AMP

Product Guide

Catalog
82750

Issued 6-91

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AMP Product Guide

This guide contains specifications and application data on many popular types and sizes of terminating, connecting, splicing, switching and programming devices manufactured by AMP.

If you are involved in wiring or interconnecting electronic devices and circuits, you are concerned with the availability of reliable products that will meet your exacting requirements and contribute to total production economies.

We believe you will find this catalog a useful and comprehensive reference in the selection and specification of terminals, splices, connectors and other items you use in your work.

Your AMP Sales Engineer or Representative welcomes the opportunity to discuss your particular application needs at any time, and to make available to you AMP worldwide research, engineering and marketing services which will help you make the most of AMP products and termination techniques.

How to use your AMP Product Guide

This guide is designed to facilitate referencing specific AMP products. Every effort has been made to assure the accuracy of the information contained in this guide. However, AMP makes constant improvements to products through specification changes, additions to product lines and the introduction of new product lines.

We recommend that you consider this volume as a GUIDE ONLY—for the latest, exact specifications contact AMP.

The AMP Product Guide is divided into Ten Sections (See Table of Contents, page 5). Each section is titled according to its product category. The various product lines within a section are identified by a brief general description and, where applicable, the appropriate AMP trademark. The sections carry their section designator throughout the guide on the edge of the page and individual pages within a section are keyed to that specific section. (Request Catalogs on pages 11003-11005 for more information and complete part number listings.)

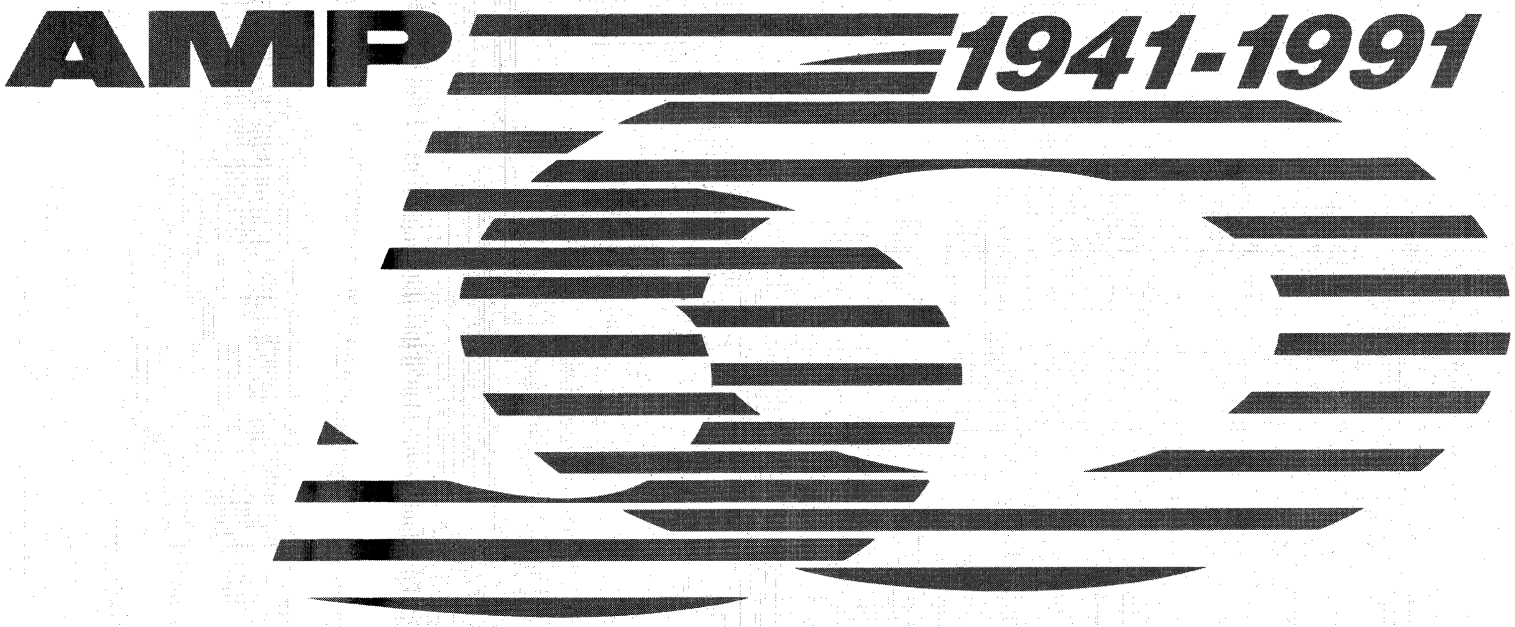
For your convenience, we have included an Alphabetical Index, and a Part Number Index at the end of the guide (immediately following Section 10). The Alphabetical Index will aid in the identification and location of AMP products by name. The Part Number Index lists only the parts contained in this guide by base (series) numbers only; part numbers with prefixes and/or suffixes are shown on the page(s) indicated. You will find this index extremely helpful where the AMP Part Number is already known.

AMP is pleased to present you with this Product Guide. We trust it will prove to be a valuable reference to our extensive and diversified line of products and tooling.

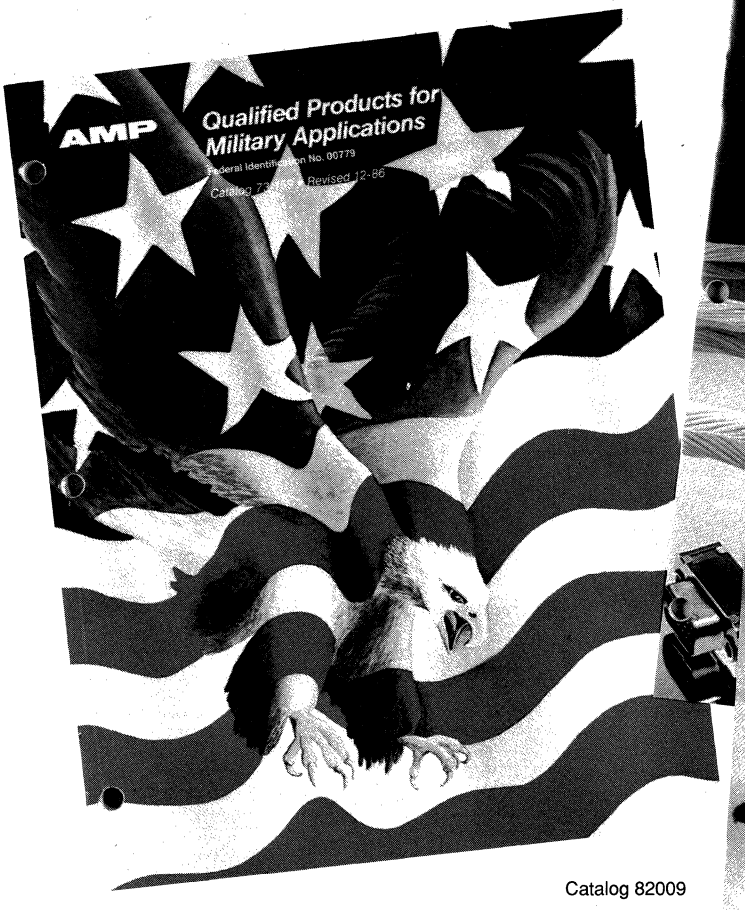
Metric Dimensions

A large percentage of the products contained in this publication will have both customary U.S. dimensions and metric dimensions shown.

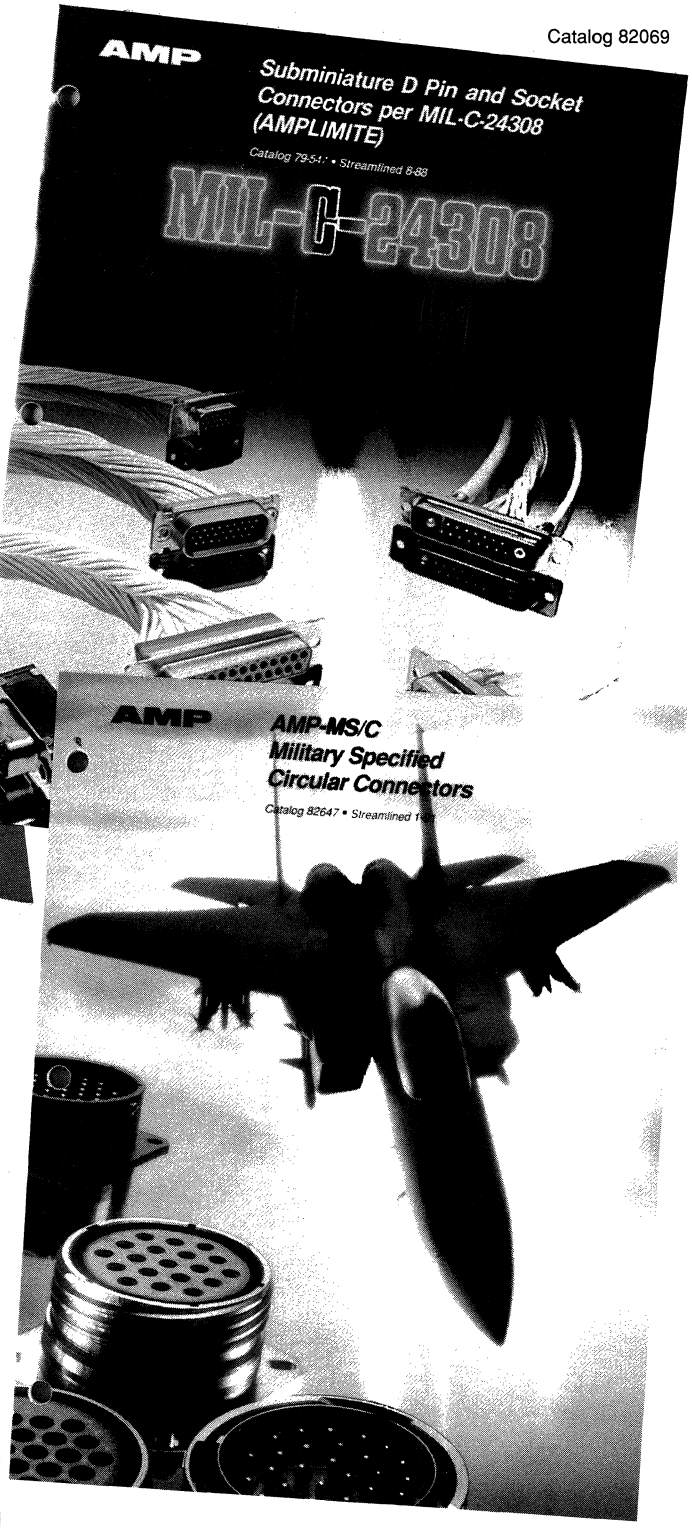
Specifications subject to change.
For latest design specifications...
1-800-522-6752



Qualified AMP Products for Military Applications



Catalog 82009



Catalog 82069

Catalog 82647

AMP offers numerous products qualified to military specifications not shown in this catalog. These products are listed here by specification number in numerical order. For complete information on these products request the AMP Catalog listed for that product.

MIL-C-5015
Cylindrical Connectors
Catalog 82647

MIL-C-21097
AMP-BLADE Two-Piece Printed Circuit Edge Connectors
Catalog 82037

MIL-C-24308
High Density Pin and Socket Connectors
Catalog 82069

MIL-C-26482 Series I, Series II
Cylindrical Connectors
Catalog 82647

MIL-C-38999 Series I, Series II, Series III
Cylindrical Connectors
Catalog 82647

MIL-C-39012
RF Coaxial Connectors
See section 4 of this catalog and Catalog 82074

MIL-C-55302
Two-Piece Board-to-Board Connectors
Catalog 82015

MIL-C-81659
Rack and Panel Connectors (ARINC 404)
Catalog 82010

MIL-C-83503
Ribbon Cable Connectors and .025 [0.64] Square Post Headers
Catalog 82012

MIL-C-83522
Fiber Optic Connectors
See section 6 of this catalog and Catalog 82188

MIL-C-83723 Series I, Series II, Series III
Cylindrical Connectors
Catalog 82647

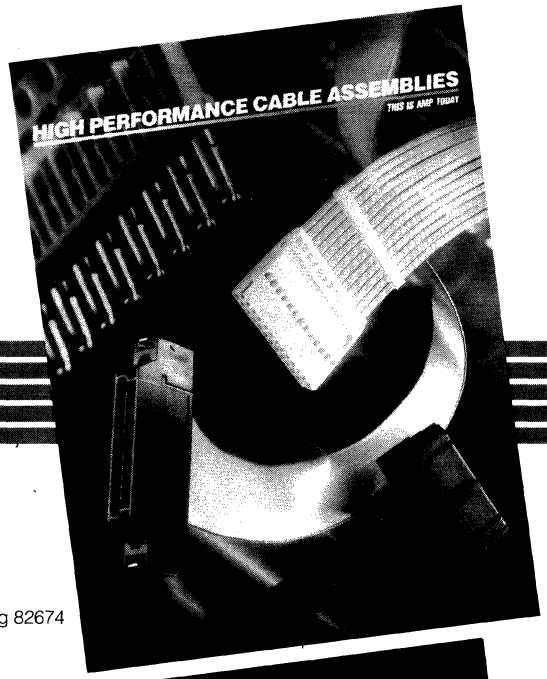
MIL-I-23053
Heat Shrinkable Tubing
Catalogs 82215 & 82551

MIL-S-83734
DIP Sockets
See section 10 of this catalog and Catalog 82172

MIL-T-7928
Terminals and Splices
Catalog 82042

MIL-T-81714
Terminal Junction Blocks
Catalog 82781

NASA GSFC-S-311-P-4
High Density Non-Magnetic Pin and Socket Connectors
Catalog 82069

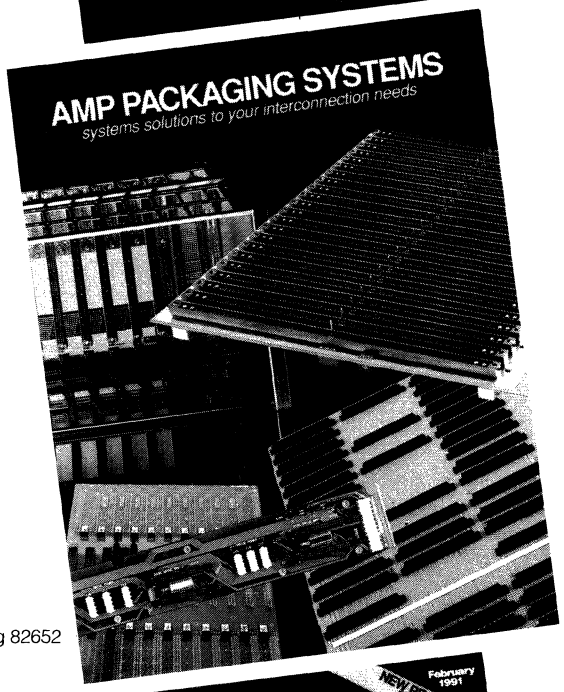


Catalog 82674

AMP can supply all your Custom Cabling, Custom Packaging, and Network/ Premises Wiring needs.

CABLE ASSEMBLIES

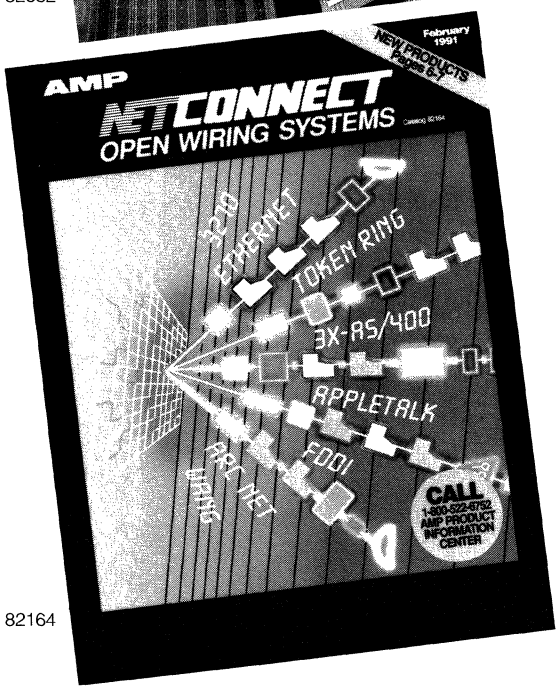
AMP High Performance Cable Assemblies are custom engineered to meet your high-speed signal transmission challenges. AMP cable assemblies are designed to match the strict electrical specifications of each system, and address characteristics that include impedance, emissions, crosstalk, attenuation, and ground bussing. A dedicated group of specialists provides you with the support, performance, reliability and value that you need and expect. Consult with AMP early in your design process for recommendations on the most efficient packaging options that comply with your performance requirements.



Catalog 82652

PACKAGING SYSTEMS

AMP Packaging Systems, Inc. specializes in electronic packaging matched to your system requirements. From connectors to backplane assemblies, AMP Packaging Systems offers a total systems approach and can deliver custom, standard, or customized standard card cages and enclosure systems. Consideration is given to your total system from driver through receiver including logic family, noise budgets, impedance requirements and other special constraints. AMP Packaging Systems builds world-class products through their commitment to excellence.



Catalog 82164

NETCONNECT OPEN WIRING SYSTEMS

AMP has become established as the preferred worldwide source for Open Systems Interconnection Products to major OEMs, Systems Integrators, and for end user applications. This catalog, organized for easy reference by cable media, includes complete vendor-independent solutions for your wiring and networking needs. If you have specific interconnect needs, contact AMP for further information.

Need More Information?

Call the AMP Product Information Center:
1-800-522-6752

The Product Information Center is staffed with specialists well-versed in all AMP products. The Center can provide you with:

- Technical Support
- Catalogs
- Technical Documents
- Product Samples
- AMP Authorized Distributor Locations

For **tooling information,** call Customer Assistance Hotline **1-800-722-1111.**

AMP

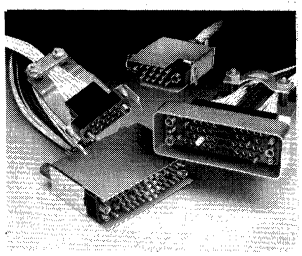
Table of Contents

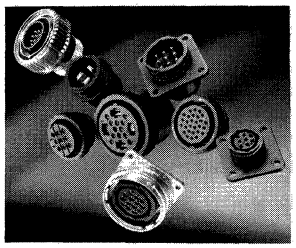
Qualified AMP Products for Military Applications are summarized on page 2

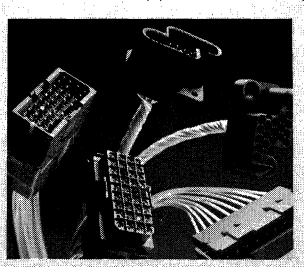
AMP Terminals and Splices

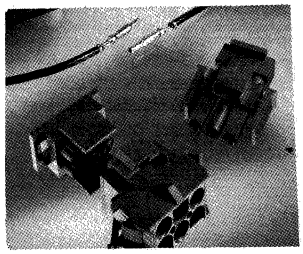
Qualified AMP Products for Military Applications are summarized on page 2.

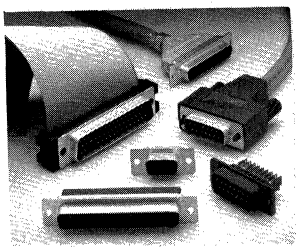
AMP Pin and Socket Connectors











Qualified AMP Products for Military Applications are summarized on page 2.
For information on Custom High Performance Cable Assemblies see page 3.

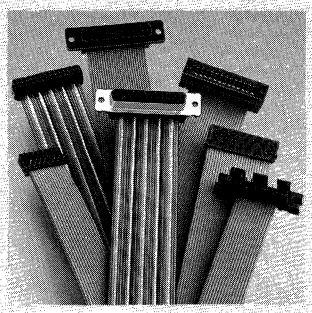
AMP Printed Circuit Board Connectors

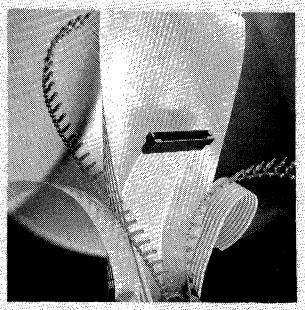
Qualified AMP Products for Military Applications are summarized on page 2.
For information on Custom High Performance Cable Assemblies see page 3.
Note: See sections 5, 7 and 9 for additional PC Board Connectors.

AMP Coaxial and Flat Coaxial Cable Products

**Qualified AMP Products for Military Applications are summarized on page 2.*
◆ For information on Custom High Performance Cable Assemblies see page 3.
†NETCONNECT Open Wiring Systems are summarized on page 3.

AMP Ribbon and Flat Cable Connectors





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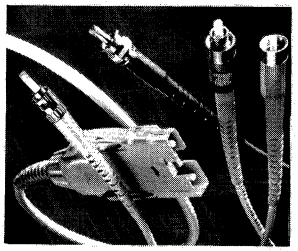
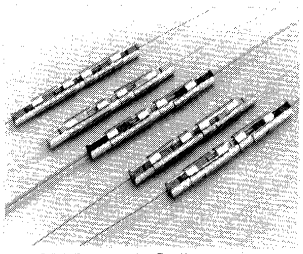
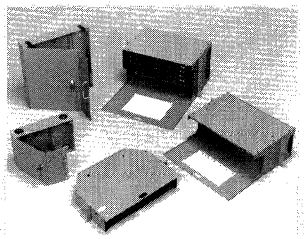
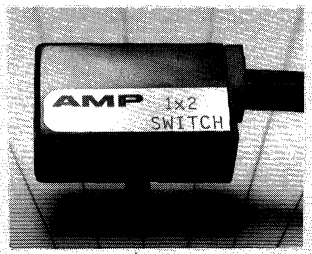
Note: See sections 3, 7 and 9 for additional PC Board Connectors.

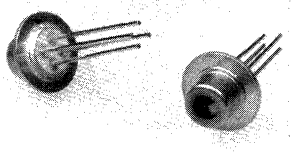
AMP Fiber Optics









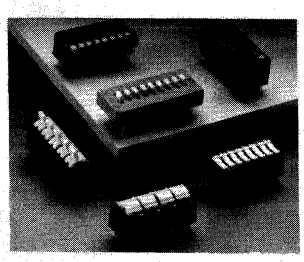


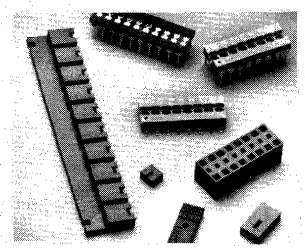
** Qualified AMP Products for Military Applications are summarized on page 2.*

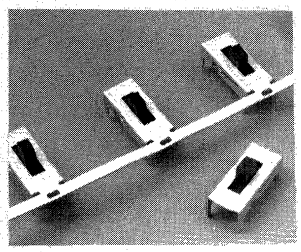
AMP Miscellaneous Connectors

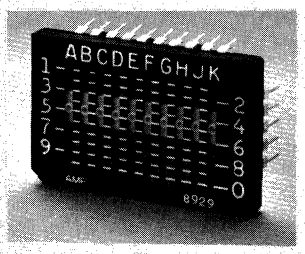
For information on Custom High Performance Cable Assemblies see page 3.
Note: See sections 3, 5 and 9 for additional PC Board Connectors.

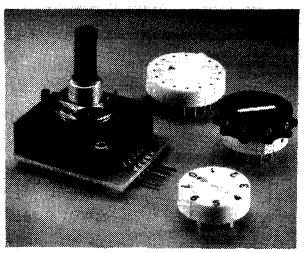
AMP Switches and Programming Systems



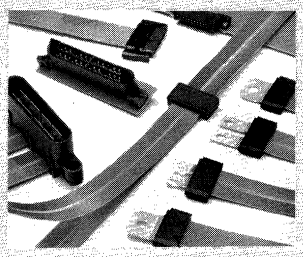






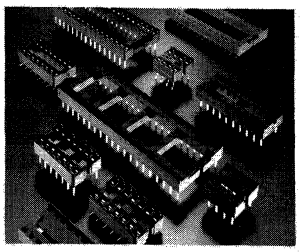


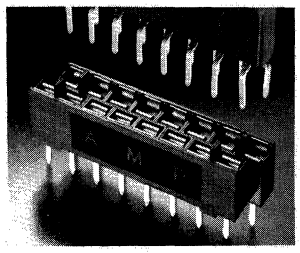
AMP Miscellaneous Products

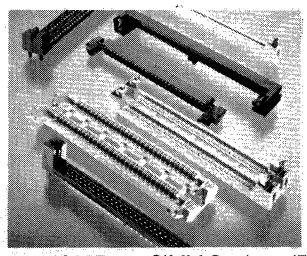


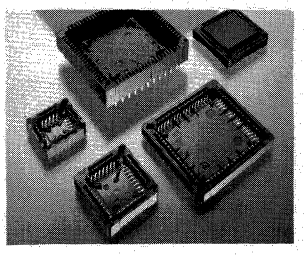
Qualified AMP Products for Military Applications are summarized on page 2.
Note: See sections 3, 5 and 7 for additional PC Board Connectors.

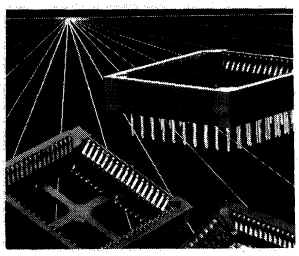
AMP IC Sockets

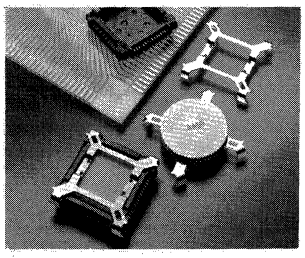


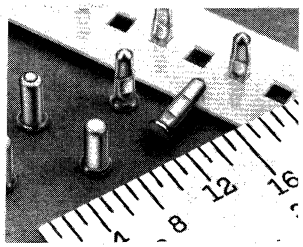


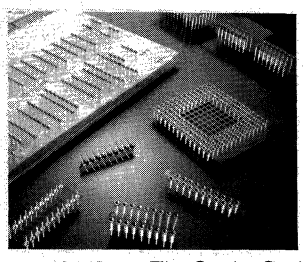












Qualified AMP Products for Military Applications are summarized on page 2.

AMP

Indexes

AMP INCORPORATED, HARRISBURG, PA 17105; PHONE: 717-564-0100 TWX: 510-657-4110 • PRODUCT INFORMATION CENTER; PHONE: 1-800-522-6752

1

AMP

Terminals and Splices

Qualified AMP Products for Military Applications are summarized on page 2.

PIDG (Pre-insulated Diamond Grip) Terminal

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Here is a pre-insulated terminal designed for complete and uniform reliability in the most difficult circuit environments. Each PIDG Terminal consists of a tin plated copper body or a tin plated phosphor bronze body for spring spades with a specially designed copper sleeve and insulation sleeve fitted over the terminal barrel. The design of the tool dies and the construction of the terminal insures uniform insulation thickness under crimping pressure, transmitting this pressure evenly to the center of the crimp area.

The AMP Mated Tool/Terminal Concept

AMP compression crimping produces crimps for a given size wire and terminal that are precisely alike in appearance and performance. This is a calculated result made possible by designing the terminal and the crimping tool as precisely matched devices. The dies are precision-engineered from the finest hard-metal alloys. Crimping pressure is controlled by a rachet device on the hand tool or a corresponding pre-calibration in the crimping jaws of AMP automated crimping machines.

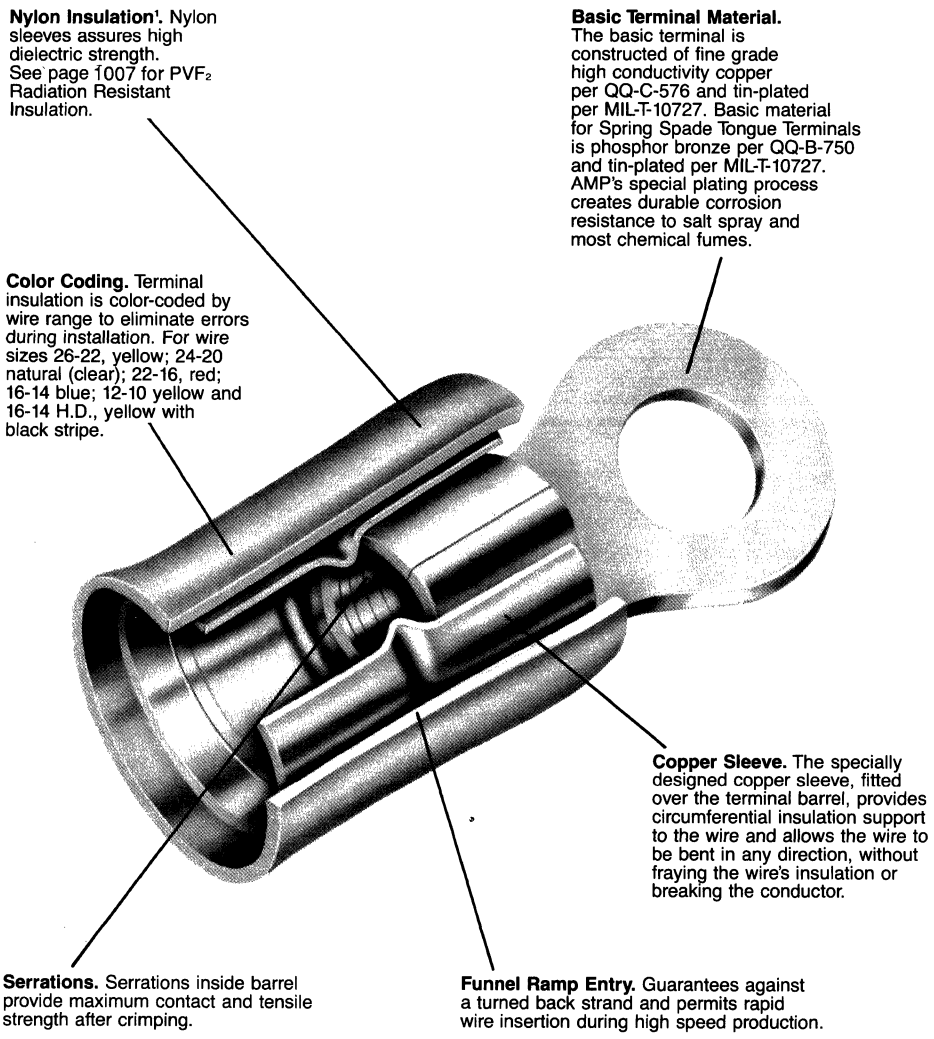
The Crimp

Crimping pressure can neither overstress nor understress the terminal barrel — machined dies fully bottom to the precise crimp height.

The resulting termination is virtually free of contamination, is extremely resistant to shock and critical environments, and its tensile strength approaches that of the wire itself.

PIDG Terminals meet or exceed the requirements of MIL-T-7928, Type II, Class 1 and 2

Refer to **AMP Qualified Products for Military Application,** Catalog 82009 for Military Specification Number to AMP Part Number cross reference.



Temperature Rating: 105°C Max.

AMP PIDG Terminals (Use PIDG Tooling)

AMP Wire Range	UL Listed	CSA LR7189 Certified
22-16	22-16 Solid or Stranded	
16-14	16-14 Solid or Stranded	300 V Max., 105°C. Max.[1]
12-10	12-10 Solid or Stranded	

Note: 22-16 splices are stamped 22-18 in accordance with MIL-T-7928.
[1]UL & CSA — Nylon

AMP PIDG Nylon Butt Window Splice (Use PIDG Tooling)

AMP Wire Range	UL Listed	CSA LR7189 Certified
22-16	22-16 Stranded or Solid	300 V Max., 105°C. Max.
16-14	16-14 Stranded or Solid	300 V Max., 105°C. Max.
12-10	12-10 Stranded or Solid	300 V Max., 105°C. Max.

Note: 22-16 splices are stamped 22-18 in accordance with MIL-T-7928.

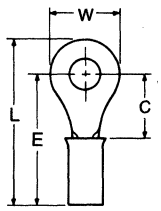
[1]Over size expansions are provided in vinyl insulation only.

Ring Tongue Terminals

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

PIDG



Material:

Insulation – Nylon
Terminal Body and Metallic Sleeve– Copper per QQ-C-576
Plating – Tin per MIL-T-10727

Related Product Data:
Application Tooling - page 1008

Wire Size Range		Stud Size	Dimensions				Terminal Insulation Color	Wire Insulation Diameter Max.	Tongue Material Thickness Max.	Barrel I.D. Min.	Part Numbers	
AWG	CMA		C Min.	W	E Max.	L Max.					Loose Piece	Tape Mounted
26-22	202-810	0	.121	.140	.452	.525	Yellow	.082	.020	.029	321013	—
		2 M2	.121	.140	.452	.525	Yellow	.082	.020	.029	323912	2-323912-1
			.211	.203	.542	.646	Yellow	.082	.020	.029	323913	—
			.211	.140	.542	.615	Yellow	.082	.020	.029	329951	2-329951-1
			.211	.165	.542	.617	Yellow/Br.	.082	.020	.029	321620	1-321620-0
		4	.211	.203	.542	.646	Yellow	.082	.020	.029	323914	2-323914-1
		6 M3.5	.211	.203	.542	.646	Yellow	.082	.020	.029	323915	2-323915-2
			.281	.250	.612	.740	Yellow	.082	.020	.029	326875	2-326875-1
		8 M4	.281	.250	.612	.740	Yellow	.082	.020	.029	323916	2-323916-1
		10	.281	.250	.612	.740	Yellow	.082	.020	.029	324075	2-324075-1
22-16	509-3,260	2 M2	.156	.218	.560	.672	Red	.125	.033	.061	328657	2-328657-1
		4	.156	.218	.560	.672	Red	.140	.033	.061	31880	2-31880-1
			.156	.218	.560	.672	Red	.125	.033	.061	320553	2-320553-2
			.172	.182	.576	.669	Red	.140	.033	.061	320882	2-320882-1
			.312	.250	.716	.844	Red	.125	.033	.061	323758	2-323758-1
			.312	.250	.716	.844	Red	.140	.033	.061	330648	2-330648-1
		6 M3.5	.156	.218	.560	.672	Red	.125	.033	.061	36149	2-36149-2
			.156	.218	.560	.672	Red	.140	.033	.061	36150	2-36150-1
			.250	.250	.654	.782	Red	.125	.033	.061	51863	51863-1
			.250	.281	.654	.797	Red	.125	.033	.061	36151	2-36151-2
			.250	.281	.654	.797	Red	.140	.033	.061	36152	2-36152-1
			.281	.312	.685	.844	Red	.125	.033	.061	323008	2-323008-1
			.281	.312	.685	.844	Red	.140	.033	.061	326878	2-326878-1
		8 M4	.281	.312	.685	.844	Red	.140	.033	.061	31890	2-31890-1
			.281	.312	.685	.844	Red	.125	.033	.061	320551	1-320551-1
			.250	.281	.654	.797	Red	.140	.033	.061	31886	2-31886-2
			.250	.281	.654	.797	Red	.125	.033	.061	320554	2-320554-1
			.297	.344	.701	.876	Red	.140	.033	.061	32835	2-32835-2
		10	.281	.312	.685	.844	Red	.125	.033	.061	36153	2-36153-2
			.281	.312	.685	.844	Red	.140	.033	.061	36154	2-36154-2
			.250	.281	.654	.797	Red	.140	.033	.061	31887	2-31887-1
			.250	.281	.654	.797	Red	.125	.033	.061	320552	2-320552-1
			.297	.344	.701	.876	Red	.125	.033	.061	32836	—
			.297	.344	.701	.876	Red	.140	.033	.061	32837	32837-1
		1/4 M6	.437	.469	.841	1.078	Red	.140	.033	.061	31894	2-31894-2
			.437	.469	.841	1.078	Red	.125	.033	.061	320571	2-320571-2
		5/16 M8	.437	.469	.841	1.078	Red	.140	.033	.061	31895	2-31895-1
			.437	.469	.841	1.078	Red	.125	.033	.061	320572	2-320572-1
			.546	.531	.950	1.218	Red	.125	.033	.061	324123	—
		3/8	.546	.531	.950	1.218	Red	.140	.033	.061	31897	2-31897-2
			.546	.531	.950	1.218	Red	.125	.033	.061	320573	2-320573-4
		1/2 M12	.530	.713	.934	1.293	Red	.140	.033	.061	328975	—
16-14	2,050-5,180	4	.171	.250	.575	.703	Blue	.150	.033	.085	324159	2-324159-2
			.171	.250	.575	.703	Blue	.170	.033	.085	328996	2-328996-1
		6 M3.5	.281	.312	.685	.844	Blue	.150	.033	.085	51864	51864-3
			.281	.343	.685	.859	Blue	.150	.033	.085	36157	2-36157-2
			.281	.343	.685	.859	Blue	.170	.033	.085	36158	2-36158-1
			.171	.250	.575	.703	Blue	.150	.033	.085	320561	2-320561-2
			.171	.250	.575	.703	Blue	.170	.033	.085	320619	2-320619-1
			.250	.312	.654	.813	Blue	.170	.033	.085	326882	2-326882-1
		8/M4	.281	.312	.685	.844	Blue	.150	.033	.085	51864-1	51864-5

Ring Tongue Terminals
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

PIDG (Continued)

Wire Size Range		Stud Size	Dimensions				Terminal Insulation Color	Wire Insulation Diameter Max.	Tongue Material Thickness Max.	Barrel I.D. Min.	Part Numbers	
AWG	CMA		C Min.	W	E Max.	L Max.					Loose Piece	Tape Mounted
16-14	2,050-5,180	8 M4	.281	.343	.685	.859	Blue	.150	.033	.085	320560	2-320560-1
			.281	.343	.685	.859	Blue	.170	.033	.085	320565	2-320565-1
			.250	.312	.654	.813	Blue	.170	.033	.085	53941-1	53941-2
		10	.281	.312	.685	.844	Blue	.150	.033	.085	51864-2	51864-4
			.281	.343	.685	.859	Blue	.150	.033	.085	320574	2-320574-2
			.281	.343	.685	.859	Blue	.170	.033	.085	36160	2-36160-1
			.250	.312	.654	.813	Blue	.170	.033	.085	53942-1	53942-2
			.437	.469	.841	1.078	Blue	.170	.033	.085	324533	2-324533-2
		1/4 M6	.437	.469	.841	1.078	Blue	.150	.033	.085	320563	2-320563-2
			.437	.469	.841	1.078	Blue	.170	.033	.085	321045	2-321045-1
		5/16	.437	.469	.841	1.078	Blue	.170	.033	.085	328998	2-328998-1
		M8	.437	.469	.841	1.078	Blue	.150	.033	.085	320575	2-320575-1
		3/8	.546	.531	.950	1.218	Blue	.150	.033	.085	320564	2-320564-3
			.546	.531	.950	1.218	Blue	.170	.033	.085	328999	2-328999-1
		1/2	.530	.713	.934	1.293	Blue	.150	.033	.085	328976	—
		M12	.530	.713	.934	1.293	Blue	.170	.033	.085	328849	—
16-14 HD[1]	2,050-5,180	6	.219	.281	.810	.953	Yellow/Blk.	.250	.050	.105	35634	—
		M3.5	.219	.281	.810	.953	Yellow/Blk.	.230	.050	.105	320631	2-320631-1
		8	.281	.343	.872	1.046	Yellow/Blk.	.250	.050	.105	35106	2-35106-1
		M4	.281	.343	.872	1.046	Yellow/Blk.	.230	.050	.105	320627	1-320627-0
		10	.281	.343	.872	1.046	Yellow/Blk.	.230	.050	.105	320630	2-320630-2
			.281	.343	.872	1.046	Yellow/Blk.	.250	.050	.105	34805	2-34805-1
			.281	.343	.961	1.135	Yellow/Blk.[2]	.300	.050	.105	35363	—
		1/4 M6	.344	.500	.935	1.188	Yellow/Blk.	.230	.050	.105	34974	2-34974-1
			.437	.531	1.028	1.296	Yellow/Blk.	.230	.050	.105	327743	1-327743-1
			.437	.531	1.028	1.296	Yellow/Blk.	.250	.050	.105	34806	—
			.437	.531	1.117	1.385	Yellow/Blk.[2]	.300	.050	.105	35362	—
		1/2 M12	.625	.750	1.216	1.564	Yellow/Blk.	.250	.050	.105	35316	—
12-10	5,180-13,100	4	.219	.281	.810	.953	Yellow	.250	.042	.129	35148	1-35148-1
		6 M3.5	.219	.281	.810	.953	Yellow	.250	.042	.129	35149	2-35149-1
			.219	.281	.810	.953	Yellow	.230	.042	.129	320634	2-320634-1
			.302	.312	.893	1.052	Yellow	.230	.042	.129	326886	326886-1
			.302	.375	.893	1.083	Yellow	.250	.042	.129	35107	2-35107-1
			.302	.375	.893	1.083	Yellow	.230	.042	.129	320567	2-320567-2
		8 M4	.281	.312	.872	1.031	Yellow	.230	.042	.129	35787	—
			.302	.312	.893	1.052	Yellow	.230	.042	.129	324915	—
			.302	.375	.893	1.083	Yellow	.250	.042	.129	35108	2-35108-1
			.302	.375	.982	1.172	Yellow[2]	.300	.042	.129	35605	2-35605-2
			.302	.375	.893	1.083	Yellow	.230	.042	.129	320568	2-320568-1
		10	.281	.343	.872	1.046	Yellow	.230	.042	.129	32883	1-32883-0
			.302	.312	.893	1.052	Yellow	.230	.042	.129	324918	1-324918-0
			.302	.375	.893	1.083	Yellow	.250	.042	.129	35109	2-35109-1
			.302	.375	.982	1.172	Yellow[2]	.300	.042	.129	35364	2-35364-1
			.302	.375	.893	1.083	Yellow	.230	.042	.129	36161	2-36161-2
		1/4 M6	.344	.500	.935	1.188	Yellow	.230	.042	.129	35273	2-35273-2
			.344	.500	.935	1.188	Yellow[2]	.300	.042	.129	323763	2-323763-2
			.468	.531	1.054	1.322	Yellow	.250	.042	.129	35110	2-35110-1
			.468	.531	1.054	1.322	Yellow[2]	.300	.042	.129	35345	2-35345-1
			.468	.531	1.054	1.322	Yellow	.230	.042	.129	320569	2-320569-3
		5/16 M8	.468	.531	1.054	1.322	Yellow	.250	.042	.129	35111	2-35111-1
			.468	.531	1.143	1.411	Yellow[2]	.300	.042	.129	35346	2-35346-1
			.468	.531	1.054	1.322	Yellow	.230	.042	.129	320576	2-320576-1
		3/8	.531	.593	1.115	1.414	Yellow	.250	.042	.129	35112	—
			.531	.593	1.115	1.414	Yellow	.230	.042	.129	320577	2-320577-3
		1/2 M12	.625	.750	1.216	1.594	Yellow	.250	.042	.129	35151	—

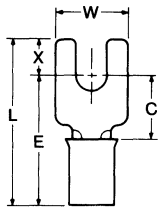
[1]Heavy duty for extra mechanical strength.
[2]Oversize expansions provided in insulation only.

Spade Tongue Terminals

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

PIDG



Material:

Insulation – Nylon
Terminal Body and Metallic Sleeve – Copper per QQ-C-576
Plating – Tin per MIL-T-10727

Related Product Data:
Application Tooling - page 1008

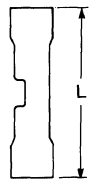
Wire Size Range		Stud Size	Dimensions					Terminal Insulation Color	Wire Insulation Diameter Max.	Tongue Material Thickness Max.	Barrel I.D. Min.	Part Numbers	
AWG	CMA		C Min.	W	E Max.	L Max.	X					Loose Piece	Tape Mounted
26-22	202-810	4	.211	.203	.542	.627	.080	Yellow	.082	.020	.029	321035	2-321035-1
22-16	509-3,260	2/M2	.203	.182	.607	.727	.115	Red	.140	.033	.061	328394	2-328394-1
		4	.156	.218	.560	.674	.109	Red	.140	.033	.061	327717	—
		6/M3.5	.218	.344	.622	.783	.156	Red	.125	.033	.061	32403	—
			.203	.297	.607	.753	.141	Red	.125	.033	.061	34080	2-34080-1
			.203	.297	.607	.753	.141	Red	.140	.033	.061	326861	2-326861-1
			.312	.250	.716	.846	.125	Red	.140	.033	.061	34541	2-34541-1
		8/M4	.312	.375	.716	.908	.187	Red	.125	.033	.061	32050	2-32050-1
			.312	.375	.716	.908	.187	Red	.140	.033	.061	32053	2-32053-1
		10	.312	.375	.716	.908	.187	Red	.125	.033	.061	32051	2-32051-1
			.312	.375	.716	.908	.187	Red	.140	.033	.061	32054	2-32054-1
16-14	2,050-5,180	6/M3.5	.312	.375	.716	.908	.187	Blue	.170	.033	.085	32058	—
			.203	.297	.607	.753	.141	Blue	.170	.033	.085	35559	2-35559-1
			.312	.244	.716	.846	.125	Blue	.170	.033	.085	328281	1-328281-1
		8/M4	.312	.375	.716	.908	.187	Blue	.150	.033	.085	32056	2-32056-1
			.203	.297	.607	.753	.141	Blue	.170	.033	.085	321233	2-321233-1
		10	.312	.375	.716	.908	.187	Blue	.170	.033	.085	32060	2-32060-1
12-10	5,180-13,100	6/M3.5	.218	.290	.809	.954	.140	Yellow	.230	.042	.129	322985	1-322985-0
			.296	.312	.887	1.095	.203	Yellow	.230	.042	.129	326859	2-326859-1
		8/M4	.296	.406	.887	1.095	.203	Yellow	.230	.042	.129	32588	2-32588-1
			.296	.406	.887	1.095	.203	Yellow	.250	.042	.129	35152	2-35152-1
		10	.296	.406	.887	1.095	.203	Yellow	.230	.042	.129	32589	2-32589-1

Butt Splices

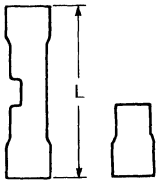
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

PIDG



Standard and Radiation Resistant



Step Down Assembly[1]

Material:

Splice Body – Copper per QQ-C-576
Plating – Tin per MIL-T-10727
Insulation Support Sleeve – Copper per QQ-C-576
Plating – Tin per MIL-T-10727
Insulation Sleeve –
Standard and Step Down Assembly – Nylon
Radiation Resistant – Polyvinylidene Fluoride (PVF_2)
Color – Natural

Related Product Data:
Application Tooling - page 1008

Wire Size Range AWG	Wire Size Range CMA[5]	Style	Dimension L Max.	Splice Insulation Color	Wire Insulation Diameter Max.	Barrel I.D. Min.	Part Numbers Loose Piece	Part Numbers Tape Mounted
26-22[3]	202-810	Standard	.890	Yellow	.082	.029	323994	2-323994-1
24-20	320-1,290		1.035	Trans.	.100	.043	323975	2-323975-3
22-16[4]	509-3,260		1.265	Red	.125	.061	320559	2-320559-4
16-14	2,050-5,180		1.265	Blue	.150	.085	320562	2-320562-3
12-10	5,180-13,100		1.656	Yellow	.220	.129	320570	—
16-14 to 22-16	2,050-5,180 to 509-3,260	Step Down Assembly	1.265	Blue	.150-.115	—	327583	—
12-10 to 16-14	5,180-13,100 to 2,050-5,180		1.656	Yellow	.220-.170	—	327638	—
12-10 to 22-16	5,180-13,100 to 509-3,260		1.656	Yellow	.220-.140	—	327639	—
24-20	320-1,290	Radiation Resistant	.968	White Stripe	.100	.043	53547-1	—
22-16	509-3,260		1.265	Red Stripe	.125	.061	53548-1	—
16-14	2,050-5,180		1.265	Blue Stripe	.150	.085	53549-1	—
12-10	5,180-13,100		1.656	Yellow Stripe	.220	.129	53550-1	—

[1]Includes adapter insert.
[3]26-22 splices are 26-24 range in accordance with MIL-T-7928.
[4]22-16 splices are 22-18 range in accordance with MIL-T-7928.
[5]When using two or more wires in either end of a butt splice, the combined cross sectional area must be within the (CMA) circular mil area range listed.

Butt Splice Step Down Adapter Inserts[2]

Step Down Adapter Insert

Material:

Adapter Body – Copper per QQ-C-576
Plating – Tin per MIL-T-10727

Related Product Data:
Application Tooling - page 1008

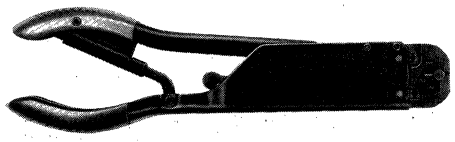
Butt Splice Wire Range AWG	Butt Splice Part No.	Adapter Insert Wire Range AWG	Adapter Insert Part No.
16-14	320562	22-16	327635
12-10	320570	16-14	327637
12-10	320570	22-16	327636

[2]Adapter inserts can be ordered separately for use in specific Standard PIDG Butt Splices; see chart above.

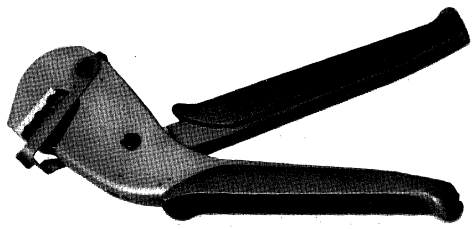
Tooling Selection Guide for Terminals and Splices (30 to 10 AWG Wire Range)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Hand Tools

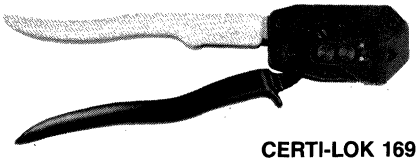


T-HEAD 59250, 59275



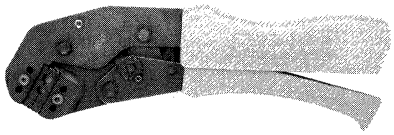
TETRA-CRIMP 59824-1

69710
(Interchangeable Dies)



CERTI-LOK 169400

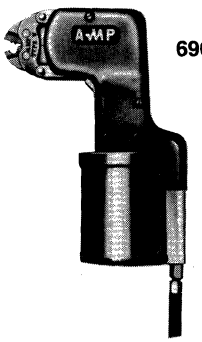
Pneumatic Tools



PRO-CRIMPER 58433-3

69365

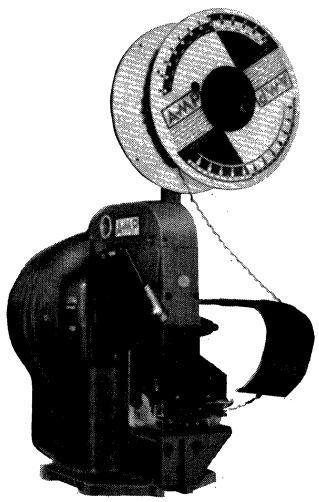
69015



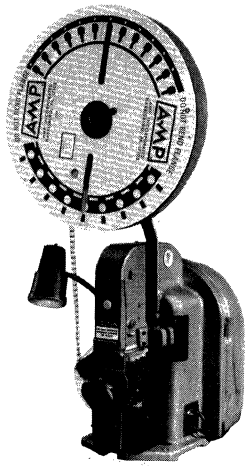
69005, 69010

"2614"
314423-1 (Foot Switch)
314423-2 (Foot Switch & Logic)
314595-1 (Hand Switch)
314597-1 (Hand Switch & Logic)

"1210"
314590-1 (Foot Switch)
314590-2 (Foot Switch & Logic)
314281-1 (Hand Switch)
314700-1 (Hand Switch & Logic)



AMP-O-LECTRIC Machine 565435-5
Uses Applicator 567200-2 and Dies



AMP-TAPETRONIC Machine
68250-1, 69875
(Tape only, requires Dies)

Description	AMP Wire Range	Tools for Loose Piece Termination: Hand Tools Single Wire Range	Multi Wire Range	Dies for 169400 CERTI-LOK Tool	Heads for 314423-1, -2, 314595-1, 314597-1	Heads for 314590-1, -2. 314281-1, 314700-1	Heads for 69005	Heads for 69010	Dies for 69365, 69365-2 69710, 69319-1 46110-2 (Term. only)	Tools for Tape Mounted Terminations: Tape Dies for 69875 AMP-TAPETRONIC Machine 818057-2 AUTO-PRO Appl.[4] 56700-2 Applicator [2] 687658-1 Applicator [3]	AMP-O-LECTRIC Applicator
PIDG Terminals & Splices	30-26	69163 - uses 26-22 Terms	—	—	—	—	—	—	—	—	—
	26-22	48518	59275	—	314537-1	—	47469	—	69344	69877	—
	22-16	47386	59250 59824-1 58433-3	169404	314270-1	764593-1 (For use with PRO-CRIMPER die P/N 58423-1)	47516	46282	47806-2	69872 59826-1[1]	—
	16-14	47387	59250 59824-1 58433-3	169404	314269-1	764593-1 (For use with PRO-CRIMPER die P/N 58423-1)	47517	46284	47807-1	69873 59827-1[1]	—
	12-10 16-14 HD	59239-4 59287-2 (.300 exp.)	59824-1 58433-3	169404	—	314268-1 764593-1 (For use with PRO-CRIMPER die P/N 58423-1)	—	47518-1 59979-1 (.300 exp. Terms. only)	47808-6 Std. 47808-5 .300 exp. Not used in 46110 or 69319-1	69874 69897 (.300 exp.) 59828-1[1]	—

1 TETRA-CRIMP configuration 2 For AMP-O-LECTRIC machine 565435-5 3 For AMPOMATOR machine 4 For AUTO-PRO machine 818380-1

PIDG FASTON Receptacles

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Here is a pre-insulated terminal designed for complete and uniform reliability in the most difficult circuit environment. Each PIDG Terminal consists of a tin-plated brass body with a specially designed copper sleeve and insulation sleeve fitted over the terminal barrel. The tool dies and the construction of the terminal are designed to create uniform insulation thickness under crimping pressure, transmitting this pressure evenly to the center of the crimp area.

The terminal and the crimping tools are designed to match each other and produce crimps for a given wire size and terminal that are uniform in appearance and performance. The dies are precision-engineered from the finest hard-metal alloys. Crimping pressure is controlled by a ratchet device on the hand tool or a corresponding pre-calibration in the crimping jaws of AMP automated crimping machines.

Crimping pressure can neither over-stress nor understress the terminal barrel; machined dies fully bottom to the precise crimp height required.

The resulting termination is virtually free of contamination, is extremely resistant to shock and critical environments, and its tensile strength approaches that of the wire itself.

Temperature Rating: 105°C

Wire Range	E66717 Recognized	LR7189 Certified
22-16	22-16 Stranded	
16-14	16-14 Stranded	300 V Max., 105°C Max.[1]
12-10	12-10 Stranded	

[1]UL and CSA - Nylon.

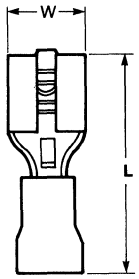
Product Facts

- Basic terminal is tin-plated brass
- Color-coded by wire range to help eliminate errors during installation
- Serrations, inside barrel, provide maximum contact and tensile strength after crimping
- Special designed copper sleeve fits over terminal barrel, providing circumferential insulation support to the wire
- Temperature rating of 105°C

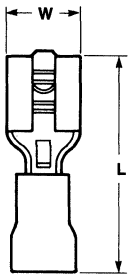
PIDG FASTON Receptacles

Specifications subject to change.
For latest design specifications...
1-800-522-6752

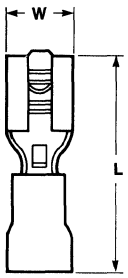
Dimensioning:
Dimensions are in inches



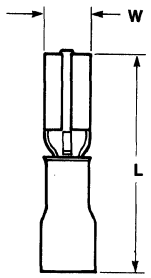
.250 Series



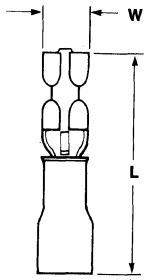
.205 Series



.187 Series



.110 Series (Standard[1])



.110 Series (Low Insertion[2])

Receptacle Style:
A – No dimple with wire stop
B – Dimple with wire stop

Materials:
Receptacle - Brass per MIL-C-50 or Phos. Bronze per QQ-B-750
Metallic Sleeve - Copper per QQ-C-576
Plating - Tin plate per MIL-T-10727
Insulation - Nylon

Series	Style	Wire Size Range		Dimensions		Terminal Insulation Color	Wire Insulation Diameter Max.	Recept. Matl.	Stock Thk.	Fits Tab Thk.	Part Numbers		
		AWG	CMA	W Nom.	L Max.						Loose Piece	Tape Mounted	Strip Form
.250	B	22-18	509-1,900	.300	.900	Red	.140	Brass	.018	.032	640903-1	640903-2	640902-1
	B	16-14	2,050-5,180	.300	.900	Blue	.170	Brass	.018	.032	640905-1	640905-2	640904-1
	B	14-12	3,831-6,654	.300	1.012	Yellow/Green	.250	Brass	.018	.032	42844-1[3]*	42844-3[3]*	60544-3[3]*
				.300	1.012	Yellow/Green	.250	Phos. Brz.	.018	.032	42844-2[3]*	—	—
	B	12-10	5,180-13,100	.300	1.012	Yellow	.250	Brass	.018	.032	640907-1	640907-2	640906-1
.205	B	22-18	509-1,900	.250	.800	Red	.135	Brass	.016	.020	640909-1	640909-2	—
				.250	.800	Red	.135	Brass	.016	.032	640911-1	640911-2	—
	B	16-14	2,050-5,180	.250	.800	Blue	.170	Brass	.016	.020	640913-1	640913-2	—
				.250	.800	Blue	.170	Brass	.016	.032	640915-1	640915-2	—
.187	B	26-24	238-475	.230	.700	Yellow	.085	Brass	.016	.020	641321-1[3]*	—	—
	B	22-18	509-1,900	.230	.800	Red	.135	Brass	.016	.020	640917-1	640917-2	640916-1
	B	16-14	2,050-5,180	.230	.800	Blue	.170	Brass	.016	.020	640919-1	640919-2	640918-1
.110	B	22-18	509-1,900	.148	.734	Trans.	.100	Brass	.012	.016	61048-1[1,3]*	61048-2[1,3]*	—
	A	22-18	509-1,900	.148	.734	Trans.	.100	Brass	.012	.020	61060-1[1,3]*	61060-2[1,3]*	61059-2[1,3]*
	B	22-18	509-1,900	.148	.734	Trans.	.100	Brass	.012	.032	60894-1[1,3]*	60894-2[1,3]*	—
	A	22-18	509-1,900	.160	.756	Red	.140	Brass	.016	.012	—	—	350871-1[2,3]*
				.160	.800	Red	.140	Brass	.016	.016	640921-1[2]*	640921-2[2]*	—
				.160	.800	Red	.140	Brass	.016	.020	640923-1[2]	640923-2[2]	640922-1[2]
				.160	.800	Red	.140	Brass	.016	.032	640925-1[2]	640925-2[2]	640924-1[2]
	B	16-14	2,050-5,180	.160	.800	Blue	.170	Brass	.016	.016	640927-1[2]*	640927-2[2]*	—
	A	16-14	2,050-5,180	.160	.800	Blue	.170	Brass	.016	.020	640929-1[2]	640929-2[2]	—
				.160	.800	Blue	.170	Brass	.016	.032	640931-1[2]	640931-2[2]	—

[1]Standard Receptacle
[2]Low Insertion Receptacle
[3]For current tooling information, call Customer Assistance Hotline, 1-800-722-1111.
Note: All the above part numbers are UL Recognized and CSA Certified except those part numbers followed by an asterisk(*).

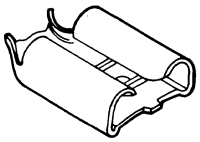
Application Tooling for PIDG FASTON Receptacles

Wire Range AWG	Hand Tool	Tools for Tape Mounted Terminations (Tape Dies for 69875 AMP-TAPETRONIC Machine 818057-2 AUTO-PRO Appl.[2] 567200-2 Applicator[3] 687658-1 Applicator[4])	Applicators for Strip Form Terminations	
			AMP-O-LECTRIC Machine	AMPOMATOR CLS II Machine
22-18	59824-1[1]	59826-1[1]	466788-4	466788-3
16-14	59824-1[1]	59827-1[1]	466789-4	466789-3
12-10	59824-1[1]	59828-1[1]	466790-4	466790-3

[1]TETRA-CRIMP Hand Tool
[2]For AUTO-PRO machine 818380-1
[3]For AMP-O-LECTRIC machine 565435-5
[4]For AMPOMATOR CLS II machine

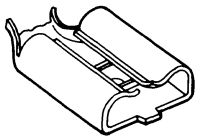
Specifications subject to change.
For latest design specifications...
1-800-522-6752

The AMP family of quick connects provides the right product for every application. All styles provide the necessary features for quality and reliable interconnections. All lines meet the applicable requirements of UL 310.



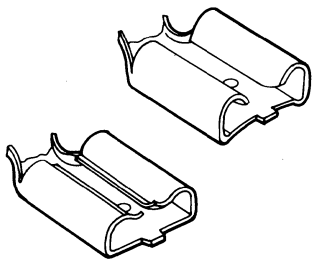
Premier

The receptacle configuration of the Premier, with its resilient rolls and double slot bottom allows maximum compliancy while retaining the high normal forces necessary to provide good wiping action and a reliable interface. The secret to the resiliency of the Premier receptacle is in the thermal stress relieving each terminal receives. This extra processing step relieves the residual stresses the stamping process imparts and allows the receptacle to resist the effects of over-stressing caused by a variety of production situations. Stress relieving also adds significantly to the normal force to provide good cleaning action and low, stable resistance under a variety of operating conditions. In addition, each Premier receptacle receives further processing to clean and lubricate the surface prior to shipping.



Economy

The Economy receptacle is separated from its counterparts by the large lead-in provided by its' flaired, relatively low, roll construction. This roll construction and lead-in, with tab contact coming on the mill finish of the brass instead of a profiled edge, makes for lower average insertion forces at relatively high normal forces.



Moldable

The moldable receptacle is available in many of the same configurations shown and is produced without slots or openings in the floor of the receptacle to facilitate over-molding.

FASTON Products Meet or Exceed Industry Standards

UL Listed

Recognized under the Component Program of Underwriters Laboratories Inc. Electrical UL File No. E66717

CSA certified
File No. LR 49710-1
and
File No. LR 36371-4

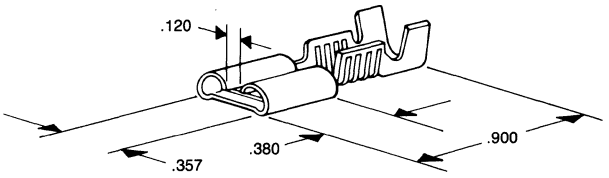
FASTON Receptacles 312 and 250 Series

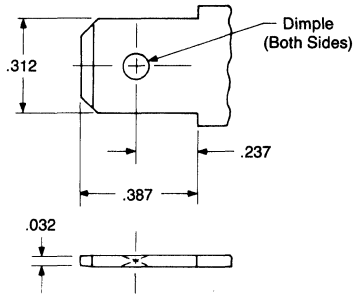
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

312 Series Receptacles Premier Line Insulation Support

(.312 x .032 tab fit)
Stock Thickness: .016



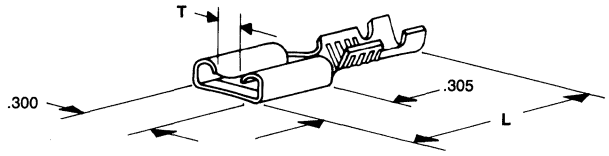


Mating 312 Series Tab Dimensions Dimple (Both Sides)

Wire Range AWG	Insulation Diameter	Material and Finish	Terminal Part No.	Quick-Change Applicator No.■
18-14	.090 - .120	Brass	62092-1	466157-2
16-12	.160 or (2) .110 Max.	Tin Plated Brass	61399-1	687944-2
16-12	.160 or (2) .110 Max.	Silver Plated Brass	63225-2	687944-2

250 Series Receptacles Premier Line Insulation Support

(.250 x .032 tab fit)



Wire Range AWG	Insulation Diameter	Stock Thickness	Dimensions L	Dimensions T	Material and Finish	Terminal Part No.	UL	CSA	CE	Quick-Change Applicator No.■
24-20	.030 - .070	.016	.755	.090	Tin Plated Brass	61368-1	X[1]	—	X[1]	466145-2
22-18	.060 - .100	.016	.755	.090	Brass	42640-1	X	—	X	687931-2
					Tin Plated Brass	42640-2	X	—	X	687931-2
	.090 - .130	.016	.755	.090	Brass	41771	X	—	X	687875-2
					Tin Plated Brass	41772	X	—	X	687875-2
18-14	.060 - .110	.018	.775	.065	Tin Plated Brass	61375-1	X	—	X	466133-3
	.120 - .170	.016	.775	.065	Nickel Plated Steel	42219-1	—	X	—	466649-2
	.120 - .170	.018	.755	.065	Brass	41202	X	—	X	687823-2
					Tin Plated Brass	41274	X	—	X	687823-2
16-12 or (2) 18	.210 - .265 or (2) .120 Max.	.018	.820	.065	Brass	41727	X	—	X	466284-7
					Tin Plated Brass	41728	X	—	X	466284-7
	.210 - .265	.016	.830	.072	Nickel Plated Steel	42579-1	—	X	—	466284-7
14-10	.150 - .200	.018	.770	.065	Brass	41449	X	—	X	687857-3
					Tin Plated Brass	41450	X	—	X	687857-3
14-10 or (2) 14	.225 - .275 or (2) .140 Max.	.018	.775	.065	Tin Plated Brass	60635-1	X	—	X	466018-3
					Silver Plated Brass	60635-2	X	—	X	466018-3
					Brass	60635-3	X	—	X	466018-3

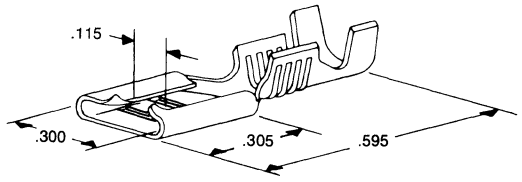
[1] UL and CSA Certified for 22-20 AWG
■Quick-Change Applicator for AMP-O-LECTRIC Machine 565435-5. For AMPOMATOR CLS II Machine and other machines not listed, contact AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

FASTON Receptacles 250 Series
(Continued)

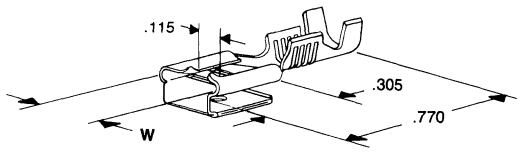
Economy Line Insulation Support
(.250 X .032 tab fit)
Stock Thickness: 0.16



Wire Range AWG	Insulation Diameter	Dimensions L	Dimensions T	Materials and Finish	Terminal Part No.	UL	CSA	CSA	Quick-Change Applicator No.■
26-22	.040 - .060	.755	.115	Brass	61202-1	X[1]	—	X[1]	466106-2
22-18	.090 - .130	.755	.115	Brass	42743-1	X	—	X	466653-2
				Tin Plated Brass	42743-2	X	—	X	466653-2
18-14	.120 - .170	.755	.115	Brass	42660-1	X	—	X	466649-2
				Tin Plated Brass	42660-2	X	—	X	466649-2
	.150 - .218	.780	.115	Brass	42692-1	X	—	X	687941-2
				Tin Plated Brass	42692-2	X	—	X	687941-2

[1]UL listed and CSA Certified for 22 AWG.

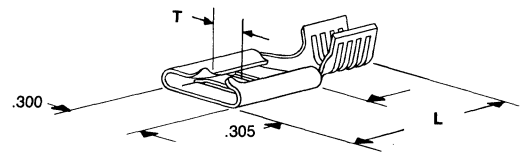
Economy Line Insulation Support (Receptacle and Tab Combination)
(.250 X .032 tab fit)
Stock Thickness: 0.16



Wire Range AWG	Insulation Diameter	Stock Thickness	Dimension W	Material and Finish	Terminal Part No.	UL	CSA	CSA	Quick-Change Applicator No.■
22-18	.060 - .100	.015	.300	Brass	61988-1	X	—	X	466500-2
				Tin Plated Brass	61988-2	X	—	X	466500-2
18-14	.120 - .170	.015	.300	Brass	61944-1	X	—	X	466502-2
				Tin Plated Brass	61944-2	X	—	X	466502-2
	.120 - .170	.032-.016[1]	.300	Brass	62109-1	X	—	X	466502-2
				Tin Plated Brass	62109-2	X	—	X	466502-2
14-10	.150 - .200	.015	.300	Brass	62253-1	X	—	X	466017-2
				Tin Plated Brass	62253-2	X	—	X	466017-2

[1]Dual Thickness.

Economy Line Non-Insulation Support
(.250 X .032 tab fit)
Stock Thickness: .016



Wire Range AWG	Material and Finish	Terminal Part No.	UL	CSA	CSA	Quick-Change Applicator No.■
18-14	Brass	42845-1	X	—	X	687942-2
	Tin Plated Brass	42845-2	X	—	X	687942-2

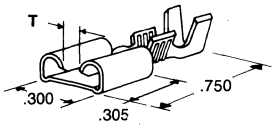
■Quick-Change Applicator for AMP-O-LECTRIC Machine 565435-5. For AMPOMATOR CLS II Machine and other machines not listed, contact AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

FASTON Receptacles 250 Series
(Continued)

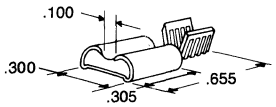
Dimensioning:
Dimensions are in inches

Moldable Line Insulation Support
(.250 X .032 tab fit)
Stock Thickness: .016



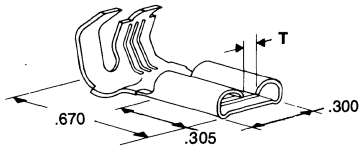
Wire Range AWG	Insulation Diameter	Dimension T	Materials and Finish	Terminal Part No.	UL	CSA	Quick-Change Applicator No.■
22-18	.090 - .130	.100	Brass	63127-1	—	—	687875-2
18-14	.120 - .170	.100	Brass	60650-1	X	—	X	466649-2
			Tin Plated Brass	60650-2	X	—	X	466649-2

Moldable Line Non-Insulation Support
(.250 X .032 tab fit)
Stock Thickness: .016



Wire Range AWG	Material and Finish	Terminal Part No.	UL	CSA	Quick-Change Applicator No.■
18-14	Brass	60938-1	X	—	X	687943-2
	Tin Plated Brass	60938-2	X	—	X	687943-2

Moldable Line Flag Insulation Support
(.250 X .032 tab fit)
Insulation Diameter: .110-.210



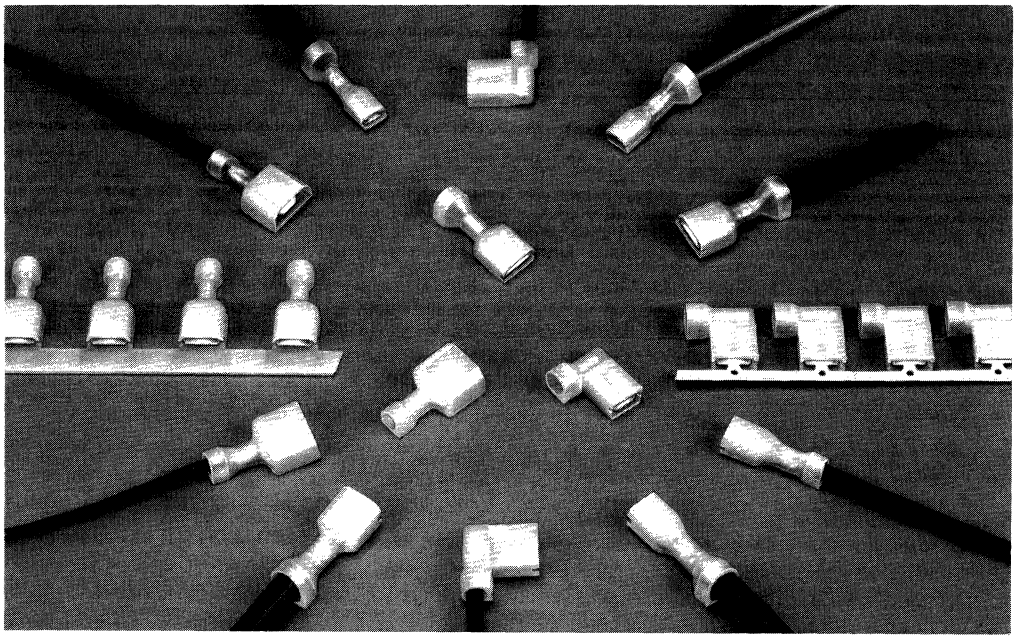
Wire Range AWG	Stock Thickness	Dimension T	Materials and Finish	Terminal Part No.[1]	UL	CSA
18-12	.016	.100	Brass	60641-1	X	—	X

[1]Contact AMP Incorporated for application tooling.
Note: Core pins available from AMP to fit the above terminals.

■Quick-Change Applicator for AMP-O-LECTRIC Machine 565435-5. For AMPOMATOR CLS II Machine and other machines not listed, contact AMP Incorporated.

Ultra-Fast Fully Insulated FASTON Receptacles and Tabs

Specifications subject to change.
For latest design specifications...
1-800-522-6752



The Ultra-Fast Fully Insulated FASTON Receptacle and Tab offers the advantages of a completely protected terminal and a wire crimp with comparable electro-mechanical performance to open barrel "F" crimp FASTON Terminals. The "User-Friendly" design combines easy mating with rounded corners. The .187 and .250 series receptacles incorporate a two-stage roll configuration and a cantilever mounted dimple which provides easy insertion and multiple independent points of contact for reduced tab interface resistance. Applied cost savings attainable with high speed automatic termination equipment and the elimination of secondary insulating operations.

Ultra-Fast Fully Insulated FASTON Receptacles, Flag Receptacles and Tabs preclude the need for costly electrical safety interlocks or special protective shields to prevent shock hazards. In addition, electrical short circuits from exposed leads are eliminated, even in equipment requiring close contact spacing.

The Ultra-Fast Receptacle and Flag Receptacle are preinsulated assemblies featuring a housing molded from type 6/6 nylon material with a +125°C UL temperature rating. The housing completely encloses a tin plated copper alloy Premier FASTON receptacle which has been stress relieved for increased durability and resistance to abuse. The FASTON receptacle is recessed sufficiently within the housing to allow its use in 600 volt applications. The front end of the terminal is designed for positive mating with a variety of tabs, including those with shoulders. The housing has a slotted membrane which is displaced by two tab shoulders allowing proper engagement of tab and receptacle while maintaining the fully insulated characteristic.

Positive entry and lead-in of the tab is assured by the inner housing wall and the lead-in on the terminal rolls. This permits positive engagement, even in blind mating locations.

The Ultra-Fast Tab is a preinsulated assembly featuring a nylon housing which completely encloses a tin-plated FASTON tab. The FASTON tab is recessed sufficiently within the housing to allow its use in 600 volt applications. The housing is designed to completely encapsulate the tab and receptacle when the two are mated.

Quality control is easily maintained. The nylon housing is translucent, allowing visual inspection of the termination. In addition, a crimp code on all hand tools is indented into the housing during the crimping operation which identifies that the proper crimp dies were used.

Depending on production requirements, AMP provides a complete selection of terminating equipment including the AMP-O-LECTRIC and AUTO-PRO terminating machines and fully automatic AMPOMATOR CLS II lead making machine.

For the exact application tooling to meet your production requirements, consult AMP Incorporated, Harrisburg, PA 17105.

Performance Capabilities

- Meets UL-310 specification for quick connect terminals
- Meets CSA C22.2, No. 153 Specification for quick connect terminals
- Meets NEMA DC-2 Standard for quick connect terminals (Flag meets mechanical standard only)
- 600 volt application capability [1000 volts for signs and fixtures]

Product Facts

- One-piece Fully Insulated Premier quality FASTON Receptacle prevents shock and short hazards
- Designed to ensure correct lead-in of tab
- Designed to ensure full mating with a variety of tab styles including those with shoulders
- Funnel wire entry
- Wire stop
- Visual inspection of crimp and wire brush
- Assemblies are color coded by wire size
- Assemblies contain wire size and tab size designation
- Tab thickness marked on terminal and visible through housing
- Standard and large insulation diameter product
- Application tooling available to meet production requirements
- Tin-plated copper alloy terminals
- Type 6/6 nylon housing UL Rated at +105°C
- Terminates 26-10 AWG solid, fused and stranded wire (Flags terminate stranded wire only)
- VDE accepted as similar to DIN 46-245, 46-247 and 46-248
- UL Listed under File No. E66717 (UL)
- CSA Certified under File No. LR 82852-1 (SP)

Ultra-Fast Fully Insulated FASTON Receptacles

Specifications subject to change.
For latest design specifications...
1-800-522-6752

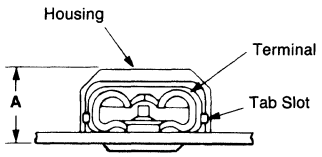
Dimensioning:
Dimensions are in inches

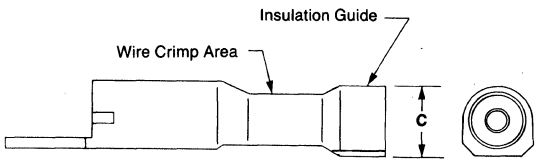
Material:

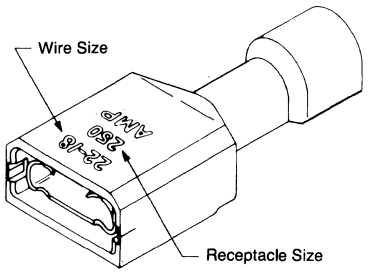
Housing – Nylon Type 6/6
Terminal – Tin-plated, copper alloy

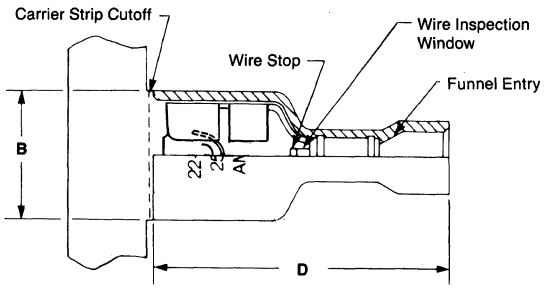
Color Code (Translucent):

Violet-26-22 AWG
Red-22-18 AWG
Blue-16-14 AWG
Yellow-12-10 AWG









Description	Wire Range AWG	Ins. Dia. Max.	Dimensions A	B	C	D	Mating Tab	Terminal Base Material	Part No. Strip	Loose Piece
.110 Series	26-22	.100	.135	.235	.132	.735	.020 X .110	Brass	7-520365-2[1]	7-520366-2[1]
	22-18	.120	.152	.235	.155	.735	.016 X .110	Brass	2-520080-2[1]	2-520081-2[1]
							.020 X .110	Brass	2-520083-2	2-520084-2
							.032 X .110	Brass	2-520272-2	2-520273-2
		.230	.152	.235	.295	.865	.020 X .110	Brass	2-520306-2	—
							.032 X .110	Brass	2-520310-2	—
	16-14	.260	.175	.235	.325	.865	.020 X .110	Brass	3-520370-2[1]	—
.187 Series	22-18	.135	.175	.300	.200	.855	.020 X .187	Brass	2-520181-2	2-520182-2
							.032 X .187	Brass	2-520193-2	2-520194-2
		.230	.175	.300	.295	.935	.020 X .187	Brass	2-520261-2	—
							.032 X .187	Brass	2-520274-2	2-520275-2
	16-14	.160	.185	.300	.225	.855	.020 X .187	Brass	3-350815-2	3-350816-2
							.032 X .187	Brass	3-520124-2	3-520125-2
		.260	.185	.300	.325	.935	.020 X .187	Brass	3-520150-2	3-520151-2
.250 Series	22-18	.135	.205	.370	.200	.855	.032 X .250	Brass	2-520183-2	2-520184-2
								Phos. Brz.	2-520183-4	2-520184-4
		.230	.205	.370	.295	.935	.032 X .250	Brass	2-520263-2	2-520264-2
								Phos. Brz.	2-520263-4	—
	16-14	.160	.205	.370	.225	.855	.032 X .250	Brass	3-350819-2	3-350820-2
								Phos. Brz.	3-520116-2	3-520117-2
		.260	.205	.370	.325	.935	.032 X .250	Brass	3-520140-2	3-520141-2
								Phos. Brz.	3-520140-4	—
	12-10	.320	.254	.370	.388	.935	.032 X .250	Brass	4-520447-2	4-520448-2

[1]Special UL/CSA status. Check AMP Engineering.

Ultra-Fast Fully Insulated FASTON Tabs

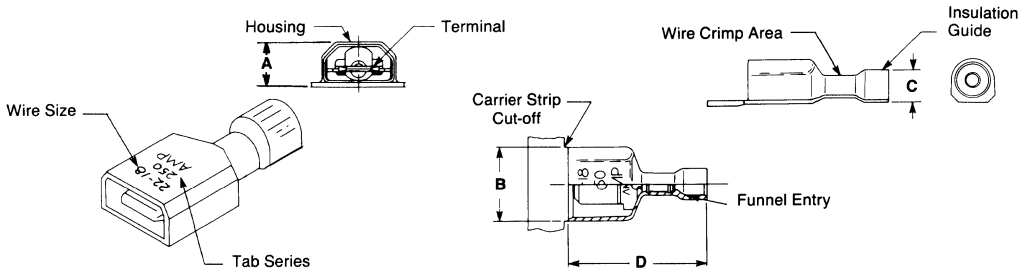
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Material:

Housing – Nylon Type 6/6
Terminal – Tin-plated, copper alloy

Color Code (Translucent):
Red-22-18 AWG
Blue-16-14 AWG



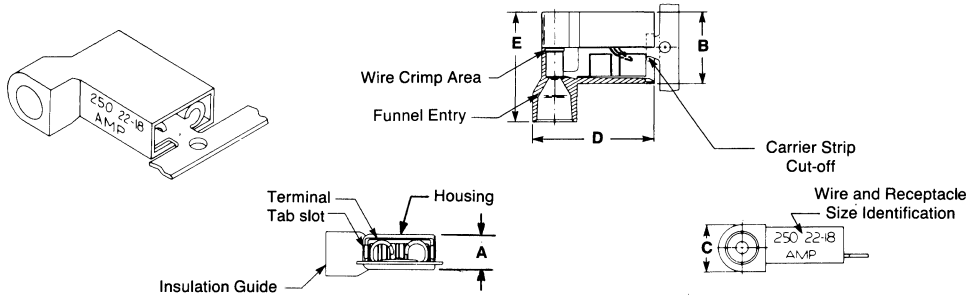
Description	Wire Range AWG	Ins. Dia. Max.	Dimensions A	B	C	D	Tab Size	Terminal Base Material	Part No. Strip	Loose Piece
.250 Series	22-18	.135	.275	.487	.200	.855	.032 X .250	Brass	2-520102-2	2-520103-2
	16-14	.160	.275	.487	.225	.855	.032 X .250	Brass	3-520106-2	3-520107-2

Ultra-Fast Fully Insulated FASTON Flag Receptacles

Material:

Housing – Nylon Type 6/6
Terminal – Tin-plated, copper alloy

Color Code (Translucent):
Red-22-18 AWG
Blue-16-14 AWG



Description	Wire Range[1] AWG	Ins. Dia. Max.	Dimensions A	B	C	D	E	Mating Tab	Terminal Base Material	Part No. Strip	Loose Piece
.187 Series	22-18	.165	.195	.320	.235	.636	.515	.020 X .187	Brass	2-520334-2	2-520335-2
								.032 X .187	Brass	2-520336-2	2-520337-2
	16-14	.185	.195	.320	.255	.632	.515	.020 X .187	Brass	3-520338-2	3-520339-2
								.032 X .187	Brass	3-520340-2	—
.250 Series	22-18	.165	.195	.385	.235	.636	.580	.032 X .250	Brass	2-520128-2	2-520129-2
		.230	.195	.385	.295	.665	.630	.032 X .250	Brass	2-520856-2	—
	16-14	.185	.195	.385	.255	.632	.580	.032 X .250	Brass	3-520132-2	3-520133-2

[1]Stranded wire only.

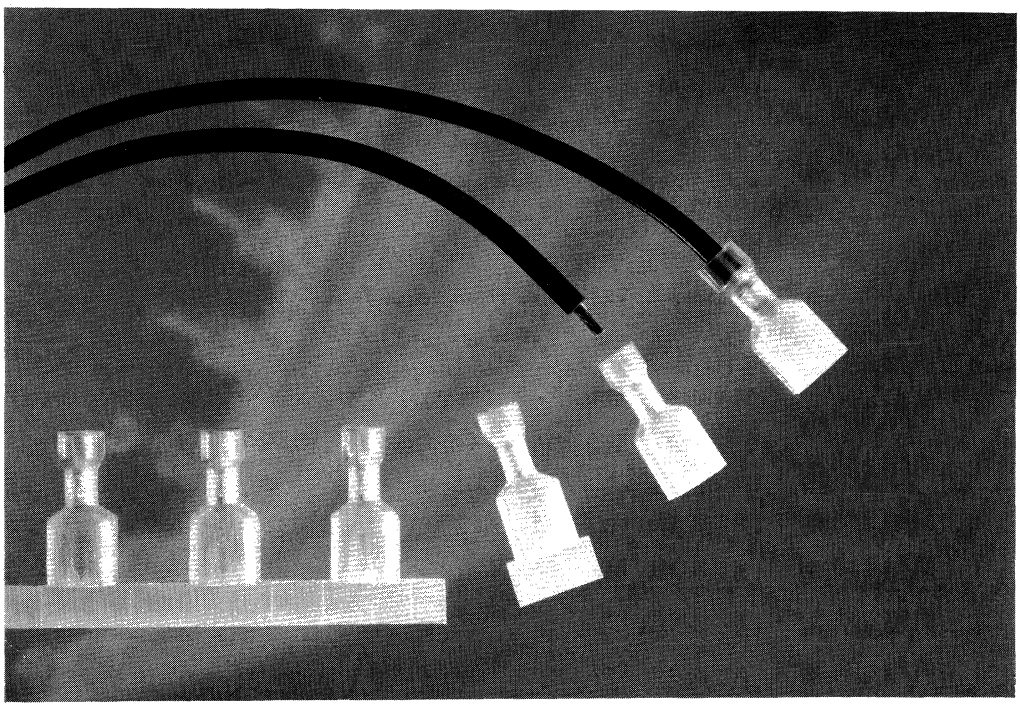
Crimp Tooling

Description	Wire Range AWG	Strip Form Terminals: Quick Change Applicator for AMP-O-LECTRIC Machine 565435-5	Strip Form Terminals: Quick Change Applicator for AMPOMATOR Machine CLS II	Strip Form Terminals: Die Insert Set for AUTO-PRO Machine 818380-1 with Applicators 818058-2	Strip Form Terminals: Die Insert Set for AUTO-PRO Machine 818380-1 with Applicators 818058-3	Loose Piece Terminals: Die Insert Set for Hand Tool 58078-3	Loose Piece Terminals: Die Insert Set for Hand Tool 69710-1
.110 Receptacles	26-22	567082-2	567082-1[1]	58269-1	—	58052-3	—
	22-18	567041-2	567041-1	58269-2	—	90390-3	—
	16-14	567117-2	567117-1	58269-3	—	90391-3	—
.187 Receptacles	22-18	466779-4	466779-3	58269-2	—	90390-3	—
	16-14	466778-4	466778-3	58269-3	—	90391-3	—
.250 Receptacles	22-18	466779-4	466779-3	58269-2	—	90390-3	—
	16-14	466778-4	466778-3	58269-3	—	90391-3	—
	12-10	567142-2	—	58269-4[2]	—	—	58267-1[3]
				58269-5[3]	—	—	58267-2[2]
.250 Tab	22-18	466779-4	466779-3	58269-2	—	90390-3	—
	16-14	466778-4	466778-3	58269-3	—	90391-3	—
.187 Flag Receptacles	22-18	567083-2	567083-1	—	58308-1	90390-3	—
	16-14	567085-2	567085-1	—	58308-2	90391-3	—
.250 Flag Receptacles	22-18	466784-2	466784-1	—	58308-1	90390-3	—
	16-14	466785-2	466785-1	—	58308-2	90391-3	—

[1]22 AWG only.
[2]12 AWG only.
[3]10 AWG only.

Ultra-Fast Plus- Fully Insulated FASTON Receptacles

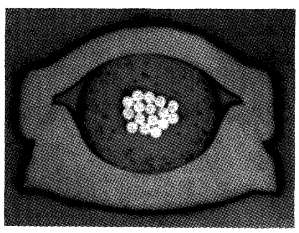
Specifications subject to change.
For latest design specifications...
1-800-522-6752



Ultra-Fast Plus- Fully Insulated FASTON Receptacles offer all the advantages of the standard Ultra-Fast product plus an insulation crimp. Applied costs savings are also attainable with high speed automatic termination equipment and the elimination of any secondary insulating operations.

Ultra-Fast Plus- Fully Insulated FASTON Receptacles preclude the need for costly electrical safety interlocks or special protective shields to prevent shock hazards. In addition, electrical short circuits from exposed leads are eliminated, even in equipment requiring close contact spacing.

Ultra-Fast Plus Receptacles are preinsulated assemblies featuring a co-molded housing produced from two different nylon materials. The receptacle and wire barrel portions of the housing are molded from type 6/6 nylon material with a +125°C UL temperature rating. The insulation barrel is molded from a premium grade nylon selected to retain the insulation crimp shape. This premium nylon exhibits minimal springback, thus providing actual insulation crimp tensile strength as well as strain relief for applications where extreme wire dressing and/or vibration are present. The plastic housing completely encloses a tin plated copper alloy Premier FASTON receptacle which has been



stress relieved for increased durability and resistance to operator abuse. The FASTON receptacle is recessed sufficiently within the housing to allow its use in 600 volt applications. The front end of the terminal is designed for positive mating with a variety of tabs, including those with shoulders. The housing has a slotted membrane which is displaced by two tab shoulders allowing proper engagement of tab and receptacle while maintaining the fully insulated characteristics.

Positive entry and lead-in of the tab is assured by the inner housing wall and the lead-in on the terminal rolls. This permits positive engagement, even in blind mating locations.

Quality control is easily maintained. The nylon housing is translucent, allowing visual inspection of the termination.

Depending on production requirements, AMP provides a complete selection of terminating equipment including the AMP-O-LECTRIC and AUTO-PRO terminating machines and the fully automatic AMPOMATOR CLS II lead making machine.

For the exact application tooling to meet your production requirements, consult AMP Incorporated, Harrisburg, PA 17105.

Product Facts

- One-piece Fully Insulated Premier quality FASTON Receptacle with insulation crimp prevents shock and short hazards
- Designed to ensure correct lead-in of tab
- Designed to ensure full mating with a variety of tab styles including those with shoulders
- Funnel wire entry
- Wire stop
- Visual inspection of crimp and wire brush
- Assemblies are color coded by wire size
- Assemblies contain wire size and tab size designation
- Tab thickness marked on terminal and visible through housing
- Application tooling available to meet production requirements
- Tin plated copper alloy terminals
- Type 6/6 nylon housing UL rated at +105°C
- Terminates 22-14 AWG solid, fused and stranded wire
- VDE accepted as similar to DIN 46-245, 46-247 and 46-248
- UL listed under File No. E-66717 (UL)
- CSA Certified under File No. LR 82852-1 (SP)

Performance Capabilities

- Meets UL-310 specification for quick connect terminals
- Meets CSA C22.2, No. 153 Specification for quick connect terminals
- Meets NEMA DC-2 standard for quick connect terminals
- 600 volt application capability (1,000 volts for signs and fixtures)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

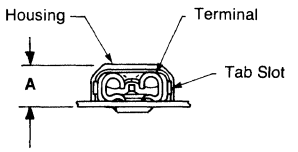
Ultra-Fast Plus- Fully Insulated FASTON Receptacles
(Continued)

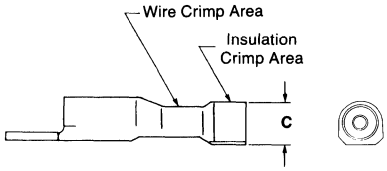
Material:

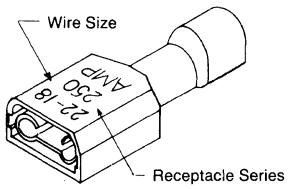
Housing – Nylon
Terminal – Tin plated, copper alloy

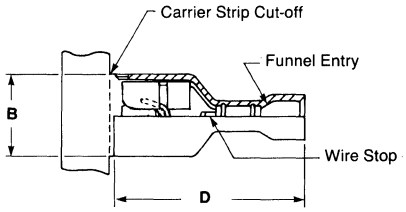
Color Code: (Translucent)

Red-22-18 AWG
Blue-16-14 AWG



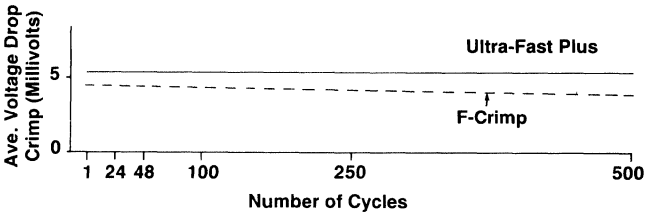




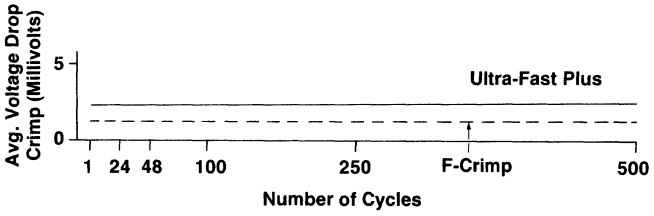


Description	Wire Range AWG	Ins. Dia. Range	Dimensions A	B	C	D	Mating Tab	Terminal Base Material	Part No. Strip	Loose Piece
.110 Series	22-18	.060 - .120	.152	.235	.155	.735	.020 X .110	Brass	2-520932-2	—
.187 Series	22-18	.060 - .135	.175	.300	.200	.855	.020 X .187	Brass	2-520401-2	2-520409-2
							.032 X .187	Brass	2-520403-2	2-520411-2
	16-14	.090 - .160	.185	.300	.225	.855	.020 X .187	Brass	3-520402-2	3-520410-2
							.032 X .187	Brass	3-520404-2	3-520412-2
.250 Series	22-18	.060 - .135	.205	.370	.200	.855	.032 X .250	Brass	2-520405-2	2-520407-2
	16-14	.090 - .160	.205	.370	.225	.855	.032 X .250	Brass	3-520406-2	3-520408-2

Test Specifications



Current Cycling
14 AWG Wire **Test Current = 30 amps**



Current Cycling
22 AWG Wire **Test Current = 6 amps**

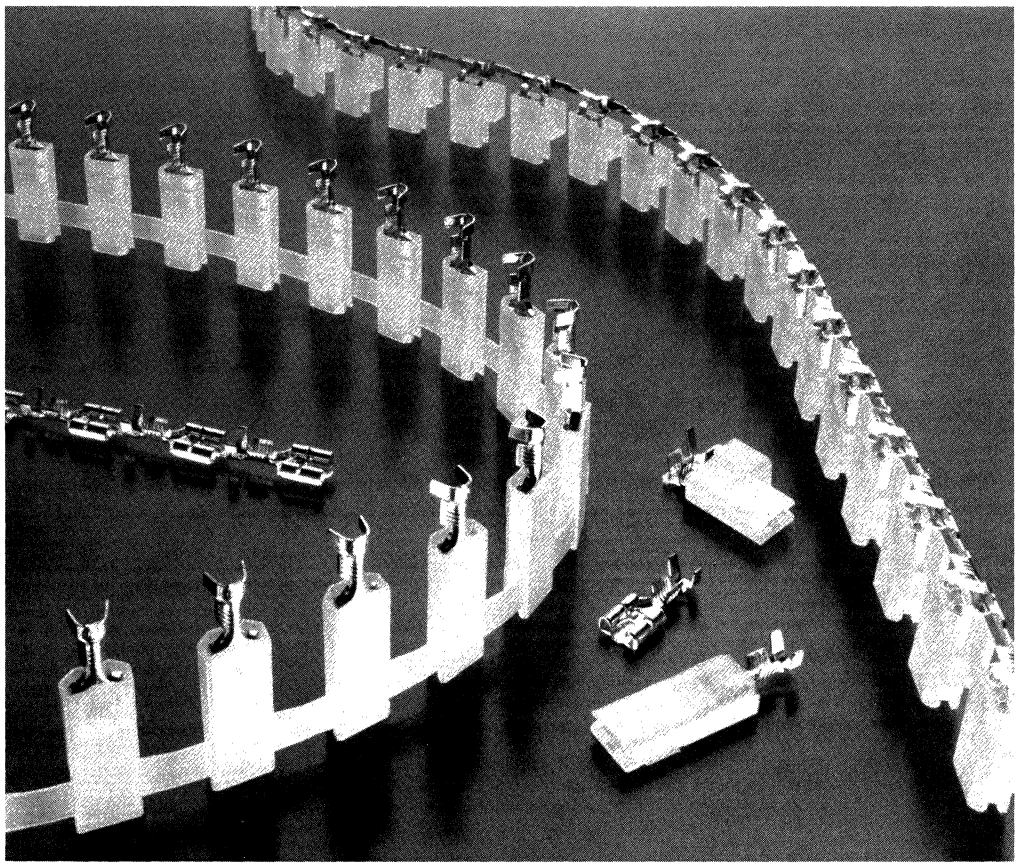
Crimp Tooling

Description	Wire Range AWG	Strip Form Terminals — Quick Change Applicators for: AMP-O-LECTRIC Machine 565435-5	AMPOMATOR Machine CLS II	Die Insert Set for AUTO-PRO Machine 818380-1 with Applicator 818058-2	Loose Piece Terminals: Die Insert Set for Hand Tool 58078-3
.110 Series	22-18	567276-2	—	58268-1	58079-3
.187 Series	22-18	567111-2	567111-1	58268-1	58079-3
	16-14	567112-2	567112-1	58268-2	58080-3
.250 Series	22-18	567111-2	567111-1	58268-1	58079-3
	16-14	567112-2	567112-1	58268-2	58080-3

Ultra-Pod Fully Insulated FASTON Receptacles

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



Ultra-Pod Fully Insulated Receptacles offer the newest in one step automatic application of insulated quick connects. The unique integral plastic carrier designed specifically for this product allows insulated F-crimp terminations to be produced quickly and easily. Applied cost savings are attainable with either bench or high-speed automatic termination equipment and the elimination of any secondary insulation operations. Both the crimping of the terminal and the terminal insulating occur in a single stroke of the press and applicator--the crimping on the downstroke and the insulating on the up-stroke.

The receptacles contained within the Ultra-Pod FASTON Receptacle assemblies are proven, tested and customer qualified and can be immediately used in existing applications where insulation has been accomplished by other means. The low insertion force design provides easier tab insertion, reduces operator fatigue and improves the productivity and reliability of the end assembly operation.

The translucent insulating housing is produced by a unique molding process which provides an integral carrier and eliminates the crimp location problems related to secondary carriers. This housing, produced from 125° C rated 6/6 nylon, covers the FASTON receptacle sufficiently to provide for use in 600-volt applications. Most importantly, this insulating system eliminates the workplace hazards and labor costs of chemically expanded or heat shrink tubing.

Depending on production requirements, AMP provides a complete selection of terminating equipment including the AMP-O-LECTRIC terminating machine and fully automatic AMPOMATOR CLS II and LM Series lead-making machines.

For the exact application tooling to meet your production requirements, see the applicator recommendations in this data sheet or call the Customer Assistance Hotline 1-800-722-1111.

Product Facts

- Reduced insertion force
- Designed to ensure correct lead-in of tab
- Mates with typical NEMA DC-2 187 and 250 Series tab styles including those with shoulders
- Type 6/6 nylon housing UL rated at +105° C
- 187 Series accepts 20-16 AWG [0.5-1.4 mm^2] wire and 250 Series accepts 18-12 AWG [0.8-3 mm^2] wire
- Visual inspection of crimp and wire brush
- Terminated by automatic or semi-automatic equipment to meet production requirements
- Listed by Underwriters Laboratories, Inc. File No. E66717
- CSA Certified, File No. LR 7189

Technical Documents:

AMP Product Specifications:

108-1285

AMP Application Specifications:

114-2124

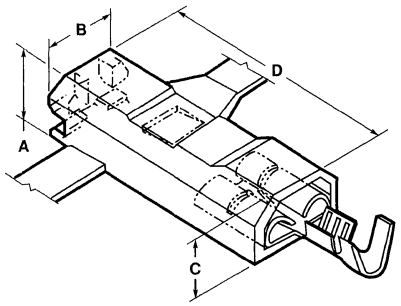
Dimensioning:
All dimensions in inches and millimeters.
Values in brackets are metric equivalents.
Metric symbol used is:
m (meter)
mm^2 (square millimeters)
C (Celsius)

Ultra-Pod Fully Insulated FASTON Receptacle

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

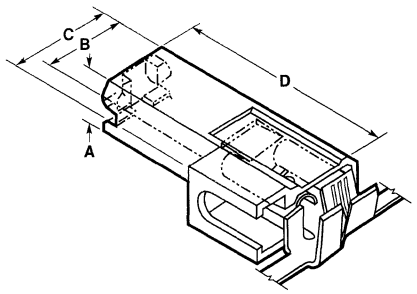
Insulation Support



Description	Wire Range AWG	Wire Range [mm²]	Ins. Dia. Max.	Dimensions A	B	C	D	Mating Tab	Material and Finish	Part Nos.
187 [4.75] Series	20-16	0.5-1.4	.090-.130 2.29-3.3	.170 4.32	.295 7.49	.200 5.08	.775 19.68	.020 x .187 0.51 x 4.75	Brass	520973-1*
									Tin Plated Brass	520973-2*
250 [6.35] Series	18-14	0.8-2	.120-.170 3.05-4.32	.195 4.95	.370 9.4	.225 5.72	.950 24.13	.032 x .250 0.81 x 6.35	Brass	520963-1
									Tin Plated Brass	520963-2
	14-12	2-3	.130-.180 3.3-4.57	.195 4.95	.370 9.4	.225 5.72	.950 24.13	.032 x .250 0.81 x 6.35	Brass	520974-1*
									Tin Plated Brass	520974-2*

*UL Listing and CSA Certification pending.

Flag Insulation Support



Description	Wire Range AWG	Wire Range [mm²]	Ins. Dia. Max.	Dimensions A	B	C	D	Mating Tab	Material and Finish	Part Nos.
250 [6.35] Series	18-14	0.8-2	.110-.160 2.79-4.06	.200 5.08	.370 9.39	.565 14.35	.680 17.27	.032 x .250 0.81 x 6.35	Brass	520971-1*
									Tin Plated Brass	520971-2*

*UL Listing and CSA Certification pending.

Application Tooling

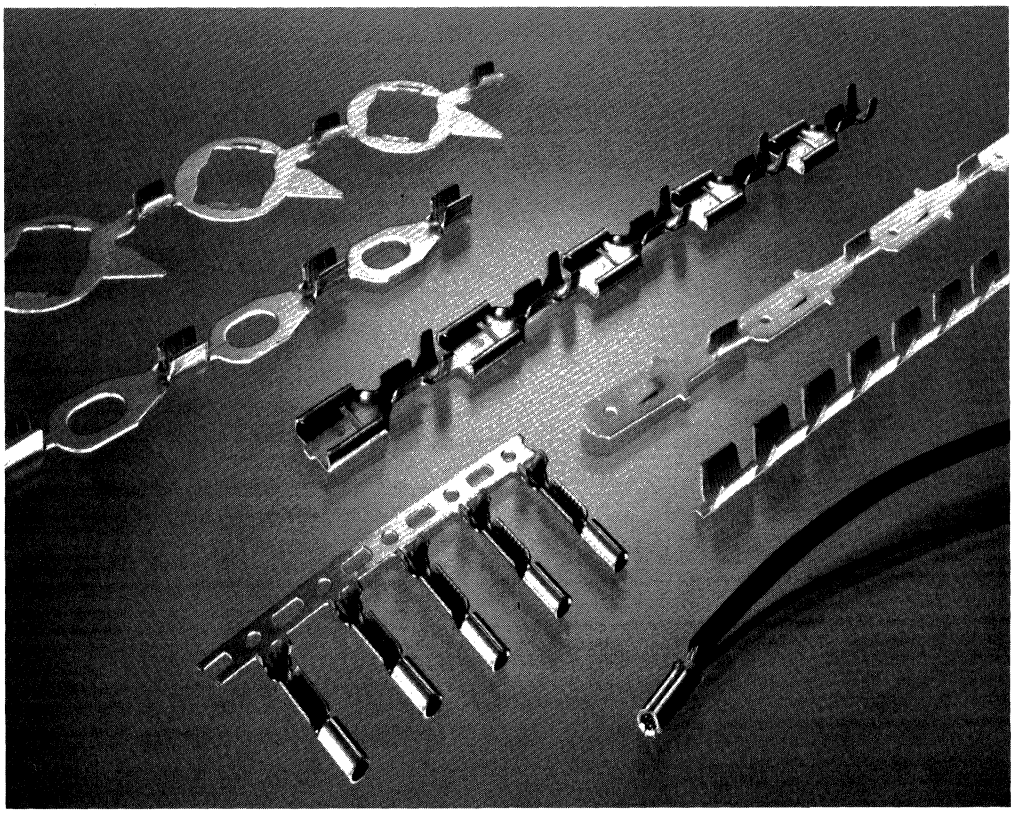
Description	Wire Range AWG	Wire Range [mm²]	Quick Change Applicators for AMP-O-LECTRIC Machine	AMPOMATOR CLS II Machine
.187 [4.75] Receptacles	20-16	0.5-1.4	853358-2	853358-1
.250 [6.35] Receptacles	18-14	0.8-2	852293-2	852293-1
	14-12	2-3	853740-2	853740-1
.250 [6.35] Flag Receptacles	18-14	0.8-2	852500-2	852500-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

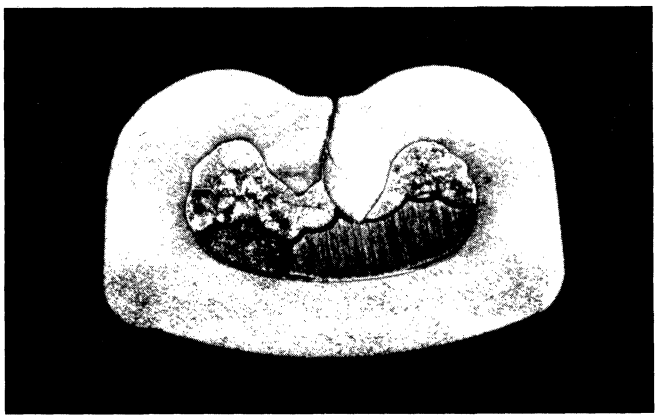
AMPLIVAR
Splices and Terminals

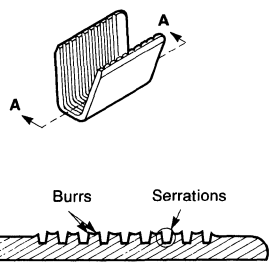
Product Facts

- Compression crimp eliminates cold solder points, weld burns and wire enbrittlement usually connected with thermal-type terminations
- Excellent tensile strength —vibration resistant
- Provides a superior electrical connection that is free of contaminants such as stripper residue and solder flux
- Precision formed, strip-fed terminals and splices terminated in AMP Automatic Machines provide for high production rates at a low applied cost.
- Low wire consumption and the elimination of rejects caused by solder flux or heat damage results
- Precisely controlled crimp termination helps eliminate human error



The basic design of the AMPLIVAR wire barrel encompasses two main areas: the burrs at the top of the serrations and the serrations themselves. During the crimping operation, the burrs pierce the insulation of the magnet wire and extrude the bare conductors into the serrations—creating ultimate metal-to-metal contact.





Section AA

AMPLIVAR Splices and Terminals are specifically designed to terminate magnet wire to itself or in combination with standard solid or stranded lead wire. The AMPLIVAR product line will accommodate a wire range from 400 to 13,000 CMA.

In a one-step crimping operation, the magnet wire is automatically ring-stripped of its insulation as it is forced into the wire barrel serrations. The result produces a high tensile strength, air sealed connection that is as resistant to corrosion as the insulated conductor.

As many as three magnet wires can be terminated simultaneously in one barrel. In addition, copper or aluminum magnet wire, or a combination of both can be terminated. When required copper or aluminum magnet wire can be combined with prestripped standard solid or stranded lead wires.

Depending on your specific application, AMPLIVAR Splices are available in 5, 7 and 9 serration versions as well as miniature and subminiature designs for terminations in the 400 to 1600 CMA range.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

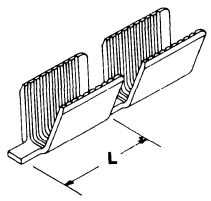
AMPLIVAR Splices

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

9 Serrations—Pigtail Type

Product Facts (Plus All 7 Serration Facts)

- Splice length is increased on larger CMA splices for improved performance
- Splice CMA ranges are overlapped so that two splices are available for any given CMA
- Serration depths are varied within the splice to give optimum electrical/mechanical performance on all wire sizes
- Serration sidewall angles are varied to allow better wire stripping and serration fill
- Flat bottom of splice helps keep magnet wires on bottom as required during crimping
- Magnet wires 28 AWG [0.32 mm] and smaller may be terminated without requiring shallow serrations



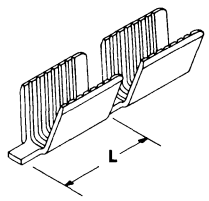
Wire Range CMA	Stock Thickness	Crimp Width	Dim. L	Material	Part Number
400–1500	.016 0.41	.080 2.03	.225 5.72	Tin Plated Brass	62303-2*
600–3000	.020 0.51	.110 2.79	.225 5.72	Tin Plated Brass	62304-2
600–3000	.016 0.41	.110 2.79	.225 5.72	Tin Plated Brass	62305-2*
1500–5000	.020 0.51	.110 2.79	.225 5.72	Tin Plated Brass	62306-2
1500–5000	.016 0.41	.110 2.79	.225 5.72	Tin Plated Brass	62307-2*
3000–7000	.020 0.51	.140 3.56	.265 6.73	Tin Plated Brass	62308-2
5000–10,000	.025 0.64	.180 4.57	.265 6.73	Tin Plated Brass	62309-2
7000–13,000	.025 0.64	.180 4.57	.265 6.73	Tin Plated Brass	62310-2
10,000–22,000	.030 0.76	.270 6.86	.340 8.64	Tin Plated Brass	62311-2

*These splices are recommended for applications using wire size 28 AWG [0.32 mm] or smaller.

7 Serrations—Pigtail Type

Product Facts

- 6° taper on both crimper and anvil improves flex file of termination
- Longer "flat" on tooling improves electrical performance (.125 vs. .080 [3.18 vs. 2.03])
- Radius on wire entry end of splice prevents nicking wires and improves mechanical performance
- Additional serrations enhance stability of crimp
- Serrations are offset to sheared end to place additional serrations in "electrical" portion of crimped splice



Wire Range CMA	Stock Thickness	Crimp Width	Dim. L	Material	Part Number
600–3000	.020 0.51	.110 2.79	.225 5.72	Brass	62000-1
600–3000	.020 0.51	.110 2.79	.225 5.72	Brass	62157-1*
600–3000	.020 0.51	.110 2.79	.225 5.72	Tin Plated Brass	62000-2
600–3000	.020 0.51	.110 2.79	.225 5.72	Tin Plated Brass	62157-2*
1500–5000	.020 0.51	.110 2.79	.225 5.72	Brass	62040-2
1500–5000	.020 0.51	.110 2.79	.225 5.72	Tin Plated Brass	62040-1
3000–7000	.020 0.51	.140 3.56	.225 5.72	Brass	62001-1
3000–7000	.020 0.51	.140 3.56	.225 5.72	Tin Plated Brass	62001-2
7000–12,000	.025 0.64	.250 6.35	.225 5.72	Tin Plated Brass	62295-1
7000–12,000	.025 0.64	.250 6.35	.225 5.72	Brass	62295-2
7000–13,000	.025 0.64	.180 4.57	.225 5.72	Tin Plated Brass	62002-2

*These splices are recommended for applications using wire size 26 AWG [0.404 mm] or smaller.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Standard MAG-MATE Terminals

Product Facts

- Terminates either copper or aluminum magnet wire
- Terminates all magnet wire film insulations
- Eliminates need for prestripping conductors
- Excess magnet wire is automatically trimmed during the termination procedure
- Simultaneously terminates two wires of the same size in one terminal
- Many lead wire attachment techniques available
- Eliminates post insulating
- Low insertion force
- Available in strip form or loose piece for semi-automatic, automatic or hand tool application
- Capable of producing up to 2000 terminations per hour with semi-automatic bench machine (based on four terminations per coil)
- High speed automatic coil winding machine terminations provide uniform reliability
- May be mass terminated
- Clean metal-to-metal interface produces stable, gas-tight electrical terminations free of oxides and other contaminants
- Eliminates lead wire handling throughout entire production process
- Varnish resist tab terminals are available for special applications
- Those products indicated are recognized under the Component Recognition Program of Underwriters Laboratories Inc., File No. E13288®

Advantages

- Low cost
- Safety
- Versatility
- Reliability

Standard MAG-MATE Terminals bring insulation displacement technology to magnet wire terminations. The technique eliminates the need for prestripping the conductors. Insulated wire is positioned so precisely by the controlled terminating slots of the "U"-shaped design that the stamped and formed terminals can be pushed over the wire.

When application tooling pushes the terminal, the wire moves through the terminal's wide lead-in area, reducing it in width and reshaping it into an oval. As the wire passes into the narrow precise slots, small stripping devices penetrate the film insulation. Complete insulation displacement occurs and four areas of contact are made as the conductor is forced deep into the slots by the terminal insertion process.

During the process, the wiping action between the wire and terminal removes all oxides or other contaminants present on both the conductor and the terminal slot walls, producing a clean, metal-to-metal interface and a stable, gas-tight electrical termination. The large areas of contact between the wire and the slot walls ensure reliable conduction of high currents.

Residual spring energy in the terminal causes the side walls of each slot to function as opposing cantilever beams. This constant pressure results in an intimate metal-to-metal contact, providing a durable connection.

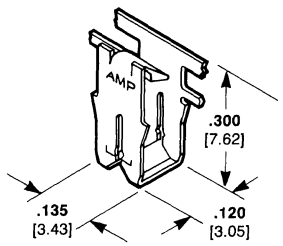
Standard MAG-MATE Poke-In Terminals

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Terminals

Material:
Tin plated brass



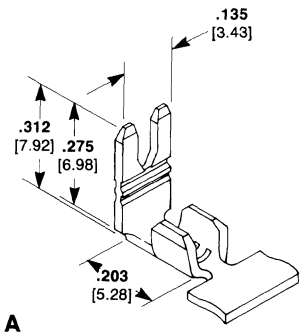
Magnet Wire Range				Lead Wire Range		Stock Thickness	Part Number[1],*
Copper		Aluminum					
AWG	mm	AWG	mm	AWG	mm²		
33–31[2]	0.18–0.23	—	—	20–18	0.5–0.9	**.010** 0.25	62431-1
30–27[2]	0.25–0.36	28–25[2]	0.32–0.46	20–18	0.5-0.9	**.012** 0.30	62429-1
27–23[2]	0.40–0.57	24–22[3]	0.51–0.64	20–18	0.5–0.9	**.016** 0.41	62935-1
22–20[3]	0.64–0.81	21–19[3]	0.73–0.91	20–18	0.5–0.9	**.016** 0.41	62420-1
19–17[3]	0.91–1.13	18–17[3]	1.02–1.15	20–18	0.5–0.9	**.016** 0.41	62833-1

[1] Strip product part numbers shown. See page 1033 for loose piece part number cross reference and tooling.
[2] Two magnet wires may be terminated in the same terminal if diameters are equal.
[3] Single magnet wire only.
*Recognized under the Component Program of Underwriters Laboratories Inc.

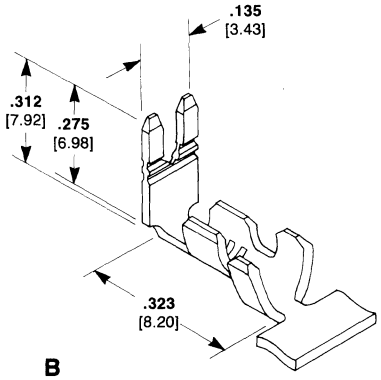
Notes:
1. Accepts fused stranded or solid lead wire only.
2. Will also accept Poke-In Tab Terminals shown below.

Tab Terminals

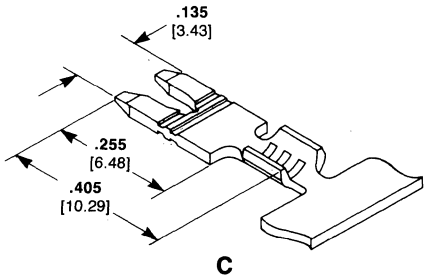
Material:
Tin plated brass



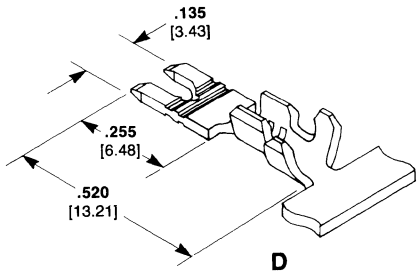
A



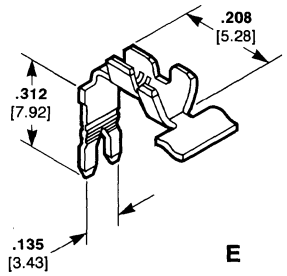
B



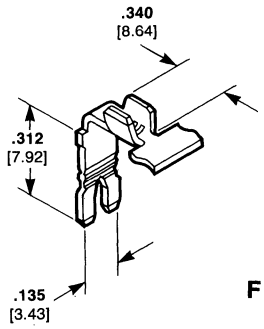
C



D



E



F

Type	Lead Wire Range AWG	Lead Wire Range mm²	Ins. O.D.	Stock Thickness	Part Number[1]
A	22–18	0.3–0.9	—	**.018** 0.46	62895-1*
A	22–18	0.3–0.9	—	**0.20** 0.51	63410-1
B	22–18	0.3–0.9	**.060–.100** 1.52–2.54	**.018** 0.46	62896-1*
C	22–18	0.3–0.9	—	**.020** 0.51	62897-1*
D	22–18	0.3–0.9	**.060–.100** 1.52–2.54	**.020** 0.51	62898-1*
F	22–18	0.3–0.9	—	**.018** 0.46	63364-1
E	18–14	0.8–2.0	**.090–.140** 2.29–3.56	**.020** 0.51	63458-1

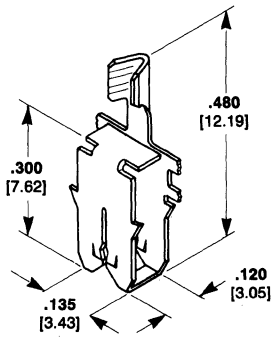
[1] Strip product part numbers.
*Recognized under the Component Program of Underwriters Laboratories Inc.
Note: Accepts stranded, fused stranded or solid lead wire.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Standard MAG-MATE Crimp Wire Barrel Terminals

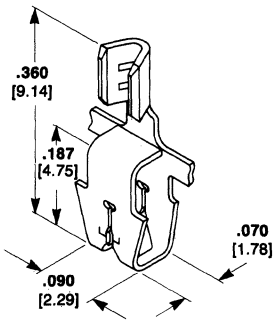
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Material:
Tin plated brass



A

.300 [7.62] Series Box



B

.187 [4.75] Series Box

Type	Magnet Wire Range				Lead Wire Range		Stock Thickness	Part Number[1]
	Copper		Aluminum		AWG	mm²		
	AWG	mm	AWG	mm				
A	33–31[2]	0.18–0.23	—	—	24–20	0.2–0.6	**.012** 0.3	63420-1
A	30-27[2]	0.254–0.361	—	—	22–18	0.3–1.0	**.012** 0.3	63501-1
A	30–27[2]	0.254–0.361	28–25[3]	0.32–0.455	24–20	0.2–0.6	**.012** 0.3	62992-1[4]
A	27–23[2]	0.361–0.574	—	—	22–18	0.3–1.0	**.016** 0.41	63502-1
A	27–23[2]	0.361–0.574	24–22[3]	0.511–0.643	24–20	0.2–0.6	**.016** 0.41	62459-1[4],*
A	22–20[3]	0.643–0.813	—	—	22–18	0.3–1.0	**.016** 0.41	63503-1
A	22–20[3]	0.643–0.813	—	—	24–20	0.2–0.6	**.016** 0.41	62458-1[4],*
A	17–19[3]	1.151–0.912	—	—	22–18	0.3–1.0	**.016** 0.41	63504-1
B	30–28[2]	0.254–0.32	—	—	26–22[5]	0.12–0.4	**.012** 0.3	62608-1[4],*
B	30–28[2]	0.254–0.32	—	—	26–22	0.12–0.4	**.012** 0.3	63036-1[6],*
B	27–25[2]	0.361–0.455	—	—	26–22[5]	0.12–0.4	**.012** 0.3	62609-1[4],*
B	24–22[3]	0.511–0.643	—	—	26–22[5]	0.12-0.4	**.012** 0.3	62610-1[4],*
B	32–31[2]	0.203–0.226	—	—	26–22	0.12–0.4	**.010** 0.25	63039-1[6],*

[1]Strip product part numbers shown. See page 1033 for loose piece part number cross reference and tooling.
[2]Two magnet wires may be terminated in the same terminal if diameters are equal.
[3]Single magnet wire only.
[4]Strip reeled to feed through Mini-Applicator.
[5]Lead wire enters wire barrel at transition section between barrel and box portions (front entry) when strip is run through applicator to crimp lead wires.
[6]Reeled for application through MAG-MATE Insertion Machine. Lead wire crimped in separate applicator.
*Recognized under the Component Program of Underwriters Laboratories Inc.

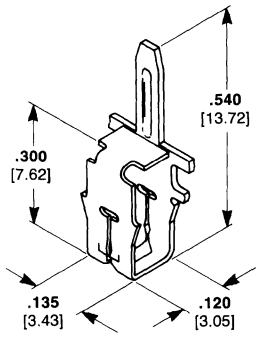
Standard MAG-MATE Posted Terminals

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Solder Terminal

Material:
Tin over copper plated brass

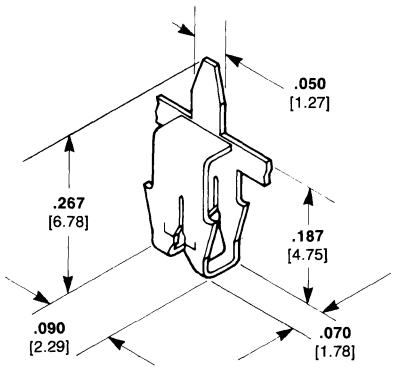


Copper Magnet Wire Range		Stock Thickness	Part Numbers[1]
AWG	mm		
33–31[2]	0.180–0.226	.010 0.25	62253-1
31–28[2]	0.226–0.32	.010 0.25	62928-1*
29–26[2]	0.287–0.404	.012 0.3	62958-1*

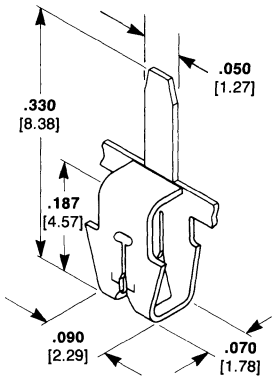
[1]Strip product part numbers.
[2]Two magnet wires may be terminated in the same terminal if diameters are equal.
*Recognized under the Component Program of Underwriters Laboratories Inc.

Terminal

Material:
Tin plated brass



A



B

Type	Copper Magnet Wire Range		Stock Thickness	Part Numbers[1]
	AWG	mm		
A	30–28[2]	0.254–0.32	.012 0.3	63160-1
B	30–28[2]	0.254–0.32	.012 0.3	62430-1*
B	27–25[2]	0.361–0.455	.012 0.3	62438-1*
B	24–22[3]	0.511–0.643	.012 0.3	62439-1*
B	33–31[2]	0.18–0.226	.010 0.25	62938-1*

[1] Strip product part numbers shown. See page 1033 for loose piece part number cross reference and tooling.
[2]Two magnet wires may be terminated in the same terminal if diameters are equal.
[3]Single magnet wire only.
*Recognized under the Component Program of Underwriters Laboratories Inc.

For **drawings, technical data or samples,** contact your AMP sales engineer or call the AMP Product Information Center **1-800-522-6752.**

Mini MAG-MATE Terminals

Specifications subject to change.
For latest design specifications...
1-800-522-6752

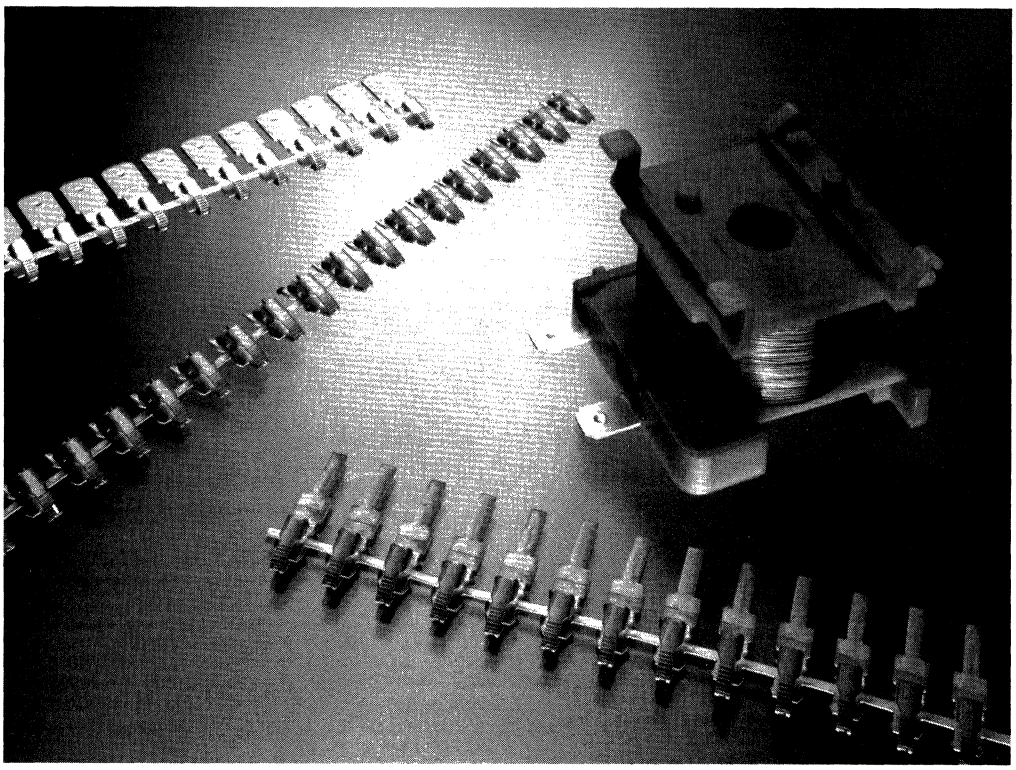
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

- Terminates 52–30 AWG
- [0.254–0.0198 mm] diameter copper magnet wire
- Eliminates critical hand operations
- Mass termination possible
- Eliminates soldering
- Fast and simple terminations
- Reliable
- Eliminates post insulating
- Terminates all film insulation wire types
- Fast assembly rates
- Low terminal insertion force
- Accommodates 22–18 AWG [0.3–0.9 mm²] fused stranded or solid lead wire
- Available in both open and closed cavity systems
- Recognized under the Component Recognition Program of Underwriters Laboratories Inc. File No. E13288

Applications

- Automobile ignition coils
- Cameras
- Hearing aids
- Small motors
- Solenoids
- Clocks
- Relays or any device that incorporates the use of fine magnet wire



AMP Mini MAG-MATE Terminals are designed to terminate 52–30 AWG [0.254–0.0198 mm]* diameter copper magnet wire and will accept 22–18 AWG [0.3–0.9 mm²] fused stranded or solid lead wire.

This system eliminates the critical hand operations usually associated with terminating fine gauge magnet wire. It is no longer necessary to prestrip the film insulation from the wire. Soldering, along with its associated negative aspects, such as wire embrittlement, flux contamination and terminal degradation are also eliminated. All of these have been replaced with a controlled mechanical termination system that adds safety and reliability not available in chemical or heat termination systems.

The closed cavity design does not require wrapping of the magnet wire. A single strand of magnet wire is laced through the cavity and then tied off by wrapping the excess wire around the tie-off post. This post and all excess magnet wire are cut off when the terminal is inserted (see illustration on page 1029).

In the open cavity design, fine magnet wire is wrapped around the molded open cavity wire slot with one to three turns (molded cavity is an integral part of the customer's bobbin or assembly) and placed into the fixture of a bench machine. A terminal is cut from the carrier strip and inserted into the cavity with a "dual ram insertion mechanism". The terminal is then pushed with both rams until the leading edge reaches a preset depth in the cavity. The lower ram continues to push, causing the terminal to transform into a rectangular shape which cams the serrations into the prepositioned magnet wire, penetrates the film insulation and provides a stable electrical termination.

*Metric sizes define bare (uncoated) size.

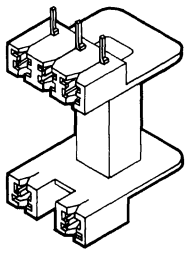
Mini MAG-MATE Terminals

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

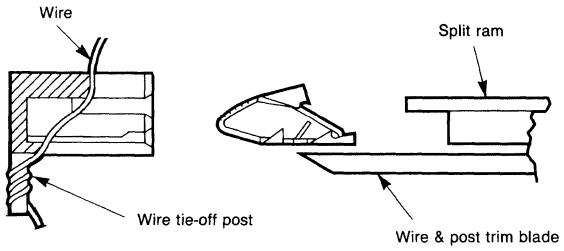
Typical Bobbin with Cavities

Not for design. AMP will supply required dimensions of cavity for each customer application.

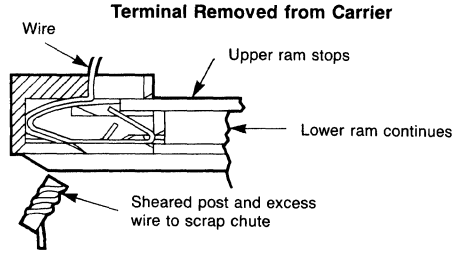


Closed Cavity

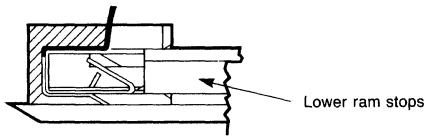
Termination Sequence



Terminal Removed from Carrier



Terminal Inserted

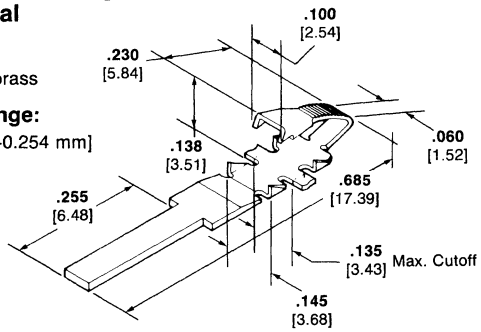


Termination Complete

.070 x .020 [1.78 x 0.51] Posted Terminal

Material:
Tin over premilled brass

Magnet Wire Range:
38–30 AWG [0.102–0.254 mm]



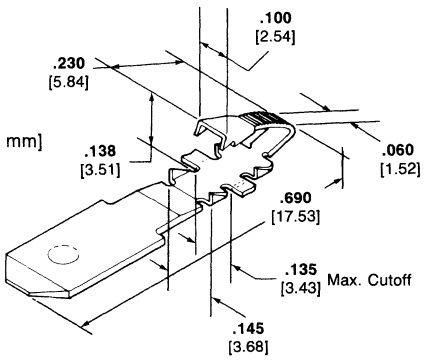
Part No. 63041-1

.187 [4.75] FASTON Tab Terminal

Material:
Tin over premilled brass

Magnet Wire Range:
38–30 AWG [0.102–0.254 mm]

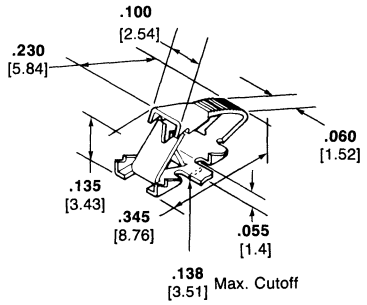
Tab Size:
.020 x .187 [0.51 x 4.75]



Part No. 62816-1

Poke-In Tab Terminal

Material:
.010 [0.25] tin plated brass



Magnet Wire Range		Lead Wire Range		Part Number
AWG	mm*	AWG	mm²	
38–30	0.102–0.254	22–18	0.3–0.9	62606-1
44–36	0.051–0.127	22–18	0.3–0.9	62780-1
52–42	0.0198–0.064	22–18	0.3–0.9	62781-1

*Metric sizes define bare (uncoated) size.

Micro MAG-MATE Terminals

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

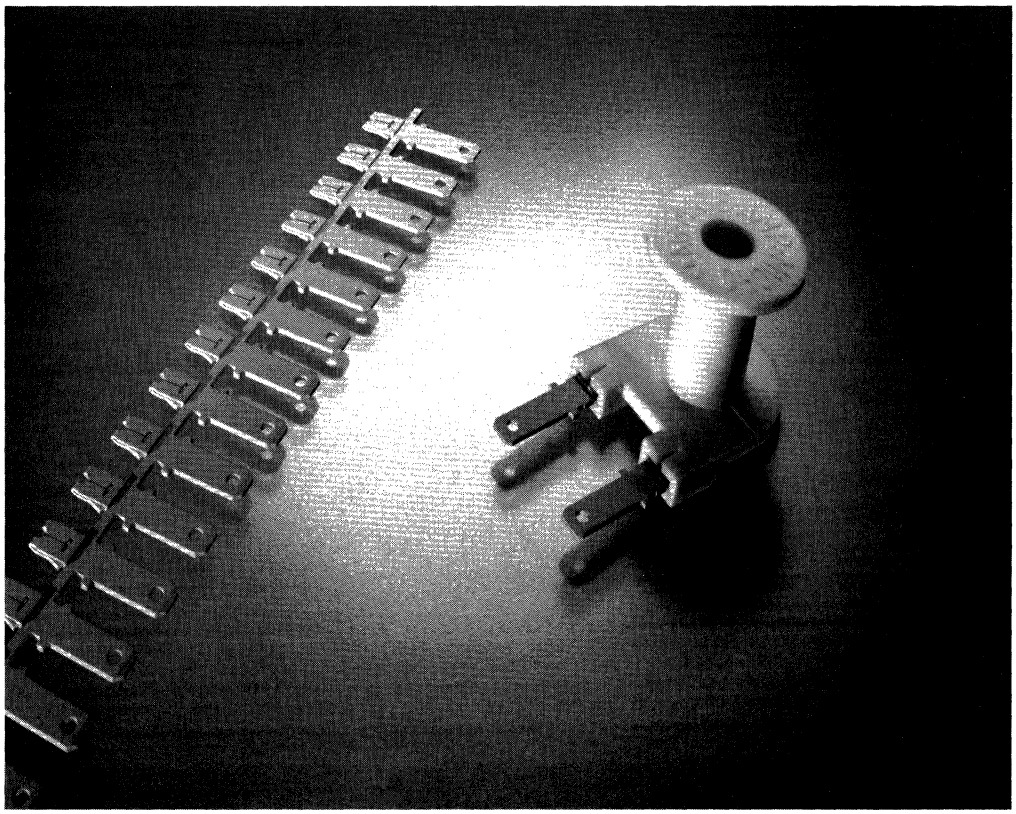
Product Facts

- One fourth the size of Standard and Mini MAG-MATE Terminals
- Terminates 28–34 AWG [0.32–0.16 mm] diameter copper magnet wire
- Eliminates critical hand operations
- Incorporates insulation displacement technology
- Mass termination possible
- Eliminates soldering
- High reliability with excellent mechanical strengths
- Faster assembly rates through automation
- Available with .110 [2.79] FASTON tab I/O

Applications

- Home appliances
- Automobiles
- Fans
- Vacuum cleaners
- Computers
- Home power tools

Material:
Tin plated brass

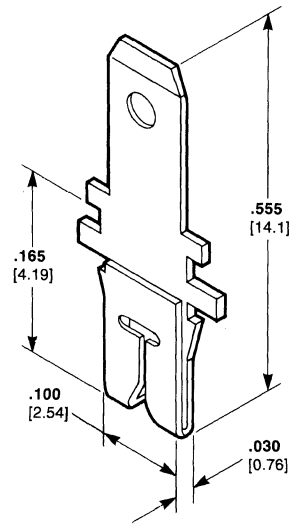


Over the past few years the coil winding industry has dramatically increased the need for high density packaging. Micro MAG-MATE terminals answer this need by combining small size with the high efficiency of one-step application. These terminals are approximately one-fourth the size of Mini MAG-MATE terminals and accept 28–34 AWG [0.32-0.16 mm] magnet wire.

The Micro MAG-MATE system is the perfect complement to miniaturized components. The wire end incorporates insulation displacement technology, and the mating end is a .110 [2.79] FASTON tab.

Application tooling is an integral part of the system. Insertion machines for the Micro MAG-MATE terminal are the same as those used for Standard MAG-MATE terminals, with only a few modifications (see page 1033).

.110 [2.79] FASTON Tab



Copper Magnet Wire Range		Part Number
AWG	mm	
28–31	0.320–0.226	63440-1
32–34	0.203–0.160	63441-1

Notes:

1. After insertion into plastic holder, tab portion must be bent over 45°–90° or potted in to prevent pullout when mating receptacle is disconnected.
2. .110 [2.79] Tab Terminals mate with compatible FASTON receptacles. Request AMP Catalog 82004
3. Post and crimp configurations can be made available. Contact AMP Incorporated for more information.

For **drawings, technical data or samples,** contact your AMP sales engineer or call the AMP Product Information Center **1-800-522-6752.**

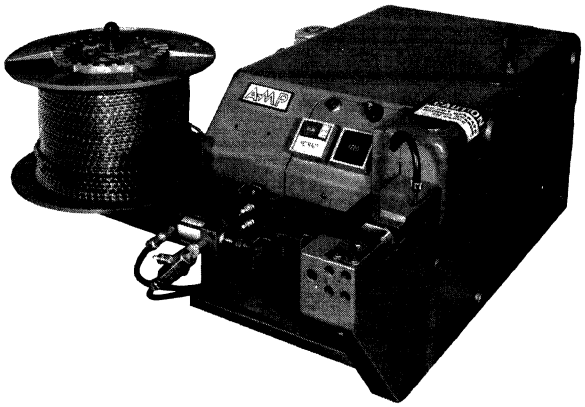
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Application Tooling for AMPLIVAR Splices and Terminals, and Cluster Block Contacts

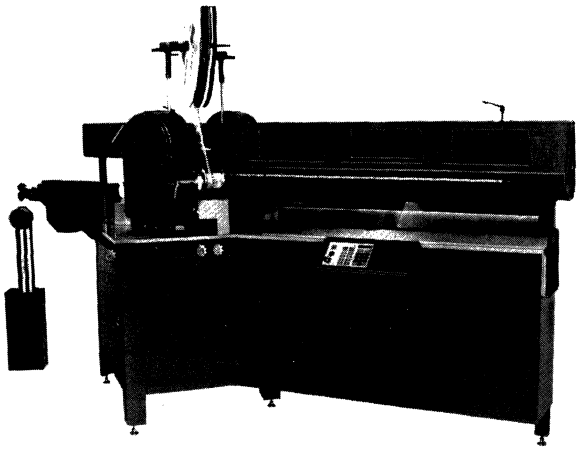
Horizontal Terminating Machine for AMPLIVAR Pigtail-Type Splices

This machine is designed to apply strip-form AMPLIVAR pigtail- type splices to magnet wire or to magnet wire and stranded lead wire combinations, without a need for prestripping the magnet wire. Compact and bench mounted, the machine is foot operated, air and electrically powered, and is specifically designed so that electrical components can be held close to the crimping area during the crimping operation. This allows the splicing of very short leads (down to .750 in. [19.05 mm] in length). The terminating machine can be supplied with a Wire Stuffer Assembly which allows a "stuffer wire" to be automatically inserted into the AMPLIVAR splice to increase the CMA. This eliminates the need for changing the crimp height when the combined CMA varies from one operation to another.

During the crimping operation, the machine automatically trims excess wire. Simple operation requires that the operator merely position the wires in the machine and actuate a foot pedal.



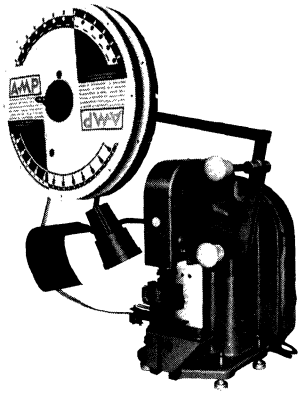
AMPOMATOR CLS II Machine



The AMPOMATOR CLS II is an automatic lead making machine designed for low volume and/or short production runs, yet it provides flexibility and ease of conversion to handle many production requirements. The unit automatically feeds, measures and cuts wire, then strips and terminates one or both ends of the wire.

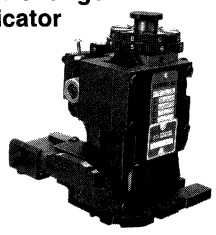
The machine uses AMP's Quick-Change Applicators common to existing bench machines and lead making equipment. The "T"-style terminating units are "air glide" to facilitate applicator changeover.

AMP-O-LECTRIC Terminating Machine



This semi-automatic terminating machine is an easily moved, bench-mounted unit designed to terminate reel-stored AMP terminals and splices. It is ideal for terminating AMPLIVAR product and Cluster Block Contacts. Maximum versatility is achieved through the machine's ability to handle copper or aluminum magnet wire as well as combinations of magnet and stranded lead wire. Additional capabilities include the making of "Thru"- and "Pigtail"-type splices as well as the trimming of excess wire of the Pigtail splices. The unit operates with a Quick-Change Applicator shown below.

Quick-Change Applicator



AMP Quick-Change Applicators are used in the AMPOMATOR CLS II and AMP-O-LECTRIC machines. This equipment features precision dies made of hardened steel to assure identical terminations time-after-time. The applicators provide complete crimp height adjustment within the CMA range through a simple dial setting.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Application Tooling for MAG-MATE Terminals

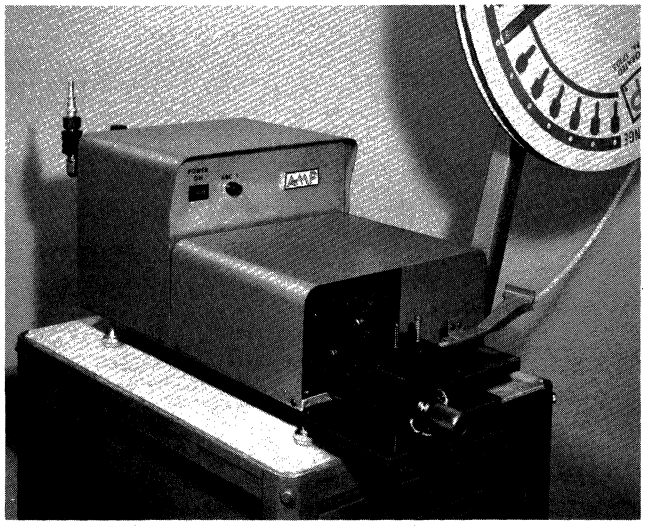
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

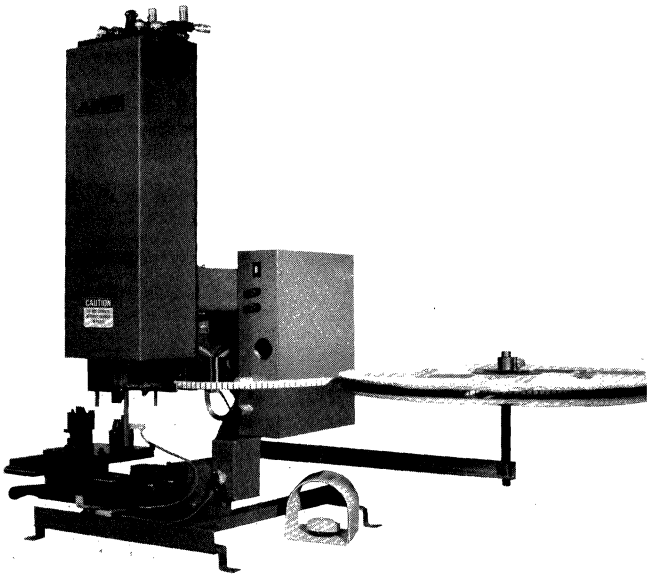
Semi-Automatic MAG-MATE Bench Machines—Horizontal and Vertical

Strip-mounted MAG-MATE terminals are terminated in AMP Horizontal or Vertical Bench Machines. These machines are capable of inserting one or two terminals at a time into a customer supplied plastic holder (i.e. bobbin or stator) using pneumatic power. The operator simply places the device to be terminated into a fixture in front of the insertion machine and presses the foot switch. The terminal is fed, sheared from the carrier strip and inserted into the device cavity. In addition, excess magnet wire is automatically trimmed off. The device is then manually indexed to the next position, and the cycle is repeated. For dual terminal insertion, the device cavities must be located on the same centers as the feed of the terminal strip. Depending on operator dexterity, the machines are capable of producing up to 1800 terminations per hour, based on four terminations per coil, or approximately 500 assemblies per hour.

The machines are capable of accepting a variety of customer bobbins by using suitable fixtures (see opposite page for typical applications and fixtures). AMP insertion machine fixtures are custom designed for each application.

The fixture can be configured into either an AMP Horizontal or Vertical Bench Machine.





Horizontal Bench Machine

Pneumatically operated through mechanical linkage and electronic controls, this machine is fully enclosed in covers and guards for operator protection. It is supported by four cushioned legs that are adjustable for leveling. The reel support, mounted on the machine base, provides easy access for mounting the terminal reels and loading the terminal strip into the feed mechanism.

Physical Characteristics:
(Less Reel)

Dimensions—12 in. [304.8 mm] high x 12 in. [304.8 mm] wide x 28 in. [711.2 mm] deep

Weight—Approximately 75 lbs. [33.8 kg]

Vertical Bench Machine

This machine is made up of an AMP Module mounted on a welded "C" frame. In operation, the terminal is inserted into the workpiece which is held by a fixture below. The functioning is the same as the Horizontal Bench Machine. Experienced AMP personnel will work with the customer and the equipment manufacturer to adapt the module to their automated assembly system.

Physical Characteristics:
(Less Reel)

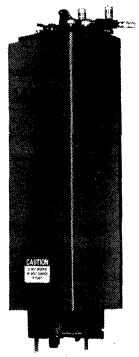
Dimensions—42 in. [1066.8 mm] high x 28 in. [711.2 mm] wide x 26 in. [660.4 mm] deep

Weight—Approximately 200 lbs. [90.7 kg]

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

The Module



The AMP Module is a packaged mechanical portion of the bench machine. This self-contained unit is designed to be mounted on coil winders, coil finishing equipment, rotary index tables or in-line transfer machines. The electronics and electrical controls are packaged separately and may be located remote from the work area. Experienced AMP personnel will work with the customer and the equipment manufacturer to adapt the module to their automated assembly system.

Physical Characteristics:

Dimensions—7 in. [177.8 mm] high x 8 in. [203.2 mm] wide x 30 in. [762 mm] deep

Weight—Approximately 75 lbs. [33.8 kg]

Specifications:

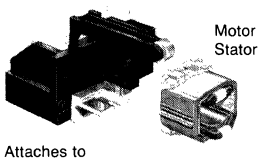
Air Pressure—8 psi, Volume 1 CFM

Electrical[1]—Voltage: 110 VAC[1]
Amperage: 1
Phase: Single
Frequency: 60 Hz

[1]By rewiring transformer (T1), the machine is adaptable to 230 VAC, 50—60 Hz, single phase power.

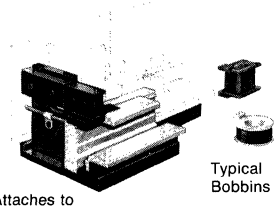
Typical Applications and Fixtures

Typical Latch-Type Fixture



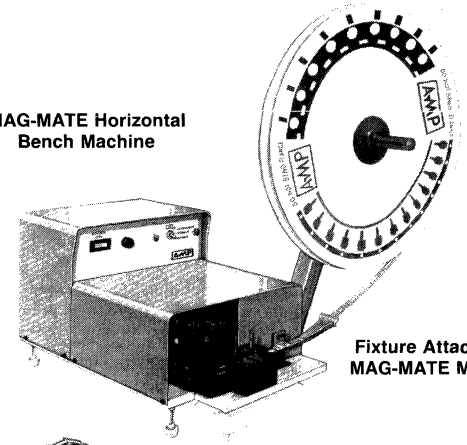
Fixture Attaches to MAG-MATE Machine

Typical Slide-Type Fixture



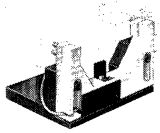
Fixture Attaches to MAG-MATE Machine

MAG-MATE Horizontal Bench Machine



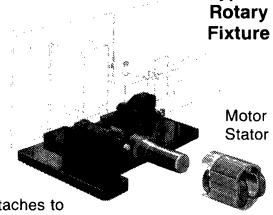
Fixture Attaches to MAG-MATE Machine

Special Stator Fixture



Fixture Attaches to MAG-MATE Machine

Typical Rotary Fixture

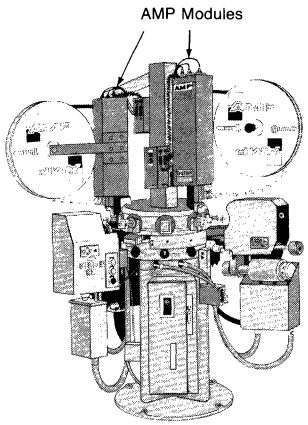


Fixture Attaches to MAG-MATE Machine

Loose Piece Parts Cross Reference

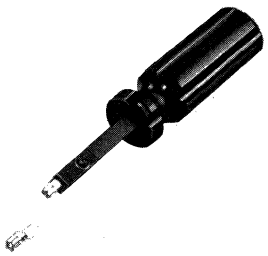
Part Numbers		
Strip	**Loose Piece**	**Hand Tool**
62420-1	62524-1	274250-2
62429-1	72526-1	274250-2
62431-1	61417-1	274250-2
62513-1	62663-1	274260-2
62652-1	62657-1	274282-1
62653-1	62658-1	274282-1
62935-1	63044-1	274250-2
62938-1	62934-1	274249-1

Coil Finishing Equipment



The AMP MAG-MATE termination can be made immediately following the wire winding operation when coil assembly equipment is provided with a terminal insertion station. This labor saving method is accomplished by configuring AMP Modules into existing customer equipment. The result produces the advantage of controlling the location of both the magnet wire and plastic cavities, and allows for testing, marking, taping or other operations without additional operator handling.

Hand Tool



This insertion tool is capable of applying terminals furnished as loose piece parts. Use for prototype, production start-up and moderate volume production runs. Terminals can be inserted at rates up to 300 per hour.

A variety of technical documents is available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-1033 PIDG FASTON Receptacles
108-2043 Ultra-Fast FASTON Receptacles
108-2044 Ultra-Fast Plus FASTON Receptacles
108-1285 Ultra-Pod Fully Insulated FASTON Receptacles
108-2012 Standard MAG-MATE Splices and Terminals
108-2016 Mini MAG-MATE Terminals

Application Specifications describe requirements for using the product in its intended application and or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-2123 Ultra-Fast and Ultra-Fast Plus FASTON Terminals
114-2124 Ultra-Pod Fully Insulated FASTON Receptacles
114-2002 AMPLIVAR 7-Serration Pigtail Splices
114-2003 AMPLIVAR 9-Serration Pigtail Splices
114-2069 Standard MAG-MATE .187 [4.75] Box Height Terminals
114-2046 Standard MAG-MATE .300 [7.62] Box Height Terminals
114-2047 Mini MAG-MATE Terminals

2

AMP Pin and Socket Connectors

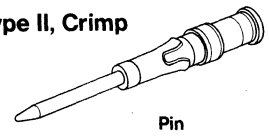
Qualified AMP Products for Military Applications are summarized on page 2.
For information on Custom High Performance Cable Assemblies see page 3.

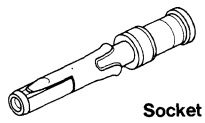
General Features of Pin & Socket Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Signal Contacts

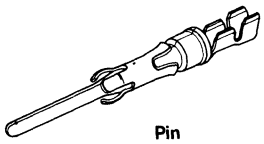
Type II, Crimp

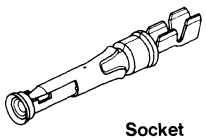

Pin


Socket

Type II, Crimp—screw-machined in size 16. Pin and socket contacts are used in Multimate contact cavities of all Standard connectors and Special Application connectors—Mixed, High Voltage and RFI/EMI Shielded. Contact design offers a durable, solid pin and socket with closed-barrel confined "C" crimp for minimum distortion, high conductivity and firm seating.

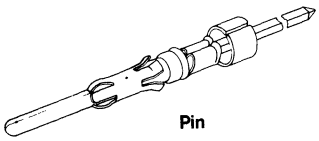
Type III+, Crimp

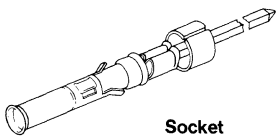

Pin


Socket

Type III+, Crimp—precision-formed in size 16. Pin and socket contacts are used in Multimate contact cavities of all Standard connectors and Special Application connectors—Mixed, High Voltage and RFI/EMI Shielded. Contact design offers advantages of open-barrel crimp and low cost application.
A wrap-around version is also available for large insulation diameter wire.

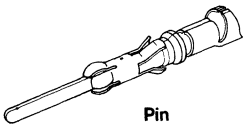
Posted Version

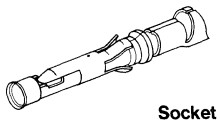

Pin


Socket

Posted Version—precision-formed pin and socket contacts precrimped to post configurations that accept TERMI-POINT Clip or wrap-type terminations. Will accommodate up to three terminations per post. Size 16 contacts are used in the same cavities as all other Multimate contacts. They are preassembled in all Posted connectors.

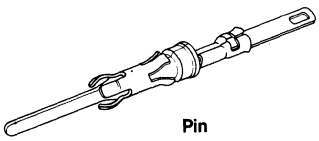
Type III+, Solder-Type

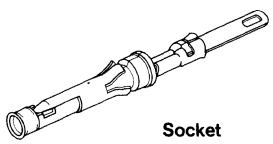

Pin


Socket

Type III+, Solder-Type—precision-formed pin and socket contacts with wire and insulation barrels preformed to accept solid or stranded wire. Size 16 contacts are used in the same cavities as all other Multimate contacts.

TYPE III+, Solder Tab


Pin


Socket

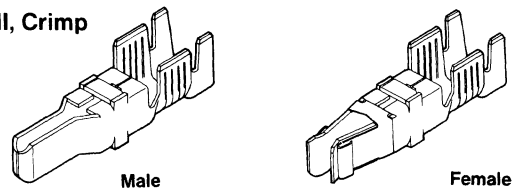
TYPE III+, Solder Tab—precision-formed pin and socket contacts precrimped to a solder tab (with slot) to accept various sizes of solid or stranded wire. Size 16 contacts are used in the same cavities as all other Multimate contacts.

General Features of Pin & Socket Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

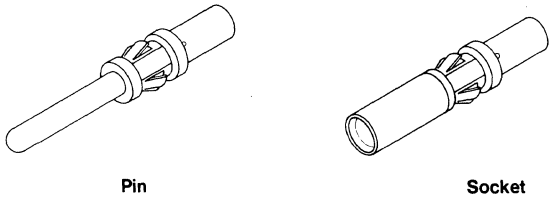
Power Contacts

Type XII, Crimp



Type XII, Crimp—precision-formed contacts designed as male and female, rather than pin and socket. They are used in rectangular contact cavities specifically designed for Type XII contacts (Special Application connectors—12-position High Current). Contacts are used for power applications with a maximum current rating of 35 amperes.

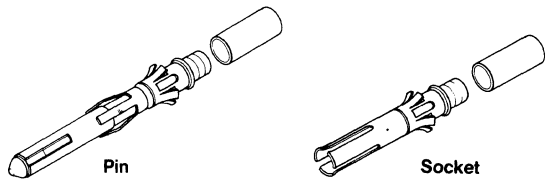
Type I, Crimp



Type I, Crimp—screw-machined in size 12. Pin and socket contacts can be used in same cavities as Miniature COAXICON contacts (Special Application connectors—15-, 29- and 42-position Mixed). Contact design offers low resistance for critical circuit applications and also current ratings of up to 23 amperes.

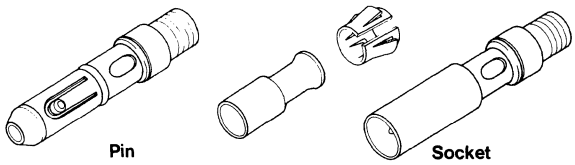
RF Contacts

Subminiature COAXICON, Crimp



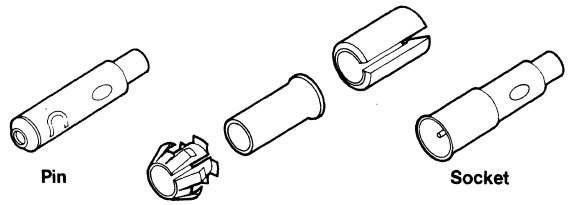
Subminiature COAXICON, Crimp—screw-machined pin and socket contacts. These contacts are used in Multimate contact cavities of all Standard connectors and Special Application connectors—Mixed, High Voltage and RFI/EMI Shielded. Contact design allows coaxial cable, shielded conductors and twisted pair wire to be mixed in the same housing with signal or power terminations.

Miniature COAXICON, Crimp



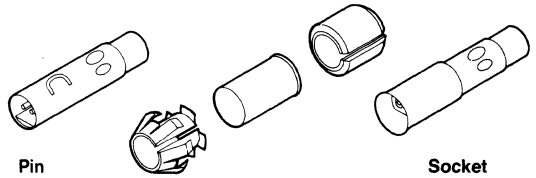
Miniature COAXICON, Crimp—screw-machined pin and socket contacts. They can be used in same contact cavities as Type I contacts (Special Application connectors—15-, 29- and 42-position Mixed). Contact design offers application of coaxial cable, shielded conductors and twisted pair wire with current ratings of up to 7.5 amperes.

Standard COAXICON, Crimp



Standard COAXICON, Crimp—screw-machined pin and socket contacts. They are used in cavities specifically designed for Standard COAXICON contacts (Special Application connectors—29-position Mixed). Contact design offers application of coaxial cable, shielded conductors and twisted pair wire.

Twin Standard COAXICON, Crimp



Twin Standard COAXICON, Crimp—screw-machined pin and socket contacts. They are used in contact cavities specifically designed for Twin Standard COAXICON contacts (Special Application connectors—16-position Mixed). Contact design is exclusively for use with two-conductor coaxial or shielded cable, with current ratings of up to 7.5 amperes.

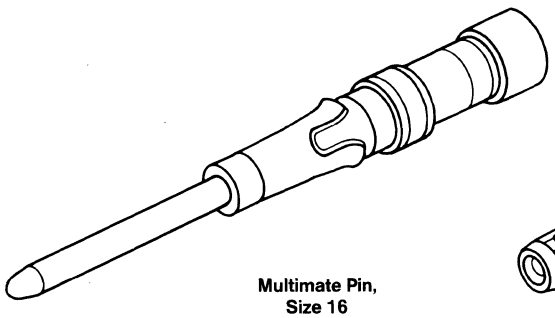
Type II, Crimp

Material:
Contact Body—Copper Alloy
Retention Spring—Stainless Steel

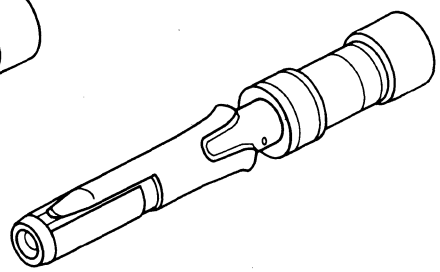
Finish:
Contact Body—.000030 [0.00076] Gold over .000050 [0.00127] Nickel Gold thickness controlled on socket O.D.
Retention Spring—Nickel Plated

AMP Extraction Tool No. 305183

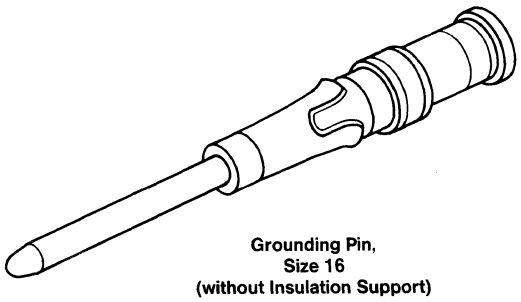
‡ Single contact, free-air test current; not to be construed as contact rating current. Use only for testing. Refer to contact current carrying capability information, page 2015.



Multimate Pin, Size 16 (with Insulation Support)



Socket, Size 16 (with Insulation Support)



Grounding Pin, Size 16 (without Insulation Support)

Size 16—Pin Diameter .062 [1.57] (Test Current, 13 Amperes)‡

Wire Size Range AWG	Wire Size Range [mm²]	Ins. Dia. Range[1]	Tape Mounted Contact No.[2] Pin	Tape Mounted Contact No.[2] Socket	Loose Piece Contact No. Pin	Loose Piece Contact No. Socket	Contact Color Code	Tooling No. Tape Mounted Dies for AMP-TAPETRONIC Machine 69875	Tooling No. Loose Piece Dies for Pneumatic Tool 69365	Tooling No. Loose Piece Hand Tool
32-30	0.03-0.05	**.030-.048** 0.76-1.22	–	–	201555-1[4]	201554-1[5]	White/Red	90249-2	90230-1	58305-1, 90118 or 601967-1
28-24	0.08-0.2	**.035-.055** 0.89-1.4	201611-4	201613-4	201611-1[4]	201613-1[5]	Red/Red	90249-2	90230-1	58305-1, 90118 or 601967-1
		.048-.065 1.22-1.65	201334-3	201332-3	201334-1[4]	201332-1[5]	Red/Red			
		.095-.110 2.41-2.79	–	–	202410-1[4]	202411-1[5]	Green			90093 or 601967-1
24-20	0.2-0.6	**.040-.062** 1.02-1.57	201578-4	201580-4	201578-1[4]	201580-1[5]	Yellow/Red	90249-2	90230-1	58305-1, 90118, 90281-1* or 601967-1
		.055-.085 1.4-2.16	201330-6	201328-9	201330-1[4]	201328-1[5]	Yellow/Red			
18 (Two)	0.8-0.9 (Two)	No. Ins. Support	–	–	202725-1[4]	202726-1[4]	Blue	90250-1	90231-2	45098 or 601967-1
18-16	0.8-1.4	**.080-.105** 2.03-2.67	202507-2	202508-2	202507-1[4]	202508-1[5]	–	90408-1	–	90136-1 or 601967-1
		No. Ins. Support	200336-6	200333-8	200336-1[4]	200333-1[4]	Blue/Blue	90250-1	90231-2	45098, 90281-1* or 601967-1
			–	–	204219-1[5]	–	Blue/Blue	–	90231-2	
14	2	No. Ins. Support	201570-2	201568-3	201570-1[4]	201568-1[5]	Violet/Blue	90250-1	90231-2	45098, 90281-1* or 601967-1
			212618-2[3]	–	212618-1[3]†	–				

[1] Overall insulation crimp diameter, including crimp barrel, must not exceed .125 [3.18].
[2] For AMP-TAPETRONIC Machine No. 69875, order contacts by Tape Mounted Contact No. plus packaging code "1M REEL" (1000 parts per reel), or "5M REEL" (5000 parts per reel).
[3] Grounding pin is used to provide a make-first/break-last condition when mating and unmating connector halves.
[4] Use turret TH502 (1-601967-6) with hand tool 601967-1.
[5] Use turret TH501 (1-601967-5) with hand tool 601967-1.

* Economy Hand Tool for field repair use only.
† Does not use Hand Tool 601967-1.

Insertion Tool No. 200893-2 (for insulation diameters .070 [1.78] or less).
Extraction Tool No. 305183.

Note: These contacts can be used in Multimate contact cavities of all connector housings.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimeters.

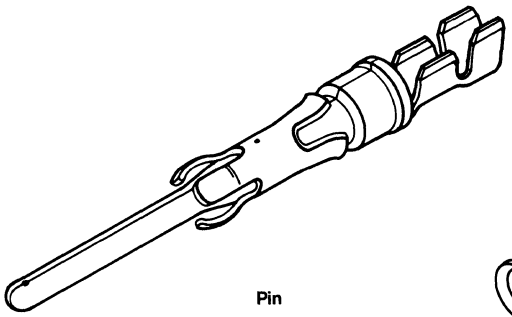
Type III+, Crimp

Material:
Contact Body—Brass
Retention Spring—Stainless Steel

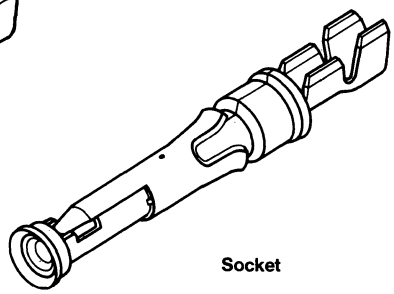
Finish:
See chart.

AMP Extraction Tool No. 305183

‡ Single contact, free-air test current; not to be construed as contact rating current. Use only for testing. Refer to contact current carrying capability information, page 2015.



Pin



Socket

Contact Size 16—Pin Diameter .062 [1.57] (Test Current, 13 Amperes)‡

Wire Size Range AWG	Wire Size Range [mm²]	Ins. Dia. Range[1]	Contact Finish	Strip Form Contact No. Pin	Strip Form Contact No. Socket	Loose Piece Contact No. Pin	Loose Piece Contact No. Socket	Tooling No. Strip Form Applicator	Tooling No. Loose Piece Hand Tool
30-26	0.05-0.15	**.040-.060** 1.02-1.52	Bright Tin-Lead	66425-6	66424-6	–	–	466598-1*	90066-7
			Gold/Nickel[2]	66425-7	66424-7	66429-3	66428-3		
			Sel. Gold/Nickel[3]	66425-8	66424-8	66429-4	66428-4		
		.014-.030 0.36-0.76	Gold/Nickel[2]	66393-7	66394-7	–	–	466585-3*	90225-2
			Sel. Gold/Nickel[3]	66393-8	66394-8	66406-4	66405-4		
26-24	0.12-0.2	**.035-.055** 0.89-1.4	Bright Tin-Lead	66106-6	66108-6	66107-2	66109-2	466321-4* or 466908-2**	90066-7 or 90277-1***
			Gold/Nickel[2]	66106-7	66108-7	66107-3	66109-3		
			Sel. Gold/Nickel[3]	66106-8	66108-8	66107-4	66109-4		
24-20	0.2-0.6	**.040-.080** 1.02-2.03	Bright Tin-Lead	66102-7	66104-7	66103-2	66105-2	466323-4* or 466907-2**	90066-7 or 90067-4 90277-1***
			Gold/Nickel[2]	66102-8	66104-8	66103-3	66105-3		
			Sel. Gold/Nickel[3]	66102-9	66104-9	66103-4	66105-4		
		.080-.100 2.03-2.54	Bright Tin-Lead	66332-5	66331-5	66400-1	66399-1	466324-2* or 466942-1**	90067-5 or 90225-2 90277-1***
			Gold/Nickel[2]	66332-7	66331-7	66400-3	66399-3		
			Sel. Gold/Nickel[3]	66332-8	66331-8	66400-4	66399-4		
18-16	0.8-1.4	**.080-.100** 2.03-2.54	Bright Tin-Lead	66098-7	66100-7	66099-2	66101-2	466325-2* or 466906-1**	90067-4 90067-5 90277-1***
			Gold/Nickel[2]	66098-8	66100-8	66099-3	66101-3		
			Sel. Gold/Nickel[3]	66098-9	66100-9	66099-4	66101-4		
18-14	0.8-2	**.080-.100** 2.03-2.54	Bright Tin-Lead	66359-6	66358-6	66361-2	66360-2	466326-4* or 466923-2**	90310-3
			Gold/Nickel[2]	66359-9	66358-9	66361-3	66360-3		
			Sel. Gold/Nickel[3]	1-66359-0	1-66358-0	66361-4	66360-4		

[1]Overall insulation crimp diameter, including crimp barrel, must not exceed .125 [3.18].
[2].000015 [0.00038] gold in the mating area over .000050 [0.00127] nickel.
[3].000030 [0.00076] gold in mating area over .000050 [0.00127] nickel.

* These applicators are used in the AMP-O-LECTRIC and AMPOMATOR Machines (pages 2012 and 2013).
** These applicators are used in the AMP-O-MATIC Stripper/Crimper Machine (page 2012).
***Economy Hand Tool for field repair use only.

Insertion Tool No. 91002-1 (for insulation diameters .070 [1.78] or less). **211300-1** (for insulation diameter .095 [2.41] max. dia.). **211300-2** (for insulation diameter .065 [1.65] max. dia.). **Extraction Tool No. 305183.**

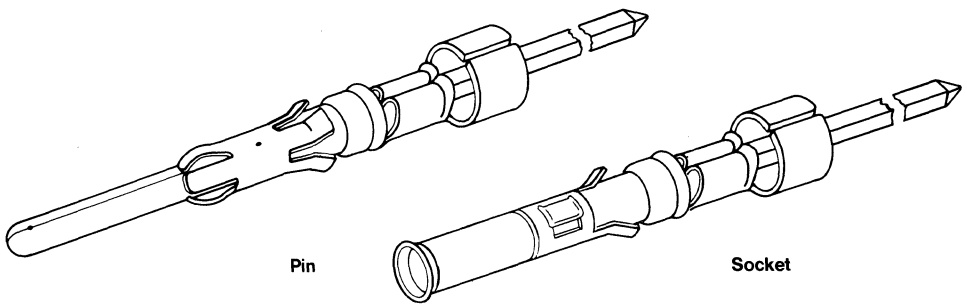
Note: These contacts can be used in Multimate contact cavities of all connector housings.

Posted Contacts (Replacement Contacts, See Note Below.)

Material:
Contact Body and Post—Brass
Retention Spring—Stainless Steel

Finish:
See chart.

‡ Single contact, free-air test current; not to be construed as contact rating current. Use only for testing. Refer to contact current carrying capability information, page 2015.



Size 16—Pin Diameter .062 [1.57] (Test Current, 13 Amperes)‡

Termination Method	Post Configuration	Contact Finish	Loose Piece Contact No.					
			3 Termination High Post		2 Termination High Post		1 Termination High Post	
			Pin	Socket	Pin	Socket	Pin	Socket
Wrap-Type	.025 x .025 0.64 x 0.64	Sel. Gold/Nickel[1]	66460-9	66461-9	66460-8	66461-8	66460-7	66461-7
		Gold/Nickel[2]	66460-6	66461-6	66460-5	66461-5	66460-4	66461-4
		Bright Tin-Lead	66460-3	66461-3	66460-2	66461-2	66460-1	66461-1
	.045 x .045 1.14 x 1.14	Sel. Gold/Nickel[1]	66471-9	66473-9	–	–	66471-7	66473-7
		Bright Tin-Lead	66471-3	66473-3	–	–	66471-1	66473-1
	.031 x .062 0.79 x 1.57	Sel. Gold/Nickel[1]	66470-9	66472-9	–	–	–	–
TERMI-POINT Clip	.022 x .036 0.56 x 0.91	Sel. Gold/Nickel[1]	66469-9	66474-9	–	–	–	–
	.031 x .062 0.79 x 1.57	Sel. Gold/Nickel[1]	66468-9	66459-9	–	–	–	–

[1]Gold flash over .000050 [0.00127] nickel on entire contact, with .000030 [0.00076] gold to a distance of .200 [5.08] from mating end. Gold thickness controlled on socket O.D.
[2].000030 [0.00076] gold over .000050 [0.00127] nickel on contact body. Gold thickness controlled on socket O.D.

Posts plated tin-lead over copper.

Extraction Tool No. 305183.

Insertion Tool No. 200893-2.

Note: These contacts are used as replacement contacts for all posted connectors.

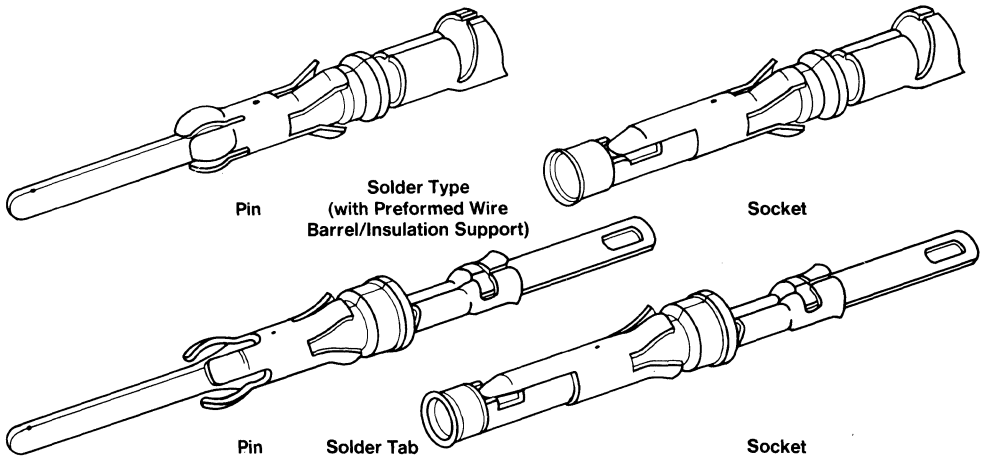
Type III+, Solder Versions

Material:
Contact Body and Tab—Brass
Retention Spring—Stainless Steel

Finish:
See chart.

AMP Extraction Tool No. 305183

‡ Single contact, free-air test current; not to be construed as contact rating current. Use only for testing. Refer to contact current carrying capability information, page 2015.



Size 16—Pin Diameter .062 [1.57] (Test Current, 13 Amperes)‡

Wire Size Range		Contact Finish	Loose Piece Contact No.	
AWG	[mm²]		Pin	Socket
26-20	0.12-0.6	Gold/Nickel[1]	66182-1	66183-1
18-16	0.8-1.4	Gold/Nickel[1]	66180-1	66181-1
Solder Tab	–	Duplex[2]	202236-1	202237-1
		Bright Tin-Lead[3]	202236-2	202237-2

[1].000030 [0.00076] gold in mating area over .000050 [0.00127] nickel.
[2]Duplex plated .000030 [0.00076] gold in mating area over .000050 [0.00127] nickel on contact body; bright tin-lead on solder tab.
[3]Bright tin-lead on entire contact.

Extraction Tool No. 305183.

Note: These contacts can be used in Multimate contact cavities of all connector housings.

Power Contacts

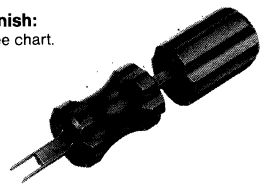
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Type XII, Crimp

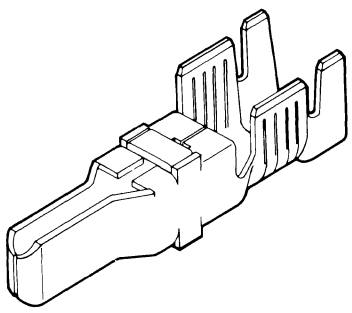
Material:
Copper

Finish:
See chart.

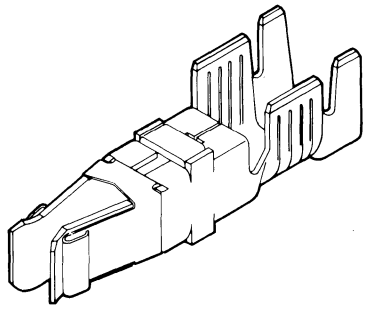


AMP Extraction Tool No. 91019-3

‡ Single contact, free-air test current; not to be construed as contact rating current. Use only for testing. Refer to contact current carrying capability information, page 2015.



Male



Female

(Test Current, 25 Amperes)‡

Wire Size Range AWG	Wire Size Range [mm²]	Ins. Dia. Range	Contact Finish	Strip Form Contact No.* Male	Strip Form Contact No.* Female	Loose Piece Contact No. Male	Loose Piece Contact No. Female	Tooling No. Strip Form Applicator	Tooling No. Loose Piece Die Inserts for Hand Tool 69710-1 or Pneumatic Tool 69365	Tooling No. Loose Piece Economy Hand Tool
16 and 14-12	1.25-1.4 and 2-3	.135-.160 3.43-4.06	Sel. Gold/Nickel[1]	66255-6	–	66261-2	–	466425-2** or 466425-1***	90145-1† or 90145-2†	90382-2
				66256-4[3]	–	66262-2[3]	–			
				–	1-66740-1	–	66740-6			
			Silver[2]	66255-8	–	66261-4	–			
				–	–	66262-4[3]	–			
				–	66740-9	–	66740-2			
10-8	5-8	.190-.220 4.83-5.59	Sel. Gold/Nickel[1]	66253-6	–	66259-2	–	567021-2**	90140-1	90384-1
				–	–	66260-2[3]	–			
				–	1-66741-1	–	66741-6			
			Silver[2]	66253-8	–	66259-4	–			
				–	–	66260-4[3]	–			
				–	66741-9	–	66741-2			

[1]Gold flash over .000030 [0.00076] nickel on entire contact, with .000030 [0.00076] gold on electrical engagement area.
[2].000200 [0.00508] silver, with lubricant added; recommended for high current/vibration applications where fretting corrosion is a problem.
[3]Grounding contact.

*For strip form contacts terminated in existing applicators other than those listed in the chart, consult AMP Incorporated.
**These applicators are used in the AMP-O-LECTRIC Machine (page 2012).
***This applicator is used in the AMPOMATOR Machine (page 2012).

†**Die Insert No. 90145-1** is for crimping 14-12 AWG [2-3 mm²] wire; and **Die Insert No. 90145-2** is for crimping 16 AWG [1.25-1.4 mm²] wire.

Extraction Tool No. 91019-3.
Economy Extraction Tool No. 91124-1 (for maintenance only).

Note: These contacts are used in the power contact cavities (rectangular) of special application connector housings; 12-position (high current) and 29-position (mixed).

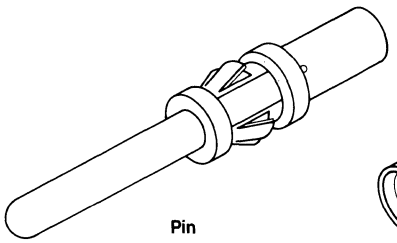
Type I, Crimp

Material:
Contact Body—Leaded Commercial Bronze
Retention Spring—Beryllium Copper

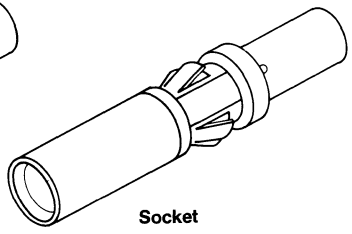
Finish:
Contact Body—.000030 [0.00076] Gold over .000050 [0.00127] Nickel Gold thickness controlled on socket O.D.
Retention Spring—Nickel Plated

AMP Extraction Tool No. 305183-8

‡ Single contact, free-air test current; not to be construed as contact rating current. Use only for testing. Refer to contact current carrying capability information, page 2015.



Pin



Socket

Size 12—Pin Diameter .094 [2.39] (Test Current, 23 Amperes)‡

Wire Size Range AWG	Wire Size Range [mm²]	Loose Piece Contact No. Pin	Loose Piece Contact No. Socket	Tooling No. Dies for Pneumatic Tool 69365	Tooling No. Hand Tool
18-16	0.8-1.4	202421-1	202418-1	90122	90121
14-12	2-3	202422-1	202417-1	90122	90121

Extraction Tool No. 305183-8.

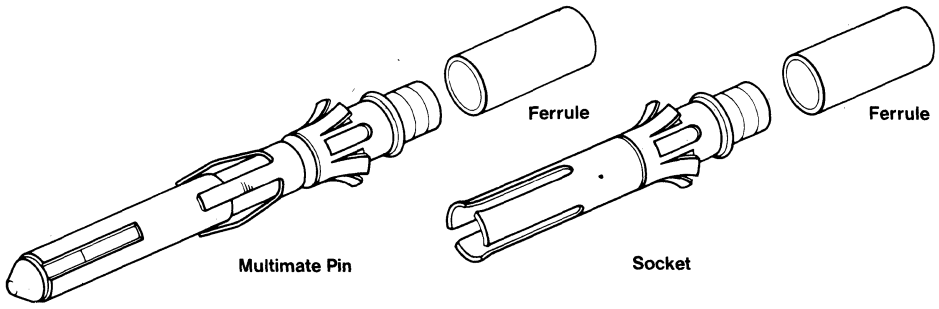
Note: These contacts can be used in the larger circular contact cavities of special application connector housings; 15-, 29- and 42-position (mixed).

Subminiature COAXICON, Crimp

Material:
Outer Shell—Brass per MIL-C-50
Center Conductor—Beryllium Copper per QQ-C-533 (Pin); Brass per QQ-B-626 (Socket)
Inner Dielectric—Polypropylene, General Purpose
Retention Spring—Stainless Steel per QQ-S-766
Ferrule—Copper per QQ-C-576

Finish:
Outer Shell, Center Conductor—See charts below
Ferrule—Bright Tin-Lead per MIL-T-10727

Extraction Tool No. 305183



Selection Chart for Coaxial Cable

Cable Size (RG/U)	Contact Finish	Loose Piece Contact No.		Ferrule No.	Tooling No.	
		Multimate Pin	Socket		Die Inserts for Hand Tool 69710-1 or Pneumatic Tools 69365-2 & 69365-3[3]	Hand Tool
178, 196	Gold/Nickel, Gold/Copper[1]	226537-2	51565-2	1-332057-0	69690-2	69656-2
	Gold/Nickel, Gold/Copper[2]	–	51565-5			
196 (Double Braid)	Gold/Nickel, Gold/Copper[1]	226537-2	51565-2	225088-1	–	69656-9
	Gold/Nickel, Gold/Copper[2]	–	51565-5			
174, 188, 316	Gold/Nickel, Gold/Copper[1]	226537-1	51565-1	1-332056-0	69690	69656
	Gold/Nickel, Gold/Copper[2]	226537-4	51565-4			
174 (Double Braid)	Gold/Nickel, Gold/Copper[1]	226537-1	51565-1	225088-3	–	69656-7
	Gold/Nickel, Gold/Copper[2]	226537-4	51565-4			
179, 187	Gold/Nickel, Gold/Copper[1]	226537-1	51565-1	1-332056-0	69690-1	69656-1
	Gold/Nickel, Gold/Copper[2]	226537-4	51565-4			
187 (Double Braid)	Gold/Nickel, Gold/Copper[1]	226537-1	51565-1	225088-1	–	69656-8
	Gold/Nickel, Gold/Copper[2]	226537-4	51565-4			
161	Gold/Nickel, Gold/Copper[1]	226537-1	51565-1	1-332056-0	–	69656-5
	Gold/Nickel, Gold/Copper[2]	226537-4	51565-4			

Selection Chart for Twisted Pairs and Shielded Wire

Wire Size AWG	Wire Size [mm²]	Contact Finish	Loose Piece Contact No.		Ferrule No.	Tooling No.	
			Multimate Pin	Socket		Die Inserts for Hand Tool 69710-1 or Pneumatic Tools 69365-2 & 69365-3[3]	Hand Tool
30 (Twisted Pair, Solid)	0.05	Gold/Nickel, Gold/Copper[1]	226537-3	51565-3	1-332057-0	69690-2	69656-2
		Gold/Nickel, Gold/Copper[2]	226537-6	51565-6			
28 (Twisted Pair, Solid)	0.08-0.09	Gold/Nickel, Gold/Copper[1]	226537-3	51565-3	1-332057-0	69690	69656
		Gold/Nickel, Gold/Copper[2]	226537-6	51565-6			
28 (Twisted Pair, Stranded; 7 Str., .005 [0.13] Dia.)	0.08-0.09	Gold/Nickel, Gold/Copper[1]	226537-3	51565-3	1-332057-0	69690-1 or 69690-2	69656-1 or 69656-2
		Gold/Nickel, Gold/Copper[2]	226537-6	51565-6			
26 (Twisted Pair, Solid or Stranded; 7 Str., .0063 [0.16] Dia.)	0.12-0.15	Gold/Nickel, Gold/Copper[1]	226537-3	51565-3	1-332057-0	69690	69656
		Gold/Nickel, Gold/Copper[2]	226537-6	51565-6			
26 (Shielded, .075 [1.91] Max. O.D.)	0.12-0.15	Gold/Nickel, Gold/Copper[1]	226537-1	51565-1	1-332057-0	69690-3	69656-3
		Gold/Nickel, Gold/Copper[2]	226537-4	51565-4			

[1].000030 [0.00076] gold over .000050 [0.00127] nickel—outer shell and socket center conductor; .000030 [0.00076] gold over .000100 [0.00254] copper—pin center conductor.
[2].000050 [0.00127] gold over .000050 [0.00127] nickel—outer shell and socket center conductor; .000050 [0.00127] gold over .000100 [0.00254] copper—pin center conductor.
[3]Includes bench mount and foot control.

Extraction Tool No. 305183.

Note: A ferrule is required for each pin and socket.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

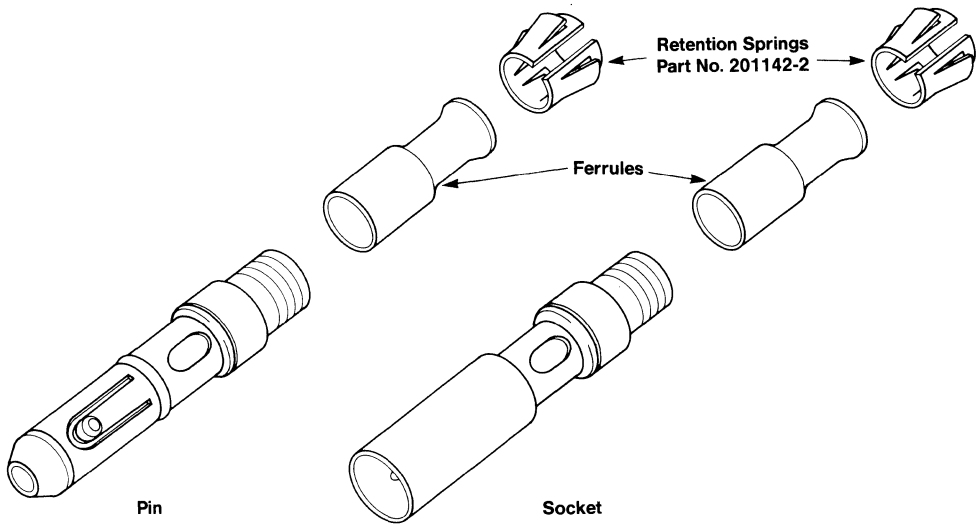
Charts contain dimensions in inches over millimeters.

Miniature COAXICON, Crimp

Material:
Outer Shell—Brass per MIL-C-50
Center Conductor—Brass per QQ-B-626
Inner Dielectric—Polypropylene, General Purpose
Retention Spring—Beryllium Copper per QQ-C-533
Ferrule—Copper per QQ-C-576

Finish:
Outer Shell, Center Conductor—See charts below and on page 36.
Retention Spring—Nickel per QQ-N-290
Ferrule—Bright Tin-Lead per MIL-T-10727

AMP Extraction Tool No. 305183-8



Selection Chart for Coaxial Cable

Cable Size (RG/U)	Contact Finish	Loose Piece Contact No.		Ferrule No.	Tooling No.	
		Pin	Socket		Die Inserts for Hand Tool 69710-1 or Pneumatic Tools 69365-2 & 69365-3[3]	Hand Tool
55, 55A, 55B, 141, 142, 223	Gold/Nickel[1]	201145-4	201146-4	330478	69315-4	69248-4
	Gold/Copper[2]	201145-9	201146-9			
58, 58A, 58B, 58C	Gold/Nickel[1]	201145-4	201146-4	328663	69220-2	45740-2
	Gold/Copper[2]	201145-9	201146-9			
59, 59A, 59B, 62, 62A, 62B, 124, 140, 210	Gold/Nickel[1]	201097-1	201098-1	329006	69675-1	45634-3
174, 179A, 187, 21-598	Gold/Nickel[1]	201143-1	201144-1	328666	69227-2	45638-2
	Gold/Copper[2]	201143-6	201144-6			
180, 180A, 195, 21-597	Gold/Nickel[1]	201145-2	201146-2	328664	69222-2	45639-2
	Gold/Copper[2]	1-201145-0	1-201146-0			
178, 178A, 196	Gold/Nickel[1]	201511-1	201512-1	328667	69373	69186-2
188	Gold/Nickel[1]	201143-5	201144-5	328666	69227-2	45638-2
	Gold/Copper[2]	201143-7	201144-7			
122	Gold/Nickel[1]	201145-1	201146-1	328664	69222-2	45639-2
	Gold/Copper[2]	–	1-201146-5			
188 Double Braid, 316 Double Braid	Gold/Nickel[1]	201143-5	201144-5	221848-3	–	58290-1
	Gold/Copper[2]	201143-7	201144-7			
Special .125, .100, .066, .012 DB	Gold/Nickel[1]	201143-1	201144-1	221848-3	–	58290-1

Selection Chart for Twisted Pairs

Wire Size AWG	Wire Size [mm²]	Max. Ins. Dia. (Two Wires Combined)	Contact Finish	Loose Piece Contact No.		Ferrule No.	Tooling No.	
				Pin	Socket		Die Inserts for Hand Tool 69710-1 or Pneumatic Tools 69365-2 & 69365-3[3]	Hand Tool
28-26	0.08-0.15 (Solid)	**.080** 2.03	Gold/Nickel[1]	201511-1	201512-1	328667	69373	69186-2
24-22	0.2-0.4 (Stranded)	**.115** 2.92	Gold/Nickel[1]	201143-5	201144-5	328666	69672	45638-3
			Gold/Copper[2]	201143-7	201144-7			
24-22	0.2-0.4 (Solid or Stranded)	**.160** 4.06	Gold/Nickel[1]	50079-1	50080-1	329029	69222-2	45639-2

[1].000030 [0.00076] gold over .000030 [0.00076] nickel.
[2].000100 [0.00254] gold over .000100 [0.00254] copper.
[3]Includes bench mount and foot control; requires Manual Take-Up Attachment **No. 69689.**

Note: A ferrule and retention spring (**201142-2**) are required for each pin and socket.

RF Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Selection Chart for Shielded Wire

Shielded Wire No.	Contact Finish	Loose Piece Contact No.		Ferrule No.	Tooling No.	
		Pin	Socket		Die Inserts for Hand Tool 69710-1, Pneumatic Tools 69365-2 & 69365-3[3]	Hand Tool
22, NAS-702, Class A 22, MIL-C-7078A, Type II	Gold/Nickel[1]	201143-3	201144-3	328666	69227-2	45638-2
22, NAS-702, Class B	Gold/Nickel[1]	201145-4	201146-4	328663	69220-2	45740-2
	Gold/Copper[2]	201145-9	201146-9			

Selection Chart for Various Manufacturers' Cables

Cable Size AWG/Type	Cable Size [mm²]	Dielectric O.D. (Max.)	Cable O.D. Range	Braid	Contact Finish	Loose Piece Contact No. Pin	Loose Piece Contact No. Socket	Ferrule No.	Tooling No. Die Inserts for Hand Tool 69710-1, Pneumatic Tools 69365-2 & 69365-3[3]	Tooling No. Hand Tool
Brand Rex T209A 29 AWG	0.08	**.076** 1.93	**.112-.122** 2.84-3.1	Single	Gold/Nickel[1]	201145-6	201146-6	330587	69440	69360-2
Brand Rex T5788A 26 AWG	0.12-0.15	**.106** 2.69	**.160** 4.06	Single	Gold/Nickel[1]	201145-2	201146-2	328664	69222-2	45639-2
					Gold/Copper[2]	1-201145-0	1-201146-0			
32-26 AWG Raychem 0030D1314 Army Ord. 11207177	0.03-0.15	**.129** 3.28	**.122-.137** 3.1-3.48	Single	Gold/Nickel[1]	201145-6	201146-6	330587	69440	69360-2

[1].000030 [0.00076] gold over .000030 [0.00076] nickel.
[2].000100 [0.00254] gold over .000100 [0.00254] copper.
[3]Includes bench mount and foot control; requires Manual Take-Up Attachment **No. 69689.**
Note: A ferrule and retention spring (**201142-2**) are required for each pin and socket.

Extraction Tool No. 305183-8.

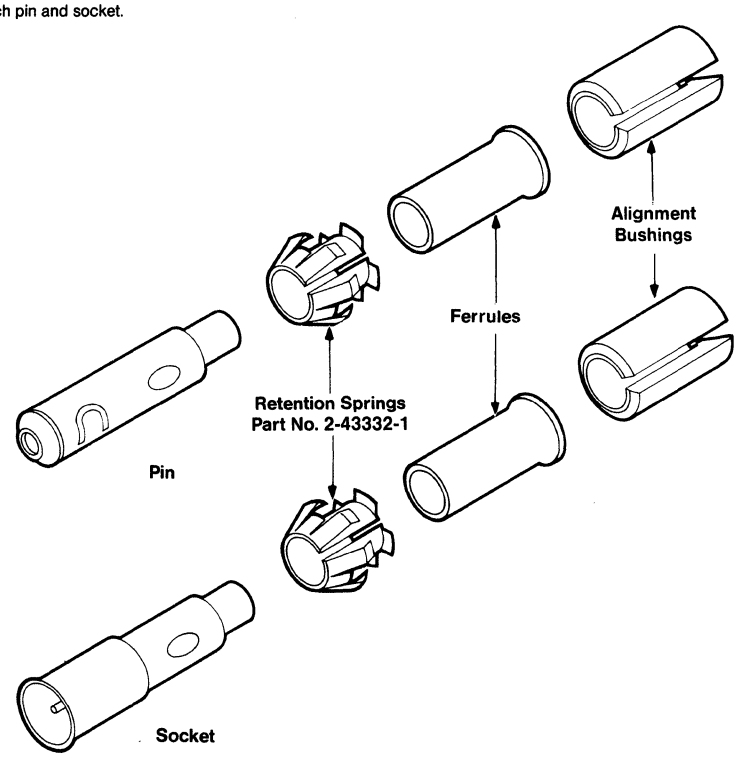
Standard COAXICON, Crimp

Material:
Outer Shell—Brass per QQ-B-613
Center Conductor—Brass per QQ-B-626
Inner Dielectric—Polypropylene, General Purpose
Alignment Bushing—Polyethylene LP-390
Retention Spring—Beryllium Copper per QQ-C-533
Ferrule—Copper per QQ-C-576

Finish:
Outer Shell, Center Conductor—.000030 [0.00076] Gold over .000030 [0.00076] Nickel
Retention Spring—Bright Tin-Lead per MIL-T-10727
Ferrule—Silver Plated

AMP Insertion Tool No. 305142

AMP Extraction Tool No. 305141-1



Selection Chart for Coaxial Cable

Cable Size (RG/U)	Loose Piece Contact No. Pin	Loose Piece Contact No. Socket	Ferrule No.	Alignment Bushing No.	Tooling No. Die Inserts for Hand Tool 69710-1, Pneumatic Tools 69365-2 & 69365-3[1]	Tooling No. Hand Tool
55, 55A, 55B, 141, 142, 223	329017	329016	330478	329052	69220-4	45740-4
58, 58A, 58B, 58C	329017	329016	328663	329052	69220-4	45740-4
59, 59A, 59B, 62, 62A, 62B, 124, 140, 210	329005	329004	329006	329050	69221-1	45634-2

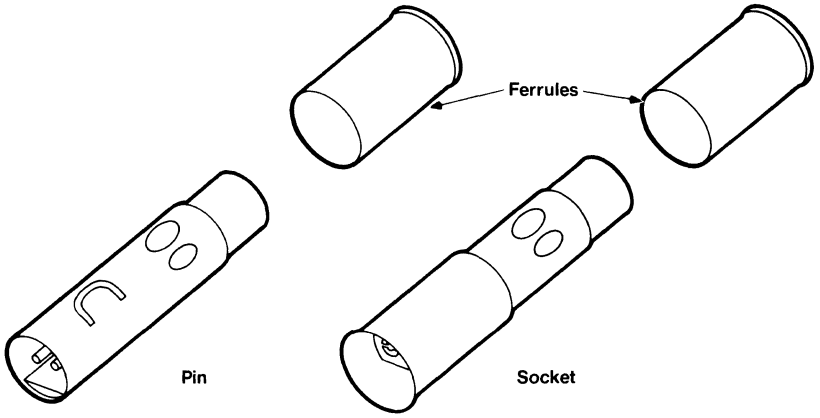
[1]Includes bench mount and foot control.
Note: A ferrule is required for each pin and socket.

Twin Standard COAXICON, Crimp

Material:
Outer Shell—Brass per MIL-C-50
Center Conductor—Brass per QQ-B-626
Inner Dielectric—Polypropylene, General Purpose
Alignment Bushing—Polyethylene LP-390
Retention Spring—Beryllium Copper per QQ-C-533
Ferrule—Copper per QQ-C-576

Finish:
Outer Shell, Center Conductor—.000030 [0.00076] Gold over .000030 [0.00076] Nickel
Retention Spring—Bright Tin-Lead per MIL-T-10727
Ferrule—Silver Plated

AMP Extraction Tool No. 305141-2

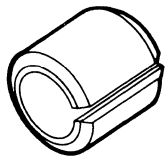


Cable Size/Type	Loose Piece Contact No.		Ferrule No.	Tooling No.	
	Pin	Socket		Die Inserts for Hand Tool 69710-1, Pneumatic Tools 69365-2 & 69365-3[1]	Hand Tool
Belden 8737 (Spiral Wrapped Shield) Trompeter TWC 124-2	329009	329010	329041	69231-2	45707-2
RG/U-108, RG/U-108A (Center Conductor Stranded 7 Str., .0126 [0.32] Dia.) Belden 8761, 8762, 8759, 9154, 8737, 8961	2-329009-1	2-329010-1	329041	69231-2	45707-2
Belden 8451, 8641, 8761 Trompeter TWC 78-1	329009	329010	329056	69494-1	45707-4
Microdot 202-3932 Microdot 202-3934	329054	329055	329056	69231-2	45707-2

[1]Includes bench mount and foot control; requires Manual Take-Up Attachment **No. 69689.**

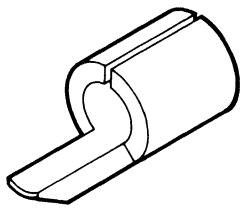
Retention Spring

Part No. 329042



Alignment Bushings

Part No. 329053[2]

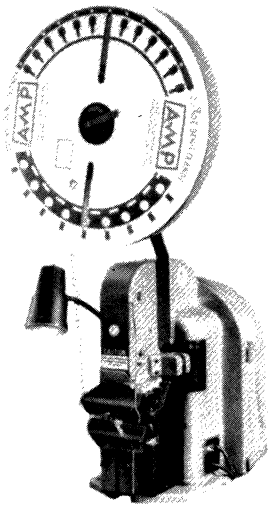


Part No. 330576[3]

Retention Spring No.	Alignment Bushing No.	Used with		Extraction Tool No.
		Pin No.	Socket No.	
329042	329053	329009 2-329009-1	329010 2-329010-1	305141-2
	330576	329054 329009	329055 329010	

[2]Used with **Ferrule 329041.**
[3]Used with **Ferrule 329056.**

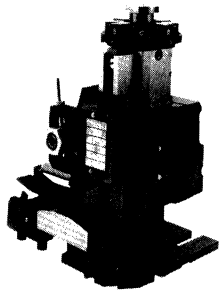
M Series Pin and Socket connector contacts may be applied in automatic or semi-automatic machines using quick-change applicators or with CERTI-CRIMP hand tools.



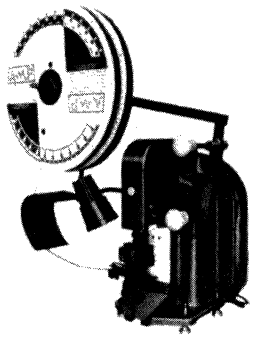
The AMP-TAPETRONIC All-Electric Machine terminates a wide range of AMP closed barrel contacts which are packaged on Mylar tape. It is actuated by a MICRO-SWITCH foot pedal, or an optional electronic switch located in the crimping area. This machine offers foolproof terminations of contacts at rates up to 1,000 per hour.

Specifications:

Power Supply—115 volts
Weight—250 lbs. [113.4 kg]
Height—27" [68.58 cm]
Width—6" [15.24 cm]
Depth—12" [30.48 cm]
Application Dies—Quick change dies for multi-product application



Quick-Change Applicators provide flexible operation for the AMPOMATOR and AMP-O-LECTRIC Machines. These applicators can be changed in minutes, with the crimping height on both terminal barrel and insulation support for a given wire size simply "dialed in". All adjustments are made rapidly, with no major interruptions in production. Unique control circuits protect every machine part and visual indicators aid in adjustment and operation.



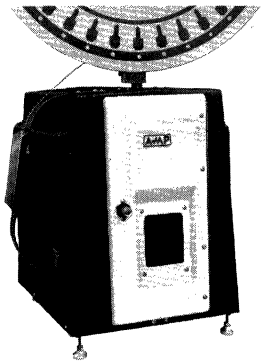
The AMP-O-LECTRIC Terminating Machine is capable of applying contacts at rates up to 1,500 per hour and more depending on operator dexterity.

This machine is electrically powered and bench mounted and can be readily moved to any location where an electric power supply is available.

For high application rates, ease of maintenance and servicing and for reliable performance at a low applied cost the AMP-O-LECTRIC machine has proven itself to be an excellent addition to any circuit production operation.

Specifications:

Power Required—115 vac, 60 Hz
Weight—230 lbs. [104.32 kg]
Height—24" [60.96 cm]
Width—21" [53.34 cm]
Depth—20" [50.8 cm]

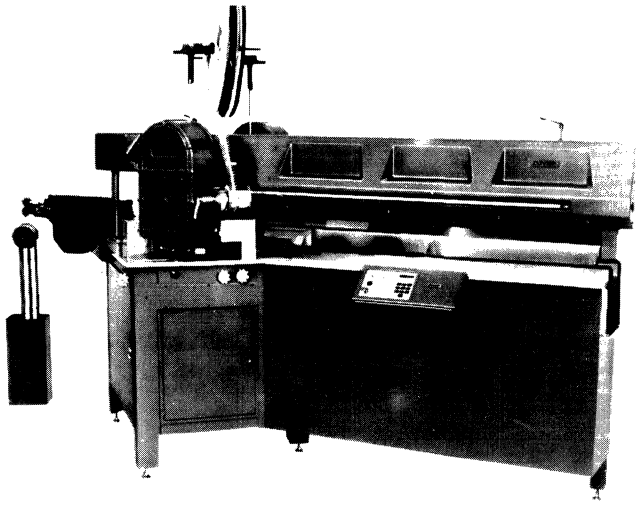


The AMP-O-MATIC Side Feed Stripper/Crimper Machine automatically strips and terminates wire in a single operation. The machine is a portable bench-mounted unit which can apply a wide range of open barrel, side-feed strip contacts. Minimum lead length is only 1.5 [38] and wire sizes from 32-14 AWG [0.03-2 mm^2] may be terminated in this machine at production rates of up to 1,200 terminations per hour.

Specifications:

Power Required—115 vac, 60 Hz
Weight—95 lbs. [43.09 kg]
Height—33" [83.8 cm] (including reel support)
Width—14" [35.6 cm]
Depth—18" [45.7 cm]
Type Terminal—Side feed open barrel
Air Supply—80-100 psi [5.51-6.89 bars] at ½ cfm
NOTE: Before ordering contact AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752



AMPOMATOR CLS II Machine No. 815800-1

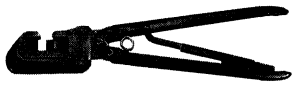
This contemporary machine is low in cost and simple to operate. It evolves from years of experience with the AMPOMATOR lead making machine family. The machine is designed for flexibility and ease of converting from product to product to handle many production requirements.

Application rate depends on length of leads. Three inch leads are produced at up to 3,400 per hour. Leads as long as 120 inches can be terminated with a production rate of up to 1,000 per hour.

AMP's Quick-Change applicators common to existing bench and lead making equipment are also used in this machine. The "T"-style terminating units are "air glide" to facilitate applicator changeover. Various accessories to this machine are available, consult AMP Incorporated.

Wire Size Range: 26-12 AWG
Maximum Insulation Thickness:
12-14 AWG—2/64"
16-26 AWG—4/64"
Weight: 2,200 lb
Height: 79"
Width: 65"
Length: 134"
Air: 80 psi 22 SCFM
Voltage: 220 VAC, 15 amperes, 1 phase, 3 wire plus ground
Insulation Types: Polyvinyl Chloride (PVC), Cross-link (PVC), Cross-link Polyethylene, Vulkene,* Silicone Rubber

*Trademark of General Electric Company.

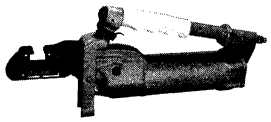


Hand Tool No. 69710

Hand Tool No. 90310

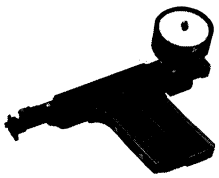
Hand Tool No. 90277

AMP Hand Tools are ideal for small production, prototype and experimental applications. They are used for terminating precision formed pins and sockets to wire and feature the CERTI-CRIMP ratchet device to assure perfectly formed crimps, time after time.



Pneumatic Tool No. 69365

Pneumatic Tools combine the facilities of hand tools with power, speed and precision. Ideal for assembly line use, they operate from a standard air supply, are lightweight in construction and feature interchangeable heads and/or dies.



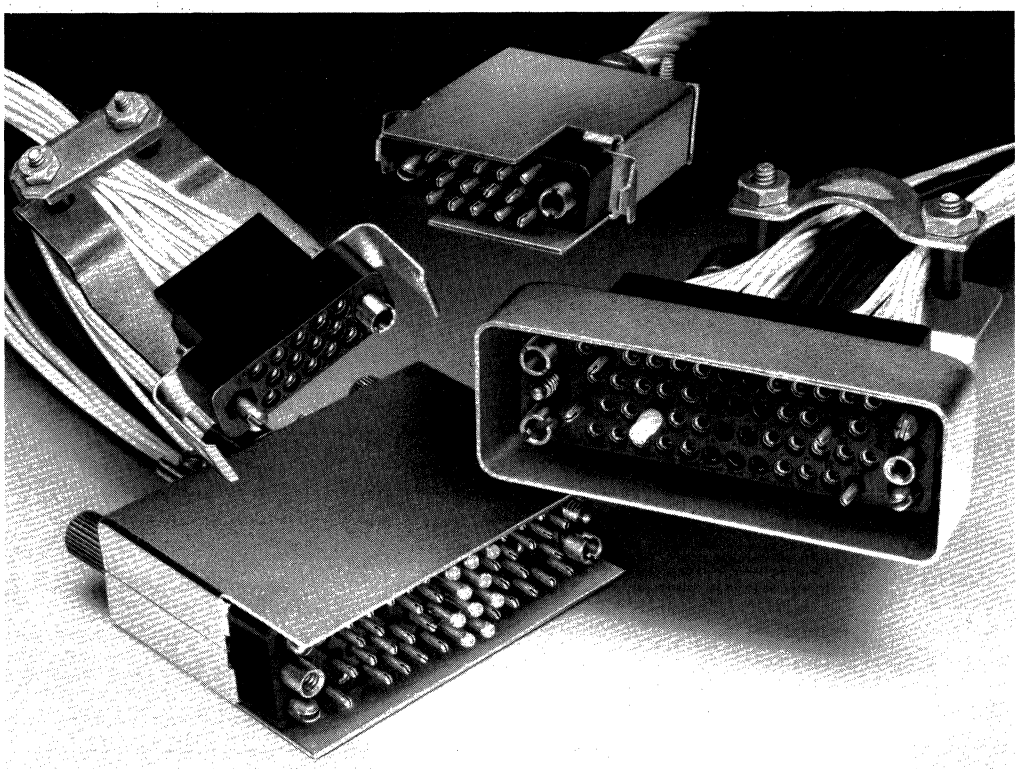
Manual Service Tool

TERMI-POINT Hand Tools

AMP's point-to-point wiring technique is ideally suited to the use of stranded as well as solid wire and offers a complete high-density termination system. This system includes a full line of AMP TERMI-POINT wiring devices and matched application tooling. Manually operated and semiautomatic hand tools are available for terminating a wide range of wire sizes to .022 x .036 [0.56 x 0.91] and .031 x .062 [0.79 x 1.57] posts.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

M Series
Pin and Socket Connectors



What makes the M Series connector line so versatile and special for a wide variety of applications?

- **Compatibility.** Most connectors intermateable with competitive connectors made to MIL-C-28748 requirements.
- **Wide range.** Choice of connector styles and sizes: standard connectors (unloaded), posted connectors (preloaded) and special application connectors.
- **Complete line.** Full line of accessory hardware for fastening, protecting, guiding, strain relief and keying.
- **Variety of contacts.** Signal, power, coaxial, and posted versions—many are interchangeable and can be intermixed in the same connector housing.
- **Full complement of application tooling.** For wire crimp and posted terminations-hand tools, semiautomatic tooling and fully automatic machines provide highly reliable, low cost terminations to meet all production requirements.

AMP M Series connectors. One of the most versatile and complete pin and socket connector lines available today.

From the basic molded plastic housing, a connector can be built up with a wide choice of contacts and hardware to serve in applications ranging from sophisticated computers, medical instrumentation and military ground support equipment to rugged truck transmissions.

Knowing what you need to meet your application is made easy.

Eight applications have been illustrated with selection charts from pages 2020 through 2035. These charts will enable you to select the appropriate connector housing as well as the necessary hardware.

Contacts of various types provide different functions in M Series connector housings.

Included are contacts for signal and power applications, for coaxial cable and posted versions for backpanel wiring. A full complement of application tooling is available to meet any production requirement for terminating the crimp-type contacts and wiring posted contacts. A description of each contact type is presented on page 2003. Application tooling for these contacts is described on pages 2012 and 2013.

Standard connectors.

Standard connectors are comprised of unloaded housings that accept a variety of crimp, solder and posted contacts. All standard connector housings will accept pins and/or sockets, permitting various combinations of contact loading. Standard connectors are described on pages 2036 through 2041.

The right hardware for the entire M Series connector line.

Hardware is available to provide fastening, protection, shielding, guiding, strain relief and keying capabilities for the entire M Series connector line. Application charts for properly selecting hardware are presented on pages 2020 through 2031. Detailed information on hardware is located on pages 2059 through 2070.

Product Facts

- Most connectors intermateable with competitive connectors made to MIL-C-28748 requirements
- Wide range of connector styles and sizes: standard connectors (unloaded), posted connectors (preloaded) and special application connectors (unloaded)
- Complete line of accessory hardware for fastening, protecting, guiding, shielding, strain relief and keying
- A variety of contacts: signal, power, coaxial and posted versions—many are interchangeable and can be intermixed in the same connector housing
- Full complement of application tooling for wire crimp and posted terminations—hand tools, semiautomatic tooling and fully automatic machines provide highly reliable, low cost terminations to meet all production requirements

Dimensioning:
Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents. Metric symbols used are:
C (Celsius)
cm (centimeter)
mm^2 (square millimeter)
N (newton)
Kg—kilogram

Material Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Contacts

The material composition and construction of AMP contacts encompass varying price ranges and performance characteristics. Specific materials and available platings and plating thicknesses of each contact type are provided on individual contact pages in the Contact section (pages 2004 thru 2011). A brief description of each contact type is presented on page 2003. Also, typical performance data of M Series connectors and contacts is shown below.

Housings

M Series connector housings are made of either diallyl phthalate (blue) or general purpose phenolic (black).

Diallyl phthalate housings are molded of material per MIL-M-14, Type SDG. These housings are ideally suited for use where adverse environmental conditions are a critical factor. Their advantages include exceptional stability; excellent resistance to acids, alkalies and solvents; low moisture absorption; and good dielectric strength.

Phenolic housings are molded of material per MIL-M-14, Type CFG. The performance characteristics of these housings make them an excellent choice for applications in which exceptional resistance to acids, alkalies or solvents is not of prime concern.

Hardware

A variety of materials such as plated steel, stainless steel and aluminum, are used in the construction of M Series connector hardware. This ensures the proper operation and durability of each hardware component, while offering a choice of economies to satisfy particular application requirements. The materials of each hardware component are specified on the individual hardware component pages in the Hardware section (pages 2059 thru 2070).

Performance Data

Recognized under the Component Program of Underwriters Laboratories Inc. for 250 volts, File No. E28476

Certified by Canadian Standard Association File No. LR 16455

Temperature Rating: Phenolic Housings, –55°C to +150°C
Diallyl Phthalate Housings, –65°C to +125°C

Dielectric Withstanding Voltage (at sea level): Type II Contacts, 1500 VAC, RMS
Type III+ Contacts, 900 VAC, RMS

Durability (Mating/Unmating): Types II and III+ Contacts, Gold Plated; 500 cycles
Types II and III+ Contacts, Bright Tin-Lead Plated; 50 cycles
Type I Contacts, Gold Plated; 100 cycles

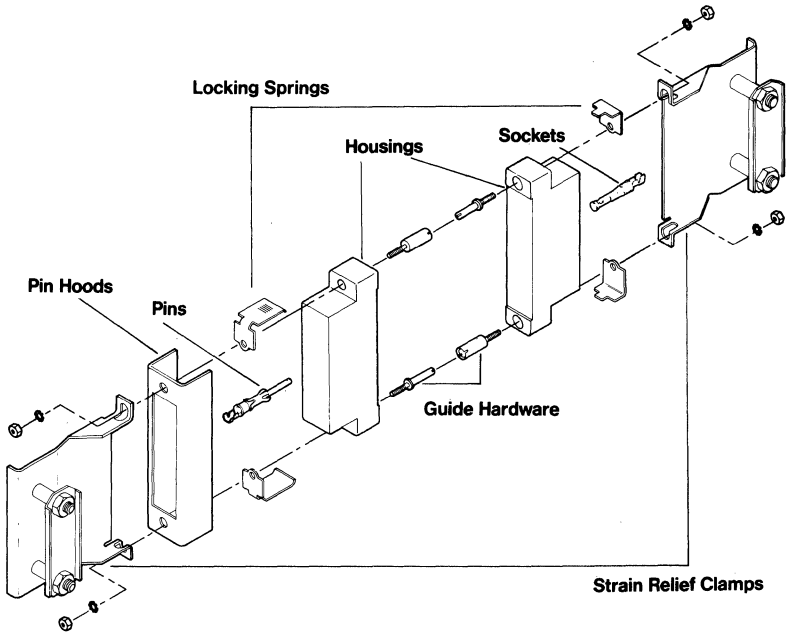
Note: For detailed information on the above performance data and further information on other performance data such as Insulation Resistance, Thermal Shock, Moisture Resistance, Vibration and Physical Shock, request AMP Product Specification No. 108-10001.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Application

A

Featured Hardware
- Strain Relief Clamps
- Locking Springs
- Pin Hoods
- Guide Hardware

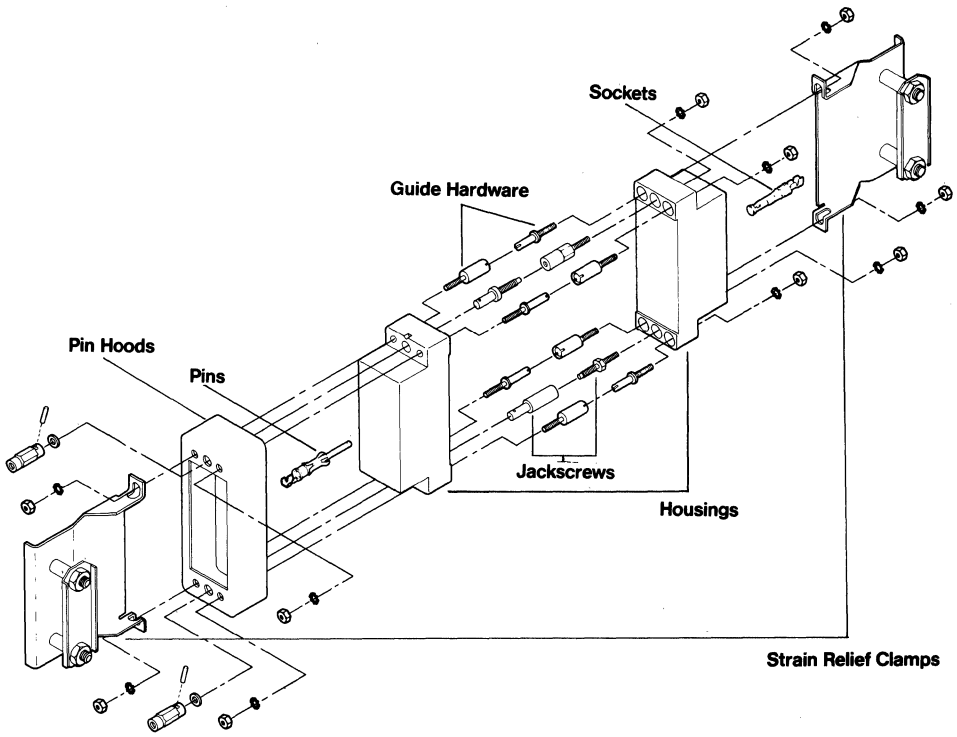


Refer to pages 2020 and 2021 for component selection.

Application

B

Featured Hardware
- Strain Relief Clamps
- Pin Hoods
- Jackscrews
- Guide Hardware

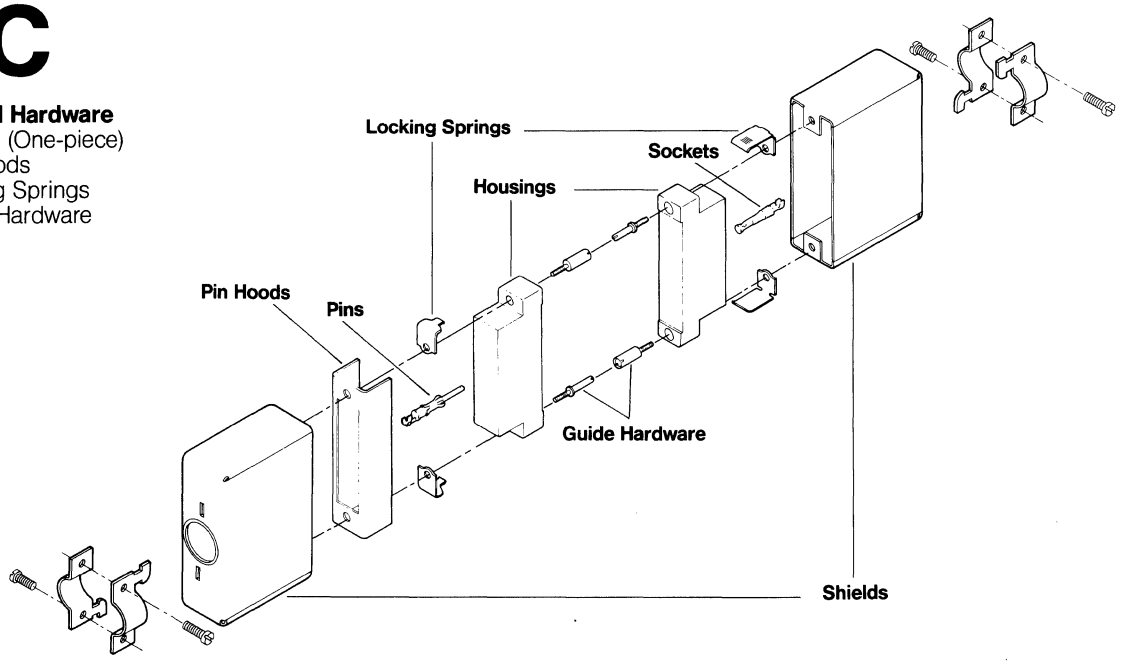


Refer to pages 2022 and 2023 for component selection.

Application

C

Featured Hardware
- Shields (One-piece)
- Pin Hoods
- Locking Springs
- Guide Hardware

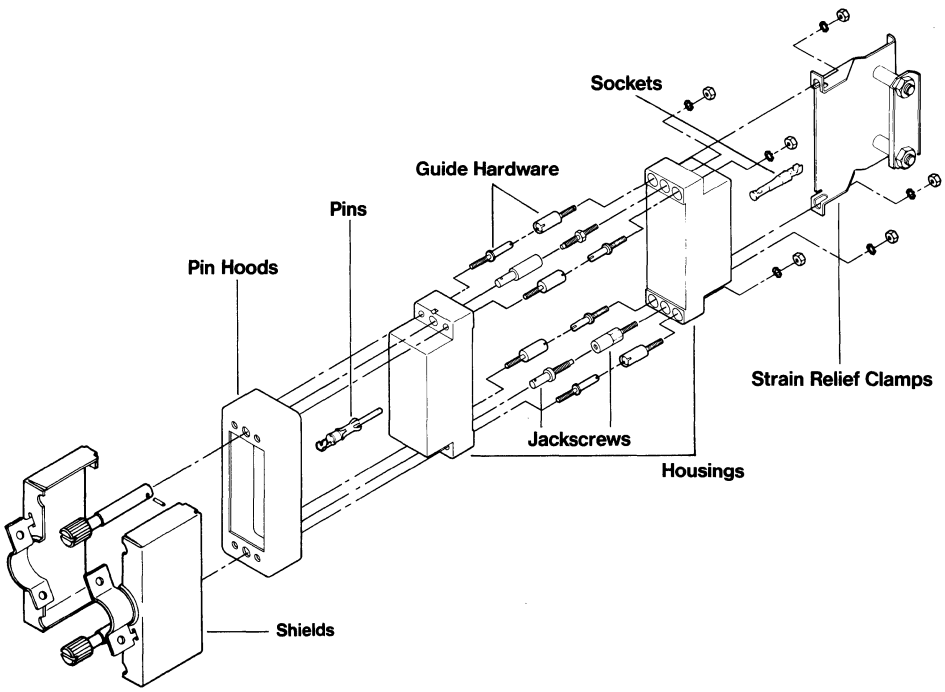


Refer to pages 2024 and 2025 for component selection.

Application

D

Featured Hardware
- Shields (Two-piece)
- Pin Hoods
- Jackscrews
- Strain Relief Clamps
- Guide Hardware



Refer to pages 2026 and 2027 for component selection.

Specifications subject to change.
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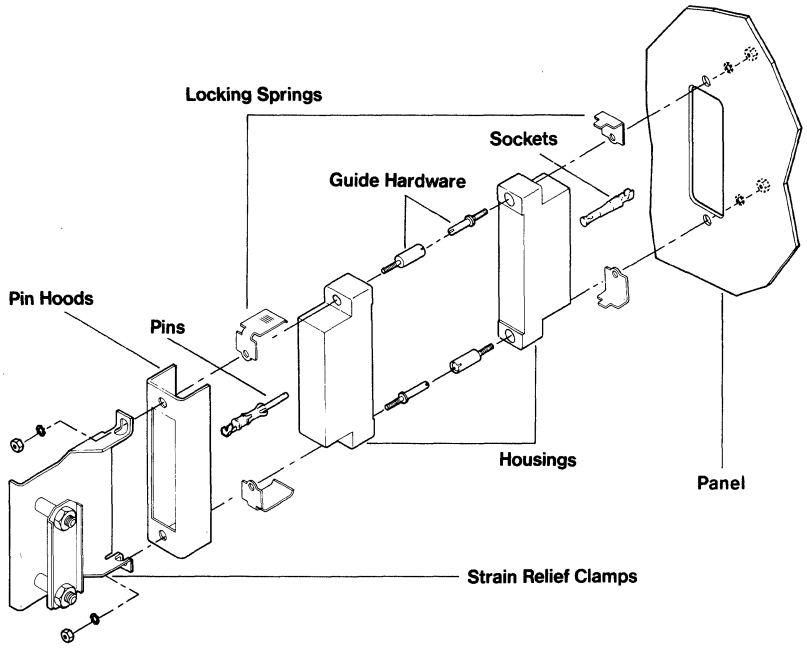
Application

E

Featured Hardware
- Strain Relief Clamps
- Locking Springs
- Pin Hoods
- Guide Hardware

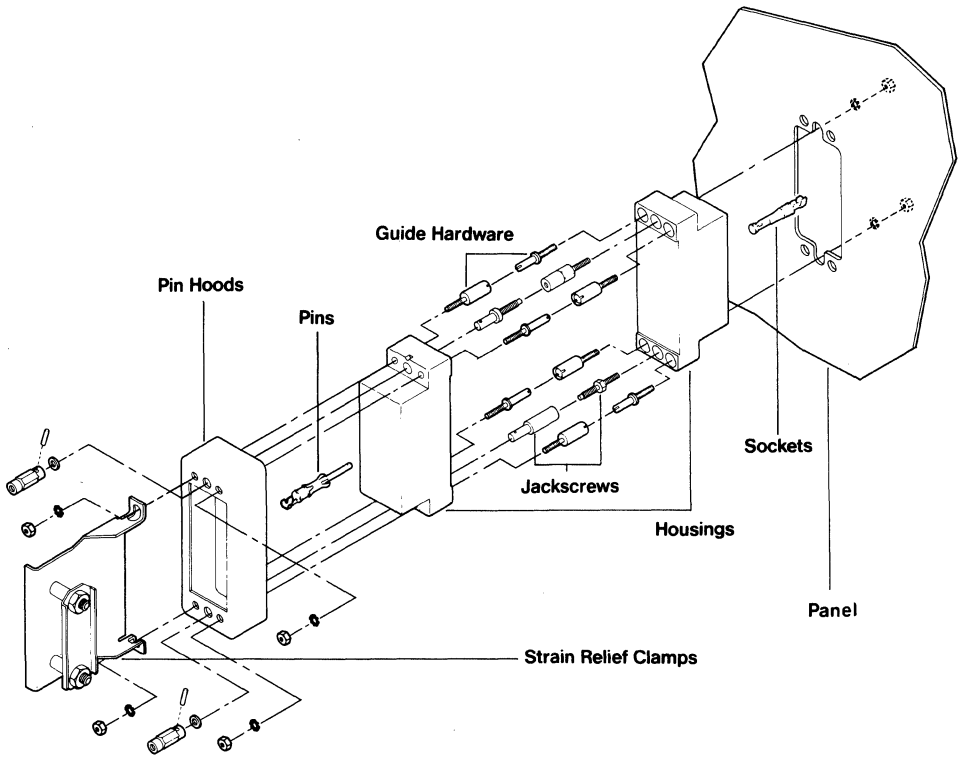


Refer to pages 2028 and 2029 for component selection.

Application

F

Featured Hardware
- Strain Relief Clamps
- Pin Hoods
- Jackscrews
- Guide Hardware

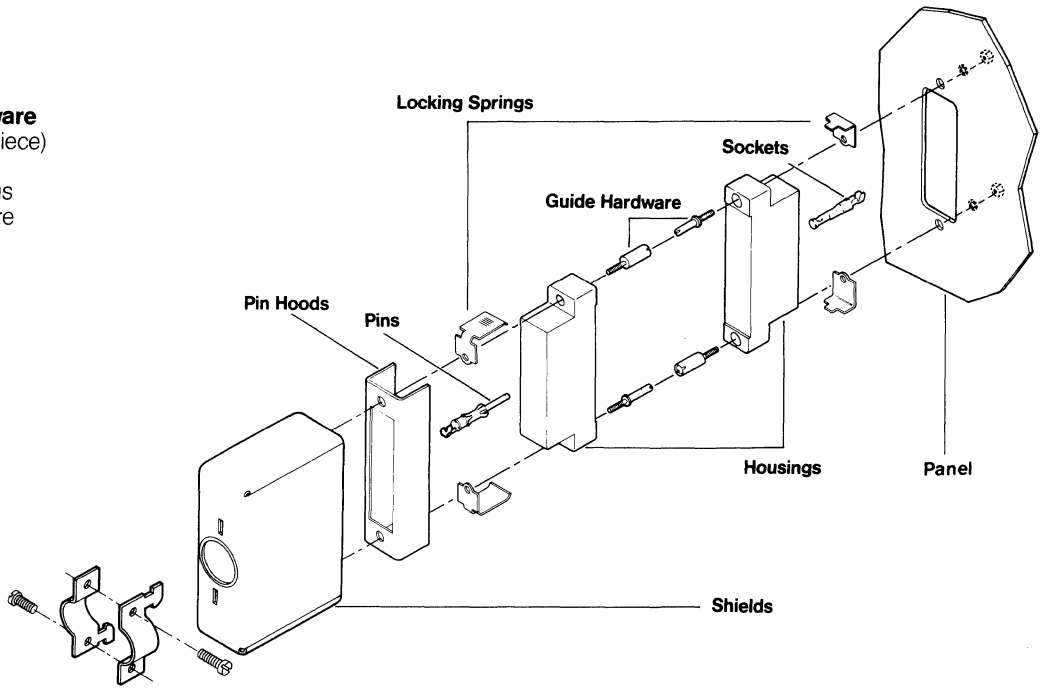


Refer to pages 2030 and 2031 for component selection.

Application

G

Featured Hardware
- Shields (One-piece)
- Pin Hoods
- Locking Springs
- Guide Hardware

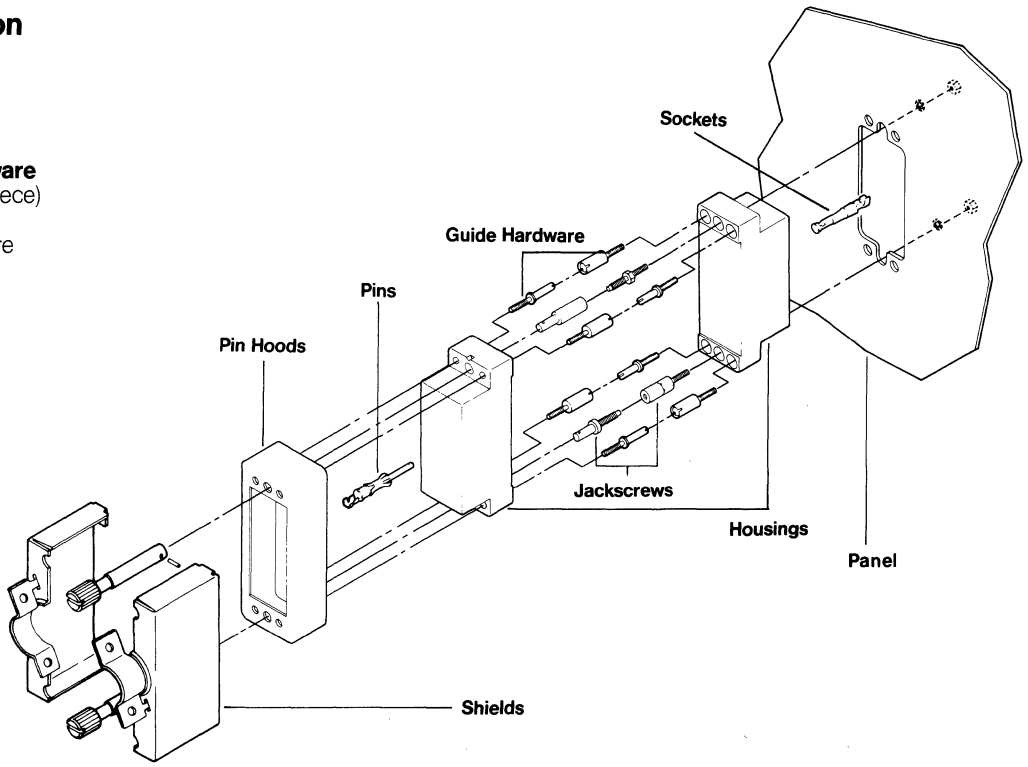


Refer to pages 2032 and 2033 for component selection.

Application

H

Featured Hardware
- Shields (Two-piece)
- Pin Hoods
- Guide Hardware
- Jackscrews



Refer to pages 2034 and 2035 for component selection.

Specifications subject to change.
For latest design specifications...
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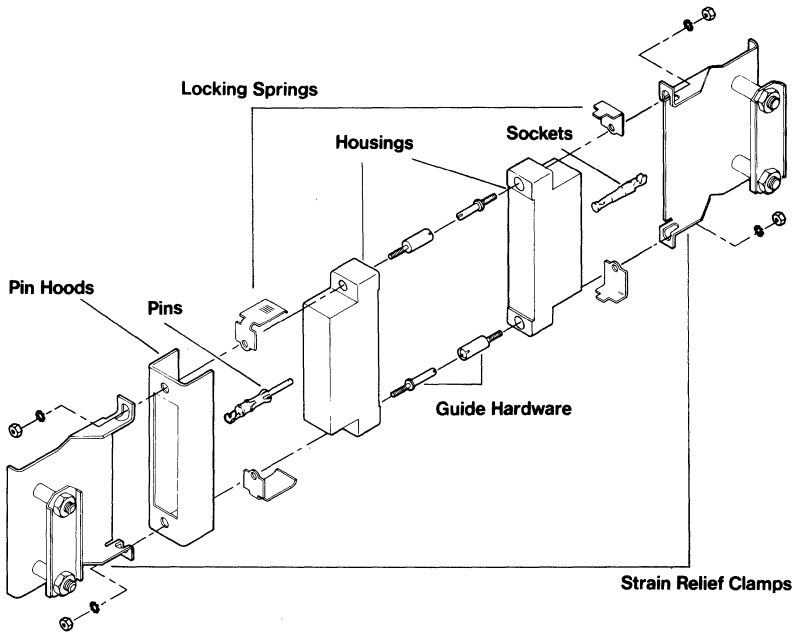
Application A



Component Description			Number of Positions				
			6	14	20	26	34
HOUSINGS Pages 2036 through 2041	Plug Block	Phenolic	202758-1	201355-1	201356-1	201359-1	201357-1
	Receptacle Block	Phenolic	202757-1	201298-1	200346-2	200512-2	200838-2
	Plug Block	Diallyl Phthalate	202758-3	201355-3	201356-3	201359-3	201357-3
	Receptacle Block	Diallyl Phthalate	202757-3	201298-3	200346-4	200512-3	200838-3
SHIELDS Pages 2065 through 2068	180° Two Piece Long	Al. Anodized	–	–	–	–	–
		Zinc Plated Steel	–	–	–	–	–
	180° Two Piece Short	Al. Anodized	–	–	–	–	–
		Zinc Plated Steel	–	–	–	–	–
		Zinc Plated Cast Al.	–	–	–	–	–
	90° Two Piece Long	Zinc Plated Steel	–	–	–	–	–
	90° Two Piece Short	Zinc Plated Steel	–	–	–	–	–
	45° Two Piece Short	Zinc Plated Steel	–	–	–	–	–
	45° Two Piece Deep	Zinc Plated Steel	–	–	–	–	–
	180° One Piece Long	Zinc Plated Steel	–	–	–	–	–
	180° One Piece Short	Zinc Plated Steel	–	–	–	–	–
	90° One Piece Short	Zinc Plated Steel	–	–	–	–	–
STRAIN RELIEF CLAMPS Page 2069	Long	Zinc Plated Steel	–	201843-1	–	201845-1	201846-1
	Short	Zinc Plated Steel	203432-1	200686-1	–	201229-1	–
	Long	Stainless Steel	–	–	–	–	–
	Short	Stainless Steel	–	–	201237-1	–	201224-1
JACKSCREWS Pages 2059 and 2060	Fixed Male	Stainless Steel	–	–	–	–	–
	Fixed Female	Stainless Steel	–	–	–	–	–
	Long Long Male	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Long Long Female	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Long Male	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Long Female	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Short Short Male	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Short Short Female	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
GUIDE HARDWARE Page 2062	Center Male	Stainless Steel	200389-2	200389-2	200389-2	200389-2	200389-2
	Center Female	Stainless Steel	200390-2	200390-2	200390-2	200390-2	200390-2
	Corner Male	Stainless Steel	–	–	–	–	200833-2
	Corner Female	Stainless Steel	–	–	–	–	200835-2
LOCKING SPRINGS[1] Page 2061	Male–Nickel Plated Spring Steel		201921-1	201921-1	201921-1	201923-1	201925-1
	Female–Stainless Steel		201922-1	201922-1	201922-1	201924-1	201926-1
PIN HOODS Pages 2063 and 2064	Internal Open End	Zinc Plated Steel	204258-6	201363-4	201362-4	201785-4	201786-4
	Internal Closed End	Zinc Plated Steel	–	–	–	–	–
	External Closed End	Al. Iridite	–	–	–	–	–
	External Closed End	Zinc Plated Steel	–	–	–	–	–

[1]Each part number contains two locking springs. Order one male and one female for each mated pair of connectors.

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1. Choose the application that most closely meets your requirements. Previously shown on pages 2016 through 2019.
2. Find the appropriate column for the number of positions required.
3. Select part numbers required for the application listed in the column below the number of positions.

   If a part number is not listed for a particular item, it is not available.

   If more than one part number is listed for a particular hardware item, choose the one which best fits your application.
4. Dimensional information is available on the indicated pages under description column.
5. Select Contacts: Type II page 2004, Type III+ pages 2005 and 2006, Subminiature Coaxial page 2008.

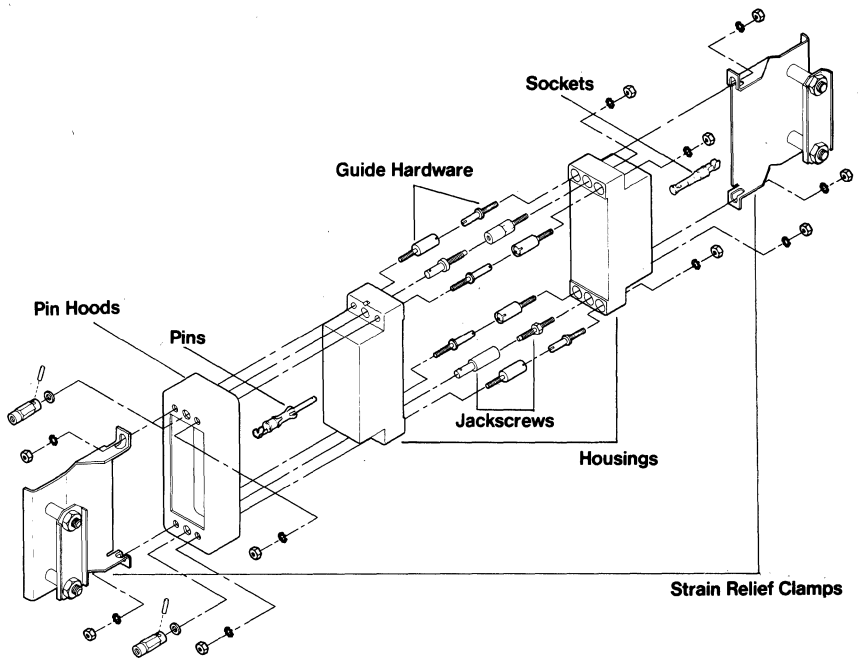
Special application housings may be substituted for these standard housings. See Special Application Section.

This cable-to-cable application utilizes locking springs, strain relief clamps, a pin hood for pin protection and guide hardware.

The 34 and 50 position connectors can be used with either center or corner guide hardware. If center guide hardware is used an additional four 4-40 screws, nuts and lockwashers are required to secure the locking springs. Corner guides require four guide pins and four guide sockets for each mated pair of connectors.

Number of Positions						Component Description		
41	50	75	104	104CF	160CF			
202135-2	201358-1	–	–	–	–	Plug Block Receptacle Block	Phenolic	HOUSINGS Pages 2036 through 2041
201302-1	200277-2	–	–	–	–			
202135-4	201358-3	–	–	–	–	Plug Block Receptacle Block	Diallyl Phthalate	
201302-3	200277-4	–	–	–	–			
–	–	–	–	–	–	180° Two Piece Long	Al. Anodized	SHIELDS Pages 2065 through 2068
–	–	–	–	–	–		Zinc Plated Steel	
–	–	–	–	–	–	180° Two Piece Short	Al. Anodized	
–	–	–	–	–	–		Zinc Plated Steel	
–	–	–	–	–	–		Zinc Plated Cast Al.	
–	–	–	–	–	–	90° Two Piece Long	Zinc Plated Steel	
–	–	–	–	–	–	90° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Deep		
–	–	–	–	–	–	180° One Piece Long		
–	–	–	–	–	–	180° One Piece Short		
–	–	–	–	–	–	90° One Piece Short		
–	–	–	–	–	–	Long Short	Zinc Plated Steel	STRAIN RELIEF CLAMPS Page 2069
–	201182-1	–	–	–	–			
201766-1	201847-1	–	–	–	–	Long Short	Stainless Steel	
–	–	–	–	–	–			
–	–	–	–	–	–	Fixed Male Fixed Female	Stainless Steel	JACKSCREWS Pages 2059 and 2060
–	–	–	–	–	–			
–	–	–	–	–	–	Long Long Male	Tip: Stainless Steel Body: Die Cast Zinc	
–	–	–	–	–	–	Long Long Female		
–	–	–	–	–	–	Long Male		
–	–	–	–	–	–	Long Female		
–	–	–	–	–	–	Short Short Male		
–	–	–	–	–	–	Short Short Female		
200389-2	200389-2	–	–	–	–	Center Male Center Female Corner Male Corner Female	Stainless Steel	GUIDE HARDWARE Page 2062
200390-2	200390-2	–	–	–	–			
–	200833-2	–	–	–	–			
–	200835-2	–	–	–	–			
201921-1	201925-1	–	–	–	–	Male–Nickel Plated Spring Steel		LOCKING SPRINGS[1] Page 2061
201922-1	201926-1	–	–	–	–	Female–Stainless Steel		
–	201317-4	–	–	–	–	Internal Open End	Zinc Plated Steel	PIN HOODS Pages 2063 and 2064
–	–	–	–	–	–	Internal Closed End	Zinc Plated Steel	
–	–	–	–	–	–	External Closed End	Al. Iridite	
–	–	–	–	–	–	External Closed End	Zinc Plated Steel	

Application B



Component Description			Number of Positions				
			6	14	20	26	34
HOUSINGS Pages 2036 through 2041	Plug Block	Phenolic	202758-1	201355-1	201356-1	201359-1	201357-1
	Receptacle Block	Phenolic	202757-1	201298-1	200346-2	200512-2	200838-2
	Plug Block	Diallyl Phthalate	202758-3	201355-3	201356-3	201359-3	201357-3
	Receptacle Block	Diallyl Phthalate	202757-3	201298-3	200346-4	200512-3	200838-3
SHIELDS Pages 2065 through 2068	180° Two Piece Long	Al. Anodized	–	–	–	–	–
	180° Two Piece Long	Zinc Plated Steel	–	–	–	–	–
	180° Two Piece Short	Al. Anodized	–	–	–	–	–
	180° Two Piece Short	Zinc Plated Steel	–	–	–	–	–
	180° Two Piece Short	Zinc Plated Cast Al.	–	–	–	–	–
	90° Two Piece Long	Zinc Plated Steel	–	–	–	–	–
	90° Two Piece Short	Zinc Plated Steel	–	–	–	–	–
	45° Two Piece Short	Zinc Plated Steel	–	–	–	–	–
	45° Two Piece Deep	Zinc Plated Steel	–	–	–	–	–
	180° One Piece Long	Zinc Plated Steel	–	–	–	–	–
	180° One Piece Short	Zinc Plated Steel	–	–	–	–	–
	90° One Piece Short	Zinc Plated Steel	–	–	–	–	–
STRAIN RELIEF CLAMPS Page 2069	Long	Zinc Plated Steel	–	201843-1	–	201845-1	201846-1
	Short	Zinc Plated Steel	203432-1	200686-1	–	201229-1	–
	Long	Stainless Steel	–	–	–	–	–
	Short	Stainless Steel	–	–	201237-1	–	201224-1
JACKSCREWS[1] Pages 2059 and 2060	Fixed Male	Stainless Steel	201092-1	201092-1	201092-1	201092-1	201092-1
	Fixed Female	Stainless Steel	201089-1	201089-1	201089-1	201089-1	201089-1
	Long Long Male	Tip: Stainless Steel Body: Die Cast Zinc	–	–	–	–	–
	Long Long Female	Tip: Stainless Steel Body: Die Cast Zinc	–	–	–	–	–
	Long Male	Tip: Stainless Steel Body: Die Cast Zinc	–	–	–	–	–
	Long Female	Tip: Stainless Steel Body: Die Cast Zinc	–	–	–	–	–
	Short Short Male	Tip: Stainless Steel Body: Die Cast Zinc	201827-1	201827-1	201827-1	201827-1	201827-1
	Short Short Female	Tip: Stainless Steel Body: Die Cast Zinc	201828-1	201828-1	201828-1	201828-1	201828-1
GUIDE HARDWARE Page 2062	Center Male	Stainless Steel	–	–	–	–	–
	Center Female	Stainless Steel	–	–	–	–	–
	Corner Male	Stainless Steel	–	–	–	–	200833-2
	Corner Female	Stainless Steel	–	–	–	–	200835-2
LOCKING SPRINGS Page 2061	Male–Nickel Plated Spring Steel		–	–	–	–	–
	Female–Stainless Steel		–	–	–	–	–
PIN HOODS Pages 2063 and 2064	Internal Open End	Zinc Plated Steel	204258-6	201363-4	201362-4	201785-4	201786-4
	Internal Closed End	Zinc Plated Steel	–	–	–	–	202434-4
	External Closed End	Al. Iridite	–	–	–	201349-2	201350-2
	External Closed End	Zinc Plated Steel	–	201347-2	–	–	–

[1]Listed Jackscrews have 6-32 single lead threads. For corresponding Jackscrews with 6-32 double lead threads, refer to pages 2059 and 2060.

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1. Choose the application that most closely meets your requirements. Previously shown on pages 2016 through 2019.
2. Find the appropriate column for the number of positions required.
3. Select part numbers required for the application listed in the column below the number of positions.

   If a part number is not listed for a particular item, it is not available.

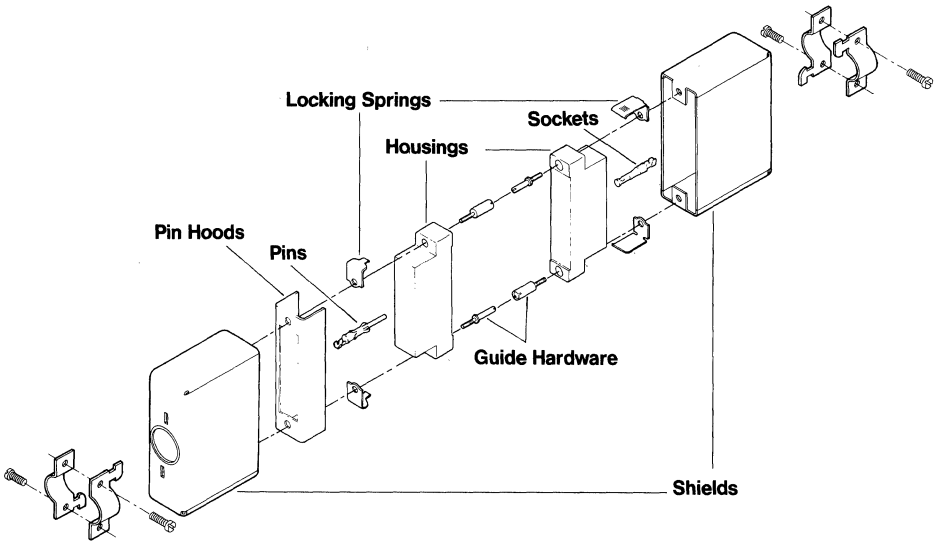
   If more than one part number is listed for a particular hardware item, choose the one which best fits your application.
4. Dimensional information is available on the indicated pages under description column.
5. Select Contacts: Type II page 2004, Type III+ pages 2005 and 2006, Subminiature Coaxial page 2008.

Special application housings may be substituted for these standard housings. See Special Application Section.

This cable-to-cable application utilizes jackscrews, strain relief clamps and guide hardware. A pin hood is provided for pin protection. Sizes 6, 14, 20, 26, and 41 **do not** use guide hardware with this application.

Number of Positions						Component Description		
41	50	75	104	104CF	160CF			
202135-2	201358-1	201310-1	201345-1	–	–	Plug Block / Receptacle Block	Phenolic	HOUSINGS Pages 2036 through 2041
201302-1	200277-2	201311-1	201037-1	–	–			
202135-4	201358-3	201310-3	201345-2	–	–	Plug Block / Receptacle Block	Diallyl Phthalate	
201302-3	200277-4	201311-3	201037-2	–	–			
–	–	–	–	–	–	180° Two Piece Long	Al. Anodized	SHIELDS Pages 2065 through 2068
–	–	–	–	–	–		Zinc Plated Steel	
–	–	–	–	–	–	180° Two Piece Short	Al. Anodized	
–	–	–	–	–	–		Zinc Plated Steel	
–	–	–	–	–	–		Zinc Plated Cast Al.	
–	–	–	–	–	–	90° Two Piece Long	Zinc Plated Steel	
–	–	–	–	–	–	90° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Deep		
–	–	–	–	–	–	180° One Piece Long		
–	–	–	–	–	–	180° One Piece Short		
–	–	–	–	–	–	90° One Piece Short		
–	–	–	201849-1	–	–	Long / Short	Zinc Plated Steel	STRAIN RELIEF CLAMPS Page 2069
–	201182-1	200730-1	–	–	–			
201766-1	201847-1	201848-1	–	–	–	Long / Short	Stainless Steel	
–	–	–	201221-1	–	–			
201092-1	201092-1	201092-1	201092-1	–	–	Fixed Male / Fixed Female	Stainless Steel	JACKSCREWS[1] Pages 2059 and 2060
201089-1	201089-1	201089-1	201089-1	–	–			
–	–	–	–	–	–	Long Long Male	Tip: Stainless Steel; Body: Die Cast Zinc	
–	–	–	–	–	–	Long Long Female		
–	–	–	–	–	–	Long Male		
–	–	–	–	–	–	Long Female		
201827-1	201827-1	201827-1	201827-1	–	–	Short Short Male		
201828-1	201828-1	201828-1	201828-1	–	–	Short Short Female		
–	–	–	–	–	–	Center Male / Center Female / Corner Male / Corner Female	Stainless Steel	GUIDE HARDWARE Page 2062
–	–	–	–	–	–			
–	200833-2	201046-2	201046-2	–	–			
–	200835-2	201047-2	201047-2	–	–			
–	–	–	–	–	–	Male–Nickel Plated Spring Steel		LOCKING SPRINGS Page 2061
–	–	–	–	–	–	Female–Stainless Steel		
–	201317-4	–	–	–	–	Internal Open End	Zinc Plated Steel	PIN HOODS Pages 2063 and 2064
–	202394-2	201369-4	201364-4	–	–	Internal Closed End	Zinc Plated Steel	
–	–	–	–	–	–	External Closed End	Al. Iridite	
–	201390-5	201368-4	201346-4	–	–	External Closed End	Zinc Plated Steel	

Application C



Component Description			Number of Positions				
			6	14	20	26	34
HOUSINGS Pages 2036 through 2041	Plug Block	Phenolic	–	201355-1	201356-1	201359-1	201357-1
	Receptacle Block	Phenolic	–	201298-1	200346-2	200512-2	200838-2
	Plug Block	Diallyl Phthalate	–	201355-3	201356-3	201359-3	201357-3
	Receptacle Block	Diallyl Phthalate	–	201298-3	200346-4	200512-3	200838-3
SHIELDS Pages 2065 through 2068	180° Two Piece Long	Al. Anodized	–	–	–	–	–
		Zinc Plated Steel	–	–	–	–	–
	180° Two Piece Short	Al. Anodized	–	–	–	–	–
		Zinc Plated Steel	–	–	–	–	–
		Zinc Plated Cast Al.	–	–	–	–	–
	90° Two Piece Long	Zinc Plated Steel	–	–	–	–	–
	90° Two Piece Short	Zinc Plated Steel	–	–	–	–	–
	45° Two Piece Short	Zinc Plated Steel	–	–	–	–	–
	45° Two Piece Deep	Zinc Plated Steel	–	–	–	–	–
	180° One Piece Long	Zinc Plated Steel	–	201378-2	201380-2	201382-2	201384-2
	180° One Piece Short	Zinc Plated Steel	–	201360-2	201227-2	201169-2	201165-2
	90° One Piece Short	Zinc Plated Steel	–	201467-2	201460-2	201468-2	201469-2
STRAIN RELIEF CLAMPS Page 2069	Long	Zinc Plated Steel	–	–	–	–	–
	Short	Zinc Plated Steel	–	–	–	–	–
	Long	Stainless Steel	–	–	–	–	–
	Short	Stainless Steel	–	–	–	–	–
JACKSCREWS Pages 2059 and 2060	Fixed Male	Stainless Steel	–	–	–	–	–
	Fixed Female	Stainless Steel	–	–	–	–	–
	Long Long Male	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Long Long Female	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Long Male	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Long Female	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Short Short Male	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Short Short Female	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
GUIDE HARDWARE Page 2062	Center Male	Stainless Steel	–	200389-2	200389-2	200389-2	200389-2
	Center Female	Stainless Steel	–	200390-2	200390-2	200390-2	200390-2
	Corner Male	Stainless Steel	–	–	–	–	200833-2
	Corner Female	Stainless Steel	–	–	–	–	200835-2
LOCKING SPRINGS[1] Page 2061	Male–Nickel Plated Spring Steel		–	201921-1	201921-1	201923-1	201925-1
	Female–Stainless Steel		–	201922-1	201922-1	201924-1	201926-1
PIN HOODS Pages 2063 and 2064	Internal Open End	Zinc Plated Steel	–	201363-4	201362-4	201785-4	201786-4
	Internal Closed End	Zinc Plated Steel	–	–	–	–	–
	External Closed End	Al. Iridite	–	–	–	–	–
	External Closed End	Zinc Plated Steel	–	–	–	–	–

[1]Each part number contains two locking springs. Order one male and one female for each mated pair of connectors.

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1. Choose the application that most closely meets your requirements. Previously shown on pages 2016 through 2019.

2. Find the appropriate column for the number of positions required.

3. Select part numbers required for the application listed in the column below the number of positions.

   If a part number is not listed for a particular item, it is not available.

   If more than one part number is listed for a particular hardware item, choose the one which best fits your application.

4. Dimensional information is available on the indicated pages under description column.

5. Select Contacts: Type II page 2004, Type III+ pages 2005 and 2006, Subminiature Coaxial page 2008.

Special application housings may be substituted for these standard housings. See Special Application Section.

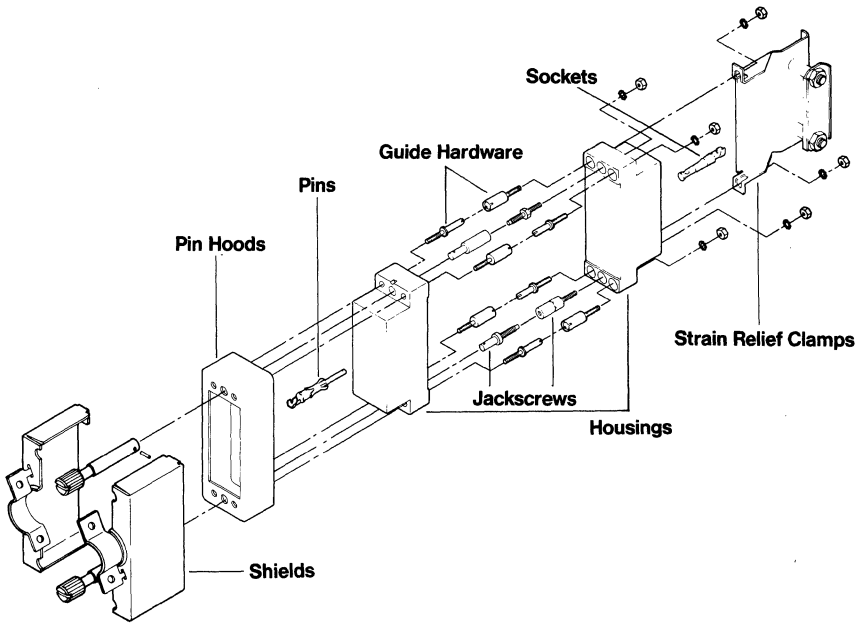
This cable-to-cable application utilizes locking springs, one piece shields, a pin hood for pin protection and guide hardware. The shields are available with both 180° and 90° cable exits. The 180° shields are available in a long version which provides pin protection in lieu of a pin hood.

A short shield and a pin hood or a long shield can be used on one side only of a mated pair of connectors. The mating connector must use a short shield.

The 34 and 50 position connectors can be used with either center or corner guide hardware. If center guides are used an additional four 4-40 screws are required to secure the locking springs. If corner guides are used an additional two 4-40 screws will be required to attach the shield. Corner guides require four guide pins and four guide sockets for each mated pair of connectors.

Number of Positions						Component Description		
41	50	75	104	104CF	160CF			
202135-2	201358-1	–	–	–	–	Plug Block / Receptacle Block	Phenolic	HOUSINGS Pages 2036 through 2041
201302-1	200277-2	–	–	–	–			
202135-4	201358-3	–	–	–	–	Plug Block / Receptacle Block	Diallyl Phthalate	
201302-3	200277-4	–	–	–	–			
–	–	–	–	–	–	180° Two Piece Long	Al. Anodized	SHIELDS Pages 2065 through 2068
–	–	–	–	–	–		Zinc Plated Steel	
–	–	–	–	–	–	180° Two Piece Short	Al. Anodized	
–	–	–	–	–	–		Zinc Plated Steel	
–	–	–	–	–	–		Zinc Plated Cast Al.	
–	–	–	–	–	–	90° Two Piece Long	Zinc Plated Steel	
–	–	–	–	–	–	90° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Deep		
–	201386-2	–	–	–	–	180° One Piece Long		
–	201173-2	–	–	–	–	180° One Piece Short		
201486-2	201470-2	–	–	–	–	90° One Piece Short		
–	–	–	–	–	–	Long / Short	Zinc Plated Steel	STRAIN RELIEF CLAMPS Page 2069
–	–	–	–	–	–			
–	–	–	–	–	–	Long / Short	Stainless Steel	
–	–	–	–	–	–			
–	–	–	–	–	–	Fixed Male / Fixed Female	Stainless Steel	JACKSCREWS Pages 2059 and 2060
–	–	–	–	–	–			
–	–	–	–	–	–	Long Long Male	Tip: Stainless Steel Body: Die Cast Zinc	
–	–	–	–	–	–	Long Long Female		
–	–	–	–	–	–	Long Male		
–	–	–	–	–	–	Long Female		
–	–	–	–	–	–	Short Short Male		
–	–	–	–	–	–	Short Short Female		
200389-2	200389-2	–	–	–	–	Center Male / Center Female / Corner Male / Corner Female	Stainless Steel	GUIDE HARDWARE Page 2062
200390-2	200390-2	–	–	–	–			
–	200833-2	–	–	–	–			
–	200835-2	–	–	–	–			
201921-1	201925-1	–	–	–	–	Male—Nickel Plated Spring Steel		LOCKING SPRINGS[1] Page 2061
201922-1	201926-1	–	–	–	–	Female—Stainless Steel		
–	201317-4	–	–	–	–	Internal Open End	Zinc Plated Steel	PIN HOODS Pages 2063 and 2064
–	–	–	–	–	–	Internal Closed End	Zinc Plated Steel	
–	–	–	–	–	–	External Closed End	Al. Iridite	
–	–	–	–	–	–	External Closed End	Zinc Plated Steel	

Application D



	Component Description		Number of Positions				
			6	14	20	26	34
HOUSINGS Pages 2036 through 2041	Plug Block / Receptacle Block	Phenolic	–	–	201356-1	201359-1	201357-1
			–	–	200346-2	200512-2	200838-2
	Plug Block / Receptacle Block	Diallyl Phthalate	–	–	201356-3	201359-3	201357-3
			–	–	200346-4	200512-3	200838-3
SHIELDS Pages 2065 through 2068	180° Two Piece Long	Al. Anodized	–	–	–	201576-1	201571-1
		Zinc Plated Steel	–	–	–	201576-2	201571-2
	180° Two Piece Short	Al. Anodized	–	–	–	200514-1	200517-1
		Zinc Plated Steel	–	–	204087-1	200514-2	200517-2
		Zinc Plated Cast Al.	–	–	–	–	–
	90° Two Piece Long	Zinc Plated Steel	–	–	–	–	–
	90° Two Piece Short		–	–	–	–	–
	45° Two Piece Short		–	–	–	–	–
	45° Two Piece Deep		–	–	–	–	–
	180° One Piece Long		–	–	–	–	–
	180° One Piece Short		–	–	–	–	–
	90° One Piece Short		–	–	–	–	–
STRAIN RELIEF CLAMPS Page 2069	Long / Short	Zinc Plated Steel	–	–	–	201845-1	201846-1
			–	–	–	201229-1	–
	Long / Short	Stainless Steel	–	–	–	–	–
			–	–	201237-1	–	201224-1
JACKSCREWS Pages 2059 and 2060	Fixed Male / Fixed Female	Stainless Steel	–	–	201092-1	201092-1	201092-1
			–	–	201089-1	201089-1	201089-1
	Long Long Male	Tip: Stainless Steel; Body: Die Cast Zinc	–	–	–	–	–
	Long Long Female		–	–	–	–	–
	Long Male		–	–	201413-1	201413-1	201413-1
	Long Female		–	–	201414-1	201414-1	201414-1
	Short Short Male		–	–	–	–	–
	Short Short Female		–	–	–	–	–
GUIDE HARDWARE Page 2062	Center Male / Center Female / Corner Male / Corner Female	Stainless Steel	–	–	–	–	–
			–	–	–	–	–
			–	–	–	–	200833-2
			–	–	–	–	200835-2
LOCKING SPRINGS[1] Page 2061	Male—Nickel Plated Spring Steel		–	–	–	–	–
	Female—Stainless Steel		–	–	–	–	–
PIN HOODS Pages 2063 and 2064	Internal Open End	Zinc Plated Steel	–	–	–	–	201786-4
	Internal Closed End	Zinc Plated Steel	–	–	–	–	202434-4
	External Closed End	Al. Iridite	–	–	–	–	201350-2
	External Closed End	Zinc Plated Steel	–	–	–	–	–

[1] Listed Jackscrews have 6-32 single lead threads. For corresponding Jackscrews with 6-32 double lead threads, refer to pages 2059 and 2060.

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1. Choose the application that most closely meets your requirements. Previously shown on pages 2016 through 2019.
2. Find the appropriate column for the number of positions required.
3. Select part numbers required for the application listed in the column below the number of positions.

   If a part number is not listed for a particular item, it is not available.

   If more than one part number is listed for a particular hardware item, choose the one which best fits your application.
4. Dimensional information is available on the indicated pages under description column.
5. Select Contacts: Type II page 2004, Type III+ pages 2005 and 2006, Subminiature Coaxial page 2008.

Special application housings may be substituted for these standard housings. See Special Application Section.

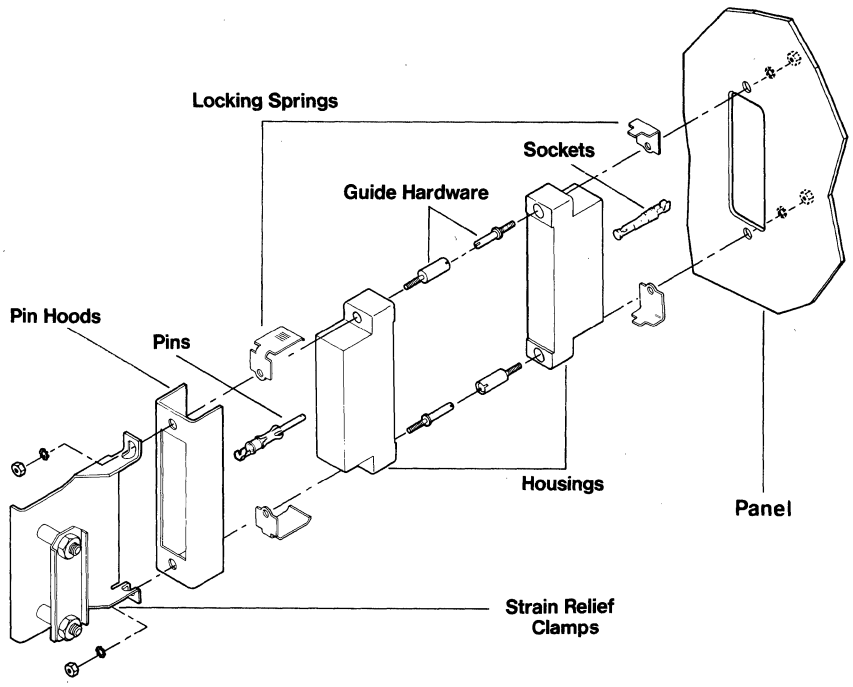
This cable-to-cable application utilizes jackscrews, a two piece short shield, a strain relief clamp, a pin hood for pin protection and guide hardware.

Do not use a pin hood in combination with the shield for sizes 20, 26 and 41. A long shield may be used in lieu of pin hood for pin protection for all sizes except the 20 position. Shields are available with 180° cable exit and for the 50 thru 104 position connectors a 90° cable exit.

Select the appropriate jackscrew length for the type of shield chosen as indicated by symbol (△ ▲).

Number of Positions						Component Description		
41	50	75	104	104CF	160CF			
202135-2	201358-1	201310-1	201345-1	–	–	Plug Block Receptacle Block	Phenolic	HOUSINGS Pages 2036 through 2041
201302-1	200277-2	201311-1	201037-1	–	–			
202135-4	201358-3	201310-3	201345-2	–	–	Plug Block Receptacle Block	Diallyl Phthalate	
201302-3	200277-4	201311-3	201037-2	–	–			
–	201443-1△	–	–	–	–	180° Two Piece Long	Al. Anodized	SHIELDS Pages 2065 through 2068
202383-2	201443-2△	202713-2▲	204173-2▲	–	–		Zinc Plated Steel	
–	200532-1△	–	–	–	–	180° Two Piece Short	Al. Anodized	
202383-1	200532-2△	202713-1▲	204173-1▲	–	–		Zinc Plated Steel	
–	–	204209-1△	201131-1△	–	–		Zinc Plated Cast Al.	
–	203975-2▲	202711-3▲	205316-2▲	–	–	90° Two Piece Long	Zinc Plated Steel	
–	203975-1▲	202711-1▲	205316-1▲	–	–	90° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Deep		
–	–	–	–	–	–	180° One Piece Long		
–	–	–	–	–	–	180° One Piece Short		
–	–	–	–	–	–	90° One Piece Short		
–	–	–	201849-1	–	–	Long Short	Zinc Plated Steel	STRAIN RELIEF CLAMPS Page 2069
–	201182-1	200730-1	–	–	–			
201766-1	201847-1	201848-1	–	–	–	Long Short	Stainless Steel	
–	–	–	201221-1	–	–			
201092-1	201092-1	201092-1	201092-1	–	–	Fixed Male Fixed Female	Stainless Steel	JACKSCREWS[1] Pages 2059 and 2060
201089-1	201089-1	201089-1	201089-1	–	–			
–	207234-1▲	207234-1▲	207234-1▲	–	–	Long Long Male	Tip: Stainless Steel Body: Die Cast Zinc	
–	207235-1▲	207235-1▲	207235-1▲	–	–	Long Long Female		
201413-1	201413-1△	201413-1△	201413-1△	–	–	Long Male		
201414-1	201414-1△	201414-1△	201414-1△	–	–	Long Female		
–	–	–	–	–	–	Short Short Male		
–	–	–	–	–	–	Short Short Female		
–	–	–	–	–	–	Center Male Center Female Corner Male Corner Female	Stainless Steel	GUIDE HARDWARE Page 2062
–	–	–	–	–	–			
–	200833-2	201046-2	201046-2	–	–			
–	200835-2	201047-2	201047-2	–	–			
–	–	–	–	–	–	Male—Nickel Plated Spring Steel		LOCKING SPRINGS Page 2061
–	–	–	–	–	–	Female—Stainless Steel		
–	201317-4	–	–	–	–	Internal Open End	Zinc Plated Steel	PIN HOODS Pages 2063 and 2064
–	202394-2	201369-4	201364-4	–	–	Internal Closed End	Zinc Plated Steel	
–	–	–	–	–	–	External Closed End	Al. Iridite	
–	201390-5	201368-4	201346-4	–	–	External Closed End	Zinc Plated Steel	

Application E



Component Description			Number of Positions				
			6	14	20	26	34
HOUSINGS Pages 2036 through 2041	Plug Block / Receptacle Block	Phenolic	202758-1 / 202757-1	201355-1 / 201298-1	201356-1 / 200346-2	201359-1 / 200512-2	201357-1 / 200838-2
	Plug Block / Receptacle Block	Diallyl Phthalate	202758-3 / 202757-3	201355-3 / 201298-3	201356-3 / 200346-4	201359-3 / 200512-3	201357-3 / 200838-3
SHIELDS Pages 2065 through 2068	180° Two Piece Long	Al. Anodized	–	–	–	–	–
		Zinc Plated Steel	–	–	–	–	–
	180° Two Piece Short	Al. Anodized	–	–	–	–	–
		Zinc Plated Steel	–	–	–	–	–
		Zinc Plated Cast Al.	–	–	–	–	–
	90° Two Piece Long	Zinc Plated Steel	–	–	–	–	–
	90° Two Piece Short		–	–	–	–	–
	45° Two Piece Short		–	–	–	–	–
	45° Two Piece Deep		–	–	–	–	–
	180° One Piece Long		–	–	–	–	–
	180° One Piece Short		–	–	–	–	–
	90° One Piece Short		–	–	–	–	–
STRAIN RELIEF CLAMPS Page 2069	Long	Zinc Plated Steel	–	201843-1	–	201845-1	201846-1
	Short		203432-1	200686-1	–	201229-1	–
	Long	Stainless Steel	–	–	–	–	–
	Short		–	–	201237-1	–	201224-1
JACKSCREWS[1] Pages 2059 and 2060	Fixed Male / Fixed Female	Stainless Steel	– / –	– / –	– / –	– / –	– / –
	Long Long Male	Tip: Stainless Steel; Body: Die Cast Zinc	–	–	–	–	–
	Long Long Female		–	–	–	–	–
	Long Male		–	–	–	–	–
	Long Female		–	–	–	–	–
	Short Short Male		–	–	–	–	–
	Short Short Female		–	–	–	–	–
GUIDE HARDWARE Page 2062	Center Male	Stainless Steel	200389-2	200389-2	200389-2	200389-2	200389-2
	Center Female		200390-2	200390-2	200390-2	200390-2	200390-2
	Corner Male		–	–	–	–	200833-2
	Corner Female		–	–	–	–	200835-2
LOCKING SPRINGS Page 2061	Male–Nickel Plated Spring Steel		201921-1	201921-1	201921-1	201923-1	201925-1
	Female–Stainless Steel		201922-1	201922-1	201922-1	201924-1	201926-1
PIN HOODS Pages 2063 and 2064	Internal Open End	Zinc Plated Steel	204258-6	201363-4	201362-4	201785-4	201786-4
	Internal Closed End	Zinc Plated Steel	–	–	–	–	–
	External Closed End	Al. Iridite	–	–	–	–	–
	External Closed End	Zinc Plated Steel	–	–	–	–	–

[1]Each part number contains two locking springs. Order one male and one female for each mated pair of connectors.

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1. Choose the application that most closely meets your requirements. Previously shown on pages 2016 through 2019.
2. Find the appropriate column for the number of positions required.
3. Select part numbers required for the application listed in the column below the number of positions.

   If a part number is not listed for a particular item, it is not available.

   If more than one part number is listed for a particular hardware item, choose the one which best fits your application.
4. Dimensional information is available on the indicated pages under description column.
5. Select Contacts: Type II page 2004, Type III+ pages 2005 and 2006, Subminiature Coaxial page 2008.

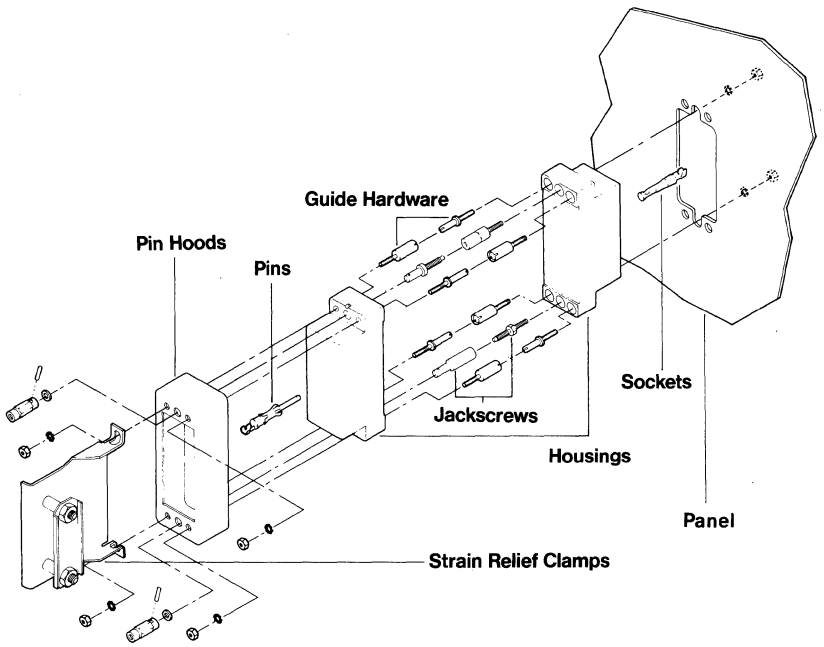
Special application housings and posted housings may be substituted for these standard housings. See Special Application and Posted Application Sections.

This cable-to-panel application utilizes locking springs, strain relief clamps, a pin hood for pin protection and guide hardware.

The 34 and 50 position connectors can be used with either center or corner guide hardware. If center guide hardware is used an additional four 4-40 screws, nuts and lockwashers are required to secure the locking springs. Corner guides require four guide pins and four guide sockets for each mated pair of connectors.

Number of Positions						Component Description		
41	50	75	104	104CF	160CF			
202135-2	201358-1	–	–	–	–	Plug Block / Receptacle Block	Phenolic	HOUSINGS Pages 2036 through 2041
201302-1	200277-2	–	–	–	–			
202135-4	201358-3	–	–	–	–	Plug Block / Receptacle Block	Diallyl Phthalate	
201302-3	200277-4	–	–	–	–			
–	–	–	–	–	–	180° Two Piece Long	Al. Anodized	SHIELDS Pages 2065 through 2068
–	–	–	–	–	–		Zinc Plated Steel	
–	–	–	–	–	–	180° Two Piece Short	Al. Anodized	
–	–	–	–	–	–		Zinc Plated Steel	
–	–	–	–	–	–		Zinc Plated Cast Al.	
–	–	–	–	–	–	90° Two Piece Long	Zinc Plated Steel	
–	–	–	–	–	–	90° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Deep		
–	–	–	–	–	–	180° One Piece Long		
–	–	–	–	–	–	180° One Piece Short		
–	–	–	–	–	–	90° One Piece Short		
–	–	–	–	–	–	Long / Short	Zinc Plated Steel	STRAIN RELIEF CLAMPS Page 2069
–	201182-1	–	–	–	–			
201766-1	201847-1	–	–	–	–	Long / Short	Stainless Steel	
–	–	–	–	–	–			
–	–	–	–	–	–	Fixed Male / Fixed Female	Stainless Steel	JACKSCREWS Pages 2059 and 2060
–	–	–	–	–	–			
–	–	–	–	–	–	Long Long Male	Tip: Stainless Steel Body: Die-Cast Zinc	
–	–	–	–	–	–	Long Long Female		
–	–	–	–	–	–	Long Male		
–	–	–	–	–	–	Long Female		
–	–	–	–	–	–	Short Short Male		
–	–	–	–	–	–	Short Short Female		
200389-2	200389-2	–	–	–	–	Center Male / Center Female / Corner Male / Corner Female	Stainless Steel	GUIDE HARDWARE Page 2062
200390-2	200390-2	–	–	–	–			
–	200833-2	–	–	–	–			
–	200835-2	–	–	–	–			
201921-1	201925-1	–	–	–	–	Male–Nickel Plated Spring Steel		LOCKING SPRINGS' Page 2061
201922-1	201926-1	–	–	–	–	Female–Stainless Steel		
–	201317-4	–	–	–	–	Internal Open End	Zinc Plated Steel	PIN HOODS Pages 2063 and 2064
–	–	–	–	–	–	Internal Closed End	Zinc Plated Steel	
–	–	–	–	–	–	External Closed End	Al. Iridite	
–	–	–	–	–	–	External Closed End	Zinc Plated Steel	

Application F



	Component Description		Number of Positions				
			6	14	20	26	34
HOUSINGS Pages 2036 through 2041	Plug Block / Receptacle Block	Phenolic	202758-1 / 202757-1	201355-1 / 201298-1	201356-1 / 200346-2	201359-1 / 200512-2	201357-1 / 200838-2
	Plug Block / Receptacle Block	Diallyl Phthalate	202758-3 / 202757-3	201355-3 / 201298-3	201356-3 / 200346-4	201359-3 / 200512-3	201357-3 / 200838-3
SHIELDS Pages 2065 through 2068	180° Two Piece Long	Al. Anodized	–	–	–	–	–
		Zinc Plated Steel	–	–	–	–	–
	180° Two Piece Short	Al. Anodized	–	–	–	–	–
		Zinc Plated Steel	–	–	–	–	–
		Zinc Plated Cast Al.	–	–	–	–	–
	90° Two Piece Long	Zinc Plated Steel	–	–	–	–	–
	90° Two Piece Short		–	–	–	–	–
	45° Two Piece Short		–	–	–	–	–
	45° Two Piece Deep		–	–	–	–	–
	180° One Piece Long		–	–	–	–	–
	180° One Piece Short		–	–	–	–	–
	90° One Piece Short		–	–	–	–	–
STRAIN RELIEF CLAMPS Page 2069	Long	Zinc Plated Steel	–	201843-1	–	201845-1	201846-1
	Short		203432-1	200686-1	–	201229-1	–
	Long	Stainless Steel	–	–	–	–	–
	Short		–	–	201237-1	–	201224-1
JACKSCREWS[1] Pages 2059 and 2060	Fixed Male	Stainless Steel	201092-1	201092-1	201092-1	201092-1	201092-1
	Fixed Female		201089-1	201089-1	201089-1	201089-1	201089-1
	Long Long Male	Tip: Stainless Steel Body: Die Cast Zinc	–	–	–	–	–
	Long Long Female		–	–	–	–	–
	Long Male		–	–	–	–	–
	Long Female		–	–	–	–	–
	Short Short Male		201827-1	201827-1	201827-1	201827-1	201827-1
	Short Short Female		201828-1	201828-1	201828-1	201828-1	201828-1
GUIDE HARDWARE Page 2062	Center Male	Stainless Steel	–	–	–	–	–
	Center Female		–	–	–	–	–
	Corner Male		–	–	–	–	200833-2
	Corner Female		–	–	–	–	200835-2
LOCKING SPRINGS Page 2061	Male—Nickel Plated Spring Steel		–	–	–	–	–
	Female—Stainless Steel		–	–	–	–	–
PIN HOODS Pages 2063 and 2064	Internal Open End	Zinc Plated Steel	204258-6	201363-4	201362-4	201785-4	201786-4
	Internal Closed End	Zinc Plated Steel	–	–	–	–	202434-4
	External Closed End	Al. Iridite	–	–	–	201349-2	201350-2
	External Closed End	Zinc Plated Steel	–	201347-2	–	–	–

[1]Listed Jackscrews have 6-32 single lead threads. For corresponding Jackscrews with 6-32 double lead threads, refer to pages 2059 and 2060.

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1. Choose the application that most closely meets your requirements.
2. Find the appropriate column for the number of positions required.
3. Select part numbers required for the application listed in the column below the number of positions.

   If a part number is not listed for a particular item, it is not available.

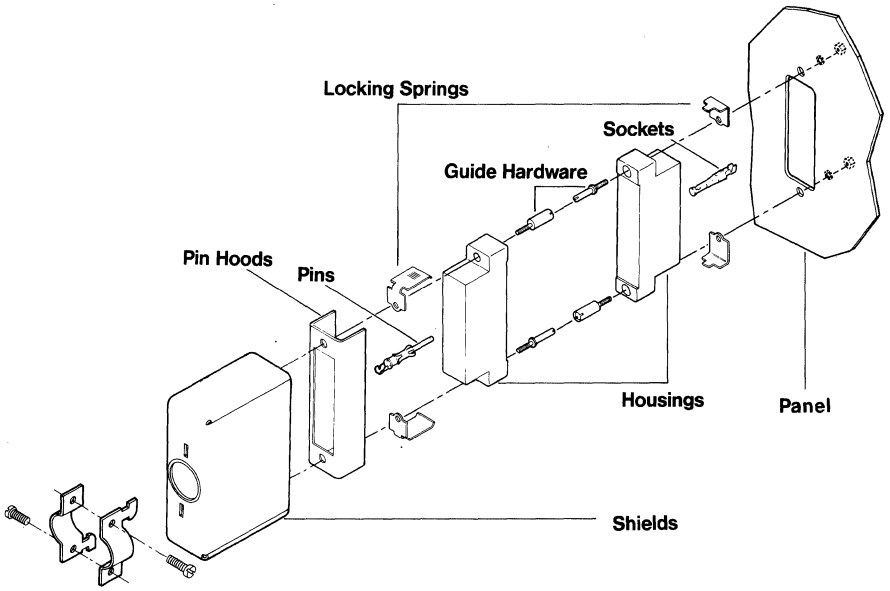
   If more than one part number is listed for a particular hardware item, choose the one which best fits your application.
4. Dimensional information is available on the indicated pages under description column.
5. Select Contacts: Type II page 2004, Type III+ pages 2005 and 2006, Subminiature Coaxial page 2008.

Special application housings and posted housings may be substituted for these standard housings. See Special Application and Posted Application Sections.

This cable-to-panel application utilizes jackscrews, strain relief clamps and guide hardware. A pin hood is provided for pin protection. Sizes 6, 14, 20, 26, and 41 **do not** use guide hardware for this application.

Number of Positions						Component Description		
41	50	75	104	104CF	160CF			
202135-2	201358-1	201310-1	201345-1	–	–	Plug Block, Receptacle Block	Phenolic	HOUSINGS Pages 2036 through 2041
201302-1	200277-2	201311-1	201037-1	–	–			
202135-4	201358-3	201310-3	201345-2	–	–	Plug Block, Receptacle Block	Diallyl Phthalate	
201302-3	200277-4	201311-3	201037-2	–	–			
–	–	–	–	–	–	180° Two Piece Long	Al. Anodized	SHIELDS Pages 2065 through 2068
–	–	–	–	–	–		Zinc Plated Steel	
–	–	–	–	–	–	180° Two Piece Short	Al. Anodized	
–	–	–	–	–	–		Zinc Plated Steel	
–	–	–	–	–	–		Zinc Plated Cast Al.	
–	–	–	–	–	–	90° Two Piece Long	Zinc Plated Steel	
–	–	–	–	–	–	90° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Deep		
–	–	–	–	–	–	180° One Piece Long		
–	–	–	–	–	–	180° One Piece Short		
–	–	–	–	–	–	90° One Piece Short		
–	–	–	201849-1	–	–	Long, Short	Zinc Plated Steel	STRAIN RELIEF CLAMPS Page 2069
–	201182-1	200730-1	–	–	–			
201766-1	201847-1	201848-1	–	–	–	Long, Short	Stainless Steel	
–	–	–	201221-1	–	–			
201092-1	201092-1	201092-1	201092-1	–	–	Fixed Male, Fixed Female	Stainless Steel	JACKSCREWS[1] Pages 2059 and 2060
201089-1	201089-1	201089-1	201089-1	–	–			
–	–	–	–	–	–	Long Long Male	Tip: Stainless Steel, Body: Die Cast Zinc	
–	–	–	–	–	–	Long Long Female		
–	–	–	–	–	–	Long Male		
–	–	–	–	–	–	Long Female		
201827-1	201827-1	201827-1	201827-1	–	–	Short Short Male		
201828-1	201828-1	201828-1	201828-1	–	–	Short Short Female		
–	–	–	–	–	–	Center Male, Center Female, Corner Male, Corner Female	Stainless Steel	GUIDE HARDWARE Page 2062
–	–	–	–	–	–			
–	200833-2	201046-2	201046-2	–	–			
–	200835-2	201047-2	201047-2	–	–			
–	–	–	–	–	–	Male–Nickel Plated Spring Steel		LOCKING SPRINGS Page 2061
–	–	–	–	–	–	Female–Stainless Steel		
–	201317-4	–	–	–	–	Internal Open End	Zinc Plated Steel	PIN HOODS Pages 2063 and 2064
–	202394-2	201369-4	201364-4	–	–	Internal Closed End	Zinc Plated Steel	
–	–	–	–	–	–	External Closed End	Al. Iridite	
–	201390-5	201368-4	201346-4	–	–	External Closed End	Zinc Plated Steel	

Application G



Component Description			Number of Positions				
			6	14	20	26	34
HOUSINGS Pages 2036 through 2041	Plug Block	Phenolic	–	201355-1	201356-1	201359-1	201357-1
	Receptacle Block	Phenolic	–	201298-1	200346-2	200512-2	200838-2
	Plug Block	Diallyl Phthalate	–	201355-3	201356-3	201359-3	201357-3
	Receptacle Block	Diallyl Phthalate	–	201298-3	200346-4	200512-3	200838-3
SHIELDS Pages 2065 through 2068	180° Two Piece Long	Al. Anodized	–	–	–	–	–
		Zinc Plated Steel	–	–	–	–	–
	180° Two Piece Short	Al. Anodized	–	–	–	–	–
		Zinc Plated Steel	–	–	–	–	–
		Zinc Plated Cast Al.	–	–	–	–	–
	90° Two Piece Long	Zinc Plated Steel	–	–	–	–	–
	90° Two Piece Short	Zinc Plated Steel	–	–	–	–	–
	45° Two Piece Short	Zinc Plated Steel	–	–	–	–	–
	45° Two Piece Deep	Zinc Plated Steel	–	–	–	–	–
	180° One Piece Long	Zinc Plated Steel	–	201378-2	201380-2	201382-2	201384-2
	180° One Piece Short	Zinc Plated Steel	–	201360-2	201227-2	201169-2	201165-2
	90° One Piece Short	Zinc Plated Steel	–	201467-2	201460-2	201468-2	201469-2
STRAIN RELIEF CLAMPS Page 2069	Long	Zinc Plated Steel	–	–	–	–	–
	Short	Zinc Plated Steel	–	–	–	–	–
	Long	Stainless Steel	–	–	–	–	–
	Short	Stainless Steel	–	–	–	–	–
JACKSCREWS[1] Pages 2059 and 2060	Fixed Male	Stainless Steel	–	–	–	–	–
	Fixed Female	Stainless Steel	–	–	–	–	–
	Long Long Male	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Long Long Female	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Long Male	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Long Female	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Short Short Male	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Short Short Female	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
GUIDE HARDWARE Page 2062	Center Male	Stainless Steel	–	200389-2	200389-2	200389-2	200389-2
	Center Female	Stainless Steel	–	200390-2	200390-2	200390-2	200390-2
	Corner Male	Stainless Steel	–	–	–	–	200833-2
	Corner Female	Stainless Steel	–	–	–	–	200835-2
LOCKING SPRINGS Page 2061	Male–Nickel Plated Spring Steel		–	201921-1	201921-1	201923-1	201925-1
	Female–Stainless Steel		–	201922-1	201922-1	201924-1	201926-1
PIN HOODS Pages 2063 and 2064	Internal Open End	Zinc Plated Steel	–	201363-4	201362-4	201785-4	201786-4
	Internal Closed End	Zinc Plated Steel	–	–	–	–	–
	External Closed End	Al. Iridite	–	–	–	–	–
	External Closed End	Zinc Plated Steel	–	–	–	–	–

[1]Each part number contains two locking springs. Order one male and one female for each mated pair of connectors.

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1. Choose the application that most closely meets your requirements.
2. Find the appropriate column for the number of positions required.
3. Select part numbers required for the application listed in the column below the number of positions.

   If a part number is not listed for a particular item, it is not available.

   If more than one part number is listed for a particular hardware item, choose the one which best fits your application.
4. Dimensional information is available on the indicated pages under description column.
5. Select Contacts: Type II page 2004, Type III+ pages 2005 and 2006, Subminiature Coaxial page 2008.

Special application housings and posted housings may be substituted for these standard housings. See Special Application and Posted Application Sections.

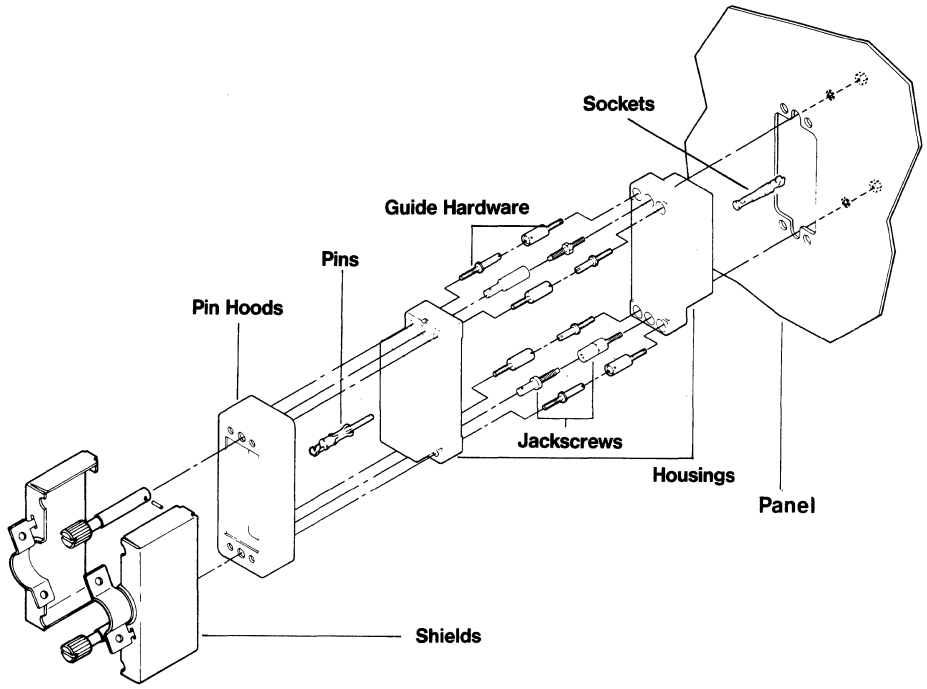
This cable-to-panel application utilizes locking springs, one piece shields, a pin hood for pin protection and guide hardware. The shields are available with both 180° and 90° cable exits. The 180° shields are available in a long version which provides pin protection in lieu of a pin hood.

Do not select a long shield and a pin hood.

The 34 and 50 position connectors can be used with either center or corner guide hardware. If center guides are used an additional four 4-40 screws are required to secure the locking springs. If corner guides are used an additional two 4-40 screws will be required to attach the shield. Corner guides require four guide pins and four guide sockets for each mated pair.

Number of Positions						Component Description		
41	50	75	104	104CF	160CF			
202135-2	201358-1	–	–	–	–	Plug Block / Receptacle Block	Phenolic	HOUSINGS Pages 2036 through 2041
201302-1	200277-2	–	–	–	–			
202135-4	201358-3	–	–	–	–	Plug Block / Receptacle Block	Diallyl Phthalate	
201302-3	200277-4	–	–	–	–			
–	–	–	–	–	–	180° Two Piece Long	Al. Anodized	SHIELDS Pages 2065 through 2068
–	–	–	–	–	–		Zinc Plated Steel	
–	–	–	–	–	–	180° Two Piece Short	Al. Anodized	
–	–	–	–	–	–		Zinc Plated Steel	
–	–	–	–	–	–		Zinc Plated Cast Al.	
–	–	–	–	–	–	90° Two Piece Long	Zinc Plated Steel	
–	–	–	–	–	–	90° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Short		
–	–	–	–	–	–	45° Two Piece Deep		
–	201386-2	–	–	–	–	180° One Piece Long		
–	201173-2	–	–	–	–	180° One Piece Short		
201486-2	201470-2	–	–	–	–	90° One Piece Short		
–	–	–	–	–	–	Long / Short	Zinc Plated Steel	STRAIN RELIEF CLAMPS Page 2069
–	–	–	–	–	–			
–	–	–	–	–	–	Long / Short	Stainless Steel	
–	–	–	–	–	–			
–	–	–	–	–	–	Fixed Male / Fixed Female	Stainless Steel	JACKSCREWS Pages 2059 and 2060
–	–	–	–	–	–			
–	–	–	–	–	–	Long Long Male	Tip: Stainless Steel Body: Die Cast Zinc	
–	–	–	–	–	–	Long Long Female		
–	–	–	–	–	–	Long Male		
–	–	–	–	–	–	Long Female		
–	–	–	–	–	–	Short Short Male		
–	–	–	–	–	–	Short Short Female		
200389-2	200389-2	–	–	–	–	Center Male / Center Female / Corner Male / Corner Female	Stainless Steel	GUIDE HARDWARE Page 2062
200390-2	200390-2	–	–	–	–			
–	200833-2	–	–	–	–			
–	200835-2	–	–	–	–			
201921-1	201925-1	–	–	–	–	Male–Nickel Plated Spring Steel		LOCKING SPRINGS[1] Page 2061
201922-1	201926-1	–	–	–	–	Female–Stainless Steel		
–	201317-4	–	–	–	–	Internal Open End	Zinc Plated Steel	PIN HOODS Pages 2063 and 2064
–	–	–	–	–	–	Internal Closed End	Zinc Plated Steel	
–	–	–	–	–	–	External Closed End	Al. Iridite	
–	–	–	–	–	–	External Closed End	Zinc Plated Steel	

Application H



Component Description			Number of Positions				
			6	14	20	26	34
HOUSINGS Pages 2036 through 2041	Plug Block	Phenolic	–	–	201356-1	201359-1	201357-1
	Receptacle Block	Phenolic	–	–	200346-2	200512-2	200838-2
	Plug Block	Diallyl Phthalate	–	–	201356-3	201359-3	201357-3
	Receptacle Block	Diallyl Phthalate	–	–	200346-4	200512-3	200838-3
SHIELDS Pages 2065 through 2068	180° Two Piece Long	Al. Anodized	–	–	–	201576-1	201571-1
	180° Two Piece Long	Zinc Plated Steel	–	–	–	201576-2	201571-2
	180° Two Piece Short	Al. Anodized	–	–	–	200514-1	200517-1
	180° Two Piece Short	Zinc Plated Steel	–	–	204087-1	200514-2	200517-2
	180° Two Piece Short	Zinc Plated Cast Al.	–	–	–	–	–
	90° Two Piece Long	Zinc Plated Steel	–	–	–	–	–
	90° Two Piece Short	Zinc Plated Steel	–	–	–	–	–
	45° Two Piece Short	Zinc Plated Steel	–	–	–	–	–
	45° Two Piece Deep	Zinc Plated Steel	–	–	–	–	–
	180° One Piece Long	Zinc Plated Steel	–	–	–	–	–
	180° One Piece Short	Zinc Plated Steel	–	–	–	–	–
	90° One Piece Short	Zinc Plated Steel	–	–	–	–	–
STRAIN RELIEF CLAMPS Page 2069	Long	Zinc Plated Steel	–	–	–	–	–
	Short	Zinc Plated Steel	–	–	–	–	–
	Long	Stainless Steel	–	–	–	–	–
	Short	Stainless Steel	–	–	–	–	–
JACKSCREWS[1] Pages 2059 and 2060	Fixed Male	Stainless Steel	–	–	201092-1	201092-1	201092-1
	Fixed Female	Stainless Steel	–	–	201089-1	201089-1	201089-1
	Long Long Male	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Long Long Female	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Long Male	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	201413-1	201413-1	201413-1
	Long Female	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	201414-1	201414-1	201414-1
	Short Short Male	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
	Short Short Female	Tip: Stainless Steel, Body: Die Cast Zinc	–	–	–	–	–
GUIDE HARDWARE Page 2062	Center Male	Stainless Steel	–	–	–	–	–
	Center Female	Stainless Steel	–	–	–	–	–
	Corner Male	Stainless Steel	–	–	–	–	200833-2
	Corner Female	Stainless Steel	–	–	–	–	200835-2
LOCKING SPRINGS Page 2061	Male—Nickel Plated Spring Steel		–	–	–	–	–
	Female—Stainless Steel		–	–	–	–	–
PIN HOODS Pages 2063 and 2064	Internal Open End	Zinc Plated Steel	–	–	–	–	201786-4
	Internal Closed End	Zinc Plated Steel	–	–	–	–	202434-4
	External Closed End	Al. Iridite	–	–	–	–	201350-2
	External Closed End	Zinc Plated Steel	–	–	–	–	–

[1] Listed Jackscrews have 6-32 single lead threads. For corresponding Jackscrews with 6-32 double lead threads, refer to pages 2059 and 2060.

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1. Choose the application that most closely meets your requirements. Previously shown on pages 2016 through 2019.

2. Find the appropriate column for the number of positions required.

3. Select part numbers required for the application listed in the column below the number of positions.

   If a part number is not listed for a particular item, it is not available.

   If more than one part number is listed for a particular hardware item, choose the one which best fits your application.

4. Dimensional information is available on the indicated pages under description column.

5. Select Contacts: Type II page 2004, Type III+ pages 2005 and 2006, Subminiature Coaxial page 2008.

Special application housings and posted housings may be substituted for these standard housings. See Special Application and Posted Applications Sections.

This cable-to-panel application utilizes jackscrews, a two piece short shield, a strain relief clamp, a pin hood for pin protection and guide hardware.

Do not use a pin hood in combination with the shield for sizes 20, 26 and 41. A long shield may be used in lieu of pin hood for pin protection for all sizes except the 20 position. Shields are available with 180° cable exit and for the 50 thru 104 position connectors a 90° cable exit. 104CF has 90° and 45° cable exits. 160CF has 45° cable exit.

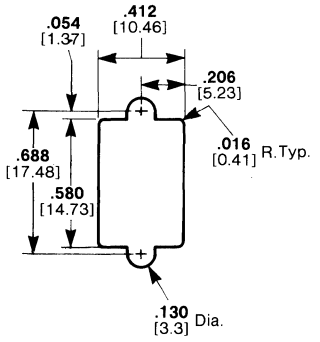
Select the appropriate jackscrew length for the type of shield chosen as indicated by symbol (△ ▲).

Number of Positions						Component Description		
41	50	75	104	104CF	160CF			
202135-2	201358-1	201310-1	201345-1	201692-4	202799-2	Plug Block / Receptacle Block	Phenolic	HOUSINGS Pages 2036 through 2041
201302-1	200277-2	201311-1	201037-1	201532-4	202800-2			
202135-4	201358-3	201310-3	201345-2	201692-3	202799-1	Plug Block / Receptacle Block	Diallyl Phthalate	
201302-3	200277-4	201311-3	201037-2	201532-2	202800-1			
–	201443-1△	–	–	–	–	180° Two Piece Long	Al. Anodized	
202383-2	201443-2△	202713-2▲	204173-2▲	–	–		Zinc Plated Steel	
–	200532-1△	–	–	–	–	180° Two Piece Short	Al. Anodized	
202383-1	200532-2△	202713-1▲	204173-1▲	–	–		Zinc Plated Steel	
–	–	204209-1△	201131-1△	–	–		Zinc Plated Cast Al.	SHIELDS Pages 2065 through 2068
–	203975-2▲	202711-3▲	205316-2▲	–	–	90° Two Piece Long	Zinc Plated Steel	
–	203975-1▲	202711-1▲	205316-1▲	202395-1	–	90° Two Piece Short		
–	–	–	–	202110-1	202798-1	45° Two Piece Short		
–	–	–	–	202169-1	–	45° Two Piece Deep		
–	–	–	–	–	–	180° One Piece Long		
–	–	–	–	–	–	180° One Piece Short		
–	–	–	–	–	–	90° One Piece Short		
–	–	–	–	–	–	Long / Short	Zinc Plated Steel	STRAIN RELIEF CLAMPS Page 2069
–	–	–	–	–	–			
–	–	–	–	–	–	Long / Short	Stainless Steel	
–	–	–	–	–	–			
201092-1	201092-1	201092-1	201092-1	–	–	Fixed Male / Fixed Female	Stainless Steel	JACKSCREWS[1] Pages 2059 and 2060
201089-1	201089-1	201089-1	201089-1	–	–			
–	207234-1▲	207234-1▲	207234-1▲	–	–	Long Long Male	Tip: Stainless Steel / Body: Die Cast Zinc	
–	207235-1▲	207235-1▲	207235-1▲	–	–	Long Long Female		
201413-1	201413-1△	201413-1△	201413-1△	–	–	Long Male		
201414-1	201414-1△	201414-1△	201414-1△	–	–	Long Female		
–	–	–	–	–	–	Short Short Male		
–	–	–	–	–	–	Short Short Female		
–	–	–	–	–	–	Center Male / Center Female / Corner Male / Corner Female	Stainless Steel	GUIDE HARDWARE Page 2062
–	–	–	–	–	–			
–	200833-2	201046-2	201046-2	202173-5	201046-2			
–	200835-2	201047-2	201047-2	202174-1	201047-2			
–	–	–	–	–	–	Male—Nickel Plated Spring Steel		LOCKING SPRINGS Page 2061
–	–	–	–	–	–	Female—Stainless Steel		
–	201317-4	–	–	–	–	Internal Open End	Zinc Plated Steel	PIN HOODS Pages 2063 and 2064
–	202394-2	201369-4	201364-4	–	203743-4	Internal Closed End	Zinc Plated Steel	
–	–	–	–	–	–	External Closed End	Al. Iridite	
–	201390-5	201368-4	201346-4	202119-2	203744-4	External Closed End	Zinc Plated Steel	

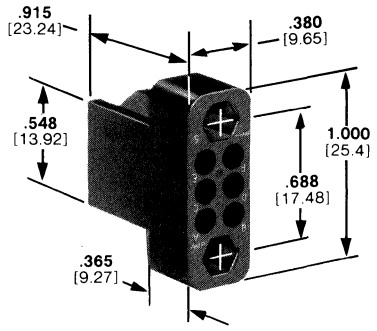
Standard Housings

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

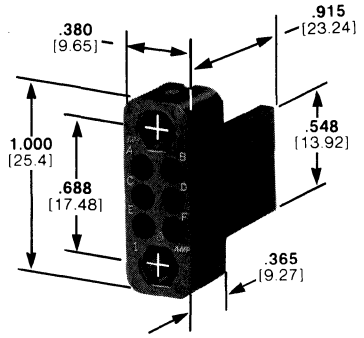
6 Position



Recommended Panel Cutout

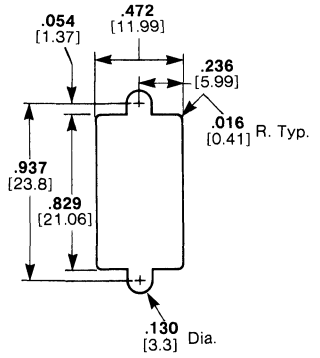


Plug Housing
Phenolic Part No. 202758-1
Diallyl Phthalate Part No. 202758-3



Receptacle Housing
Phenolic Part No. 202757-1
Diallyl Phthalate Part No. 202757-3

14 Position



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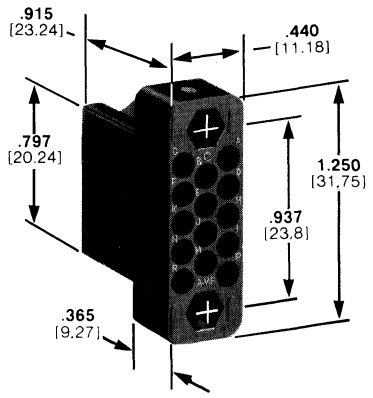
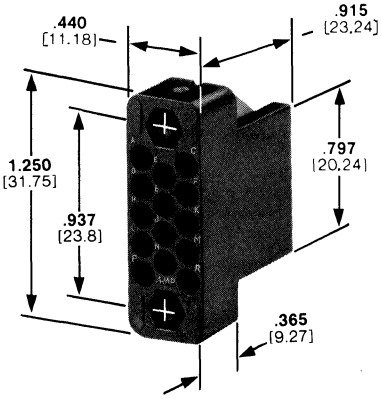
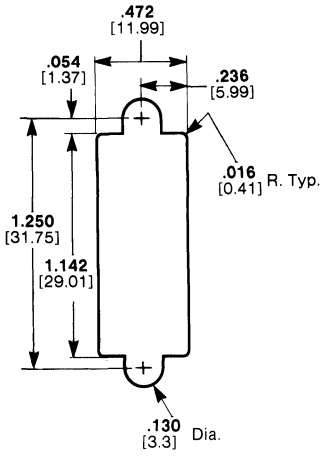


Plug Housing
Phenolic Part No. 201355-1
Diallyl Phthalate Part No. 201355-3



Receptacle Housing
Phenolic Part No. 201298-1
Diallyl Phthalate Part No. 201298-3

20 Position



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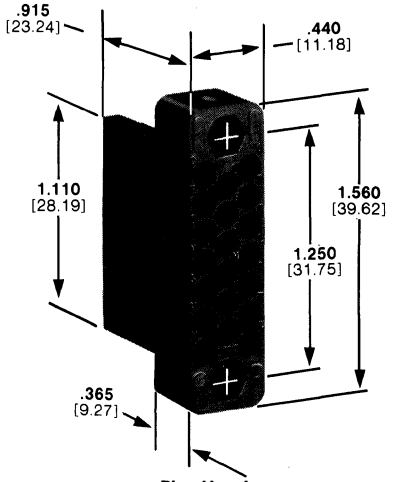
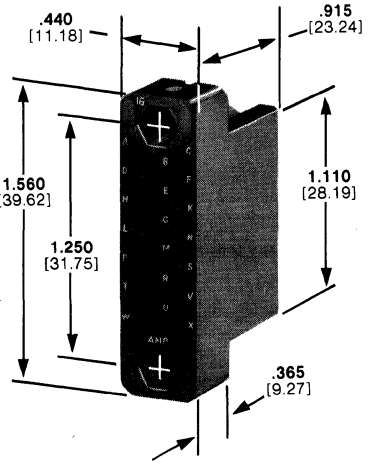


Plug Housing
Phenolic Part No. 201356-1
Diallyl Phthalate Part No. 201356-3



Receptacle Housing
Phenolic Part No. 200346-2
Diallyl Phthalate Part No. 200346-4

Notes: 1. All housings accept Type II, Type III+, and Subminiature COAXICON contacts.
2. Pins and/or sockets may be used in any housing.

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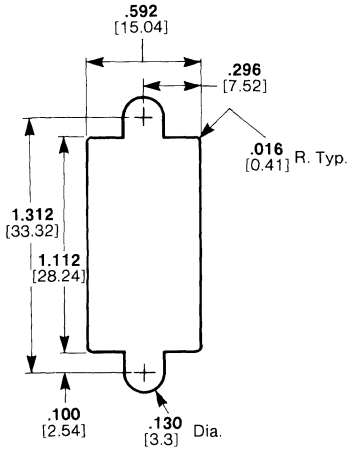
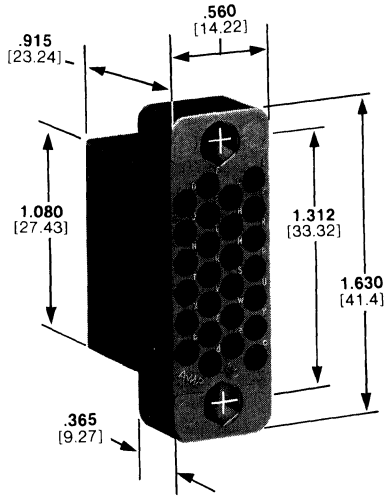
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

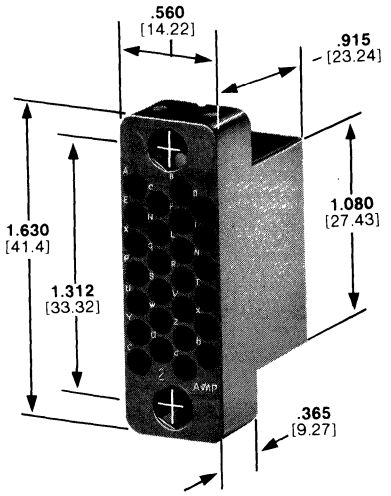
26 Position



Recommended Panel Cutout

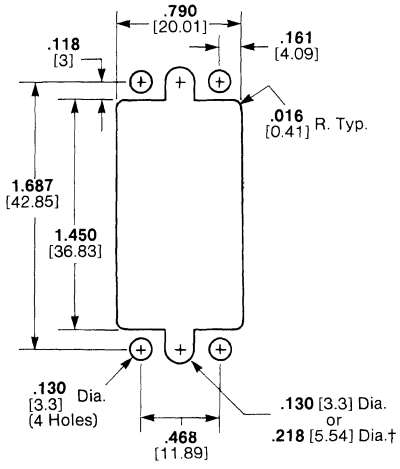


Plug Housing
Phenolic Part No. 201359-1
Diallyl Phthalate Part No. 201359-3



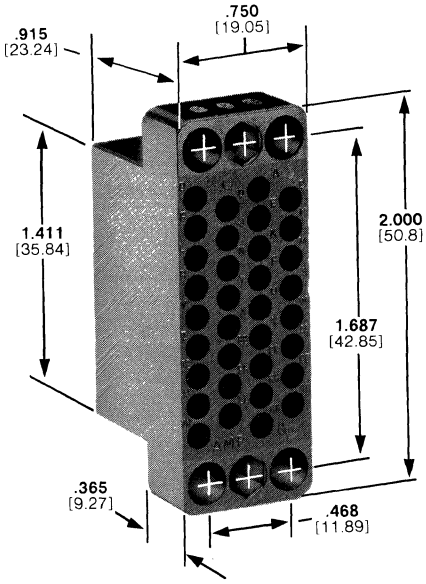
Receptacle Housing
Phenolic Part No. 200512-2
Diallyl Phthalate Part No. 200512-3

34 Position

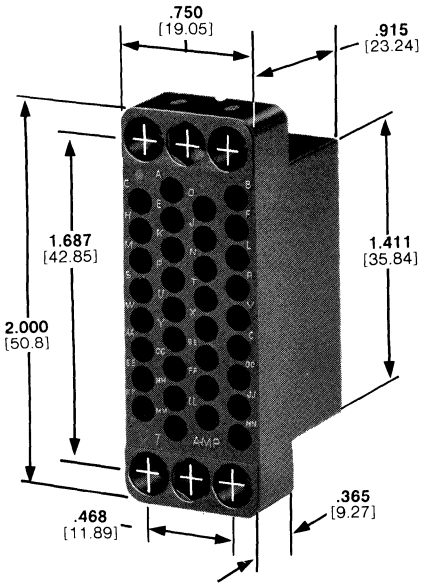


†**.218** [5.54] diameter is required when jackscrews are used.

Recommended Panel Cutout



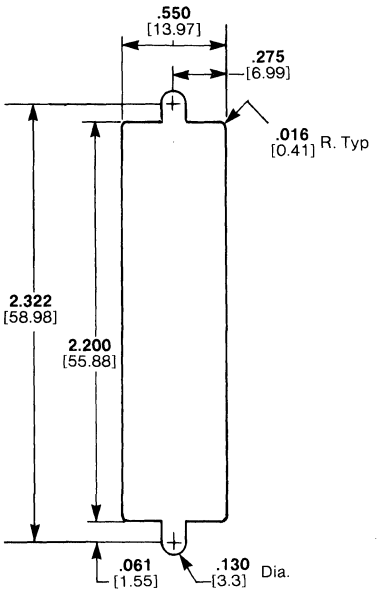
Plug Housing
Phenolic Part No. 201357-1
Diallyl Phthalate Part No. 201357-3



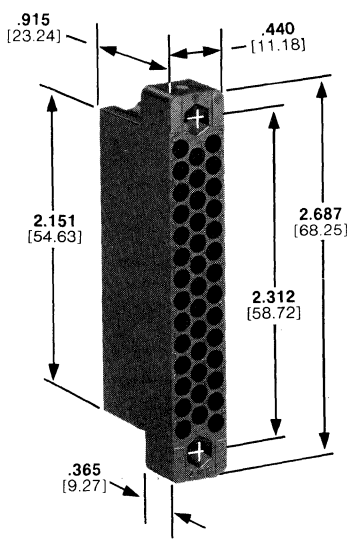
Receptacle Housing
Phenolic Part No. 200838-2
Diallyl Phthalate Part No. 200838-3

Contacts: All housings accept—Type II, Type III+, and Subminiature COAXICON contacts.
Note: Pins and/or sockets may be used in any housing.

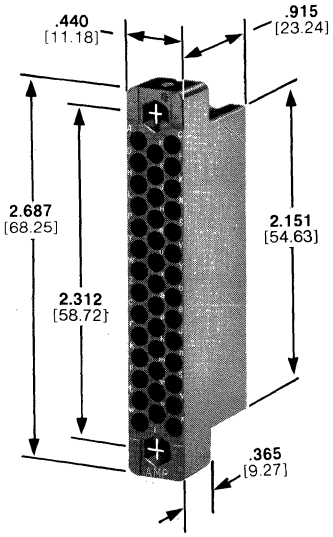
41 Position



Recommended Panel Cutout

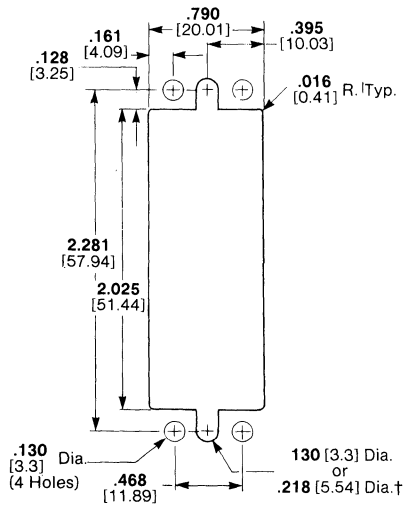


Plug Housing
Phenolic Part No. 202135-2
Diallyl Phthalate Part No. 202135-4



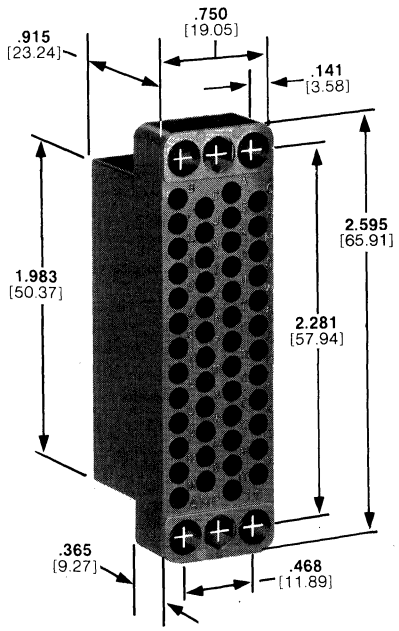
Receptacle Housing
Phenolic Part No. 201302-1
Diallyl Phthalate Part No. 201302-3

50 Position

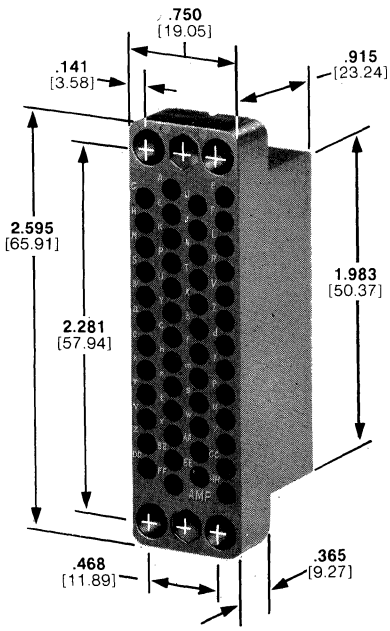


†**.218** [5.54] diameter is required when jackscrews are used.

Recommended Panel Cutout



Plug Housing
Phenolic Part No. 201358-1
Diallyl Phthalate Part No. 201358-3



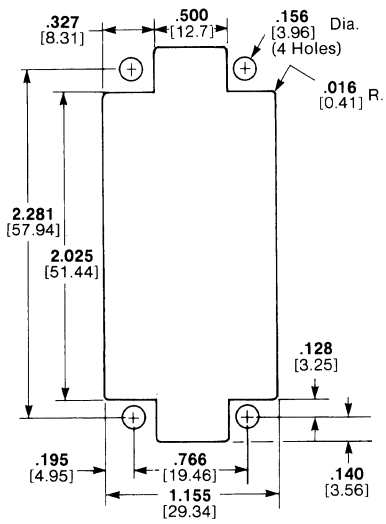
Receptacle Housing
Phenolic Part No. 200277-2
Diallyl Phthalate Part No. 200277-4

Notes: 1. All housings accept Type II, Type III+, and Subminiature COAXICON contacts.
2. Pins and/or sockets may be used in any housing.

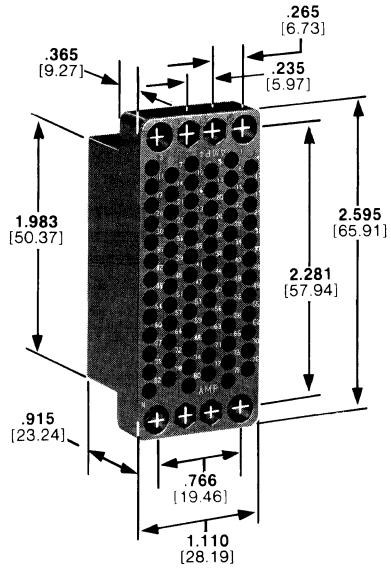
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

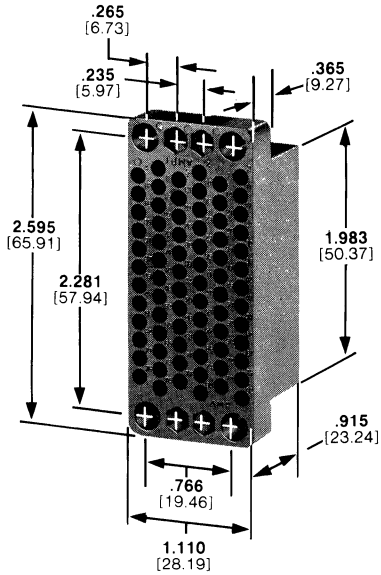
75 Position



Recommended Panel Cutout

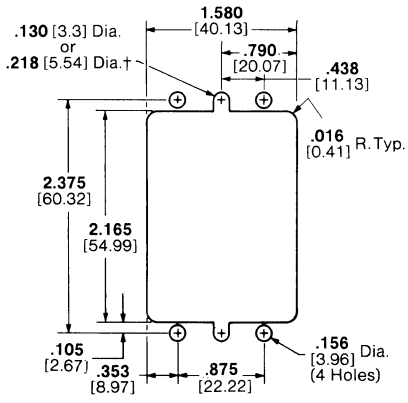


Plug Housing
Phenolic Part No. 201310-1
Diallyl Phthalate Part No. 201310-3



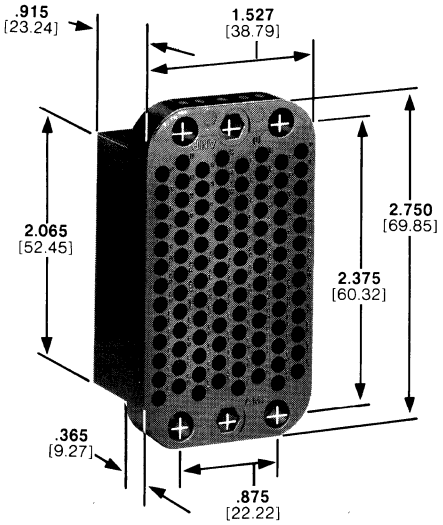
Receptacle Housing
Phenolic Part No. 201311-1
Diallyl Phthalate Part No. 201311-3

104 Position

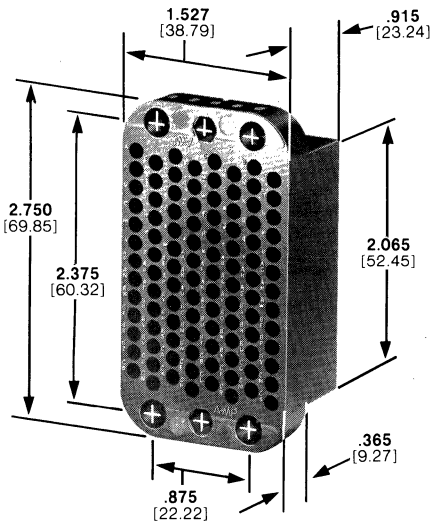


†.218 [5.54] diameter is required when jackscrews are used.

Recommended Panel Cutout



Plug Housing
Phenolic Part No. 201345-1
Diallyl Phthalate Part No. 201345-2



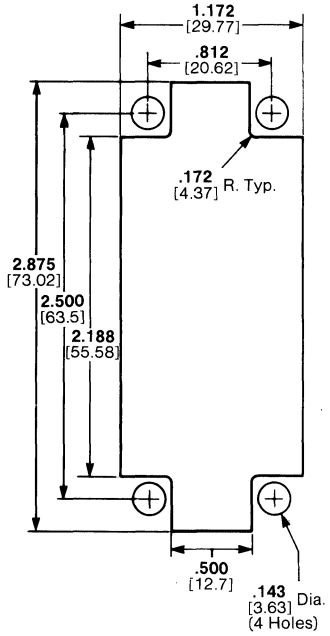
Receptacle Housing
Phenolic Part No. 201037-1
Diallyl Phthalate Part No. 201037-2

Notes: 1. All housings accept Type II, Type III+, and Subminiature COAXICON contacts.
2. Pins and/or sockets may be used in any housing.

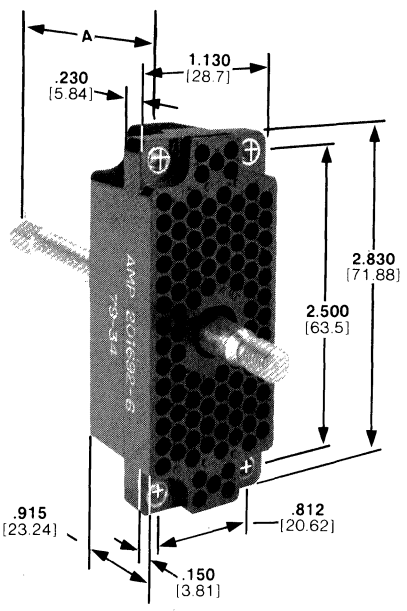
Specifications subject to change.
For latest design specifications...
1-800-522-6752

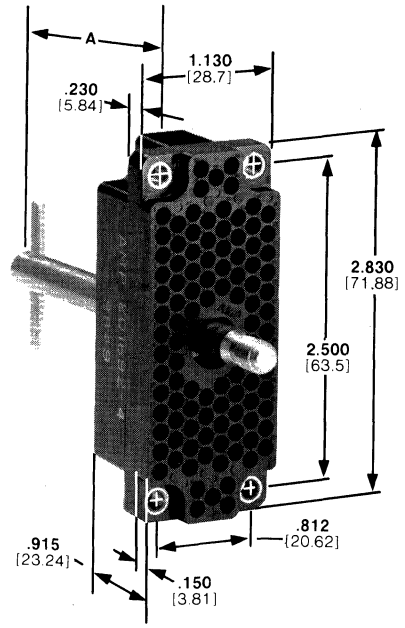
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

104 CF Position (with Center Fastener)

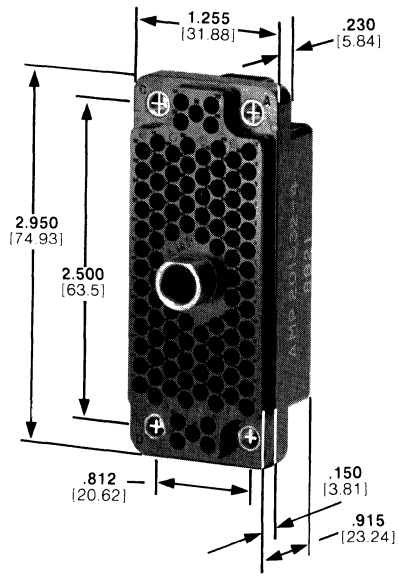


Recommended Panel Cutout





Plug Housing

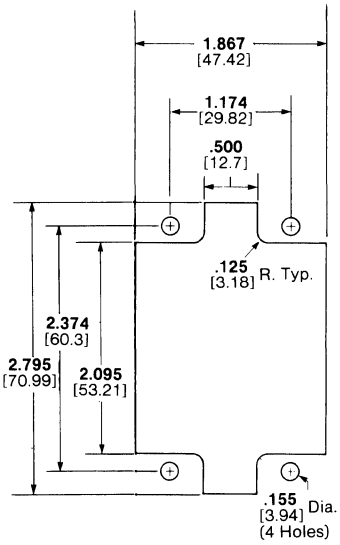


Receptacle Housing

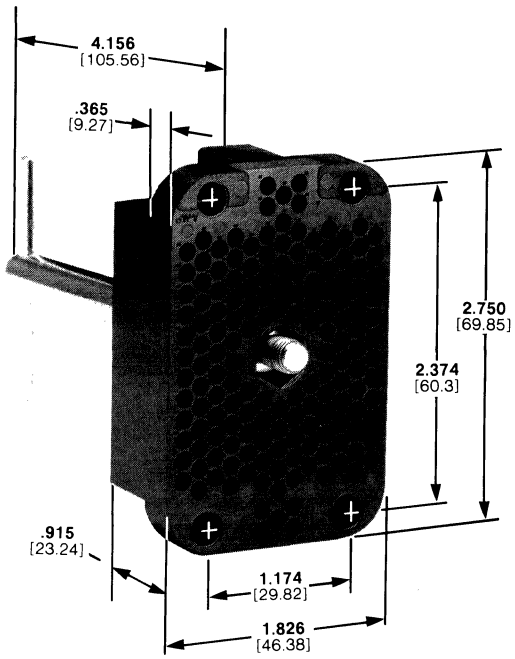
Description	Dimension A	Plug Housing Part No.		Receptacle Housing Part No.	
		Phenolic	Diallyl Phthalate	Phenolic	Diallyl Phthalate
"T" Handle	**2.500** 63.5	201692-4	201692-3	201532-4	201532-2
Slotted Hex	**2.500** 63.5	201692-6	201692-5		
Slotted Hex	**.531** 13.49	201692-2	–		

Notes: 1. All housings accept contacts—Type II, Type III+, and Subminiature COAXICON.
2. Pins and/or sockets may be used in any housing.

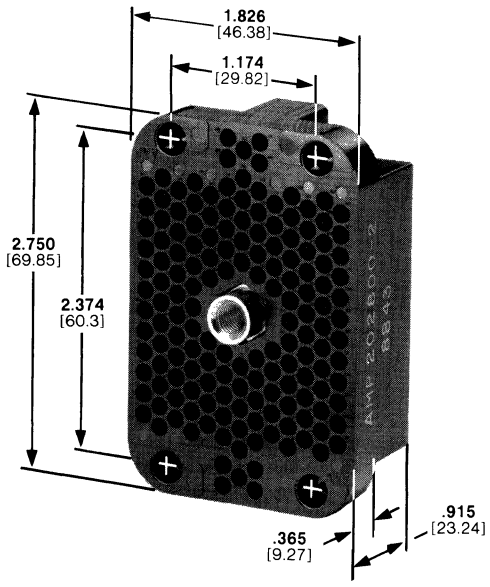
160 CF Position (with Center Fastener)



Recommended Panel Cutout



Plug Housing
Phenolic Part No. 202799-2
Diallyl Phthalate Part No. 202799-1



Receptacle Housing
Phenolic Part No. 202800-2
Diallyl Phthalate Part No. 202800-1

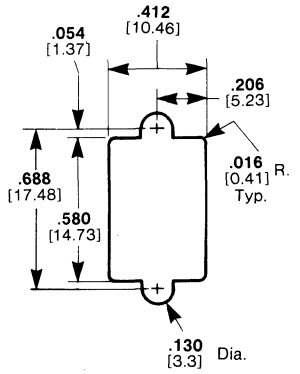
Notes: 1. All housings accept contacts—Type II, Type III+, and Subminiature COAXICON.
2. Pins and/or sockets may be used in any housing.

Posted Connectors

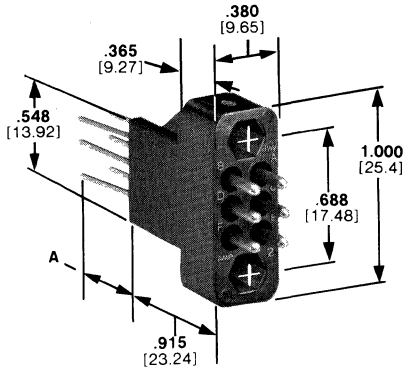
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

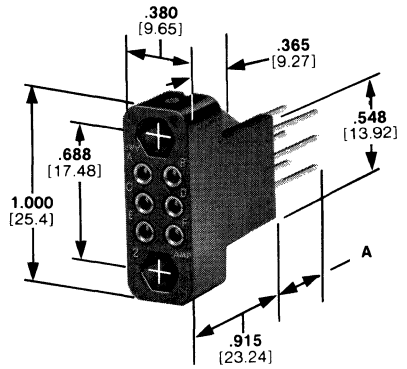
6 Position



Recommended Panel Cutout

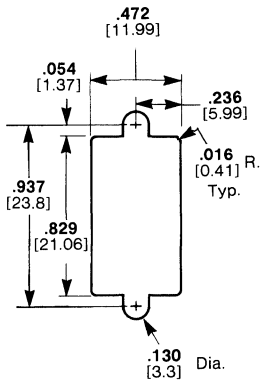


Plug Assembly

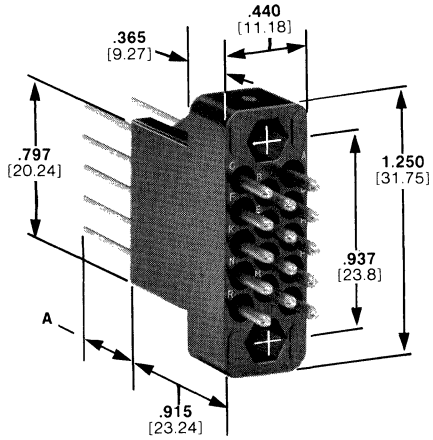


Receptacle Assembly

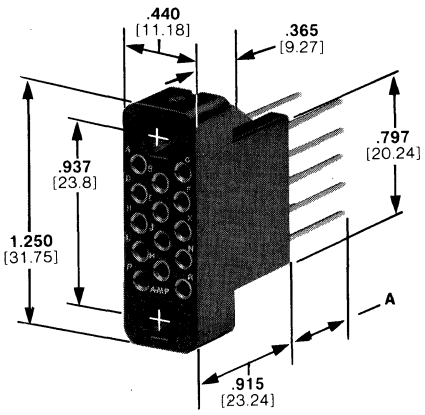
14 Position



Recommended Panel Cutout

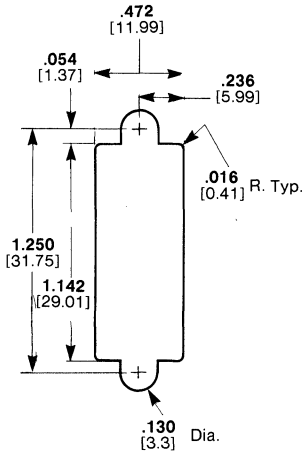


Plug Assembly

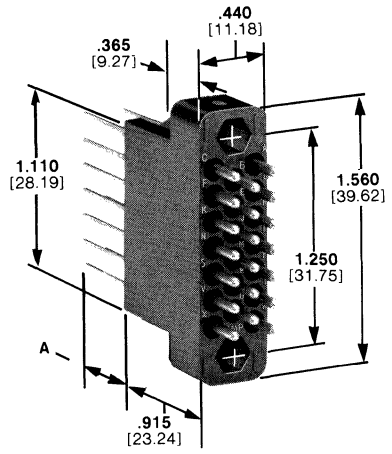


Receptacle Assembly

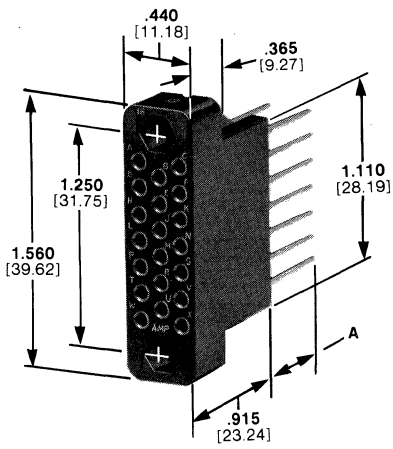
20 Position



Recommended Panel Cutout



Plug Assembly

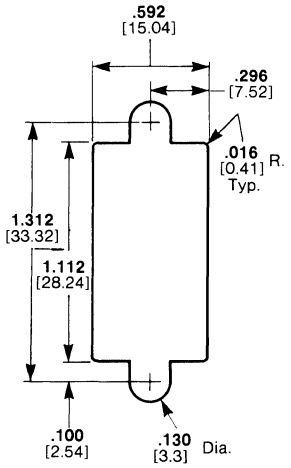


Receptacle Assembly

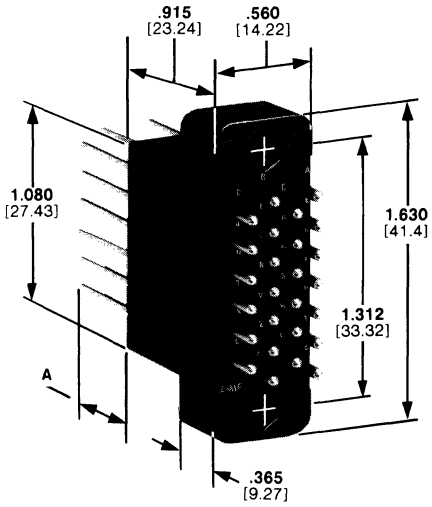
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

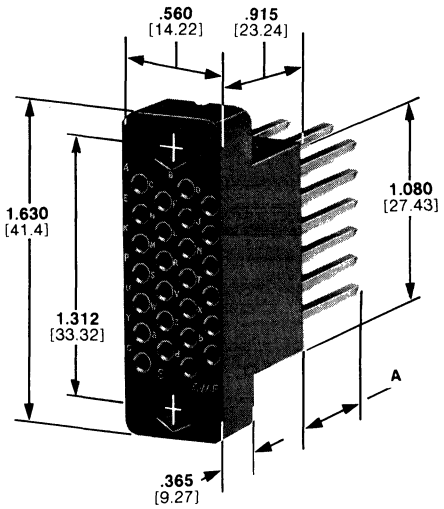
26 Position



Recommended Panel Cutout



Plug Assembly



Receptacle Assembly

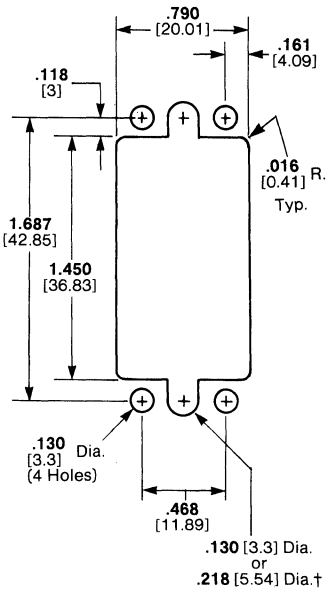
Plug and Receptacle Assemblies

No. of Pos.	Termination Method	Post Configuration	A Dimension	Contact Finish	Plug Assembly Part No.	Receptacle Assembly Part No.
6	Wrap Type	**.025 x .025** 0.64 x 0.64	**.659** 16.74	Sel. Gold/Nickel[1]	205507-1	205506-1
14	Wrap Type	**.025 x .025** 0.64 x 0.64	**.659** 16.74	Sel. Gold/Nickel[1]	205317-1	205508-1
			.261 6.63		–	3-205508-1
20	Wrap Type	**.025 x .025** 0.64 x 0.64	**.659** 16.74	Sel. Gold/Nickel[1]	205509-1	205452-1
			.261 6.63		–	3-205452-1
	TERMI-POINT Clip	**.022 x .036** 0.56 x 0.91	**.659** 16.74	Sel. Gold/Nickel[1]	1-205509-0	–
26	Wrap Type	**.025 x .025** 0.64 x 0.64	**.659** 16.74	Sel. Gold/Nickel[1]	205512-1	205511-1
	TERMI-POINT Clip	**.031 x .062** 0.79 x 1.57	**.810** 20.57	Sel. Gold/Nickel[1]	1-205512-3	1-205511-3

[1]Gold flash over .000050 [0.00127] nickel on entire contact, with .000030 [0.00076] gold to a distance of .200 [5.08] from mating end. Posts are plated tin-lead over copper.

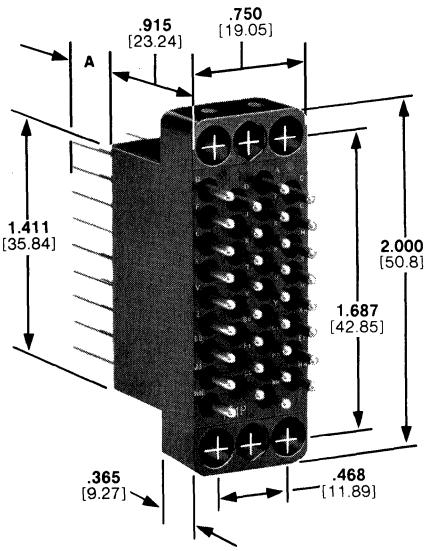
Notes: 1. Posted connectors listed above have black phenolic housings.
2. Replacement contacts are shown on page 2006.
3. These posted connectors mate with standard connector housings shown on pages 2037 and 2038.

34 Position

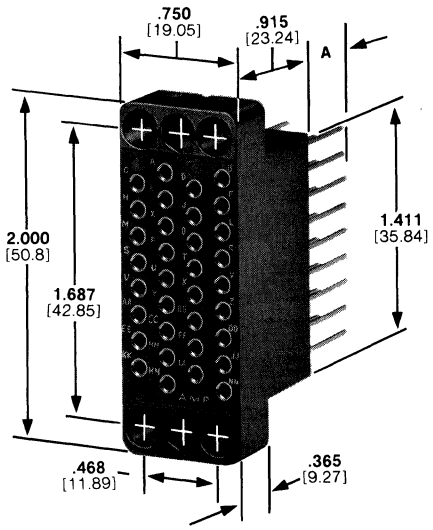


Recommended Panel Cutout

†.**218** [5.54] diameter is required when jackscrews are used.

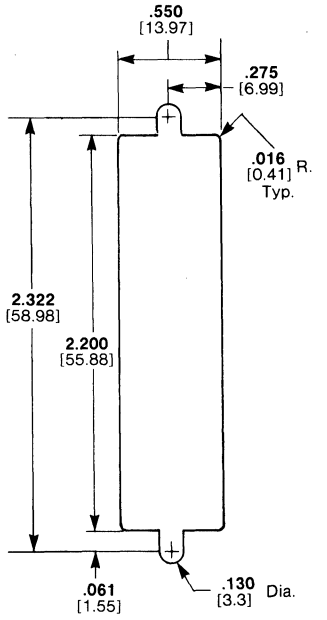


Plug Assembly

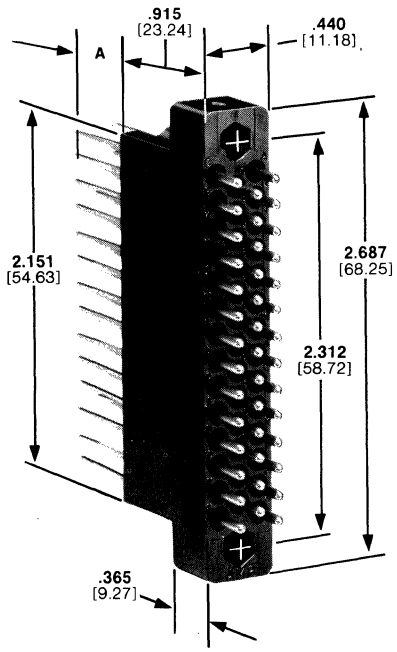


Receptacle Assembly

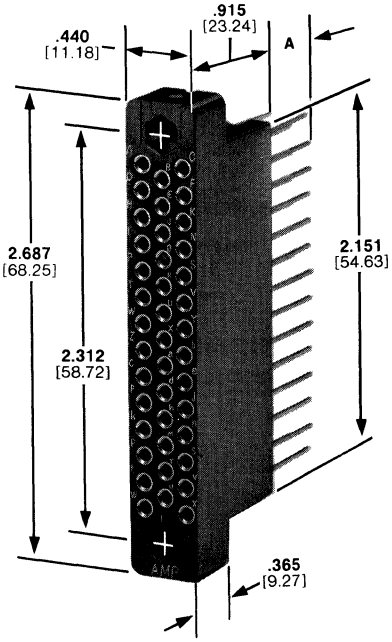
41 Position



Recommended Panel Cutout



Plug Assembly

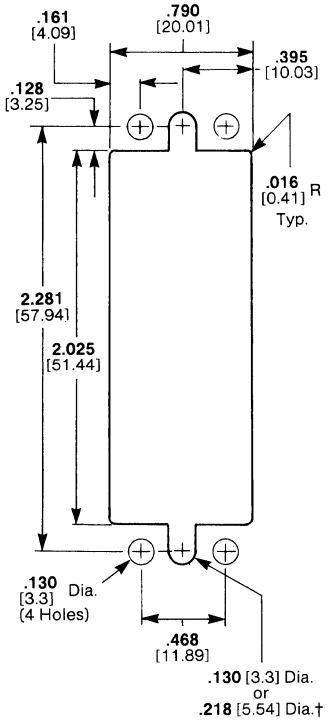


Receptacle Assembly

Specifications subject to change.
For latest design specifications...
1-800-522-6752

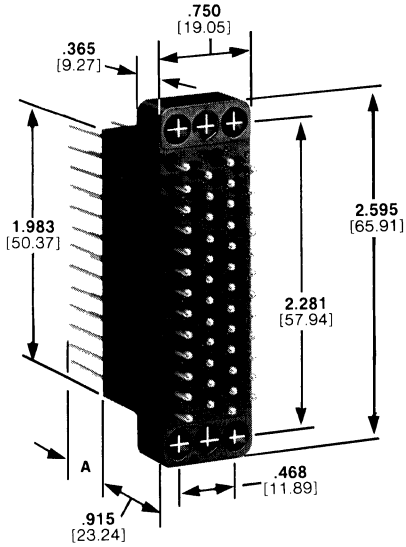
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

50 Position

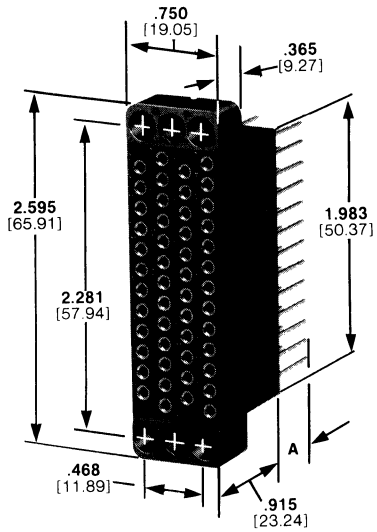


Recommended Panel Cutout

†.218 [5.54] diameter is required when jackscrews are used.



Plug Assembly



Receptacle Assembly

Plug and Receptacle Assemblies

No. of Pos.	Termination Method	Post Configuration	A Dimension	Contact Finish	Plug Assembly Part No.	Receptacle Assembly Part No.
34	Wrap Type	.025 x .025 0.64 x 0.64	.659 16.74	Sel. Gold/Nickel[1]	205361-1	205505-1
				Bright Tin-Lead	205361-3	205505-3
			.261 6.63	Sel. Gold/Nickel[1]	–	3-205505-1
	TERMI-POINT Clip	.022 x .036 0.56 x 0.91	.659 16.74	Sel. Gold/Nickel[1]	1-205361-0	1-205505-0
		.031 x .062 0.79 x 1.57	.810 20.57		1-205361-3	1-205505-3
41	Wrap Type	.025 x .025 0.64 x 0.64	.659 16.74	Sel. Gold/Nickel[1]	205510-1	205513-1
			.261 6.63		–	3-205513-1
50	Wrap Type	.025 x .025 0.64 x 0.64	.659 16.74	Sel. Gold/Nickel[1]	205156-1	205514-1
			.261 6.63		–	3-205514-1
	TERMI-POINT Clip	.022 x .036 0.56 x 0.91	.659 16.74		1-205156-0	1-205514-0
		.031 x .062 0.79 x 1.57	.810 20.57		1-205156-3	1-205514-3

[1]Gold flash over .000050 [0.00127] nickel on entire contact, with .000030 [0.00076] gold to a distance of .200 [5.08] from mating end. Posts are plated tin-lead over copper.

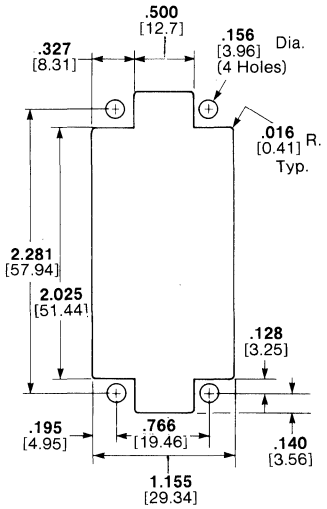
Notes: 1. Posted connectors listed above have black phenolic housings.
2. Replacement contacts are shown on page 2006.
3. These posted connectors mate with standard connector housings shown on pages 2037 and 2038.

Posted Connectors

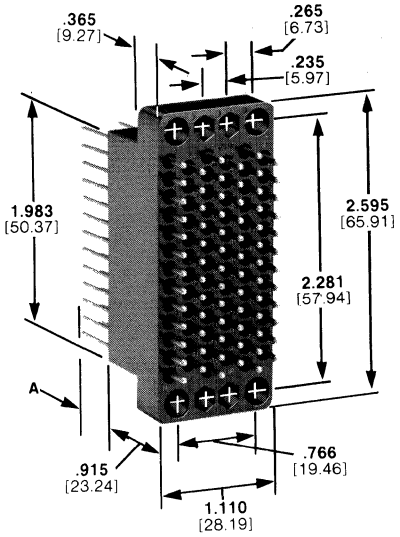
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

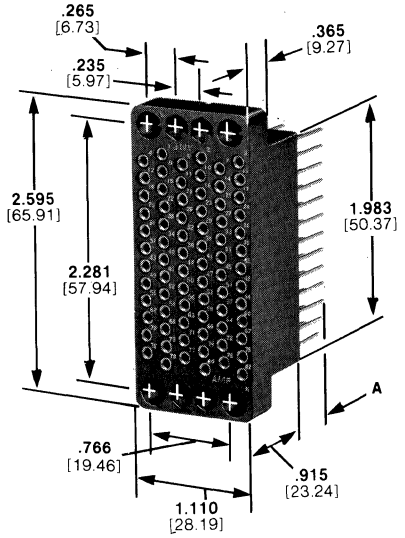
75 Position



Recommended Panel Cutout

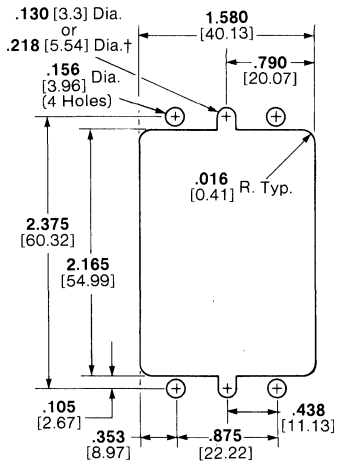


Plug Assembly



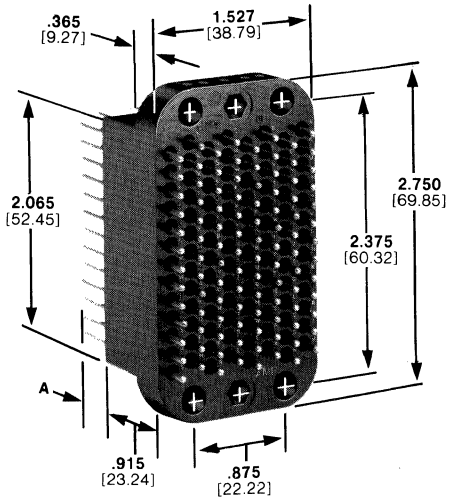
Receptacle Assembly

104 Position

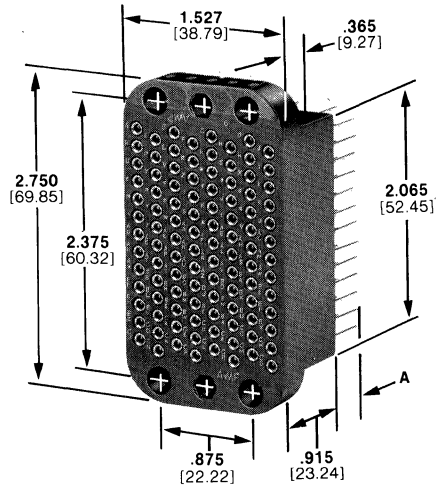


Recommended Panel Cutout

†.218 [5.54] diameter is required when jackscrews are used.



Plug Assembly



Receptacle Assembly

Plug and Receptacle Assemblies

No. of Pos.	Termination Method	Post Configuration	A Dim.	Contact Finish	Plug Assembly Part No.	Receptacle Assembly Part No.
75	Wrap-Type	.025 x .025 0.64 x 0.64	.659 16.74	Sel. Gold/Nickel[1]	205157-1	205515-1
104	Wrap-Type	.025 x .025 0.64 x 0.64	.659 16.74	Sel. Gold/Nickel[1]	205158-1	205359-1

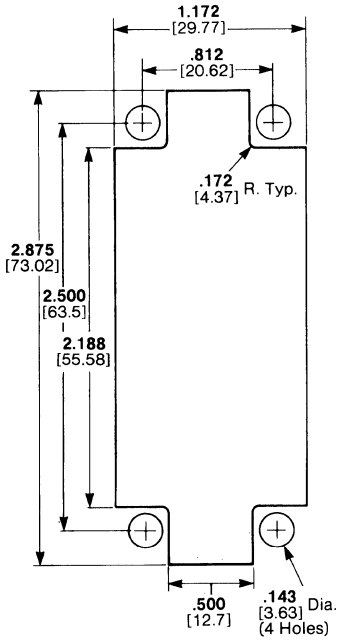
[1]Gold flash over .000050 [0.00127] nickel on entire contact, with .000030 [0.00076] gold to a distance of .200 [5.08] from mating end. Posts are plated tin-lead over copper.

Notes: 1. Posted connectors listed above have black phenolic housings.
2. Replacement contacts are shown on page 2006.
3. These posted connectors mate with standard connector housings shown on page 2039.

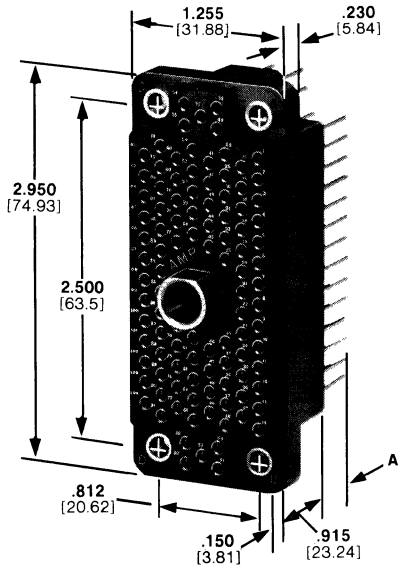
Posted Connectors—with Center Fastener

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

104 CF Position (with Center Fastener)



Recommended Panel Cutout



Receptacle Assembly

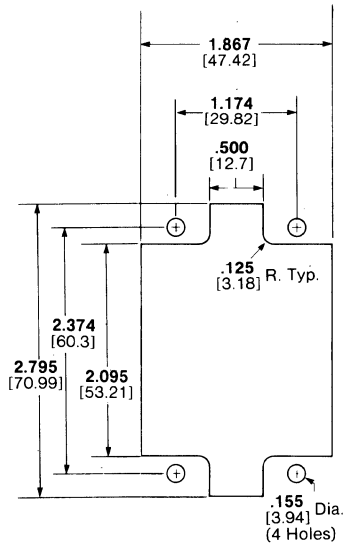
Termination Method	Post Configuration	A Dim.	Contact Finish	Receptacle Assembly Part No.
Wrap-Type	.025 x .025 0.64 x 0.64	.659 16.74	Sel. Gold/Nickel[1]	205720-2

[1]Gold flash over .000050 [0.00127] nickel on entire contact, with .000030 [0.00076] gold to a distance of .200 [5.08] from mating end. Posts are plated tin-lead over copper.

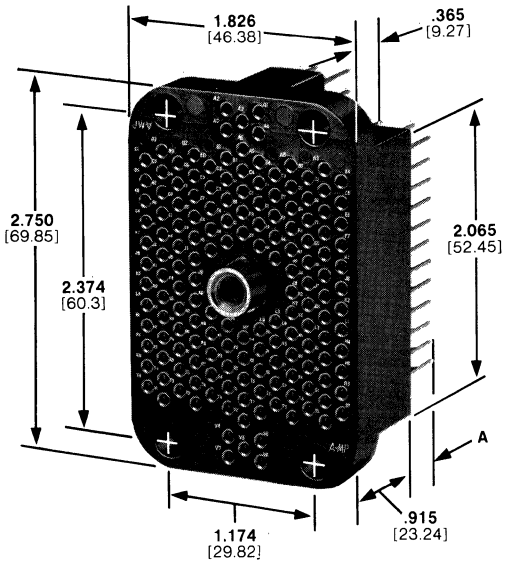
Extraction Tool No. 305183.

Notes: 1. Posted receptacle assembly listed above has black phenolic housing.
2. Replacement contacts (Type III+ posted) are shown on page 2006.
3. This posted socket assembly will mate with standard connector housings shown on page 2048.

160 CF Position (with Center Fastener)



Recommended Panel Cutout



Receptacle Assembly

Termination Method	Post Configuration	A Dim.	Contact Finish	Receptacle Assembly Part No.
Wrap-Type	.025 x .025 0.64 x 0.64	.659 16.74	Sel. Gold/Nickel[1]	205516-1

[1]Gold flash over .000050 [0.00127] nickel on entire contact, with .000030 [0.00076] gold to a distance of .200 [5.08] from mating end. Posts are plated tin-lead over copper.

Extraction Tool No. 305183.

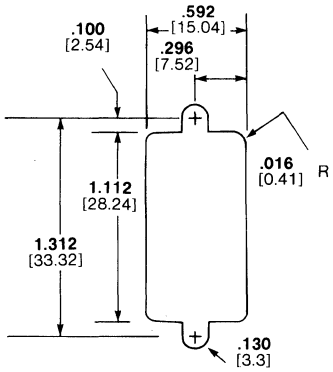
Notes: 1. Posted receptacle assembly listed above has black phenolic housing.
2. Replacement contacts (Type III+ posted) are shown on page 2006.
3. This posted socket assembly will mate with standard connector housings shown on page 2049.

Posted Connectors
.200 [5.08] Grid

Specifications subject to change.
For latest design specifications...
1-800-522-6752

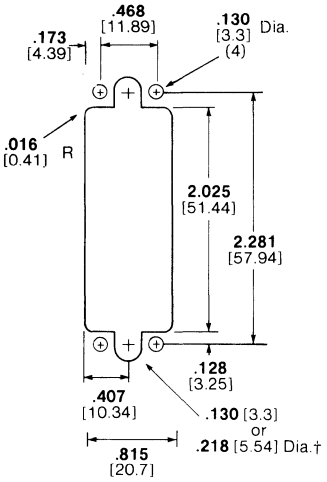
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

15 Position



Recommended Panel Cutout

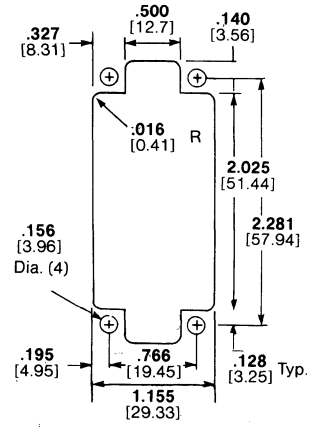
36 Position



†.218 [5.54] diameter is required when jackscrews are used.

Recommended Panel Cutout

50 Position

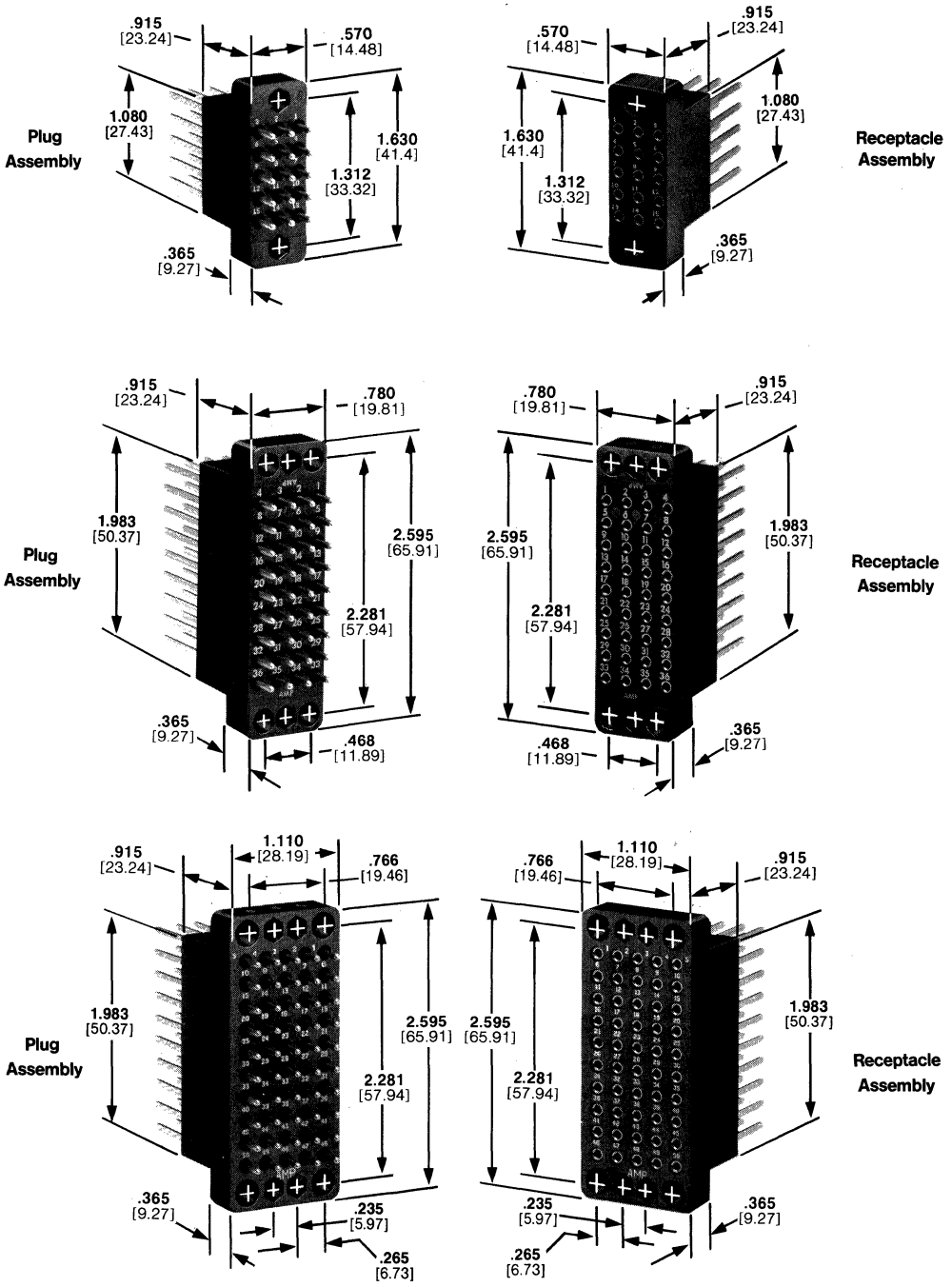


Recommended Panel Cutout

Material and Finish:

Housing—Phenolic per MIL-M-14, Type CFG; color, black

Contacts—Brass per MIL-C-50; selective .000030 [0.00076] gold over .000050 [0.00127] nickel plated (gold plating per MIL-G-45204, nickel plating per QQ-N-290).



Number of Positions	Termination Method	Post Configuration	Post Length†	Contact Finish	Part Number	
					Plug Assembly	Receptacle Assembly
15	TERMI-POINT Clip	.031 x .062 0.79 x 1.57	.810 20.57	Sel. Gold/Nickel[1]	205628-1△	205698-1○
36					205629-1▲	205609-1●
50					205630-1△△	205608-1○○

[1] Gold flash over .000050 [0.00127] nickel on entire contact with .000030 [0.00076] gold to a distance of .200 [5.08] from mating end. Posts are plated tin-lead over copper.
†Post length will accommodate up to 3 terminations.
Extraction Tool—Part No. 305183.
Refer to pages 2005 and 2006 for contact specifications (Type III+ Size 16).
△205606-3 Mating block using crimp snap-in contacts.
○205607-2 Mating block using crimp snap-in contacts.
▲203956-2 Mating block using crimp snap-in contacts.
●205076-2 Mating block using crimp snap-in contacts.
△△203622-2 Mating block using crimp snap-in contacts.
○○205058-2 Mating block using crimp snap-in contacts.

Refer to the appropriate column of Application Chart for Hardware Selection Page 2028 through 2035.

Note: 15 position connector uses standard 26 position hardware.
36 position connector uses standard 50 position hardware.
50 position connector uses standard 75 position hardware.

V.35 Printed Circuit Board Connectors

Material and Finish:

Housings—Phenolic, black, flame retardant

Contacts—Body—Brass, select gold/nickel plating

Spring—Stainless steel

Post—Brass, tin plated

Mounting Bracket—Brass, clear chromate coating

Post Spacer—Phenolic

Shield—Anodized Aluminum

Screws—Zinc plated steel

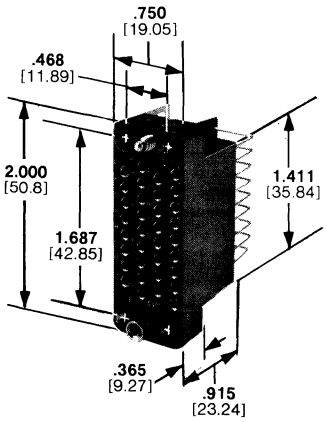
Jackscrews—Stainless steel

Standoff—Stainless steel

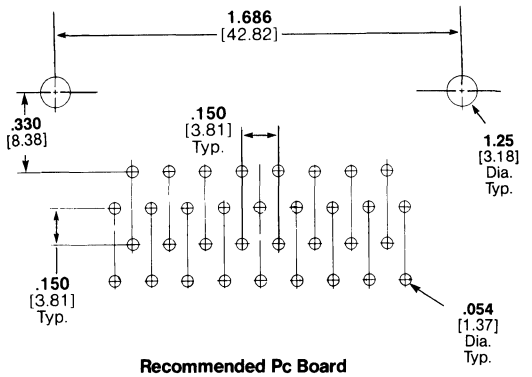
These connectors afford dependable, convenient assembly in high-speed data-transmission applications.

Available in pin and socket versions, these V.35 connectors are fully assembled and ready for placement on the printed circuit board. A mounting bracket for securing the connector to the printed circuit board is standard equipment. Connectors are preloaded with economical, dependable Size 16 precision stamped and formed contacts. The contact posts feature a chamfered lead-in that eases assembly. The right angle connector also features a true-position wafer that ensures the exact location of each post. They are fully intermateable with comparable M Series connectors.

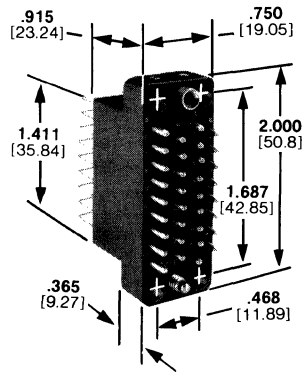
These AMP V.35 connectors meet the requirements of ISO 2593 for CCITT V.35 interfacing. These connectors are also compatible with MIL-C-28748 connectors.



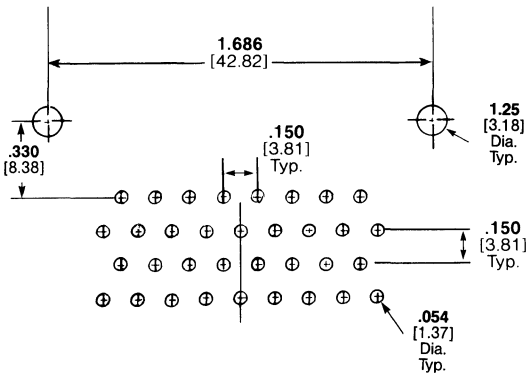
Right Angle Receptacle Assembly
Part No. 212810-2



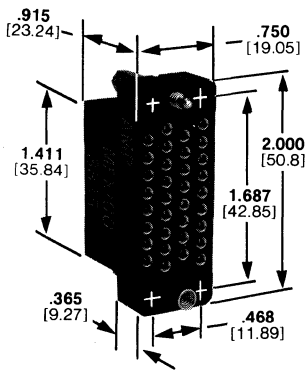
Recommended Pc Board Layout



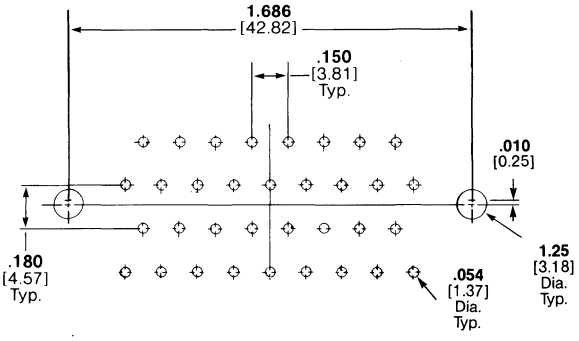
Right Angle Plug Assembly
Part No. 213289-1



Recommended Pc Board Layout



Vertical Mount Receptacle Assembly
Part No. 213524-1



Recommended Pc Board Layout

The above connectors can be made available selectively loaded and with a variety of mounting methods (tapped 4-40 hole, board locks). Consult AMP Incorporated.

Cable Connector Kits

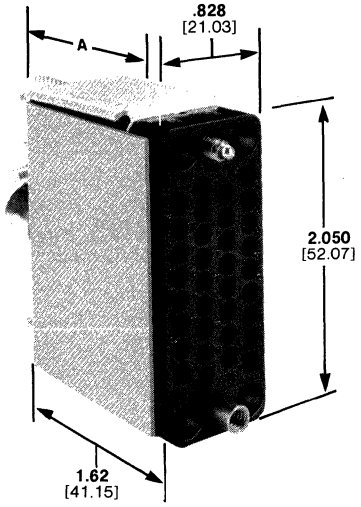
Material and Finish:
Housings–Phenolic, black, flame retardant
Shield–Anodized Aluminum
Screws–Zinc plated steel
Jackscrews–Stainless steel
Cable Clamps–Zinc plated steel

Kits include:
1. Housing
2. One Piece Shield
3. One Piece Turnable Jackscrew
4. Strain Relief Clamp
5. Mounting Screws

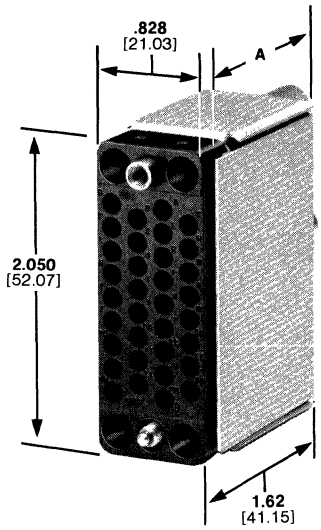
Pin connectors are available with long and short shields, (long shields provide pin protection) and two different size cable clamps.

Pins and sockets sold separately. Type III+ contacts page 2006.

Housings are keyed to assure the proper location of the male and female jackscrews as defined by ISO 2593.



Receptacle
Part Number 213522-1*



Plug
Part Number 213300-1*

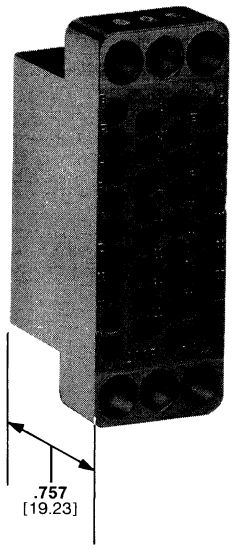
Shield Size	Max. Cable Diameter	A Dimensions	Part Number	
			Receptacle	Plug
Short	**.500** 12.7	**1.53** 3.89	–	213300-1*
Short	**.415** 10.54	**1.53** 3.89	–	213300-2*
Long	**.500** 12.7	**1.97** 5	–	213300-3*
Long	**.415** 10.54	**1.97** 5	–	213300-4*
Short	**.500** 12.7	**1.53** 3.89	213522-1*	–
Short	**.415** 10.54	**1.53** 3.89	213522-2*	–

*CSA certification pending.

Shallow Block Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



Typical
All other dimensions are same as Standard Housings

Refer to Standard Housings for recommended panel cutouts

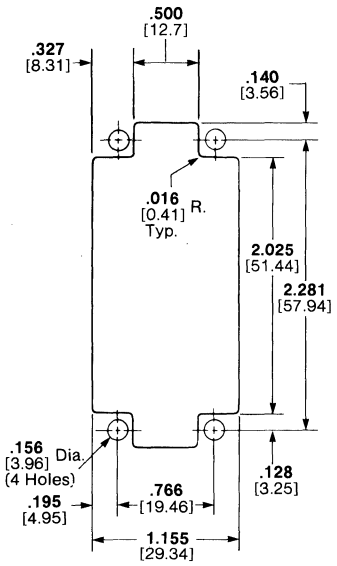
Shallow Pin Housings

No. of Positions	Phenolic Housing Part Number	Diallyl Phthalate Housing Part Number
6	202756-1	202756-3
14	201279-1	–
20	200345-2	–
26	200513-2	200513-3
34	200837-2	200837-3
41	201301-1	201301-3
50	200276-2	200276-4
75	201622-1	201622-3
104	201036-1	201036-2

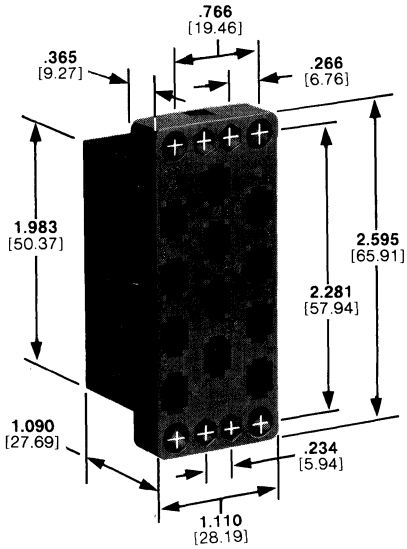
Refer to pages 2004 through 2011 for contacts.

Note: Use same hardware as similar size Standard Housings.

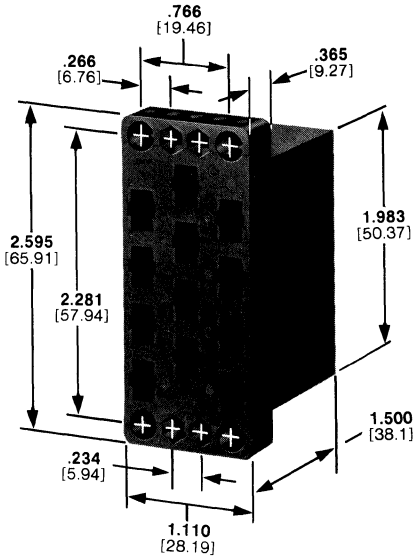
High Current 12 Position



Recommended Panel Cutout



Plug Housing

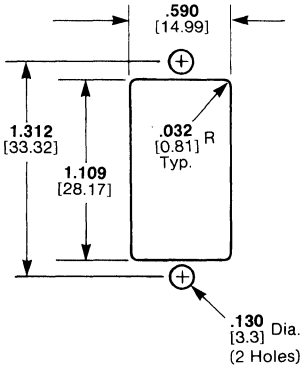


Receptacle Housing

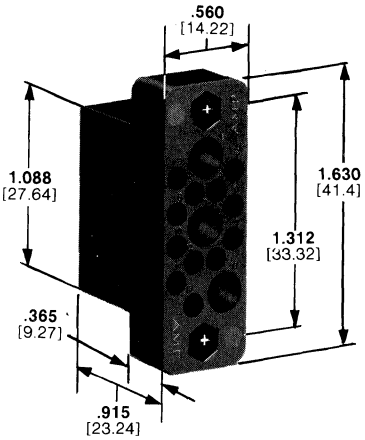
Phenolic Housing Part No.		Contacts Accepted		
Plug	Receptacle	Quantity	Contact Type	Page Ref.
205042-1	205043-1	12	Type XII	2007

Note: 12 position connector uses Standard 75 Position Hardware. Refer to appropriate column of Application Charts for Hardware Selection Page 2020 through Page 2035.

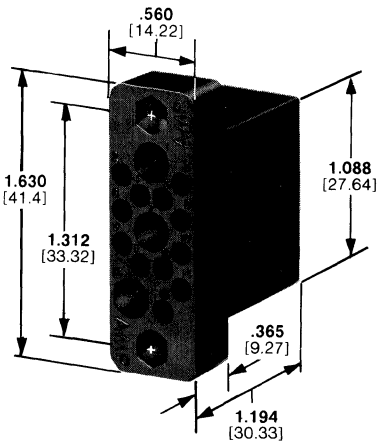
Mixed 15 Position



Recommended Panel Cutout



Plug Housing



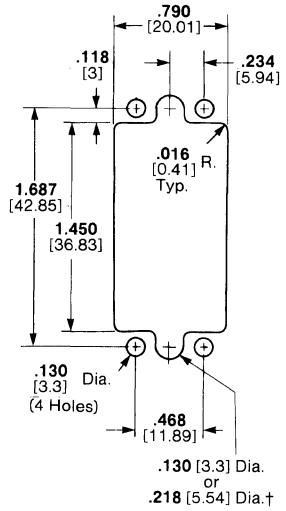
Receptacle Housing

Phenolic Housing Part No.		Diallyl Phthalate Housing Part No.		Contacts Accepted		
Plug	Receptacle	Plug	Receptacle	Quantity	Contact Type	Page Ref.
201597-1	201598-1	201597-3	201598-3	12*	Type II	2004
					Type III+	2005 - 2006
					Subminiature COAXICON	2008
				3*	Type I	2007
					Miniature COAXICON	2009, 2010

*Quantity may be all of the same type, or a combination of those types listed.

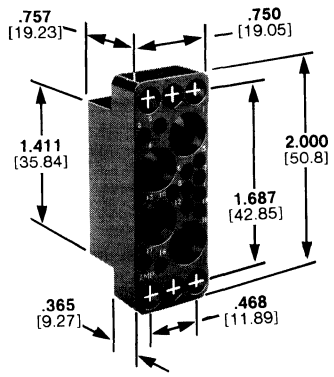
Note: 15 position connector uses Standard 26 Position Hardware. Refer to appropriate column of Application Charts for Hardware Selection Page 2020 through Page 2035.

Mixed 16 Position

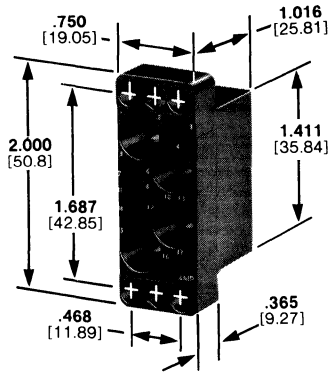


Recommended Panel Cutout

†**.218** [5.54] diameter is required when jackscrews are used.



Plug Housing



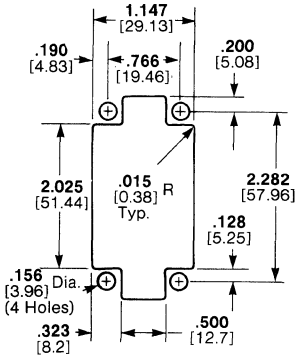
Receptacle Housing

Phenolic Housing Part No.		Contacts Accepted		
Plug	Receptacle	Quantity	Contact Type	Page Ref.
202268-2	202267-2	12*	Type II Size 20 Type II Size 16	2004 - 2011
			Subminiature COAXICON Short Pins	2004 - 2011
		4	Twin Standard COAXICON	2011

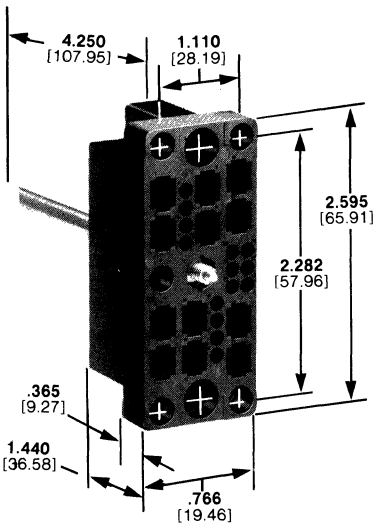
*Quantity may be all of the same type, or a combination of those types listed.

Note: 16 position connector uses Standard 34 Position Hardware. Refer to appropriate column of Application Chart for Hardware Selection Page 2020 through Page 2035.

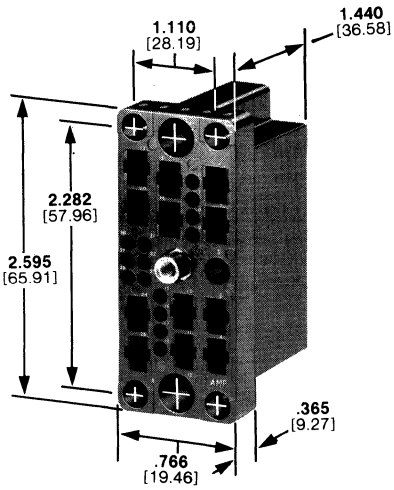
Mixed 29 CF Position (with Center Fastener)



Recommended Panel Cutout



Plug Housing



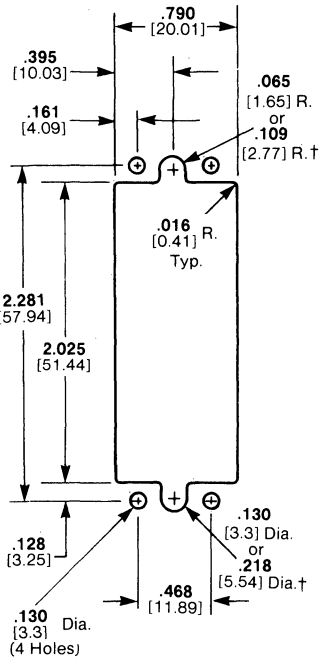
Receptacle Housing

Phenolic Housing Part No.		Contacts Accepted		
Plug	Receptacle	Quantity	Contact Type	Page Ref.
202479-2	202478-2	14*	Type II	2004
			Type III+	2005 - 2006
			Subminiature COAXICON	2008
		12	Type XII	2007
		2	Standard COAXICON	2010
		1	Type I	2007
			Miniature COAXICON	2009, 2010

*Quantity may be all of the same type, or a combination of those types listed.

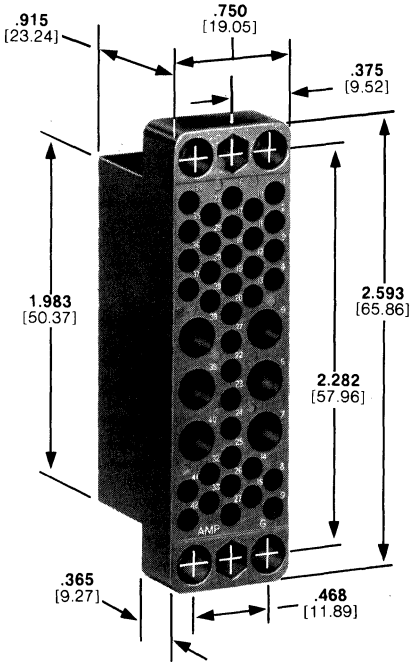
See Hardware Section for appropriate hardware for this connector. See pages 2062, 2064 and 2068.

Mixed
42 Position

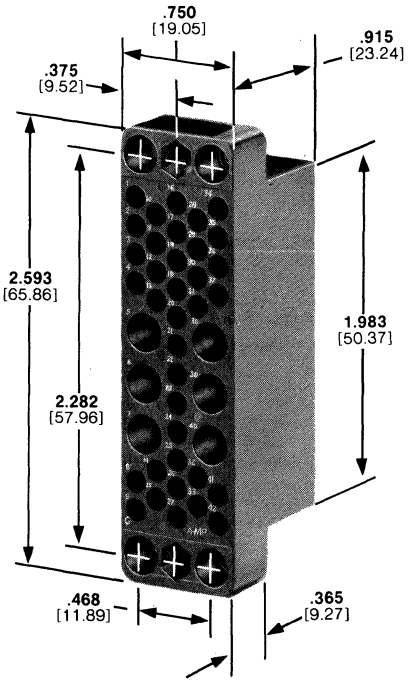


Recommended Panel Cutout

†**.218** [5.54] diameter and **.109** [2.77] radius are required when jackscrews are used.



Plug Housing



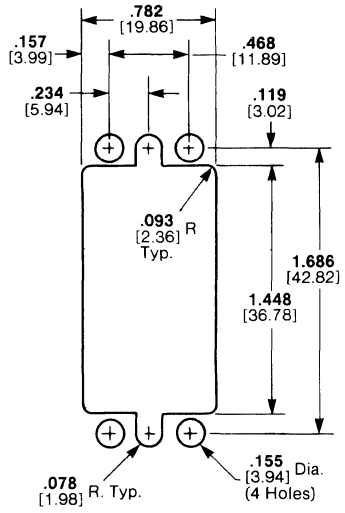
Receptacle Housing

Phenolic Housing Part No.		Diallyl Phthalate Housing Part No.		Contacts Accepted		
Plug	Receptacle	Plug	Receptacle	Quantity	Contact Type	Page Ref.
202515-1	202516-1	202515-3	202516-3	36*	Type II	2004
					Type III+	2005 - 2006
					Subminiature COAXICON	2008
				6*	Type I	2007
					Miniature COAXICON	2009, 2010

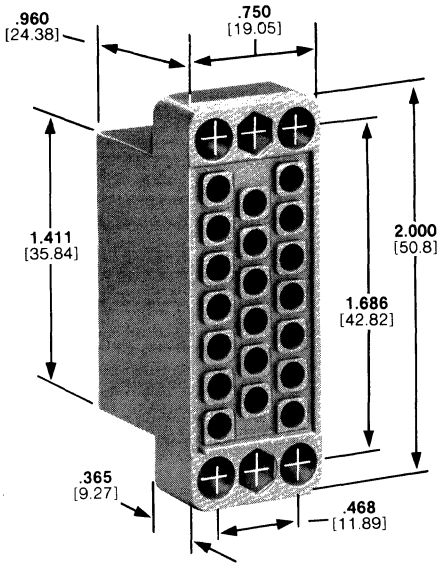
*Quantity may be all of the same type, or a combination of those types listed.

Note: 42 position connector uses Standard 50 Position Hardware. Refer to appropriate column of Application Chart for Hardware Selection Page 2020 through Page 2035.

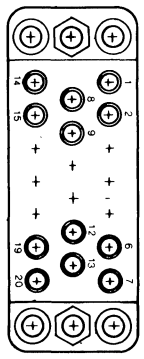
High Voltage 20 Position



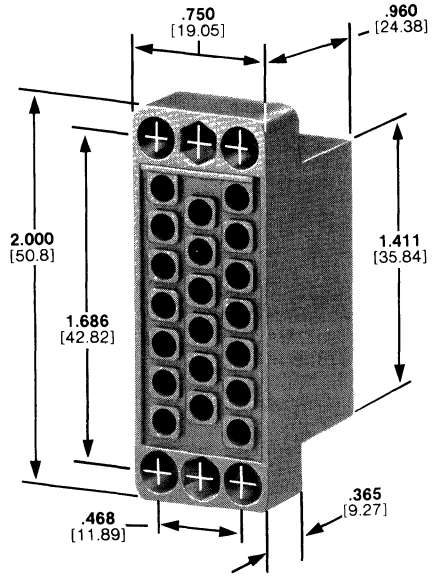
Recommended Panel Cutout



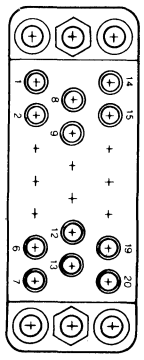
Plug Housing



Plug Housing Wiring Side



Receptacle Housing



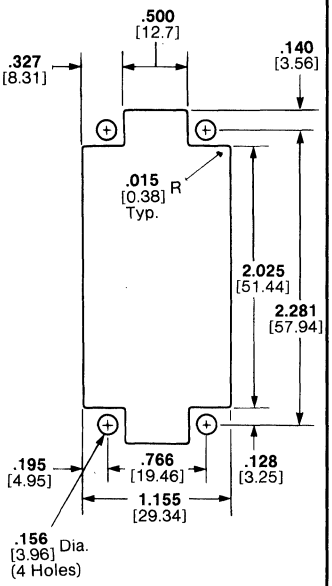
Receptacle Housing Wiring Side

Diallyl Phthalate Housing Part No.		Contacts Accepted		
Plug	Receptacle	Quantity	Contact Type	Page Ref.
203908-2	203909-2	20*	Type II	2004
			Type III+	2005 - 2006
			Subminiature COAXICON	2008

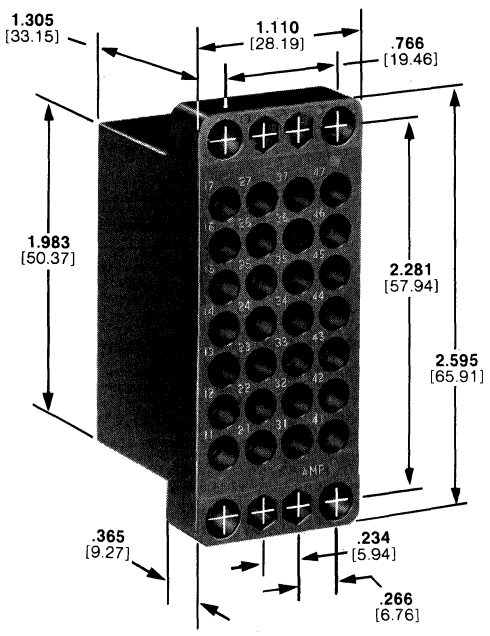
*Quantity may be all of the same type, or a combination of those types listed.

Note: 20 Position connector uses Standard 34 Position Hardware. Refer to appropriate column of Application Chart for Hardware Selection Page 2020 through Page 2035.

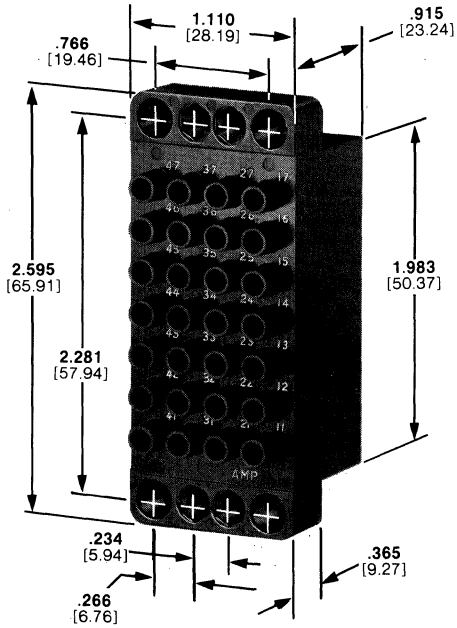
High Voltage
28 Position



Recommended Panel Cutout



Plug Housing



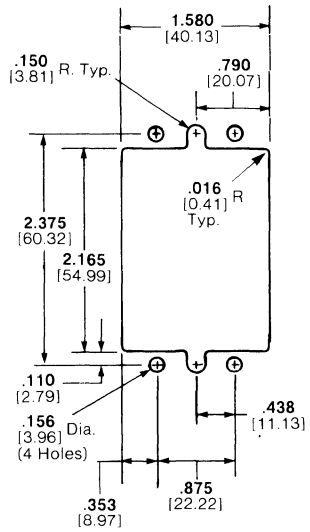
Receptacle Housing

Phenolic Housing Part No.		Contacts Accepted		
Plug	Receptacle	Quantity	Contact Type	Page Ref.
205689-2	205690-2	28*	Type II	2004
			Type III+	2005 - 2006
			Subminiature COAXICON	2008

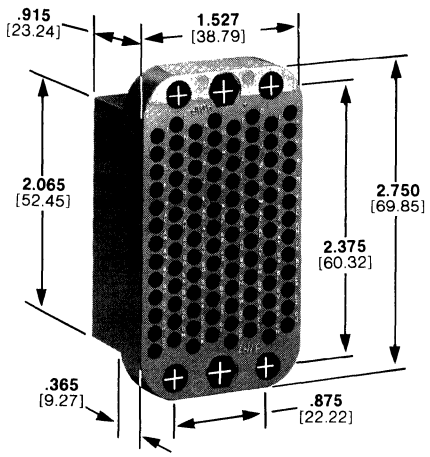
*Quantity may be all of the same type, or a combination of those types listed.

Note: 28 Position connector uses Standard 75 Position Hardware. Refer to appropriate column of Application Chart for Hardware Selection Page 2020 through Page 2035.

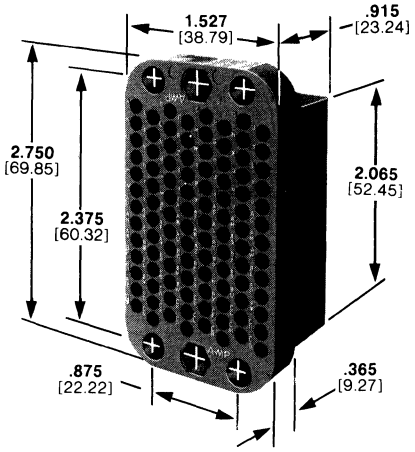
RFI/EMI Shielded 104 Position



Recommended Panel Cutout



Plug Housing



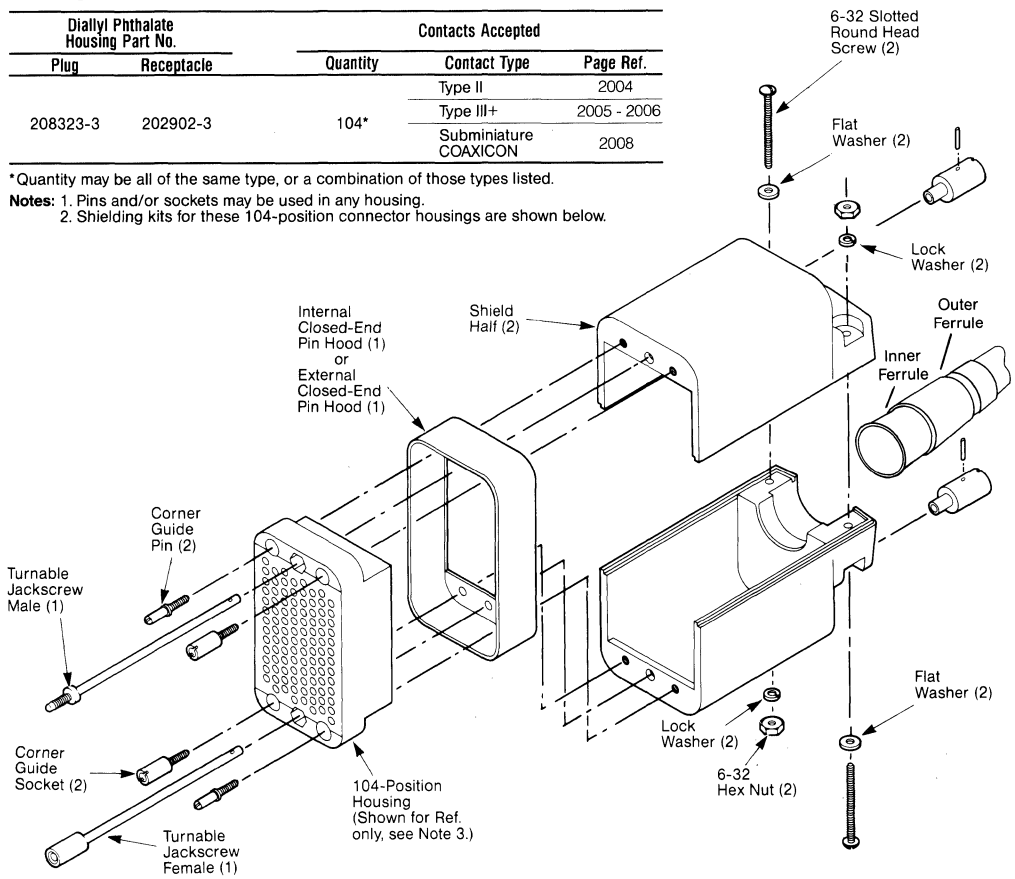
Receptacle Housing

Housings

Diallyl Phthalate Housing Part No.		Contacts Accepted		
Plug	Receptacle	Quantity	Contact Type	Page Ref.
208323-3	202902-3	104*	Type II	2004
			Type III+	2005 - 2006
			Subminiature COAXICON	2008

*Quantity may be all of the same type, or a combination of those types listed.

Notes: 1. Pins and/or sockets may be used in any housing.
2. Shielding kits for these 104-position connector housings are shown below.



Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of the components illustrated above. Kit nos. and mating hardware component part nos. are listed at the left.
3. These shielding kits can be used with either pin or socket housing (shown above). **They cannot be adapted to 104-position standard connector housings.**

Material and Finish:
Shield, Pin Hood—Die Cast Zinc; Nickel-over-Copper Plated
Guide Pin, Socket—Stainless Steel
Jackscrew Body—Aluminum Iridite; Zinc (Clear Chromate) Plated
Jackscrew Tip, Roll Pin—Stainless Steel
Screws, Hex Nuts, Washers—Steel; Zinc Plated

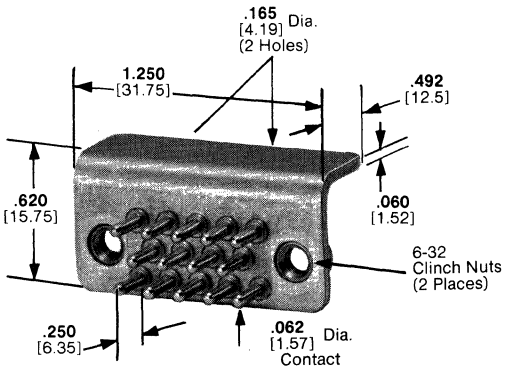
Shielding Kit Nos.:
208783-1 (with Internal Closed-End Pin Hood)
208783-2 (with External Closed-End Pin Hood)

Part nos. of individual hardware components for mating connector half are:
Fixed Male Jackscrew—**202875-2**
Fixed Female Jackscrew—**202876-1**
Corner Guide Pins—**201046-2**
Corner Guide Sockets—**201047-2**
Internal Closed-End Pin Hood—**212554-2**
External Closed-End Pin Hood—**212555-2**

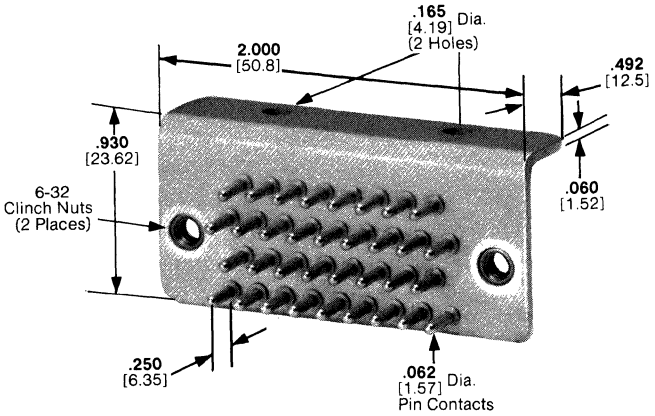
Order housings and ferrules separately.
Ferrules:
Inner—**Part No. 211424-2**
Outer—**Part No. 1-211423-2**
Crimping Tool—**Part No. 90410-1**
Die—**Part No. 90411-1**

Grounding Blocks

Material and Finish:
Plate—Brass; Tin Plated
Clinch Nuts—Stainless Steel
Pin Contacts—Phosphor Bronze; Gold-over-Nickel Plated



14-Position, Part No. 203540-1*

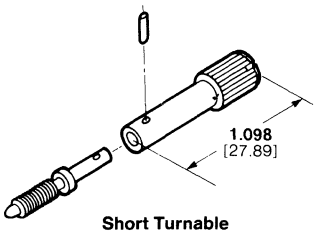


34-Position, Part Number 204814-1*

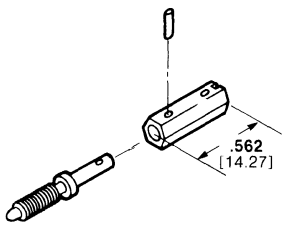
Grounding blocks mate with standard 14 and 34 position receptacle housings.
Note: Use referenced turnable jackscrews on mating housings when mating to grounding blocks.
*CSA certification pending.

Jackscrews

Material and Finish:
Jackscrew Body—Die Cast Zinc; (Clear Chromate) Conversion Coating
Jackscrew Tip, Roll Pin—Stainless Steel



Short Turnable Jackscrew, Male Part No. 203618-1 (2 Req'd.)



Short-Short Turnable Jackscrew, Male Part No. 203535-2 (2 Req'd.)

Jackscrews

Material and Finish:

Turnable Jackscrew Body—Die Cast Zinc; Chromate Conversion Coating

Turnable Jackscrew Tip—Stainless Steel

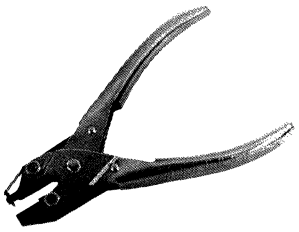
Roll Pin—Stainless Steel

For Fixed Jackscrews;
Lock Washer—Steel
Hex Nut—Steel; Zinc Plated

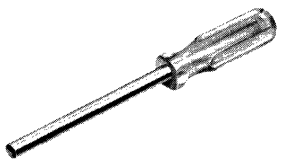
Jackscrews are used as an aid in mating and unmating connectors and for holding mated connectors together, mostly larger sizes (34-position and up). They can also be used for polarization.

Turnable jackscrews are free to rotate in a connector housing and are always used opposite mating fixed jackscrews. Where provided, roll pins are used to hold a male or female tip onto the turnable jackscrew body. AMP Assembly Tool No. 91016-2 (shown below) is available for properly assembling the turnable jackscrews on a connector housing.

Fixed jackscrews can be readily assembled to a connector housing with the Nut Driver Tool (also shown below).

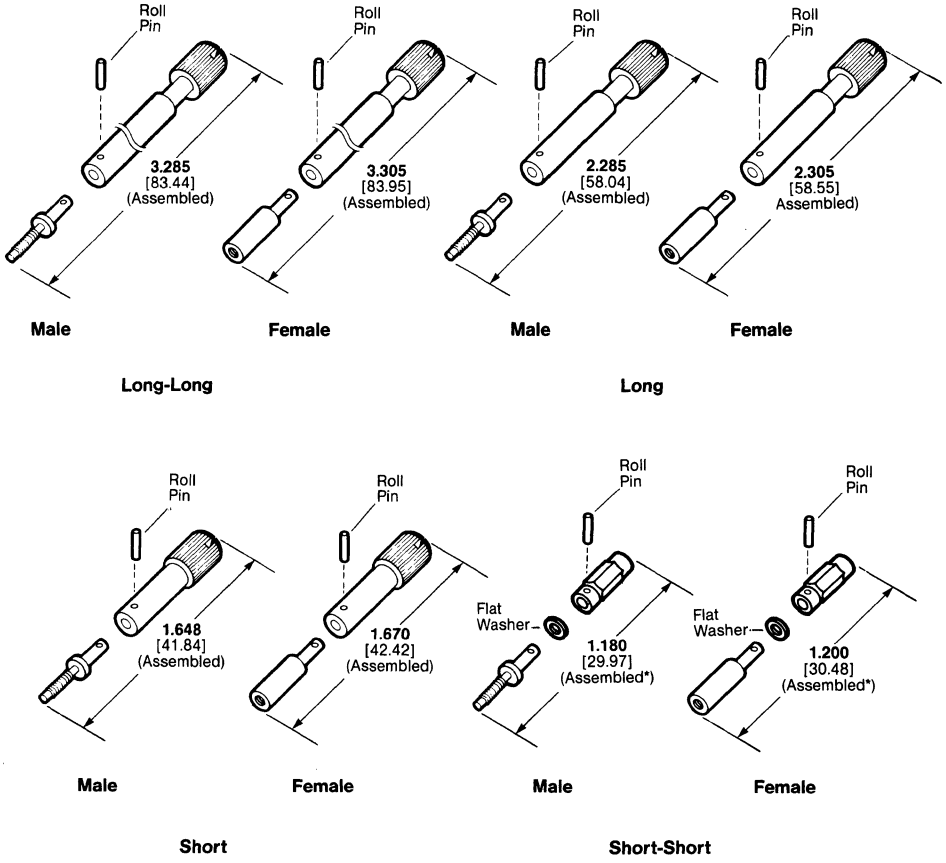


AMP Assembly Tool No. 91016-2 (for Roll Pins)



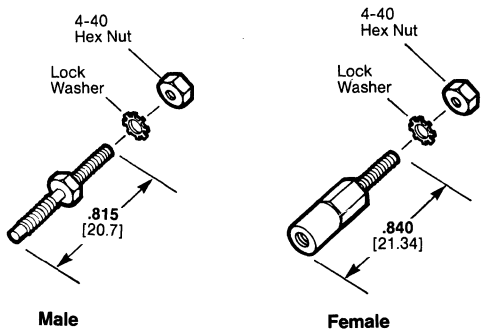
Nut Driver No. 811262-1 (4-40)

Turnable Jackscrews



*Assembled dimension includes metal thickness of Pin Hood or Strain Relief Clamp. Remove washer when both Pin Hood and Strain Relief Clamp are used.

Fixed Jackscrews



Turnable Jackscrews

Style	Jackscrew Part No.		Connectors Used on (No. of Positions)				
					Special Application		
	6-32 [M3.5 x 0.6] Double Lead Thread	6-32 [M3.5 x 0.6] Single Lead Thread	Standard	Posted	High Current	Mixed	High Voltage
Long-Long Male[1]	201911-1	207234-1	50 (90° shield only), 75 and 104	–	12	42	28
Long-Long Female[1]	201910-1	207235-1					
Long Male	200871-1	201413-1	20, 26, 34, 41 and 50	20, 26, 34, 41 and 50	12	15, 16 and 42	20 and 28
Long Female	200867-1	201414-1					
Short Male	200868-1	201087-1	6, 14, 20, 26, 34, 41, 50, 75 and 104	6, 14, 20, 26, 34, 41, 50, 75 and 104	12	15, 16 and 42	20 and 28
Short Female	200870-1	201088-1					
Short-Short Male	201388-1	201827-1	6, 14, 20, 26, 34, 41, 50, 75 and 104	6, 14, 20, 26, 34, 41, 50, 75 and 104	12	15, 16 and 42	20 and 28
Short-Short Female	201389-1	201828-1					

[1] Long-Long Turnable Jackscrews are used only with Two-Piece Shields on the connector sizes listed.

Notes: 1. Turnable Jackscrews mate with any Fixed Jackscrew listed below having the same thread size.
2. Special Turnable Jackscrews for use in connector housings to mate with Grounding Blocks are presented on page 2058.
3. Single-lead versions are designed to mate with competitive Jackscrews.

Roll pins for turnable jackscrews, Long-Long, Long, Short **Part No. 201501-1,** Short-Short **Part No. 201501-2.**

Fixed Jackscrews

Type	Jackscrew Part No.	
	6-32 [M3.5 x 0.6] Double Lead Thread	6-32 [M3.5 x 0.6] Single Lead Thread
Male	200874-1	201092-1
Female	200875-1	201089-1

Notes: 1. Fixed Jackscrews mate with any Turnable Jackscrew listed above having the same thread size.
2. Single-lead versions are designed to mate with competitive Jackscrews.

Locking Springs

Material and Finish:

Male (Spring Member)—Spring Steel; Nickel Plated

Female (Latching Member)—Stainless Steel

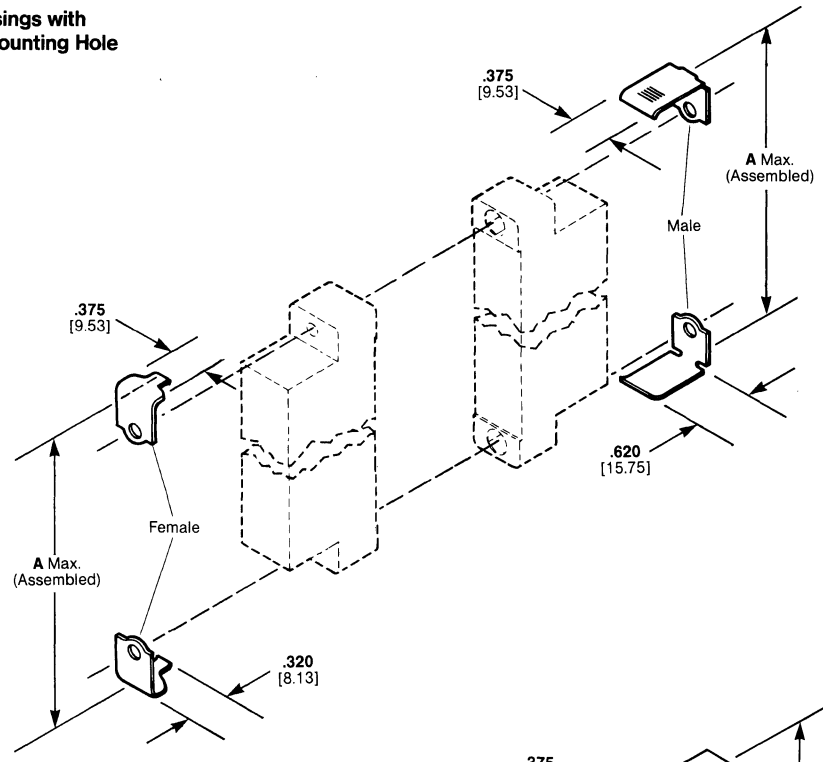
Locking Springs are used to hold mated connectors together. Although Locking Springs can be used on connectors up to 50 positions, they are primarily used on smaller size connectors (less than 34 positions).

In all applications, a Male (Spring Member) is used opposite a Female (Latching Member). They can be secured to a connector housing using Guide Pins and Sockets or 4-40 x .250 [6.35] fillister head screws and nuts. Locking Springs can be used with all hardware, except Closed-End Pin Hoods.

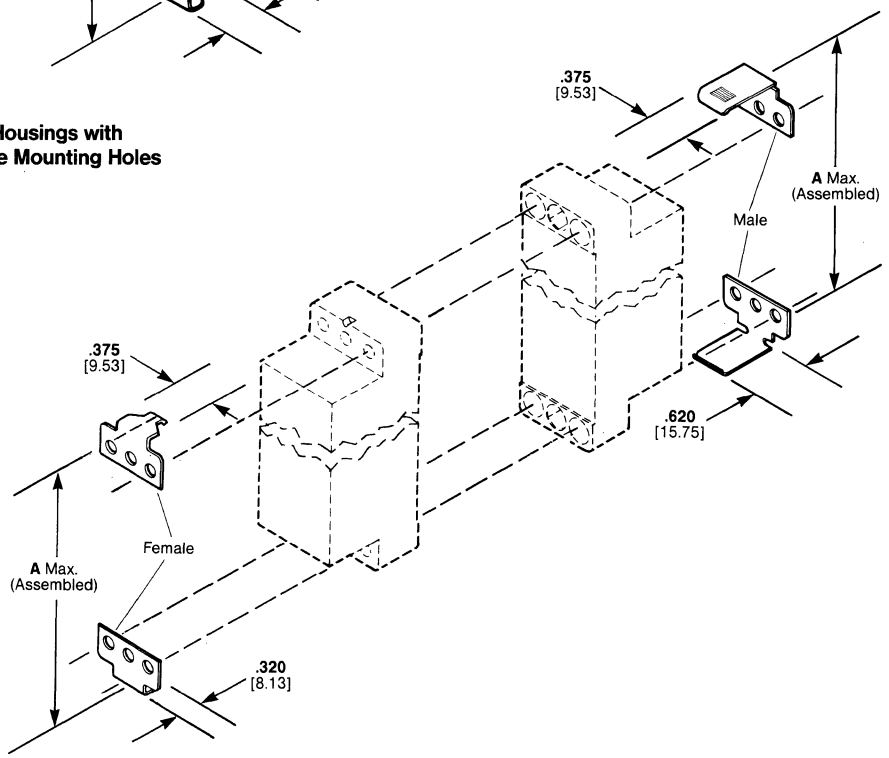
Standard Connector Size*	A Max.
6	**1.413** 35.89
14	**1.662** 42.21
20	**1.975** 50.17
26	**2.037** 51.74
34	**2.412** 61.26
41	**3.047** 77.39
50	**3.006** 76.35

*A dimension also applies to other comparably sized connector types listed in the chart at the right.

For Housings with Single Mounting Hole



For Housings with Three Mounting Holes



Locking Spring Part No.		Connectors Used On (No. of Positions)				
				Special Application		
Male (Spring Member)	Female (Latching Member)	Standard	Posted	High Current	Mixed	High Voltage
201921-1	201922-1	6, 14, 20 and 41	6, 14, 20 and 41	–	–	–
201923-1	201924-1	26	26	–	15	–
201925-1	201926-1	34 and 50	34 and 50	–	16 and 42	20

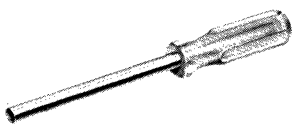
Guide Pins and Sockets

Material and Finish:
Guide Pins and Sockets—See chart.
Lock Washers—Stainless Steel
Hex Nuts—Steel; Zinc Plated

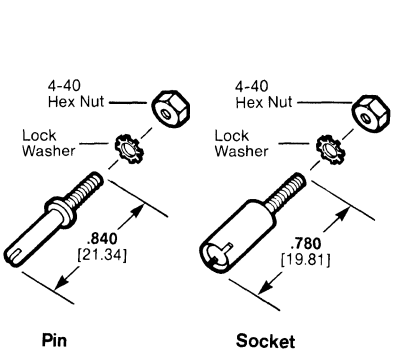
Guiding hardware is used to align connector halves during mating. This hardware can also be used for keying connectors to ensure proper mating. Guiding hardware can be readily secured to connector housings using the Nut Driver Tool shown below.

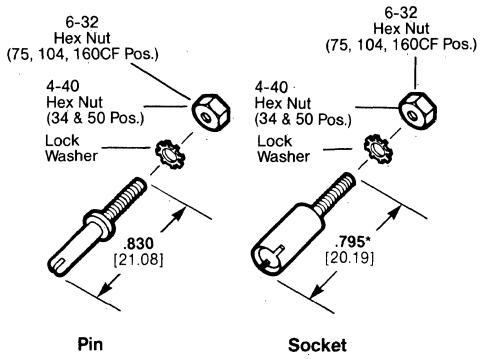
Center Guide Pins and Sockets are used primarily in housings having a single mounting hole, but can also be used in the centermost hole of housings having 3 or 4 mounting holes.

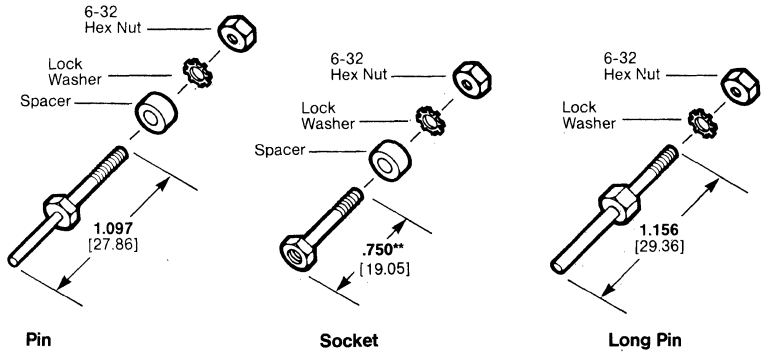
Corner Guide Pins and Sockets are used in the corner holes of housings having 2, 3 or 4 mounting holes. They cannot be used in center mounting holes which are slightly deeper than corner mounting holes to accept Jackscrews.



Nut Driver
No. 811262-1 (4-40)
No. 811262-2 (6-32)







Guide Pin and Socket		Connectors Used On (No. of Positions)				
				Special Application		
Type	Part No.	Standard	Posted	High Current	Mixed	High Voltage
Center Pin	200389-2	6, 14, 20, 26, 34, 41, 50, 75 and 104	6, 14, 20, 26, 34, 41, 50, 75 and 104	12	15, 16 and 42	20 and 28
Center Socket	200390-2					
	207619-1*[2]					
Corner Pin	200833-2	34 and 50	34 and 50	–	16 and 42	20
Corner Socket	200835-2					
	203964-1*					
Corner Pin	201046-2	75, 104 and 160 CF	75, 104 and 160 CF	12	29	28
Corner Socket	201047-2					
	203966-1*					
Corner Pin	202173-5	104 CF	104 CF	–	–	–
Corner Socket	202174-1	104CF	104CF	–	–	–
	204099-2**					
Long Pin[1]	201540-1	104 CF	104 CF	–	–	–

[1] Two Long Pins are to be installed in diagonal corners. Use without Guide Sockets.
[2] Hex Nut Stainless Steel.
*These Corner or Center Guide Sockets (.880 [22.35] long) are to be used when housings are loaded with subminiature COAXICON contacts.
Corner Socket, **Part No. 204099-2 (.838 [21.29] long), is to be used when housings are loaded with subminiature COAXICON contacts.

Pin Hoods, Internal Open-End and Closed-End

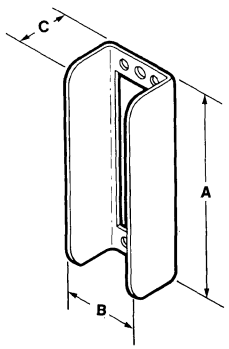
Material and Finish:
See chart.

Pin Hoods are used to protect pin contacts that protrude from a connector housing.

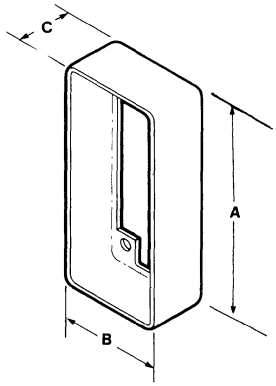
When contacts are mixed (pins and sockets in both housings), an Internal Pin Hood is used on one housing and an External Pin Hood (page 2064) is used on the other housing. Or a Long Shield is used on one housing and an External Pin Hood must be used on the other housing. When a housing is loaded with all pin contacts, an Internal or External Pin Hood may be used—no Pin Hood is required on the mating half.

External Open-End Pin Hoods with flanges (page 2064) are used primarily for mounting a connector with pin contacts to a panel.

All Pin Hoods may be secured to connector housings using other appropriate hardware, such as Jackscrews and Guide Pins and Sockets.



Internal Open-End



Internal Closed-End

Note: Typical Internal Open-End and Closed-End Pin Hoods are illustrated. Slight differences in configuration exist for various sizes. The mounting holes and/or slots in each Pin Hood match the mounting hole pattern of the connector housing on which the Pin Hood is used.

Pin Hoods, Internal Open-End

Dimensions A	Dimensions B	Dimensions C	Material	Pin Hood Part No.	Connectors Used On (No. of Positions) Standard	Posted	Special Application High Current	Mixed	Special Application High Voltage
1.000 25.4	**.500** 12.7	**.718** 18.24	Zinc Plated Steel	204258-6	6	6	–	–	–
1.250 31.75	**.550** 13.97	**.718** 18.24	Zinc Plated Steel	201363-4	14	14	–	–	–
1.562 39.67	**.530** 13.46	**.718** 18.24	Zinc Plated Steel	201362-4	20	20	–	–	–
1.632 41.45	**.725** 18.42	**.718** 18.24	Zinc Plated Steel	201785-4	26	26	–	15	–
2.000 50.8	**.880** 22.35	**.718** 18.24	Zinc Plated Steel	201786-4	34	34	–	16	20
2.595 65.91	**.940** 23.88	**.687** 17.45	Zinc Plated Steel	201317-4	50	50	–	42	–

Pin Hoods, Internal Closed-End

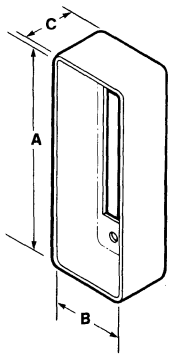
Dimensions A	Dimensions B	Dimensions C	Material	Pin Hood Part No.	Connectors Used On (No. of Positions) Standard	Posted	Special Application High Current	Mixed	Special Application High Voltage
2.130 54.1	**.880** 22.35	**.687** 17.45	Zinc Plated Steel	202434-4	34	34	–	16	20
2.875 73.02	**.952** 24.18	**.687** 17.45	Zinc Plated Steel	202394-2	50	50	–	42	–
2.765 70.23	**1.310** 33.27	**.687** 17.45	Zinc Plated Steel	201369-4	75	75	12	–	28
2.975 75.57	**1.740** 44.2	**.687** 17.45	Zinc Plated Steel	201364-4	104	104	–	–	–
2.975 75.57	**2.040** 51.82	**.687** 17.45	Zinc Plated Steel	203743-4	160 CF	160 CF	–	–	–

Specifications subject to change.
For latest design specifications...
1-800-522-6752

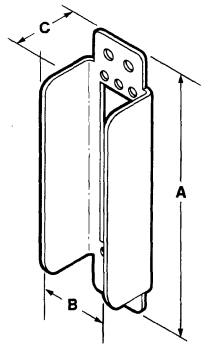
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Pin Hoods, External Closed-End and Open-End (with Flanges)

Material and Finish:
See chart.



External Closed-End



External Open-End with Flanges

Note: Typical External Closed-End and Open-End (with Flanges) Pin Hoods are illustrated. Slight differences in configuration exist for various sizes. The mounting holes and/or slots in each Pin Hood match the mounting hole pattern of the connector housing on which the Pin Hood is used.

Pin Hoods, External Closed-End

Dimensions			Material	Pin Hood Part No.	Connectors Used On (No. of Positions)				
							Special Application		
A	B	C			Standard	Posted	High Current	Mixed	High Voltage
1.500 38.1	**.690** 17.53	**.687** 17.45	Zinc Plated Steel	201347-4	14	14	–	–	–
1.880 47.75	**.812** 20.62	**.687** 17.45	Aluminum Iridite	201349-2	26	26	–	15	–
2.250 57.15	**1.000** 25.4	**.687** 17.45	Aluminum Iridite	201350-2	34	34	–	16	20
2.845 72.26	**1.000** 25.4	**.687** 17.45	Zinc Plated Steel	201390-5	50	50	–	42	–
2.845 72.26	**1.360** 34.54	**.687** 17.45	Zinc Plated Steel	201368-4	75	75	12	29	28
3.025 76.84	**1.800** 45.72	**.687** 17.45	Zinc Plated Steel	201346-4	104	104	–	–	–
3.040 77.22	**1.340** 34.04	**.718** 18.24	Zinc Plated Steel	202119-2	104 CF	104 CF	–	–	–
3.025 76.84	**2.100** 53.34	**.687** 17.45	Zinc Plated Steel	203744-4	160 CF	160 CF	–	–	–

Pin Hoods, External Open-End with Flanges

Dimensions			Material	Pin Hood Part No.	Connectors Used On (No. of Positions)				
							Special Application		
A	B	C			Standard	Posted	High Current	Mixed	High Voltage
2.484 63.09	**.720** 18.29	**.687** 17.45	Zinc Plated Steel	202118-5	26	26	–	15	–
2.875 73.02	**.891** 22.63	**.687** 17.45	Zinc Plated Steel	202095-5	34	34	–	16	20
3.375 85.73	**.565** 14.35	**.687** 17.45	Zinc Plated Steel	202165-5	41	41	–	–	–
3.468 88.09	**.891** 22.63	**.687** 17.45	Zinc Plated Steel	202096-5	50	50	–	42	–
3.468 88.09	**1.266** 32.16	**.687** 17.45	Zinc Plated Steel	202097-5	75	75	12	–	28

Shields, Two-Piece, 180° and 90° Cable Exit

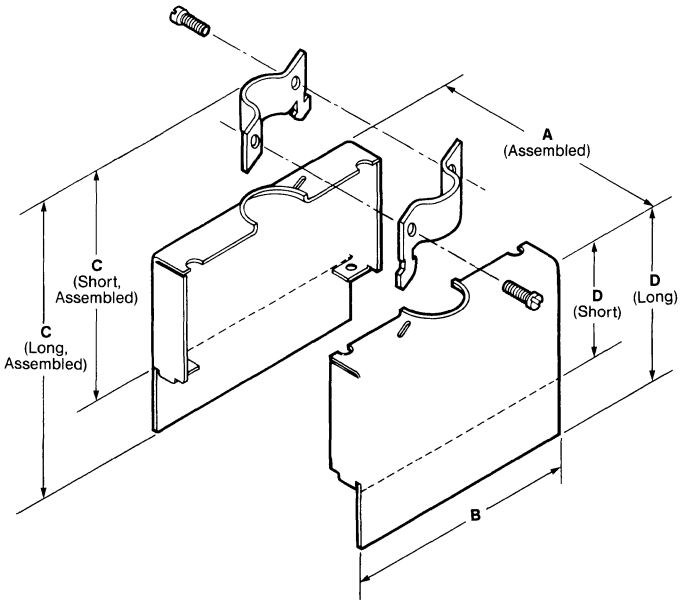
Material and Finish:
Shields—See chart.
Cable Clamps and Screws—Steel; Zinc Plated

These Two-Piece Shields are used to protect connectors from dust, dirt and physical damage and to provide strain relief for the contacts. They feature integral cable clamps formed at 180° and 90° and are available in long and short versions. Long versions offer pin protection as well as connector protection and strain relief. Short versions may be used in combination with Pin Hoods to provide pin protection.

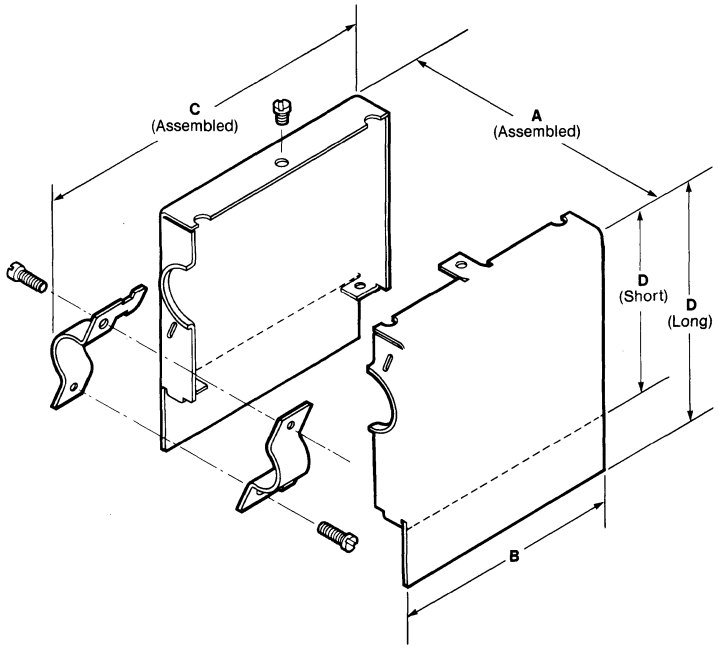
For shielding and fastening applications, Two-Piece Shields are used with Jackscrews. They may be secured to a connector housing using other appropriate hardware such as Guide Pins and Sockets.

Two-Piece Shields with cable clamps formed at 45° are available, see page 2068.

AMP does not recommend the use of shields with posted connectors because of the danger of shorting.



180° Cable Exit



90° Cable Exit

Note: Typical 180° and 90° Cable Exit Shields are illustrated. Slight differences in configuration exist for various sizes.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Shields, Two-Piece 180° and 90° Cable Exit

Two-Piece Shields, 180° Cable Exit (Long and Short)

Dimensions A	Dimensions B	Dimensions C	Dimensions D	Material	Shield Part No. Long	Shield Part No. Short	Max. Cable Dia.	Connectors Used On (No. of Positions) Standard	Special Application High Current	Special Application Mixed	Special Application High Voltage
.520 13.21	1.562 39.67	1.815 46.1	1.300 33.02	Zinc Plated Steel	–	204087-1	.375 9.53	20	–	–	–
.640 16.26	1.625 41.28	2.453 62.31	1.970 50.04	Anodized Aluminum	201576-1	–	.415 10.54	26	–	15	–
				Zinc Plated Steel	201576-2	–					
		1.781 45.24	1.300 33.02	Anodized Aluminum	–	200514-1					
				Zinc Plated Steel	–	200514-2					
.828 21.03	2.000 50.8	2.453 62.31	1.937 49.2	Anodized Aluminum	201571-1	–	.500 12.7	34	–	16	20
				Zinc Plated Steel	201571-2	–					
		1.765 44.83	1.250 31.75	Anodized Aluminum	–	200517-1					
				Zinc Plated Steel	–	200517-2					
.640 16.26	2.687 68.25	2.453 62.31	1.968 49.99	Zinc Plated Steel	202164-1	–	.435 11.05	41	–	–	–
.515 13.08					202383-2	–					
.640 16.26	2.687 68.25	1.781 45.24	1.290 32.77		–	202160-1					
.515 13.08					–	202383-1					
.828 21.03	2.593 65.86	2.468 62.69	1.970 50.04	Anodized Aluminum	201443-1	–	.550 13.97	50	–	42	–
				Zinc Plated Steel	201443-2	–					
		1.796 45.62	1.290 32.77	Anodized Aluminum	–	200532-1					
				Zinc Plated Steel	–	200532-2					
1.195 30.35	2.727 69.27	3.327 84.51	2.797 71.04	Zinc Plated Steel	202713-2	–	1.000 25.4	75	12	–	28
		2.655 67.44	2.125 53.98		–	202713-1					
1.237 31.42	2.718 69.04	1.738 44.15	1.290 32.77	Zinc Plated Cast Aluminum	–	204209-1					
1.620 41.15	2.835 72.01	3.327 84.51	2.797 71.04	Zinc Plated Steel	204173-2	–	1.100 27.94	104	–	–	–
		2.655 67.44	2.125 53.98		–	204173-1					
1.703 43.26	2.765 70.23	1.843 46.81	1.290 32.77	Zinc Plated Cast Aluminum	–	201131-1	.800 20.32				

Two-Piece Shields, 90° Cable Exit (Long and Short)

Dimensions A	Dimensions B	Dimensions C	Dimensions D	Shield Part No. Long	Shield Part No. Short	Max. Cable Dia.	Connectors Used On (No. of Positions) Standard	Special Application High Current	Special Application Mixed	Special Application High Voltage
.900 22.86	2.592 65.84	3.098 78.69	2.797 71.04	203975-2	–	.550 13.97	50	–	42	–
			2.125 53.98	–	203975-1					
1.195 30.35	2.730 69.34	3.260 82.80	2.797 71.04	202711-3	–	1.000 25.4	75	12	–	28
			2.125 53.98	–	202711-1					
1.620 41.15	2.835 72.01	3.365 85.47	2.797 71.04	205316-2	–	1.100 27.94	104	–	–	–
			2.125 53.98	–	205316-1					
1.145 29.08	2.845 72.26	3.375 85.73	2.375 60.33	–	202395-1	1.000 25.4	104 CF	–	–	–

Note: 1. All parts are packaged unassembled.
2. **Material,** Zinc Plated Steel.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimeters.

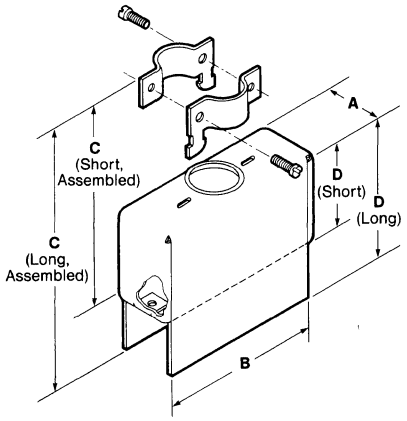
Shields, One-Piece 180° and 90° Cable Exit

Material and Finish:
Shields, Cable Clamps and Screws—Steel; Zinc Plated

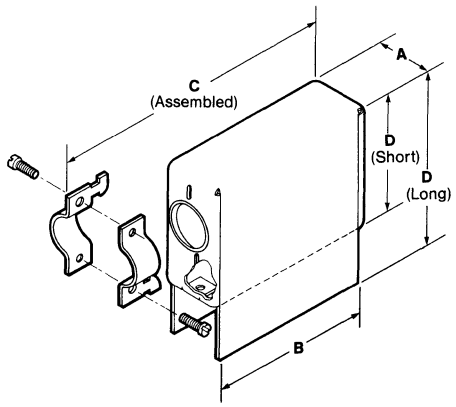
One-Piece Shields are used to protect connectors from dust, dirt and physical damage and to provide strain relief for the contacts. They feature integral cable clamps formed at 180° and 90° and are available in long and short versions. Long versions offer pin protection as well as connector protection and strain relief. Short versions may be used in combination with Pin Hoods to provide pin protection.

For shielding and fastening applications, One-Piece Shields are used with Locking Springs. They cannot be used with Jackscrews. One-Piece Shields may be secured to a connector housing using other appropriate hardware such as Guide Pins and Sockets.

AMP does not recommend the use of shields with posted connectors because of the danger of shorting.



180° Cable Exit



90° Cable Exit

Note: Typical 180° and 90° Cable Exit Shields are illustrated. Slight differences in configuration exist for various sizes.

One-Piece Shields, 180° Cable Exit (Long and Short)

Dimensions A	Dimensions B	Dimensions C	Dimensions D	Shield Part No. Long	Shield Part No. Short	Max. Cable Dia.	Connectors Used On (No. of Positions) Standard	Special Application Mixed	Special Application High Voltage
.531 13.49	**1.312** 33.32	**2.468** 62.69	**1.969** 50.01	201378-2	–	**.375** 9.53	14	–	–
		1.796 45.62	**1.300** 33.02	–	201360-2				
.515 13.08	**1.640** 41.66	**2.468** 62.69	**1.969** 50.01	201380-2	–	**.350** 8.89	20	–	–
		1.796 45.62	**1.300** 33.02	–	201227-2				
.640 16.26	**1.687** 42.85	**2.468** 62.69	**1.969** 50.01	201382-2	–	**.400** 10.16	26	15	–
		1.796 45.62	**1.296** 32.92	–	201169-2				
.828 21.03	**2.062** 52.37	**2.468** 62.69	**1.969** 50.01	201384-2	–	**.500** 12.7	34	16	20
		1.781 45.24	**1.281** 32.54	–	201165-2				
.828 21.03	**2.530** 64.26	**2.468** 62.69	**1.969** 50.01	201386-2	–	**.550** 13.97	50	42	–
		1.796 45.62	**1.300** 33.02	–	201173-2				

One-Piece Shields, 90° Cable Exit (Long and Short)

Dimensions A	Dimensions B	Dimensions C	Dimensions D	Shield Part No. Short	Max. Cable Dia.	Connectors Used On (No. of Positions) Standard	Special Application Mixed	Special Application High Voltage
.531 13.49	**1.312** 33.32	**1.796** 45.62	**1.750** 44.45	201467-2	**.375** 9.53	14	–	–
.515 13.08	**1.640** 41.66	**2.125** 53.98	**1.812** 46.02	201460-2	**.350** 8.89	20	–	–
.640 16.26	**1.687** 42.85	**2.171** 55.14	**1.812** 46.02	201468-2	**.400** 10.16	26	15	–
.828 21.03	**2.062** 52.37	**2.562** 65.07	**1.812** 46.02	201469-2	**.500** 12.7	34	16	20
.515 13.08	**2.687** 68.25	**3.171** 80.54	**1.562** 39.67	201486-2	**.435** 11.05	41	–	–
.500 12.7		**3.156** 80.16						
.828 21.03	**2.812** 71.42	**3.296** 83.72	**1.843** 46.81	201470-2	**.550** 13.97	50	42	–

Note: All parts are packaged unassembled.

Shields, Two-Piece, 45° and 30° Cable Exit

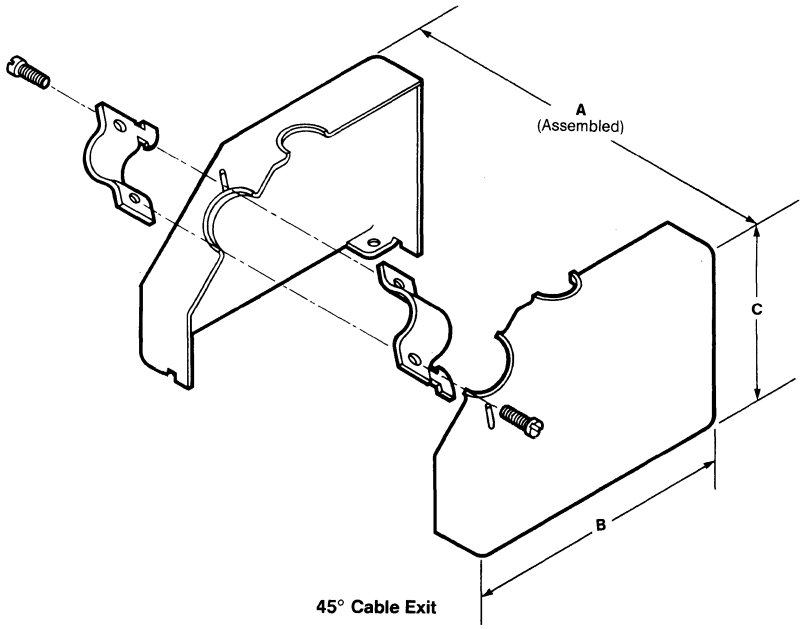
Material and Finish:
Shields, Cable Clamps and Screws—Steel; Zinc Plated

These Two-Piece Shields are used to protect connectors from dust, dirt and physical damage and to provide strain relief for the contacts. They feature integral cable clamps formed at 45° and are specifically designed for use with 104 CF and 160 CF position standard connectors.

These Shields may be used with Pin Hoods to provide pin protection.

These Two-Piece Shields may be secured to a connector housing using other appropriate hardware such as Guide Pins and Sockets.

AMP does not recommend the use of shields with posted connectors because of the danger of shorting.



45° Cable Exit

Note: A typical 45° Cable Exit Shield is illustrated. Slight differences in configuration exist between sizes.

Two-Piece Shields, 45° Cable Exit

Dimensions A	Dimensions B	Dimensions C	Shield Part No.	Max. Cable Dia.	Connectors Used On (No. of Positions) Standard
1.145 29.08	**2.845** 72.26	**2.375** 60.33	202169-1	**1.000** 25.4	104 CF
		1.875 47.63	202110-1	**.650** 16.51	
1.845 46.86	**2.770** 70.36	**2.750** 69.85	202798-1	**1.200** 30.48	160 CF

Notes: All parts are packaged unassembled.

Two-Piece Shield, 30° Cable Exit

Dimensions A	Dimensions B	Dimensions C	Shield Part No.	Max. Cable Dia.	Connectors Used On (No. of Positions) Standard
1.375 34.93	**2.685** 68.19	**3.440** 87.38	202483-1	**1.250** 31.75	29 CF

Specifications subject to change.
For latest design specifications...
1-800-522-6752

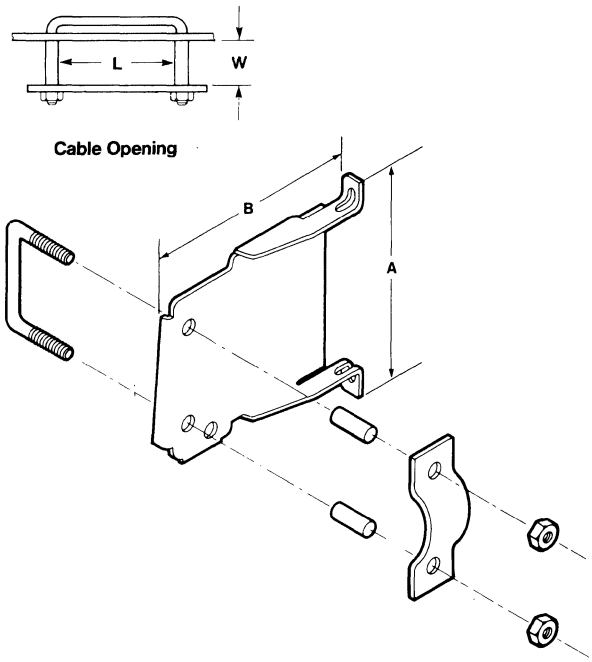
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Strain Relief Clamps

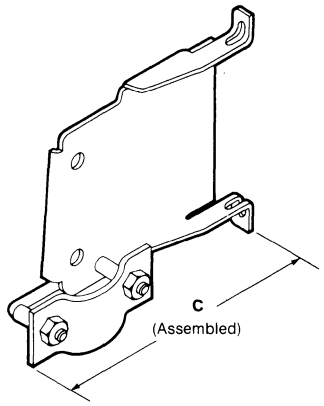
Material and Finish:
Clamp and Hex Nuts—Steel; Zinc Plated
"U" Bolt—Stainless Steel
Sleeves—Black Plastic (Neoprene)
Bracket—See chart

Strain Relief Clamps are used to relieve the stress of the wires on the contacts and to group the wires where they enter a connector. Both long and short versions are available. The long versions are normally used for all applications and provide a greater distance between the wire bundle and the connector for operating Jackscrews without interference. The short versions are ideally suited for applications where space is limited.

AMP does not recommend the use of Strain Relief Clamps with posted connectors because of the danger of shorting.



Shown for
180° Cable Exit



Shown for
90° Cable Exit

Note: A typical Strain Relief Clamp is illustrated. Slight differences in configuration exist for various sizes.

Cable Clamps (Long and Short)

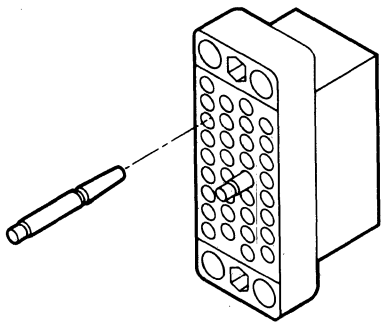
Bracket Material	Dimensions A	Dimensions B	Dimensions C	Cable Opening L x W	Strain Relief Clamp Part No. Long	Strain Relief Clamp Part No. Short	Connectors Used On (No. of Positions) Standard	Special Application High Current	Special Application Mixed	Special Application High Voltage
Steel Zinc Plated	**1.000** 25.4	**1.125** 28.58	–	**.305 x .155** 7.75 x 3.94	–	203432-1	6	–	–	–
Steel Zinc Plated	**1.250** 31.75	**2.125** 53.98	**2.687** 68.25	**.530 x .335** 13.46 x 8.51	201843-1	–	14	–	–	–
Steel Zinc Plated	**1.250** 31.75	**1.125** 28.58	**1.687** 42.85	**.530 x .335** 13.46 x 8.51	–	200686-1	14	–	–	–
Stainless Steel	**1.562** 39.67	**1.187** 30.15	**2.000** 50.8	**.780 x .335** 19.81 x 8.51	–	201237-1	20	–	–	–
Steel Zinc Plated	**1.625** 41.28	**2.125** 53.98	**2.937** 74.6	**.780 x .505** 19.81 x 12.83	201845-1	–	26	–	15	–
Steel Zinc Plated	**1.625** 41.28	**1.250** 31.75	**2.062** 52.37	**.780 x .430** 19.81 x 10.92	–	201229-1	26	–	15	–
Stainless Steel	**2.000** 50.8	**2.281** 57.94	**2.851** 72.42	**.780 x .500** 19.81 x 12.7	201846-1	–	34	–	16	20
Stainless Steel	**2.000** 50.8	**1.500** 38.1	**2.265** 57.53	**.780 x .425** 19.81 x 10.8	–	201224-1	34	–	16	20
Stainless Steel	**2.625** 66.68	**2.000** 50.8	**3.343** 84.91	**1.500 x .360** 38.1 x 9.14	201766-1	–	41	–	–	–
Steel Zinc Plated	**2.593** 65.86	**2.406** 61.11	**3.296** 83.72	**1.125 x .675** 28.58 x 17.15	201847-1	–	50	–	42	–
Steel Zinc Plated	**2.562** 65.07	**1.703** 43.26	**2.780** 70.61	**1.125 x .550** 28.58 x 13.97	–	201182-1	50	–	42	–
Stainless Steel	**2.594** 65.89	**2.531** 64.29	**3.717** 94.41	**1.125 x .925** 28.58 x 23.5	201848-1	–	75	12	–	28
Steel Zinc Plated	**2.625** 66.68	**1.734** 44.04	**2.874** 73.	**1.125 x .800** 28.58 x 20.32	–	200730-1	75	12	–	28
Steel Zinc Plated	**2.750** 69.85	**2.531** 64.29	**3.389** 86.08	**1.125 x 1.235** 28.58 x 31.37	201849-1	–	104	–	–	–
Stainless Steel	**2.750** 69.85	**1.812** 46.02	**2.889** 73.38	**1.125 x 1.110** 28.58 x 28.19	–	201221-1	104	–	–	–

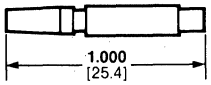
Notes: All parts are packaged unassembled.

Keying Plug (for Multimate Contact Cavities)

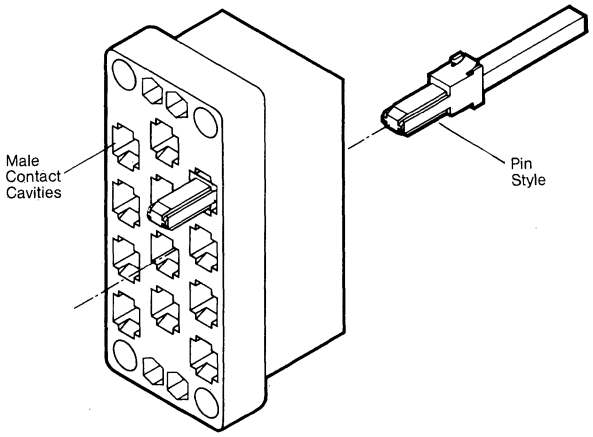
Material:
Natural Color Nylon

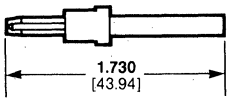
This cylindrical keying plug is used in Multimate contact cavities that accept Type II, Type III+ and subminiature COAXICON socket contacts. The plug protrudes from the mating face of a connector and will prevent connector halves from being mated by butting against the pin contact. The mating pin contact must be removed to assure proper mating.





Part No. 200821-1



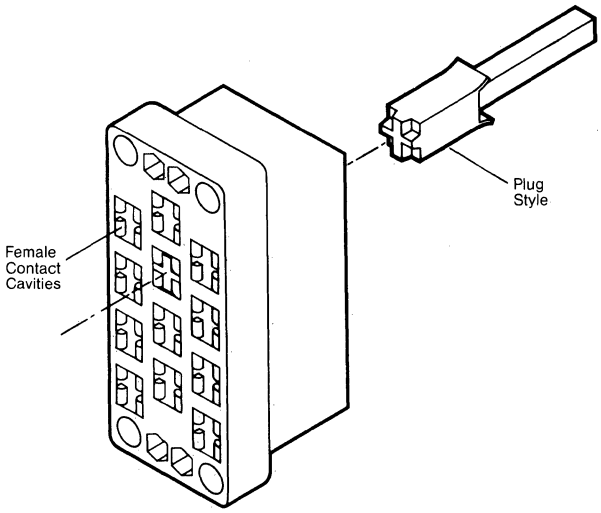


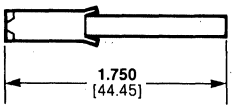
Part No. 207597-1

Keying Plugs (for Type XII Contact Cavities)

Material:
For 207597-1—Gray Nylon
For 206508-1—Natural Color Nylon

Two versions of rectangular keying plugs are available for Type XII contact cavities. A pin style is used in cavities that accept Type XII male contacts, and a plug style is used in cavities that accept Type XII female contacts. These keying plugs perform the same as the cylindrical keying plug described above. The mating contact must also be removed to assure proper connector mating.





Part No. 206508-1

The following is a list of technical documents that provide specifications, application and performance data for M Series connectors, contacts, tooling and hardware.

Product Specifications

108-10001—M Series Connectors
108-10039—Type II Contacts
108-10042—Type III+ Contacts
108-10108—Type I Contacts
108-10037—Type XII Contacts
108-12011—Subminiature COAXICON Contacts
108-12021—Miniature COAXICON Contacts
108-12023—Twin Standard COAXICON Contacts

Application Specifications

114-10026—Type II Contacts
114-10004—Type III+ Contacts, Application of
114-10005—Type XII Contacts, Application of

Instruction Sheets

IS 1379—Selection Charts for Multimate Pin and Socket Contacts
IS 7053—Selection Chart for Type I Pin and Socket Contacts
IS 2024-2—Selection Chart for Subminiature COAXICON Contacts
IS 1770—Selection Chart for Miniature COAXICON Contacts
IS 1748—Selection Chart for Standard COAXICON Contacts
IS 1772—Selection Chart for Twin Standard COAXICON Contacts
IS 7170—6, 14, 20 and 41 Position M Series Connectors
IS 7177—21 and 26 Position M Series Connectors
IS 7161—34 and 50 Position and 20 Position (High Voltage) M Series Connectors
IS 7164—75 and 104 Position M Series Connectors
IS 7005—104 CF Position M Series Connectors
IS 7293—160 CF Position M Series Connectors
IS 7728—6 Position M Series Connector Kits
IS 7729—14, 20 and 26 Position M Series Connector Kits
IS 7105—14, 20, 26 and 41 Position M Series Connector Kits
IS 7107—34 and 50 Position M Series Connector Kits
IS 7730—34, 50, 75 and 104 Position M Series Connector Kits
IS 7108—75 and 104 Position M Series Connector Kits
IS 7731—104 CF Position M Series Connector Kits
IS 7732—160 CF Position M Series Connector Kits
IS 7048—15 Position (Mixed) M Series Connectors
IS 7455—29 Position (Mixed) M Series Connectors
IS 6800—Shield Kit 208783-1 for 104 Position M Series Connector
IS 7485—Press-Fit Jackscrews for M Series Connectors
IS 7066—Locking Springs for 14, 20, 21, 26 and 41 Position M Series Connectors
IS 7067—Locking Springs for 34 and 50 Position M Series Connectors
IS 7054—Center Guide Pins and Sockets for M Series Connectors
IS 7055—Corner Guide Pins and Sockets for 34 and 50 Position M Series Connectors
IS 7056—Corner Guide Pins and Sockets for 75 and 104 Position M Series Connectors
IS 7121—Guide Pins and Sockets for 104 CF Position M Series Connectors
IS 7013—Pin Hoods for M Series Connectors
IS 7096—Pin Hoods w/Mounting Flange for 26 Position M Series Connectors
IS 7094—Pin Hoods w/Mounting Flange for 34 and 50 Position M Series Connectors

IS 7103—Pin Hoods w/Mounting Flange for 41 Position M Series Connectors
IS 7095—Pin Hoods w/Mounting Flange for 75 Position M Series Connectors
IS 7089—Pin Hoods, Closed-End, for 104 CF Position M Series Connectors
IS 1238—Shields (Long) for 34 and 50 Position M Series Connectors
IS 1197—Shields (Short) for 34 and 50 Position M Series Connectors
IS 1298—Shields, 180° (Long) for 14, 20, 26, 34 and 50 Position M Series Connectors
IS 1312—Shields, 180° (Short) for 14, 20, 26, 34 and 50 Position M Series Connectors
IS 1296—Shields, 90° (Long) for 14, 20, 26, 34 and 50 Position M Series Connectors
IS 1297—Shields, 90° (Short) for 14, 20, 26, 34 and 50 Position M Series Connectors
IS 7026—Shields, 90° (Short) for 21 and 41 Position M Series Connectors
IS 1192—Shields, 180° (Long and Short) for 26 and 41 Position M Series Connectors
IS 7220—Shields, 180° and 90° (Long and Short) for 75 Position M Series Connectors
IS 1321—Shields, 90° (Short) for 104 Position M Series Connectors
IS 7148—Shields, 90° and 45° (Long) for 104 CF Position M Series Connectors
IS 7088—Shields, 45° (Short) for 104 CF Position M Series Connectors
IS 7423—Shields, 45° (Short) for 160 CF Position M Series Connectors
IS 7017—Strain Relief Clamps (Long) for 14 and 20 Position M Series Connectors
IS 7018—Strain Relief Clamps (Long) for 26 Position M Series Connectors
IS 1313—Strain Relief Clamps (Short) for 14, 20 and 26 Position M Series Connectors
IS 7012—Strain Relief Clamps (Long and Short) for 21 and 41 Position M Series Connectors
IS 7019—Strain Relief Clamps (Long) for 34 Position M Series Connectors
IS 1317—Strain Relief Clamps (Short) for 34 and 50 Position M Series Connectors
IS 7216—Strain Relief Clamps (Long) for 75 Position M Series Connectors
IS 1368—Strain Relief Clamps (Short) for 75 Position M Series Connectors
IS 7020—Strain Relief Clamps (Long) for 50 and 104 Position M Series Connectors
IS 1322—Strain Relief Clamps (Short) for 104 Position M Series Connectors
IS 1340—Keying Plug (Cylindrical) for Multimate Contact Cavities
IS 6610—Application and Maintenance of AMP Hand Crimping Tool 90066
IS 6613—Application and Maintenance of AMP Hand Crimping Tool 90067
IS 6614—Application and Maintenance of AMP Hand Crimping Tool 90067-2
IS 6615—Application and Maintenance of AMP Hand Crimping Tool 90208-1
IS 7414—Application and Maintenance of AMP Hand Crimping Tool 90225-2
IS 7574—Application and Maintenance of AMP Hand Crimping Tool 90277-1
IS 7586—Application and Maintenance of AMP Hand Crimping Tool 90282-1
IS 7942—Application and Maintenance of AMP Hand Crimping Tool 90310-2
IS 7773—Application and Maintenance of AMP Hand Crimping Tool 90331-1
IS 7126—AMP Assembly Tool 91016 for Turnable Jackscrews

CPC (Circular Plastic) and Metal-Shell CPC Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Metric symbols used are:
mm² (square millimeters)
C (Celsius)

Product Facts

- Lightweight, all-plastic connectors and metal-shell versions available
- CPC connectors made of UL recognized, high-grade thermoplastic material
- Recognized under the Component Program of Underwriters Laboratories Inc. for 250-volt service*, File No. E28476
- Certified by Canadian Standards Association File No. LR16455
- Four connector series for different interconnection needs:
  - Series 1—Standard density applications with Multimate contacts
  - Series 2—High-density applications with Size 20 DM and 20 DF contacts (.040 [1.02] pin diameter)
  - Series 3—Power density applications with Type XII contacts capable of carrying up to 25 amperes of current
  - Series 4—Combination standard and power density applications with Series 1 and Series 3 contacts
- Available in panel or chassis mount versions and in free-hanging versions
- Quick connect/disconnect capability with thread assist, positive detent coupling
- Built-in pin and socket protection
- 5-key polarization for proper mating of connector halves
- Special connector configurations offer special solder and posted contacts, special receptacles with threaded inserts
- Full complement of optional accessories

***Some connectors are recognized for 600-volt service. Consult AMP Incorporated for more information**

AMP CPC and metal-shell CPC connectors are designed for such commercial applications as automotive, aircraft, instrumentation, computer and peripheral equipment. These connectors offer many advanced design features to assure top quality performance.

CPC Connectors

These molded plugs and receptacles provide substantial savings in both weight and cost through the use of plastic shells and a wide variety of hand and machine terminated pin and socket contacts. CPC connectors are available in various shell sizes, densities and configurations and are supplied unloaded. Several Series 1 and 2 arrangements are available preloaded with posted contacts. Many connectors can be furnished in either standard sex (receptacles that accept pins, plugs that accept sockets) or reverse sex (receptacles that accept sockets, plugs that accept pins). Also a full complement of optional accessories is available to extend the usefulness of the CPC connectors.

Metal-Shell CPC Connectors

Metal-shell CPC connectors consist of a black thermoplastic insert in a nickel-plated, zinc alloy shell. These connectors are currently available in shell sizes 14, 22 and 28 and in two basic configurations: plugs and square flange receptacles.

Performance Characteristics

Current Carrying Capabilities:

8 amperes, max.

Note: Total current capacity of each contact in any given connector is dependent upon the heat rise resulting from the combination of electrical loads of all contacts in the connector arrangement and the maximum ambient temperature in which the connector will be operating.

More information on the performance of AMP CPC and metal-shell CPC connectors is available by requesting the following AMP Product Specifications:

108-10024—
CPC Connectors
108-10037—
Type XII Contacts
108-10020—
Size 20 DM and 20 DF Contacts, AMPLIMITE
108-10040—
Metal-Shell CPC Connectors
108-10042—
Type III + Contacts

Test Description	Procedure	Requirements
Maintenance Aging	Contacts removed and reinserted 10 times using applicable tools	No damage
Contact Retention	Axial load applied to contact to displace to the rear of the connector	Contacts remain in place
Dielectric Withstanding Voltage (MIL-STD-1344, Method 3001)	Connectors subjected to 1500 volts rms at sea level	No breakdown or flashover
Thermal Shock	Unmated connectors subjected to five cycles of temperature change (−55°C and +105°C)	No damage
Vibration (MIL-STD-202, Method 204, Test Condition B)	Connectors vibrated (wired and mated). Contacts wired in series with 100 milliamperes flowing during the test	No damage or loosening of parts. No interruption of electrical continuity longer than 10 microseconds
Physical Shock (MIL-STD-202, Method 213A, Test Condition A)	Connectors shocked 50 G (wired and mated). Contacts wired in series with 100 milliamperes flowing during the test	No damage or loosening of parts. No interruption of electrical continuity longer than 10 microseconds
Durability	Connectors mated and unmated 200 times with tin plated contacts and 500 times with gold plated contacts	No damage
Corrosion (Salt Spray) (MIL-STD-202, Method 101, Test Condition B)	Mated connectors subjected to 5% salt spray for 48 hours	No damage
Temperature Life	Mated connectors subjected to a temperature of +105°C for 200 hours	No damage
Insulation Resistance (MIL-STD-1344, Method 3003)	Measurement made between adjacent contacts with connector mated	5000 megohms minimum ambient temperature
Humidity (MIL-STD-202, Method 103, Test Condition B)	Mated connectors subjected to 10 days moisture test	Minimum insulation resistance of 100 megohms

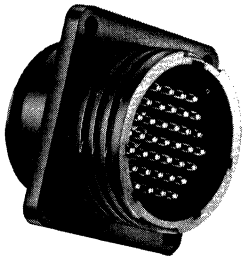
Specifications subject to change.
For latest design specifications...
1-800-522-6752

CPC Connectors
Series 1

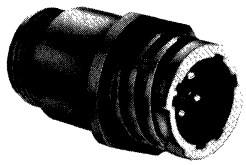
Part numbers listed are for connectors only; order contacts separately.

Related Product Data:
Contacts-pages 2004 through 2011
Contact Arrangements-page 2078
Component Dimensions-page 2080
Accessories-pages 2090 through 2097
Performance Characteristics-page 2074
Application Tooling-pages 2012 and 2013
Technical Documents-page 2112

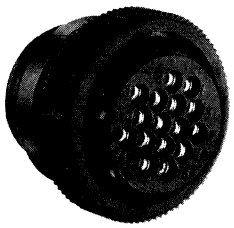
Standard Sex Connectors



Square Flange Receptacle
(Accepts Multimate Pins)



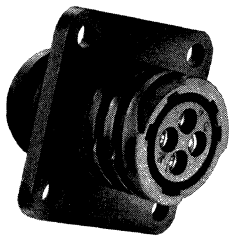
Free-Hanging Receptacle
(Accepts Multimate Pins)



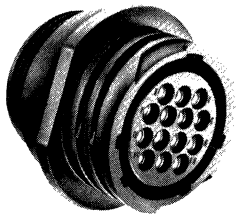
Plug
(Accepts Multimate Sockets)

Arrangement	Square Flange Receptacle	Free-Hanging Receptacle	Plug
11-4	206061-1	206153-1	206060-1
13-9	206705-1	206705-2	206708-1
17-16	206036-1	206036-3	206037-1
23-24	206838-1	206838-2	206837-1
23-37	206151-1	206151-2	206150-1

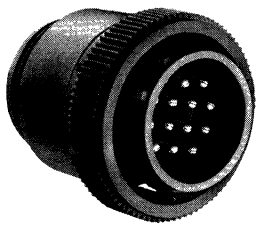
Reverse Sex Connectors



Square Flange Receptacle
(Accepts Multimate Sockets)



Free-Hanging Receptacle
(Accepts Multimate Sockets)



Plug
(Accepts Multimate Pins)

Arrangement	Square Flange Receptacle	Free-Hanging Receptacle	Plug
11-4	206430-1	206430-2	206429-1
17-14	206043-1	206043-3	206044-1
23-37	206306-1	206306-2	206305-1

Note: Maximum wire insulation dia. is .100 [2.54], except for arrangement 23-24 which will accept insulation dia. of .150 [3.81] max.

Replacement Coupling Rings Available

Shell Size	Part No.
11	206089-1
13	206707-1
17	205958-1
23	206251-1

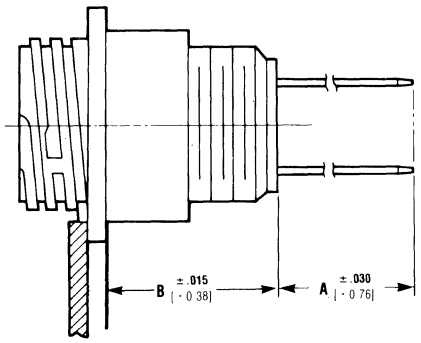
Square Flange Receptacles Preloaded with Posted Contacts

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

These square flange receptacles are preloaded with .025 [0.64] sq. posted contacts.

Contact Finish:

A—Select—Gold flash over nickel on entire contact, with .000030 [0.00076] gold on electrical engagement area
B—Gold flash over nickel on entire contact
C—Tin



Note: Posts are .017 [0.43] offset from centerline of contacts. All posts must be oriented in the same plane for proper contact/post location.

Standard Sex (Posted Pin Contacts)

Arrangement No.	Receptacle Assembly Part No.	Dimensions A	Dimensions B	Contact Finish Code
11-4	207825-1	**.119** 3.02	**.816** 20.73	A
13-9	208223-1	**.220** 5.59	**.816** 20.73	A
17-16	207303-1	**.220** 5.59	**.816** 20.73	C
17-16	207303-3	**.220** 5.59	**.816** 20.73	A
23-37	206934-1	**.220** 5.59	**.654** 16.61	A
23-37	208132-1	**.429** 10.9	**.654** 16.61	C

Reverse Sex (Posted Socket Contacts)

Arrangement No.	Receptacle Assembly Part No.	Dimensions A	Dimensions B	Contact Finish Code
11-4	208283-1	**.159** 4.04	**.536** 13.61	A
23-37	208224-1	**.557** 14.15	**.374** 9.5	A

Other Available Posted Contacts

Posted contacts are available for loading into the standard or reverse sex square flange receptacles shown on page 2075. The charts at the right provide the contact part numbers for ordering Size 16, Type III+ posted contacts. These contacts are .025 [0.64] sq. and accept 32 AWG [0.03 mm²] wire.

Posted Pin Contacts for Standard Sex Square Flange Connectors (Page 2075)

3 Term. High Post			2 Term. High Post			1 Term. High Post		
Dimension A	Part No.	Contact Finish Code	Dimension A	Part No.	Contact Finish Code	Dimension A	Part No.	Contact Finish Code
.618 15.7	66460-9	A	**.429** 10.9	66460-8	A	**.220** 5.59	66460-7	A
	66460-6	B		66460-5	B		66460-4	B
	66460-3	C		66460-2	C		66460-1	C

Posted Socket Contacts for Reverse Sex Square Flange Connectors (Page 2075)

3 Term. High Post			2 Term. High Post			1 Term. High Post		
Dimension A	Part No.	Contact Finish Code	Dimension A	Part No.	Contact Finish Code	Dimension A	Part No.	Contact Finish Code
.557 14.15	66461-9	A	**.368** 9.35	66461-8	A	**.159** 4.04	66461-7	A
	66461-6	B		66461-5	B		66461-4	B
	66461-3	C		66461-2	C		66461-1	C

CPC Connectors
Series 1, VDE Tested

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

- Meets test requirements of VDE as shown in VDE Test Report File No. 4751-1431-402
- Recognized under the Component Program of Underwriters Laboratories Inc. for 600 volts ac and dc service File No. E28476

Part numbers listed are for connectors only; order contacts separately.

Related Product Data:

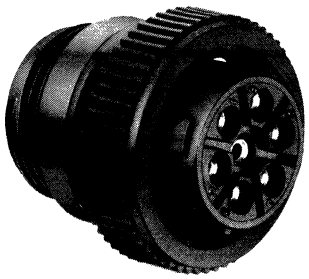
Contacts-pages 2004 through 2011
Contact Arrangements-page 2079
Component Dimensions-page 2080
Accessories-pages 2090 through 2097
Performance Characteristics-page 2074
Application Tooling-pages 2012 and 2013
Technical Documents-page 2112

Replacement Coupling Rings Available

Shell Size	Part No.
13	206707-1
17	205958-1
23	206251-1

Standard Sex Connectors

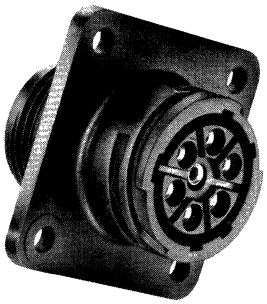
Square Flange Receptacle
(Accepts Multimate Pins)



Plug
(Accepts Multimate Sockets)

Arrangement	Square Flange Receptacle	Plug
13-7	211401-1	211399-1
17-9	211767-1	211766-1
23-19	211771-1	211770-2

Reverse Sex Connectors



Square Flange Receptacle
(Accepts Multimate Sockets)

Plug
(Accepts Multimate Pins)

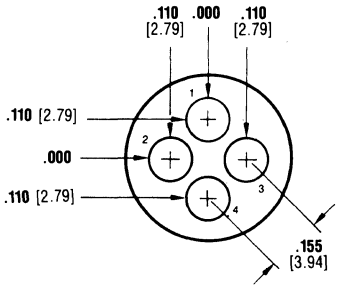
Arrangement	Square Flange Receptacle	Plug
13-7	211398-1	211400-1
17-9	211769-1	211768-1
23-19	211773-1	211772-1

Note: Maximum wire insulation dia. is .150 [3.81].

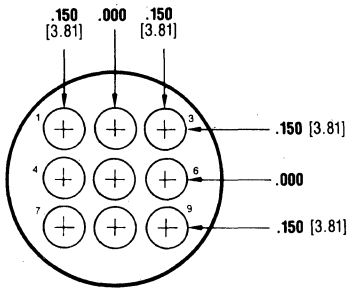
Contact Arrangements Series 1

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Shell Sizes 11 and 13



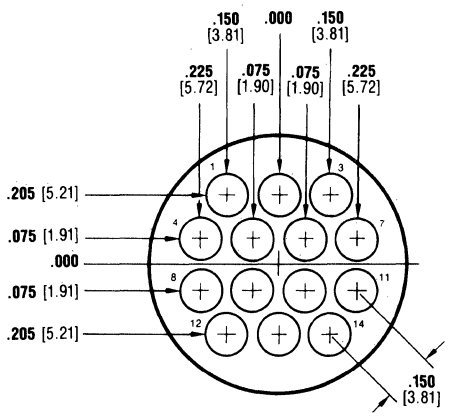
Arrangement 11-4
Max. Wire Ins. Dia. = .100 [2.54]



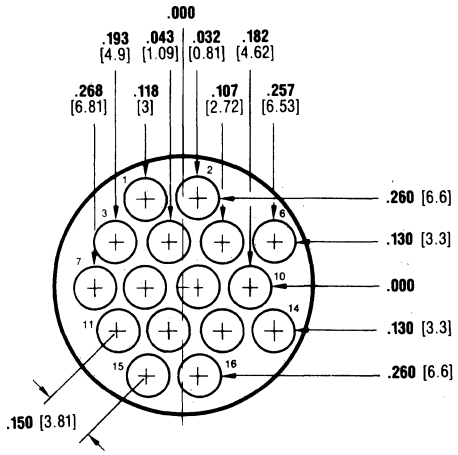
Arrangement 13-9
Max. Wire Ins. Dia. = .100 [2.54]

Shell Size 17

Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

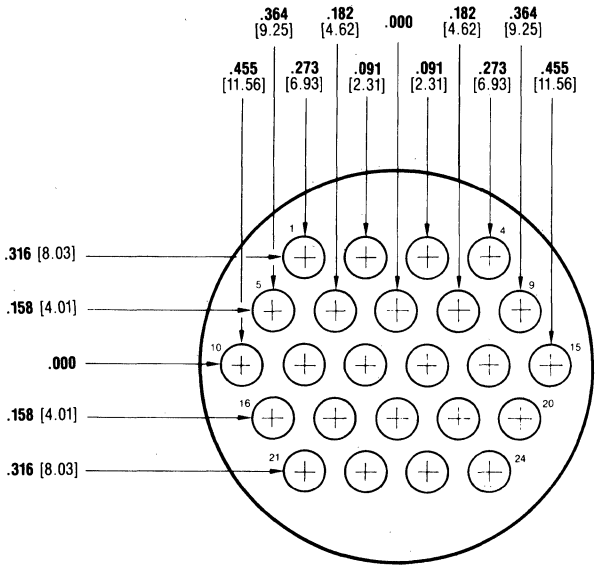


Arrangement 17-14
Max. Wire Ins. Dia. = .100 [2.54]

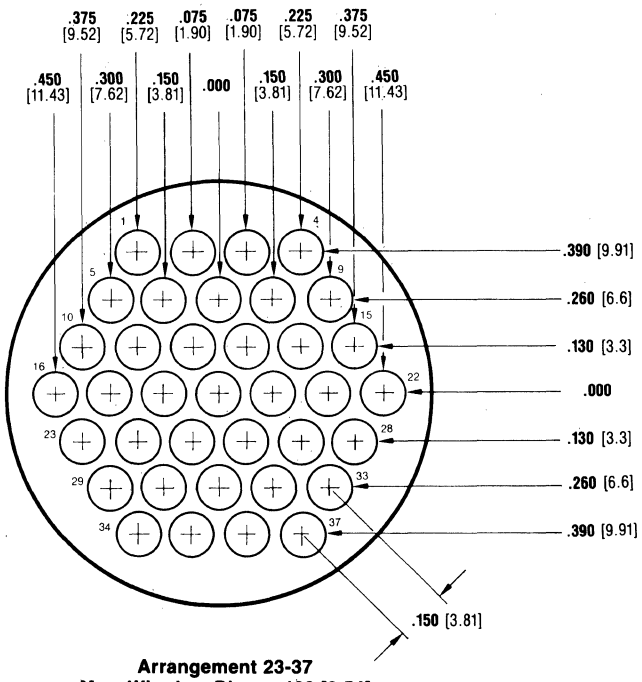


Arrangement 17-16
Max. Wire Ins. Dia. = .100 [2.54]

Shell Size 23



Arrangement 23-24
Max. Wire Ins. Dia. = .150 [3.81]



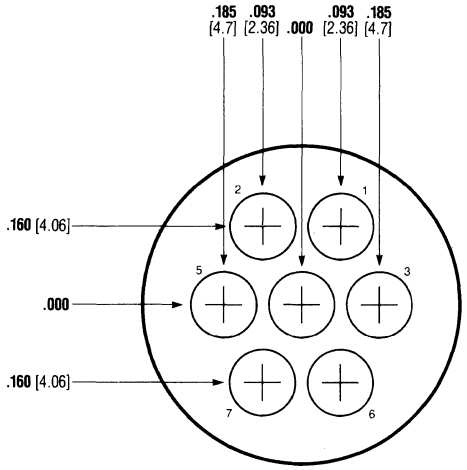
Arrangement 23-37
Max. Wire Ins. Dia. = .100 [2.54]

Contact Arrangements
Series 1, VDE Tested

Specifications subject to change.
For latest design specifications...
1-800-522-6752

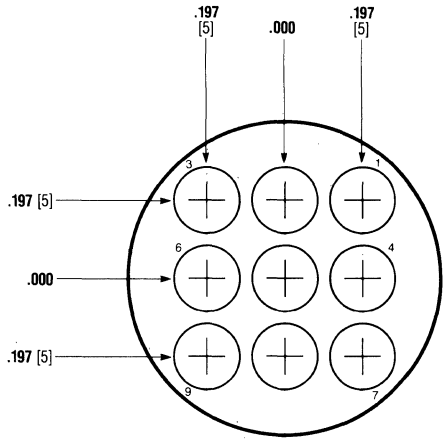
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Shell Size 13



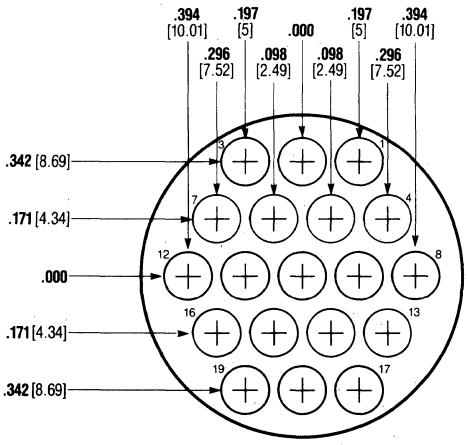
Arrangement 13-7
Max. Wire Ins. Dia. = .150 [3.81]

Shell Size 17



Arrangement 17-9
Max. Wire Ins. Dia. = .150 [3.81]

Shell Size 23



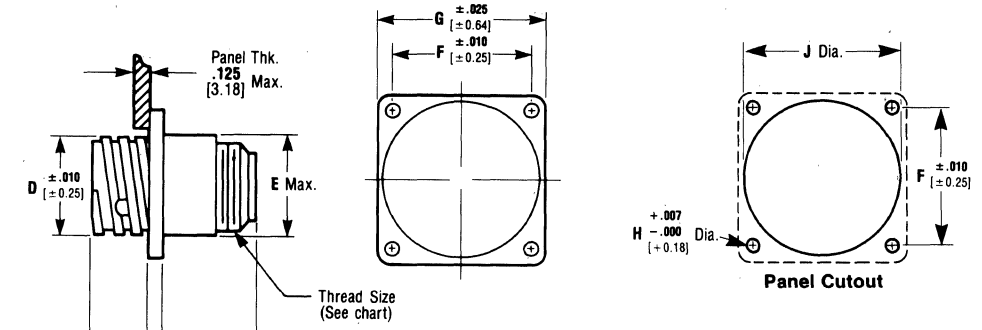
Arrangement 23-19
Max. Wire Ins. Dia. = .150 [3.81]

Specifications subject to change.
For latest design specifications...
1-800-522-6752

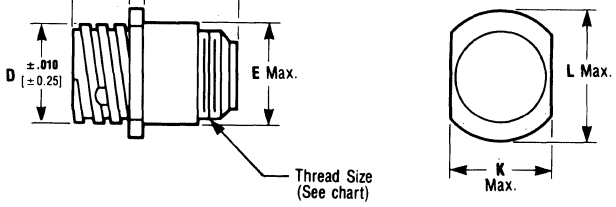
Component Dimensions
Series 1

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

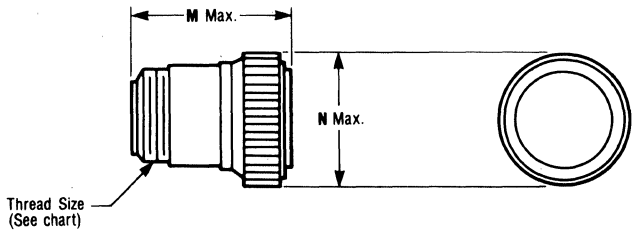
Square Flange Receptacle



Free-Hanging Receptacle



Plug



Shell Size	Sex	Dimensions													Thread Size
		A	B	C	D	E	F	G	H	J	K	L	M	N	
11	Rev.	**1.070** 27.18	.420 10.67	.094 2.39	.687 17.45	.740 18.8	.844 21.44	1.125 28.58	.125 3.18	.840 21.34	.817 20.75	.935 23.75	**1.365** 34.67	.942 23.93	5/8-24 UNEF-2A
	Std.	**1.350** 34.29											**1.080** 27.43		
13	Std.	**1.350** 34.29	.420 10.67	.094 2.39	.812 20.62	.879 22.33	.969 24.61	1.281 32.54	.125 3.18	.979 24.87	.874 22.2	1.072 27.23	1.080 27.43	1.070 27.18	3/4-20 UNEF-2A
17	Rev.	**1.070** 27.18	.420 10.67	.094 2.39	1.050 26.67	1.110 28.19	1.125 28.58	1.435 36.45	.150 3.81	1.210 30.73	1.161 29.49	1.310 33.27	**1.365** 34.67	1.315 33.40	15/16-20 UNEF-2A
17	Std.	**1.350** 34.29											**1.080** 27.43		
23	Rev.	**1.070** 27.18	.520 13.21	.156 3.96	1.438 36.53	1.510 38.35	1.438 36.53	1.750 44.45	.150 3.81	1.610 40.89	1.505 38.23	1.733 44.02	**1.365** 34.67	1.743 44.27	1-3/8-18 UNEF-2A
	Std.	**1.350** 34.29											**1.080** 27.43		

CPC Connectors Series 2

Specifications subject to change.
For latest design specifications...
1-800-522-6752

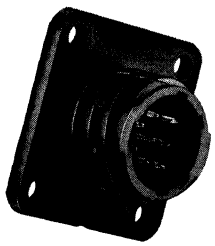
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part numbers listed are for connectors only; order contacts separately.

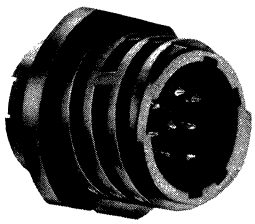
Related Product Data:

Contacts-pages 2004 through 2011
Contact Arrangements-page 2083
Component Dimensions-page 2084
Accessories-pages 2090 through 2097
Performance Characteristics-page 2074
Application Tooling-pages 2012 and 2013
Technical Documents-page 2112

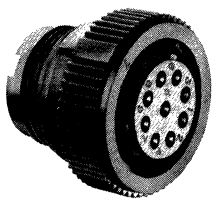
Standard Sex Connectors



Square Flange Receptacle
(Accepts Size 20 DM or DF Pins)



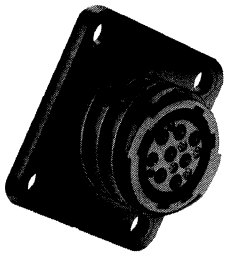
Free-Hanging Receptacle
(Accepts Size 20 DM or DF Pins)



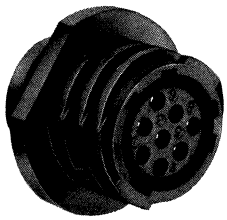
Plug
(Accepts Size 20 DM or DF Sockets)

Arrangement	Square Flange Receptacle	Free-Hanging Receptacle	Plug
11-8	205841-1	205841-2	205838-1
11-9	206486-1	206486-2	206485-1
17-28	205840-3	206152-1	205839-3
23-63	205843-1	205843-2	205842-1

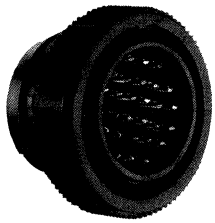
Reverse Sex Connectors



Square Flange Receptacle
(Accepts Size 20 DM or DF Sockets)



Free-Hanging Receptacle
(Accepts Size 20 DM or DF Sockets)



Plug
(Accepts Size 20 DM or DF Pins)

Arrangement	Square Flange Receptacle	Free-Hanging Receptacle	Plug
11-8	206433-1	206433-2	206434-1
17-28	206038-1	206038-2	206039-1
23-57	206438-1	206438-2	206437-1

Note: Maximum wire insulation dia. is .068 [1.73].

Replacement Coupling Rings Available

Shell Size	Part No.
11	206089-1
17	205958-1
23	206251-1

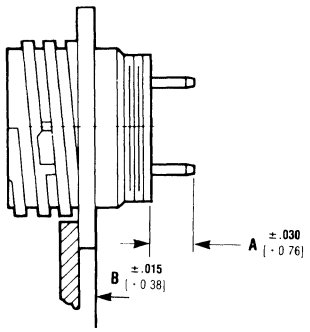
Square Flange Receptacles Preloaded with Posted Contacts

These square flange receptacles are preloaded with .025 [0.64] sq. posted contacts.

Contact Finish:

A—Select—Gold flash over nickel on entire contact, with .000030 [0.00076] gold on electrical engagement area

B—Gold flash over nickel on entire contact



Standard Sex (Posted Pin Contacts)

Arrangement No.	Receptacle Assembly Part No.	Dimensions A	Dimensions B	Contact Finish Code
11-9	206852-2	.125 3.18	.230 5.84	A
11-9	206852-1	.352 8.94	.230 5.84	A
17-28	207369-1	.125 3.18	.230 5.84	A
23-63	206455-2	.227 5.77	.293 7.44	A
23-63	206455-1	.449 11.4	.293 7.44	A

Reverse Sex (Posted Socket Contacts)

Arrangement No.	Receptacle Assembly Part No.	Dimensions A	Dimensions B	Contact Finish Code
11-8	208657-1	.352 8.94	.285 7.24	A
17-28	207216-2	.125 3.18	.230 5.84	A

Note: Posts are .017 [0.43] offset from centerline of contacts. All posts must be oriented in the same plane for proper contact/post location.

Other Available Posted Contacts

Posted contacts are available for loading into the standard or reverse sex square flange receptacles shown on page 2081. The charts at the right provide the contact part numbers for ordering Size 20 DF posted contacts. These contacts are .025 [0.64] sq. and accept 32 AWG [0.03 mm²] wire.

Posted Pin Contacts for Standard Sex Square Flange Connectors (Page 2081)

Shell Size	.215 [5.46] Post Length Dim. A	Part No.	Contact Finish Code	.288 [7.32] Post Length Dim. A	Part No.	Contact Finish Code	.515 [13.08] Post Length Dim. A	Part No.	Contact Finish Code	.737 [18.72] Post Length Dim. A	Part No.	Contact Finish Code
11 and 17	.052 1.32	745287-4	A	.125 3.18	2-745287-0	A	.352 8.94	745287-8	A	.574 14.58	1-745287-2	A
		745287-2	B		1-745287-8	B		745287-6	B		1-745287-0	B
23	—	—	—	—	—	—	.227 5.77	745287-8	A	.449 11.4	1-745287-2	A
								745287-6	B		1-745287-0	B

Posted Socket Contacts for Reverse Sex Square Flange Connectors (Page 2081)

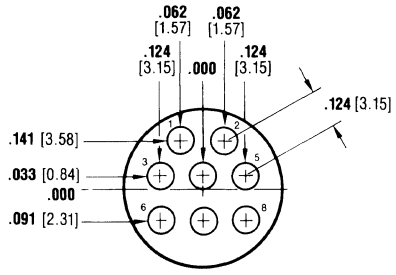
Shell Size	.215 [5.46] Post Length Dim. A	Part No.	Contact Finish Code	.288 [7.32] Post Length Dim. A	Part No.	Contact Finish Code	.515 [13.08] Post Length Dim. A	Part No.	Contact Finish Code	.737 [18.72] Post Length Dim. A	Part No.	Contact Finish Code
11 and 17	.052 1.32	745288-4	A	.125 3.18	2-745288-0	A	.352 8.94	745288-8	A	.574 14.58	1-745288-2	A
		745288-2	B		1-745288-8	B		745288-6	B		1-745288-0	B
23	—	—	—	—	—	—	.227 5.77	745288-8	A	.449 11.4	1-745288-2	A
								745288-6	B		1-745288-0	B

Contact Arrangements
Series 2

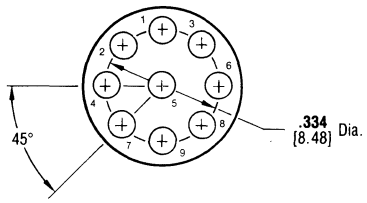
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Shell Size 11



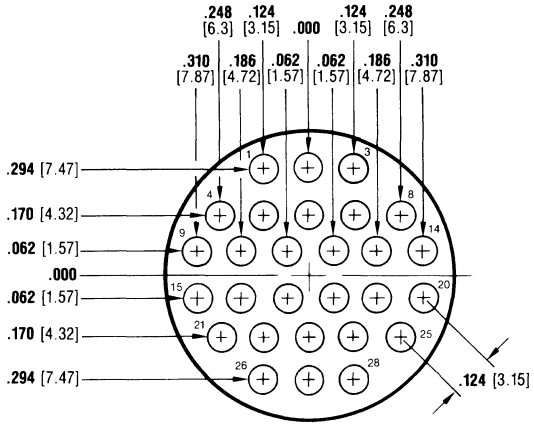
Arrangement 11-8
Max. Wire Ins. Dia. = .068 [1.73]



Arrangement 11-9
Max. Wire Ins. Dia. = .068 [1.73]

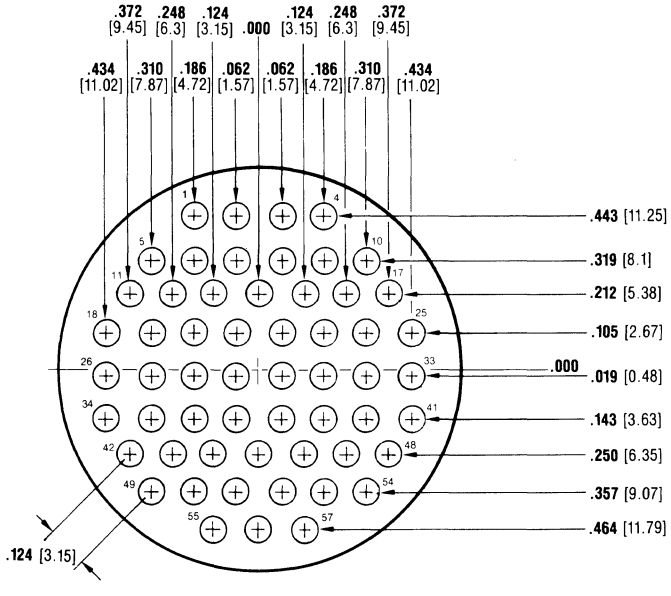
Shell Size 17

Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

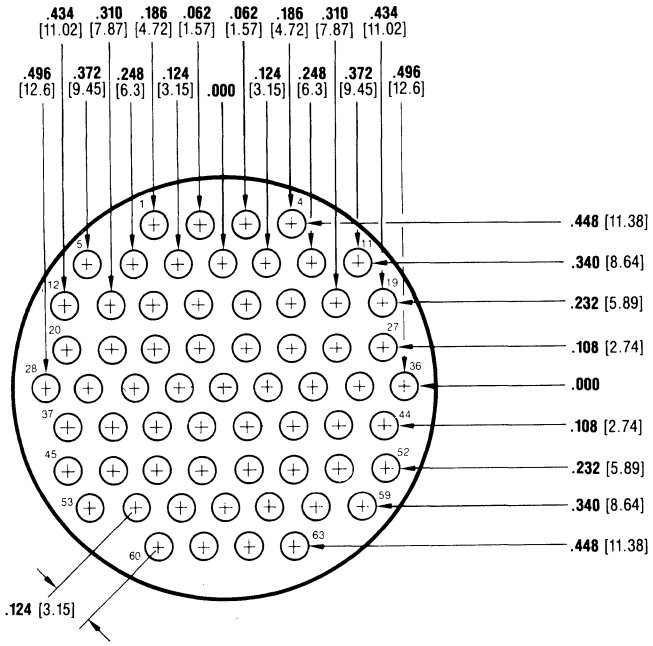


Arrangement 17-28
Max. Wire Ins. Dia. = .068 [1.73]

Shell Size 23



Arrangement 23-57
Max. Wire Ins. Dia. = .068 [1.73]



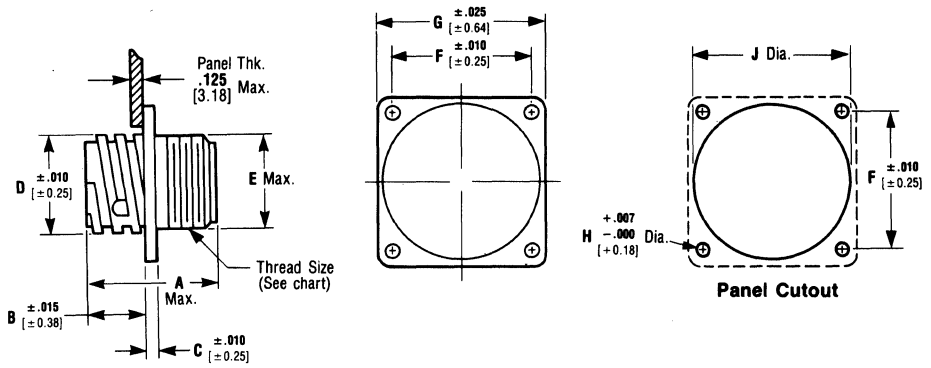
Arrangement 23-63
Max. Wire Ins. Dia. = .068 [1.73]

Component Dimensions
Series 2

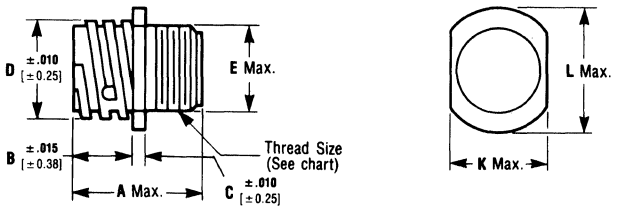
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

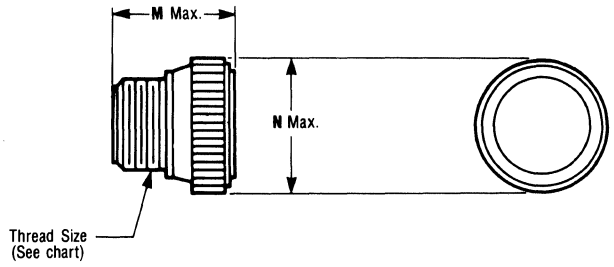
Square Flange Receptacle



Free-Hanging Receptacle



Plug



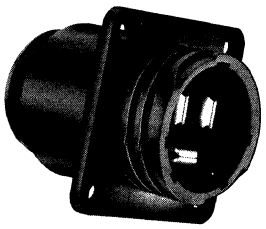
Arrangement No.	Dimensions													Thread Size
	A	B	C	D	E	F	G	H	J	K	L	M	N	
11-8 11-9	.809 20.55	.420 10.67	.094 2.39	.688 17.48	.630 16	.844 21.44	1.125 28.58	.125 3.18	.840 21.34	.817 20.75	.935 23.75	.800 20.32	.942 23.93	5/8-24 UNEF-2A
17-28	.809 20.55	.420 10.67	.094 2.39	1.050 26.67	.943 23.95	1.125 28.58	1.435 36.45	.150 3.81	1.210 30.73	1.161 29.49	1.310 33.27	.800 20.32	1.315 33.4	15/16-20 UNEF-2A
23-57 23-63	.924 23.47	.420 10.67	.156 3.96	1.438 36.53	1.515 38.48	1.438 36.53	1.750 44.45	.150 3.81	1.610 40.89	1.500 38.1	1.733 44.02	.915 23.24	1.743 44.27	1-3/8-18 UNEF-2A

Note: All dimensions apply to both standard and reverse sex connectors.

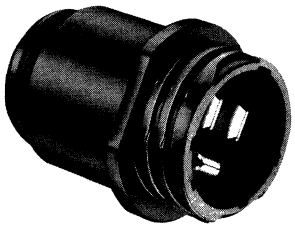
Part numbers listed are for connectors only; order contacts separately.

Related Product Data:
Contacts-pages 2004 through 2011
Contact Arrangements-page 2086
Component Dimensions-page 2087
Accessories-pages 2090 through 2097
Performance Characteristics-page 2074
Application Tooling-pages 2012 and 2013
Technical Documents-page 2112

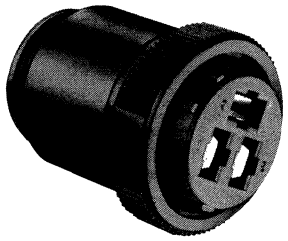
Standard Sex Connectors



Square Flange Receptacle
(Accepts Type XII Male Pins)



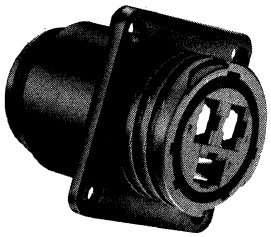
Free-Hanging Receptacle
(Accepts Type XII Male Pins)



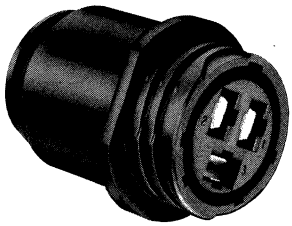
Plug
(Accepts Type XII Female Sockets)

Arrangement	Square Flange Receptacle	Free-Hanging Receptacle	Plug
17-3	206036-2	206207-1	206037-2
23-7	206137-1	206137-2	206136-1

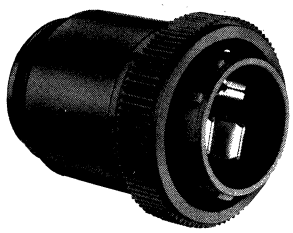
Reverse Sex Connectors



Square Flange Receptacle
(Accepts Type XII Female Sockets)



Free-Hanging Receptacle
(Accepts Type XII Female Sockets)



Plug
(Accepts Type XII Male Pins)

Arrangement	Square Flange Receptacle	Free-Hanging Receptacle	Plug
17-3	206425-1	206425-2	206426-1
23-7	206227-1	206227-2	206226-1

Replacement Coupling Rings Available

Shell Size	Part No.
17	205958-1
23	206251-1

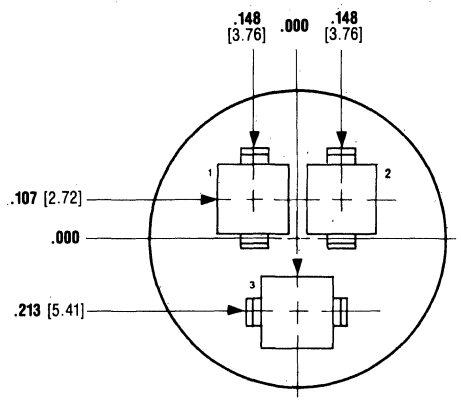
Note: Maximum wire insulation dia. is .220 [5.59].

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Contact Arrangements Series 3

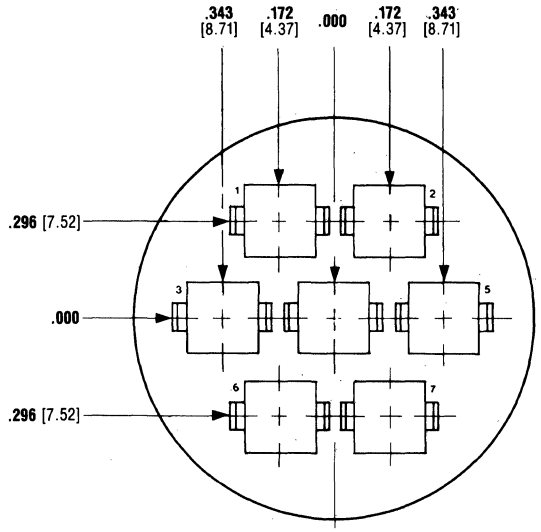
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Shell Size 17



Arrangement 17-3
Max. Wire Ins. Dia. = .220 [5.59]

Shell Size 23



Arrangement 23-7
Max. Wire Ins. Dia. = .220 [5.59]

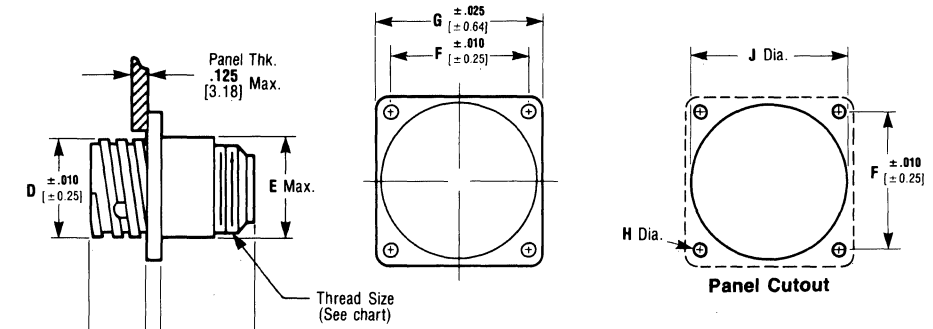
Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

Component Dimensions
Series 3

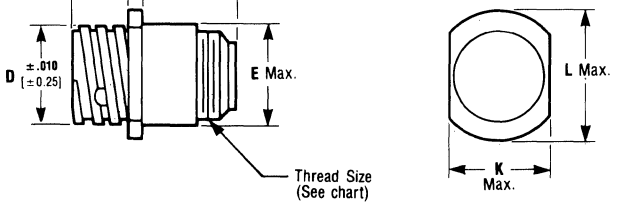
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

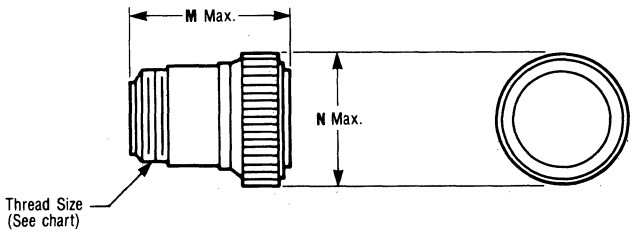
Square Flange Receptacle



Free-Hanging Receptacle



Plug



Arrangement No.	Dimensions													Thread Size
	A	B	C	D	E	F	G	H	J	K	L	M	N	
17-3	**1.635** 41.53	**.420** 10.67	**.094** 2.39	**1.050** 26.67	**1.110** 28.19	**1.125** 28.58	**1.435** 36.45	**.150** 3.81	**1.210** 30.73	**1.161** 29.49	**1.310** 33.27	**1.645** 41.78	**1.315** 33.4	15/16-20 UNEF-2A
23-7	**1.635** 41.53	**.520** 13.21	**.156** 3.96	**1.438** 36.53	**1.510** 38.35	**1.438** 36.53	**1.750** 44.45	**.150** 3.81	**1.610** 40.89	**1.505** 38.23	**1.733** 44.02	**1.645** 41.78	**1.743** 44.27	1-3/8-18 UNEF-2A

Note: All dimensions apply to both standard and reverse sex.

Part numbers listed are for connectors only; order contacts separately.

Related Product Data:

Contacts-pages 2004 through 2011
Contact Arrangements-page 2088
Component Dimensions-page 2089
Accessories-pages 2090 through 2097
Performance Characteristics-page 2074
Application Tooling-pages 2012 and 2013
Technical Documents-page 2112

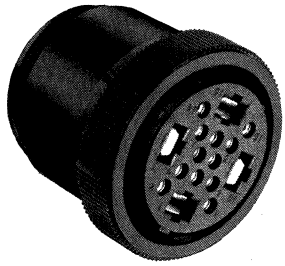
Replacement Coupling Rings Available

Shell Size	Part No.
23	206251-1

Standard Sex Connectors

Square Flange Receptacle
(Accepts Type XII Male and Multimate Pins)

Free-Hanging Receptacle
(Accepts Type XII Male and Multimate Pins)

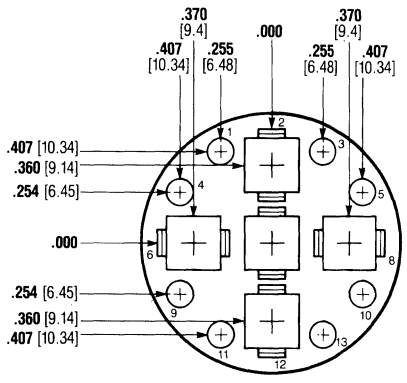


Plug
(Accepts Type XII Female and Multimate Sockets)

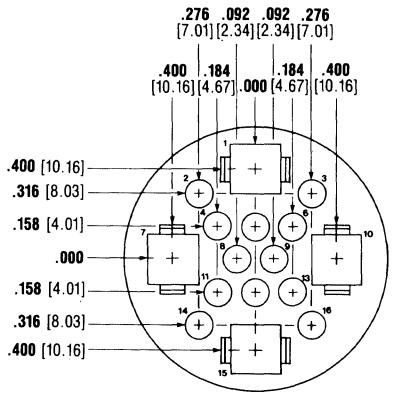
Arrangement	No. of Cavities		Square Flange Receptacle	Free-Hanging Receptacle	Plug
	Power	Multimate			
23-13M	5	8	211825-1	211825-2	211824-1
23-16M	4	12	207486-1	207486-2	207485-1
23-22M	2	20	206613-1	206613-3	206612-1

Note: Maximum wire insulation dia. is .150 [3.81] for Multimate contacts; .220 [5.59] for Power contacts.

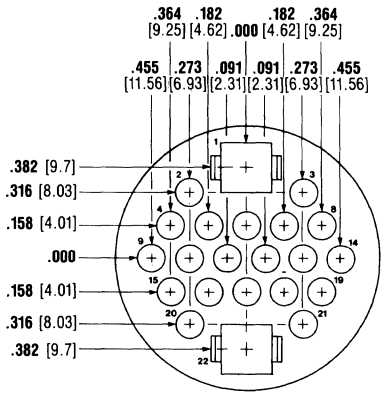
Contact Arrangements
Series 4
Shell Size 23



Arrangement 23-13M
Max. Wire Ins. Dia. =
.150 [3.81] for Multimate Contacts
.220 [5.59] for Power Contacts



Arrangement 23-16M
Max. Wire Ins. Dia. =
.150 [3.81] for Multimate Contacts,
.220 [5.59] for Power Contacts



Arrangement 23-22M
Max. Wire Ins. Dia. =
.150 [3.81] for Multimate Contacts,
.220 [5.59] for Power Contacts

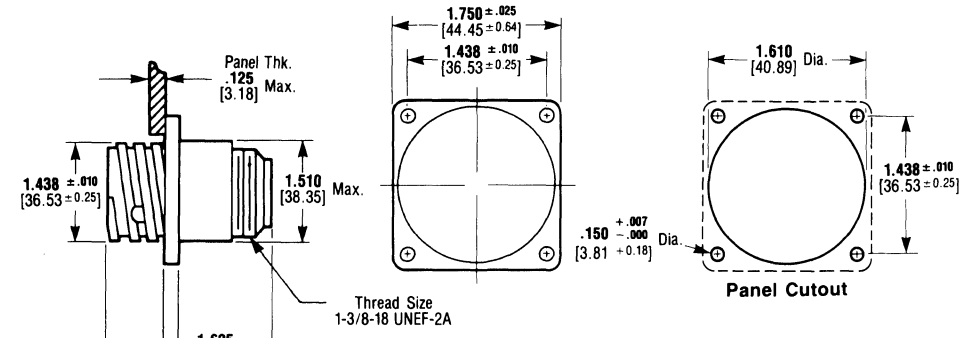
Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

Component Dimensions
Series 4

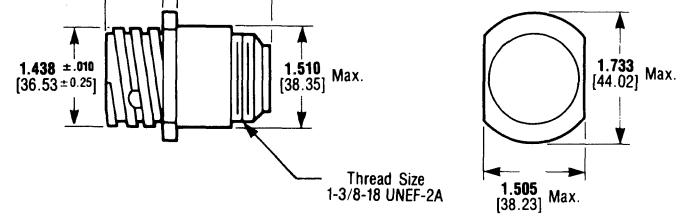
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

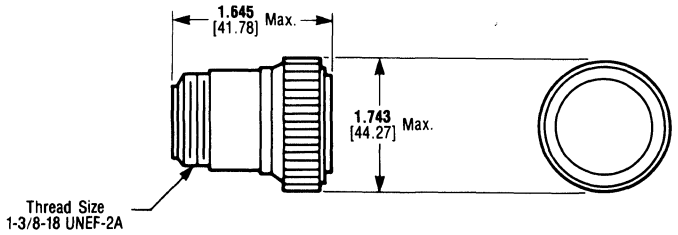
Square Flange Receptacle



Free-Hanging Receptacle



Plug



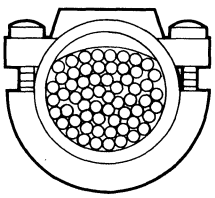
CPC Connector Accessories
Cable Clamps

Specifications subject to change.
For latest design specifications...
1-800-522-6752

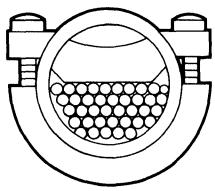
Cable clamps provide strain relief and can be used on all series receptacles and plugs.

Material:

Black thermoplastic heat-stabilized, fire-resistant, self-extinguishing, 94V-1 rated

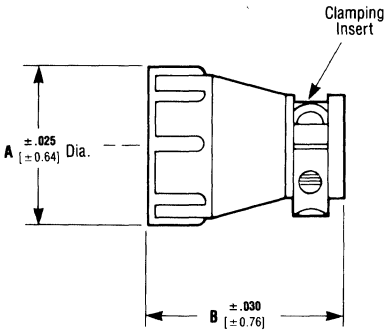


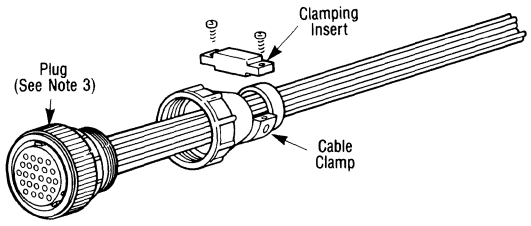
The clamping area can be adjusted by reversing the clamping insert as shown below.



For additional information concerning cable clamps, refer to Instruction Sheet IS 7582.

Standard Size

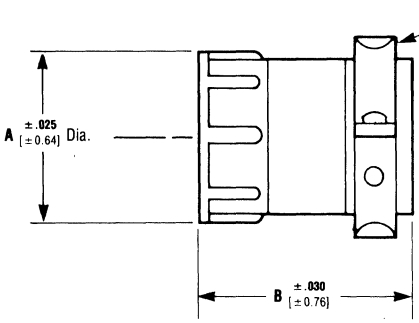


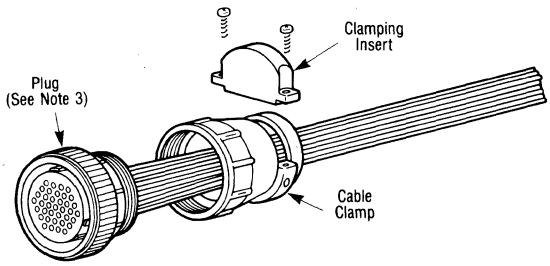


Shell Size	Dimensions A	Dimensions B	Cable O.D. (Max.)	Thread Size	Part No. Individually Packaged	Part No. Bulk Packaged*
11	**.825** 20.96	**1.250** 31.75	**.329** 8.36	5/8-24 UNEF-2B	206062-3	206062-2 (400)
13	**.950** 24.13	**1.400** 35.56	**.453** 11.51	3/4-20 UNEF-2B	206966-1	206966-2 (200)
17	**1.125** 28.58	**1.400** 35.56	**.453** 11.51	15/16-20 UNEF-2B	206070-1	206070-3 (200)
23	**1.600** 40.64	**1.555** 39.5	**.703** 17.86	1-3/8-18 UNEF-2B	206138-1	206138-2 (100)

*Numbers in parentheses specify, in multiples, the minimum quantity of parts that can be ordered.
Note: Cable Clamp Inserts are not sold separately.

Large Size





Shell Size	Dimensions A	Dimensions B	Cable O.D. (Max.)	Thread Size	Part No. Individually Packaged	Part No. Bulk Packaged*
11	**.850** 21.59	**1.450** 36.83	**.453** 11.51	5/8-24 UNEF-2B	206358-1	206358-2 (200)
13	**1.131** 28.73	**1.655** 42.04	**.703** 17.86	3/4-20 UNEF-2B	207008-1	207008-2 (100)
17	**1.131** 28.73	**1.655** 42.04	**.703** 17.86	15/16-20 UNEF-2B	206322-1	206322-2 (100)
23	**1.600** 40.64	**1.655** 42.04	**1.125** 28.58	1-3/8-18 UNEF-2B	206512-1	206512-2 (75)

*Numbers in parentheses specify, in multiples, the minimum quantity of parts that can be ordered.

Notes: 1. Clamping areas adjustable by inverting or changing clamping inserts. The quantity of inserts supplied with each assembly is as follows: for size 11 cable clamps (standard size), one insert; for size 23 cable clamps (large size), four inserts; for all other cable clamps (standard and large size), two inserts.
2. Components for all cable clamps are packaged unassembled. This includes the cable clamp, two screws and the clamping inserts.
3. Cable clamps can be threaded directly onto plugs or receptacles, or onto back-shell extenders (page 2092).
4. Replacement screws are available in the following sizes: 3/8 in. [9.52]—**19024-1,** 1/2 in. [12.7]—**19024-2,** 5/8 in. [1.6]—**19024-3,** 1 in. [25.4]—**19024-4.**
5. Cable Clamp Inserts are not sold separately.

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

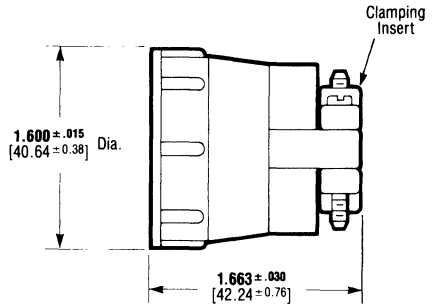
Self-Centering (for Shell Size 23)

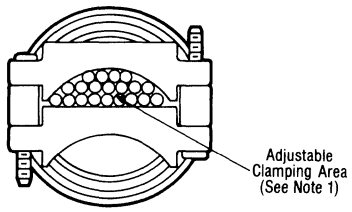
The self-centering cable clamp is used in applications where strain relief protection is required and the cable or wire bundle is large and/or stiff.

Material;

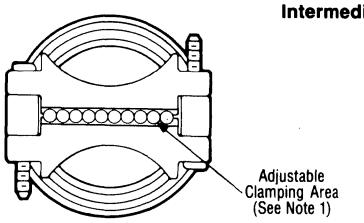
Black thermoplastic

Part Nos.
207774-1 (individually packaged)
207774-2 (bulk packaged)

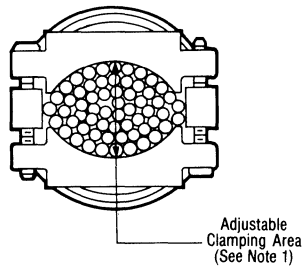




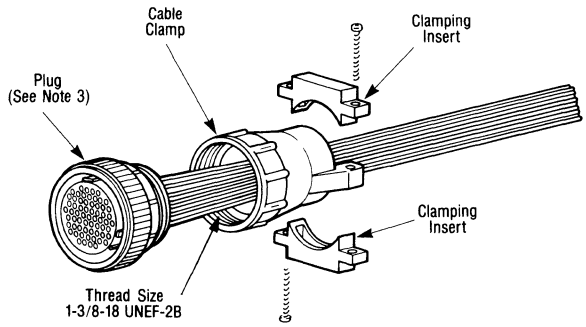
Intermediate



Minimum



Maximum



Notes: 1. Clamping area is adjustable by inserting clamping inserts; maximum cable diameter is 1.125 [28.58].
2. Components for cable clamp are packaged unassembled. This includes the cable clamp, two screws and the clamping inserts.
3. Cable clamp can be threaded directly onto plugs or receptacles, or onto back-shell extenders (page 2092).

CPC Connector Accessories
(Continued)

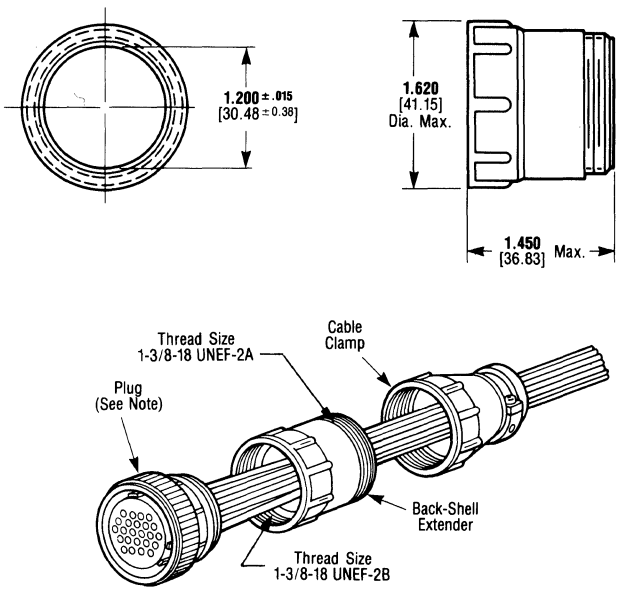
Back-Shell Extender (for Shell Size 23)

A back-shell extender is used with a cable clamp in applications where added length and/or additional wire breakout are required.

Material:

Black glass-filled thermoplastic

Part No. 207055-1



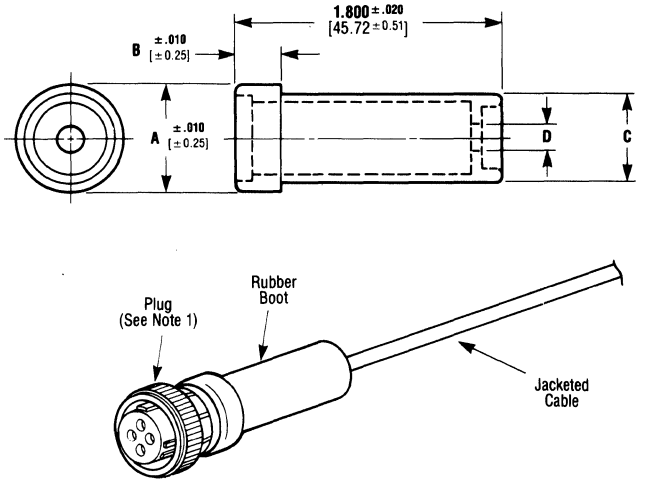
Note: Back-shell extenders can be threaded directly onto plugs or receptacles and will accept cable clamps of the appropriate size (pages 2090 and 2091).

Rubber Boots

Rubber boots are used with jacketed cable to provide splash-proof connections for Series 1 and Series 3 connectors.

Material:

Black neoprene



Shell Size	Cable Dia. Sealing Range	Dimensions A	B	C	D	Part No.
11	.219-.438 5.56-11.13	.750 19.05	.300 7.62	.600 15.24	.170 4.32	206304-1
17	.297-.516 7.54-13.11	1.200 30.48	.409 10.39	.900 22.86	.250 6.35	206398-1

Notes: 1. Rubber boots are recommended for use with jacketed cable and can be used on plugs or receptacles, except Series 2 connectors.
2. For detailed performance data on rubber boots, refer to AMP Product Specification No. 108-10024.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

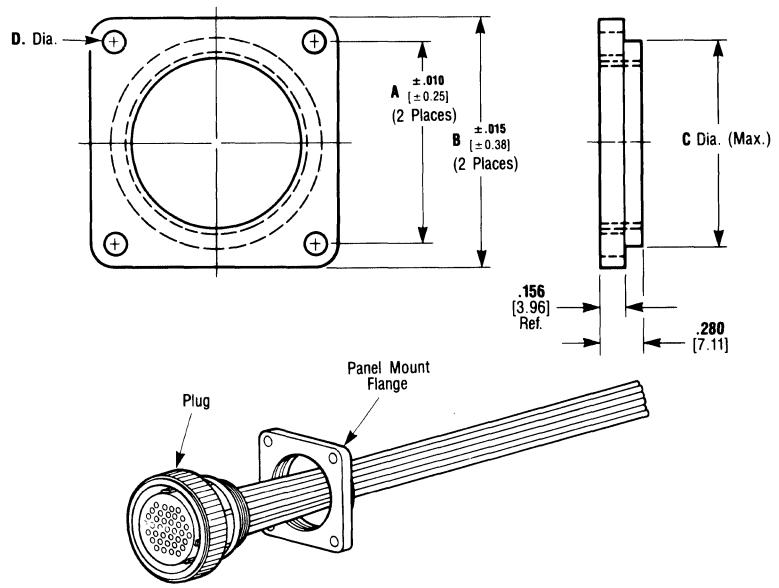
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Panel Mount Flanges (for Plugs only)

A panel mount flange is used in applications that require the plug half of a connector to be panel mounted.

Material:

Black thermoplastic



Shell Size	Dimensions A	B	C	D	Part No.
11	**.844** 21.44	**1.125** 28.58	**.750** 19.05	**.125** 3.18	207299-1
13	**.969** 24.61	**1.280** 32.51	**.875** 22.22	**.125** 3.18	207299-2
17	**1.125** 28.58	**1.435** 36.45	**1.110** 28.19	**.150** 3.81	207299-3
23	**1.438** 36.53	**1.750** 44.45	**1.510** 38.35	**.150** 3.81	207299-4

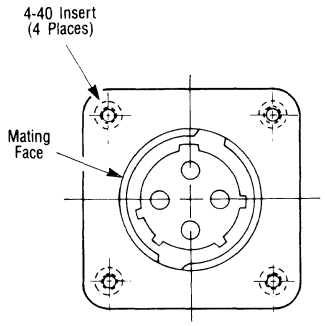
Square Flange Receptacles with Threaded Inserts

Material:

Receptacle—Black thermoplastic, heat stabilized, fire resistant, self-extinguishing, 94V-1 rated

4-40 Inserts—Brass (stainless steel also available)

Square flange receptacles with threaded inserts are available in certain sizes. Consult AMP Incorporated for specific requirements.



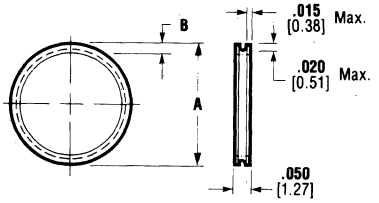
CPC Connector Accessories
(Continued)

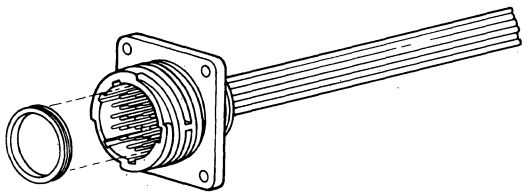
Peripheral Seals (for Receptacles only)

Peripheral seals are recommended for use in sealing/splash-proof applicators, or where connectors will be subjected to vibration.

Material:

Elastomer





Shell Size	Dimensions A	Dimensions B	Peripheral Seal Part No.	Standard Sex Receptacle with Peripheral Seal Bonded In: Contact Arrangement	Square Flange Part No.	Free-Hanging Part No.
11	.524 13.31	.041 1.04	206403-1	—	—	—
13	.650 16.51	.041 1.04	206403-4	13-9	—	206705-4
17	.875 22.23	.050 1.27	206403-2	17-14	—	206043-5
				17-16	206036-4	206036-5
23	1.230 31.24	.050 1.27	206403-3	23-24	206838-3	—
				23-37	—	206151-4

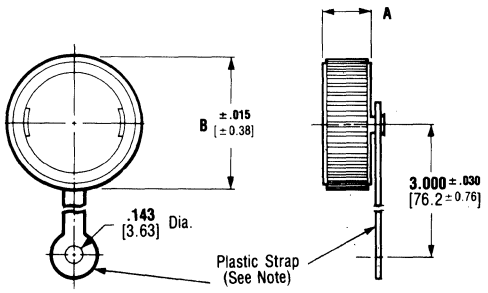
Notes: 1. Peripheral seals must be bonded into receptacles of other sizes. Consult AMP Incorporated for details. (See AMP Instruction Sheet IS 7582.)
2. For detailed performance data on peripheral seals, refer to AMP Product Specification No. 108-10024.

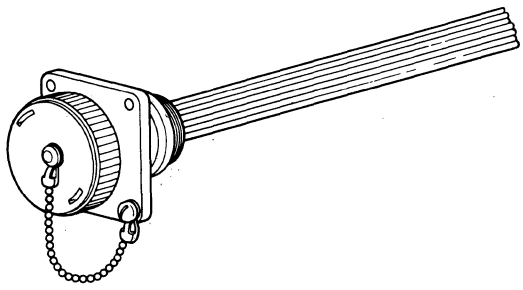
Sealing Caps (for Receptacles only)

Sealing caps are used to protect exposed contacts of unmated receptacles.

Material:

Cap—Black thermoplastic, heat stabilized, fire resistant, self-extinguishing, 94V-1 rated
Sealing Gasket—Black neoprene
Bead Chain—Nickel plated steel
Bead Chain Coupling—Nickel plated brass





Shell Size	Series	Dimensions A	Dimensions B	Plastic Strap	Metal Bead Chain
11	1 & 2	.360 9.14	.927 23.55	206903-1	208800-1
13	1	.360 9.14	1.055 26.8	211870-1	213485-1
17	1, 2 & 3	.360 9.14	1.295 32.89	207445-1	208652-1
23	1, 3 & 4	.460 11.68	1.728 43.89	207446-1[1]	208680-1[1]
	2			207446-2[2]	208680-2[2]

[1]These sealing caps are used with Series 1 and Series 3 receptacles.
[2]These sealing caps are used with Series 2 receptacles.

Note: Sealing caps are supplied with either a plastic strap or metal bead chain. See chart above.

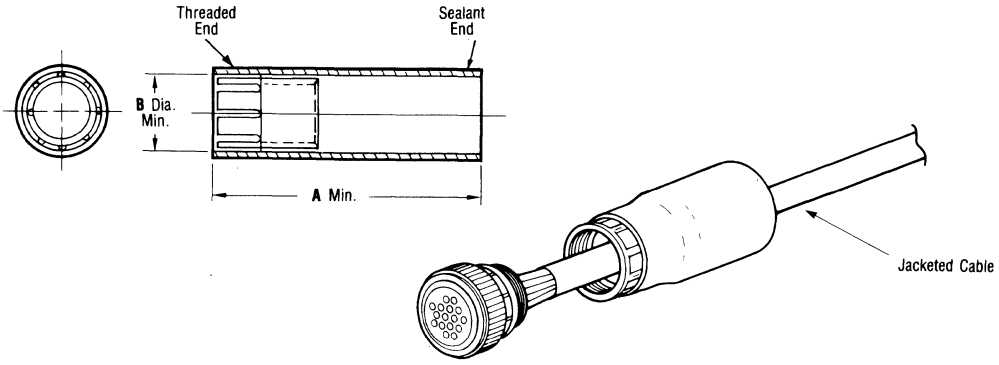
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Cable Entry Seals (Heat Shrinkable Sealing Boots)

Cable entry seals are used with jacketed cable to provide an environmentally sealed wire-to-connector system. They can be used with plugs or receptacles.

Material:

Internal Sleeve—Black nylon
Outer Tubing—Black polyolefin



Shell Size	Dimensions A	Dimensions B	Sealing Range (Dia.)	Part No.
11	**2.500** 63.5	**.625** 15.88	**.260-.600** 6.6-15.24	54010-1
13	**2.500** 63.5	**.775** 19.68	**.300-.725** 7.62-18.42	54123-1
17	**2.500** 63.5	**.975** 24.76	**.400-.875** 10.16-22.22	54011-1
23	**3.250** 82.55	**1.250** 31.75	**.550-1.100** 13.97-27.94	54012-1

Jacketed Cable Seals (for Shell Size 23)

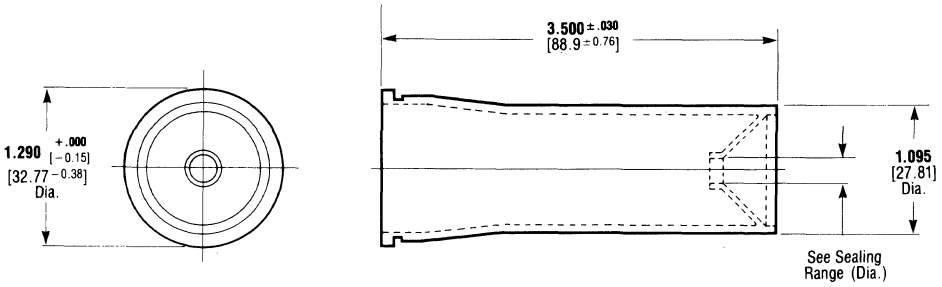
A jacketed cable seal kit provides an environmentally sealed connection for jacketed cable.

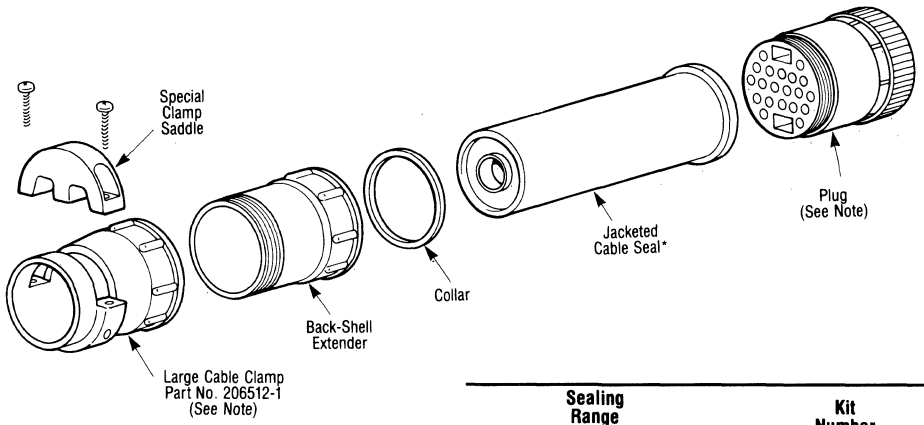
Material:

Peripheral Seal—White neoprene
Collar—Aluminum
Jacketed Cable Seal—Black rubber
Back-Shell Extender—Black glass-filled thermoplastic
Special Clamp Saddle—Black thermoplastic

Note: Jacketed cable seals must be used with large cable clamps and can be used on plugs or receptacles. Large cable clamps are to be ordered separately (see page 2090). Each jacketed cable seal kit includes:

- Peripheral Seal—to be discarded if kit is used on plug. Additional seals may be purchased (see page 2094)
- Collar—provides bearing surface for back-shell extender
- Jacketed Cable Seal
- Back-Shell Extender
- Special Clamp Saddle—to be used in lieu of clamping insert supplied with large cable clamp





Sealing Range (Dia.)	Kit Number
.300-.450 7.62-11.43	207052-1
.450-.600 11.43-15.24	207052-2
.600-.875 15.24-22.22	207052-3

*Jacketed cable seal is pressed flush against rear connector face when back-shell extender is threaded onto rear of connector.

CPC Connector Accessories
(Continued)

Flexible Cable Boot and Internal Cable Grip (for Shell Size 11)

Flexible cable boots, with internal cable grip installed, provide strain relief capabilities for jacketed cable in applications where aesthetic appearance is essential. They can be threaded onto plugs or receptacles.

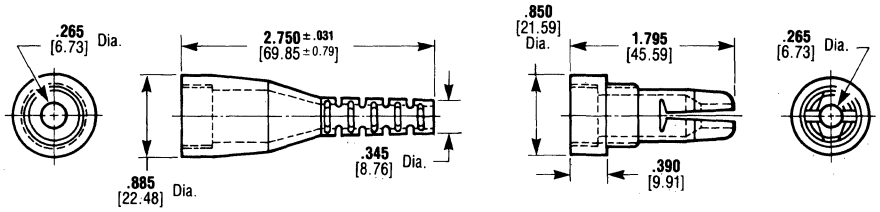
Material:

Black thermoplastic

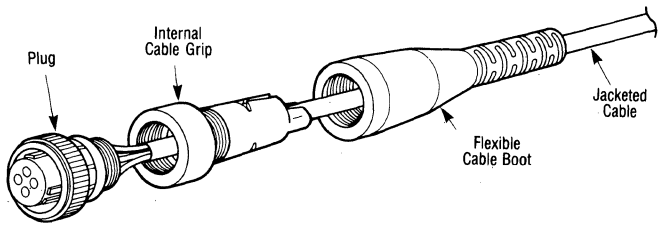
Cable Range:

.150-.250 [3.81-6.35]

Part Nos.
207489-1 (Cable Boot)
207490-1 (Cable Grip)



Flexible Cable Boot **Internal Cable Grip**



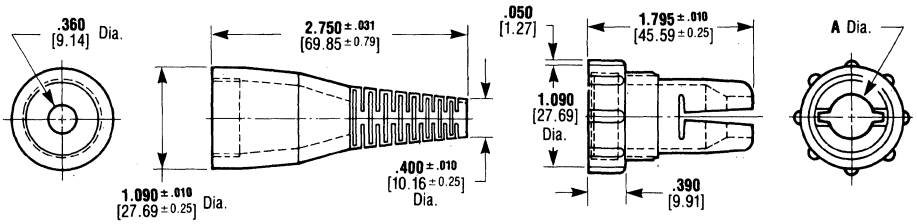
Flexible Cable Boot and Internal Cable Grip (for Shell Size 17)

Flexible cable boots, with internal cable grip installed, provide strain relief capabilities for jacketed cable in applications where aesthetic appearance is essential. They can be threaded onto plugs or receptacles.

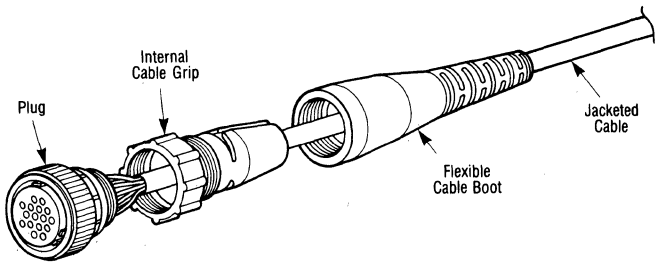
Material:

Black thermoplastic

Part Nos.
207241-1 (Cable Boot)
207387-1 (Cable Grip)
A Dia. = .325 [8.26] for cable range of .200-.250 [5.08-6.35]
207387-2 (Cable Grip)
A Dia. = .385 [9.78] for cable range of .250-.350 [6.35-8.89]
207387-4* (Cable Grip)
A Dia. = .385 [9.78] for cable range of .250-.350 [6.35-8.89]
*For use with soft jacket cable



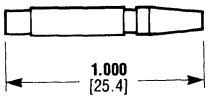
Flexible Cable Boot **Internal Cable Grip**

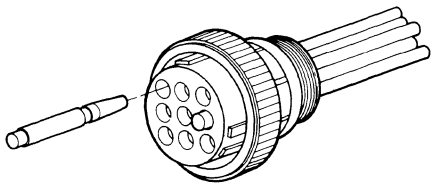


Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Keying Plugs

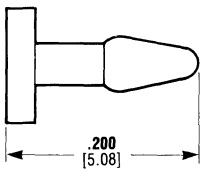
Keying plugs are used to provide keying capabilities for all connector series. Keying plugs are used in socket cavities of standard sex plugs and reverse sex receptacles, except when used with sealing caps.

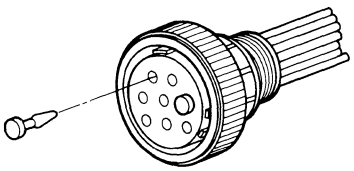




Series 1 and Series 4 Keying Plug
(for Types III+ and Subminiature COAXICON)

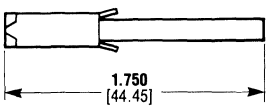
Part No. 200821-1

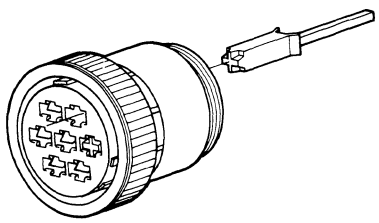




Series 2 Keying Plug
(for Size 20 DM and 20 DF Contacts)

Part No. 206509-1





Series 3 and Series 4 Keying Plugs
(for Type XII Contacts)

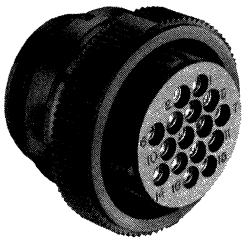
Part Nos. 206508-1 (Socket Cavities)
207597-1 (Pin Cavities)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

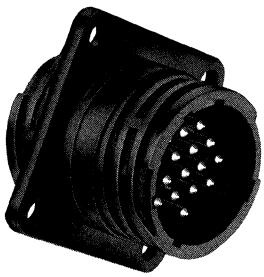
Special CPC Connectors
Feed-Thru

Series 1

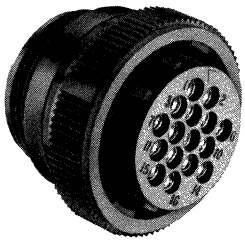
Pressure Rating:
up to 30 psi



Plug
(Accepts Sockets)



Receptacle
(with Permanently Sealed .062
[1.57] Dia. Solid Pins)



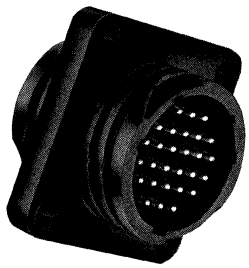
Plug
(Accepts Sockets)

Arrangement	Standard Numbering Plug	Reverse Numbering Plug	Feed-Thru Receptacle
11-4	206060-1	206516-1	206518-2
17-16	206037-1	206554-1	206552-1

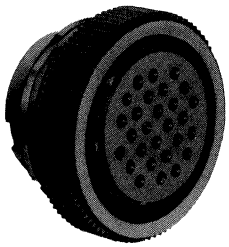
Series 2

Pressure Rating:
up to 30 psi

Plug
(Accepts Sockets)



Receptacle
(with Permanently Sealed .040
[1.02] Dia. Solid Pins)



Plug
(Accepts Sockets)

Arrangement	Standard Numbering Plug	Reverse Numbering Plug	Feed-Thru Receptacle
11-8	205838-1	206460-1	206458-1
17-28	206125-1	206126-1	206127-1

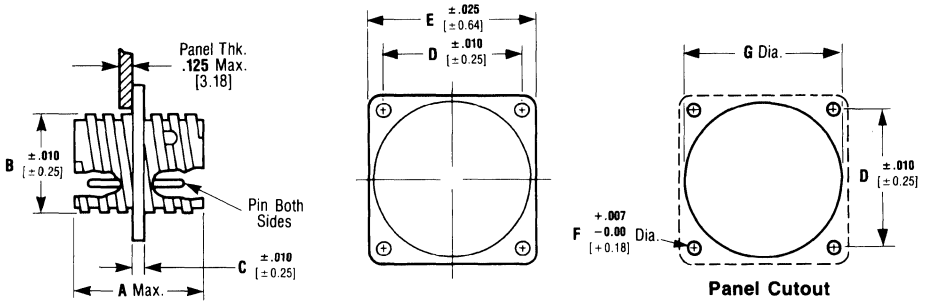
Note: One plug must have standard numbering of cavities. The other plug must have reverse numbering.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

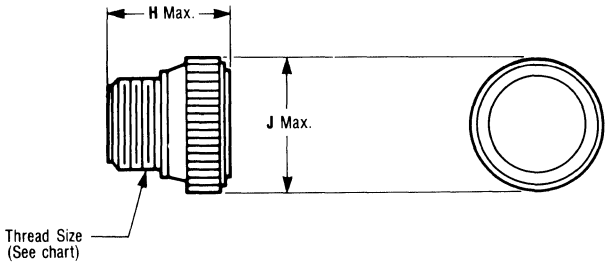
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Dimensions

Receptacle



Plug



Arrangement No.	Dimensions									Thread Size
	A	B	C	D	E	F	G	H	J	
11-4	**1.209** 30.71	**.687** 17.45	**.094** 2.39	**.844** 21.44	**1.125** 28.58	**.125** 3.18	**.840** 21.34	**1.080** 27.43	**.942** 23.93	5/8-24 UNEF-2A
17-16	**1.209** 30.71	**1.050** 26.67	**.094** 2.39	**1.125** 28.58	**1.435** 36.45	**.150** 3.81	**1.210** 30.73	**1.080** 27.43	**1.315** 33.4	15/16-20 UNEF-2A
11-8	**1.035** 26.29	**.688** 17.48	**.188** 4.78	**.844** 21.44	**1.125** 28.58	**.125** 3.18	**.840** 21.34	**.800** 20.32	**.942** 23.93	5/8-24 UNEF-2A
17-28	**1.040** 26.42	**1.050** 26.67	**.188** 4.78	**1.125** 28.58	**1.435** 36.45	**.150** 3.81	**1.210** 30.73	**.800** 20.32	**1.315** 33.4	15/16-20 UNEF-2A

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Special CPC Connectors
Square Flange Receptacle

With Round Posted Contacts (Size 16), Contact Arrangement 17-16

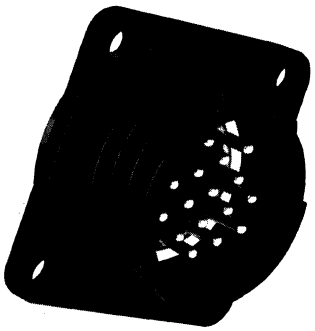
Material:

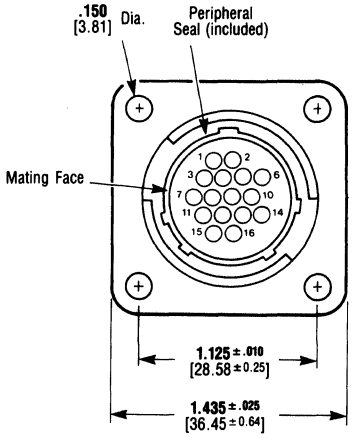
Receptacle—Black thermoplastic, heat-stabilized, fire-resistant, self-extinguishing, 94V-1 rated
Contacts—Tin plated

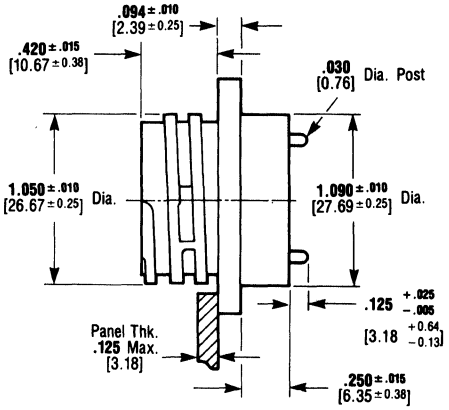
Part No.: 207292-1

Receptacle is standard sex; supplied preloaded with 16 special round posted pin contacts, .030 [0.76] diameter posts.

Note: This connector can be used for pressure bulkhead feed-thru (sealed) applications.







Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

With Solder Type Contacts (Size 16), Contact Arrangement 17-16

Material:

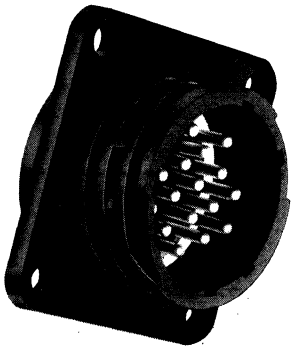
Receptacle—Black thermoplastic, heat-stabilized, fire-resistant, self-extinguishing, 94V-1 rated

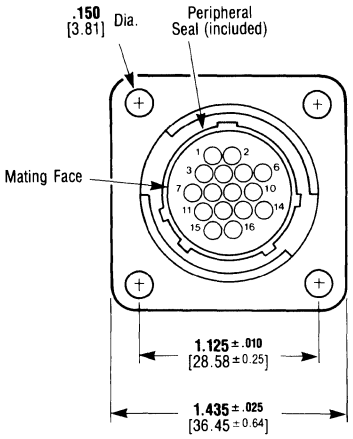
Contacts—Tin plated or plated gold flash over .000050 [0.00127] nickel on entire contact, with .000030 [0.00076] gold on mating end for length of .150 [3.81] min.

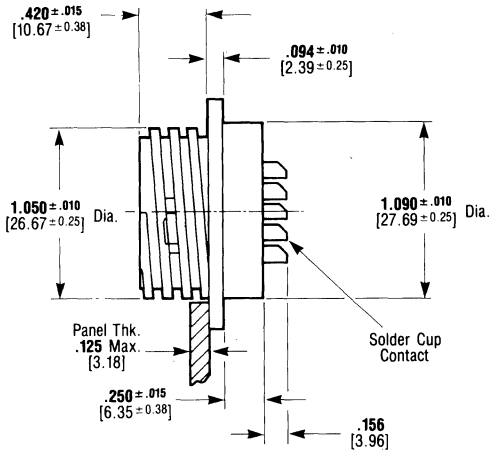
Part Numbers:
206404-1 (Gold Plated Contacts)
206404-2 (Tin Plated Contacts)

Receptacle is standard sex; supplied preloaded with 16 special solder cup pin contacts.

Note: This connector can be used for pressure bulkhead feed-thru (sealed) applications.







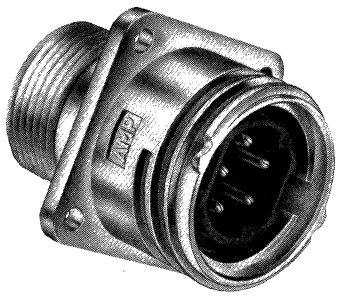
Metal-Shell CPC Connectors
Series 1

Part numbers are for connectors only; order contacts separately.

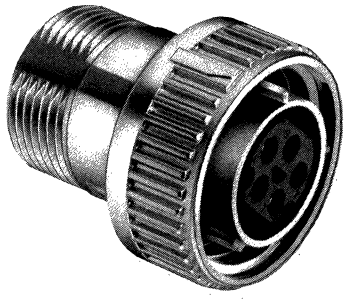
Related Product Data:

Contacts-pages 2004 through 2011
Contact Arrangements-page 2103
Component Dimensions-page 2110
Accessories-page 2111
Performance Characteristics-page 2074
Application Tooling-pages 2012 and 2013
Technical Documents-page 2112

Standard Sex Connectors



Square Flange Receptacle
(Accepts Multimate Pins)

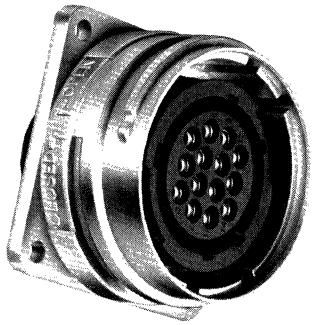


Plug
(Accepts Multimate Sockets)

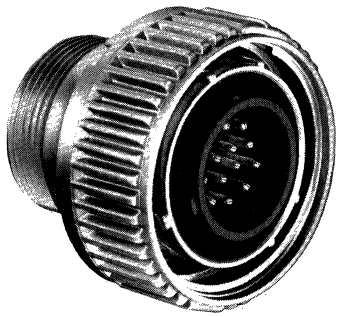
Arrangement	Square Flange Receptacle	Plug	
		w/o Tetraseal	with Tetraseal
14-5	208719-1	208718-1	208718-2
14-7	208715-1	208714-1	208714-2
22-16	208489-1	208488-1	208488-3
28-24	208459-1	208457-1	208457-3
28-37	208471-1	208470-1	208470-3

Note: Maximum wire insulation diameter is .100 [2.54] max., except arrangements 14-5 and 28-24 which are .150 [3.81] max.

Reverse Sex Connectors



Square Flange Receptacle
(Accepts Multimate Sockets)



Plug
(Accepts Multimate Pins)

Arrangement	Square Flange Receptacle	Plug	
		w/o Tetraseal	with Tetraseal
14-5	208721-1	208720-1	208720-2
14-7	208717-1	208716-1	208716-2
22-14	208487-1	208486-1	208486-3
28-37	208473-1	208472-1	208472-3

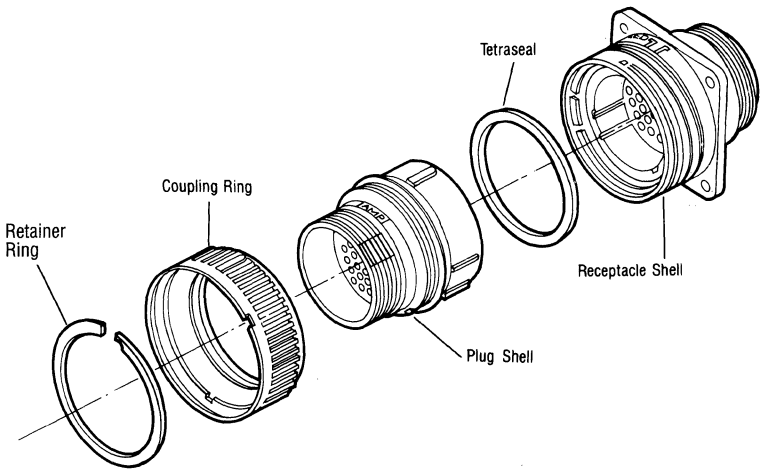
Note: Maximum wire insulation diameter is .100 [2.54] max., except arrangement 14-5 which is .150 [3.81] max.

Tetraseals (Installed in plugs only)

Material:

Fluorocarbon, black

The Tetraseal provides splash-proof sealing between mating metal shells. It is located behind the plug shell external keys (under the coupling ring). When mated with a receptacle, the seal is compressed against the inside diameter of the mating end edge of the receptacle shell.

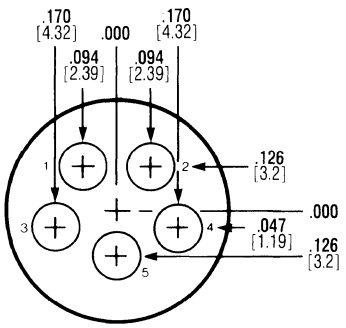


Metal-Shell CPC Connectors
Series 1, Contact Arrangements

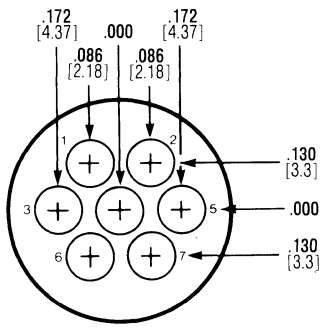
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Shell Size 14

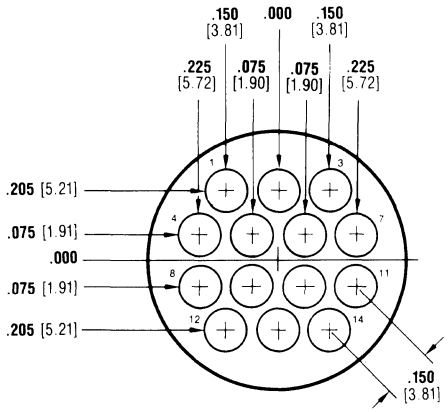


Arrangement 14-5
Max. Wire Ins. Dia. = .150 [3.81]

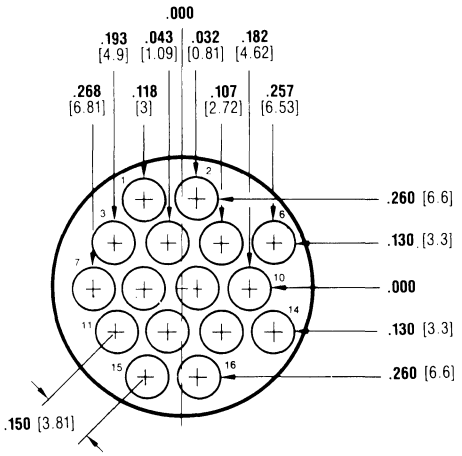


Arrangement 14-7
Max. Wire Ins. Dia. = .100 [2.54]

Shell Size 22



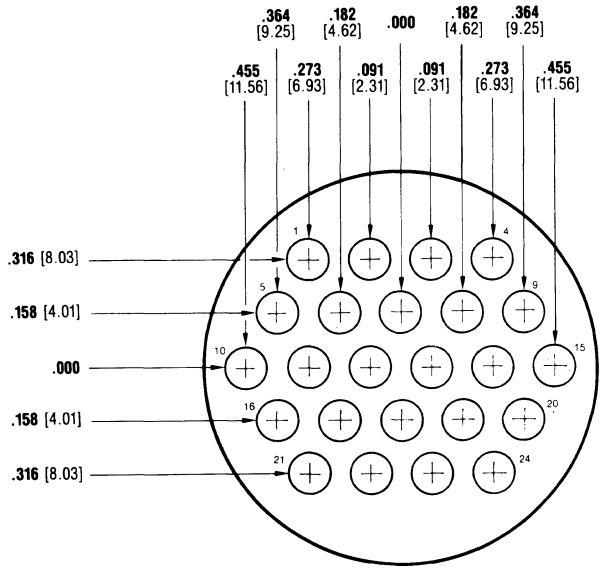
Arrangement 22-14
Max. Wire Ins. Dia. = .100 [2.54]



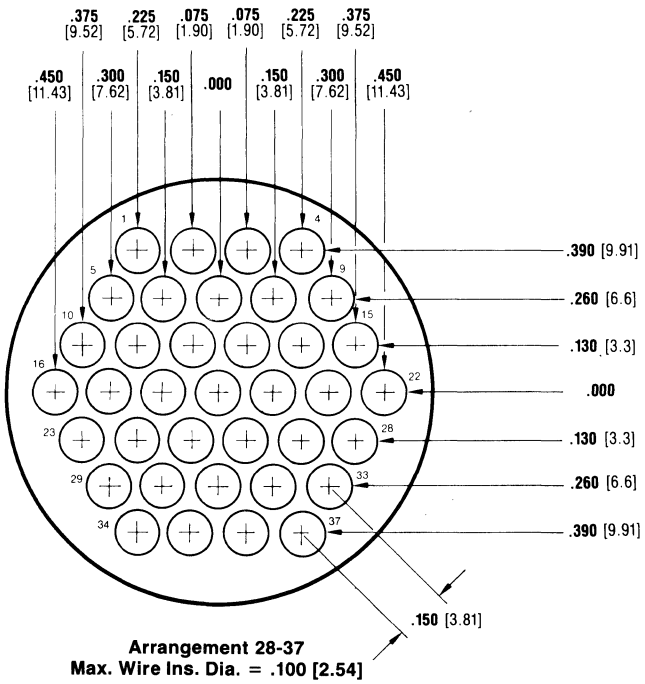
Arrangement 22-16
Max. Wire Ins. Dia. = .100 [2.54]

Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

Shell Size 28



Arrangement 28-24
Max. Wire Ins. Dia. = .150 [3.81]



Arrangement 28-37
Max. Wire Ins. Dia. = .100 [2.54]

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Metal-Shell CPC Connectors Series 2

Part numbers are for connectors only; order contacts separately.

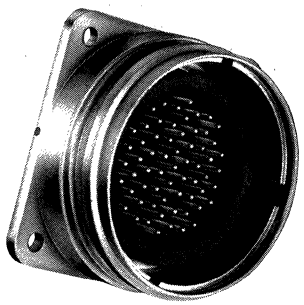
Shell Material:

Aluminum alloy with nickel over copper plating.

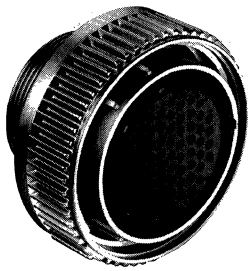
Related Product Data:

Contacts-pages 2004 through 2011
Contact Arrangements-page 2105
Component Dimensions-page 2110
Accessories-page 2111
Performance Characteristics-page 2074
Application Tooling-pages 2012 and 2013
Technical Documents-page 2112

Standard Sex Connectors



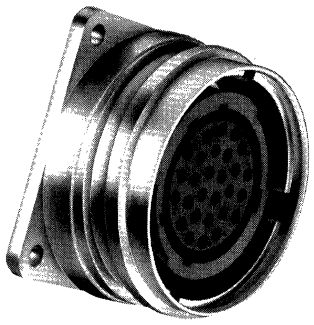
Square Flange Receptacle
(Accepts 20 DF and 20 DM Pins)



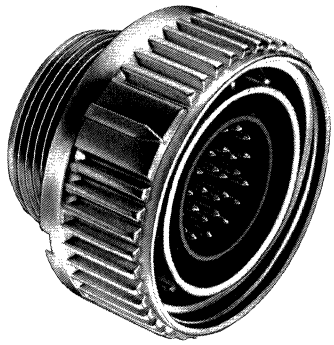
Plug
(Accepts 20 DF and 20 DM Sockets)

Arrangement	Square Flange Receptacle	Receptacle With Tetraseal	Plug (w/o Tetraseal)
22-28	208491-1	208491-2	208490-1
28-63	208477-1	208477-2	208476-1

Reverse Sex Connectors



Square Flange Receptacle
(Accepts 20 DF and 20 DM Sockets)



Plug
(Accepts 20 DF and 20 DM Pins)

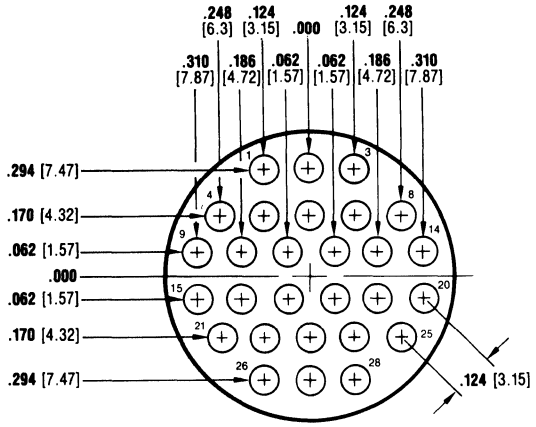
Arrangement	Square Flange Receptacle	Receptacle With Tetraseal	Plug (w/o Tetraseal)
22-28	208493-1	208493-2	208492-1
28-57	208475-1	208475-2	208474-1

Metal-Shell CPC Connectors
Series 2, Contact Arrangements

Specifications subject to change.
For latest design specifications...
1-800-522-6752

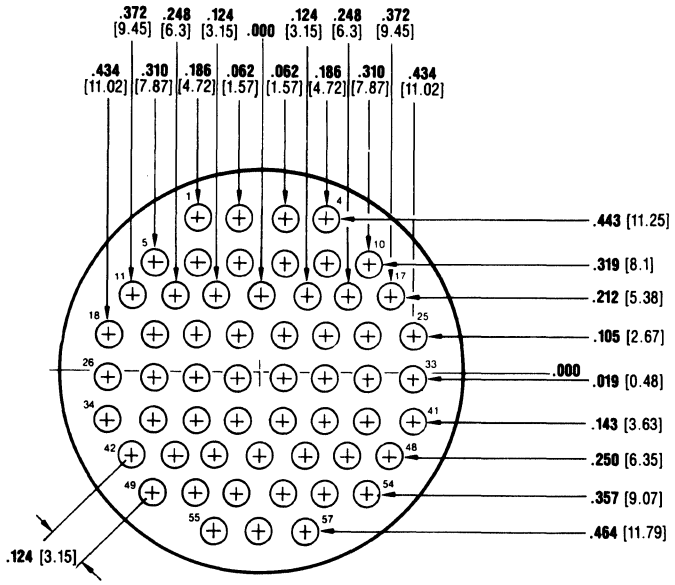
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Shell Size 22

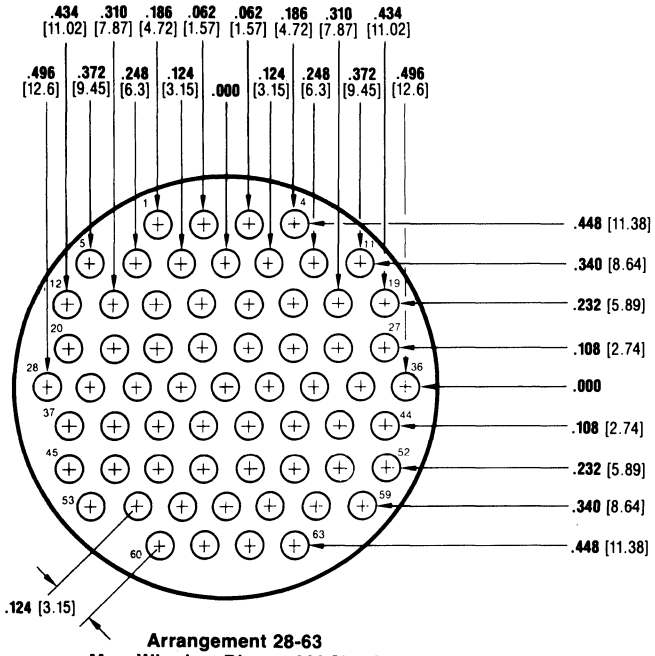


Arrangement 22-28
Max. Wire Ins. Dia. = .068 [1.73]

Shell Size 28



Arrangement 28-57
Max. Wire Ins. Dia. = .068 [1.73]



Arrangement 28-63
Max. Wire Ins. Dia. = .068 [1.73]

Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

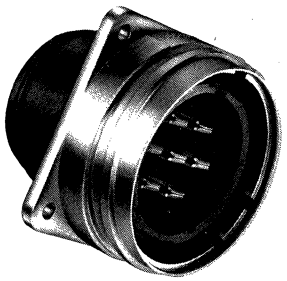
Metal-Shell CPC Connectors Series 3

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Part numbers are for connectors only; order contacts separately.

Related Product Data:
Contacts-pages 2004 through 2011
Contact Arrangements-page 2107
Component Dimensions-page 2110
Accessories-page 2111
Performance Characteristics-page 2074
Application Tooling-pages 2012 and 2013
Technical Documents-page 2112

Standard Sex Connectors

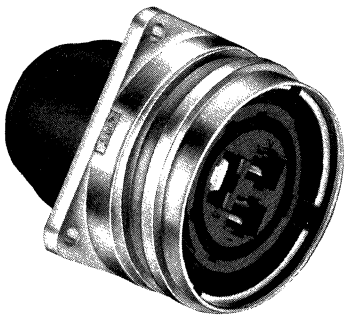


Square Flange Receptacle
(Accepts Type XII Male Pins)

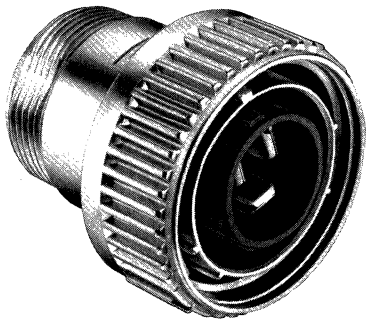
Plug
(Accepts Type XII Female Sockets)

Arrangement	Square Flange Receptacle	Plug	
		w/o Tetraseal	with Tetraseal
22-3	208495-1	208494-1	208494-3
28-7	208483-1	208482-1	208482-3

Reverse Sex Connectors



Square Flange Receptacle
(Accepts Type XII Female Sockets)



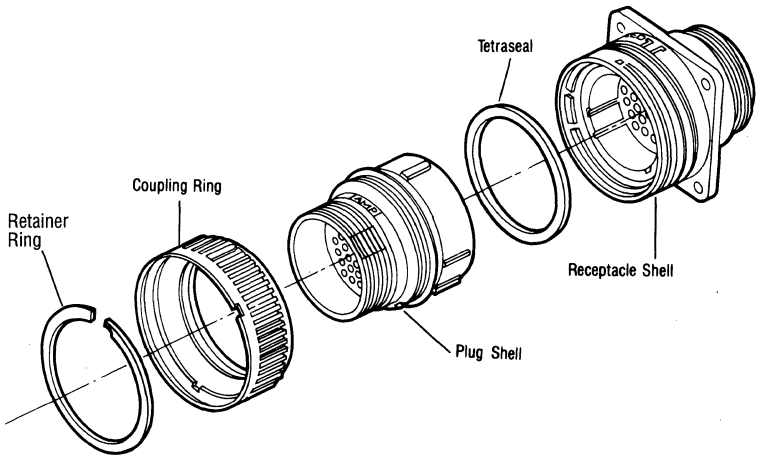
Plug
(Accepts Type XII Male Pins)

Arrangement	Square Flange Receptacle	Plug	
		w/o Tetraseal	with Tetraseal
22-3	208497-1	208496-1	208496-3
28-7	208485-1	208484-1	208484-3

Tetraseals (Installed in Plugs Only)

Material:
Fluorocarbon, black

The Tetraseal provides splash-proof sealing between connector metal shells. It is located behind the plug shell external keys (under the coupling ring). When mated with a receptacle, the seal is compressed against the inside diameter of the mating end edge of the receptacle shell.

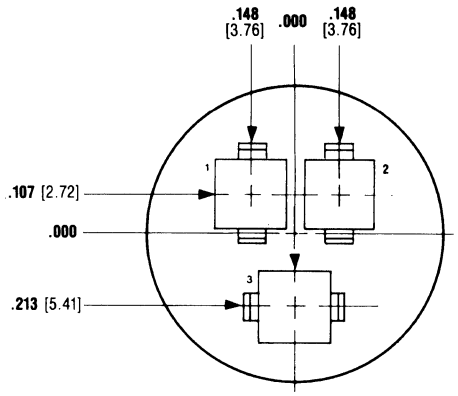


Metal-Shell CPC Connectors
Series 3, Contact Arrangements

Specifications subject to change.
For latest design specifications...
1-800-522-6752

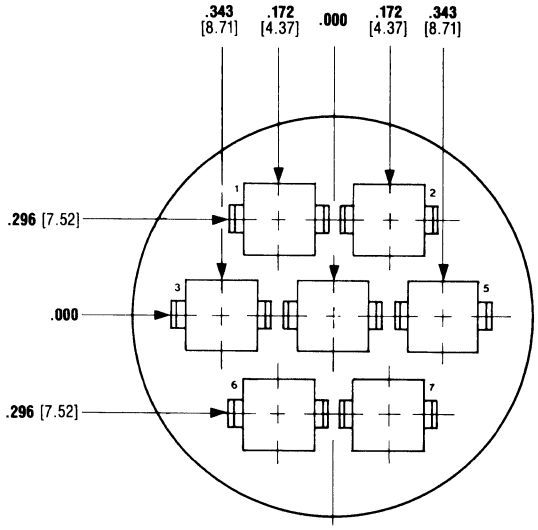
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Shell Size 22



Arrangement 22-3
Max. Wire Ins. Dia. = .220 [5.59]

Shell Size 28



Arrangement 28-7
Max. Wire Ins. Dia. = .220 [5.59]

Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Metal-Shell CPC Connectors
Series 4

Part numbers are for connectors only; order contacts separately.

Related Product Data:
Contacts-pages 2004 through 2011
Contact Arrangements-page 2109
Component Dimensions-page 2110
Accessories-page 2111
Performance Characteristics-page 2074
Application Tooling-pages 2012 and 2013
Technical Documents-page 2112

Standard Sex Connectors

Square Flange Receptacle
(Accepts Type XII Male and Multimate Pins)

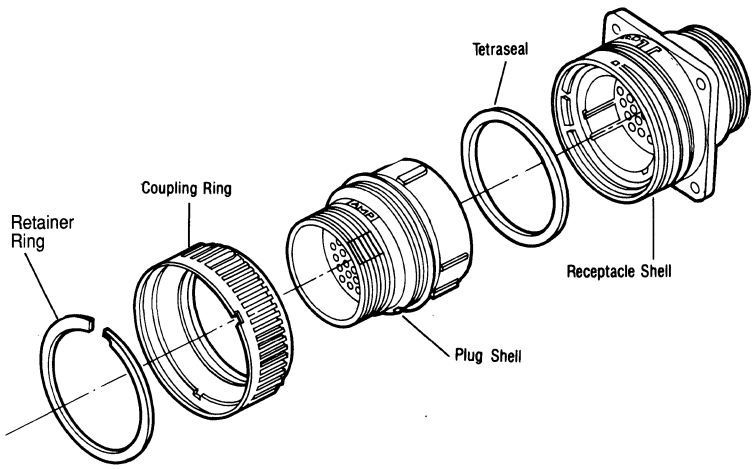
Plug
(Accepts Type XII Female and Multimate Sockets)

Arrangement	Square Flange Receptacle	Plug	
		w/o Tetraseal	with Tetraseal
28-13M	211823-1	211822-1	211822-3
28-16M	208479-1	208478-1	208478-3
28-22M	208481-1	208480-1	208480-3

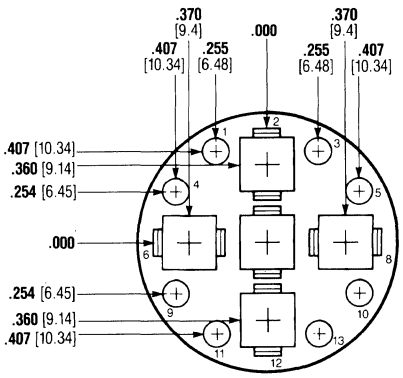
Tetraseals (Installed in Plugs Only)

Material:
Fluorocarbon, black

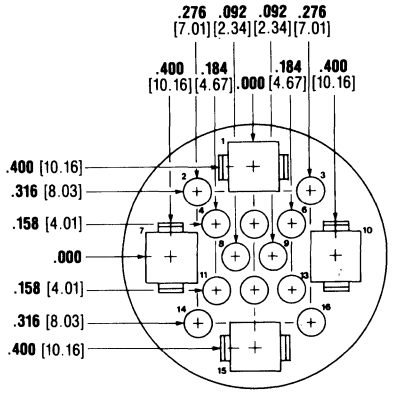
The Tetraseal provides splash-proof sealing between connector metal shells. It is located behind the plug shell external keys (under the coupling ring). When mated with a receptacle, the seal is compressed against the inside diameter of the mating end edge of the receptacle shell.



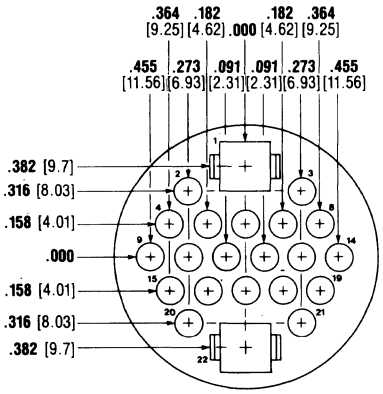
Shell Size 28



Arrangement 28-13M
Max. Wire Ins. Dia. =
.150 [3.81] for Multimate Contacts,
.220 [5.59] for Power Contacts



Arrangement 28-16M
Max. Wire Ins. Dia. =
.150 [3.81] for Multimate Contacts,
.220 [5.59] for Power Contacts



Arrangement 28-22M
Max. Wire Ins. Dia. =
.150 [3.81] for Multimate Contacts,
.220 [5.59] for Power Contacts

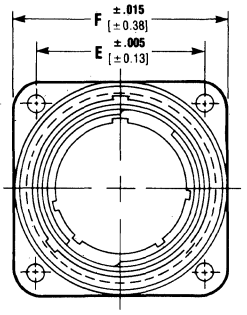
Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

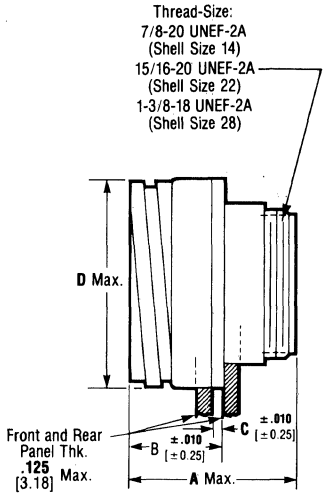
Metal-Shell CPC Connectors
Component Dimensions

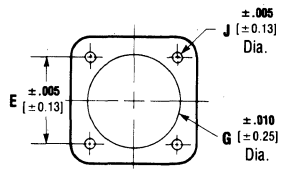
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

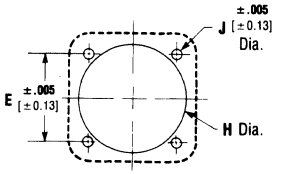
Square Flange Receptacles





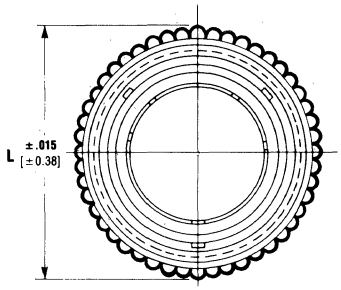


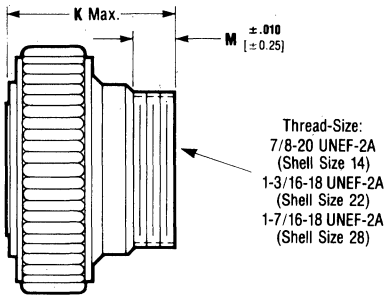
Panel Cutout, Front Mounted Receptacle



Panel Cutout, Rear Mounted Receptacle

Plug





Series	Arrangement No.	Sex	Dimensions											
			A	B	C	D	E	F	G	H	J	K	L	M
1	14-5	Std.	**1.415** 35.94	**.745** 18.92	**.100** 2.54	**1.031** 26.19	**.906** 23.01	**1.185** 30.1	**1.070** 27.18	**1.070** 27.18	**.125** 3.18	**1.400** 35.56	**1.225** 31.12	**.380** 9.65
		Rev.												
	14-7	Std.	**1.415** 35.94	**.745** 18.92	**.100** 2.54	**1.031** 26.19	**.906** 23.01	**1.185** 30.1	**1.070** 27.18	**1.070** 27.18	**.125** 3.18	**1.400** 35.56	**1.225** 31.12	**.380** 9.65
		Rev.												
	22-14	Rev.	**1.190** 30.22	**.790** 20.07	**.103** 2.62	**1.503** 38.18	**1.250** 31.75	**1.534** 38.96	**1.156** 29.36	**1.554** 39.47	**.120** 3.05	**1.560** 39.62	**1.750** 44.45	**.380** 9.65
	22-16	Std.	**1.470** 37.34	**.790** 20.07	**.103** 2.62	**1.503** 38.18	**1.250** 31.75	**1.534** 38.96	**1.156** 29.36	**1.554** 39.47	**.120** 3.05	**1.265** 32.13	**1.750** 44.45	**.380** 9.65
	28-24	Std.	**1.555** 39.5	**.875** 22.23	**.125** 3.18	**1.900** 48.26	**1.562** 39.67	**1.950** 49.53	**1.610** 40.89	**1.970** 50.04	**.145** 3.68	**1.560** 39.62	**2.170** 55.12	**.380** 9.65
	28-37	Std.	**1.540** 39.12	**.875** 22.23	**.125** 3.18	**1.900** 48.26	**1.562** 39.67	**1.950** 49.53	**1.610** 40.89	**1.970** 50.04	**.145** 3.68	**1.560** 39.62	**2.170** 55.12	**.380** 9.65
		Rev.	**1.260** 31.00									**1.840** 46.74		
2	22-28	Std.	**.934** 23.72	**.790** 20.07	**.103** 2.62	**1.503** 38.18	**1.250** 31.75	**1.534** 38.96	**1.156** 29.36	**1.554** 39.47	**.120** 3.05	**1.295** 32.89	**1.750** 44.45	**.380** 9.65
		Rev.												
	28-57	Rev.	**1.229** 31.22	**.875** 22.22	**.125** 3.18	**1.900** 48.26	**1.562** 39.67	**1.950** 49.53	**1.610** 40.89	**1.970** 50.04	**.145** 3.68	**1.408** 35.76	**2.170** 55.12	**.380** 9.65
	28-63	Std.	**1.229** 31.22	**.875** 22.22	**.125** 3.18	**1.900** 48.26	**1.562** 39.67	**1.950** 49.53	**1.610** 40.89	**1.970** 50.04	**.145** 3.68	**1.408** 35.76	**2.170** 55.12	**.380** 9.65
3	22-3	Std.	**1.755** 44.58	**.790** 20.07	**.103** 2.62	**1.503** 38.18	**1.250** 31.75	**1.534** 38.96	**1.156** 29.36	**1.554** 39.47	**.120** 3.05	**1.805** 45.85	**1.750** 44.45	**.380** 9.65
		Rev.												
	28-7	Std.	**1.825** 46.36	**.875** 22.22	**.125** 3.18	**1.900** 48.26	**1.562** 39.67	**1.950** 49.53	**1.610** 40.89	**1.970** 50.04	**.145** 3.68	**2.125** 53.98	**2.170** 55.12	**.380** 9.65
		Rev.												
4	28-13M	Std.	**1.825** 46.36	**.875** 22.22	**.125** 3.18	**1.900** 48.26	**1.562** 39.67	**1.950** 49.53	**1.610** 40.89	**1.970** 50.04	**.145** 3.68	**2.125** 53.98	**2.170** 55.12	**.380** 9.65
	28-16M	Std.	**1.825** 46.36	**.875** 22.22	**.125** 3.18	**1.900** 48.26	**1.562** 39.67	**1.950** 49.53	**1.610** 40.89	**1.970** 50.04	**.145** 3.68	**2.125** 53.98	**2.170** 55.12	**.380** 9.65
	28-22M	Std.	**1.825** 46.36	**.875** 22.22	**.125** 3.18	**1.900** 48.26	**1.562** 39.67	**1.950** 49.53	**1.610** 40.89	**1.970** 50.04	**.145** 3.68	**2.125** 53.98	**2.170** 55.12	**.380** 9.65

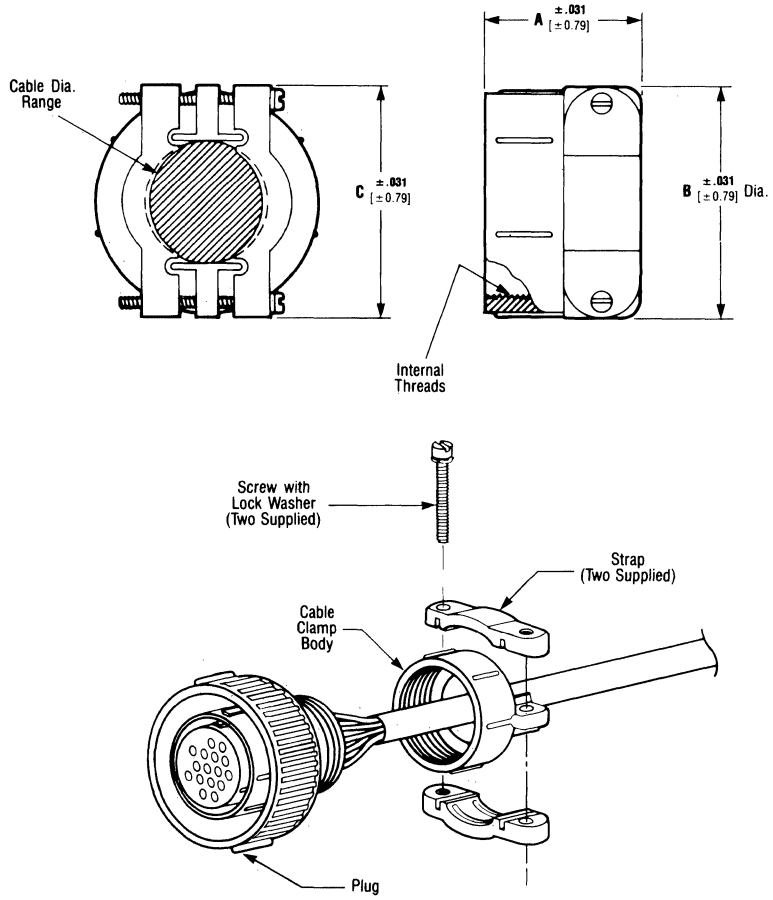
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Metal-Shell CPC Connectors Accessories

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Cable Clamps (for Metal-Shell CPC Plugs Only)

Material and Finish:
Aluminum alloy, nickel plated

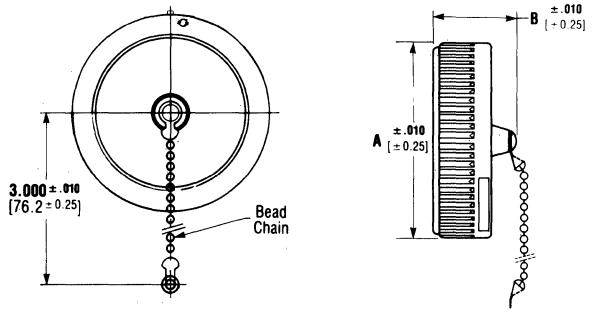


Shell Size	Dimensions A	B	C	Cable O.D. Range	Thread Size	Part No.
14	.938 23.83	1.094 27.79	1.156 29.36	.312-.562 7.92-14.27	7/8-20 UNEF-3B	208945-5
22	.938 23.83	1.375 34.92	1.469 37.31	.500-.750 12.7-19.05	1-3/16-18 UNEF-3B	208945-7
28	1.031 26.19	1.656 42.06	1.688 42.88	.625-.938 15.88-23.83	1-7/16-18 UNEF-3B	208945-8

Protective Cap Assemblies (for Metal-Shell CPC Receptacles Only)

Material and Finish:
Zinc alloy, nickel plated

Shell Size	Dimensions A	B	Part No.
22	1.750 44.45	.635 16.13	211903-1
28	2.170 55.12	.635 16.13	211904-1



Note: For backshell hardware for Metal-Shell CPC Receptacles, see pages 2092 through 2097.

Various technical documents are available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-10024 CPC Connectors
108-10037 Contacts, Type XII
108-10040 Metal-Shell CPC Connectors
108-10042 Contacts, Type III+

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-10000 Contacts, Size 20 DF
114-10004 Contacts, Type III+
114-10005 Contacts, Type XII

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

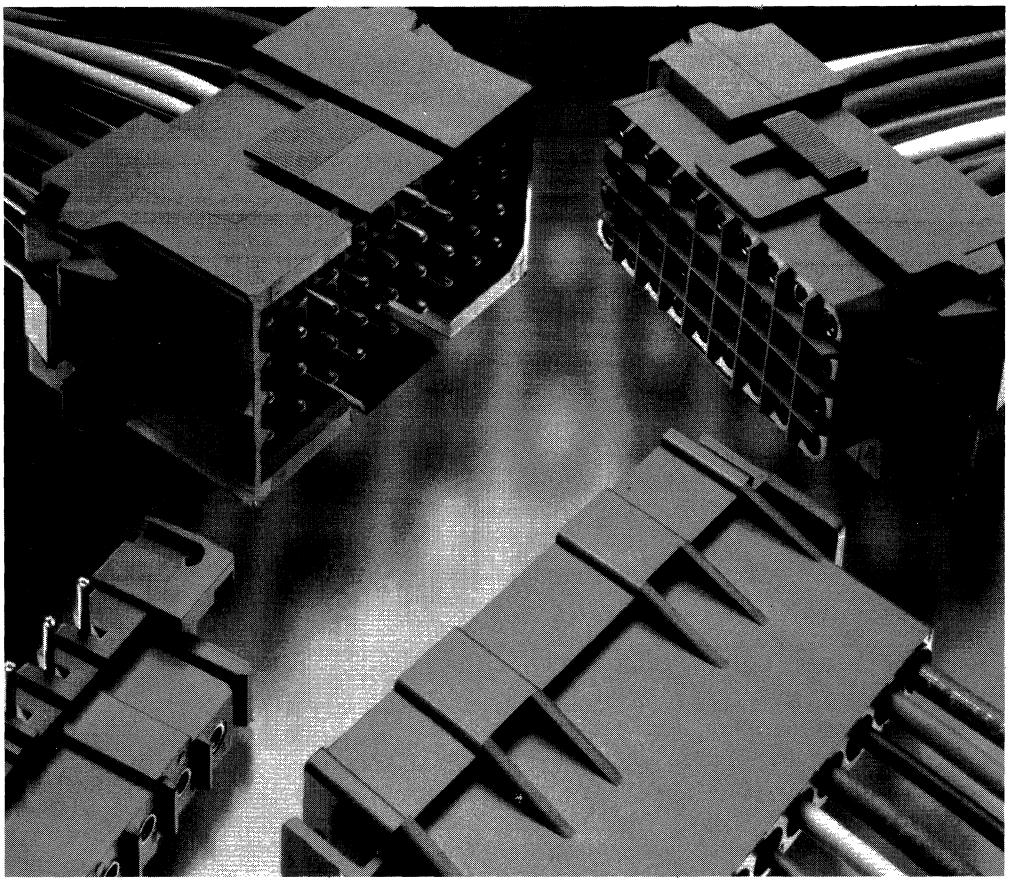
IS 7582 Accessories for CPC Connectors
IS 7592-A Improved Strain Relief Clamps for CPC Connectors
IS 7593 CPC Connectors
IS 7890 CPC Connectors for Jacketed Cable
IS 6641 Metal-Shell CPC Connectors

Application Tooling/Instruction Sheet Cross Reference

Tool No.	Instruction Sheet
69365	IS 2987-5
69710	IS 2987-5
90310-1	IS 2095
	IS 7680
90310-2	IS 8042
90310-3	IS 9387
90277-1	IS 7574
91067-2	IS 7508
91019-3	IS 7276
305183	IS 7680

Metrimate Pin and Socket Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are equivalent U.S. Customary Units.
Metric symbols used are:
C (Celsius)
mm^2 (square millimeter)

Note: Dimensions in this catalog are for reference purposes only. Customer drawings are available on request.

AMP Metrimate connectors are true metric specification connectors designed for panel, free-hanging or pc board application. These connectors are ideally suited for equipment manufacturers engaged in both national and international markets. This versatile pin and socket connector line is designed to meet the general requirements of

Product Facts

- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association,* File No. LR16455
- Tested to **VDE** requirements outlined in VDE Test Report No. 4751-1431-1029/A1I (except Power Drawer Connectors)
- Designed to meet IEC (440 V) requirements (except Power Drawer Connectors)
- True metric dimensions–contacts on 5 [.197] centers (drawer connectors and special in-line connectors and pin headers have contacts on 5.08 [.200] centers)
- Panel mount versions require no hardware for mounting
- Polarized housings
- 4- thru 36-position square grid configurations can be mounted to and removed from either front or rear of panel.
- Housings made of UL rated 94V-0 thermoplastic
- Strain reliefs available for 6- thru 36-position square grid, panel mount housings
- Drawer connectors available in 4- thru 25-position sizes (see page 2120 for additional product facts) various testing and approval agencies, including UL, CSA, VDE and IEC.

Presently, connectors are available in various design configurations and the most popular sizes to satisfy a variety of application requirements. Such designs include: square grid connectors for free-hanging and/or panel mounting; free-hanging in-line connectors; square grid and in-line pin and socket headers for pc board mounting; and drawer connectors for rack and panel mounting with radial float.

For high but economical electrical performance, all connectors employ housings made of UL rated 94V-0 thermoplastic. Except those of preloaded versions, the housings accept combinations of contacts for mixing power and signal circuits.

Electrical Characteristics

Voltage Rating: UL (600 VAC and VDC), CSA (600 VAC and VDC), VDE (380 VAC, 450 VDC), IEC (440 V)

Dielectric Strength: 2000 Volts, RMS (at sea level)

Current Rating: See contact current carrying capability data below.

Insulation Resistance: 5000 Megohms (Min.)

Termination Resistance: Dependent upon individual contact type. Refer to applicable Product Specification. (Technical Documents, page 2137).

Environmental Characteristics

Temperature Range: -55° C to +130° C

Mechanical Characteristics

Air Gap: Exceeds 3.2 [.125]

Creep Distance: Exceeds 4 [.157]

Mounting Distance (Live Contact-to-Panel): Exceeds 6 [.237]

Acceptable Panel Thicknesses: 0.8-2.3 [.030-.090]

Contact Current Carrying Capability

The following is a comparison of the various contacts used in Metrimate connectors:

Type III+ Contact on 2 mm^2 [14 AWG] wire .....13 amperes

Pin and Socket PC Board Headers mated with
Type III+ Contact on 2 mm^2 [14 AWG] wire .....7.5 amperes

Power Eight Contact on 7-8 mm^2 [8 AWG] wire.....45 amperes

The currents are for a single contact in free air and generate a 30° C temperature rise above ambient.

The total current capacity of each contact in a connector is dependent upon the heat rise resulting from the combination of electrical loads on all the contacts in the connector arrangement and the maximum ambient temperature in which the connector will be operating. Caution must be taken to assure that these combinations of conditions do not cause the internal temperature of the connector to exceed the maximum operating temperature of the housing material. There are several variables which must be considered when determining this maximum current carrying capability for your application.

These variables are:

a) Wire Size – Larger wire will carry more current since it has less internal resistance to current flow, therefore, it generates less heat. The wire also conducts heat away from the connector.

b) Connector Size – In general, the more circuits in a connector, the less current per contact can be carried.

c) Ambient Temperature – The higher the ambient temperature, the less current can be carried.

Square Grid Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

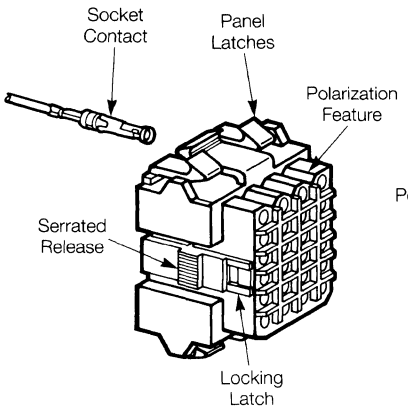
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Free-Hanging and Panel Mount Connectors

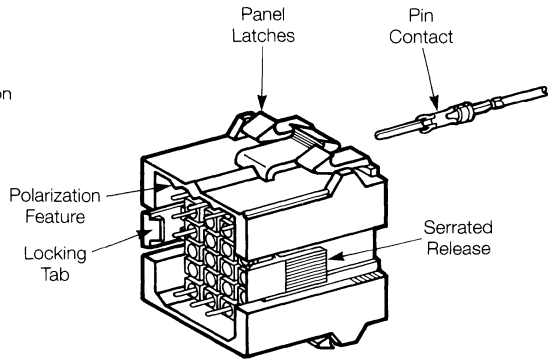
Material:
Red thermoplastic, 94V-0 rated

Related Product Data:
Mateable Connectors:
PC Board Headers-page 2116
Contacts-Pages 2004 through 2011
Keying Plug-Page 2119
Strain Relief Kits-See below
Dimensional Specifications and Recommended Panel Cutout-Pages 2121 and 2122
Performance Characteristics-Page 2114
Technical Documents-Page 2137

Plug Housing
(Accepts Socket Contacts)



Receptacle Housing
(Accepts Pin Contacts)



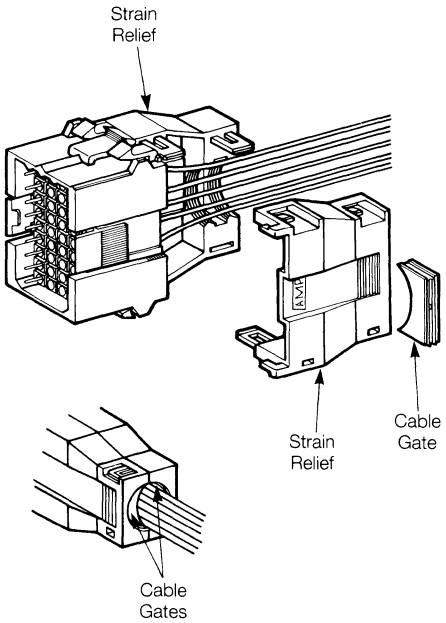
No. of Positions	Housing Part No. *	
	Plug	Receptacle
4	207015-1	207016-1
6	207152-1	207153-1
9	207439-1	207440-1
12	207017-1	207018-1
18	207442-1	207443-1
24	207304-1	207305-1
36	207019-1	207020-1

*Housing only, order contacts separately. See pages 2004 - 2011 for contact specifications.

Strain Relief Kits
(For use with plugs and/or receptacles)

Material:
Red thermoplastic, 94V-0 rated

Related Product Data:
Dimensional Specifications - page 2122



No. of Positions (Connector)	Cable O.D. (Max.)	Strain Relief Kit No.
6	**9.5** .375	207600-1
9	**11.7** .460	207601-1
12	**13.45** .530	207602-1
18	**16.5** .650	207603-1
24	**19.05** .750	207088-1
36	**23.3** .918	207604-1

Notes: 1. Cable gates are supplied with each strain relief kit to accommodate various cable diameters up to the maximum specified.
2. Components for all strain relief kits are packaged unassembled.

Pc Board Mount Headers

Material and Finish:

Housing - Red thermoplastic, 94V-0 rated

Pin Contacts - Copper alloy, plated tin or gold duplex

Socket Contacts - Phosphor bronze, plated tin or gold duplex

Related Product Data:

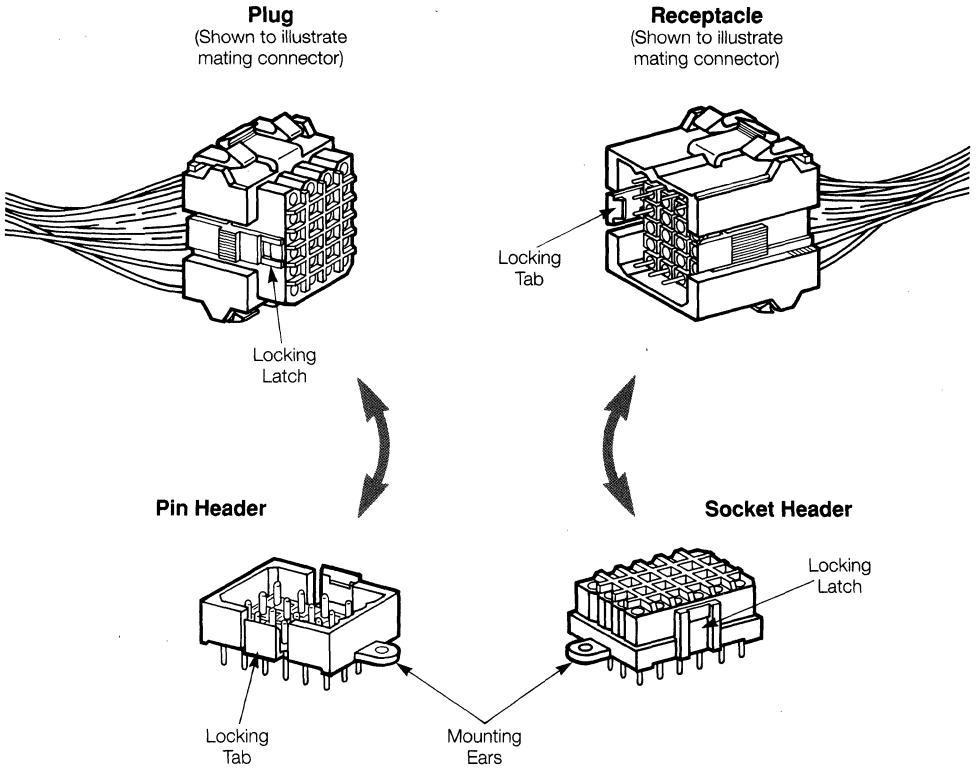
Mateable Connectors:

Free-Hanging Connectors-Page 2115 (Pin and Socket Headers do not mate.)

Dimensional Specifications and Recommended Pc Board Layout-Pages 2123 through 2126

Performance Characteristics-Page 2114

Technical Documents-Page 2137



No. of Positions	Contact Plating	Pin Header Part No. With Mounting	Pin Header Part No. Without Mounting	Mates with Plug Part No. (Page 2115)	Socket Header Part No. With Mounting	Socket Header Part No. Without Mounting	Mates with Receptacle Part No. (Page 2115)
4	Tin	207119-1	207119-2	207015-1	207496-1	207496-2	207016-1
	Gold*	207119-3	207119-4		207496-3	207496-4	
6	Tin	207158-1	207158-2	207152-1	207524-1	207524-2	207153-1
	Gold*	207158-3	207158-4		207524-3	207524-4	
9	Tin	207441-1	207441-2	207439-1	207526-1	207526-2	207440-1
	Gold*	207441-3	207441-4		207526-3	207526-4	
12	Tin	207120-1	207120-2	207017-1	207528-1	207528-2	207018-1
	Gold*	207120-3	207120-4		207528-3	207528-4	
18	Tin	207444-1	207444-2	207442-1	207530-1	207530-2	207443-1
	Gold*	207444-3	207444-4		207530-3	207530-4	
24	Tin	206763-1	206763-2	207304-1	207532-1	207532-2	207305-1
	Gold*	206763-3	206763-4		207532-3	207532-4	
36	Tin	207121-1	207121-2	207019-1	207534-1	207534-2	207020-1
	Gold*	207121-3	207121-4		207534-3	–	

* Duplex plated 0.00076 [.000030] gold on mating end, tin-lead on termination end, with entire contact nickel underplated.
Note: Pin and Socket Headers do not mate.

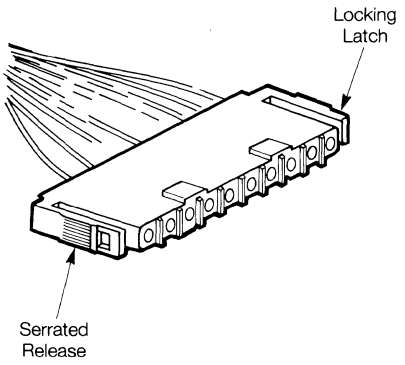
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Free-Hanging Connectors

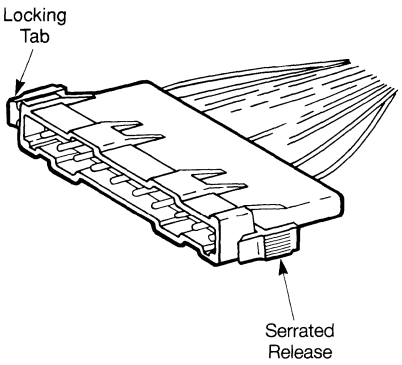
Material:
Red thermoplastic, 94V-0 rated

Related Product Data:
Mateable Connectors:
Pc Board Mount Headers- Page 2118
Contacts-Pages 2004 through 2011
Keying Plug-Page 2119
Dimensional Specifications-Page 2127
Performance Characteristics-Page 2114
Technical Documents-Page 2137

Plug Housing
(Accepts Socket Contacts)



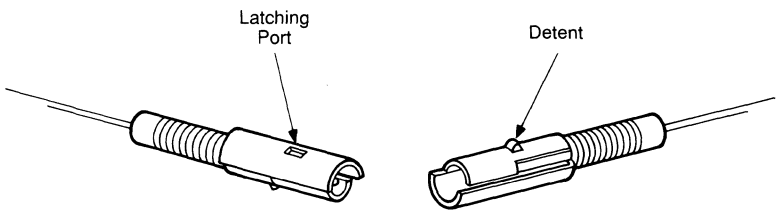
Receptacle Housing
(Accepts Pin Contacts)



No. of Positions	Housing Part No. *	
	Plug	Receptacle
1 (Positive Latch)	207535-1**	207535-1**
1 (Breakaway Latch)	211076-1**	211076-1**
3	207360-1	207359-1
6	207377-1	207376-1
10	207396-1	207397-1
16	207542-1	207543-1

* Housing only, order contacts separately. See pages 2004 - 2011 for contact specifications.
** Hermaphroditic housing acccepts pins or sockets and mates with itself.

1 Position Housing
(Hermaphroditic Housing Accepts Pins or Sockets and Mates With Itself.)



Pc Board Mount Headers

Material and Finish:

Housing - Red thermoplastic, 94V-0 rated

Pin Contacts - Copper alloy, plated tin or gold duplex

Socket Contacts - Phosphor bronze, plated tin or gold duplex

Related Product Data:

Mateable Connectors:

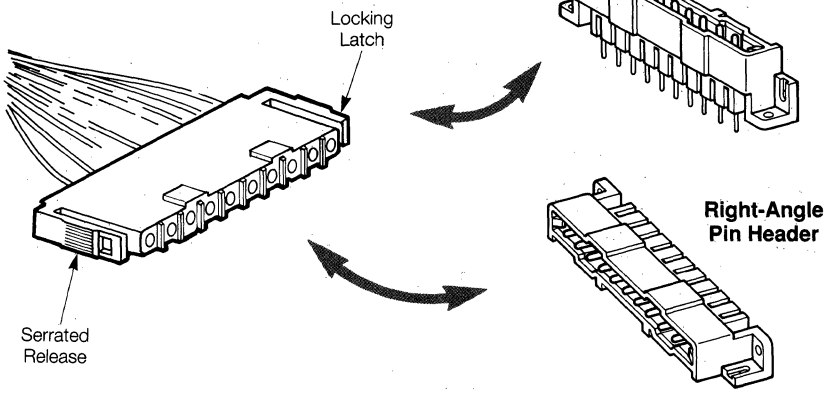
Free Hanging Connectors-Page 2117 (Pin and Socket Headers do not mate)

Dimensional Specifications and Recommended Pc Board Layout-Pages 2128 and 2129

Performance Characteristics-Page 2114

Technical Documents-Page 2137

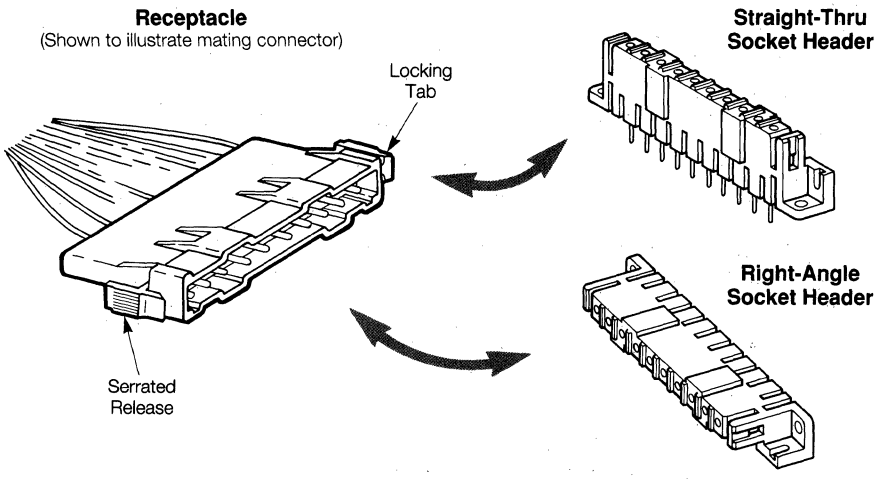
Plug
(Shown to illustrate mating connector)



No. of Positions	Contact Plating	Pin Header Part No.		Mates with Plug Part No. (Page 2117)
		Straight-Thru	Right-Angle	
3	Tin	207365-1	207541-1	207360-1
	Gold*	207365-3	207541-3	
6	Tin	207583-1	207378-1	207377-1
	Gold*	207583-3	207378-3	
10	Tin	207584-1	207398-1	207396-1
	Gold*	207584-3	207398-3	
16	Tin	207599-1	207544-1	207542-1
	Gold*	207599-3	207544-3	

* Duplex plated 0.00076 [.000030] gold on mating end, tin-lead on termination end, with entire contact nickel underplated.
Note: Pin and Socket Headers do not mate.

Receptacle
(Shown to illustrate mating connector)



No. of Positions	Contact Plating	Socket Header Part No.		Mates with Receptacle Part No. (Page 2117)
		Straight-Thru	Right-Angle	
3	Tin	207609-1	207608-1	207359-1
	Gold*	207609-3	207608-3	
6	Tin	207611-1	207610-1	207376-1
	Gold*	207611-3	207610-3	
10	Tin	207613-1	207612-1	207397-1
	Gold*	207613-3	207612-3	
16	Tin	207615-1	207614-1	207543-1
	Gold*	207615-3	207614-3	

* Duplex plated 0.00076 [.000030] gold on mating end, tin-lead on termination end, with entire contact nickel underplated.
Note: Pin and Socket Headers do not mate.

In-Line Connectors, 5.08 [.200] Centerline

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Free-Hanging Connector and Pc Board Mount Header

Material and Finish:

Connector:
Red thermoplastic, 94V-0 rated

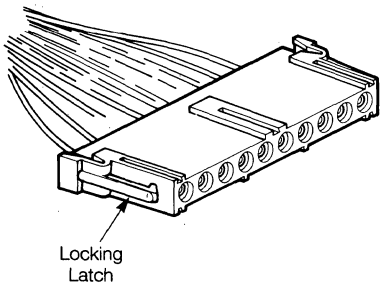
Header:

Housing - Red thermoplastic, 94V-0 rated
Contact - Copper alloy, plated tin or gold duplex

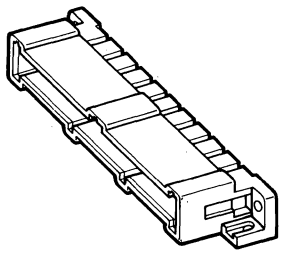
Related Product Data:

Contacts-Pages 2004 through 2011
Keying Plug-See Below
Dimensional Specifications and Recommended Pc Board Layout-Pages 2130 and 2131
Performance Characteristics-Page 2114
Technical Documents-Page 2137

Plug Housing
(Accepts Socket Contacts)



Right-Angle Pin Header



No. of Positions	In-Line Connector Plug Part No. *	Right-Angle Pin Header	
		Contact Plating	Part No.
6	208117-1	Tin	208116-1
10	208404-1	Tin	208403-1
19	208100-1	Tin	208099-1
		Gold**	212630-1

* Housing only, order contacts separately. See pages 2004 - 2011 for contact specifications.
* Duplex plated 0.00076 [.000030] gold on mating end, tin-lead on termination end, with entire contact nickel underplated.

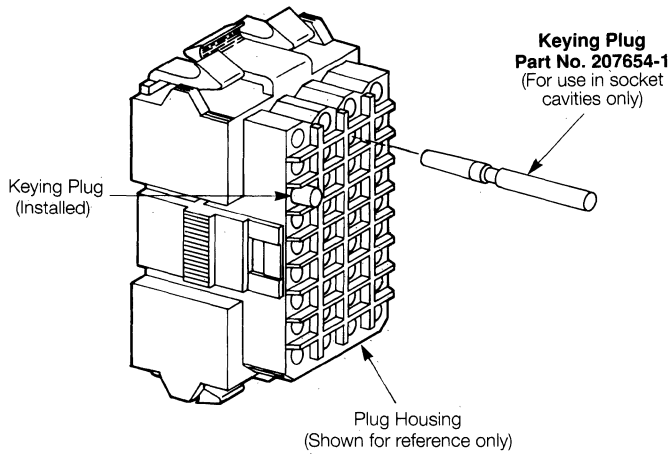
Keying Plug

Material: Nylon

Related Product Data:

Used with:

Square Grid Connectors-Page 2115
In-Line Connectors-Pages 2117 and 2119
Drawer Connectors-Page 2120



Drawer Connectors

Panel Mount

Product Facts

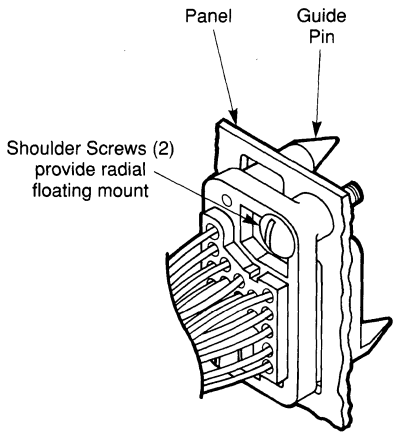
- 4-, 12-, 19- and 25-position connectors for size 16 contacts
- 8-position connector for size 8 power contacts, and a 15-position connector for 3 size 8 power contacts and 12 size16 contacts
- Provides "blind" mating with up to 2.3 [.090] misalignment in any direction
- Guide pins molded into plug half
- Plug and receptacle can be front- or rear-panel mounted

Material:
Black glass-filled thermoplastic, 94V-0 rated

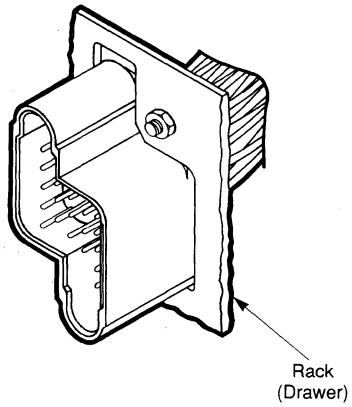
Related Product Data:

Contacts-Pages 2004 through 2011
Mounting Screw-See below
Keying Plug-Page 2120
Dimensional Specifications and Recommended Panel Cutouts-Pages 2132 through 2136
Performance Characteristics-Page 2114
Technical Documents-Page 2137

Plug Housing
(Accepts Socket Contacts)



Receptacle Housing
(Accepts Pin Contacts)



No. of Positions	Housing Part No. *		Grounding Pins should not be used in these receptacle cavities
	Plug	Receptacle	
4	212608-1	212609-1	1 and 4
12	211758-1	211759-1	1 and 12
19	208210-2	208209-2	1 and 19
25	211150-1	211149-1	1 and 25

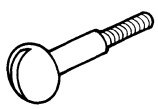
* Housing only, order contacts separately. See pages 2004 - 2011 for contact specifications.

Power Connectors

No. of Positions	Housing Part No. *		Grounding Pins should not be used in these receptacle cavities
	Plug	Receptacle	
8 (8 size 8)	213499-1	213500-1	All power contact cavities
15 (3 size 8,12 size 16)	213426-1	213427-1	All power contact cavities, 1 and 12

* Housing only, order contacts separately. See pages 2004 - 2011 for contact specifications.

Mounting Screw



Material: Stainless steel

Thread Size	Part No.
M4x0.7-6H/6g	208211-1
SAE 6/32	208211-4

Note: These shoulder screws are used for mounting the plug housing and are to be ordered separately. Two are required for each plug. Nuts are to be supplied by the customer.

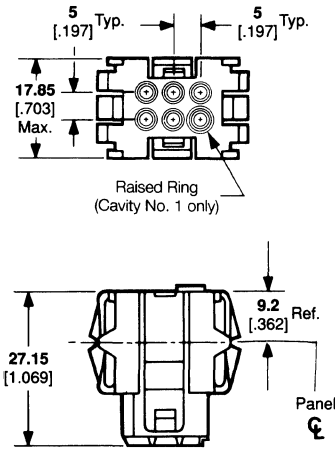
Square Grid Connector Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

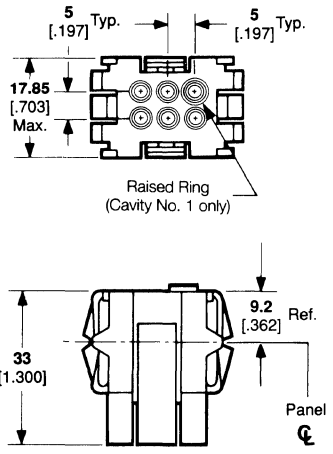
Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.
Chart contains dimensions in millimeters over inches.

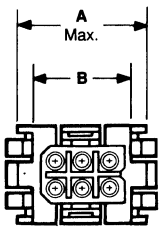
4 and 6 Position Housings

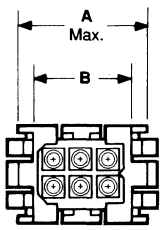
Plug (for Sockets)

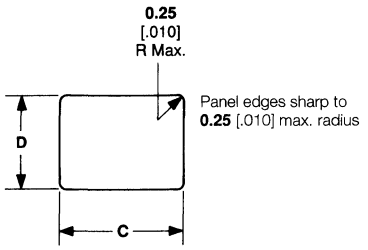


Receptacle (for Pins)





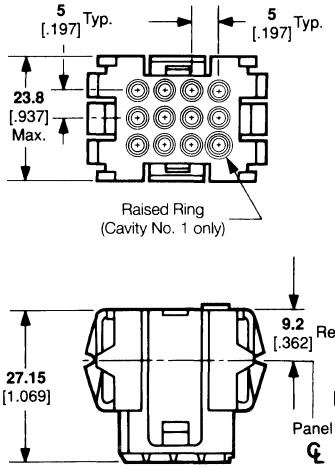




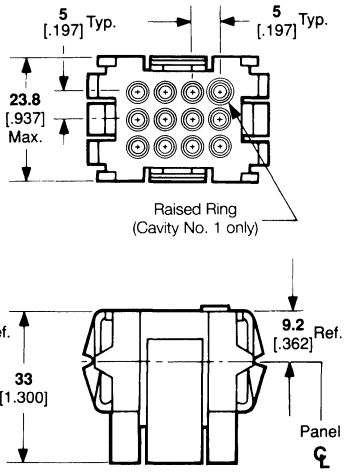
Recommended Panel Cutout
(for Plug or Receptacle)

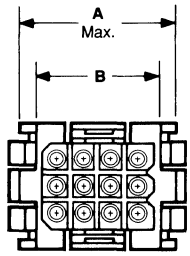
9, 12 and 18 Position Housings

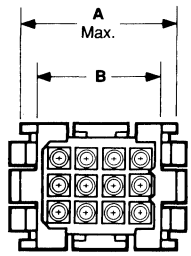
Plug (for Sockets)

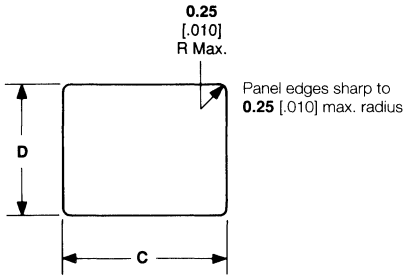


Receptacle (for Pins)









Recommended Panel Cutout
(for Plug or Receptacle)

No. of Positions	Connector Dimensions		Panel Cutout Dimensions	
	A	B	C	D
4	**20.1** .791	**12.6** .496	**20.3** .799	**18.1** .712
6	**25.04** .986	**17.5** .689	**25.1** .988	**18.1** .712
9	**24.8** .976	**17.5** .689	**25.1** .988	**24** .945
12	**29.8** 1.173	**22.5** .886	**30** 1.181	**24** .945
18	**40.45** 1.592	**32.85** 1.293	**40.5** 1.594	**24** .945

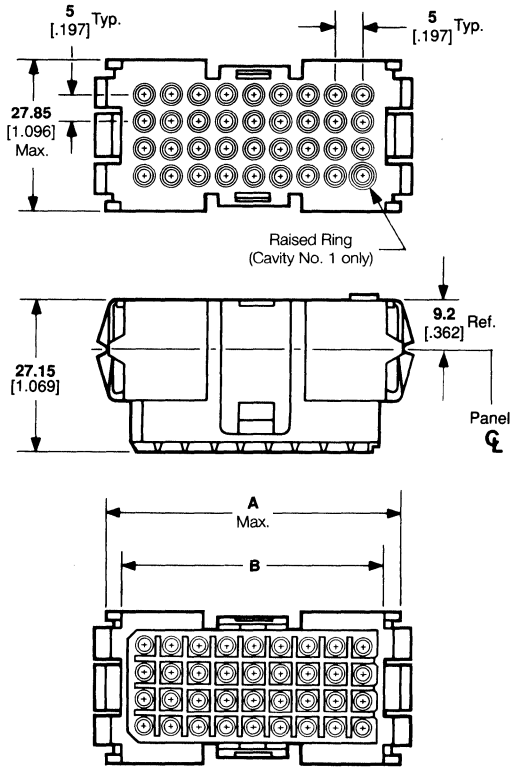
Square Grid Connector Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

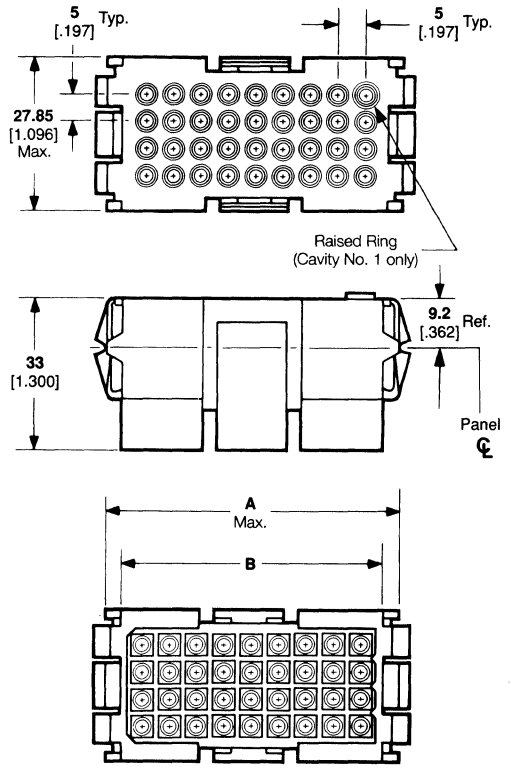
Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.
Charts contain dimensions in millimeters over inches.

24 and 36 Position Housings

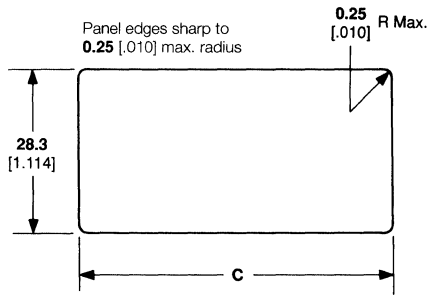
Plug (for Sockets)



Receptacle (for Pins)

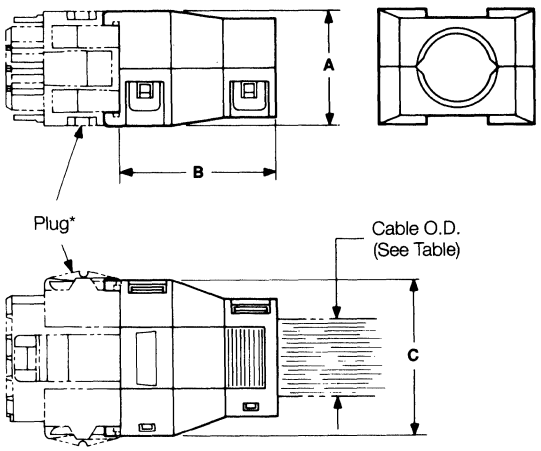


Recommended Panel Cutout (for Plug or Receptacle)



No. of Positions	Connector Dimensions		Panel Cutout Dimensions
	A	B	C
24	**40.45** 1.592	**32.85** 1.293	**40.5** 1.594
36	**55.45** 2.183	**47.85** 1.885	**55.5** 2.185

Strain Relief Kits (for 6, 9, 12, 18, 24 and 36 Position Connector)



No. of Positions	Dimensions			Cable O.D. (Max.)
	A	B	C	
6	**17.75** .700	**25.53** 1.005	**22.75** .896	**9.5** .375
9	**23.9** .940	**32.4** 1.275	**22.75** .896	**11.7** .460
12	**23.9** .940	**32.4** 1.275	**27.45** 1.081	**13.45** .530
18	**23.9** .940	**38.1** 1.500	**38.1** 1.500	**16.5** .650
24	**27.95** 1.100	**38.1** 1.500	**38.1** 1.500	**19.05** .750
36	**27.95** 1.100	**38.1** 1.500	**53.1** 2.090	**23.3** .918

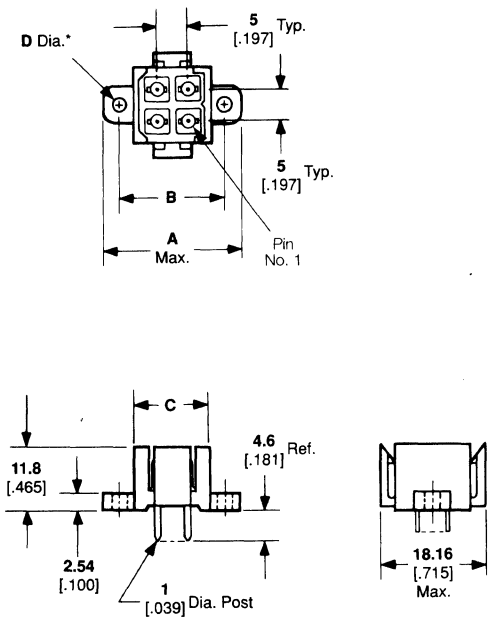
* Plug shown for illustration purposes only. Strain Relief Kits can be used on either plug or receptacle.

Square Grid Pin Header Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

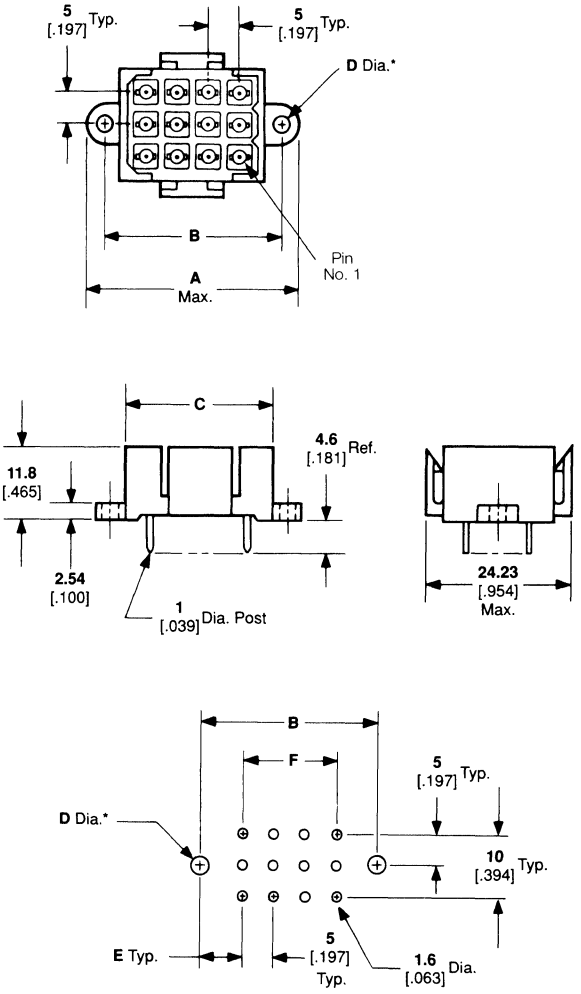
Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.
Chart contains dimensions in millimeters over inches.

4 and 6 Position Headers



Recommended Pc Board Layout

9, 12, and 18 Position Headers



Recommended Pc Board Layout

No. of Positions	Header Dimensions				Pc Board Layout Dimensions			
	A	B	C	D*	B	D*	E	F
4	**22.61** .890	**17.4** .685	**12.7** .500	**2.65** .104	**17.4** .685	**2.65** .104	**6.2** .244	**5** .197
6	**27.96** 1.090	**22.4** .882	**17.6** .693	**2.65** .104	**22.4** .882	**2.65** .104	**6.2** .244	**10** .394
9	**27.69** 1.090	**22.4** .882	**17.78** .700	**2.65** .104	**22.4** .882	**2.65** .104	**6.2** .244	**10** .394
12	**32.5** 1.280	**27.3** 1.075	**22.61** .890	**2.65** .104	**27.3** 1.075	**2.65** .104	**6.2** .244	**15** .591
18	**47.32** 1.863	**40.6** 1.598	**32.85** 1.293	**3.3** .130	**40.6** 1.598	**3.3** .130	**7.8** .307	**25** .984

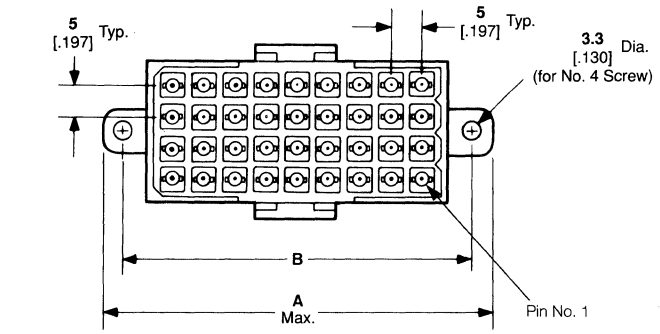
* **D** Dia. - 2.65 [.104] for No. 2 screw; 3.3 [.130] for No. 4 screw.

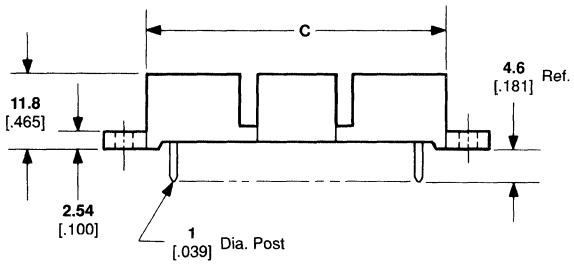
Square Grid Pin Header Specifications
(Continued)

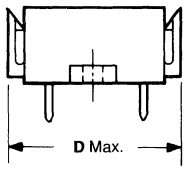
Specifications subject to change.
For latest design specifications...
1-800-522-6752

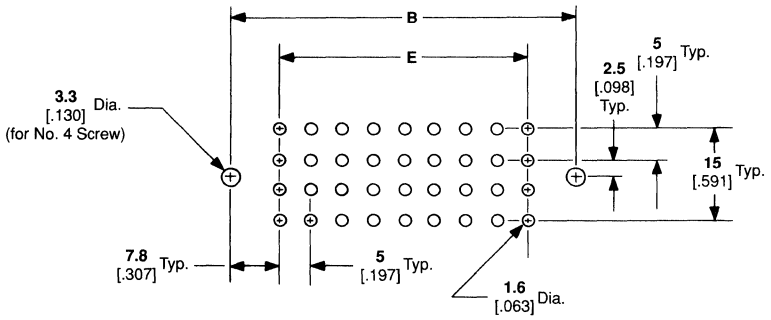
Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.
Chart contains dimensions in millimeters over inches.

24 and 36 Position Headers









Recommended Pc Board Layout

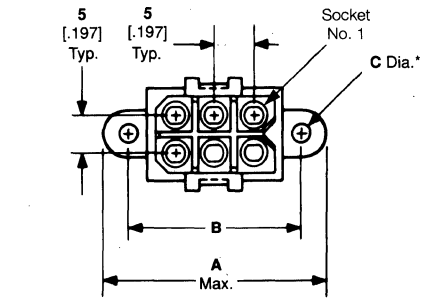
No. of Positions	Header Dimensions				Pc Board Layout Dimensions	
	A	B	C	D	B	E
24	**47.32** 1.863	**40.6** 1.598	**32.85** 1.293	**29.36** 1.156	**40.6** 1.598	**25** .984
36	**62.31** 2.453	**55.58** 2.188	**48.01** 1.890	**29.87** 1.176	**55.58** 2.188	**40** 1.575

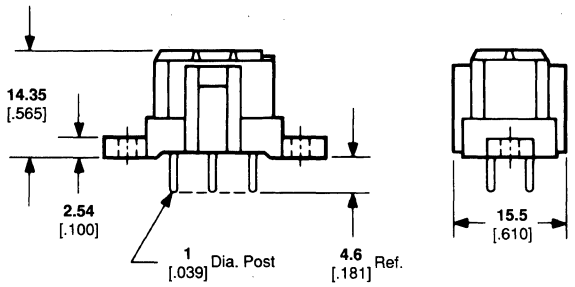
Square Grid Socket Header Specifications

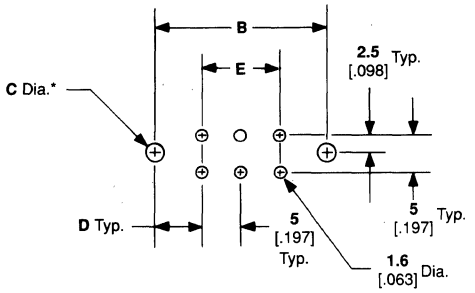
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.
Chart contains dimensions in millimeters over inches.

4 and 6 Position Headers

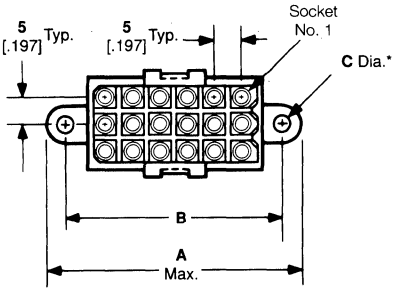


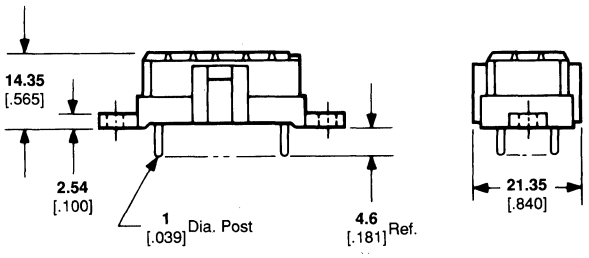


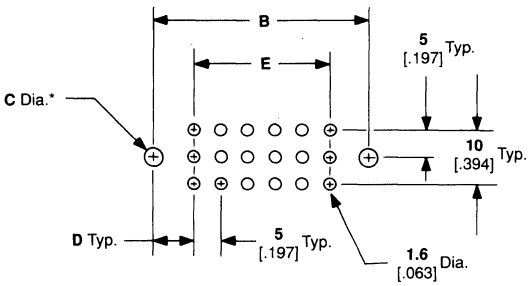


Recommended Pc Board Layout

9, 12 and 18 Position Headers







Recommended Pc Board Layout

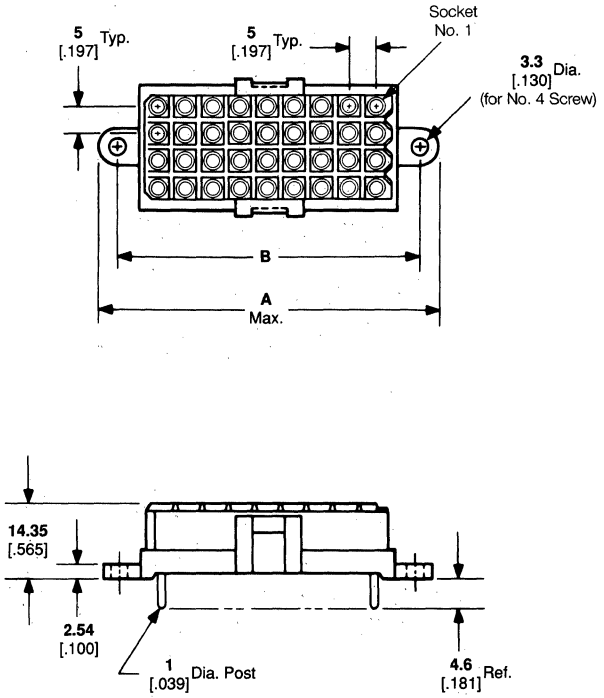
No. of Positions	Header Dimensions			Pc Board Layout Dimensions			
	A	B	C*	B	C*	D	E
4	**22.61** .890	**17.4** .685	**2.65** .104	**17.4** .685	**2.65** .104	**6.2** .244	**5** .197
6	**27.69** 1.090	**22.4** .882	**2.65** .104	**22.4** .882	**2.65** .104	**6.2** .244	**10** .394
9	**27.69** 1.090	**22.4** .882	**2.65** .104	**22.4** .882	**2.65** .104	**6.2** .244	**10** .394
12	**32.5** 1.280	**27.3** 1.075	**2.65** .104	**27.3** 1.075	**2.65** .104	**6.2** .244	**15** .591
18	**47.32** 1.863	**40.6** 1.598	**3.3** .130	**40.6** 1.598	**3.3** .130	**7.8** .307	**25** .984

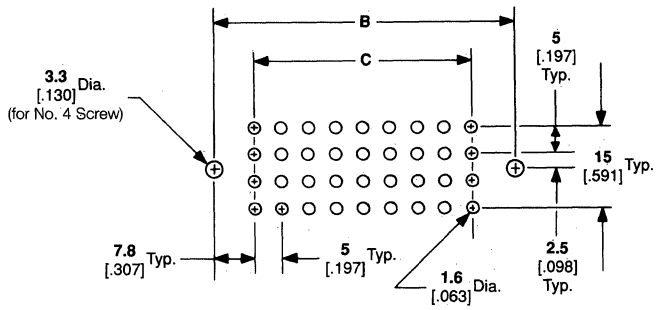
* **C** Dia. - 2.65 [.104] for No. 2 screw; 3.3 [.130] for No. 4 screw.

Square Grid Socket Header Specifications
(Continued)

Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.
Chart contains dimensions in millimeters over inches.

24 and 36 Position Headers





Recommended Pc Board Layout

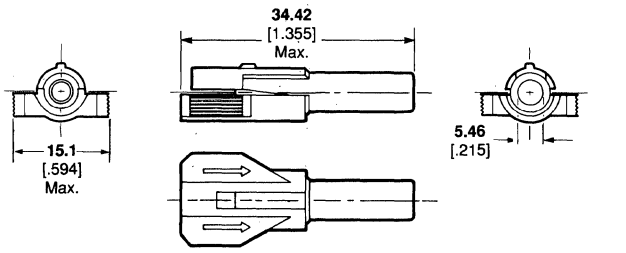
No. of Positions	Header Dimensions		Pc Board Layout Dimensions	
	A	B	B	C
24	**47.32** 1.863	**40.6** 1.598	**40.6** 1.598	**25** .984
36	**62.31** 2.453	**55.58** 2.188	**55.58** 2.188	**40** 1.575

In-Line Connector Specifications

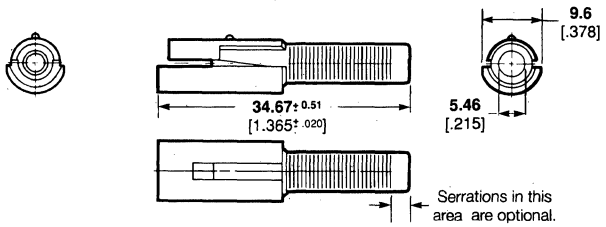
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.
Chart contains dimensions in millimeters over inches.

Single Position Hermaphroditic Housings



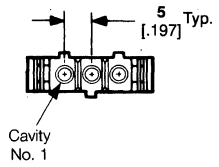
Positive Latch

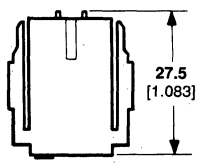


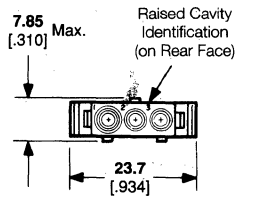
Breakaway Latch

3 Position Housings

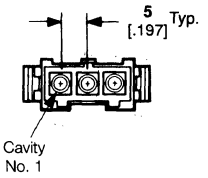
Plug
(for Sockets)

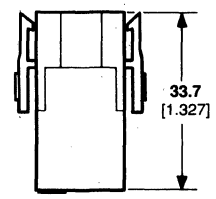


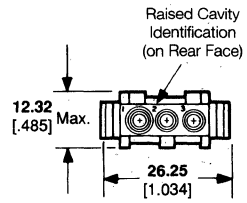




Receptacle
(for Pins)

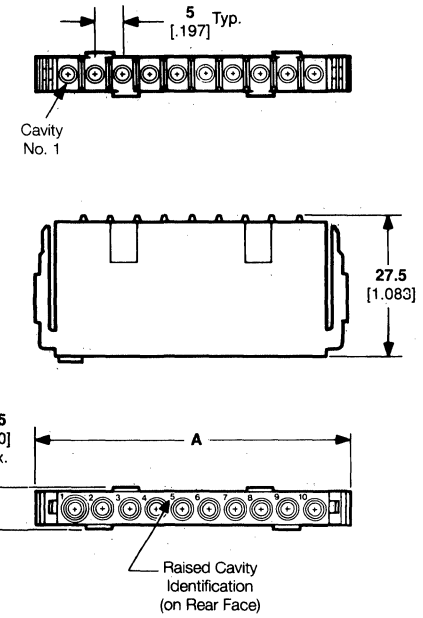




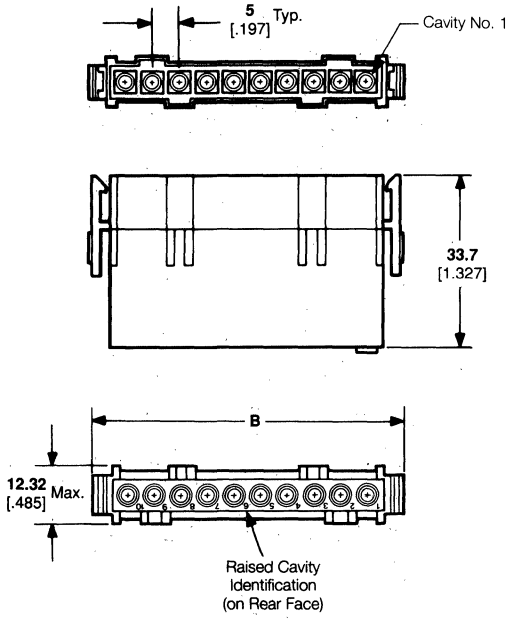


6, 10 and 16 Position Housings

Plug (for Sockets)



Receptacle (for Pins)



No. of Positions	Dimensions	
	A	B
6	**38.7** 1.524	**41.3** 1.625
10	**58.7** 2.312	**61.3** 2.413
16	**89.79*** 3.535	**86.7** 3.59

* **A** Dim. is Max. for 16-position housing.

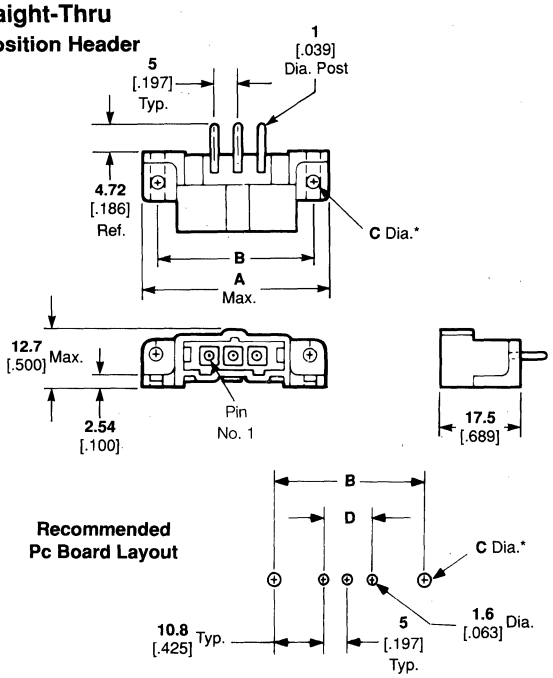
In-Line Pin Header Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

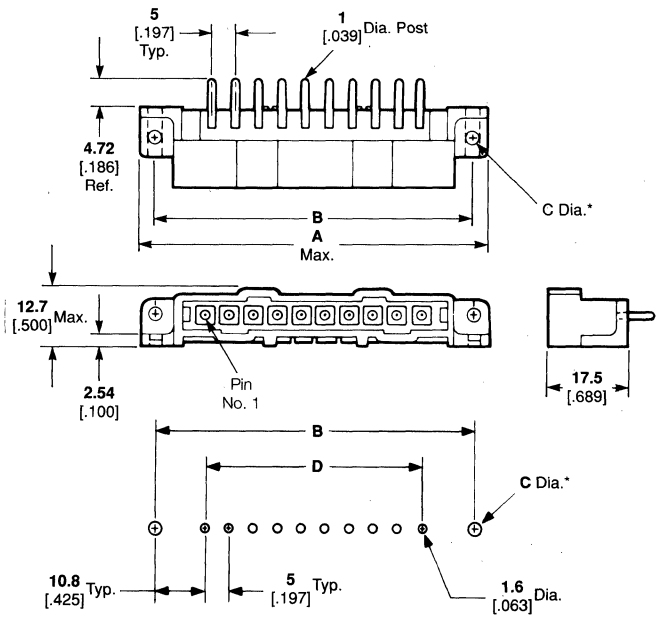
Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.
Chart contains dimensions in millimeters over inches.

Straight-Thru

3 Position Header



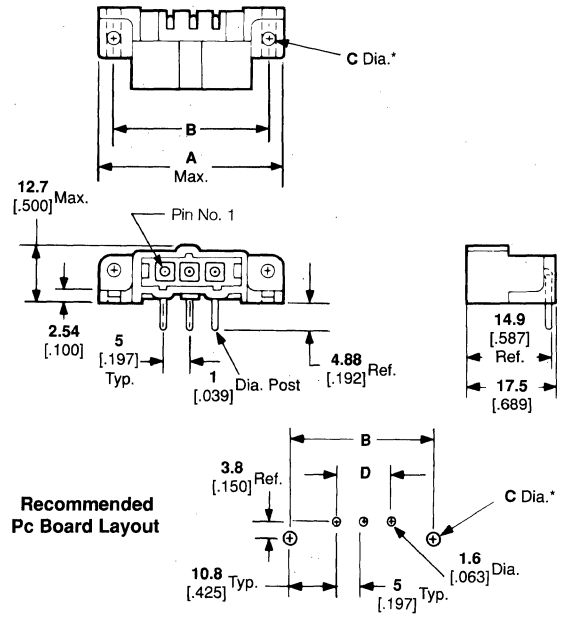
6, 10 and 16 Position Headers



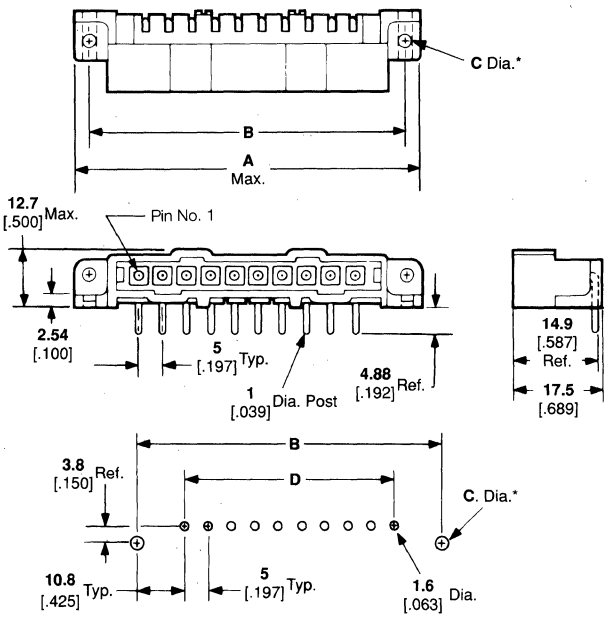
Recommended Pc Board Layout

Right-Angle

3 Position Header



6, 10 and 16 Position Headers



Recommended Pc Board Layout

No. of Positions	Header Dimensions			Pc Board Layout Dimensions		
	A	B	C*	B	C*	D
3	**36.86** 1.451	**31.6** 1.244	**2.65** .104	**31.6** 1.244	**2.65** .104	**10** .394
6	**51.87** 2.042	**46.6** 1.834	**2.65** .104	**46.6** 1.834	**2.65** .104	**25** .984
10	**71.86** 2.829	**66.6** 2.622	**2.85** .112	**66.6** 2.622	**2.85** .112	**45** 1.772
16	**102.64** 4.041	**96.6** 3.803	**2.85** .112	**96.6** 3.803	**2.85** .112	**75** 2.953

* **C** Dia. - 2.65 [.104] for No. 2 screw; 2.85 [.112] for No. 3 screw.

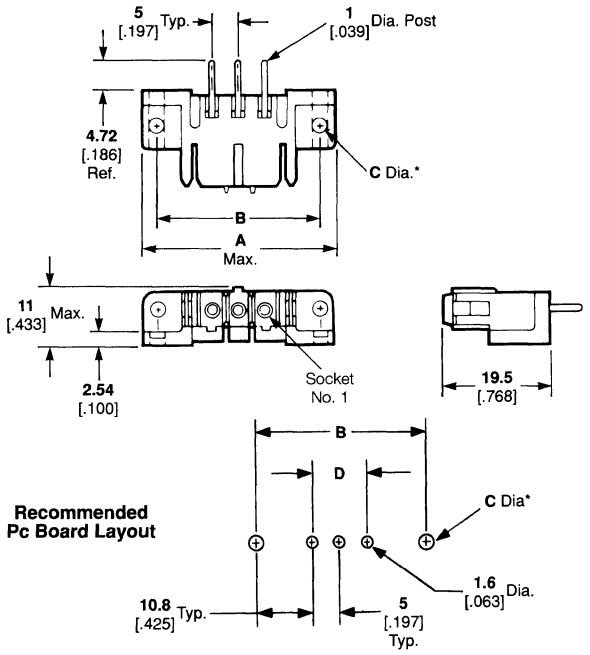
In-Line Socket Header Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

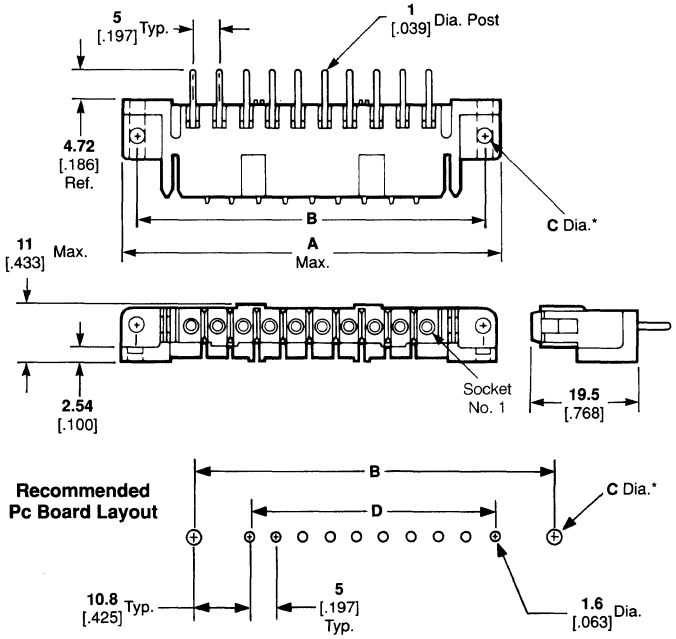
Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.
Chart contains dimensions in millimeters over inches.

Straight-Thru

3 Position Header

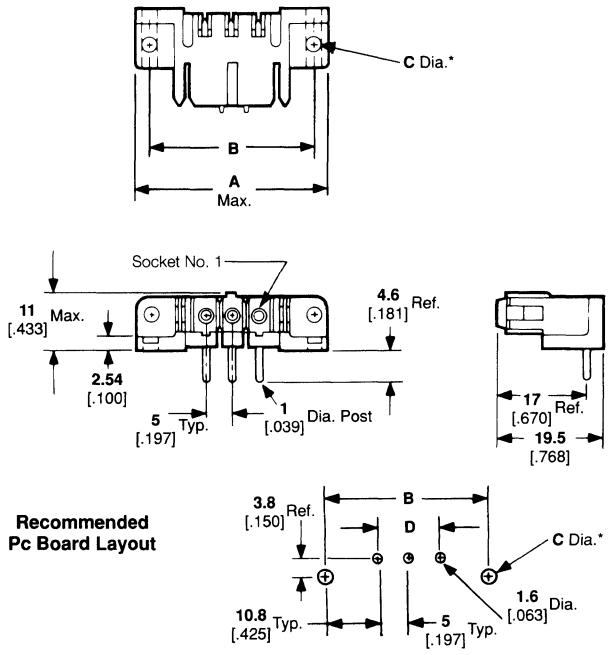


6, 10 and 16 Position Headers

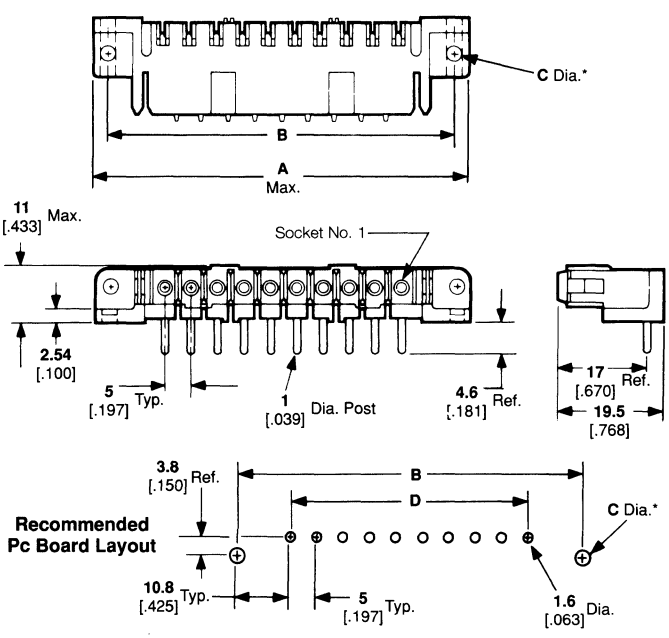


Right-Angle

3 Position Header



6, 10 and 16 Position Headers



No. of Positions	Header Dimensions			Pc Board Layout Dimensions		
	A	B	C*	B	C*	D
3	**36.55** 1.439	**31.6** 1.244	**2.65** .104	**31.6** 1.244	**2.65** .104	**10** .394
6	**51.59** 2.031	**46.6** 1.834	**2.65** .104	**46.6** 1.834	**2.65** .104	**25** .984
10	**71.6** 2.819	**66.6** 2.622	**2.85** .112	**66.6** 2.622	**2.85** .112	**45** 1.772
16	**101.78** 4.007	**96.6** 3.803	**2.85** .112	**96.6** 3.803	**2.85** .112	**75** 2.953

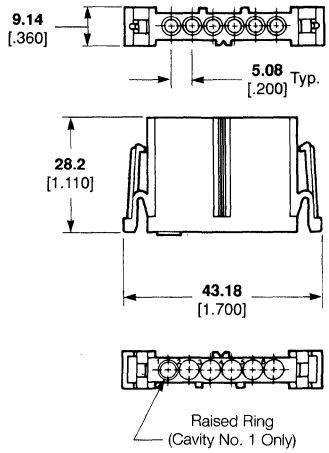
* **C** Dia. - 2.65 [.104] for No. 2 screw; 2.85 [.112] for No. 3 screw.

In-Line Connector, 5.08 [.200] Centerline Specifications

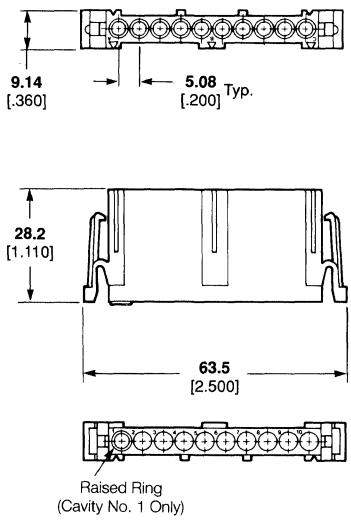
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.

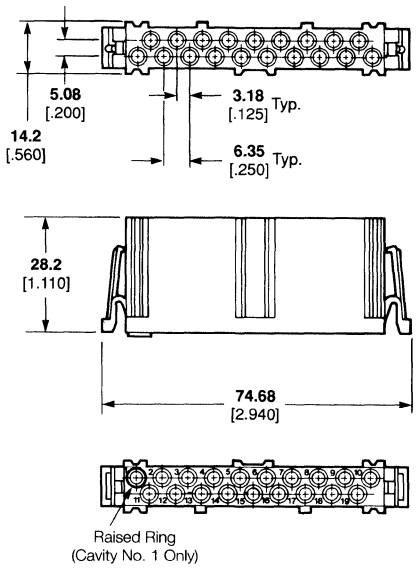
6 Position Plug Housing
(for Sockets)



10 Position Plug Housing
(for Sockets)



19 Position Plug Housing
(for Sockets)



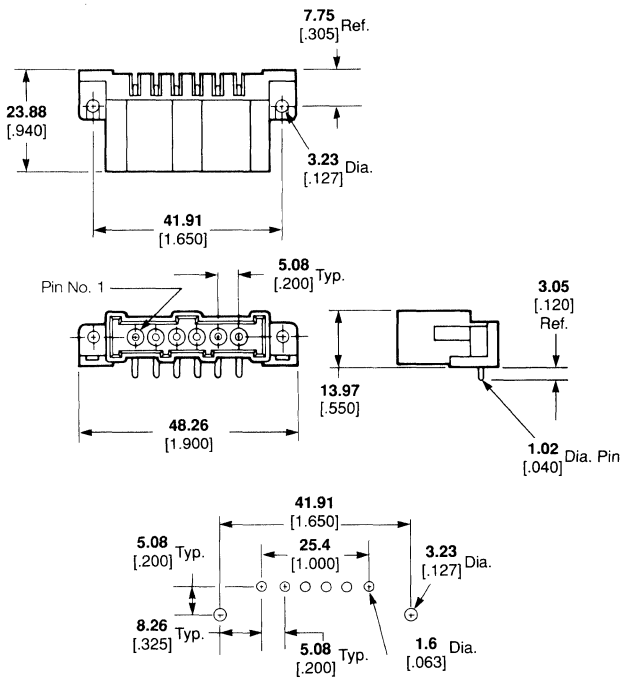
In-Line Pin Header, 5.08 [.200] Centerline Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.

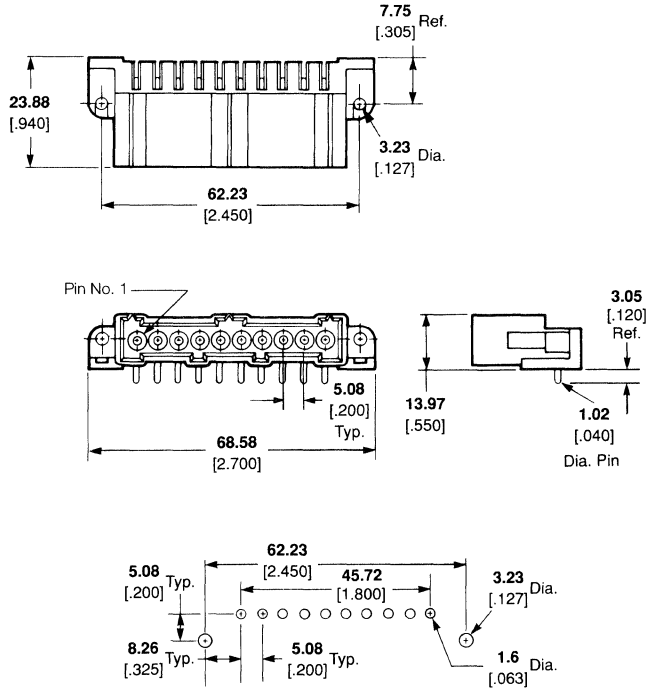
Right-Angle Headers

6 Position Header



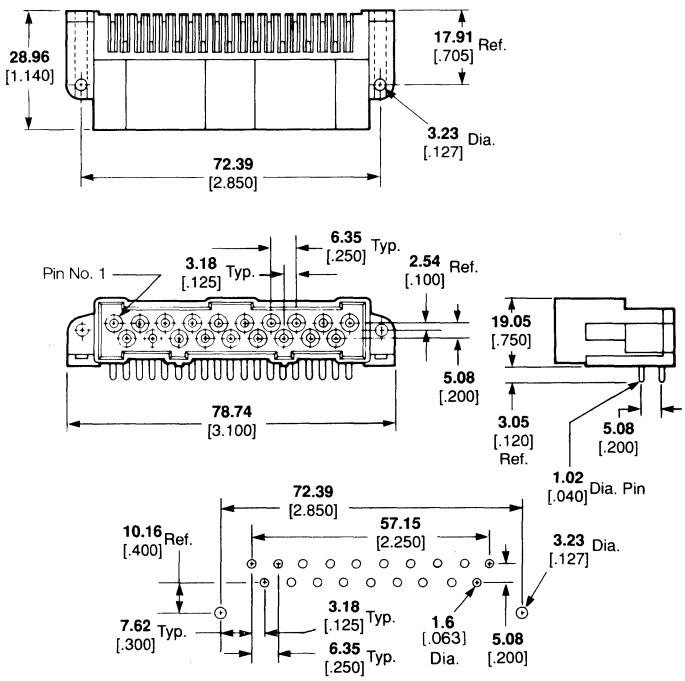
Recommended Pc Board Layout

10 Position Header



Recommended Pc Board Layout

19 Position Header



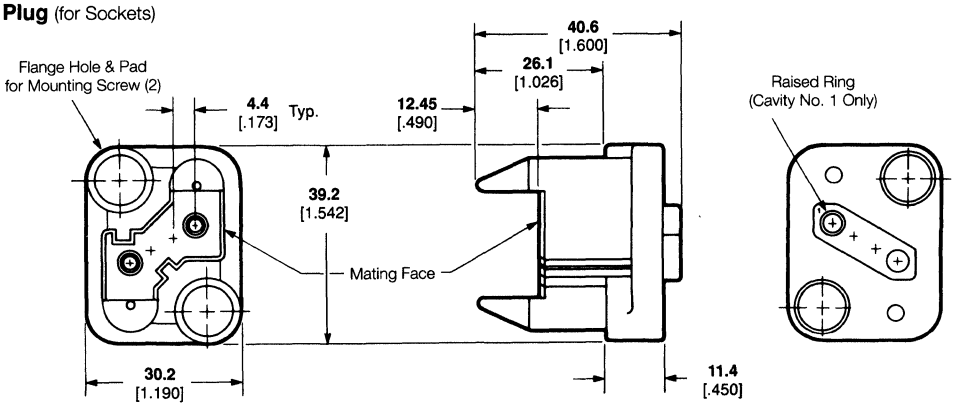
Recommended Pc Board Layout

Drawer Connector Specifications

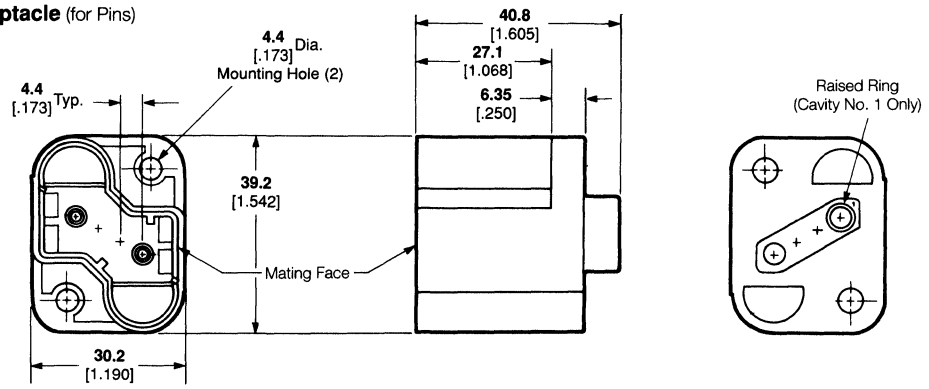
Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.

4 Position Housings

Plug (for Sockets)

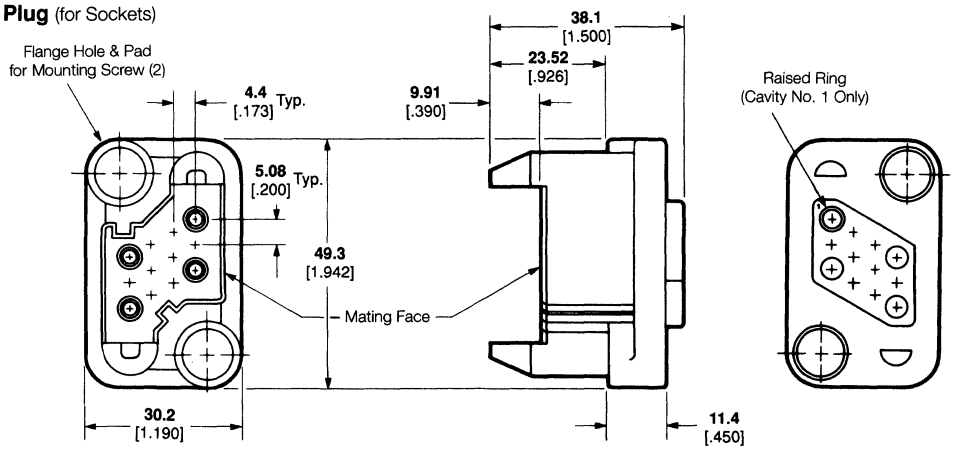


Receptacle (for Pins)

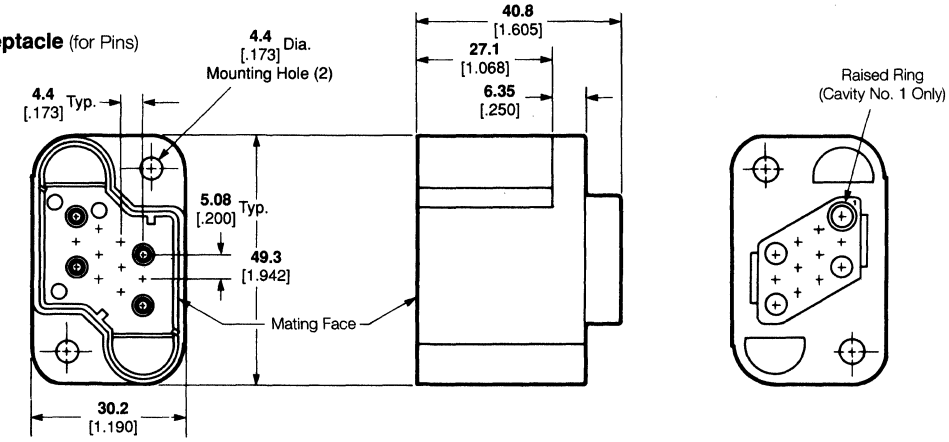


12 Position Housings

Plug (for Sockets)



Receptacle (for Pins)

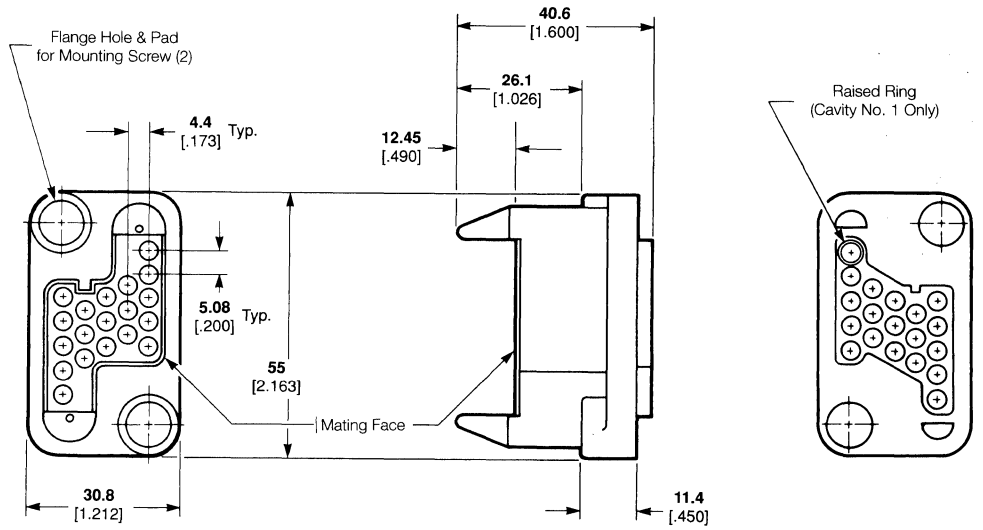


Drawer Connector Specifications
(Continued)

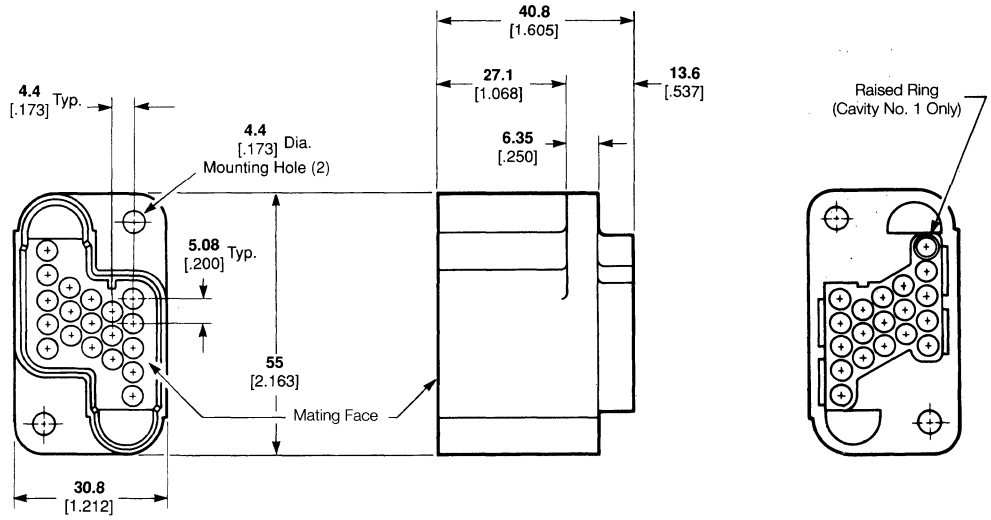
Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.

19 Position Housings

Plug (for Sockets)



Receptacle (for Pins)

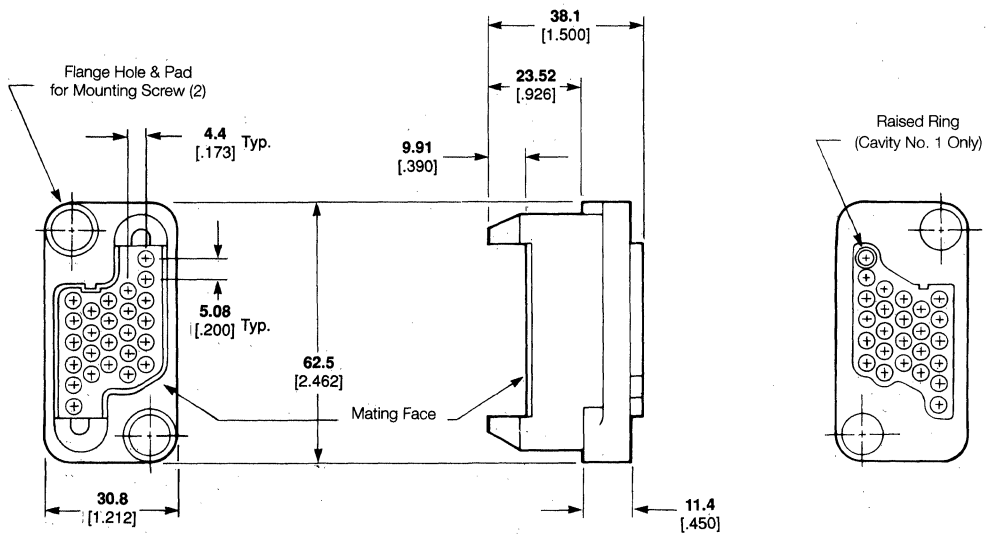


Drawer Connector Specifications
(Continued)

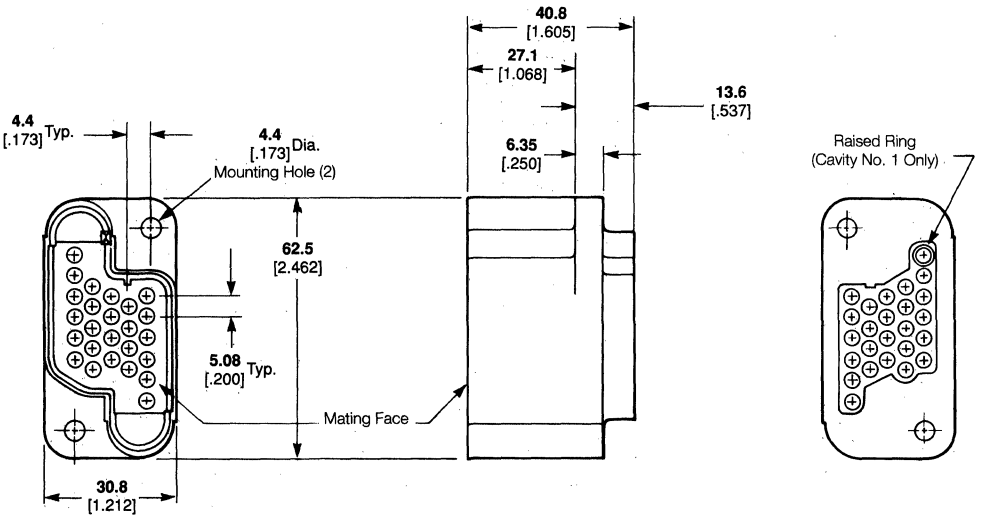
Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.

25 Position Housings

Plug (for Sockets)



Receptacle (for Pins)



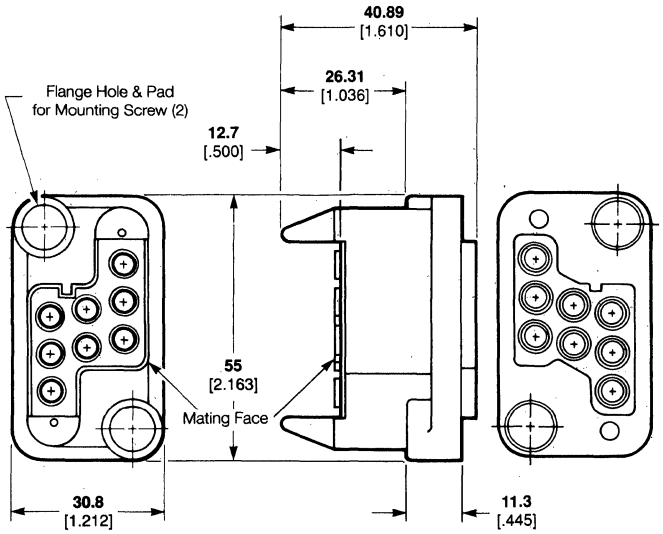
Drawer Connector Specifications
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

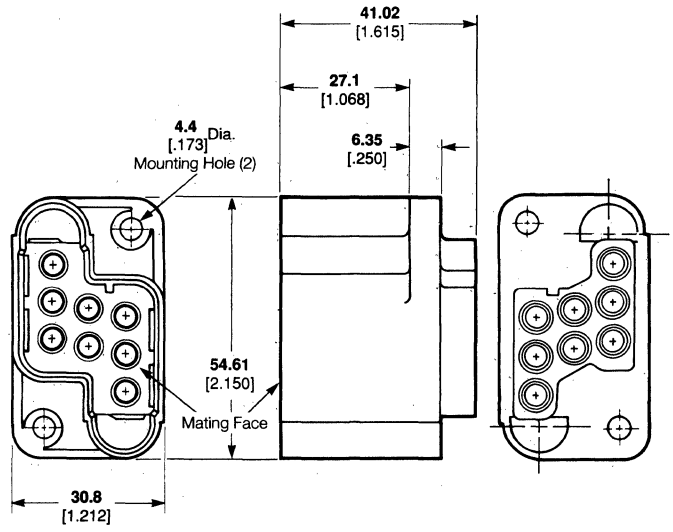
Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.

8 Position Housings
(Accept 8 Size 8 Contacts)

Plug (for Sockets)

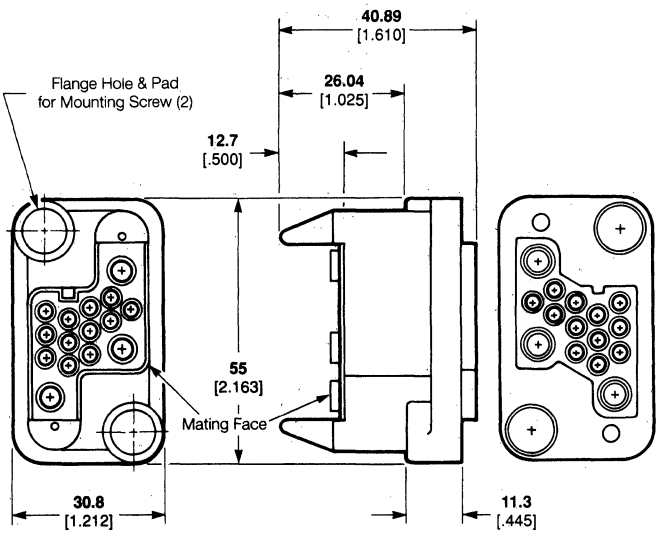


Receptacle (for Pins)

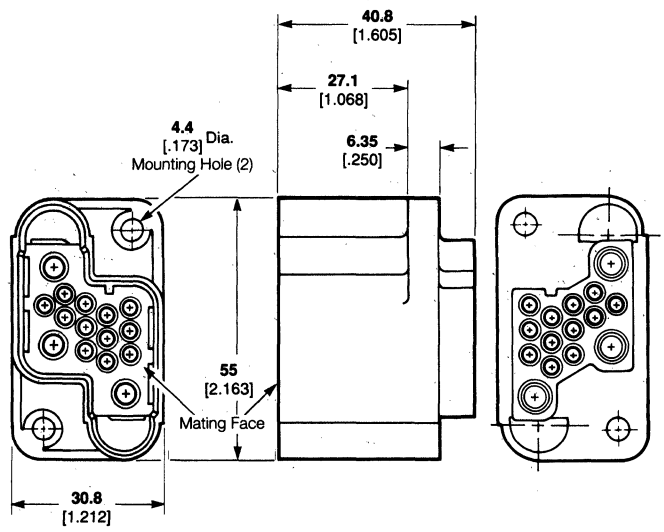


15 Position Housings
(Accept 3 Size 8 Contacts and 12 Size 16 Contacts)

Plug (for Sockets)



Receptacle (for Pins)

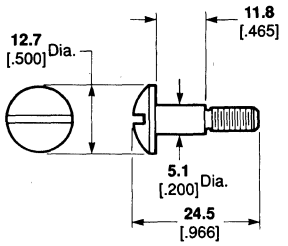


Drawer Connector Specifications
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

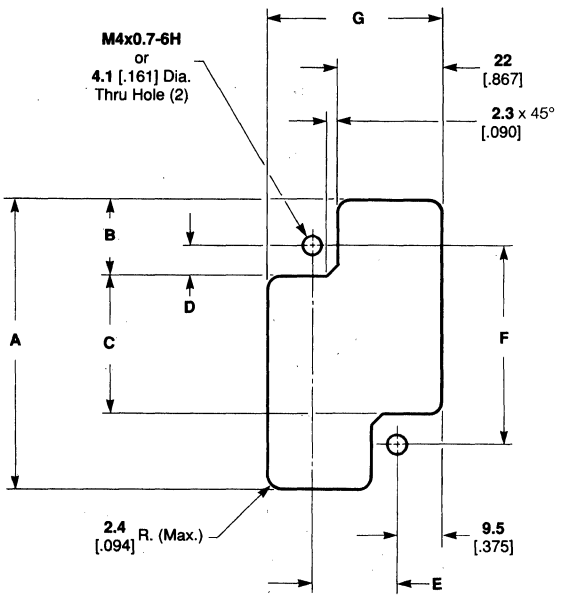
Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are equivalent U.S. Customary Units.
Chart contains dimensions in millimeters over inches.

Mounting Screw

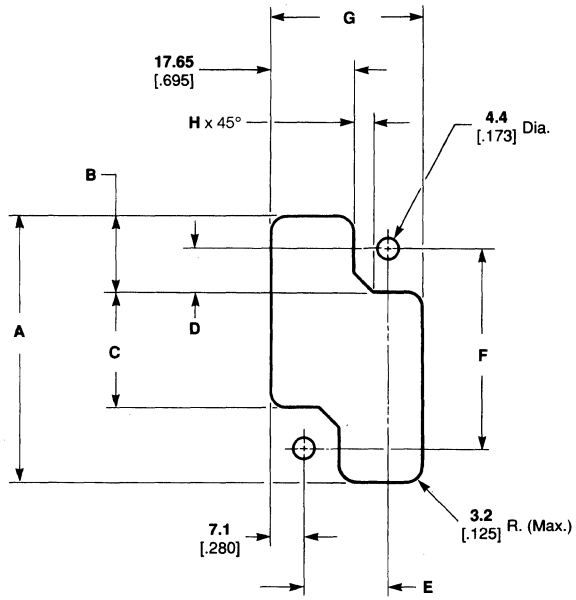


Thread Size - M4x0.7-6H/6g or SAE 6/32

Recommended Panel Cutouts



Recommended Panel Cutout for Plugs (Socket Housings)



Recommended Panel Cutout for Receptacles (Pin Housings)

No. of Positions		Dimensions							
		A	B	C	D	E	F	G	H
4	Plug	**45.3** 1.783	**14** .552	**17.3** .680	**4.5** .176	**17.3** .680	**26.2** 1.032	**36.3** 1.430	–
	Receptacle	**40.5** 1.595	**13.9** .547	**12.8** .502	**6.7** .265	**17.3** .680	**26.2** 1.032	**31.5** 1.240	**3.6** .140
12	Plug	**55.45** 2.183	**14** .552	**27.4** 1.080	**4.5** .176	**17.3** .680	**36.4** 1.432	**36.3** 1.430	–
	Receptacle	**50.7** 1.995	**13.9** .547	**22.9** .902	**6.7** .265	**17.3** .680	**36.4** 1.432	**31.5** 1.240	**3.6** .140
19, Power Connectors- 8 & 15	Plug	**61** 2.403	**15.9** .626	**29.2** 1.150	**6.4** .251	**17.8** .702	**42** 1.652	**36.9** 1.452	–
	Receptacle	**56.3** 2.215	**15.93** .627	**24.4** .960	**8.8** .346	**17.8** .702	**42** 1.652	**32** 1.262	**4.6** .180
25	Plug	**68.7** 2.703	**15.9** .626	**36.8** 1.450	**6.4** .251	**17.8** .702	**49.6** 1.952	**36.9** 1.452	–
	Receptacle	**63.9** 2.515	**15.93** .627	**32** 1.260	**8.8** .346	**17.8** .702	**49.6** 1.952	**32** 1.262	**4.6** .180

Technical Documents

The following is a list of technical documents covering the application, performance and maintenance of Metrimate Connectors.

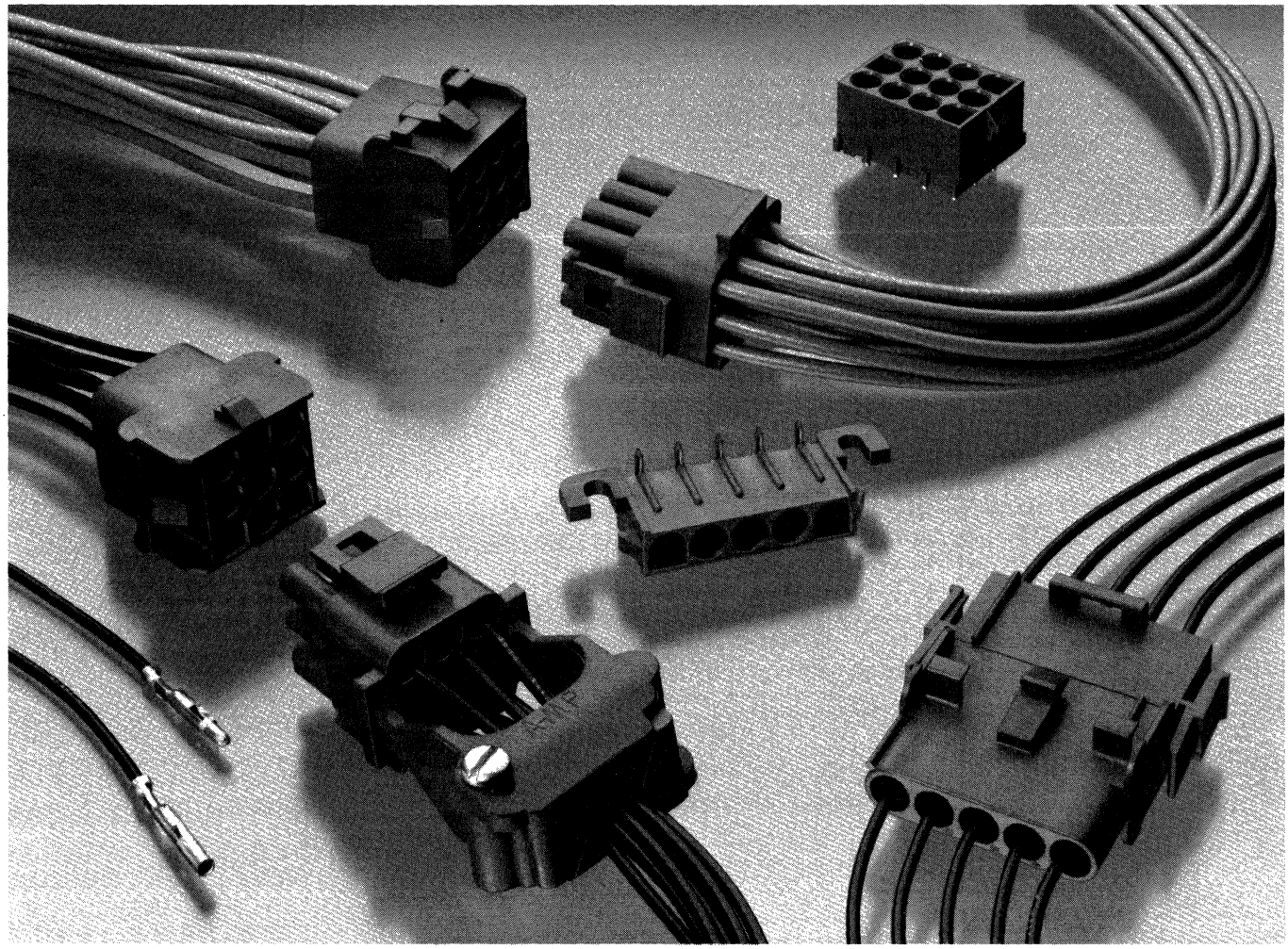
Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.
108-10033 - Metrimate Connectors
108-10042 - Contacts, Type III+ Stamped and Formed
108-12011 - Contacts, Subminiature COAXICON
108-10045 - Contacts, Pin and Socket, Power

Application Specfications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.
114-10014-Contacts, Pin and Socket, Power Application of
114-10004-Contacts, Type III+

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.
IS 7846 - Metrimate Connectors (Square Grid)
IS 1379 - Pin and Socket Contacts
IS 7347 - Insertion Tool 91002, Type III+ Contacts
IS 2024-2 - Subminiature COAXICON Contacts, Instruction, Maintenance and Inspection
IS 1216 - Extraction Tool 305183, Type III+ and Subminiature COAXICON Contacts

Universal MATE-N-LOK Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Features

- Innumerable keying combinations
- Pins and sockets can be intermixed in the same housing
- Positive polarization
- Rear cavity identification
- Contacts completely enclosed in housings
- Pin or socket contact can be hot
- Positive locking housings
- Cap housing can be panel mounted
- Standard housings are natural color nylon
- Insulation capability to .200 diameter
- Removable, crimp snap-in contacts
- Low contact mating force
- Contacts accept 30-10 AWG wire sizes
- Contacts available with pre-tin or gold plating
- Dual locking lances provide optimum contact stability
- Continuous strip contacts permit high-speed application with AMP automatic terminating machines using quick-change applicators
- Panel mount or free-hanging
- Available in 94V-0 flame retardant material. Meets the material requirements of table 25.1 of U.L. Standard 1410 (television receivers and video products)
- Make first, break last capability using grounding pin
- Harness to pc board capability using pin or socket headers
- Contacts are on .250 centerline spacing
- Recognized under Component Program of Underwriters Laboratories Inc. File No. E28476
- Certified by Canadian Standards Association File No. LR 16455
- Tested by VDE under their Test Report #4751-800-2/A

Universal MATE-N-LOK Connectors (Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensional tolerances are ± .015 unless specified otherwise.

Contacts

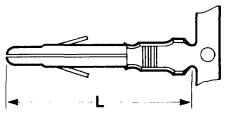
Pin Diameter .084

Pin and socket contacts can be used in either plug or cap housings.

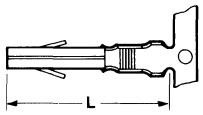
(These contacts are to be used in Universal MATE-N-LOK Connector housings only)

Related Product Data

Technical Documents-pg. 2169
Application Tooling-pg. 2012 & 2013



Pin



Socket

Wire Size Range AWG	Ins. Dia. Range	Stock Thickness	L Dim. Pin	L Dim. Socket	Material & Finish	Contact Part Numbers Pin Strip Form	Contact Part Numbers Pin Loose Form	Contact Part Numbers Socket Strip Form	Contact Part Numbers Socket Loose Form	Quick-Change Applicator Part No.[5]	Hand Tool Part No.
30-26	**.032-.057**	**.012**	**.790**	**.760**	Brass, Pre-tin	350924-1	—	350925-1	—	466616-2	—
					Phos. Brz., Gold	350924-6	—	350925-6	—		
24-18	**.040-.100**	**.012**	**.790**	**.760**	Brass, Pre-tin	350561-1	350690-1	350851-1 350570-1[1]	350689-1[1]	466320-1 466320-2	90300-2
					Brass, Gold	350561-2	350690-2	350851-2 350570-2[1]	640347-2 350689-2[1]		
					Brass, Select Gold	350561-7	350690-7	350851-7 350570-7[1]	350689-7[1]		
					Phos. Brz., Pre-tin	350561-3	350690-3	350570-3[1]	350689-3[1]		
					Phos. Brz., Select Gold	—	—	350570-6[1]	—		
20-14	**.060-.130**	**.012**	**.790**	**.760**	Brass, Pre-tin	350218-1	350547-1	350536-1	350550-1	687763-1 687763-2	90296-2
					Brass, Gold	350218-2	350547-2	350536-2	350550-2		
					Brass, Select Gold	350218-7	350547-7	350536-7	350550-7		
					Phos. Brz., Pre-tin	350218-3	350547-3	350536-3	350550-3		
					Phos. Brz., Select Gold	350218-6	350547-6	350536-6	350550-6		
20-14	**.130-.200**	**.012**	**.810**	**.780**	Brass, Pre-tin	350538-1	350552-1	350537-1	350551-1	687926-1 687926-2	90298-2[2] 90299-2[2]
					Grass, Gold	350538-2	350552-2	350537-2	350551-2		
					Brass, Select Gold	350538-7	350552-7	350537-7	350551-7		
					Phos. Brz., Pre-tin	350538-3	350552-3	350537-3	350551-3		
					Phos. Brz., Select Gold	350538-6	350552-6	350537-6	350551-6		
18-14[4]	**.130-.200**	**.012**	**.810**	**.780**	Brass, Pre-tin	350873-1	—	350874-1	—	466588-1 466588-2	See Note 2.
					Brass, Gold	350873-2	—	350874-2	—		
					Phos. Brz., Pre-tin	350873-3	350918-3	350874-3	350919-3		
12-10	**.200 max.[3]**	**.012**	**.810**	**.780**	Phos. Brz., Pre-tin	350922-3	640309-3	350923-3	640310-3	466597-1 466597-2	69710-1[2]
					Phos. Brz., Select Gold	350922-6	640309-6	350923-6	640310-6		
					Phos. Brz., Gold	350922-4	—	350923-4	—		

[1] Socket Contact - .010 stock thickness.
[2] Hand Tool **No. 90298-2** is for wire size 20-18 AWG; Hand Tool **No. 90299-2** is for wire size 16-14 AWG; Hand Tool **No. 69710-1** use die set **No. 58380-1** for 12 AWG and **No. 58380-2** for 10 AWG.
[3] There is no insulation barrel on this contact. Insulation maximum diameter is limited by the housing.
[4] Recommended for predominant use of 14 AWG wire.
[5] Quick-Change Applicator Part No. with -1 is for a "T" terminating unit used in automatic machines; -2 is for a "K" AMP-O-LECTRIC bench machine. Stripper/Crimper Applicators for jacketed cable are also available, consult AMP Incorporated, Harrisburg, PA 17105.

Notes:
1. Phosphor bronze material contacts should be used in high temperature/humidity cycling applications.
2. Consult AMP Incorporated, Harrisburg, PA for recommended hand tool.

Contact Extraction Tool
No. 458994-2

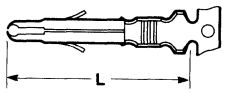
Contact Insertion Tool
(For inserting contacts applied to small diameter wire)
No. 455830-2

Contacts

Related Product Data
Technical Documents-pg. 2169
Application Tooling-pg. 2012 & 2013

Split Pins

Can be used in either plug or cap housings



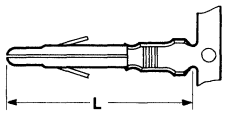
Wire Size Range AWG	Ins. Dia. Range	Stock Thickness	L Dim.	Material & Finish	Contact Part Numbers		Quick-Change Applicator Part No.*	Hand Tool No.
					Strip Form	Loose Form		
24-18	.040-.100	.012	.790	Brass, Pre-tin	350699-1	350706-1	466320-1 466320-2	90300-2
				Brass, Gold	350699-2	350706-2		
				Brass, Select Gold	350699-7	350706-7		
20-14	.060-.130	.012	.790	Brass, Pre-tin	350687-1	350705-1	687763-1 687763-2	90296-2
				Brass, Gold	350687-2	350705-2		
				Brass, Select Gold	350687-7	350705-7		
20-14	.130-.200	.012	.810	Brass, Pre-tin	350700-1	350707-1	687926-1 687926-2	90298-2** 90299-2**
				Brass, Gold	305700-2	350707-2		
				Brass, Select Gold	350700-7	350707-7		

*Quick-Change Applicator Part No. with -1 is for a "T" terminating unit used in automatic machines; -2 is for a "K" AMP-O-LECTRIC bench machine. Stripper/Crimper Applicators for jacketed cable are also available, consult AMP Incorporated.
Hand Tool **No. 9028-2 for wire size 20-18 AWG; Hand Tool **No. 90299-2** for wire size 16-14 AWG.

Notes:
1. AMP recommends split pins be used in housings having 6, 9, 12 and 15 circuits to reduce mating force.
2. Phosphor bronze material contacts are available for use in high temperature/humidity cycling applications, consult AMP Incorporated.

Grounding Pin

(.100 longer than standard pin)
Can be used in either plug or cap housings



Wire Size Range AWG	Ins. Dia. Range	Stock Thickness	L Dim.	Material & Finish	Contact Part Numbers		Quick-Change Applicator Part No.*	Hand Tool No.
					Strip Form	Loose Form		
24-18	.060-.130	.012	.890	Brass, Pre-tin	770210-1	—	567229-2	—
20-14	.060-.130	.012	.890	Brass, Pre-tin	350654-1	350669-1	687763-1 687763-2	90296-2
12-10	.200 max.**	.012	.910	Phos. Brz., Pre-tin	770234-3	—	466597-2	—

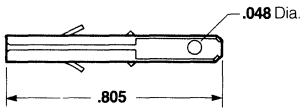
*Quick-Change Applicator Part No. with -1 is for a "T" terminating unit used in automatic machines; -2 is for a "K" AMP-O-LECTRIC bench machine. Stripper/Crimper Applicators for jacketed cable are also available, consult AMP Incorporated.
**There is no insulation barrel on this contact. Insulation maximum diameter is limited by the housing.

Programmable Connector Contact

(Socket with 110 Series Special FASTON Tab)

Can be used in either plug or cap housings

Material: .012 Brass
Part Number:
Pre-tin Finish—**350877-1**



Note: This contact will accept a 110 Series FASTON Receptacle—Part No. 350871-1 (strip form) Allows simple field wiring or wiring changes.

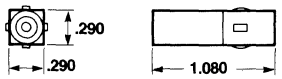
Universal MATE-N-LOK Connectors (Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

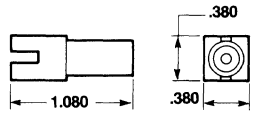
Dimensional tolerances are ± .015 unless specified otherwise.

Housings

1 Circuit Free-Hanging

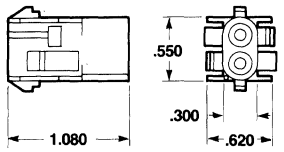


Plug

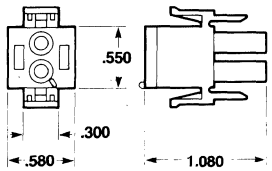


Cap

2 Circuit Panel Mount, In-Line

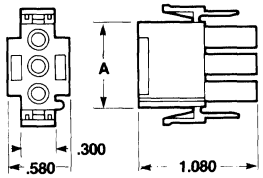


Cap

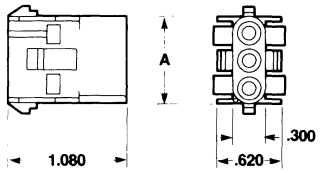


Plug

3, 4, 5, 6, 8 and 10 Circuit Panel Mount, In-Line

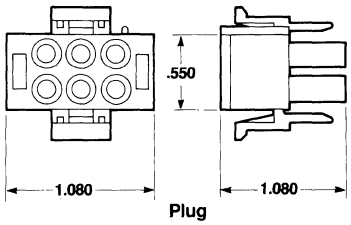


Plug

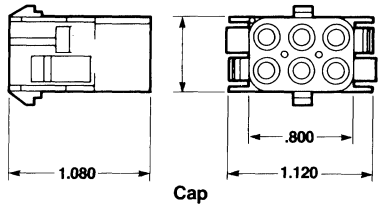


Cap

6 Circuit Panel Mount, Matrix

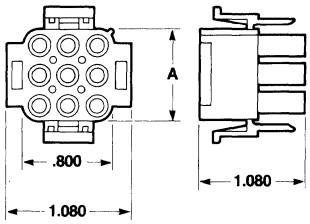


Plug

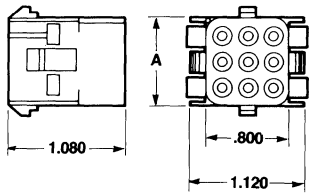


Cap

9, 12 and 15 Circuit Panel Mount, Matrix



Plug



Cap

Number of Circuits	A. Dim.	Housing Part Numbers			
		Plug		Cap	
		94V-2 Nylon	94V-0 Nylon	94V-2 Nylon	94V-0 Nylon
1	—	1-350867-0	350865-1	770421-1	350866-1
		1-641084-0**	—	1-641083-0**	—
2	—	1-480698-0*	350777-1*	1-480699-0*	350778-1*
		1-770113-0**	—	1-770114-0**	—
3	.800	1-480700-0*	350766-1*	1-480701-0*	350767-1*
4	1.050	1-480702-0*	350779-1*	1-480703-0*	350780-1*
		770208-1**	—	770209-1**	—
5	1.300	1-480763-0*	350809-1*	1-480764-0*	350810-1*
6	1.550	640585-1*	640581-1*	926307-1*	926307-3*
	—	1-480704-0	350715-1	1-480705-0	350781-1
		1-641770-0**	—	1-641766-0**	
8	2.050	640586-1*	640582-1*	926308-1*	926308-3*
9	.800	1-480706-0	350720-1	1-480707-0	350782-1
		1-641769-0**	—	1-641765-0**	
10	.925	926302-1*	926302-3*	926309-1*	926309-3*
12	1.050	1-480708-0	350735-1	1-480709-0	350783-1
		1-641768-0**	—	—	
15	1.300	1-480710-0	350736-1	1-480711-0	350784-1

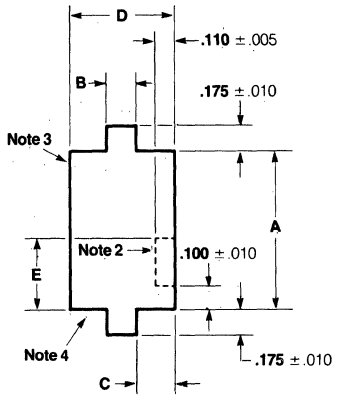
*In-line version.
**Housing material has 125°C temperature rating.

Notes:
1. 94V-2 nylon material is natural color, 94V-0 nylon material is brick red color.
2. Contacts are on .250 centerlines.

Related Product Data

Panel-Cutout Recommendations-pg. 2142
Keying Plug-pg 2142
Strain Reliefs-pg. 2142 & 2143
Technical Documents-pg. 2169

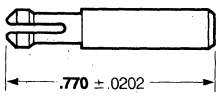
Cap Housing Panel Cutout



Number of Circuits	Dimensions				
	A ±.005	B ±.010	C ±.010	D ±.005	E ±.010
2	.565	.340	.095	.530	.250
3	.815	.340	.095	.530	.250
4	1.065	.340	.095	.530	.250
5	1.315	.340	.095	.530	.250
6	.565	.480	.275	1.030	.250
9	.815	.480	.275	1.030	.250
10	2.567	.154	.189	.530	—
12	1.065	.480	.275	1.030	.350
15	1.315	.480	.275	1.030	.350

Notes:
1. Recommended panel thickness—.030-.090. Panel must be punched so that housing enters panel in same direction as the punch.
2. Optional for keying housing to panel.
3. Circuit #1 location when using panel keying with 6, 9, 12 and 15 circuit housings.
4. Circuit #1 location when using panel keying with 2, 3, 4 and 5 circuit housings.

Keying Plug

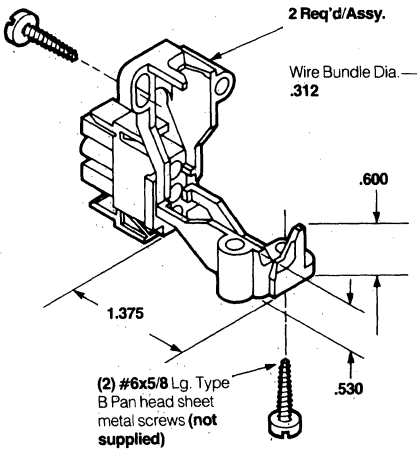


Part Numbers
94V-2 Nylon material, natural color—**1-640415-1**
94V-0 Nylon material, brick red color—**1-640415-0**

Note: Keying plug snaps into plug or cap housing.

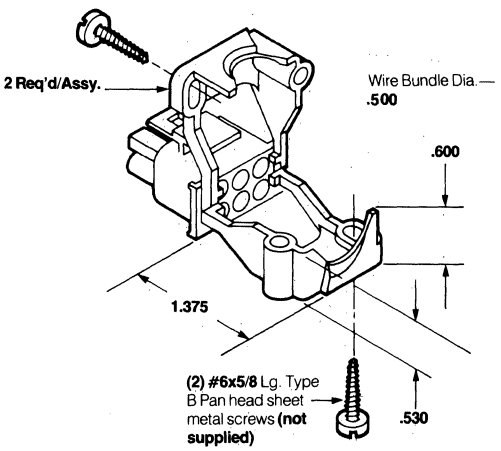
Plug Housing Strain Reliefs

2, 3, 4, 5 and 8 Circuit, In-Line



Part Numbers
94V-2 Nylon material, natural color—**1-350589-0**
94V-0 Nylon material, brick red color—**350811-1**

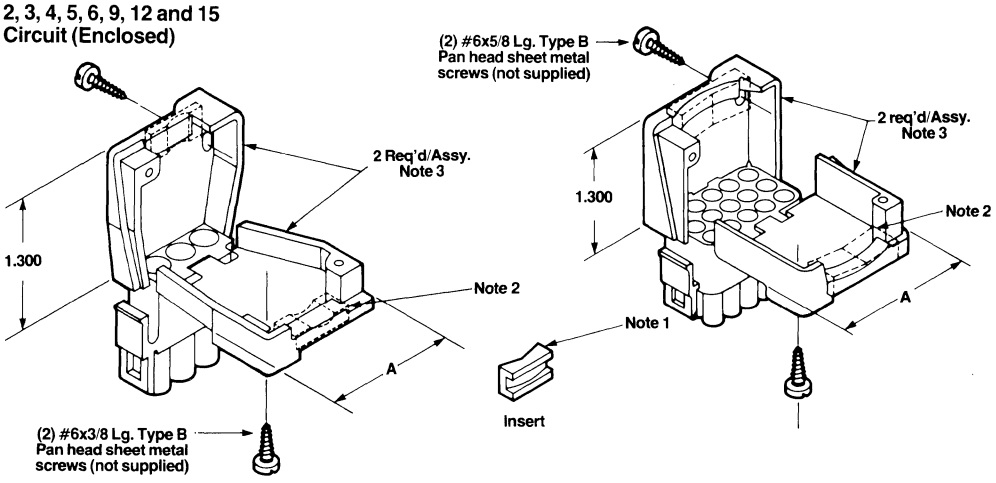
6, 9, 12 and 15 Circuit, Matrix



Part Numbers
94V-2 Nylon material, natural color—**1-350590-0**
94V-0 Nylon material, brick red color—**350812-1**

Cap Housing Strain Reliefs

2, 3, 4, 5, 6, 9, 12 and 15 Circuit (Enclosed)



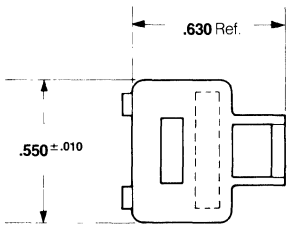
Type	Number of Circuits	A Dim.	Insert Supplied	Single Wire Dia. Range	Wire Bundle Dia. Range	Part Numbers 94V-2 Nylon, Natural	Part Numbers 94V-0 Nylon, Brick Red
In-Line	2	**.960**	Yes	**.040-.190**	—	1-640719-0	640713-1
	2	**.960**	No	—	**.200-.350**	1-640719-1	640713-2
	3	**1.140**	Yes	**.040-.190**	—	1-640720-0	640714-1
	3	**1.140**	No	—	**.200-.350**	641763-1	641945-1
	4	**1.340**	Yes	**.040-.190**	—	641775-1	641776-1
	4	**1.340**	No	—	**.200-.350**	641775-2	641776-2
	5	**1.530**	Yes	**.040-.190**	—	643030-3	643030-1
	5	**1.530**	No	—	**.200-.350**	643030-2	643030-4
	6	**1.780**	Yes	**.040-.190**	—	643585-1	643313-1
	6	**1.780**	No	—	**.200-.350**	643585-2	643313-2
	8	**2.280**	Yes	**.040-.190**	—	—	643314-1
Matrix	6	**1.030**	Yes	—	**.120-.650**	1-640721-0	640715-1
	9	**1.030**	Yes	—	**.120-.650**	1-640722-0	640716-1
	12	**1.280**	Yes	—	**.150-.750**	1-640723-0	640717-1
	15	**1.530**	Yes	—	**.200-.850**	1-640724-0	640718-1

Notes:
1. Cable clamping insert comes attached to strain relief. It can be used to provide additional adjustment for small wire bundles or discarded.
2. Insert to be positioned as shown by dotted lines.
3. Strain relief part numbers represent one-half of a strain relief. Two of a part number are required for one connector.

Cap Housing Adapters

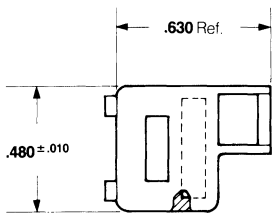
These adapters are designed to anchor the cap housing strain reliefs to the housings and prevent the strain relief halves from "drawing in" when the screws are being torqued down to clamp the cable.

For All Positions Except 2 and 6 Circuit Cap Housings



94V-2 Nylon material, natural color - **641777-1**
94V-0 Nylon material, brick red color - **641778-1**

For 2 and 6 Circuit Cap Housings Only



94V-2 Nylon material, natural color - **643182-1**
94V-0 Nylon material, brick red color - **643182-2**

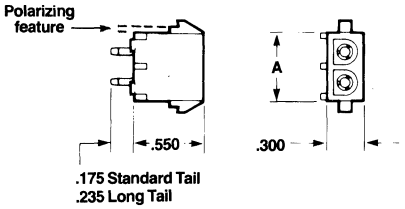
Note: 2 Adapters required per housing.

Pc Board Vertical Pin Headers

Related Product Data
Recommended Pc Board Hole Layout-pg. 2146
Technical Documents-pg. 2169

2, 3, 4, 5, 6 and 8 Circuit, In-Line

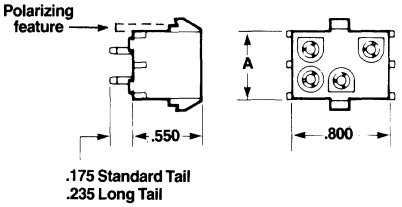
Material:
Housing -
94V-2 Nylon, natural color
94V-0 Nylon, brick red color
Contacts - Phosphor bronze



Number of Circuits	A Dim.	Housing Material	Pin Finish[3]	Pin Header Part Numbers: Standard Tail[1]	Standard Tail Polarized[1]	Long Tail[2]	Mates with Plug Housing Part Number (Using Socket Contacts)
2	.550	94V-2	Pre-tin	350428-1	641963-1	350582-1	1-480698-0
			Gold	350428-2	641963-2	350582-2	
		94V-0	Pre-tin	350786-1	641964-1	350787-1	350777-1
			Gold	350786-2	—	350787-2	
3	.800	94V-2	Pre-tin	350429-1	641965-1	350583-1	1-480700-0
			Gold	350429-2	641965-2	350583-2	
		94V-0	Pre-tin	350789-1	641966-1	350790-1	350766-1
			Gold	350789-2	—	350790-2	
4	1.050	94V-2	Pre-tin	350430-1	641967-1	350584-1	1-480702-0
			Gold	350430-2	—	350584-2	
		94V-0	Pre-tin	350792-1	641968-1	350793-1	350779-1
			Gold	350792-2	—	350793-2	
5	1.300	94V-2	Pre-tin	640466-1	—	770111-1	1-480763-0
			Gold	640466-2	—	770111-2	
		94V-0	Pre-tin	640900-1	643406-1	—	350809-1
			Gold	640900-2	—	—	
6	1.550	94V-2	Pre-tin	641832-1	643407-1	—	640585-1
		94V-0	Pre-tin	641831-1	643408-1	—	640581-1
8	2.050	94V-2	Pre-tin	641825-1	–	770143-1	640586-1
		94V-0	Pre-tin	641828-1	643410-1	—	640582-1

6, 9, 12 and 15 Circuit, Matrix

Material:
Housing -
94V-2 Nylon, natural color
94V-0 Nylon, brick red color
Contacts - Phosphor bronze



Number of Circuits	A Dim.	Housing Material	Pin Finish[3]	Pin Header Part Numbers: Standard Tail[1]	Standard Tail Polarized[1]	Long Tail[2]	Mates with Plug Housing Part Number (Using Socket Contacts)
6	.550	94V-2	Pre-tin	350431-1	641969-1	350585-1	1-480704-0
			Gold	350431-2	—	350585-2	
		94V-0	Pre-tin	350711-1	641970-1	350732-1	350715-1
			Gold	350711-2	641970-2	350732-2	
9	.800	94V-2	Pre-tin	350432-1	641971-1	350586-1	1-480706-0
			Gold	350432-2	641971-2	350586-2	
		94V-0	Pre-tin	350712-1	641972-1	350742-1	350720-1
			Gold	350712-2	—	350742-2	
12	1.050	94V-2	Pre-tin	350433-1	641973-1	350587-1	1-480708-0
			Gold	350433-2	—	350587-2	
		94V-0	Pre-tin	350713-1	641974-1	350737-1	350735-1
			Gold	350713-2	—	350737-2	
15	1.300	94V-2	Pre-tin	350434-1	641975-1	350588-1	1-480710-0
			Gold	350434-2	—	350588-2	
		94V-0	Pre-tin	350714-1	641976-1	350738-1	350736-1
			Gold	350714-2	641976-2	350738-2	

[1]Use Standard Tail for .062 thick pc board.
[2]Use Long Tail for .125 thick pc board.
[3]Gold finish - Plated .000030 min. gold over .000050 min. nickel.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

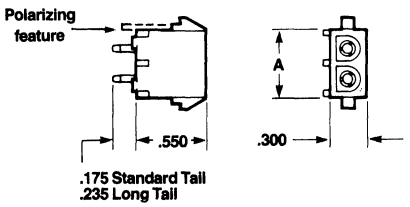
Tolerances:
Dimensional tolerances are ± .015 unless specified otherwise.

Pc Board Vertical Socket Headers

Related Product Data
Recommended Pc Board Hole Layout-pg. 2146
Technical Documents-pg. 2169

2, 3, 4 and 5 Circuit, In-Line

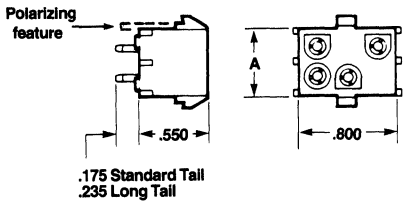
Material:
Housing -
94V-2 Nylon, natural color
94V-0 Nylon, brick red color
Contacts - Phosphor bronze



Number of Circuits	A Dim.	Housing Material	Pin Finish[3]	Socket Header Part Numbers			Mates with Plug Housing Part Number (Using Pin Contacts)
				Standard Tail[1]	Standard Tail Polarized[1]	Long Tail[2]	
2	.550	94V-2	Pre-tin	350759-4	—	350986-4	1-480698-0
			Gold	350759-3	—	—	
		94V-0	Pre-tin	350824-1	—	350831-1	350777-1
			Gold	350824-2	—	—	
3	.800	94V-2	Pre-tin	350760-4	—	350987-4	1-480700-0
			Gold	350760-3	—	350987-3	
		94V-0	Pre-tin	350825-1	643414-1	350832-1	350766-1
			Gold	350825-2	—	350832-2	
4	1.050	94V-2	Pre-tin	350761-4	643415-1	350988-4	1-480702-0
			Gold	350761-3	—	350988-3	
		94V-0	Pre-tin	350826-1	643416-1	350833-1	350779-1
			Gold	350826-2	—	350833-2	
5	1.300	94V-2	Pre-tin	640467-1	643417-1	643061-1	1-480763-0
		94V-0	Pre-tin	640901-1	—	—	350809-1
			Gold	640901-2	—	—	

6, 9, 12 and 15 Circuit, Matrix

Material:
Housing -
94V-2 Nylon, natural color
94V-0 Nylon, brick red color
Contacts - Phosphor bronze

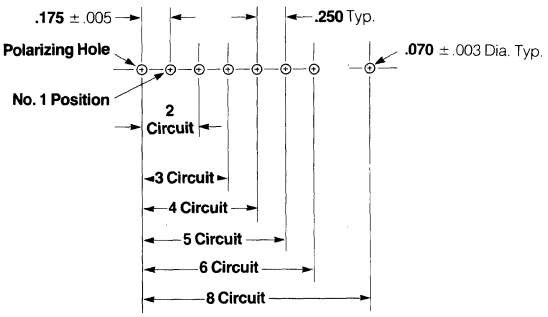


Number of Circuits	A Dim.	Housing Material	Pin Finish[3]	Socket Header Part Numbers			Mates with Plug Housing Part Number (Using Pin Contacts)
				Standard Tail[1]	Standard Tail Polarized[1]	Long Tail[2]	
6	.550	94V-2	Pre-tin	350762-4	643423-1	350989-4	1-480704-0
			Gold	350762-3	—	350989-3	
		94V-0	Pre-tin	350827-1	643424-1	350834-1	350715-1
			Gold	350827-2	—	350834-2	
9	.800	94V-2	Pre-tin	350763-4	—	350990-4	1-480706-0
			Gold	350763-3	—	350990-3	
		94V-0	Pre-tin	350828-1	643426-1	350835-1	350720-1
			Gold	350828-2	643426-2	350835-2	
12	1.050	94V-2	Pre-tin	350764-4	643427-1	350991-4	1-480708-0
			Gold	350764-3	—	350991-3	
		94V-0	Pre-tin	350829-1	643428-1	350836-1	350735-1
			Gold	350829-2	—	350836-2	
15	1.300	94V-2	Pre-tin	350765-4	643429-1	350992-4	1-480710-0
			Gold	350765-3	—	350992-3	
		94V-0	Pre-tin	350830-1	643430-1	350837-1	350736-1
			Gold	350830-2	—	350837-2	

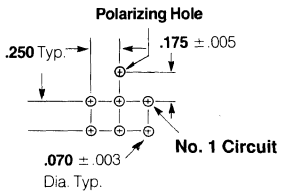
[1]Use Standard Tail for .062 thick pc board.
[2]Use Long Tail for .125 thick pc board.
[3]Gold finish - Plated .000030 min. gold over .000050 min. nickel.

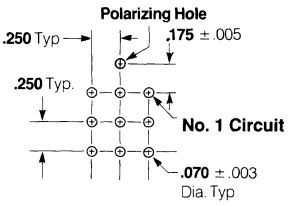
Recommended Pc Board Hole Layout for Pin and Socket Headers

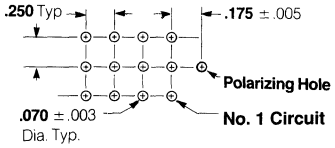
2, 3, 4, 5, 6 and 8 Circuit, In-Line

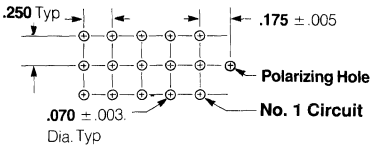


6, 9, 12 and 15 Circuit, Matrix

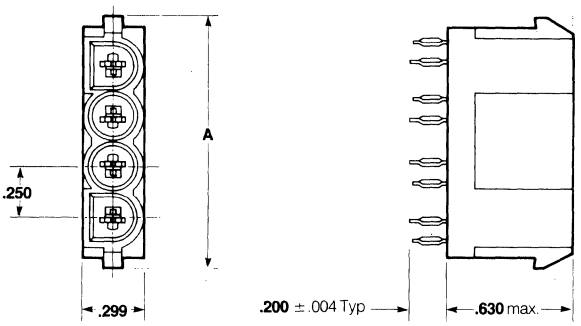








Pc Board Vertical Pin Headers with ACTION PIN Contacts



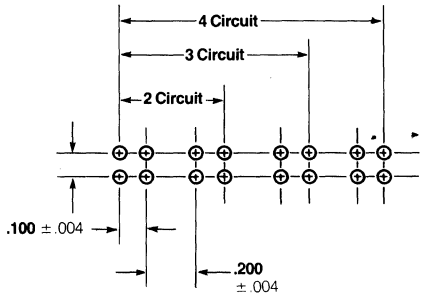
Material and Finish:
Housing - 94V-0 PBT, black
Contacts - Copper alloy, plated with tin-lead over nickel on entire contact

Number of Circuits	A Dim.	Part Number	Mates with Housing Part Number (Pg. 2141)
2	**.750**	173924-1*	1-480698-0 350777-1
3	**1.000**	173925-1*	1-480700-0 350766-1
4	**1.250**	173926-1*	1-480702-0 350779-1

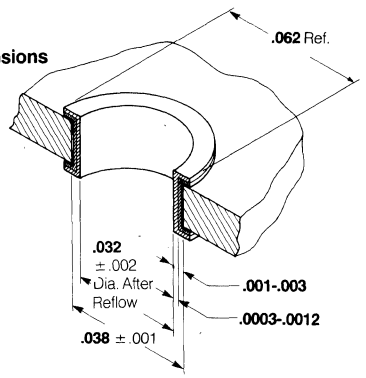
Note: Install in Pc Board with arbor press.
*UL recognition pending.

Related Product Data
Technical Documents-pg. 2169

Recommended Pc Board Hole Layout



Pc Board Hole Dimensions

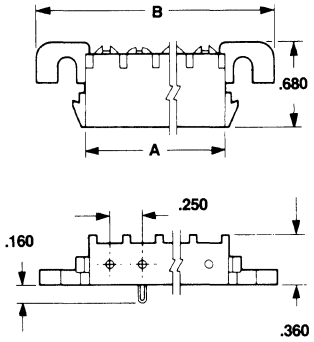


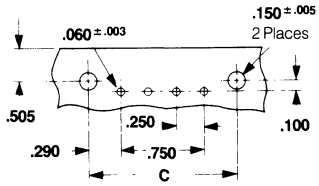
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensional tolerances are ± .015 unless specified otherwise.

Pc Board Right-Angle Pin and Socket Headers

Material:
Housing—94V-0 Nylon, brick red color
Contacts—Phosphor bronze





Use 6-32 UNC Pan Head Screw 3/8 [9.53] long for mounting

Number of Circuits	Dimensions			Contact Finish*	Part Numbers		Mates with Housing Part Number (Pg. 2141)
	A	B	C		Pin Header	Socket Header	
2	.550	1.245	.830	Pre-tin	1-350942-0	643226-1	350777-1
				Gold	2-350942-0	—	
3	.800	1.495	1.080	Pre-tin	1-350943-0	643228-1	350766-1
				Gold	2-350943-0	—	
4	1.050	1.745	1.330	Pre-tin	1-350944-0	643230-1	350779-1
				Gold	2-350944-0	643230-2	
5	1.300	1.995	1.580	Pre-tin	1-350945-0	643232-1	350809-1
				Gold	2-350945-0	643232-2	
6	1.550	2.245	1.830	Pre-tin	640583-1	643234-1	640581-1
				Gold	640583-2	643234-2	
8	2.050	2.745	2.330	Pre-tin	640584-1	643236-1	640582-1
				Gold	640584-2	643236-2	

*Gold finish—Plated .000030 min. gold over .000050 min. nickel.

Test Connectors (with spring loaded contacts)

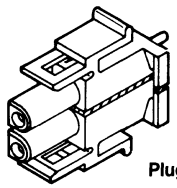
Material:
Housing—94V-0 Nylon, brick red color

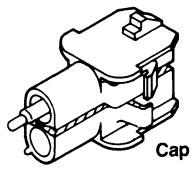
Related Product Data

Mating Connectors—Housings and headers having the same number of circuits. The housings can have pin or socket contacts, or a combination of both.

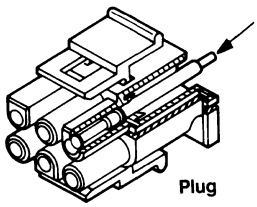
Notes:
1. Test probes have 5 amp maximum current rating.
2. Test Connector housings are of the same configuration as standard housings. Refer to page 8 for dimensional specifications.
3. Test connectors mate with connector housings and pc board headers found on pages 2141, 2144 - 2147.

2, 3, 4 and 5 Circuit, In-Line

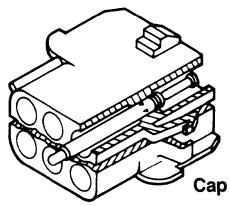

Plug


Cap

6, 9, 12 and 15 Circuit, Matrix



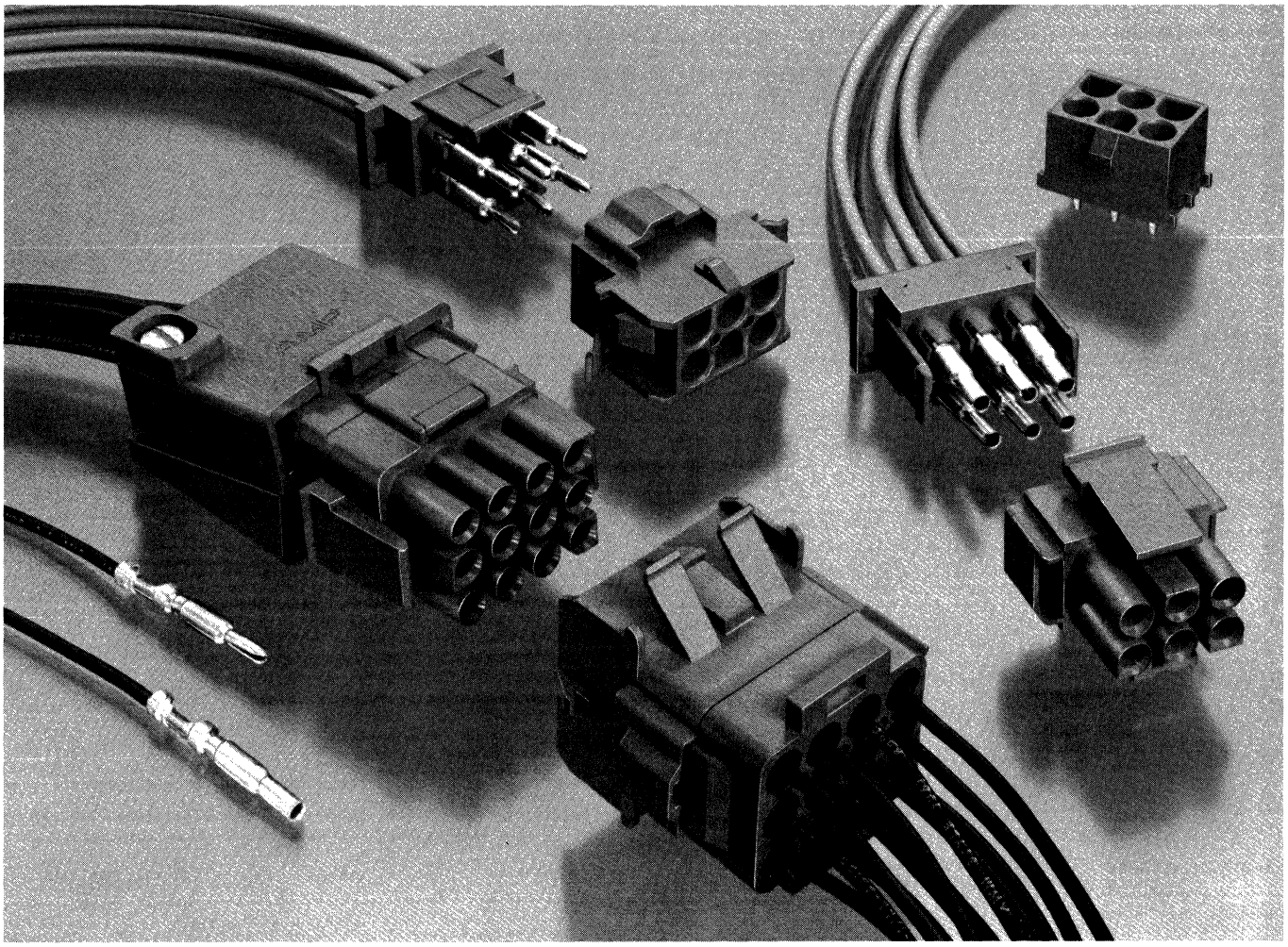
Plug


Cap

Number of Circuits	Part Numbers	
	Plug	Cap
2	350848-2	350849-2
3	350848-3	350849-3
4	350848-4	350849-4
5	350848-5	350849-5
6	350848-6	350849-6
9	350848-9	350849-9
12	1-350848-2	1-350849-2
15	1-350848-5	1-350849-5

Universal MATE-N-LOK II Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Features:
- Reliable
- For use where repair or replacement would be difficult
- Available in 2 thru 15 Circuit sizes for free-hanging or panel mount wire-to-wire connections
- Mate with standard Universal MATE-N-LOK Housings and Pc Board Headers
- Polarized housings made of UL 94V-0 rated thermoplastic
- Enclosed contacts for shock protection
- F-Crimp terminals accept 30 to 10 AWG Wire
- Contacts available in strip and loose form
- Lanceless contacts for tangle free handling
- Insulation capability to .200 diameter
- Housing design assures proper contact position during assembly
- Three point stabilization precisely controls contact alignment, minimizing stubbing
- Tin or duplex gold plated contacts
- Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476
- Certified by Canadian Standards Association File No. LR 16455-113
- VDE testing: VDE Test Report 4751-1431-4016/A8E

Universal MATE-N-LOK II Connectors (Continued)

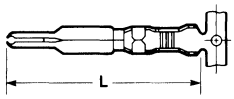
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensional tolerances are ±.015 unless specified otherwise.

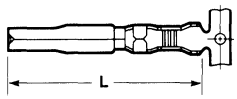
Contacts

.012 Stock Thickness
Can be used in either plug or cap housings

Related Product Data
Technical Documents-pg. 2169
Application Tooling-pg. 2012 & 2013



Pin



Socket

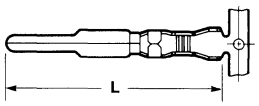
Wire Size Range Awg	Ins. Dia. Range	L Dim. Pin	Socket	Material & Finish	Contact Part Numbers				Quick-Change Applicator Part No.[1]	Hand Tool Part No.
					Pin		Socket			
					Strip Form	Loose Form	Strip Form	Loose Form		
30-26	**.032-.057**	—	**.980**	Phos. Brz. Select Gold	770011-6	770512-6	770012-6	770416-6	567252-2	58439-1
24-18	**.040-.100**	**1.005**	**.980**	Brass, Pre-tin	770009-1	770252-1	—	—	567214-1 567214-2	90300-2
				Brass, Duplex[2]	770009-2	770252-2	—	—		
				Phos. Brz., Pre-tin	—	—	770010-3	770253-3		
				Phos. Brz., Duplex[2]	—	—	770010-4	770253-4		
20-14	**.060-.130**	**1.005**	**.980**	Brass, Pre-tin	770007-1	770250-1	—	—	567213-1 567213-2	90296-2
				Brass, Duplex[2]	770007-2	770250-2	—	—		
				Phos. Brz., Pre-tin	—	—	770008-3	770251-3		
				Phos. Brz., Duplex[2]	—	—	770008-4	770251-4		
20-14	**.130-.200**	**.995**	**.970**	Brass, Pre-tin	770005-1	770248-1	—	—	567212-1 567212-2	90298-2[4] 90299-2[4]
				Brass, Duplex[2]	770005-2	770248-2	—	—		
				Phos. Brz., Pre-tin	—	—	770006-3	770249-3		
				Phos. Brz., Duplex[2]	—	—	770006-4	770249-4		
12-10	**.200 max.[3]**	**1.005**	**.980**	Phos. Brz., Pre-tin	770003-3	770246-3	770004-3	770247-3	567211-1 567211-2	69710-1[5]
				Phos. Brz., Duplex[2]	770003-4	770246-4	770004-4	770247-4		

[1]Quick-Change Applicator Part No. with -1 is for a "T" terminating unit used in automatic machines; -2 is for a "K" AMP-O-LECTRIC bench machine. Stripper/Crimper Applicators for jacketed cable are also available, consult AMP Incorporated, Harrisburg, PA 17105.
[2]Duplex finish - Plated .000030 min. gold on pin end and .000030 min. tin-lead in crimp area over .000050 min. nickel on entire contact.
[3]There is no insulation barrel on this contact. Insulation maximum diameter is limited by the housing.
[4]Use hand tool **No. 90298-2** for 20-18 AWG and **No. 90299-2** for 16-14 AWG.
[5]Hand tool **No. 69710-1** uses die set **No. 58380-1** for 12 AWG and **No. 58380-2** for 10 AWG.

Grounding Pin

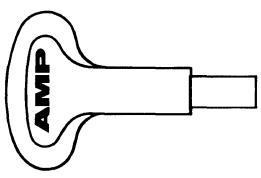
(.100 longer than standard pin)
.012 Stock Thickness

Can be used in either plug or cap housings



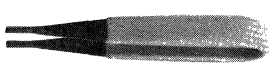
Wire Size Range AWG	Ins. Dia. Range	L Dim.	Material & Finish	Contact Part Numbers		Quick-Change Applicator Part No.[1]	Hand Tool Part No.
				Strip Form	Loose Form		
20-14	**.060-.130**	**1.105**	Brass, Pre-tin	770193-1	770254-1	567213-1 567213-2	90296-2
			Brass, Duplex[2]	770193-2	770254-2		
20-14	**.130-.200**	**1.085**	Brass, Pre-tin	770194-1	770255-1	567212-1 567212-2	90298-2[3] 90299-2[3]
			Brass, Duplex[2]	770194-2	770255-2		

[1]Quick-Change Applicator Part No. with -1 is for a "T" terminating unit used in automatic machines; -2 is for a "K" AMP-O-LECTRIC bench machine. Stripper/Crimper Applicators for jacketed cable are also available, consult AMP Incorporated, Harrisburg, PA 17105.
[2]Duplex finish - Plated .000030 min. gold on pin end and .000030 min. tin in crimp area over .000050 min. nickel on entire contact.
[3]Use hand tool **No. 90298-2** for 20-18 AWG and **No. 90299-2** for 16-14 AWG.



Latch Disengaging Tool
No. 58382-1


Contact Extraction Tool
No. 458994-2


Contact Insertion Tool
(For inserting contacts applied to small diameter wire)
No. 455830-1

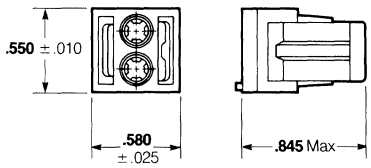
Housings, Free-Hanging or Panel Mount

Material:
94V-0 Nylon, brick red color

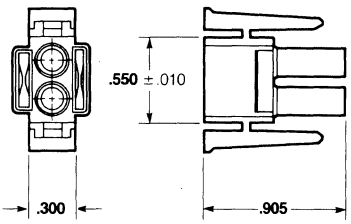
Related Product Data

Panel Cutout Recommendations-pg. 2152
Technical Documents-pg. 2169
Other Mating Connectors:
Universal MATE-N-LOK Connectors-pg. 2141
Universal MATE-N-LOK Headers-pgs. 2144 - 2147

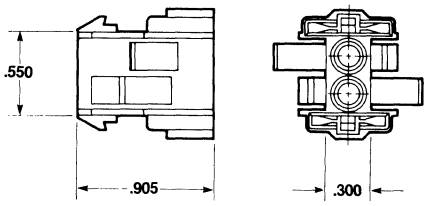
2 Circuit, In-Line



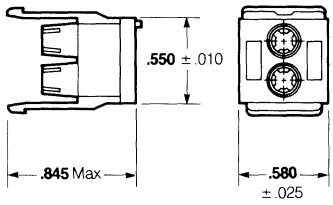
Plug Back



Plug Front

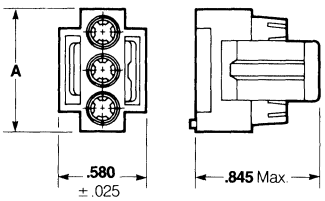


Cap Front

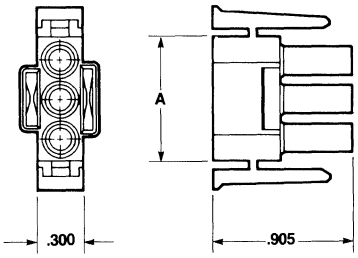


Cap Back

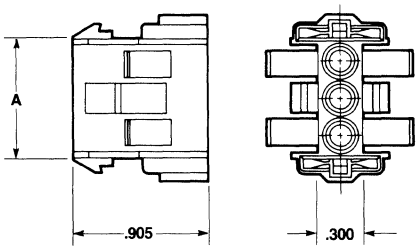
3, 4 and 5 Circuit, In-Line



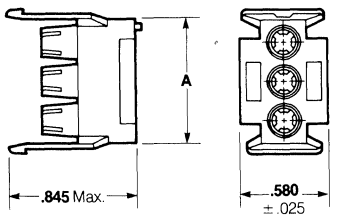
Plug Back



Plug Front



Cap Front



Cap Back

Number of Circuits	A ±.010 Dim.	Plug Kit No. (Includes Front and Back)	Cap Kit No. (Includes Front and Back)
2	—	770017-1	770024-1
3	**.800**	770018-1	770025-1
4	**1.050**	770019-1	770026-1
5	**1.300**	770016-1	—

Housings, Free-Hanging or Panel Mount

Material:
94V-0 Nylon, brick red color

Related Product Data

Panel Cutout Recommendations-pg. 2152

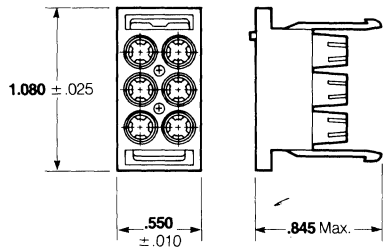
Technical Documents-pg. 2169

Other Mating Connectors:

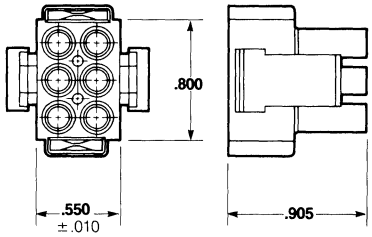
Universal MATE-N-LOK Connectors-pg. 2141

Universal MATE-N-LOK Headers-pgs. 2144 & 2145

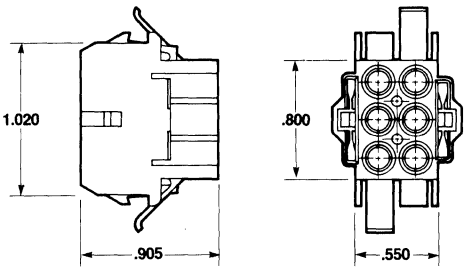
6 Circuit, Matrix



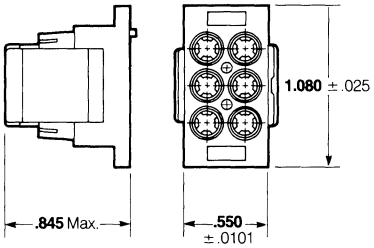
Plug Back



Plug Front

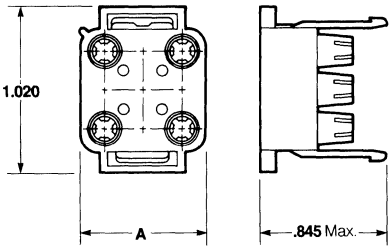


Cap Front

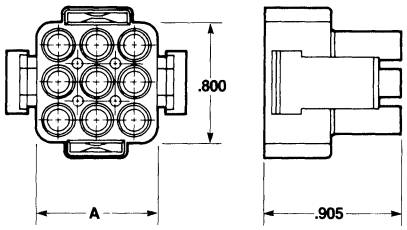


Cap Back

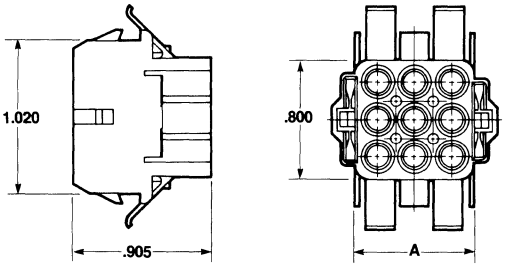
9,12 and 15 Circuit, Matrix



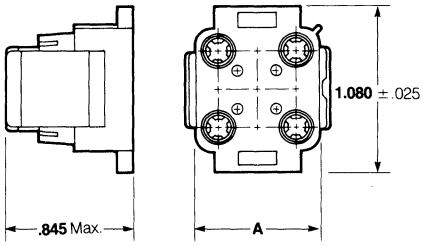
Plug Back



Plug Front



Cap Front

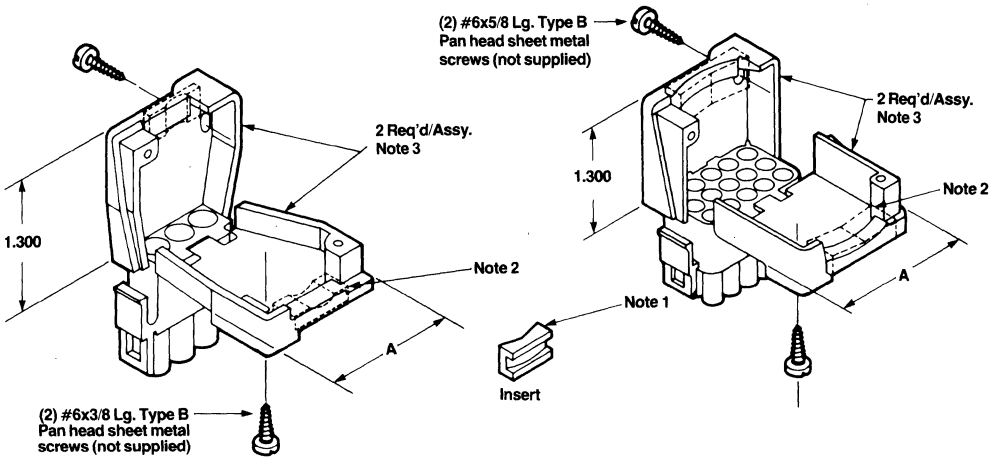


Cap Back

Number of Circuits	A ± .010 Dim.	Plug Kit No. (Includes Front and Back)	Cap Kit No. (Includes Front and Back)
6	—	770020-1	770027-1
9	**.800**	770021-1	770028-1
12	**1.050**	770022-1	770029-1
15	**1.300**	770023-1	770030-1

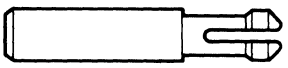
Strain Reliefs for Plug and Cap Housings

2, 3, 4, 5, 6, 9, 12 and 15 Circuit (Enclosed)



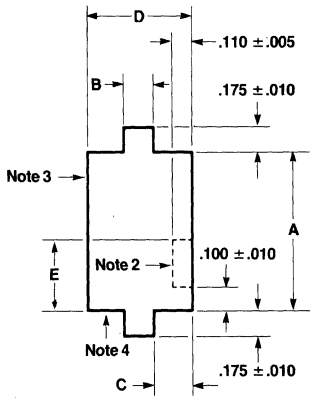
Type	Number of Circuits	A Dim.	Insert Supplied	Single Wire Dia. Range	Wire Bundle Dia. Range	Part Numbers
In-Line	2	**.960**	Yes	.040-.190	—	640713-1
	2	**.960**	No	—	.200-.350	640713-2
	3	**1.140**	Yes	.040-.190	—	640714-1
	3	**1.140**	No	—	.200-.350	641945-1
	4	**1.340**	Yes	.040-.190	—	641776-1
	4	**1.340**	No	—	.200-.350	641776-2
	5	**1.530**	Yes	.040-.190	—	643030-1
	5	**1.530**	No	—	.200-.350	643030-4
Matrix	6	**1.030**	Yes	—	.120-.650	640715-1
	9	**1.030**	Yes	—	.120-.650	640716-1
	12	**1.280**	Yes	—	.150-.750	640717-1
	15	**1.530**	Yes	—	.200-.850	640718-1

Notes:
1. Insert comes attached to strain relief. It can be used to provide additional adjustment for small wire bundles or discarded.
2. Insert to be positioned as shown by dotted lines.
3. Strain relief part numbers represent one-half of a strain relief. Two of a part number are required for one connector.



Keying Plug No. 770377-1

Cap Housing Panel Cutout

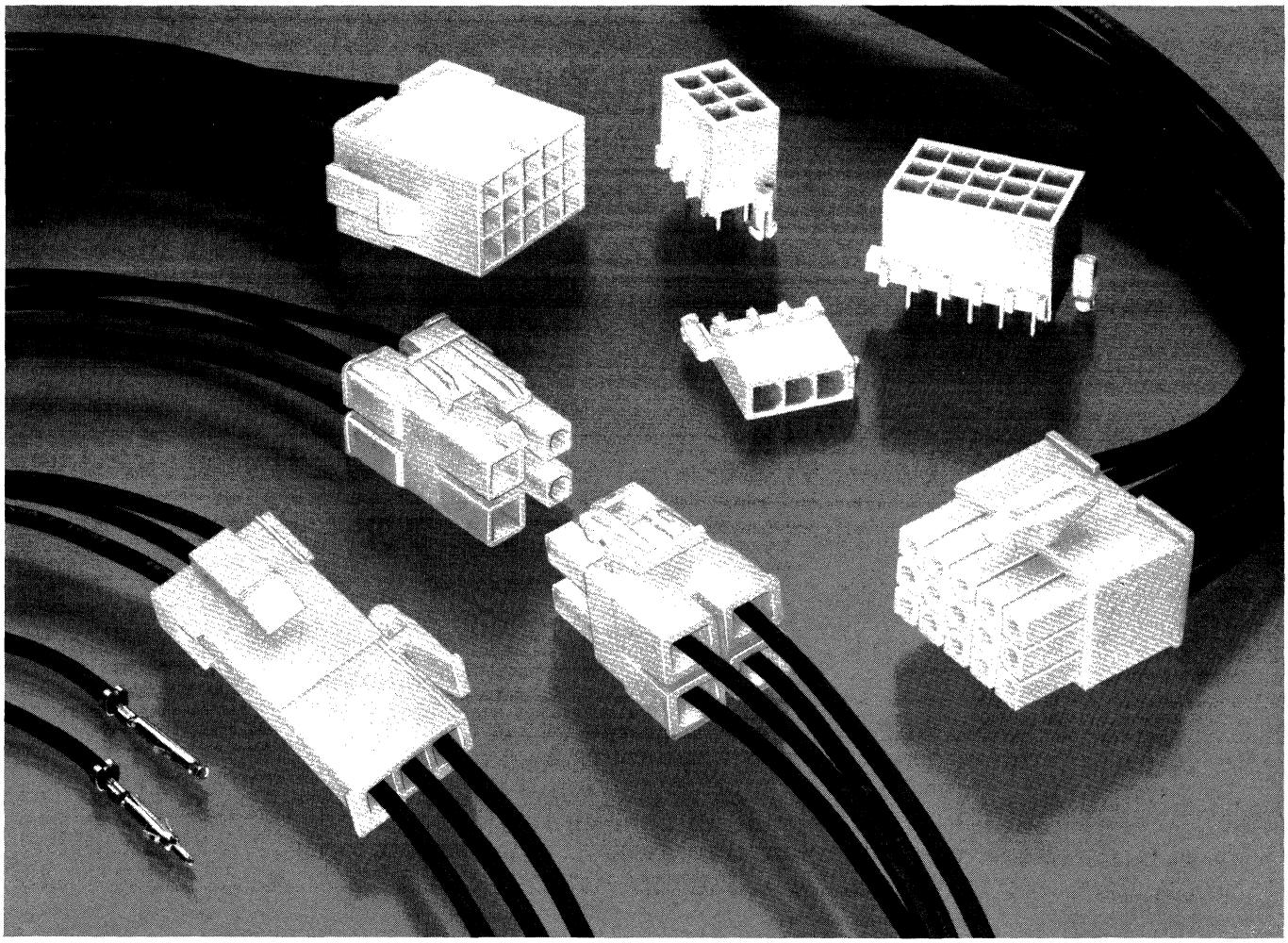


Number of Circuits	Dimensions				
	A ±.005	B ±.010	C ±.010	D ±.005	E ±.010
2	**.565**	**.340**	**.095**	**.530**	**.250**
3	**.815**	**.340**	**.095**	**.530**	**.250**
4	**1.065**	**.340**	**.095**	**.530**	**.250**
6	**.565**	**.480**	**.275**	**1.030**	**.250**
9	**.815**	**.480**	**.275**	**1.030**	**.250**
12	**1.065**	**.480**	**.275**	**1.030**	**.350**
15	**1.315**	**.480**	**.275**	**1.030**	**.350**

Notes:
1. Recommended panel thickness—.030-.090. Panel must be punched so that housing enters panel in same direction as the punch.
2. Optional for keying housing to panel.
3. Circuit #1 location when using panel keying with 6, 9, 12 and 15 circuit housings.
4. Circuit #1 location when using panel keying with 2, 3, 4 and 5 circuit housings.

Mini-Universal MATE-N-LOK Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Features

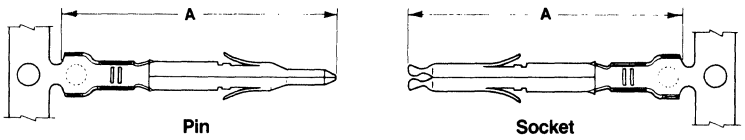
- Compact, durable housings
- Pins and sockets can be accommodated in the same housings
- Contacts fully protected in the housings. Both pins and sockets can be used on the power supply wiring
- Fully polarized to provide proper plug-to-cap mating incorporating a positive locking mechanism to prevent accidental disengagement of mated connectors. Also facilitates panel mounting
- Housings available in 1, 2, and 3 circuit configurations for free-hanging applications and 2, 3, 4, 6, 9, 12 and 15 circuit configurations for panel mounting
- Connectors can be mounted to .031-.078 thick panels
- Printed circuit board pin headers are available in 2, 3, 4, 6, 9, 10, 12 and 15 circuit configurations
- Right angle printed circuit board connectors available in 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, and 24 circuit configurations
- Hermaphroditic housings available in 2, 3 and 4 circuits for free-hanging applications
- Low insertion/extraction forces required
- Contacts accept wire size range 26-16 AWG
- Test probe contacts available
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- CSA Certified, File No. LR38721
- VDE tested, plugs and caps only, File No. 4751-1430-4020/AIG

Electrical Characteristics

Rated voltage: AC/DC —600 V max.; VDE rating—250 V max.
Overall low-level resistance: 10 mΩ max.
Insulation resistance: 1,000 MΩ min. (initial- 100 MΩ min. (after testing)
Dielectric withstanding voltage: 1. 5 KVAC at voltage rising of 500 V per second (applied for 1 minute)
Operating temperature: -20° to + 105°C (The upper limits of temperature include Temperature rises caused by applied current)

Contacts

Material: Brass
Pin Diameter: .039



Pin Socket

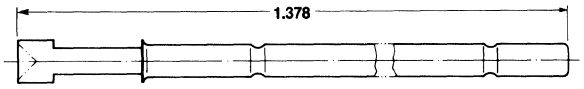
Wire Size AWG	Ins. Dia. Range	Dim. A	Finish	Contact Part Numbers				Quick-Change Applicator Part No.*	Hand Tool Part No.
				Pin		Socket			
				Strip Form	Loose Form	Strip Form	Loose Form		
26-22	**.047-.069**	**.669**	Pre-tin	170359-1	170363-1	170361-1	170365-1	567066-1	724649-1
			Sel. Gold	170359-3	170363-3	170361-3	170365-3	567066-2	
22-18 or 22 x (2)	**.059-.094 or .133 Max.**	**.669**	Pre-tin	170360-1	170364-1	170362-1	170366-1	567067-1	724651-1
			Sel. Gold	170360-3	170364-3	170362-3	170366-3	567067-2	
20-16 or 20 × (2)	**.079-.126 or .094 × (2)**	**.689**	Pre-tin	171636-1	171638-1	171637-1	171639-1	567251-2	753808-1

* Quick-Change Applicator Part No. with -1 is for a "T" terminating unit used in automatic machines; -2 is for a "K" AMP-O-LETRIC bench machine.

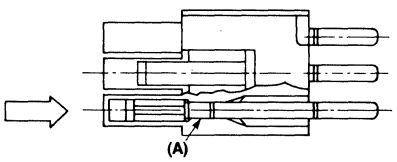
Test Probe Contact

Material and Finish:
Phosphor bronze, nickel plated

Part No. 172971-1



Notes:
1. The test probe is inserted into the housing in the same direction as indicated by the arrow shown to the right.
2. If the test probe does not secure in the housing apply adhesive in area (A).
3. The test probe can be used in the Cap or Plug Housing.
4. Test probes are supplied unassembled.



Extraction Tool Part Number 455822-2
Keying Plug Part Number 174670-1

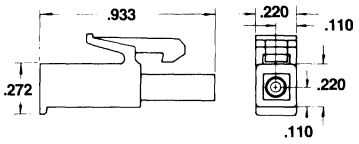
Related Product Data

Electrical Characteristics-pg. 2153
Technical Documents-pg. 2169
Application Tooling-pg. 2012 & 2013

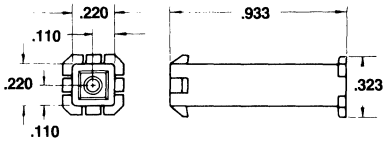
Housings

Related Product Data
Electrical Characteristics-pg. 2153
Recommended Panel Cutout-pg. 2156
Technical Documents-pg. 2169

1 Circuit Free-Hanging

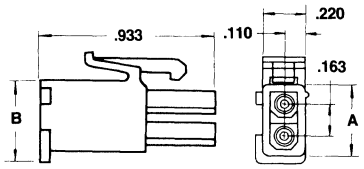


Plug

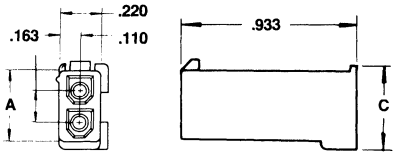


Cap

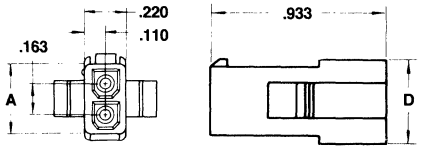
2 and 3 Circuit Free-Hanging and Panel Mount, In-Line



Plug



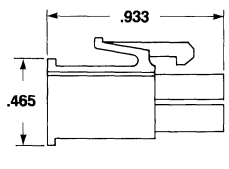
Cap (Free-Hanging)



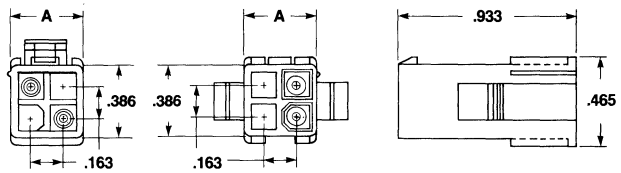
Cap (Panel Mount)

Number of Circuits	Dimensions				Housing Part Numbers*					
					94V-0 Nylon			94V-2 Nylon		
						Cap			Cap	
	A	B	C	D	Plug	Panel Mount	Free-Hanging	Plug	Panel Mount	Free-Hanging
1	—	—	—	—	172164-1	—	172156-1	172335-1	—	172327-1
2	.386	.425	.488	.464	172165-1	172157-1	172233-1	172336-1	172328-1	172343-1
3	.551	.591	.654	.630	172166-1	172158-1	172234-1	172337-1	172329-1	172344-1

4 and 6 Circuit Panel Mount, Matrix



Plug



Cap

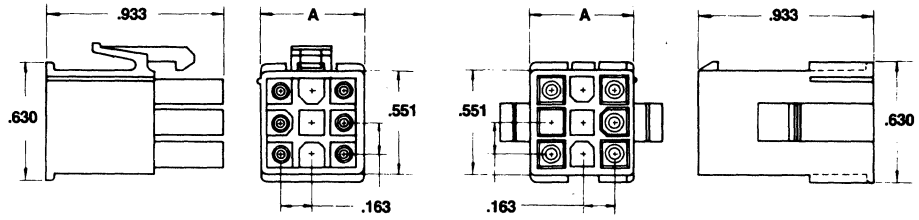
Number of Circuits	Dimension A	Housing Part Numbers*			
		94V-0 Nylon		94V-2 Nylon	
		Plug	Cap	Plug	Cap
4	.386	172167-1	172159-1	172338-1	172330-1
6	.551	172168-1	172160-1	172339-1	172331-1

* Housing part numbers shown in the tables are all natural color. Other colors, red, green, blue, black, are also available. To order connectors in these colors use the appropriate dash numbers as follows: Red 1-___ -2, Green 1-___ -5, Blue 1-___ -6, Black 1-___ -9

Housings

Related Product Data
Electrical Characteristics-pg. 2153
Recommended Panel Cutout-see below
Technical Documents-pg. 2169

9, 12 and 15 Circuit Panel Mount, Matrix

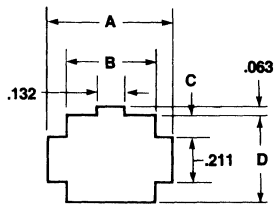


Plug Cap

Number of Circuits	Dimension A	Housing Part Numbers*			
		94V-0 Nylon		94V-2 Nylon	
		Plug	Cap	Plug	Cap
9	.551	172169-1	172161-1	172340-1	172332-1
12	.716	172170-1	172162-1	172341-1	172333-1
15	.882	172171-1	172163-1	172342-1	172334-1

* Housing part numbers shown in the tables are all natural color.
Other colors, red, green, blue, black, are also available. To order connectors in these colors use the appropriate dash numbers as follows:
Red 1-____-2, Green 1-____-5, Blue 1-____-6, Black 1-____-9

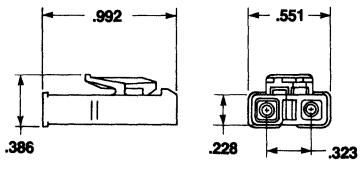
Recommended Cap Housing Panel Cutout



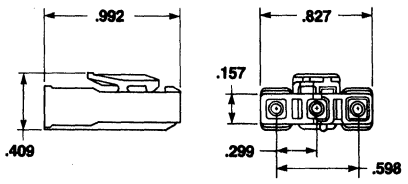
Number of Circuits	Dimensions			
	A	B	C	D
2	.421	.242	.098	.407
3	.421	.242	.181	.573
4	.587	.407	.098	.407
6	.752	.573	.098	.407
9	.752	.573	.181	.573
12	.917	.738	.181	.573
15	1.080	.904	.181	.573

2, 3 and 4 Circuit, Hermaphroditic Type Free-Hanging

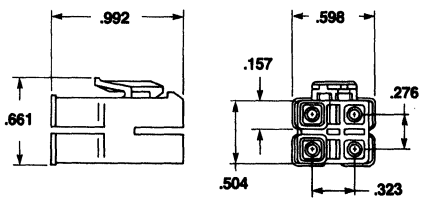
Material: 94V-2 Nylon, natural color



2 Circuit
Part No. 172807-1



3 Circuit
Part No. 172808-1



4 Circuit
Part No. 172809-1

Mini-Universal MATE-N-LOK Connectors (Continued)

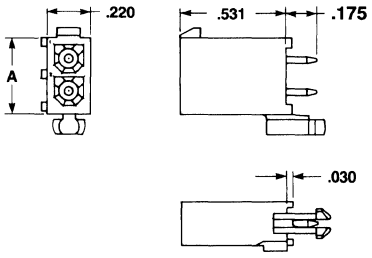
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensional tolerances are ± .015 unless specified otherwise.

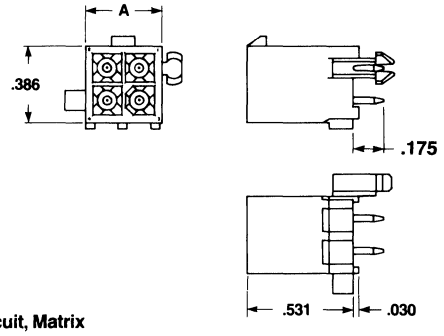
Pc Board Pin Headers

Material and Finish:
Housing - 94V-0 Nylon, white
Contacts - Phosphor bronze, tin plated

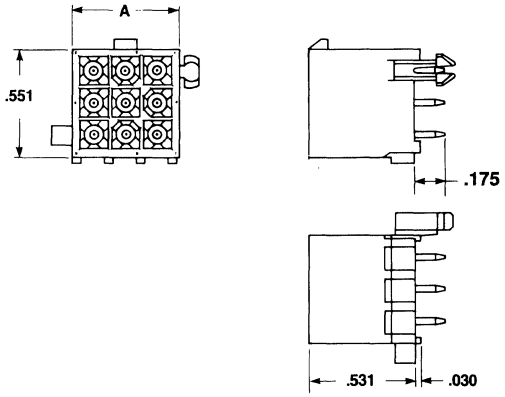
2 and 3 Circuit, In-Line



4 and 6 Circuit, Matrix



9, 12 and 15 Circuit, Matrix



Straight Header

Number of Circuits	Dimension A	Pin Header Part No.	Mates with Plug Housing Part No. (Pg. 2155, 2156)
2 Single Row	.386	770166-1	172165-1
3 Single Row	.551	770170-1	172166-1
4 Matrix	.386	770174-1	172167-1
6 Matrix	.551	770178-1	172168-1
9 Matrix	.551	770182-1	172169-1
12 Matrix	.716	770186-1	172170-1
15 Matrix	.882	770190-1	172171-1
10 Double Row	.877	770743-1	770580-1
12 Double Row	1.039	770621-1	770581-1

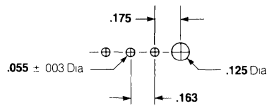
Right Angle Header

Number of Circuits	Dimension A	Pin Header Part No.	Mates with Plug Housing Part No. (Pg. 2155, 2156)
2	.386	770605-1	172165-1
3	.551	770606-1	172166-1
4	.388	770607-1	172167-1
6	.551	770608-1	172168-1
8	.714	770609-1	770579-1
10	.877	770610-1	770580-1
12	1.040	770611-1	770581-1
14	1.203	770612-1	770582-1
16	1.366	770613-1	770583-1
18	1.529	770614-1	770584-1
20	1.692	770615-1	770585-1
22	1.855	770616-1	770586-1
24	2.018	770617-1	770587-1

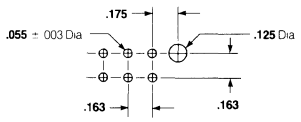
Recommended Pc Board Hole Layout

(.062 thick board, tolerances non-accumulative)

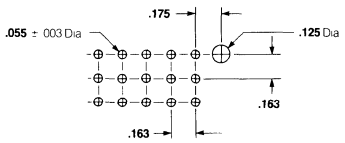
2 and 3 Circuit

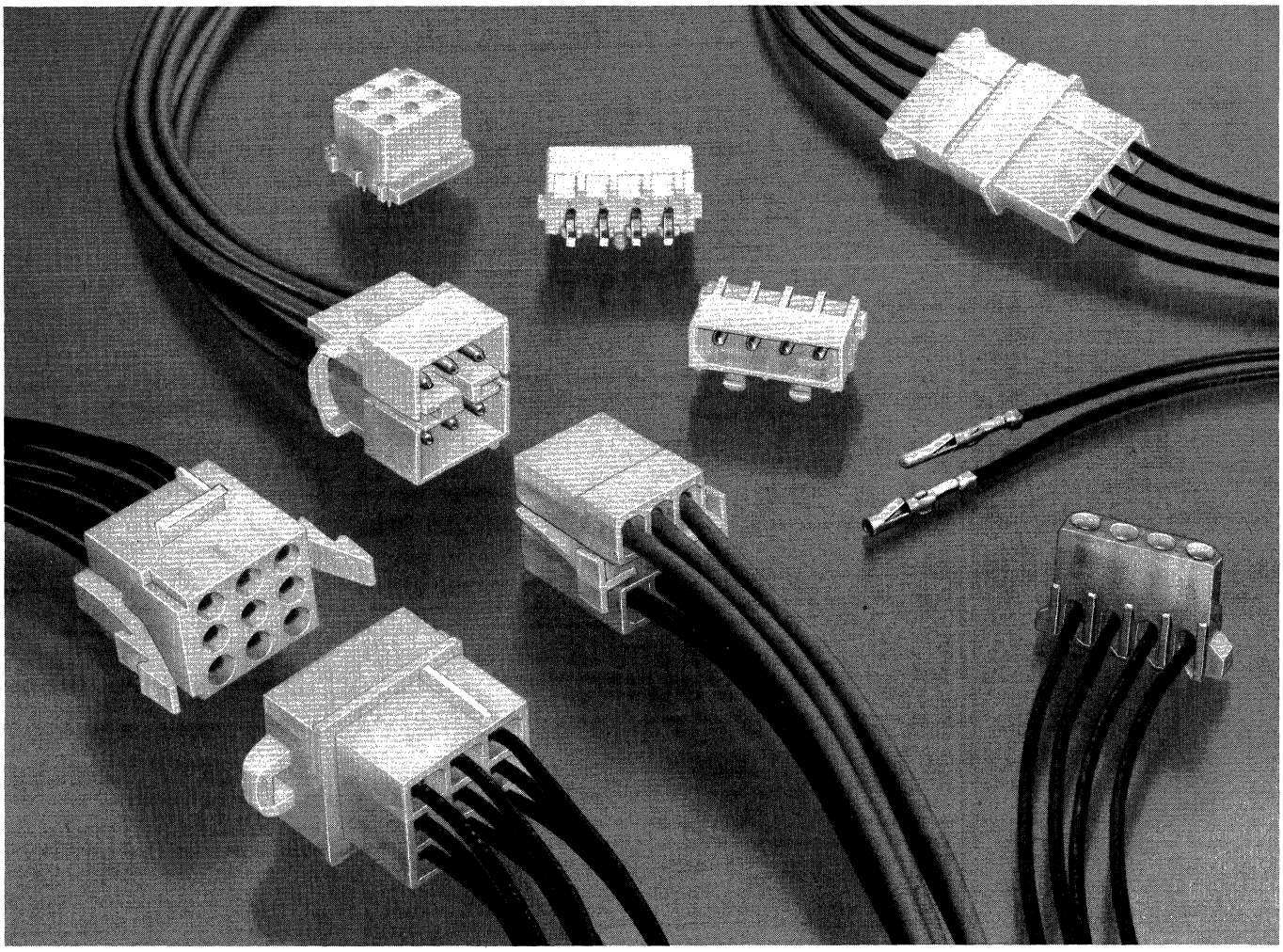


3 and 4 Circuit



9, 12 and 15 Circuit





Features

- Fully polarized nylon housings
- Easy cavity identification
- Locking devices are integral part of design. Connector halves will hold together under severe conditions of vibration and shock
- Built-in contact stabilization and self-aligning features
- Hot side egg-crate design for safety
- Precision molded to exacting tolerances
- Housing marking available upon request
- Solder, pc board and pre-crimped contacts available
- Contacts accept a wire size range of 30-14 AWG
- Keying plug available
- Contact AMP Incorporated for availability of colored housings prior to specification
- Housing colors are identified by suffix number in housing part number
  Example:
  1-480284-0 - Natural
  1-480284-2 - Red
  1-480284-9 - Black
- "Clean" design contact—no sharp projections to impede insertion or damage housings
- Low insertion/extraction forces
- Contacts available in tin or gold over nickel plated to fit the application requirements.
- UL recognized for 250 volts, AC or DC
- Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476
- CSA Certified - File No. LR-16455-38

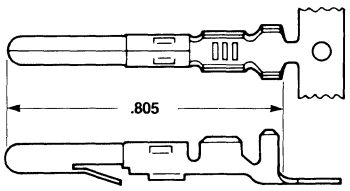
Commercial MATE-N-LOK Connectors (Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

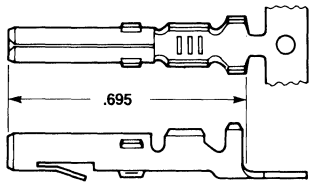
Dimensional tolerances are ± .015 unless specified otherwise.

Contacts
Pin Diameter - .084

Related Product Data
Technical Documents-pg. 2169
Application Tooling-pg. 2012 & 2013



Pin



Socket

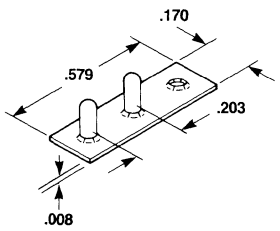
Wire Size Range AWG	Ins. Dia. (Max.)	Material & Finish	Contact Part Numbers				Quick-Change Applicator Part No.[3]	Hand Tool No.
			Pin		Socket			
			Strip Form	Loose Form	Strip Form	Loose Form		
30-22	**.075**	Brass, tin	350079-1	61174-1	350078-1	61173-1	466426-1 466426-2	90066-5
		Phos. Brz., tin	350079-4	—	350078-4	61173-4		
		Brass, gold[1]	350079-5	61174-5	350078-5	61173-5		
24-18	**.100**	Brass, tin	61116-1	60618-1	61314-1	60617-1	466320-1 466320-2	90123-2
		Phos. Brz., tin	61116-4	60618-4	61314-4	60617-4		
		Brass[1]	61116-5	60618-5	61314-5	60617-5		
		Phos. Brz.[2]	61116-6	60618-6	61314-6	60617-6		
		Brass[2]	61116-7	60618-7	61314-7	60617-7		
20-14	**.130**	Brass, tin	61118-1	60620-1	61117-1	60619-1	687763-1 687763-2	90124-2
		Phos. Brz., tin	61118-4	60620-4	61117-4	60619-4		
		Brass[1]	61118-5	60620-5	61117-5	60619-5		
		Phos. Brz.[1]	61118-6	—	61117-6	60619-7		
		Brass[2]	61118-7	—	61117-7	—		
(2) 18 or (1) 18 & (1) 16	**(2) .115 (stacked)**	Brass, tin	350558-1	350639-1	—	—	687898-1 687898-2	90124-2
		Phos. Brz., tin	—	—	350557-4	350638-4		

[1] .000030 gold in mating area and inside wire barrel over nickel plating on entire contact
[2] .000030 gold in mating area over nickel plating on entire contact
[3] Quick-Change Applicator Part No. with -1 is for a "T" terminating unit used in automatic machines; -2 is for a "K" AMP-O-LECTRIC bench machine. Stripper/Crimper Applicators for jacketed cable are also available, consult AMP Incorporated, Harrisburg, PA 17105.

Notes:
1. Extraction tools—Pins—No. 1-305183-1, Sockets—1-305183-2, Pins and Sockets—No. 465644-1.
2. Insertion tools—No. 91002-1, for small insulation diameter (.043 min)—No. 90123-5.

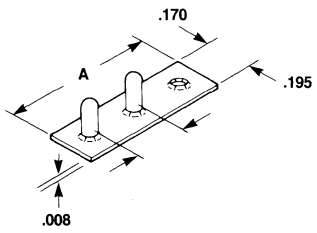
Commoning Tabs

Material and Finish:
Brass, tin plated



Panel Mount

Part Numbers:
3 Circuit—60842-1 (used to common any 3 adjacent contacts)
2 Circuit—60843-1 (used to common any 2 adjacent contacts in the following circuit cavity groups of panel mount housings: 1, 2, 3 or 4, 5, 6 or 7, 8, 9 or 10, 11, 12 or 13, 14, 15)

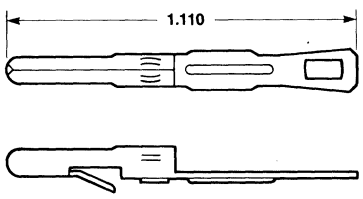


Motor Mount & Free Hanging
(For use with Motor Mount and Cap Mount Housings)

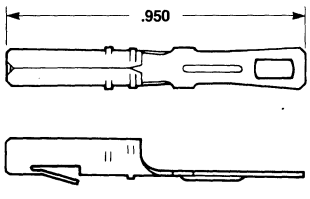
Number of Holes	Dimension A	Part Number
2	**.355**	350444-1
3	**.550**	350444-2

Special Contacts

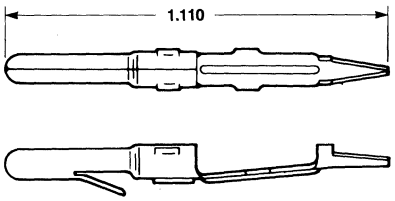
Stock Thickness: .012



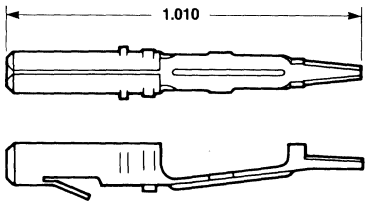
Solder Tab Pin



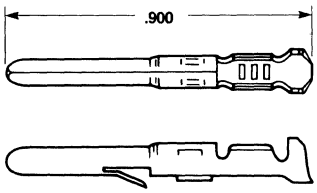
Solder Tab Socket



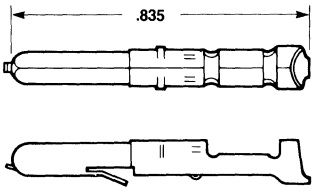
Pc Board Pin



Pc Board Socket



Side Feed Ground Pin

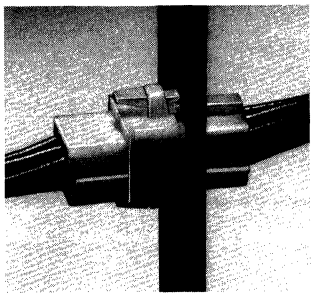


Precrimped Pin

Type of Contact	Material & Finish	Part Numbers		
		Pin		Socket
		Strip Form	Loose Form	Loose Form
Solder Tab	Phos. Brz., tin	—	—	60662-1
Pc Board	Phos. Brz., tin	—	61518-1*	61320-1*
	Phos. Brz., gold	—	—	61320-2*
	Phos. Brz., tin	—	350074-1**	350073-1**
Side Feed Ground Pin	Brass, tin	61527-2†	—	—
Precrimped Pin for Commoning Tabs	Brass, tin	—	60927-1	—

*For .062 max. board thickness—Board hole size .057 ± .003
**For .125 max. board thickness—Board hole size .057 ± .003
† 22-18 AWG

Panel Mount Connectors

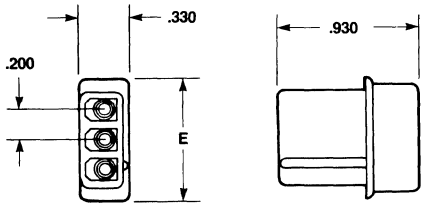


Material: 94V-2 Nylon, natural color

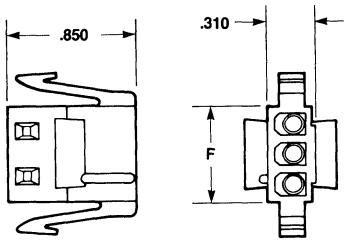
Related Product Data

Technical Documents-pg. 2169

3 and 4 Circuit Housings, In-Line

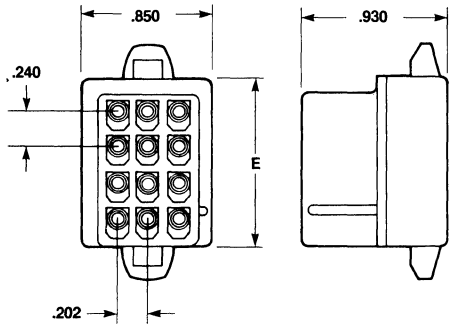


Pin Housing (Cap)

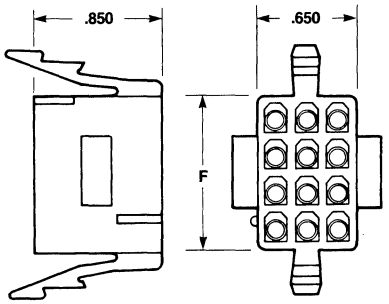


Socket Housing (Plug)

6, 9, 12 and 15 Circuit Housings, Matrix



Pin Housing (Cap)

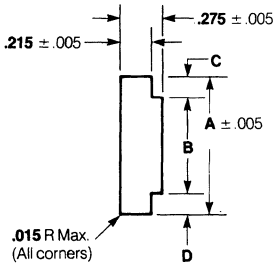


Socket Housing (Plug)

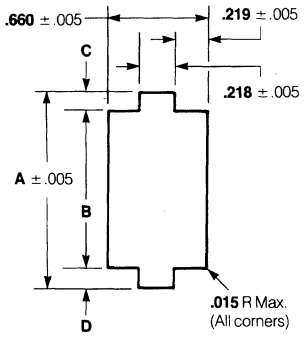
Number of Circuits	Dimensions		Part Numbers	
	E	F	Pin Housing	Socket Housing
3	.810	.630	1-480305-0	1-480304-0
4	1.010	.830	1-480426-0	1-480425-0
6	.665	.565	1-480276-0	1-480273-0
9	.905	.805	1-480277-0	1-480274-0
12	1.145	1.045	1-480278-0	1-480275-0
15	1.382	1.280	1-480324-0	1-480323-0

Socket Housing Panel Cutout

3 and 4 Circuit



6, 9, 12 and 15 Circuit



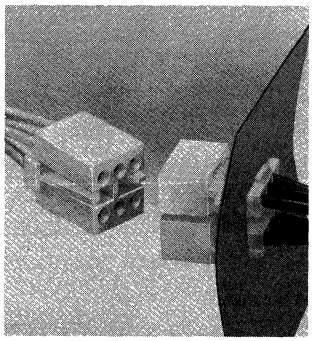
Note: Dimensions "C" and "D" are to be equal with a tolerance of ± .005.

Number of Circuits	Dimensions	
	A	B
3	.910	.645-.635
4	1.110	.845-.835
6	.840	.575-.570
9	1.075	.815-.810
12	1.320	1.055-1.050
15	1.550	1.290-1.285

Mounting Information

1. Recommended panel thickness—.025-.065
2. Both locking legs are to be squeezed together and the housing is to be inserted "straight-in", as opposed to a rocking manner.
3. The panel should be punched so that the housing enters the panel in the same direction as the punch.
4. The panel must not have any material (paint, porcelain,etc.) applied in the mounting hole area that would decrease the retention of the housing in the panel.
5. If the two items above are not complied with, the "A" dimension should be reduced .020 to assure proper retention.

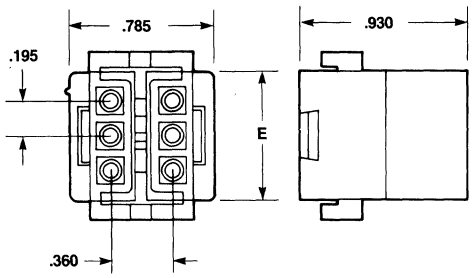
Motor Mount Connectors



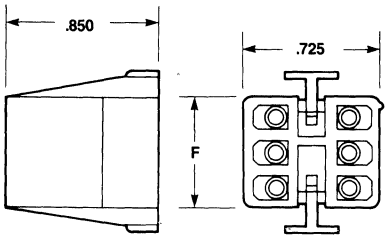
Material: 94V-2 Nylon, natural color

Related Product Data
Technical Documents-pg. 2169

6, 8, 10, 12 and 16 Circuit Housings, Matrix



Pin Housing (Cap)

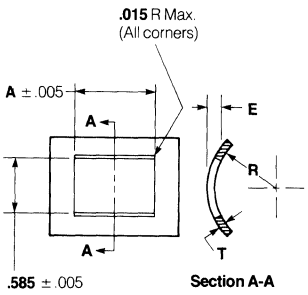


Socket Housing (Plug)

Number of Circuits	Dimensions		Part Numbers	
	E	F	Pin Housing	Socket Housing
6	**.705**	**.610**	1-480271-0	1-480270-0*
8	**.900**	**.805**	1-480284-0	1-480283-0*
10	**1.095**	**1.000**	1-480286-0	1-480285-0*
12	**1.290**	**1.195**	1-480288-0	1-480287-0
16	**1.680**	**1.585**	1-480439-0	1-480438-0

*Housing accepts double wire applications where individual insulation diameters do not exceed .115

Pin Housing Panel Cutout



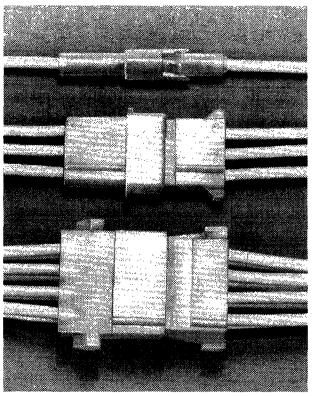
Note: Motor mount housings may be used in flat panels.

Number of Circuits	Dimension A
6	**.715**
8	**.910**
10	**1.105**
12	**1.300**
16	**1.690**

Mounting Information

1. Effective panel thickness "E" is .040-.100 and is dependent on "T" and "R".
2. The pin housing must be inserted in a rocking manner.
3. The panel must be punched so that the housing enters the panel in the same direction as the punch.

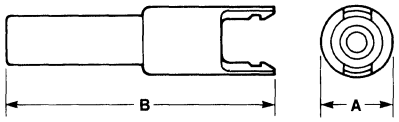
Free-Hanging Connectors



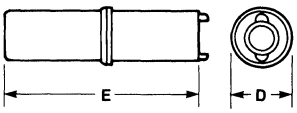
Material: 94V-2 Nylon, natural color

Related Product Data
Technical Documents-pg. 2169

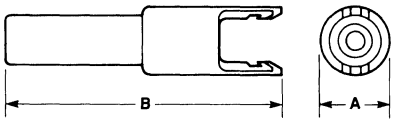
1 Circuit Housing



Pin Housing Detent Lock

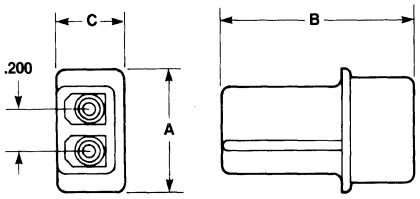


Socket Housing

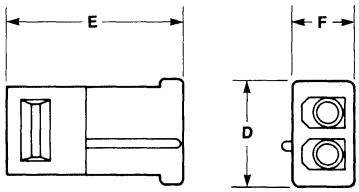


Pin Housing Positive Lock

2, 3 and 4 Circuit Housings, In-Line

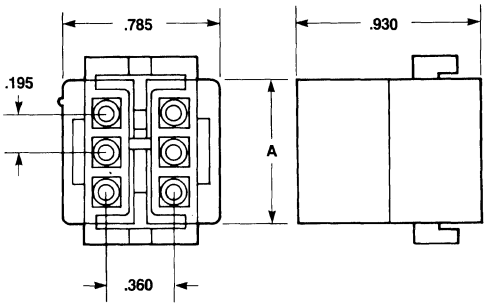


Pin Housing (Cap)

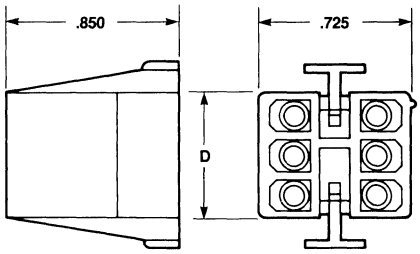


Socket Housing (Plug)

6, 8 and 10 Circuit Housings, Matrix



Pin Housing (Cap)



Socket Housing (Plug)

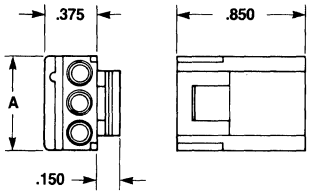
Number of Circuits	Dimensions						Part Numbers	
	A	B	C	D	E	F	Pin Housing	Socket Housing
1	.300	1.200	—	.260	.870	—	1-480350-0[1]	1-480349-0
1	.300	1.240	—	.260	.870	—	1-480351-0[2]	1-480349-0
2	.610	.930	.330	.530	.860	.295	1-480319-0[3]	1-480318-0[3]
3	.810	.930	.325	.825	.850	.310	1-480305-0[3]	1-480303-0[3]
4	1.010	.930	.330	1.025	.850	.310	1-480426-0[3]	1-480424-0[3]
6	.705	—	—	.610	—	—	1-480340-0	1-480270-0[3]
8	.900	—	—	.805	—	—	1-480345-0	1-480283-0[3]
10	1.095	—	—	1.000	—	—	1-480339-0	1-480285-0[3]

[1]Detent Lock
[2]Positive Lock
[3]Housing accepts double wire applications where individual insulation diameters do not exceed .115

Free-Hanging Connectors

Material: 94V-2 Nylon, natural color

2, 3 and 4 Circuit Positive Lock Socket Housings



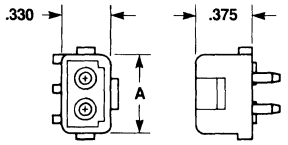
Number of Circuits	Dim. A	Socket Housing Part Numbers	Mates with Pin Headers
2	**.435**	1-480720-0	350539, 350540
3	**.630**	1-480721-0	350541, 350542
4	**.830**	1-480722-0	350543, 350544

Pc Board Pin Headers

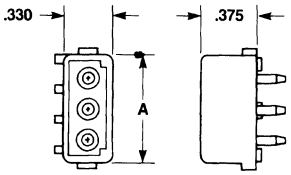
Material:
Housing—94V-2 Nylon, natural color
Contacts—Copper alloy

Related Product Data
Technical Documents-pg. 2169

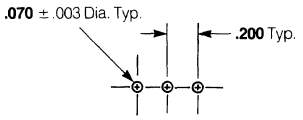
2, 3 and 4 Circuit, In-Line



Positive Lock



Detent Lock

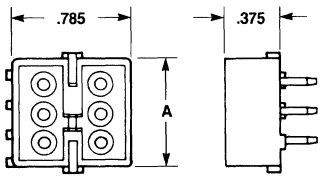


Recommended Pc Board Mounting Dimensions

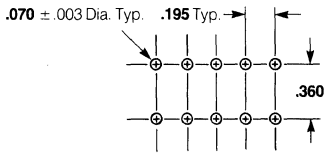
Number of Circuits	Dim. A	Finish	Part Numbers with Positive Lock		Part Numbers with Detent Lock		Mates with Socket Housing Part Number
			Standard Pin*	Long Pin**	Standard Pin*	Long Pin**	
2	**.515**	Tin plated	350539-1	350540-1	350209-1	350422-1	1-480318-0 Page 2163
		Gold plated	350539-2	350540-2	350209-2	350422-2	
3	**.715**	Tin plated	350541-1	350542-1	350210-1	350423-1	1-480303-0 Page 2163
		Gold plated	350541-2	350542-2	350210-2	350423-2	
4	**.915**	Tin plated	350543-1	350544-1	350211-1	350424-1	1-480424-0 Page 2163 770156 Page 2168
		Gold plated	350543-2	350544-2	350211-2	350424-2	

*Use Standard Pin for .062 thick pc board
** Use Long Pin for .125 thick pc board

6, 8, 10, 12 and 16 Circuit, Matrix



Positive Lock



Recommended Pc Board Mounting Dimensions

Number of Circuits	Dim. A	Finish	Part Numbers Standard Pin*	Part Numbers Long Pin**	Mates with Socket Housing Part Number
6	**.705**	Tin plated	1-380999-0	350425-1	1-480270-0 Page 2163
		Gold plated	2-380999-0	350425-2	
8	**.900**	Tin plated	350212-1	350426-1	1-480283-0 Page 2163
		Gold plated	350212-2	350426-2	
10	**1.095**	Tin plated	1-380991-0	350219-1	1-480285-0 Page 2163
		Gold plated	2-380991-0	350219-2	
12	**1.290**	Tin plated	350213-1	350220-1	1-480287-0 Page 2162
		Gold plated	350213-2	350220-2	
16	**1.680**	Tin plated	350214-1	350427-1	1-480438-0 Page 2162
		Gold plated	350214-2	350427-2	

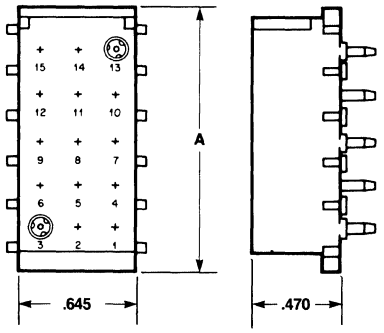
*Use Standard Pin for .062 thick pc board
**Use Long Pin for .125 thick pc board

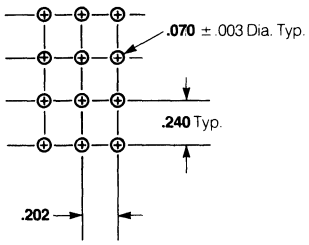
Pc Board Socket Headers

Material:
Housing—94V-2 Nylon, natural color
Contact—Copper alloy

Related Product Data
Technical Documents-pg. 2169

6, 9, 12 and 15 Circuit, Matrix





Recommended Pc Board Mounting Dimensions

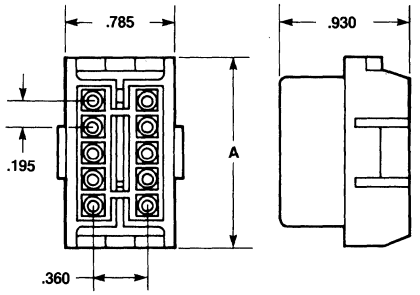
Number of Circuits	Dim. A	Finish	Part Numbers		Mates with Pin Housing Part Number
			Standard Pin*	Long Pin**	
6	.720	Tin plated	350641-1	350576-1	1-480276-0 Page 2161
		Gold plated	350641-2	350576-2	
9	.960	Tin plated	350642-1	350577-1	1-480277-0 Page 2161
		Gold plated	350642-2	350577-2	
12	1.200	Tin plated	350643-1	350578-1	1-480278-0 Page 2161
		Gold plated	350643-2	350578-2	
15	1.440	Tin plated	350644-1	350579-1	1-480324-0 Page 2161
		Gold plated	350644-2	350579-2	

*Use Standard Pin for .062 thick pc board
**Use Long Pin for .125 thick pc board

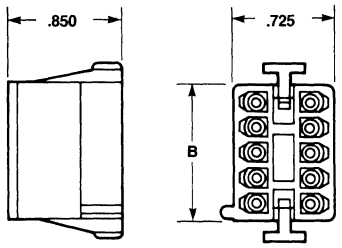
Cap Mount Connectors

Material: 94V-2 Nylon, natural color

6, 10 and 12 Circuit Housings, Matrix



Pin Housing (Cap)

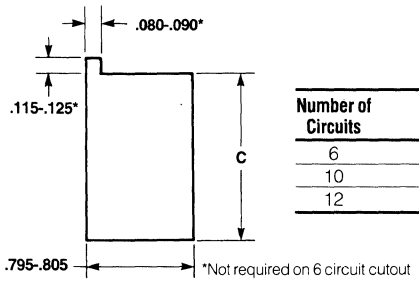


Socket Housing (Plug)
(Accepts double wire applications where individual insulation diameters do not exceed .115)

Number of Circuits	Dimensions		Part Numbers	
	A	B	Pin Housing	Socket Housing
6	**1.015**	**.610**	1-480402-0	1-480765-0
10	**1.405**	**1.000**	1-480432-0	1-480431-0
12	**1.600**	**1.195**	1-480434-0	1-480433-0

Pin Housing (Cap) Panel Cutout

(as viewed from punched side)



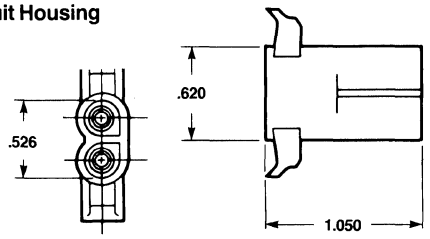
Number of Circuits	Dim. C
6	**.845-.855**
10	**1.230-1.235**
12	**1.425-1.430**

Recommended panel thickness—.020-.050

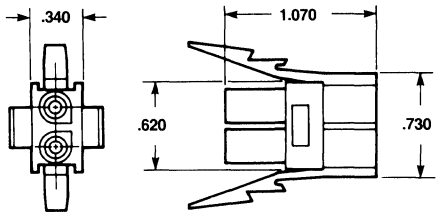
Special Application Panel Mount Connector

Material: 94V-2 Nylon, natural color

2 Circuit Housing



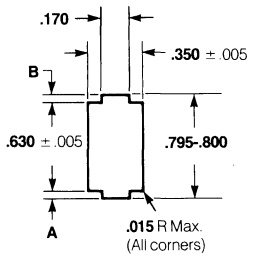
Pin Housing (Cap)
Part No. 1-480732-0



Socket Housing (Plug)
Part No. 1-480731-0

Socket Housing (Plug) Panel Cutout

Recommended panel thickness—.045-.085



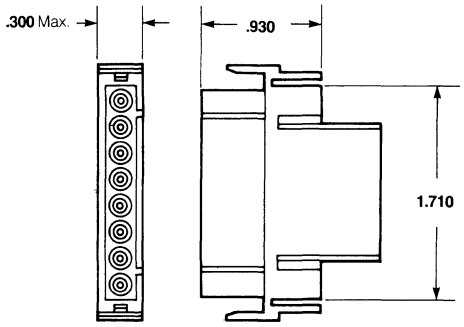
Mounting Information

1. Both locking legs are to be squeezed together and the housing is to be inserted "straight-in", as opposed to a rocking manner.
2. Dimensions "A" and "B" are to be equal within a tolerance of .005.
3. The panel should be punched so that the housing enters the panel in the same direction as the punch.
4. The panel must not have any material (paint, porcelain, etc.) applied in the mounting hole area that would decrease the retention of the housing in the panel.

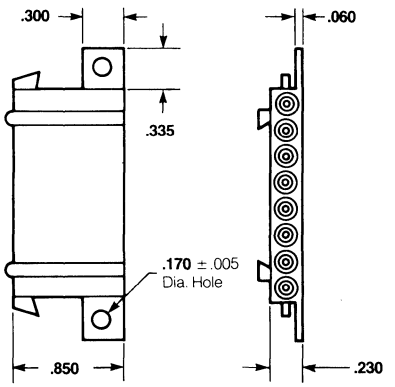
Flange Mount Connector

Material: 94V-2 Nylon, natural color

8 Circuit Housing

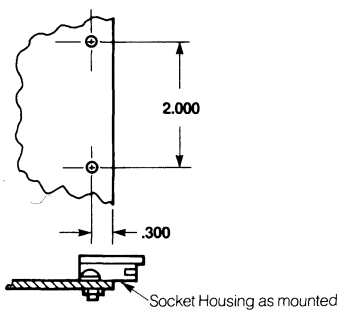


Pin Housing (Cap)
Part No. 1-480460-0



Socket Housing (Plug)
Part No. 1-480459-0
(Extraction Tool Part No. 693597-1)

Recommended Socket Housing (Plug) Mounting

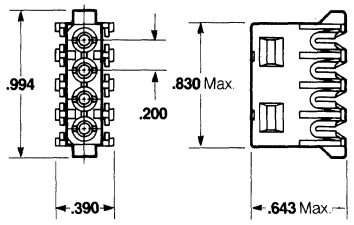


Related Product Data
Technical Documents-pg. 2169

Insulation Displacement Plug Assemblies

4 Circuit

Material and Finish:
Housing—94V-2 Nylon
Contact—Phosphor bronze, tin plated

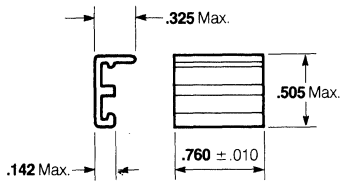


Wire Size AWG	Housing Color	Part Numbers
22	Red	770156-2
20	Yellow	770156-4
18	Orange	770156-3
16	Blue	770156-5

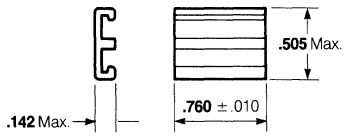
Notes:
1. Application Hand Tool - Head No. **231894-1**, Handle No. **58074-1**
2. These housings mate with vertical and right-angle pc board headers found on pages 2164, 2165 and 2168.

Dust Covers

Material:
94V-0 PVC, cream color



For Standard Wiring
Part No. 770232-1

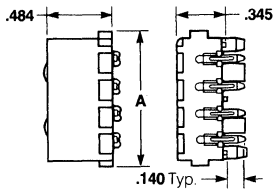


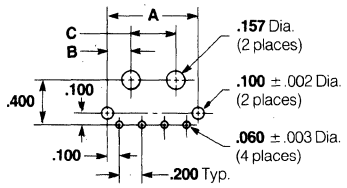
For Feed Through Wiring
Part No. 770233-1

Right-Angle Mount Pc Board Headers

Through-Board Contacts

Contact Material and Finish:
Phosphor bronze, pre-tin



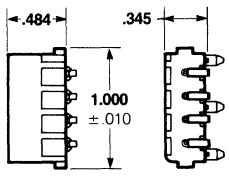


Recommended Pc Board Layout
(.062 thick pc board)

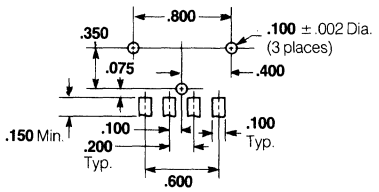
Number of Circuits	Dimensions A	B	C	Housing Material	Part Numbers	Mates with Socket Housing Part Number
3	.600	.150	.300	94V-0 Nylon, natural	643488-1*	1-480303-0 Page 2163
4	.800	.200	.400	94V-2 Nylon, natural	641737-1*	1-480424-0 Pg. 2163 770156 above
4	.800	.200	.400	94V-0 Nylon, brick red	1-641737-1*	1-480424-0 Pg. 2163 770156 above

Surface Mount Contacts

Material and Finish:
Housing—94V-2 Nylon, natural color
Contact—Phosphor bronze, pre-tin



4 Circuit
Part No. 770149-1*



Recommended Pc Board Layout
(.062 thick pc board)

Mates with Socket Housing Part No. -
1-480424-0 Pg. 2163 & 770156 above

Related Product Data
Technical Documents-pg. 2169

*UL Recognition Pending

Various technical documents are available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-1031 Universal MATE-N-LOK Free-Hanging and Panel Mount Connectors
108-1053 Universal MATE-N-LOK Pc Board Headers
108-5222 Universal MATE-N-LOK Connectors (ACTION PIN Contacts)
108-1090 Universal MATE-N-LOK II Connectors
108-1022 MR Miniature Rectangular Connectors
108-5138 Mini-Universal MATE-N-LOK Connectors (94V-0)
108-5151 Mini-Universal MATE-N-LOK Connectors (94V-2)
108-1000 Commercial MATE-N-LOK Free-Hanging, Panel Mount and Motor Mount Connectors
108-1077 Commercial MATE-N-LOK Pc Board Headers
108-1032 .140 MATE-N-LOK Connectors

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-1010 Universal MATE-N-LOK Connectors
114-1043 Universal MATE-N-LOK II Connectors
114-1041 MR Miniature Rectangular Connector Crimping Specifications for Grounding Pin
114-5050 Mini-Universal MATE-N-LOK Contact Crimping Specifications
114-1012 Commercial MATE-N-LOK Connectors
114-1007 .140 MATE-N-LOK Connectors

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

Universal MATE-N-LOK Connectors
IS 7300 Contact and Housing Selection Chart
IS 7714 Plug, Cap, Headers, Pin, Socket and Accessories

Universal MATE-N-LOK II Connectors
IS 3200 Housing, Contacts and Accessories

MR Miniature Rectangular Connectors
IS 7668 Pin, Socket, Housing, Contacts and Accessories

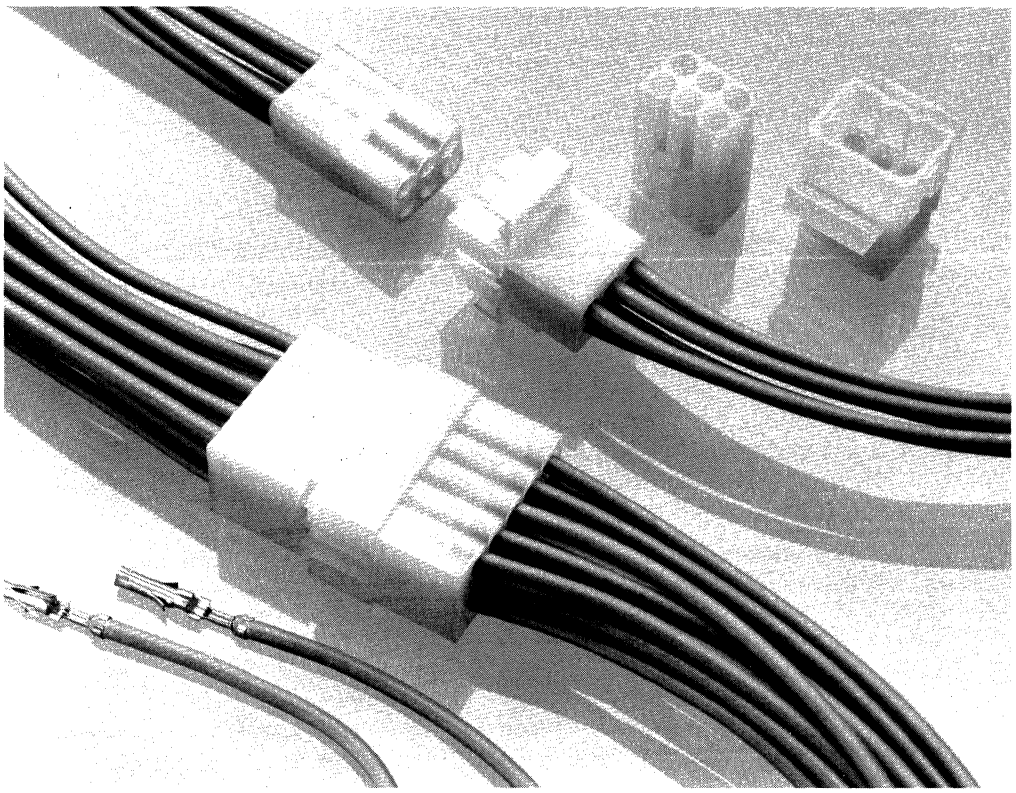
Mini-Universal MATE-N-LOK Connectors
IS 105J Connector
IS 107J Hand Tool
IS 108J Contact Extraction Tool

Commercial MATE-N-LOK Connectors
IS 7209 Commoning Tabs
IS 7166 Panel Mount Connectors
IS 7167 Motor Mount Connectors
IS 7200 Free-Hanging Connectors
IS 7201 Detent Engagement Connectors, Two and Three Circuit
IS 7215 Single Circuit Connectors
IS 7228 Single Circuit Connectors
IS 3186 Insulation Displacement Connector

Specifications subject to change.
For latest design specifications...
1-800-522-6752

.093 [2.36] and .062 [1.57] Soft-Shell Commercial Pin and Socket Connectors

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



Product Facts

- Polarized
- Rear-cavity identification
- Low contact-mating force
- Dual locking lances
- Detent and positive locking
- Tin and gold plating
- Panel-mounting and free-hanging styles
- "F" crimping
- Applicator and hand tool available
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455

AMP .093 [2.36] and .062 [1.57] Soft-Shell Commercial Pin and Socket connectors form a total system of economical commercial-grade connectors and offer compatibility with competitive soft shells. Based on .093 [2.36] and .062 [1.57] pin diameters, one of their major advantages is their low applied cost, which is due largely to the economies of AMP automatic termination equipment.

In addition to their compatibility with high-speed application machinery (such as the AMPOMATOR CLS machine), these contacts cover a wire range from 24 to 14 AWG [0.2 to 2 mm^2] for the .093 [2.36] contact and 30 to 18 AWG [0.05 to 0.9 mm^2] for the .062 [1.57] contact. They accept wires with insulation diameters as broad as .180 [4.57], and they are available in brass and phosphor bronze with tin or gold plating. Housings are available in 1 to 9 positions for the .062 [1.57] contact and 1 to 15 positions for the .093 [2.36] contact.

The AMP .093 [2.36] and .062 [1.57] Soft-Shell Commercial Pin and Socket connectors include dual locking lances, which secure the contacts into the housings firmly. Additionally, they are available with and without panel-mount flanges, and with and without locking detents. Their design also incorporates built-in polarization.

Specifications subject to change. Consult AMP Incorporated for latest design changes.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)
kg (kilogram)
mm^2 (square millimeter)
N (newton)

.093 [2.36] Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

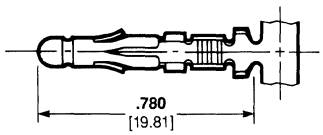
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

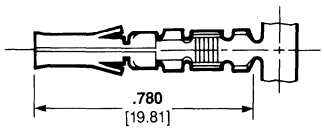
Pin Diameter .093 [2.36]

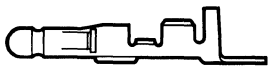
.010 [0.25] Stock Thickness

Pin and socket contacts can be used in either plug or receptacle housings.

Related Product Data:
Housings:
.198 [5.03] Centerline-pg. 2172
.250 [6.35] Centerline-pg. 2173 and 2174
Application Tooling-pg. 2176
Technical Documents-pg. 2176

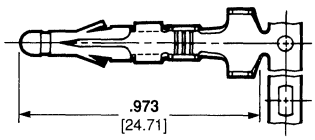


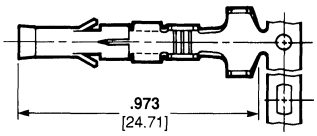


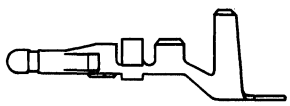


Pin

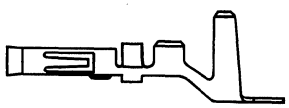
Socket







Pin
Part No. 770385-1



Socket
Part No. 770383-1

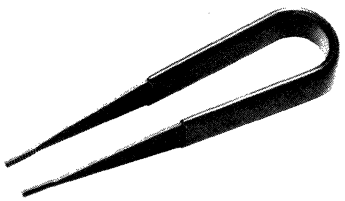
Wire Size AWG	Wire Size mm²	Ins. Dia. (Max.)	Material & Finish	Part Numbers Pin	Part Numbers Socket	Quick-Change Applicator
24-18	0.2-0.9	.110 2.79	Brass, Pre-tin	350418-1	350417-1	466656-1, 466656-2
			Brass, Gold	—	350417-3	
			Brass, Select Gold	350418-5	350417-5	
			Phosphor Bronze, Select Gold	350418-7	350417-7	
20-14	0.6-2	.140 3.56	Brass, Pre-tin	350416-1	350415-1	466878-1, 466878-2
			Brass, Select Gold	350416-5	350415-5	
			Phosphor Bronze, Pre-tin	—	350415-6	
			Phosphor Bronze, Select Gold	350416-7	350415-7	
		—*	Brass, Pre-tin	770259-1	770263-1	
18-14 or 2 (18)	0.8-2 or 2 (0.8-0.9)	.180 4.57 (per wire)	Brass, Pre-tin	770530-1	770529-1	567337-3,- 4
				770385-1**	—	567273-2
			Phosphor Bronze, Pre-tin	—	770383-1**	—

*No insulation wire barrel on contact.

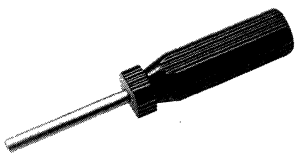
**These contacts have a .0125 [.318] stock thickness and accept two wires, each with maximum .180 [4.57] insulation diameters. They can be used only with the following housing part numbers: 770364-1, 770365-1, 770450-1, 770451-1, 770452-1, and 770453-1.

Notes: 1. Phosphor bronze contacts should be used in high-temperature/humidity cycling applications.

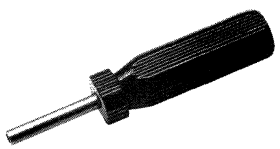
2. Quick-Change Applicator No. with -1 & -3 is for a "T" terminating unit used in automatic machines such as an AMPOMATOR machine; -2 & -4 is for a Model "K" AMP-O-LECTRIC bench machine.



Contact Insertion Tool (For Pins and Sockets) No. 91002-1



Contact Extraction Tool (For Pins) No. 844130-1



Contact Extraction Tool (For Sockets) No. 844132-1

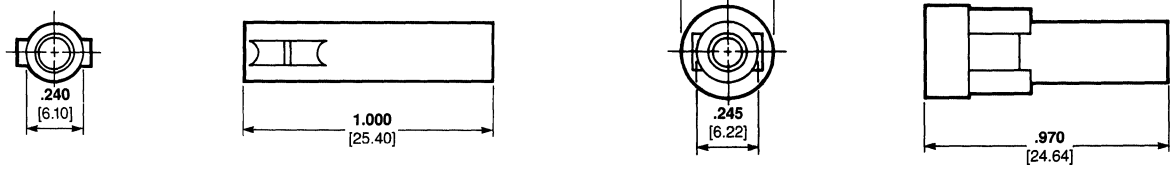
.198 [5.03] Centerline Housings For .093 [2.36] Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

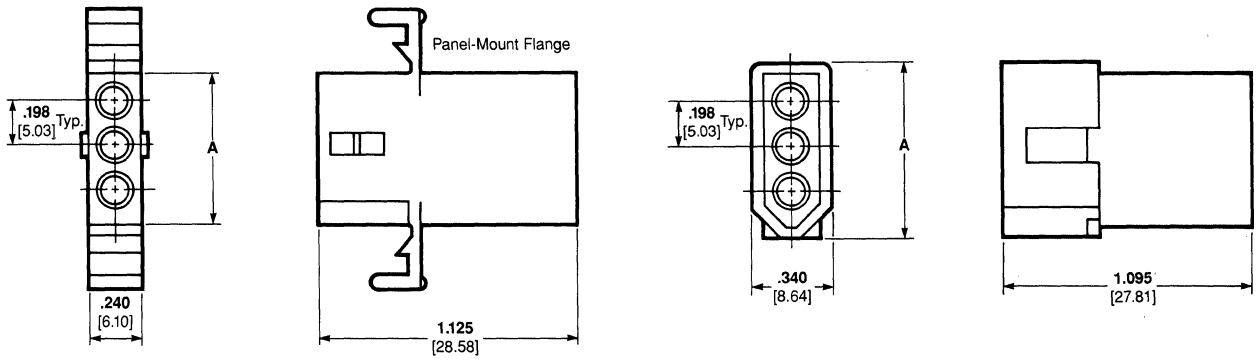
Material: 94V-2 nylon, natural color

1-Circuit Housing



Receptacle **Plug**

2, 3, and 4-Circuit Housings, In-Line



Receptacle **Plug**

No. Of Circuits	Dimension A		Receptacle Part Numbers				Plug Part Numbers	
			Panel-Mount		Free-Hanging			
	Receptacle	Plug	Without Detents	With Detents	Without Detents	With Detents	Panel-Mount	Free-Hanging
1	—	—	—	—	—	770063-1	—	770064-1
2	.540 13.72	.640 16.26	—	770066-1**	770067-1**	770065-1**	770068-1**	770069-1**
3	.670 17.02	.770 19.56	—	770071-1	770072-1	770070-1	770073-1	770074-1
4	.870 22.10	.970 24.64	—	770076-1	—	770075-1	770077-1	770078-1
5	1.070 27.18	1.170 29.72	—	—	—	770083-1	—	770084-1
6	.435 11.05	.535 13.59	770085-1	770087-1	770088-1	770086-1	770089-1	770090-1
9	.670 17.02	.770 19.56	770091-1	770093-1	770094-1	770092-1 770108-1*	770095-1	770096-1
12	.870 22.10	.970 24.64	770097-1	770099-1	770100-1	770098-1	770101-1	770102-1
15	1.070 27.18	1.170 29.72	770103-1	—	770105-1	—	770106-1	770107-1

*Mounting ears at wire end.
** .248 centerline

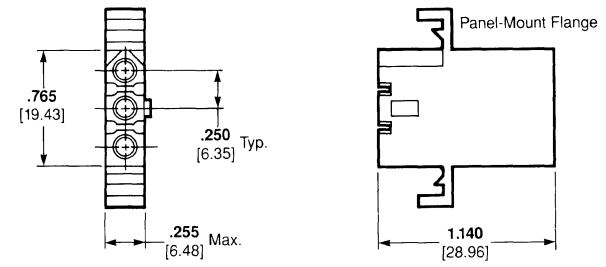
.250 [6.35] Centerline Housings For .093 [2.36] Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

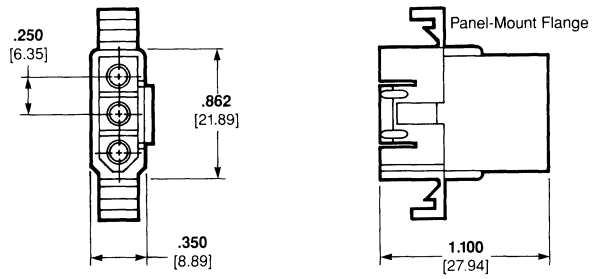
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material: 94V-2 nylon, natural color

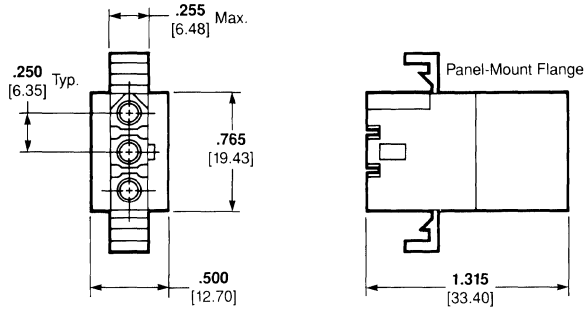
3-Circuit Housing, In-Line



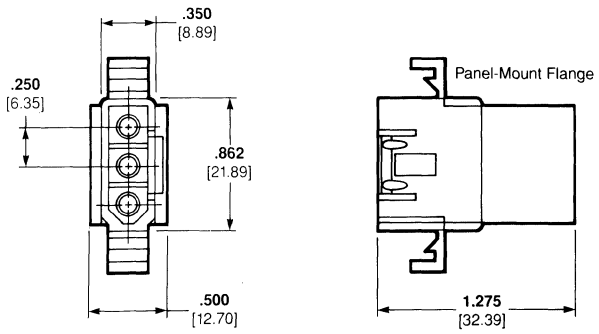
Receptacle



Plug

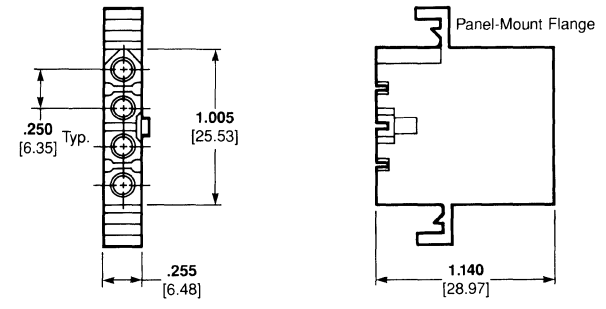


Receptacle
Part No. 770453-1

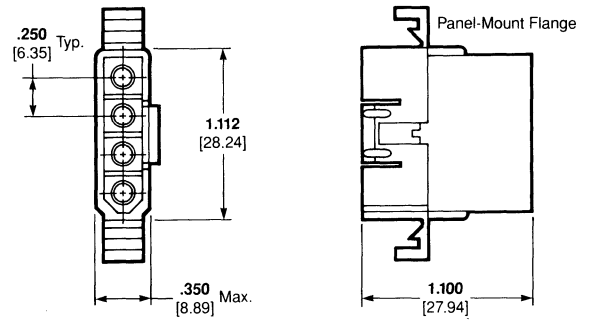


Plug
Part No. 770452-1

4-Circuit Housing, In-Line



Receptacle



Plug

No. Of Circuits	Receptacle Part Numbers		Plug Part Numbers	
	Panel-Mount	Free-Hanging	Panel-Mount	Free-Hanging
2**	—	770364-1*	—	770365-1*
3	770269-1	770339-1	770338-1	770276-1
	770453-1*	770451-1*	770452-1*	770450-1*
4	770329-1	770337-1	770330-1	770336-1
6	770372-1	770360-1	770373-1	770361-1

*These housings are used with Contact Part No. 770383-1 and 770385-1.
** .248 centerline

.062 [1.57] Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

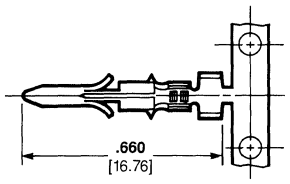
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Pin Diameter .062 [1.57]

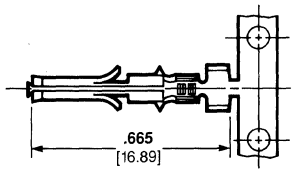
.008 [0.20] Stock Thickness

Pin and socket contacts can be used in either plug or receptacle housings.

Related Product Data:
Housings-pg. 2175
Application Tooling-pg. 2176
Technical Documents-pg. 2176



Pin



Socket

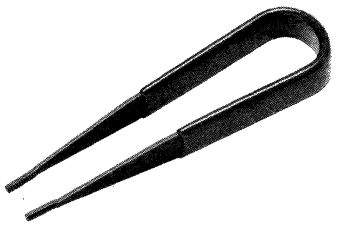
Wire Size AWG	Wire Size mm²	Ins. Dia.	Material & Finish	Part Numbers Pin	Part Numbers Socket	Quick-Change Applicator
30-24	0.05-0.2	.060 1.52 Max.	Brass, Pre-tin	640391-1	640392-1	466686-1, 466686-2
			Brass, Select Gold	640391-5	640392-5	
			Phosphor Bronze, Select Gold	640391-7	640392-7	
24-18	0.2-0.9	.050-.110 1.27-2.79	Brass, Pre-tin	350629-1	350628-1	687996-1, 687996-2
			Phosphor Bronze, Pre-tin	—	350628-2	
			Brass, Duplex Gold *	350629-4	350628-4	
			Brass, Select Gold	350629-5	350628-5	
			Phosphor Bronze, Select Gold	350629-6	350628-6	

Notes: 1. Phosphor bronze contacts should be used in high-temperature/humidity cycling applications.

2. Quick-Change Applicator No. with -1 is for a "T" terminating unit used in automatic machines such as an AMPOMATOR machine; -2 is for a Model "K" AMP-O-LECTRIC bench machine.

3. Socket extraction tool No. 844134-1 and pin extraction tool No. 455822-2.

* .000050 min. Gold in mating area, overall gold flash.



Contact Insertion Tool (For Pins and Sockets) No. 91002-1

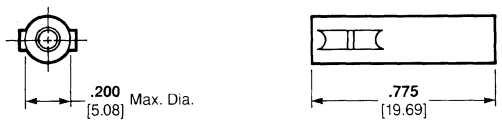
.145 [3.68] Centerline Housings For .062 [1.57] Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

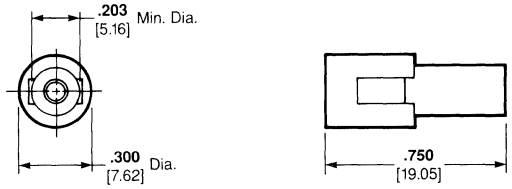
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Material: 94V-2 nylon, natural color

1-Circuit Housing

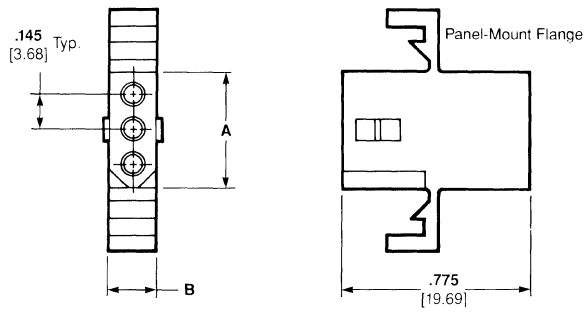


Receptacle

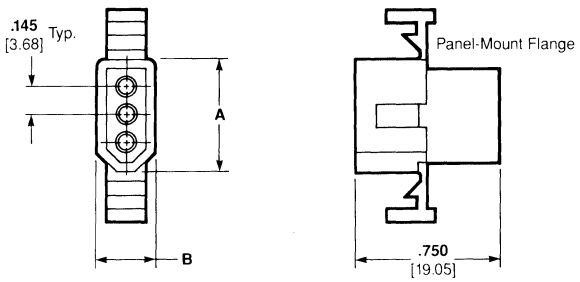


Plug

2, 3, and 4-Circuit Housings, In-Line



Receptacle



Plug

No. Of Circuits	Dimensions				Receptacle Part Numbers		Plug Part Numbers	
	Receptacle		Plug		Panel-Mount	Free-Hanging	Panel-Mount	Free-Hanging
	A Max.	B Max.	A	B				
1	–	–	–	–	–	770277-1	–	770278-1
2	.340 8.64	.199 5.05	.440 11.18	.300 7.62	770343-1	770342-1	770341-1	770340-1
3	.490 12.45	.199 5.05	.590 14.99	.300 7.62	770326-1	770333-1	770332-1	770331-1
4 (In-Line)	.635 16.13	.199 5.05	.733 18.62	.300 7.62	770335-1	770274-1	770334-1	770275-1
4 (Matrix)	.345 8.76	.345 8.76	.445 11.30	.445 11.30	770441-1*	770442-1*	770443-1**	770433-1**
6	.345 8.76	.495 12.57	.445 11.30	.600 15.24	770354-1	770356-1	770353-1	770355-1
9	.490 12.45	.495 12.57	.590 14.99	.600 15.24	770427-1	770429-1	770426-1	770428-1

* Length is .868
** Length is .843

Technical Documents

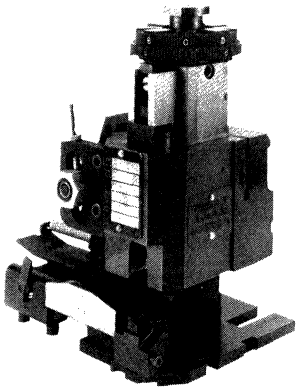
Various technical documents are available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the design, component and quality engineer.

108-1038	Commercial .093 Diameter Pin and Socket Connector
108-1037	.062 Diameter Pin and Socket Connector

Application Specifications describe the requirements for using the product in its intended application and/or crimping information. They are intended for the packaging and design engineer and the machine setup person.

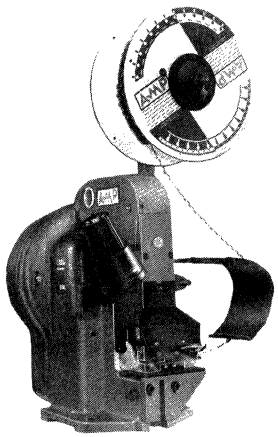
114-49000	Commercial .093 Diameter Pin and Socket Contact
114-1013	.062 Diameter Pin and Socket Contact



Application Tooling

Quick-Change Applicator

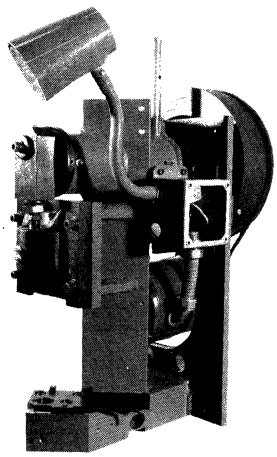
Featuring a "quick-change" design, this applicator can be changed in a matter of minutes to afford maximum flexibility and minimum production downtime. It is also capable of handling similar products and various wire sizes simply by dialing in the exact wire and insulation crimp heights.



AMP-O-LECTRIC Model "K" Terminating Machine

This device is the most commonly used terminating machine for bench-top operation as a power source for operating standard and quick-change applicators because it is easily adapted to either mechanical or air feed systems. It is also easily adapted to serve as the basic component of many special machines by modification and/or installing available accessories and kits.

Rates of up to 1800 per hour are attainable with the quick-change applicator.



Model "T" Terminating Unit

This unit is designed to use quick-change applicators, and is installed on the AMPOMATOR CLS II, LM 40 Series, LM 43 and LM 35 machines. It can also be mounted on Artos, Komax and other commercially available lead-making equipment.

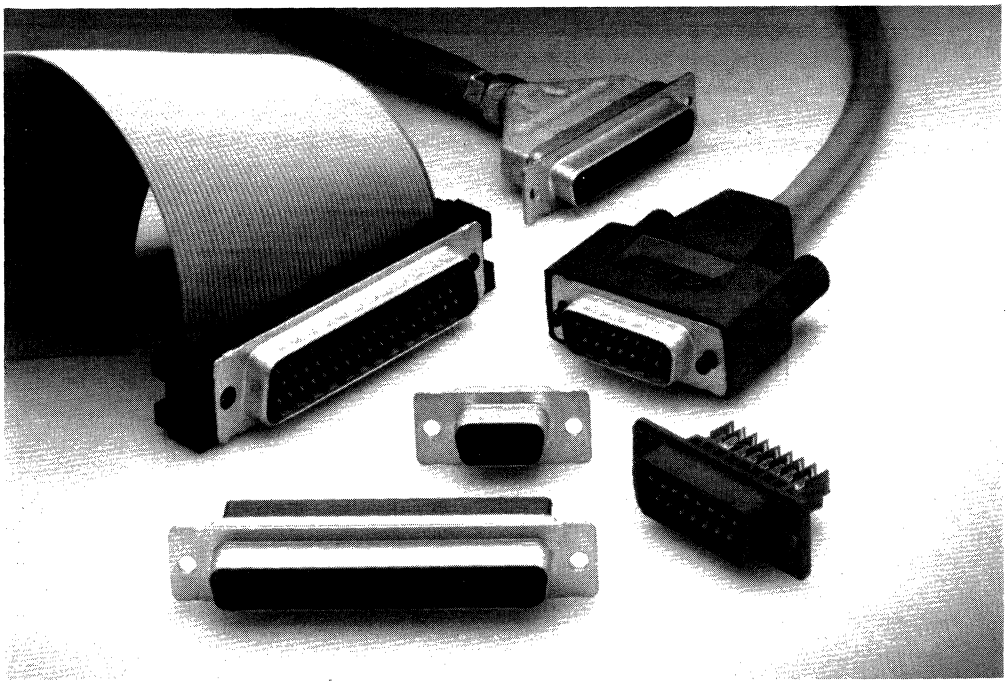
The unit is available in kit form, which includes one Model "T" Terminating Unit and necessary hardware to install the device. It is also available as a bench-mounted machine.

For more information on AMP machines, request the following AMP catalogs:

82123	(AMPOMATOR CLS II Machine)
82184	(LM 40 Series Machines)
82189	(LM 43 Machine)
82190	(LM 35 Machine)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Subminiature D Commercial Connectors (AMPLIMITE)



Introduction

AMP's Subminiature D Commercial AMPLIMITE family of connectors is the industry's most extensive and versatile. These subminiature D connectors have become the most popular type of input/output (I/O) connectors in use today. Established and proven, they are rugged, easily used and have been widely adopted in standards for serial communications, telecommunications and local area networks (LANs).

All front metal-shell right-angle board mount connectors lend themselves to robotic placement onto the pc board. This feature speeds handling and production, thereby reducing applied cost.

The connectors come in two series, HD-20 and HD-22, each having five sizes related to the size of the shell. The shell sizes, numbering from one through five, are identical for each series, while the number of positions differ. Depending on the size of the contacts, it is possible to have different numbers of contact cavities in a given shell size.

HD-20 connectors use size 20 contacts, which are based on .040 inch diameter pins with contact centerlines of .109 x .112 inch. This size is the more common variety.

HD-22 connectors use size 22 contacts, based on .030 inch diameter pins on centerlines of .090 x .078 inch for shell sizes 1, 2 and 3; .095 x .078 inch for shell size 4; and .095 x .082 inch for shell size 5. The smaller pin diameters of the HD-22 series allow roughly 65 percent more contacts to be held in a given shell size. For example, shell size three holds 25 contacts in an HD-20 connector and 44 contacts in an HD-22 connector.

The leading standard defining subminiature D connectors is MIL-C-24308. Most connectors, however, do not meet all these Mil-spec requirements because the commercial world doesn't require them.

EIA standard RS-232, which details low-speed serial communication between data communication devices (computers, terminals, modems, etc.) recommends 25 position subminiature D connectors. 25 position subminiature D connectors are often called "RS-232 connectors" or "EIA connectors."

RS-449, a newer, "upgraded" version of RS-232 that permits higher data rates, uses 9 position and 37 position connectors.

In Europe CCITT standards for serial data communications also recommend subminiature D connectors. The standards require the connectors to meet the requirements of ISO 2110, the main International Standards Organization document defining subminiature Ds.

Another popular standard specifying these connectors is IEEE 802.3, which covers bus-structured LANs such as Ethernet. Here the interface between workstations and the LAN transceiver uses HDP-20 15 position connectors and the cable has a receptacle on one end and plug on the other.

The main application of subminiature D connectors is for I/O, connecting the inside electronics of equipment to the outside world. More specifically, subminiature D connectors are used for serial communications. In such applications, a connector mounts at the equipment skin, connecting the electronics either directly by mounting to the pc board or indirectly through jumper wires. A cable-mounted connector mates to it, carrying signals to and from the outside world.

Subminiature D connectors are one of the workhorse connectors in the electronics industry. While the "standard" subminiature D connector is the full metal-shell version using crimp, solder cup, or posted contacts, the line has diversified to include insulation displacement, front metal-shell, all-plastic, shielded, and filtered versions.

Numerical values

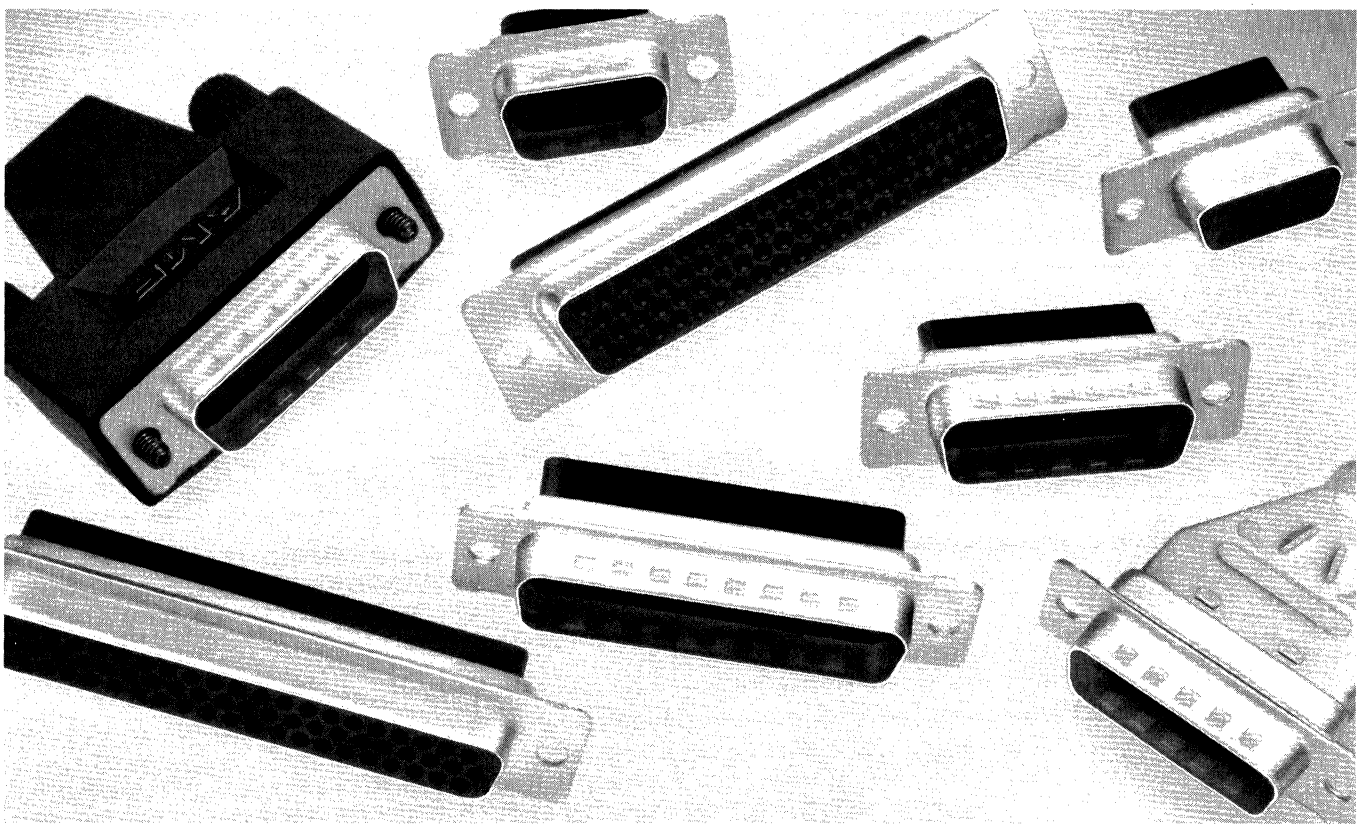
To convert U.S. customary unit values in this catalog to their metric equivalents, use the following formulas:

To convert from	to	Multiply by
inch	millimetre (mm)	2.540 000 x 10
foot	metre (m)	3.048 000 x 10^{-1}
pound-force	newton (N)	4.448 222

To convert wire size (AWG) to the equivalent metric value using the circular mil area of the wire, use the following formula: circular mil area (CMA)/1550.003 = square millimetre (mm^2)

HDP-22 Crimp Snap-In Contact Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

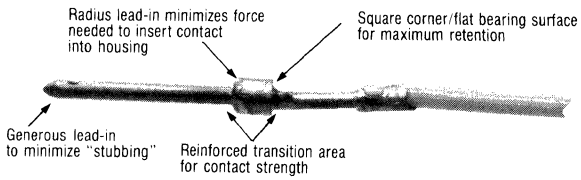


Product Facts:

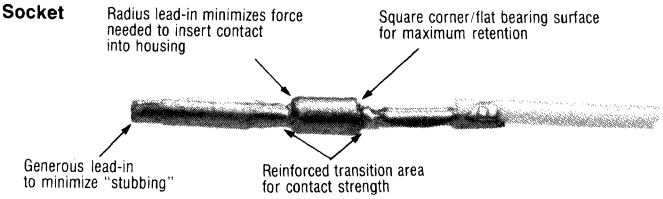
- Approximately 65% higher density than HD-20 connectors
- Lower cost, commercial version of the military approved Series 90 family
- Tin plated shells with grounding indents
- Available with shielding overmold hardware and shielding enclosure kits
- Capable of using numerous standard HD-20 cable clamps and mating hardware
- Low cost, high performance, precision-formed crimp contacts
- Intermatable with any size 22 Subminiature D connector dimensionally complying with MIL-C-24308
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455

Contact Retention Features

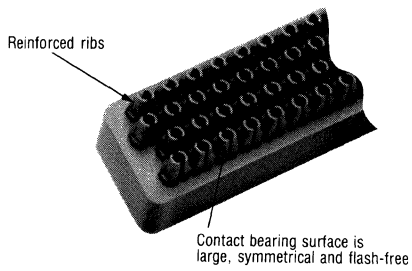
Pin



Socket



Housing
(Cutaway)

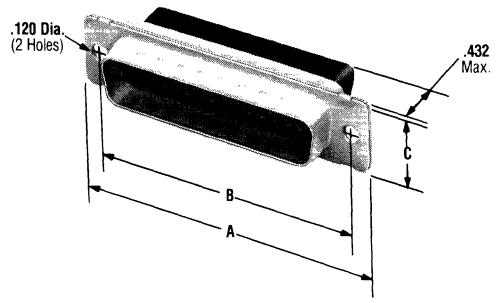


HDP-22 Crimp Snap-In Contact Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

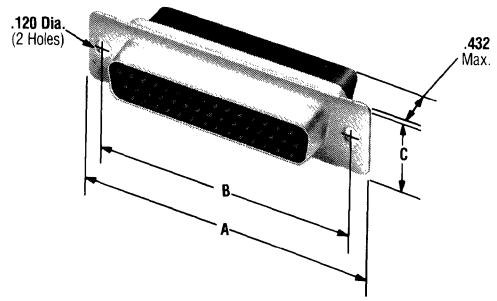
Dimensioning:
Dimensions are in inches

Plugs



With Grounding Indents

Receptacles



Shell Size	No. of Contact Positions	Dimensions			Part Numbers	
		A	B	C	Plug	Receptacle
1	15	1.213	.984	.494	748364-1	748565-1
2	26	1.541	1.312	.494	748365-1	748566-1
3	44	2.088	1.852	.494	748366-1	748567-1
4	62	2.729	2.500	.494	748367-1	748568-1
5	78	2.635	2.406	.605	748368-1	748569-1

Note: Plugs accept size 22 DF pin contacts and receptacles accept size 22 DF socket contacts.

Material and Finish:

Shell—Steel, tin plated

Insert—94V-0 rated thermoplastic, black

Related Product Data:

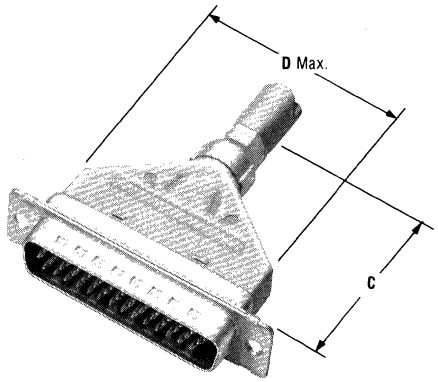
Mateable Connectors:
HD-22 Right-Angle Board Mount-page 2227
Mating/Panel Mounting-page 2254
Cable Clamps-pages 2202 - 2207
Mating Hardware-pages 2208 - 2215
Technical Documents-pages 2258 & 2259

HDP-22 Crimp Snap-In Contact Connectors

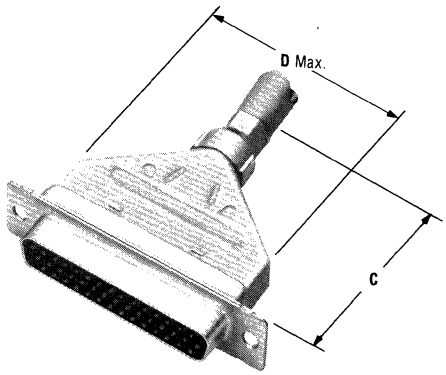
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Basic Shielding Hardware Kits



Plug



Receptacle

Shell Size	No. of Contact Positions	Dimensions		Recommended Cable Insulation Diameter	Kit Numbers	
		C	D		Plug	Receptacle
1	15	1.535	.700	.165-.455	748468-1	748634-1
2	26	1.535	1.024	.165-.455	748469-1	748635-1
3	44	1.535	1.576	.165-.455	748470-1	748636-1
4	62	1.892	2.215	.338-.562	748471-1	748637-1
5	78	1.876	2.120	.338-.490	748472-1	748638-1

Notes: 1. Plugs accept size 22 DF pin contacts and receptacles accept size 22 DF socket contacts.
2. Components of the kits are shipped unassembled and bulk-packaged in quantities of 100 pieces.

Each kit contains:

- Connector
- Inner shield
- Outer shield

Contacts and ferrules must be purchased separately.

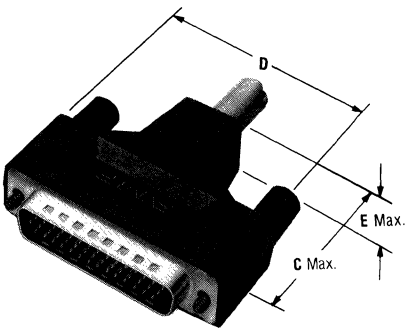
Material and Finish:

Connector Shell—Steel, tin plated
Connector Insert—94V-0 rated thermoplastic, black
Shields—Steel, tin plated

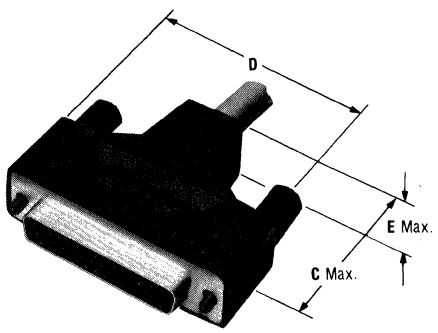
Related Product Data:

Contacts-page 2181
Ferrules-page 2197
Application Tooling-pages 2198 & 2199
Mateable Connectors-pages 2179, 2227
Mating Hardware-pages 2208-2215
Mating/Panel Mounting-page 2254
Technical Documents-pages 2258 & 2259

Shielding Hardware Enclosure Kits



Plug



Receptacle

Shell Size	No. of Contact Positions	Dimensions			Recommended Cable Insulation Diameter	Kit Numbers		Shielding Enclosure Expansion Tool	
		C	D	E		Plug	Receptacle	Cable O.D. Max.	Part No.
1	15	1.640	1.350	.630	.190-.375	748473-1	748639-1	.335	58241-4
2	26	1.640	1.680	.630	.190-.375	748474-1	748640-1		
3	44	1.640	2.205	.630	.217-.435	748475-1	748641-1	.455	58241-1
4	62	2.010	2.860	.730	.338-.562	748476-1	748642-1	.562	58241-2
5	78	2.010	2.770	.730	.338-.490	748477-1	748643-1		

Notes: 1. Plugs accept size 22 DF pin contacts and receptacles accept size 22 DF socket contacts.
2. Components of the kits are shipped unassembled and bulk-packaged in quantities of 100 pieces.

Each Kit Contains:

- Connector
- Inner shield
- Outer shield
- Enclosure
- Two jackscrews

Contacts and ferrules must be purchased separately.

Material and Finish:

Connector Shell—Steel, tin plated
Connector Insert—94V-0 rated thermoplastic, black
Shields—Steel, tin plated
Enclosure—PVC, black
Jackscrews—Zinc alloy

Related Product Data:

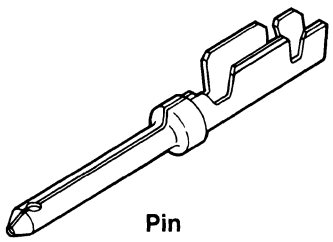
Contacts-page 2181
Ferrules-page 2197
Application Tooling-pages 2198 & 2199
Mateable Connectors-pages 2179, 2227
Mating Hardware-pages 2208 - 2215
Mating/Panel Mounting-page 2254
Technical Documents-pages 2258 & 2259

HDP-22 Crimp Snap-In Contact Connectors

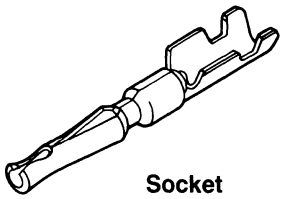
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Precision Formed Crimp Snap-In Contacts, Size 22 DF



Pin



Socket

Wire Size AWG	Insulation Diameter Max.	Contact Finish (Plating Code)	Contact Part Numbers				Tooling	
			Pin		Socket		Strip Form	Loose Form
			Strip Form	Loose Form	Strip Form	Loose Form	Quick-Change Applicator	Hand Tool
22-28	.040	A	748333-2	748333-4	748610-2	748610-4	567243-2* 466975-1**	90430-1
		B	748333-5	748333-7	748610-5	748610-7		

*For use with AMP-O-LECTRIC Machine.
**For use with AMP-O-MATIC Stripper/Crimper Machine.

Notes: 1. Strip form contacts shipped 20,000 pieces/reel.
2. Loose form contacts shipped in unit quantities of 1,000 pieces.

Insertion/Extraction Tool No. 91285-1

This tool includes interchangeable tips to Insert/Extract:
Size 22, 28-22 AWG Crimp Contacts
Size 20, 28-20 AWG Crimp and Solder Cup Contacts
Size 20, Posted Contacts

Material:

Pin—Brass
Socket—Phosphor bronze

Finish:

A—Duplex plated .000030 gold on mating end, tin-lead on crimp barrel, with entire contact nickel underplated
B—Duplex plated gold flash on mating end, tin-lead on crimp barrel, with entire contact nickel underplated

Related Product Data:

Connectors used with-pages 2179 & 2180
Technical Documents-pages 2258 & 2259

Specifications subject to change.
For latest design specifications...
1-800-522-6752

HDE-20 IDC Connectors for Discrete Wire and Jacketed Cable

Product Facts

- Insulation displacement contacts preloaded in housings
- No wire stripping
- Post plated contacts with no bare edges
- Duplex plated contacts—Gold on mating end and tin on crimp end
- Patented contact designed to reliably terminate a wide range of wire sizes and insulation diameters
- Removable contacts for replacement and repair
- Crimp snap-in contacts available for making jumpers between circuits
- Selective loading of contacts available
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455

Typical Application Rates

Tool	Rate
Pistol Style	7.4 Sec./Line
Arbor Tool	5.0 Sec./Line
CHAMPOMATOR Machine	2.8 Sec./Line

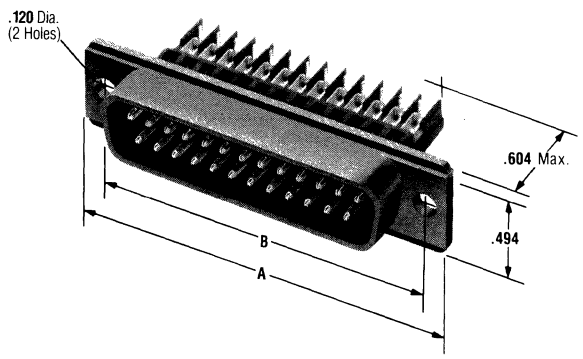
Note: Rates are based on total time to complete a double ended 25 position Jacketed Cable Assembly.

HDE-20 All-Plastic IDC Connectors

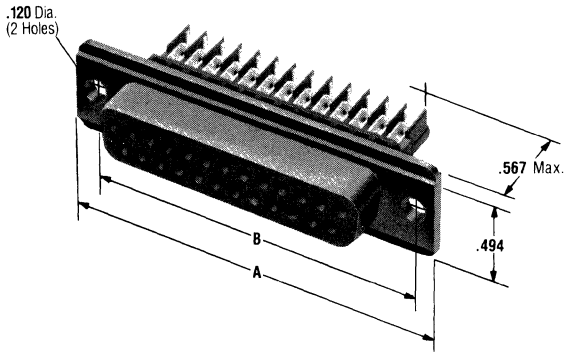
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Plugs



Receptacles



Material and Finish:

Housing—94V-0 rated thermoplastic, black

Contacts—Phosphor bronze

Contact Finish—Duplex plated:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Interchangeable Crimp Snap-In Contact-page 2187
Application Tooling-page 2187
Mateable Connectors:
HD-pages 2237-2240, 2248-2251 & 2253
HDF-page 2189
Mating/Panel Mounting-page 2254
Cable Clamps-pages 2202-2203
Mating Hardware-pages 2208-2215
Plug/Receptacle Adapters-page 2223
Connector Savers-page 2224
Transition Connector-page 2225
Technical Documents-pages 2258 & 2259

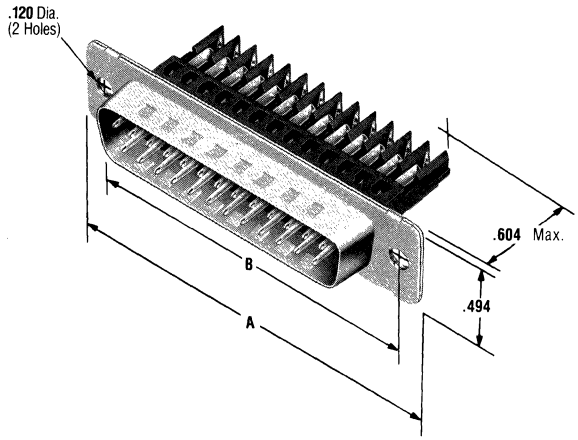
Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Contact Finish (Plating Code)	Connector Part Numbers: Contact Identification No. 1 for 30-26 AWG Wire — Plug	Contact Identification No. 1 for 30-26 AWG Wire — Receptacle	Contact Identification No. 2 for 26-22 AWG Wire — Plug	Contact Identification No. 2 for 26-22 AWG Wire — Receptacle	Contact Identification No. 3 for 22-20 AWG Wire — Plug	Contact Identification No. 3 for 22-20 AWG Wire — Receptacle
1	9	1.213	.984	A	745203-1	745201-1	745203-2	745201-2	745203-3	745201-3
				B	745203-4	745201-4	745203-5	745201-5	745203-6	745201-6
2	15	1.541	1.312	A	745207-1	745205-1	745207-2	745205-2	745207-3	745205-3
				B	745207-4	745205-4	745207-5	745205-5	745207-6	745205-6
3	25	2.088	1.852	A	745211-1	745209-1	745211-2	745209-2	745211-3	745209-3
				B	745211-4	745209-4	745211-5	745209-5	745211-6	745209-6
4	37	2.729	2.500	A	745215-1	745213-1	745215-2	745213-2	745215-3	745213-3
				B	745215-4	745213-4	745215-5	745213-5	745215-6	745213-6

Notes: 1. All connectors are preloaded with insulation displacement crimp contacts. Pins in plug connectors and sockets in receptacle connectors. Contacts accept a max. wire insulation thickness of .015 and a max. wire insulation dia. of .060.
2. HDE connectors are designed for terminating solid or stranded (7-strand max.) wire.
3. Individual conductor strands should be larger than .005 inch diameter.
4. Extraction Tool No. 91232-1 is used to remove pin or socket contacts.
5. For terminating more than one wire, or a drain wire, use crimp contacts on page 2187.

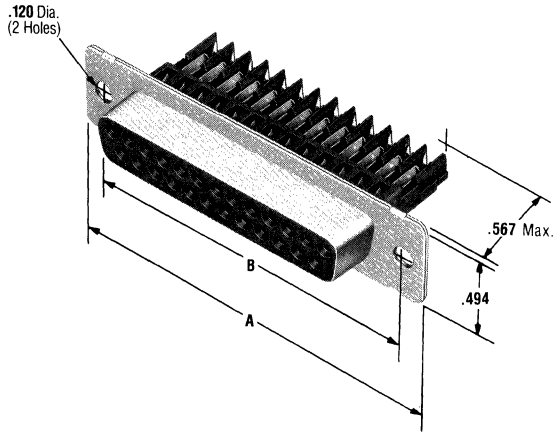
HDE-20 Metal-Shell IDC Connectors

Dimensioning:
Dimensions are in inches

Plugs



Receptacles



Material and Finish:

Shell—Steel, tin plated

Insert—94V-0 rated thermoplastic, black

Contacts—Phosphor bronze

Contact Finish—Duplex plated:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Interchangeable Crimp Snap-In Contact-page 2187

Application Tooling-page 2187

Mateable Connectors:
HDE-pages 2185 & 2186
HDF-page 2190
HDP-pages 2192-2194
HD-pages 2228-2236, 2241, 2242, 2244-2247 & 2252

Mating/Panel Mounting-page 2254

Cable Clamps-pages 2202-2207

Mating Hardware-pages 2208-2216

Plug/Receptacle Adapters-page 2222

Connector Savers-page 2224

Transition Connector-page 2225

Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions		Contact Finish (Plating Code)	Connector Part Numbers					
					Contact Identification No. 1 for 30-26 AWG Wire		Contact Identification No. 2 for 26-22 AWG Wire		Contact Identification No. 3 for 22-20 AWG Wire	
		A	B		Plug	Receptacle	Plug	Receptacle	Plug	Receptacle
1	9	1.213	.984	A	745492-1	745491-1	745492-2	745491-2	745492-3	745491-3
				B	745492-4	745491-4	745492-5	745491-5	745492-6	745491-6
2	15	1.541	1.312	A	745494-1	745493-1	745494-2	745493-2	745494-3	745493-3
				B	745494-4	745493-4	745494-5	745493-5	745494-6	745493-6
3	25	2.088	1.852	A	745496-1	745495-1	745496-2	745495-2	745496-3	745495-3
				B	745496-4	745495-4	745496-5	745495-5	745496-6	745495-6
4	37	2.729	2.500	A	745498-1	745497-1	745498-2	745497-2	745498-3	745497-3
				B	745498-4	745497-4	745498-5	745497-5	745498-6	745497-6

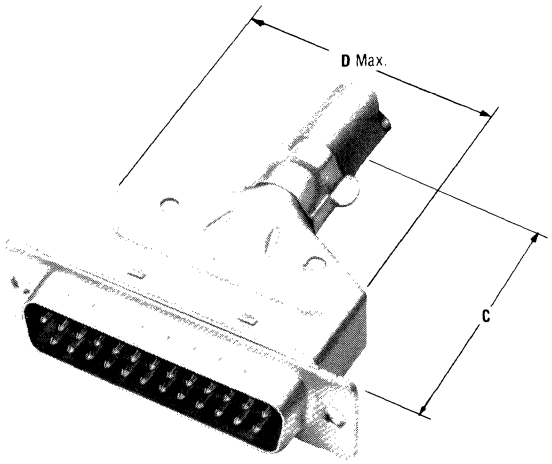
Notes: 1. All connectors are preloaded with insulation displacement contacts. Pins in plug connectors and sockets in receptacle connectors. Contacts accept a max. wire insulation thickness of .015 and a max. wire insulation dia. of .060.
2. HDE connectors are designed for terminating solid or stranded (7-strand max.) wire.
3. Individual conductor strands should be .005 diameter or larger.
4. Extraction tool No. 91232-1 is used to remove pin or socket contacts.
5. For terminating more than one wire, or a drain wire, use crimp contacts on page 2187.

HDE-20 Basic Shielding Hardware Kits

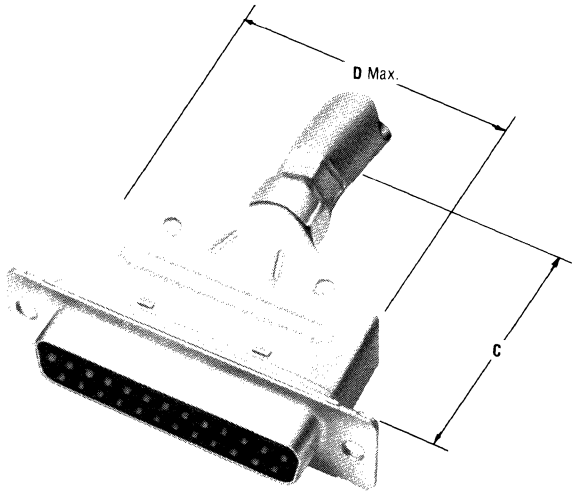
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Plugs



Receptacles



Each kit contains:

- Connector
- Inner shield
- Outer shield

Ferrules must be purchased separately.

Material and Finish:

Connector Shell—Steel, tin plated

Connector Insert—94V-0 rated thermoplastic, Black

Shield—Steel, tin plated

Contacts—Phosphor bronze

Contact Finish—Duplex plated:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Application Tooling-page 2187

Mateable Connectors:
HDE-page 2184
HDF-page 2190
HDP-pages 2192-2194
HD-pages 2228-2236, 2241, 2242, 2244-2247 & 2252

Mating/Panel Mounting-page 2254

Mating Hardware-pages 2208-2216

Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions		Recommended Cable Insulation Diameter	Contact Finish (Plating Code)	Kit Part Numbers					
		C	D			Contact Identification No. 1 for 30-26 AWG Wire		Contact Identification No. 2 for 26-22 AWG Wire		Contact Identification No. 3 for 22-20 AWG Wire	
						Plug	Receptacle	Plug	Receptacle	Plug	Receptacle
1	9	1.520	.678	.165-.455	A	747515-1	747516-1	747515-2	747516-2	747515-3	747516-3
					B	747515-4	747516-4	747515-5	747516-5	747515-6	747516-6
2	15	1.520	1.002	.165-.455	A	747531-1	747532-1	747531-2	747532-2	747531-3	747532-3
					B	747531-4	747532-4	747531-5	747532-5	747531-6	747532-6
3	25	1.520	1.550	.165-.455	A	747547-1	747548-1	747547-2	747548-2	747547-3	747548-3
					B	747547-4	747548-4	747547-5	747548-5	747547-6	747548-6
4	37	1.867	2.205	.338-.562	A	747563-1	747564-1	747563-2	747564-2	747563-3	747564-3
					B	747563-4	747564-4	747563-5	747564-5	747563-6	747564-6

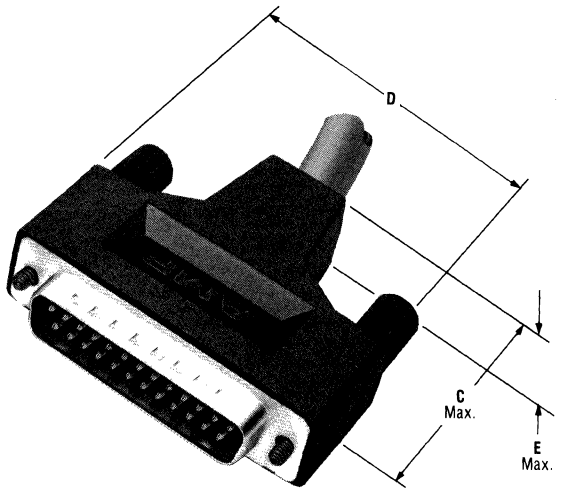
Note: Components of the kits are shipped unassembled and bulk-packaged in quantities of 100 pieces.

HDE-20 Shielding Hardware Enclosure Kits

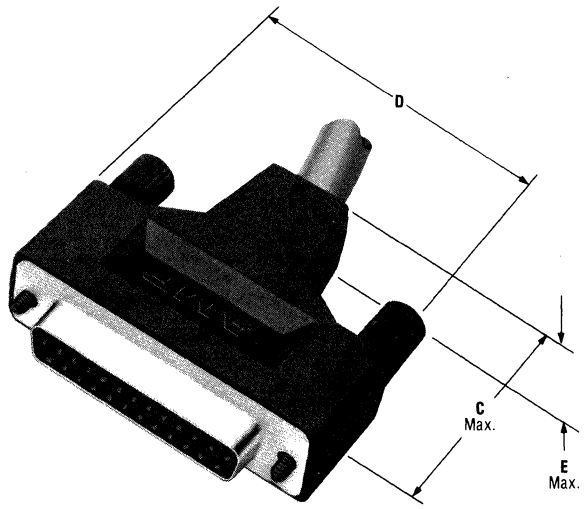
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Plugs



Receptacles



Each kit contains:

- Connector
- Inner shield
- Outer shield
- Enclosure
- Two jackscrews

Ferrules must be purchased separately.

Material and Finish:

Connector Shell—Steel, tin plated

Connector Insert—94V-0 rated thermoplastic, black

Shield—Steel, tin plated

Enclosure—PVC, black

Jackscrews—Zinc alloy

Contacts—Phosphor bronze, duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end with entire contact nickel underplated
B—Gold Flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Application Tooling-page 2187
Mateable Connectors:
HDE-page 2184
HDF-page 2190
HDP-pages 2192-2194
HD-pages 2228-2236, 2241, 2242, 2244-2247 & 2252
Mating/Panel Mounting-page 2254
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions C	D	E	Recommended Cable Insulation Diameter	Contact Finish (Plating Code)	Kit Part Numbers: Contact Identification No. 1 for 30-26 AWG Wire Plug	Receptacle	Contact Identification No. 2 for 26-22 AWG Wire Plug	Receptacle	Contact Identification No. 3 for 22-20 AWG Wire Plug	Receptacle	Shielding Enclosure Expansion Tool: Cable O.D. Max.	Part No.
1	9	1.640	1.350	.630	.190-.375	A	747944-1	747943-1	747944-2	747943-2	747944-3	747943-3	.335	58241-4
						B	747944-4	747943-4	747944-5	747943-5	747944-6	747943-6		
2	15	1.640	1.680	.630	.190-.375	A	747946-1	747945-1	747946-2	747945-2	747946-3	747945-3	.455	58241-1
						B	747946-4	747945-4	747946-5	747945-5	747946-6	747945-6		
3	25	1.640	2.205	.630	.217-.435	A	747948-1	747947-1	747948-2	747947-2	747948-3	747947-3		
						B	747948-4	747947-4	747948-5	747947-5	747948-6	747947-6		
4	37	2.010	2.860	.730	.338-.562	A	747950-1	747949-1	747950-2	747949-2	747950-3	747949-3	.562	58241-2
						B	747950-4	747949-4	747950-5	747949-5	747950-6	747949-6		

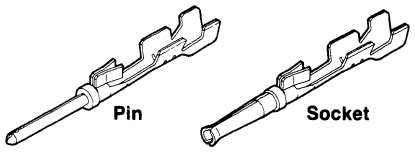
Note: Components of the kits are shipped unassembled and bulk-packaged if quantities of 100 pieces.

HDE-20 Contacts, Precision Formed

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Interchangeable Contacts, Crimp Snap-In



Wire Size Range AWG	Code*	Insulation Diameter		Contact Finish (Plating Code)	Contact Part Numbers				Quick-Change Applicator Number	Hand Tool Number
					Pin		Socket			
		Single Wire	Two Wires		Strip Form	Loose Form	Strip Form	Loose Form		
26-22	4	.054	.039	A	745266-2	745266-3	745269-2	745269-3	567179-2**	90398-1
				B	745266-6	745266-7	745269-6	745269-7		
22-18	3	.075	.054	A	745267-2	745267-3	745270-2	745270-3	567180-2**	90399-1
				B	745267-6	745267-7	745270-6	745270-7		

*A Code indicating accepted wire size range is stamped inside insulation crimp barrel of each contact.
**For AMP-O-LECTRIC Machine No. 565435-5.

Notes: 1. Extraction Tool No. 91232-1 is used to remove pin and socket contacts.
2. Strip form contacts shipped 10,000 pieces/reel.
3. Loose form contacts shipped in unit quantities of 1,000 pieces.

Material and Finish:

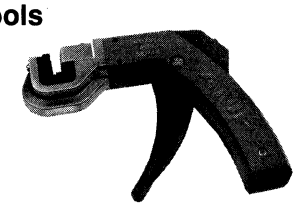
Phosphor bronze, duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Connectors used with:
HDE-pages 2183-2186
Technical Documents-pages 2258 & 2259

Hand and Manual Arbor Tools with Modular Heads

Manual Pistol Style Tool



Handle No. 58074-1
Head Assembly No. 58063-2

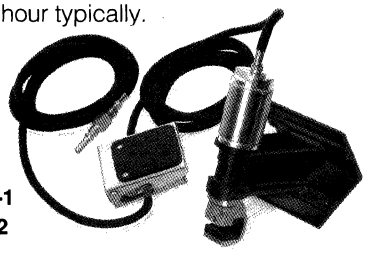
This tool is manually actuated, using modular heads, and is capable of terminating 600 wires an hour typically.

Air Pistol Style Tool

Handle No. 58075-1
Head Assembly No. 58063-2

Air actuated, utilizing modular heads, this tool can typically terminate as many as 600 wires per hour. When used with the Bench Mount Adaptor, No. 58076-1, production can be increased to 1000 wires per hour typically.

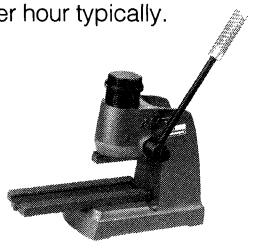
Bench Mount Power Assembly



Bench Assembly No. 58338-1
Head Assembly No. 58063-2

This tool is air actuated with either a foot or knee switch. This capability frees the operator's hands for optimum positioning permitting termination of 1000 wires per hour typically.

Manual Arbor Tool

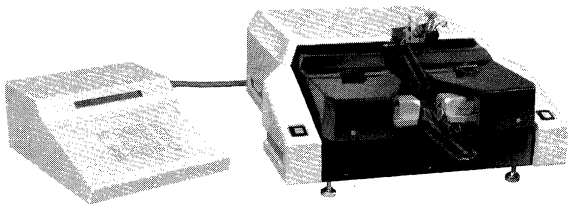


Arbor Tool No. 91085-2
Applicators:
Wire O.D. .041-.060 - No. 91255-1
Wire O.D. .041 and smaller - No. 91255-2

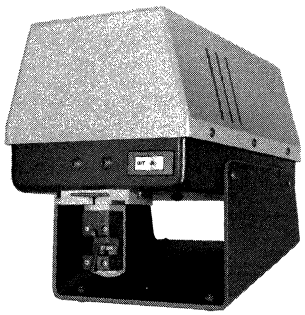
The arbor tool with applicator is used to terminate jacketed cable. Wires are neatly routed and trimmed to length with the cable jacket close to the connector. 400 to 800 terminated wires per hour are typical.

CHAMPOMATOR

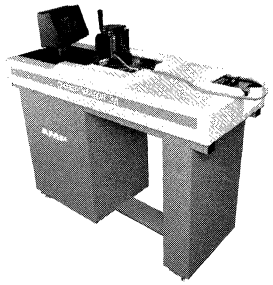
CHAMPOMATOR 2.5 Terminating Machine



Insulation Displacement Crimp (IDC) Power Unit



CHAMPOMATOR 3A Terminating Machine



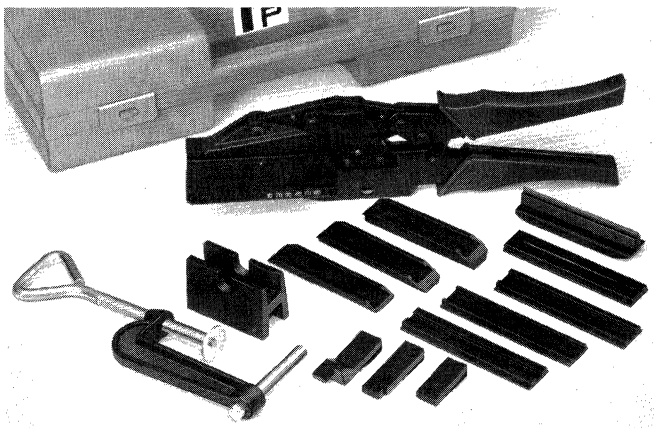
Complete AMP form 4670 to identify tooling package part numbers for specific applications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

HDF-20 IDC Mass Termination Connectors for Flat Ribbon Cable, .050 Conductor Centers

Product Facts

- Available in all 5 standard shell sizes
- Selection of through holes, 4-40 threaded inserts or 4-40 threaded self-locking inserts
- Option of 90° or 180° cable exit
- Low terminated height—.323 inches from the mounting flange to the back of the connector
- Visual inspection of termination possible
- Fluted cover provides positive alignment of cable prior to termination
- Wide range of application tooling—from portable hand tool to bench mounted pneumatic semi-automatic equipment
- Patented insulation displacement contact latches into the connector cover to provide strain relief for each termination—no additional strain relief required
- Contact design provides a "gas tight" termination
- Contacts accept 30 AWG solid, 28 AWG solid and stranded, and 26 AWG solid and stranded round conductor flat ribbon cable on .050 centers
- Qualified to Battelle Level II environments
- Contacts are duplex plated with gold on the mating end and tin-lead on the termination end
- Duplex plating provides cost reduction and mechanical and chemical compatibility with the tin plated ribbon cable conductors
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 46568



Kit No. 91271-1
Shell Size 5 Locator No. 543297-1 (This locator in addition to Kit No. 91271-1 is needed to terminate the 50 position connector)

Hand Tool Kit

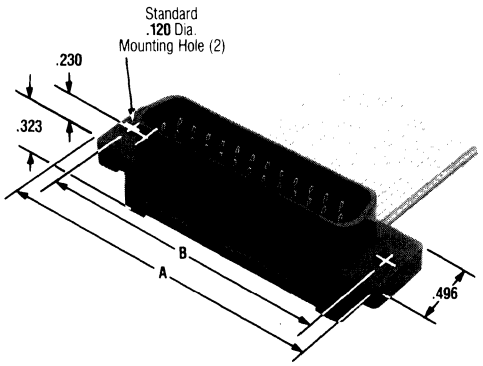
The most economical method of applying HDF low profile connectors to .050 center-line ribbon cable. The kit terminates shell sizes 1, 2, 3 and 4 HDF connectors as well as other types of AMP ribbon cable connectors. Included in the kit is a cable cutter and a bench mount device to ease its use and improve productivity. An additional locator is required to terminate shell size 5. Typical rate of application using this tool is 200 per hour.

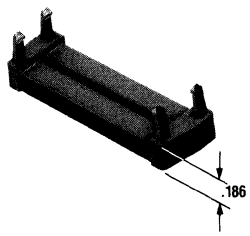
HDF-20 Low Profile All-Plastic Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

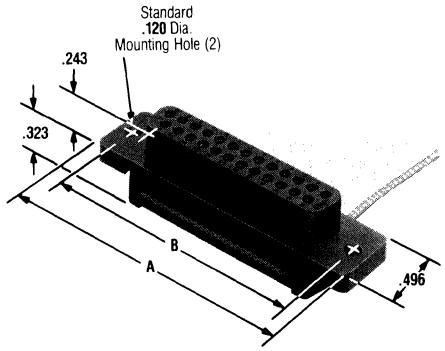
Plugs





Optional Cable Stabilizer for 180° Cable Exit

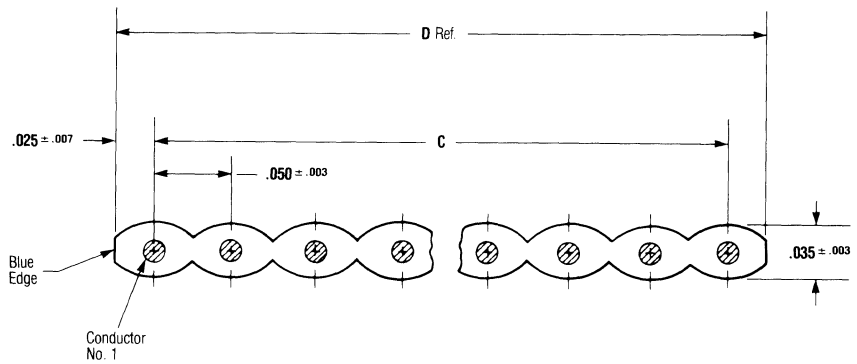
Receptacles



Shell Size	No. of Contact Positions	Dimensions		Connector Part Numbers				Optional Cable Stabilizer Part No.
				With Standard Mounting Holes		With Threaded Inserts		
		A	B	Plug	Receptacle	Plug	Receptacle	
1	9	1.216	.984	747321-4	747318-4	747053-4	747051-4	747275-4
2	15	1.541	1.312	747321-3	747318-3	747053-3	747051-3	747275-3
3	25	2.090	1.852	747321-2	747318-2	747053-2	747051-2	747275-2
4	37	2.732	2.500	747321-1	747318-1	747053-1	747051-1	747275-1

Notes: 1. All connectors are supplied with housing assembly and cover preassembled.
2. Cable stabilizers must be purchased separately.
3. These connectors terminate flat ribbon cable with conductors on .050 centers in sizes 30 AWG Solid, 28 AWG solid or stranded and 26 AWG solid or stranded.

Ribbon Cable Parameters



No. of Conductors	Dimensions	
	C	D
9	.400	.450
15	.700	.750
25	1.200	1.250
37	1.800	1.850
50	2.450	2.500

Material and Finish:

Housing, Cover & Cable Stabilizer—94V-0 rated thermoplastic, black

Threaded Inserts—Brass, unplated

Contacts—Phosphor bronze, duplex plated .000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated

Mounting Holes:

Standard—.120 Dia.

Threaded Insert—4-40 thread size

Related Product Data:

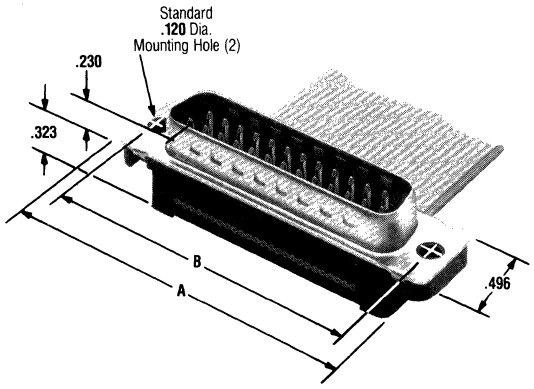
Mateable Connectors:
HDE-page 2183
HD-pages 2237-2240, 2248-2251 & 2253
Mating/Panel Mounting-page 2254
Mating Hardware-pages 2209-2212, 2214-2216
Plug/Receptacle Adapters-page 2223
Connector Savers-page 2224
Transition Connector-page 2225
Technical Documents-pages 2258 & 2259

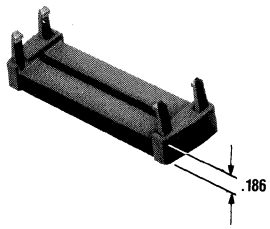
HDF-20 Low Profile Metal-Shell Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

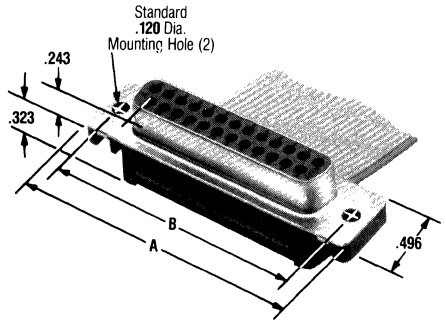
Plugs (Shell size 1, 2, 3 and 4)



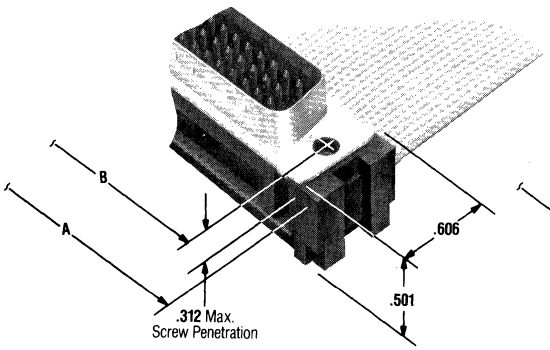


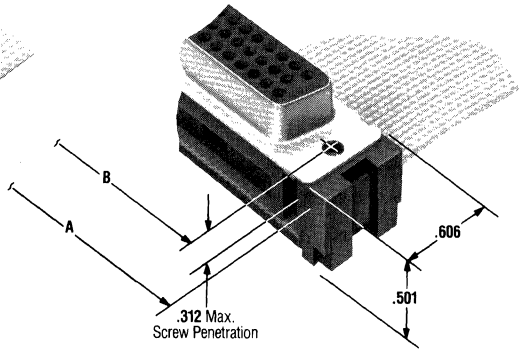
Optional Cable Stabilizer for 180° Cable Exit

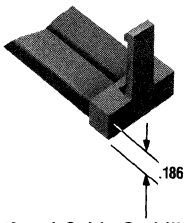
Receptacles (Shell size 1, 2, 3 and 4)



Plug and Receptacle (Shell size 5)







Optional Cable Stabilizer for 180° Cable Exit

Shell Size	No. of Contact Positions	Dimensions		Connector Part Numbers				Optional Cable Stabilizer Part No.
				With Standard Mounting Holes		With Threaded Inserts		
		A	B	Plug	Receptacle	Plug	Receptacle	
1	9	1.216	.984	747306-4	747303-4	747043-4	747052-4	747275-4
2	15	1.541	1.312	747306-3	747303-3	747043-3	747052-3	747275-3
3	25	2.090	1.852	747306-2	747303-2	747043-2	747052-2	747275-2
4	37	2.732	2.500	747306-1	747303-1	747043-1	747052-1	747275-1
5	50	2.920	2.406	—	—	746790-1	746789-1	746785-1

Notes: 1. All connectors are supplied with housing assembly and cover preassembled.
2. Cable stabilizers must be purchased separately.
3. These connectors terminate flat ribbon cable with conductors on .050 centers and in sizes 30 AWG solid, 28 AWG solid or stranded and 26 AWG solid or stranded.

Material and Finish:

Front Shell—Steel, tin plated

Housing, Cover & Cable Stabilizer—94V-0 rated thermoplastic, black

Threaded Inserts—Brass, unplated

Threaded Self-Locking Insert—Brass, color coded red

Contacts—Phosphor bronze, duplex plated .000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated

Mounting Holes:

Standard—.120 Dia.

Threaded Insert—4-40 thread size

Threaded Self-Locking Insert—4-40 thread size

Related Product Data:

Mateable Connectors:
HDE-pages 2184-2186
HDP-pages 2192-2194
HD-pages 2228-2236, 2241, 2242, 2244-2247 & 2252

Mating/Panel Mounting-page 2254

Mating Hardware-pages 2209-2216

Plug/Receptacle Adapters-page 2222

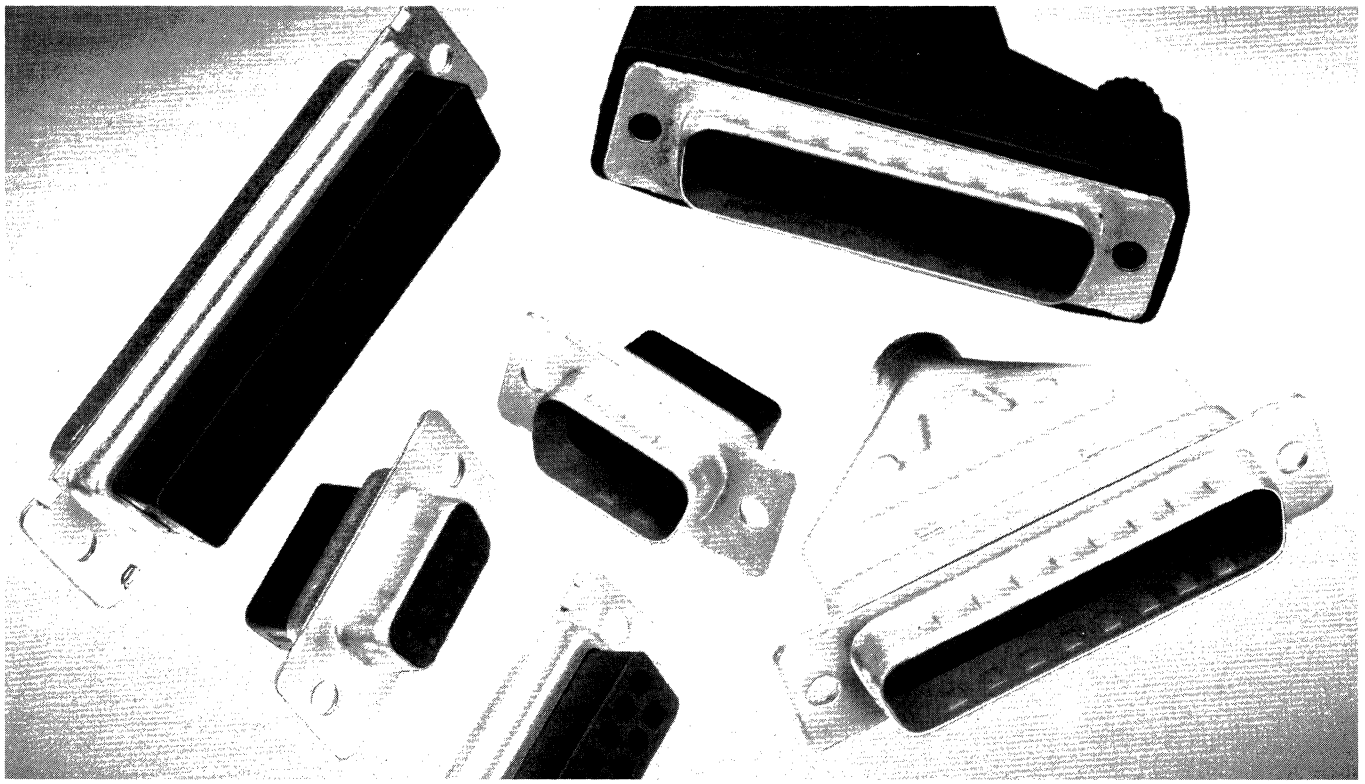
Connector Savers-page 2224

Transition Connector-page 2225

Technical Documents-pages 2258 & 2259

HDP-20 Crimp Snap-In Contact Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

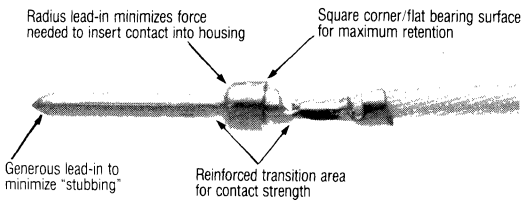


Product Facts

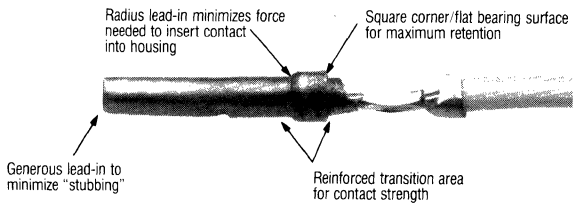
- Shell sizes offer wide choice of contact positions—9, 15, 25, 37 and 50
- Lower cost, commercial version of the military approved series
- Tin or zinc plated shells, with or without grounding indents
- Crimp snap-in contacts allows loading of only the number of contacts being used
- Available with shielding hardware and shielding enclosure kits
- Numerous cable clamps and mating hardware available
- Low cost, high performance, precision-formed crimp contacts
- Machine applied terminations assure highest production rates at lowest applied cost
- Intermateable with any size 20 Subminiature D connector dimensionally complying with MIL-C-24308
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455

Contact Retention Features

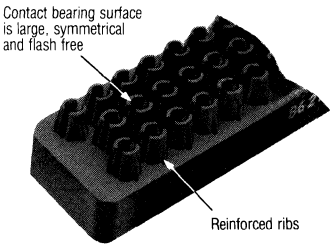
Pin



Socket



Housing Cutaway

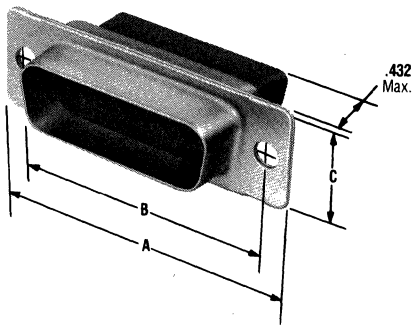


HDP-20 Crimp Snap-In Contact Connectors

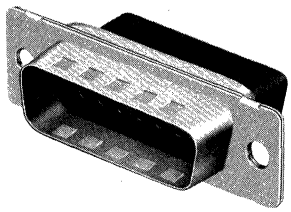
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

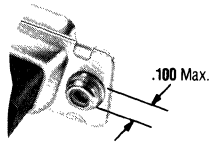
Plugs



Without Grounding Indents

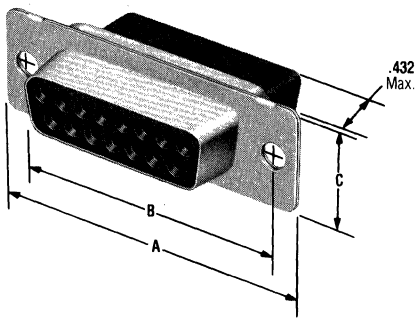


With Grounding Indents



Clinch Nut
(Plug and Receptacle)

Receptacles



Material and Finish:

Shell—Steel, zinc or tin plated
Insert—94V-0 rated thermoplastic, black or 94V-1 rated thermoplastic, beige

Mounting Hole:

Standard—.120 Dia.
Clinch Nut—4-40 threads with self-locking feature

Related Product Data:

Contacts-pages 2195 & 2196
Application Tooling-pages 2198 & 2199
Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2193, 2194
HD-pages 2228-2236, 2241, 2242, 2244-2247 & 2252
Mating/Panel Mounting-page 2254
Cable Clamps-pages 2202-2207
Mating Hardware-pages 2208-2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Transition Connector-page 2225
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions			Insert Material	Mounting Method	Plug Part Numbers			Receptacle Part Numbers	
							Zinc Plated Shell	Tin Plated Shell		Zinc Plated Shell	Tin Plated Shell
		A	B	C				Without Grounding Indents	With Grounding Indents		
1	9	1.213	.984	.494	94V-0	Standard	205204-1	205204-3	205204-4	205203-1	205203-3
						Clinch Nut	—	745906-1	745906-2	—	745907-1
					94V-1	Standard	747983-1	747983-2	747983-3	747982-1	747982-2
2	15	1.541	1.312	.494	94V-0	Standard	205206-1	205206-2	205206-3	205205-1	205205-2
						Clinch Nut	—	745908-1	745908-2	—	745909-1
					94V-1	Standard	747985-1	747985-2	747985-3	747984-1	747984-2
3	25	2.088	1.852	.494	94V-0	Standard	205208-1	207464-1	207464-2	205207-1	207463-1
						Clinch Nut	—	745036-1	745036-2	—	207516-3
					94V-1	Standard	747987-1	747987-2	747987-3	747986-1	747986-2
4	37	2.729	2.500	.494	94V-0	Standard	205210-1	205210-2	205210-3	205209-1	205209-2
						Clinch Nut	—	—	745135-2	—	207661-3
					94V-1	Standard	747989-1	747989-2	747989-3	747988-1	747988-2
5	50	2.635	2.406	.605	94V-0	Standard	205212-1	205212-2	205212-3	205211-1	205211-2
						Clinch Nut	—	—	—	—	745884-1
					94V-1	Standard	747991-1	747991-2	747991-3	747990-1	747990-2

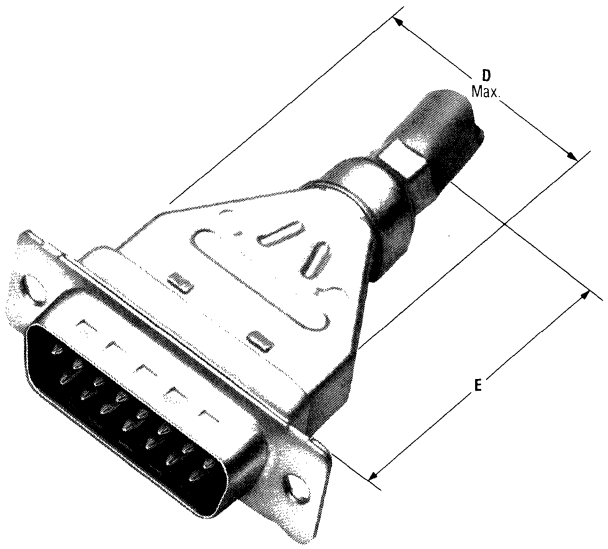
Note: Plugs accept size 20 DF pin contacts and receptacles accept size 20 DF socket contacts.

HDP-20 Basic Shielding Hardware Kits

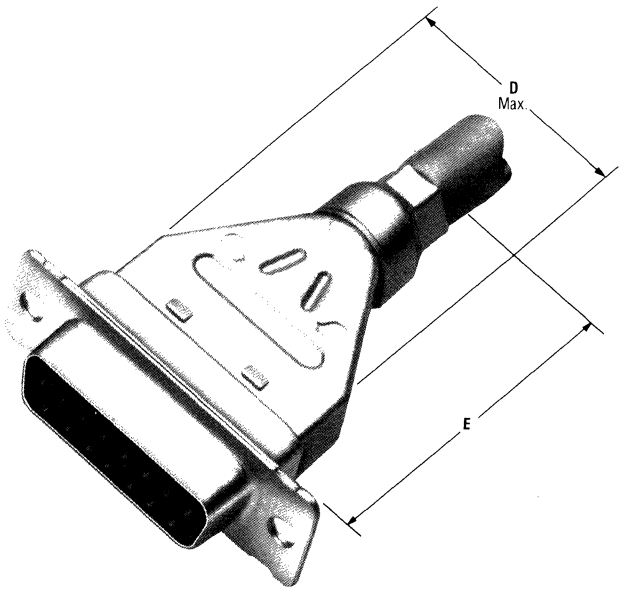
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Plug



Receptacle



Each kit contains:

- Connector
- Inner shield
- Outer shield

Contacts and ferrules must be purchased separately.

Material and Finish:

Connector Shells—Steel, tin plated

Connector Insert—94V-0 rated thermoplastic, black or 94V-1 rated thermoplastic, beige

Shields—Steel, tin plated

Related Product Data:

Contacts-pages 2195 & 2196
Application Tooling-pages 2198 & 2199
Ferrules-page 2197
Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-page 2192
HD-pages 2228-2236, 2241, 2242, 2244-2247 & 2252
Mating/Panel Mounting-page 2254
Mating Hardware-pages 2208-2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Transition Connector-page 2225
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions		Recommended Cable Insulation Diameter	Insert Material	Kit Numbers	
		D	E			Plug	Receptacle
1	9	.700	1.535	.165-.455	94V-0	747522-1	747523-1
					94V-1	748183-1	748184-1
2	15	1.024	1.535	.165-.455	94V-0	747538-1	747539-1
					94V-1	748185-1	748186-1
3	25	1.576	1.535	.165-.455	94V-0	747554-1	747555-1
					94V-1	748187-1	748188-1
4	37	2.215	1.892	.338-.562	94V-0	747570-1	747571-1
					94V-1	748189-1	748190-1
5	50	2.120	1.876	.338-.562	94V-0	747577-1	747578-1
					94V-1	748191-1	748192-1

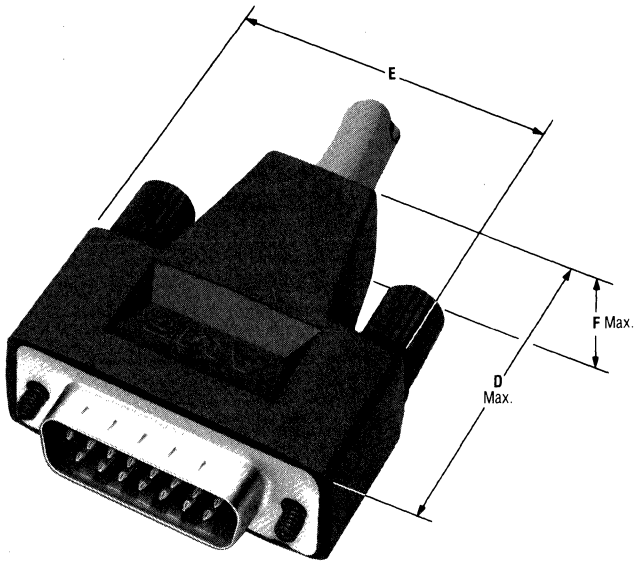
Notes: 1. Plugs accept size 20 DF pin contacts and receptacles accept size 20 DF socket contacts.
2. Components of the kits are shipped unassembled and bulk-packaged in quantities of 100 pieces.

HDP-20 Shielding Hardware Enclosure Kits

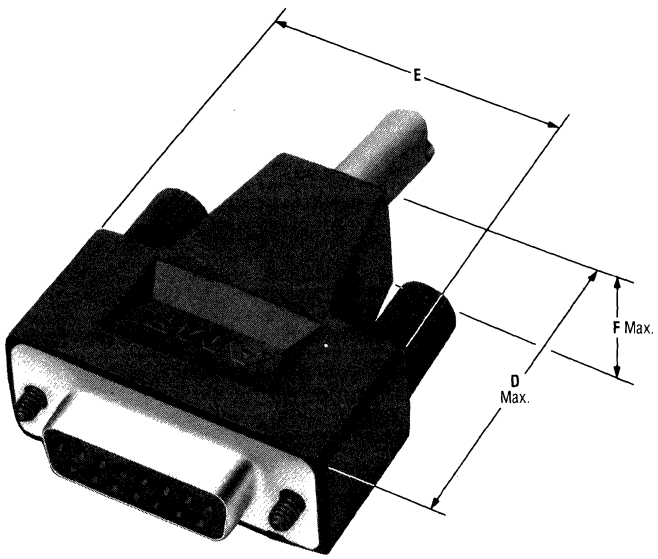
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Plug



Receptacle



Each kit contains:

- Connector
- Inner shield
- Outer shield
- Enclosure
- Two jackscrews

Contacts and ferrules must be purchased separately.

Material and Finish:

Connector Shells—Steel, tin plated
Connector Insert—94V-0 rated thermoplastic, black or 94V-1 rated thermoplastic, beige
Shields—Steel, tin plated
Enclosure—PVC, black
Jackscrews—Zinc alloy

Related Product Data:

Contacts-pages 2195 & 2196
Application Tooling-pages 2198 & 2199
Ferrules-page 2197
Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-page 2192
HD-pages 2228-2236, 2241, 2242, 2244-2247 & 2252
Mating/Panel Mounting-page 2254
Mating Hardware-pages 2208-2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Transition Connector-page 2225
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions			Recomended Cable Insulation Diameter	Insert Material	Kit Numbers		Shielding Enclosure Expansion Tool	
		D	E	F			Plug	Receptacle	Cable O.D. Max.	Part No.
1	9	1.660	1.350	.630	.190-.375	94V-0	747952-1	747951-1	.335	58241-4
						94V-1	748256-1	748257-1		
2	15	1.660	1.680	.630	.190-.375	94V-0	747954-1	747953-1		
						94V-1	748258-1	748259-1		
3	25	1.660	2.205	.630	.217-.435	94V-0	747956-1	747955-1	.455	58241-1
						94V-1	748260-1	748261-1		
4	37	2.010	2.860	.730	.338-.562	94V-0	747958-1	747957-1		
						94V-1	748262-1	748263-1		
5	50	2.010	2.770	.730	.338-.562	94V-0	747960-1	747959-1	.562	58241-2
						94V-1	748264-1	748265-1		

Notes: 1. Plugs accept size 20 DF pin contacts and receptacles accept size 20 DF socket contacts.
2. Components of the kits are shipped unassembled and bulk-packaged in quantities of 100 pieces.

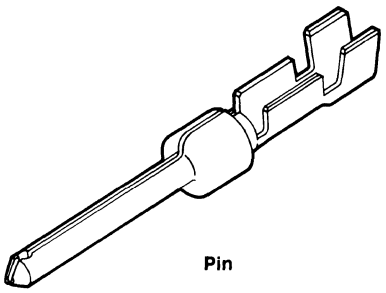
HDP-20 Connector Contacts, Precision Formed

Specifications subject to change.
For latest design specifications...
1-800-522-6752

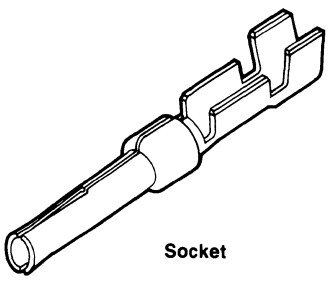
Dimensioning:
Dimensions are in inches

Crimp Snap-In Contacts

With Insulation Support



Pin

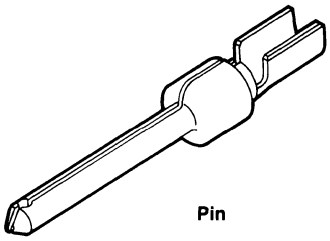


Socket

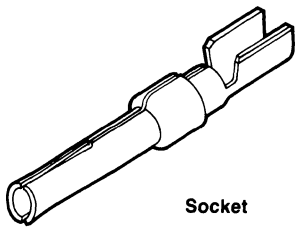
Wire Size Range AWG	Ins. Dia. Max.	Contact Finish (Plating Code)	Contact Part Numbers				Tooling		Color Code (Loose Form)
			Pin		Socket		Strip Form	Loose Form	
			Strip Form	Loose Form	Strip Form	Loose Form	Quick-Change Applicator	Hand Tool	
28-24	.040	A	66507-3	66507-9	66505-3	66505-9	466423-1* 466423-2* 466901-1**	90302-1	Blue Dot
		B	3-66507-0	5-66507-7	6-66505-0	6-66505-2			
		C	66507-4	1-66507-0	66505-4	1-66505-0			
		D	3-66507-1	5-66507-9	5-66505-7	5-66505-9			
	.060	A	66682-2	66682-4	66683-2	66683-4	466758-1* 466758-2* 466963-1**	90374-1	Black Dot
		B	66682-9	1-66682-1	1-66683-0	1-66683-2			
		D	66682-6	66682-8	66683-7	66683-9			
26-22	.050	A	745254-2	745254-6	745253-2	745253-6	567036-1* 567036-2*	90406-1	Yellow Dot
		B	1-745254-4	1-745254-6	1-745253-4	1-745253-6			
		C	745254-3	745254-7	745253-3	745253-7			
		D	1-745254-1	1-745254-3	1-745253-1	1-745253-3			
24-20	.060	A	66506-3	66506-9	66504-3	66504-9	466422-1* 466422-2* 466900-1**	90302-1	Red Dot
		B	2-66506-4	5-66506-7	5-66504-9	6-66504-0			
		C	66506-4	1-66506-0	66504-4	1-66504-0			
		D	2-66506-5	5-66506-9	5-66504-6	5-66504-7			
		E	—	—	748321-2	748321-6			

*Quick-Change Applicator Part No. with -1 is for a "T" terminating unit used in automatic machines; -2 is for "K" AMP-O-LECTRIC bench machine, shown on page 2198.
** These applicators are for use in the AMP-O-MATIC Stripper/Crimper machine, shown on page 2199.
Note: Maintenance and Repair Tool for Wire Size 28-24 (Ins. Dia. Max. .040) and Wire Size 24-20 (Ins. Dia. Max. .060)—No. 90312-1 & PRO-CRIMPER Hand Tool Part Number 58448-2.

Without Insulation Support



Pin



Socket

Wire Size Range AWG	Ins. Dia. Max.	Contact Finish (Plating Code)	Contact Part Numbers				Tooling		Color Code (Loose Form)
			Pin		Socket		Strip Form	Loose Form	
			Strip Form	Loose Form	Strip Form	Loose Form	Quick-Change Applicator	Hand Tool	
28-24	.068	A	205310-2	205310-8	205311-3	205311-9	466506-1* 466506-2* 466903-1**	90265-1	Blue Dot
		B	2-205310-5	2-205310-7	2-205311-1	2-205311-3			
		C	205310-4	1-205310-0	205311-4	1-205311-0			
		D	2-205310-2	2-205310-4	1-205311-8	2-205311-0			
24-20	.068	A	205202-2	205202-4	205201-3	205201-5	466505-1* 466505-2* 466902-1**	90265-1	Red Dot
		B	2-205202-5	2-205202-7	2-205201-5	2-205201-7			
		C	205202-6	205202-7	205201-6	205201-7			
		D	2-205202-2	2-205202-4	2-205201-2	2-205201-4			
22-18	.068	A	745229-2	745229-4	745230-2	745230-4	567033-1* 567033-2*	90405-1	Green Dot
		B	1-745229-1	1-745229-3	1-745230-1	1-745230-3			
		C	745229-5	745229-7	745230-5	745230-7			
		D	745229-8	1-745229-0	745230-8	1-745230-0			

*Quick-Change Applicator Part No. with -1 is for a "T" terminating unit used in automatic machines; -2 is for "K" AMP-O-LECTRIC bench machine, shown on page 2198.
** These applicators are for use in the AMP-O-MATIC Stripper/Crimper machine, shown on page 2199.
Note: Wire insulation diameter is limited by the connector housing cavity and clearance for the insertion/extraction tool.

Contact Size 20 DF Pin Diameter .040

Material and Finish:

Pin—Brass
Socket—Phosphor bronze
Plated:
A—Select—Gold flash over nickel on entire contact, with additional .000030 gold on mating end
B—Duplex—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
C—Gold flash over nickel on entire contact
D—Duplex—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated
E—Duplex—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated (Short Point of Contact (S.P.O.C.))

Related Product Data:

Connectors used with:
HDP-pages 2192-2194
Application Tooling-pages 2198 & 2199
Technical Documents-pages 2258 & 2259

Insertion/Extraction Tool No. 91285-1

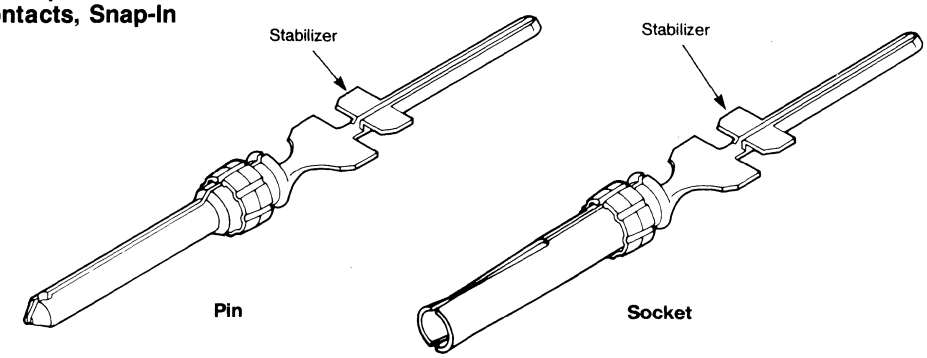
This tool includes interchangeable tips to Insert/Extract:
Size 22, 28-22 AWG Crimp Contacts
Size 20, 28-20 AWG Crimp and Solder Cup Contacts
Size 20, Posted Contacts

HDP-20 Connector Contacts, Precision Formed

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Posted Contacts, Snap-In



Contact Finish (Plating Code)	Loose Form Contact Numbers							
	.125 Post Length*		.188 Post Length*		.425 Post Length*		.651 Post Length*	
	Pin	Socket	Pin	Socket	Pin	Socket	Pin	Socket
A	1-66481-7	1-66482-7	3-66481-5	3-66482-5	1-66481-9	1-66482-9	2-66481-1	2-66482-1
B	1-66481-6	1-66482-6	3-66481-4	3-66482-4	1-66481-8	1-66482-8	2-66481-0	2-66482-0

*Length of post extending from rear of HDP-20 metal-shell connector.

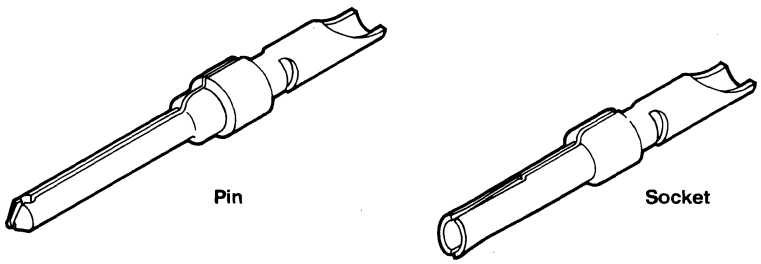
Contact Size 20 DF
Pin Diameter .040

Material and Finish:

Pin—Brass
Socket—Phosphor bronze
Plated:
A—Select—Gold flash over nickel on entire contact, with additional .000030 gold on mating end
B—Gold flash over nickel on entire contact

Related Product Data:
Connectors used with:
HDP-page 2192
Technical Documents-pages 2258 & 2259

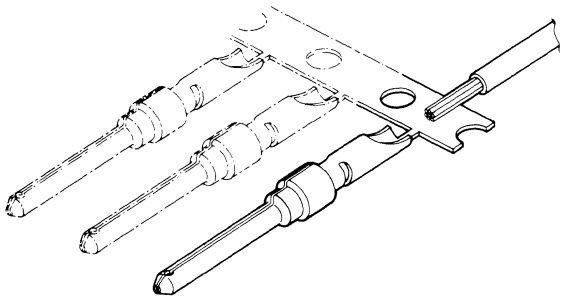
Solder Cup Contacts, Snap-In



18 AWG Max. Wire

Strip Form Contact Number		Loose Form Contact Number	
Pin	Socket	Pin	Socket
66570-2	66569-2	66570-3	66569-3

Contacts to be soldered to wire before being inserted into housing



Contact Size 20 DF
Pin Diameter .040

Material and Finish:

Pin—Brass
Socket—Phosphor bronze
Plated—Gold flash over nickel on entire contact, with additional .000030 gold on mating end

Related Product Data:
Connectors used with:
HDP-pages 2192-2194
Technical Documents-pages 2258 & 2259

Insertion/Extraction Tool No. 91285-1

This tool includes interchangeable tips to Insert/Extract:

Size 22, 28-22 AWG Crimp Contacts

Size 20, 28-20 AWG Crimp and Solder Cup Contacts

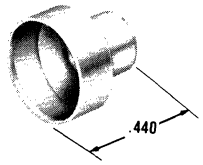
Size 20, Posted Contacts

HDP-20 Ferrules for Shielding Hardware Kits

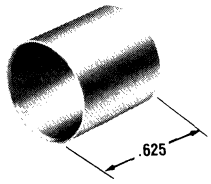
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Ferrules for Shielding Hardware Kits



For Shell Sizes 1 thru 3



For Shell Sizes 4 and 5

Shell Sizes	Cable Diameter	Part Numbers	
		Ferrule	Die Set*
1-3	.165-.190	747579-8	543424-3
1-3	.190-.217	747579-8	543424-2
1-3	.217-.246	747579-8	543424-8
1-3	.246-.284	1-747579-0	543424-1
1-3	.284-.324	1-747579-0	543424-7
1-3	.324-.375	1-747579-1	543424-6
1-3	.375-.435	1-747579-2	543424-5
1-3	.400-.455	1-747579-4	543424-4
4-5	.338-.385	747580-8	543425-1
4-5	.375-.432	747580-4	58238-1
4-5	.422-.490	747580-5	58237-2
4-5	.480-.562	747580-6	58237-1

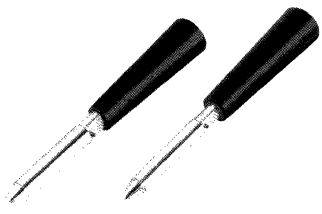
*Die sets used with Hand Crimping Tool 543344-1 or Pneumatic Bench Tool 312522-2 equipped with Die Set Holder 58240-1.

Material and Finish:
Copper (annealed), tin plated

Related Product Data:
Shielding Hardware Kits-
pages 2185 & 2186
Technical Documents-
pages 2258 & 2259

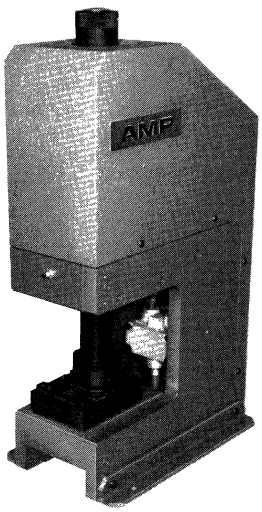
Application Tooling for Connector Shielding Kits

Hand Crimping Tool No. 543344-1
(Requires Die Sets, see table above.)



Shielding Enclosure Expansion Tools Nos. 58241-1, -2, & -4

Pneumatic Bench Tool No. 312522-2
(Requires Die Set Holder No. 58240-1)



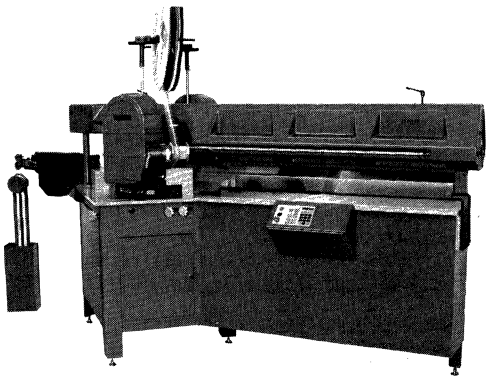
AMPOMATOR CLS II Machine No. 815800-1

This contemporary machine is low in cost and simple to operate. It evolves from years of experience with the AMPOMATOR lead making machine family. The machine is designed for flexibility and ease of converting from product to product to handle many production requirements.

Application rate depends on length of leads. The machine is capable of producing at up to 3,400 per hour. Leads as long as 120 inches can be produced.

AMP's Quick-Change applicators common to existing bench and lead making equipment are also used in this machine. The "T"-style terminating units are "air glide" to facilitate applicator changeover.

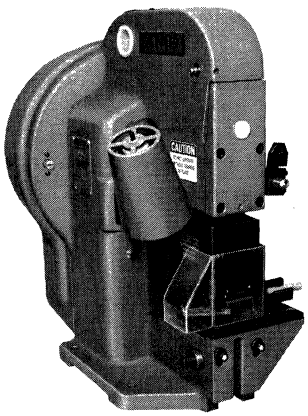
Various accessories to this machine are available, consult AMP Incorporated.



Wire Size Range: 26-12 AWG
Maximum Insulation Thickness:
12-14 AWG - 2/64″
16-26 AWG - 4/64″
Weight: 2,200 lb
Height: 79″
Width: 65″
Length: 134″
Air: 80 psi 22 SCFM

Voltage: 220 VAC, 15 amperes, 1 phase, 3 wire plus ground
Insulation Types: Polyvinyl Chloride (PVC), Cross-link (PVC), Cross-link Polyethylene, Vulkene*, Silicone Rubber
*Trademark of General Electric Company

AMP-O-LECTRIC Model K and Model KII Terminating Unit



Specifications
Weight: Approximately 230 lbs. [104.3 kg]
Height: 24 in. [61 cm] (without reel)
Width: 21 in. [53.3 cm]
Depth: 20 in. [50.8 cm]
Air Supply: 80-120 psi [5.52-8.27 bars] when necessary
Power Requirements: 115 vac, 60 Hz, 6.0 amp (1/4 hp motor)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

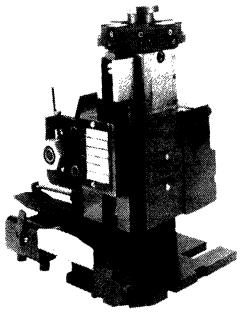
Dimensioning:
Dimensions are in inches

Quick-Change Applicator

For use with the AMPOMATOR and AMP-O-LECTRIC Machines shown.

Featuring a "quick-change" design, this applicator can be changed in a matter of minutes to afford maximum flexibility and minimum production downtime for various AMP machines.

Crimping height on both terminal barrel and insulation support barrel for a given wire size is simply "dialed in". Since all adjustments are made with the applicator in the machine, there is no major interruption in production.



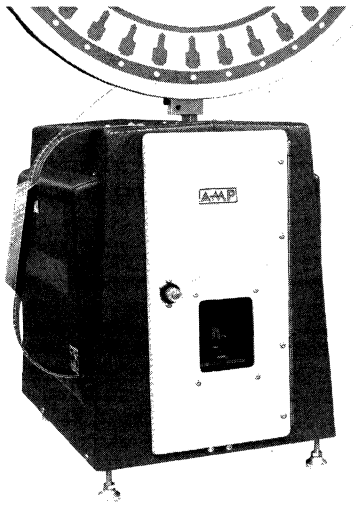
AMP-O-MATIC Stripper/Crimper Machine No. 463345-2

This is a pneumatically operated bench-top machine capable of stripping wires and crimping side feed terminals. It is a compact machine and can be easily moved to other locations.

The machine is completely enclosed and the "target area" is visible through a slotted window in the door. Interchangeable applicators used in this machine are similar to the quick-change type applicator. They feature wire and insulation crimp adjustment on the top of the applicator ram.

Unstripped wire is inserted and the foot valve depressed. The wire is automatically stripped and a terminal applied.

Depending on operator dexterity and work being processed, rates to 1,000 terminations/hour are attainable.

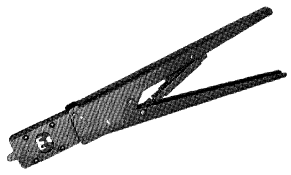


Height: 33" includes reel support
Depth: 18"
Width: 14"
Weight: 95 lb

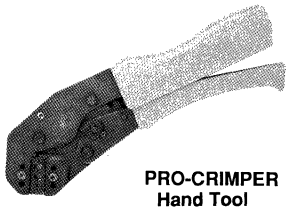
Power Requirements: 115 VAC, 60 Hz
Air: 80-100 psi at 1½ cfm
Wire Range: 28-16 AWG
Type Terminal: Side-feed open barrel

CERTI-CRIMP Hand Tool

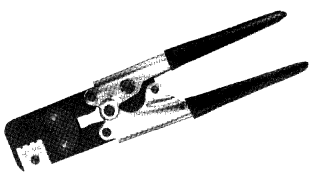
For limited production, prototype, experimental and servicing applications, CERTI-CRIMP hand tools are ideal. The ratchet device located between the tool handles assures precise pressure needed to form a proper crimp. Refer to the specific contact table for tool part numbers.



AMP Hand Tool (Preferred) meets all specifications.



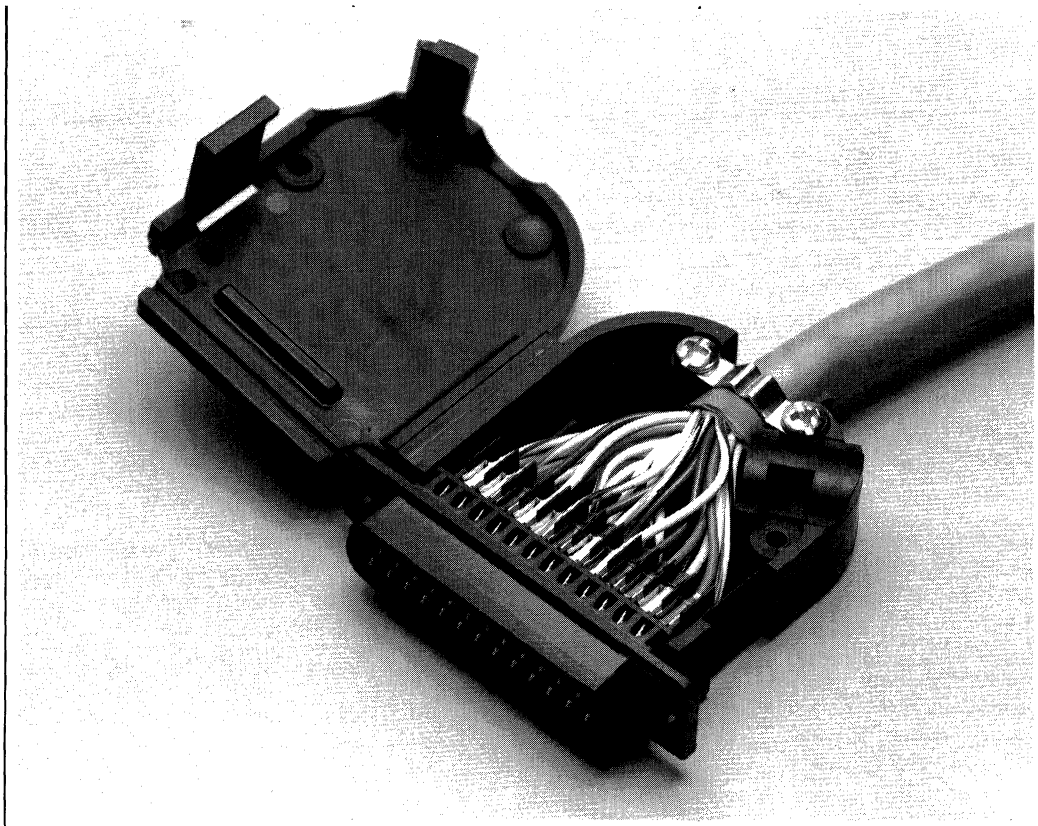
PRO-CRIMPER Hand Tool



AMPLIVERSAL Hand Tool (Economy) may not meet all specifications, generally used for repair and maintenance.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE Subminiature D Quik-Snap Backshell Kit



The AMP Quik-Snap Backshell Kit is a one piece, all-plastic cable clamp kit designed for use with either the AMPLIMITE HDP-20 or HDE-20, all-plastic and metal-shell connectors. Kits are available for 9, 15, 25 and 37 position connectors with a cable exit option of 180° or 120°. Each kit consists of one clamp with integral gate (gate is used to close the unused exit), two screws and one strain relief clip. For metal-shell connector applications an optional kit is available with 2 retainer clips and screws.

This backshell is designed for ease of assembly. Simply choose the preferred cable exit, close off the unused exit with the integral gate, position the flange of the connector in the slot at the front of the cable clamp, locate the cable jacket in the strain relief of the clamp and place the strain relief clip over it, insert screws and tighten, close the cover and engage the latches and the assembly is complete.

Product Facts

- No special tooling required
- Competitive pricing
- Quick assembly, minimizes labor costs
- Timely delivery

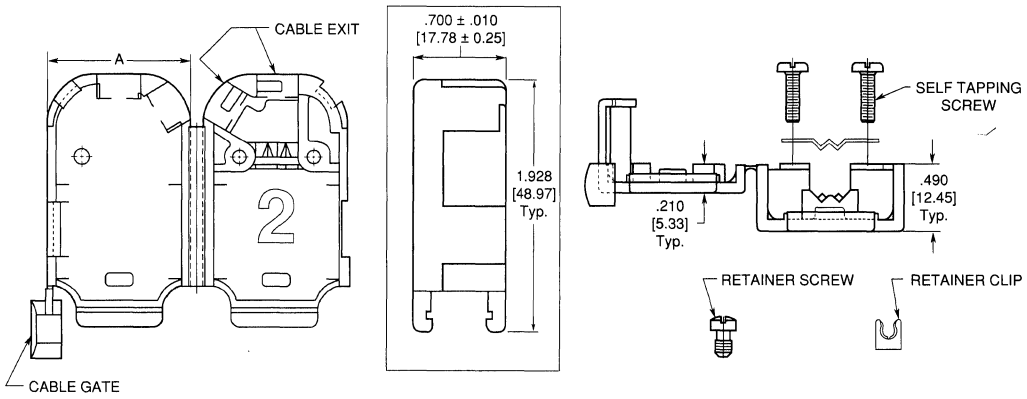
Quik-Snap Backshell Kits

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Materials and Finishes

Cover – Polypropylene, black
Strain Relief Clip – Stainless steel
Retainer Clip – Stainless steel
Screws – Carbon steel, zinc plated



Shell Size	No. of Positions	Dim. A	Kit Number* with Retainer Clip	Kit Number without Retainer Clip	
1	9	**.785**	749914-1	750100-2	Bulk Pkg.
		19.94	749914-2	750100-1	Unit Kit
2	15	**1.110**	749915-1	750101-2	Bulk Pkg.
		28.19	749915-2	750101-1	Unit Kit
3	25	**1.650**	749626-1	750078-2	Bulk Pkg.
		41.91	749626-2	750078-1	Unit Kit
4	37	**2.296**	749916-1	—	Bulk Pkg.
		58.32	749916-2	—	Unit Kit

* Only used with metal-shell connector applications.
Note: For information on AMPLIMITE, Subminiature D Connectors see AMP Catalog No. 82068

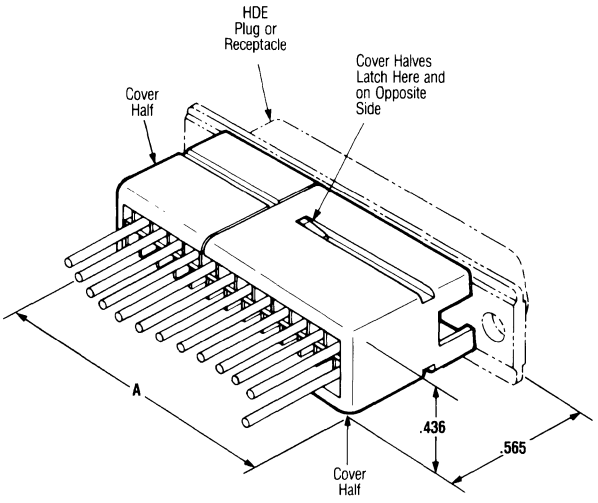
Slide-On Back Covers

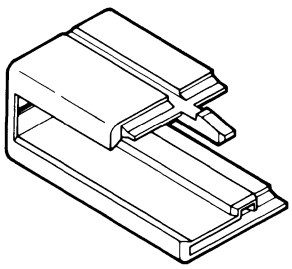
Material:

Black thermoplastic

Related Product Data:

Connectors used with:
HDE All-Plastic-page 2183
HDE Metal-Shell-page 2184
Other accessory capabilities:
RFI/EMI Metal Shields-pages 2204 & 2205
Male Screw Retainers-pages 2208 & 2209
Locking Posts and Slide Latches-pages 2211 & 2212
Latching Blocks-pages 2214 & 2215
Technical Documents-pages 2258 & 2259





Back Cover Half
(See Note 2.)

Shell Size	Dimension A	Back Cover Kit No.	
		Individual	Bulk Packaged*
1	.610	745530-1	745530-5
2	.934	745530-2	745530-6
3	1.482	745530-3	745530-7
4	2.134	745530-4	745530-8

*Each part is individually bulk packed for multiple kit orders.

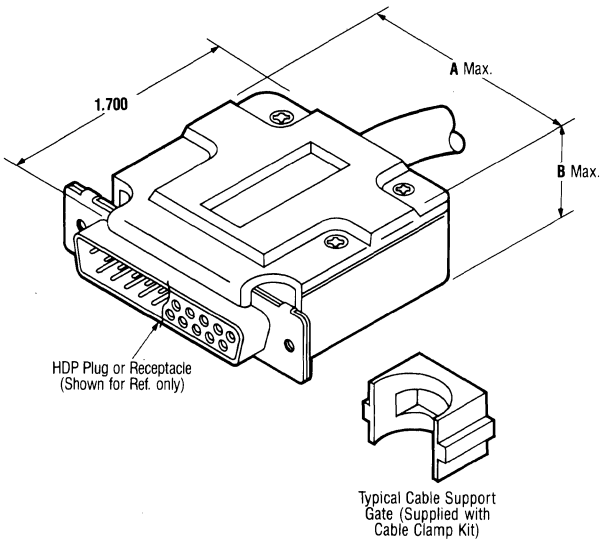
Note: 1. All parts are packaged unassembled.
2. Each slide-on back cover kit includes two identical cover halves which snap together over the connector.

Unshielded Cable Clamps

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Box and Lid Straight/90° Exit

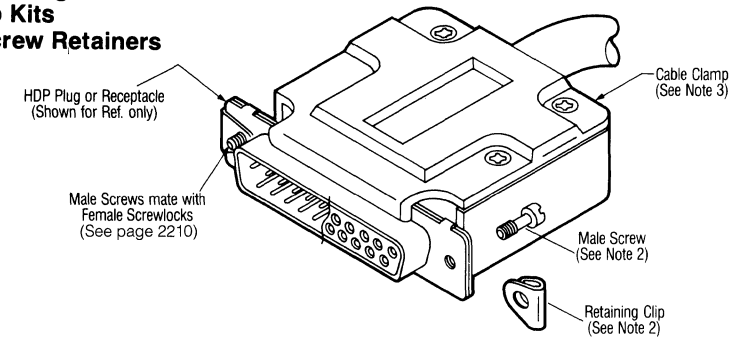


Shell Size	Dimensions		Cable Dia. Max. (Ref.)		Cable Clamp Kit No.	
	A	B	Straight Cable Exit	90° Cable Exit	Individual	Bulk Packed*
1	.755	.635	.160	.160	207467-1	207467-2
2	1.078	.635	.320	.320	207470-1	207470-2
3	1.620	.770	.390	.390	207345-1	207345-2
4	2.268	.770	.640	.405	207473-1	207473-2
5	2.178	.880	.490	.490	207476-1	207476-2

*Each part is individually bulk packed for multiple assembly orders.

Notes: 1. All parts are packaged unassembled.
2. Cable diameter is adjustable by changing cable support gates. Use the flat side of cable support gates for discrete wire, and the semi-circle side for jacketed cable.
3. Cable clamp assemblies are available in kits with male screw retainers and with spring latches and latching blocks

Box and Lid Straight/90° Exit Cable Clamp Kits with Male Screw Retainers



Shell Size	Cable Clamp Kit No.	
	Individual	Bulk Packed*
1	207908-1	207908-2
2	207908-4	207908-5
3	207908-7	207908-8
4	1-207908-0	1-207908-1
5	1-207908-3	1-207908-4

*Each part is individually bulk packed for multiple kit orders.

Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of a cable clamp and male screw retainer hardware (2 each). Male screw retainers are also available in kit form, see page 2208.

Box and Lid Cable Clamps can be used on either plugs or receptacles and will not interfere with commonly used hardware. Their hinged construction allows easy assembly to a harness. A wide range of cable diameters are accommodated through the use of cable support gates, supplied with each cable clamp.

Cable clamps are available in kits with appropriate hardware for convenient plug/receptacle mating.

Material and Finish:

Cable Clamp Housing—Thermoplastic, black with textured finish

Gates—Thermoplastic, black

Flat Head Screws—Steel, black zinc plated

Related Product Data:

Connectors used with:
HDP Metal-Shell-pages 2179 & 2192

Other accessory capabilities:
Male Screw Retainers-pages 2208 & 2209
Female Screwlocks-page 2210
Locking Posts and Slide Latches-pages 2211 & 2212
Spring latches (One Piece)-page 2213
Latching Blocks-pages 2214 & 2215

Material and Finish:

Cable Clamp Housing—Thermoplastic, black with textured finish

Gates—Thermoplastic, black

Flat Head Screws—Steel, black zinc plated

Male Screw—Steel, zinc plated yellow chromate

Retaining Clip—Steel, zinc plated yellow chromate

Related Product Data:

Connectors used with:
HDP Metal-Shell-page 2179 & 2192

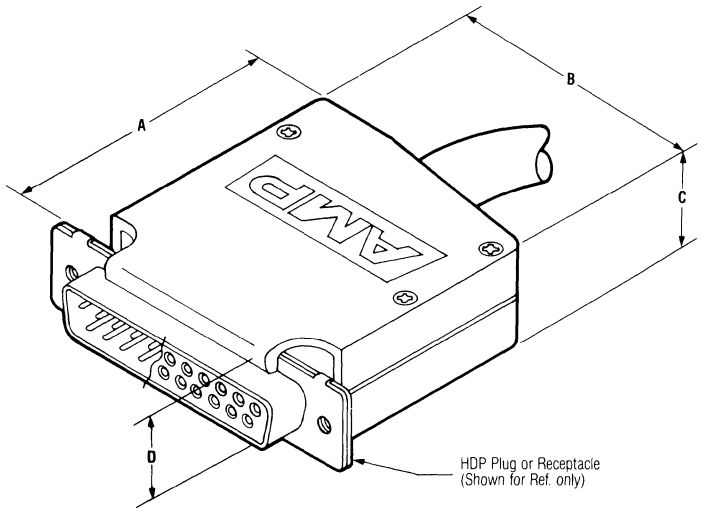
Technical Documents-pages 2258 & 2259

Unshielded Cable Clamps

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Clam Shell Straight/45° Exit

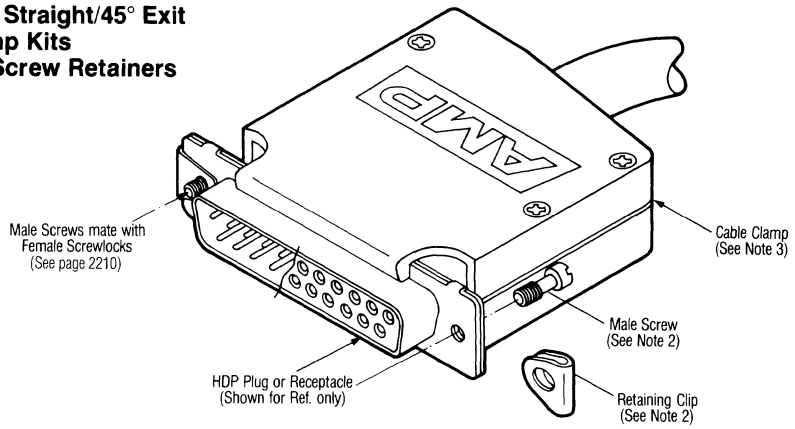


Shell Size	Dimensions				Cable Dia. (Max.)	Short Cable Clamp Part No.		Standard Cable Clamp Part No.	
	A	B	C	D		Individual	Bulk Packed*	Individual	Bulk Packed*
1	1.625	.750	.620	.620	.256	—	—	205729-1	205729-3
2	1.250	1.073	.580	.620	.320	206393-1	206393-3	—	—
	1.625	1.073	.620	.620	.320	—	—	205730-1	205730-3
3	1.250	1.615	.580	.620	.420	206390-1	206390-3	—	—
	1.625	1.615	.620	.620	.420	—	—	205718-1	205718-4
4	1.625	2.263	.620	.620	.490	—	—	205731-1	205731-3
5	1.625	2.168	.730	.730	.600	—	—	205732-1	205732-3

*Each part is individually bulk packed for multiple assembly orders.

Notes: 1. All parts are packaged unassembled.
2. Quantity of pan head screws supplied with cable clamp assembly varies with shell size.
3. Cable clamps are available in kits with male screw retainers and with spring latches and latching blocks
4. All pan head screws have combination cross-recessed and slotted heads.

Clam Shell Straight/45° Exit Cable Clamp Kits with Male Screw Retainers



Shell Size	Short Cable Clamp Kit No.		Standard Cable Clamp Kit No.	
	Individual	Bulk Packed*	Individual	Bulk Packed*
1	—	—	206478-1	2-206478-0
2	1-206478-1	2-206478-5	206478-2	2-206478-1
3	1-206478-2	2-206478-6	206478-3	2-206478-2
4	—	—	206478-4	2-206478-3
5	—	—	206478-5	2-206478-4

*Each part is individually bulk packed for multiple kit orders.

Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of a cable clamp and male screw retainer hardware (2 each). Male screw retainers are also available in kit form, see page 2208.

Straight/45° Exit Cable clamps can be used on either a plug or receptacle and will not interfere with commonly used hardware, such as Male Screw Retainers, Female Screwlocks or Spring Latches and Latching Blocks. Their hinged construction allows easy assembly to a harness. Also, the straight or 45° angle of cable exit is achieved by merely positioning the Cable Support Gate for the desired angle prior to installing the assembly onto the plug or receptacle.

Cable clamp assemblies are available in kits with appropriate hardware for convenient plug/receptacle mating.

Material and Finish:

Cable Clamp Housing—Thermoplastic, black with textured finish

Gates—Thermoplastic, black

Pan Head Screws, 6-32 Set Screw and 6-32 Square Nut—Steel, zinc plated

Related Product Data:

Connectors used with:
HDP Metal-Shell-pages 2179 & 2192
Other accessory capabilities:
Male Screw Retainers-pages 2208 & 2209
Female Screwlocks-page 2210
Locking Posts and Slide Latches-pages 2211 & 2212
Spring Latch (One-Piece)-page 2213
Latching Blocks-pages 2214 & 2215
Technical Documents-pages 2258 & 2259

Material and Finish:

Cable Clamp Housing—Thermoplastic, black with textured finish

Gates—Thermoplastic, black

Pan Head Screws, 6-32 Set Screw and 6-32 Square Nut—Steel, zinc plated

Male Screw—Steel, zinc plated yellow chromate

Retaining Clip—Steel, zinc plated yellow chromate

Related Product Data:

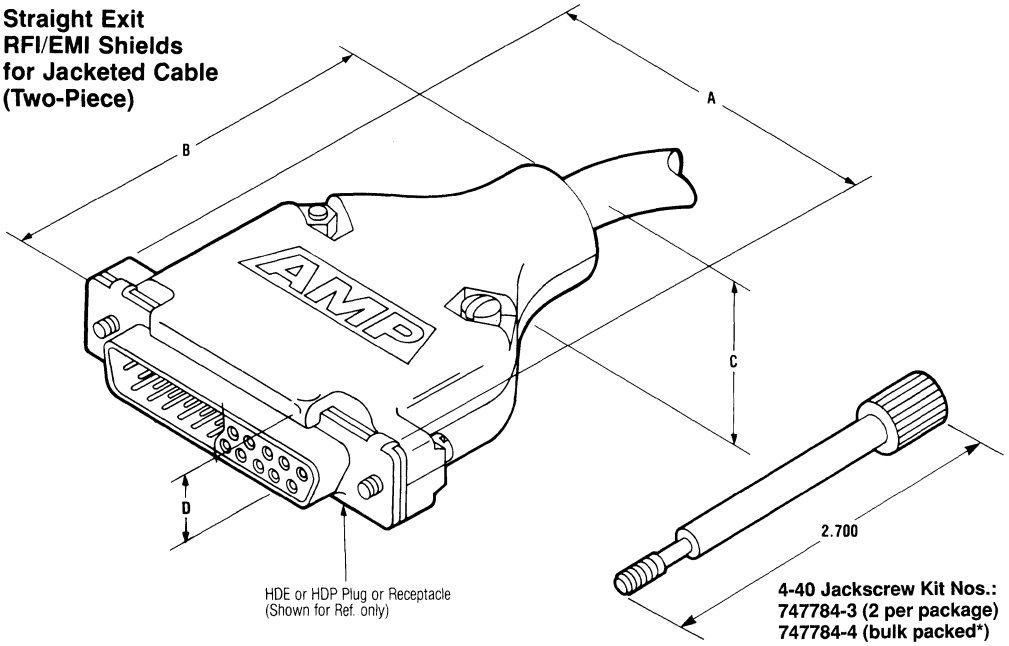
Connectors used with:
HDP Metal Shell-pages 2179 & 2192
Technical Documents-pages 2258 & 2259

Shielded Cable Clamps

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Straight Exit RFI/EMI Shields for Jacketed Cable (Two-Piece)



4-40 Jackscrew Kit Nos.:
747784-3 (2 per package)
747784-4 (bulk packed*)
*Each part is individually bulk packed for multiple kit orders.

Shell Size	Dimensions A	B	C	D	Cable O.D. (Max.)	Die Cast Shield Kit Numbers	Metal-Plated Plastic Shield Kit Numbers	Grommet Sets: Cable O.D. Range	No. of Grommets Per Set	Part Number
					.200	745171-2	745854-5	—	—	—
1	1.215	1.910	.550	.620	.250	745171-1	745854-3	—	—	—
					.370	745171-5	745854-1	.185-.320	4	747746-1
					.225	745172-3	747099-7	—	—	—
2	1.545	1.910	.620	.620	.300	745172-2	747099-5	—	—	—
					.375	745172-1	747099-3	.185-.320	4	747746-1
					.430	1-745172-3	747099-1	—	—	—
					.280	745173-5	745833-9	—	—	—
					.350	745173-4	745833-7	—	—	—
3	2.090	1.920	.680	.620	.430	745173-3	745833-5	—	—	—
					.480	745173-2	745833-3	—	—	—
					.530	745173-1	745833-1	.255-.470	6	747973-1
					.350	745174-5	747100-9	—	—	—
					.425	745174-4	747100-7	—	—	—
4	2.738	1.920	.800	.620	.500	745174-3	747100-5	—	—	—
					.530	2-745174-7	1-747100-1	.255-.470	6	747973-1
					.575	745174-2	747100-3	—	—	—
					.650	745174-1	747100-1	—	—	—
					.375	745175-6	1-747098-1	—	—	—
					.450	745175-5	747098-9	—	—	—
5	2.644	1.920	.900	.730	.525	745175-4	747098-7	.255-.470	6	747973-1
					.600	745175-3	747098-5	—	—	—
					.675	745175-2	747098-3	—	—	—
					.750	745175-1	747098-1	—	—	—

Cable Clamp Kits With Grommets

Shell Size	Dimensions A	B	C	D	Cable O.D. Range	No. of Grommets Per Set	Kit Numbers: Die Cast Shield With Grommets	Metal-Plated Plastic Shield With Grommets	Plastic Shield With Grommets
1	1.215	1.910	.550	.620	.185-.320	4	748676-1	748677-1	748678-1
2	1.545	1.910	.620	.620	.185-.320	4	748676-2	748677-2	748678-2
3	2.090	1.920	.680	.620	.255-.470	6	748676-3	748677-3	748678-3
4	2.738	1.920	.800	.620	.255-.470	6	748676-4	748677-4	748678-4
5	2.644	1.920	.900	.730	.255-.470	6	748676-5	748677-5	748678-5

Notes: 1. All parts are packaged unassembled.
2. Jackscrews must be purchased separately.
3. Split-ring and crimp ferrules are shown on pages 2206 and 2207.

This RFI/EMI shield allows cable to be fully prepared and terminated to the connector before the shield is installed. During installation, the shield of the jacketed cable is folded back and compressed into the cable opening of the RFI/EMI shield. For greater cable support and/or shielding effectiveness, split-ring and crimp ferrules are available (pages 2206 and 2207).

Material and Finish:

Die Cast Shield—Zinc alloy, plated bright nickel over bright copper

Metal-Plated Plastic Shield—Thermoplastic, plated nickel over copper

Plastic Shield—Black thermoplastic

4-40 Fillister Head Screws and Hex Nuts—Steel, zinc plated

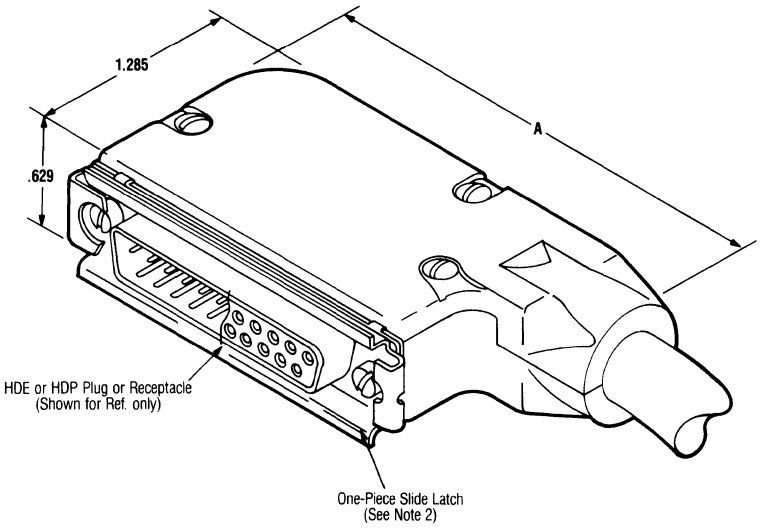
4-40 Mounting Screws—Steel, zinc plated

Jackscrews—Steel, zinc plated clear chromate

Related Product Data:

Ferrules-pages 2197
Connectors used with:
HDE Metal-Shell-page 2184
HDP Metal-Shell (Tin plated only)-pages 2179 & 2192
Other accessory capabilities:
Spring Latch (Two-Piece)-page 2213
Technical Documents-pages 2258 & 2259

90° Exit RFI/EMI Die Cast Shields for Jacketed Cable (Two-Piece)



Shell Size	Dimension A	Cable Dia. (Max.)	Shield with Slide Latch Kit Numbers (See Note 2)	Shield without Slide Latch Kit Numbers (See Note 3)
2	2.310	.225	745652-4	745918-4
		.300	745652-3	745918-3
		.375	745652-2	745918-2
		.430	745652-1	745918-1
3	2.850	.280	745653-5	—
		.355	745653-4	—
		.430	745653-3	747194-3
		.480	745653-2	—
		.530	745653-1	—

Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of a two-piece shield with three pan head screws and a slide latch with two 4-40 slide latch screws. Slide latches may be purchased separately in kit form, see page 2212.
3. Split-ring and crimp ferrules are shown on pages 2206 and 2207.

This RFI/EMI shield allows cable to be fully prepared and terminated to the connector before the shield is installed. During installation, the shield of the jacketed cable is folded back and compressed into the cable opening of the RFI/EMI shield. For greater cable support and/or shielding effectiveness, split-ring and crimp ferrules are available (pages 2206 and 2207).

Material and Finish:

Shield—Zinc alloy, plated nickel over copper
4-40 Pan Head Screws & Slide Latch Screws—Steel, zinc plated
One-Piece Slide Latch—Stainless steel

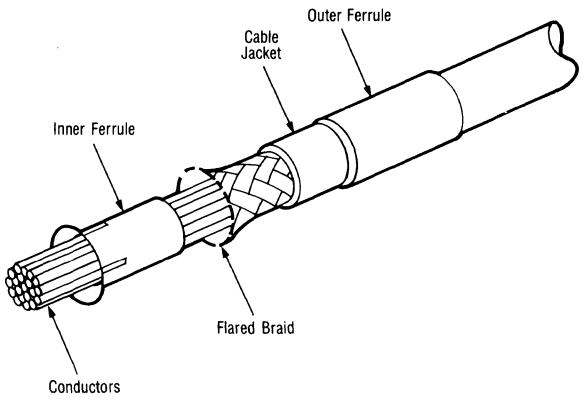
Related Product Data:

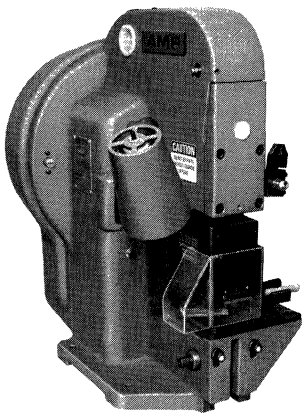
Ferrules-pages 2197
Connectors used with:
HDE Metal-Shell-page 2184
HDP Metal-Shell (Tin plated only)-pages 2179 & 2192
Technical Documents-pages 2258 & 2259

Shielded Cable Clamps

Dimensioning:
Dimensions are in inches

Crimp Ferrules for Braided Cable Shield





AMP-O-LECTRIC Terminating Machine No. 565435-5, with Applicator No. 812407-1 and Die Set No. 813809-( )
(See page 2207 for dash numbers)

AMP Hand Tool No. 543344-1
(See page 2207 for Hand Tool Die Set numbers)

Material and Finish:

Outer Ferrule—Copper, plated .000100 min. tin

Inner Ferrule—.023 thick brass plated .000050 tin over copper

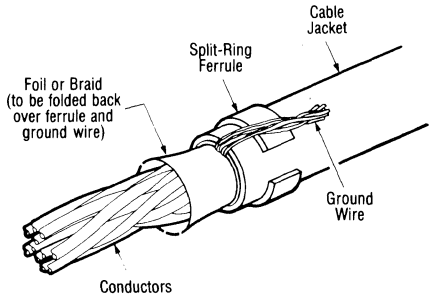
Related Product Data:

Shields used with:

Straight Exit-page 2204
90° Exit-page 2205

Note: Crimp ferrules are for use with braided shields only. Crimp ferrules require application tooling with die sets for attachment to cable.

Split-Ring Ferrules for Foil or Braided Cable Shield



Material:

Aluminum

Related Product Data:

Shields used with:

Straight Exit-page 2204
90° Exit-page 2205

Note: Split-ring ferrules cannot be used with outer and inner ferrules. Split-ring ferrules are suitable for both foil and braided shields. The ferrules do not require tooling for assembly.

Shielded Cable Clamps

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

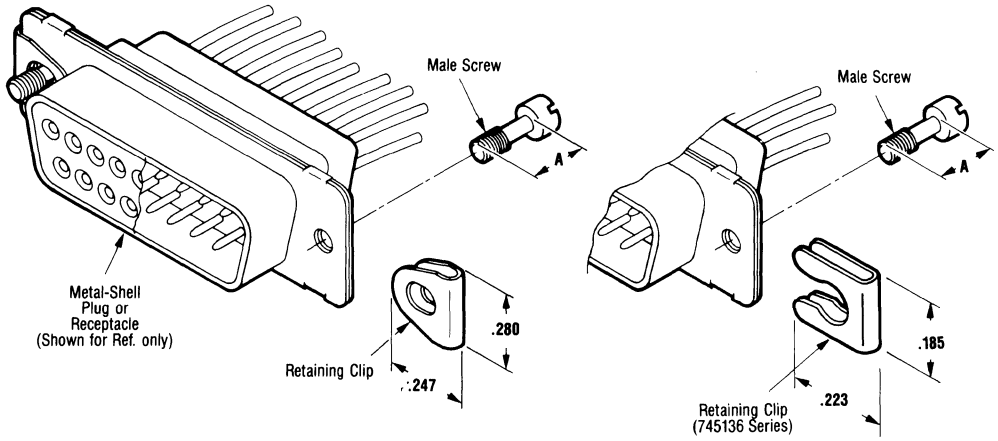
Crimp and Split-Ring Ferrules

Shell Size	Cable Dia. (Max.)*	When using these Shield Kits → Straight Exit Shield Kit No.		90° Exit Die Cast Shield Kit No.		Use these Ferrules → Split-Ring Ferrule No.	Crimp Ferrule No. and Tooling No.			
		Die Cast	Metal-Plated Plastic	With Slide Latch	Without Slide Latch		Inner	Outer	Hand Tool Die Set	Applicator Die Set
1	.200	745171-2	745854-5	—	—	745508-2	—	—	—	
	.240	745171-5	745854-1	—	—	—	1-745129-8	745130-8	543013-2	813809-1
	.240	745171-1	745854-3	—	—	745508-3	1-745129-6	745130-8	543013-1	813809-1
	.280	745171-5	745854-1	—	—	—	3-745129-4	1-745130-6	1-543013-7	813809-7
	.370	745171-5	745854-1	—	—	745508-6	1-745129-7	1-745130-0	543013-6	813809-5
2	.225	745172-3	747099-7	745652-4	745918-4	745508-3	—	—	—	—
	.240	745172-1	747099-3	745652-2	745918-2	—	1-745129-8	745130-8	543013-2	813809-1
	.240	1-745172-3	747099-1	745652-1	745918-1	—	2-745129-1	745130-8	543013-3	813809-1
	.280	1-745172-3	747099-1	745652-1	745918-1	—	3-745129-2	1-745130-6	1-543013-6	813809-7
	.300	745172-2	747099-5	745652-3	745918-3	745508-4	—	—	—	—
	.350	1-745172-3	747099-1	745652-1	745918-1	—	2-745129-0	745130-9	543013-4	813809-2
	.365	745172-1	747099-3	745652-2	745918-2	—	1-745129-7	1-745130-0	543013-6	813809-5
	.375	745172-1	747099-3	745652-2	745918-2	745508-6	—	—	—	—
	.430	1-745172-3	747099-1	745652-1	745918-1	745508-1	1-745129-9	1-745130-1	543013-7	813809-3
3	.240	745173-3	745833-5	745653-3	747194-3	—	2-745129-1	745130-8	543013-3	813809-1
	.280	745173-5	745833-9	745653-5	—	745508-4	—	—	—	—
	.280	745173-3	745833-5	745653-3	747194-3	—	3-745129-2	1-745130-6	1-543013-6	813809-7
	.350	745173-4	745833-7	745653-4	—	745508-5	—	—	—	—
	.350	745173-3	745833-5	745653-3	747194-3	—	2-745129-0	745130-9	543013-4	813809-2
	.350	745173-1	745833-1	745653-1	—	—	2-745129-4	745130-9	543013-5	813809-2
	.430	745173-3	745833-5	745653-3	747194-3	745508-1	1-745129-9	1-745130-1	543013-7	813809-3
	.430	745173-1	745833-1	745653-1	—	—	2-745129-3	1-745130-1	543013-8	813809-3
	.480	745173-2	745833-3	745653-2	—	745508-8	—	—	—	—
	.530	745173-1	745833-1	745653-1	—	745508-9	2-745129-2	1-745130-2	1-543013-0	813809-4
4	.240	745174-4	747100-7	—	—	—	2-745129-1	745130-8	543013-3	813809-1
	.280	745174-4	747100-7	—	—	—	3-745129-2	1-745130-6	1-543013-6	813809-7
	.350	745174-5	747100-9	—	—	745508-5	—	—	—	—
	.350	745174-4	747100-7	—	—	—	2-745129-0	745130-9	543013-4	813809-2
	.430	745174-4	747100-7	—	—	745508-1	1-745129-9	1-745130-1	543013-7	813809-3
	.430	745174-1	747100-1	—	—	—	2-745129-7	1-745130-1	543013-9	813809-3
	.500	745174-3	747100-5	—	—	745508-8	—	—	—	—
	.525	745174-1	747100-1	—	—	—	2-745129-6	1-745130-2	1-543013-1	813809-4
	.575	745174-2	747100-3	—	—	1-745508-0	—	—	—	—
	.650	745174-1	747100-1	—	—	1-745508-1	2-745129-5	1-745130-3	1-543013-3	813809-6
5	.240	745175-6	1-747098-1	—	—	—	1-745129-8	745130-8	543013-2	813809-1
	.350	745175-4	747098-7	—	—	—	2-745129-4	745130-9	543013-5	813809-2
	.365	745175-6	1-747098-1	—	—	—	1-745129-7	1-745130-0	543013-6	813809-5
	.375	745175-6	1-747098-1	—	—	745508-6	—	—	—	—
	.430	745175-4	747098-7	—	—	—	2-745129-3	1-745130-1	543013-8	813809-3
	.450	745175-5	747098-9	—	—	745508-7	—	—	—	—
	.525	745175-4	747098-7	—	—	745508-9	—	—	—	—
	.530	745175-4	747098-7	—	—	—	2-745129-2	1-745130-2	1-543013-0	813809-4
	.530	745175-1	747098-1	—	—	—	3-745129-0	1-745130-2	1-543013-2	813809-4
	.600	745175-3	747098-5	—	—	1-745508-0	—	—	—	—
	.650	745175-1	747098-1	—	—	—	2-745129-9	1-745130-3	1-543013-4	813809-6
	.675	745175-2	747098-3	—	—	1-745508-1	—	—	—	—
	.750	745175-1	747098-1	—	—	1-745508-2	2-745129-8	1-745130-4	1-543013-5	813809-8

*For split-ring ferrules, Min. O.D. is .040 smaller than Max. O.D. For inner and outer ferrules, Min. O.D. is .050 smaller than Max. O.D. At the Max. cable O.D. the Min. insulation thickness is .060.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Male Screw Retainers for Metal-Shell Connectors (HDE and HDP)



Male Screw Finish	Thread Size	Dimension A	Male Screw Retainer Kit No.	
			Individual	Bulk Packed*
Yellow Chromate	4-40	.220	205980-1	205980-3
		.200	745136-1**	745136-2**
	M3 (Metric)	.225	207871-1	207871-2
Clear Chromate	4-40	.220	205980-4	205980-5
		.200	745136-3**	745136-4**

*Each part is individually bulk packed for multiple kit orders.
**Retaining clips are stainless steel for Male Screw Retainer Series 745136.

Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of two male screws and two retaining clips. Male screw retainers are also furnished as part of cable clamp kits (pages 2202 and 2203).
3. Male screw retainers mate with female screwlocks (page 2210), with HDF metal-shell connectors featuring 4-40 threaded inserts (page 2190) and with HD metal-shell board mount connectors featuring 4-40 threaded inserts or female screwlocks (pages 2230-2236, 2241, 2242, 2246, 2247 and 2252).
4. Retaining clips must be assembled onto connector flanges with threaded hole toward wire side of connector.

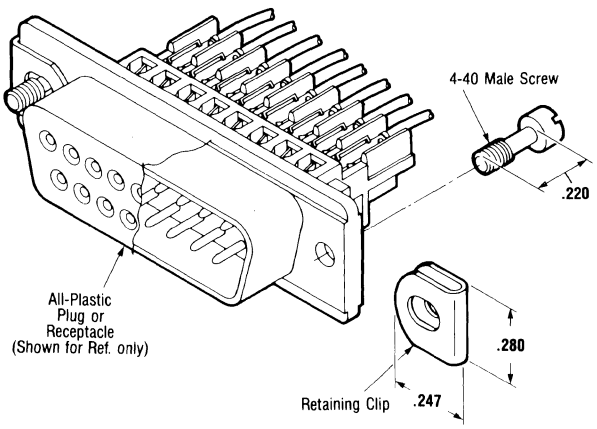
Material and Finish

Male Screw—Steel, zinc plated clear or yellow chromate
Retaining Clip—.012 steel, zinc plated or stainless steel**

Related Product Data:

Connectors used with:
HDE Metal-Shell-page 2184
HDP Metal-Shell-pages 2179 & 2192
Technical Documents-pages 2258 & 2259

Male Screw Retainers for All-Plastic Connectors (HDE)



Kit Numbers:
745647-1 (individually packaged, see Note 2.)
745647-2 (bulk packed)*

*Each part is individually bulk packed for multiple kit orders.

Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of two 4-40 male screws and two retaining clips.
3. Male screw retainers mate with female screwlocks (page 2210), with HDF all-plastic connectors featuring 4-40 threaded inserts (page 2189), with HD all-plastic board mount connectors featuring integral standoffs with 4-40 threaded inserts and female screwlocks (pages 2237-2240, 2248, 2250, and 2253).
4. Retaining clips must be assembled onto connector flanges with threaded hole toward wire side of connector.

Material and Finish:

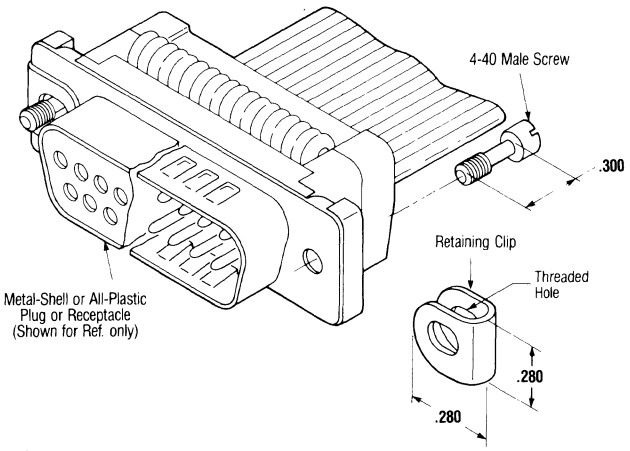
Male Screw—Steel, zinc plated yellow chromate

Retaining Clip—.012 steel, zinc plated yellow chromate

Related Product Data:

Connectors used with:
HDE All-Plastic-page 2183
Technical Documents-pages 2258 & 2259

Male Screw Retainers for Metal-Shell and All-Plastic Connectors (HDF)



Kit Numbers:
746881-1 (individually packaged, see Note 2.)
746881-2 (bulk packed)*

*Each part is individually bulk packed for multiple kit orders.

Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of two male screws and two retaining clips.
3. Male screw retainers mate with female screwlocks (page 2210), and with HD board mount connectors featuring female screwlocks (pages 2230-2242, 2246-2248, 2252 and 2253).
4. Retaining clips must be assembled onto connector flanges with threaded hole toward ribbon cable side of connector.

Material and Finish:

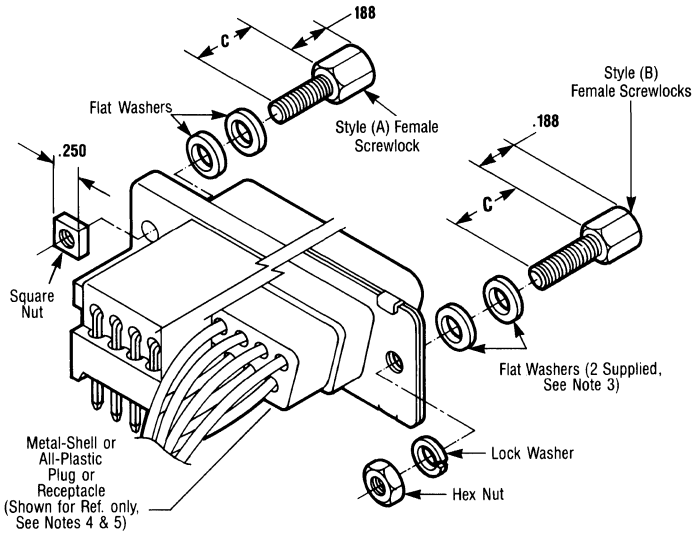
Male Screw—Steel, zinc plated clear chromate

Retaining Clip—.012 steel, zinc plated yellow chromate

Related Product Data:

Connectors used with:
HDF Metal-Shell and All-Plastic-pages 2189 & 2190
Technical Documents-pages 2258 & 2259

Female Screwlocks for Metal-Shell and All-Plastic Connectors (HDE, HDF, HDP)



Connector Used with	Style	Dimension C	Thread Size	Finish	Kit Number	
					Individual	Bulk Packed*
HD All-Plastic Right-Angle Plugs and Receptacles	(A)	.250	4-40	Yellow Chromate	207952-1	—
				Clear Chromate	207952-3	—
HDE Metal-Shell or All-Plastic Plugs and Receptacles	(B)	.250	4-40	Yellow Chromate	745563-1	745563-2
				Clear Chromate	745563-3	745563-4
HDP or HDF Metal-Shell or All-Plastic Plugs and Receptacles	(B)	.312	4-40	Yellow Chromate	205817-1	205817-2
				Clear Chromate	205817-3	205817-4
					—	748558-4**
			M3 (Metric)	Yellow Chromate	207872-1	207872-2
				Clear Chromate	207872-3	—
HD All-Plastic Plugs and Receptacles with Integral Standoffs	(B)	.560	4-40	Yellow Chromate	207719-1	207719-2
				Clear Chromate	207719-3	207719-4
			2-56	Clear Chromate	747223-3	747223-4

*Each part is individually bulk packed for multiple kit orders.
**With captivated star washer. No additional hardware included.

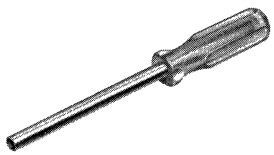
Notes: 1. All parts are packaged unassembled.
2. Each female screwlock kit is comprised of two assemblies as illustrated above.
3. One or two flat washers may be required for panel thicknesses less than .060. Female screwlocks are not recommended for panel thicknesses greater than .060.
4. 2-56 is the male thread size. The female thread size is 4-40.
5. Female screwlocks with 2-56 thread size are to be used with cable clamps with mounting flanges. Female screwlocks with 4-40 and M3 (metric) thread sizes can be used with all other cable clamps.
6. Female screwlocks mate with male screw retainers (pages 2208 & 2209).
7. Short female screwlocks cannot be used with HDF connectors.

Material and Finish:

All Parts—Cold rolled steel, zinc plated clear or yellow chromate

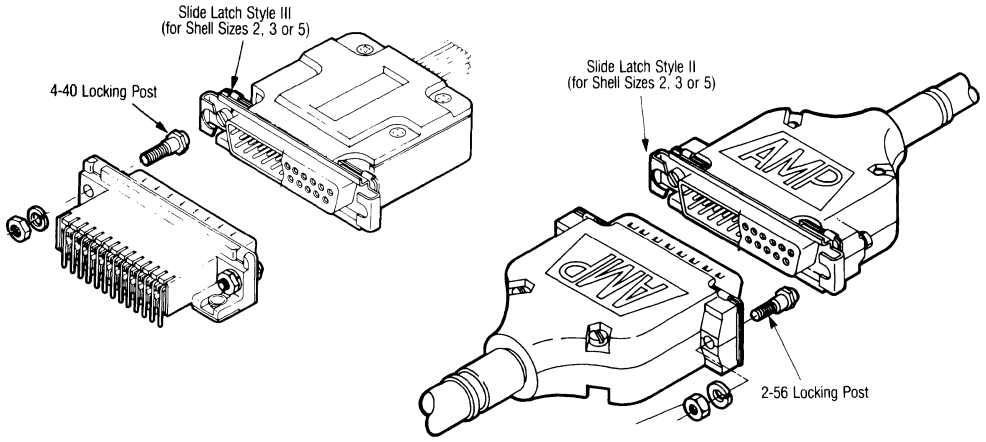
Related Product Data:

Connectors used with:
HDE Metal-Shell or All-Plastic-pages 2183-2185
HDF Metal-Shell or All-Plastic-pages 2189 & 2190
HDP Metal-Shell-pages 2179, 2180, 2192 & 2193
HD Metal-Shell-pages 2227-2236, 2241, 2242, 2244-2247 & 2252
HD All-Plastic-pages 2237-2240, 2248-2251 & 2253
Technical Documents-pages 2258 & 2259



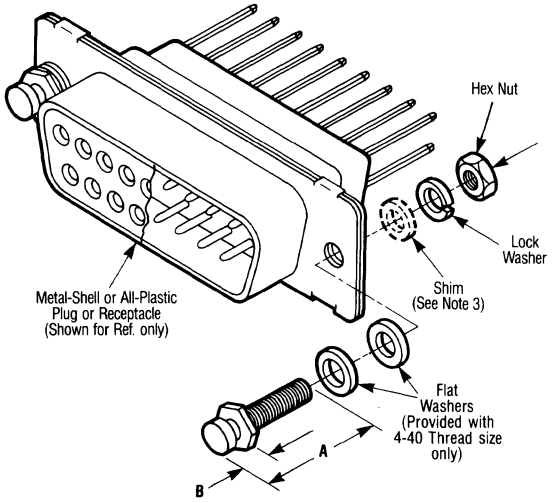
Nut Driver, Part No. 811262-1
(Used for assembling female screwlocks to connector flange)

Locking Posts and Slide Latches



Typical Applications of Locking Posts and Slide Latches

Locking Posts



Thread Size	Locking Post Finish	Dimensions		Locking Post Kit Number (See Note 4)	
		A	B	Individual	Bulk Packed*
4-40	Yellow Chromate	.410	.110	206514-1	206514-3
		.560	.110	206514-6	206514-7
2-56	Yellow Chromate	.615	.172	747242-1	747242-2
	Clear Chromate	.615	.172	747242-3	747242-4

*Each part is individually bulk packed for multiple kit orders.

Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of two complete assemblies, as illustrated above.
3. For front panel mounting, it is recommended that a shim be used between the connector flange and panel to prevent bowing of the flange.
4. Locking posts with 2-56 thread size are to be used with cable clamps with mounting flanges. Locking posts with 4-40 thread size can be used with all other cable clamps
5. Locking posts mate with slide latches (page 2212).

Material and Finish:

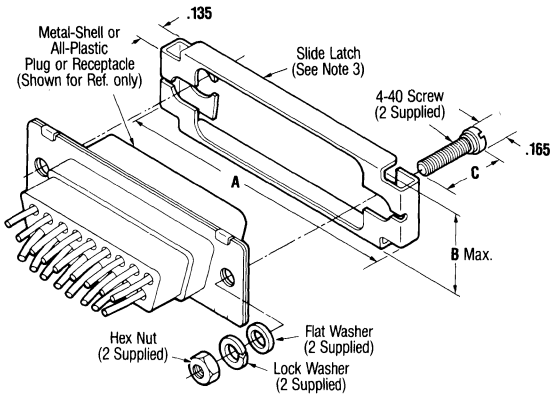
All Parts—Cold rolled steel, zinc plated clear or yellow chromate

Related Product Data:

Connectors used with:
HDE Metal-Shell or All-Plastic-pages 2183-2185
HDF Metal-Shell or All-Plastic-pages 2189 & 2190
HDP Metal-Shell-pages 2179, 2180, 2192 & 2193
HD Metal-Shell-pages 2227-2236, 2241, 2242, 2244-2247 & 2252
HD All-Plastic-pages 2237-2240, 2248-2251 & 2253
Technical Documents-pages 2258 & 2259

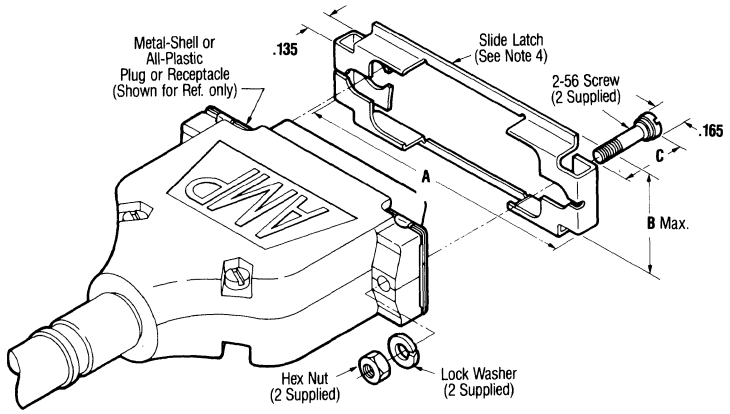
Slide Latches

Style I



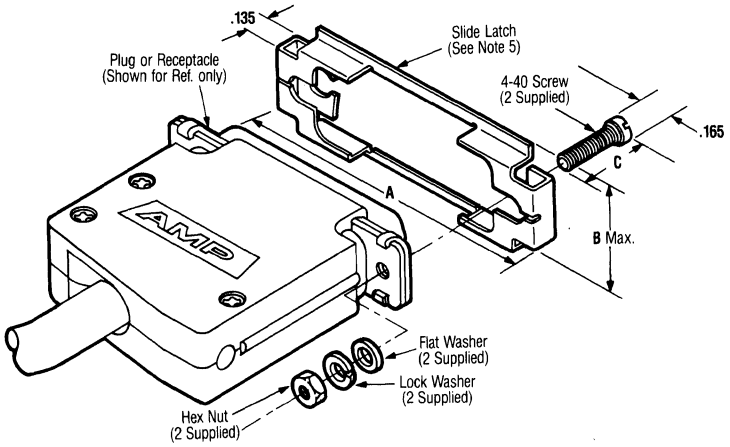
For Shell Sizes 1, 2 and 4

Style II



For Shell Sizes 2, 3 and 5

Style III



For Shell Sizes 2, 3 and 5

Shell Size	Style	Dimensions			Slide Latch Kit Numbers	
		A	B	C	Individual	Bulk Packed*
1	I	1.397	.490	.415	745404-1	745404-2
2	II	1.725	.490	.547	745583-1	745583-2
	III	1.725	.490	.415	745583-5	745583-6
3	II	2.265	.490	.547	745584-1	745584-2
	III	2.265	.490	.415	745584-3	745584-4
4	I	2.913	.490	.415	745407-1	745407-2
5	II	2.819	.590	.547	745578-1	745578-2
	III	2.819	.590	.415	745578-3	745578-4

*Each part is individually bulk packed for multiple kit orders.

Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of a slide latch and two screws, flat washers (if required), lock washers and hex nuts. Style I slide latches are also furnished as part of cable clamp kits (page 2205).
3. Style I slide latches can be used with cable clamps that do not extend beyond the front flange of the connector or on connectors without cable clamps.
4. Style II slide latches can be used with any cable clamp that has the mounting ear configuration as shown above.
5. Style III slide latches can be used on connectors without cable clamps or with cable clamps that do not have the mounting ear configuration shown with Style II above.
6. Slide latches mate with locking posts (page 2211).

Material and Finish:

4-40 Screws, Washers & Hex Nuts—Steel, zinc plated yellow chromate

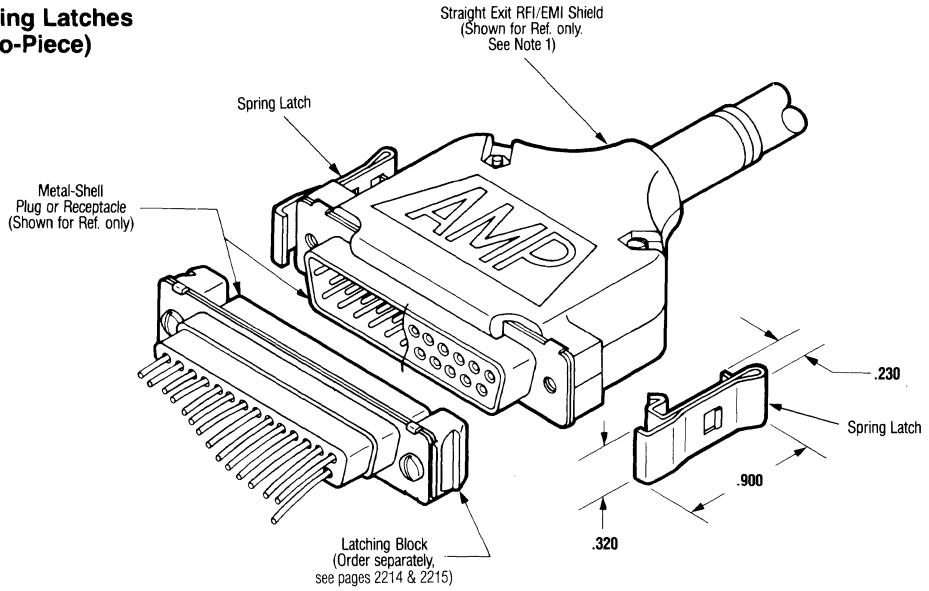
2-56 Screws, Washers & Hex Nuts—Steel, zinc plated clear chromate

Slide Latch—Stainless steel

Related Product Data:

Connectors used with:
HDE Metal-Shell or All-Plastic-pages 2183-2185
HDF Metal-Shell or All-Plastic-pages 2189 & 2190
HDP Metal-Shell-pages 2179, 2180, 2192 & 2193
HD Metal-Shell-pages 2227-2236, 2241, 2242, 2244-2247 & 2252
HD All-Plastic-pages 2237-2240, 2248-2251 & 2253
Technical Documents-pages 2258 & 2259

Spring Latches (Two-Piece)



Spring Latch Part Numbers:
745255-2 (two per package)
745255-3 (bulk packed)*

*Two-piece spring latches are individually bulk packed for multiple part orders.

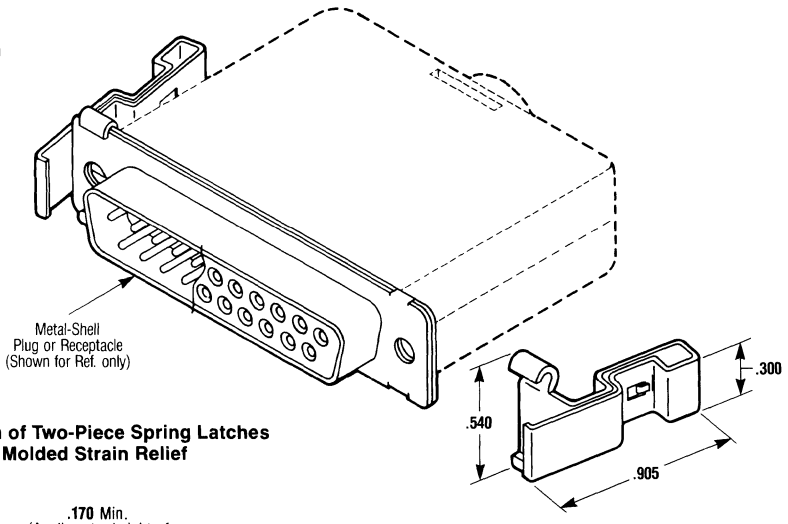
Notes: 1. Two-piece spring latches can be used with straight/90° cable clamps (page 2202-2207) and RFI/EMI shields (page 2204).
2. Two-piece spring latches mate with latching blocks (pages 2214 & 2215)

Typical Application of Two-Piece Spring Latches with Straight Exit RFI/EMI Shield

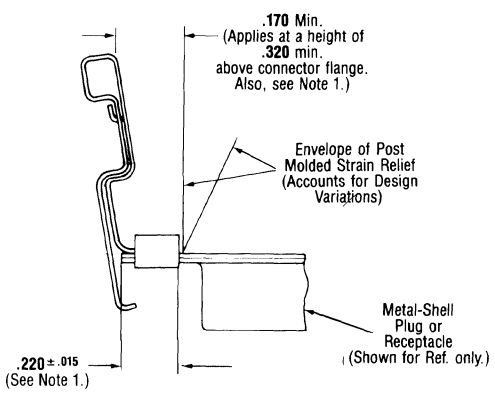
Material:
.015 Stainless steel

Related Product Data:
Connectors used with:
HDE Metal-Shell-page 2184
HDP Metal-Shell (Tin plated only)-pages 2179 & 2192

Spring Latches for Post Molded Strain Reliefs (Two-Piece)



Typical Application of Two-Piece Spring Latches with Post Molded Strain Relief



Spring Latch Part Numbers:
745779-2 (two per package)
745779-3 (bulk packed)*

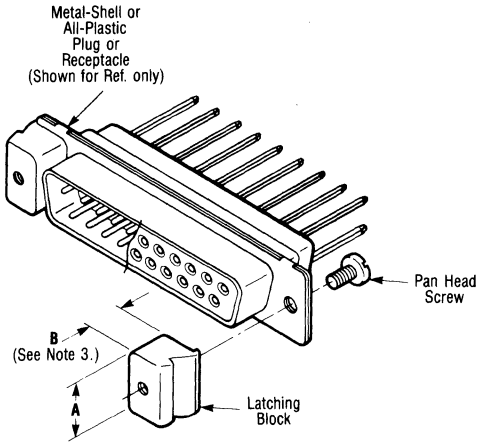
*Two-piece spring latches are individually bulk packed for multiple part orders.

Notes: 1. These dimensions must be maintained to assure satisfactory operation of the spring latches.
2. Two-piece spring latches mate with latching blocks (pages 2214 & 2215).

Material:
Stainless steel

Related Product Data:
Connectors used with:
HDE Metal-Shell-page 2184
HDP Metal-Shell-pages 2179 & 2192
Technical Documents-pages 2258 & 2259

Latching Blocks with Threaded Hole



Shell Size	Dimensions A	Dimensions B	Thread Size	Mounting Screw Length	Mounting Screw Part Number	Rear Panel Latching Block Part Number Individual**	Rear Panel Latching Block Part Number Bulk Packed*	Front Panel Latching Block Part Number Individual**	Front Panel Latching Block Part Number Bulk Packed*	Front Panel Latching Block Kit Number
1 thru 4	.400	.190	M3 (Metric)	—	—	745403-1	745403-2	—	—	—
			4-40	—	—	745403-8	745403-9	—	—	—
		.220	4-40	—	—	747717-2	747717-3	—	—	—
		.250	M3 (Metric)	6 mm	18019-1	—	—	208101-1	208101-2	745007-1
				4.5 mm	3-18019-0	—	—	208101-1	208101-2	745007-3
			4-40	.187	26853-4	—	—	208101-8	208101-9	745007-5

*Bulk packed for multiple part orders.
**Individual kits contain two latching blocks per package.

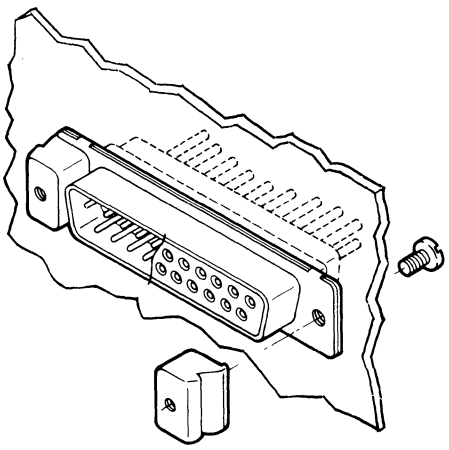
Notes: 1. All parts are packaged unassembled.
2. Each front panel latching block kit is comprised of two latching blocks and two pan head screws of the appropriate length and thread size. Front panel latching blocks are also furnished as part of cable clamp kits (pages 2202 & 2203).
3. B dimension .250 is for connector flange mounting, .220 is for use with .030 thick panels, and .190 is for use with .060 thick panels.
4. Latching blocks mate with spring latches (page 2213).

Material and Finish:

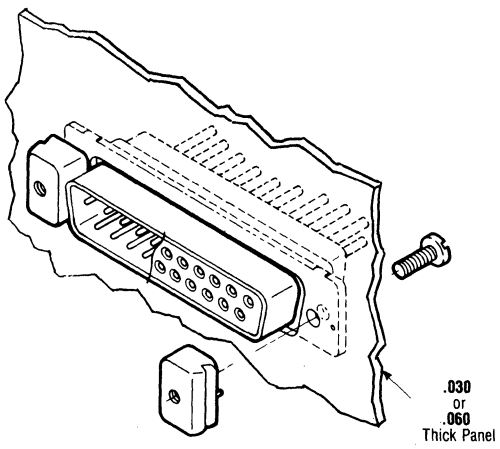
Latching Blocks—Zinc
Pan Head Screws—Steel, zinc plated

Related Product Data:

Connectors used with:
HDE Metal-Shell or All-Plastic-pages 2183-2185
HDF Metal-Shell or All-Plastic-pages 2189 & 2190
HDP Metal-Shell-pages 2179, 2180, 2192 & 2193
HD Metal-Shell-pages 2227-2236, 2241, 2242, 2244-2247 & 2252
HD All-Plastic-pages 2237-2240, 2248-2251 & 2253
Mating/Panel Mounting-page 2254
Technical Documents-pages 2258 & 2259

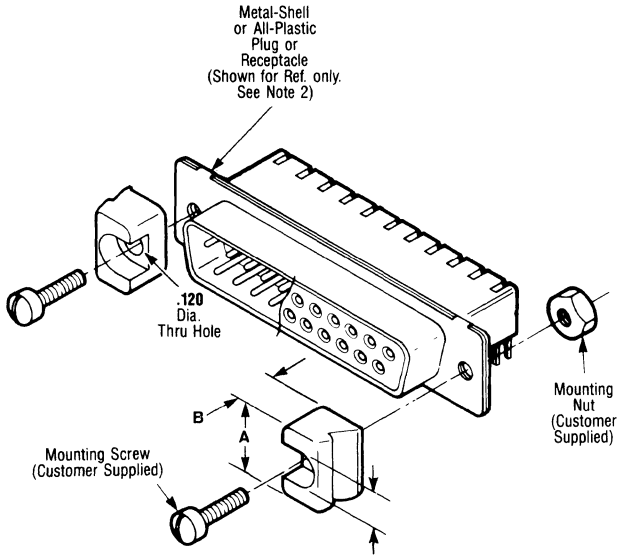


Typical Application of Front-Panel Mounted Subminiature D Connector using Front-Panel Latching Blocks



Typical Application of Rear-Panel Mounted Subminiature D Connector using Rear-Panel Latching Blocks

Latching Blocks with Slot Recess and Thru Hole



Shell Size	Dimensions A	Dimensions B	Panel Thickness	Rear-Panel Latching Block Part Number Individual**	Rear-Panel Latching Block Part Number Bulk Packed*	Front-Panel Latching Block Part Number Individual**	Front-Panel Latching Block Part Number Bulk Packed*
1 thru 4	.400	.160	.090	747080-2	—	—	—
		.190	.060	745245-2	745245-3	—	—
		.250	—	—	—	745286-2	745286-3

*Bulk packed for multiple part orders.
**Individual kits contain two latching blocks per package.

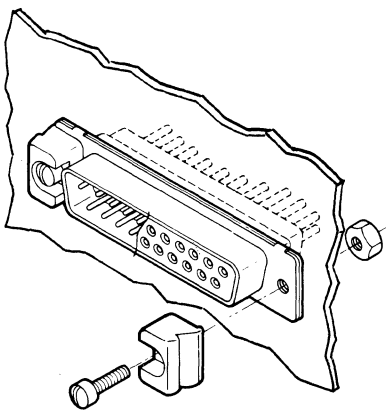
Notes: 1. Mounting screws and nuts are to be supplied by Customer.
2. These latching blocks allow mounting screws to be installed thru the front of the block and to be screwed into the bracket of a right-angle connector, a fixed insert in a connector mounting flange, or a nut behind the connector mounting flange (as illustrated above).
3. Latching blocks mate with spring latches (page 2213).

Material:

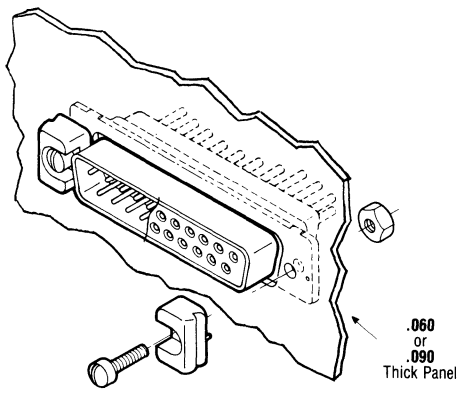
Latching Blocks—Zinc

Related Product Data:

Connectors used with:
HDE Metal-Shell or All-Plastic-pages 2183-2185
HDF Metal-Shell or All-Plastic-pages 2189 & 2190
HDP Metal-Shell-pages 2179, 2180, 2192 & 2193
HD Metal-Shell-pages 2227-2236, 2241, 2242, 2244-2247 & 2252
HD All-Plastic-pages 2237-2240, 2248-2251 & 2253
Mating/Panel Mounting-page 2254
Technical Documents-pages 2258 & 2259

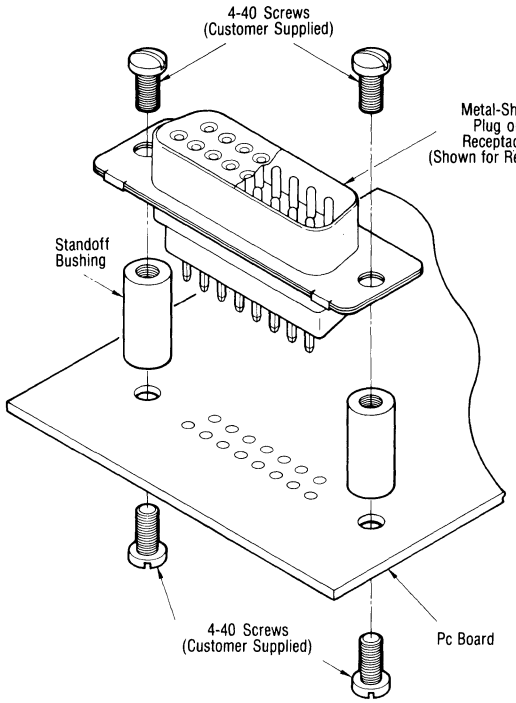


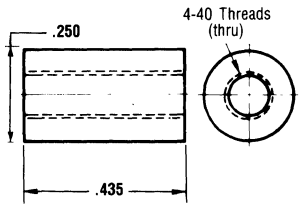
Typical Application of Front-Panel Mounted Subminiature D Connector using Front-Panel Latching Blocks



Typical Application of Rear-Panel Mounted Subminiature D Connector using Rear-Panel Latching Blocks

Standoff Bushings



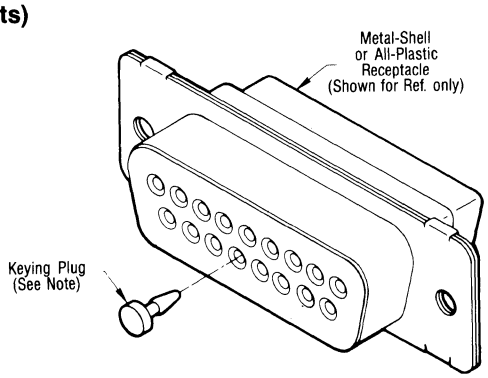


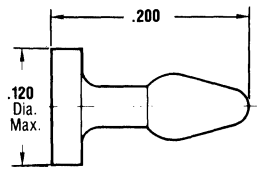
Kit Numbers:
205933-3 (two bushings per package)
205933-4 (bulk packed)*
*Parts are individually bulk packed for multiple part orders.

Material:
Aluminum

Related Product Data:
Connectors used with:
HD Straight Posted-
pages 2244 & 2245
Technical Documents-
pages 2258 & 2259

Keying Plug (for Size 20 Socket Contacts)





Part Number: 206509-1

Notes: 1. Keying plug is installed taper-end first into front of receptacle.
2. Sold individually.

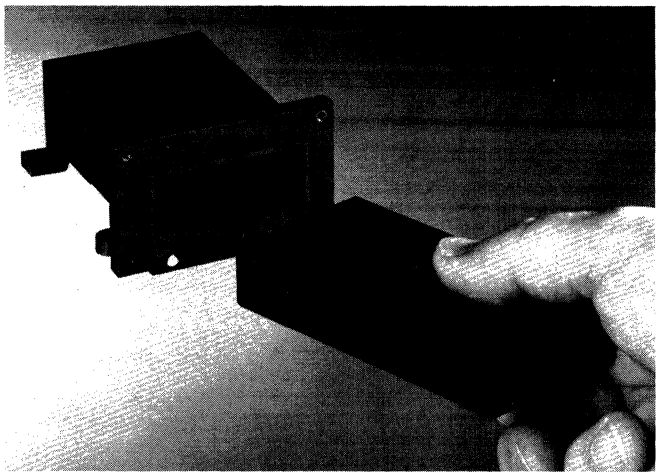
Material:
Polyphenylene oxide

Related Product Data:
Connectors used with:
All HDE, HDP and HD Receptacles with Socket Contacts

Cassette Connector

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches



The AMPLIMITE cassette connector is designed as a complete systems approach for use with magnetic bubble memories, as well as RAM, PROM and EPROM memories. This versatile and reliable connector is comprised of a cartridge and cartridge holder.

The cartridge consists of top and bottom cover halves that snap together, a front cover which provides keying, a 33-position Subminiature D receptacle connector and a sliding gate for optical "write-protect" sensing. Cover halves also have provisions for a customer logo and program identification label. A long version of the cartridge is available to provide an additional 1.460 of length.

The cartridge holder consists of a holder body that accepts the cartridge and includes mounting ears for pc board mounting, a cover which provides keying and flush rear-panel mounting and a 33-position Subminiature D pin connector. Also included are provisions for "busy" and "write-protect" LED's and a "write-protect" optical sensor. A long cartridge holder is available to accept the long cartridge.

Product Facts:

- Keying of cartridge and holder prevents insertion of undesired cartridge into holder
- Keying variations accomplished by simply changing front and panel mount covers

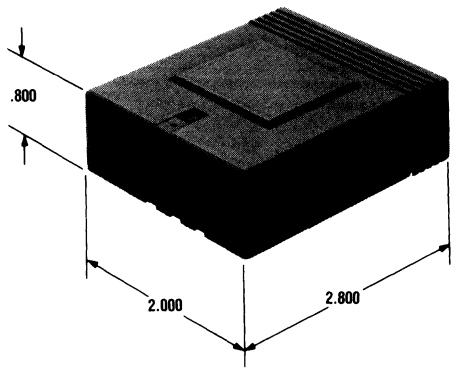
Cartridge:

- Recessed sliding gate provides for optical sensing with reflective background
- Unit can be disassembled with special tool for servicing/inspection
- Connector concept uses industry standard AMP Subminiature D connector configuration and socket contacts with selective plating for high-cycle life
- Position 9 contact recessed for removal and insertion detection

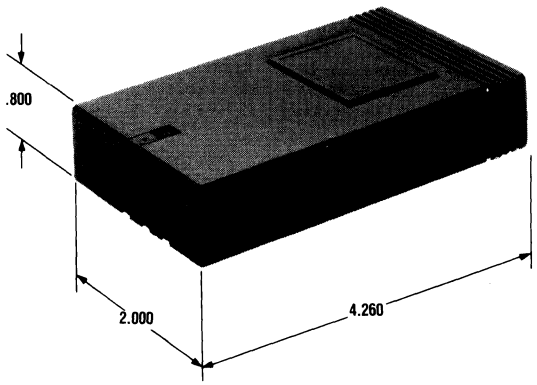
Cartridge Holder:

- Rear panel mount cover provides flush panel mounting, avoiding cutout edges
- Body and connector rigidly interlocked, requiring no additional support
- Optical sensor and LED's can be wave-soldered directly to pc board
- Pin connector uses industry proven AMP Subminiature D contacts with selective plating for high-cycle life

Cartridges



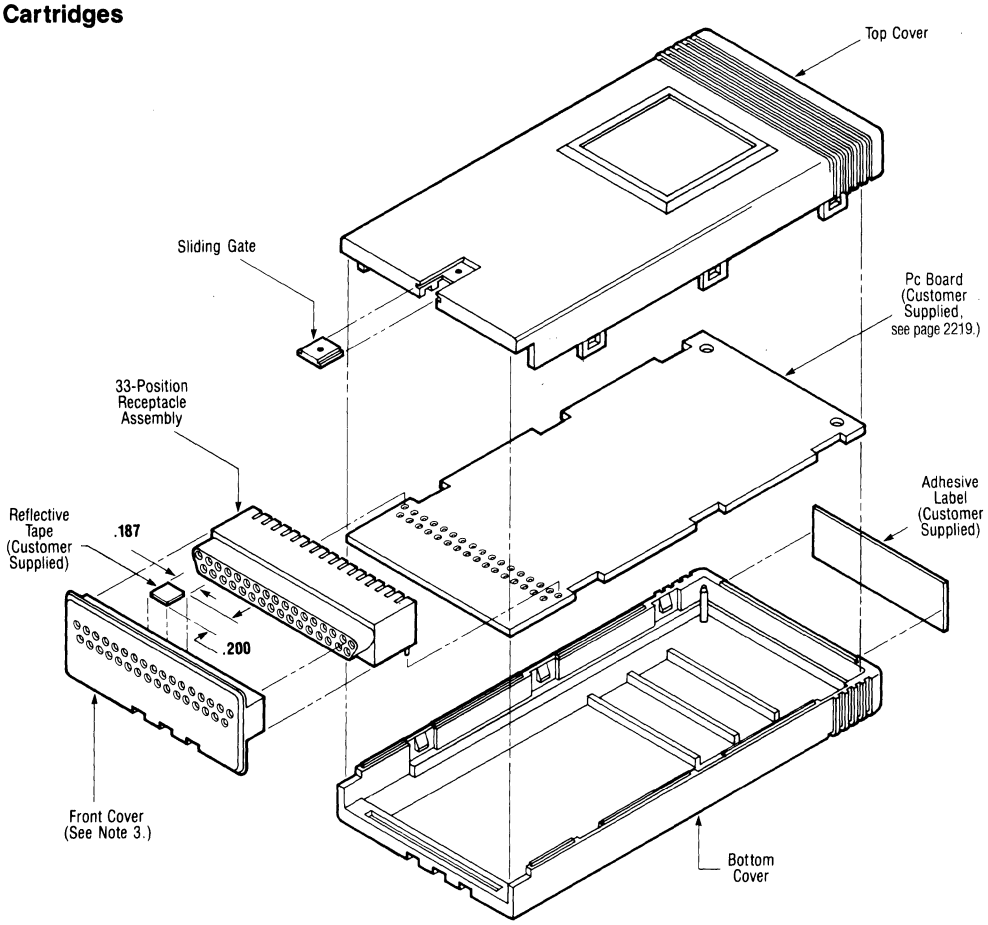
Standard Cartridge



Long Cartridge

Notes: 1. Recessed area for customer logo is 1.020 x 1.040. Logo may be molded into top cover, or applied with adhesive label.
2. Recessed area for adhesive label is .500 x 1.500.
3. See page 2219 for available keying of front cover.
4. Standard cartridges are used with standard cartridge holders, and long cartridges are used with long cartridge holders. Cartridge holders are presented on pages 2220 and 2221.

Cartridges



Note: A long cartridge is shown for illustration purposes only. The standard version is identical, except for shorter top and bottom covers. It also accommodates a shorter pc board.

Material and Finish:

Top and Bottom Covers, Front Cover, Receptacle Housing and Sliding Gate—Black thermoplastic, flame retardant

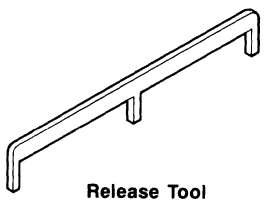
Receptacle Contacts—Phosphor bronze, selectively plated .000002-.000005 pure soft gold over .000030 min. palladium on contact area, .000150-.000250 tin on solder post with entire contact under plated .000050 min. nickel

Related Product Data:

Mateable Connector-pages 2220 & 2221

Pc Board Layouts-page 2219

Technical Documents-pages 2258 & 2259



Release Tool No. 91251-1

Receptacle Part No.	Sliding Gate Part No.	Front Cover Part No.	Top Cover Part No.		Bottom Cover Part No.		Standard Kit No.		Long Kit No.	
			Standard	Long	Standard	Long	Individual	Bulk Packed*	Individual	Bulk Packed*
745447-1	745442-1	745427-1	745432-1	745637-1	745433-1	745638-1	745538-5	745538-1	745640-2	745640-1
745447-1	745442-1	745427-4	745432-1	—	745433-1	—	745538-8	745538-4	—	—

*Each part is individually bulk packed for multiple kit orders. Minimum order quantity is 50.

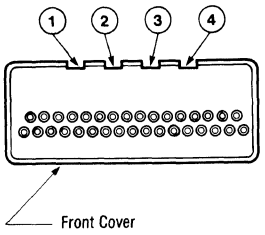
Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of a top and bottom cover (standard or long), front cover, sliding gate and 33-position receptacle. To purchase individual components separately, use the component part numbers listed above.
3. Available keying combinations of front cover are shown on page 2219.
4. Standard cartridges are used with standard cartridge holders, and long cartridges are used with long cartridge holders. Cartridge holders are presented on pages 2220 and 2221.

Cassette Connector

Specifications subject to change.
For latest design specifications...
1-800-522-6752

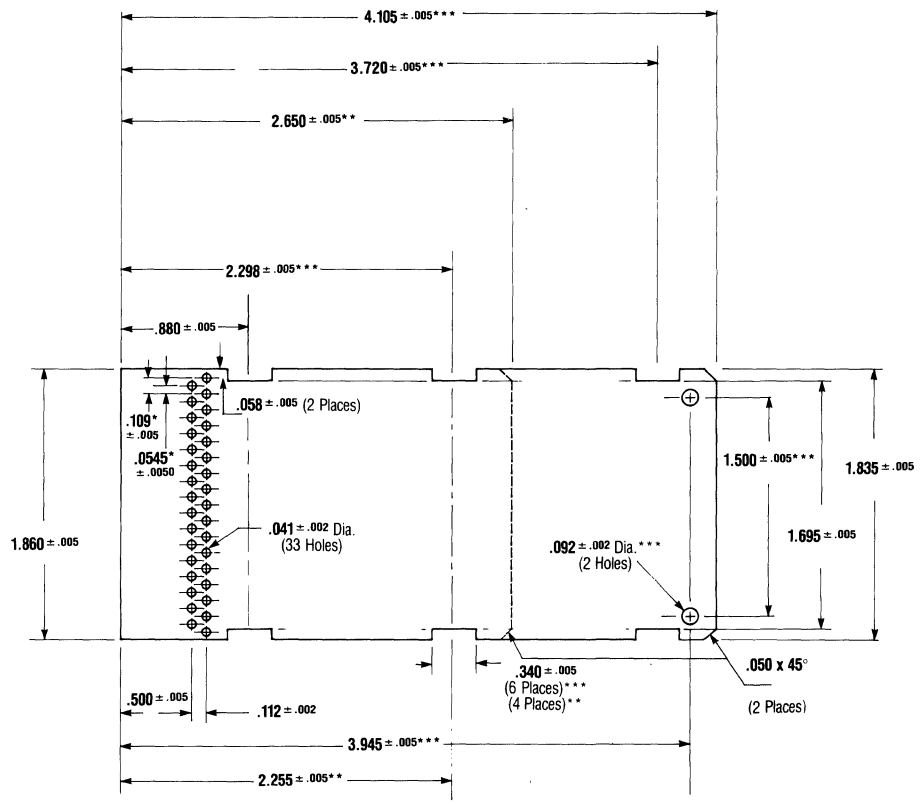
Dimensioning:
Dimensions are in inches

Cartridge Keying Options



Keying Slot Locations	Front Cover Part No.
1, 2, 3	745427-1
1, 2, 4	745427-2
2, 3, 4	745427-4

Recommended Cartridge Pc Board Layouts



Pc Board Layouts for Standard and Long Cartridges
(Pc board thickness is .062)

*These dimensions are non-cumulative.
**Dimensions apply to standard cartridge only.
***Dimensions apply to long cartridge only.

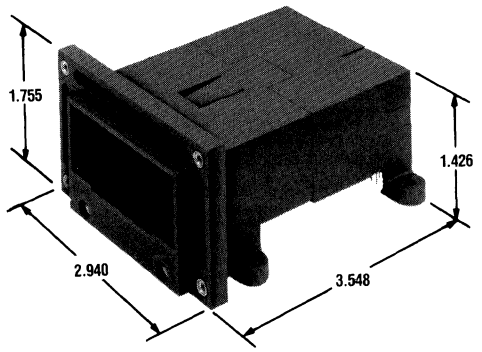
Note: All dimensions shown are applicable to pc board layouts of both standard and long cartridges, except where noted.

Cassette Connector

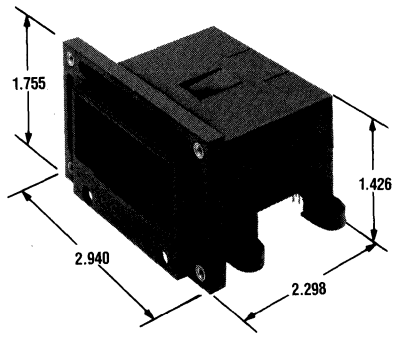
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Cartridge Holders

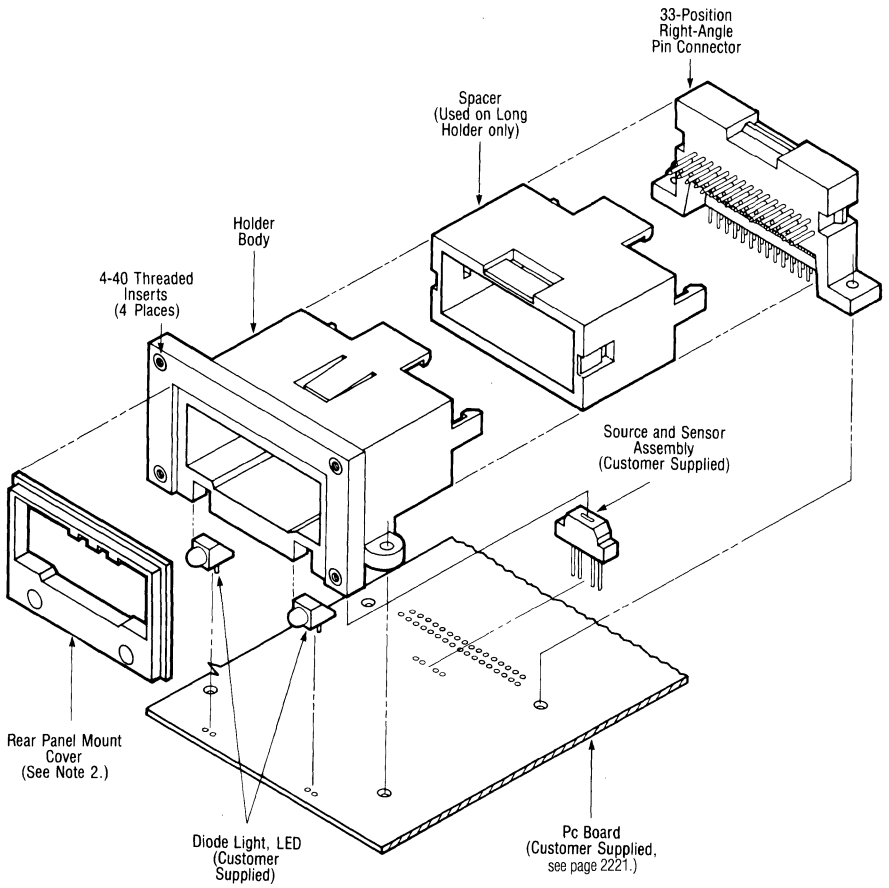


Long Cartridge Holder



Standard Cartridge Holder

Notes: 1. Mounting hardware is to be supplied by the customer.
2. See page 2221 for available keying of rear panel mount cover.
3. Standard cartridge holders are used with standard cartridges, and long cartridge holders are used with long cartridges. Cartridges are presented on pages 2218 and 2219.



Note: A long cartridge holder is shown for illustration purposes only. Except for the added spacer, the standard version is identical.

Material and Finish:

Holder Body, Spacer, Connector Housing and Cover—Black thermoplastic, flame retardant

4-40 Insert—Brass

Pin Contacts—Brass, Selectively plated .000030 min. palladium on contact area, .000150-.000250 tin-lead on solder post, with entire contact nickel underplated.

Related Product Data:

Mateable Connectors-page 2218
Pc Board Layout-page 2221
Technical Documents-pages 2258 & 2259

Cassette Connector

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

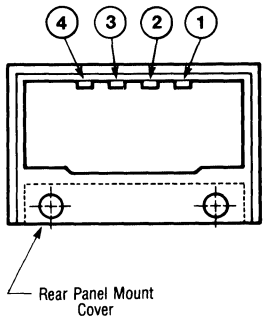
Cartridge Holders

Pin Connector Part No.	Holder Body Part No.	Rear Panel Mount Cover Part No.	Spacer Part No.	Standard Kit No.		Long Kit No.	
				Individual	Bulk Packed*	Individual	Bulk Packed*
745448-1	745443-1	745429-1	745639-1	745539-5	745539-1	745641-2	745641-1

*Each kit is individually bulk packed for multiple kit orders. Minimum order quantity is 50.

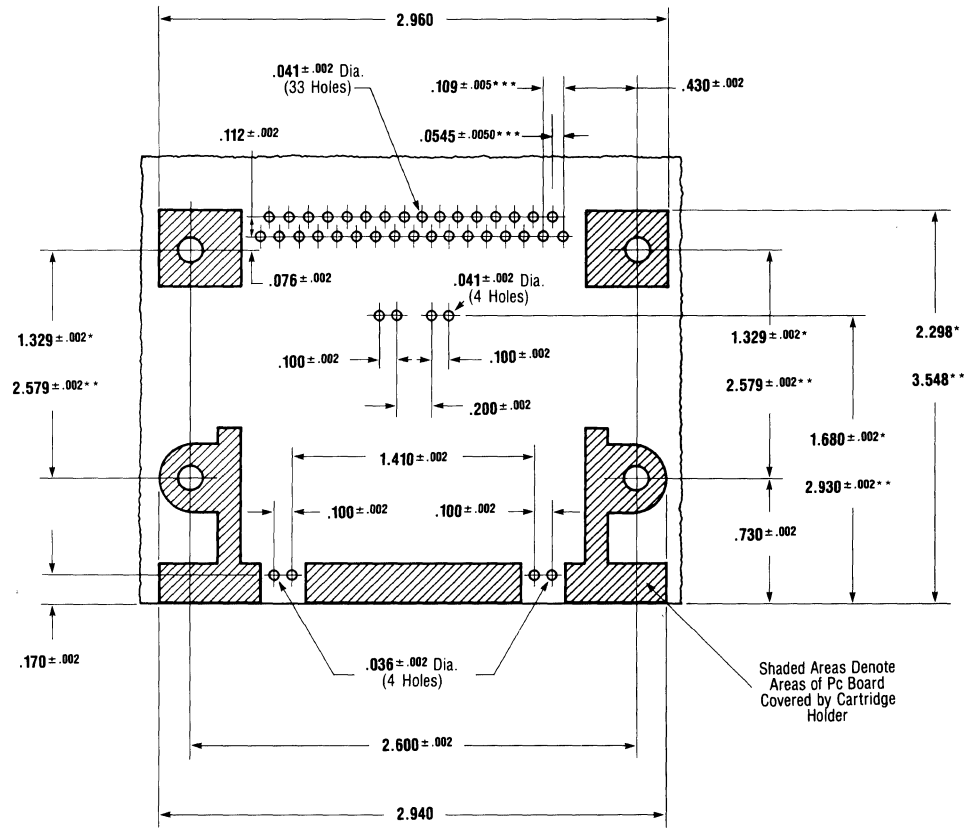
Notes: 1. All parts are packaged unassembled.
2. Each kit is comprised of a holder body, rear panel mount cover, pin connector and spacer (long cartridge holder only). To purchase individual components separately, use the component part numbers listed above.
3. Available keying combinations of rear panel mount cover are shown at right.
4. Standard cartridge holders are used with standard cartridges, and long cartridge holders are used with long cartridges. Cartridges are presented on page 2218.

Cartridge Holder Keying Options



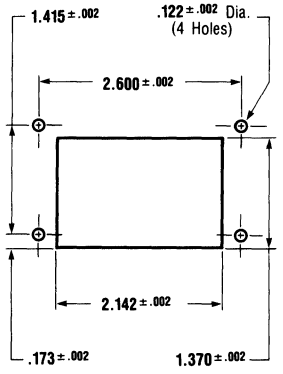
Keying Locations	Rear Panel Mount Cover Part No.
1, 2, 3	745429-1
1, 2, 4	745429-2
1, 3, 4	745429-3
2, 3, 4	745429-4

Recommended Cartridge Holder Pc Board Layout



Pc Board Layouts for Standard and Long Cartridge Holders
(Pc board thickness is .062)

Recommended Panel Cutout



Panel Cutout for Standard and Long Cartridge Holders
(.060 Thick Panel)

*Dimensions apply to standard cartridge holder only.
**Dimensions apply to long cartridge holder only.
***These dimensions are non-cumulative.

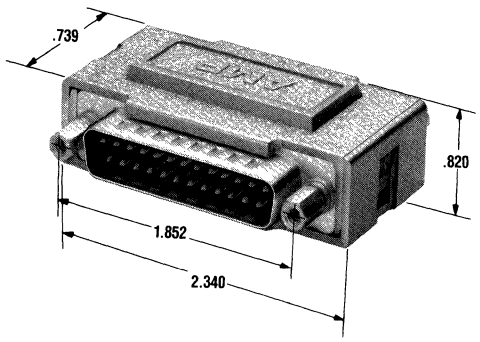
Note: All dimensions shown are applicable to pc board layouts of both standard and long cartridge holders, except where noted.

Plug/Receptacle Adapters

Specifications subject to change.
For latest design specifications...
1-800-522-6752

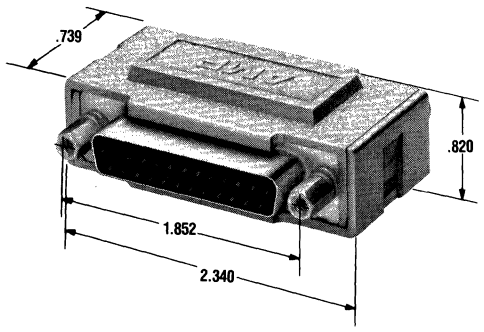
Dimensioning:
Dimensions are in inches

25 Position Metal-Shell Plug-to-Plug



With Nickel Plated Thermoplastic Cover
Part No. 747117-1

25 Position Metal-Shell Receptacle-to-Receptacle



With Nickel Plated Thermoplastic Cover
Part No. 747112-1

Plug/Receptacle Adapters provide a quick and easy method of changing the gender of plugs and receptacles.

Material and Finish:

Front Metal Shell—Steel, tin plated

Housing—94V-0 rated black thermoplastic

Cover—94V-0 rated black thermoplastic, nickel plated

Hardware—Steel, zinc plated

Contacts—Phosphor bronze, duplex plated .000030 Gold on mating end, .000100-.000200 tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

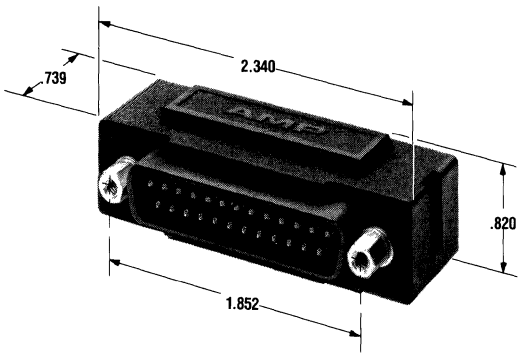
Connectors used with:
HDE Metal-Shell-page 2184
HDF Metal-Shell-page 2190
HDP Metal-Shell-page 2192
HD Metal-Shell-pages 2228-2236, 2241, 2242, 2244-2247 & 2252

Plug/Receptacle Adapters

Specifications subject to change.
For latest design specifications...
1-800-522-6752

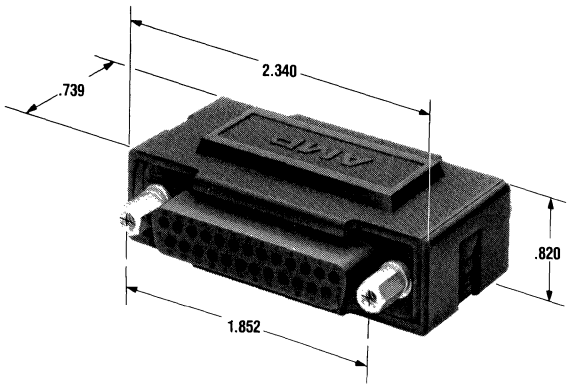
Dimensioning:
Dimensions are in inches

25 Position All-Plastic Plug-to-Plug



With Unplated Thermoplastic Cover
Part No. 747115-1

25 Position All-Plastic Receptacle-to-Receptacle



With Unplated Thermoplastic Cover
Part No. 747119-1

Plug/Receptacle Adapters provide a quick and easy method of changing the gender of plugs and receptacles.

Material and Finish:

Housing & Cover—94V-0 rated black thermoplastic

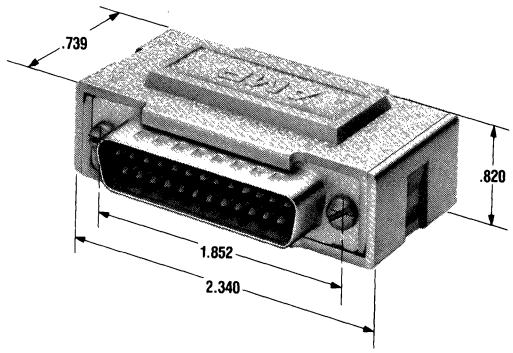
Hardware—Steel, zinc plated

Contacts—Phosphor bronze, duplex plated .000030 Gold on mating end, .000100-.000200 tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

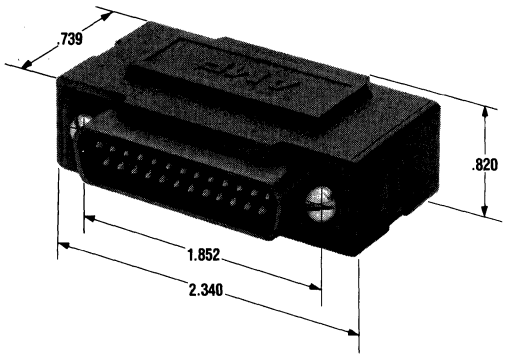
Connectors used with:
HDE All-Plastic-page 2183
HDF All-Plastic-page 2189
HD All-Plastic-pages 2237-2240, 2248-2251 & 2253

25 Position Metal-Shell



Plug-to-Receptacle
With Nickel Plated Thermoplastic Cover
Part No. 747122-1

25 Position All-Plastic



Plug-to-Receptacle
With Unplated Thermoplastic Cover
Part No. 747120-1

Connector Savers are throw-away subminiature D adapters designed to save wear of connectors that are used in applications requiring a high cycle life, such as test equipment.

Material and Finish:

Front Metal-Shell—Steel, tin plated

Housing—94V-0 black thermoplastic

Cover—94V-0 rated black thermoplastic; nickel plated (Metal-Shell versions), unplated (All-Plastic versions)

Hardware—Steel, zinc plated

Contacts—Phosphor bronze, duplex plated .000030 Gold on mating end, .000100-.000200 tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Connectors used with:
HDE Metal-Shell-page 2184
HDE All-Plastic-page 2183
HDF Metal-Shell-page 2190
HDF All-Plastic-page 2189
HDP Metal-Shell-page 2192
HD Metal-Shell-pages 2227-2236, 2241, 2242, 2244-2247 & 2252
HD All-Plastic-pages 2237-2240, 2248-2251 & 2253

Transition Connector (RS-232 to Modular Jack)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

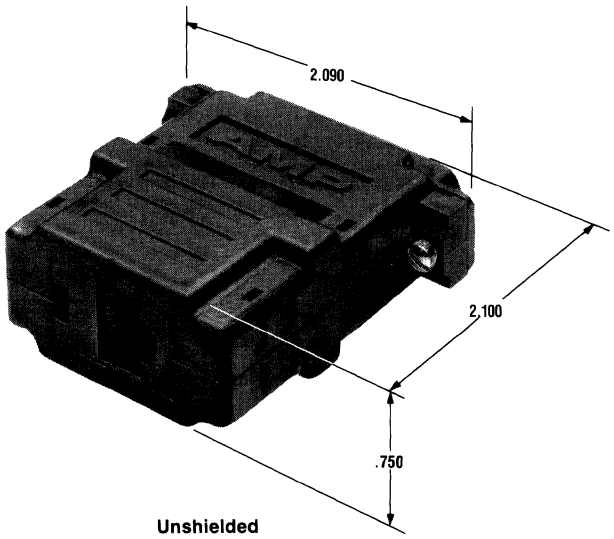
These versatile connectors convert a 25 position plug or receptacle interface to modular jack interface.

Transition Connectors are used most often with data, data-over-voice, and data and voice equipment; and on the dropside or output device side of mainframe, personal or business computers. There are also applications on the system or input side, and in computer-independent applications such as Temporary System Networks (election, telethon or convention phone networks).

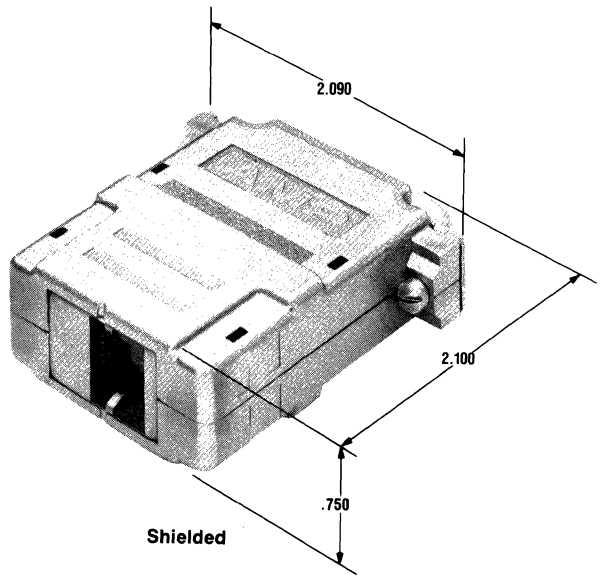
Product Facts

- Flying leads are preterminated to crimp contacts; no application tooling necessary
- Complete wiring configuration versatility; user selectively loads contacts into desired positions
- Contacts may be handloaded; no insertion tooling necessary
- AMP crimp contact reliability
- Hermaphroditic clamp halves and modular jack; orientation of sub-assembly is unnecessary
- Tool-less assembly of product for cost effective production
- Internal latch retention system to prevent unintentional disassembly or tampering
- Compact and lightweight design
- Both plug and receptacle configurations

Interface Kits



Unshielded



Shielded

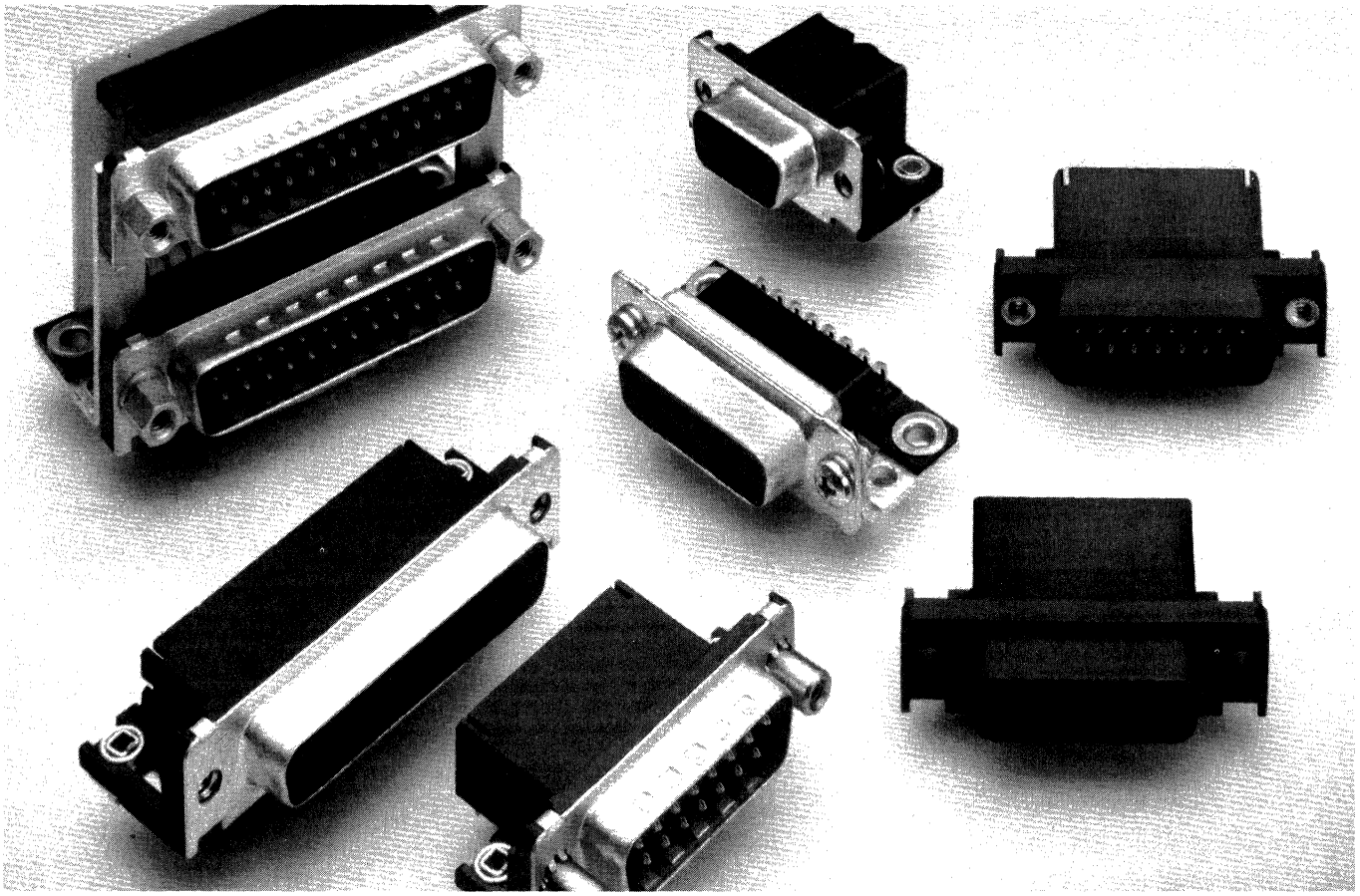
Connector Type	Interface Type	Kit Part Number
Size 3—25 Position Plug	6 Position Modular Jack	748100-1
Size 3—25 Position Receptacle	6 Position Modular Jack	748152-1
Size 3—25 Position Plug	8 Position Modular Jack	747772-1
Size 3—25 Position Receptacle	8 Position Modular Jack	747868-1
Shielded Size 3—25 Position Plug	6 Position Modular Jack	748598-1*

*Part is furnished assembled.

Note: For kit disassembly use Field Service Tool No. 91266-2.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Right-Angle Posted Connectors



Product Facts:

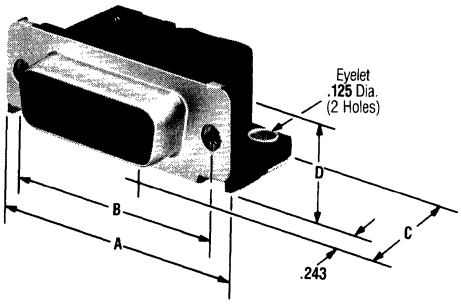
- Flame retardant thermoplastic housing material, UL 94V-0 rated
- HD-20 right-angle connectors are available in 9, 15, 25 and 37 positions (Shell Sizes 1 thru 4) in both plug and receptacle versions; some versions available in 50 position, shell size 5
- HD-20 stackable connectors are available in 18, 30, 50 and 74 positions (Shell Sizes 1 thru 4) in receptacle over receptacle, plug over plug and combination versions
- HD-22 right-angle receptacle connectors are available in 15, 26, 44, 62 and 78 positions (Shell Sizes 1 thru 5)
- Low cost front metal-shell design compatible with full metal-shell connectors
- Integral boardlock versions secure posted connectors to pc boards prior to soldering
- HD-20 and HD-22 connector contacts are available in a variety of plating types to satisfy different applications
- HD-22 right-angle posted connectors are designed for robotic and high temperature applications
- Integral fixed 4-40 threaded inserts and screwlocks are available in both HD-20 and HD-22 connectors
- Connectors are intermateable with any size 20 or 22 subminiature D connectors dimensionally complying with MIL-C-24308
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- CSA Certified, File No. LR 16455

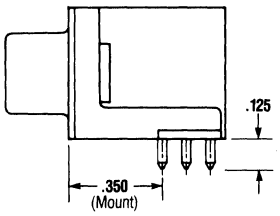
HD-22 Front Metal-Shell Right-Angle Posted Connectors 350 Mount

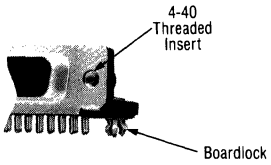
Specifications subject to change.
For latest design specifications...
1-800-522-6752

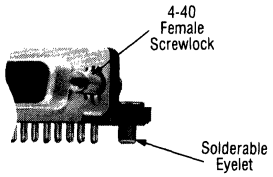
Dimensioning:
Dimensions are in inches

Receptacles









Shell Size	No. of Contact Positions	Dimensions				Contact Finish (Plating Code)	Receptacle Part Numbers				
							Boardlocks		Solderable Eyelets		.125 Dia. Holes
		A	B	C	D		Threaded Inserts	Female Screwlocks	Threaded Inserts	Female Screwlocks	Threaded Inserts
1	15	1.222	.984	.836	.494	A	748390-5	748390-6	1-748390-4	1-748390-5	1-748390-9
						B	1-748390-1	1-748390-2	1-748390-7	1-748390-8	—
2	26	1.550	1.312	.836	.494	A	748481-5	748481-6	1-748481-4	1-748481-5	1-748481-9
3	44	2.090	1.852	.836	.494	A	748482-5	748482-6	1-748482-4	1-748482-5	1-748482-9
4	62	2.738	2.500	.836	.494	A	748394-5	748394-6	1-748394-4	1-748394-5	1-748394-9
5	78	2.644	2.406	.936	.605	A	748483-5	748483-6	1-748483-4	1-748483-5	1-748483-9

Notes: 1. All receptacle connectors are preloaded with size 22 DF posted socket contacts.
2. Recommended pc board thickness is .062 for connectors with boardlocks and .093 max. for all others.

Material and Finish:

Front Shell—Steel, tin plated
Housing—94V-0 rated thermoplastic, black
Eyelets—Brass, tin or tin-lead plated
Threaded Inserts—Zinc
Female Screwlocks—Zinc
Socket Contacts (Posted)—Phosphor bronze
Contact Finish—Duplex plated:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

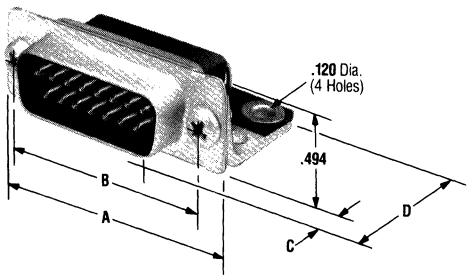
Mateable Connectors:
HDP-22-pages 2179 & 2180
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2255
Mating Hardware-pages 2208-2215
Technical Documents-pages 2258 & 2259

Specifications subject to change.
For latest design specifications...
1-800-522-6752

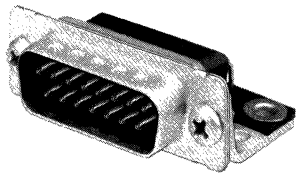
Dimensioning:
Dimensions are in inches

HD-20 Full Metal-Shell Right-Angle Posted Connectors 454 Mount

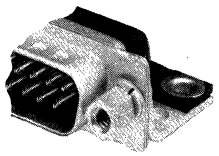
Plugs



Without Grounding Indents

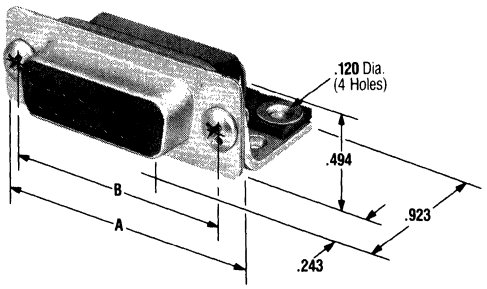


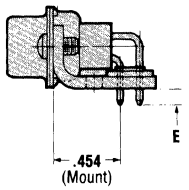
With Grounding Indents



Available with preassembled 4-40 Female Screwlocks, consult AMP Incorporated.

Receptacles





Shell Size	No. of Contact Positions	Dimensions					Contact Finish (Plating Code)	Plug Part Numbers		Receptacle Part Numbers
		A	B	C	D	E		Without Grounding Indents	With Grounding Indents	
1	9	1.213	.984	.235	.915	.125	A	745434-6	745434-8	745438-4
							B	745434-5	745434-7	745438-3
						.220	A	—	745434-4	745438-2
							B	745434-1	745434-3	745438-1
2	15	1.541	1.312	.235	.915	.125	A	—	745435-8	745439-4
							B	745435-5	745435-7	745439-3
						.220	A	745435-2	745435-4	745439-2
							B	745435-1	—	745439-1
3	25	2.088	1.852	.230	.919	.125	A	—	745436-8	745440-4
							B	745436-5	745436-7	745440-3
						.220	A	745436-2	745436-4	745440-2
							B	745436-1	745436-3	745440-1
4	37	2.729	2.500	.230	.919	.125	A	—	745437-8	745441-4
							B	—	745437-7	745441-3
						.220	A	745437-2	745437-4	745441-2
							B	745437-1	745437-3	745441-1

Notes: 1. All connectors are preloaded with size 20 DF posted contacts; plugs with pin contacts and receptacles with socket contacts.
2. .125 post length is recommended for pc board thickness of .093 max.; .220 post length is recommended for pc board thickness of .125 max.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

Post Size—.025 Sq.

Material and Finish:

Shell—Steel, tin plated
Insert—94V-0 rated thermoplastic, black
Female Screwlock—Steel, zinc plated
Contacts (Posted):
Pin—Brass
Socket—Phosphor bronze
Contact Plating:
A—Gold flash over .000050 nickel on entire contact, with additional .000030 gold on mating end
B—Gold flash over .000030 nickel

Related Product Data:

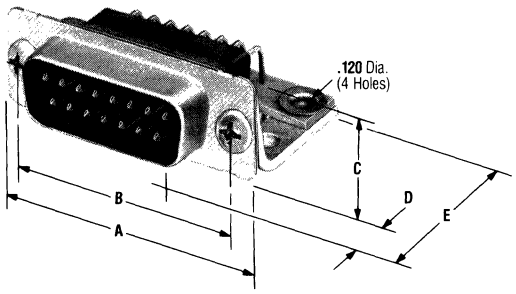
Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Commoning Strip-page 2216
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

HD-20 Full Metal-Shell Right-Angle Posted Connectors 545 Mount

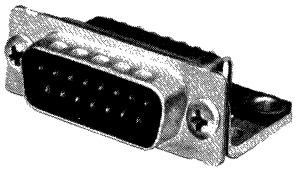
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

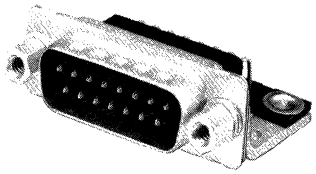
Plugs



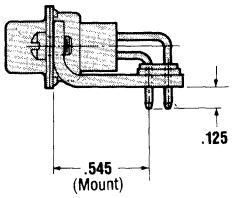
Without Grounding Indents



With Grounding Indents



With 4-40 Female Screwlocks



Shell Size	No. of Contact Positions	Dimensions					Contact Finish (Plating Code)	Plug Part Numbers		
								Without Grounding Indents	With Grounding Indents	
		A	B	C	D	E		With Standard Mounting Screws*	With Standard Mounting Screws	With Female Screwlocks
1	9	1.213	.984	.494	.235	1.025	A	745351-2	745351-4	747197-4
							B	745351-1	745351-3	747197-3
2	15	1.541	1.312	.494	.235	1.025	A	745352-2	745352-4	747192-2
							B	745352-1	745352-3	747192-1
3	25	2.088	1.852	.494	.230	1.029	A	745353-2	745353-4	747022-2
							B	745353-1	745353-3	747022-1
4	37	2.729	2.500	.494	.230	1.029	A	745354-2	745354-4	747444-2
							B	745354-1	745354-3	747444-1
5	50	2.635	2.406	.605	.230	1.149	A	—	745355-4	747497-4
							B	745355-1	745355-3	747497-3

*These plugs can be made available with female screwlocks, consult AMP Incorporated.

Notes: 1. All plugs are preloaded with size 20 DF posted pin contacts.
2. Recommended pc board thickness is .093 max.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

Post Size—.025 Sq.

Material and Finish:

Shell—Steel, tin plated
Insert—94V-0 rated thermoplastic, black
Female Screwlock—Steel, zinc plated
Pin Contacts (Posted)—Brass, plated as follows:
A—Gold Flash over .000050 nickel on entire contact, with additional .000030 gold on mating end
B—Gold flash over .000030 nickel

Related Product Data:

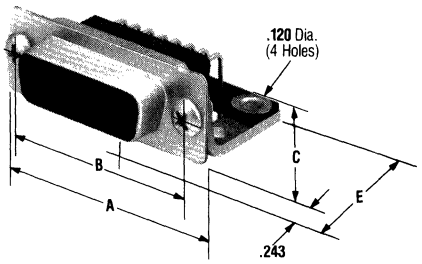
Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Commoning Strip-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

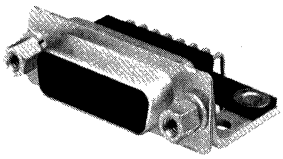
HD-20 Full Metal-Shell Right-Angle Posted Connectors 545 Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

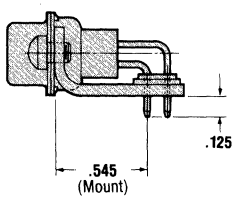
Dimensioning:
Dimensions are in inches

Receptacles





With 4-40 Female Screwlocks



Post Size—.025 Sq.

Material and Finish:

Shell—Steel, tin plated
Insert—94V-0 rated thermoplastic, black
Female Screwlock—Steel, zinc plated
Socket Contacts (Posted)—Phosphor bronze, plated as follows:
A—Gold Flash over .000050 nickel on entire contact, with additional .000030 gold on mating end
B—Gold flash over .000030 nickel

Related Product Data:

Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions				Contact Finish (Plating Code)	Receptacle Part Numbers	
		A	B	C	E		With Standard Mounting Screws	With Female Screwlocks
1	9	1.213	.984	.494	1.033	A	745112-2	747020-2
						B	745112-1	747020-1
2	15	1.541	1.312	.494	1.033	A	745113-2	747021-2
						B	745113-1	747021-1
3	25	2.088	1.852	.494	1.033	A	745114-2	745536-2
						B	745114-1	745536-1
4	37	2.729	2.500	.494	1.033	A	745115-2	745964-2
						B	745115-1	745964-1
5	50	2.635	2.406	.605	1.153	A	745116-2	747193-2
						B	745116-1	747193-1

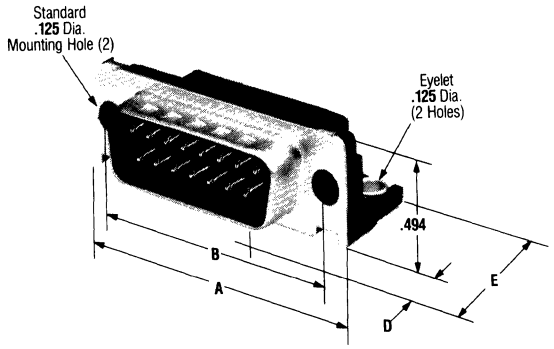
Notes: 1. All receptacles are preloaded with size 20 DF posted socket contacts.
2. Recommended pc board thickness is .093 max.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

HD-20 Front Metal-Shell Right-Angle Posted Connectors 318 Mount

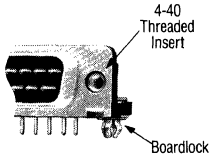
Specifications subject to change.
For latest design specifications...
1-800-522-6752

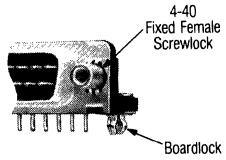
Dimensioning:
Dimensions are in inches

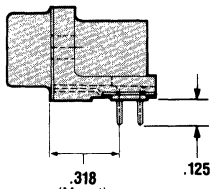
Plugs



With Grounding Indents and Grounding Straps







Post Size —.026 Dia.

Material and Finish:

Front Shell—Steel, tin plated
Housing—94V-0 rated thermoplastic, black
Eyelets—Brass, tin plated
Threaded Inserts—Zinc
Female Screwlock—Zinc
Boardlock—Copper alloy, tin-lead plated
Pin Contacts (Posted)—Brass, duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Commoning Strip-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions				Contact Finish (Plating Code)	Plug Part Numbers					
							Without Boardlocks			With Boardlocks		
		A	B	D	E		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	With Standard Mounting	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.213	.984	.235	.733	A	747250-2	747250-4	747250-6	747840-2	747840-4	747840-6
						B	747250-1	747250-3	747250-5	747840-1	747840-3	747840-5
2	15	1.541	1.312	.235	.733	A	747236-2	747236-4	747236-6	747841-2	747841-4	747841-6
						B	747236-1	747236-3	747236-5	747841-1	747841-3	747841-5
3	25	2.088	1.852	.230	.738	A	747238-2	747238-4	747238-6	747842-2	747842-4	747842-6
						B	747238-1	747238-3	747238-5	747842-1	747842-3	747842-5
4	37	2.729	2.500	.230	.740	A	747252-2	747252-4	747252-6	747843-2	747843-4	747843-6
						B	747252-1	747252-3	747252-5	747843-1	747843-3	747843-5

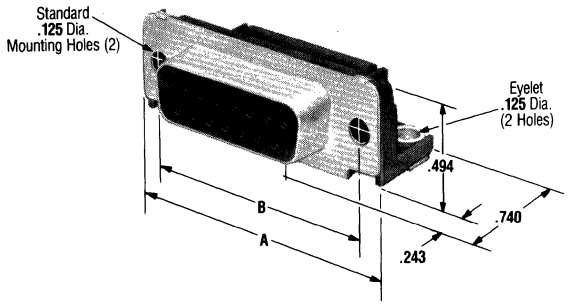
Notes: 1. All plugs are preloaded with size 20 DF posted pin contacts.
2. Recommended pc board thickness is .062 for connectors with boardlocks and .093 max. for all others.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

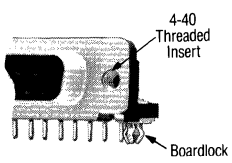
HD-20 Front Metal-Shell Right-Angle Posted Connectors 318 Mount

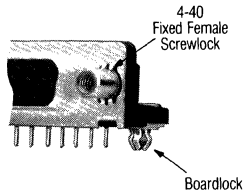
Dimensioning:
Dimensions are in inches

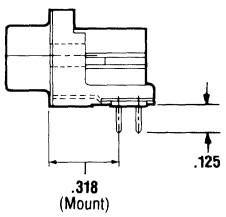
Receptacles



With Grounding Straps







Post Size—.026 Dia.

Material and Finish:

Front Shell—Steel, tin plated
Housing—94V-0 rated thermoplastic, black
Eyelets—Brass, tin plated
Threaded Inserts—Zinc
Female Screwlock—Zinc
Boardlock—Copper alloy, tin-lead plated
Socket Contacts (Posted)—Phosphor bronze, duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions		Contact Finishing (Plating Code)	Receptacle Part Numbers					
					Without Boardlocks			With Boardlocks		
		A	B		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.213	.984	A	745781-2	745781-4	745781-6	747844-2	747844-4	747844-6
				B	745781-1	745781-3	745781-5	747844-1	747844-3	747844-5
2	15	1.541	1.312	A	745782-2	745782-4	745782-6	747845-2	747845-4	747845-6
				B	745782-1	745782-3	745782-5	747845-1	747845-3	747845-5
3	25	2.088	1.852	A	745783-2	745783-4	745783-6	747846-2	747846-4	747846-6
				B	745783-1	745783-3	745783-5	747846-1	747846-3	747846-5
4	37	2.729	2.500	A	745784-2	745784-4	745784-6	747847-2	747847-4	747847-6
				B	745784-1	745784-3	745784-5	747847-1	747847-3	747847-5

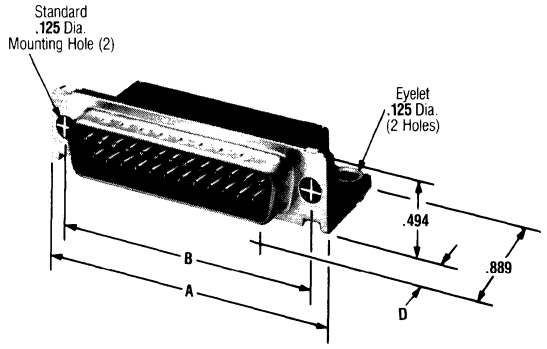
Notes: 1. All receptacles are preloaded with size 20 DF posted socket contacts.
2. Recommended pc board thickness is .062 for connectors with boardlocks and .093 max. for all others.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

HD-20 Front Metal-Shell Right-Angle Posted Connectors 478 Mount

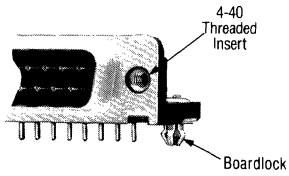
Specifications subject to change.
For latest design specifications...
1-800-522-6752

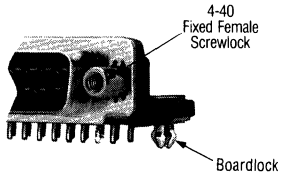
Dimensioning:
Dimensions are in inches

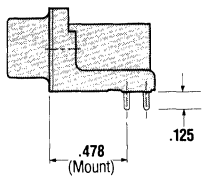
Plugs



With Grounding Indents and Grounding Straps







Post Size—.026 Dia.

Material and Finish:

Front Shell—Steel, tin plated
Housing—94V-0 rated thermoplastic, black
Eyelets—Brass, tin plated
Threaded Inserts—Zinc
Female Screwlock—Zinc
Boardlock—Copper alloy, tin-lead plated
Pin Contacts (Posted)—Brass, duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Commoning Strip-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions			Contact Finish (Plating Code)	Plug Part Numbers					
						Without Boardlocks			With Boardlocks		
		A	B	D		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.213	.984	.235	A	747414-2	747414-4	747414-6	747848-2	747848-4	747848-6
					B	747414-1	747414-3	747414-5	747848-1	747848-3	747848-5
2	15	1.541	1.312	.235	A	747415-2	747415-4	747415-6	747849-2	747849-4	747849-6
					B	747415-1	747415-3	747415-5	747849-1	747849-3	747849-5
3	25	2.088	1.852	.230	A	747416-2	747416-4	747416-6	747850-2	747850-4	747850-6
					B	747416-1	747416-3	747416-5	747850-1	747850-3	747850-5
4	37	2.729	2.500	.230	A	747417-2	747417-4	747417-6	747851-2	747851-4	747851-6
					B	747417-1	747417-3	747417-5	747851-1	747851-3	747851-5

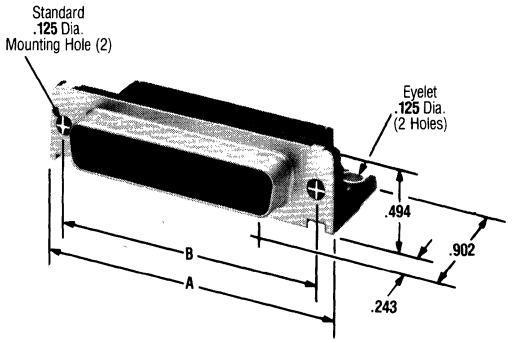
Notes: 1. All plugs are preloaded with size 20 DF posted pin contacts.
2. Recommended pc board thickness is .062 for connectors with boardlocks and .093 max. for all others.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

HD-20 Front Metal-Shell Right-Angle Posted Connectors 478 Mount

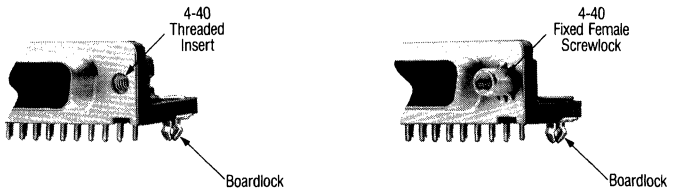
Specifications subject to change.
For latest design specifications...
1-800-522-6752

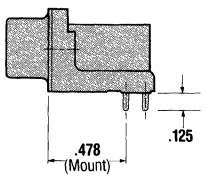
Dimensioning:
Dimensions are in inches

Receptacles



With Grounding Straps





Post Size—.026 Dia.

Material and Finish:

Front Shell—Steel, tin plated
Housing—94V-0 rated thermoplastic, black
Eyelets—Brass, tin plated
Threaded Inserts—Zinc
Female Screwlock—Zinc
Boardlock—Copper alloy, tin-lead plated
Socket Contacts (Posted)—Phosphor bronze, duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions		Contact Finish (Plating Code)	Receptacle Part Numbers					
					Without Boardlocks			With Boardlocks		
		A	B		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.213	.984	A	747418-2	747418-4	747418-6	747852-2	747852-4	747852-6
				B	747418-1	747418-3	747418-5	747852-1	747852-3	747852-5
2	15	1.541	1.312	A	747419-2	747419-4	747419-6	747853-2	747853-4	747853-6
				B	747419-1	747419-3	747419-5	747853-1	747853-3	747853-5
3	25	2.088	1.852	A	747420-2	747420-4	747420-6	747854-2	747854-4	747854-6
				B	747420-1	747420-3	747420-5	747854-1	747854-3	747854-5
4	37	2.729	2.500	A	747421-2	747421-4	747421-6	747855-2	747855-4	747855-6
				B	747421-1	747421-3	747421-5	747855-1	747855-3	747855-5

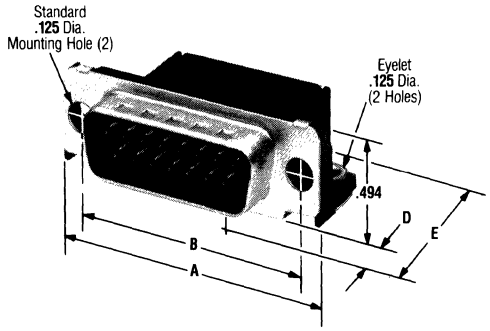
Notes: 1. All receptacles are preloaded with size 20 DF posted socket contacts.
2. Recommended pc board thickness is .062 for connectors with boardlocks and .093 max. for all others.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

HD-20 Front Metal Shell Right-Angle Posted Connectors 590 Mount

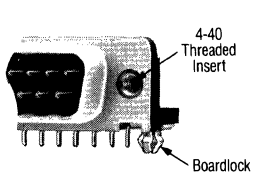
Specifications subject to change.
For latest design specifications...
1-800-522-6752

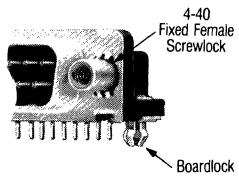
Dimensioning:
Dimensions are in inches

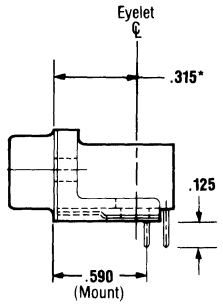
Plugs



With Grounding Indents and Grounding Straps
(Short Mounting Flange*)







*Short mounting flange, Connectors with long mounting flange (.646) can be made available, consult AMP Incorporated

Post Size—.026 Dia.

Material and Finish:

Front Shell—Steel, tin plated
Housing—94V-0 rated thermoplastic, black
Eyelets—Brass, tin plated
Threaded Inserts—Zinc
Female Screwlocks—Zinc
Boardlock—Copper alloy, tin-lead plated
Pin Contacts (Posted)—Brass, duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Commoning Strip-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions				Contact Finish (Plating Code)	Plug Part Numbers					
							Without Boardlocks			With Boardlocks		
		A	B	D	E		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.213	.984	.235	.965	A	745990-2	745990-4	745990-6	747832-2	747832-4	747832-6
						B	745990-1	745990-3	745990-5	747832-1	747832-3	747832-5
2	15	1.541	1.312	.235	.965	A	745986-2	745986-4	745986-6	747833-2	747833-4	747833-6
						B	745986-1	745986-3	745986-5	747833-1	747833-3	747833-5
3	25	2.088	1.852	.230	.970	A	745994-2	745994-4	745994-6	747834-2	747834-4	747834-6
						B	745994-1	745994-3	745994-5	747834-1	747834-3	747834-5
4	37	2.729	2.500	.230	.972	A	745998-2	745998-4	745998-6	747835-2	747835-4	747835-6
						B	745998-1	745998-3	745998-5	747835-1	747835-3	747835-5

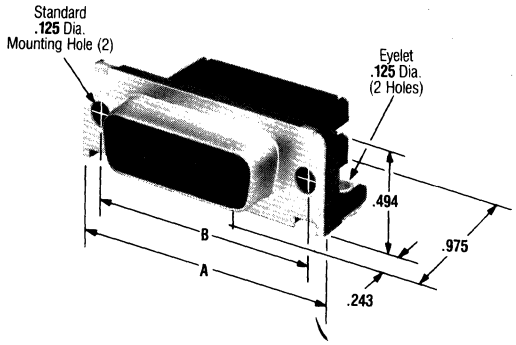
Notes: 1. All plugs are preloaded with size 20 DF posted pin contacts.
2. Recommended pc board thickness is .062 for connectors with boardlocks and .093 max. for all others.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

HD-20 Front Metal-Shell Right-Angle Posted Connectors 590 Mount

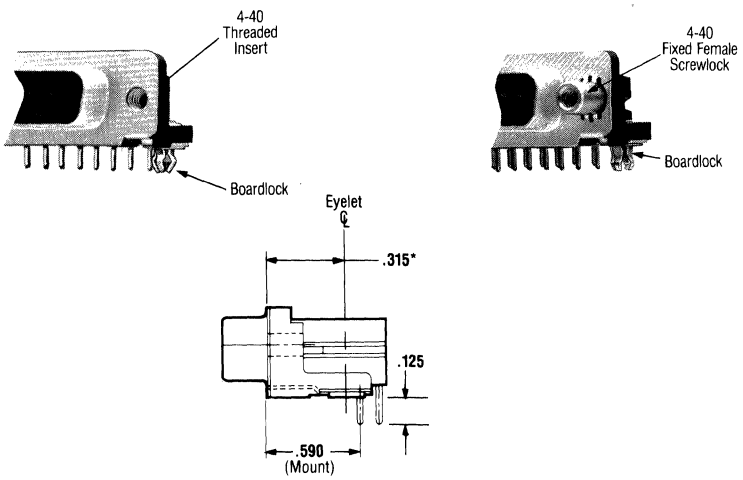
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Receptacles



With Grounding Straps
(Short Mounting Flange*)



*Short mounting flange. Connectors with long mounting flange (.646) can be made available, consult AMP Incorporated

Post Size—.026 Dia.

Material and Finish:

Front Shell—Steel, tin plated
Housing—94V-0 rated thermoplastic, black
Eyelets—Brass, tin plated
Threaded Inserts—Zinc
Female Screwlocks—Zinc
Boardlock—Copper alloy, tin-lead plated
Socket Contacts (Posted)—Phosphor bronze, duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Contact Finish (Plating Code)	Receptacle Part Numbers: Without Boardlocks: With Standard Mounting Holes	Without Boardlocks: With Threaded Inserts	Without Boardlocks: With Fixed Female Screwlocks	With Boardlocks: With Standard Mounting Holes	With Boardlocks: With Threaded Inserts	With Boardlocks: With Fixed Female Screwlocks
1	9	1.213	.984	A	745988-2	745988-4	745988-6	747836-2	747836-4	747836-6
				B	745988-1	745988-3	745988-5	747836-1	747836-3	747836-5
2	15	1.541	1.312	A	745984-2	745984-4	745984-6	747837-2	747837-4	747837-6
				B	745984-1	745984-3	745984-5	747837-1	747837-3	747837-5
3	25	2.088	1.852	A	745992-2	745992-4	745992-6	747838-2	747838-4	747838-6
				B	745992-1	745992-3	745992-5	747838-1	747838-3	747838-5
4	37	2.729	2.500	A	745996-2	745996-4	745996-6	747839-2	747839-4	747839-6
				B	745996-1	745996-3	745996-5	747839-1	747839-3	747839-5

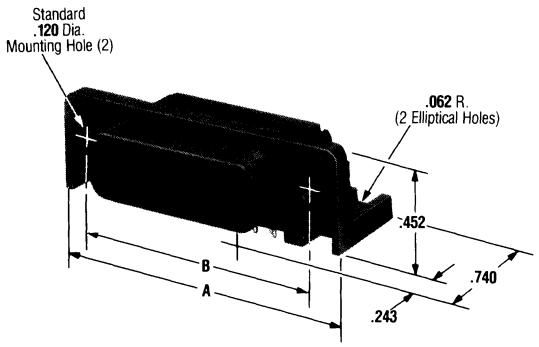
Notes: 1. All receptacles are preloaded with size 20 DF posted socket contacts.
2. Recommended pc board thickness is .062 for connectors with boardlocks and .093 max. for all others.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

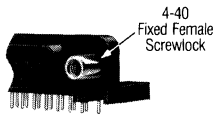
HD-20 All-Plastic Right-Angle Posted Connectors 318 Mount (Front Load)

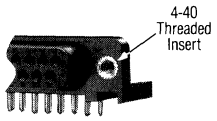
Specifications subject to change.
For latest design specifications...
1-800-522-6752

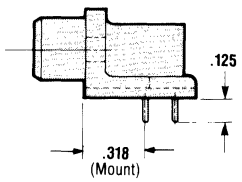
Dimensioning:
Dimensions are in inches

Receptacles









Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Contact Finish (Plating Code)	Receptacle Part Numbers With Standard Mounting Holes	Receptacle Part Numbers With Threaded Inserts	Receptacle Part Numbers With Fixed Female Screwlocks
1	9	1.213	.984	A	745131-2	745394-2	745395-2
				B	745131-1	745394-1	745395-1
2	15	1.541	1.312	A	745271-2	745393-2	745396-2
				B	745271-1	745393-1	745396-1
3	25	2.088	1.852	A	745132-2	745392-2	745397-2
				B	745132-1	745392-1	745397-1
4	37	2.729	2.500	A	—	747724-2	747725-2
				B	—	747724-1	747725-1

Notes: 1. All receptacles are preloaded with size 20 DF posted socket contacts.
2. Recommended pc board thickness is .093 max.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

Post Size—.026 Dia.

Material and Finish:

Housing—94V-0 rated thermoplastic, black

Threaded Inserts—Brass, unplated

Female Screwlocks—Brass, nickel plated

Socket Contacts (Posted)—Phosphor bronze, duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

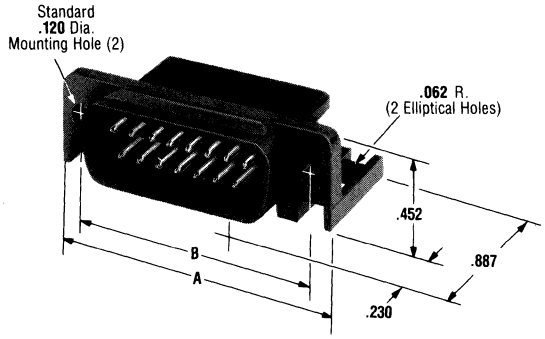
Mateable Connectors:
HDE-page 2183
HDF-page 2189
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

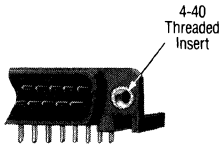
HD-20 All-Plastic Right-Angle Posted Connectors 478 Mount (Front Load)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

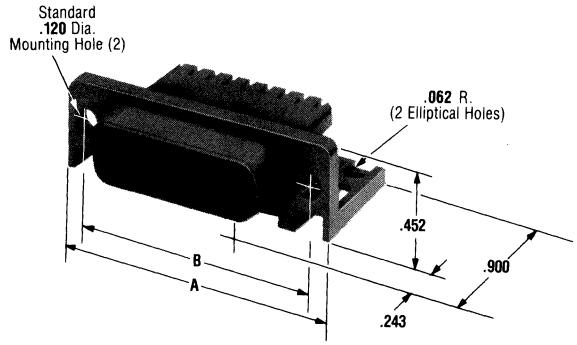
Dimensioning:
Dimensions are in inches

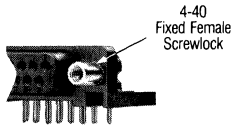
Plugs

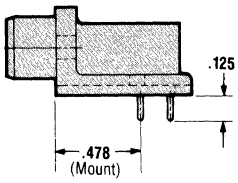




Receptacles







Post Size—.026 Dia.

Material and Finish:

Housing—94V-0 rated thermoplastic, black
Threaded Inserts—Brass, unplated
Female Screwlocks—Brass, nickel plated
Contacts (Posted):
Pin—Brass
Socket—Phosphor bronze
Contacts duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Mateable Connectors:
HDE-page 2183
HDF-page 2189
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Commoning Strips-page 2216
Keying Plugs-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions		Contact Finish (Plating Code)	Plug Part Numbers			Receptacle Part Numbers		
		A	B		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.213	.984	A	745828-2	745877-2	745878-2	745330-2	745391-2	745400-2
				B	745828-1	745877-1	745878-1	745330-1	745391-1	745400-1
2	15	1.541	1.312	A	747729-2	747730-2	747731-2	745387-2	745390-2	745399-2
				B	747729-1	747730-1	747731-1	745387-1	745390-1	745399-1
3	25	2.088	1.852	A	745128-2	745401-2	745402-2	745085-2	745389-2	745398-2
				B	745128-1	745401-1	745402-1	745085-1	745389-1	745398-1
4	37	2.729	2.500	A	747732-2	747733-2	747734-2	747726-2	747727-2	747728-2
				B	747732-1	747733-1	747734-1	747726-1	747727-1	747728-1

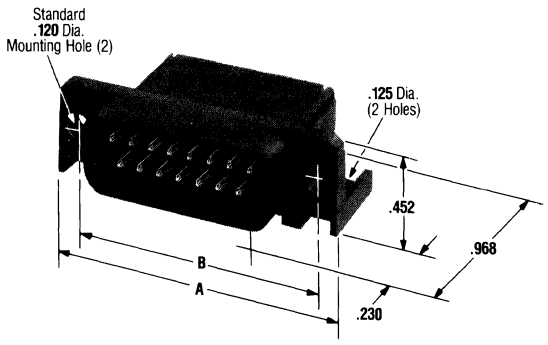
Notes: 1. All connectors are preloaded with size 20 DF posted contacts; plugs with pin contacts and receptacles with socket contacts.
2. Recommended pc board thickness is .093 max.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

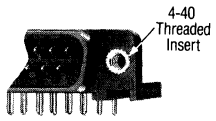
HD-20 All-Plastic Right-Angle Posted Connectors 590 Mount (Front Load)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

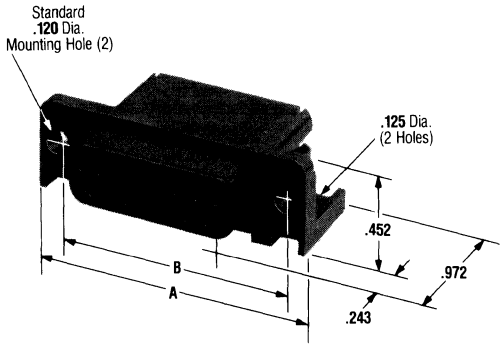
Dimensioning:
Dimensions are in inches

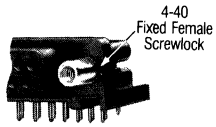
Plugs

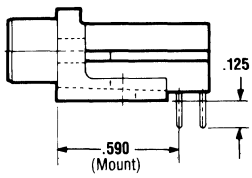




Receptacles







Post Size—.026 Dia.

Material and Finish:

Housing—94V-0 rated thermoplastic, black

Threaded Inserts—Brass, unplated

Female Screwlocks—Brass, nickel plated

Contacts (Posted):
Pin—Brass
Socket—Phosphor bronze
Contacts duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

Mateable Connectors:
HDE-page 2183
HDF-page 2189
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Commoning Strip-page 2216
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions		Contact Finish (Plating Code)	Plug Part Numbers			Receptacle Part Numbers		
		A	B		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.213	.984	A	747467-2	747467-4	747467-6	747459-2	747459-4	747459-6
				B	747467-1	747467-3	747467-5	747459-1	747459-3	747459-5
2	15	1.541	1.312	A	747468-2	747468-4	747468-6	747460-2	747460-4	747460-6
				B	747468-1	747468-3	747468-5	747460-1	747460-3	747460-5
3	25	2.088	1.852	A	747469-2	747469-4	747469-6	747461-2	747461-4	747461-6
				B	747469-1	747469-3	747469-5	747461-1	747461-3	747461-5
4	37	2.729	2.500	A	747470-2	747470-4	747470-6	747462-2	747462-4	747462-6
				B	747470-1	747470-3	747470-5	747462-1	747462-3	747462-5

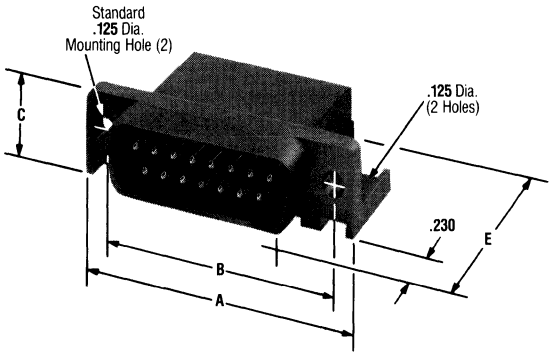
Notes: 1. All connectors are preloaded with size 20 DF posted contacts; plugs with pin contacts and receptacles with socket contacts.
2. Recommended pc board thickness is .093 max.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

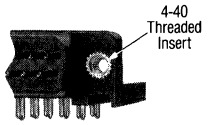
HD-20 All Plastic Right-Angle Posted Connectors 590 Mount (Rear Load)

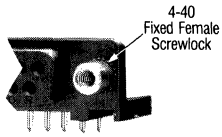
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

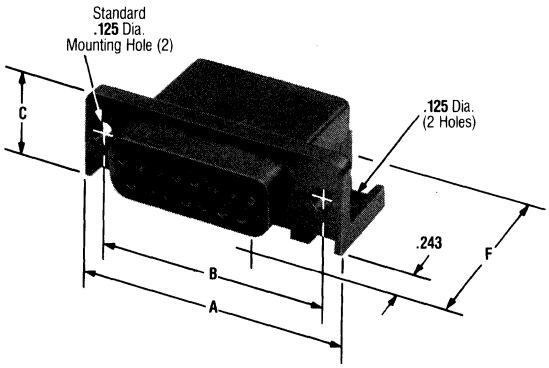
Plugs

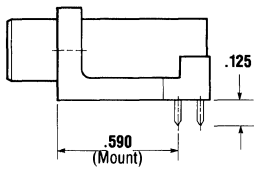






Receptacles





Post Size—.025 Sq.

Material and Finish:

Housing—94V-0 rated thermoplastic, black

Threaded Inserts—Brass, unplated

Female Screwlocks—Brass, nickel plated

Contacts (Posted):
Pin—Brass
Socket—Phosphor bronze
Contacts plated as follows:
A—.000030 gold on mating end, gold flash on remainder of contact, with entire contact nickel underplated
B—Gold flash over nickel on entire contact

Related Product Data:

Mateable Connectors:
HDE-page 2183
HDF-page 2189
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2256
Mating Hardware-pages 2208-2215
Commoning Strip-page 2216
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions					Contact Finish (Plating Code)	Plug Part Numbers			Receptacle Part Numbers		
		A	B	C	E	F		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.213	.984	.452	.985	1.000	A	207081-2	745091-2	745101-2	207084-2	745092-2	745102-2
							B	207081-1	745091-1	745101-1	207084-1	745092-1	745102-1
2	15	1.541	1.312	.452	.985	1.000	A	206913-2	745093-2	745103-2	206914-2	745094-2	745104-2
							B	206913-1	745093-1	745103-1	206914-1	745094-1	745104-1
3	25	2.088	1.852	.452	.985	1.000	A	206604-2	207870-2	745105-2	206584-2	207869-2	745106-2
							B	206604-1	207870-1	745105-1	206584-1	207869-1	745106-1
4	37	2.729	2.500	.452	.985	1.000	A	206816-2	745097-2	745107-2	206817-2	745098-2	745108-2
							B	206816-1	745097-1	745107-1	206817-1	745098-1	745108-1
5	50	2.635	2.406	.558	1.115	1.120	A	206971-2	745099-2	—	206973-2	745100-2	745110-2
							B	206971-1	—	—	206973-1	745100-1	745110-1

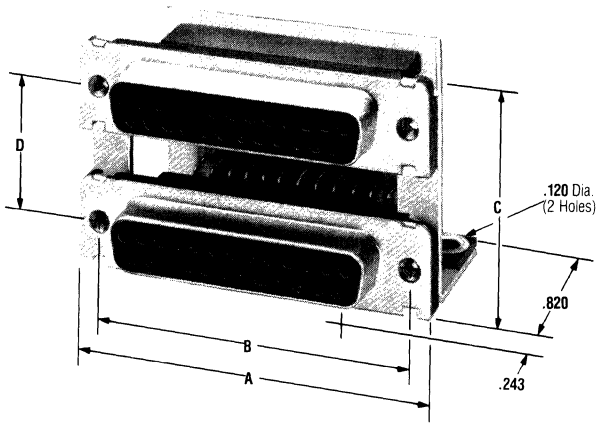
Notes: 1. All connectors are preloaded with size 20 DF posted contacts; plugs with pin contacts and receptacles with socket contacts.
2. Recommended pc board thickness is .093 max.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

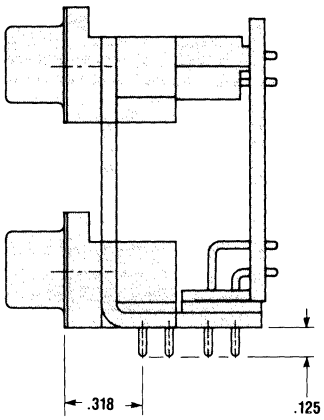
Specifications subject to change.
For latest design specifications...
1-800-522-6752

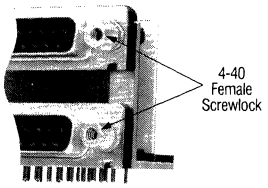
Dimensioning:
Dimensions are in inches

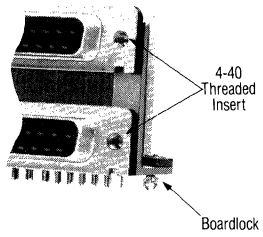
HD-20 Front Metal-Shell Right-Angle Stacked Connectors

Receptacle over Receptacle









Shell Size	No. of Contact Positions	Dimensions A	B	C	D	Contact Finish (Plating Code)	Part Numbers With Threaded Inserts	With Female Screwlocks	With Female Screwlocks and Washers	With Threaded Inserts and Boardlocks
1	18	1.213	.984	1.394	.900	A	1-747804-0	747804-2	747804-4	1-747804-2
						B	747804-9	747804-1	747804-3	1-747804-1
				1.244	.750	A	748110-2	748110-4	748110-6	748110-8
						B	748110-1	748110-3	748110-5	748110-7
2	30	1.541	1.312	1.244	.750	A	748544-2	—	—	748544-8
						B	748544-1	—	—	748544-7
3	50	2.088	1.852	1.394	.900	A	1-747754-0	747754-2	747754-4	1-747754-2
						B	747754-9	747754-1	747754-3	1-747754-1
				1.244	.750	A	747867-2	747867-4	747867-6	747867-8
						B	747867-1	747867-3	747867-5	747867-7
4	74	2.729	2.500	1.394	.900	A	1-747899-0	747899-4	747899-6	1-747899-2
						B	747899-9	747899-3	747899-5	1-747899-1
				1.244	.750	A	748099-2	748099-4	748099-6	748099-8
						B	748099-1	748099-3	748099-5	748099-7

Notes: 1. All receptacles are preloaded with size 20 DF posted socket contacts.
2. Recommended pc board thickness is .062 for connectors with boardlocks and .093 max. for all others.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

Post Size—.026 Dia.

Material and Finish:

Front Shells and Brackets—Steel, tin plated
Housings—94V-0 rated thermoplastic, black
Pc Board—94V-0 flame retardant glass/epoxy
Eyelets—Brass, unplated
Threaded Inserts—Stainless steel
Female Screw Locks—Steel, nickel plated
Boardlock—Copper alloy, tin-lead plated
Socket Contacts (Posted)—Phosphor bronze, duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

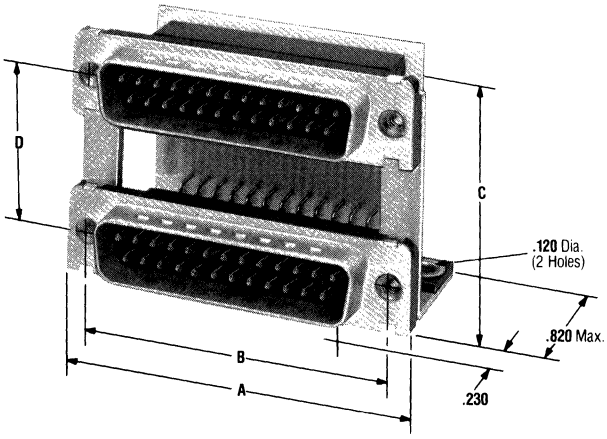
Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2255
Mating Hardware-pages 2208-2215
Keying Plug-page 2216
Technical Documents-pages 2258 & 2259

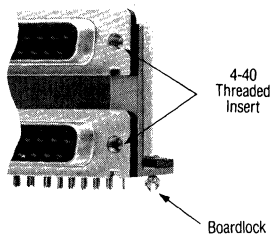
HD-20 Front Metal-Shell Right-Angle Stacked Connectors

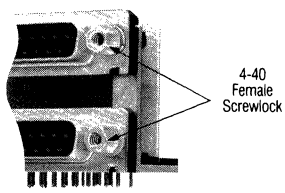
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

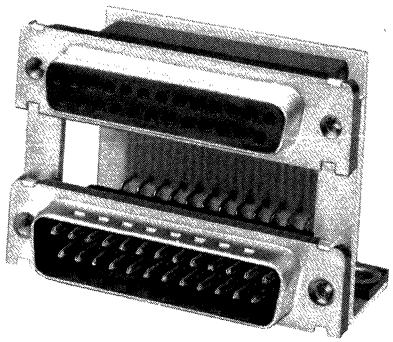
Plug over Plug

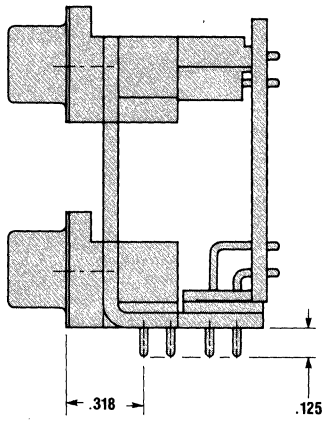






Receptacle over Plug





Post Size—.026 Dia.

Material and Finish:

Front Shells and Brackets—Steel, tin plated
Housings—94V-0 rated thermoplastic, black
Pc Board—94V-0 flame retardant glass/epoxy
Eyelets—Brass, unplated
Threaded Inserts—Stainless steel
Female Screwlocks—Steel, nickel plated
Board Lock—Copper alloy, tin-lead plated
Contacts (Posted):
Pin—Brass
Socket—Phosphor bronze
Contacts duplex plated as follows:
A—.000030 gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated

Related Product Data:

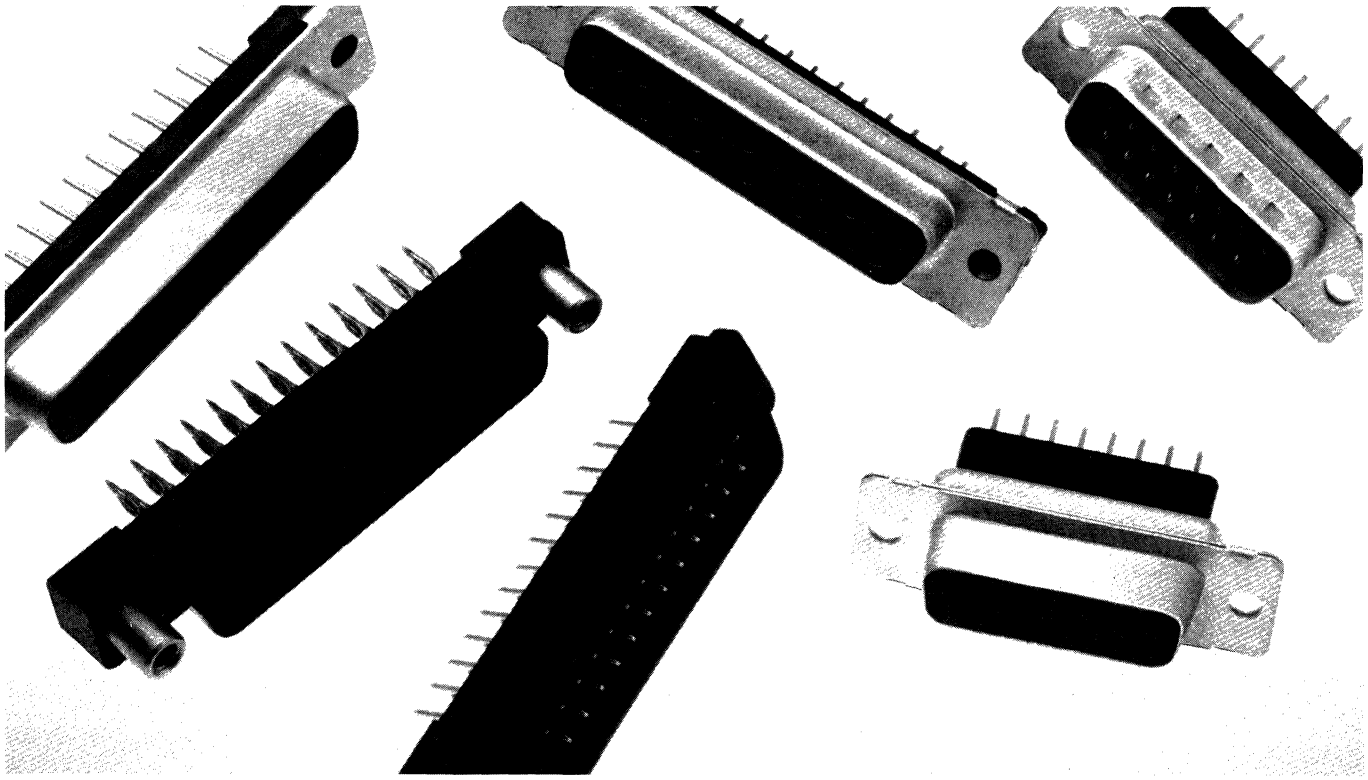
Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2255
Mating Hardware-pages 2208-2215
Commoning Strip-page 2216
Keying Plug-page 2216
Technical Documents-pages 2258 & 2259

Connector Configuration	Shell Size	No. of Contact Positions	Dimensions A	B	C	D	Contact Finish (Plating Code)	Part Numbers With Threaded Inserts	With Female Screwlocks	With Female Screwlocks and Washers	With Threaded Inserts and Boardlocks
Plug over Plug	1	18	1.213	.984	1.244	.750	A	—	—	—	748662-2
	3	50	2.088	1.852	1.394	.900	A	748126-2	748126-4	748126-6	748126-8
							B	748126-1	748126-3	748126-5	748126-7
					1.244	.750	A	748324-2	—	—	—
							B	748324-1	—	—	—
	4	74	2.729	2.500	1.394	.900	A	748121-2	748121-4	748121-6	748121-8
							B	748121-1	748121-3	748121-5	748121-7
					1.244	.750	A	748325-2	—	—	—
							B	748325-1	—	—	—
Receptacle over Plug	3	50	2.088	1.852	1.394	.900	A	748131-2	748131-4	748131-6	748131-8
							B	748131-1	748131-3	748131-5	748131-7
					1.244	.750	A	748556-2	—	—	—
							B	748556-1	—	—	—
Plug over Receptacle	3	50	2.088	1.852	1.244	.750	A	748275-2	—	—	748275-8
							B	748275-1	—	—	748275-7

Notes: 1. All connectors are preloaded with size 20 DF posted contacts; plugs with pin contacts and receptacles with socket contacts.
2. Recommended pc board thickness is .062 for connectors with boardlocks and .093 max. for all others.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

Straight Posted Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Product Facts

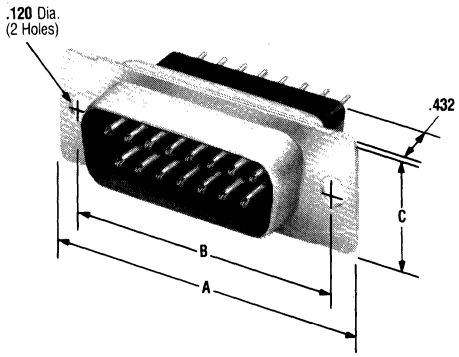
- Flame retardant thermoplastic housing material, UL 94V-0 rated
- Straight posted connectors are available in 9, 15, 25, 37 and 50 positions (Shell Sizes 1 thru 5)
- Straight posted connectors in Full Metal-Shell, Front Metal-Shell and All-Plastic versions
- Connectors with ACTION PIN contacts are available in low, medium and high profiles with integral standoffs
- ACTION PIN contact connectors for both .093 to .125 and .062 thick pc board application
- Various straight posted connectors offer a choice of through-holes, 4-40 threaded inserts or 4-40 fixed female screwlocks
- Choice of contact platings
- Integral boardlock feature secures connector to pc board prior to soldering
- Connectors are intermateable with any size 20 or 22 subminiature D connectors dimensionally complying with MIL-C-24308
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- CSA Certified, File No. LR 16455

HD-20 Full Metal-Shell Straight Posted Connectors

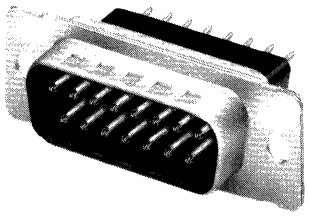
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

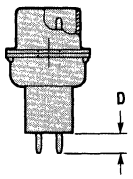
Plugs



Without Grounding Indents



With Grounding Indents



Shell Size	No. of Contact Positions	Dimensions A	B	C	D*	Contact Finish (Plating Code)	Plug Part Numbers Without Grounding Indents	With Grounding Indents
1	9	1.213	.984	.494	.125	A	745182-1	745410-1
						B	745182-2	745410-2
					.188	A	—	745410-7
						B	745182-8	745410-8
2	15	1.541	1.312	.494	.125	A	745184-1	745411-1
						B	745184-2	745411-2
					.188	A	745184-7	745411-7
						B	—	745411-8
3	25	2.088	1.852	.494	.125	A	745186-1	745412-1
						B	745186-2	745412-2
					.188	A	745186-7	745412-7
						B	745186-8	745412-8
4	37	2.729	2.500	.494	.125	A	745188-1	745413-1
						B	745188-2	745413-2
					.188	A	745188-7	745413-7
						B	—	745413-8
5	50	2.635	2.406	.605	.125	A	745190-1	745414-1
						B	—	745414-2
					.188	A	745190-7	745414-7

*.125 post length is for recommended pc board thickness of .062-.093 max.; .188 post length is for recommended pc board thickness of .125.

Notes: 1. All plugs are preloaded with size 20 DF posted pin contacts.
2. Special loading of contacts can be arranged upon request.
3. Insertion/Extraction Tool No. 91285-1 is used to remove and install posted pin contacts. Refer to page 2196 for replacement contacts.

Post Size—.025 Sq.

Material and Finish:

Shell—Steel, tin plated
Insert—94V-0 rated thermoplastic, black
Pin Contacts (Posted)—Brass, plated as follows:
A—Gold flash over nickel on entire contact, with additional .000030 gold on mating end
B—Gold flash over nickel

Related Product Data:

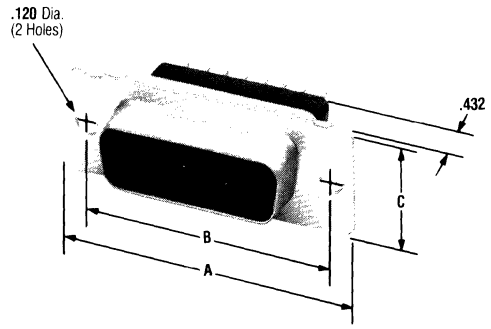
Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2258
Mating Hardware-pages 2208-2215
Standoff Bushings-page 2216
Commoning Strip-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

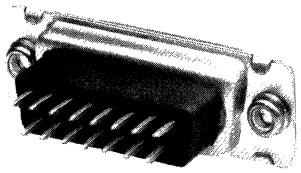
HD-20 Full Metal-Shell Straight Posted Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

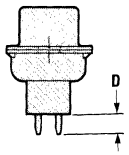
Dimensioning:
Dimensions are in inches

Receptacles





Receptacles with Clinch Nuts



Shell Size	No. of Contact Positions	Dimensions A	B	C	D*	Contact Finish (Plating Code)	Receptacle Part Numbers With Standard Mounting Holes	With Clinch Nuts
1	9	1.213	.984	.494	.125	A	745183-1	747190-2
						B	745183-2	747190-1
					.188	A	745183-7	747190-4
						B	745183-8	—
2	15	1.541	1.312	.494	.125	A	745185-1	745820-1
						B	745185-2	745820-2
					.188	A	745185-7	745820-7
						B	745185-8	745820-8
3	25	2.088	1.852	.494	.125	A	745187-1	745886-1
						B	745187-2	745886-2
					.188	A	745187-7	745886-7
						B	745187-8	745886-8
4	37	2.729	2.500	.494	.125	A	745189-1	747315-1
						B	745189-2	747315-2
					.188	A	745189-7	747315-7
						B	745189-8	747315-8
5	50	2.635	2.406	.605	.125	A	745191-1	747302-1
						B	745191-2	747302-2
					.188	A	745191-7	747302-7
						B	745191-8	—

*.125 post length is for recommended pc board thickness of .062-.093 max.; .188 post length is for recommended pc board thickness of .125.

Notes: 1. All receptacles are preloaded with size 20 DF posted socket contacts.
2. Special loading of contacts can be arranged upon request.
3. Insertion/Extraction Tool No. 91285-1 is used to remove and install posted socket contacts. Refer to page 2196 for replacement contacts.

Post Size—.025 Sq.

Material and Finish:

Shell—Steel, tin plated
Insert—94V-0 rated thermoplastic, black
Clinch Nuts—Steel, zinc plated
Socket Contacts (Posted)—Phosphor bronze, plated as follows:
A—Gold flash over nickel on entire contact, with additional .000030 gold on mating end
B—Gold flash over nickel

Related Product Data:

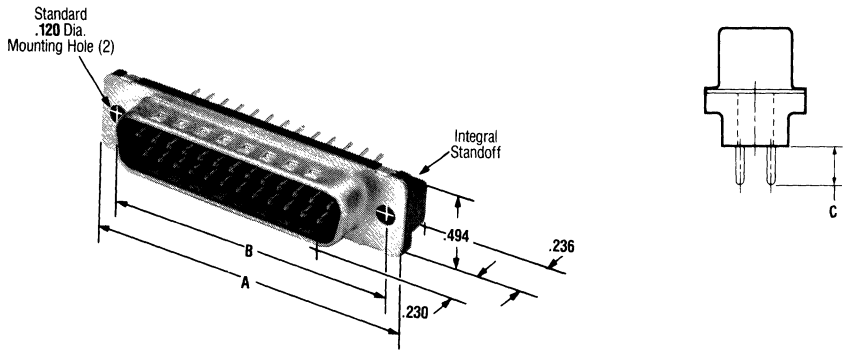
Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2258
Mating Hardware-pages 2208-2215
Standoff Bushings-page 2216
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

HD-20 Front Metal-Shell Straight Posted Connectors

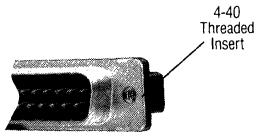
Specifications subject to change.
For latest design specifications...
1-800-522-6752

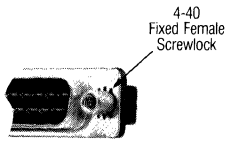
Dimensioning:
Dimensions are in inches

Plugs



With Grounding Indents





Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Dimensions C*	Contact Finish (Plating Code)	Plug Part Numbers: With Standard Mounting Holes	Plug Part Numbers: With Threaded Inserts	Plug Part Numbers: With Fixed Female Screwlocks
1	9	1.213	.984	.125	A	747871-2	747871-8	—
					B	747871-1	—	1-747871-3
				.170	A	747871-4	—	1-747871-6
					B	747871-3	—	1-747871-5
2	15	1.541	1.312	.125	A	747872-2	747872-8	1-747872-4
				.170	A	747872-4	1-747872-0	1-747872-6
					B	—	—	1-747872-5
3	25	2.090	1.852	.125	A	745968-2	745968-8	1-745968-4
					B	745968-1	745968-7	1-745968-3
				.170	A	745968-4	—	1-745968-6
					B	745968-3	745968-9	1-745968-5
				.250	A	—	1-745968-2	—
4	37	2.732	2.500	.125	A	747375-2	747375-8	—
					B	—	747375-7	1-747375-3
				.170	A	747375-4	1-747375-0	—
					B	—	—	1-747375-5

*.125 post length is for recommended pc board thickness of .062-.093 max.; .170 post length is for recommended pc board thickness of .093-.125; .250 post length is for special applications.

Notes: 1. All plugs are preloaded with size 20 DF posted pin contacts.
2. Special loading of contacts can be arranged upon request.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

Post Size—.026 Dia.

Material and Finish:

Shell—Steel, tin plated
Housing—94V-0 rated thermoplastic, black
Threaded Inserts—Brass, unplated
Female Screwlocks—Zinc
Pin Contacts (Posted)—Brass, plated as follows:
A—Gold flash over .000050 nickel on entire contact, with additional .000030 gold on mating end
B—Gold flash over .000030 nickel

Related Product Data:

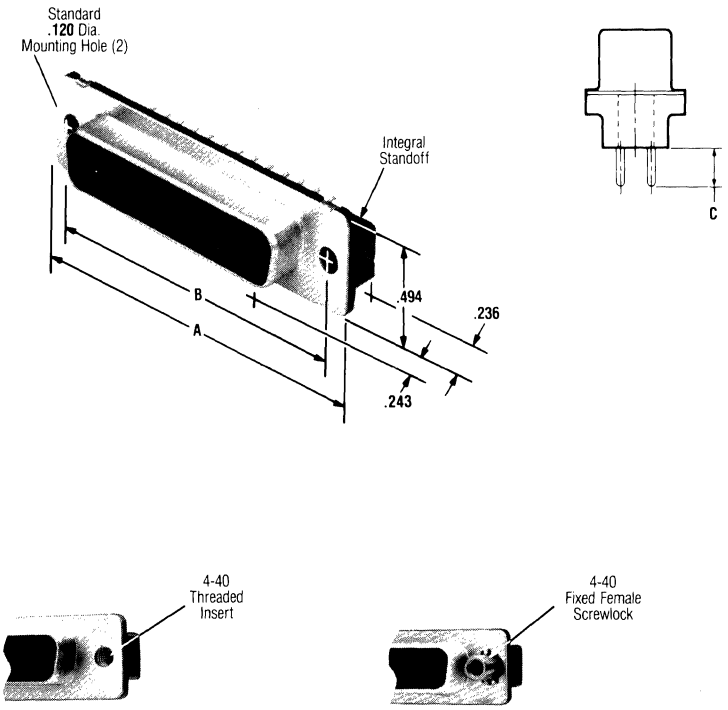
Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2258
Mating Hardware-pages 2208-2215
Commoning Strip-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

HD-20 Front Metal-Shell Straight Posted Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Receptacles



Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Dimensions C*	Contact Finish (Plating Code)	Receptacle Part Numbers With Standard Mounting Holes	Receptacle Part Numbers With Threaded Inserts	Receptacle Part Numbers With Fixed Female Screwlocks
1	9	1.216	.984	.125	A	747150-2	747150-8	1-747150-4
					B	747150-1	747150-7	1-747150-3
				.170	A	747150-4	—	1-747150-6
					B	—	747150-9	1-747150-5
2	15	1.541	1.312	.125	A	747299-2	747299-8	1-747299-4
					B	747299-1	747299-7	1-747299-3
				.170	A	747299-4	1-747299-0	1-747299-6
					B	—	—	1-747299-5
				.250	A	747299-6	—	—
3	25	2.090	1.852	.125	A	745967-2	745967-8	1-745967-4
					B	745967-1	745967-7	1-745967-3
				.170	A	745967-4	1-745967-0	1-745967-6
					B	745967-3	745967-9	1-745967-5
				.250	A	745967-6	—	—
					B	—	1-745967-1	—
4	37	2.732	2.500	.125	A	747301-2	747301-8	1-747301-4
					B	747301-1	747301-7	—
				.170	A	747301-4	—	1-747301-6
					B	747301-3	747301-9	1-747301-5
				.250	A	747301-6	—	—

*.125 post length is for recommended pc board thickness of .062-.093 max.; .170 post length is for recommended pc board thickness of .093 and .125; .250 post length is for special applications.

Notes: 1. All receptacles are preloaded with size 20 DF posted socket contacts.
2. Special loading of contacts can be arranged upon request.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

Post Size—.026 Dia.

Material and Finish:

Shell—Steel, tin plated
Housing—94V-0 rated thermoplastic, black
Threaded Inserts—Brass, unplated
Female Screwlocks—Zinc
Socket Contacts (Posted)—Phosphor bronze, plated as follows:
A—Gold flash over .000050 nickel on entire contact, with additional .000030 gold on mating end
B—Gold flash over .000030 nickel

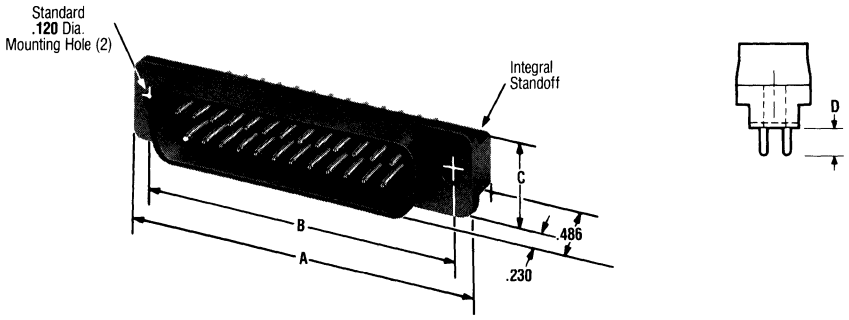
Related Product Data:

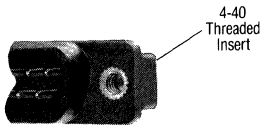
Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2258
Mating Hardware-pages 2208-2215
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

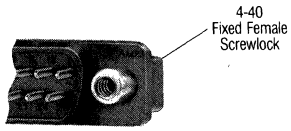
HD-20 All-Plastic Straight Posted Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

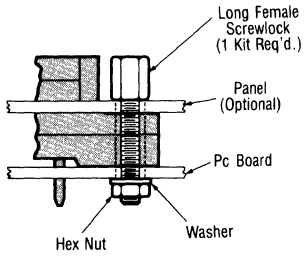
Plugs



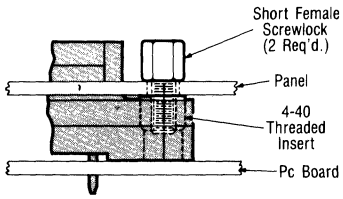




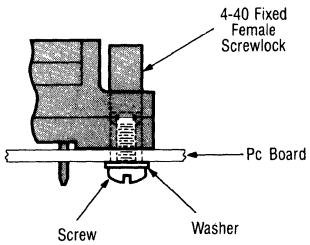
Typical Applications



Application of connector with standard mounting holes using Long Female Screwlock Kit No. 207719 (page 2210).



Application of connector with 4-40 Threaded Inserts using Short Female Screwlocks included in Kit No. 207952 (page 2210).



Application of connector with 4-40 Fixed Female Screwlocks. (See table on next page.)

Note: Unshaded parts in illustrations above are not included with the connectors listed in the table on page 2249. They are to be supplied by the Customer or, where applicable, purchased separately from AMP using the part nos. specified.

Post Size .026 Dia.

Material and Finish:

Housing—94V-0 rated thermoplastic, black

Threaded Inserts—Brass, unplated

Female Screwlocks—Brass, nickel plated

Pin Contacts (Posted)—Brass, plated as follows:
A—Gold flash over .000050 nickel on entire contact, with additional .000030 gold on mating end
B—Gold flash over .000030 nickel

Related Product Data:

Mateable Connectors:
HDE-page 2183
HDF-page 2189
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2258
Mating Hardware-pages 2208-2215
Commoning Strip-page 2216
Plug/Receptacle Adapters-page 2223
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

HD-20 All-Plastic Straight Posted Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Plugs

Shell Size	No. of Contact Positions	Dimensions				Contact Finish (Plating Code)	Plug Part Numbers		
		A	B	C	D*		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.228	.984	.420	.125	A	208006-2	745051-2	745071-2
						B	208006-1	745051-1	745071-1
					.170	A	208006-4	745051-4	745071-4
						B	208006-3	745051-3	745071-3
					.250	A	208006-6	745051-6	745071-6
						B	208006-5	745051-5	745071-5
2	15	1.546	1.312	.420	.125	A	208007-2	745052-2	745072-2
						B	208007-1	745052-1	745072-1
					.170	A	208007-4	745052-4	745072-4
						B	208007-3	745052-3	745072-3
					.250	A	208007-6	745052-6	745072-6
						B	208007-5	745052-5	745072-5
3	25	2.095	1.852	.420	.125	A	208008-2	745053-2	745073-2
						B	208008-1	745053-1	745073-1
					.170	A	208008-4	745053-4	745073-4
						B	208008-3	745053-3	745073-3
					.250	A	208008-6	745053-6	745073-6
						B	208008-5	745053-5	745073-5
4	37	2.737	2.500	.420	.125	A	208009-2	745054-2	745074-2
						B	208009-1	745054-1	745074-1
					.170	A	208009-4	745054-4	745074-4
						B	208009-3	745054-3	745074-3
					.250	A	208009-6	745054-6	745074-6
						B	208009-5	745054-5	745074-5
5	50	2.643	2.406	.527	.125	A	208010-2	745055-2	745075-2
						B	208010-1	745055-1	745075-1
					.170	A	208010-4	745055-4	745075-4
						B	208010-3	745055-3	745075-3
					.250	A	208010-6	745055-6	745075-6
						B	—	745055-5	745075-5

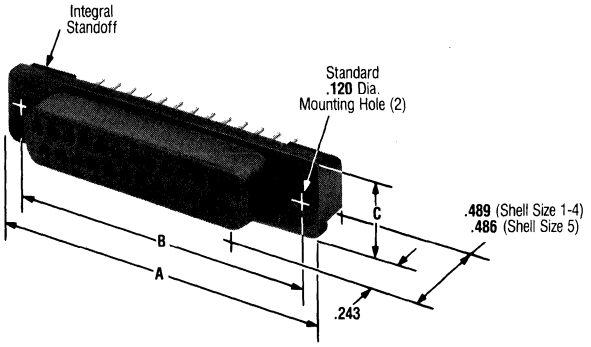
*.125 post length is for recommended pc board thickness of .062-.093 max.; .170 post length is for recommended pc board thickness of .093-.125; .250 post length is for special applications.

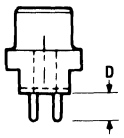
Notes: 1. All plugs are preloaded with size 20 DF posted pin contacts.
2. It is recommended that these connectors be secured with appropriate hardware to a pc board and/or panel.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware with 4-40 female screwlocks.

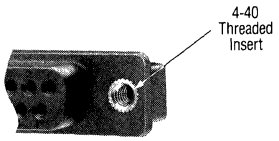
HD-20 All-Plastic Straight Posted Connectors

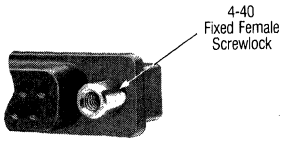
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Receptacles

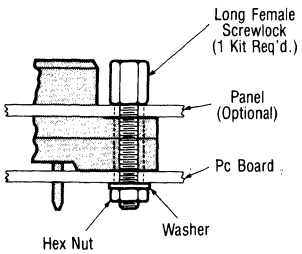




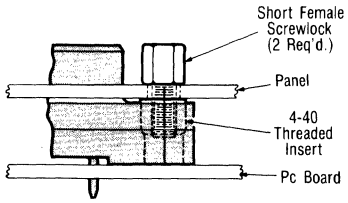




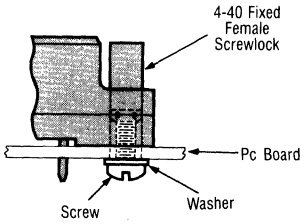
Typical Applications



Application of connector with standard mounting holes using Long Female Screwlock Kit No. 207719 (page 2210).



Application of connector with 4-40 Threaded Inserts using Short Female Screwlocks included in Kit No. 207952 (page 2210).



Application of connector with 4-40 Fixed Female Screwlocks. (See table on next page.)

Note: Unshaded parts in illustrations above are not included with the connectors listed in the table on page 2251. They are to be supplied by the Customer or, where applicable, purchased separately from AMP using the part nos. specified.

Post Size—.026 Dia.

Material and Finish:

Housing—94V-0 rated thermoplastic, black
Threaded Inserts—Brass, unplated
Female Screwlocks—Brass, nickel plated
Socket Contacts (Posted)—Phosphor bronze, plated as follows:
A—Gold flash over .000050 nickel on entire contact, with additional .000030 gold on mating end
B—Gold flash over .000030 nickel

Related Product Data:

Mateable Connectors:
HDE-page 2183
HDF-page 2189
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2258
Mating Hardware-pages 2208-2215
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2223
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

HD-20 All-Plastic Straight Posted Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Receptacles

Shell Size	No. of Contact Positions	Dimensions				Contact Finish (Plating Code)	Receptacle Part Numbers		
		A	B	C	D*		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.228	.984	.420	.125	A	207826-4	207841-4	745076-4
						B	207826-3	207841-3	745076-3
					.170	A	207826-6	207841-6	745076-6
						B	207826-5	207841-5	745076-5
					.250	A	207826-8	207841-8	745076-8
						B	207826-7	207841-7	745076-7
2	15	1.546	1.312	.420	.125	A	207827-4	745057-4	745077-4
						B	207827-3	745057-3	745077-3
					.170	A	207827-6	745057-6	745077-6
						B	207827-5	745057-5	745077-5
					.250	A	—	745057-8	745077-8
						B	207827-7	745057-7	745077-7
3	25	2.095	1.852	.420	.125	A	207828-4	745058-4	745078-4
						B	207828-3	745058-3	745078-3
					.170	A	207828-6	745058-6	745078-6
						B	207828-5	745058-5	745078-5
					.250	A	207828-8	745058-8	745078-8
						B	207828-7	745058-7	745078-7
4	37	2.737	2.500	.420	.125	A	207829-4	745059-4	745079-4
						B	207829-3	745059-3	745079-3
					.170	A	207829-6	745059-6	745079-6
						B	207829-5	745059-5	745079-5
					.250	A	207829-8	745059-8	745079-8
						B	207829-7	745059-7	745079-7
5	50	2.643	2.406	.527	.125	A	207830-4	745060-4	745080-4
						B	207830-3	745060-3	745080-3
					.170	A	207830-6	745060-6	745080-6
						B	207830-5	745060-5	745080-5
					.250	A	207830-8	745060-8	745080-8
						B	207830-7	745060-7	745080-7

*.125 post length is for recommended pc board thickness of .062-.093 max. .170 post length is for recommended pc board thickness of .093-.125; .250 post length is for special applications.

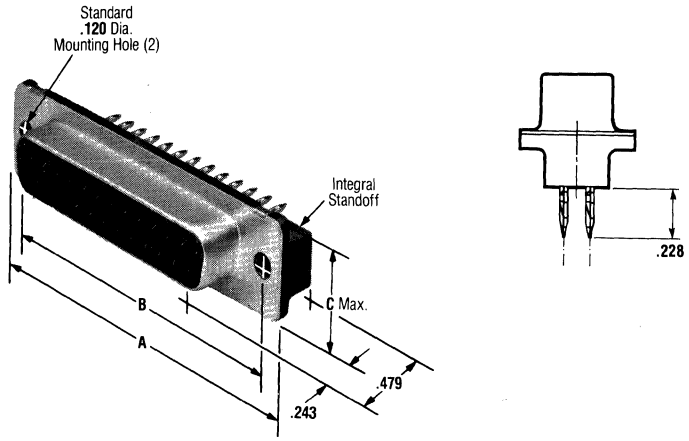
Notes: 1. All receptacles are preloaded with size 20 DF posted socket contacts.
2. It is recommended that these connectors be secured with appropriate hardware to a pc board and/or panel.
3. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.

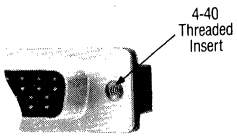
Specifications subject to change.
For latest design specifications...
1-800-522-6752

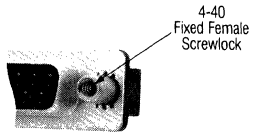
HD-20 Front Metal-Shell Straight Posted Connectors with ACTION PIN Contacts

Dimensioning:
Dimensions are in inches

Receptacles







For .062 Thick Pc Boards

Shell Size	No. of Contact Positions	Dimensions			Contact Finish (Plating Code)	Receptacle Part Numbers			Seating Tool Part No.
		A	B	C		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	
1	9	1.213	.984	.509	A	—	748650-1	—	91164-2
2	15	1.541	1.312	.509	A	748560-1	—	—	91165-2
3	25	2.088	1.852	.509	A	—	748484-2	748688-1	91168-2
					B	—	748484-1	—	
5	50	2.635	2.406	.620	A	—	748485-2	—	91167-2
					B	—	748485-1	—	

For .093 to .125 Thick Pc Boards

Shell Size	No. of Contact Positions	Dimensions			Contact Finish (Plating Code)	Receptacle Part Numbers			Seating Tool Part No.
		A	B	C		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	
1	9	1.213	.984	.509	A	747089-2	747090-2	747091-2	91164-2
					B	747089-1	747090-1	747091-1	
2	15	1.541	1.312	.509	A	747140-2	747141-2	747142-2	91165-2
					B	747140-1	747141-1	747142-1	
3	25	2.088	1.852	.509	A	745922-2	745925-2	745928-2	91168-2
					B	745922-1	745925-1	745928-1	
4	37	2.729	2.500	.509	A	747713-2	747714-2	747715-2	91166-2
					B	747713-1	747714-1	747715-1	
5	50	2.635	2.406	.620	A	747143-2	747144-2	747145-2	91167-2
					B	747143-1	747144-1	747145-1	

Notes: 1. All receptacles are preloaded with straight posted ACTION PIN socket contacts.
2. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.
3. Insertion/Extraction Tool No. 91261-1 is used to remove and install straight posted ACTION PIN socket contacts. Consult AMP Incorporated for replacement contact nos.

Material and Finish:

Front Shell—Steel, tin plated
Housing—94V-0 rated thermoplastic, black
Threaded Inserts—Brass, unplated
Female Screwlocks—Brass, nickel plated
ACTION PIN Contacts—Copper alloy, duplex plated as follows:
A—.000030 gold on mating end, tin-lead on ACTION PIN post surface, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on ACTION PIN post surface, with entire contact nickel underplated

Related Product Data:

Mateable Connectors:
HDE-pages 2184-2186
HDF-page 2190
HDP-pages 2192-2194
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2258
Mating Hardware-pages 2208-2215
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2222
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

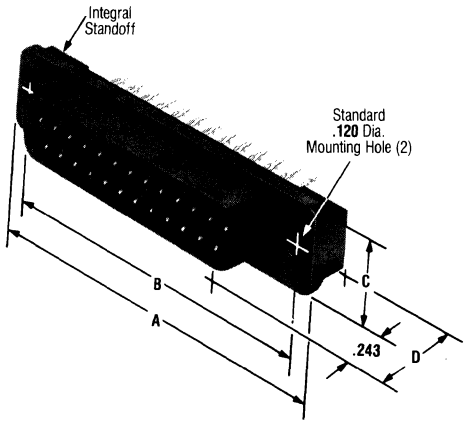
Insertion/Extraction Tool No. 91261-1 (includes Insertion Tip No. 543133-1, Extraction Tip No. 126961-2)

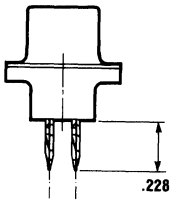
HD-20 All-Plastic Straight Posted Connectors with ACTION PIN Contacts

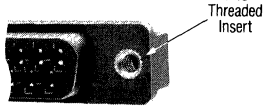
Specifications subject to change.
For latest design specifications...
1-800-522-6752

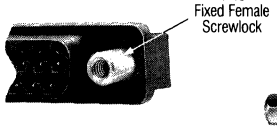
Dimensioning:
Dimensions are in inches

Receptacles (Low, and High Profile)









Insertion/Extraction Tool No. 91261-1 (includes Insertion Tip No. 543133-1, Extraction Tip No. 126961-2)

Material and Finish:

Housing—94V-0 rated thermoplastic, black

Threaded Inserts—Brass, unplated

Female Screwlocks—Brass, nickel plated

ACTION PIN Contacts—Copper alloy, duplex plated as follows:
A—.000030 gold on mating end, tin-lead on ACTION PIN post surface, with entire contact nickel underplated
B—Gold flash on mating end, tin-lead on ACTION PIN post surface, with entire contact nickel underplated

Related Product Data:

Mateable Connectors:
HDE-page 2183
HDF-page 2189
Mating/Panel Mounting-page 2254
Pc Board Mounting Specifications-page 2258
Mating Hardware-pages 2208-2215
Keying Plug-page 2216
Plug/Receptacle Adapters-page 2223
Connector Savers-page 2224
Technical Documents-pages 2258 & 2259

Shell Size	No. of Contact Positions	Dimensions A	B	C	D	Profile	Contact Finish (Plating Code)	Receptacle Part Numbers For .093 to .125 Thick Pc Boards: With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	For .062 Thick Pc Boards: With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	Seating Tool Part No.
1	9	1.221	.984	.410	.395	Low	A	745335-2	745379-2	745454-2	745586-2	745601-2	745616-2	91164-1
							B	745335-1	745379-1	745454-1	745586-1	745601-1	745616-1	
					.695	High	A	745450-2	745463-2	745455-2	745596-2	745611-2	745626-2	91164-3
							B	745450-1	745463-1	745455-1	745596-1	745611-1	745626-1	
2	15	1.546	1.312	.410	.395	Low	A	745336-2	745380-2	745456-2	745587-2	745602-2	—	91165-1
							B	745336-1	745380-1	745456-1	745587-1	745602-1	745617-1	
					.695	High	A	745451-2	745464-2	745457-2	745597-2	745612-2	—	91165-3
							B	745451-1	745464-1	745457-1	745597-1	745612-1	745627-1	
3	25	2.095	1.852	.410	.395	Low	A	208069-2	745381-2	745458-2	745588-2	745603-2	—	91168-1
							B	208069-1	745381-1	745458-1	745588-1	745603-1	—	
					.695	High	A	208089-2	745465-2	745031-2	745598-2	745613-2	745628-2	91168-3
							B	208089-1	745465-1	745031-1	745598-1	745613-1	745628-1	
4	37	2.737	2.500	.410	.395	Low	A	745337-2	745382-2	745459-2	745589-2	745604-2	745619-2	91166-1
							B	745337-1	745382-1	745459-1	745589-1	745604-1	745619-1	
					.695	High	A	745452-2	745466-2	745460-2	745599-2	745614-2	745629-2	91166-3
							B	745452-1	745466-1	745460-1	745599-1	745614-1	745629-1	
5	50	2.643	2.406	.517	.395	Low	A	745338-2	745383-2	745461-2	745590-2	745605-2	745620-2	91167-1
							B	745338-1	745383-1	745461-1	745590-1	745605-1	745620-1	
					.695	High	A	745453-2	745467-2	745462-2	745600-2	745615-2	—	91167-3
							B	745453-1	745467-1	745462-1	745600-1	745615-1	745630-1	

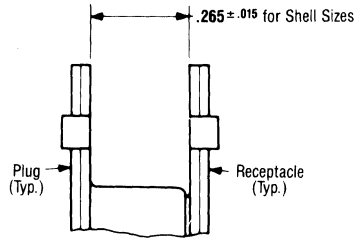
Notes: 1. All receptacles are preloaded with straight posted ACTION PIN socket contacts.
2. Male screw retainers (pages 2208 & 2209) are used as mating hardware for connectors with 4-40 female screwlocks.
3. Insertion/Extraction Tool No. 91261-1 is used to remove and install straight posted ACTION PIN socket contacts. Consult AMP Incorporated for replacement contact nos.

Plug/Receptacle Mating and Panel Mounting Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

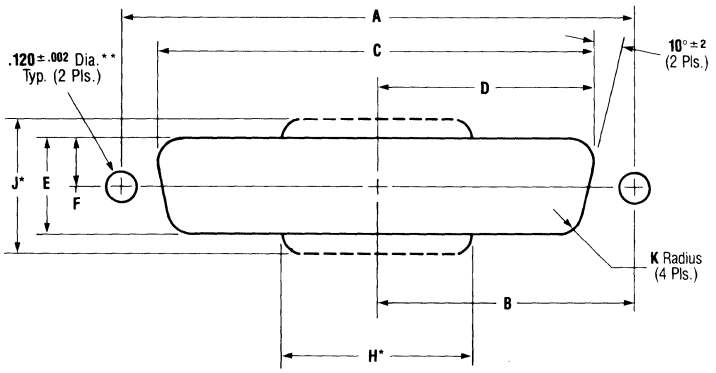
Dimensioning:
Dimensions are in inches

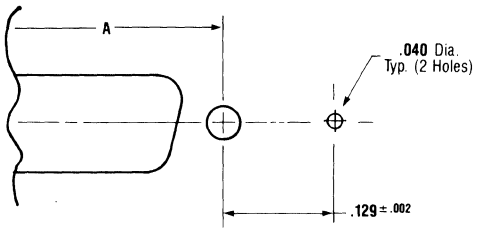
Plug/Receptacle Mating



The .265 dimension is required to assure full mating of connector halves. This dimension must be taken into consideration when determining the method of mounting, panel thickness, etc.

Panel Mounting



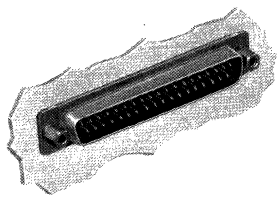


Cutout for Rear Mount and Short Latching Block

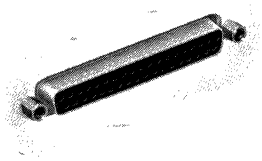
Shell Size	Mounting Method Front/Rear Panel	Dimensions A	B	C	D	E	F	H*	J*	K
1	Front	.984	.492	.874	.437	.513	.257	—	—	.083
	Rear	.984	.492	.806	.403	.449	.225	.300	.635	.132
2	Front	1.312	.656	1.102	.601	.513	.257	—	—	.083
	Rear	1.312	.656	1.134	.567	.449	.225	.623	.635	.132
3	Front	1.852	.926	1.743	.872	.513	.257	—	—	.083
	Rear	1.852	.926	1.674	.837	.449	.225	1.165	.635	.132
4	Front	2.500	1.250	2.391	1.196	.513	.257	—	—	.083
	Rear	2.500	1.250	2.326	1.163	.449	.225	1.813	.635	.132
5	Front	2.406	1.203	2.297	1.149	.623	.312	—	—	.083
	Rear	2.406	1.203	2.218	1.109	.555	.278	1.718	.745	.132

*Panel cutout configuration with H and J dimensions provides clearance for mounting connectors with cable clamps.
**This dimension is .190 ± .002 when posted connectors with fixed female screwlocks are rear-panel mounted.

Most plugs and receptacles can be mounted to a panel from either the front or rear, using a variety of accessory hardware. Posted receptacles are rear panel mounted only. Typical examples are shown below.



Typical Front-Panel Mounted Subminiature D Plug



Typical Rear-Panel Mounted Subminiature D Receptacle

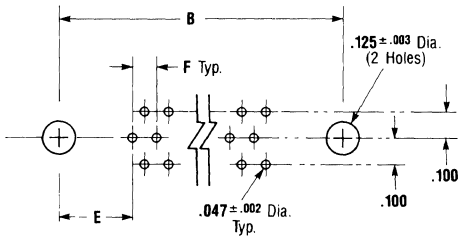
Pc Board Mounting Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

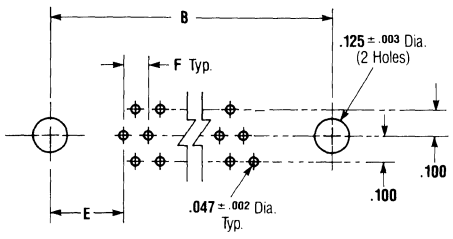
Dimensioning:
Dimensions are in inches

HD-22 Right-Angle Posted Connectors

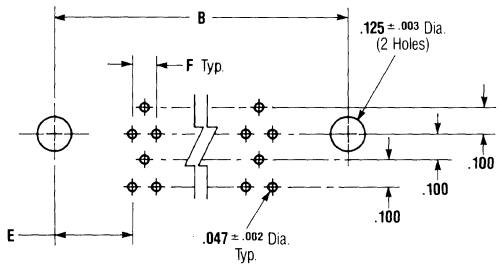
Shell Size 1



Shell Sizes 2 thru 4



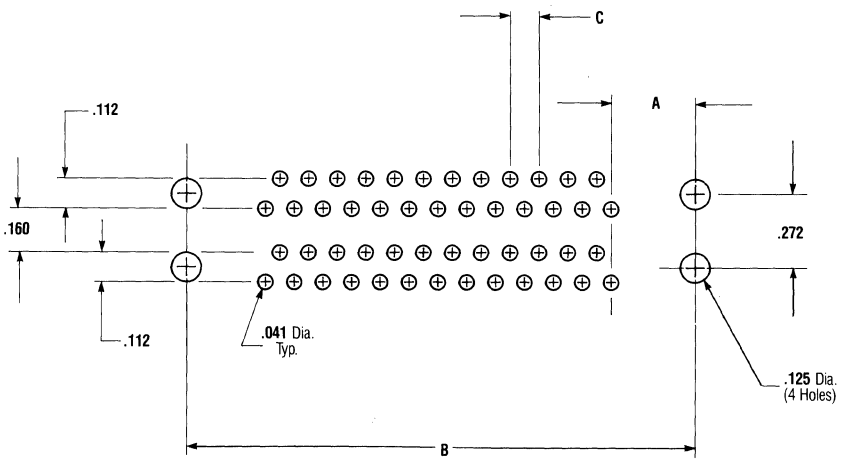
Shell Size 5



Note: Pc board layouts illustrated above serve as a guide only; they are not to be used for actual design or construction of Customer equipment. Consult AMP Incorporated for detailed pc board layouts.

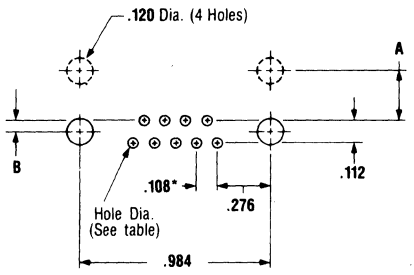
Shell Size	No. of Contact Positions	Dimensions		
		B	E	F
1	15	.984	.277	.090
2	26	1.312	.271	.090
3	44	1.852	.271	.090
4	62	2.500	.2755	.095
5	78	2.406	.3005	.095

HD-20 Right-Angle Stacked Connectors

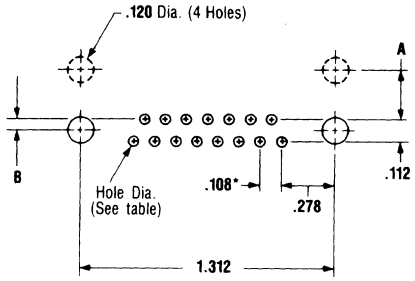


No. of Contact Positions	Dimensions		
	A	B	C
18	.276	.984	.108
30	.278	1.312	.108
50	.274	1.852	.109
74	.272	2.500	.109

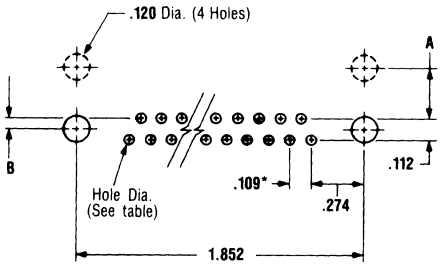
HD-20 Right-Angle Posted Connectors



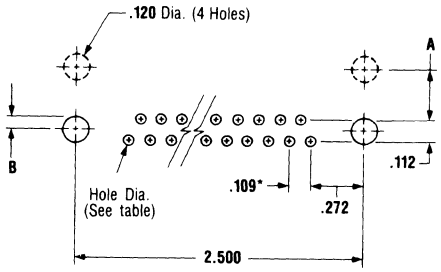
Shell Size 1 (9 Positions)



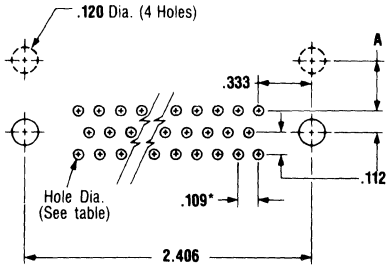
Shell Size 2 (15 Positions)



Shell Size 3 (25 Positions)



Shell Size 4 (37 Positions)



Shell Size 5 (50 Positions)

*This dimension is non-cumulative.

Note: Pc board layouts illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP Incorporated for detailed pc board layout requirements.

Connector Style	Shell Size	Dimensions A	Dimensions B	Hole Dia.	Page Reference
HD-20 Full Metal-Shell with .025 Sq. Posts 454 Mount	1, 2, 3, 4	.185	.056	.047	2228
HD-20 Full Metal-Shell with .025 Sq. Posts 545 Mount	1, 2, 3, 4	.275	.056	.047	2229, 2230
	5	.275/.219	—		
HD-20 Front Metal-Shell with .026 Dia. Posts 318 Mount	1, 2, 3, 4	—	.056	.041	2231, 2232
HD-20 Front Metal-Shell with .026 Dia. Posts 478 Mount	1, 2, 3, 4	—	.056	.041	2233, 2234
HD-20 Front Metal-Shell with .026 Dia. Posts 590 Mount	1, 2, 3, 4	.275	—	.041	2235, 2236
HD-20 All-Plastic with .026 Dia. Posts 318 Mount (Front Load)	1, 2, 3, 4	—	.056	.041	2237
HD-20 All-Plastic with .026 Dia. Posts 478 Mount (Front Load)	1, 2, 3, 4	.163	.056	.041	2238
HD-20 All-Plastic with .026 Dia. Posts 590 Mount (Front Load)	1, 2, 3, 4	.275	.056	.041	2239
HD-20 All-Plastic with .025 Sq. Posts 590 Mount (Rear Load)	1, 2, 3, 4, 5	.275	.056	.047	2240

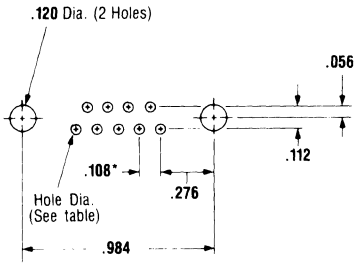
Note: Refer to individual pages covering each connector style for recommended pc board thicknesses.

Pc Board Mounting Specifications

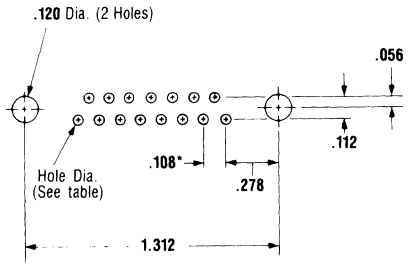
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

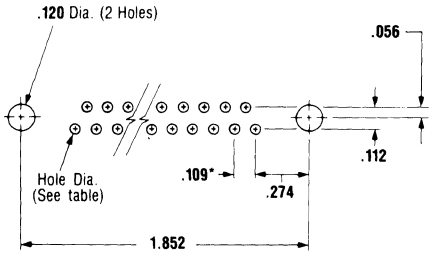
HD-20 Straight Posted Connectors



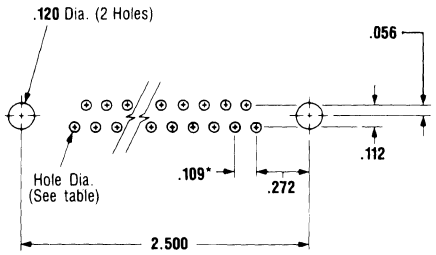
Shell Size 1 (9 Positions)



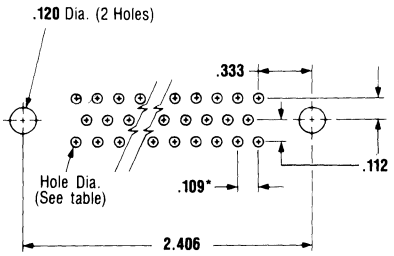
Shell Size 2 (15 Positions)



Shell Size 3 (25 Positions)



Shell Size 4 (37 Positions)



Shell Size 5 (50 Positions)

*This dimension is non-cumulative.

Note: Pc board layouts illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP Incorporated for detailed pc board layout requirements.

Connector Style	Shell Size	Hole Dia.	Page Reference
HD-20 Full Metal-Shell with .025 Sq. Posts	1, 2, 3, 4, 5	.047	2244, 2245
HD-20 Front Metal-Shell with .026 Dia. Posts	1, 2, 3, 4	.041	2246, 2247
HD-20 All-Plastic with .026 Dia. Posts	1, 2, 3, 4, 5	.041	2248-2251
HD-20 Front Metal-Shell with ACTION PIN Posts**	1, 2, 3, 4, 5	.043/.036	2252
HD-20 All-Plastic with ACTION PIN Posts**	1, 2, 3, 4, 5	.043/.036	2253

**Pc board recommendations for ACTION PIN posts:
A. Holes should be drilled with a 1.15 mm drill.
B. Minimum pc board tin-lead plating to be .0003 thick over .002 ± .001 thick copper.
C. Recommended hole size after tin-lead plating is .037 to .043.
D. If hole is reflowed after plating, diameter to be .036 to .043.

Note: Refer to individual pages covering each connector style for recommended pc board thicknesses.

The following is a list of technical documents covering the application, performance and maintenance of Subminiature D Connectors and related tooling.

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

Cable Connectors—Pages 2178 thru 2225

108-40011—Connector, AMPLIMITE HDE-20
108-40030—AMPLIMITE HDE-20 Shielding Hardware
108-40012—Connector, AMPLIMITE HDF-20 (Low Profile)
108-46002—SHIELDED HDF-20 Low Profile Connectors
108-40005—Connector, AMPLIMITE HDP-20
108-40030—AMPLIMITE Shielding Hardware, HDP-20 and HDE-20
108-40031—Connector, AMPLIMITE HDP-20 Solder Cup
108-40032—Accessories, Cable Clamp Assemblies, Shielded AMPLIMITE
108-40016—Connector System, AMPLIMITE HD-20 Cassette

Board Mount Connectors—Pages 2226 thru 2253

108-1092 —Connector, AMPLIMITE, Right-Angle, HD-22
108-40025—Connector, AMPLIMITE HD-20, All-Plastic, Front Metal-Shell, Full Metal-Shell, Right-Angle and Straight Posted Pc Board Assemblies
108-40014—Connector, AMPLIMITE, ACTION PIN
108-40028—Connector, AMPLIMITE Stacked

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Setup person.

Cable Connectors—Pages 2178 thru 2225

114-10001— AMPLIMITE HDP-22 Connectors and High Density 22 Contacts
114-40002—Connector, HDE-20, Mass Termination, Application of
114-40003—Connector, HDE-20, F Crimp, Application of
114-40006—HDE Connectors for Overmolding
114-40008—HDE Connectors for Enclosure Kits
114-40005—Ribbon Cable Connectors (HDF-20)
114-46001—Shielded HDF-20 Low Profile Connectors
114-40007—HDP Connectors for Overmolding
114-40009—HDP Connectors for Enclosure Kits
114-10000—Contact, 20 DF, Application of

Board Mount Connectors—Pages 2226 thru 2253

114-40021—Connector, AMPLIMITE, Right-Angle, HD-22
114-40010—AMPLIMITE Right-Angle Front Metal-Shell Connectors
114-40013—Connector, HDP-20 Metal-Shell (Right-Angle)
114-40015—AMPLIMITE HD-20 Series .318, .478 and .590 All-Plastic Right-Angle Pc Board Connectors
114-40017—AMPLIMITE Stacked Connectors
114-40023—AMPLIMITE HD-20 Straight Posted, Front Metal-Shell

Instruction Sheets provide instructions for assembling or applying the product. They are intended for Manufacturing Assembler or Operator.

Cable Connectors—Pages 2178 thru 2225

IS 9381—AMPLIMITE HDP-22 Connectors
IS 6645—HDE-20 Metal-Shell Connectors
IS 6621—HDE-20 All-Plastic Connectors
IS 6631—HDE-20 Extraction Tool 91232-1
IS 6638—HDE-20 Pistol Grip Hand Tool
IS 6656—HDE-20 Pneumatic Hand Tool
IS 6871—HDE-20 Mass Termination Tooling
IS 6608—HDF-20 Low Profile Connectors, One Step
IS 7777—Manual Applicator Frame Assembly 91085-2
IS 6893—HDF-20 Termination Tooling Assembly (Die Set) 91257-1
IS 6842—HDF-20 Termination Tooling Assemblies (Die Sets) 91250-1 and 91250-2 (3 Foot Rack)
IS 9011—HDF-20 Termination Tooling Assembly (Die Set) 91248-1 for Shielded Connectors
IS 6845—HDF-20 Termination Tooling Assembly (Die Set) 91249-1 for Shielding Hardware
IS 6967—AMP Economy Tooling 91280-1 for AMPLIMITE Bulkhead and 50 Position HDF Connectors
IS 6938—AMP Hand Tool Kit 91271-1 for AMPLIMITE Connectors
IS 6962—AMP Economy Tooling 91275-1 for AMPLIMITE HDF Low-Profile Connectors
IS 9257—AMP Comptool Tooling Assembly 543306-1 for AMP-LATCH Connectors
IS 7514—HDP-20 Connectors with Crimp Type Contacts
IS 7799—AMPLIMITE Solder Cup Contacts
IS 9375—HDP-22 Hand Tool
IS 9404—Insertion/Extraction Tool 91285-1
IS 7521—Application and Maintenance of AMP Hand Crimping Tool 90265-1
IS 7634—Application and Maintenance of AMP Hand Crimping Tool 90302-1
IS 7694—Application and Maintenance of AMP Hand Crimping Tool 90312-1
IS 6678—Application and Maintenance of AMP Hand Crimping Tool 91239
IS 6695—Application and Maintenance of AMP Hand Crimping Tool 90405-1
IS 6709—Application and Maintenance of AMP Hand Crimping Tool 90406-1
IS 7954—Application and Maintenance of AMP Hand Crimping Tool 90374-1
IS 9315—Application and Maintenance of AMP Hand Crimping Tool 543344-1
IS 9241—Application and Maintenance for AMP Die Assemblies 58236-1, -2, -3 and -4
IS 9242—Application and Maintenance for AMP Die Assemblies 58237-1 and -2
IS 9243—Application and Maintenance for AMP Die Assemblies 58238-1 and -2
IS 9244—Application and Maintenance for AMP Die Assemblies 58239-1, -2, -3 and -4
IS 6732—Pneumatic Tool 91112-3 (Auto-Cycle)
IS 6864—One-Step Adapter Kit 543160-1 for Pneumatic (Auto Cycle) Tool
IS 6905—One-Step Termination Shuttle Tool 91265-1
IS 9318—Application & Maintenance for AMP Die Assemblies 543013-() for AMPLIMITE Crimp Ferrules
IS 9193—HDP-20 Solder Cup Connectors
IS 9217—Solder Cup Connector Shielding Hardware Kit
IS 9218—Solder Cup Connector Shielding Enclosure Kit
IS 9199—Shielding Enclosure Expansion Tools
IS 9010—Basic Shielding Hardware Kits
IS 9172—Shielding Hardware Enclosure Kits
IS 6609—HDP-20 Shielded Cable Clamp Kits, Straight Exit
IS 6769—HDP-20 Shielded Cable Clamp Kits, 90° Exit
IS 6658—HDE-20 Slide-On Back Covers
IS 6659—AMPLIMITE Cable Clamp Kits 745306 and 745311
IS 7837—Female Screwlock Kit 205817-1 and Male Screw Retainer Kit 205980-1
IS 7785—Locking Post Assembly Kit 206514-1 and Slide Latch Assembly Kit 206942-1
IS 9128—AMPLIMITE Latching Blocks
IS 9129—AMPLIMITE HDP One-Piece Spring Latches
IS 9130—AMPLIMITE Two-Piece Spring Latches for Metal Shields
IS 9131—AMPLIMITE Two-Piece Spring Latches for Post Molded Strain Reliefs
IS 6551—AMPLIMITE Slide Latch Kits and Slide Latch Post Kits
IS 9238—AMPLIMITE Universal Cable Clamp Kits
IS 7555—AMPLIMITE Cable Clamp Assemblies
IS 6906—Release Tool Kit 91266-2 for AMPLIMITE Conn. Cable Clamps
IS 6662—AMPLIMITE Cassette and Holder Units
IS 6809—Cassette Connector Release Tool 91251-1

Board Mount Connectors—Pages 2226 thru 2253

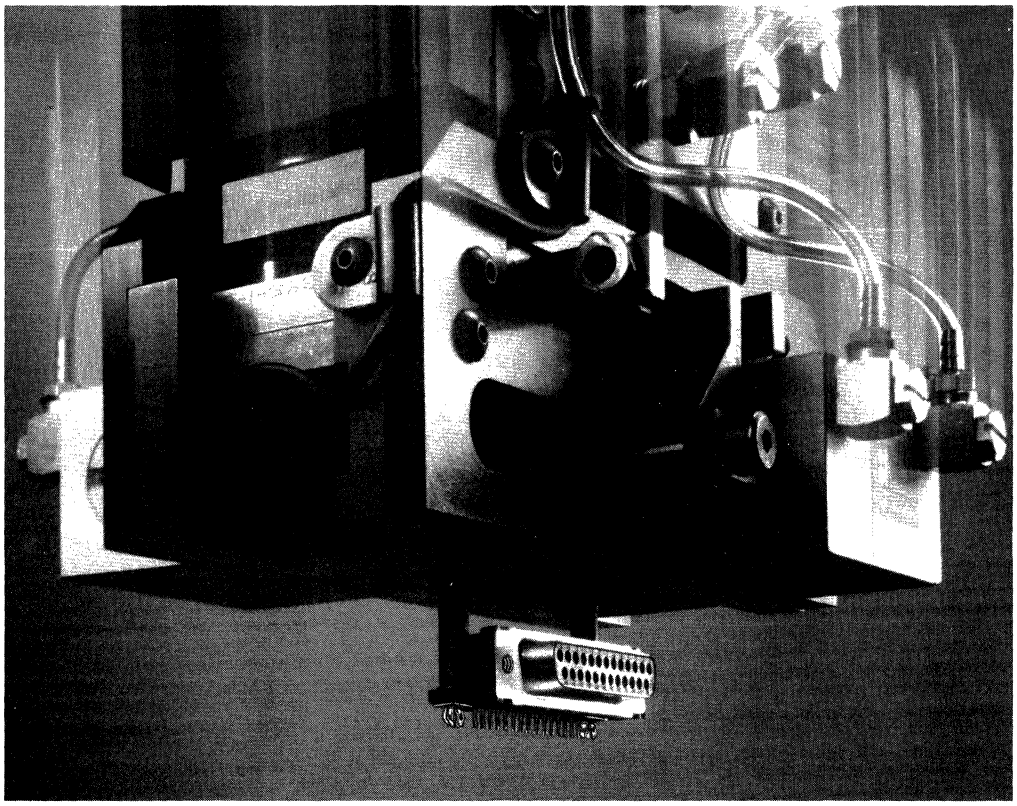
IS 9031—ACTION PIN Receptacle Installation Tooling; 9, 15, 25, 37 and 50 Positions
IS 6889—ACTION PIN Insertion/Extraction Tool Kit 91261-1
IS 9293—ACTION PIN Plug Installation Tooling

Military and Federal Specifications

QQ-C-530	Beryllium Copper
QQ-B-626	Copper Alloy
QQ-B-750	Phosphor Bronze
ASTM A109	Steel
ASTM A108	Cold Rolled Steel
MIL-C-50	Brass
QQ-N-290	Nickel Plating
ASTM B633	Zinc Plating (Type I or III, Class SC1)
MIL-C-14550	Copper Plating
MIL-G-45204	Gold Plating
MIL-P-81728	Tin-Lead Plating
MIL-T-10727	Tin Plating

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Subminiature D HD-20 Right-Angle, Metal Shell and All-Plastic Connectors (AMPLIMITE III)



Intermateable with AMPLIMITE and other Subminiature D connectors, AMPLIMITE III connectors are designed and packaged for use with robotic component insertion machines. AMPLIMITE III connectors are constructed of UL 94 V-0 rated materials for standard wave soldering and are available in 9, 15, 25 and 37 position. Mating hardware options include threaded inserts and screwlocks. A choice of with or without boardlocks is also offered. Boardlocks provide firm board retention, eliminating the need for under-board tooling.

AMPLIMITE III, HD-20 connector contacts are available in three types of gold plating to meet the needs of different applications: .000030 [0.00076], .000010 [0.00254] and gold flash on the mating end.

AMPLIMITE III connectors offer the lead registration, dimensional uniformity and locating features necessary for accurate, robotic pick-and-place handling. Connectors can be gripped front-to-back, side-to-side, or from the top with a vacuum chuck.

Design, Engineering, Technical Support and proven product quality from AMP have set the standards in the connector industry. Now the AMPLIMITE III Connector will be the standards setter in robotically applied connector technology.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbol used is:
C (Celsius)

Product Facts

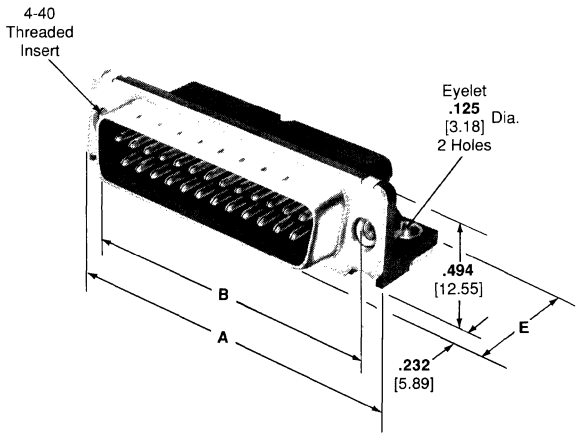
- 9, 15, 25 and 37 positions
- Designed and packaged for use with robotic component insertion machines
- Connector housing are UL 94 V-0 rated
- Suitable for standard wave soldering (For high temperature applications contact AMP Incorporated)
- Mating hardware options — 4-40 threaded inserts or screwlocks
- With or without boardlocks
- Contacts available in three types of gold plating on the mating end
- Accurate Lead registration
- Robotic guide notch on the connector housing
- Two standard footprints in both metal-shell and all-plastic connectors (318 and 590 mount)
- Applied costs savings thru robotic application
- Recognized under the Component Program of Underwriters Laboratories, Inc., No. E28476
- CSA Certified, No. LR 51928

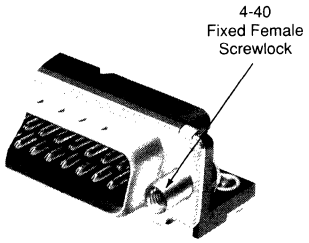
HD-20 Front Metal-Shell Right-Angle Posted Connectors 318 Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

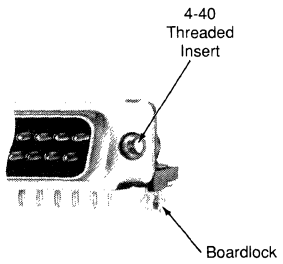
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

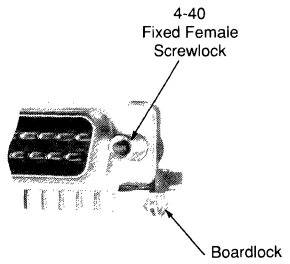
Plugs

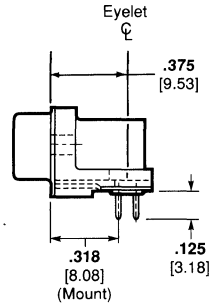




Without Boardlocks







Material and Finish:

Front Shell — Steel, tin plated
Housing — 94V-0 rated thermoplastic, black
Eyelets — Brass, tin plated
Threaded Inserts — Zinc
Female Screwlock — Zinc
Boardlock — Copper alloy, tin-lead plated
Pin Contacts (Posted) — Brass, duplex plated as follows:
A — .000030 [0.00076] gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B — Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated
C — .000010 [0.000254] gold on mating end, tin-lead on termination end, with entire contact nickel underplated

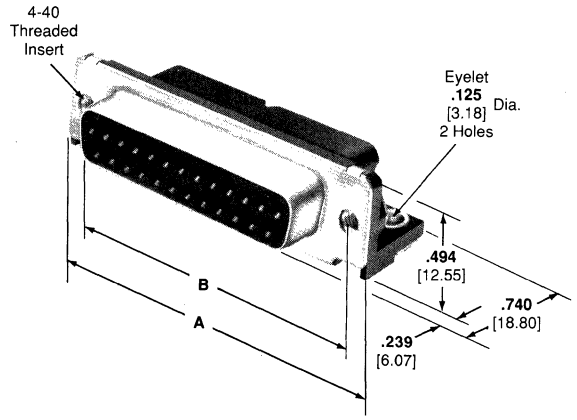
Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Dimensions E	Contact Finish (Plating Code)	Without Boardlocks: With Threaded Inserts	Without Boardlocks: With Fixed Female Screwlocks	With Boardlocks: With Threaded Inserts	With Boardlocks: With Fixed Female Screwlocks
1	9	**1.222** 31.04	**.984** 24.99	**.732** 18.59	A	748839-1	748919-1	748879-1	748959-1
					B	748839-2	748919-2	748879-2	748959-2
					C	748839-3	748919-3	748879-3	748959-3
2	15	**1.550** 39.37	**1.312** 24.99	**.732** 18.59	A	748840-1	748920-1	748880-1	748960-1
					B	748840-2	748920-2	748880-2	748960-2
					C	748840-3	748920-3	748880-3	748960-3
3	25	**2.090** 53.09	**1.852** 47.04	**.738** 18.74	A	748841-1	748921-1	748881-1	748961-1
					B	748841-2	748921-2	748881-2	748961-2
					C	748841-3	748921-3	748881-3	748961-3
4	37	**2.738** 69.55	**2.500** 63.50	**.738** 18.74	A	748842-1	748922-1	748882-1	748962-1
					B	748842-2	748922-2	748882-2	748962-2
					C	748842-3	748922-3	748882-3	748962-3

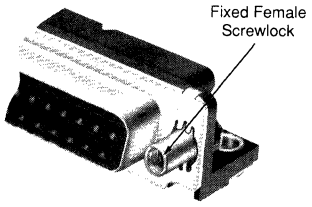
HD-20 Front Metal-Shell Right-Angle Posted Connectors 318 Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

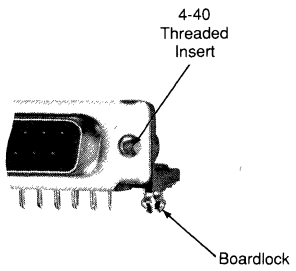
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

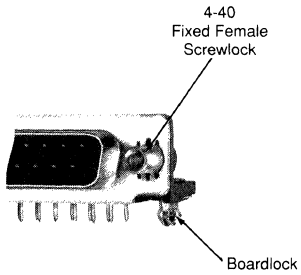
Receptacles

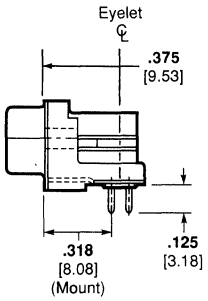




Without Boardlocks







Material and Finish:

Front Shell — Steel, tin plated
Housing — 94V-0 rated thermoplastic, black
Eyelets — Brass, tin plated
Threaded Inserts — Zinc
Female Screwlock — Zinc
Boardlock — Copper alloy, tin-lead plated
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A — .000030 [0.00076] gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B — Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated
C — .000010 [0.000254] gold on mating end, tin-lead on termination end, with entire contact nickel underplated

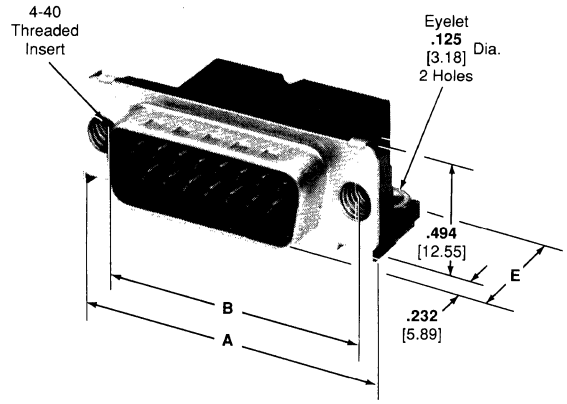
Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Contact Finish (Plating Code)	Without Boardlocks: With Threaded Inserts	Without Boardlocks: With Fixed Female Screwlocks	With Boardlocks: With Threaded Inserts	With Boardlocks: With Fixed Female Screwlocks
1	9	**1.222** 31.04	**.984** 24.99	A	748835-1	748915-1	748875-1	748955-1
				B	748835-2	748915-2	748875-2	748955-2
				C	748835-3	748915-3	748875-3	748955-3
2	15	**1.550** 39.37	**1.312** 33.32	A	748836-1	748916-1	748876-1	748956-1
				B	748836-2	748916-2	748876-2	748956-2
				C	748836-3	748916-3	748876-3	748956-3
3	25	**2.090** 53.09	**1.852** 47.04	A	748837-1	748917-1	748877-1	748957-1
				B	748837-2	748917-2	748877-2	748957-2
				C	748837-3	748917-3	748877-3	748957-3
4	37	**2.738** 69.55	**2.500** 63.50	A	748838-1	748918-1	748878-1	748958-1
				B	748838-2	748918-2	748878-2	748958-2
				C	748838-3	748918-3	748878-3	748958-3

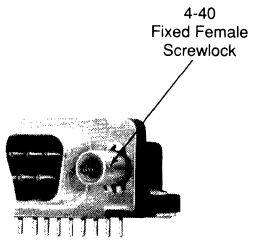
HD-20 Front Metal-Shell (Short Leg) Right-Angle Posted Connectors 590 Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

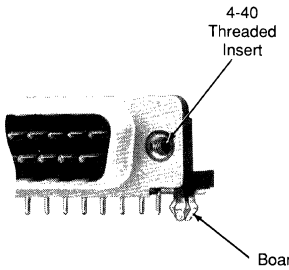
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

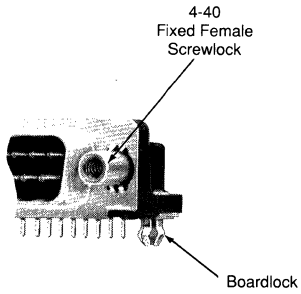
Plugs

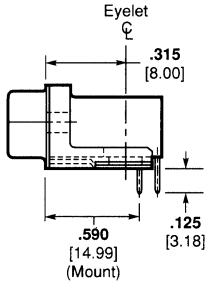




Without Boardlocks







Material and Finish:

Front Shell — Steel, tin plated
Housing — 94V-0 rated thermoplastic, black
Eyelets — Brass, tin plated
Threaded Inserts — Zinc
Female Screwlock — Zinc
Boardlock — Copper alloy, tin-lead plated
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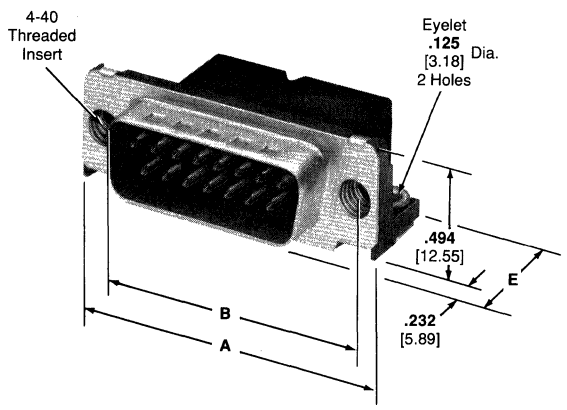
Shell Size	No. of Contact Positions	Dimensions			Contact Finish (Plating Code)	Without Boardlocks		With Boardlocks	
		A	B	E		With Threaded Inserts	With Fixed Female Screwlocks	With Threaded Inserts	With Fixed Female Screwlocks
1	9	**1.222** 31.04	**.984** 24.99	**.977** 24.82	A	748847-1	748927-1	748887-1	748967-1
					B	748847-2	748927-2	748887-2	748967-2
					C	748847-3	748927-3	748887-3	748967-3
2	15	**1.550** 39.37	**1.312** 33.32	**.977** 24.82	A	748848-1	748928-1	748888-1	748968-1
					B	748848-2	748928-2	748888-2	748968-2
					C	748848-3	748928-3	748888-3	748968-3
3	25	**2.090** 53.09	**1.852** 47.04	**.983** 24.97	A	748849-1	748929-1	748889-1	748969-1
					B	748849-2	748929-2	748889-2	748969-2
					C	748849-3	748929-3	748889-3	748969-3
4	37	**2.738** 69.55	**2.500** 63.50	**.983** 24.97	A	748850-1	748930-1	748890-1	748970-1
					B	748850-2	748930-2	748890-2	748970-2
					C	748850-3	748930-3	748890-3	748970-3

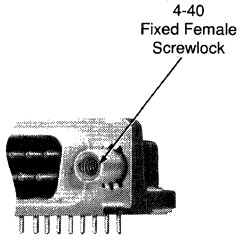
HD-20 Front Metal-Shell (Long Leg) Right-Angle Posted Connectors 590 Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

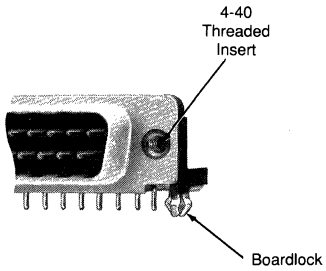
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

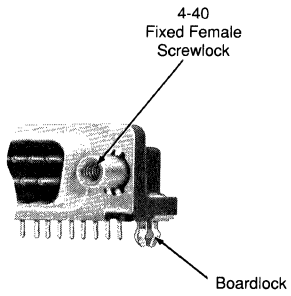
Plugs

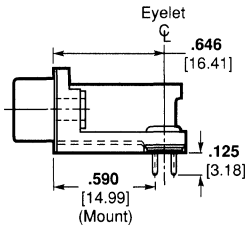




Without Boardlocks







Material and Finish:

Front Shell — Steel, tin plated
Housing — 94V-0 rated thermoplastic, black
Eyelets — Brass, tin plated
Threaded Inserts — Zinc
Female Screwlock — Zinc
Boardlock — Copper alloy, tin-lead plated
Pin Contacts (Posted) — Brass, duplex plated as follows:
A — .000030 [0.00076] gold on mating end, tin-lead on termination end, with entire contact nickel underplated
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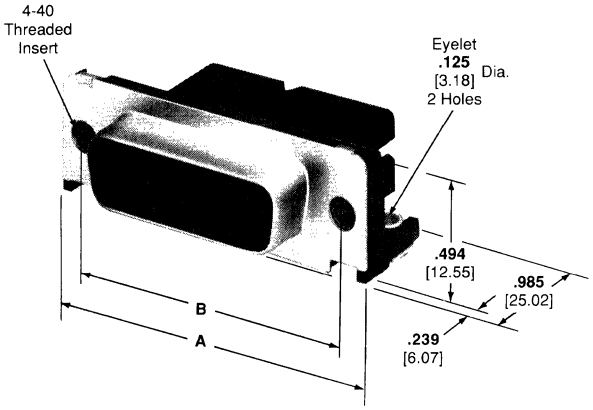
Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Dimensions E	Contact Finish (Plating Code)	Without Boardlocks: With Threaded Inserts	Without Boardlocks: With Fixed Female Screwlocks	With Boardlocks: With Threaded Inserts	With Boardlocks: With Fixed Female Screwlocks
1	9	**1.222** 31.04	**.984** 24.99	**1.003** 25.48	A	748855-1	748935-1	748895-1	748975-1
					B	748855-2	748935-2	748895-2	748975-2
					C	748855-3	748935-3	748895-3	748975-3
2	15	**1.550** 39.37	**1.312** 33.32	**1.003** 25.48	A	748856-1	748936-1	748896-1	748976-1
					B	748856-2	748936-2	748896-2	748976-2
					C	748856-3	748936-3	748896-3	748976-3
3	25	**2.090** 53.09	**1.852** 47.04	**1.009** 25.63	A	748857-1	748937-1	748897-1	748977-1
					B	748857-2	748937-2	748897-2	748977-2
					C	748857-3	748937-3	748897-3	748977-3
4	37	**2.738** 69.55	**2.500** 63.50	**1.009** 25.63	A	748858-1	748938-1	748898-1	748978-1
					B	748858-2	748938-2	748898-2	748978-2
					C	748858-3	748938-3	748898-3	748978-3

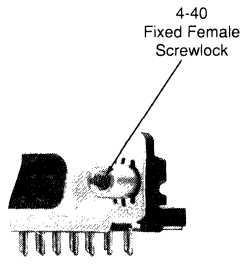
HD-20 Front Metal-Shell (Short Leg) Right-Angle Posted Connectors 590 Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

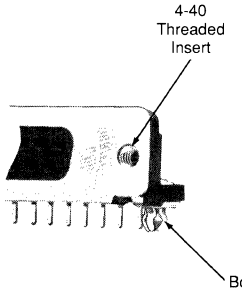
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

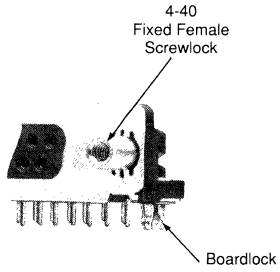
Receptacles

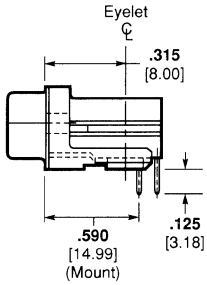




Without Boardlocks







Material and Finish:

Front Shell — Steel, tin plated
Housing — 94V-0 rated thermoplastic, black
Eyelets — Brass, tin plated
Threaded Inserts — Zinc
Female Screwlock — Zinc
Boardlock — Copper alloy, tin-lead plated
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A — .000030 [0.00076] gold on mating end, tin-lead on termination end, with entire contact nickel underplated
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Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Contact Finish (Plating Code)	Without Boardlocks: With Threaded Inserts	Without Boardlocks: With Fixed Female Screwlocks	With Boardlocks: With Threaded Inserts	With Boardlocks: With Fixed Female Screwlocks
1	9	**1.222** 31.04	**.984** 24.99	A	748843-1	748923-1	748883-1	748963-1
				B	748843-2	748923-2	748883-2	748963-2
				C	748843-3	748923-3	748883-3	748963-3
2	15	**1.550** 39.37	**1.312** 33.32	A	748844-1	748924-1	748884-1	748964-1
				B	748844-2	748924-2	748884-2	748964-2
				C	748844-3	748924-3	748884-3	748964-3
3	25	**2.090** 53.09	**1.852** 47.04	A	748845-1	748925-1	748885-1	748965-1
				B	748845-2	748925-2	748885-2	748965-2
				C	748845-3	748925-3	748885-3	748965-3
4	37	**2.738** 69.55	**2.500** 63.50	A	748846-1	748926-1	748886-1	748966-1
				B	748846-2	748926-2	748886-2	748966-2
				C	748846-3	748926-3	748886-3	748966-3

HD-20 Front Metal-Shell (Long Leg) Right-Angle Posted Connectors 590 Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
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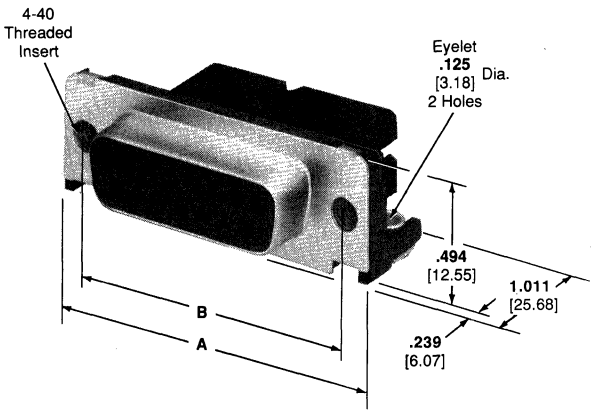
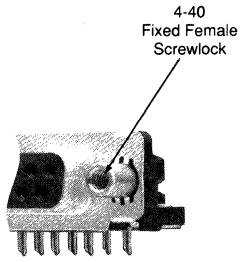
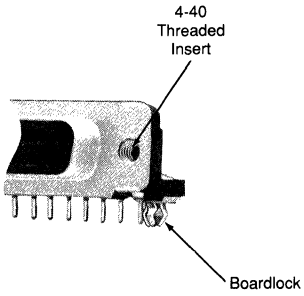
Charts contain dimensions in inches over millimeters.

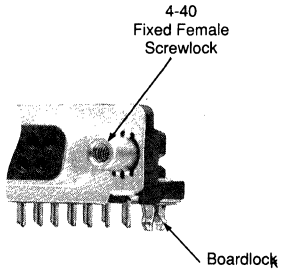
Receptacles

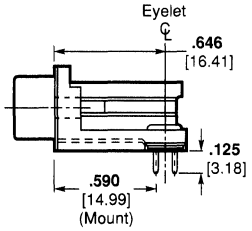




Without Boardlocks







Material and Finish:

Front Shell — Steel, tin plated
Housing — 94V-0 rated thermoplastic, black
Eyelets — Brass, tin plated
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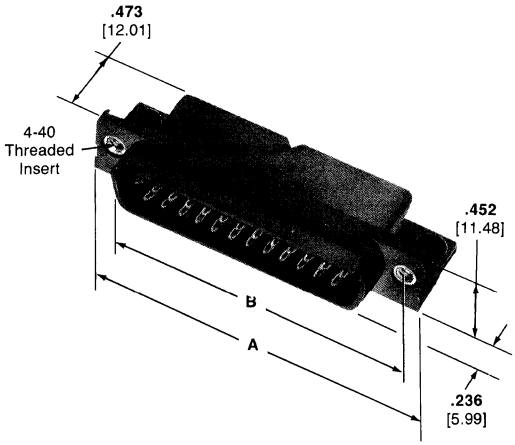
Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Contact Finish (Plating Code)	Without Boardlocks: With Threaded Inserts	Without Boardlocks: With Fixed Female Screwlocks	With Boardlocks: With Threaded Inserts	With Boardlocks: With Fixed Female Screwlocks
1	9	**1.222** 31.04	**.984** 24.99	A	748851-1	748931-1	748891-1	748971-1
				B	748851-2	748931-2	748891-2	748971-2
				C	748851-3	748931-3	748891-3	748971-3
2	15	**1.550** 39.37	**1.312** 33.32	A	748852-1	748932-1	748892-1	748972-1
				B	748852-2	748932-2	748892-2	748972-2
				C	748852-3	748932-3	748892-3	748972-3
3	25	**2.090** 53.09	**1.852** 47.04	A	748853-1	748933-1	748893-1	748973-1
				B	748853-2	748933-2	748893-2	748973-2
				C	748853-3	748933-3	748893-3	748973-3
4	37	**2.738** 69.55	**2.500** 63.50	A	748854-1	748934-1	748894-1	748974-1
				B	748854-2	748934-2	748894-2	748974-2
				C	748854-3	748934-3	748894-3	748974-3

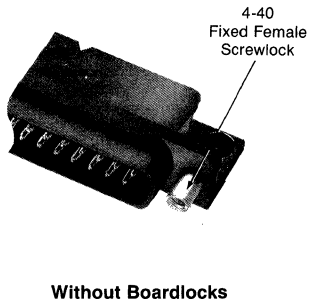
HD-20 All-Plastic Right-Angle Posted Connectors 318 Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

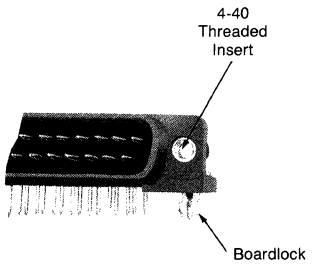
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

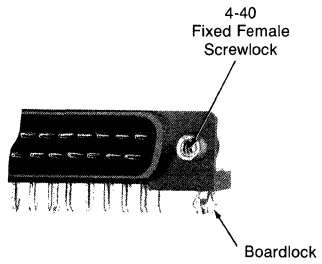
Plugs

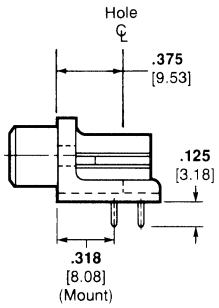




Without Boardlocks







Material and Finish:

Housing — 94V-0 rated thermoplastic, black
Eyelets — Brass, tin plated
Threaded Inserts — Zinc
Female Screwlock — Zinc
Boardlock — Copper alloy, tin-lead plated
Pin Contacts (Posted) — Brass, duplex plated as follows:
A — .000030 [0.00076] gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B — Gold flash on mating end tin-lead on termination end, with entire contact nickel underplated
C — .000010 [0.000254] gold on mating end, tin-lead on termination end, with entire contact nickel underplated

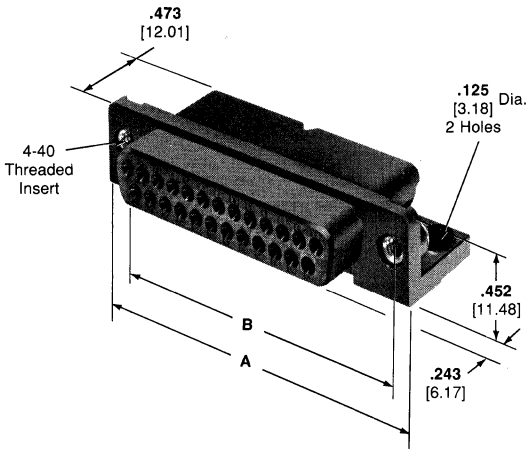
Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Contact Finish (Plating Code)	Without Boardlocks: With Threaded Inserts	Without Boardlocks: With Fixed Female Screwlocks	With Boardlocks: With Threaded Inserts	With Boardlocks: With Fixed Female Screwlocks
1	9	**1.222** 31.04	**.984** 24.99	A	748863-1	748943-1	748903-1	748983-1
				B	748863-2	748943-2	748903-2	748983-2
				C	748863-3	748943-3	748903-3	748983-3
2	15	**1.550** 39.37	**1.312** 33.32	A	748864-1	748944-1	748904-1	748984-1
				B	748864-2	748944-2	748904-2	748984-2
				C	748864-3	748944-3	748904-3	748984-3
3	25	**2.090** 53.09	**1.852** 47.04	A	748865-1	748945-1	748905-1	748985-1
				B	748865-2	748945-2	748905-2	748985-2
				C	748865-3	748945-3	748905-3	748985-3
4	37	**2.738** 69.55	**2.500** 63.50	A	748866-1	748946-1	748906-1	748986-1
				B	748866-2	748946-2	748906-2	748986-2
				C	748866-3	748946-3	748906-3	748986-3

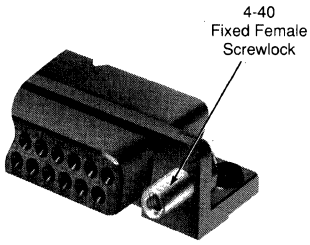
HD-20 All-Plastic Right-Angle Posted Connectors 318 Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

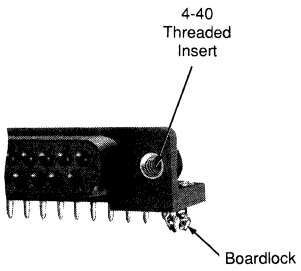
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

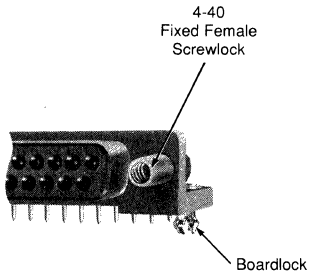
Receptacles

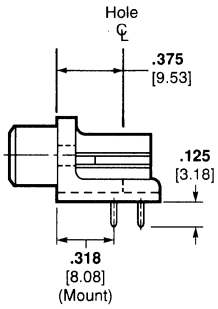




Without Boardlocks







Material and Finish:

Housing — 94V-0 rated thermoplastic, black
Eyelets — Brass, tin plated
Threaded Inserts — Zinc
Female Screwlock — Zinc
Boardlock — Copper alloy, tin-lead plated
Socket Contacts (Posted) — Phosphor Bronze, duplex plated as follows:
A — .000030 [0.00076] gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B — Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated
C — .000010 [0.000254] gold on mating end, tin-lead on termination end, with entire contact nickel underplated

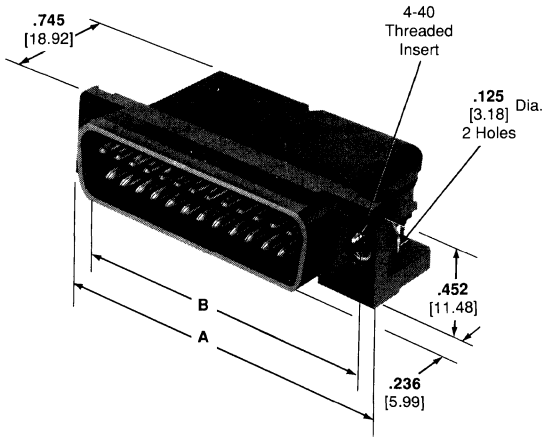
Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Contact Finish (Plating Code)	Without Boardlocks: With Threaded Inserts	Without Boardlocks: With Fixed Female Screwlocks	With Boardlocks: With Threaded Inserts	With Boardlocks: With Fixed Female Screwlocks
1	9	**1.222** 31.04	**.984** 24.99	A	748859-1	748939-1	748899-1	748979-1
				B	748859-2	748939-2	748899-2	748979-2
				C	748859-3	748939-3	748899-3	748979-3
2	15	**1.550** 39.37	**1.312** 33.32	A	748860-1	748940-1	748900-1	748980-1
				B	748860-2	748940-2	748900-2	748980-2
				C	748860-3	748940-3	748900-3	748980-3
3	25	**2.090** 53.09	**1.852** 47.04	A	748861-1	748941-1	748901-1	748981-1
				B	748861-2	748941-2	748901-2	748981-2
				C	748861-3	748941-3	748901-3	748981-3
4	37	**2.738** 69.55	**2.500** 63.50	A	748862-1	748942-1	748902-1	748982-1
				B	748862-2	748942-2	748902-2	748982-2
				C	748862-3	748942-3	748902-3	748982-3

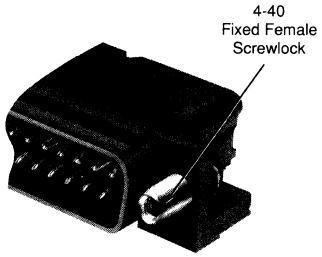
HD-20 All-Plastic Right-Angle Posted Connectors 590 Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

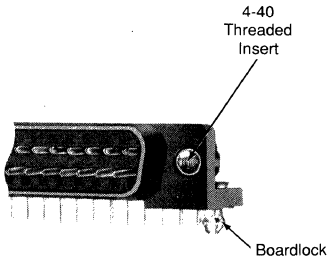
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

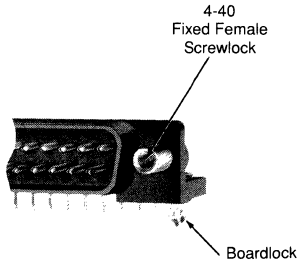
Plugs

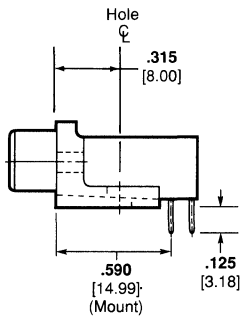




Without Boardlocks







Material and Finish:

Housing — 94V-0 rated thermoplastic, black
Eyelets — Brass, tin plated
Threaded Inserts — Zinc
Female Screwlock — Zinc
Boardlock — Copper alloy, tin-lead plated
Pin Contacts (Posted) — Brass, duplex plated as follows:
A — .000030 [0.00076] gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B — Gold flash on mating end tin-lead on termination end, with entire contact nickel underplated
C — .000010 [0.000254] gold on mating end, tin-lead on termination end, with entire contact nickel underplated

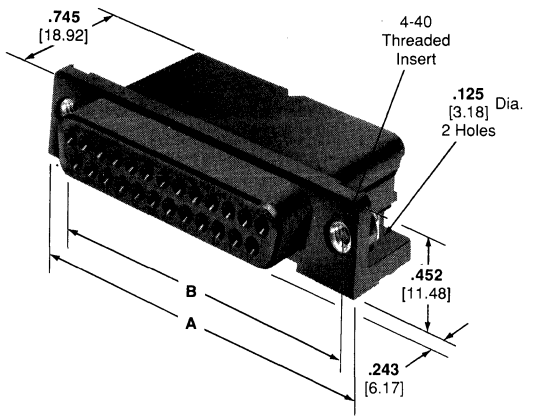
Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Contact Finish (Plating Code)	Without Boardlocks: With Threaded Inserts	Without Boardlocks: With Fixed Female Screwlocks	With Boardlocks: With Threaded Inserts	With Boardlocks: With Fixed Female Screwlocks
1	9	**1.222** 31.04	**.984** 24.99	A	748871-1	748951-1	748911-1	748991-1
				B	748871-2	748951-2	748911-2	748991-2
				C	748871-3	748951-3	748911-3	748991-3
2	15	**1.550** 39.37	**1.312** 33.32	A	748872-1	748952-1	748912-1	748992-1
				B	748872-2	748952-2	748912-2	748992-2
				C	748872-3	748952-3	748912-3	748992-3
3	25	**2.090** 53.09	**1.852** 47.04	A	748873-1	748953-1	748913-1	748993-1
				B	748873-2	748953-2	748913-2	748993-2
				C	748873-3	748953-3	748913-3	748993-3
4	37	**2.738** 69.55	**2.500** 63.50	A	748874-1	748954-1	748914-1	748994-1
				B	748874-2	748954-2	748914-2	748994-2
				C	748874-3	748954-3	748914-3	748994-3

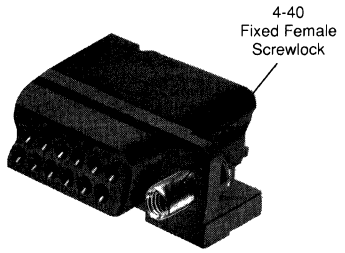
HD-20 All-Plastic Right-Angle Posted Connectors 590 Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

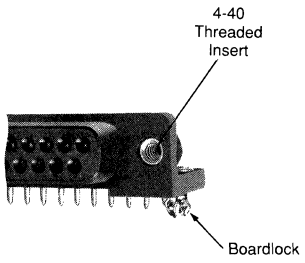
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

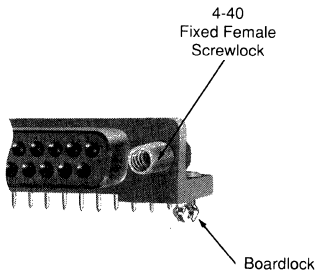
Receptacles

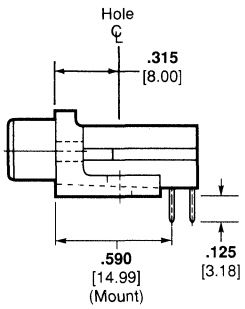




Without Boardlocks







Material and Finish:

Housing — 94V-0 rated thermoplastic, black
Eyelets — Brass, tin plated
Threaded Inserts — Zinc
Female Screwlock — Zinc
Boardlock — Copper alloy, tin-lead plated
Socket Contacts (Posted) — Phosphor Bronze, duplex plated as follows:
A — .000030 [0.00076] gold on mating end, tin-lead on termination end, with entire contact nickel underplated
B — Gold flash on mating end, tin-lead on termination end, with entire contact nickel underplated
C — .000010 [0.000254] gold on mating end, tin-lead on termination end, with entire contact nickel underplated

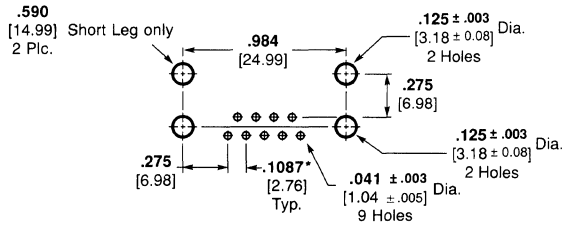
Shell Size	No. of Contact Positions	Dimensions A	Dimensions B	Contact Finish (Plating Code)	Without Boardlocks: With Threaded Inserts	Without Boardlocks: With Fixed Female Screwlocks	With Boardlocks: With Threaded Inserts	With Boardlocks: With Fixed Female Screwlocks
1	9	**1.222** 31.04	**.984** 24.99	A	748867-1	748947-1	748907-1	748987-1
				B	748867-2	748947-2	748907-2	748987-2
				C	748867-3	748947-3	748907-3	748987-3
2	15	**1.550** 39.37	**1.312** 33.32	A	748868-1	748948-1	748908-1	748988-1
				B	748868-2	748948-2	748908-2	748988-2
				C	748868-3	748948-3	748908-3	748988-3
3	25	**2.090** 53.09	**1.852** 47.04	A	748869-1	748949-1	748909-1	748989-1
				B	748869-2	748949-2	748909-2	748989-2
				C	748869-3	748949-3	748909-3	748989-3
4	37	**2.738** 69.55	**2.500** 63.50	A	748870-1	748950-1	748910-1	748990-1
				B	748870-2	748950-2	748910-2	748990-2
				C	748870-3	748950-3	748910-3	748990-3

Pc Board Mounting Specifications

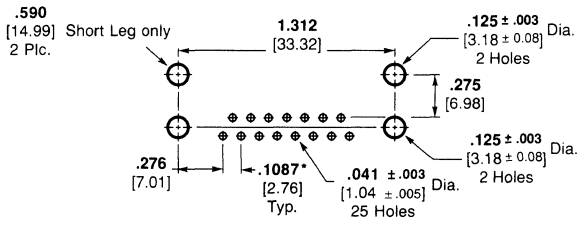
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

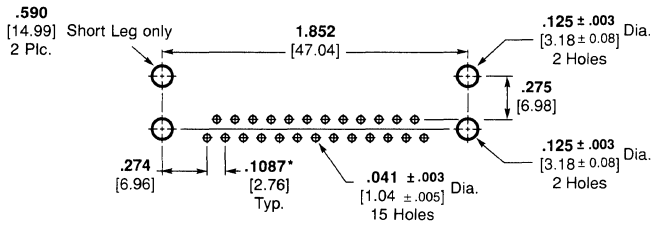
HD-20 Right-Angle Posted Connectors



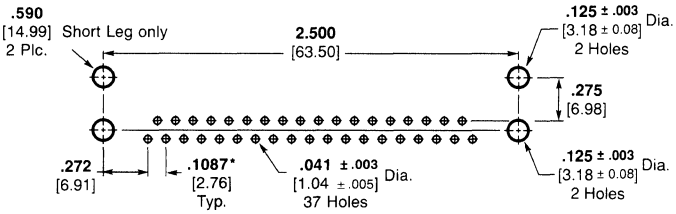
Shell Size 1 (9 position)



Shell Size 2 (15 Position)



Shell Size 3 (25 Position)

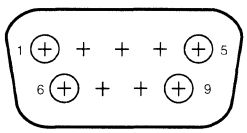


Shell Size 4 (37 Position)

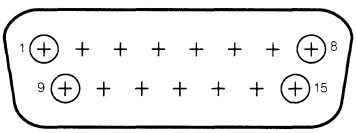
* This dimension is non-cumulative.

Notes: 1. All receptacles are preloaded with size 20 DF socket contacts.
2. Recommended pc board thickness is .062 [1.57] for connectors with boardlocks and .093 [2.36] max. for all others.
3. Pc board layouts illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP Incorporated for detailed pc board layout requirements.

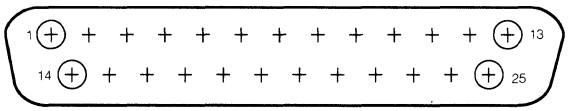
Contact Arrangements Plug*



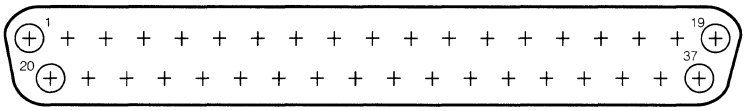
Shell Size 1 (9 Position)



Shell Size 2 (15 Position)



Shell Size 3 (25 Position)

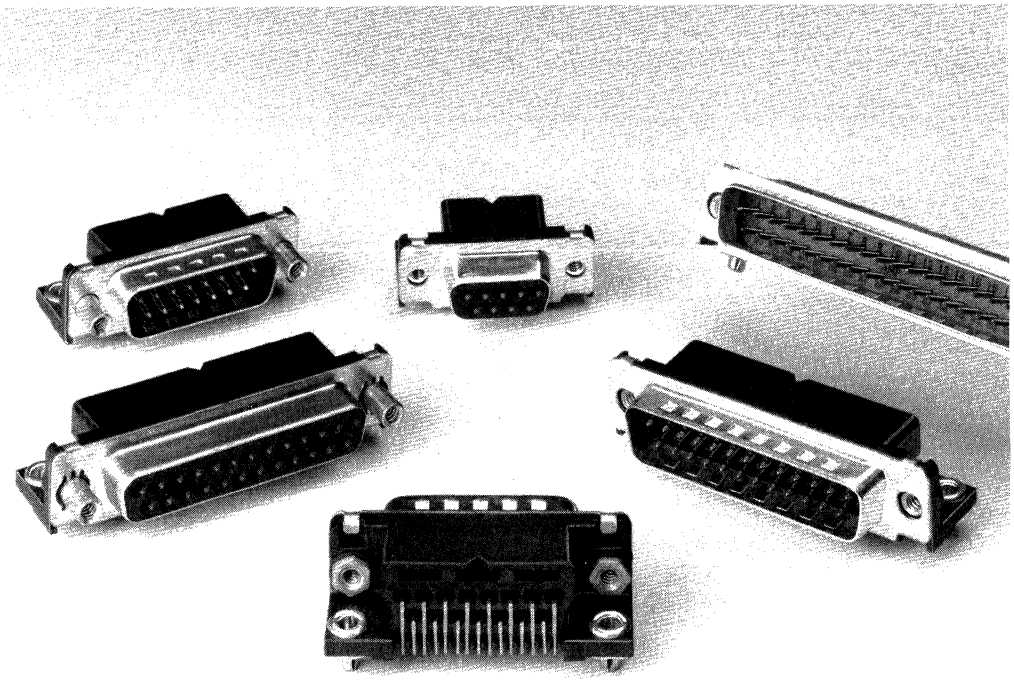


Shell Size 4 (37 Position)

*Receptacle contact arrangements are mirror image of plugs.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE HDP-20 Surface Mount Connectors



Intermateable with AMPLIMITE and other subminiature D connectors, AMPLIMITE Surface-Mount connectors are constructed of high-temperature materials that are suitable for vapor-phase and infrared reflow soldering. They are available in 9, 15, 25 and 37 positions and offer grounding indents on plugs for shielded applications. Mating hardware options include screwlocks and threaded inserts.

AMPLIMITE Surface-Mount connectors offer the lead registration, dimensional uniformity and locating features necessary for robotic pick-and-place handling. Connectors, which can be gripped front-to-back, side-to-side, or from the top with a vacuum chuck, can be supplied on tape or in single or multitrack tubes. AMP can also provide appropriate feeders and grippers.

The connectors feature top-actuated eyelets to eliminate any need for underboard tooling. The eyelet retains the connectors to the pc board before soldering and provides mechanical strain relief afterwards. And the eyelet actuator can be built into the robot head.

Excellent design features, AMP technical support and proven product quality have made AMPLIMITE connectors the superior subminiature Ds. Now AMPLIMITE connectors are the first choice for surface mounting.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Metric symbol used is:
C (Celsius)

Product Facts

- 9, 15, 25 and 37 positions
- Intermateable with AMPLIMITE and other subminiature D connectors
- High-temperature materials for vapor-phase and infrared reflow soldering
- Visually inspectable solder joints
- Compliant leads with precision registration
- Robotics compatible
- Packaged for automation
- Top-actuated eyelets for connector hold-down eliminate underboard tooling
- Screwlock or threaded insert mating hardware available
- Recognition under the Component Program of Underwriters Laboratories Inc. pending
- Certification by Canadian Standards Association pending

Note: UL recognition and CSA certification apply only when an AMPLIMITE connector is mated with an AMPLIMITE connector.

HDP-20 Front Metal-Shell Right-Angle Surface-Mount Connectors

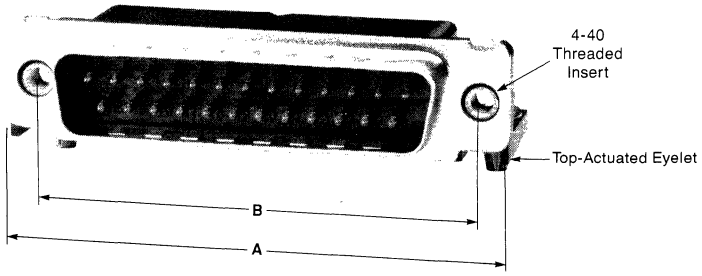
Specifications subject to change.
For latest design specifications...
1-800-522-6752

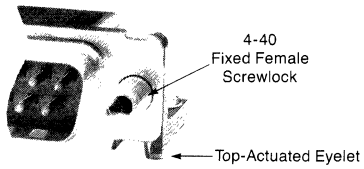
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

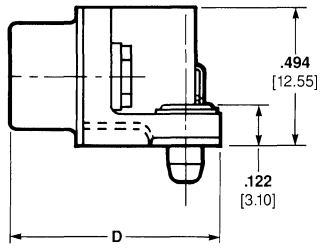
Plugs

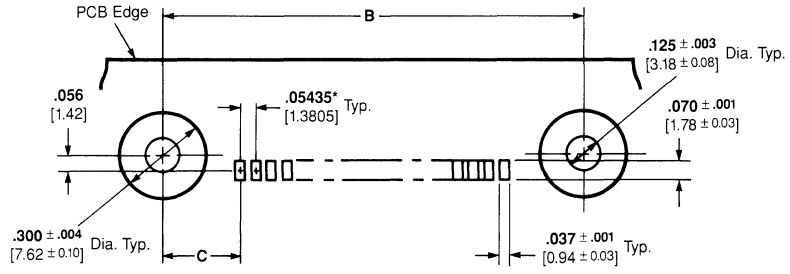
Material and Finish:

Front Shell – Steel, tin plated
Housing – 94V-0 rated, high-temperature thermoplastic, black
Contacts – Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000100 [0.00254] min. tin-lead on solder end; all underplated .000050 [0.00127] min. nickel
Top-Actuated Eyelets – Brass, tin-lead plated
Threaded Inserts – Zinc
Female Screwlocks – Zinc









Recommended Pc Board Layout

Recommended pc board thickness is .062 [1.57].

*This dimension is non-cumulative.

Note: Pc board layout illustrated above serves as a guide only; it is not to be used for actual design or construction of customer equipment. Consult AMP Incorporated for detailed pc board layout requirements.

Shell Size	No. Of Contact Positions	Dimensions				Plug Part Numbers	
		A	B	C	D	Threaded Insert	Female Screwlock
1	9	**1.222** 31.04	**.984** 24.99	**.2746** 6.975	**.732** 18.59	749426-1	749428-1
2	15	**1.550** 39.37	**1.312** 33.32	**.2755** 6.998	**.732** 18.59	749432-1	749434-1
3	25	**2.090** 53.09	**1.852** 47.04	**.2738** 6.955	**.738** 18.75	749438-1	749440-1
4	37	**2.738** 69.55	**2.500** 63.50	**.2717** 6.901	**.738** 18.75	749444-1	749446-1

HDP-20 Front Metal-Shell Right-Angle Surface-Mount Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

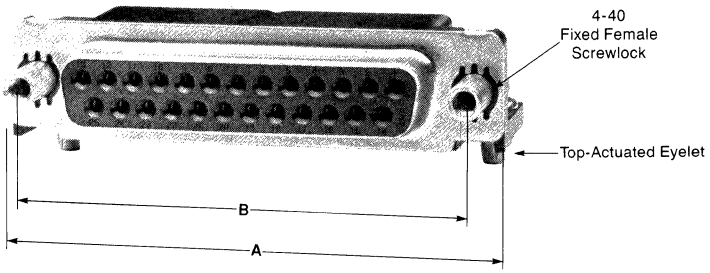
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

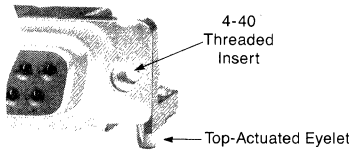
Receptacles

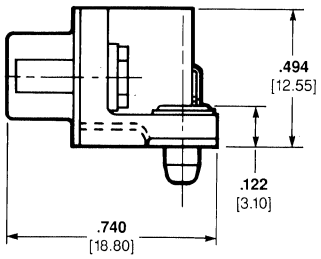
Material and Finish:

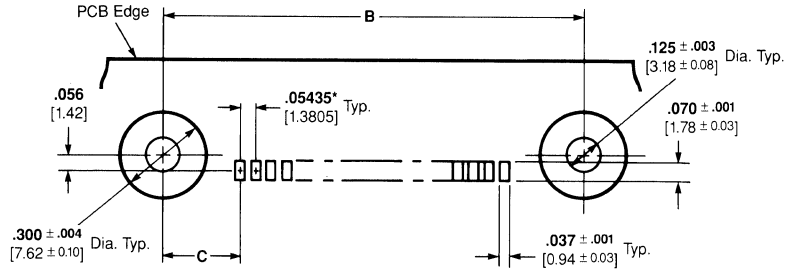
Front Shell – Steel, tin plated
Housing – 94V-0 rated, high-temperature thermoplastic, black
Contacts – Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000100 [0.00254] min. tin-lead on solder end; all underplated .000050 [0.00127] min. nickel
Top-Actuated Eyelets –Brass, tin-lead plated
Threaded Inserts – Zinc
Female Screwlocks – Zinc

Recommended pc board thickness is .062 [1.57].









Recommended Pc Board Layout

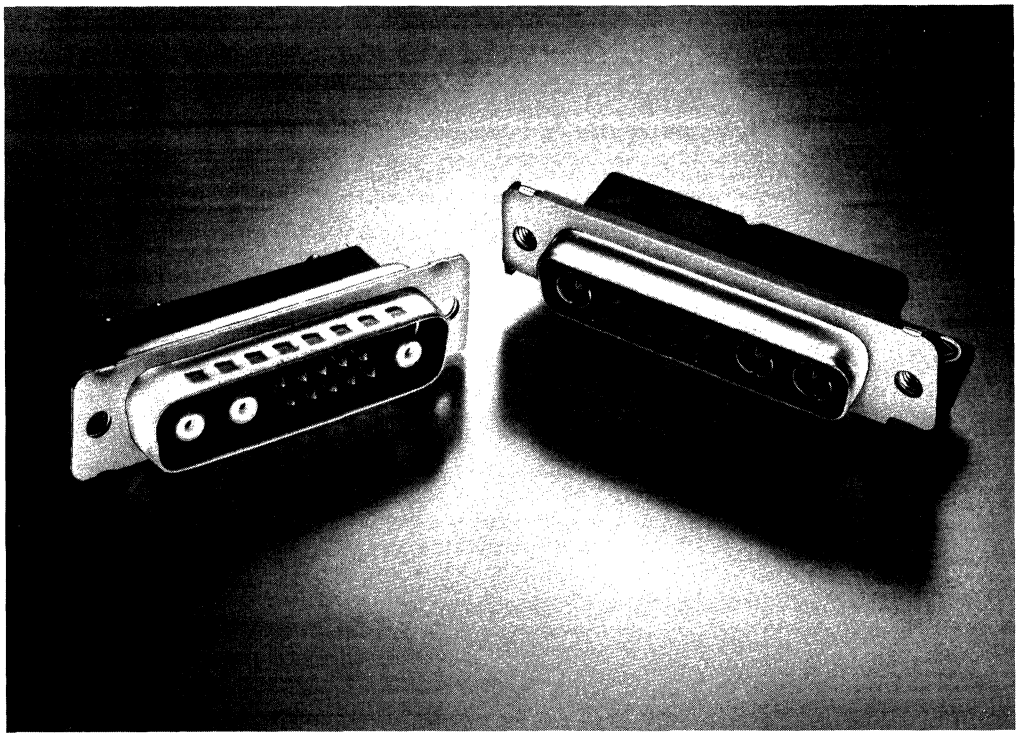
*This dimension is non-cumulative.

Note: Pc board layout illustrated above serves as a guide only; it is not to be used for actual design or construction of customer equipment. Consult AMP Incorporated for detailed pc board layout requirements.

Shell Size	No. Of Contact Positions	Dimensions			Receptacle Part Numbers	
		A	B	C	Threaded Insert	Female Screwlock
1	9	**1.222** 31.04	**.984** 24.99	**.2746** 6.975	749402-1	749404-1
2	15	**1.550** 39.37	**1.312** 33.32	**.2755** 6.998	749408-1	749410-1
3	25	**2.090** 53.09	**1.852** 47.04	**.2738** 6.955	749414-1	749416-1
4	37	**2.738** 69.55	**2.500** 63.50	**.2717** 6.901	749420-1	749422-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE Coax Mix 13C3 Subminiature D Commercial Connectors



AMPLIMITE Coax Mix 13C3 Connectors contain ten HD-20 signal contacts and three Special Size 8 Coaxial Contacts designed for high performance in 75 ohm impedance systems. Plug and receptacle cable connectors and receptacle right-angle pcb connectors are available.

Each cable connector consists of a two-piece plastic housing enclosed within two metal shells. All contacts, provided separately, are crimp, snap-in. Coax contacts are available for termination to both RG/U 179B type and Belden 8218 type cables.

The receptacle right-angle pcb connector is supplied preassembled with HD-20 and coaxial contacts in a one-piece plastic housing with a front metal shell.

Cable coaxial contacts are supplied individually packaged in kits for hand applicator assembly or reeled and bulk packaged for high volume mini-applicator assembly.

Excellent design features, AMP technical support and proven product quality have made AMPLIMITE connectors the superior subminiature Ds. Now AMPLIMITE connectors are the first choice for commercial coax mix connectors.

Product Facts

- Standard, 13C3 Subminiature D Connector Configuration
- Plug and receptacle cable mount and a receptacle right-angle pcb mount are available
- Cable mount connectors accept 10 HD-20 signal contacts and 3 Special Size 8 Coaxial Contacts, all are crimp, snap-in type for ease of insertion/extraction
- Design assures coax contact true position at mating face
- Right-angle pcb mount connector is preloaded with receptacle contacts
- EMI/RFI shielding
- Special Size 8 Coaxial Contacts for use with 75 ohm system
- Signal and coaxial contacts available in a choice of contact platings.
- Connector housing made of thermoplastic 94V-0 rated
- All connectors have a mating face per MIL-STD 18275, Arrangement 4
- Recognized under the Component Program of Underwriters Laboratories Inc., No. E28476
- Certified by Canadian Standards Association Pending

Dimensioning:

Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Metric symbols are used:
C (Celsius)
N (newton)

AMPLIMITE Coax Mix 13C3 Subminiature D Commercial Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

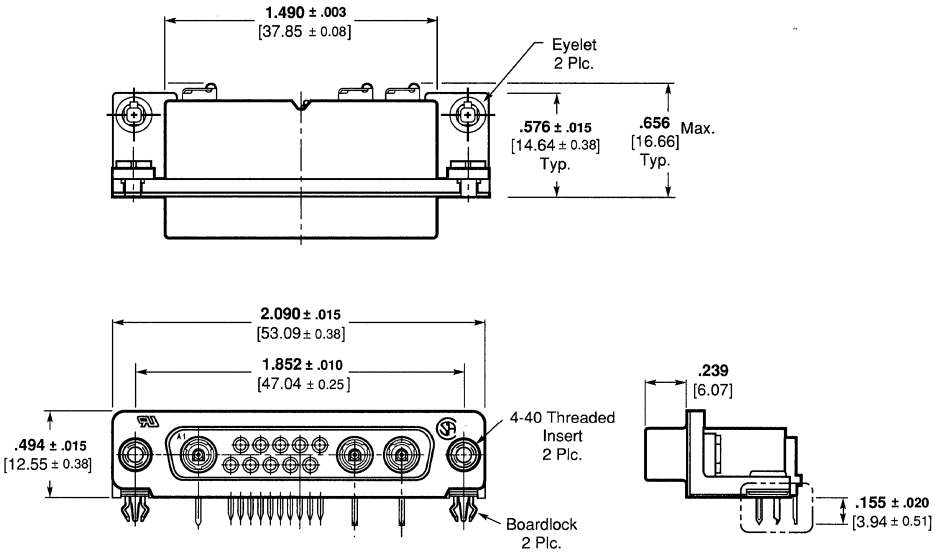
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

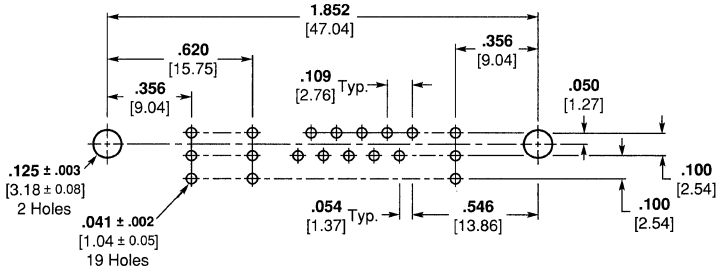
Right-Angle Boardmount Receptacle

Part No. 749958-1 — .000030 [0.00076] gold plating on mating end
Part No. 749958-2 — .000015 [0.00038] gold plating on mating end

Material and Finish:

Housing — 94V-0 rated, glass filled polyester, black
Metal Shell — Steel per QQ-5-698, Plated bright tin over copper
Eyelets — Brass, plated tin over copper
Inserts — Zinc
Boardlocks — Copper alloy, plated tin lead over nickel
Dielectric — Polyolefin, white
Contacts — Solder end all tin-lead plated
HDP-20 Contacts — Phosphor Bronze
Coax Center Pin Contact — Brass
Coax Shell — Phosphor Bronze





Recommended PCB Layout

AMPLIMITE Coax Mix 13C3 Subminiature D Commercial Connectors (Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

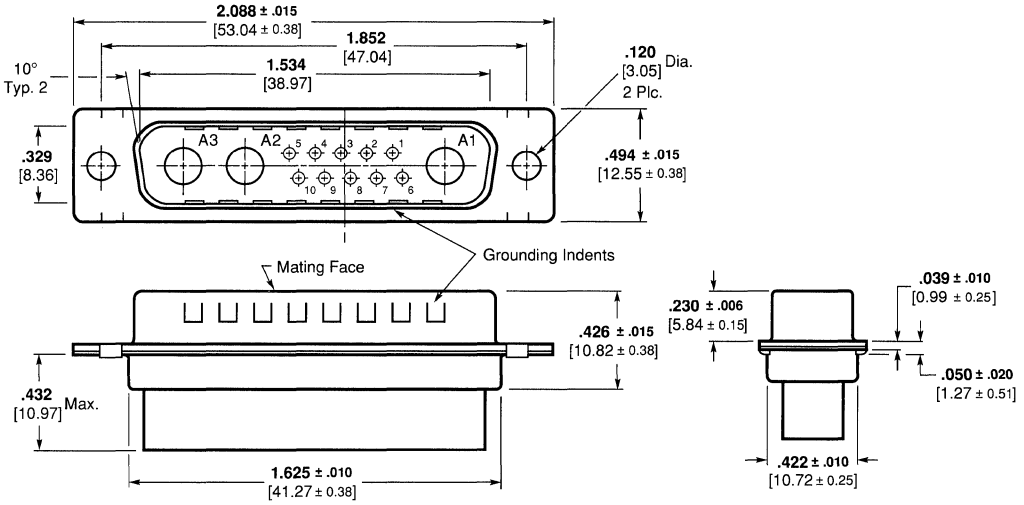
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Cable Plug Housing

Part No. 750021-1

Materials and Finish:

Housing — 94V-0 rated glass filled nylon, black
Shell — Tin plated steel



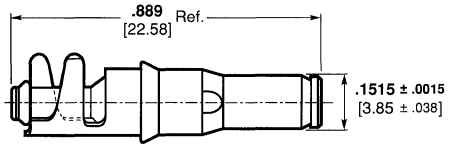
Contacts

HD-20 Pin Contacts are standard crimp snap-in type and can be selected from Subminiature D Connector (AMPLIMITE) Catalog 82068.

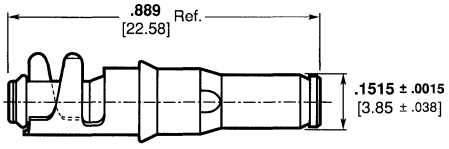
Materials and Finish:

Coax Plug Shell — Brass
Center Contact — Phosphor Bronze
Plating —
A .000030 [0.00076] min. gold in mating area, .000120 [0.00305] min. tin-lead on termination end, both over .000050 [0.00127] min. nickel underplating for center contact
B .000015 [0.00038] min. gold in mating area, .000120 [0.00305] min. tin-lead on termination end, both over .000050 [0.00127] min. nickel underplating for center contact
Ferrule — Copper Alloy, plated .000100 [0.00254] min. tin-lead over .000050 [0.00127] min. nickel
Dielectric — Polyolefin, white

Size 8 Coax Contact Kits



Part No. 750019-1, -2

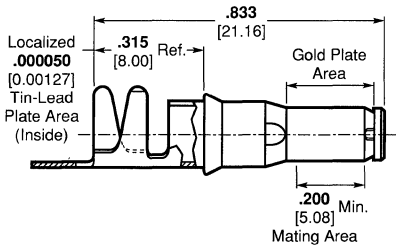


Part No. 750023-1, -2

Cable Size	Plating Code	Plug Kit Part No.
RG/U 179B	A	750019-1
	B	750019-2
Belden 8218	A	750023-1
	B	750023-2

Note: Contact Kits are individually packaged unassembled, for crimp tool termination. Minimum quantity–50 kits.

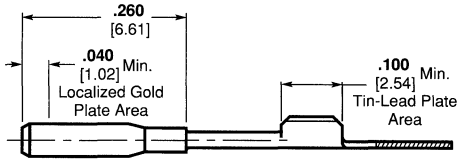
Coax Plug Shells — Strip Form



Plating Code	Plug Part No.
A	750018-1
B	750018-3

Note: Shells are bulk packaged in strip form on reels, 2,000 shells per reel.

Coax Center Contacts — Strip Form



Plating Code	Socket Part No.
A	750011-2
B	750011-4

Note: All contacts are packaged in strip form on reels, 10,000 contacts per reel.

Ferrule

Cable Size	Part No.
RG/U 179B	750015-3
Belden 8218	750016-3

Note: Ferrules are bulk packaged, 10,000 per package.

Dielectric

Cable Size	Part No.
RG/U 179B	750013-2
Belden 8218	750014-2

Note: Dielectrics are bulk packaged, 10,000 per package.

AMPLIMITE Coax Mix 13C3 Subminiature D Commercial Connectors (Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

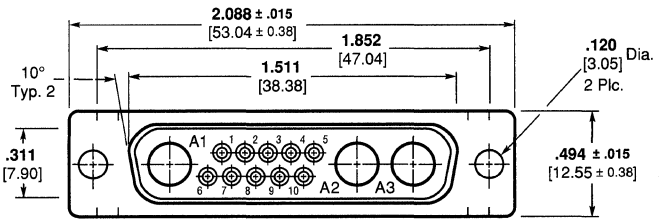
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

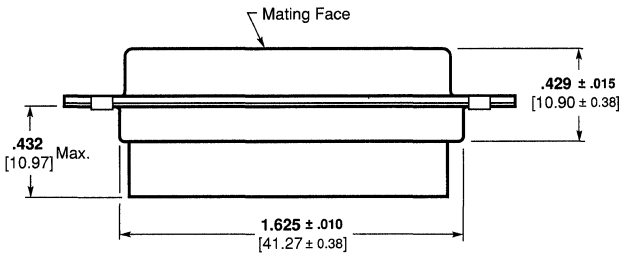
Cable Receptacle Housing

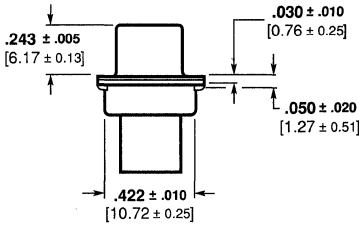
Part No. 750022-1

Materials and Finish:

Housing — 94V-0 rated glass filled nylon, black
Shell — Tin plated steel







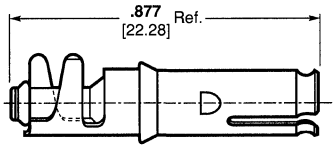
Contacts

HD-20 Pin Contacts are standard crimp snap-in type and can be selected from Subminiature D Connector (AMPLIMITE) Catalog 82068.

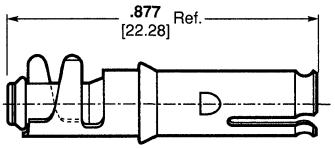
Materials and Finish:

Coax Socket Shell — Phosphor Bronze
Center Contact — Brass
Plating —
A .000030 [0.00076] min. gold in mating area, .000120 [0.00305] min. tin-lead on termination end, both over .000050 [0.00127] min. nickel underplating for center contact
B .000015 [0.00038] min. gold in mating area, .000120 [0.00305] min. tin-lead on termination end, both over .000050 [0.00127] min. nickel underplating for center contact
Ferrule — Copper Alloy, plated .000100 [0.00254] min. tin-lead over .000050 [0.00127] min. nickel
Dielectric — Polyolefin, white

Size 8 Coax Contact Kits



Part No. 750020-1, -2

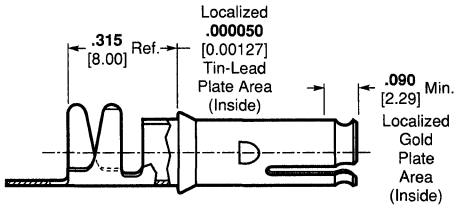


Part No. 750024-1, -2

Cable Size	Plating Code	Receptacle Kit Part No.
RG/U 179B	A	750020-1
	B	750020-2
Belden 8218	A	750024-1
	B	750024-2

Note: Contact Kits are individually packaged unassembled, for crimp tool termination. Minimum quantity–50 kits.

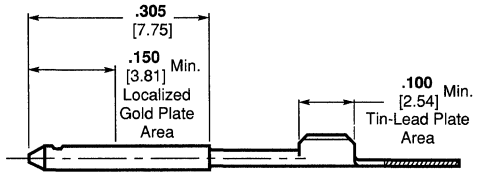
Coax Socket Shells — Strip Form



Plating Code	Socket Part No.
A	750010-2
B	750010-5

Note: Shells are bulk packaged in strip form on reels, 2,000 shells per reel.

Coax Center Contacts — Strip Form



Plating Code	Pin Part No.
A	750012-2
B	750012-4

Note: All contacts are packaged in strip form on reels, 10,000 contacts per reel.

Ferrule

Cable Size	Part No.
RG/U 179B	750015-3
Belden 8218	750016-3

Note: Ferrules are bulk packaged, 10,000 per package.

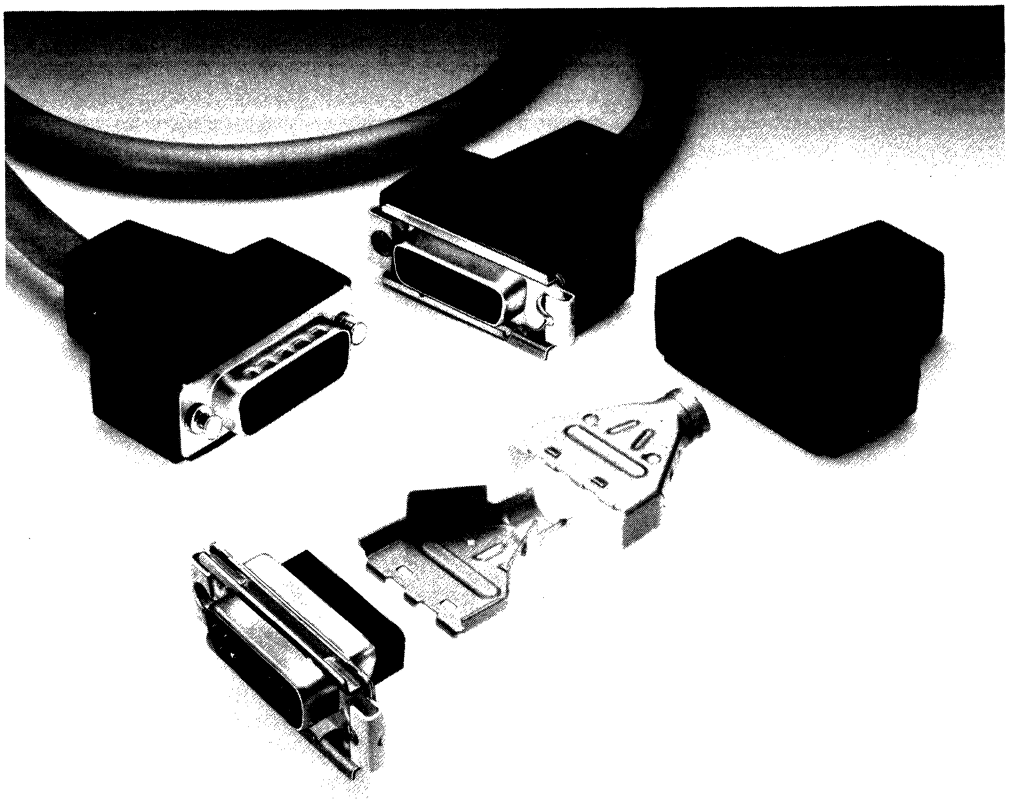
Dielectric

Cable Size	Part No.
RG/U 179B	750013-2
Belden 8218	750014-2

Note: Dielectrics are bulk packaged, 10,000 per package.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Subminiature D Sheilded Connector Preassembled Kits (AMPLIMITE HD-20)



Designed to meet the requirements of Local Area Networking, these Subminiature D Shielded Connector Kits are available with slide latches attached to the receptacle half and locking posts on the plug half. This facilitates ease of assembly.

Both plug and receptacle are shielded and covered with a durable plastic enclosure. This shielding decreases emissions and provides an effective EMI/RFI barrier.

Preassembled connector kits are available in Subminiature D, shell size 2, 15-position configuration and accept crimp, snap-in HD-20 contacts. Contacts are available separately and allow for selective positioning.

Other sizes and styles could be made available, consult AMP Incorporated regarding your design requirements.

Product Facts

- Connectors have hardware attached, reduces applied costs
- One part number for each connector kit, reduces inventory
- Slide latch and locking post secure a positive connection
- Shielding reduces emissions from 15 to 35 dB and inhibits EMI/RFI
- Plastic enclosures insulate and protect the connectors

Recognized under the Component Program of Underwriters Laboratories, Inc., File No. E28476 and Certified by Canadian Standards Association File No. LR 7189

Dimensioning:
Dimensions are inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)
N (newton)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Subminiature D Shielded Connector Preassembled Kits (AMPLIMITE HD-20)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Material and Finish:

Inserts—Glass filled black nylon, 94V-0 rated

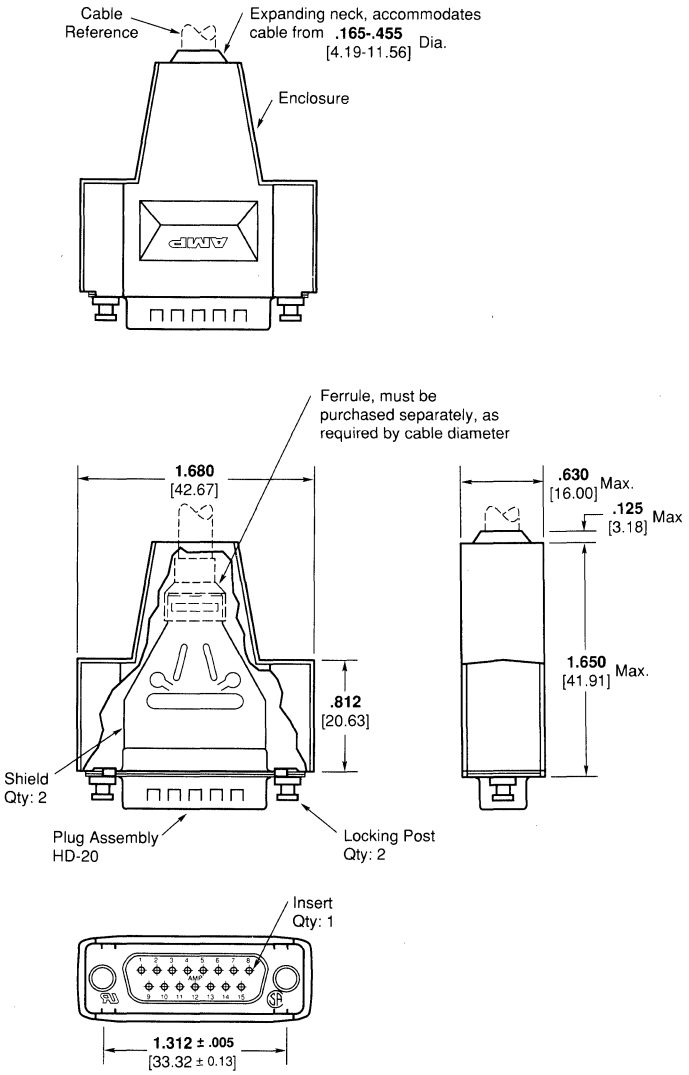
Enclosures—Elastomer, styrene polyolefin, or PVC black

Locking Post—Brass, plated with .000020 [0.00508] bright tin over .000100 [0.00254] min. matte copper

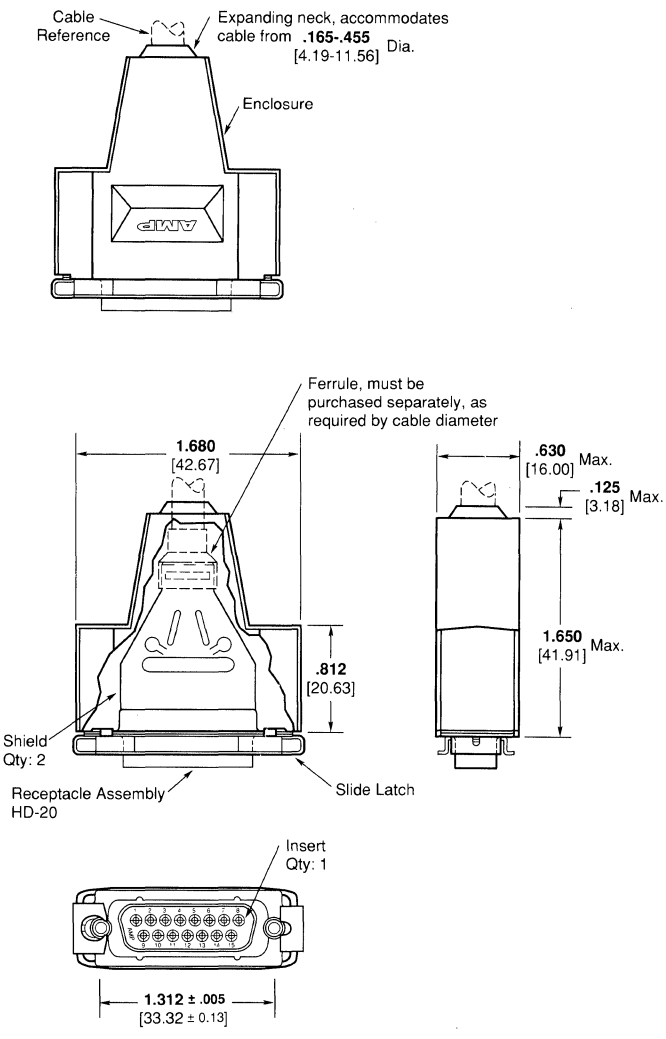
Shields—Carbon steel per ASTM A109, plated with .000200 [0.00508] min. tin over .000050 [0.00127] min. copper, per MIL-T-10727

Shells—Carbon steel per ASTM A109, plated with .000200 [0.00508] min. tin over .000050 [0.00127] min. copper, per MIL-T-10727

Plug—Part No. 749245-1

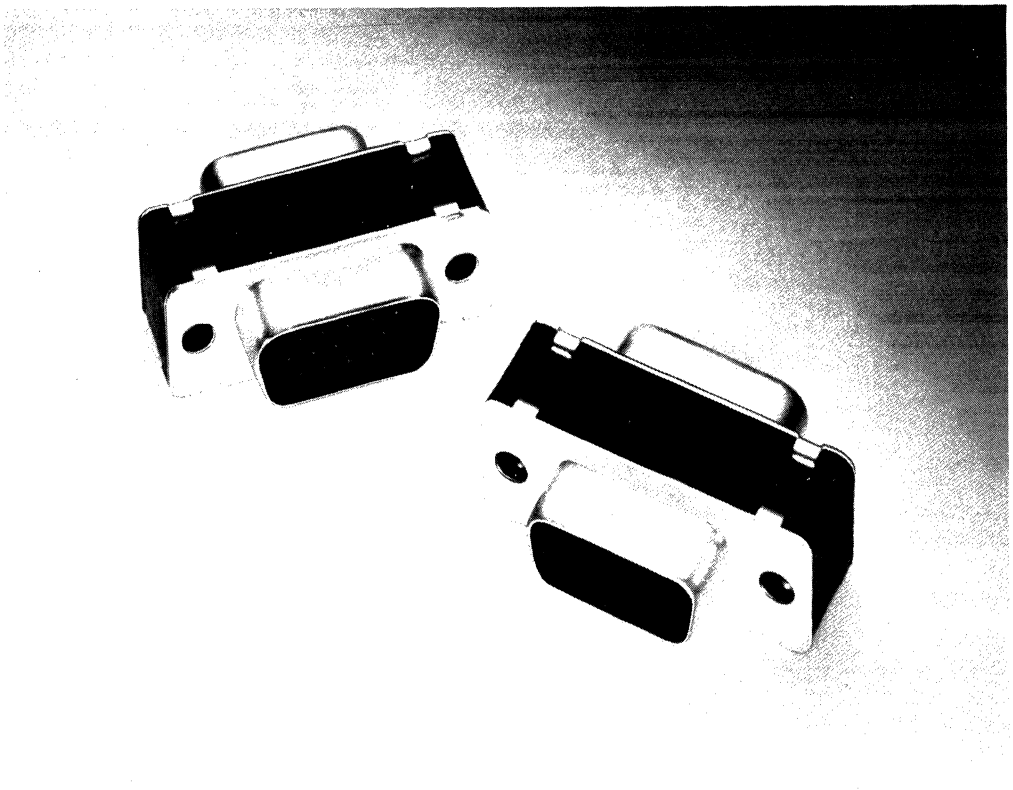


Receptacle—Part No. 749246-1



Specifications subject to change.
For latest design specifications...
1-800-522-6752

Subminiature D Connector Saver (AMPLIMITE HD-22)



The connector saver is designed to extend the life of test cables on assembly lines and in test laboratories. The connector saver plugs into the test cable connector and in tests has withstood 500 cycles of mating and umating. This insures the preservation and integrity of the test cable and its connector.

The connector saver is available in a standard Subminiature D shell size 1, 15-position configuration with position No. 9 blocked. 4-40 inserts are standard hardware with the connector saver. Optional contact plating is available to meet most production requirements.

Product Facts

- Durability–500 cycles in tests
- Standard Subminiature D shell size 1 configuration
- Optional contact platings available
- 4-40 inserts standard

Recognized under the Component Program of Underwriters Laboratories, Inc., File No. E28476 and Certified by Canadian Standards Association File No. LR 7189

Dimensioning:
Dimensions are inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)
N (newton)

Submimiature D Connector Saver (AMPLIMITE HD-22)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Connector Part No. 749668-1

Material:

Housing—Thermoplastic, 94V-0 rated, black

Contacts—Beryllium copper per QQ-C-530

Shells—Carbon steel per ASTM A109

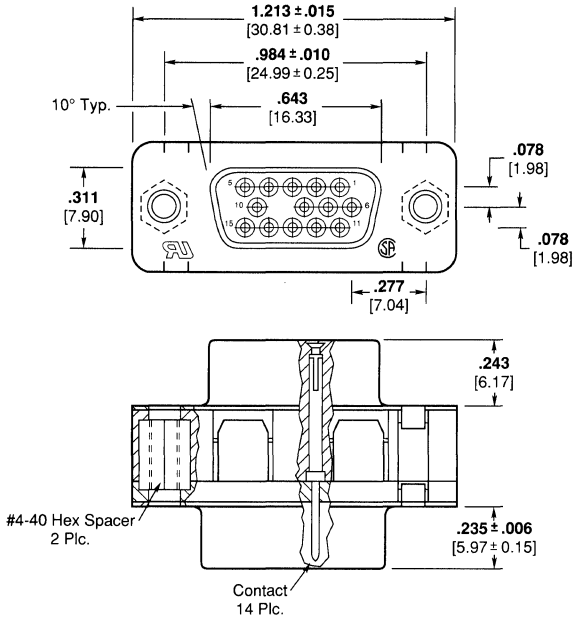
Hex Spacers—Brass

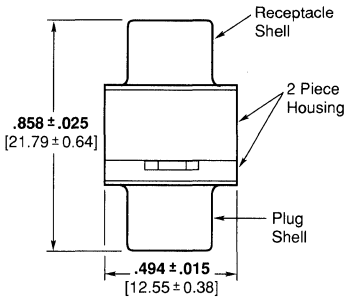
Finish:

Gold plated per MIL-G-45204, nickel plated per QQ-N-290, tin plated per MIL-T-10727, copper plated per MIL-C-14550

Contact—Plated with .000030 [0.00076] min. gold over .000050 [0.00127] min. nickel

Shells—Plated with .000200 [0.00508] min. bright tin over .000050 [0.00127] min. copper





Specifications

Electrical

Current:
1.5 amperes max. per contact

Termination Resistance:
15 milliohms max. initial
20 milliohms max. final

Dielectric Withstanding Voltage:
1000 VAC

Insulation Resistance:
5000 megohms min. initial

Mechanical

Vibration:
23 rms G

Physical Shock:
50 G's

Mating Force:
5.6 lbs. [24.91 N] without ground indents

33.0 lbs. [146.79 N] with ground indents

Unmating Force:
5.6 lbs. [24.91 N] without ground indents

33.0 lbs. [146.79 N] with ground indents

Durability:
500 cycles

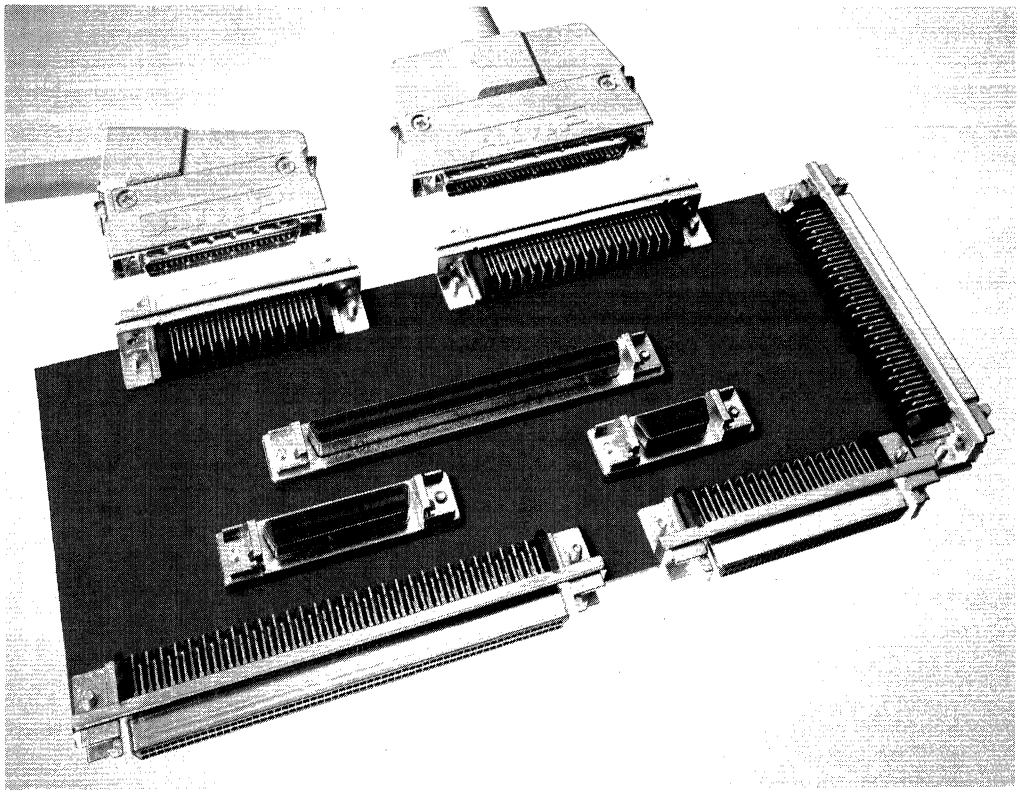
Environmental

Temperature: – 55° to 105°C

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Connectors

(0.50 x .100 [1.27 x 2.54] Centerlines), Series III



Introduction

Shielded AMPLIMITE .050 Series connectors offer a high-density D type interface. Featuring .050 x .100 [1.27 x 2.54] contact centerline spacing, these compact and reliable connectors are available in 20 through 120 positions. Their construction offers exceptional EMI/RFI shielding effectiveness.

The connector is compatible with SCSI-2, EIA RS-232, IPI-2 and HIPPI standards.

Connectors are available in cable-mount and panel mount versions and vertical and right-angle mount pcb headers. The headers feature high temperature housings, tight tolerances and registration features to make them suitable for robotic assembly and high temperature reflow soldering.

Cable and panel connectors use insulation displacement contacts for fast termination of discrete, round-to-flat laminated, and ribbon cable. Recommended wire size is 28 AWG [0.08 – 0.09 mm^2] with a .029– .036 [0.74 – 0.89] insulation diameter. Wire must be approved by AMP engineering.

Backshells are available with either a straight or angled cable exit. Hardware includes a choice of integral squeeze-to-release latches or jackscrews.

Unshielded, All-Plastic Plug connectors are available in 20 through 100 positions and offer an economical answer to your connector needs on applications where EMI/RFI protection is not a factor.

Termination Connectors are available for SCSI-2 Single Ended and SCSI-2 Differential applications.

Product Facts

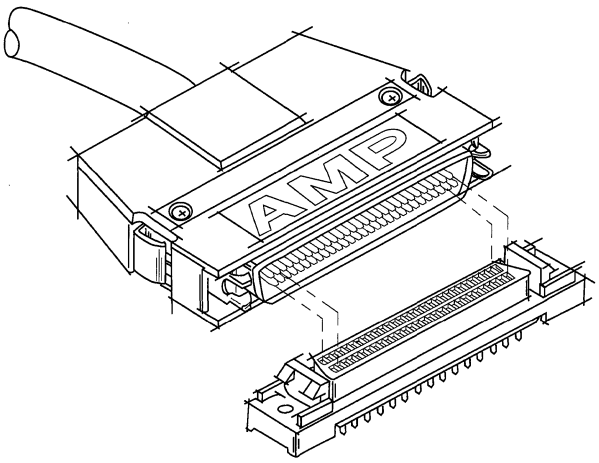
- Compatible with SCSI-2, EIA RS-232, HIPPI and IPI-2 standards
- High-density D type interface
- 20 through 120 contact positions
- Tab plug contacts and tuning-fork receptacle contacts, with reliable two-point (redundant) contact; contact normal force is not dependent on plastic housing support
- Insulation displacement wire termination of discrete wire, round-to-flat laminated wires and flat ribbon cable
- Vertical and right-angle headers
- Board-to-board, cable-to-board and cable-to-cable connection
- Rugged die cast backshell with excellent EMI/RFI protection
- Shields mate before contacts, with ground mating first and breaking last
- Squeeze-to-release latches or jackscrew hardware
- Keying available
- Board connectors compatible with standard through-hole flow solder and surface-mount reflow solder processes
- Unshielded, All-Plastic Plug connectors available
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 86179

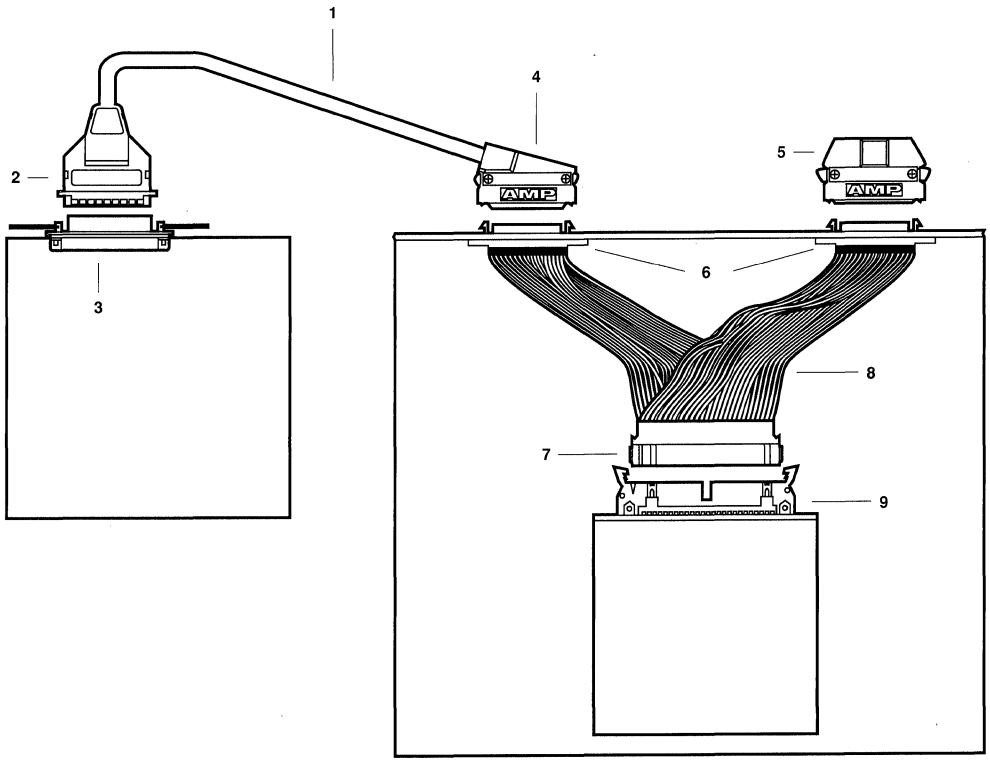
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMPLIMITE .050 Series Connectors Series III SCSI-1 to SCSI-2 and SCSI-2 to SCSI-2 Applications

SCSI-1 to SCSI-2 Application (Shown)



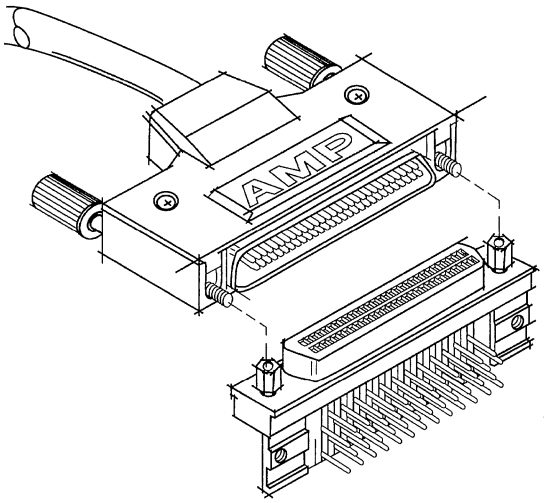


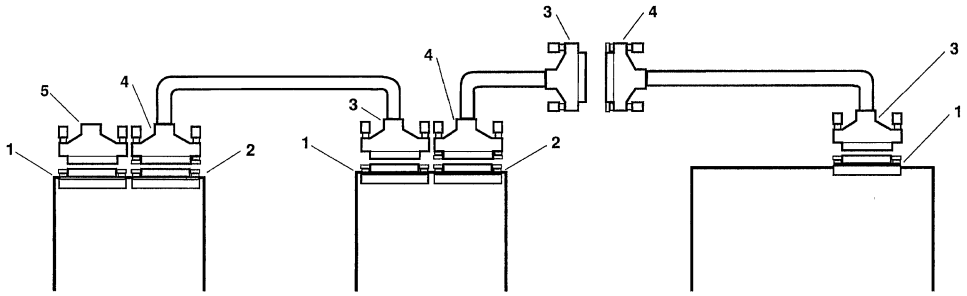
1. SCSI Transition Cable Assembly
2. Shielded CHAMP Plug Connector
3. Shielded CHAMP pcb Connector
4. Shielded AMPLIMITE .050 Series Plug with Backshell
5. Shielded AMPLIMITE .050 Series Termination Connector
6. Shielded AMPLIMITE .050 Series, Panel-Mount Receptacles
7. AMP-LATCH Novo Receptacle
8. Unshielded AMP-LATCH to Shielded AMPLIMITE .050 Series Daisy Chain Assembly
9. AMP-LATCH Universal Ejection Style Pin Header

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Connectors Series III IPI-2 and HIPPI Applications

Typical IPI-2 and HIPPI Application





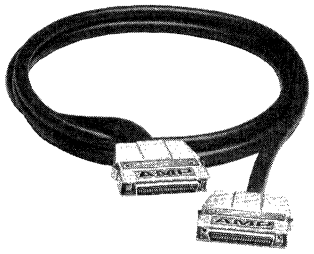
Using AMPLIMITE .050 Series Shielded Board-Mount and Cable Connectors and Terminators

1. Shielded Board-Mount Right-Angle Receptacle with Female Screwlocks
2. Shielded Board-Mount Right-Angle Plug with Male Screwlocks
3. Cable Connector, Shielded Plug with Backshell and Male Jackscrews
4. Cable Connector, Shielded Receptacle with Backshell and Female Jackscrews
5. Shielded Terminator

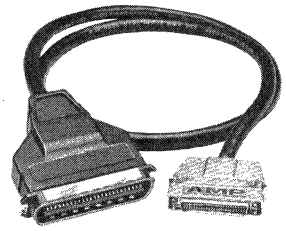
Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Cable Assemblies Series III

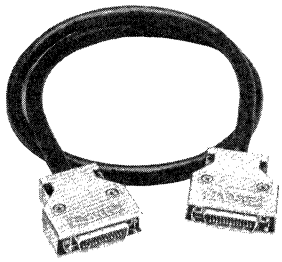
To meet Standards Applications the following 106 ohm, black jacketed cable assemblies are available. For AMPLIMITE .050 Series cable assemblies that meet other impedance requirements or other lengths consult AMP Incorporated.



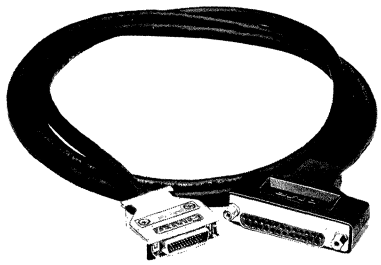
SCSI-2



SCSI-1 to SCSI-2



RS-232 (Alternate)



RS-232 (Alternate) to RS-232

IPI-2 and HIPPI

Application	Assembly	Part Numbers		
		2 Feet	2 Meters	3 Meters
SCSI-2	50 pos. .050 Series Plug to 50 pos. .050 Series Plug	750254-1	750254-2	750254-3
SCSI-1 to SCSI-2	50 pos. CHAMP Conn. to 50 pos. .050 Series Plug	750342-3	750342-5	—
RS-232 (Alternate)	26 pos. .050 Series Plug to 26 pos. .050 Series Plug	750255-1	750255-2	750255-3
RS-232 to RS-232 Alt.	Std. 25 pos. AMPLIMITE Plug to 26 pos. .050 Series Plug	750257-1	750257-2	—

Application	Assembly	Part Numbers		
		5 Meters	15 Meters	25 Meters
IPI-2 and HIPPI	100 pos. .050 Series Plug to 100 pos. .050 Series Plug	749755-2	749755-3	749755-4

Note: .050 centerline ribbon cable assemblies are available in single or double ended versions. These assemblies are made using AMPLIMITE .050 Series panel mount connectors, AMPLIMITE .050 Series all-plastic connectors and AMP-LATCH Novo receptacles. Consult AMP Incorporated.

SCSI — Small Computer Systems Interface
HIPPI — High Performance Parallel Interface
IPI — Intelligent Peripheral Interface

AMPLIMITE .050 Series Right-Angle Receptacle Headers With Rails and Latch Blocks Series III

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

.112 [2.84] Solder Tail Length

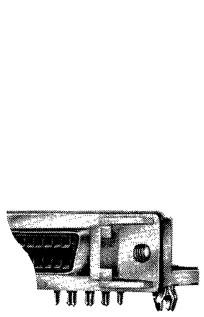
Materials:

Housing — Thermoplastic, 94V-0 rated, black. SMT compatible

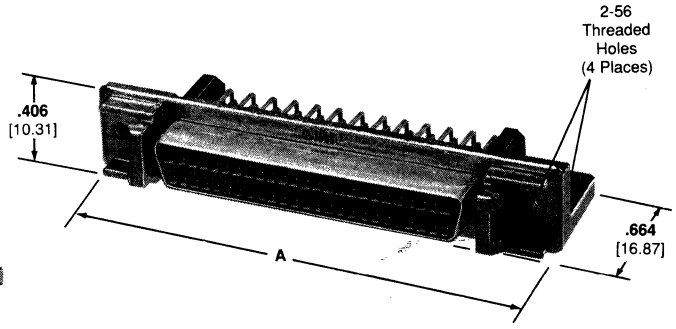
Shell — Steel, plated .000200 [0.00508] min. bright tin over .000050 [0.00127] min. copper

Bracket — Zinc, plated nickel over copper

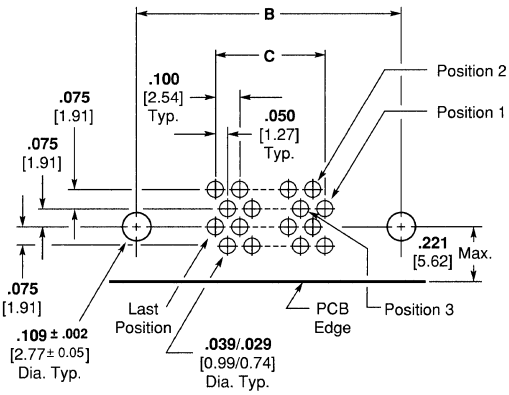
Contacts — Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000120 [0.00304] min. tin-lead on solder end; all underplated .000050 [0.00127] min. nickel



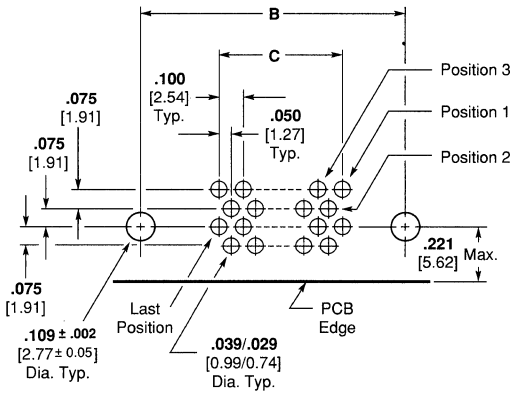
With Boardlocks



Without Boardlocks



Recommended Pc Board Hole Pattern
(For all header sizes except 26 and 50 positions)



Recommended Pc Board Hole Pattern
(For 26 and 50 position headers)

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimension requirements.

No. of Pos.	Dimensions A	Dimensions B	Dimensions C	Without Boardlocks Part No.	With Boardlocks Part No.
20	**1.315** 33.40	**1.080** 27.43	**.450** 11.43	749075-1	749830-1
26	**1.465** 37.21	**1.230** 31.24	**.600** 15.24	749075-2	749830-2
28	**1.515** 38.48	**1.280** 32.51	**.650** 16.51	749075-3	749830-3
40	**1.815** 46.10	**1.580** 40.13	**.950** 24.13	749075-4	749830-4
50	**2.065** 52.45	**1.830** 46.48	**1.200** 30.48	749075-5	749830-5
60	**2.315** 58.80	**2.080** 52.83	**1.450** 36.83	749075-6	749830-6
68	**2.515** 63.88	**2.280** 57.91	**1.650** 41.91	749075-7	749830-7
80	**2.815** 71.50	**2.580** 65.53	**1.950** 49.53	749075-8	749830-8
100	**3.315** 84.20	**3.080** 78.23	**2.450** 62.23	749075-9	749830-9
120	**3.815** 96.90	**3.580** 90.93	**2.950** 74.93	1-749075-0	1-749830-0

AMPLIMITE .050 Series Right-Angle Receptacle Headers Without Rails and Latch Blocks Series III

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

.112 [2.84] Solder Tail Length

For use with jackscrew mating hardware

Materials:

Housing — Thermoplastic, 94V-0 rated, black. SMT compatible

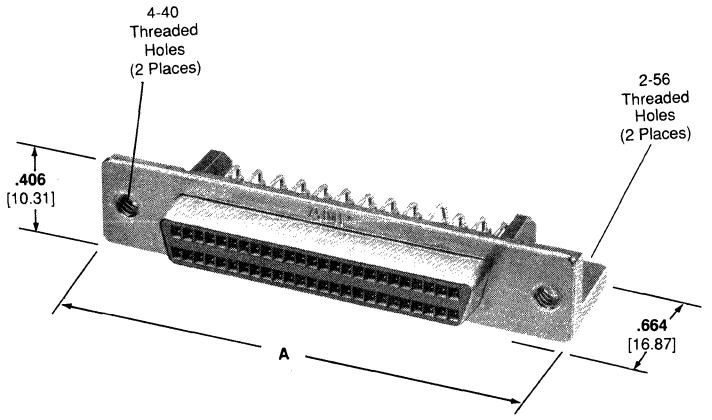
Shell — Steel, plated .000200 [0.00508] min. bright tin over .000050 [0.00127] min. copper

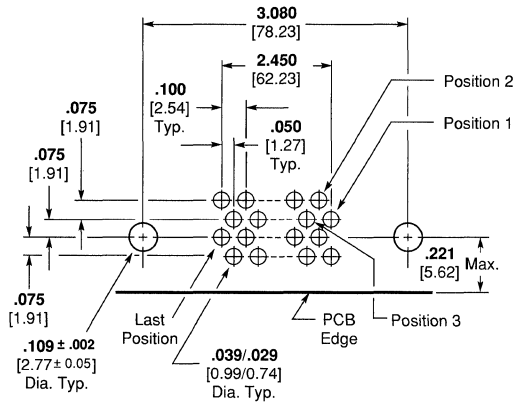
Bracket — Zinc, plated nickel over copper

Contacts — Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000120 [0.00304] min. tin-lead on solder end; all underplated .000050 [0.00127] min. nickel

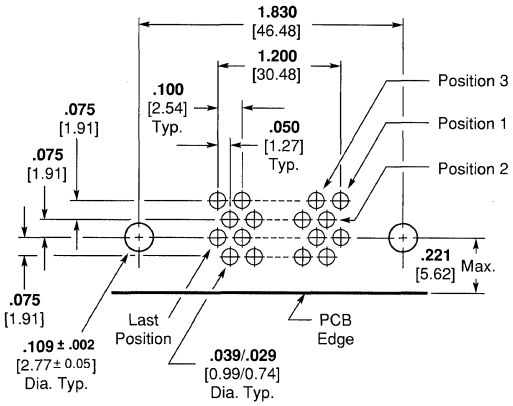
Related Product Data:

Required Hardware - Page 2297





Recommended Pc Board Hole Pattern (100-position connector)



Recommended Pc Board Hole Pattern (50-position connector)

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimension requirements.

No. of Pos.	Dimension A	Part No.
50	**2.065** 52.45	749076-5
100	**3.315** 84.20	749076-9

Note: Female screwlocks must be used to mate with cable assemblies with male jackscrew hardware.

AMPLIMITE .050 Series Right-Angle Receptacle Headers Without Rails — With Latch Blocks Series III

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

.112 [2.84] Solder Tail Length

For use with jackscrew mating hardware

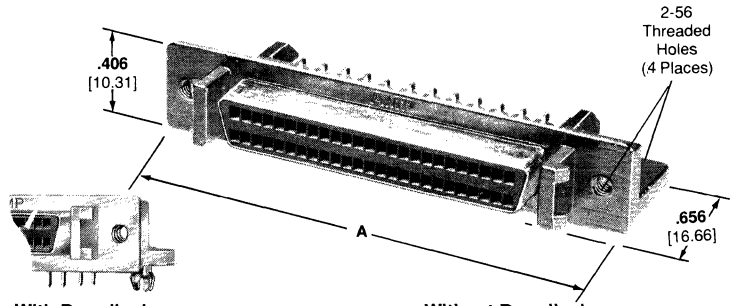
Materials:

Housing — Thermoplastic, 94V-0 rated, black. SMT compatible

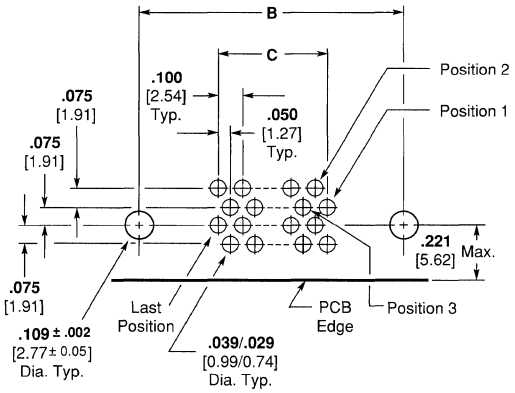
Shell — Steel, plated .000200 [0.00508] min. bright tin over .000050 [0.00127] min. copper

Bracket — Zinc, plated nickel over copper

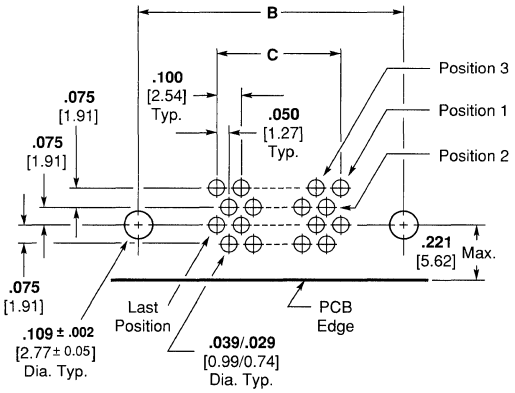
Contacts — Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000120 [0.00304] min. tin-lead on solder end; all underplated .000050 [0.00127] min. nickel



With Boardlocks **Without Boardlocks**



Recommended Pc Board Hole Pattern
(For all header sizes except 26 and 50 positions)



Recommended Pc Board Hole Pattern
(For 26 and 50 position headers)

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimension requirements.

No. of Pos.	Dimensions			Without Boardlocks Part No.	With Boardlocks Part No.
	A	B	C		
20	**1.315** 33.40	**1.080** 27.43	**.450** 11.43	749649-2	749831-1
26	**1.465** 37.21	**1.230** 31.24	**.600** 15.24	749649-1	749831-2
28	**1.515** 38.48	**1.280** 32.51	**.650** 16.51	749649-3	749831-3
40	**1.815** 46.10	**1.580** 40.13	**.950** 24.13	749649-4	749831-4
50	**2.065** 52.45	**1.830** 46.48	**1.200** 30.48	749649-5	749831-5
60	**2.315** 58.80	**2.080** 52.83	**1.450** 36.83	749649-6	749831-6
68	**2.515** 63.88	**2.280** 57.91	**1.650** 41.91	749649-7	749831-7
80	**2.815** 71.50	**2.580** 65.53	**1.950** 49.53	749649-8	749831-8
100	**3.315** 84.20	**3.080** 78.23	**2.450** 62.23	749649-9	749831-9
120	**3.815** 96.90	**3.580** 90.93	**2.950** 74.93	1-749649-0	1-749831-0

AMPLIMITE .050 Series Right-Angle Plug Headers Without Rails and Latch Blocks Series III

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

.112 [2.84] Solder Tail Length

For use with jackscrew mating hardware

Materials:

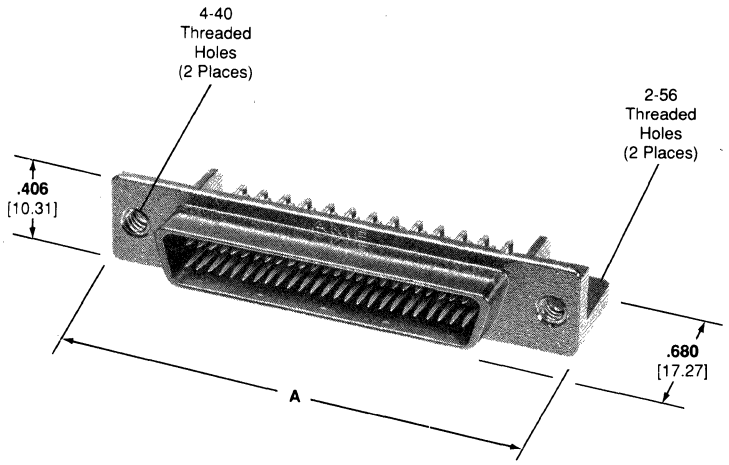
Housing — Thermoplastic, 94V-0 rated, black. SMT compatible

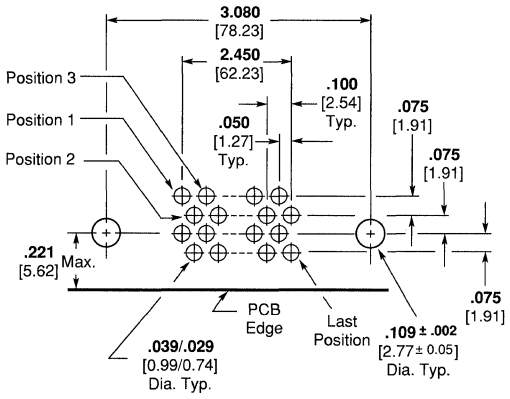
Bracket — Zinc, plated nickel over copper

Contacts — Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000120 [0.00304] min. tin-lead on solder end; all underplated .000050 [0.00127] min. nickel

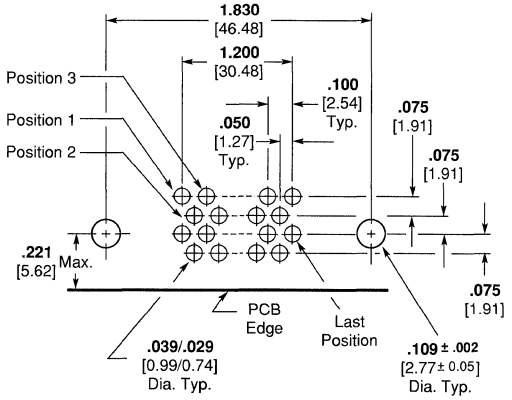
Related Product Data:

Required Hardware - Page 2297





Recommended Pc Board Hole Pattern (100-position connector)



Recommended Pc Board Hole Pattern (50-position connector)

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimension requirements.

No. of Pos.	Dimension A	Part No.
50	**2.065** 52.45	749084-5†
100	**3.315** 84.20	749084-9†

†**These plugs can be made available for prototype or limited production. Consult AMP Incorporated.**

Note: Male screwlocks must be used to mate with cable assemblies with female screwlocks.

AMPLIMITE .050 Series Vertical Receptacle Headers With Rails and Latch Blocks Series III

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

.125 [3.18] Solder Tail Length

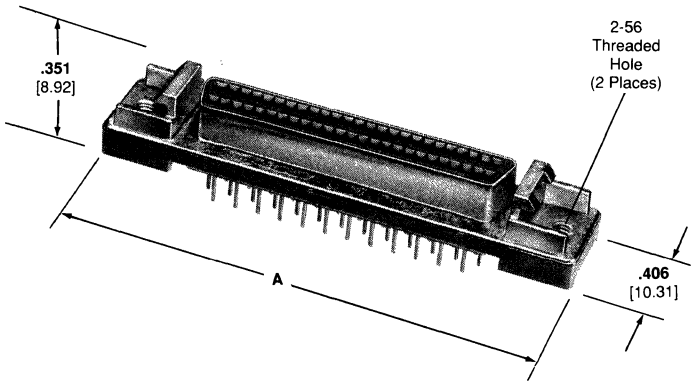
Materials:

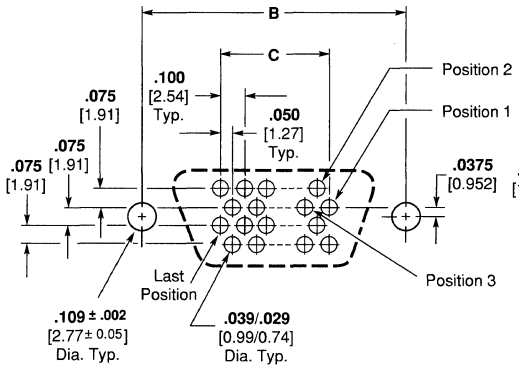
Housing — Thermoplastic, 94V-0 rated, black. SMT compatible

Shell — Steel, plated .000200 [0.00508] min. bright tin over .000050 [0.00127] min. copper

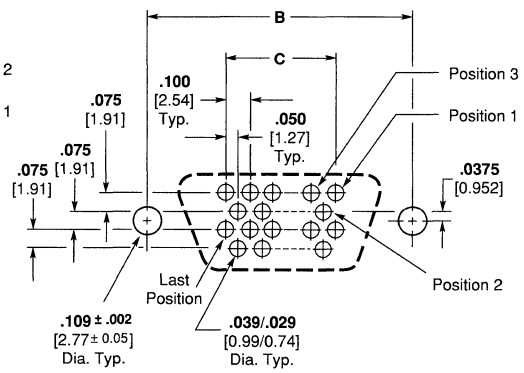
Bracket — Zinc, plated nickel over copper

Contacts — Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000120 [0.00304] min. tin-lead on solder end; all underplated .000050 [0.00127] min. nickel





Recommended Pc Board Hole Pattern
(For all header sizes except 26 and 50 positions)



Recommended Pc Board Hole Pattern
(For 26 and 50 position headers)

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimension requirements.

No. of Pos.	Dimensions			Without Posts 2-56 Threaded Part No.
	A	B	C	
20	**1.315** 33.40	**1.080** 27.43	**.450** 11.43	749069-1
26	**1.465** 37.21	**1.230** 31.24	**.600** 15.24	749069-2
28	**1.515** 38.48	**1.280** 32.51	**.650** 16.51	749069-3
40	**1.815** 46.10	**1.580** 40.13	**.950** 24.13	749069-4
50	**2.065** 52.45	**1.830** 46.48	**1.200** 30.48	749069-5
60	**2.315** 58.80	**2.080** 52.83	**1.450** 36.83	749069-6
68	**2.515** 63.88	**2.280** 57.91	**1.650** 41.91	749069-7
80	**2.815** 71.50	**2.580** 65.53	**1.950** 49.53	749069-8
100	**3.315** 84.20	**3.080** 78.23	**2.450** 62.23	749069-9
120	**3.815** 96.90	**3.580** 90.93	**2.950** 74.93	1-749069-0

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

AMPLIMITE .050 Series Vertical Receptacle Headers Without Rails and Latch Blocks Series III

.125 [3.18] Solder Tail Length

For use with jackscrew mating hardware

Materials:

Housing—Thermoplastic, 94V-0 rated, black. SMT compatible

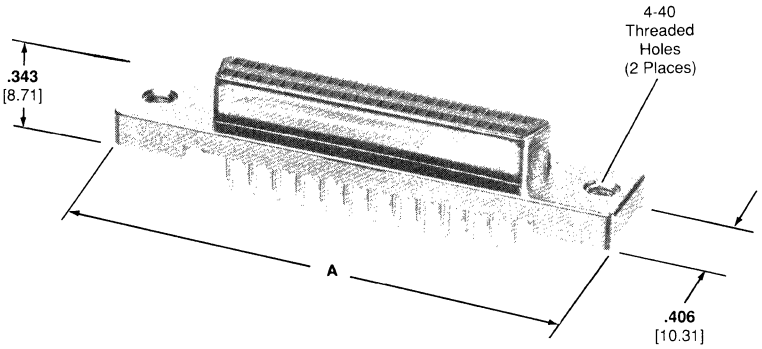
Shell—Steel, plated .000200 [0.00508] min. bright tin over .000050 [0.00127] min. copper

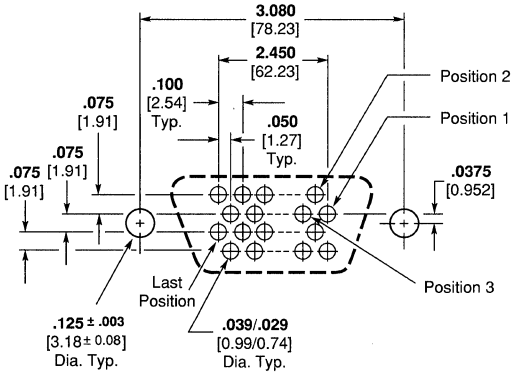
Bracket—Zinc, plated nickel over copper

Contacts—Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000120 [0.00304] min. tin-lead on solder end; all underplated .000050 [0.00127] min. nickel

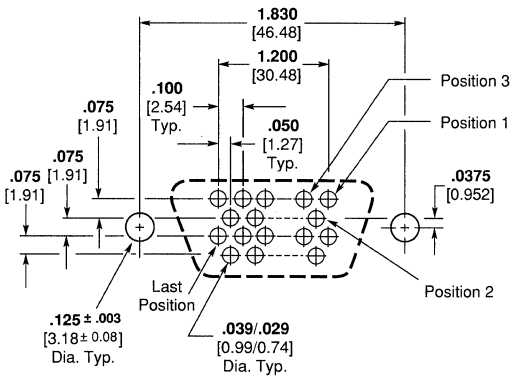
Related Product Data:

Required Hardware - Page 2297





Recommended Pc Board Hole Pattern (100-position connector)



Recommended Pc Board Hole Pattern (50-position connector)

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimension requirements.

No. of Pos.	Dimension A	Part No.
50	**2.065** 52.45	749070-5
100	**3.315** 84.20	749070-9

Note: Female screwlocks must be used to mate with cable assemblies with male jackscrew hardware.

AMPLIMITE .050 Series Vertical Receptacle Headers Without Rails — With Latch Blocks Series III

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

.125 [3.18] Solder Tail Length

For use with jackscrew mating hardware

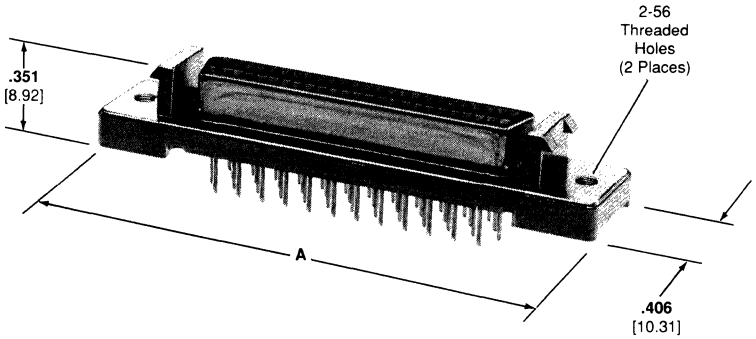
Materials:

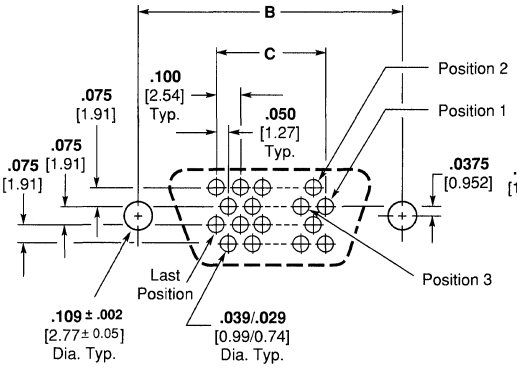
Housing — Thermoplastic, 94V-0 rated, black. SMT compatible

Shell — Steel, plated .000200 [0.00508] min. bright tin over .000050 [0.00127] min. copper

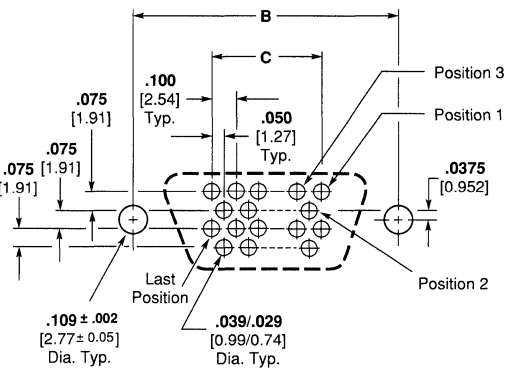
Bracket — Zinc, plated nickel over copper

Contacts — Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000120 [0.00304] min. tin-lead on solder end; all underplated .000050 [0.00127] min. nickel





Recommended Pc Board Hole Pattern
(For all header sizes except 26 and 50 positions)



Recommended Pc Board Hole Pattern
(For 26 and 50 position headers)

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimension requirements.

No. of Pos.	Dimensions			Part No.
	A	B	C	
20	**1.315** 33.40	**1.080** 27.43	**.450** 11.43	749721-1
26	**1.465** 37.21	**1.230** 31.24	**.600** 15.24	749721-2
28	**1.515** 38.48	**1.280** 32.51	**.650** 16.51	749721-3
40	**1.815** 46.10	**1.580** 40.13	**.950** 24.13	749721-4
50	**2.065** 52.45	**1.830** 46.48	**1.200** 30.48	749721-5
60	**2.315** 58.80	**2.080** 52.63	**1.450** 36.83	749721-6
68	**2.515** 63.88	**2.280** 57.91	**1.650** 41.91	749721-7
80	**2.815** 71.50	**2.580** 65.53	**1.950** 49.53	749721-8
100	**3.315** 84.20	**3.080** 78.23	**2.450** 62.23	749721-9
120	**3.815** 96.90	**3.580** 90.93	**2.950** 74.93	1-749721-0

AMPLIMITE .050 Series Vertical Plug Headers Without Rails and Latch Blocks Series III

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

.125 [3.18] Solder Tail Length

For use with jackscrew mating hardware

Materials:

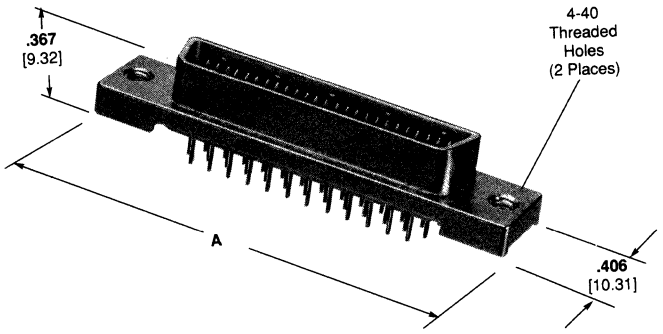
Housing—Thermoplastic, 94V-0 rated, black. SMT compatible

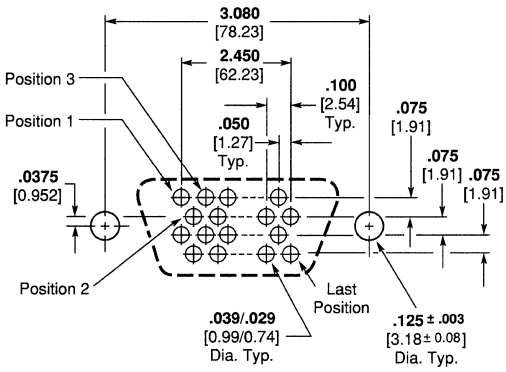
Bracket—Zinc, plated nickel over copper

Contacts—Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000120 [0.00304] min. tin-lead on solder end; all underplated .000050 [0.00127] min. nickel

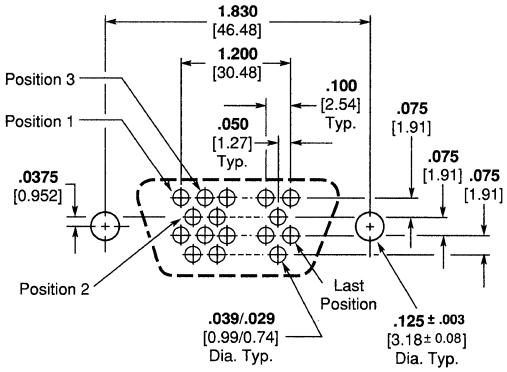
Related Product Data:

Required Hardware - Page 2297





Recommended Pc Board Hole Pattern (100-position connector)



Recommended Pc Board Hole Pattern (50-position connector)

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimension requirements.

No. of Pos.	Dimension A	Part No.
50	**2.065** 52.45	749085-5†
100	**3.315** 84.20	749085-9†

†**These plugs can be made available for prototype or limited production. Consult AMP Incorporated.**

Note: Male screwlocks must be used to mate with cable assemblies with female screwlocks.

AMPLIMITE .050 Series Cable Plug Connectors Series III

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Shielded Plugs

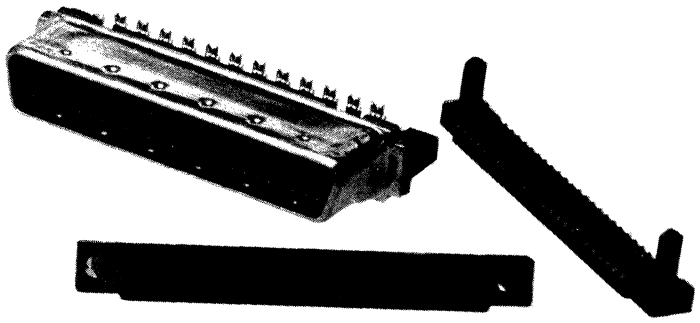
Materials:

Housing and Covers— Thermoplastic, 94V-0 rated, black

Contacts— Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000050 [0.00127] min. tin-lead on termination end; all underplated .000050 [0.00127] min. nickel

Shell— Steel, plated .000200 [0.00508] min. bright tin-lead over .000050 [0.00127] min. copper

Recommended wire size is 28 AWG [0.08–0.09 mm]. Maximum insulation diameter is .036 [0.91].



Shielded Plug with Unassembled Termination Covers

No. of Pos.	Part Number
20	749621-1
26	749621-2
28	749621-3
40	749621-4
50	749621-5

No. of Pos.	Part Number
60	749621-6
68	749621-7
80	749621-8
100	749621-9
120	1-749621-0

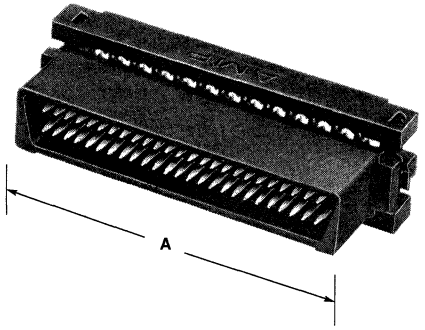
Note: Plug connector requires backshell kit for a complete assembly. Refer to page 2297 for backshell part numbers.

Unshielded Plugs:

Materials:

Housing and Termination Covers— Thermoplastic, 94V-0 rated, black

Contacts— Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000050 [0.00127] min. bright tin-lead in termination area, all underplated .000050 [0.00127] nickel



No. of Pos.	Dimension A	Part Number
20	**.829** 21.06	749925-1
28	**1.029** 26.14	749925-7
40	**1.329** 33.76	749925-2
50	**1.579** 40.11	749925-3
60	**1.829** 46.46	749925-4
68	**2.029** 51.54	749925-5
100	**2.829** 71.86	749925-6

AMPLIMITE .050 Series Cable Receptacle Connectors Series III

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Shielded Receptacles

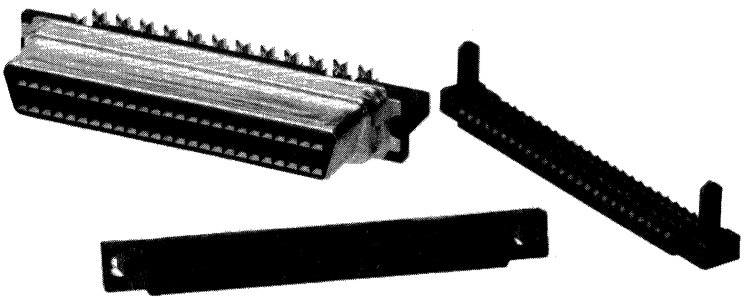
Materials:

Housing and Covers — Thermoplastic, 94V-0 rated, black

Contacts — Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000050 [0.00127] min. tin-lead on termination end; all underplated .000050 [0.00127] min. nickel

Shell — Steel, plated .000200 [0.00508] min. bright tin-lead over .000050 [0.00127] min. copper

Recommended wire size is 28 AWG [0.08 – 0.09 mm]. Maximum insulation diameter is .036 [0.91].



Shielded Receptacle with Unassembled Termination Covers

No. of Pos.	Part Number
26	749699-2
40	749699-4
50	749699-5
68	749699-7
100	749699-8

Note: Receptacle connectors require backshell kits for a complete assembly. Refer to page 2297 for backshell part numbers.

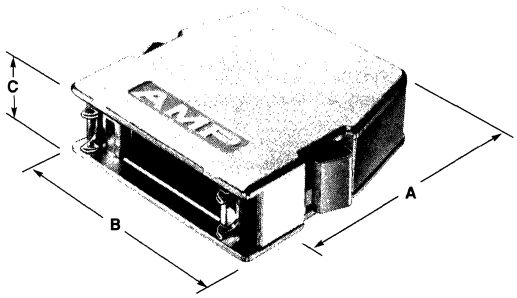
AMPLIMITE .050 Series Shielded Backshell Kits Series III

Specifications subject to change.
For latest design specifications...
1-800-522-6752

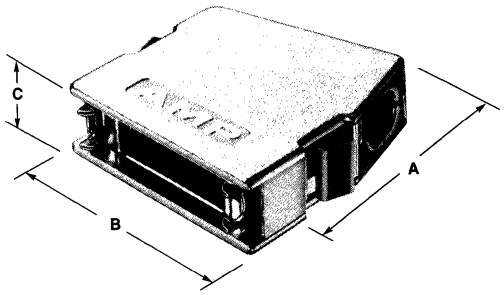
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Materials:

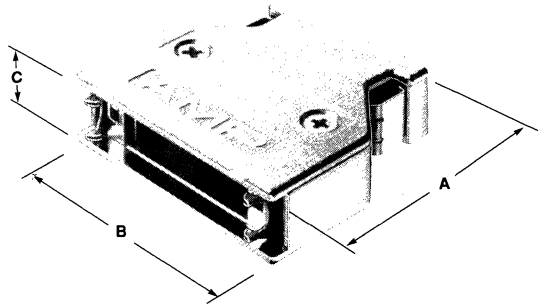
Backshell — Zinc, plated nickel over copper
Spring Latch — Stainless steel
Strain Relief Staple — Steel, plated tin-lead over nickel
Jackscrews — Steel, plated black zinc
2-56 Screws — Stainless Steel



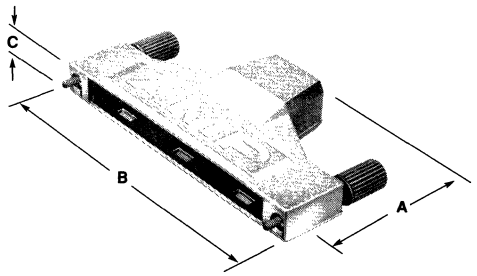
Style A Straight Exit with Latches



Style A Angled Exit with Latches



Style B Straight Exit with Latches



Style C Straight Exit with Jackscrews (Male Jackscrews Shown)

Straight and Angled Exit RFI/EMI Shields (Two-Piece) for Jacketed Cable

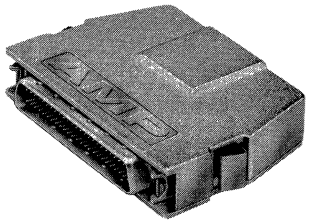
No. of Pos.	Style	Dimension			Max. O.D.	Straight with Latches	Straight Male Jackscrews	Straight Female Jackscrews	Angled with Latches
		A	B	C					
20	A	1.290	1.215	.400	.270	749190-1	—	—	749199-1
26	B	1.290	1.335	.400	.270	749608-1	—	—	—
26	A	1.290	1.365	.400	.270	—	—	—	749609-1
28	A	1.290	1.415	.400	.295	749191-1	—	—	749200-1
40	A	1.290	1.715	.400	.320	749192-1	—	—	749201-1
50	A	1.395	1.965	.480	.355	749193-1	—	—	749202-1
50	A	1.395	1.965	.480	.400	749193-2	—	—	749202-2
50	B	1.800	1.965	.492	.480	749889-3	—	—	—
50	C	1.270	2.085	.480	.400	—	749080-1	749082-1	—
60	A	1.395	2.215	.515	.380	749194-1	—	—	749203-1
68	A	1.405	2.415	.520	.400	749195-1	—	—	749204-1
68	A	1.405	2.415	.520	.440	749195-2	—	—	749204-2
80	A	1.600	2.715	.565	.420	749196-1	—	—	749205-1
80	A	1.600	2.715	.565	.500	749196-2	—	—	—
100	A	1.725	3.215	.615	.500	749197-1	—	—	749206-1
100	C	1.695	3.325	.595	.500	—	749081-1	749083-1	—
120	A	1.725	3.715	.665	.550	749198-1	—	—	749207-1

Note: Each backshell kit includes upper and lower backshells, two spring latches OR two male jackscrews OR two female jackscrews, one strain relief staple and two 2-56 screws. All are packaged unassembled.

AMPLIMITE .050 Series Termination Connectors SCSI/SCSI-2 Series III

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



AMPLIMITE terminators provide a quick, economical means of terminating input/output buses used for interconnecting computers and peripheral devices. These termination units, designed for SCSI/SCSI-2 applications, conform to the mechanical, electrical, and functional requirements and specifications of the American National Standards for Information Systems (ANSI) under X3.131 and X3T39. Each unit includes a ceramic substrate with resistive, capacitive, and other active devices needed to terminate the bus and maintain signal and command message integrity.

Materials:

Housing — Thermoplastic, 94V-0 rated, black

Shell — Steel, plated .000200 [0.00508] min. bright tin-lead over .000050 [0.00127] min. copper

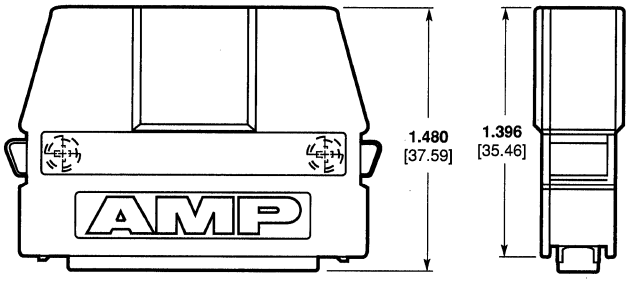
Backshell — Zinc, plated nickel over copper

Latches — Stainless steel

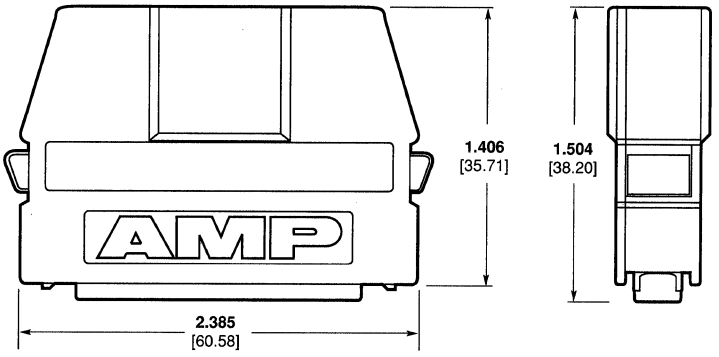
Contacts — Phosphor bronze, duplex plated .000030 [0.00076] min. gold over .000050 [0.00127] nickel

Substrate — 90% alumina ceramic

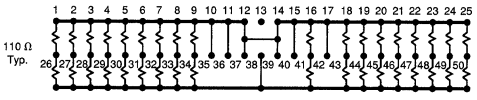
Notes:
Resistor Tolerance, ±1%
22 µF Capacitor — Tantalum, rated 10V, min.
4.7 µF Capacitor — Tantalum, rated 15V, min.
0.1µF Capacitor — Ceramic, rated 25V, min.
Capacitor Tolerance, ±20%



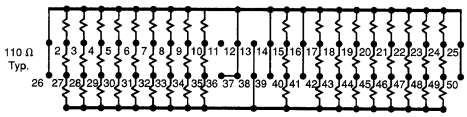
50 Position



68 Position

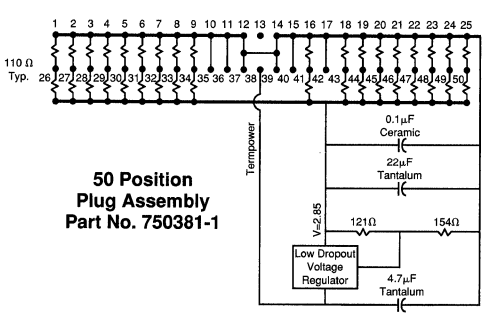


50 Position
SCSI-2 Single Ended
Part No. 749535-2



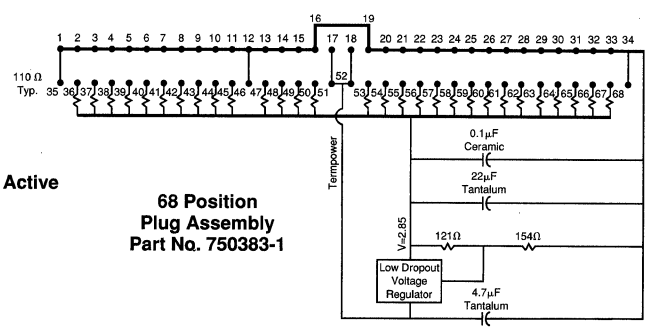
50 Position
SCSI-2 Differential
Part No. 749541-1

Passive



50 Position
Plug Assembly
Part No. 750381-1

Active



68 Position
Plug Assembly
Part No. 750383-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

AMPLIMITE .050 Series Panel Mount Receptacle Assemblies with Rails, Latch Blocks Series III

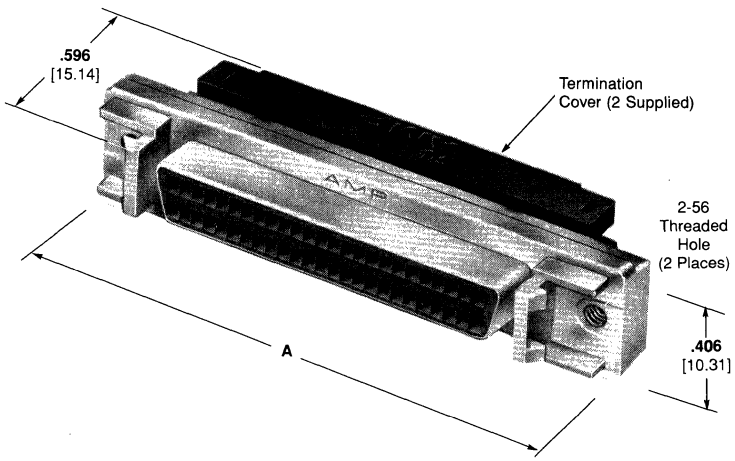
Materials:

Housing and Termination
Covers — Thermoplastic, 94V-0 rated, black

Shell — Steel, plated .000200 [0.00508] min. bright tin over .000050 [0.00127] min. copper

Bracket — Zinc, plated nickel over copper

Contacts — Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000050 [0.00127] min. bright tin-lead in termination area, all underplated .000050 [0.00127] nickel



No. of Pos.	Dimension A	Part No.
20	**1.315** 33.40	749611-2
26	**1.465** 37.21	749611-1
28	**1.515** 38.48	749611-3
40	**1.815** 46.10	749611-4
50	**2.065** 52.45	749611-5
50	**2.065** 52.45	750450-1*
60	**2.315** 58.80	749611-6
68	**2.515** 63.88	749611-7
80	**2.815** 71.50	749611-8
100	**3.315** 84.20	749611-9
120	**3.815** 96.90	1-749611-0

***Part Number 750450-1** has 4/40 threaded holes. All other receptacle assemblies have 2/56 threaded holes.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

AMPLIMITE .050 Series Panel Mount Receptacle Assemblies without Rails, with Latch Blocks Series III

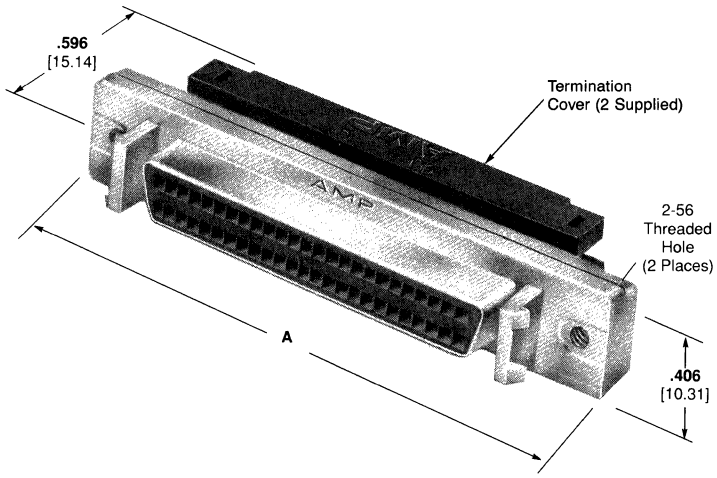
Materials:

Housing and Termination Covers — Thermoplastic, 94V-0 rated, black

Shell — Steel, plated .000200 [0.00508] min. bright tin over .000050 [0.00127] min. copper

Bracket — Zinc, plated nickel over copper

Contacts — Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000050 [0.00127] min. bright tin-lead in termination area, all underplated .000050 [0.00127] nickel



No. of Pos.	Dimension A	Part No.
20	**1.315** 33.40	749656-2
26	**1.465** 37.21	749656-1
28	**1.515** 38.48	749656-3
40	**1.815** 46.10	749656-4
50	**2.065** 52.45	749656-5
60	**2.315** 58.80	749656-6
68	**2.515** 63.88	749656-7
80	**2.815** 71.50	749656-8
100	**3.315** 84.20	749656-9
120	**3.815** 96.90	1-749656-0

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Panel Mount Flat Top Receptacle Assemblies without Rails and Latch Blocks Series III

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

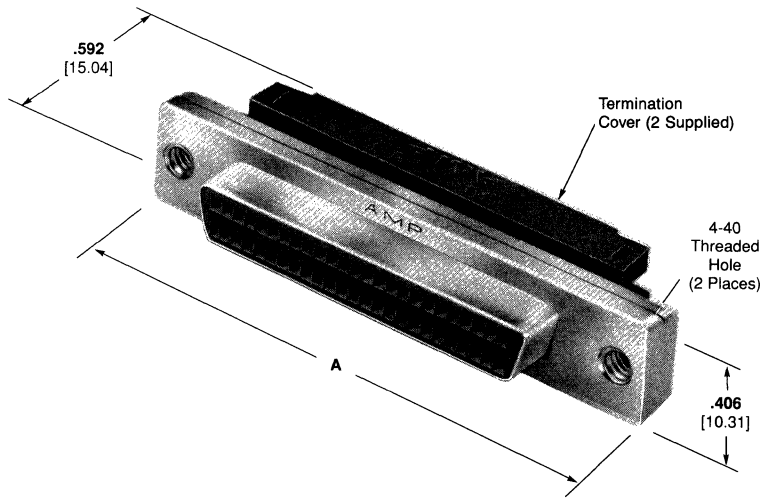
Materials:

Housing and Termination Covers — Thermoplastic, 94V-0 rated, black

Shell — Steel, plated .000200 [0.00508] min. bright tin over .000050 [0.00127] min. copper

Bracket — Zinc, plated nickel over copper

Contacts — Phosphor bronze, duplex plated .000030 [0.00076] min. gold on mating end; .000050 [0.00127] min. bright tin-lead in termination area, all underplated .000050 [0.00127] nickel

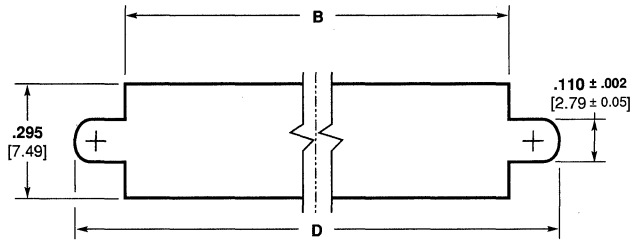


No. of Pos.	Dimension A	Part No.
50	**2.065** 52.45	749877-5
100	**3.315** 84.20	749877-9

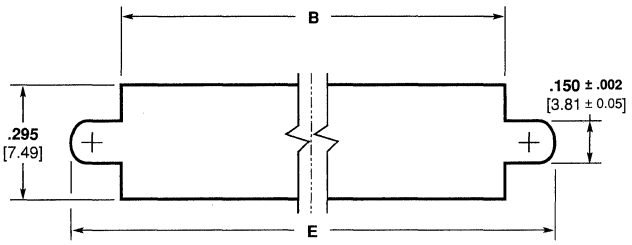
AMPLIMITE .050 Series Panel Cutout Specifications Series III

Specifications subject to change.
For latest design specifications...
1-800-522-6752

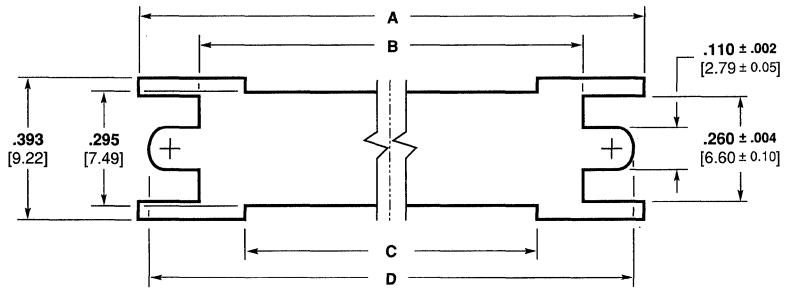
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.



For Latch Blocks Only
(Use 2-56 screws for mounting)



For Screwlock Applications



For Rails and Latch Blocks
(Use 2-56 screws for mounting)

No. of Pos.	Dimensions				
	A	B	C	D	E
20	**1.240** 31.50	**.935** 23.75	**.684** 17.37	**1.190** 30.23	**1.230** 31.24
26	**1.390** 35.31	**1.085** 27.56	**.834** 21.18	**1.340** 34.04	**1.380** 35.05
28	**1.440** 36.58	**1.135** 28.83	**.884** 22.45	**1.390** 35.31	**1.430** 36.32
40	**1.740** 44.20	**1.435** 36.45	**1.184** 30.07	**1.690** 42.93	**1.730** 43.94
50	**1.990** 50.55	**1.685** 42.80	**1.434** 36.42	**1.940** 49.28	**1.980** 50.29
60	**2.240** 56.90	**1.935** 49.15	**1.684** 42.77	**2.190** 55.63	**2.230** 56.64
68	**2.440** 61.98	**2.135** 54.23	**1.884** 47.85	**2.390** 60.71	**2.430** 61.72
80	**2.740** 69.60	**2.435** 61.85	**2.184** 55.47	**2.690** 68.33	**2.730** 69.34
100	**3.240** 82.30	**2.935** 74.55	**2.684** 68.17	**3.190** 81.03	**3.230** 82.04
120	**3.740** 95.00	**3.435** 87.25	**3.184** 80.87	**3.690** 93.73	**3.730** 94.74

Note: Recommended panel thickness: .062 [1.58]

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Hardware and Dust Covers Series III

Screwlock Kits

Materials:

Stainless steel (female)
Steel, zinc plated black (male)

Related Product Data:

Used with the following connectors:

Right Angle Receptacle Header- Page 2287
Right Angle Plug Header- Page 2289
Vertical Receptacle Header- Page 2291
Vertical Plug Header- Page 2293

Male
Part No. 749086-1
(Includes two screwlocks)

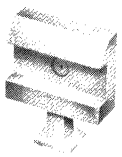
Female
Part No. 749087-1
Part No. 749087-2*
(Includes two screwlocks)
***Recommended for right angle board mount connectors.**

Latch Blocks for Cable-to-Cable Applications

Materials:

Zinc, plated .000200 [0.00508] min. bright tin over .000050 [0.00127] min. copper

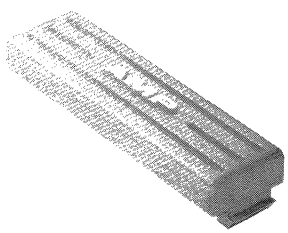
Part No. 749900-2



Protective Dust Covers

Material:

Polyethylene, red



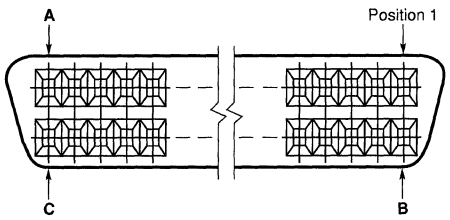
No. of Pos.	Part Number	
	Cable Connector[1]	Board Mount[2]
20	—	750062-1
26	—	750062-2
28	—	750062-3
40	—	750062-4
50	749894-5	750062-5
60	—	750062-6
68	—	750062-7
80	—	750062-8
100	—	750062-9
120	—	1-750062-0

Notes: 1. Covers can be used with connectors which have backshells with latches installed.
2. Covers can be used with PCB or panel mount connectors which have latch blocks.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Contact Arrangements, Performance Specifications, Technical Documents Series III

Contact Arrangements



Note: Mating face of receptacle is shown, plug is mirror image.

No. of Pos.	Position No.		
	A	B	C
20	10	11	20
26	13	14	26
28	14	15	28
40	20	21	40
50	25	26	50
60	30	31	60
68	34	35	68
80	40	41	80
100	50	51	100
120	60	61	120

Performance Specifications

Mating Cycles (Durability): 500 min.
Current Rating (30°C T-Rise): 1A
Termination Resistance (Mated): 25 milliohms max.
Insulation Resistance: 1000 megohms min.
Dielectric Withstanding Voltage: 500 VAC
Header Processing Temperature: +220°C max. for 3 minutes
Operating Temperature Range: −55°C to +105°C

Technical Documents

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-1228 Shielded AMPLIMITE .050 Series Connectors

Application Specifications describe requirements for using the product in its intended application and/or termination information. They are intended for the Packaging and Design Engineer and the Setup person.

114-40029 Shielded AMPLIMITE .050 Series Connectors

Instruction Sheets provide instructions for assembling or applying product. They are intended for Manufacturing Assembler or Operator.

IS 9427 AMPLIMITE .050 Series Connectors
IS 9584 Mass Insertion Tooling
IS 9573 Stapler Tooling Kit

AMPLIMITE .050 Series Application Tooling Series III

Specifications subject to change.
For latest design specifications...
1-800-522-6752

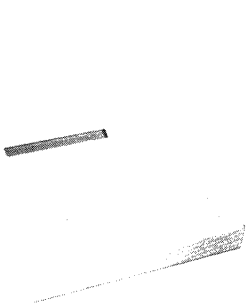
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Discrete Wire Application Tooling

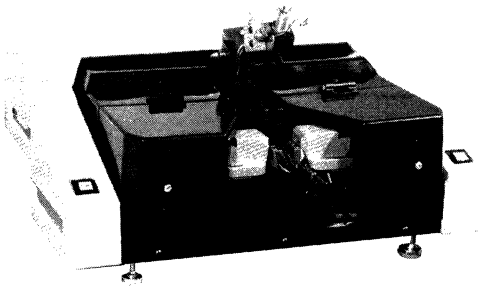
To meet medium to high volume production of discrete wire terminations AMP offers the following tooling:

The CHAMPOMATOR Model 2.5 Bench Terminating Machine — **Part No. 762734-1**, used in conjunction with Control Module — **Part No. 852423-1**, and Tooling Package — **Part No. 762661-6**.

This machine requires: Tool Set — **Part No. 853736** or **764259** (Table No.1) and Wire Setup Gauge — **Part No. 763382** (Table No. 2).



Control Module
Part No. 852423-1



CHAMPOMATOR
2.5 Machine
Part No. 762734-1

Table Number 1

Connector Size	Receptacle Tool Set Part No.	Plug Tool Set Part No.
20 Pos.	853736-1	764259-1
26 Pos.	1-853736-1	1-764259-1
28 Pos.	1-853736-2	1-764259-2
40 Pos.	853736-3	764259-3
50 Pos.	853736-4	764259-4
60 Pos.	853736-5	764259-5
68 Pos.	853736-6	764259-7
80 Pos.	853736-7	764259-8
100 Pos.	853736-9	764259-9
120 Pos.	1-853736-0	1-764259-0

Table Number 2

Wire Ins. Dia.	Wire Setup Gauge Part No.
.026 – .028 0.66 – 0.71	763382-3
.029 – .031 0.74 – 0.79	763382-4
.032 – .035 0.81 – 0.89	763382-5

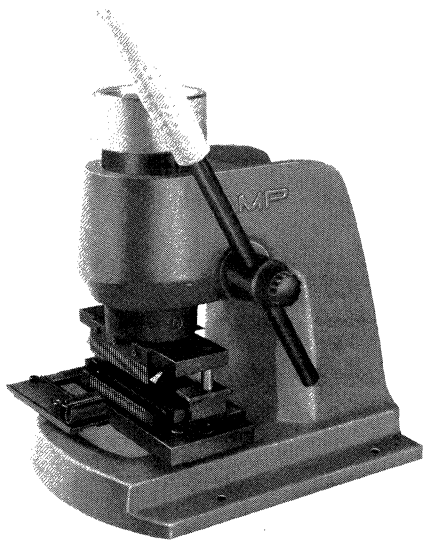
Note: CHAMPOMATOR 2.5 Machine, Control Module, Tooling Package, Tool Set and Wire Set-up Gauge each must be ordered separately by part number.

Discrete Wire Application Tooling

For low to medium volume production use the AMP Arbor Frame Assembly — **Part No. 58024-1** equipped with Applicator — **Part No. 91291-1** for .032 – .035 [0.81 – 0.89] O.D. and Applicator — **Part No. 91291-2** for .029 – .032 [0.74 – 0.81] O.D.

Cable-to-Shell Staple Tooling (For discrete jacketed wire cable only)

To provide cable strain relief use Manual Arbor Frame Assembly — **Part No. 58024-1**, equipped with a Staple Insertion Tool — **Part No. 764088-1** to install staples into lower backshells of connector kits and assemblies.



Arbor Press
Part No. 58024-1
Equipped with
Applicator Part No.
91291-1

Note: AMP Arbor Frame Assembly, Applicator and Staple Insertion Tool each must be ordered separately.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMPLIMITE .050 Series Application Tooling and Numerical Index
Series III

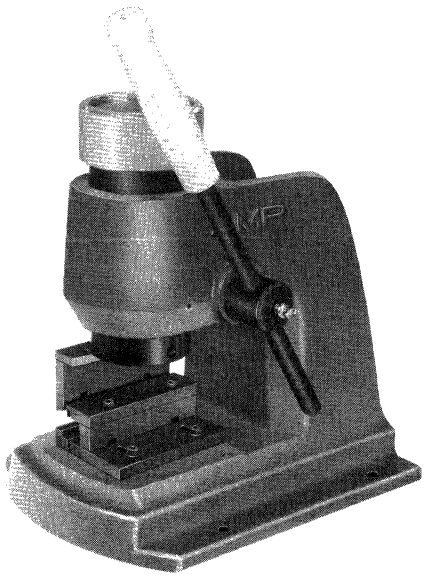
.050 [1.27] Centerline Ribbon Cable, Laminated, and Round to Flat Wire Application Tooling

Manual Arbor Frame Assembly — Part No. 58024-1

This press requires Mass-Insertion Tooling — **Part No. 852859-1**, Termination Bar — **Part No. 853254** (Table No. 3) and Connector Holder (Table No. 4).

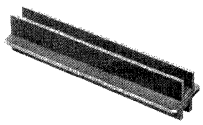
Lamination Tape

PVC — **Part No. 750349-1**
Polypropylene — **Part No. 750349-2**



Arbor Press
Part No. 58024-1
Equipped with
Mass Insertion Tooling
Part No. 852851-1

Termination Bar
Part No. 853254
(Table No. 3)



Connector Holder
(Table No. 4)

Table Number 3

Pos.	Termination Bar Part No.
20–38	None Required
40–48	853254-1
50–58	853254-2
60–68	853254-3
70–78	853254-4
80–88	853254-5
90–98	853254-6
100–108	853254-7
110–120	853254-8

Table Number 4

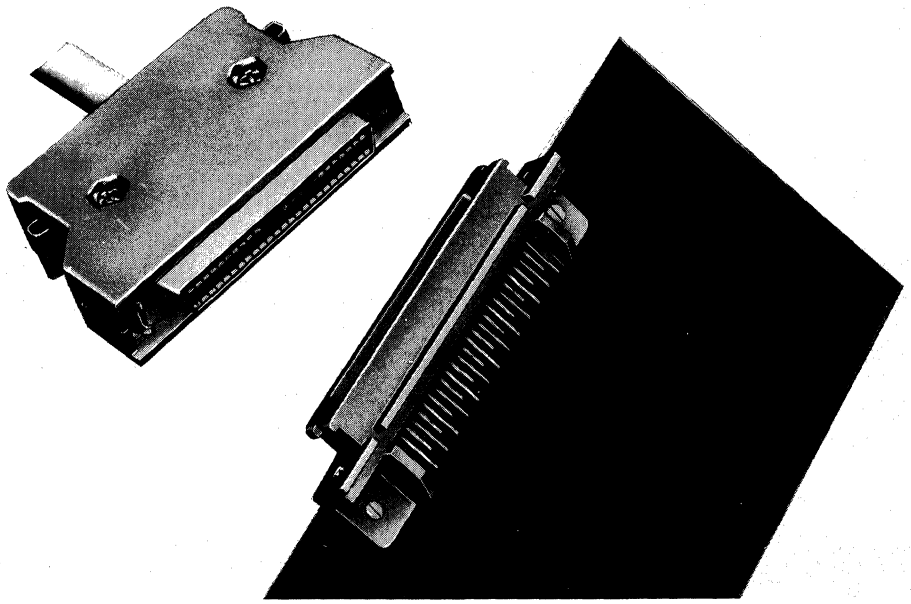
Connector Type	Connector Holder
Cable Plug & Rcpt.	853240-1
All Plastic Plug	853728-1
Panel Mt. Plug	853238-1
Panel Mt. Rcpt.	853239-1

Note: AMP Arbor Frame Assembly, Mass Insertion Tooling, Termination Bar and Connector Holder each must be ordered separately by part number.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Shielded AMPLIMITE .050 Series Connectors

(.050 x .100 [1.27 x 2.54] Centerlines), Series II



Shielded Wire-to-Board Connectors

Shielded AMPLIMITE .050 Series Connectors offer excellent EMI/RFI protection. The 50 and 68-position wire-to-board connectors have been qualified to meet SCSI standards. The complete family is available in 20, 28, 36, 50 and 68 position configurations. The cable connectors use insulation displacement contacts for fast termination of discrete, round-to-flat laminated and ribbon cable. Recommended wire size is 28 AWG [0.08 – 0.09] with a .020 – .026 [0.5 – 0.65] insulation diameter. For other wire sizes and insulation diameters, consult AMP Incorporated.

A selection of cable connector backshell kits is offered, including a standard 180° Exit, a Keyed 180° Exit, and for SCSI applications a 36 and 50 position 180° Exit and a 50 position 75° Exit.

Board mount headers are available in a choice of right-angle plugs and receptacles and a vertical mount plug.

Important Note: Only the 50 and 68 position wire-to-board connectors for SCSI Applications are intermateable with Shielded AMPLIMITE .050 Series, Series III connectors.

Performance Specifications

Voltage/Current rating: 100V DC, 1 ampere, max.

Dielectric withstanding voltage: 500V AC, 1 minute

Insulation resistance: 1,000 Megohms, min.

Operating temperature range: −55° to +105°C

Technical Documents

Product Specification: 108-5238
Application Specification: 114-5124

Product Facts

- High-density D type interface
- Flame retardant thermoplastic housings, material 94V-0 UL rated
- 20 through 68 contact positions
- Tab and tuning-fork receptacle contacts, with reliable two-point (redundant) contact
- Right-angle and vertical headers
- Board-to-board, cable-to-board and cable to cable connections
- Zinc diecast backshells offer excellent EMI/RFI protection
- Shields mate before contacts, with ground mating first/break last
- Keying available
- Recognized under the Component Program of Underwriters Laboratories, Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR7189

U.L. and C.S.A. Approval
Part Nos.: 1-174340-X
2-174340-X
1-174731-X
2-174731-X
174726-X
174725-X
174731-X

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)
mm (millimeters)

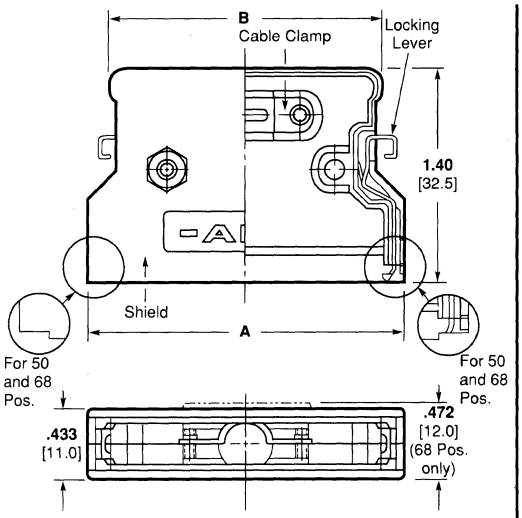
Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Backshell Kits, Series II

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Material and Finish:

Backshell — ABS, nickel over copper underplating
Cable Clamp — Steel, nickel over copper underplating
Locking Lever — Stainless Steel



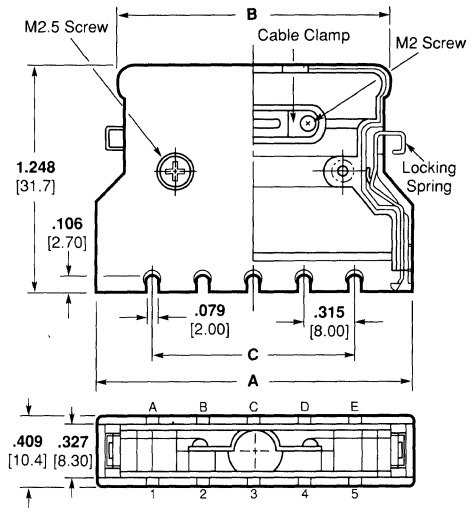
No. of Pos.*	Dimensions A	Dimensions B	Part Number
20	**1.157** 29.4	**.850** 21.6	174542-1
28	**1.358** 34.5	**1.051** 26.7	174543-1
36	**1.559** 39.6	**1.252** 31.8	174544-1
50	**1.909** 48.5	**1.602** 40.7	174545-1
68	**2.354** 59.8	**2.051** 52.1	174548-1

*96 positions are available, consult AMP Incorporated.

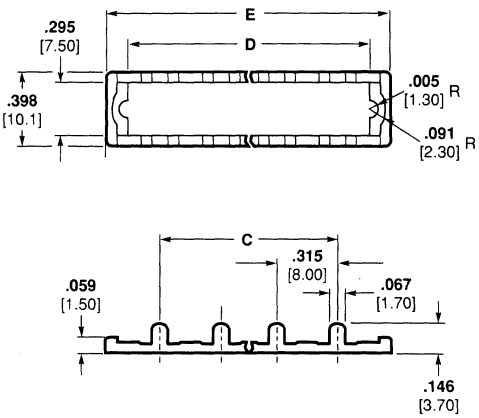
Backshell Kits (Keyed)

Material and Finish:

Backshell — Zinc
Cable Clamp and Screw — Steel
Locking Spring — Stainless Steel
Rivet — Brass



Keying Plate Kit



Keying Plate Kits

Material and Finish:

Keying Plate and Screws — Zinc, nickel plated

Note: See table for keyed positions

No. of Pos.*	Dimensions A	B	C	D	E	Backshell Kit: Position of Rivets (A)	(B)	Backshell Kit: Part No.	Key Plate Kit: Key Cut Pos.	Key Plate Kit: Part No.
20	**1.157** 29.4	**.850** 21.6	**.630** 16.0	**1.078** 27.4	**1.181** 30.0	1	B	174745-1	1 & B	174761-1
						1	C	174745-2	1 & C	174761-2
						2	A	174745-3	2 & A	174761-3
						3	A	174745-4	3 & A	174761-4
						None		9-174745-1	None	9-174761-1
28	**1.358** 34.5	**1.051** 26.7	**.945** 24.0	**1.280** 32.5	**1.500** 38.1	1	D	174746-1	1 & D	174762-1
						2	C	174746-2	2 & C	174762-2
						3	B	174746-3	3 & B	174762-3
						4	A	174746-4	4 & A	174762-4
						None		9-174746-1	None	9-174762-1
36	**1.560** 39.6	**1.252** 31.8	**.945** 24.0	**1.480** 37.6	**1.701** 43.2	1	D	174747-1	1 & D	174763-1
						2	C	174747-2	2 & C	174763-2
						3	B	174747-3	3 & B	174763-3
						4	A	174747-4	4 & A	174763-4
						None		9-174747-1	None	9-174763-1
50	**1.909** 48.5	**1.602** 40.7	**1.260** 32.0	**1.831** 46.5	**2.051** 52.1	1	E	174748-1	1 & E	174764-1
						2	D	174748-2	2 & D	174764-2
						4	B	174748-3	4 & B	174764-3
						5	A	174748-4	5 & A	174764-4
						None		9-174748-1	None	9-174764-1
68	**2.358** 59.9	**2.051** 52.1	**1.260** 32.0	**2.280** 57.9	**2.500** 63.5	1	E	174749-1	1 & E	174765-1
						2	D	174749-2	2 & D	174765-2
						4	B	174749-3	4 & B	174765-3
						5	A	174749-4	5 & A	174765-4
						1	A	174749-5	I & A	174765-5
						None		9-174749-1	None	9-174765-1

*96 positions are available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Backshell Kits (for SCSI Cable), Series II

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimeters.

Backshell Kit 180° Cable Exit 36 and 50 Position

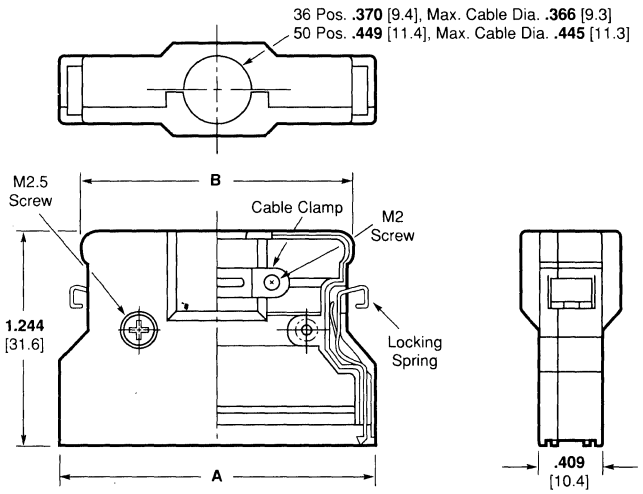
Material and Finish:

Backshell — Zinc, nickel over copper underplating

Cable Clamp — Carbon steel, nickel over copper underplating

M2 Screw — Brass, nickel plated

Locking Spring — Stainless Steel



No. of Pos.	Dimensions A	Dimensions B	Part Number	Part Number Applicable Connector
36	**1.560** 39.6	**1.252** 31.8	176853-1	x-174340-3 x-174731-3 x-175705-3 x-175707-3
50	**1.909** 48.5	**1.602** 40.7	176854-1	x-174340-4 x-174731-4 x-175705-4 x-175707-4

Backshell Kit 75° Cable Exit 50 Position

Material and Finish:

Backshell — Zinc, nickel over copper underplating

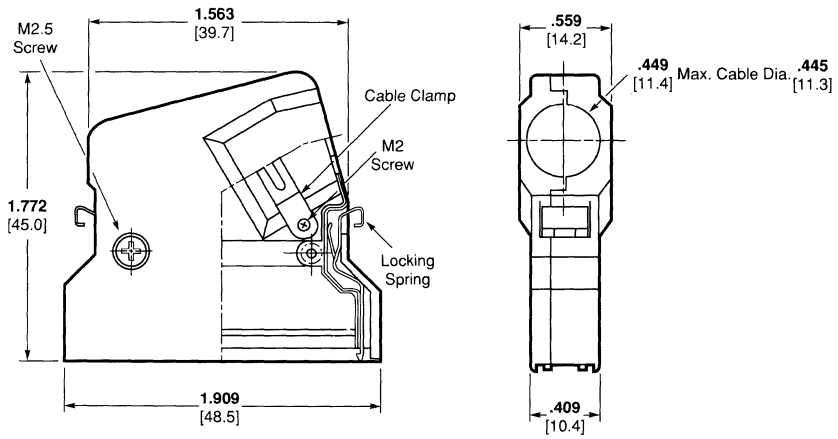
Cable Clamp — Carbon steel, nickel over copper underplating

M2 Screw — Brass, nickel plated

Locking Spring — Stainless steel

Backshell Kit Part No. 176855-1

Applicable Connectors: Part Nos. x-174340-4
x-174731-4
x-175705-4
x-175707-4



AMPLIMITE .050 Series Receptacle Connector Kits, Series II

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Material and Finish:

Shell — Steel, plated bright tin over copper underplating

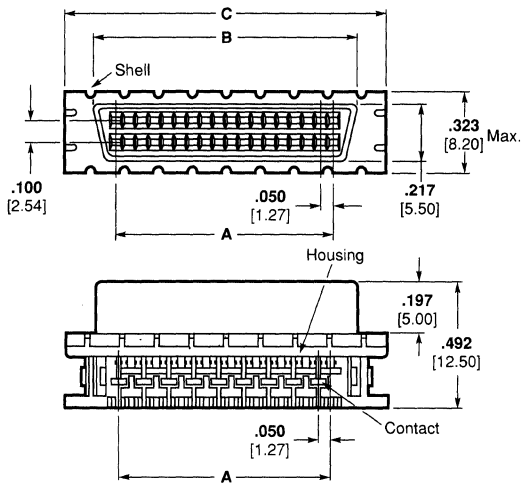
Housing and Cover — Thermoplastic, 94V-0 rated, black

Contacts — Phosphor bronze, duplex plated .000008 [0.0002] or .000030 [0.00076] min. gold on contact area, with entire contact nickel underplated

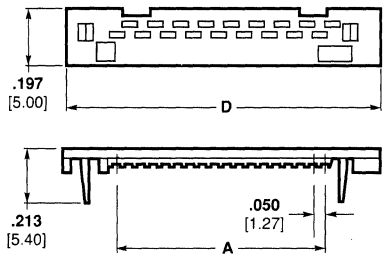
Wire Range:
AWG 30 [0.05mm²]
AWG 28 [0.08mm²]

Wire Insulation Diameter:
(See Charts)

Receptacle Connector



Cover



30 AWG [0.05mm²]

No. of Pos.**	Dimensions A	B	C	D	Part Numbers Black* (.020–.026 [0.5–0.65]) .000008 0.0002	.000030 0.00076	Grey* (.031–.035 [0.8–0.88]) .000008 0.0002	.000030 0.00076
20	.450 11.43	.614 15.6	.874 22.2	.850 21.6	175705-1	1-175705-1	2-175705-1	3-175705-1
28	.650 16.51	.815 20.7	1.075 27.3	1.051 26.7	175705-2	1-175705-2	2-175705-2	3-175705-2
36	.850 21.59	1.016 25.8	1.276 32.4	1.252 31.8	175705-3	1-175705-3	2-175705-3	3-175705-3
50	1.200 30.48	1.366 34.7	1.626 41.3	1.602 40.7	175705-4	1-175705-4	2-175705-4	3-175705-4
68	1.650 41.91	1.815 46.1	2.075 52.7	2.051 52.1	175705-5	1-175705-5	2-175705-5	3-175705-5

*These are housing and cover colors. Dimensions in parentheses are insulation O.D.
**96 positions are available, consult AMP Incorporated.

28 AWG [0.08mm²]

No. of Pos.**	Dimensions A	B	C	D	Part Numbers Black* (.020–.026 [0.5–0.65]) .000008 0.0002	.000030 0.00076	Grey* (.031–.035 [0.8–0.88]) .000008 0.0002	.000030 0.00076
20	.450 11.43	.614 15.6	.874 22.2	.850 21.6	174340-1	1-174340-1	2-174340-1	3-174340-1
28	.650 16.51	.815 20.7	1.075 27.3	1.051 26.7	174340-2	1-174340-2	2-174340-2	3-174340-2
36	.850 21.59	1.016 25.8	1.276 32.4	1.252 31.8	174340-3	1-174340-3	2-174340-3	3-174340-3
50	1.200 30.48	1.366 34.7	1.626 41.3	1.602 40.7	174340-4	1-174340-4	2-174340-4	3-174340-4
68	1.650 41.91	1.815 46.1	2.075 52.7	2.051 52.1	174340-5	1-174340-5	2-174340-5	3-174340-5

*These are housing and cover colors. Dimensions in parentheses are insulation O.D.
**96 positions are available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Receptacle Connector Kits for Flat and Laminated Wire, Series II

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Material and Finish:

Shell — Steel, plated bright tin over copper underplating

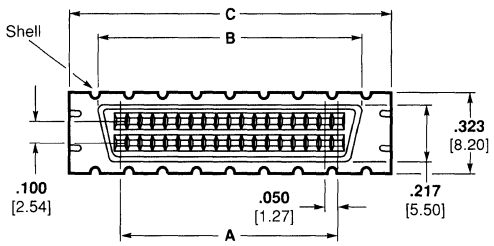
Housing and Cover — Thermoplastic, 94V-0 rated, black

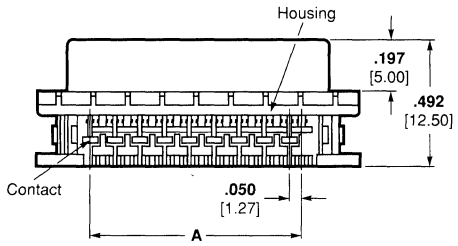
Contacts — Phosphor bronze, duplex plated .000008 [0.0002] or .000030 [0.00076] min. gold on contact area, with entire contact nickel underplated

Wire Range:
AWG 28 [0.08mm²]

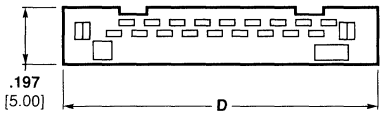
Wire Insulation Diameter:
.020-.026 [0.5-0.65]

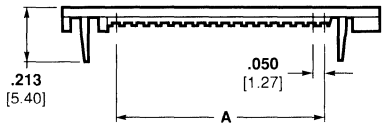
Receptacle Connnector





Cover





No. of Pos.*	Dimensions				Part Numbers	
	A	B	C	D	.000008 0.0002	.000030 0.00076
50	**1.200** 30.48	**1.366** 34.7	**1.626** 41.3	**1.622** 41.2	175644-4	1-175644-4
68	**1.650** 41.91	**1.815** 46.1	**2.075** 52.7	**2.071** 52.6	175644-5	1-175644-5

*96 positions available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Plug Connector Kits With Detent, Series II

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Material and Finish:

Shell — Steel, plated bright tin over copper underplating

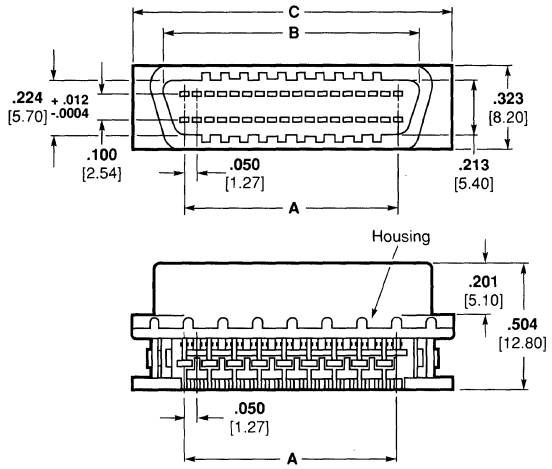
Housing and Cover — Thermoplastic, 94V-0 rated

Contacts — Phosphor bronze, duplex plated .000008 [0.0002] or .000030 [0.00076] min. gold on contact area, with entire contact nickel underplated

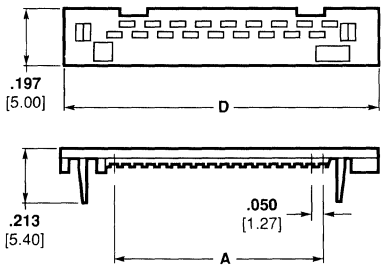
Wire Range:
AWG 30 [0.05mm²]
AWG 28 [0.08mm²]

Wire Insulation Diameter:
(See Charts)

Plug Connnector



Cover



30 AWG [0.05mm²]

No. of Pos.**	Dimensions A	B	C	D	Part Numbers Black* (.020–.026 [0.5–0.65]) .000008 0.0002	Black* (.020–.026 [0.5–0.65]) .000030 0.00076	Grey* (.031–.035 [0.8–0.88]) .000008 0.0002	Grey* (.031–.035 [0.8–0.88]) .000030 0.00076
20	.450 11.43	.614 15.8	.874 22.2	.850 21.6	175707-1	1-175707-1	2-175707-1	3-175707-1
28	.650 16.51	.815 20.9	1.075 27.3	1.051 26.7	175707-2	1-175707-2	2-175707-2	3-175707-2
36	.850 21.59	1.016 26.0	1.276 32.4	1.252 31.8	175707-3	1-175707-3	2-175707-3	3-175707-3
50	1.200 30.48	1.366 34.9	1.626 41.3	1.602 40.7	175707-4	1-175707-4	2-175707-4	3-175707-4
68	1.650 41.91	1.815 46.3	2.075 52.7	2.051 52.1	175707-5	1-175707-5	2-175707-5	3-175707-5

*These are housing and cover colors. Dimensions in parentheses are insulation O.D.
**96 positions are available, consult AMP Incorporated.

28 AWG [0.08mm²]

No. of Pos.**	Dimensions A	B	C	D	Part Numbers Black* (.020–.026 [0.5–0.65]) .000008 0.0002	Black* (.020–.026 [0.5–0.65]) .000030 0.00076	Grey* (.031–.035 [0.8–0.88]) .000008 0.0002	Grey* (.031–.035 [0.8–0.88]) .000030 0.00076
20	.450 11.43	.614 15.8	.874 22.2	.850 21.6	174731-1	1-174731-1	2-174731-1	3-174731-1
28	.650 16.51	.815 20.9	1.075 27.3	1.051 26.7	174731-2	1-174731-2	2-174731-2	3-174731-2
36	.850 21.59	1.016 26.0	1.276 32.4	1.252 31.8	174731-3	1-174731-3	2-174731-3	3-174731-3
50	1.200 30.48	1.366 34.9	1.626 41.3	1.602 40.7	174731-4	1-174731-4	2-174731-4	3-174731-4
68	1.650 41.91	1.815 46.3	2.075 52.7	2.051 52.1	174731-5	1-174731-5	2-174731-5	3-174731-5

*These are housing and cover colors. Dimensions in parentheses are insulation O.D.
**96 positions are available, consult AMP Incorporated.

AMPLIMITE .050 Series Plug Connector Kits for Panel Mount, Series II

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Material and Finish:

Shell — Zinc diecast, nickel over copper underplating

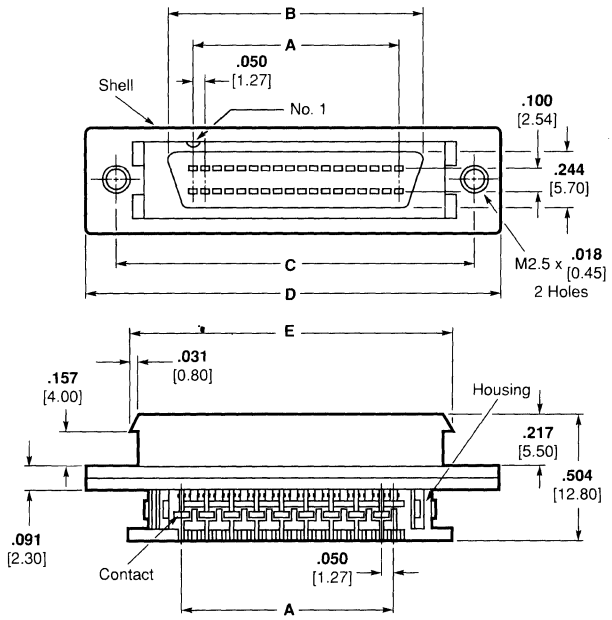
Housing and Cover — Thermoplastic, 94V-0 rated, gray

Contacts — Phosphor bronze, duplex plated .000008 [0.0002] or .000030 [0.00076] min. gold on contact area, with entire contact nickel underplated

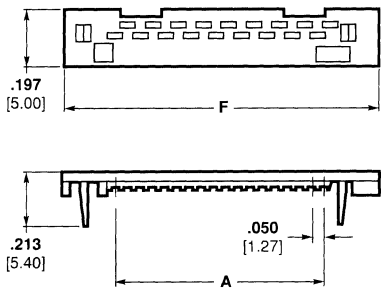
Wire Range:
AWG 28 [0.08 mm²]
(Flat Ribbon Cable)

Wire Insulation Diameter:
.020-.035 [0.5-0.88]

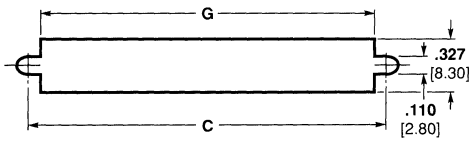
Plug Connnector



Cover



Panel Cutout



No. of Pos.*	Dimensions							Part Numbers	
	A	B	C	D	E	F	G	.000008 0.0002	.000030 0.00076
36	.850 21.59	1.024 26.0	1.480 37.6	1.717 43.6	1.315 33.4	1.272 32.3	1.335 33.9	175590-3	2-175590-3
50	1.200 30.48	1.374 34.9	1.831 46.5	2.067 52.5	1.665 42.3	1.622 41.2	1.685 42.8	175590-4	2-175590-4
68	1.650 41.91	1.823 46.3	2.280 57.9	2.516 63.9	2.114 53.7	2.071 52.6	2.134 54.2	175590-5	2-175590-5

*96 positions available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Receptacle Headers Right-Angle Mount, Series II

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

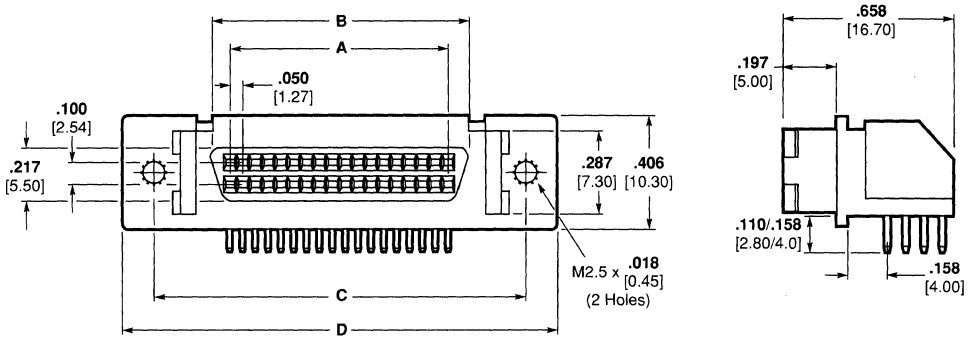
With Mounting Holes

Material and Finish:

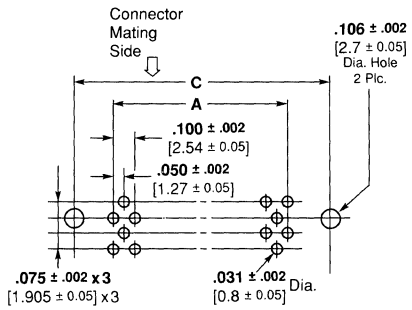
Shell — Zinc diecast, nickel plated over copper underplating

Housing — Thermoplastic, 94V-0 rated, black

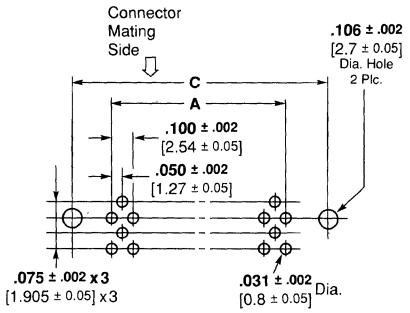
Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area, tin-lead on solder end, with entire contact nickel underplated



PC Board Mounting Dimensions



For 20, 28, 36 and 68 Pos.



For 50 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.*	Dimensions				Part Numbers	
	A	B	C	D	.000008 0.0002	.000030 0.00076
20	**.450** 11.43	**.614** 15.6	**1.079** 27.4	**1.315** 33.4	174726-1	2-174726-1
28	**.650** 16.51	**.815** 20.7	**1.280** 32.5	**1.516** 38.5	174726-2	2-174726-2
36	**.850** 21.59	**1.016** 25.8	**1.480** 37.6	**1.717** 43.6	174726-3	2-174726-3
50	**1.200** 30.48	**1.366** 34.7	**1.831** 46.5	**2.070** 52.5	174726-4	2-174726-4
68	**1.650** 41.91	**1.815** 46.1	**2.280** 57.9	**2.516** 63.9	174726-5	2-174726-5

*96 positions are available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Plug Headers Right-Angle Mount, Series II

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Mounting Holes

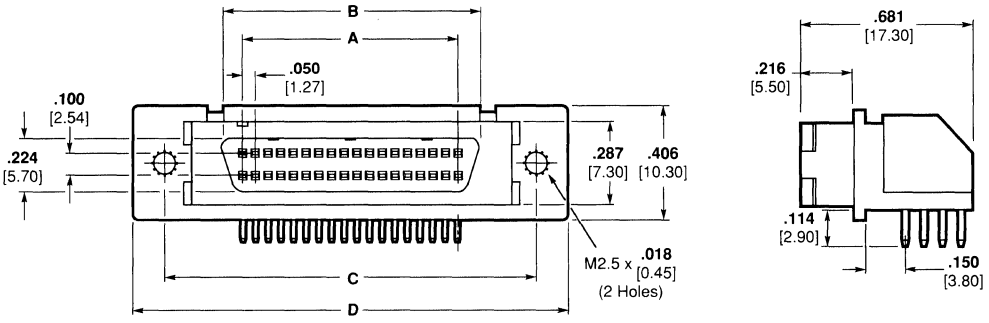
Material and Finish:

Shell — Zinc diecast, nickel plated over copper underplating

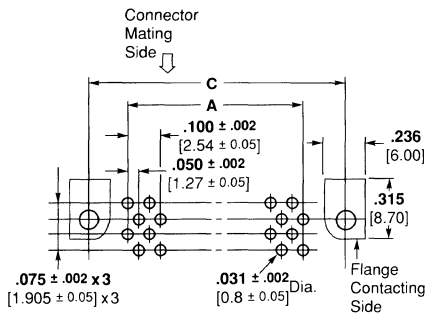
Housing — Thermoplastic, 94V-0 rated, black

Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area, tin-lead on solder end, with entire contact nickel underplated

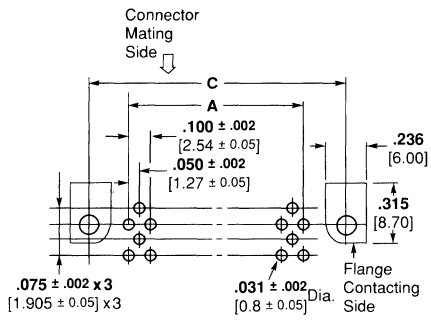
Post Plate — Thermoplastic, 94V-0 rated, black



PC Board Mounting Dimensions



For 20, 28, 36 and 68 Pos.



For 50 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.*	Dimensions				Part Numbers	
	A	B	C	D	.000008 0.0002	.000030 0.00076
20	**.450** 11.43	**.614** 15.8	**1.079** 27.4	**1.315** 33.4	174225-1	2-174225-1
28	**.650** 16.51	**.815** 20.9	**1.280** 32.5	**1.516** 38.5	174225-2	2-174225-2
36	**.850** 21.59	**1.016** 26.0	**1.480** 37.6	**1.717** 43.6	174225-3	2-174225-3
50	**1.200** 30.48	**1.366** 34.9	**1.831** 46.5	**2.070** 52.5	174225-4	2-174225-4
68	**1.650** 41.91	**1.815** 46.3	**2.280** 57.9	**2.516** 63.9	174225-5	2-174225-5

*96 positions are available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Plug Headers Right-Angle Mount, Series II

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Retention Legs

Material and Finish:

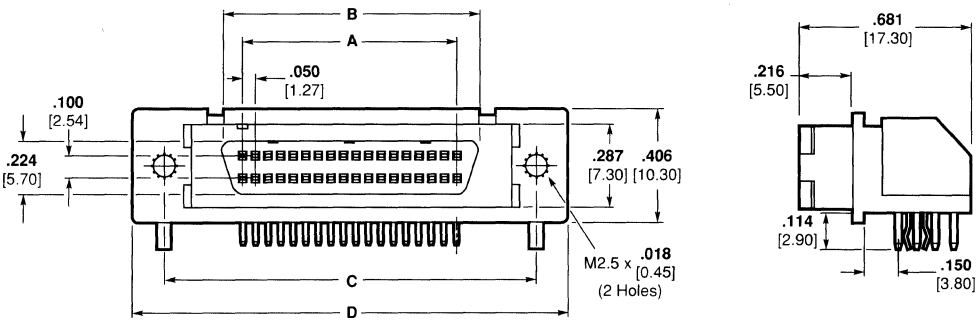
Shell — Zinc diecast, nickel plated over copper underplating

Housing — Thermoplastic, 94V-0 rated, black

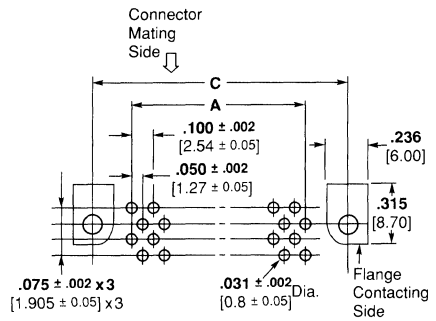
Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area, tin-lead on solder end, with entire contact nickel underplated

Retention Legs — Nickel plated brass

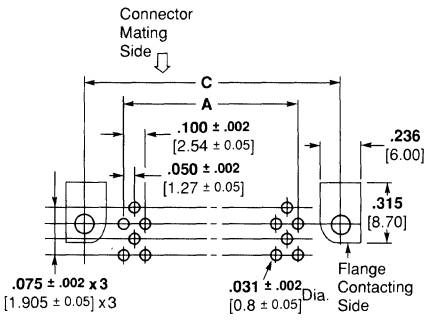
Post Plate — Thermoplastic, 94V-0 rated, black



PC Board Mounting Dimensions



For 20, 28, 36 and 68 Pos.



For 50 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.*	Dimensions				Part Numbers	
	A	B	C	D	.000008 0.0002	.000030 0.00076
20	**.450** 11.43	**.614** 15.8	**1.079** 27.4	**1.315** 33.4	174341-1	2-174341-1
28	**.650** 16.51	**.815** 20.9	**1.280** 32.5	**1.516** 38.5	174341-2	2-174341-2
36	**.850** 21.59	**1.016** 26.0	**1.480** 37.6	**1.717** 43.6	174341-3	2-174341-3
50	**1.200** 30.48	**1.366** 34.9	**1.831** 46.5	**2.070** 52.5	174341-4	2-174341-4
68	**1.650** 41.91	**1.815** 46.3	**2.280** 57.9	**2.516** 63.9	174341-5	2-174341-5

*96 positions are available, consult AMP Incorporated.

AMPLIMITE .050 Series Plug Headers Vertical Mount, Series II

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Screw Mounting Holes

Material and Finish:

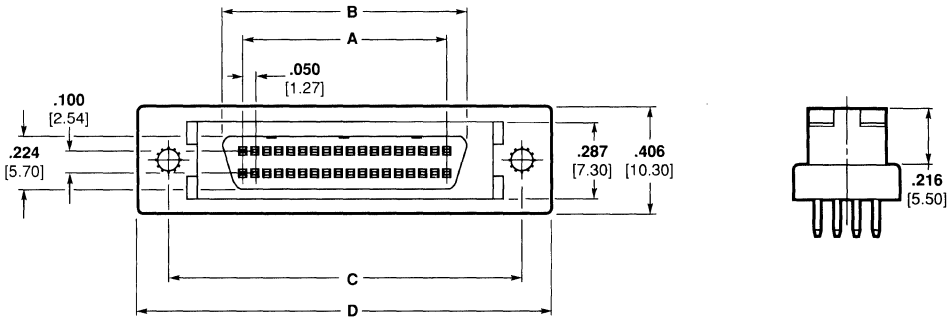
Shell — Zinc diecast, nickel plated over copper underplating

Housing — Thermoplastic, 94V-0 rated, black

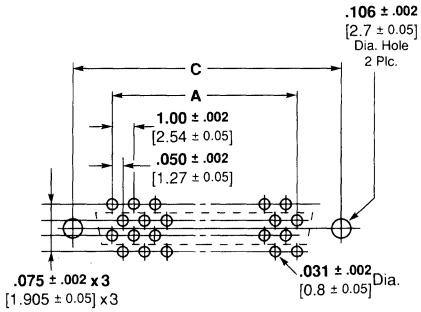
Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area, tin-lead on solder end, with entire contact nickel underplated

Retention Legs — Nickel plated brass

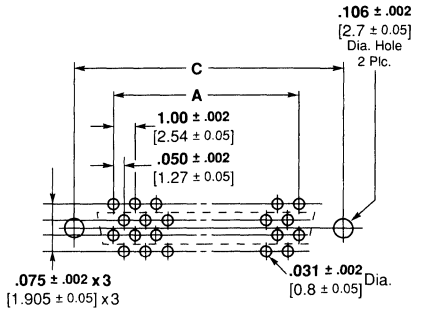
Post Plate — Thermoplastic, 94V-0 rated, black



PC Board Mounting Dimensions



For 50 Pos.



For 68 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.*	Dimensions				Part Numbers	
	A	B	C	D	.000008 0.0002	.000030 0.00076
50	**1.200** 30.48	**1.374** 34.9	**1.831** 46.5	**2.067** 52.5	174339-4	2-174339-4
68	**1.650** 41.91	**1.823** 46.3	**2.280** 57.9	**2.516** 63.9	174339-5	2-174339-5

*96 positions are available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Application Tooling, Series II

Manual Arbor Frame Assembly

Part No. 911149-4
(Includes Comb)

Comb Part No. 911432-4

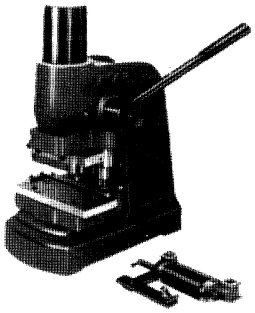
Maximum Connector Size: 100 Position

Insulation Diameter: .020–.035 [0.5–0.88]

Dimensions: 6.299W x 9.055D x 13.386H [160W x 230D x 340H]

Weight: Approx. 22.05lb. [10kg]

Instruction Sheet: IS-443J



Hand Press

Part No. 911123-1

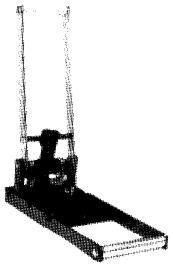
Maximum Connector Size: 50 Position

Applicable Cable: Shielded Jacket Cable

Dimensions: 5.709W x 13.780D x 16.535H [145W x 350D x 420H]

Weight: Approx. 15.43lb. [7kg]

Instruction Sheet: IS-389J



CHAMP .050 Terminator Model A

Part No. 915019-1

Connector Size: 14 thru 120 pos.

Applicable Cable: 28 and 30 AWG [0.08 and 0.05mm²] Maximum Conductor O.D. .0228 [0.58]

Acceptable Cable Length: More than 5.905 [150] (Cable adapter required for less than 23.622 [600]

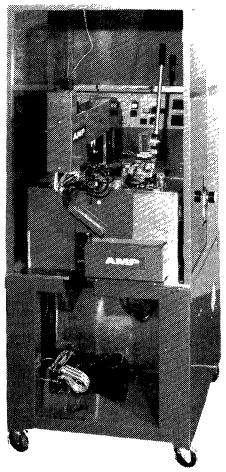
Dimensions: 23.622W x 27.559D x 55.118H [600W x 700D x 1,400H]

Weight: 661.39lb. [300kg]

Power: 100V AC, 50/60Hz.

Air Supply: 71.10psi [5kg/cm²]

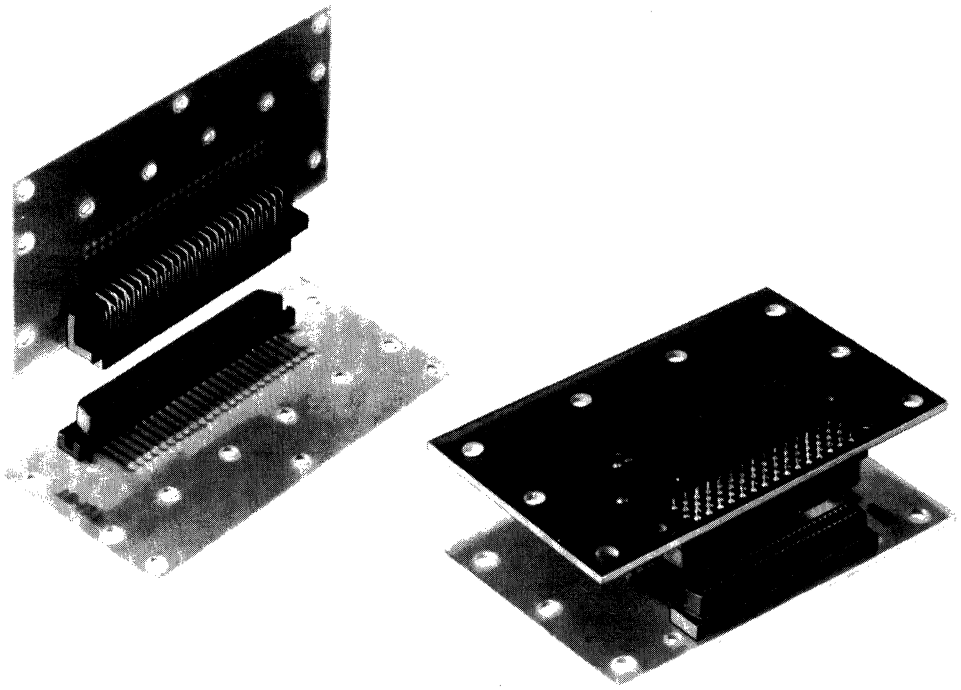
Instruction Sheet: CM-528J



Specifications subject to change.
For latest design specifications...
1-800-522-6752

All-Plastic Board-to-Board Headers AMPLIMITE .050 Series Connectors

(0.50 x .100 [1.27 x 2.54] Centerlines), Series I



All-Plastic Board-to-Board Headers

These Board-mount, plug and receptacle headers offer a high-density D type interface and feature a .050 x .100 [1.27 x 2.54] contact centerline spacing. They are ideally suited for applications where EMI/RFI protection is not necessary. Headers are available in two configurations, right-angle and vertical mount, with a choice of screw down, retention leg or solder post board retention. This versatility in mounting configurations makes possible a variety of board-to-board interconnections, such as horizontal, parallel and right-angle. Right-angle headers are available in 30 through 96 positions and vertical mount headers are available in 20 through 96 positions.

Performance Specifications

Voltage/Current rating: 100V DC, 1 ampere, max.

Dielectric withstanding voltage: 500V AC, 1 minute

Insulation resistance: 1,000 Megohms, min.

Operating temperature range: −55° to +105°C

Technical Documents

Product Specification: 108-5203

Instruction Sheet: IS-292J

Product Facts

- High-density D type interface
- Flame retardant thermoplastic housings, material 94V-0 rated
- Right-angle and vertical configurations available
- Right-angle headers — 30 – 96 contact positions
- Vertical headers — 20 – 96 contact positions
- Recognized under the Component Program of Underwriters Laboratories, Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR7189

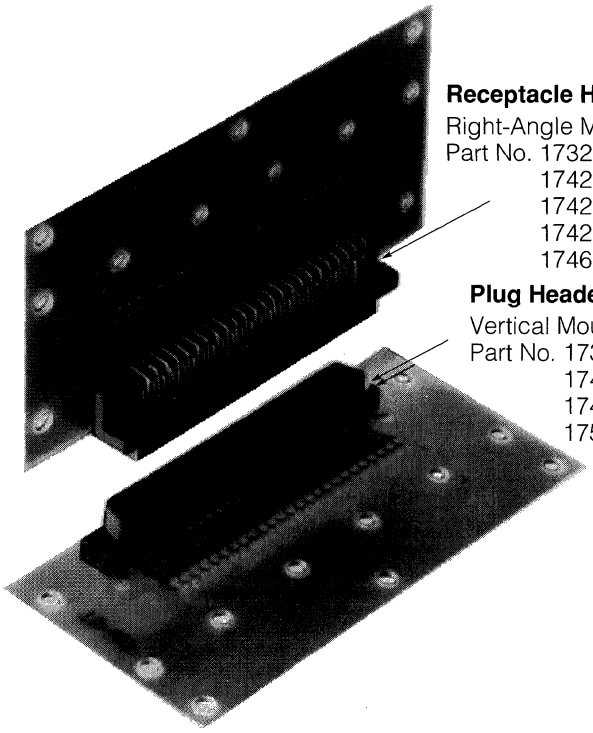
U.L. and C.S.A. Approval Part Nos.: 173277
174207
174217
174213
173280
174216
173278
174218
174214
173279
174215

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)
mm (millimeter)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

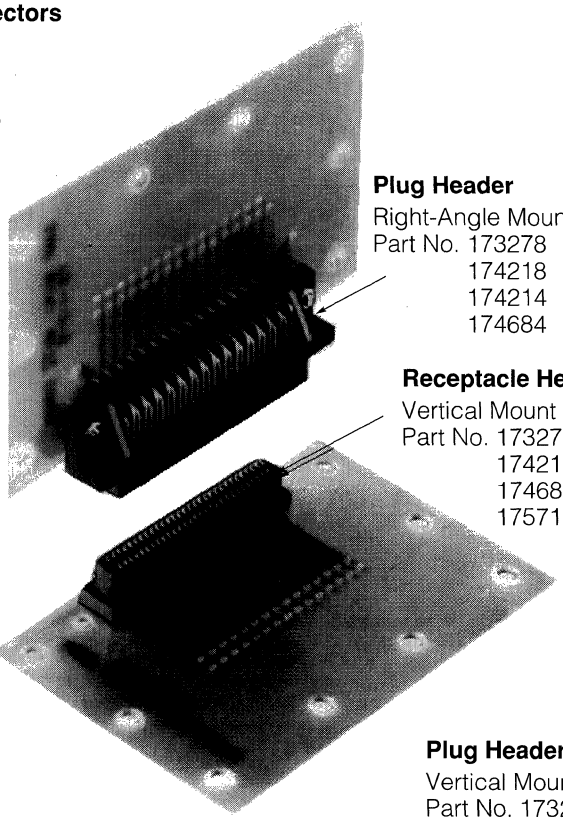
AMPLIMITE .050 Series Board-to-Board Headers Typical Applications, Series I

Right-Angle Connectors



Receptacle Header
Right-Angle Mount
Part No. 173277
174207
174217
174213
174682

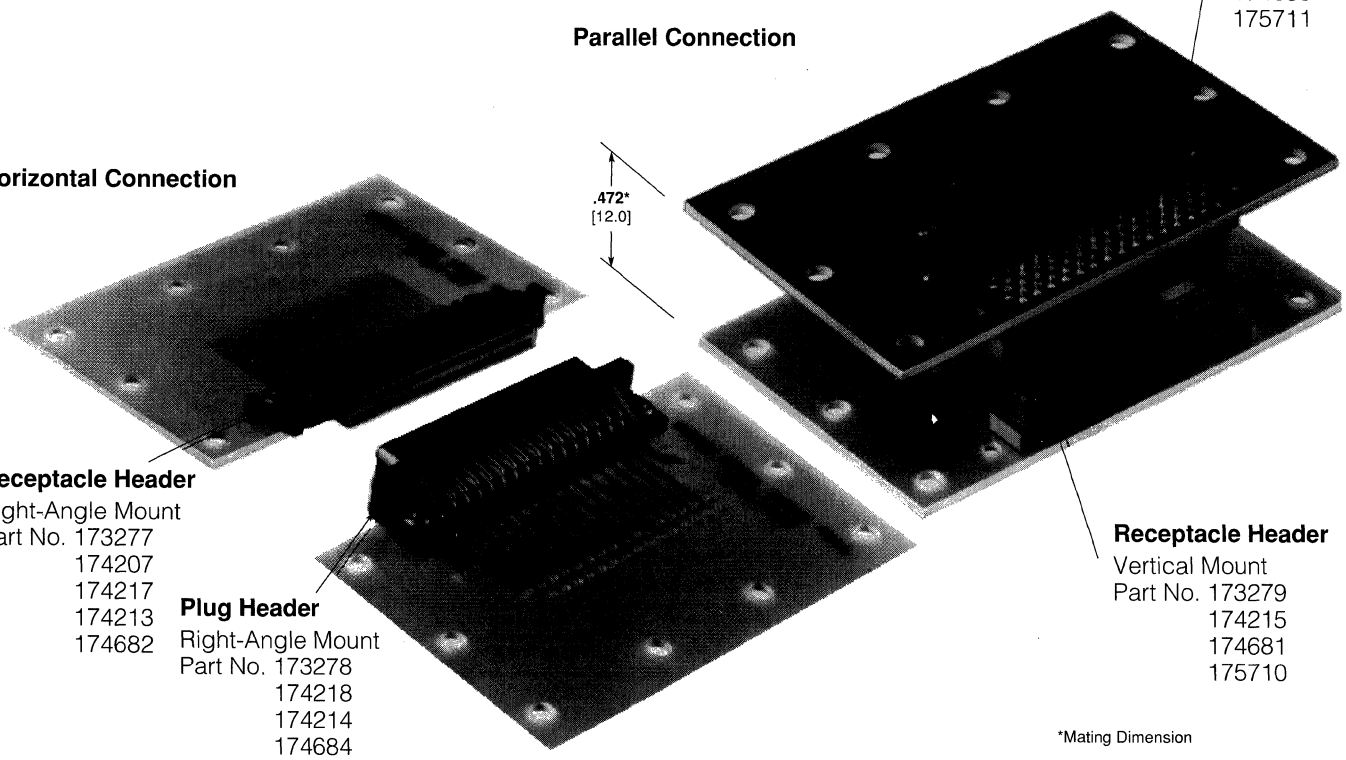
Plug Header
Vertical Mount
Part No. 173280
174216
174683
175711



Plug Header
Right-Angle Mount
Part No. 173278
174218
174214
174684

Receptacle Header
Vertical Mount
Part No. 173279
174215
174681
175710

Parallel Connection



Plug Header
Vertical Mount
Part No. 173280
174216
174683
175711

Horizontal Connection

Receptacle Header
Right-Angle Mount
Part No. 173277
174207
174217
174213
174682

Plug Header
Right-Angle Mount
Part No. 173278
174218
174214
174684

Receptacle Header
Vertical Mount
Part No. 173279
174215
174681
175710

*Mating Dimension

AMPLIMITE .050 Series Receptacle Headers Right-Angle Mount, Series I

Specifications subject to change.
For latest design specifications...
1-800-522-6752

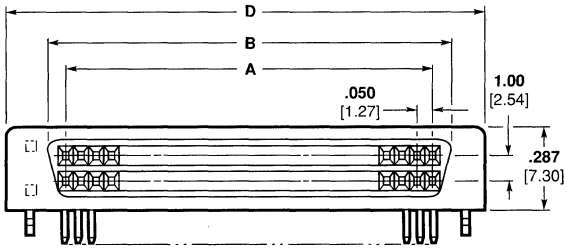
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

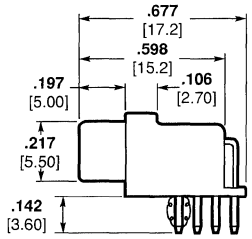
With Retention Leg and Self-Retaining Post (Without Board Standoff)

Material and Finish:

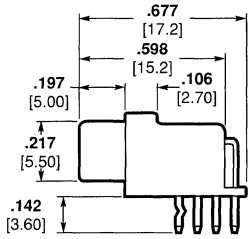
Housing — Thermoplastic, 94V-0 rated, black

Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area. .0254 [0.001] min. tin-lead on soldering area, with entire contact underplated .000050 [0.00127] min. nickel

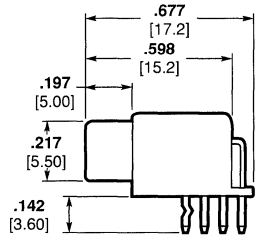




Part No. 174207

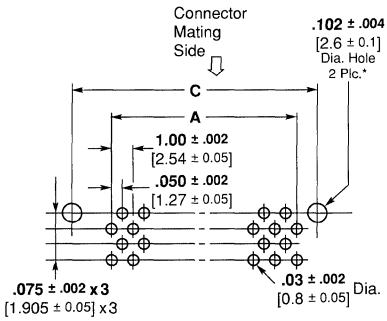


Part No. 174682
34 and 48 Pos.

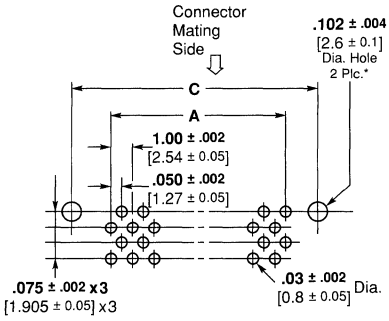


Part No. 174682
68 and 96 Pos.

PC Board Mounting Dimensions



For 34 Pos.



For 48, 68 and 96 Pos.

* Hole for Retention Legs.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.	Dimensions				Part Numbers			
					With Retention Legs		With Self-Retaining Posts	
	A	B	C	D	.000008 [0.0002]	.000030 [0.00076]	.000008 [0.0002]	.000030 [0.00076]
34	**0.80** 20.32	**.965** 24.5	**1.09** 27.72	**1.24** 31.6	174207-5	6-174207-5	174682-5	6-174682-5
48	**1.15** 29.21	**1.32** 33.4	**1.44** 36.61	**1.60** 40.5	174207-6	6-174207-6	174682-6	6-174682-6
68	**1.65** 41.91	**1.82** 46.1	—	**2.10** 53.2	—	—	3-174682-7	8-174682-7
96	**2.35** 59.69	**2.52** 63.9	—	**2.80** 71.0	—	—	3-174682-8	8-174682-8

Note: Connector is secured to the pc board by soldering contact posts.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Receptacle Headers Right-Angle Mount, Series I

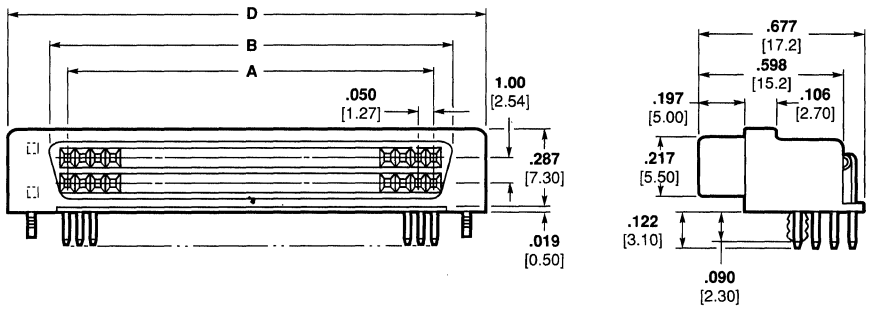
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With and Without Retention Legs (With Standoff)

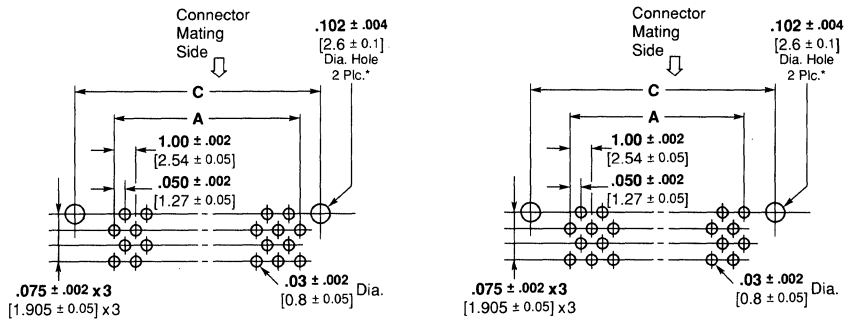
Material and Finish:

Housing — Thermoplastic, 94V-0 rated, black

Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area. .0254 [0.001] min. tin-lead on soldering area, with entire contact underplated .000050 [0.00127] min. nickel



PC Board Mounting Dimensions



For 30 and 50 Pos. **For 40 and 60 Pos.**

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.	Dimensions				Part Numbers			
					With Retention Legs		Without Retention Legs	
	A	B	C	D	.000008 [0.0002]	.000030 [0.00076]	.000008 [0.0002]	.000030 [0.00076]
30	**0.70** 17.78	**.866** 22.0	**.991** 25.18	**1.146** 29.1	174217-1	6-174217-1	174213-1	6-174213-1
40	**0.095** 24.13	**1.114** 28.3	**1.241** 31.53	**1.394** 35.4	174217-2	6-174217-2	174213-2	6-174213-2
50	**1.20** 30.48	**1.366** 34.7	**1.491** 37.88	**1.642** 41.7	174217-2	6-174217-3	174213-3	6-174213-3
60	**1.45** 36.83	**1.614** 41.0	**1.74** 44.23	**1.894** 48.1	174217-4	6-174217-4	174213-4	6-174213-4

Note: Connector is secured by soldering to contact posts. For connector with retention legs, connector is temporarily secured onto pc board prior to soldering.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Receptacle Headers Right-Angle Mount, Series I

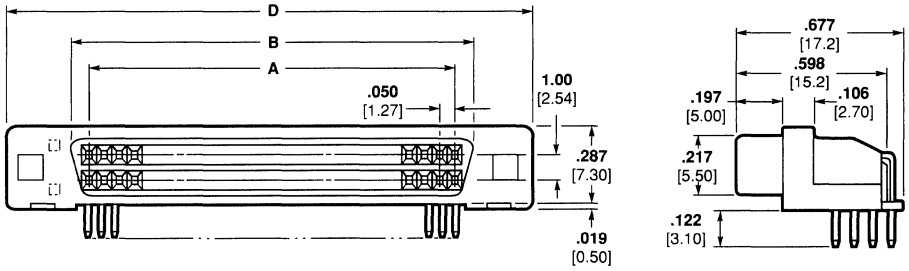
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Screw Mounting Holes

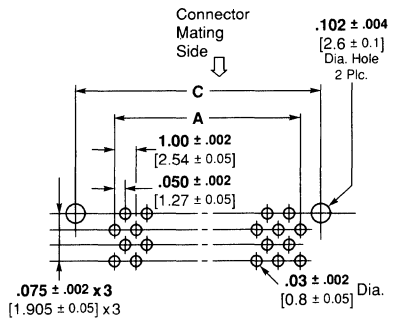
Material and Finish:

Housing—Thermoplastic, 94V-0 rated, black

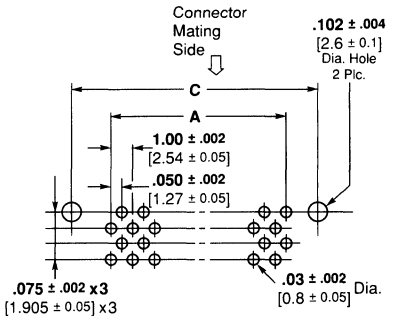
Contacts—Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area. .0254 [0.001] min. tin-lead on soldering area, with entire contact underplated .000050 [0.00127] min. nickel



PC Board Mounting Dimensions



For 30, 34 and 50 Pos.



For 40, 48, 60 and 96 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.	Dimensions				Part Numbers	
	A	B	C	D	.000008 [0.0002]	.000030 [0.00076]
30	**0.70** 17.78	**.866** 22.0	**.991** 25.18	**1.23** 31.2	173277-1	6-173277-1
34	**0.80** 20.32	**.965** 24.5	**1.09** 27.72	**1.33** 33.7	173277-5	6-173277-5
40	**0.95** 24.13	**1.11** 28.3	**1.24** 31.53	**1.48** 37.5	173277-2	6-173277-2
48	**1.15** 29.21	**1.32** 33.4	**1.44** 36.61	**1.68** 42.6	173277-6	6-173277-6
50	**1.20** 30.48	**1.37** 34.7	**1.49** 37.88	**1.73** 43.9	173277-6	6-173277-3
60	**1.45** 36.83	**1.61** 41.0	**1.74** 44.23	**1.98** 50.2	173277-4	6-173277-4
96	**2.33** 59.61	**2.52** 63.9	**2.64** 67.09	**2.88** 73.1	173277-8	6-173277-8

Note: To mount connector to pc board, use M2 screws and nuts (not supplied).

AMPLIMITE .050 Series Receptacle Headers Vertical Mount, Series I

Specifications subject to change.
For latest design specifications...
1-800-522-6752

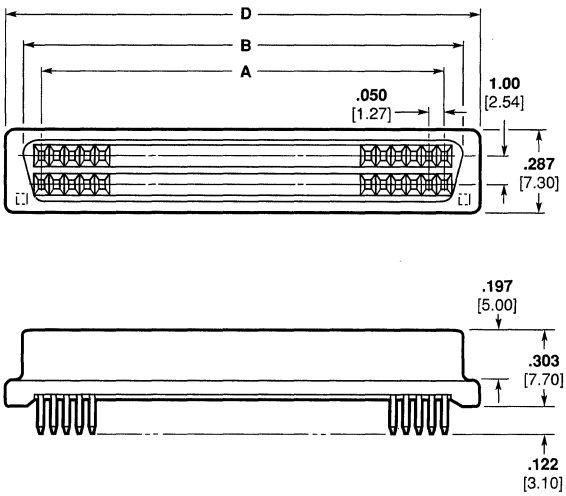
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With and Without Self-Retuning Posts (Short-Type)

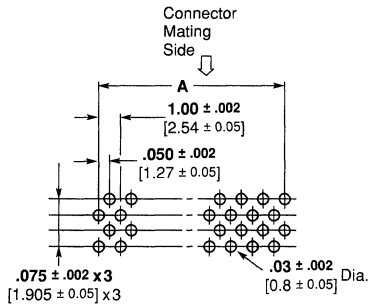
Material and Finish:

Housing—Thermoplastic, 94V-0 rated, black

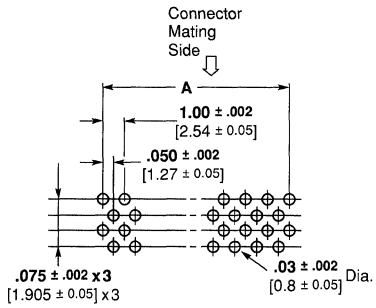
Contacts—Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area. .0254 [0.001] min. tin-lead on soldering area, with entire contact underplated .000050 [0.00127] min. nickel



PC Board Mounting Dimensions



For 20, 40 and 60 Pos.



For 30 and 50 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.	Dimensions			Part Numbers			
				Without Self-Retaining Post		With Self-Retaining Posts	
	A	B	D	.000008 [0.0002]	.000030 [0.00076]	.000008 [0.0002]	.000030 [0.00076]
20	**0.45** 11.43	**.614** 15.6	**.756** 19.2	174215-5	6-174215-5	175710-5	6-175710-5
30	**0.70** 17.78	**.866** 22.0	**1.01** 25.6	174215-1	6-174215-1	175710-1	6-175710-1
40	**0.95** 24.13	**1.11** 28.3	**1.256** 31.9	174215-2	6-174215-2	175710-2	6-175710-2
50	**1.20** 30.48	**1.37** 34.7	**1.51** 38.3	174215-3	6-174215-3	175710-3	6-175710-3
60	**1.45** 36.83	**1.61** 41.0	**1.76** 44.6	174215-4	6-174215-4	175710-4	6-175710-4

AMPLIMITE .050 Series Receptacle Headers Vertical Mount, Series I

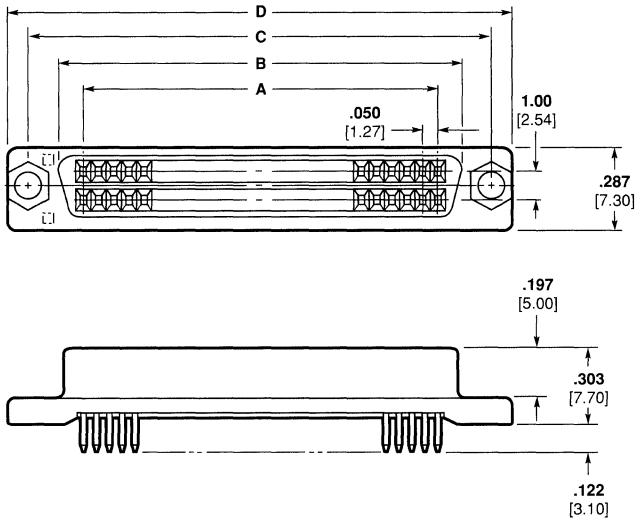
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Screw Mounting Holes

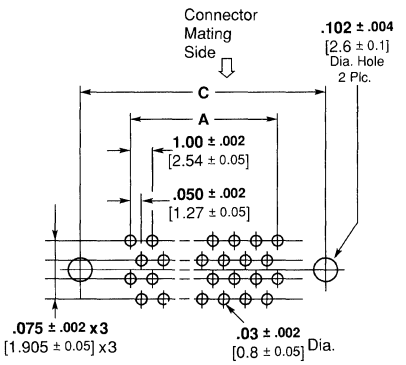
Material and Finish:

Housing— Thermoplastic, 94V-0 rated, black

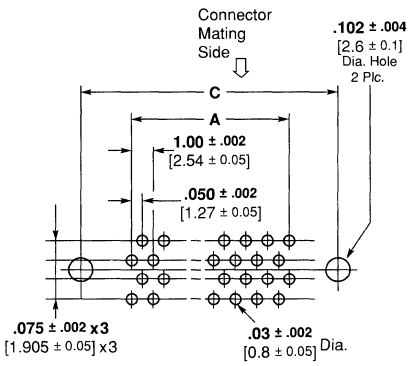
Contacts— Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area. .0254 [0.001] min. tin-lead on soldering area, with entire contact underplated .000050 [0.00127] min. nickel



PC Board Mounting Dimensions



For 30 and 50 Pos.



For 40 and 60 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.	Dimensions				Part Numbers	
	A	B	C	D	.000008 [0.0002]	.000030 [0.00076]
30	**0.70** 17.78	**.866** 22.0	**1.09** 27.75	**1.25** 31.8	173279-1	6-173279-1
40	**0.95** 24.13	**1.11** 28.3	**1.34** 34.10	**1.5** 38.1	173279-2	6-173279-2
50	**1.20** 30.48	**1.37** 34.7	**1.59** 40.45	**1.75** 44.5	173279-3	6-173279-3
60	**1.45** 36.83	**1.61** 41.0	**1.84** 46.80	**2.00** 50.8	173279-4	6-173279-4

Note: To mount connector to pc board, use M2 screws and nuts (not supplied).

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Receptacle Headers Vertical Mount, Series I

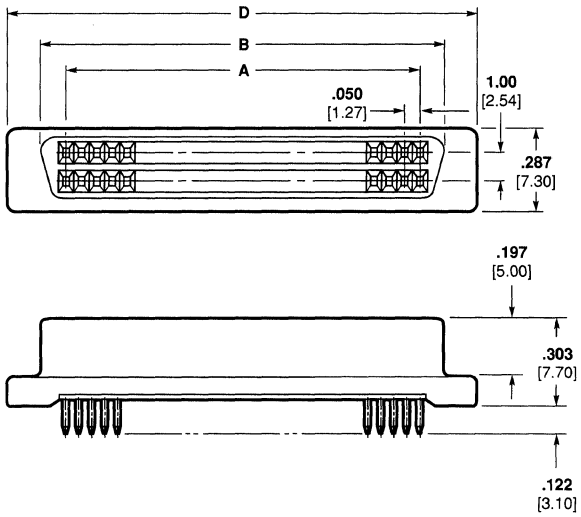
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Self-Retaining Post

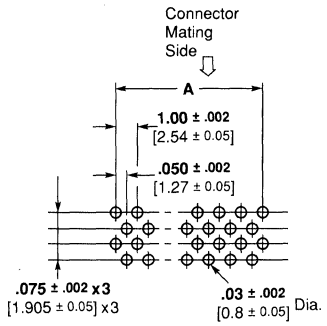
Material and Finish:

Housing — Thermoplastic, 94V-0 rated, black

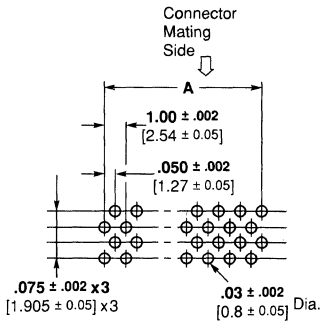
Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area. .0254 [0.001] min. tin-lead on soldering area, with entire contact underplated .000050 [0.00127] min. nickel



PC Board Mounting Dimensions



For 34 Pos.



For 48, 68 and 96 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.	Dimensions			Part Numbers	
	A	B	D	.000008 [0.0002]	.000030 [0.00076]
34	**0.80** 20.32	**.965** 24.5	**1.24** 31.6	174681-5	6-174681-5
48	**1.15** 29.21	**1.32** 33.4	**1.59** 40.5	174681-6	6-174681-6
68	**1.65** 41.91	**1.82** 46.1	**2.10** 53.2	174681-7	6-174681-7
96	**2.35** 59.69	**2.52** 63.9	**2.80** 71.0	174681-8	6-174681-8

AMPLIMITE .050 Series Plug Headers Right-Angle Mount, Series I

Specifications subject to change.
For latest design specifications...
1-800-522-6752

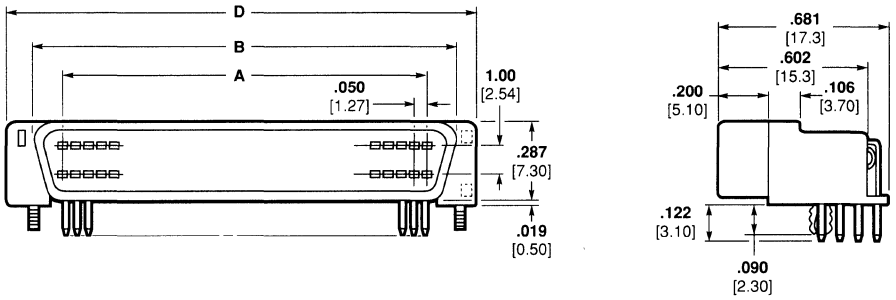
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With and Without Retention Legs

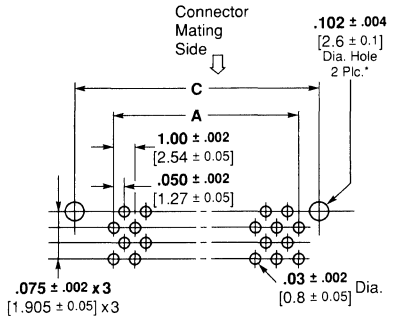
Material and Finish:

Housing — Thermoplastic, 94V-0 rated, black

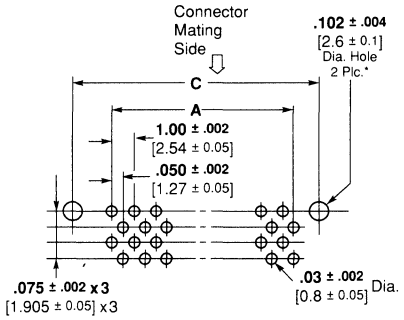
Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area. .0254 [0.001] min. tin-lead on soldering area, with entire contact underplated .000050 [0.00127] min. nickel



PC Board Mounting Dimensions



For 30 and 50 Pos.



For 40 and 60 Pos.

*Hole for Retention Leg.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.	Dimensions				Part Numbers			
					With Retention Legs		Without Retention Legs	
	A	B	C	D	.000008 [0.0002]	.000030 [0.00076]	.000008 [0.0002]	.000030 [0.00076]
30	**0.70** 17.78	**.937** 23.8	**.991** 25.18	**1.15** 29.21	174218-1	6-174218-1	174214-1	6-174214-1
40	**0.95** 24.13	**1.185** 30.1	**1.24** 31.53	**1.39** 35.4	174218-2	6-174218-2	174214-2	6-174214-2
50	**1.20** 30.48	**1.44** 36.5	**1.49** 37.88	**1.65** 41.8	174218-3	6-174218-3	174214-3	6-174214-3
60	**1.45** 36.83	**1.69** 42.8	**1.74** 44.23	**1.89** 48.1	174218-4	6-174218-4	174214-4	6-174214-4

Note: Connector is secured by soldering to contact posts. For connectors with retention legs, connector is temporarily secured onto pc board prior to soldering.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Plug Headers Right-Angle Mount, Series I

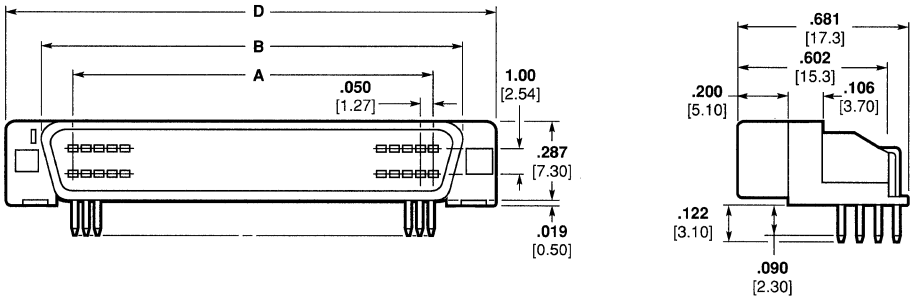
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Screw Mounting Holes

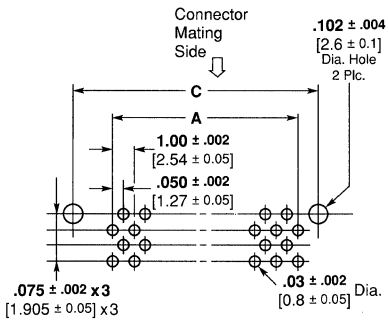
Material and Finish:

Housing — Thermoplastic, 94V-0 rated, black

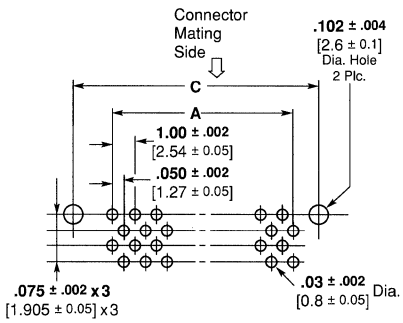
Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area. .0254 [0.001] min. tin-lead on soldering area, with entire contact underplated .000050 [0.00127] min. nickel



PC Board Mounting Dimensions



For 30 and 50 Pos.



For 40 and 60 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.	Dimensions				Part Numbers	
	A	B	C	D	.000008 [0.0002]	.000030 [0.00076]
30	**0.70** 17.78	**.937** 23.8	**.991** 25.18	**1.23** 31.2	173278-1	6-173278-1
40	**0.95** 24.13	**1.19** 30.1	**1.24** 31.53	**1.48** 37.5	173278-2	6-173278-2
50	**1.20** 30.48	**1.44** 36.5	**1.49** 37.88	**1.73** 43.9	173278-3	6-173278-3
60	**1.45** 36.83	**1.66** 42.8	**1.74** 44.23	**1.98** 50.2	173278-4	6-173278-4

Note: To mount connector to pc board, use M2 screws and nuts (not supplied).

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Plug Headers Right-Angle Mount, Series I

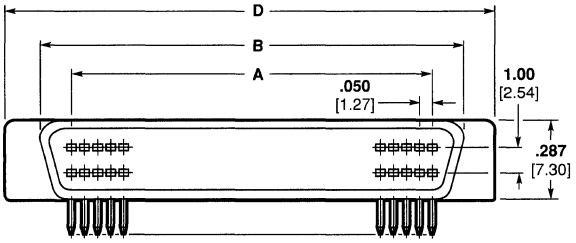
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

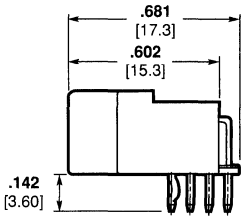
With Self-Retaining Post

Material and Finish:

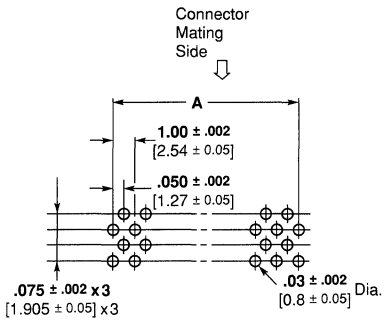
Housing — Thermoplastic, 94V-0 rated, black

Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area. .0254 [0.001] min. tin-lead on soldering area, with entire contact underplated .000050 [0.00127] min. nickel

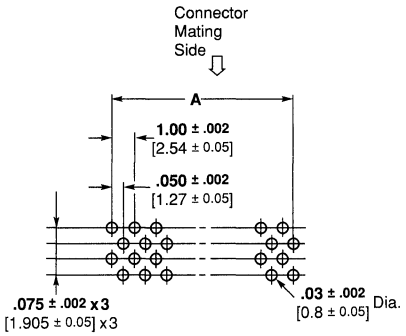




PC Board Mounting Dimensions



For 34 Pos.



For 48, 68 and 96 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.	Dimensions			Part Numbers	
	A	B	D	.000008 [0.0002]	.000030 [0.00076]
34	**0.80** 20.32	**1.04** 26.3	**1.24** 31.6	174684-5	6-174684-5
48	**1.15** 29.21	**1.39** 35.2	**1.59** 40.5	174684-6	6-174684-6
68	**1.65** 41.91	**1.89** 47.9	**2.09** 53.2	174684-7	6-174684-7
96	**2.35** 59.69	**2.59** 65.7	**2.80** 71.0	174684-8	6-174684-8

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Plug Headers Vertical Mount, Series I

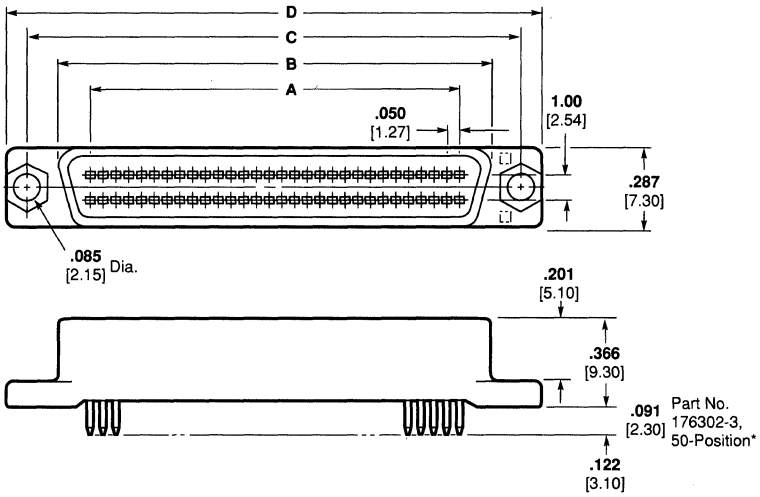
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Screw Mounting Holes

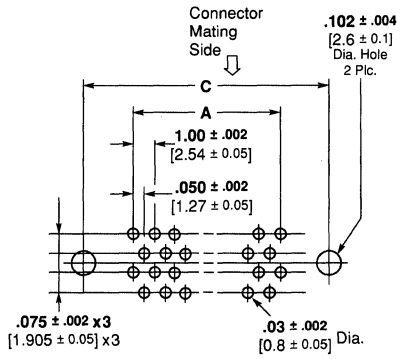
Material and Finish:

Housing — Thermoplastic, 94V-0 rated, black

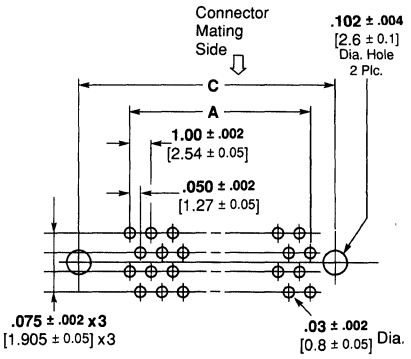
Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area. .0254 [0.001] min. tin-lead on soldering area, with entire contact underplated .000050 [0.00127] min. nickel



PC Board Mounting Dimensions



For 30, 34 and 50 Pos.



For 40, 48, 60 and 96 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.	Dimensions				Part Numbers	
	A	B	C	D	.000008 [0.0002]	.000030 [0.00076]
30	**0.70** 17.78	**.937** 23.8	**1.09** 27.75	**1.25** 31.8	173280-1	6-173280-1
34	**0.80** 20.32	**1.04** 26.3	**1.19** 30.29	**1.35** 34.3	173280-5	6-173280-5
40	**0.95** 24.13	**1.19** 30.1	**1.34** 34.10	**1.50** 38.1	173280-2	6-173280-2
48	**1.15** 29.21	**1.39** 35.2	**1.54** 39.18	**1.70** 43.2	173280-6	6-173280-6
50	**1.20** 30.48	**1.44** 36.5	**1.59** 40.45	**1.75** 44.5	176302-3* 173280-3	6-173280-3
60	**1.45** 36.83	**1.69** 42.8	**1.84** 46.80	**2.00** 50.8	173280-4	6-173280-4
96	**2.35** 59.69	**2.59** 65.7	**2.74** 69.66	**2.90** 73.7	173280-8	6-173280-8

Note: To mount connector to pc board, use M2 screws and nuts (not supplied).

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Plug Headers Vertical Mount, Series I

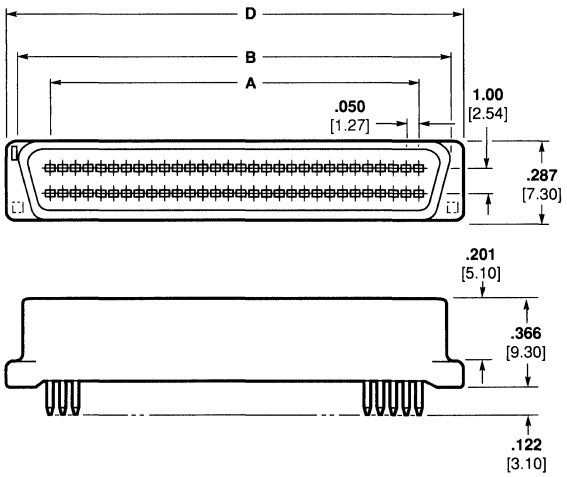
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With and Without Self-Retaining Post (Short Type has flux drain holes)

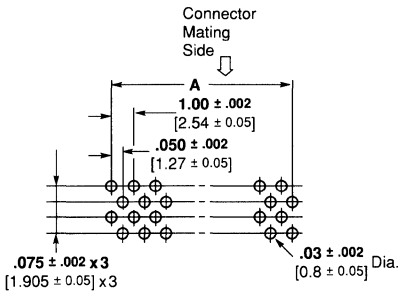
Material and Finish:

Housing — Thermoplastic, 94V-0 rated, black

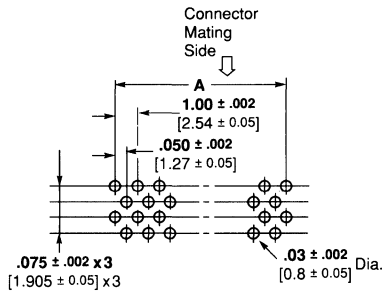
Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area. .0254 [0.001] min. tin-lead on soldering area, with entire contact underplated .000050 [0.00127] min. nickel



PC Board Mounting Dimensions



For 20, 40 and 60 Pos.



For 30 and 50 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.	Dimensions			Part Numbers			
				Without Self-Retaining Post		With Self-Retaining Posts	
	A	B	D	.000008 [0.0002]	.000030 [0.00076]	.000008 [0.0002]	.000030 [0.00076]
20	**0.45** 11.43	**.685** 17.4	**.756** 19.2	174216-5	6-174216-5	175711-5	6-175711-5
30	**0.70** 17.78	**.937** 23.8	**1.01** 25.6	174216-1	6-174216-1	175711-1	6-175711-1
40	**0.95** 24.13	**1.19** 30.1	**1.26** 31.9	174216-2	6-174216-2	175711-2	6-175711-2
50	**1.20** 30.48	**1.44** 36.5	**1.51** 38.5	174216-3	6-174216-3	175711-3	6-175711-3
60	**1.45** 36.83	**1.69** 42.8	**1.76** 44.6	174216-4	6-174216-4	175711-4	6-175711-4

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPLIMITE .050 Series Plug Headers Vertical Mount, Series I

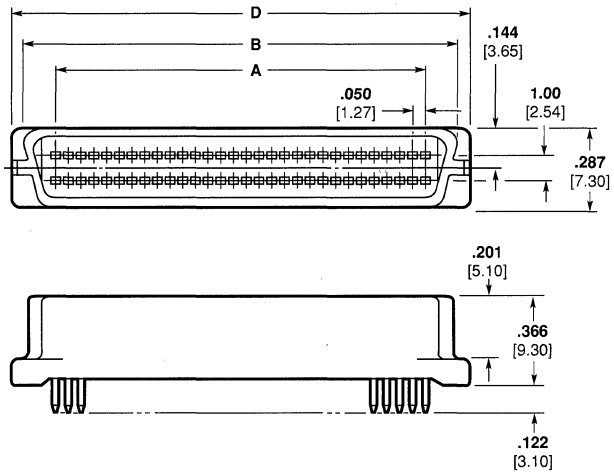
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Self-Retaining Posts (Short Type, has flux drain holes)

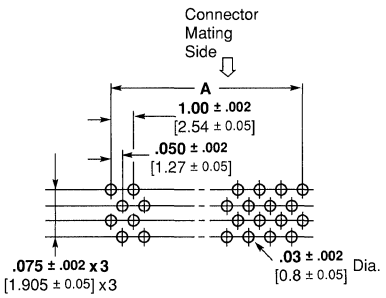
Material and Finish:

Housing — Thermoplastic, 94V-0 rated, black

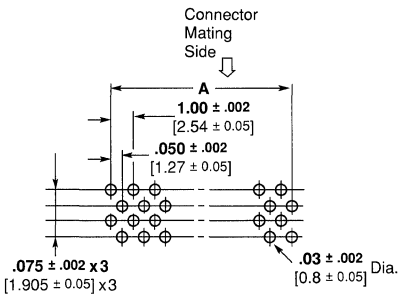
Contacts — Phosphor bronze, duplex plated .000008 [0.0002] min. or .000030 [0.00076] min. gold on contact area. .0254 [0.001] min. tin-lead on soldering area, with entire contact underplated .000050 [0.00127] min. nickel



PC Board Mounting Dimensions



For 34 Pos.



For 48, 68 and 96 Pos.

Notes: 1. Connector side of pc board layout shown.
2. Pc board layouts and connector dimensions illustrated above serve as a guide only; they are not to be used for actual design or construction of customer equipment. Consult AMP customer drawings for detailed pc board layout and connector dimensions requirements.

No. of Pos.	Dimensions			Part Numbers	
	A	B	D	.000008 [0.0002]	.000030 [0.00076]
34	**0.80** 20.32	**1.04** 26.3	**1.24** 31.6	174683-5	6-174683-5
48	**1.15** 29.21	**1.39** 35.2	**1.59** 40.5	174683-6	6-174683-6
68	**1.65** 41.91	**1.89** 47.9	**2.09** 53.2	174683-7	6-174683-7
96	**2.35** 59.69	**2.59** 65.7	**2.80** 71.0	174683-8	6-174683-8

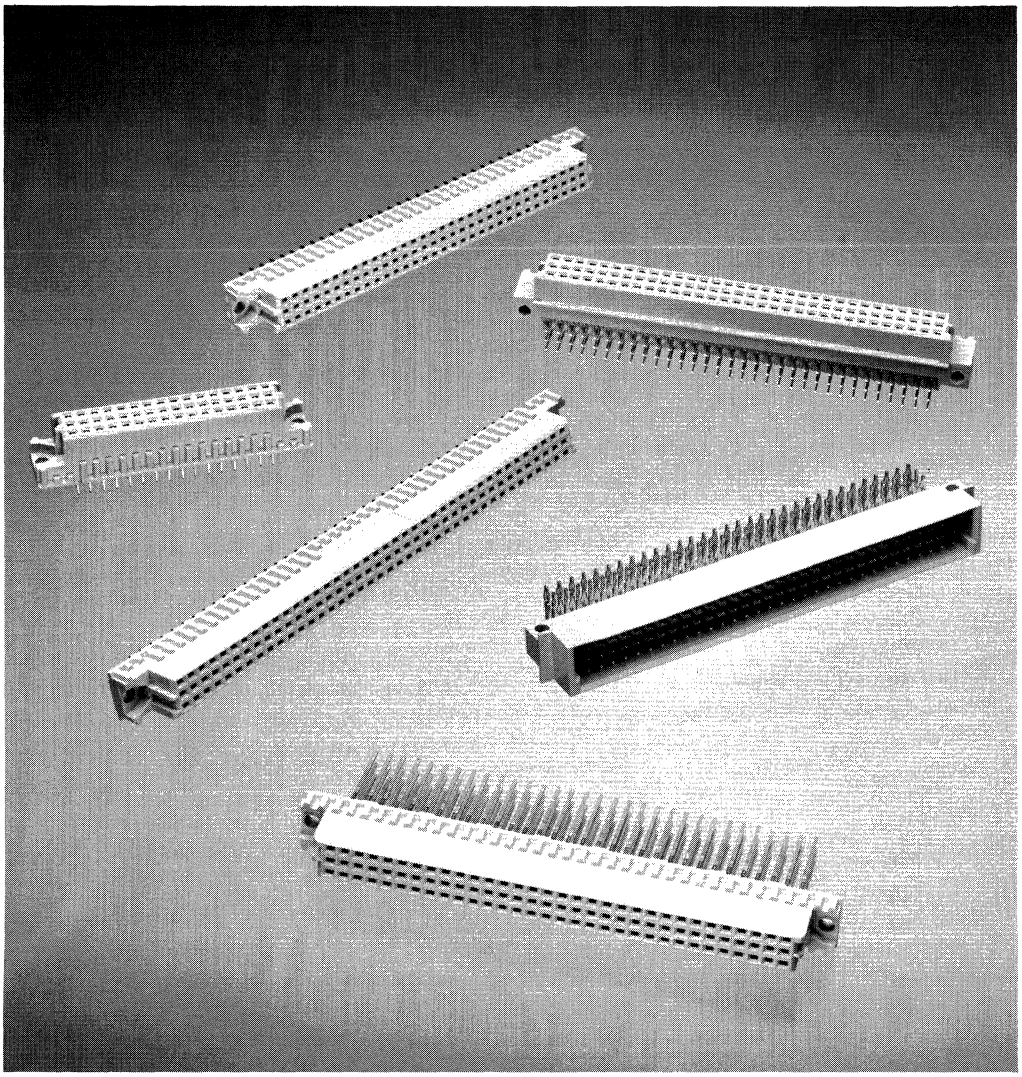
3

AMP Printed Circuit Board Connectors

Qualified AMP Products for Military Applications are summarized on page 2.
For information on Custom High Performance Cable Assemblies see page 3.
Note: See sections 5, 7 and 9 for additional PC Board Connectors.

Eurocard Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



AMP Eurocard Connectors incorporate internationally accepted design advantages of DIN 41612/IEC 603-2 two-piece connectors with the universally known quality, service and delivery of AMP products. The Eurocard Connectors meet DIN 41612/IEC 603-2 specifications.

AMP has the largest domestic manufacturing capability for board-to-board interconnect styles noted, of any of the domestic manufacturers. Domestic production capabilities allow for product modifications within reasonable lead times. These would include make-first/break-last contacts, special plating, housing modifications, hold-down devices and keying.

In addition to the standard board-to-board connectors included in this catalog, wire-to-board, ribbon cable-to-board and high current connectors as well as other product configurations are manufactured in facilities in Europe and the Far East.

Product Facts

- Meets DIN 41612
- Low cost
- Two-piece reliability
- Polarized housings
- Flame retardant
- 2 and 3 row assemblies
- Standard and inverse styles
- Standard DIN sizes as well as half sizes and expanded sizes
- AMP ACTION PIN post assemblies for high reliability and economical motherboard assembly
- Various solder post lengths
- Wrap-type posts
- Selective contact loading
- Domestic and international manufacturing capability

Technical Documents

Product Specifications:
108-19051 Eurocard Connectors (Types B, C, D, F and R)
108-26003 ACTION PIN Contacts

Application Specification:
114-09014 Eurocard Connectors (Types B, C, Q and R)

Instruction Sheets:
IS 6784 Eurocard Connectors (Soldering and Cleaning)
IS 6927 Design Recommendations for PC Board Support Fixture
IS 9623 AMP Seating Tool 535072-1 for Eurocard Receptacles, Type C, with ACTION PIN Posts

DIN 41612
Performance Levels

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches unless specified otherwise.
Values in brackets are equivalent U.S. customary units.

	Level I	Level II	Level III
Test Batch P			
Dimensional Check	Yes	Yes	Yes
Contact Resistance	20 milliohms	20 milliohms	—
Insulation Resistance	1 E 12 ohms	1 E 12 ohms	1 E 11 ohms
Dielectric Strength	1000 V	1000 V	1000 V
Test Batch AP			
Withdrawal Force	0.15 N [.54 oz]	0.15 N [.54 oz]	—
Mating and Unmating Force	90.7/14.2 N [20.4/3.2 lb]	90.7/14.2 N [20.4/3.2 lb]	90.7/14.2 N [20.4/3.2 lb]
Solderability	Yes	Yes	Yes
Dielectric Strength	1000 V	1000 V	—
Vibration	10-2000 Hz, 20G	10-500 Hz, 6G	—
Rapid Temperature Change	−55°C, +125°C	−55°C, +125°C	—
Insulation Resistance	1 E 12 ohms	1 E 12 ohms	—
Dielectric Strength	1000 V	1000 V	—
Visual Examination	Yes	Yes	Yes
Dry Heat	+125°C, 16 hours	+125°C, 16 hours	+125°C, 16 hours
Insulation Resistance	1 E 11 ohms	1 E 11 ohms	1 E 11 ohms
Climate Sequence	5 cycles	5 cycles	—
Humid Heat	+55°C	+40°C	—
Cold	−55°C	−55°C	−55°C
Partial Vacuum	300M bar	300M bar	—
Insulation Resistance	1 E 10 ohms	1 E 10 ohms	1 E .09 ohms
Contact Resistance	20 milliohms	20 milliohms	20 milliohms
Dielectric Strength	1000 V	1000 V	—
Mating and Unmating	90.7/14.2 N [20.4/3.2 lb]	90.7/14.2 N [20.4/3.2 lb]	90.7/14.2 N [20.4/3.2 lb]
Visual Examination	Yes	Yes	Yes
Test Batch BP			
Withdrawal Force	0.15 N [.54 oz]	0.15 N [.54 oz]	0.15 N [.54 oz]
Durability	250 cycles	200 cycles	50 cycles
Industrial Atmosphere	21 days SO_2	4 days SO_2	—
Contact Resistance	20 milliohms	20 milliohms	—
Durability	250 cycles	200 cycles	—
Insulation Resistance	1 E 12 ohms	1 E 12 ohms	—
Dielectric Strength	1000 V	1000 V	—
Withdrawal Force	0.15 N [.54 oz]	0.15 N [.54 oz]	0.15 N [.54 oz]
Visual Examination	Yes	Yes	Yes
Static Axial Force	89.9 N [20.2 lb]	—	—
Test Batch CP			
Humid Heat	56 days	56 days	—
Insulation Resistance	1 E 10 ohms	1 E 10 ohms	—
Contact Resistance	20 milliohms	20 milliohms	—
Dielectric Strength	1000 V	1000 V	—
Visual Examination	Yes	Yes	—
Test Batch DP			
Durability	250 cycles	200 cycles	—
Electric Load at High Temperature	1 ampere at 70°C	1 ampere at 70°C	—
Contact Resistance	20 milliohms	20 milliohms	—
Dielectric Strength	1000 V	1000 V	—
Discharge Voltage	1000 V	1000 V	—
Visual Examination	Yes	Yes	—
Test Batch EP			
Mechanical Strength of Terminals	20 N [4.5 lb]	20 N [4.5 lb]	—
Contact Mount in Use	10 N [2.25 lb]	10 N [2.25 lb]	—
Growth of Mold	Yes	—	—
Visual Examination	Yes	—	—
Combustibility	10 sec burning	—	—

Type B Right-Angle Pin Assemblies with Solder Posts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are equivalent U.S. customary units.

Charts contain dimensions in millimeters over inches.

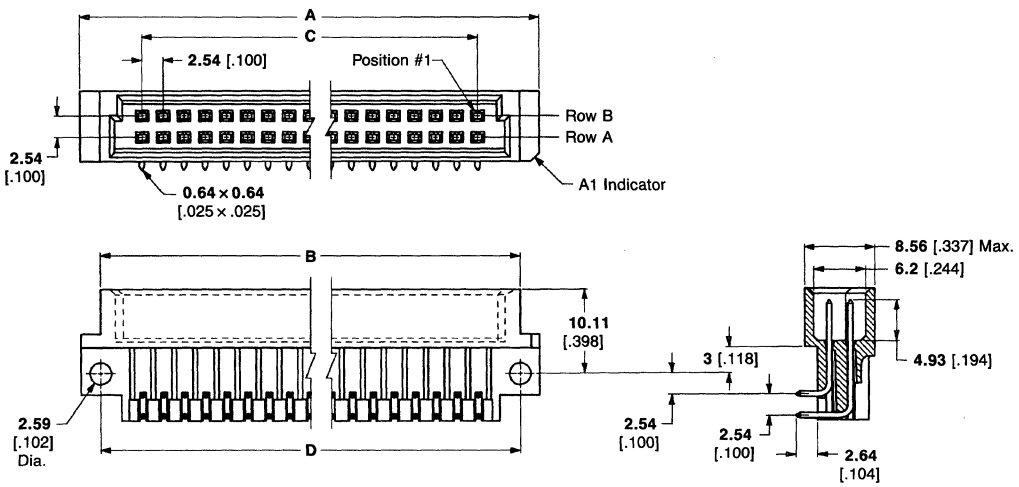
Dimensions are shown for reference purposes only.

Material:

Housing—Polyester
Contacts—Brass

Related Product Data:

DIN Performance Levels - Page 3003
Mateable Connectors - Page 3005
Technical Documents - Page 3002



Standard Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part No.
64	A,B	**93.98** 3.700	**88.90** 3.500	**78.74** 3.100	**88.90** 3.500	II	533248-1

Half Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part No.
32	A,B	**53.34** 2.100	**48.26** 1.900	**38.10** 1.500	**48.26** 1.900	II	533768-1

Type B Vertical Receptacle Assemblies with Solder Posts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are equivalent U.S. customary units.

Charts contain dimensions in millimeters over inches.

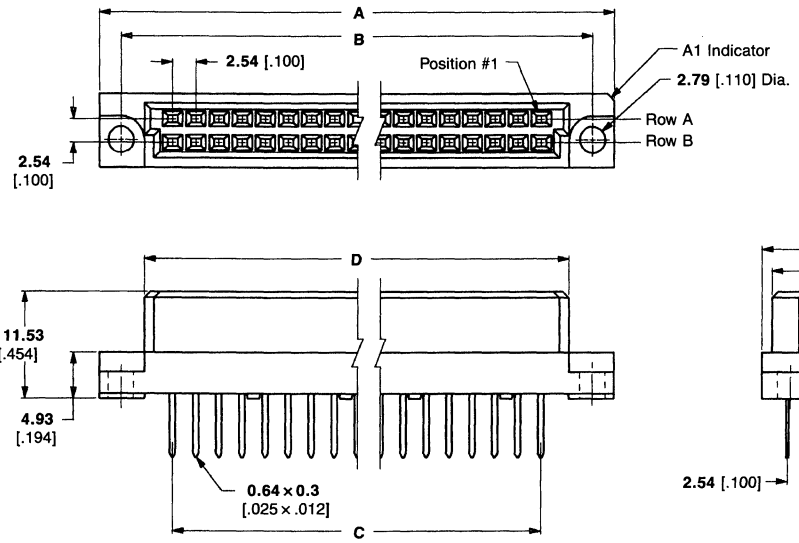
Dimensions are shown for reference purposes only.

Material:

Housing—Polyester
Contacts—Phosphor bronze

Related Product Data:

DIN Performance Levels - Page 3003
Mateable Connectors - Page 3004
Technical Documents - Page 3002



Standard Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part No.
64	A,B	**94.87** 3.735	**89.99** 3.543	**78.74** 3.100	**84.89** 3.342	II	533249-1

Half Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part No.
32	A,B	**54.86** 2.160	**50.01** 1.969	**38.10** 1.500	**44.25** 1.742	II	533767-1

Type C Right-Angle Pin Assemblies with Solder Posts (with and without Boardlocks)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are equivalent U.S. customary units.

Charts contain dimensions in millimeters over inches.

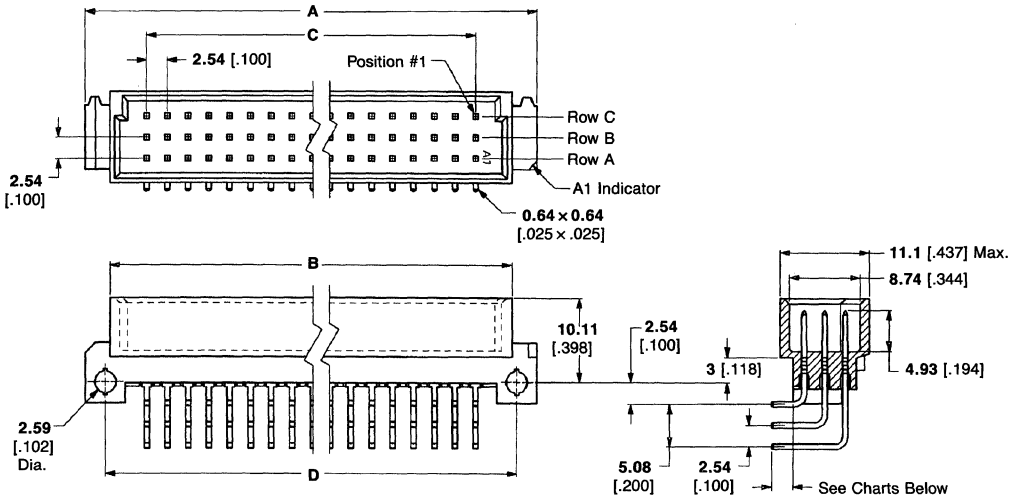
Dimensions are shown for reference purposes only.

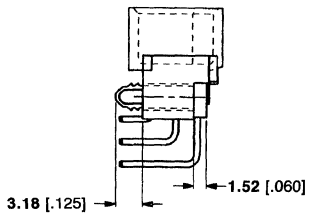
Material:

Housing—Polyester
Contacts and Boardlocks—Brass

Related Product Data:

DIN Performance Levels - Page 3003
Mateable Connectors - Pages 3008, 3009, 3010 and 3013
Technical Documents - Page 3002





With Boardlocks*

Standard Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 2.64 [.104] Post Length	3.30 [.130] Post Length
96	A,B,C	**93.98** 3.700	**87.76** 3.455	**78.74** 3.100	**88.90** 3.500	II	650473-5 / 650913-5*	650947-5
						III	650473-9	650947-9
64	A,C	**93.98** 3.700	**87.76** 3.455	**78.74** 3.100	**88.90** 3.500	II	650945-5	650951-5
						III	650945-9	650951-9

*With Boardlocks

Half Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 2.64 [.104] Post Length	3.30 [.130] Post Length
48	A,B,C	**53.34** 2.100	**47.12** 1.855	**38.10** 1.500	**48.26** 1.900	II	650478-5 / 650916-5*	650948-5
						III	650478-9	650948-9
32	A,C	**53.34** 2.100	**47.12** 1.855	**38.10** 1.500	**48.26** 1.900	II	650946-5	650952-5
						III	650946-9	650952-9

*With Boardlocks

Expanded Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 2.64 [.104] Post Length	3.30 [.130] Post Length
120	A,B,C	**114.30** 4.500	**108.08** 4.255	**99.06** 3.900	**109.22** 4.300	II	650906-5 / 650914-5*	650949-5
						III	650906-9	650949-9
150	A,B,C	**139.70** 5.500	**133.48** 5.255	**124.46** 4.900	**134.62** 5.300	II	650907-5	650950-5
						III	650907-9	650950-9

*With Boardlocks

Type C Right-Angle Pin Assemblies with ACTION PIN Posts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are equivalent U.S. customary units.

Charts contain dimensions in millimeters over inches.

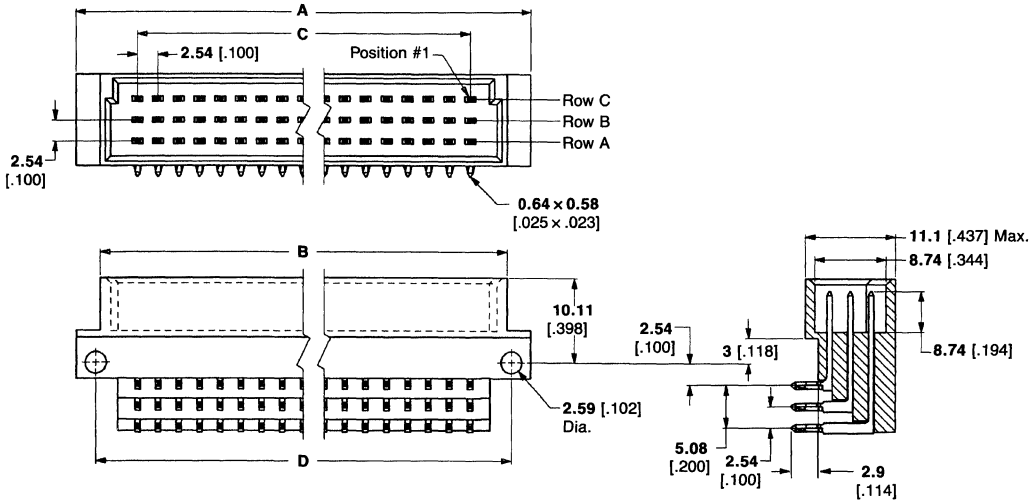
Dimensions are shown for reference purposes only.

Material:

Housing—Polyester
Contacts—Phosphor bronze

Related Product Data:

DIN Performance Levels - Page 3003
Mateable Connectors - Pages 3008, 3009, 3010 and 3013
ACTION PIN Contacts - Pages 3014 and 3412
Technical Documents - Page 3002



Standard Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part No.
96	A,B,C	**93.98** 3.700	**87.76** 3.455	**78.74** 3.100	**88.90** 3.500	II	215605-4

Half Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part No.
48	A,B,C	**53.34** 2.100	**47.12** 1.855	**38.10** 1.500	**48.26** 1.900	II	216398-4

Type C Vertical Receptacle Assemblies with Solder Posts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are equivalent U.S. customary units.

Charts contain dimensions in millimeters over inches.

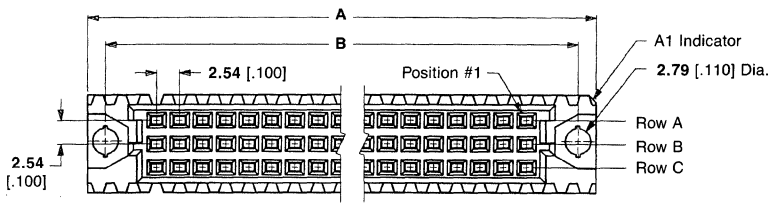
Dimensions are shown for reference purposes only.

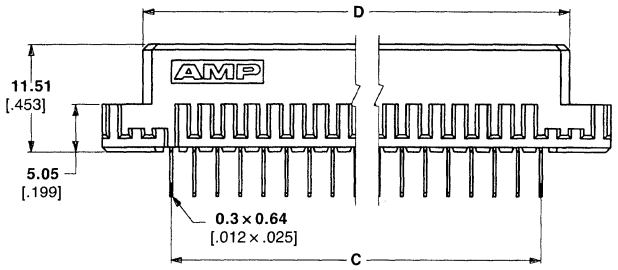
Material:

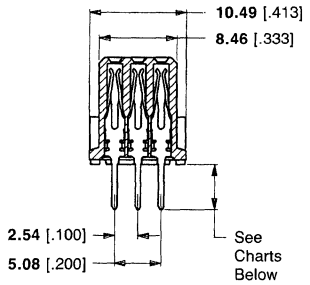
Housing—Polyester
Contacts—Phosphor bronze

Related Product Data:

DIN Performance Levels - Page 3003
Mateable Connectors - Pages 3006, 3007, 3011 and 3012
Technical Documents - Page 3002







Standard Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 2.49 [.098] Post Length	3.30 [.130] Post Length	4.57 [.180] Post Length
96	A,B,C	**93.98** 3.700	**89.99** 3.543	**78.74** 3.100	**84.99** 3.346	II	535089-4	535090-4	535043-4
						III	535089-9	535090-9	535043-9
64	A,C	**93.98** 3.700	**89.99** 3.543	**78.74** 3.100	**84.99** 3.346	II	650458-4	650956-4	650408-4
						III	650458-9	650956-9	650408-9

Half Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 2.49 [.098] Post Length	3.30 [.130] Post Length	4.57 [.180] Post Length
48	A,B,C	**53.34** 2.100	**49.35** 1.943	**38.10** 1.500	**44.35** 1.746	II	535091-4	535070-4	535071-4
						III	535091-9	535070-9	535071-9
32	A,C	**53.34** 2.100	**49.35** 1.943	**38.10** 1.500	**44.35** 1.746	II	650459-4	650957-4	650466-4
						III	650459-9	650957-9	—

Expanded Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 2.49 [.098] Post Length	3.30 [.130] Post Length	4.57 [.180] Post Length
120	A,B,C	**114.30** 4.500	**110.31** 4.343	**99.06** 3.900	**105.31** 4.146	II	535097-4	535098-4	535099-4
						III	535097-9	535098-9	—
150	A,B,C	**139.70** 5.500	**135.71** 5.343	**124.46** 4.900	**130.71** 5.146	II	650404-4	650405-4	650406-4
						III	650404-9	650405-9	—

Type C Vertical Receptacle Assemblies with ACTION PIN Posts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are equivalent U.S. customary units.

Charts contain dimensions in millimeters over inches.

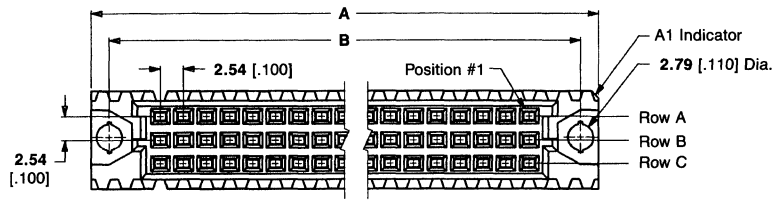
Dimensions are shown for reference purposes only.

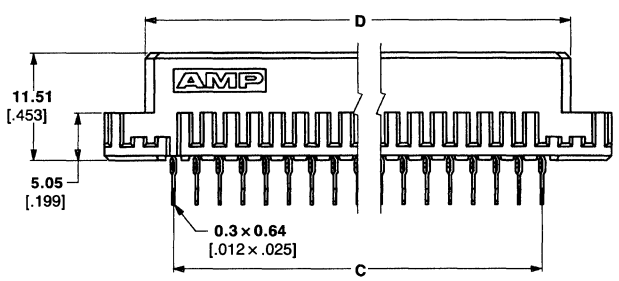
Material:

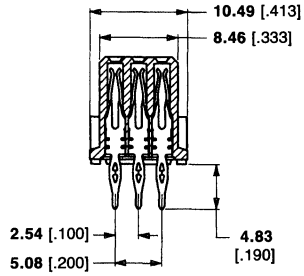
Housing—Polyester
Contacts—Phosphor bronze

Related Product Data:

DIN Performance Levels - Page 3003
Mateable Connectors - Pages 3006, 3007, 3011 and 3012
ACTION PIN Contacts - Pages 3014 and 3412
Technical Documents - Page 3002







Standard Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos.
96	A,B,C	**93.98** 3.700	**89.99** 3.543	**78.74** 3.100	**84.99** 3.346	II III	535032-4 535032-9
64	A,C	**93.98** 3.700	**89.99** 3.543	**78.74** 3.100	**84.99** 3.346	II III	535059-4 535059-9

Half Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos.
48	A,B,C	**53.34** 2.100	**49.35** 1.943	**38.10** 1.500	**44.35** 1.746	II III	535034-4 535034-9
32	A,C	**53.34** 2.100	**49.35** 1.943	**38.10** 1.500	**44.35** 1.746	II III	535068-4 535068-9

Expanded Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos.
120	A,B,C	**114.30** 4.500	**110.31** 4.343	**99.06** 3.900	**105.31** 4.146	II III	535079-4 535079-9
150	A,B,C	**139.70** 5.500	**135.71** 5.343	**124.46** 4.900	**130.71** 5.146	II III	535080-4 535080-9

Note: These receptacle assemblies are toolless "flat-rock" connectors

Type C Vertical Receptacle Assemblies with ACTION PIN Posts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are equivalent U.S. customary units.

Charts contain dimensions in millimeters over inches.

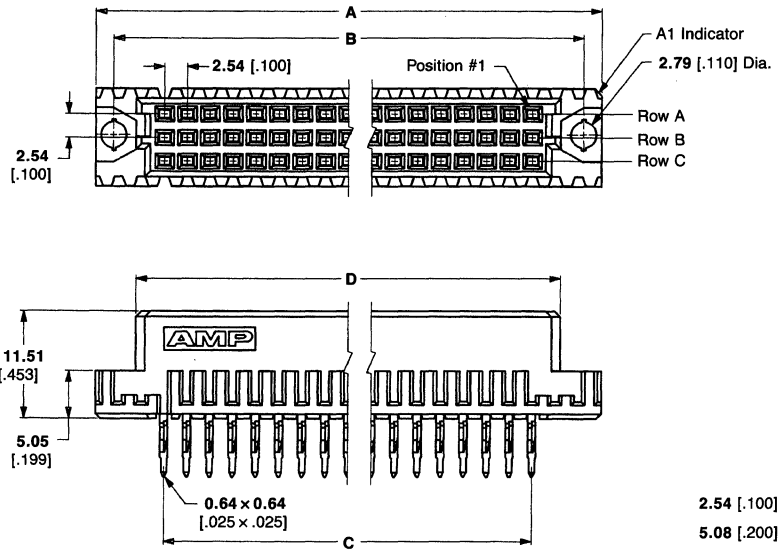
Dimensions are shown for reference purposes only.

Material:

Housing—Polyester
Contacts—Phosphor bronze

Related Product Data:

DIN Performance Levels - Page 3003
Mateable Connectors - Pages 3006, 3007, 3011 and 3012
ACTION PIN Contacts - Pages 3014 and 3412
Application Tooling - Page 3015
Technical Documents - Page 3002



Standard Size (for 2.36 [.093] Thick PC Boards)

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 13.23 [.521] Post Length	16.99 [.669] Post Length
96	A,B,C	**93.98**	**89.99**	**78.74**	**84.99**	II	215912-4	215614-4
		3.700	3.543	3.100	3.346	—	1-215912-4*	1-215614-4*
64	A,C	**93.98**	**89.99**	**78.74**	**84.99**	II	215913-4	215781-4
		3.700	3.543	3.100	3.346	—	1-215913-4*	1-215781-4*

*Precious metal plating in contact area and for 5.08 [.200] from tip of post; gold flash on remainder of contact.

Standard Size (for 1.57 [.062] Thick PC Boards)

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 13.23 [.521] Post Length	16.99 [.669] Post Length
96	A,B,C	**3.700**	**3.543**	**3.100**	**3.346**	II	215950-4	215783-4
		93.98	89.99	78.74	84.99	—	1-215950-4*	1-215783-4*
64	A,C	**93.98**	**89.99**	**78.74**	**84.99**	II	215951-4	215784-4
		3.700	3.543	3.100	3.346	—	1-215951-4*	1-215784-4*

*Precious metal plating in contact area and for 5.08 [.200] from tip of post; gold flash on remainder of contact.

Type R Vertical Pin Assemblies with Solder Posts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are equivalent U.S. customary units.

Charts contain dimensions in millimeters over inches.

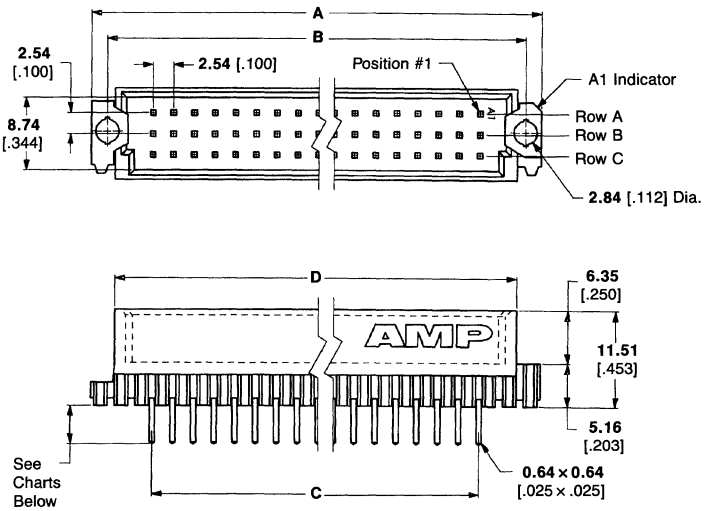
Dimensions are shown for reference purposes only.

Material:

Housing—Polyester
Contacts—Brass

Related Product Data:

DIN Performance Levels - Page 3003
Mateable Connectors - Pages 3008, 3009 and 3013
Technical Documents - Page 3002



Standard Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 3.30 [.130] Post Length	4.57 [.180] Post Length
96	A,B,C	**95.00** 3.740	**89.99** 3.543	**78.74** 3.100	**88.01** 3.465	II	650908-5	650470-5
						III	650908-9	650470-9
96	A,C	**95.00** 3.740	**89.99** 3.543	**78.74** 3.100	**88.01** 3.465	II	650933-5	650934-5
						III	650933-9	650934-9

Half Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 3.30 [.130] Post Length	4.57 [.180] Post Length
48	A,B,C	**54.37** 2.140	**49.35** 1.943	**38.10** 1.500	**47.37** 1.865	II	650479-5	650477-5
						III	650479-9	650477-9
32	A,C	**54.37** 2.140	**49.35** 1.943	**38.10** 1.500	**47.37** 1.865	II	650935-5	650936-5
						III	650935-9	650936-9

Expanded Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 3.30 [.130] Post Length	4.57 [.180] Post Length
120	A,B,C	**115.31** 4.540	**110.31** 4.343	**99.06** 3.900	**108.33** 4.265	II	650919-5	650910-5
						III	650919-9	650910-9
150	A,B,C	**140.71** 5.540	**135.71** 5.343	**124.46** 4.900	**133.73** 5.265	II	650922-5	650911-5
						III	650922-9	650911-4

Type R Vertical Pin Assemblies with ACTION PIN Posts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are equivalent U.S. customary units.

Charts contain dimensions in millimeters over inches.

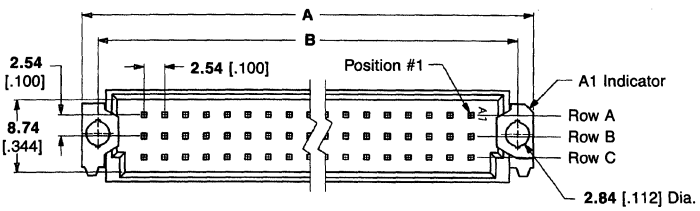
Dimensions are shown for reference purposes only.

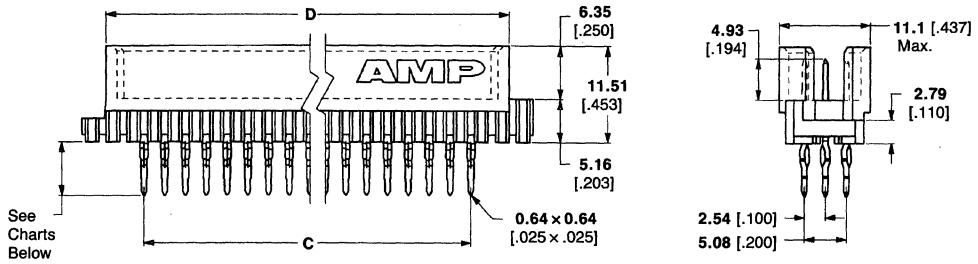
Material:

Housing—Polyester
Contacts—Phosphor bronze

Related Product Data:

DIN Performance Levels - Page 3003
Mateable Connectors - Pages 3008, 3009 and 3013
ACTION PIN Contacts - Pages 3014 and 3412
Application Tooling - Page 3015
Technical Documents - Page 3002





Standard Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 6.35 [.250] Post Length	13.23 [.521] Post Length
96	A,B,C	**95.00** 3.740	**89.99** 3.543	**78.74** 3.100	**88.01** 3.465	II	650889-5	650909-5
						—	—	1-650909-4*
						III	650889-9	650909-9
						—	—	1-650909-9*
64	A,C	**95.00** 3.740	**89.99** 3.543	**78.74** 3.100	**88.01** 3.465	II	650912-5	650930-5
						—	—	1-650930-4*
						III	650912-9	650930-9
						—	—	1-650930-9*

*Precious metal plating in contact area and for 5.08 [.200] from tip of post; gold flash on remainder of contact.

Half Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 6.35 [.250] Post Length	13.23 [.521] Post Length
48	A,B,C	**54.37** 2.140	**49.35** 1.943	**38.10** 1.500	**47.37** 1.865	II	650918-5	650917-5
						III	650918-9	650917-9
32	A,C	**54.37** 2.140	**49.35** 1.943	**38.10** 1.500	**47.37** 1.865	II	650931-5	650932-5
						III	650931-9	650932-9

Expanded Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 6.35 [.250] Post Length	13.23 [.521] Post Length
120	A,B,C	**115.31** 4.540	**110.31** 4.343	**99.06** 3.900	**108.33** 4.265	II	650921-5	650920-5
						III	650921-9	650920-9
150	A,B,C	**140.71** 5.540	**135.71** 5.343	**124.46** 4.900	**133.71** 5.265	II	650924-5	650923-5
						III	650924-9	650923-9

Type R Right-Angle Receptacle Assemblies with Solder Posts (with and without Boardlocks)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are equivalent U.S. customary units.

Charts contain dimensions in millimeters over inches.

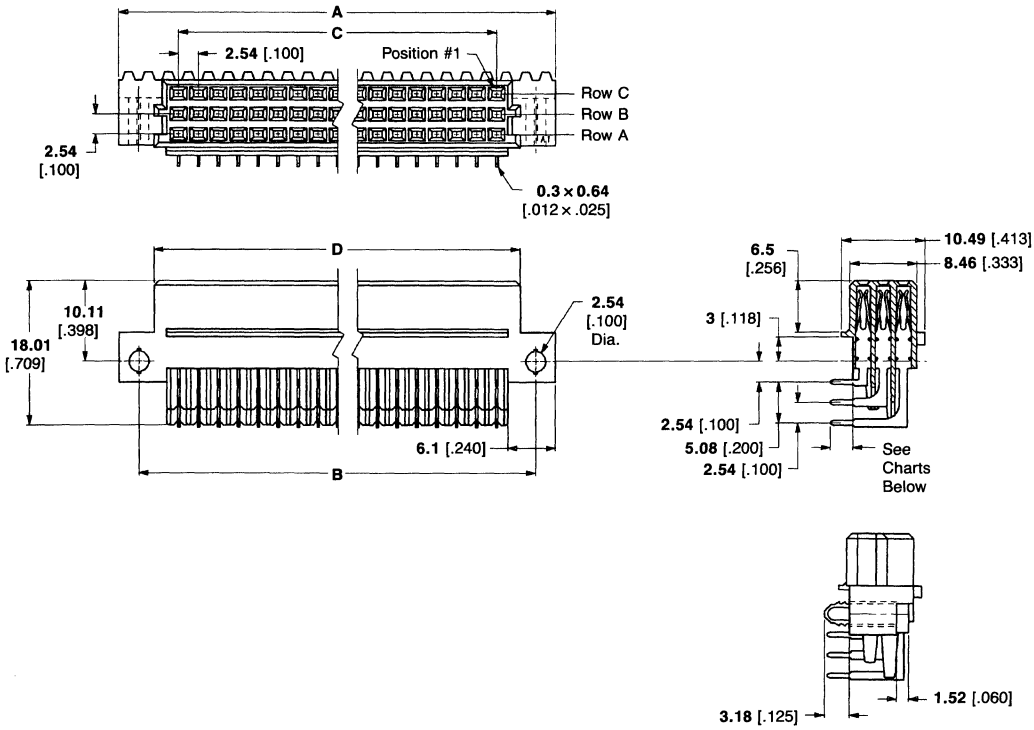
Dimensions are shown for reference purposes only.

Material:

Housing—Polyester
Contacts and Boardlocks—Phosphor bronze

Related Product Data:

DIN Performance Levels - Page 3003
Mateable Connectors - Pages 3006, 3007, 3011 and 3012
Technical Documents - Page 3002



With Boardlocks*

Standard Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 2.79 [.110] Post Length	4.24 [.167] Post Length
96	A,B,C	**93.87** 3.696	**88.90** 3.500	**78.74** 3.100	**84.99** 3.346	II	650461-4 650895-4*	650462-4
						III	650461-9	650462-9
64	A,C	**93.87** 3.696	**88.90** 3.500	**78.74** 3.100	**84.99** 3.346	II	650870-4	650871-4
						III	650870-9	650871-9

*With Boardlocks

Half Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 2.79 [.110] Post Length	4.24 [.167] Post Length
48	A,B,C	**53.24** 2.096	**48.26** 1.900	**38.10** 1.500	**44.35** 1.746	II	650868-4 650893-4*	650869-4
						III	650868-9	650869-9
32	A,C	**53.24** 2.096	**48.26** 1.900	**38.10** 1.500	**44.35** 1.746	II	650867-4	650958-4
						III	650867-9	650958-9

*With Boardlocks

Expanded Size

No. of Pos.	Rows Loaded	Dimensions A	B	C	D	DIN Level	Part Nos. 2.79 [.110] Post Length	4.24 [.167] Post Length
120	A,B,C	**114.20** 4.496	**109.22** 4.300	**99.06** 3.900	**105.21** 4.142	II	650874-4 650899-4*	650876-4
						III	650874-9	650876-9
150	A,B,C	**139.60** 5.496	**134.62** 5.300	**124.46** 4.900	**130.61** 5.142	II	650875-4 650959-4*	650877-4
						III	650875-9	650877-9

*With Boardlocks

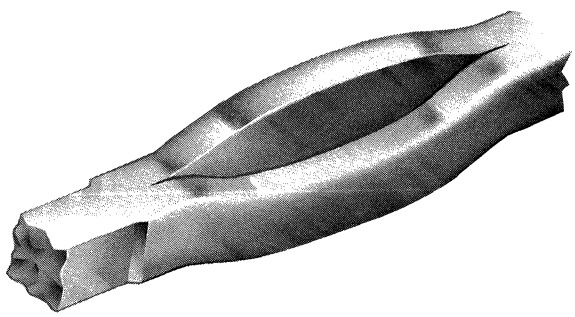


Figure 1.

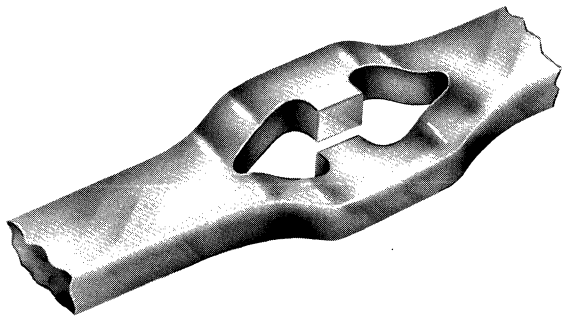


Figure 2.

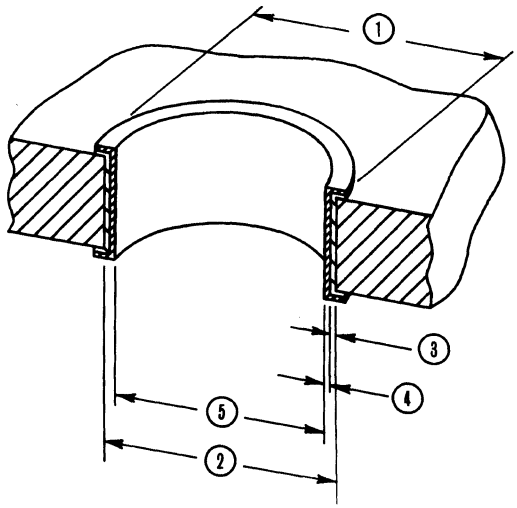
ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area ensures oxide breakthrough and prevents corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

ACTION PIN Thin Stock contacts extend the press-fit technology into thinner contact materials. The lower insertion force provided by this pin is ideal for applications requiring thinner contacts and/or toolless connector applications where wrap-type retention requirements are not needed.

ACTION PIN Thin Stock contacts maintain all of the interconnection properties of the ACTION PIN contact shown at the left.

PC Board Thickness

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To ensure optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



① Annular Ring (See Note)
② Drilled Hole
③ Copper Thickness
④ Tin-Lead Thickness
⑤ Plated-Through Hole

For more information on ACTION PIN Press-Fit Contacts
See page 3412

ACTION PIN Contact/PC Board Applications

Connector Type (Page Ref.)	ACTION PIN Contact		Drilled Hole Diameter ②	Plating Thicknesses		Plated-Through Hole Diameter ⑤	Distortion Specification**	
	Configuration	Material Thickness		Copper ③*	Tin-Lead ④		Average	Maximum
Type C; Vertical Receptacle Assemblies (page 3010)	Figure 1	**0.64** .025	**1.151±0.03** .0453±.001	**0.03 - 0.08** .001 - .003	**0.008** .0003 Min.	**0.94 - 1.09** .037 - .043	**Not Specified**	**Not Specified**
Type R; Vertical Pin Assemblies (page 3012)	Figure 1	**0.64** .025	**1.151±0.03** .0453±.001	**0.03 - 0.08** .001 - .003	**0.008** .0003 Min.	**0.94 - 1.09** .037 - .043	**0.038** .0015	**0.05** .002
Type C; Vertical Receptacle Assemblies (page 3009)	Figure 2	**0.30** .012	**1.151±0.03** .0453±.001	**0.03 - 0.08** .001 - .003	**0.008** .0003 Min.	**0.94 - 1.09** .037 - .043	**0.038** .0015	**0.05** .002

* Maximum hardness of copper layer is 150 Knoop
** Radial hole distortion
Note: Recommended annular ring diameter is hole diameter plus **0.51** [.020]

Application Tooling for Eurocard Receptacle Assemblies with ACTION PIN Posts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

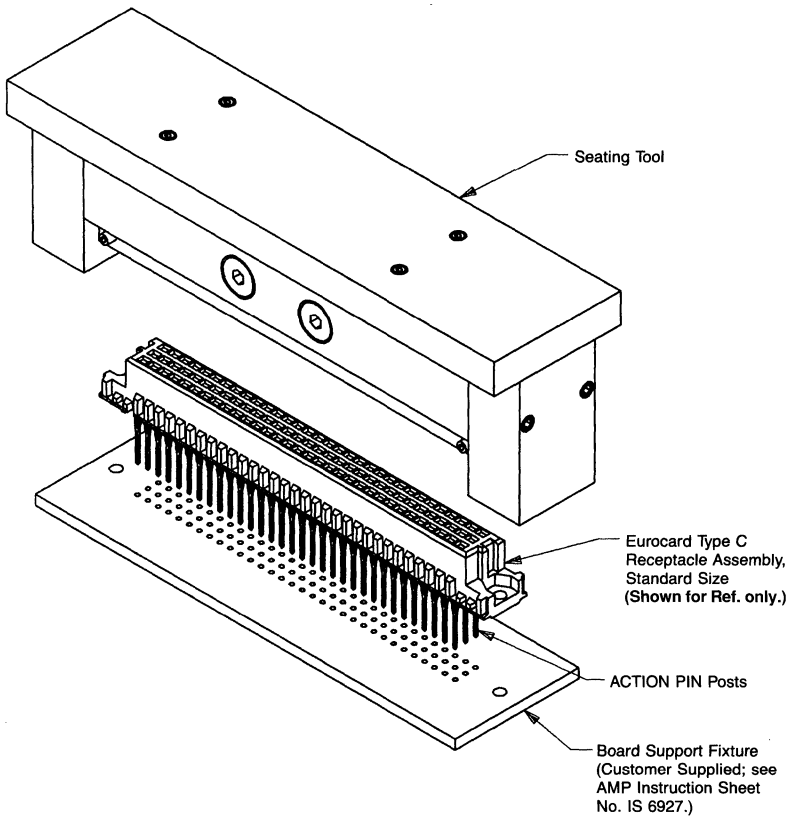
Dimensioning:
Dimensions are in millimeters and inches unless specified otherwise.
Values in brackets are equivalent U.S. customary units.

Receptacle assemblies with ACTION PIN contacts allow high speed solderless backplane construction through reliable press-fit application. Press fitting connectors to printed circuit boards requires special seating tools which transfer application force directly to the contacts.

Force applied to the tool to seat the connectors can be provided by the AMP seating machines shown below, or by commercially available arbor presses such as Greenerd 3A or 3B, which have a seating pressure capacity of 178 N [40 lbs] per contact.

Board support fixtures are used to support PC boards or backplanes while connectors are being assembled to the boards or backplanes. AMP Instruction Sheet No. IS 6927 provides AMP recommendations for manufacturing board support fixtures.

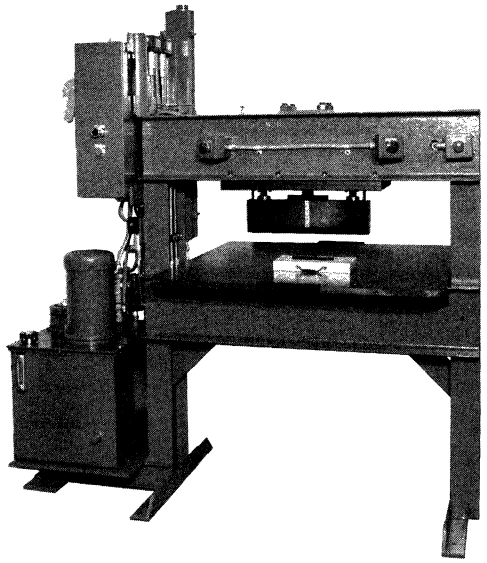
For **tooling information**, call Customer Assistance Hotline **1-800-722-1111**.



Seating Tool No. 535072-1

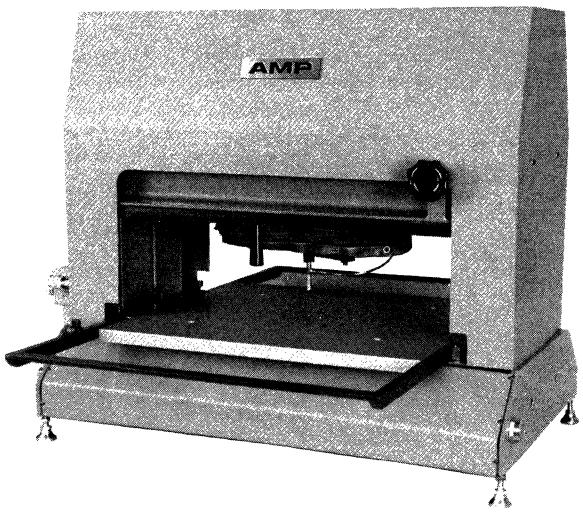
SM-10/20 Machine No. 803880-6

This machine is hydraulically operated with a capacity of 178 000 N [40,000 lbs]. Each contact requires 178 N [40 lbs] for insertion. Cycling time of 2 to 2½ seconds is adequate for AMP's largest connectors or multiple seating.



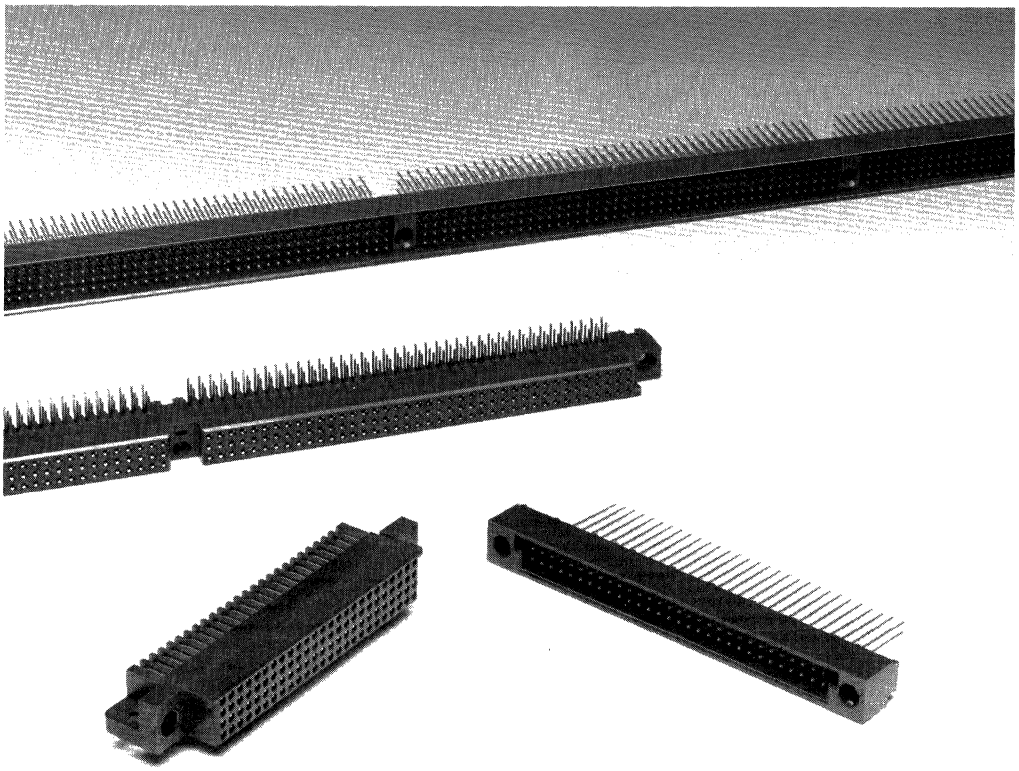
SM-3 Machine No. 814700-2

This machine is air powered with a capacity of 26 700 N [6,000 lbs]. Each contact requires 178 N [40 lbs] for insertion. It utilizes 19.05 [.750] thick board support fixtures and has adjustable seating force. It also has a board sensing feature to compensate for board thickness variations. The machine has the capability of processing boards up to 508 [20] wide and all but the largest connectors. Cycling time is 4 seconds.



AMP-HDI Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



AMP-HDI connectors define the state-of-the-art for high pin count, two-piece printed circuit board connectors. They are available with two, three or four rows of contacts on a .100 [2.54] grid, totaling a maximum of 684 positions.

Complementing high density, the required PC board hole sizes and patterns allow space-efficient circuitry layout. Box-type, quad redundant receptacle contacts with select gold plating in the contact area provide high reliability while maintaining low mating force which makes possible the mating of such large connectors.

Center guide pins facilitate reliable mating of long connectors. In addition, contact and housing configurations prevent pin damage if a long connector is "peeled" apart from one end.

Features such as press-fit pin headers with ACTION PIN contacts; four-point, box-type receptacle contacts; 64-combination keying; and high-temperature housing materials add to the appeal of AMP-HDI connectors.

These connectors are highly specialized products for applications demanding their unusual characteristics.

Technical Documents

Product Specifications
108-9063 AMP-HDI (High Density Interconnect) Connectors
108-26003 ACTION PIN Contacts

Application Specification
114-9008 AMP-HDI (High Density Interconnect) Connectors

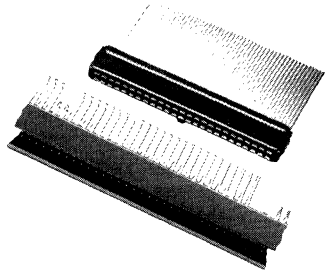
Instruction Sheets
IS 2636 ACTION PIN Contact Replacement Tool
IS 6626 Clinching Tool 91117-3 (3- and 4-Row)
IS 6909 Jackscrews and Guide Pins
IS 6927 Design Recommendations for PC Board Support Fixture
IS 9007 AMP-HDI (High Density Interconnect) Connectors
IS 9038 Seating Tools 58172
IS 9141 Alignment Tools 532925
IS 9142 ACTION PIN Contact Removal and Replacement Tool Kit 265871-7
IS 9178 Clinching Tool 91117-5 (2-Row)
IS 9185 ACTION PIN Contact Replacement Tool

Product Facts

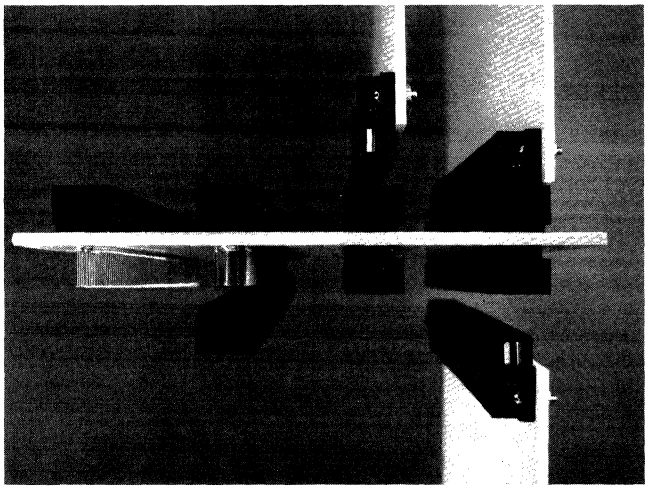
- High pin count - through 684 positions
- Four areas of contact per connection
- Available with ACTION PIN and solder posts on pin assemblies
- Pin assemblies available with both vertical and right angle posts
- Inserts into standard 100 [2.54] grid
- Keying system provides 64 combinations without loss of contact count
- High temperature material permits vapor phase reflow soldering
- Low mating forces
- Highly economical for quality and density
- Vertical receptacles with ACTION PIN and solder post contacts available, request AMP Catalog No. 82618
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association File No. LR 16455

Note: UL recognition and CSA certification pending on certain products. Consult AMP engineering.

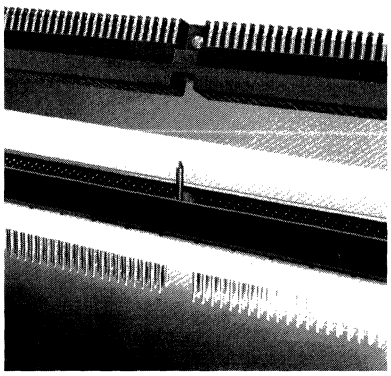
Typical Applications



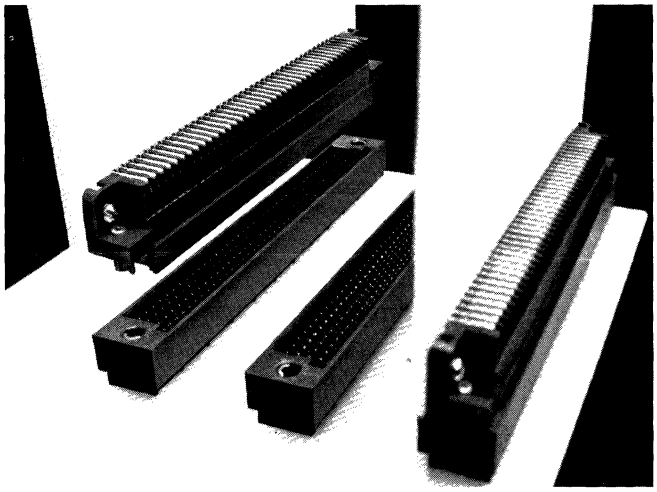
Selectively Loaded Connector



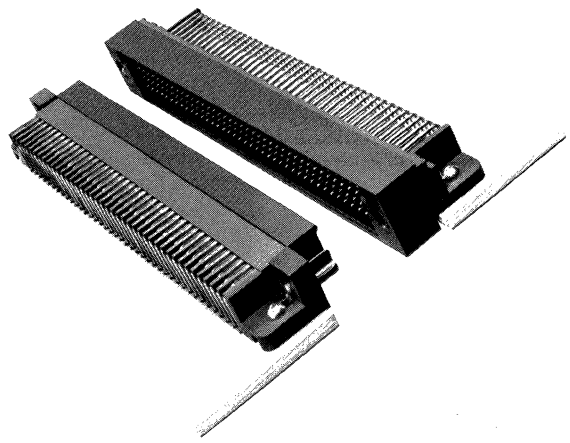
Shrouds



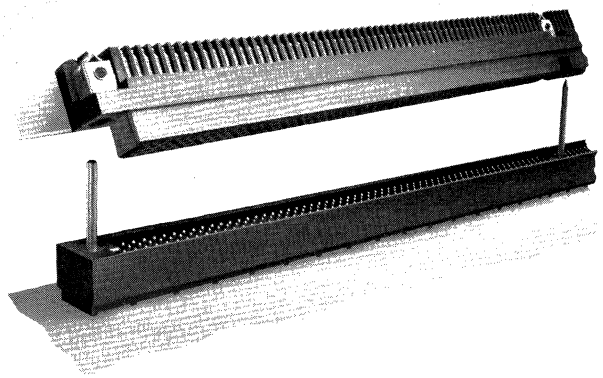
Typical Guide Pin Application



Typical Mother/Daughter Application



Extender Board Application



Power Pins

AMP-HDI Hybrid Connectors

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Unusual Convenience in High-Density Applications

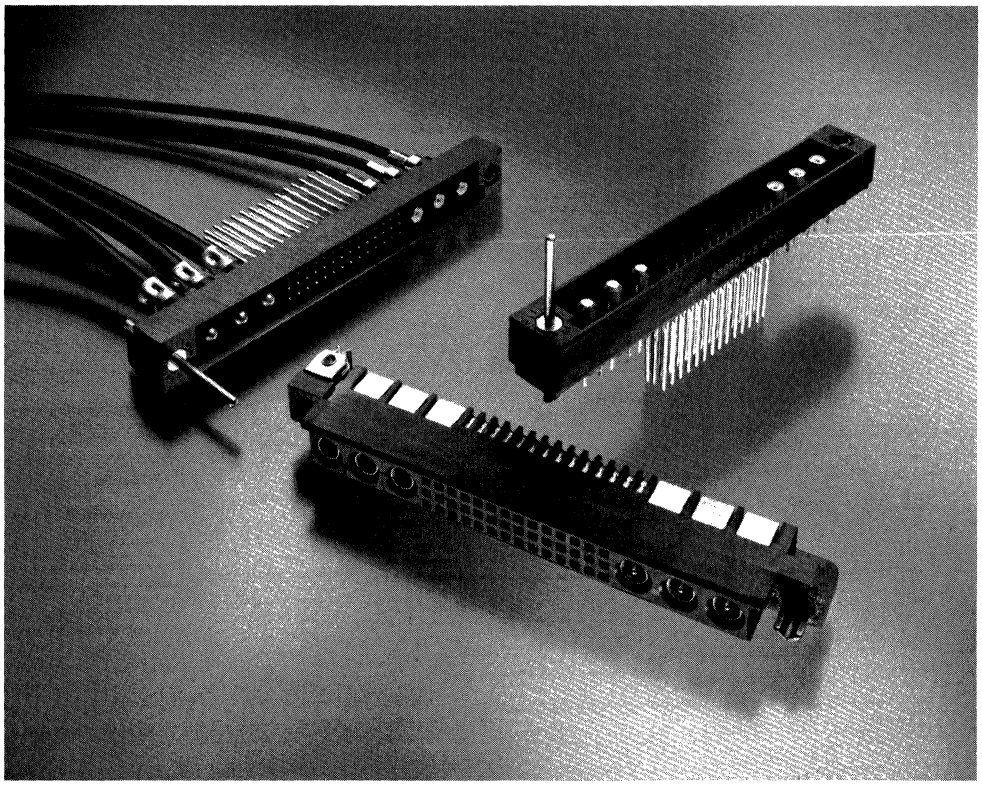
Hybrid versions of the state-of-the-art AMP-HDI connector provide an easy blend of signal with power or coax. With signal contacts on the standard .100 x .100 [2.54 x 2.54] grid, these hybrid connectors feature ports that accept either power or coax contacts for board-mount and cable-mount applications. Available in right-angle or straight versions, the connectors are compatible with all standard AMP-HDI connector hardware, application tooling and low power guide pins, and possess all the high performance features of their standard counterparts.

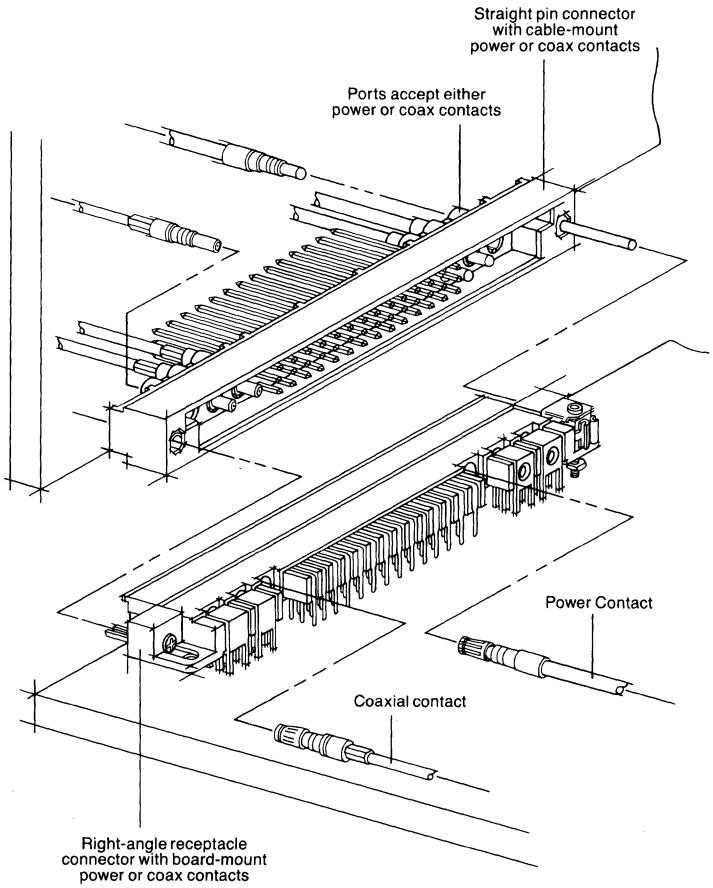
These hybrids have an operating temperature of −65°C to 125°C. Power contacts handle up to 30 amperes each and coax contacts maintain a low VSWR of between 1.30 and 1.40, depending on the application.

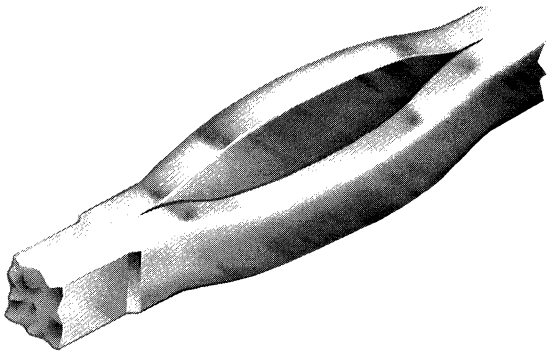
The connectors' housing material withstands the high temperatures of vapor phase soldering, and pin assemblies are available with solder posts or compliant ACTION PIN posts. AMP-HDI hybrid connectors are available with Eurocard footprints, making them ideal for interchanging with existing 96-position Eurocard connectors.

Fiber-Optic Capability, Too!

AMP-HDI hybrid connectors are also available in versions with ports that accept fiber optic contacts. If your application requires electro-optic capability, contact AMP Incorporated for further information.



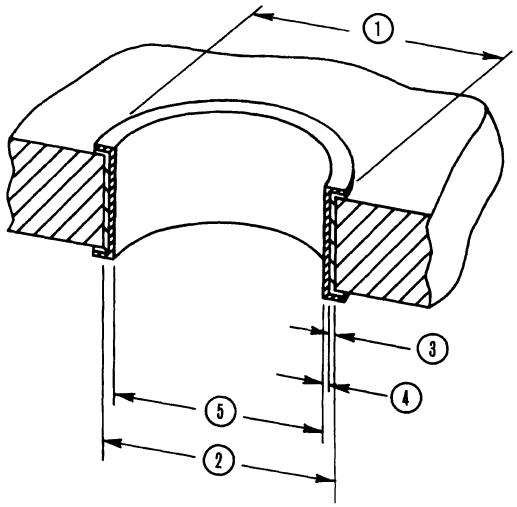




ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area ensures oxide breakthrough and prevents corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

PC Board Thickness

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To ensure optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



① Annular Ring (See Note)
② Drilled Hole
③ Copper Thickness
④ Tin-Lead Thickness
⑤ Plated-Through Hole

For more information on ACTION PIN Press-Fit Contacts See page 3412

ACTION PIN Contact/PC Board Applications

Connector Type	ACTION PIN Contact Material Thickness	Drilled Hole Diameter ②	Plating Thicknesses		Plated-Through Hole Diameter ⑤	Distortion Specification**	
			Copper ③*	Tin-Lead ④		Average	Maximum
Four-, Three- and Two-Row Pin Assemblies	**.025** 0.64	**.0435±.001** 1.153±0.03	**.001 - .003** 0.03 - 0.08	**.0003** 0.008 Min.	**.037 - .043** 0.94 - 1.09	**.0015** 0.038	**.002** 0.05

* Maximum hardness of copper layer is 150 Knoop
** Radial hole distortion
Note: Recommended annular ring diameter is hole diameter plus **.020** [0.51]

Four-Row Pin Assemblies Without Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Vertical Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

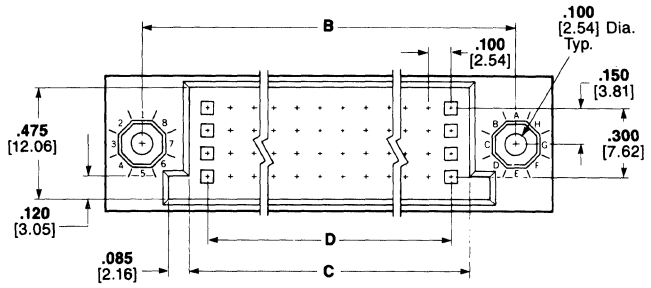
Contacts—Phosphor bronze, plated as follows:

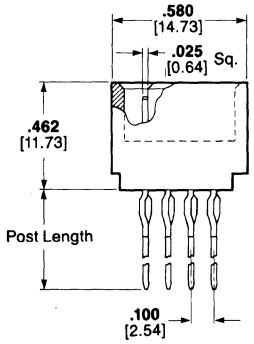
A .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel
B Gold flash over .000050-.000100 [0.00127-0.00254] nickel on entire contact, with additional .000030 [0.00076] gold in contact area and for .200 [5.08] from tip of wrap-type post

Related Product Data:

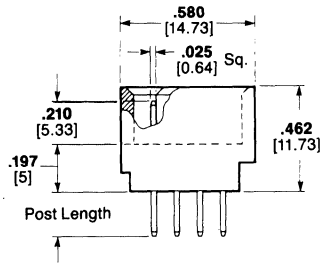
Mateable Connectors - page 3023
Accessories:
Shrouds - page 3046
Guide/Power Pins - page 3053
Keys - page 3054
Jackscrews - page 3056
PCB Hole Layouts - page 3057
ACTION PIN Contacts - pages 3019 and 3412
Application Tooling - pages 3064 - 3066
Technical Documents - page 3016
AMP Product Specifications 108-9063, 108-26003
AMP Application Specification 114-9008
AMP Instruction Sheets IS 2636, IS 6626, IS 6909, IS 6927, IS 9007, IS 9038, IS 9142, IS 9185

Note: Housing with center mounting is recommended for assemblies having 75 contacts or more per row.





ACTION PIN Posts



Solder Posts

No. of Pos.	Dimensions A	B	C	D	Post Length	Contact Finish	Part Numbers* ACTION PIN Posts	Solder Posts
100	3.250 82.55	2.950 74.93	2.550 64.77	2.400 60.96	.733 18.62	A	532435-1	—
					.533 13.54	A	533254-1	—
						B	533270-1	—
					.250 6.35	A	532448-1	—
					.190 4.83	A	—	532436-1
120	3.750 95.25	3.450 87.63	3.050 77.47	2.900 73.66	.533 13.54	A	533254-2	—
						B	533270-2	—
128	3.950 100.33	3.650 92.71	3.250 82.55	3.100 78.74	.733 18.62	A	532435-3	—
						B	532818-3	—
					.533 13.54	A	533254-3	—
						B	533270-3	—
					.250 6.35	A	532448-3	—
					.190 4.83	A	—	532436-3

*Connectors with other post style/length/plating combinations can be made available, consult AMP Incorporated.

Four-Row Pin Assemblies Without Guide Holes
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Pos.	Dimensions A	B	C	D	Post Length	Contact Finish	Part Numbers* ACTION PIN Posts	Solder Posts
140	**4.250** 107.95	**3.950** 100.33	**3.550** 90.17	**3.400** 86.36	**.533** 13.54	A	1-533254-2	—
						B	533270-4	—
					.250 6.35	A	532448-4	—
					.190 4.83	A	—	532436-4
160	**4.750** 120.65	**4.450** 113.03	**4.050** 102.87	**3.900** 99.06	**.733** 18.62	A	532435-5	—
					.533 13.54	A	533270-5	—
					.250 6.35	A	532448-5	—
					.190 4.83	A	—	532436-5
180	**5.250** 133.35	**4.950** 125.73	**4.550** 115.57	**4.400** 111.76	**.733** 18.62	A	532435-6	—
					.533 13.54	A	533254-6	—
						B	533270-6	—
					.190 4.83	A	—	532436-6
200	**5.750** 146.05	**5.450** 138.43	**5.050** 128.27	**4.900** 124.46	**.733** 18.62	A	532435-7	—
						B	532818-7	—
					.533 13.54	A	533270-7	—
					.250 6.35	A	532448-7	—
					.190 4.83	A	—	532436-7
220	**6.250** 158.75	**5.950** 151.13	**5.550** 140.97	**5.400** 137.16	**.533** 13.54	A	533254-8	—
						B	533270-8	—
					.190 4.83	A	—	532436-8
240	**6.750** 171.45	**6.450** 163.83	**6.050** 153.67	**5.900** 149.86	**.733** 18.62	A	532435-9	—
					5.33 13.54	A	533254-9	—
						B	533270-9	—
					.250 6.35	A	532448-9	—
					.190 4.83	A	—	532436-9
260	**7.250** 184.15	**6.950** 176.53	**6.550** 166.37	**6.400** 162.56	**.533** 13.54	A	1-533254-0	—
						B	1-533270-0	—
280	**7.750** 196.85	**7.450** 189.23	**7.050** 179.07	**6.900** 175.26	**.533** 13.54	A	1-533254-1	—
						B	1-533270-1	—
					.250 6.35	A	1-532448-1	—
300	**8.250** 209.55	**7.950** 201.93	**7.550** 191.77	**7.400** 187.96	**.733** 18.62	A	1-532435-2	—
					.533 13.54	A	533254-4	—
						B	1-533270-2	—
					.250 6.35	A	1-532448-2	—
					.190 4.83	A	—	1-532436-2

*Connectors with other post style/length/plating combinations can be made available, consult AMP Incorporated.

Four-Row Pin Assemblies Without Guide Holes

(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Right-Angle Solder Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

Contacts—Phosphor bronze, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

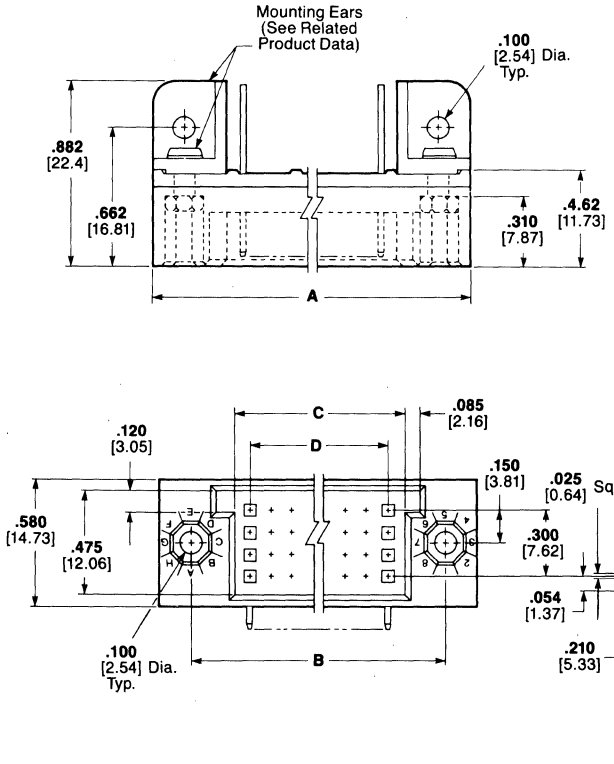
Mateable Connectors - page 3023

Accessories:
Guide/Power Pins - page 3053
Static Discharge Guide/Power Pins - page 3053
Keys - page 3054
Mounting Ears (Purchase Separately) - page 3055
Jackscrews - page 3056

PCB Hole Layouts - page 3057

Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9007

Note: Housing with center guide is recommended for assemblies having 75 contacts or more per row.



No. of Pos.	Dimensions				Part Numbers*	
	A	B	C	D	L=.180 [4.57]	L=.120 [3.05]
100	**3.250** 82.55	**2.950** 74.93	**2.550** 64.77	**2.400** 60.96	533444-1	533286-1
120	**3.750** 95.25	**3.450** 87.63	**3.050** 77.47	**2.900** 73.66	—	533286-2
128	**3.950** 100.33	**3.650** 92.71	**3.250** 82.55	**3.100** 78.74	533444-3	533286-3
140	**4.250** 107.95	**3.950** 100.33	**3.550** 90.17	**3.400** 86.36	533444-4	—
160	**4.750** 120.65	**4.450** 113.03	**4.050** 102.87	**3.900** 99.06	533444-5	533286-5
180	**5.250** 133.35	**4.950** 125.73	**4.550** 115.57	**4.400** 111.76	533444-6	533286-6
200	**5.750** 146.05	**5.450** 138.43	**5.050** 128.27	**4.900** 124.46	533444-7	533286-7
240	**6.750** 171.45	**6.450** 163.83	**6.050** 153.67	**5.900** 149.86	533444-9	533286-9
260	**7.250** 184.15	**6.950** 176.53	**6.550** 166.37	**6.400** 162.56	—	1-533286-0
280	**7.750** 196.85	**7.450** 189.23	**7.050** 179.07	**6.900** 175.26	1-533444-1	—
300	**8.250** 209.55	**7.950** 201.93	**7.550** 191.77	**7.400** 187.96	1-533444-2	1-533286-2

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Four-Row Receptacle Assemblies Without Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Right-Angle Solder Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

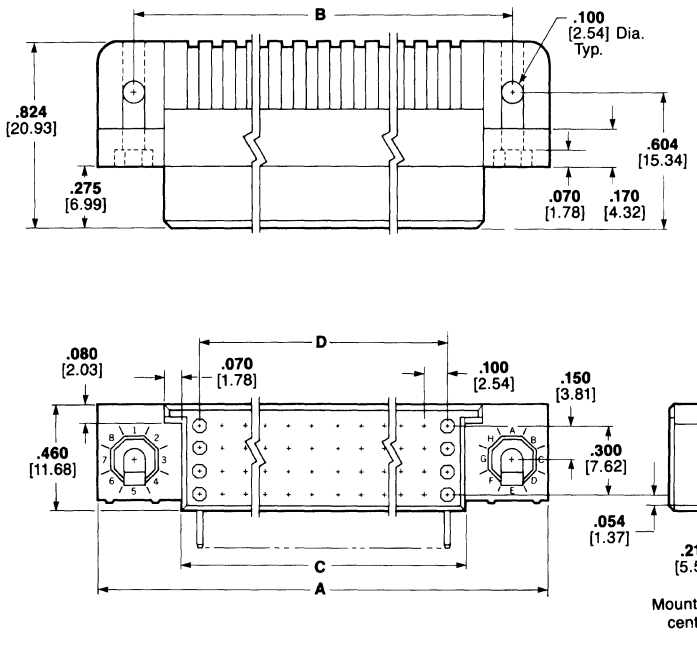
Contacts—Beryllium copper, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

Mateable Connectors - pages 3020 - 3022

Accessories:
Guide Pin/Power Receptacles - page 3053
Keys - page 3054
Jackscrews - page 3056
PCB Hole Layouts - page 3057
Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9141, IS 9007

Note: Housing with center mounting is recommended for assemblies having 75 contacts or more per row.



No. of Pos.	Dimensions				Part Numbers*	
	A	B	C	D	L=.180 [4.57]	L=.120 [3.05]
100	**3.250** 82.55	**2.950** 74.93	**2.524** 64.11	**2.400** 60.96	532434-1	532903-2
120	**3.750** 95.25	**3.450** 87.63	**3.024** 76.81	**2.900** 73.66	532434-2	1-532903-2
128	**3.950** 100.33	**3.650** 92.71	**3.224** 81.89	**3.100** 78.74	532434-3	532903-3
140	**4.250** 107.95	**3.950** 100.33	**3.524** 89.51	**3.400** 86.36	532434-4	532903-4
160	**4.750** 120.65	**4.450** 113.03	**4.024** 102.21	**3.900** 99.06	532434-5	532903-5
180	**5.250** 133.35	**4.950** 125.73	**4.524** 114.91	**4.400** 111.76	532434-6	532903-6
200	**5.750** 146.05	**5.450** 138.43	**5.024** 127.61	**4.900** 124.46	532434-7	532903-7
220	**6.250** 158.75	**5.950** 151.13	**5.524** 140.31	**5.400** 137.16	532434-8	—
240	**6.750** 171.45	**6.450** 163.83	**6.024** 153.01	**5.900** 149.86	532434-9	532903-9
260	**7.250** 184.15	**6.950** 176.53	**6.524** 165.71	**6.400** 162.56	1-532434-0	1-532903-0
280	**7.750** 196.85	**7.450** 189.23	**7.024** 178.41	**6.900** 175.26	1-532434-1	1-532903-1
300	**8.250** 209.55	**7.950** 201.93	**7.524** 191.11	**7.400** 187.96	1-532434-2	532903-1

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Four-Row Pin Assemblies With One Guide Hole

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

Vertical Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

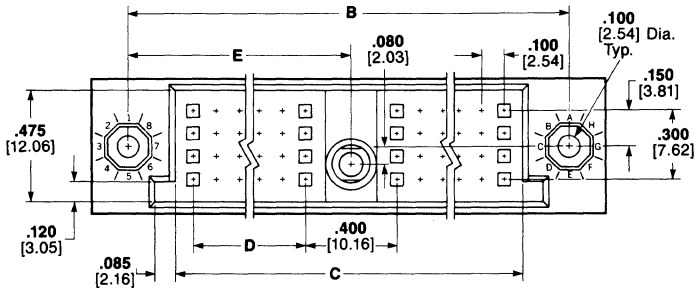
Contacts—Phosphor bronze, plated as follows:

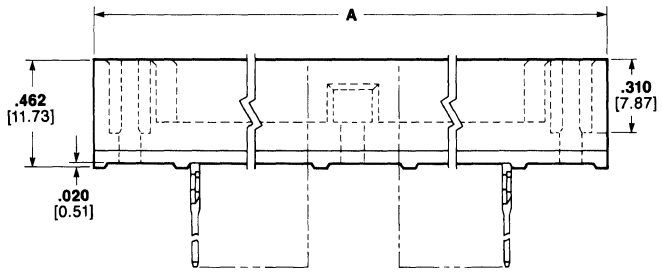
A .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel
B Gold flash over .000050-.000100 [0.00127-0.00254] nickel on entire contact, with additional .000030 [0.00076] gold in contact area and for .200 [5.08] from tip of wrap-type post

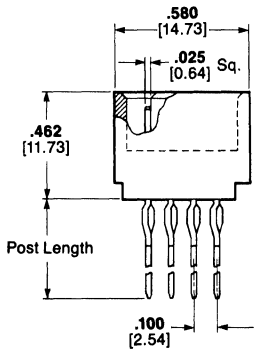
Related Product Data:

Mateable Connectors - page 3027
Accessories:
Shrouds - page 3047
Guide Pins - page 3052
Guide/Power Pins - page 3053
Static Discharge Guide/Power Pins - page 3053
Keys - page 3054
Jackscrews - page 3056
PCB Hole Layouts - page 3058
ACTION PIN Contacts - pages 3019 and 3412
Application Tooling - pages 3064 - 3066
Technical Documents - page 3016
AMP Product Specifications 108-9063, 108-26003
AMP Application Specification 114-9008
AMP Instruction Sheets IS 2636, IS 6626, IS 6909, IS 6927, IS 9007, IS 9038, IS 9142, IS 9185

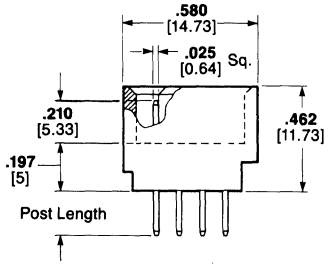
Note: Housing with center mounting is recommended for assemblies having 75 contacts or more per row.







ACTION PIN Posts



Solder Posts

Four-Row Pin Assemblies With One Guide Hole
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Pos.	Dimensions A	B	C	D	E	Post Length	Contact Finish	Part Numbers* ACTION PIN Posts	Solder Posts
320	**9.050** 229.87	**8.750** 222.25	**8.350** 212.09	**3.900** 99.06	**4.375** 111.12	**.733** 18.62	A	532921-1	—
						.533 13.54	A	533445-1	—
						.250 6.35	A	533447-1	—
						.190 4.83	A	—	533083-1
344	**9.650** 245.11	**9.350** 237.49	**8.950** 227.33	**4.200** 106.68	**4.675** 118.74	**.733** 18.62	A	532921-2	—
							B	533446-2	—
						.533 13.54	A	533445-2	—
							B	532933-2	—
						.250 6.35	A	533447-2	—
368	**10.250** 260.35	**9.950** 252.73	**9.550** 242.57	**4.500** 114.30	**4.975** 126.36	**.733** 18.62	A	532921-3	—
						.533 13.54	A	533445-3	—
							B	532933-3	—
						.250 6.35	A	533447-3	—
						.190 4.83	A	—	533083-3
392	**10.850** 275.59	**10.550** 267.97	**10.150** 257.81	**4.800** 121.92	**5.275** 133.98	**.733** 18.62	A	532921-4	—
						.190 4.83	A	—	533083-4
416	**11.450** 290.83	**11.150** 283.21	**10.750** 273.05	**5.100** 129.54	**5.575** 141.60	**.733** 18.62	A	532921-5	—
						.533 13.54	A	532933-5	—
						.250 6.35	A	533447-5	—
						.190 4.83	A	—	533083-5
440	**12.050** 306.07	**11.750** 298.45	**11.350** 288.29	**5.400** 137.16	**5.875** 149.22	**.733** 18.62	A	532921-6	—
						.533 13.54	A	532933-6	—
						.250 6.35	A	533447-6	—
464	**12.650** 321.31	**12.350** 313.69	**11.950** 303.53	**5.700** 144.78	**6.175** 156.84	**.250** 6.35	A	533447-7	—
						.190 4.83	A	—	533083-7
488	**13.250** 336.55	**12.950** 328.93	**12.550** 318.77	**6.000** 152.40	**6.475** 164.46	**.733** 18.62	A	532921-8	—
							B	533446-8	—
						.533 13.54	A	533445-8	—
							B	532933-8	—
						.250 6.35	A	533447-8	—

*Connectors with other post style/length/plating combinations can be made available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Four-Row Pin Assemblies With One Guide Hole

(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Right-Angle Solder Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

Contacts—Phosphor bronze, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

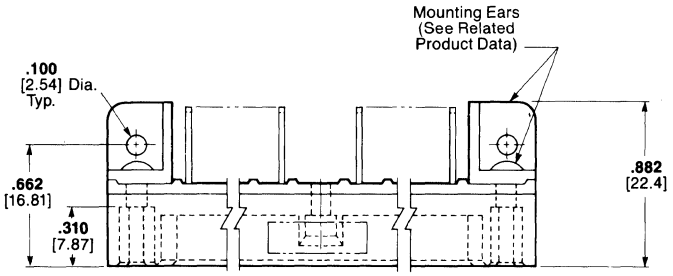
Mateable Connectors - page 3027

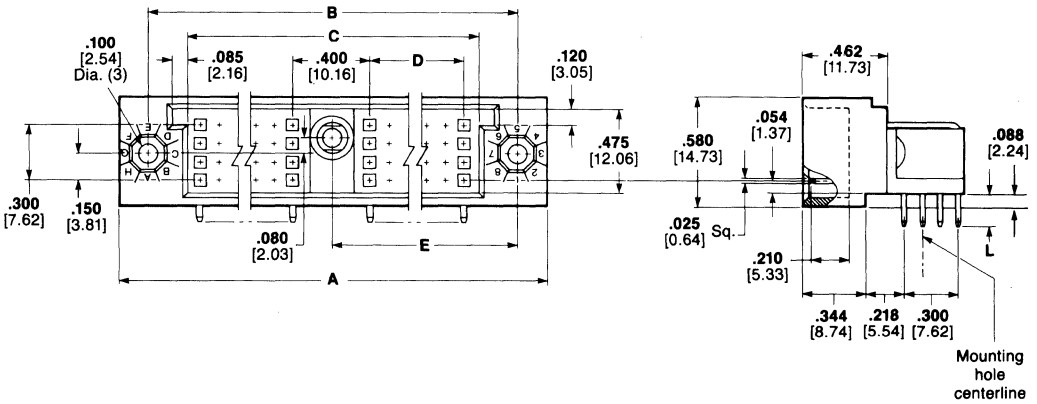
Accessories:
Guide Pins - page 3052
Guide/Power Pins - page 3053
Static Discharge Guide/Power Pins - page 3053
Keys - page 3054
Mounting Ears (Purchase Separately) - page 3055
Jackscrews - page 3056

PCB Hole Layouts - page 3058

Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9007

Note: Housing with center guide is recommended for assemblies having 75 contacts or more per row.





No. of Pos.	Dimensions					Part Numbers	
	A	B	C	D	E	L=.180 [4.57]	L=.120 [3.05]
344	**9.650** 245.11	**9.350** 237.49	**8.950** 227.33	**4.200** 106.68	**4.675** 118.74	—	533524-2
440	**12.050** 306.07	**11.750** 298.45	**11.350** 288.29	**5.400** 137.16	**5.875** 149.22	533523-6	—
488	**13.250** 336.55	**12.950** 328.93	**12.550** 318.77	**6.000** 152.40	**6.475** 164.46	533523-8	—

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Four-Row Receptacle Assemblies With One Guide Hole

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Right-Angle Solder Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

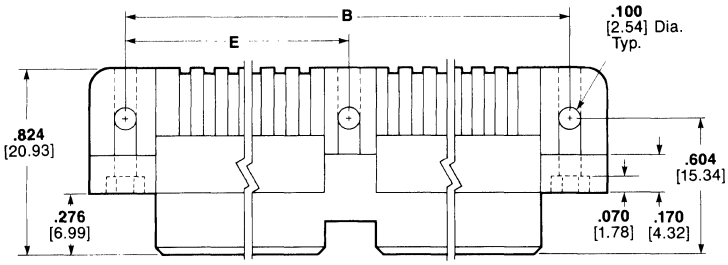
Contacts—Beryllium copper, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

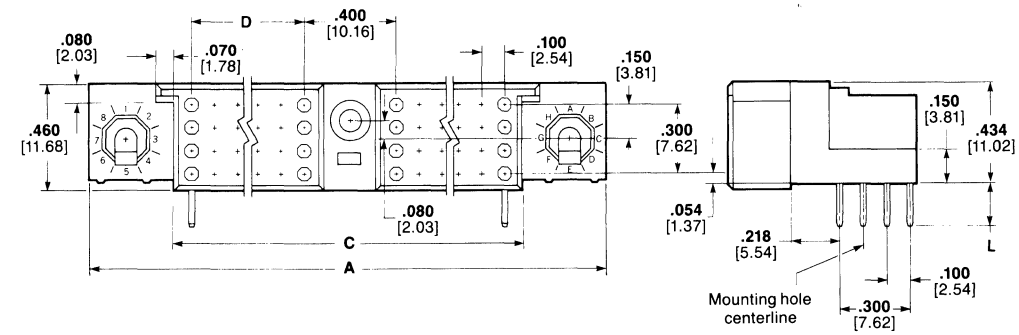
Related Product Data:

Mateable Connectors - pages 3024 - 3026

Accessories:
Guide Pin/Power Receptacles - page 3053
Keys - page 3054
Jackscrews - page 3056
PCB Hole Layouts - page 3058
Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9141, IS 9007

Note: Housing with center mounting is recommended for assemblies having 75 contacts or more per row.





No. of Pos.	Dimensions					Part Numbers*	
	A	B	C	D	E	L=.180 [4.57]	L=.120 [3.05]
320	**9.050** 229.87	**8.750** 222.25	**8.324** 211.43	**3.900** 99.06	**4.375** 111.12	532920-1	533443-1
344	**9.650** 245.11	**9.350** 237.49	**8.924** 226.67	**4.200** 106.68	**4.675** 118.74	532920-2	533443-2
368	**10.250** 260.35	**9.950** 252.73	**9.524** 241.91	**4.500** 114.30	**4.975** 126.36	532920-3	533443-3
392	**10.850** 275.59	**10.550** 267.97	**10.124** 257.15	**4.800** 121.92	**5.275** 133.98	532920-4	—
416	**11.450** 290.83	**11.150** 283.21	**10.724** 272.39	**5.100** 129.54	**5.575** 141.60	532920-5	533443-5
440	**12.050** 306.07	**11.750** 298.45	**11.324** 287.63	**5.400** 137.16	**5.875** 149.22	532920-6	533443-6
464	**12.650** 321.31	**12.350** 313.69	**11.924** 302.87	**5.700** 144.78	**6.175** 156.84	532920-7	533443-7
488	**13.250** 336.55	**12.950** 328.93	**12.524** 318.11	**6.000** 152.40	**6.475** 164.46	532920-8	533443-8

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Four-Row Pin Assemblies With Two Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

Vertical Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

Contacts—Phosphor bronze, plated as follows:

A .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

B Gold flash over .000050-.000100 [0.00127-0.00254] nickel on entire contact, with additional .000030 [0.00076] gold in contact area and for .200 [5.08] from tip of wrap-type post

Related Product Data:

Mateable Connectors - page 3031

Accessories:
Shrouds - page 3048
Guide Pins - page 3052
Guide/Power Pins - page 3053
Static Discharge Guide/Power Pins - page 3053
Keys - page 3054
Jackscrews - page 3056

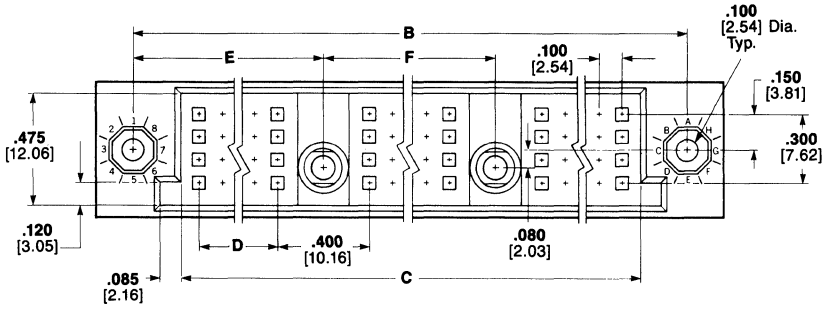
PCB Hole Layouts - page 3059

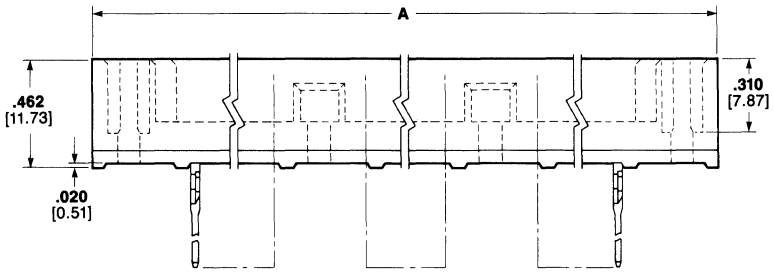
ACTION PIN Contacts - pages 3019 and 3412

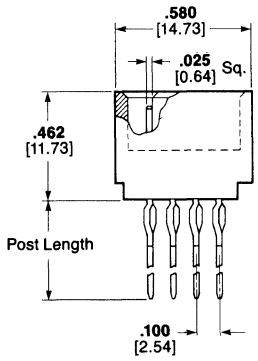
Application Tooling - pages 3064 - 3066

Technical Documents - page 3016
AMP Product Specifications 108-9063, 108-26003
AMP Application Specification 114-9008
AMP Instruction Sheets IS 2636, IS 6626, IS 6909, IS 6927, IS 9007, IS 9038, IS 9142, IS 9185

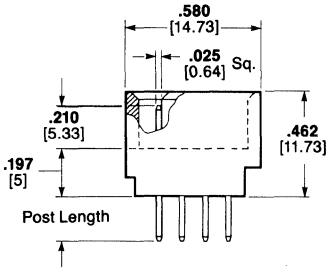
Note: Housing with center mounting is recommended for assemblies having 75 contacts or more per row.







ACTION PIN Posts



Solder Posts

Four-Row Pin Assemblies With Two Guide Holes
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Pos.	Dimensions						Post Length	Contact Finish	Part Numbers*	
	A	B	C	D	E	F			ACTION PIN Posts	Solder Posts
516	**14.250** 361.95	**13.950** 354.33	**13.550** 344.17	**4.200** 106.68	**4.675** 118.74	**4.600** 116.84	**.733** 18.62	A	533404-1	—
							.533 13.54	A	532837-2	—
							.250 6.35	A	533448-1	—
540	**14.850** 377.19	**14.550** 369.57	**14.150** 359.41	**4.400** 111.76	**4.875** 123.82	**4.800** 121.92	**.733** 18.62	A	532841-2	—
							.533 13.54	A	533056-2	—
								B	532837-1	—
							.250 6.35	A	533448-2	—
							.190 4.83	A	—	532944-2
564	**15.450** 392.43	**15.150** 384.81	**14.750** 374.65	**4.600** 116.84	**5.075** 128.90	**5.000** 127.00	**.733** 18.62	A	533404-3	—
612	**16.650** 422.91	**16.350** 415.29	**15.950** 405.13	**5.000** 127.00	**5.475** 139.06	**5.400** 137.16	**.733** 18.62	A	532841-5	—
								B	533404-5	—
							.250 6.35	A	533448-5	—
636	**17.250** 438.15	**16.950** 430.53	**16.550** 420.37	**5.200** 132.08	**5.675** 144.14	**5.600** 142.24	**.733** 18.62	A	533404-6	—
							.250 6.35	A	533448-6	—
684	**18.450** 468.63	**18.150** 461.01	**17.750** 450.95	**5.600** 142.24	**6.075** 154.30	**6.000** 152.40	**.733** 18.62	A	532841-8	—

*Connectors with other post style/length/plating combinations can be made available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Four-Row Pin Assemblies With Two Guide Holes

(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Right-Angle Solder Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

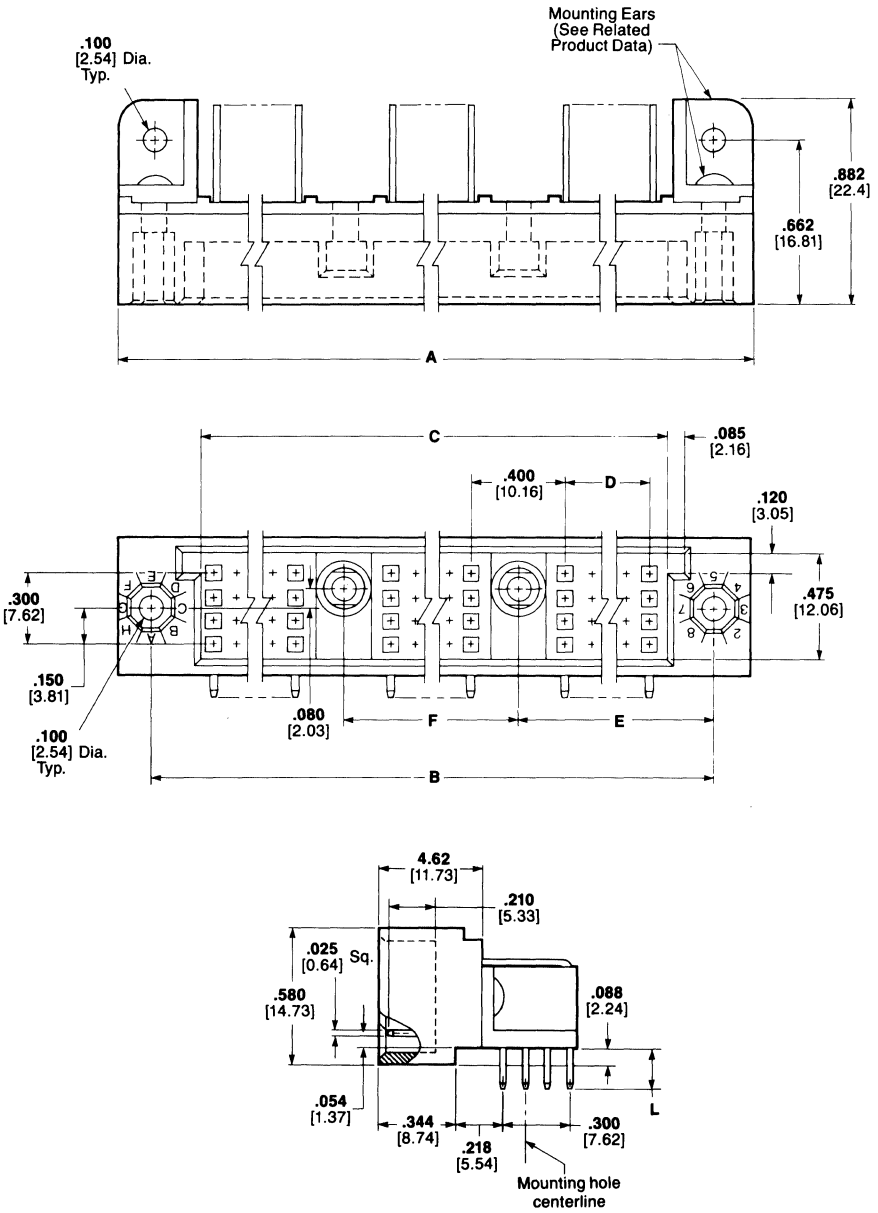
Contacts—Phosphor bronze, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

Mateable Connectors - page 3031

Accessories:
Guide Pins - page 3052
Guide/Power Pins - page 3053
Static Discharge Guide/Power Pins - page 3053
Keys - page 3054
Mounting Ears (Purchase Separately) - page 3055
Jackscrews - page 3056
PCB Hole Layouts - page 3059
Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9007

Note: Housing with center guide is recommended for assemblies having 75 contacts or more per row.



No. of Pos.	Dimensions A	B	C	D	E	F	Part Numbers* (L = .180 [4.57])
516	**14.250** 361.95	**13.950** 354.33	**13.550** 344.17	**4.200** 106.68	**4.675** 118.74	**4.600** 116.84	533525-1
540	**14.850** 377.19	**14.550** 369.57	**14.150** 359.41	**4.400** 111.76	**4.875** 123.82	**4.800** 121.92	533525-2
612	**16.650** 422.91	**16.350** 415.29	**15.950** 405.13	**5.000** 127.00	**5.475** 139.06	**5.400** 137.16	533525-5
636	**17.250** 438.15	**16.950** 430.53	**16.550** 420.37	**5.200** 132.08	**5.675** 144.14	**5.600** 142.24	533525-6

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Four-Row Receptacle Assemblies With Two Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Right-Angle Solder Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

Contacts—Beryllium copper, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

Mateable Connectors - pages 3028 - 3030

Accessories:

Guide Pin/Power Receptacles - page 3053

Keys - page 3054

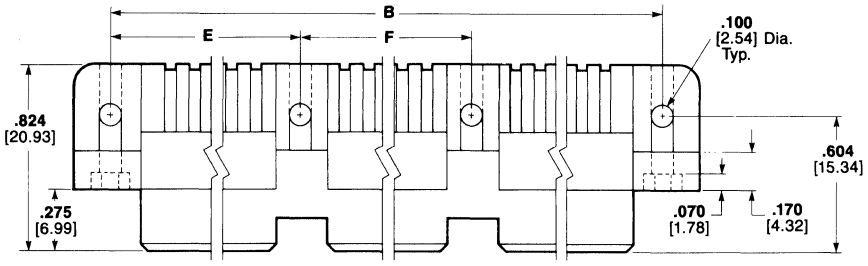
Mounting Ears - page 3055

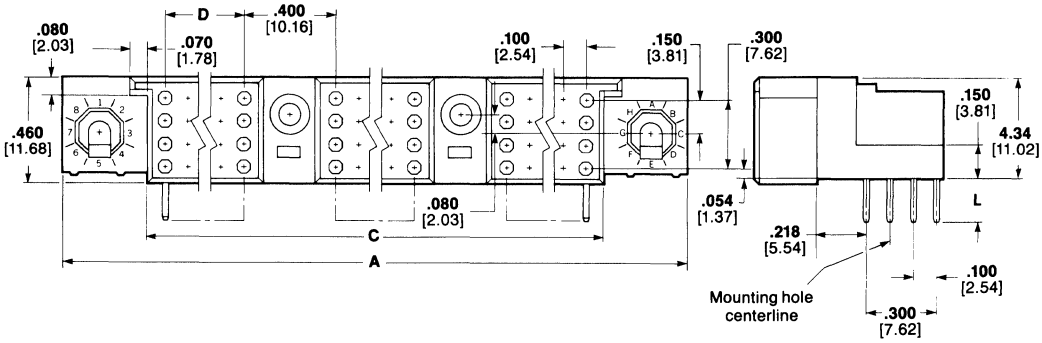
Jackscrews - page 3056

PCB Hole Layouts - page 3059

Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Spencification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9141, IS 9007

Note: Housing with center mounting is recommended for assemblies having 75 contacts or more per row.





No. of Pos.	Dimensions						Part Numbers*	
	A	B	C	D	E	F	L=.180 [4.57]	L=.120 [3.05]
516	**14.250** 361.95	**13.950** 354.33	**13.524** 343.51	**4.200** 106.68	**4.675** 118.74	**4.600** 116.84	532840-1	533449-1
540	**14.850** 377.19	**14.550** 369.57	**14.124** 358.75	**4.400** 111.76	**4.875** 123.82	**4.800** 121.92	532840-2	533449-2
564	**15.450** 392.43	**15.150** 384.81	**14.724** 373.99	**4.600** 116.84	**5.075** 128.90	**5.000** 127.00	532840-3	533449-3
588	**16.050** 407.67	**15.750** 400.05	**15.324** 389.23	**4.800** 121.92	**5.275** 133.98	**5.200** 132.08	532840-4	533449-4
612	**16.650** 422.91	**16.350** 415.29	**15.924** 404.47	**5.000** 127.00	**5.475** 139.06	**5.400** 137.16	532840-5	533449-5
636	**17.250** 438.15	**16.950** 430.53	**16.524** 419.71	**5.200** 132.08	**5.675** 144.14	**5.600** 142.24	532840-6	533449-6
660	**17.850** 453.39	**17.550** 445.77	**17.124** 434.95	**5.400** 137.16	**5.875** 149.22	**5.800** 147.32	—	533449-7
684	**18.450** 468.63	**18.150** 461.01	**17.724** 450.19	**5.600** 142.24	**6.075** 154.30	**6.000** 152.40	532840-8	533449-8

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Three-Row Pin Assemblies Without Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Vertical Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

Contacts—Phosphor bronze, plated as follows:

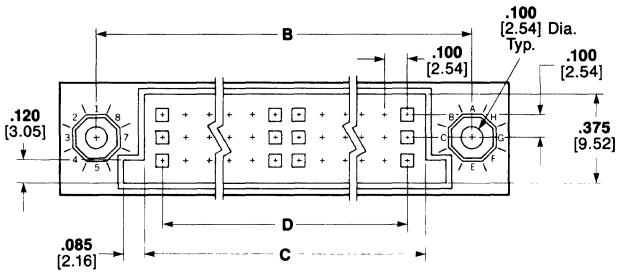
A .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

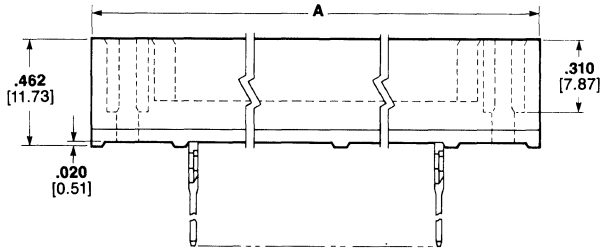
B Gold flash over .000050-.000100 [0.00127-0.00254] nickel on entire contact, with additional .000030 [0.00076] gold in contact area and for .200 [5.08] from tip of wrap-type post

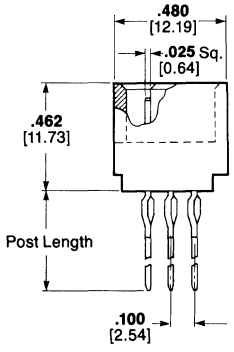
Related Product Data:

Mateable Connectors - page 3035
Accessories:
Shrouds - page 3049
Guide/Power Pins - page 3053
Keys - page 3054
Jackscrews - page 3056
PCB Hole Layouts - page 3060
ACTION PIN Contacts - pages 3019 and 3412
Application Tooling - pages 3064 - 3066
Technical Documents - page 3016
AMP Product Specifications 108-9063, 108-26003
AMP Application Specification 114-9008
AMP Instruction Sheets IS 2636, IS 6626, IS 6909, IS 6927, IS 9007, IS 9038, IS 9142, IS 9185

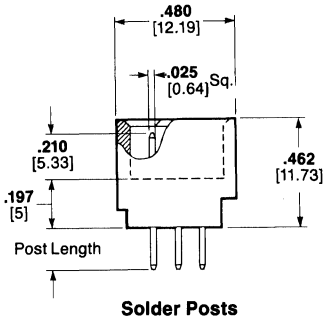
Note: Housing with center mounting is recommended for assemblies having 75 contacts or more per row.







ACTION PIN Posts



Solder Posts

No. of Pos.	Dimensions A	B	C	D	Post Length	Contact Finish	Part Numbers* ACTION PIN Posts	Solder Posts
75	**3.250** 82.55	**2.950** 74.93	**2.550** 64.77	**2.400** 60.96	**.533** 13.54	A	533061-1	—
						B	533093-1	—
					.190 4.83	A	—	532433-1
90	**3.750** 95.25	**3.450** 87.63	**3.050** 77.47	**2.900** 73.66	**.533** 13.54	A	533061-2	—
					.190 4.83	A	—	532433-2
96	**3.950** 100.33	**3.650** 92.71	**3.250** 82.55	**3.100** 78.74	**.733** 18.62	A	532432-3	—
						B	533092-3	—
					.533 13.54	A	533061-3	—
						B	533093-3	—
					.250 6.35	A	532447-3	—
					.190 4.83	A	—	532433-3

*Connectors with other post style/length/plating combinations can be made available, consult AMP Incorporated.

Three-Row Pin Assemblies Without Guide Holes
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Pos.	Dimensions A	B	C	D	Post Length	Contact Finish	Part Numbers* ACTION PIN Posts	Solder Posts
105	**4.250** 107.95	**3.950** 100.33	**3.550** 90.17	**3.400** 86.36	**.533** 13.54	A	533061-4	—
					.190 4.83	A	—	532433-4
120	**4.750** 120.65	**4.450** 113.03	**4.050** 102.87	**3.900** 99.06	**.733** 18.62	A	532432-5	—
					.533 13.54	A	533061-5	—
						B	533093-5	—
					.250 6.35	A	532447-5	—
					.190 4.83	A	—	532433-5
135	**5.250** 133.35	**4.950** 125.73	**4.550** 115.57	**4.400** 111.76	**.533** 13.54	A	533061-6	—
150	**5.750** 146.05	**5.450** 138.43	**5.050** 128.27	**4.900** 124.46	**.533** 13.54	A	533093-7	—
					.250 6.35	A	532447-7	—
					.190 4.83	A	—	532433-7
165	**6.250** 158.75	**5.950** 151.13	**5.550** 140.97	**5.400** 137.16	**.733** 18.62	A	532432-8	—
					.533 13.54	A	533061-8	—
						B	533093-8	—
					.250 6.35	A	532447-8	—
					.190 4.83	A	—	532433-8
180	**6.750** 171.45	**6.450** 163.83	**6.050** 153.67	**5.900** 149.86	**.533** 13.54	A	533061-9	—
						B	533093-9	—
					.250 6.35	A	532447-9	—
					.190 4.83	A	—	532433-9
195	**7.250** 184.15	**6.950** 176.53	**6.550** 166.37	**6.400** 162.56	**.533** 13.54	A	1-533061-0	—
					.250 6.35	A	1-532447-0	—
					.190 4.83	A	—	1-532433-0
210	**7.750** 196.85	**7.450** 189.23	**7.050** 179.07	**6.900** 175.26	**.733** 18.62	A	1-532432-1	—
					.533 13.54	A	1-533093-1	—
					.250 6.35	A	1-532447-1	—
					.190 4.83	A	—	1-532433-1
225	**8.250** 209.55	**7.950** 201.93	**7.550** 191.77	**7.400** 187.96	**.733** 18.62	A	1-532432-2	—
					.533 13.54	A	1-533061-2	—
						B	1-533093-2	—
					.250 6.35	A	1-532447-2	—

*Connectors with other post style/length/plating combinations can be made available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Three-Row Pin Assemblies Without Guide Holes
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Right-Angle Solder Posts

Material and Finish:

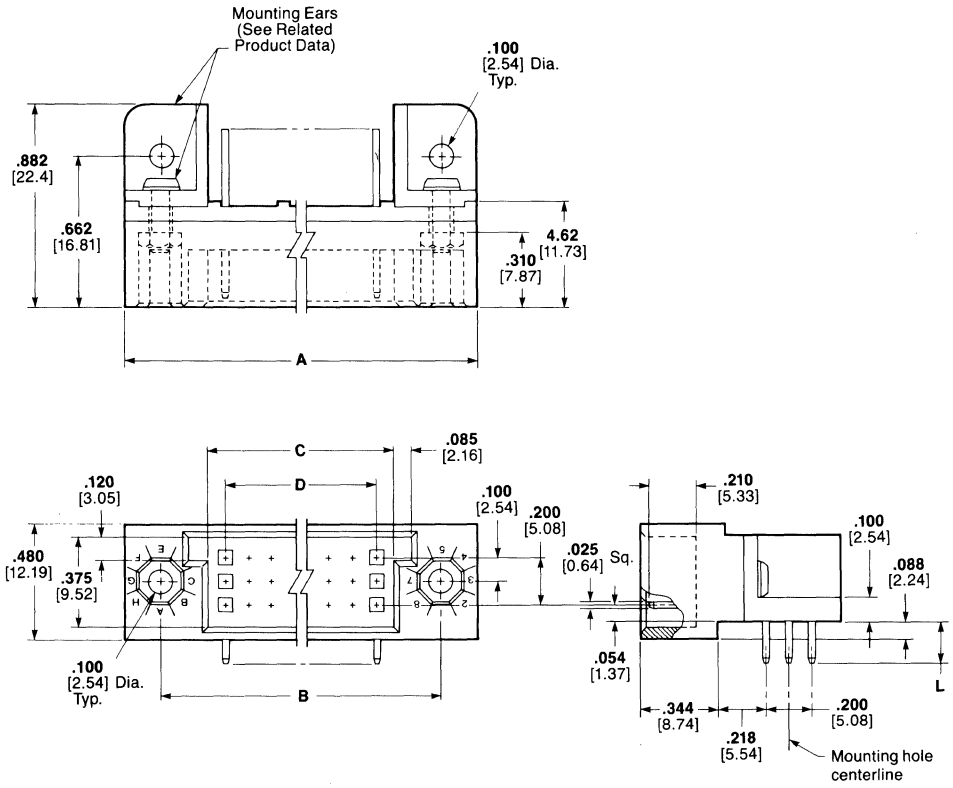
Housing—Natural, glass-filled polyphenylene sulfide

Contacts—Phosphor bronze, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

Mateable Connectors - page 3035
Accessories:
Guide/Power Pins - page 3053
Keys - page 3054
Mounting Ears (Purchase Separately) - page 3055
Jackscrews - page 3056
PCB Hole Layouts - page 3060
Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9007

Note: Housing with center guide is recommended for assemblies having 75 contacts or more per row.



No. of Pos.	Dimensions				Part Numbers*	
	A	B	C	D	L = .180 [4.57]	L = .120 [3.05]
75	**3.250** 82.55	**2.950** 74.93	**2.550** 64.77	**2.400** 60.96	533420-1	—
90	**3.750** 95.25	**3.450** 87.63	**3.050** 77.47	**2.900** 73.66	—	533288-2
96	**3.950** 100.33	**3.650** 92.71	**3.250** 82.55	**3.100** 78.74	533420-3	533288-3
105	**4.250** 107.95	**3.950** 100.33	**3.550** 90.17	**3.400** 86.36	533420-4	—
120	**4.750** 120.65	**4.450** 113.03	**4.050** 102.87	**3.900** 99.06	533420-5	533288-5
135	**5.250** 133.35	**4.950** 125.73	**4.550** 115.57	**4.400** 111.76	533420-6	—
150	**5.750** 146.05	**5.450** 138.43	**5.050** 128.27	**4.900** 124.46	533420-7	533288-7
165	**6.250** 158.75	**5.950** 151.13	**5.550** 140.97	**5.400** 137.16	533420-8	—
180	**6.750** 171.45	**6.450** 163.83	**6.050** 153.67	**5.900** 149.86	533420-9	—
210	**7.750** 196.85	**7.450** 189.23	**7.050** 179.07	**6.900** 175.26	1-533420-1	1-533288-1
225	**8.250** 209.55	**7.950** 201.93	**7.550** 191.77	**7.400** 187.96	1-533420-2	1-533288-2

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Three-Row Receptacle Assemblies Without Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

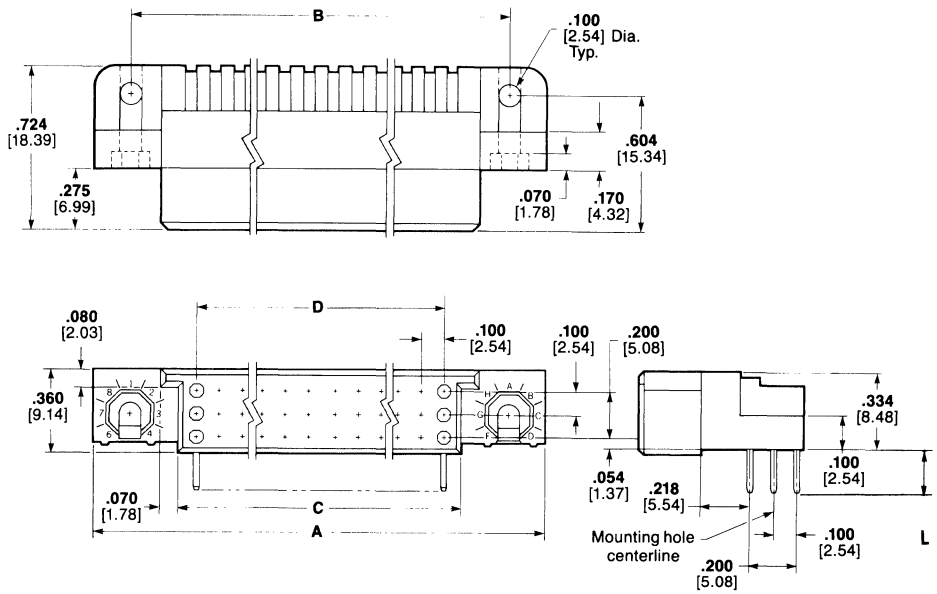
Right-Angle Solder Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide
Contacts—Beryllium copper, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

Mateable Connectors - pages 3032 - 3034
Accessories:
Guide Pin/Power Receptacles - page 3053
Keys - page 3054
Jackscrews - page 3056
PCB Hole Layouts - page 3060
Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9141, IS 9007
Note: Housing with center mounting is recommended for assemblies having 75 contacts or more per row.



No. of Pos.	Dimensions				Part Numbers*	
	A	B	C	D	L=.180 [4.57]	L=.120 [3.05]
75	**3.250** 82.55	**2.950** 74.93	**2.524** 64.11	**2.400** 60.96	532431-1	533268-1
90	**3.750** 95.25	**3.450** 87.63	**3.024** 76.81	**2.900** 73.66	—	533268-2
96	**3.950** 100.33	**3.650** 92.71	**3.224** 81.89	**3.100** 78.74	532431-3	533268-3
105	**4.250** 107.95	**3.950** 100.33	**3.524** 89.51	**3.400** 86.36	—	533268-4
120	**4.750** 120.65	**4.450** 113.03	**4.024** 102.21	**3.900** 99.06	532431-5	533268-5
135	**5.250** 133.35	**4.950** 125.73	**4.524** 114.91	**4.400** 111.76	—	533268-6
150	**5.750** 146.05	**5.450** 138.43	**5.024** 127.61	**4.900** 124.46	532431-7	533268-7
165	**6.250** 158.75	**5.950** 151.13	**5.524** 140.31	**5.400** 137.16	532431-8	—
180	**6.750** 171.45	**6.450** 163.83	**6.024** 153.01	**5.900** 149.86	532431-9	533268-9
210	**7.750** 196.85	**7.450** 189.23	**7.024** 178.41	**6.900** 175.26	1-532431-1	1-533268-1
225	**8.250** 209.55	**7.950** 201.93	**7.524** 191.11	**7.400** 187.96	1-532431-2	1-533268-2

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Three-Row Pin Assemblies With One Guide Hole

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

Vertical Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

Contacts—Phosphor bronze, plated as follows:

A .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

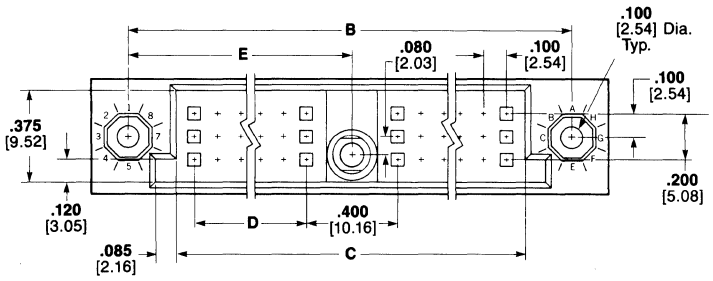
B Gold flash over .000050-.000100 [0.00127-0.00254] nickel on entire contact, with additional .000030 [0.00076] gold in contact area and for .200 [5.08] from tip of wrap-type post

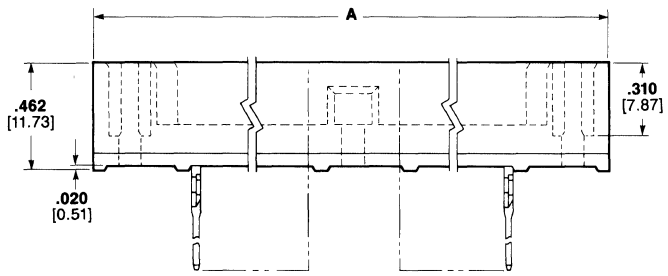
Related Product Data:

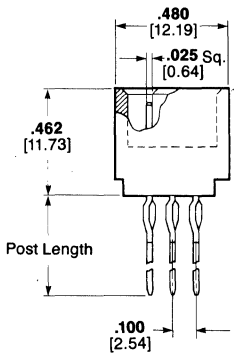
Mateable Connectors - page 3039
Accessories:
Shrouds - page 3050
Guide Pins - page 3052
Guide/Power Pins - page 3053
Static Discharge Guide/Power Pins - page 3053
Keys - page 3054
Jackscrews - page 3056
PCB Hole Layouts - page 3061
ACTION PIN Contacts - pages 3019 and 3412
Application Tooling - pages 3064 - 3066
Technical Documents - page 3016

AMP Product Specifications 108-9063, 108-26003
AMP Application Specification 114-9008
AMP Instruction Sheets IS 2636, IS 6626, IS 6909, IS 6927, IS 9007, IS 9038, IS 9142, IS 9185

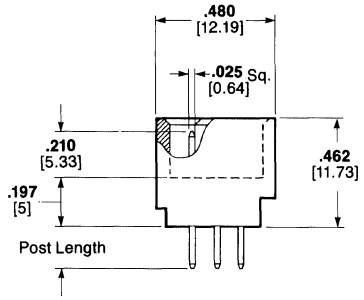
Note: Housing with center mounting is recommended for assemblies having 75 contacts or more per row.







ACTION PIN Posts



Solder Posts

Three-Row Pin Assemblies With One Guide Hole
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Pos.	Dimensions A	B	C	D	E	Post Length	Contact Finish	Part Numbers* ACTION PIN Posts	Solder Posts
240	**9.050** 229.87	**8.750** 222.25	**8.350** 212.09	**3.900** 99.06	**4.375** 111.12	**.733** 18.62	A	532919-1	—
						.533 13.54	B	533434-1	—
						.250 6.35	A	533294-1	—
						.190 4.83	A	—	532931-1
276	**10.250** 260.35	**9.950** 252.73	**9.550** 242.57	**4.500** 114.30	**4.975** 126.36	**.733** 18.62	A	532919-3	—
						.533 13.54	B	533434-3	—
						.250 6.35	A	533294-3	—
						.190 4.83	A	—	532931-3
294	**10.850** 275.59	**10.550** 267.97	**10.150** 257.81	**4.800** 121.92	**5.275** 133.98	**.733** 18.62	A	532919-4	—
						.250 6.35	A	533294-4	—
312	**11.450** 290.83	**11.150** 283.21	**10.750** 273.05	**5.100** 129.54	**5.575** 141.60	**.733** 18.62	B	533296-5	—
						.250 6.35	A	533294-5	—
330	**12.050** 306.07	**11.750** 298.45	**11.350** 288.29	**5.400** 137.16	**5.875** 149.22	**.733** 18.62	A	532919-6	—
						.533 13.54	A	533513-6	—
						.250 6.35	A	533294-6	—
348	**12.650** 321.31	**12.350** 313.69	**11.950** 303.53	**5.700** 144.78	**6.175** 156.84	**.533** 13.54	B	533434-7	—
						.250 6.35	A	533294-7	—
366	**13.250** 336.55	**12.950** 328.93	**12.550** 318.77	**6.000** 152.40	**6.475** 164.46	**.733** 18.62	B	533296-8	—
						.533 13.54	A	533513-8	—
						.250 6.35	A	533294-8	—

*Connectors with other post style/length/plating combinations can be made available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Three-Row Pin Assemblies With One Guide Hole
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Right-Angle Solder Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

Contacts—Phosphor bronze, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

Mateable Connectors - page 3039

Accessories:

Guide Pins - page 3052

Guide/Power Pins - page 3053

Static Discharge Guide/Power Pins - page 3053

Keys - page 3054

Mounting Ears (Purchase Separately) - page 3055

Jackscrews - page 3056

PCB Hole Layouts - page 3061

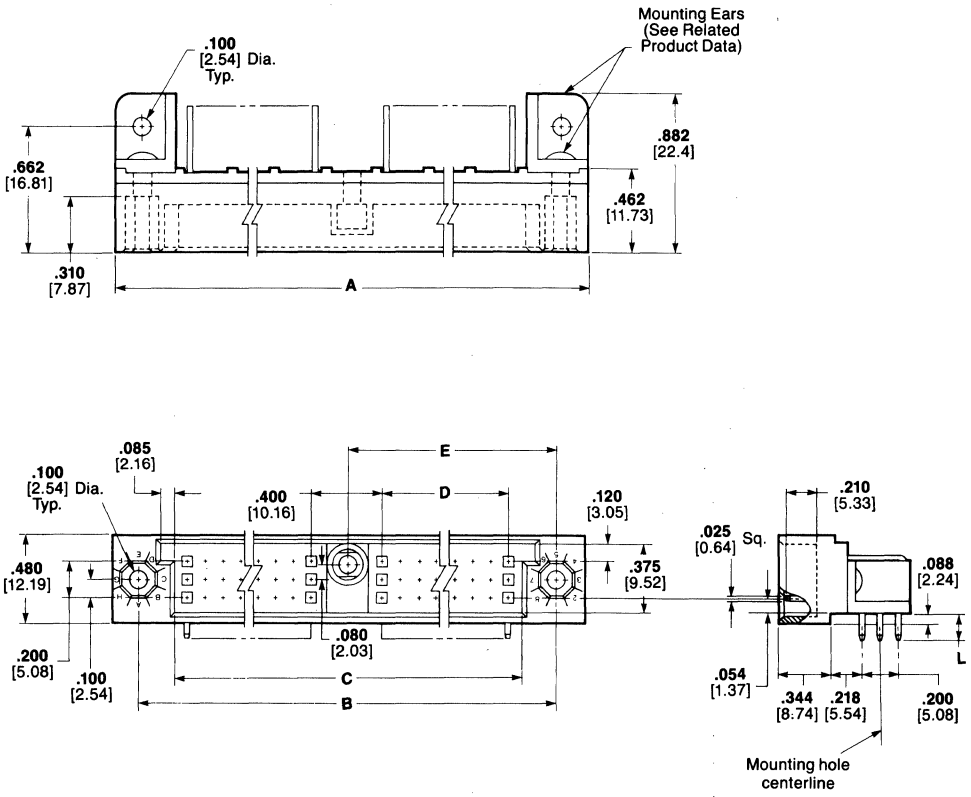
Technical Documents - page 3016

AMP Product Specification 108-9063

AMP Application Specification 114-9008

AMP Instruction Sheets IS 6626, IS 6909, IS 9007

Note: Housing with center guide is recommended for assemblies having 75 contacts or more per row.



No. of Pos.	Dimensions					Part Numbers*	
	A	B	C	D	E	L=.180 [4.57]	L=.120 [3.05]
240	**9.050** 229.87	**8.750** 222.25	**8.350** 212.09	**3.900** 99.06	**4.375** 111.12	—	533519-1
312	**11.450** 290.83	**11.150** 283.21	**10.750** 273.05	**5.100** 129.54	**5.575** 141.60	—	533519-5
330	**12.050** 306.07	**11.750** 298.45	**11.350** 288.29	**5.400** 137.16	**5.875** 149.22	533518-6	—
366	**13.250** 336.55	**12.950** 328.93	**12.550** 318.77	**6.000** 152.40	**6.475** 164.46	533518-8	533519-8

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Three-Row Receptacle Assemblies With One Guide Hole

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Right-Angle Solder Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

Contacts—Beryllium copper, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

Mateable Connectors - pages 3036 - 3038

Accessories:

Guide Pin/Power Receptacles - page 3053

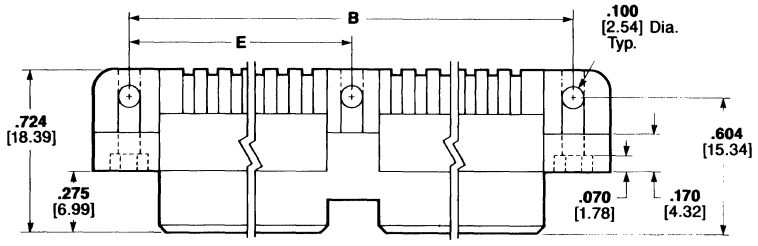
Keys - page 3054

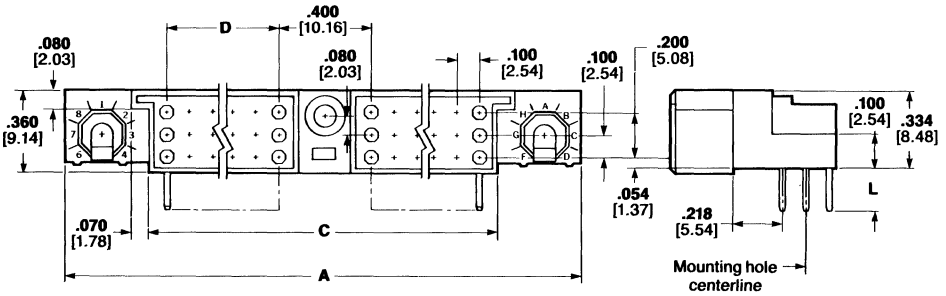
Jackscrews - page 3056

PCB Hole Layouts - page 3061

Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9141, IS 9007

Note: Housing with center mounting is recommended for assemblies having 75 contacts or more per row.





No. of Pos.	Dimensions					Part Numbers*	
	A	B	C	D	E	L = .180 [4.57]	L = .120 [3.05]
240	**9.050** 229.87	**8.750** 222.25	**8.324** 211.43	**3.900** 99.06	**4.375** 111.12	532918-1	533514-1
258	**9.650** 245.11	**9.350** 237.49	**8.924** 226.67	**4.200** 106.68	**4.675** 118.74	532918-2	—
276	**10.250** 260.35	**9.950** 252.73	**9.524** 241.91	**4.500** 114.30	**4.975** 126.36	532918-3	533514-3
294	**10.850** 275.59	**10.550** 267.97	**10.124** 257.15	**4.800** 121.92	**5.275** 133.98	532918-4	533514-4
312	**11.450** 290.83	**11.150** 283.21	**10.724** 272.39	**5.100** 129.54	**5.575** 141.60	532918-5	533514-5
330	**12.050** 306.07	**11.750** 298.45	**11.324** 287.63	**5.400** 137.16	**5.875** 149.22	532918-6	533514-6
348	**12.650** 321.31	**12.350** 313.69	**11.924** 302.87	**5.700** 144.78	**6.175** 156.84	532918-7	533514-7
366	**13.250** 336.55	**12.950** 328.93	**12.524** 318.11	**6.000** 152.40	**6.475** 164.46	532918-8	—

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Three-Row Pin Assemblies With Two Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Vertical Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

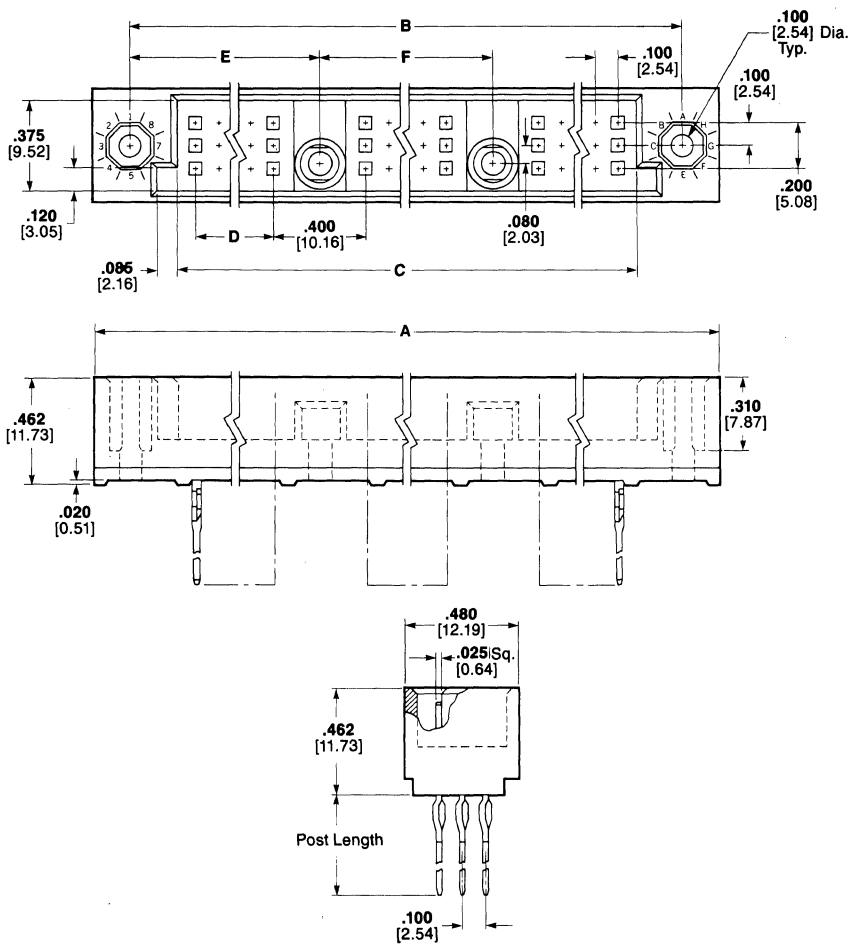
Contacts—Phosphor bronze, plated as follows:

A .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel
B Gold flash over .000050-.000100 [0.00127-0.00254] nickel on entire contact, with additional .000030 [0.00076] gold in contact area and for .200 [5.08] from tip of wrap-type post

Related Product Data:

Mateable Connectors - page 3041
Accessories:
Shrouds - page 3050
Guide Pins - page 3052
Guide/Power Pins - page 3053
Static Discharge Guide/Power Pins - page 3053
Keys - page 3054
Jackscrews - page 3056
PCB Hole Layouts - page 3062
ACTION PIN Contacts - pages 3019 and 3412
Application Tooling - pages 3064 - 3066
Technical Documents - page 3016
AMP Product Specifications 108-9063, 108-26003
AMP Application Specification 114-9008
AMP Instruction Sheets IS 2636, IS 6626, IS 6909, IS 6927, IS 9007, IS 9038, IS 9142, IS 9185

Note: Housing with center mounting is recommended for assemblies having 75 contacts or more per row.



ACTION PIN Posts

No. of Pos.	Dimensions A	B	C	D	E	F	Post Length	Contact Finish	Part Numbers* (ACTION PIN Posts)
387	**14.250** 361.95	**13.950** 354.33	**13.550** 344.17	**4.200** 106.68	**4.675** 118.74	**4.600** 116.84	**.733** 18.62	A	532839-1
							.533 13.54	A	533426-1
							.250 6.35	A	533094-1
405	**14.850** 377.19	**14.550** 369.57	**14.150** 359.41	**4.400** 111.76	**4.875** 123.82	**4.800** 121.92	**.733** 18.62	A	532839-2
							.533 13.54	A	533512-2
								B	533426-2
							.250 6.35	A	533094-2

*Connectors with other post style/length/plating combinations can be made available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Three-Row Pin Assemblies With Two Guide Holes

(Continued)

Right-Angle Solder Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

Contacts—Phosphor bronze, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

Mateable Connectors - below

Accessories:

Guide Pins - page 3052

Guide/Power Pins - page 3053

Static Discharge Guide/Power Pins - page 3053

Keys - page 3054

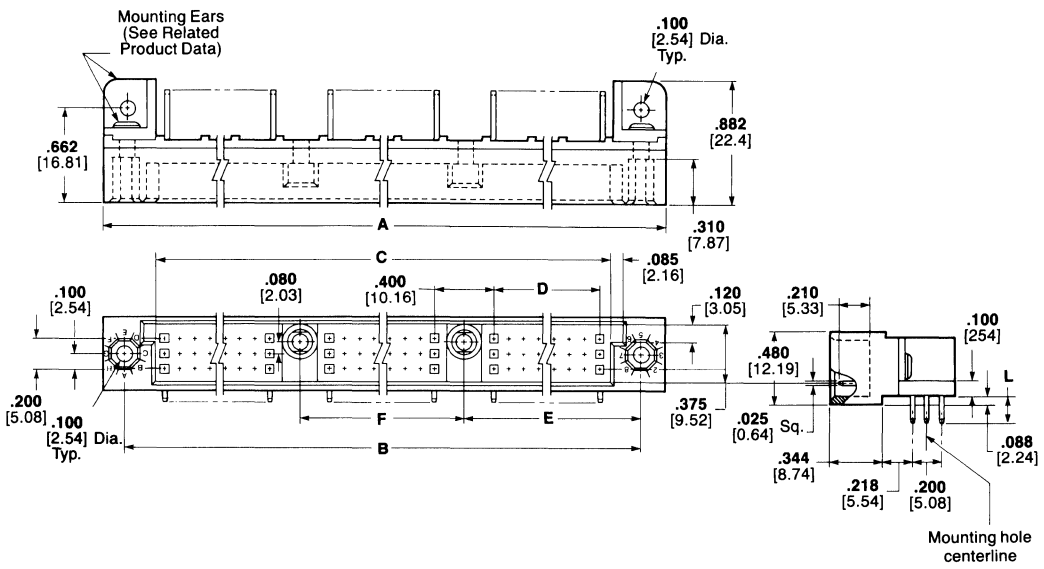
Mounting Ears (Purchase Separately) - page 3055

Jackscrews - page 3056

PCB Hole Layouts - page 3062

Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9007

Note: Housing with center guide is recommended for assemblies having 75 contacts or more per row.



No. of Pos.	Dimensions A	B	C	D	E	F	Part Number* (L=.180 [4.57])
387	**14.250** 361.95	**13.950** 354.33	**13.550** 344.17	**4.200** 106.68	**4.675** 118.74	**4.600** 116.84	533520-1

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Three-Row Receptacle Assemblies With Two Guide Holes

Right-Angle Solder Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

Contacts—Beryllium copper, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

Mateable Connectors - above

Accessories:

Guide Pin/Power Receptacles - page 3053

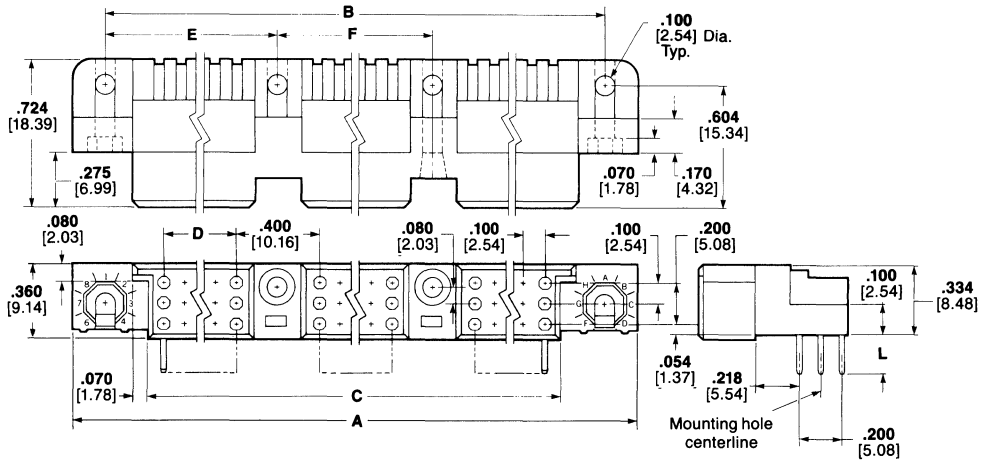
Keys - page 3054

Jackscrews - page 3056

PCB Hole Layouts - page 3062

Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9141, IS 9007

Note: Housing with center mounting is recommended for assemblies having 75 contacts or more per row.



No. of Pos.	Dimensions A	B	C	D	E	F	Part Numbers* L=.180 [4.57]	L=.120 [3.05]
387	**14.250** 361.95	**13.950** 354.33	**13.524** 343.51	**4.200** 106.68	**4.675** 118.74	**4.600** 116.84	532838-1	533425-1
405	**14.850** 377.19	**14.550** 369.57	**14.124** 358.75	**4.400** 111.76	**4.875** 123.82	**4.800** 121.92	532838-2	533425-2

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Two-Row Pin Assemblies Without Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Vertical Posts

Material and Finish:

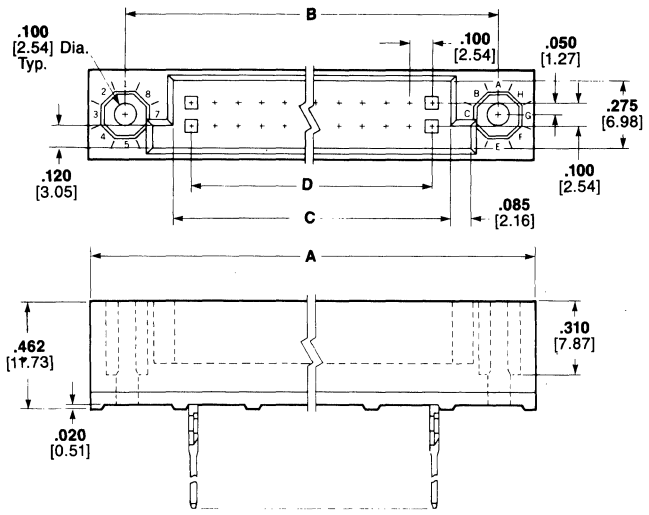
Housing—Natural, glass-filled polyphenylene sulfide

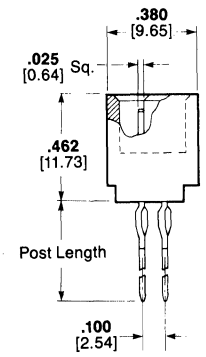
Contacts—Phosphor bronze, plated as follows:

A .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel
B Gold flash over .000050-.000100 [0.00127-0.00254] nickel on entire contact, with additional .000030 [0.00076] gold in contact area and for .200 [5.08] from tip of wrap-type post

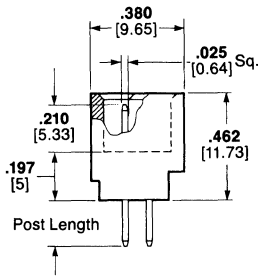
Related Product Data:

Mateable Connectors - page 3045
Accessories:
Shrouds - page 3051
Guide/Power Pins - page 3053
Keys - page 3054
PCB Hole Layouts - page 3063
ACTION PIN Contacts - pages 3019 and 3412
Application Tooling - pages 3064 - 3066
Technical Documents - page 3016
AMP Product Specifications 108-9063, 108-26003
AMP Application Specification 114-9008
AMP Instruction Sheets IS 2636, IS 6909, IS 6927, IS 9007, IS 9038, IS 9142, IS 9178, IS 9185





ACTION PIN Posts



Solder Posts

No. of Pos.	Dimensions A	B	C	D	Post Length	Contact Finish	Part Numbers* ACTION PIN Posts	Solder Posts
20	**1.750** 44.45	**1.450** 36.83	**1.050** 26.67	**.900** 22.86	**.533** 13.54	A	533060-1	—
					.250 6.35	A	532446-1	—
					.190 4.83	A	—	532430-1
40	**2.750** 69.85	**2.450** 62.23	**2.050** 52.07	**1.900** 48.26	**.533** 13.54	A	533091-3	—
					.190 4.83	A	—	532430-3
50	**3.250** 82.55	**2.950** 74.93	**2.550** 64.77	**2.400** 60.96	**.533** 13.54	A	533060-4	—
						B	533091-4	—
					.250 6.35	A	532446-4	—
60	**3.750** 95.25	**3.450** 87.63	**3.050** 77.47	**2.900** 73.66	**.733** 18.62	A	532429-5	—
						B	533090-5	—
					.533 13.54	A	533091-5	—
					.250 6.35	A	532446-5	—
					.190 4.83	A	—	532430-5

*Connectors with other post style/length/plating combinations can be made available, consult AMP Incorporated.

Two-Row Pin Assemblies Without Guide Holes
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Pos.	Dimensions A	B	C	D	Post Length	Contact Finish	Part Numbers* ACTION PIN Posts	Solder Posts
70	**4.250** 107.95	**3.950** 100.33	**3.550** 90.17	**3.400** 86.36	**.733** 18.62	A	532429-6	—
					.250 6.35	A	532446-6	—
80	**4.750** 120.65	**4.450** 113.03	**4.050** 102.87	**3.900** 99.06	**.533** 13.54	A	533060-7	—
						B	533091-7	—
					.250 6.35	A	532446-7	—
					.190 4.83	A	—	532430-7
100	**5.750** 146.05	**5.450** 138.43	**5.050** 128.27	**4.900** 124.46	**.533** 13.54	A	533060-9	—
					.250 6.35	A	532446-9	—
					.190 4.83	A	—	532430-9
110	**6.250** 158.75	**5.950** 151.13	**5.550** 140.97	**5.400** 137.16	**.533** 13.54	A	1-533091-0	—
					.190 4.83	A	—	1-532430-0
120	**6.750** 171.45	**6.450** 163.83	**6.050** 153.67	**5.900** 149.86	**5.33** 13.54	A	1-533091-1	—
					.250 6.35	A	1-532446-1	—
140	**7.750** 196.85	**7.450** 189.23	**7.050** 179.07	**6.900** 175.26	**.733** 18.62	A	1-532429-3	—
					.533 13.54	A	1-533060-3	—
					.190 4.83	A	—	1-532430-3
150	**8.250** 209.55	**7.950** 201.93	**7.550** 191.77	**7.400** 187.96	**.733** 18.62	A	1-532429-4	—
					.533 13.54	A	1-533060-4	—
						B	1-533091-4	—
					.250 6.35	A	1-532446-4	—

*Connectors with other post style/length/plating combinations can be made available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Two-Row Pin Assemblies Without Guide Holes
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Right-Angle Solder Posts

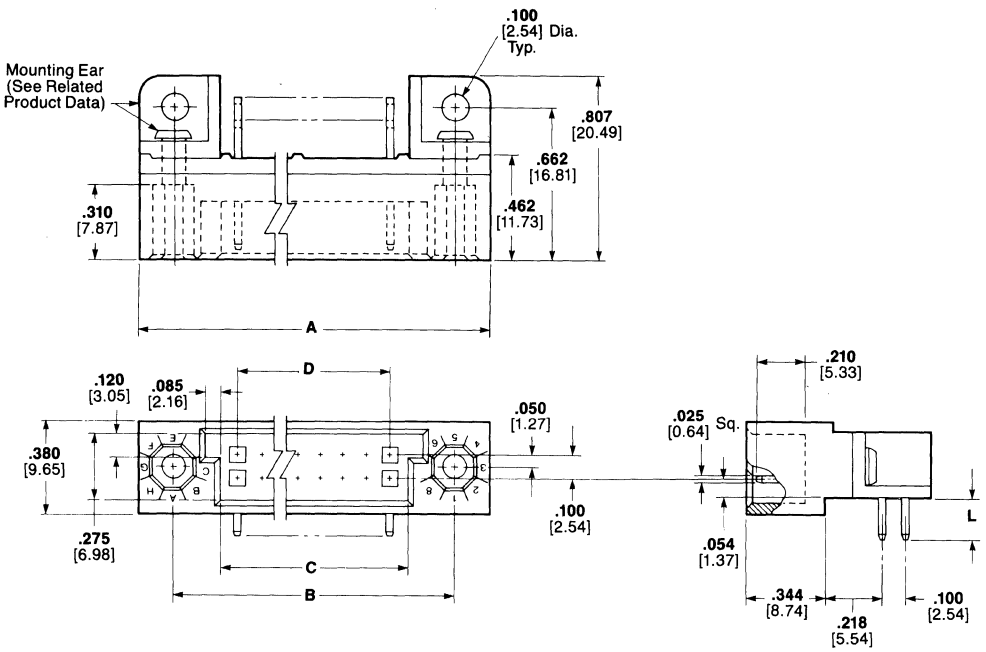
Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide

Contacts—Phosphor bronze, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

Mateable Connectors - page 3045
Accessories:
Guide/Power Pins - page 3053
Keys - page 3054
Mounting Ears (Purchase Separately) - page 3055
PCB Hole Layouts - page 3063
Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6909, IS 9007, IS 9178



No. of Pos.	Dimensions				Part Numbers*	
	A	B	C	D	L=.180 [4.57]	L=.120 [3.05]
50	**3.250** 82.55	**2.950** 74.93	**2.550** 64.77	**2.400** 60.96	—	533295-4
60	**3.750** 95.25	**3.450** 87.63	**3.050** 77.47	**2.900** 73.66	—	533295-5
100	**5.750** 146.05	**5.450** 138.43	**5.050** 128.27	**4.900** 124.46	533515-9	—
150	**8.250** 209.55	**7.950** 201.93	**7.550** 191.77	**7.400** 187.96	1-533515-4	—

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Two-Row Receptacle Assemblies Without Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

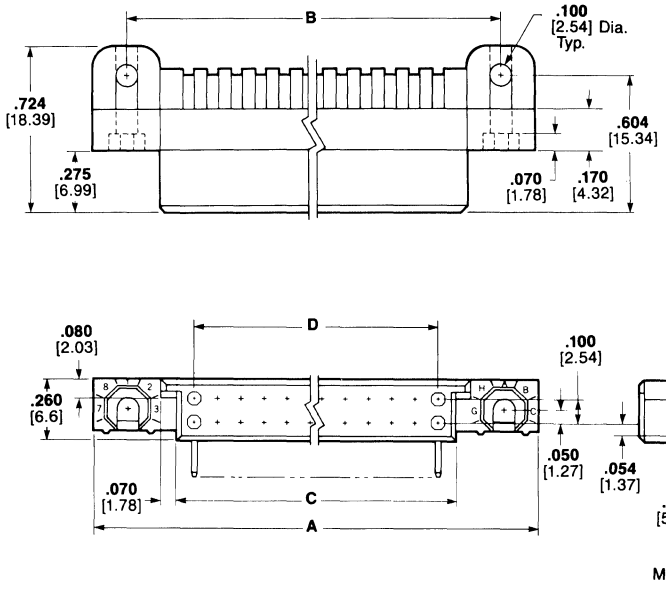
Right-Angle Solder Posts

Material and Finish:

Housing—Natural, glass-filled polyphenylene sulfide
Contacts—Beryllium copper, plated .000030 [0.00076] gold in contact area; tin on posts, with entire contact underplated .000050-.000100 [0.00127-.0.00254] nickel

Related Product Data:

Mateable Connectors - pages 3042 - 3044
Accessories:
Guide Pin/Power Receptacles - page 3053
Keys - page 3054
PCB Hole Layouts - page 3063
Technical Documents - page 3016
AMP Product Specification 108-9063
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6909, IS 9007, IS 9141, IS 9178



No. of Pos.	Dimensions				Part Numbers*	
	A	B	C	D	L=.180 [4.57]	L=.120 [3.05]
20	**1.750** 44.45	**1.450** 36.83	**1.024** 26.01	**.900** 22.86	532428-1	—
30	**2.250** 57.15	**1.950** 49.53	**1.524** 38.71	**1.400** 35.56	—	532825-2
40	**2.750** 69.85	**2.450** 62.23	**2.024** 51.41	**1.900** 48.26	532428-3	532825-3
50	**3.250** 82.55	**2.950** 74.93	**2.524** 64.11	**2.400** 60.96	532428-4	532825-4
60	**3.750** 95.25	**3.450** 87.63	**3.024** 76.81	**2.900** 73.66	532428-5	532825-5
70	**4.250** 107.95	**3.950** 100.33	**3.524** 89.51	**3.400** 86.36	532428-6	532825-6
80	**4.750** 120.65	**4.450** 113.03	**4.024** 102.21	**3.900** 99.06	532428-7	532825-7
100	**5.750** 146.05	**5.450** 138.43	**5.024** 127.61	**4.900** 124.46	532428-9	532825-9
110	**6.250** 158.75	**5.950** 151.13	**5.524** 140.13	**5.400** 137.16	1-532428-0	—
120	**6.750** 171.45	**6.450** 163.83	**6.024** 153.01	**5.900** 149.86	1-532428-1	1-532825-1
140	**7.750** 196.85	**7.450** 189.23	**7.024** 178.41	**6.900** 175.26	1-532428-3	1-532825-3
150	**8.250** 209.55	**7.950** 201.93	**7.524** 191.11	**7.400** 187.96	1-532428-4	1-532825-4

*Connectors with other post lengths can be made available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Shrouds for Four-Row Pin Assemblies Without Guide Holes

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

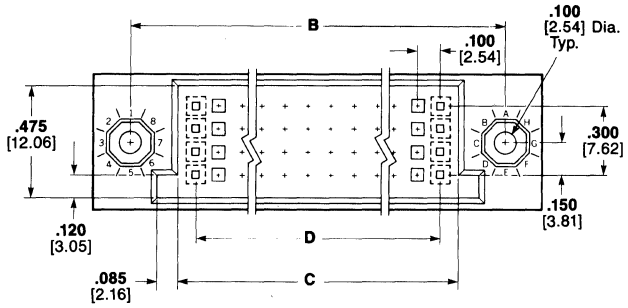
Chart contains dimensions in inches over millimeters.

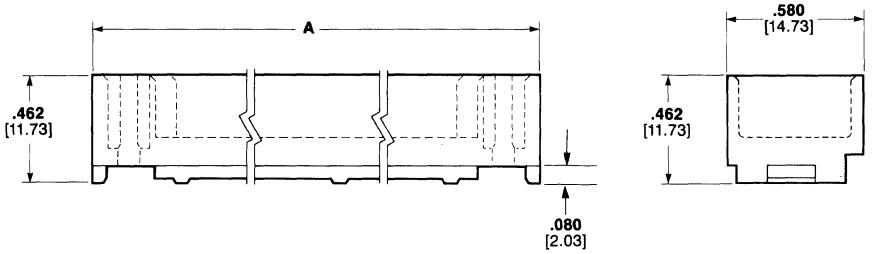
Dimensions are shown for reference purposes only.

Material:

Housing—Natural, glass-filled polyphenylene sulfide

Note: These shrouds are to be used with connectors having a post length of .533 [13.54] and with .093-.125 [2.36-3.18] thick PC boards.





No. of Pos.	Dimensions				Part Numbers*
	A	B	C	D	
100	**3.250** 82.55	**2.950** 74.93	**2.550** 64.77	**2.400** 60.96	533562-1
120	**3.750** 95.25	**3.450** 87.63	**3.050** 77.47	**2.900** 73.66	533562-2
160	**4.750** 120.65	**4.450** 113.03	**4.050** 102.87	**3.900** 99.06	533562-5
180	**5.250** 133.35	**4.950** 125.73	**4.550** 115.57	**4.400** 111.76	533562-6
200	**5.750** 146.05	**5.450** 138.43	**5.050** 128.27	**4.900** 124.46	533562-7
220	**6.250** 158.75	**5.950** 151.13	**5.550** 140.97	**5.400** 137.16	533562-8
240	**6.750** 171.45	**6.450** 163.83	**6.050** 153.67	**5.900** 149.86	533562-9
300	**8.250** 209.55	**7.950** 201.93	**7.550** 191.77	**7.400** 187.96	1-533562-2

*Other sizes can be made available, consult AMP Incorporated.

Shrouds for Four-Row Pin Assemblies With One Guide Hole

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

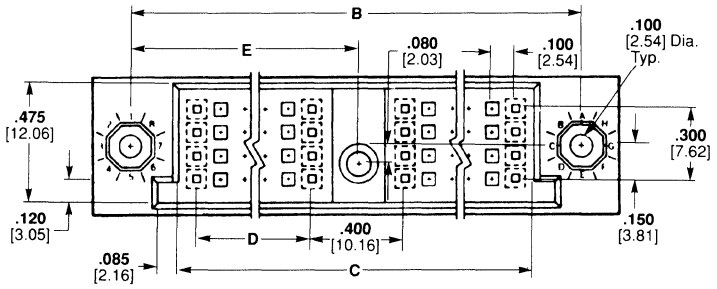
Chart contains dimensions in inches over millimeters.

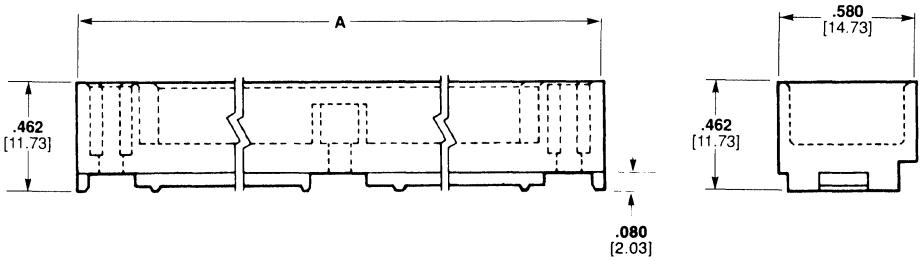
Dimensions are shown for reference purposes only.

Material:

Housing—Natural, glass-filled polyphenylene sulfide

Note: These shrouds are to be used with connectors having a post length of .533 [13.54] and with .093-.125 [2.36-3.18] thick PC boards.





No. of Pos.	Dimensions					Part Numbers*
	A	B	C	D	E	
368	**10.250** 260.35	**9.950** 252.73	**9.550** 242.57	**4.500** 114.30	**4.975** 126.36	533563-3
416	**11.450** 290.83	**11.150** 283.21	**10.750** 273.05	**5.100** 129.54	**5.575** 141.60	533563-5

*Other sizes can be made available, consult AMP Incorporated.

Shrouds for Four-Row Pin Assemblies With Two Guide Holes

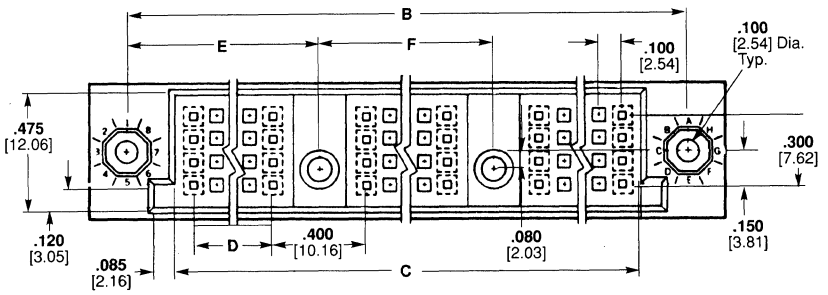
Specifications subject to change.
For latest design specifications...
1-800-522-6752

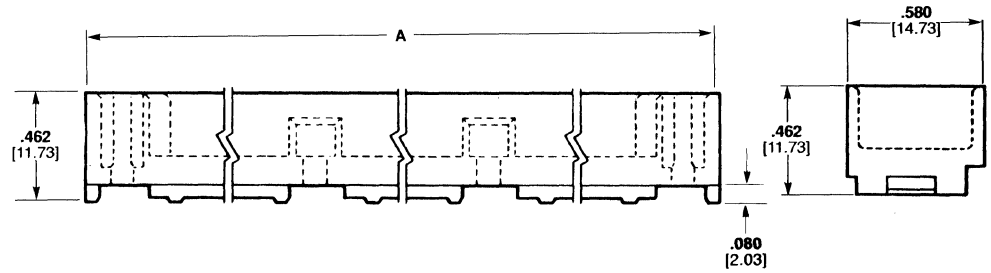
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Material:

Housing—Natural, glass-filled polyphenylene sulfide

Note: These shrouds are to be used with connectors having a post length of .533 [13.54] and with .093-.125 [2.36-3.18] thick PC boards.





No. of Pos.	Dimensions						Part Numbers*
	A	B	C	D	E	F	
516	**14.250** 361.95	**13.950** 354.33	**13.550** 344.17	**4.200** 106.68	**4.675** 118.74	**4.600** 116.84	533564-1
540	**14.850** 377.19	**14.550** 369.57	**14.150** 359.41	**4.400** 111.76	**4.875** 123.82	**4.800** 121.92	533564-2
588	**16.050** 407.67	**15.750** 400.05	**15.350** 389.89	**4.800** 121.92	**5.275** 133.98	**5.200** 132.08	533564-4

*Other sizes can be made available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Shrouds for Three-Row Pin Assemblies Without Guide Holes

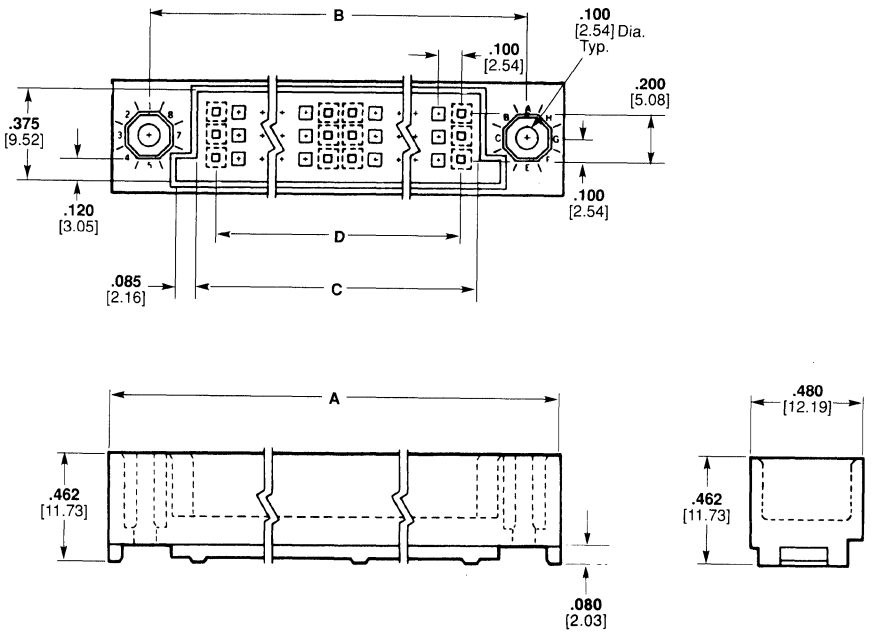
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Material:
Housing—Natural, glass-filled polyphenylene sulfide

Note: These shrouds are to be used with connectors having a post length of .533 [13.54] and with .093-.125 [2.36-3.18] thick PC boards.



No. of Pos.	Dimensions A	B	C	D	Part Numbers*
96	**3.950** 100.33	**3.650** 92.71	**3.250** 82.55	**3.100** 78.74	533558-3
150	**5.750** 146.05	**5.450** 138.43	**5.050** 128.27	**4.900** 124.46	533558-7
180	**6.750** 171.45	**6.450** 163.83	**6.050** 153.67	**5.900** 149.86	533558-9
225	**8.250** 209.55	**7.950** 201.93	**7.550** 191.77	**7.400** 187.96	1-533558-2

*Other sizes can be made available, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

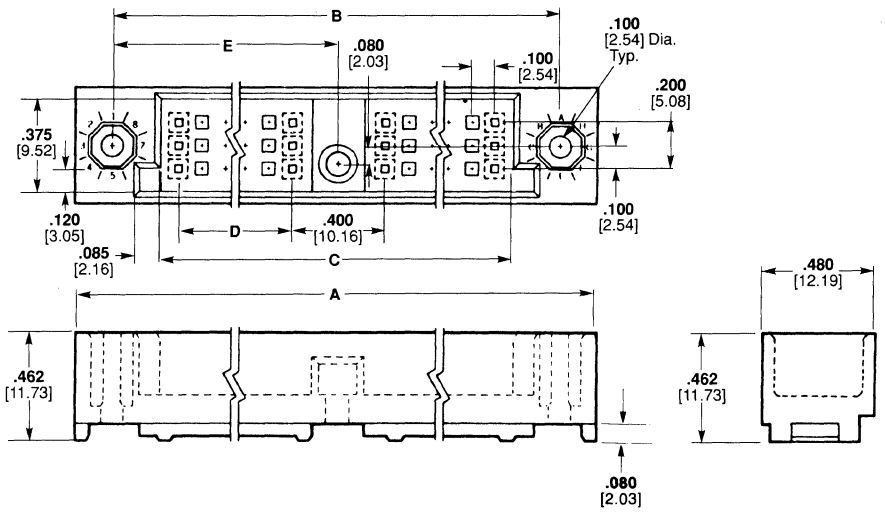
Shrouds for Three-Row Pin Assemblies With One Guide Hole

Material:

Housing—Natural, glass-filled polyphenylene sulfide

Note: These shrouds are to be used with connectors having a post length of .533 [13.54] and with .093-.125 [2.36-3.18] thick PC boards.

Part Numbers: Consult AMP Incorporated for available sizes.



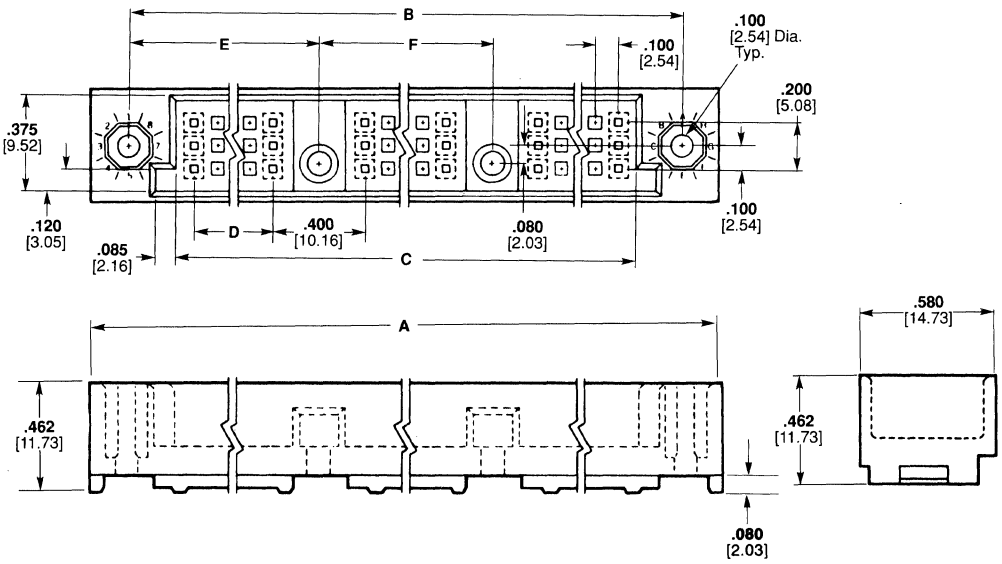
Shrouds for Three-Row Pin Assemblies With Two Guide Holes

Material:

Housing—Natural, glass-filled polyphenylene sulfide

Note: These shrouds are to be used with connectors having a post length of .533 [13.54] and with .093-.125 [2.36-3.18] thick PC boards.

Part Numbers: Consult AMP Incorporated for available sizes.



Shrouds for Two-Row Pin Assemblies Without Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

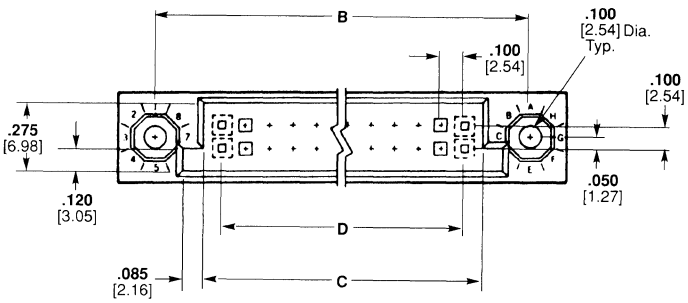
Chart contains dimensions in inches over millimeters.

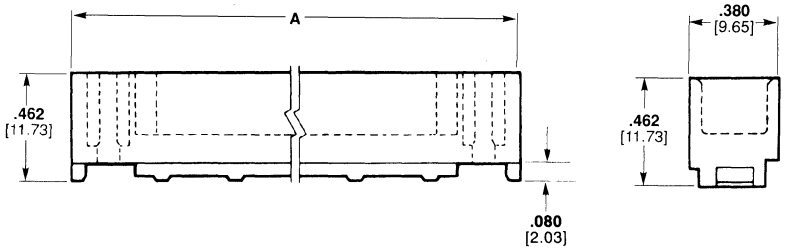
Dimensions are shown for reference purposes only.

Material:

Housing—Natural, glass-filled polyphenylene sulfide

Note: These shrouds are to be used with connectors having a post length of .533 [13.54] and with .093-.125 [2.36-3.18] thick PC boards.





No. of Pos.	Dimensions				Part Numbers*
	A	B	C	D	
30	**2.250** 57.15	**1.950** 49.53	**1.550** 39.37	**1.400** 35.56	533557-2
80	**4.750** 120.65	**4.450** 113.03	**4.050** 102.87	**3.900** 99.06	533557-7

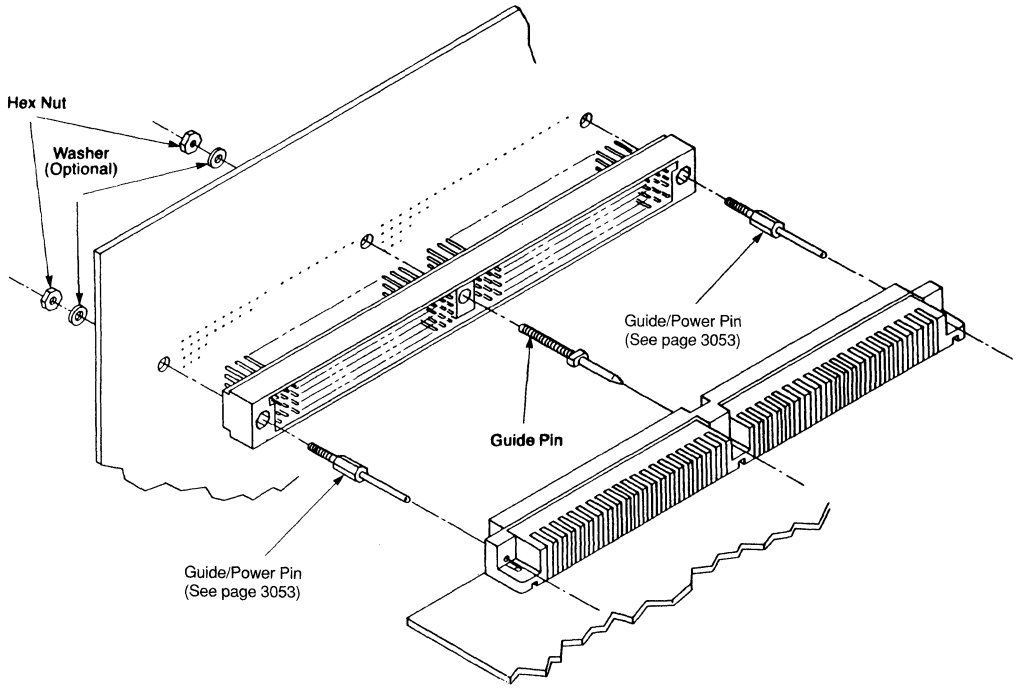
*Other sizes can be made available, consult AMP Incorporated.

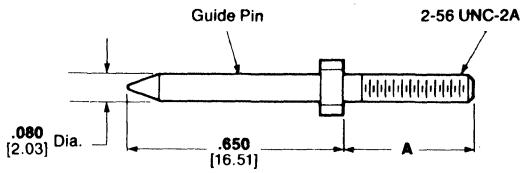
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Guide Pin Kits (for use in Center Guide Holes)

Material and Finish:

Washer—Passivated stainless steel
Pin—Passivated stainless steel
Nut—Passivated stainless steel





Dimension A	Guide Pin Part Numbers	Guide Pin Kit Numbers
.475 12.06	532807-1	532808-1
.562 14.27	532807-2	532808-2
.750 19.05	532807-3	532808-3

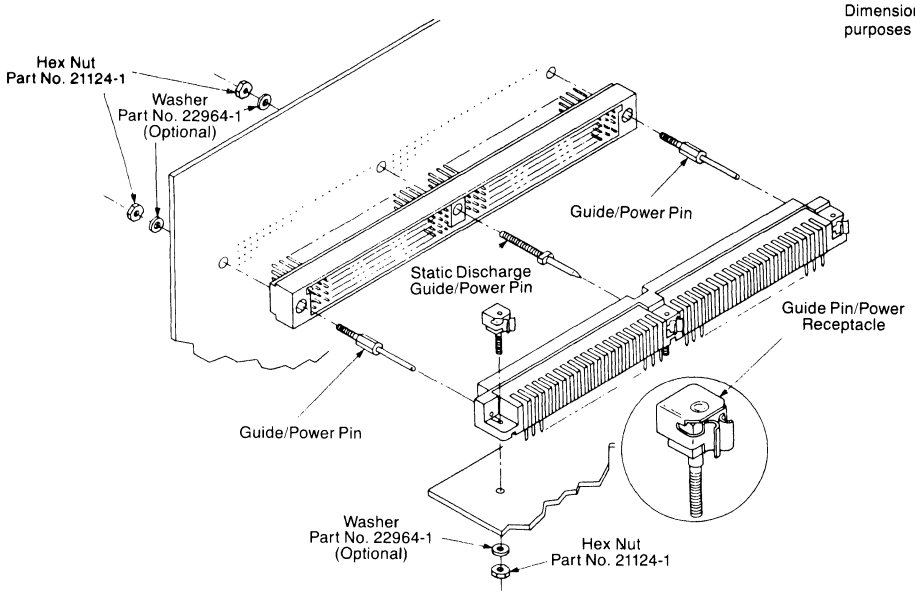
Note: Each kit includes a guide pin, washer and nut. All parts may be purchased separately.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Charts contain dimensions in inches and millimeters.

Dimensions are shown for reference purposes only.

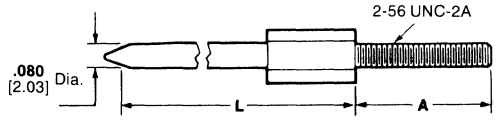


Guide/Power Pins (for use in End Guide Holes)

Material and Finish:

Brass, plated as follows:

A .000030 [0.00076] gold over .000050-.000100 [0.00127-0.00254] nickel
B .000050 [0.00127] gold over .000050-.000100 [0.00127-0.00254] nickel

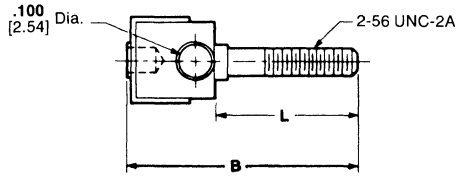


Dimensions A Inch	Dimensions A mm	Dimensions L Inch	Dimensions L mm	Finish	Part Number
		1.025	26.04	None	533082-1
		1.195	30.35	None	533082-2
.375	9.52	**1.025**	26.04	A	533082-3
		1.195	30.35	A	533082-4
		1.025	26.04	B	533082-5
.475	12.06	**1.195**	30.35	A	533082-6
				None	533082-7
.475	12.06	**1.025**	26.04	None	533082-8
				A	533082-9
.560	14.22	**1.025**	26.04	None	1-533082-0
				A	1-533082-1

Guide Pin/Power Receptacles (for use in End Mounts)

Material and Finish:

Brass, plated .000030 [0.00076] gold in contact area and gold flash on remainder, with entire contact underplated .000050-.000100 [0.00127-0.00254] nickel



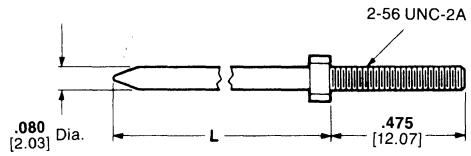
Dimensions B Inch	Dimensions B mm	Dimensions L Inch	Dimensions L mm	Part Numbers
.678	17.22	**.425**	10.80	532924-1
.578	14.68	**.325**	8.26	532924-3
.538	13.67	**.285**	7.25	532924-4

Static Discharge Guide/Power Pins (for use in Center Guide Holes)

Material and Finish:

Brass, plated as follows:

A .000030 [0.00076] gold over .000050-0.00100 [0.00127-0.00254] nickel
B .000050 [0.00127] gold over .000050-0.00100 [0.00127-0.00254] nickel



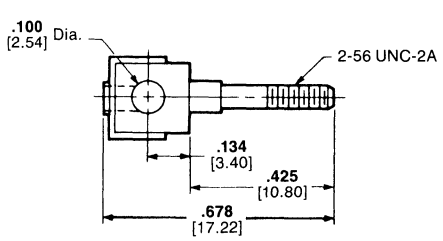
Dimension L Inch	Dimension L mm	Finish	Part Numbers
1.150	29.21	A	532828-2
.980	24.89	A	532828-5
1.025	26.04	A	532828-8
1.195	30.35	A	1-532828-1
.850	21.59	B	1-532828-5

Guide Pin/Power Receptacles (for use in Center Mounts)

Material and Finish:

Brass, plated .000030 [0.00076] gold in contact area and gold flash on remainder, with entire contact underplated .000050-0.00100 [0.00127-0.00254] nickel

Part Number: 533065-1



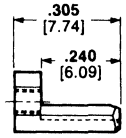
Keying Hardware and Applications

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

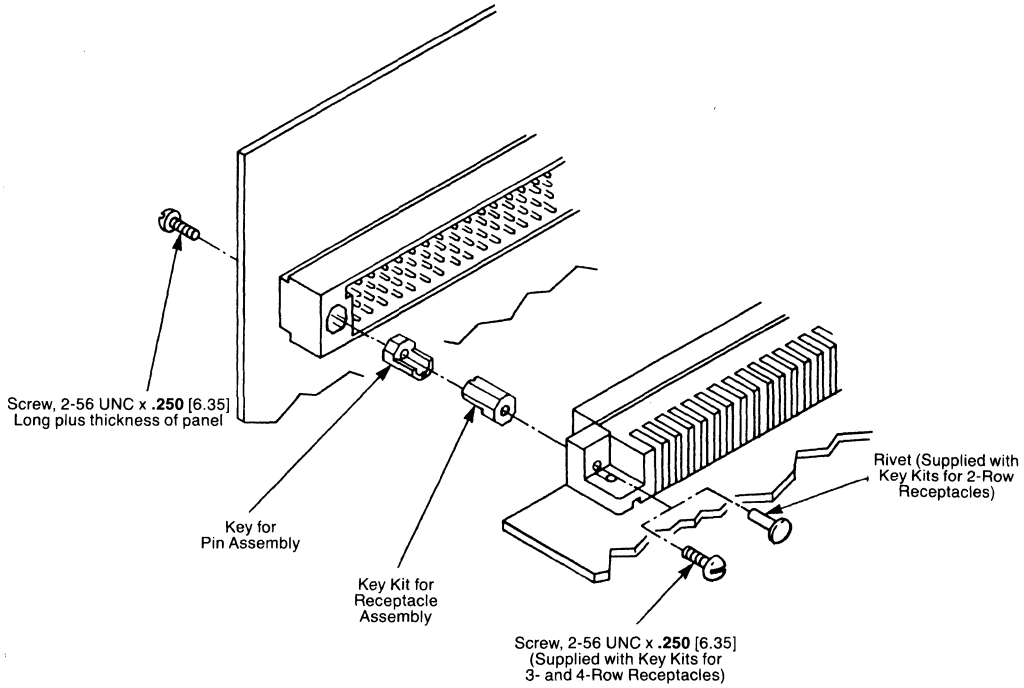
Keys for Pin Assemblies

Material and Finish:

Passivated stainless steel
Key Part No. 530341-1
Key Part No. 530341-6 (contains 2 per package)



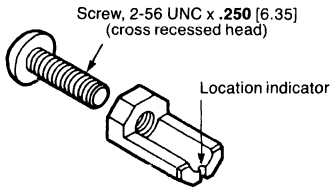
Note: Customer must supply screws; .250 [6.35] min. long, plus thickness of panel



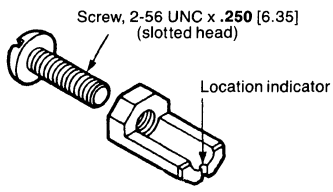
Key Kits for 3- and 4-Row Receptacles

Material and Finish:

Key—Passivated stainless steel
Screw—Passivated stainless steel



Kit No. 530341-7
(includes 2 keys and 2 screws)

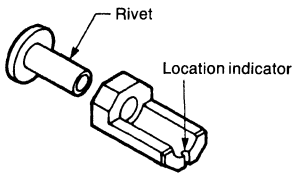


Kit No. 530341-3
(includes 2 keys and 2 screws)

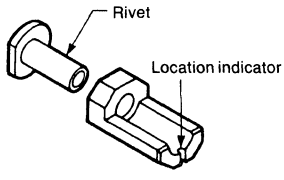
Key Kits for 2-Row Receptacles

Material and Finish:

Key—Passivated stainless steel
Rivet—Nickel plated brass



Kit No. 530341-5
(includes 2 keys and 2 rivets)
Note: Use Rivet Tool No. 91117-3

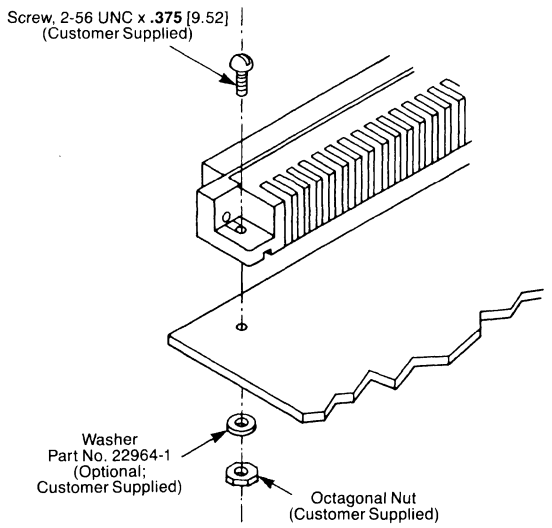


Kit No. 530341-4
(includes 2 keys and 2 rivets)
Note: Use Rivet Tool No. 91117-5

Mounting Hardware and Applications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

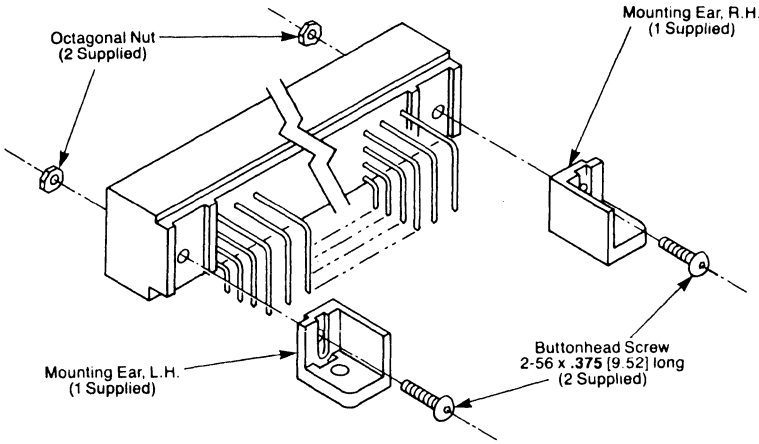
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

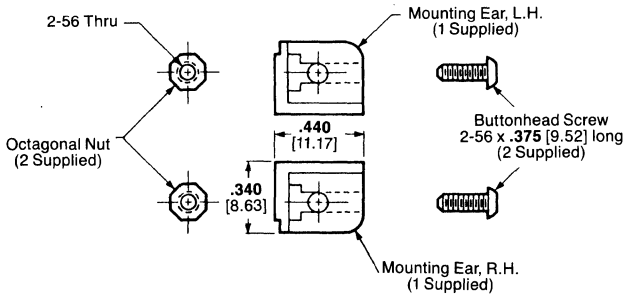


Mounting Ear Kits

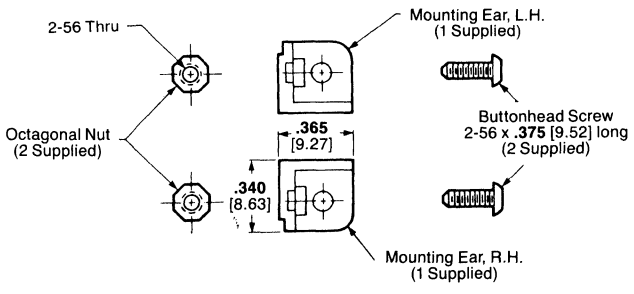
Material and Finish:

Ear—Natural, glass-filled polyphenylene sulfide
Nut—Passivated stainless steel
Screw—Passivated stainless steel





Kit No. 533050-1
(for 3-and 4-Row Right-Angle Pin Assemblies)

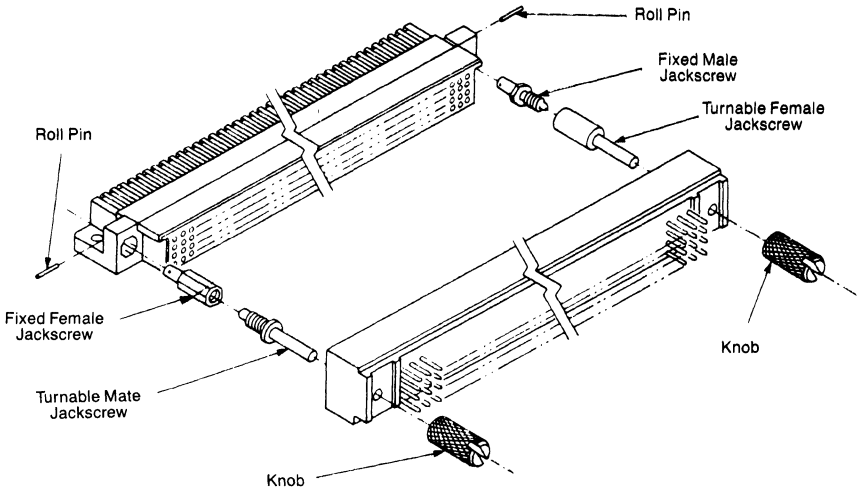


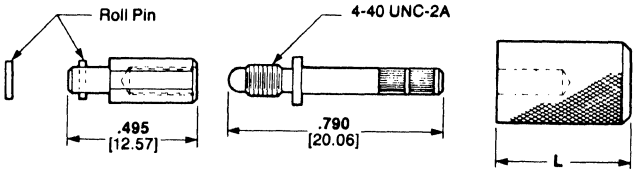
Kit No. 533069-1
(for 2-Row Right-Angle Pin Assemblies)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches and millimeters.
Dimensions are shown for reference purposes only.

Jackscrews for Three- and Four-Row Connectors

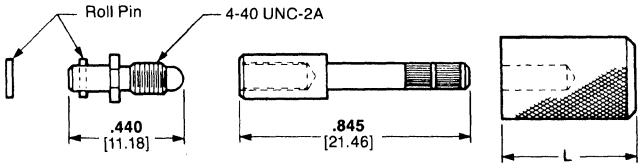




Fixed Female Part No. 532805-1 | **Turnable Male (see chart)** | **Knob**

Dimension L	Part Numbers
.500 12.70	532805-2
	532805-3*
1.250 31.75	532805-4*

*Knob with screwdriver slot



Fixed Male Part No. 532804-1 | **Turnable Female (see chart)** | **Knob**

Dimension L	Part Numbers
.500 12.70	532804-2
	532804-3*

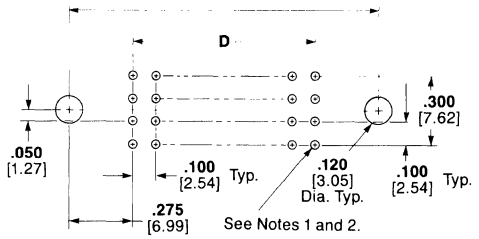
*Knob with screwdriver slot

Recommended PC Board Hole Layouts

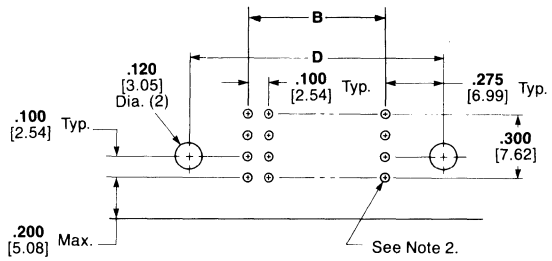
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Four-Row Connectors Without Guide Holes



Vertical Pin Assemblies with ACTION PIN and Solder Posts



Right-Angle Pin and Receptacle Assemblies with Solder Posts

Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3019.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

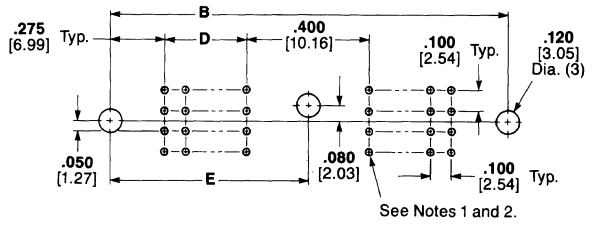
No. of Pos.	Dimensions	
	B	D
100	**2.950** 74.93	**2.400** 60.96
120	**3.450** 87.63	**2.900** 73.66
128	**3.650** 92.71	**3.100** 78.74
140	**3.950** 100.33	**3.400** 86.36
160	**4.450** 113.03	**3.900** 99.06
180	**4.950** 125.73	**4.400** 111.76
200	**5.450** 138.43	**4.900** 124.46
220	**5.950** 151.13	**5.400** 137.16
240	**6.450** 163.83	**5.900** 149.86
260	**6.950** 176.53	**6.400** 162.56
280	**7.450** 189.23	**6.900** 175.26
300	**7.950** 201.93	**7.400** 187.96

Recommended PC Board Hole Layouts (Continued)

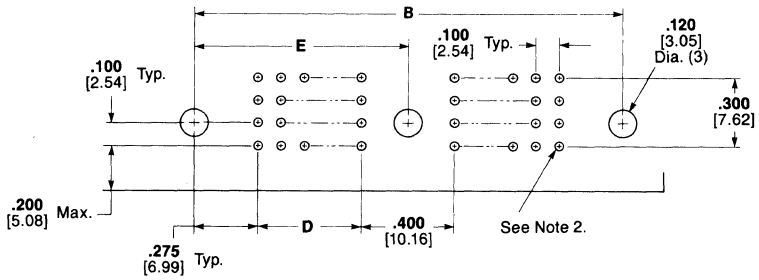
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Four-Row Connectors With One Guide Hole



Vertical Pin Assemblies with ACTION PIN and Solder Posts



Right-Angle Pin and Receptacle Assemblies with Solder Posts

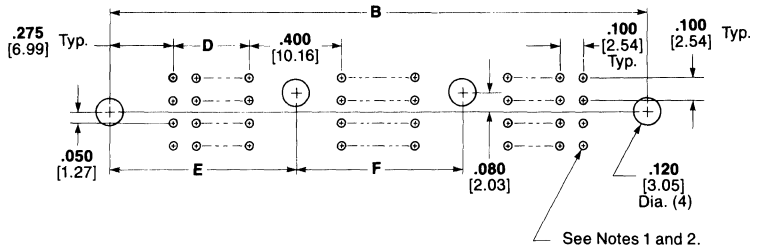
Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3019.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions		
	B	D	E
320	**8.750** 222.25	**3.900** 99.06	**4.375** 111.12
344	**9.350** 237.49	**4.200** 106.68	**4.675** 118.74
368	**9.950** 252.73	**4.500** 114.30	**4.975** 126.36
392	**10.550** 267.97	**4.800** 121.92	**5.275** 133.98
416	**11.150** 283.21	**5.100** 129.54	**5.575** 141.60
440	**11.750** 298.45	**5.400** 137.16	**5.875** 149.22
464	**12.350** 313.69	**5.700** 144.78	**6.175** 156.84
488	**12.950** 328.93	**6.000** 152.40	**6.475** 164.46

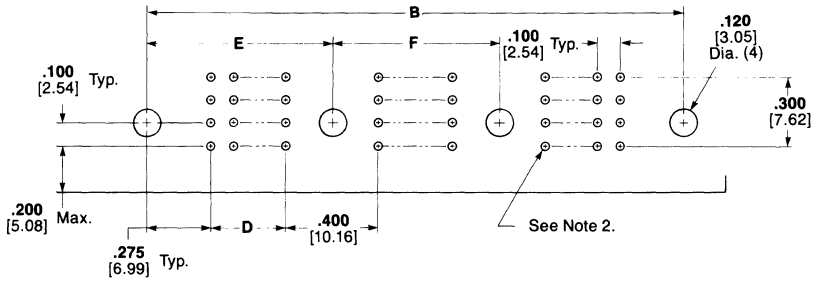
Recommended PC Board Hole Layouts (Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Four-Row Connectors With Two Guide Holes



Vertical Pin Assemblies with ACTION PIN and Solder Posts



Right-Angle Pin and Receptacle Assemblies with Solder Posts

Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3019.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions			
	B	D	E	F
516	**13.950** 354.33	**4.200** 106.68	**4.675** 118.74	**4.600** 116.84
540	**14.550** 369.57	**4.400** 111.76	**4.875** 123.82	**4.800** 121.92
564	**15.150** 384.81	**4.600** 116.84	**5.075** 128.90	**5.000** 127.00
588	**15.750** 400.05	**4.800** 121.92	**5.275** 133.98	**5.200** 132.08
612	**16.350** 415.29	**5.000** 127.00	**5.475** 139.06	**5.400** 137.16
636	**16.950** 430.53	**5.200** 132.08	**5.675** 144.14	**5.600** 142.24
660	**17.550** 445.77	**5.400** 137.16	**5.875** 149.22	**5.800** 147.32
684	**18.150** 461.01	**5.600** 142.24	**6.075** 154.30	**6.000** 152.40

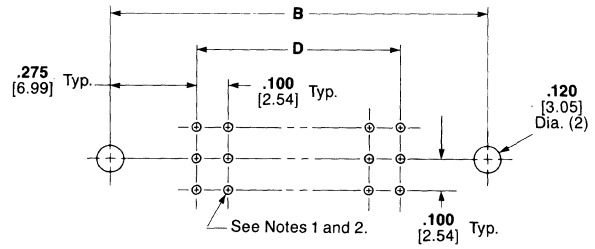
Recommended PC Board Hole Layouts (Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

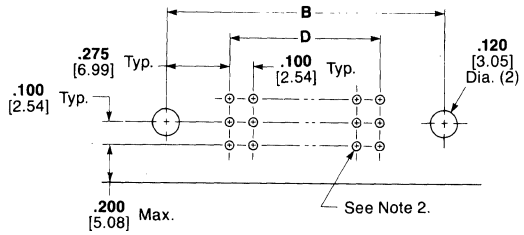
Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Three-Row Connectors Without Guide Holes



Vertical Pin Assemblies with ACTION PIN and Solder Posts



Right-Angle Pin and Receptacle Assemblies with Solder Posts

Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3019.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions	
	B	D
75	**2.950** 74.93	**2.400** 60.96
90	**3.450** 87.63	**2.900** 73.66
96	**3.650** 92.71	**3.100** 78.74
105	**3.950** 100.33	**3.400** 86.36
120	**4.450** 113.03	**3.900** 99.06
135	**4.950** 125.73	**4.400** 111.76
150	**5.450** 138.43	**4.900** 124.46
165	**5.950** 151.13	**5.400** 137.16
180	**6.450** 163.83	**5.900** 149.86
195	**6.950** 176.53	**6.400** 162.56
210	**7.450** 189.23	**6.900** 175.26
225	**7.950** 201.93	**7.400** 187.96

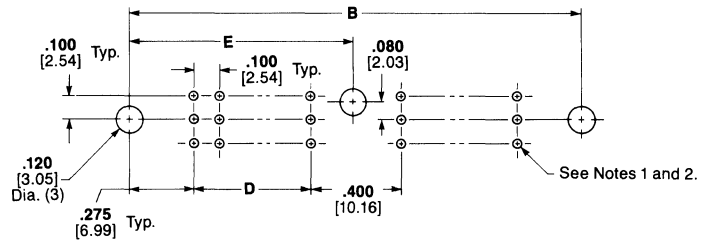
Recommended PC Board Hole Layouts (Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

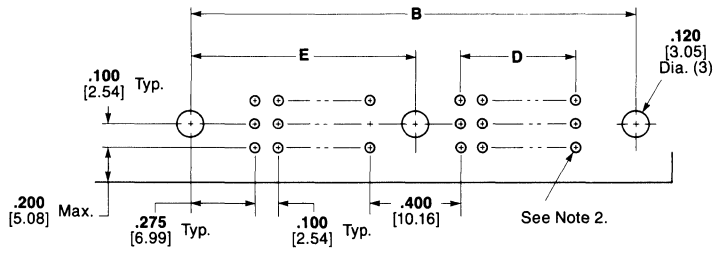
Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Three-Row Connectors With One Guide Hole



Vertical Pin Assemblies with ACTION PIN and Solder Posts



Right-Angle Pin and Receptacle Assemblies with Solder Posts

Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3019.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

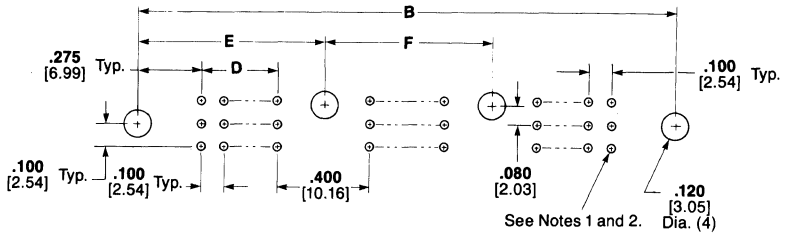
No. of Pos.	Dimensions		
	B	D	E
240	**8.750** 222.25	**3.900** 99.06	**4.375** 111.12
258	**9.350** 237.49	**4.200** 106.68	**4.675** 118.74
276	**9.950** 252.73	**4.500** 114.30	**4.975** 126.36
294	**10.550** 267.97	**4.800** 121.92	**5.275** 133.98
312	**11.150** 283.21	**5.100** 129.54	**5.575** 141.60
330	**11.750** 298.45	**5.400** 137.16	**5.875** 149.22
348	**12.350** 313.69	**5.700** 144.78	**6.175** 156.84
366	**12.950** 328.93	**6.000** 152.40	**6.475** 164.46

Recommended PC Board Hole Layouts (Continued)

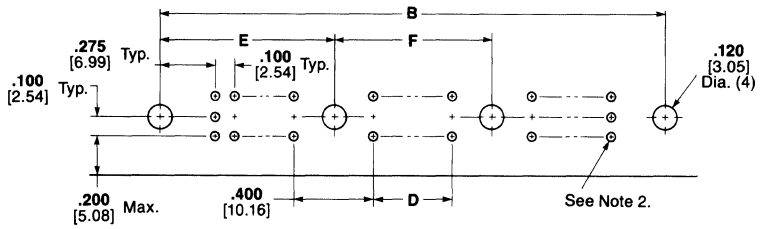
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Three-Row Connectors With Two Guide Holes



Vertical Pin Assemblies with ACTION PIN and Solder Posts



Right-Angle Pin and Receptacle Assemblies with Solder Posts

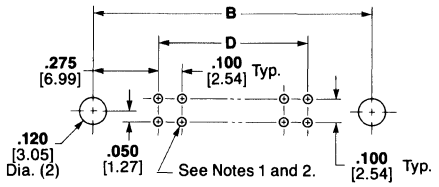
Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3019.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions			
	B	D	E	F
387	**13.950** 354.33	**4.200** 106.68	**4.675** 118.74	**4.600** 116.84
405	**14.550** 369.57	**4.400** 111.76	**4.875** 123.82	**4.800** 121.92

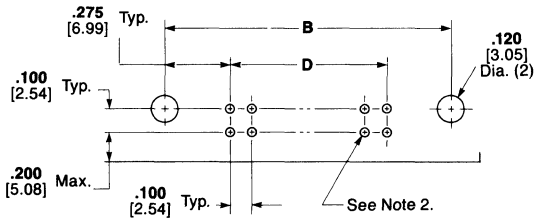
Recommended PC Board Hole Layouts (Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Two-Row Connectors Without Guide Holes



Vertical Pin Assemblies with ACTION PIN and Solder Posts



Right-Angle Pin and Receptacle Assemblies with Solder Posts

Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3019.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions	
	B	D
20	**1.450** 36.83	**.900** 22.86
30	**1.950** 49.53	**1.400** 35.56
40	**2.450** 62.23	**1.900** 48.26
50	**2.950** 74.93	**2.400** 60.96
60	**3.450** 87.63	**2.900** 73.66
70	**3.950** 100.33	**3.400** 86.36
80	**4.450** 113.03	**3.900** 99.06
100	**5.450** 138.43	**4.900** 124.46
110	**5.950** 151.13	**5.400** 137.16
120	**6.450** 163.83	**5.900** 149.86
140	**7.450** 189.23	**6.900** 175.26
150	**7.950** 201.93	**7.400** 187.96

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. unless specified otherwise.
Values in brackets are metric equivalents.

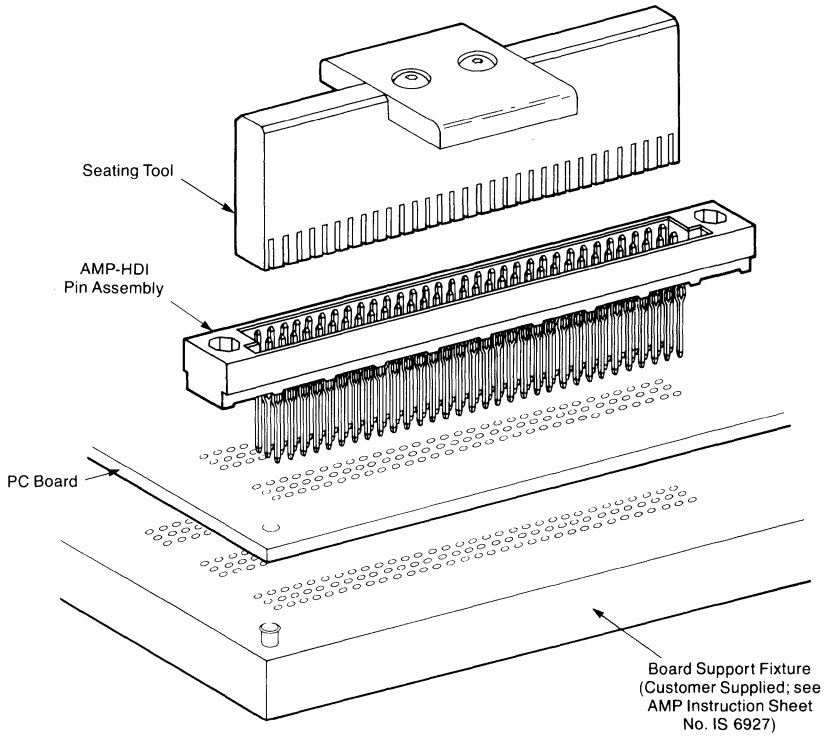
Application Tooling for AMP-HDI Pin Assemblies with ACTION PIN Posts

Pin assemblies with ACTION PIN contacts allow high speed, solderless backplane construction through reliable press-fit application. Press fitting connectors to printed circuit boards requires special seating tools which transfer application force directly to the contacts.

Force applied to the tool to seat the connectors can be provided by the AMP seating machines shown below, or by commercially available arbor presses such as Greenerd 3A or 3B, which have a seating pressure capacity of 40 lbs [178 N] per contact.

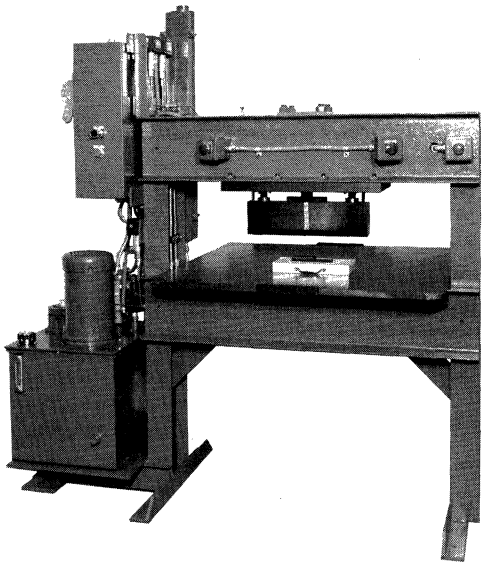
Board support fixtures are used to support PC boards or backplanes while connectors are being assembled to the boards or backplanes. AMP Instruction Sheet No. IS 6927 provides AMP recommendations for manufacturing board support fixtures.

For **tooling information**, call Customer Assistance Hotline **1-800-722-1111.**



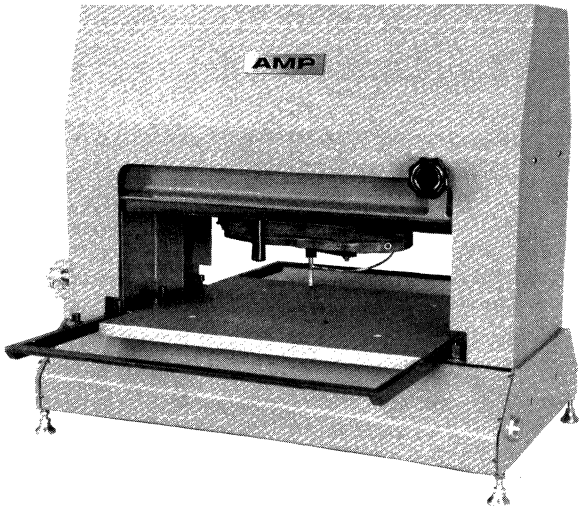
SM-10/20 Machine No. 803880-6

This machine is hydraulically operated with a capacity of 40,000 lbs [178 000 N]. Each contact requires 40 lbs [178 N] for insertion. Cycling time of 2 to 2½ seconds is adequate for AMP's largest connectors or multiple seating.



SM-3 Machine No. 814700-2

This machine is air powered with a capacity of 6000 lbs [26 700 N]. Each contact requires 40 lbs [178 N] for insertion. It utilizes .750 [19.05] thick board support fixtures and has adjustable seating force. It also has a board sensing feature to compensate for board thickness variations. The machine has the capability of processing boards up to 20 [508] wide and all but the largest connectors. Cycling time is 4 seconds.



Application Tooling
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Seating Tools for AMP-HDI Four-Row Pin Assemblies

Pin Assembly Configuration			Seating Tools	
No. of Bays	No. of Pins/Row/Bay	Total No. of Pins	Tool Numbers	No. of Tools
One (without Guide Holes)	25	100	2-58172-1	One
	32	128	2-58172-2	
	35	140	4-58172-0	
	36	144	4-58172-1	
	40	160	2-58172-3	
	41	164	4-58172-3	
	44	176	4-58172-4	
	45	180	2-58172-5	
	50	200	2-58172-9	
	55	220	—	
	60	240	3-58172-6	
	75	300	2-58172-0	
	80	320	4-58172-7	
Two (with One Guide Hole)	40	320	2-58172-3	Two
	43	344	2-58172-4	
	46	368	2-58172-6	
	49	392	2-58172-8	
	52	416	3-58172-1	
	55	440	3-58172-3	
	58	464	3-58172-5	
	61	488	3-58172-7	
Three (with Two Guide Holes)	43	516	2-58172-4	Three
	45	540	2-58172-5	
	47	564	2-58172-7	
	49	588	2-58172-8	
	51	612	3-58172-0	
	53	636	3-58172-2	
	55	660	3-58172-3	
	57	684	3-58172-4	

Seating Tools for AMP-HDI Three-Row Pin Assemblies

Pin Assembly Configuration			Seating Tools	
No. of Bays	No. of Pins/Row/Bay	Total No. of Pins	Tool Numbers	No. of Tools
One (without Guide Holes)	8	24	4-58172-8	One
	25	75	5-58172-0	
	30	90	4-58172-5	
	32	96	58172-9	
	40	120	1-58172-0	
	46	138	1-58172-3	
	50	150	3-58172-9	
	55	165	1-58172-6	
	60	180	3-58172-8	
	70	210	1-58172-9	
	75	225	58172-8	
	97	291	4-58172-9	
	100	300	5-58172-3	
Two (with One Guide Hole)	40	240	1-58172-0	Two
	41	123	4-58172-6	
	43	129	1-58172-1	
	46	276	1-58172-3	
	49	294	1-58172-4	
	52	312	1-58172-5	
	55	330	1-58172-6	
	58	348	1-58172-7	
	61	366	1-58172-8	
Three (with Two Guide Holes)	30	270	4-58172-5	Three
	43	387	1-58172-1	
	45	405	1-58172-2	

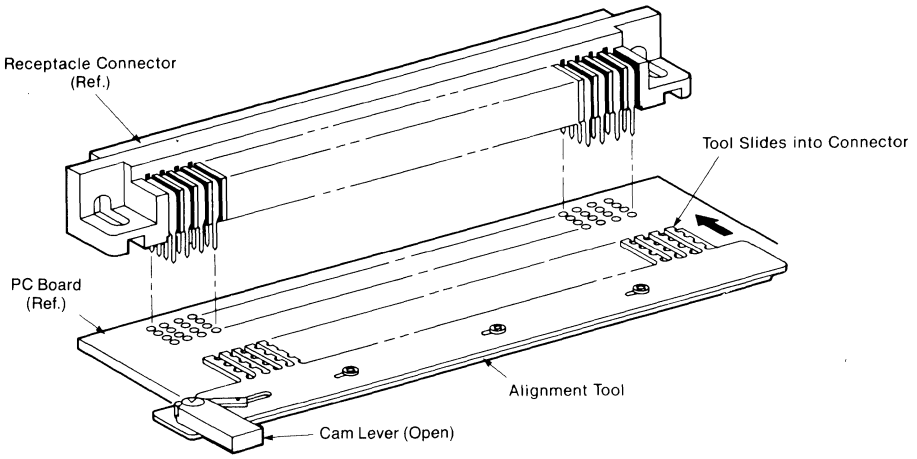
Seating Tools for AMP-HDI Two-Row Pin Assemblies

Pin Assembly Configuration			Seating Tools	
No. of Bays	No. of Pins/Row/Bay	Total No. of Pins	Tool Numbers	No. of Tools
One (without Guide Holes)	15	30	4-58172-2	One
	25	50	5-58172-1	
	30	60	58172-2	
	35	70	58172-3	
	40	80	58172-4	
	50	100	58172-5	
	55	110	58172-6	
	60	120	5-58172-2	
	63	126	5-58172-4	
	70	140	58172-7	
	75	150	58172-1	
	100	200	5-58172-3	

Alignment Tool for Receptacle Connectors with .180 [4.57] Posts Only

Tool Numbers:
532925-3 (up to 300 Pos.)
532925-2 (up to 540 Pos.)
532925-1 (up to 700 Pos.)

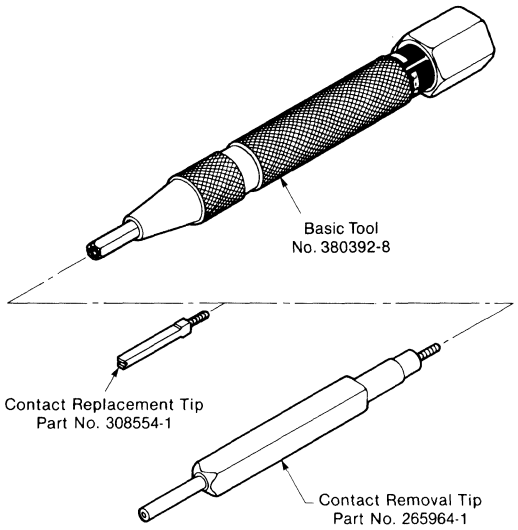
See AMP Instruction Sheet No. IS 9141.



ACTION PIN Contact Removal and Replacement Tool

Kit Number:
265871-7 (includes Basic Tool, Contact Replacement and Removal Tips)

See AMP Instruction Sheet No. IS 9142.

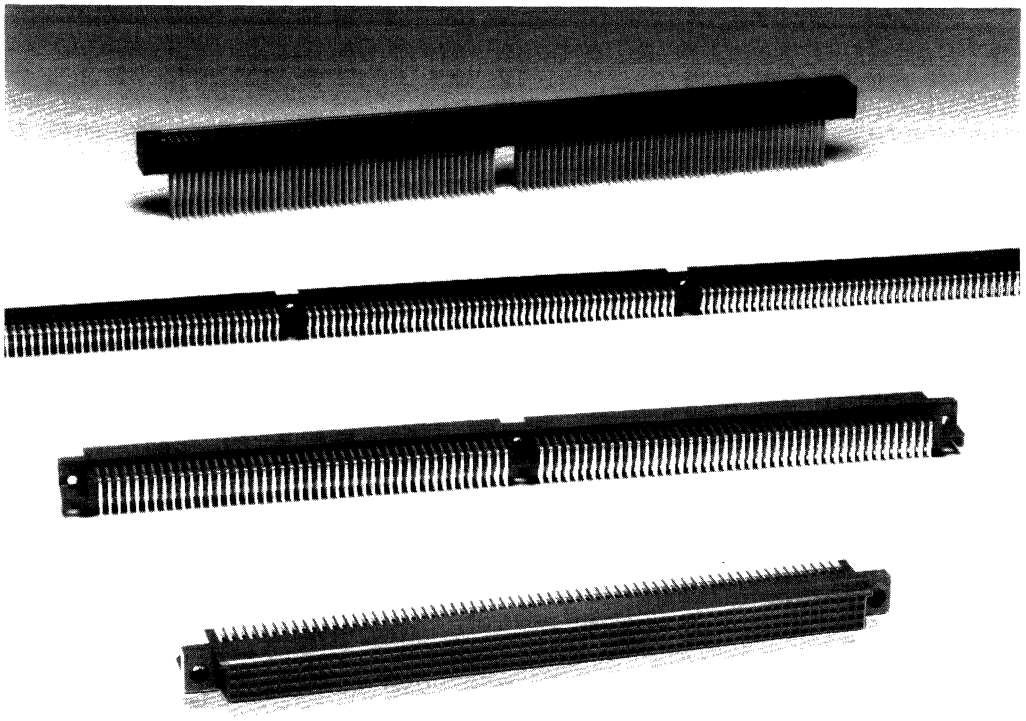


Clinching Tool for External Keys

Tool Numbers:
91117-3 (for 3- and 4-Row Connectors)
91117-5 (for 2-Row Connectors)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

TBC (Twin-Beam Contact) Connectors



TBC connectors combine economy and high performance in a high-density interconnect. These right-angle board-mount receptacle connectors are available in three- and four-row versions with up to 540 positions.

At the heart of the TBC connector is the twin-beam contact. Its design and copper alloy material provide the high normal force and high conductivity that ensure a reliable electrical connection. The mating points of the beams are tightly controlled near the front of the contact and provide a nominal .116 [2.95] contact wipe on the .210 [5.33] pin length and .070 [1.78] wipe on the .164 [4.17] pin length. Closed-entry design prevents contact stubbing, while low mating forces simplify mating of high-pin-count connectors.

The contacts permit two levels of sequencing when mated with a pin connector having pins of two different lengths: .164 [4.17] and .210 [5.33]. The long .210 [5.33] pin allows make-first/break-last of the power and ground connections.

TBC connectors are fully intermateable with AMP-HDI pin connectors and can use the same hardware. When sequencing is not desired, use standard AMP-HDI pin headers. The connectors are further available with any combination of long and short pins for sequencing. Consult AMP Incorporated for information on specific configurations.

Each TBC connector includes two eight-way keying slots and two mounting holes. They are available with zero, one, or two guide holes and a choice of .120 [3.05] or .180 [4.57] solder tails.

Technical Documents

Product Specifications

108-1098 Connectors, TBC
108-26003 ACTION PIN Contacts

Application Specification

114-9008 AMP-HDI (High Density Interconnect) Connectors (Also Applicable for TBC Connectors)

Instruction Sheets

IS 2636 ACTION PIN Contact Replacement Tool
IS 6626 Clinching Tool 91117-3 (3- and 4-Row)
IS 6909 Jackscrews and Guide Pins
IS 6927 Design Recommendations for PC Board Support Fixture
IS 9038 Seating Tools 58172
IS 9141 Alignment Tools 532925
IS 9142 ACTION PIN Contact Removal and Replacement Tool Kit 265871-7
IS 9185 ACTION PIN Contact Removal Tool

Product Facts

- High-density interconnect: three or four rows on .100 x .100 [2.54 x 2.54] grid.
- 32 through 540 positions in four-row version; 90 through 423 positions in three-row versions.
- Two sequencing levels provide make-first/break-last of power and ground connections.
- Low insertion force.
- .070 [1.78] and .116 [2.95] contact wipe ensures clean, reliable electrical connection.
- Closed-entry design eliminates contact stubbing.
- Compatible with AMP-HDI pin connectors.
- Mating pin connectors available with any combination of short and long pins for sequencing.
- High-temperature materials are compatible with vapor-phase and infrared reflow soldering.
- Polarized housings prevent mismating.
- Zero, one, or two guide holes.

Performance Specifications

Normal force: 50 grams min.
Mating Force: 2.5 oz. [70.9 g] max. per contact
Unmating Force: .5 oz. [14.1 g] min. per contact
Current-Carrying Capacity (30°C T-rise):
Single Contact: 2.25 A
All Contacts Simultaneously: 1 A
Termination Resistance: 20 milliohms max.
Capacitance: Line to Line: 2 pF max.
Dielectric Withstanding Voltage:
At Sea Level: 900 V rms
At 70,000 Feet: 200 V rms
Operating Temperature Range: 125°C max.
Processing Temperature: 215°C

MFBL (Make-First/Break-Last) Connector System

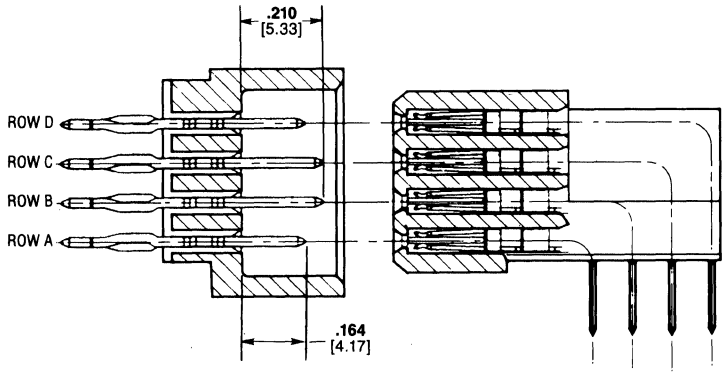
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

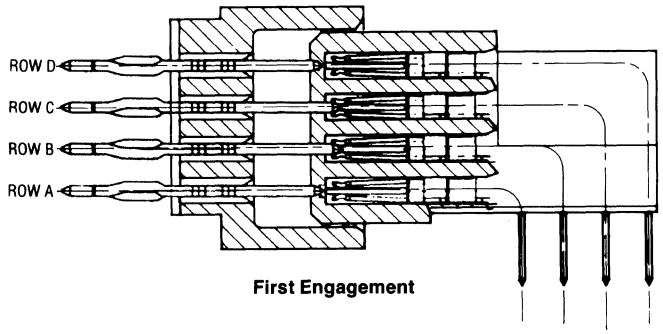
AMP offers MFBL capabilities with TBC connectors. The MFBL concept is achieved by loading two different pin heights within a connector housing. AMP uses .210 ± .005 [5.33 ± 0.13] high mating pins for MFBL positions and .164 ± .005 [4.17 ± 0.13] high mating pins for signal positions. Standard Twin-Beam Contact pin assemblies not requiring MFBL capabilities use .210 ± .005 [.533 ± 0.13] high mating pins for signal positions. This dimensioning scheme eliminates the possibilities of pin stubbing on the receptacle face which is inherent with MFBL concepts using longer mating pins for MFBL positions. AMP's two levels of pin height will provide sequential engagement capabilities which allow power or ground positions to make contact before signal positions are engaged.

TBC pin assemblies with ACTION PIN posts use standard AMP-HDI seating tools.

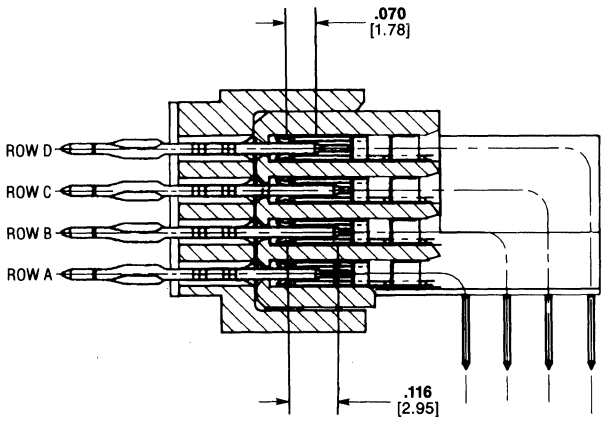
Selectively loaded TBC pin assemblies with MFBL capabilities are presented on page 3069.



Pin Height



First Engagement



Contact Wipe

Three- and Four-Row Pin Assemblies, Selectively Loaded With MFBL Capabilities

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Vertical ACTION PIN Posts

Material and Finish:

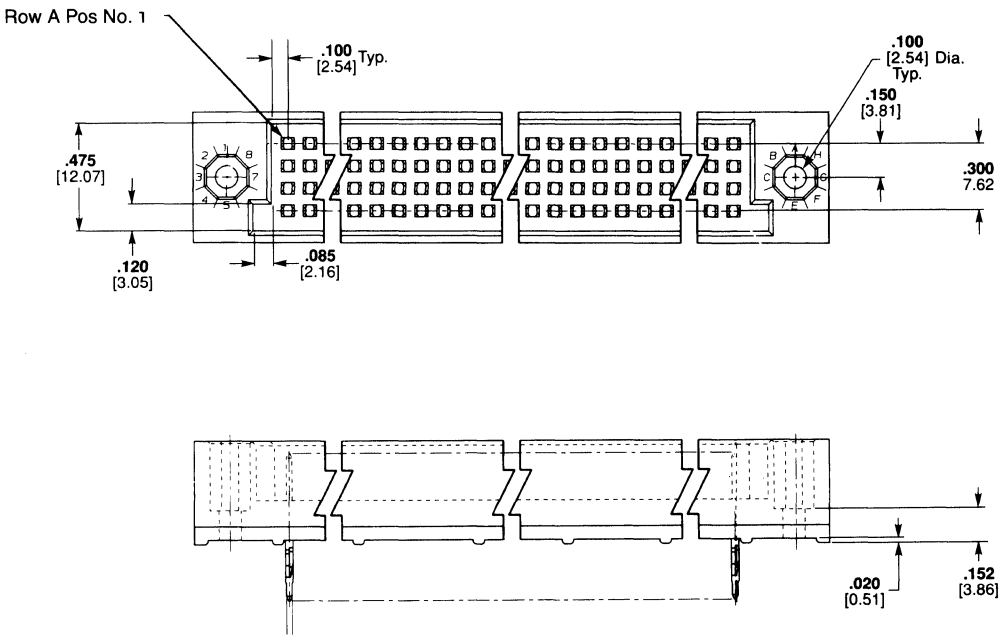
Housing—Polyphenylene sulfide, brown

Contacts—Phosphor bronze, plated as follows:

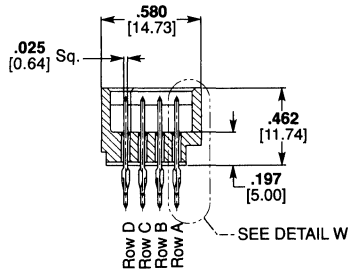
A .000030 [0.00076] gold for minimum length (**P** dimension) from mating post tip (two sides), with entire contact underplated .000050 [0.00127] min. nickel
B .000100-.000200 [0.00254-0.00508] tin-lead on ACTION PIN post, with entire contact underplated .000050 [0.00127] min. nickel
C .000030 [0.00076] gold for .200 [5.08] min. length from ACTION PIN post tip (four sides), gold flash on ACTION PIN post area, with entire contact underplated .000050 [0.00127] min. nickel

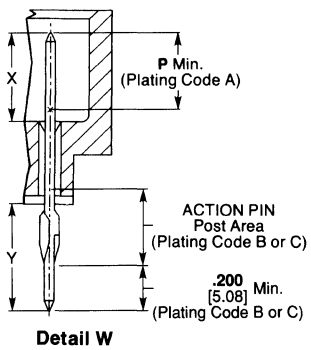
Related Product Data:

Mateable Connectors - pages 3070 - 3075 (as applicable)
Performance Specifications - page 3067
Accessories (AMP-HDI Connectors, As Applicable):
Shrouds - pages 3046 - 3050
Guide Pins - page 3052
Guide/Power Pins - page 3053
Static Discharge Guide/Power Pins - page 3053
Keys - page 3054
Jackscrews - page 3056
PCB Hole Layouts - pages 3076 - 3079
ACTION PIN Contacts - pages 3080 and 3412
Application Tooling - page 3081
Technical Documents - page 3067
AMP Product Specifications 108-1098, 108-26003
AMP Application Specification 114-9008
AMP Instruction Sheets IS 2636, IS 6626, IS 6909, IS 6927, IS 9038, IS 9142, IS 9185



Note: A four-row pin assembly without guide holes is shown for illustration purposes only. Three-row pin assemblies, as well as pin assemblies with one and two guide holes are also available with any desired MFBL configuration, consult AMP Incorporated.





Detail W

Available Post Plating/Length Combinations

Plating Code A		Plating Code B	Plating Code C
Dimension X	Dimension P	Dimension Y	Dimension Y
		.250 6.35	—
		.533 13.54	—
.164 4.17	.120 3.05	.733 18.62	—
		—	.533 13.54
		—	.733 18.62
		.250 6.35	—
		.533 13.54	—
.210 5.33	.165 4.19	.733 18.62	—
		—	.533 13.54
		—	.733 18.62

Four-Row Receptacle Assemblies Without Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

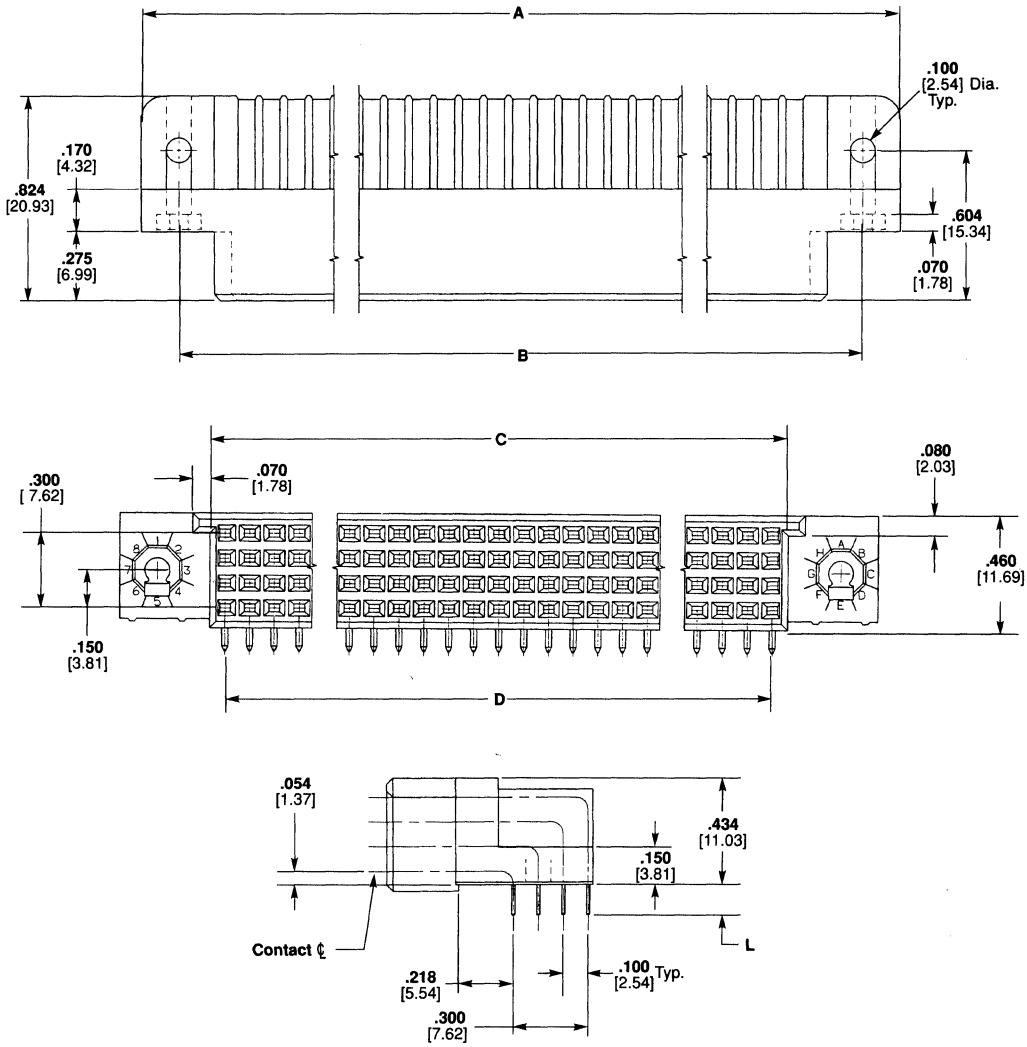
Right-Angle Solder Posts .120 [3.05] and .180 [4.57] Post Lengths

Material and Finish:

Housing—High-temperature polyphenylene sulfide, brown
Contacts—Copper alloy, plated .000030 [0.00076] gold in mating area, tin-lead on solder posts, with entire contact underplated .000050-.000100 [0.00127-0.00254] nickel

Related Product Data:

Mateable Connectors - pages 3020 - 3022, 3069
Performance Specifications - page 3067
Accessories:
Guide Pin/Power Receptacles - page 3053
Keys - page 3054
Jackscrews - page 3056
PCB Hole Layouts - page 3076
Technical Documents - page 3067
AMP Product Specification 108-1089
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9141



No. of Pos.	Dimensions				Part Numbers*	
	A	B	C	D	L = .120 [3.05]	L = .180 [4.57]
100	**3.250** 82.55	**2.950** 74.93	**2.524** 64.11	**2.400** 60.96	534008-1	534047-6
120	**3.750** 95.25	**3.450** 87.63	**3.024** 76.81	**2.900** 73.66	534008-7	534047-7
128	**3.950** 100.33	**3.650** 92.71	**3.224** 81.89	**3.100** 78.74	534008-8	534047-8
140	**4.250** 107.95	**3.950** 100.33	**3.524** 89.51	**3.400** 86.36	534008-9	534047-9
160	**4.750** 120.65	**4.450** 113.03	**4.024** 107.70	**3.900** 99.06	1-534008-0	1-534047-0
168	**4.950** 125.73	**4.650** 118.21	**4.224** 107.29	**4.100** 104.14	1-534008-7	1-534047-7
200	**5.750** 46.05	**5.450** 138.43	**5.024** 127.61	**4.900** 124.46	1-534008-1	1-534047-1
220	**6.250** 158.75	**5.950** 151.13	**5.524** 140.31	**5.400** 137.16	1-534008-6	—
240	**6.750** 171.45	**6.450** 163.83	**6.024** 153.01	**5.900** 149.86	1-534008-3	1-534047-2
260	**7.250** 184.15	**6.950** 176.53	**6.524** 165.71	**6.400** 162.56	1-534008-4	1-534047-3
284	**7.850** 199.39	**7.550** 191.77	**7.124** 180.95	**7.000** 177.80	1-534008-5	1-534047-4
300	**8.250** 209.55	**7.950** 201.93	**7.524** 191.11	**7.400** 187.95	1-534008-2	1-534047-5
320	**8.750** 222.25	**8.450** 214.63	**8.024** 203.81	**7.900** 200.66	—	1-534047-6

*Other connection sizes can be made available, consult AMP Incorporated.

Four-Row Receptacle Assemblies With One Guide Hole

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

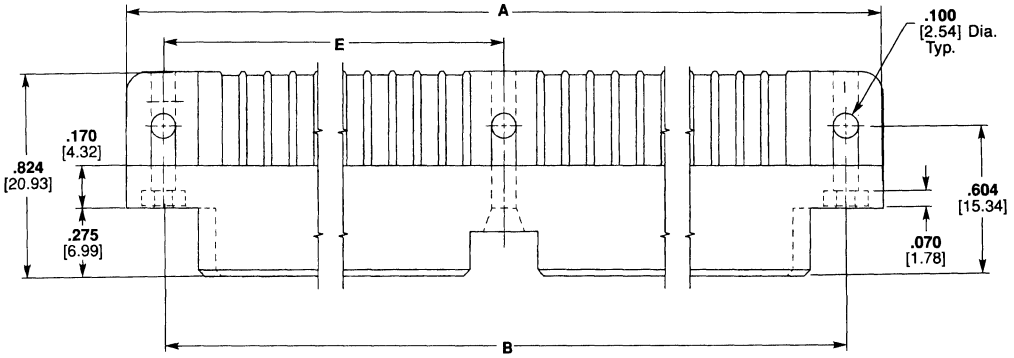
Right-Angle Solder Posts .120 [3.05] and .180 [4.57] Post Lengths

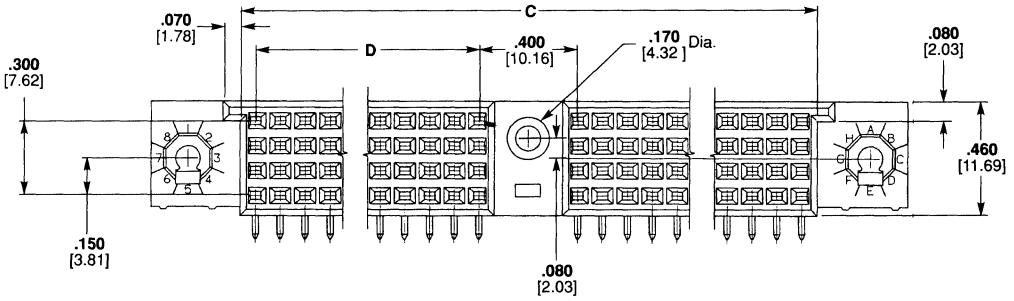
Material and Finish:

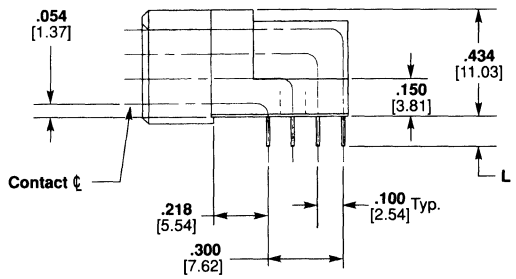
Housing—High-temperature polyphenylene sulfide, brown
Contacts—Copper alloy, plated .000030 [0.00076] gold in mating area, tin-lead on solder posts, with entire contact underplated .000050-.000100 [0.00127-0.00254] nickel

Related Product Data:

Mateable Connectors - pages 3024 - 3026, 3069
Performance Specifications - page 3067
Accessories:
Guide Pin/Power Receptacles - page 3053
Keys - page 3054
Jackscrews - page 3056
PCB Hole Layouts - page 3076
Technical Documents - page 3067
AMP Product Specification 108-1098
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9141







No. of Pos.	Dimensions					Part Numbers*	
	A	B	C	D	E	L = .120 [3.05]	L = .180 [4.57]
320	**9.050** 229.87	**8.750** 222.25	**8.324** 211.43	**3.900** 99.06	**4.375** 111.13	534010-1	534048-1
344	**9.650** 245.11	**9.350** 237.49	**8.924** 226.67	**4.200** 106.68	**4.675** 118.75	534010-2	534048-2
352	**9.850** 250.19	**9.550** 242.57	**9.124** 231.75	**4.300** 109.22	**4.775** 121.29	—	534048-5
368	**10.250** 260.35	**9.950** 252.73	**9.524** 241.91	**4.500** 114.30	**4.975** 126.37	534010-3	534048-3
416	**11.450** 290.83	**11.150** 283.21	**10.724** 272.39	**5.100** 129.54	**5.575** 146.05	534010-5	—
480	**13.050** 331.47	**12.750** 323.85	**12.324** 313.03	**5.900** 149.86	**6.375** 161.93	534010-4	534048-4

*Other connector sizes can be made available, consult AMP Incorporated.

Four-Row Receptacle Assemblies With Two Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Right-Angle Solder Posts .120 [3.05] and .180 [4.57] Post Lengths

Material and Finish:

Housing—High-temperature polyphenylene sulfide, brown

Contacts—Copper alloy, plated .000030 [0.00076] gold in mating area, tin-lead on solder posts, with entire contact underplated .000050-.000100 [0.00127-0.00254] nickel

Related Product Data:

Mateable Connectors - pages 3028 - 3030, 3069

Performance Specifications - page 3067

Accessories:

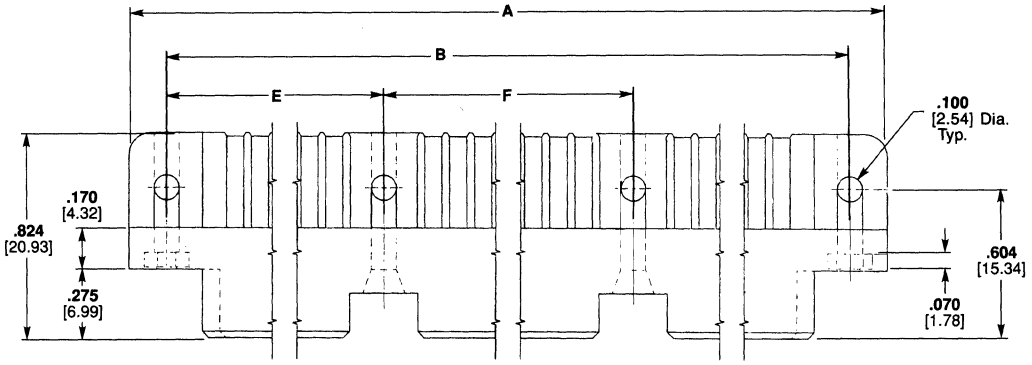
Guide Pin/Power Receptacles - page 3053

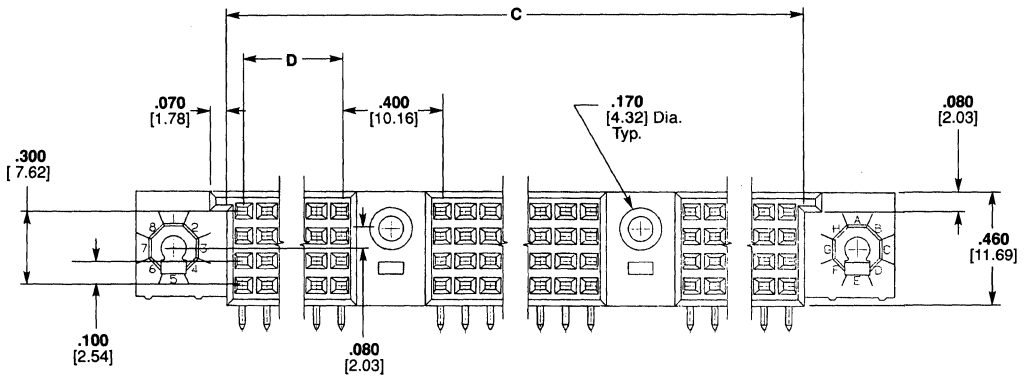
Keys - page 3054

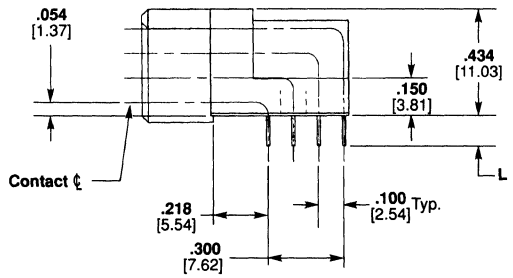
Jackscrews - page 3056

PCB Hole Layouts - page 3077

Technical Documents - page 3067
AMP Product Specification 108-1098
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9141







No. of Pos.	Dimensions						Part Numbers*	
	A	B	C	D	E	F	L = .120 [3.05]	L = .180 [4.57]
492	**13.650** 346.71	**13.350** 339.09	**12.924** 328.27	**4.000** 101.60	**4.475** 113.67	**4.400** 111.76	534043-1	534049-1
516	**14.250** 361.95	**13.950** 354.33	**13.524** 343.51	**4.200** 106.68	**4.675** 118.75	**4.600** 116.84	534043-3	—
540	**14.850** 377.19	**14.550** 369.57	**14.124** 358.75	**4.400** 111.76	**4.875** 123.83	**4.800** 121.92	534043-2	534049-2

*Other connector sizes can be made available, consult AMP Incorporated.

Three-Row Receptacle Assemblies Without Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Right-Angle Solder Posts .120 [3.05] and .180 [4.57] Post Lengths

Material and Finish:

Housing—High-temperature polyphenylene sulfide, brown

Contacts—Copper alloy, plated .000030 [0.00076] gold in mating area and tin-lead on solder posts, with entire contact underplated .000050-.000100 [0.00127-0.00254] nickel

Related Product Data:

Mateable Connectors - pages 3032 - 3034

Performance Specifications - page 3067

Accessories:

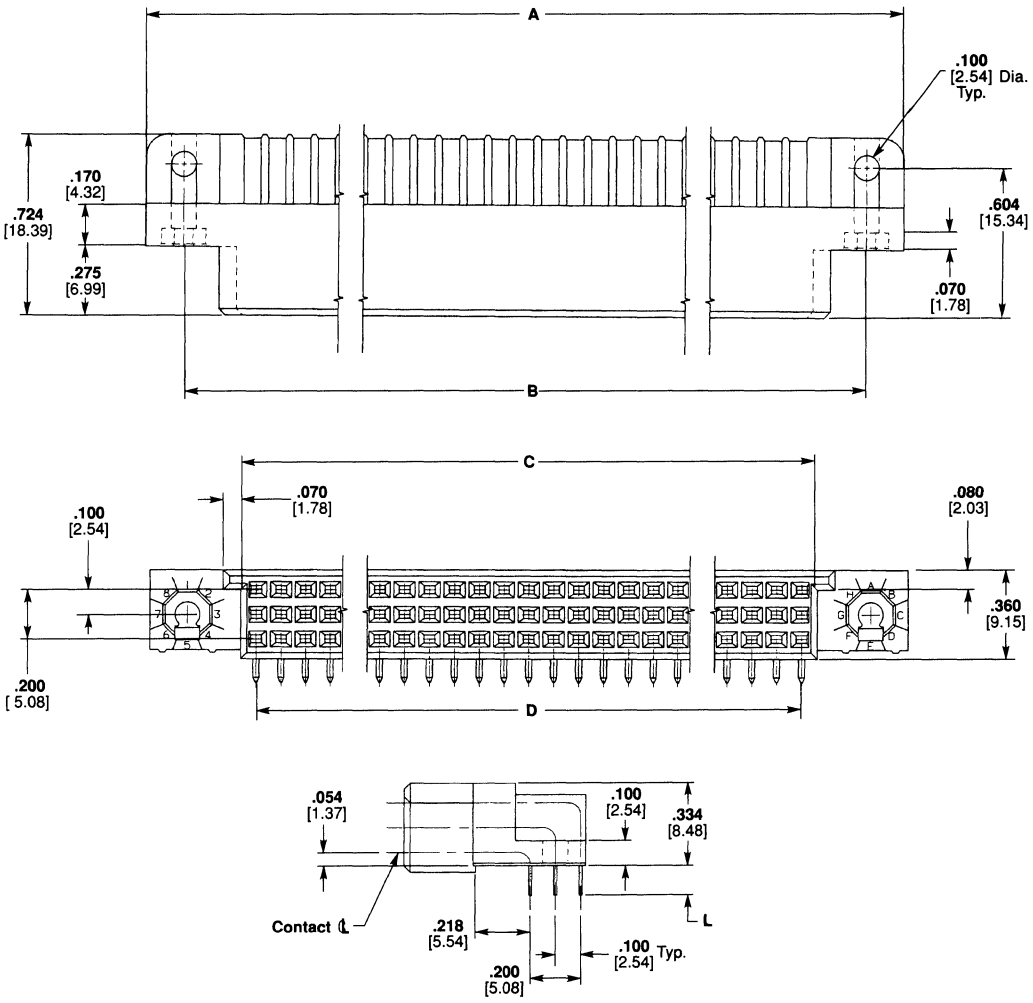
Guide Pin/Power Receptacles - page 3053

Keys - page 3054

Jackscrews - page 3056

PCB Hole Layouts - page 3078

Technical Documents - page 3067
AMP Product Specification 108-1089
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9141



No. of Pos.	Dimensions				Part Numbers*	
	A	B	C	D	L = .120 [3.05]	L = .180 [4.57]
90	**3.750** 95.25	**3.450** 87.63	**3.024** 76.81	**2.900** 73.66	534026-1	534044-1
96	**3.950** 100.33	**3.650** 92.71	**3.224** 81.89	**3.100** 78.74	534026-2	534044-2
120	**4.750** 120.65	**4.450** 113.03	**4.024** 102.21	**3.900** 99.06	534026-3	534044-3
150	**5.750** 146.05	**5.450** 138.43	**5.024** 127.61	**4.900** 124.46	534026-4	534044-4
165	**6.250** 158.75	**5.950** 151.13	**5.524** 140.31	**5.400** 137.16	534026-8	534044-5
180	**6.750** 171.45	**6.450** 163.83	**6.024** 153.01	**5.900** 149.86	534026-9	—
210	**7.750** 196.85	**7.450** 189.23	**7.024** 178.41	**6.900** 175.26	534026-5	534044-6
225	**8.250** 209.55	**7.950** 201.93	**7.524** 191.11	**7.400** 187.96	534026-6	534044-7
240	**8.750** 222.25	**8.450** 214.63	**8.024** 203.81	**7.900** 200.66	534026-7	534044-8

*Other connector sizes can be made available, consult AMP Incorporated.

Three-Row Receptacle Assemblies With One Guide Hole

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Right-Angle Solder Posts .120 [3.05] and .180 [4.57] Post Lengths

Material and Finish:

Housing—High-temperature polyphenylene sulfide, brown

Contacts—Copper alloy, plated .000030 [0.00076] gold in mating area, tin-lead on solder posts, with entire contact underplated .000050-.000100 [0.00127-0.00254] nickel

Related Product Data:

Mateable Connectors - pages 3036 - 3038, 3069

Performance Specifications - page 3067

Accessories:

Guide Pin/Power Receptacles - page 3053

Keys - page 3054

Jackscrews - page 3056

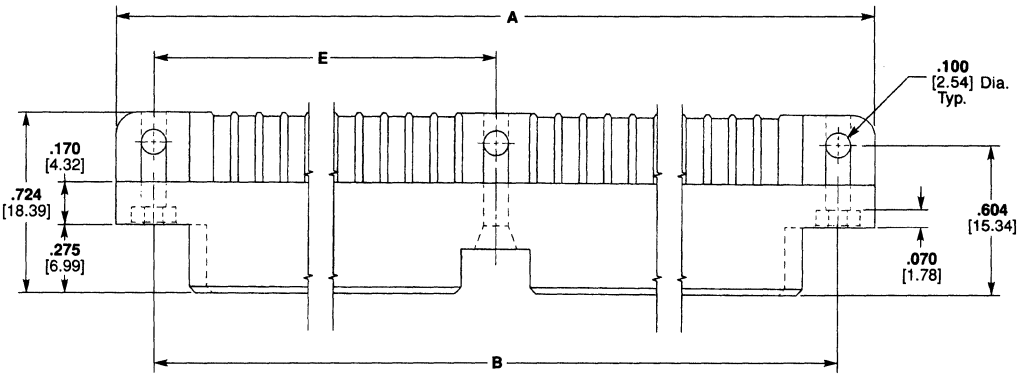
PCB Hole Layouts - page 3078

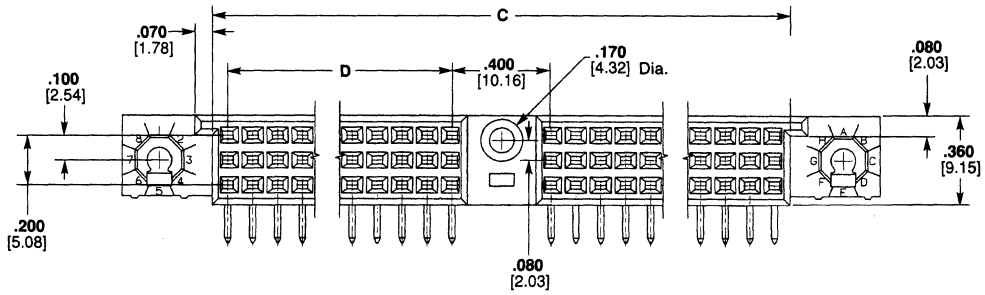
Technical Documents - page 3067

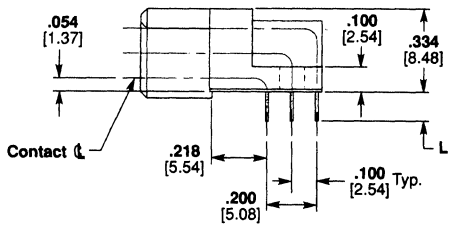
AMP Product Specification 108-1098

AMP Application Specification 114-9008

AMP Instruction Sheets IS 6626, IS 6909, IS 9141







No. of Pos.	Dimensions					Part Numbers*	
	A	B	C	D	E	L = .120 [3.05]	L = .180 [4.57]
240	**9.050** 229.87	**8.750** 222.25	**8.324** 211.43	**3.900** 99.06	**4.375** 111.13	534027-1	534045-1
276	**10.250** 260.35	**9.950** 252.73	**9.524** 241.91	**4.500** 114.30	**4.975** 126.75	534027-2	534045-2
312	**11.450** 290.83	**11.150** 283.21	**10.724** 272.39	**5.100** 129.54	**5.575** 146.05	534027-3	534045-3
348	**12.650** 321.31	**12.350** 313.69	**11.924** 302.87	**5.700** 144.78	**6.175** 156.85	534027-4	534045-4
360	**13.050** 331.47	**12.750** 323.85	**12.324** 313.03	**5.900** 149.86	**6.375** 161.93	534027-5	534045-5
366	**13.250** 336.55	**12.950** 328.93	**12.524** 318.11	**6.000** 152.40	**6.475** 164.47	534027-8	534045-6

*Other connector sizes can be made available, consult AMP Incorporated.

Three-Row Receptacle Assemblies With Two Guide Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Right-Angle Solder Posts .120 [3.05] and .180 [4.57] Post Lengths

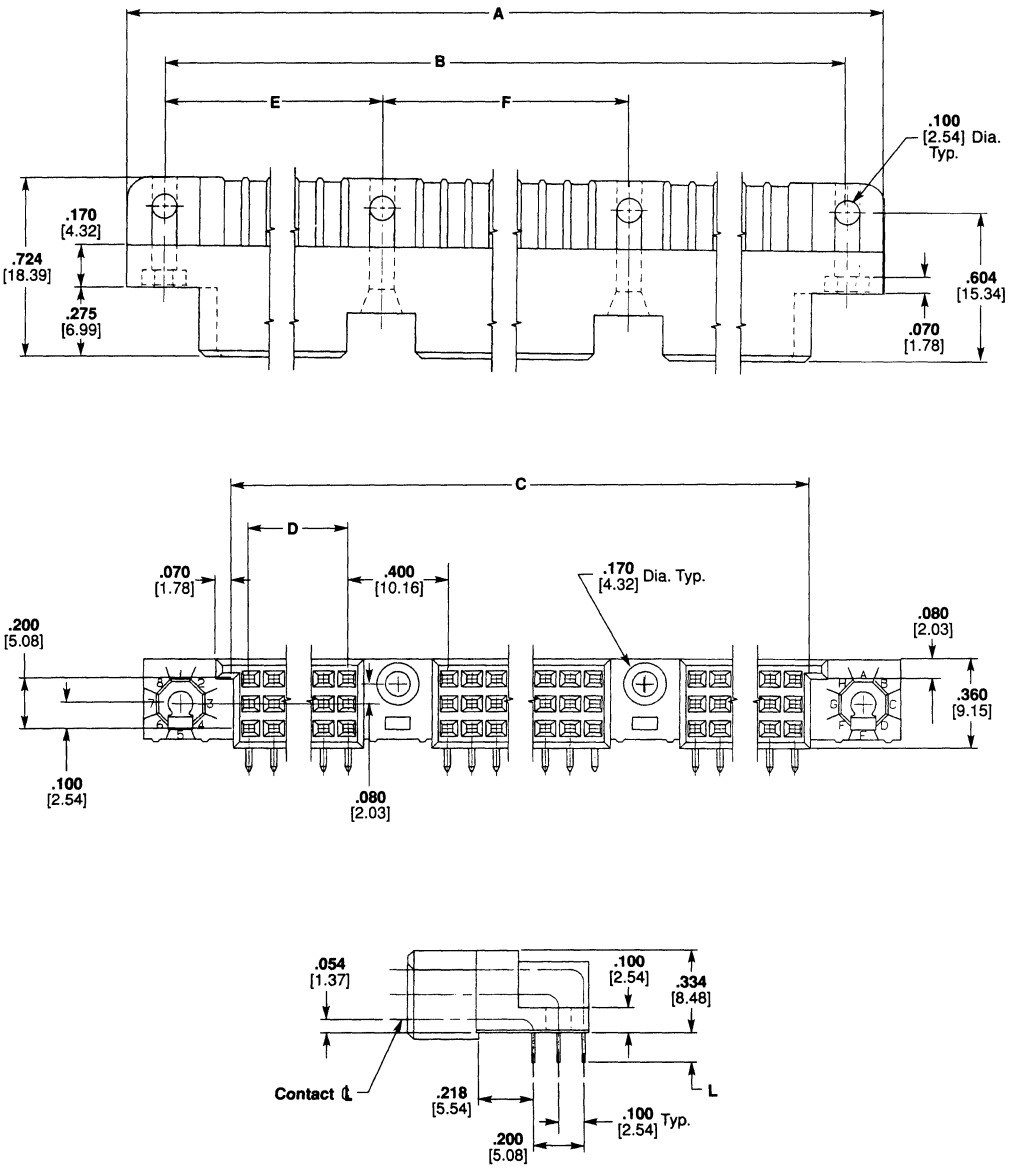
Material and Finish:

Housing—High-temperature polyphenylene sulfide, brown

Contacts—Copper alloy, plated .000030 [0.00076] gold in mating area, tin-lead on solder posts, with entire contact underplated .000050-.000100 [0.00127-0.00254] nickel

Related Product Data:

Mateable Connectors - pages 3041, 3069
Performance Specifications - page 3067
Accessories:
Guide Pin/Power Receptacles - page 3053
Keys - page 3054
Jackscrews - page 3056
PCB Hole Layouts - page 3079
Technical Documents - page 3067
AMP Product Specification 108-1098
AMP Application Specification 114-9008
AMP Instruction Sheets IS 6626, IS 6909, IS 9141



No. of Pos.	Dimensions						Part Numbers*	
	A	B	C	D	E	F	L = .120 [3.05]	L = .180 [4.57]
387	**14.250** 361.95	**13.950** 354.33	**13.524** 343.51	**4.200** 106.68	**4.675** 118.75	**4.600** 116.84	534042-1	534046-1
423	**15.450** 392.43	**15.150** 348.81	**14.724** 373.99	**4.600** 116.84	**5.075** 128.91	**5.000** 127.00	534042-2	534046-2

*Other connector sizes can be made available, consult AMP Incorporated.

Recommended PC Board Hole Layouts

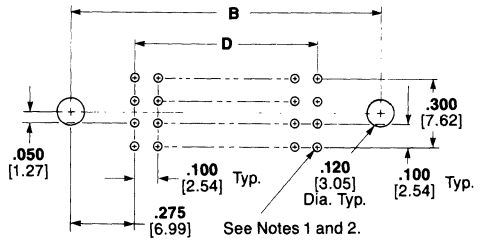
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

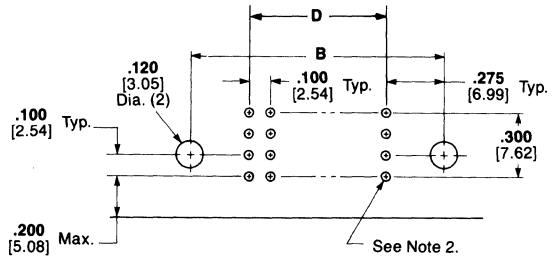
Charts contain dimensions in inches and millimeters.

Dimensions are shown for reference purposes only.

Four-Row Connectors without Guide Holes



Vertical Pin Assemblies with ACTION PIN and Solder Posts

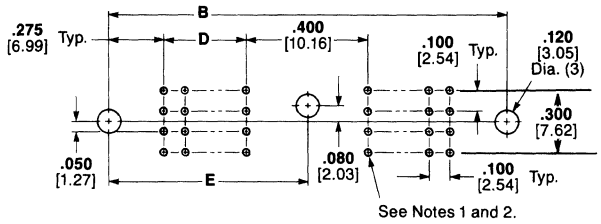


Right-Angle Receptacle Assemblies with Solder Posts

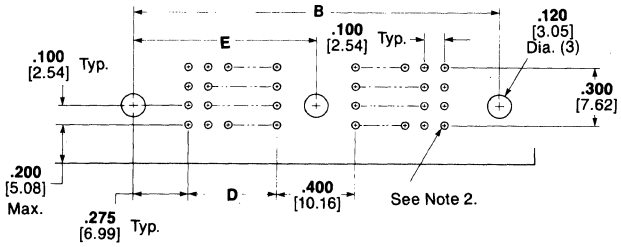
Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3080.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions			
	B		D	
	Inch	mm	Inch	mm
100	**2.950**	74.93	**2.400**	60.96
120	**3.450**	87.63	**2.900**	73.66
128	**3.650**	92.71	**3.100**	78.74
140	**3.950**	100.33	**3.400**	86.36
160	**4.450**	113.03	**3.900**	99.06
168	**4.650**	118.21	**4.100**	104.14
200	**5.450**	138.43	**4.900**	124.46
220	**5.950**	151.13	**5.400**	137.16
240	**6.450**	163.83	**5.900**	149.86
260	**6.950**	176.53	**6.400**	162.56
284	**7.550**	191.77	**7.000**	177.80
300	**7.950**	201.93	**7.400**	187.95
320	**8.450**	214.63	**7.900**	200.66

Four-Row Connectors with One Guide Hole



Vertical Pin Assemblies with ACTION PIN and Solder Posts



Right-Angle Receptacle Assemblies with Solder Posts

Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3080.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions					
	B		D		E	
	Inch	mm	Inch	mm	Inch	mm
320	**8.750**	222.25	**3.900**	99.06	**4.375**	111.13
344	**9.350**	237.49	**4.200**	106.68	**4.675**	118.75
352	**9.550**	242.57	**4.300**	109.22	**4.775**	121.29
368	**9.950**	252.73	**4.500**	114.30	**4.975**	126.37
416	**11.150**	283.21	**5.100**	129.54	**5.575**	146.05
480	**12.750**	323.85	**5.900**	149.86	**6.375**	161.93

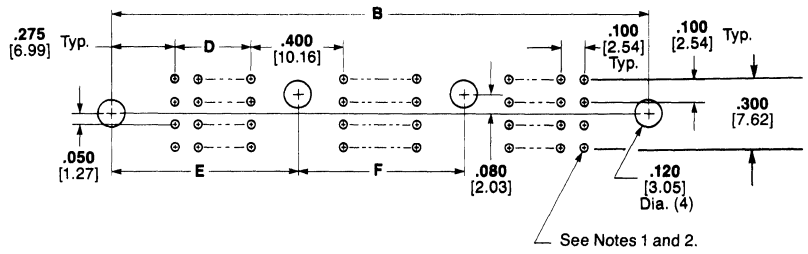
Recommended PC Board Hole Layouts (Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

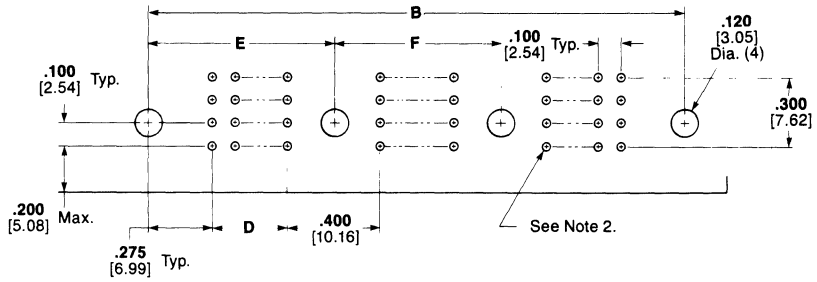
Chart contains dimensions in inches and millimeters.

Dimensions are shown for reference purposes only.

Four-Row Connectors with Two Guide Holes



Vertical Pin Assemblies with ACTION PIN and Solder Posts



Right-Angle Receptacle Assemblies with Solder Posts

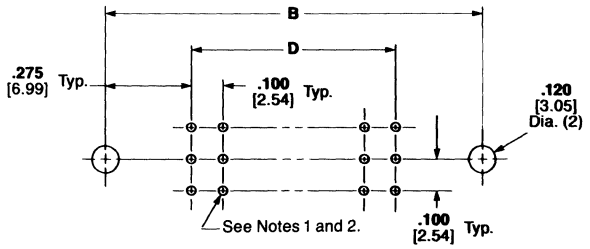
Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3080.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions							
	B		D		E		F	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm
492	**13.350**	339.09	**4.000**	101.60	**4.475**	113.67	**4.400**	111.76
516	**13.950**	354.33	**4.200**	106.68	**4.675**	118.75	**4.600**	116.84
540	**14.550**	369.57	**4.400**	111.76	**4.875**	123.83	**4.800**	121.92

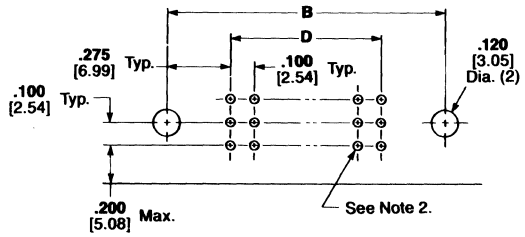
Recommended PC Board Hole Layouts (Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches and millimeters.
Dimensions are shown for reference purposes only.

Three-Row Connectors without Guide Holes



Vertical Pin Assemblies with ACTION PIN and Solder Posts

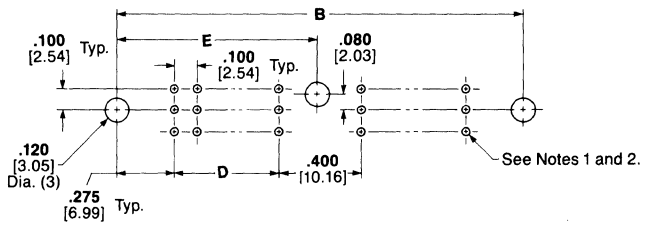


Right-Angle Receptacle Assemblies with Solder Posts

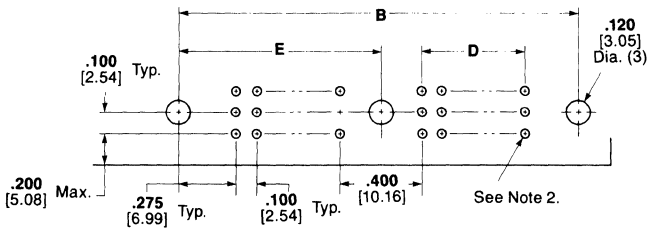
Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3080.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions			
	B		D	
	Inch	mm	Inch	mm
90	**3.450**	87.63	**2.900**	73.66
96	**3.650**	92.71	**3.100**	78.74
120	**4.450**	113.03	**3.900**	99.06
150	**5.450**	138.43	**4.900**	124.46
165	**5.950**	151.13	**5.400**	137.16
180	**6.450**	163.83	**5.900**	149.86
210	**7.450**	189.23	**6.900**	175.26
225	**7.950**	201.93	**7.400**	187.96
240	**8.450**	214.63	**7.900**	200.66

Three-Row Connectors with One Guide Hole



Vertical Pin Assemblies with ACTION PIN and Solder Posts



Right-Angle Receptacle Assemblies with Solder Posts

Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3080.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions					
	B		D		E	
	Inch	mm	Inch	mm	Inch	mm
240	**8.750**	222.25	**3.900**	99.06	**4.375**	111.13
276	**9.950**	252.73	**4.500**	114.30	**4.975**	126.75
312	**11.150**	283.21	**5.100**	129.54	**5.575**	146.05
348	**12.350**	313.69	**5.700**	144.78	**6.175**	156.85
360	**12.750**	323.85	**5.900**	149.86	**6.375**	161.93
366	**12.950**	328.93	**6.000**	152.40	**6.475**	164.47

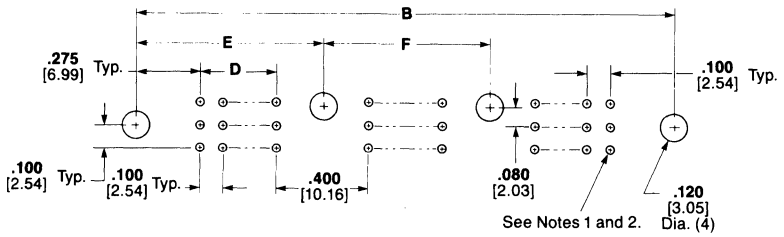
Recommended PC Board Hole Layouts (Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

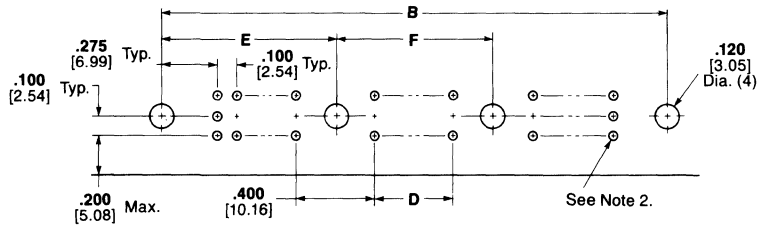
Chart contains dimensions in inches and millimeters.

Dimensions are shown for reference purposes only.

Three-Row Connectors with Two Guide Holes



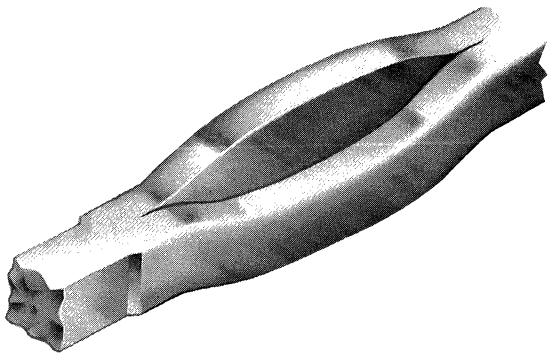
Vertical Pin Assemblies with ACTION PIN and Solder Posts



Right-Angle Receptacle Assemblies with Solder Posts

Notes: 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post mounting hole specifications, refer to page 3080.
2. Mounting hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

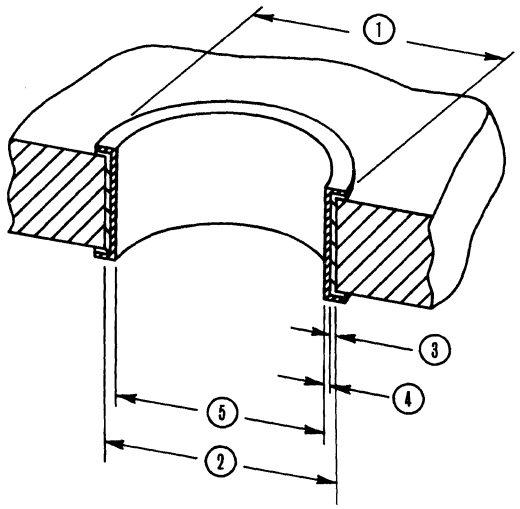
No. of Pos.	Dimensions							
	B		D		E		F	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm
387	**13.950**	354.33	**4.200**	106.68	**4.675**	118.75	**4.600**	116.84
423	**15.150**	348.81	**4.600**	116.84	**5.075**	128.91	**5.000**	127.00



ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area ensures oxide break-through and prevents corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

PC Board Thickness

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To ensure optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



① Annular Ring (See Note)
② Drilled Hole
③ Copper Thickness
④ Tin-Lead Thickness
⑤ Plated-Through Hole

For more information on ACTION PIN Press-Fit Contacts
See page 3412

ACTION PIN Contact/PC Board Applications

Connector Type	ACTION PIN Contact Material Thickness	Drilled Hole Diameter ②	Plating Thicknesses		Plated-Through Hole Diameter ⑤	Distortion Specification**	
			Copper ③*	Tin-Lead ④		Average	Maximum
Three- and Four-Row Pin Assemblies	**.025** 0.64	**.0435±.001** 1.153±0.03	**.001 - .003** 0.03 - 0.08	**.0003** 0.008 Min.	**.037 - .043** 0.94 - 1.09	**.0015** 0.038	**.002** 0.05

* Maximum hardness of copper layer is 150 Knoop
** Radial hole distortion
Note: Recommended annular ring diameter is hole diameter plus **.020** [0.51]

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. unless specified otherwise.
Values in brackets are metric equivalents.

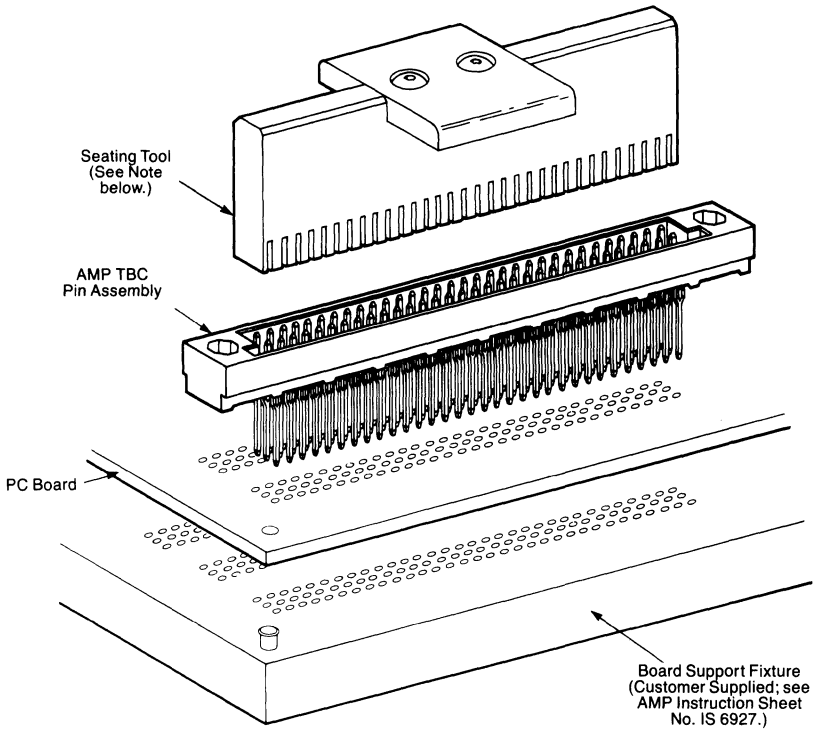
Application Tooling for TBC Pin Assemblies with ACTION PIN Posts

Pin assemblies with ACTION PIN contacts allow high speed, solderless backplane construction through reliable press-fit application. Press fitting connectors to printed circuit boards requires special seating tools which transfer application force directly to the contacts.

Force applied to the tool to seat the connectors can be provided by the AMP seating machines shown below, or by commercially available arbor presses such as Greenerd 3A or 3B, which have a seating pressure capacity of 40 lbs. [178 N] per contact.

Board support fixtures are used to support PC boards or backplanes while connectors are being assembled to the boards or backplanes. AMP Instruction Sheet No. IS 6927 provides AMP recommendations for manufacturing board support fixtures.

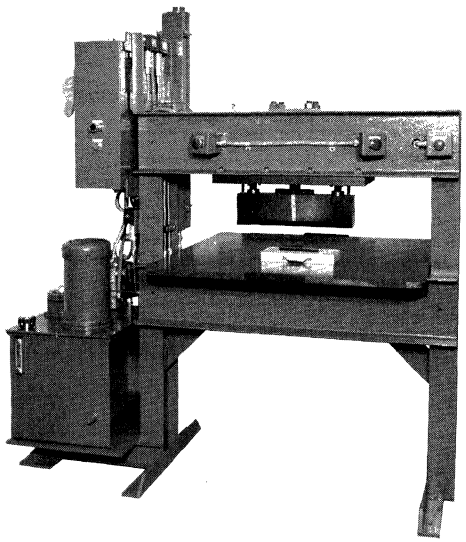
For **tooling information**, call Customer Assistance Hotline **1-800-722-111.**



Note: Seating tools for TBC pin assemblies are the same as those used for AMP-HDI pin assemblies. Refer to page 3065 for specific connector sizes and seating tool numbers.

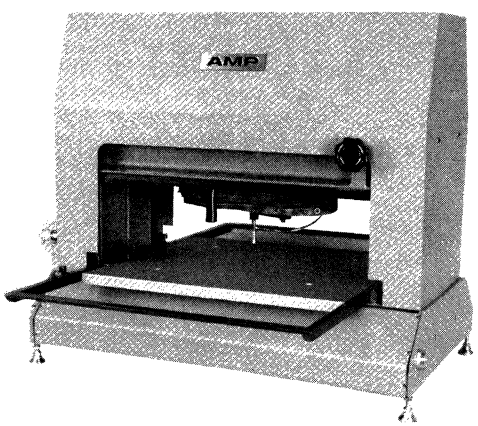
SM-10/20 MachineNo. 803880-6

This machine is hydraulically operated with a capacity of 40,000 lbs (178 000 N). Each contact requires 40 lbs [178 N] for insertion. Cycling time of 2 to 2½ seconds is adequate for AMP's largest connectors or multiple seating.



SM-3 Machine No. 814700-2

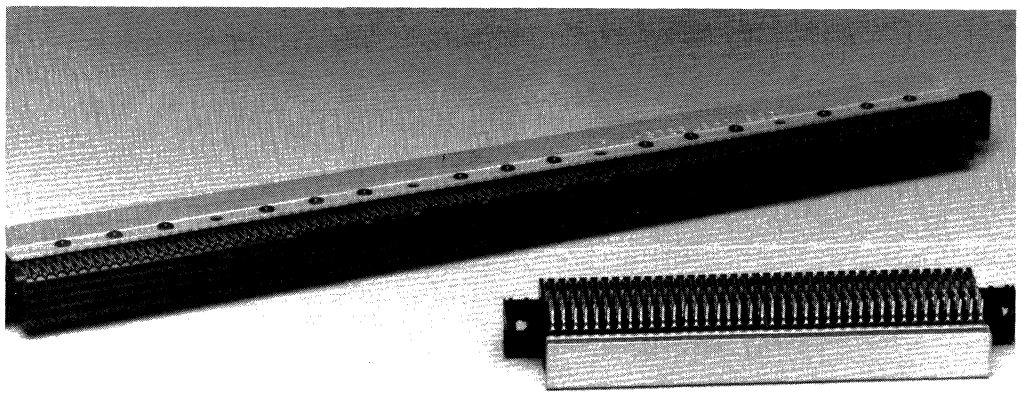
This machine is air powered with a capacity of 6000 lbs [26 700 N]. Each contact requires 40 lbs [178 N] for insertion. It utilizes .750 [19.05] thick board support fixtures and has adjustable seating force. It also has a board sensing feature to compensate for board thickness variations. The machine has the capability of processing boards up to 20 [508] wide. Cycling time is 4 seconds.

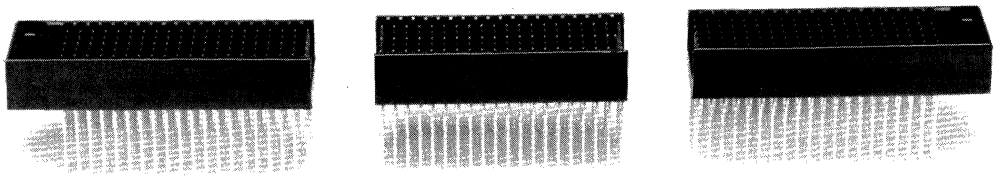


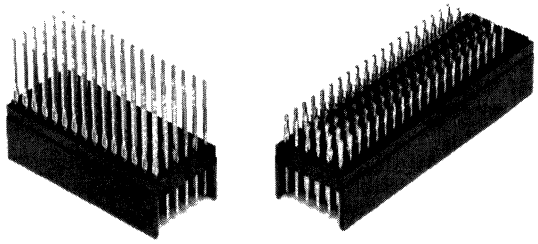
Specifications subject to change.
For latest design specifications...
1-800-522-6752

TBC Plus (Twin-Beam Contact) Connectors

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.







AMP TBC Plus connectors combine economy and high performance into a high-density, six-row connector. The connectors are modular, consisting of 90- and 120-position post header modules and right-angle receptacle connectors. Contacts are on a .100 x .100 [2.54 x 2.54] grid. The modules can be combined to create high-pin-count interconnections of 810 positions or more.

At the heart of the TBC Plus connector is the twin-beam receptacle contact. Its design and beryllium copper material provide the high normal force, contact wipe, and conductivity to ensure a reliable electrical connection with .025 x .025 [.064 x .064] posts.

Header posts are available in various heights to allow four-level sequencing of ground, power, and signals. Posts use ACTION PIN contact feature for fast, solderless, press-fit application to the motherboard.

Each connector assembly includes two eight-way keying slots and can be configured with zero, one or two guide holes.

Technical Documents

Product Specifications
108-1188 TBC Plus Connectors
108-26003 ACTION PIN Contacts

Application Specification
114-25036 TBC Plus Connectors

Instruction Sheet
IS 6927 Design Recommendations for PC Board Support Fixture

Product Facts

- Six rows of contacts on high-density .100 [2.54] grid
- Modular design with 90- and 120-position modules
- High-conductivity beryllium copper twin-beam receptacle contacts provide two redundant points of contact with .025 x .025 [0.64 x 0.64] posts
- Header use ACTION PIN press-fit contacts
- Various pin heights for make-first/break-last sequencing of ground, power and signals
- Select loading available
- Guide pins provide positive connector alignment.
- Keying hardware allows 64 combinations to prevent mismating
- Receptacle modules preassembled to stiffener
- Right-angle pin headers available for card extender applications
- Integral (nonmodular) assemblies available for high-volume requirements
- Interchangeable with other high-density, six-row connectors.

Typical Application and Material Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

Material and Finish:

Housings—Black glass-filled polyester, 94V-0 rated

Receptacle Contacts—Beryllium copper, duplex plated .000030 [0.00076] gold in mating area, tin-lead on solder posts, with entire contact underplated .000050 [0.00127] min. nickel

Pin Contacts—Phosphor bronze, duplex plated .000030 [0.00076] gold in mating area, tin-lead on solder posts, with entire contact underplated .000050 [0.00127] min. nickel

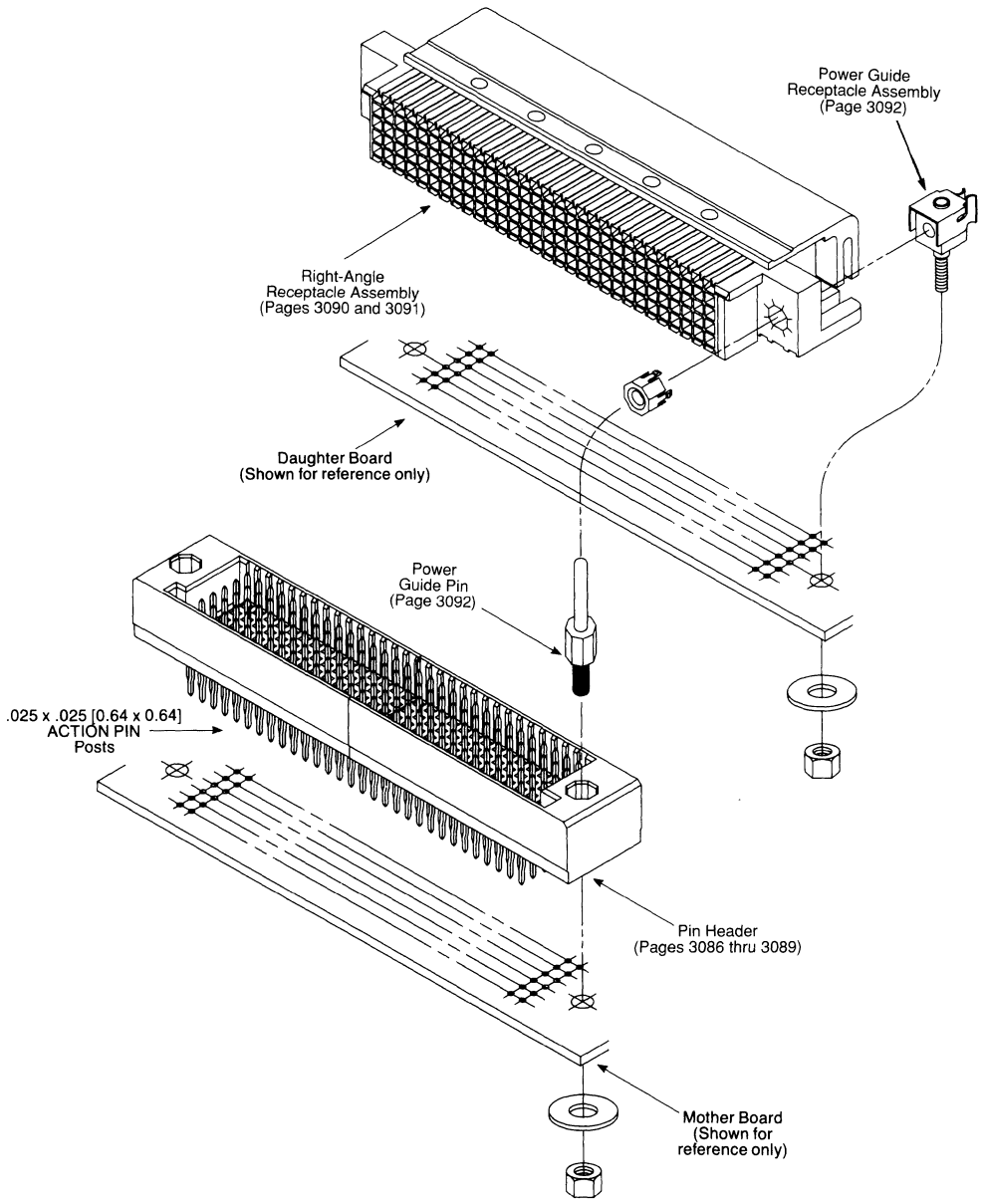
Stiffener—Aluminum

Power Guide Pin—Brass, plated .000030 [0.00076] gold over .000050 [0.00127] min. nickel

Power Guide Receptacle Assembly—Phosphor bronze contact, plated .000030 [0.00076] gold in contact area and gold flash on remainder, with entire contact underplated .000050 [0.00127] min. nickel. Brass bracket, plated .000020 [0.00051] gold flash over .000050 [0.00127] min. nickel

Center Guide Pin, Guide Pin, Inserts, Key Pin, Washers, and Nuts—Stainless steel

Typical Application



Note: Components shown above are "typical"; they are not representative of all sizes and configurations available. See pages referenced for complete details.

Performance Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Electrical Specifications

Termination Resistance:
15 milliohms max. (initial)
20 milliohms max. (end of life)

Dielectric Withstanding Voltage:
900 Vrms at sea level
200 Vrms at 70,000 feet [21 336 m]

Current-Carrying Capacity:
Outer Rows: 3 amperes per contact
Inner Rows: 2.25 amperes per contact

Insulation Resistance:
5000 milliohms min. (initial)
1000 milliohms min. (final)

Capacitance:
2 picofarads max. (Line-to-Line)

Mechanical Specifications

Mating Force:
2.5 oz. [0.7 N] max. per contact

Normal Force:
1.75 oz. [0.5 N] min.

Durability:
250 mating cycles

Environmental Specifications

Temperature Life:
1000 hours at 105°C

Thermal Shock:
100 cycles, −55°C to +105°C

Temperature Cycling Humidity:
10 days

Physical Shock:
100 Gs, 6 ms half sine, 18 shocks

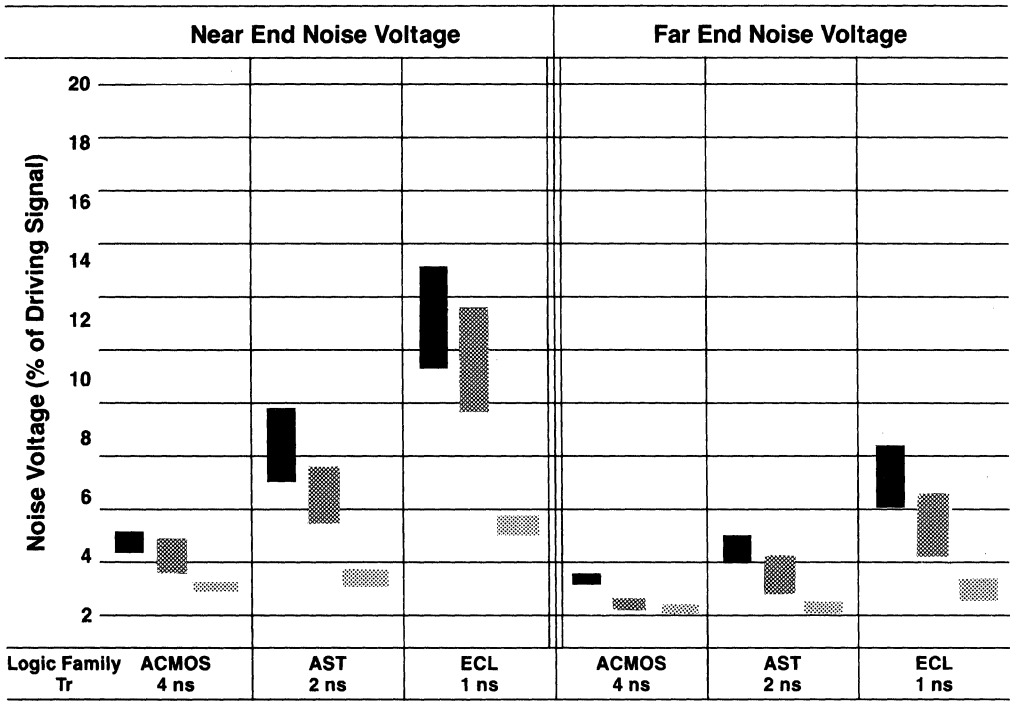
Industrial Mixed Flowing Gas:
10 days, Class III

Noise Voltage Analysis

TBC Plus connectors offer excellent high-speed performance. The accompanying graph shows near-end and far-end noise voltages for TBC Plus and competitive six-row connectors for different logic families and signal rise times. Notice that arrangement of grounds in the connector influences performance: dispersing the grounds throughout the connector offers lower noise levels than placing ground on the outside rows only.

For additional information about multiple-line crosstalk of TBC Plus connectors, consult AMP Incorporated.

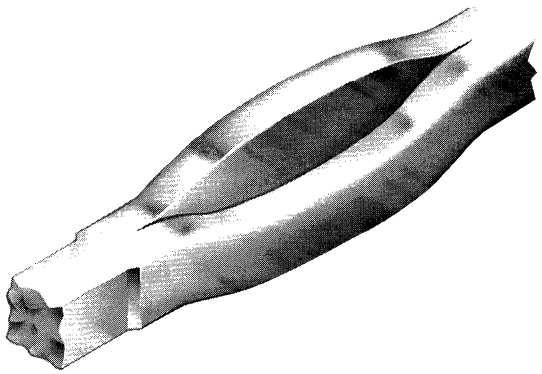
30 Signals/Inch



■ Competitive Connector

▒ TBC Plus (All Grounds Outside Rows)

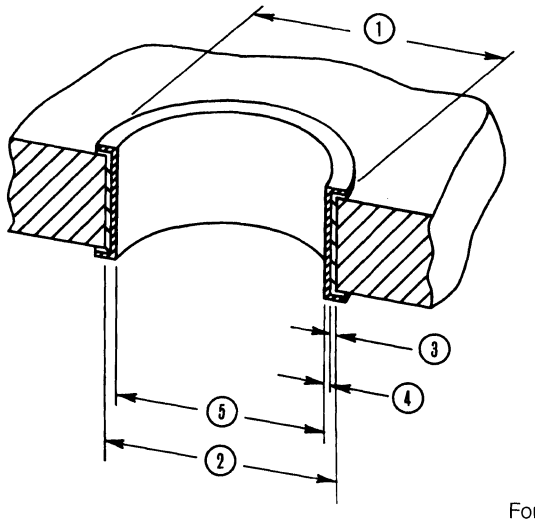
▒ TBC Plus (Grounds Evenly Dispersed)



ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area ensures oxide breakthrough and prevents corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

PC Board Thickness

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To ensure optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



① Annular Ring (See Note)
② Drilled Hole
③ Copper Thickness
④ Tin-Lead Thickness
⑤ Plated-Through Hole

For more information on
ACTION PIN Press-Fit Contacts
See page 3412

ACTION PIN Contact/PC Board Applications

Connector Type	ACTION PIN Contact Material Thickness	Drilled Hole Diameter ②	Plating Thicknesses		Plated-Through Hole Diameter ⑤	Distortion Specification**	
			Copper ③*	Tin-Lead ④		Average	Maximum
Pin Header Modules and Modular Pin Header Assemblies	**.025** 0.64	**.0435±.001** 1.153±0.03	**.001 - .003** 0.03 - 0.08	**.0003** 0.008 Min.	**.037 - .043** 0.94 - 1.09	**.0015** 0.038	**.002** 0.05

* Maximum hardness of copper layer is 150 Knoop
** Radial hole distortion
Note: Recommended annular ring diameter is hole diameter plus **.020** [0.51]

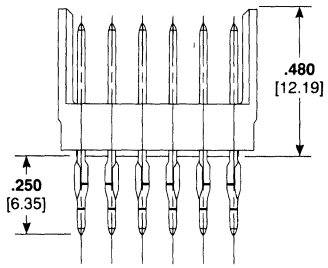
Pin Header Modules

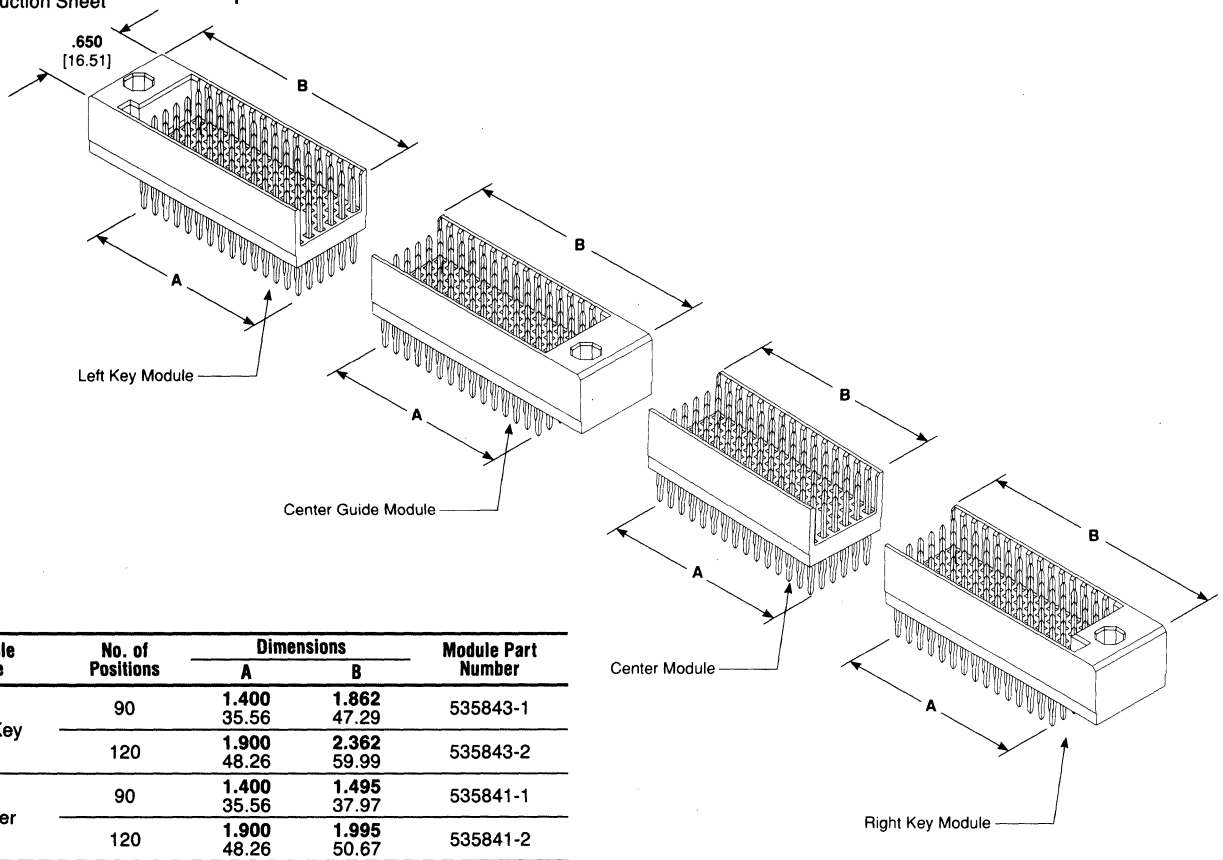
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

.250 [6.35] post length.
.555 [14.10] and .684 [17.37] post lengths also available; consult AMP Incorporated.
ACTION PIN posts require .093 [2.36] thick minimum PC board for mounting.

Related Product Data:
Mating Receptacle Connectors - pages 3090, 3091
Materials - page 3083
Performance Specifications - page 3084
Accessories - page 3092
Power Modules - page 3093
ACTION PIN Contacts - pages 3085 and 3412
Application Tooling - page 3094
Technical Documents - page 3082
AMP Product Specifications 108-1188, 108-26003
AMP Application Specification 114-25036
AMP Instruction Sheet IS 6927





Module Type	No. of Positions	Dimensions A	Dimensions B	Module Part Number
Left Key	90	**1.400** 35.56	**1.862** 47.29	535843-1
	120	**1.900** 48.26	**2.362** 59.99	535843-2
Center	90	**1.400** 35.56	**1.495** 37.97	535841-1
	120	**1.900** 48.26	**1.995** 50.67	535841-2
Center Guide	90	**1.400** 35.56	**1.785** 45.34	650369-1
	120	**1.900** 48.26	**2.285** 58.04	650369-2
Right Key	90	**1.400** 35.56	**1.862** 47.29	535845-1
	120	**1.900** 48.26	**2.362** 59.99	535845-2

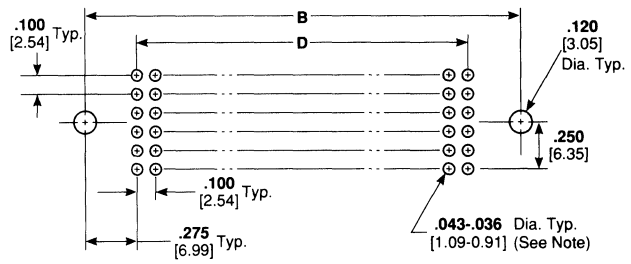
Note: Contact AMP Incorporated for information on selective loading of different height posts for sequencing.

Modular Pin Assemblies Without Guide Holes

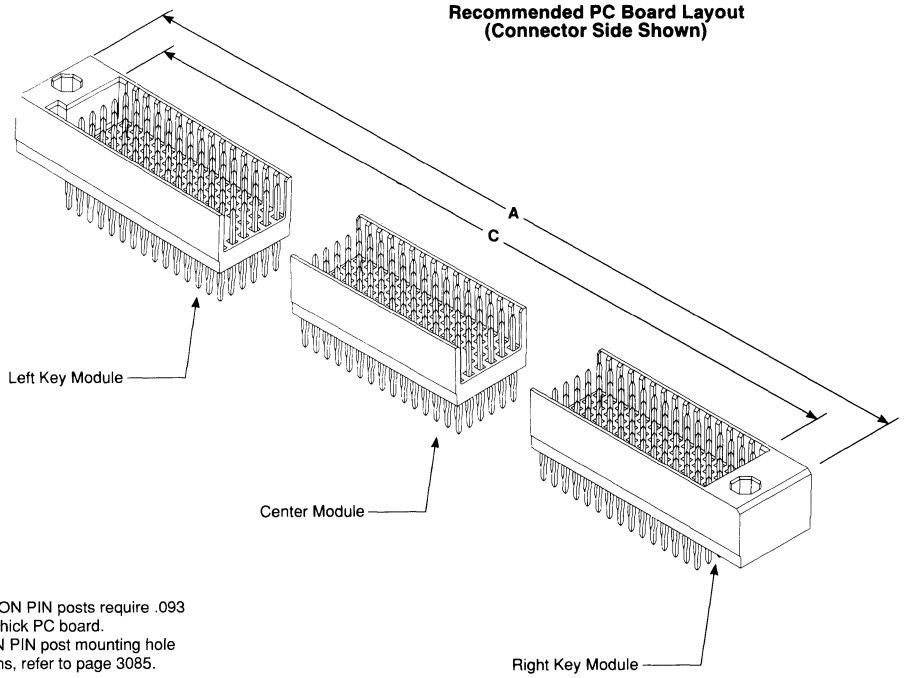
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Related Product Data:
Mating Receptacle Connectors - pages 3090, 3091
Materials - page 3083
Performance Specifications - page 3084
Accessories - page 3092
Power Modules - page 3093
ACTION PIN Contacts - pages 3085 and 3412
Application Tooling - page 3094
Technical Documents - page 3082
AMP Product Specifications 108-1188, 108-26003
AMP Application Specification 114-25036
AMP Instruction Sheet IS 6927



Recommended PC Board Layout (Connector Side Shown)



Note: ACTION PIN posts require .093 [2.36] min. thick PC board.
For ACTION PIN post mounting hole specifications, refer to page 3085.

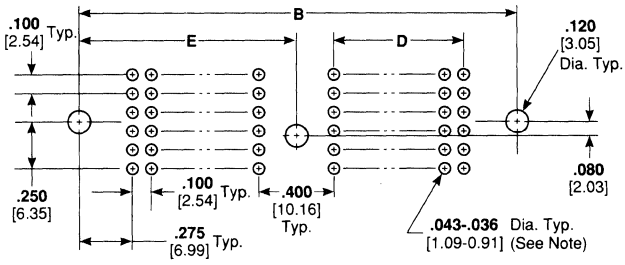
No. of Positions	Dimensions				Modules Required					
					Left Key		Center		Right Key	
	A	B	C	D	90	120	90	120	90	120
180	**3.750** 95.25	**3.450** 87.63	**3.050** 77.47	**2.900** 73.66	1	—	—	—	1	—
210	**4.250** 107.95	**3.950** 100.33	**3.550** 90.17	**3.400** 86.36	1	—	—	—	—	1
240	**4.750** 120.65	**4.450** 113.03	**4.050** 102.87	**3.900** 99.06	—	1	—	—	—	1
270	**5.250** 113.35	**4.950** 125.73	**4.550** 115.57	**4.400** 111.76	1	—	1	—	1	—
300	**5.750** 146.05	**5.450** 138.43	**5.050** 128.27	**4.900** 124.46	1	—	—	1	1	—
330	**6.250** 158.75	**5.950** 151.13	**5.550** 140.97	**5.400** 137.16	—	1	1	—	—	1
360	**6.750** 171.45	**6.450** 163.83	**6.050** 153.67	**5.900** 149.86	—	1	—	1	—	1
390	**7.250** 184.15	**6.950** 176.53	**6.550** 166.37	**6.400** 162.56	1	—	1	1	1	—
420	**7.750** 196.85	**7.450** 189.23	**7.050** 179.07	**6.900** 175.26	1	—	1	1	—	1
450	**8.250** 209.55	**7.950** 201.93	**7.550** 191.77	**7.400** 187.96	—	1	1	1	—	1
480	**8.750** 222.25	**8.450** 214.63	**8.050** 204.47	**7.900** 200.66	—	1	—	2	—	1
600	**10.750** 273.05	**10.450** 265.43	**10.050** 255.27	**9.900** 251.46	—	1	—	3	—	1

Modular Pin Assemblies With One Guide Hole

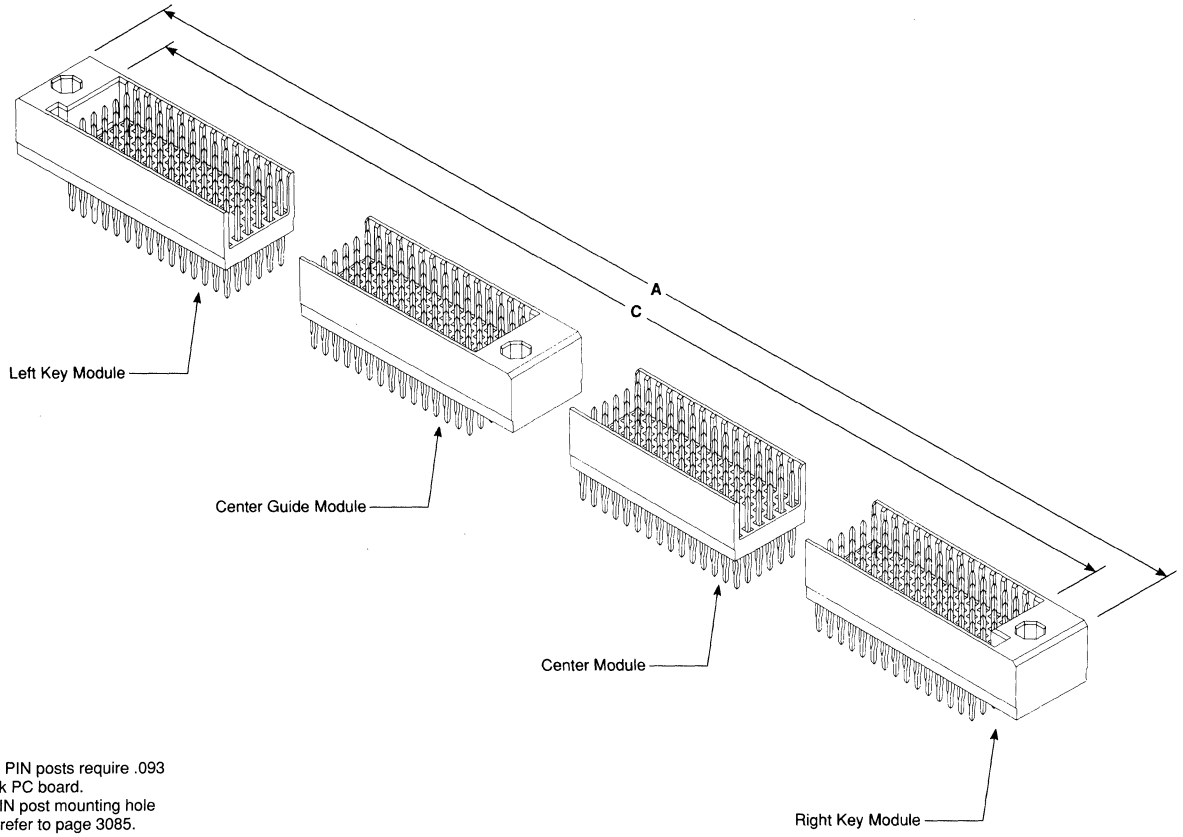
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Related Product Data:
Mating Receptacle Connectors - pages 3090, 3091
Materials - page 3083
Performance Specifications - page 3084
Accessories - page 3092
Power Modules - page 3093
ACTION PIN Contacts - pages 3085 and 3412
Application Tooling - page 3094
Technical Documents - page 3082
AMP Product Specifications
108-1188, 108-26003
AMP Application Specification
114-25036
AMP Instruction Sheet
IS 6927



Recommended PC Board Layout (Connector Side Shown)



Note: ACTION PIN posts require .093 [2.36] min. thick PC board.
For ACTION PIN post mounting hole specifications, refer to page 3085.

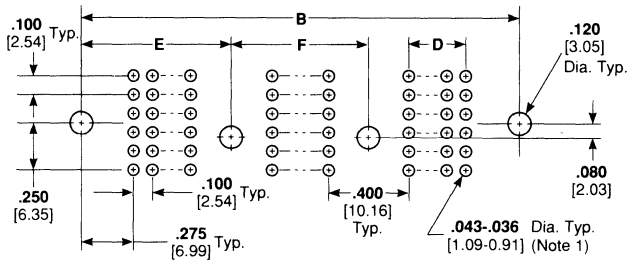
No. of Positions	Dimensions					Modules Required							
						Left Key		Center		Center Guide		Right Key	
	A	B	C	D	E	90	120	90	120	90	120	90	120
480	**9.050** 229.87	**8.750** 222.25	**8.350** 212.09	**3.900** 99.06	**4.375** 111.13	—	1	—	1	—	1	—	1
540	**10.050** 255.27	**9.750** 247.65	**9.350** 237.49	**4.400** 111.76	**4.875** 123.83	1	—	3	—	1	—	1	—
600	**11.050** 280.67	**10.750** 273.05	**10.350** 262.89	**4.900** 124.46	**5.375** 136.53	—	1	3	—	1	—	1	—
660	**12.050** 306.07	**11.750** 298.45	**11.350** 288.29	**5.400** 137.16	**5.875** 149.23	1	—	—	3	—	1	1	—

Modular Pin Assemblies With Two Guide Holes

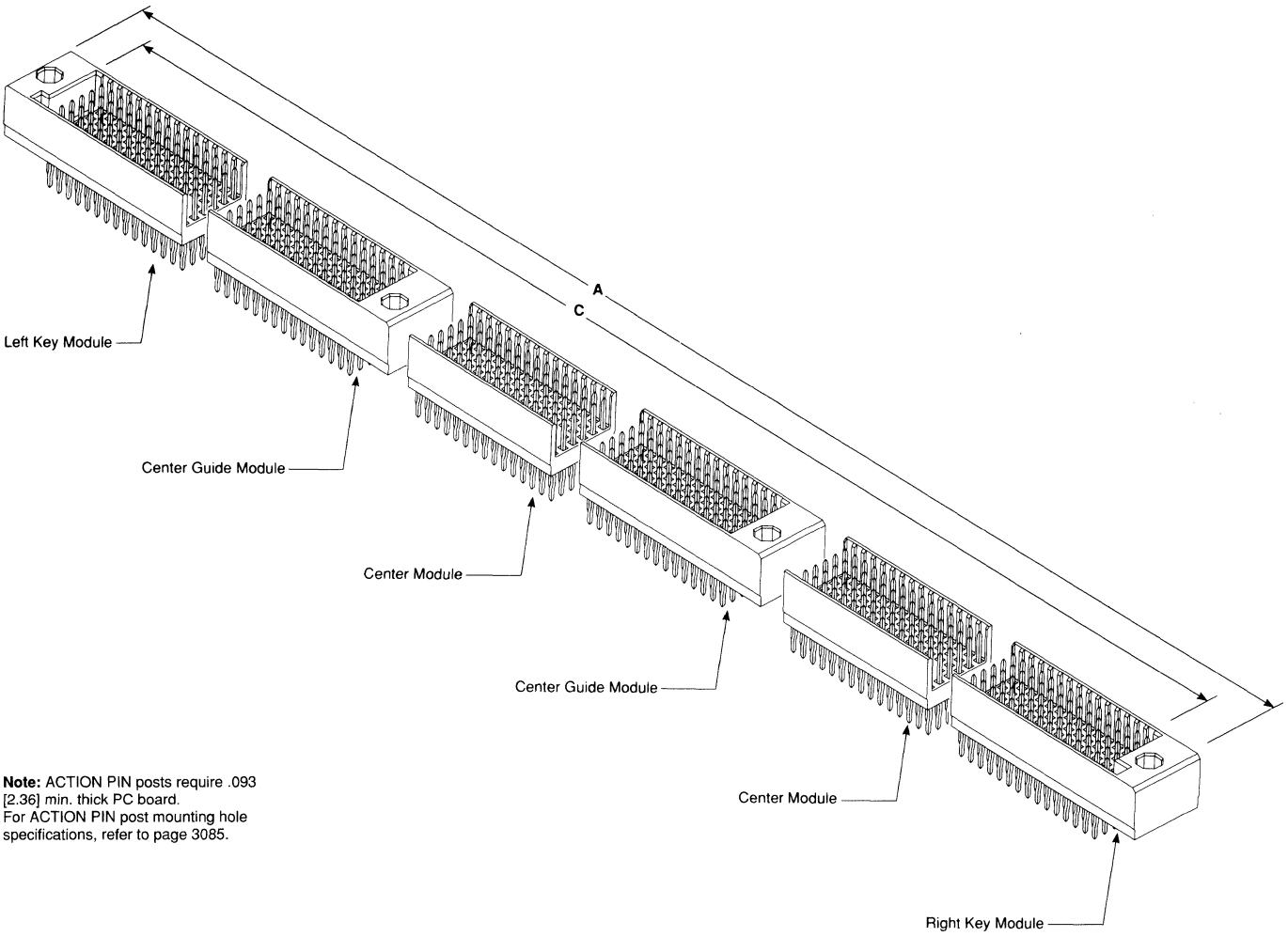
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Related Product Data:
Mating Receptacle Connectors - pages 3090, 3091
Materials - page 3083
Performance Specifications - page 3084
Accessories - page 3092
Power Modules - page 3093
ACTION PIN Contacts - pages 3085 and 3412
Application Tooling - page 3094
Technical Documents - page 3082
AMP Product Specifications 108-1188, 108-26003
AMP Application Specification 114-25036
AMP Instruction Sheet IS 6927



Recommended PC Board Layout (Connector Side Shown)

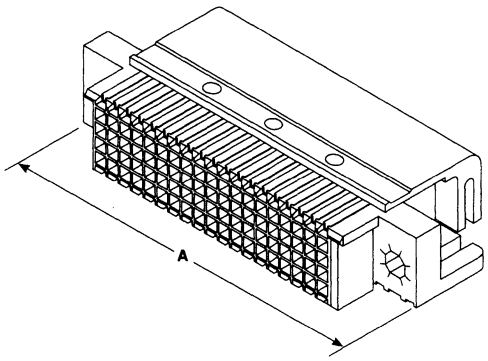


Note: ACTION PIN posts require .093 [2.36] min. thick PC board.
For ACTION PIN post mounting hole specifications, refer to page 3085.

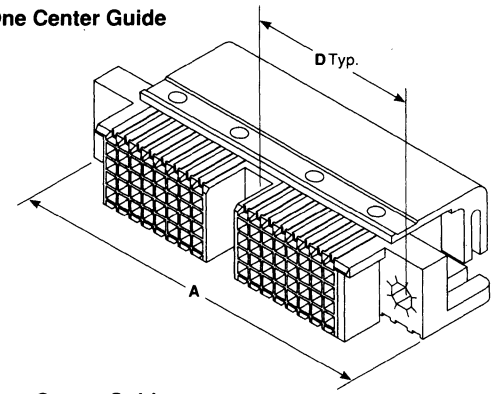
No. of Positions	Dimensions						Modules Required							
							Left Key		Center		Center Guide		Right Key	
	A	B	C	D	E	F	90	120	90	120	90	120	90	120
720	**13.350** 339.09	**13.050** 331.47	**12.650** 321.31	**3.900** 99.06	**4.375** 111.13	**4.300** 109.22	—	1	—	2	—	2	—	1
810	**14.850** 377.19	**14.550** 369.57	**14.150** 359.11	**4.400** 111.76	**4.875** 123.83	**4.800** 121.92	1	—	5	—	2	—	1	—

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

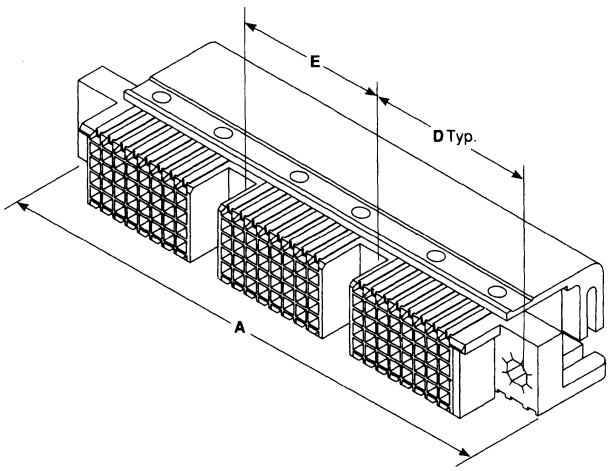
Without Center Guide



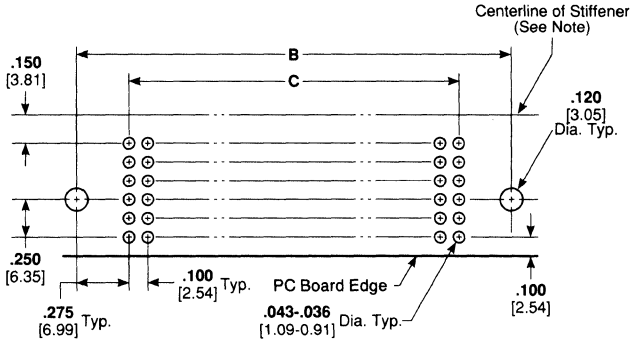
With One Center Guide



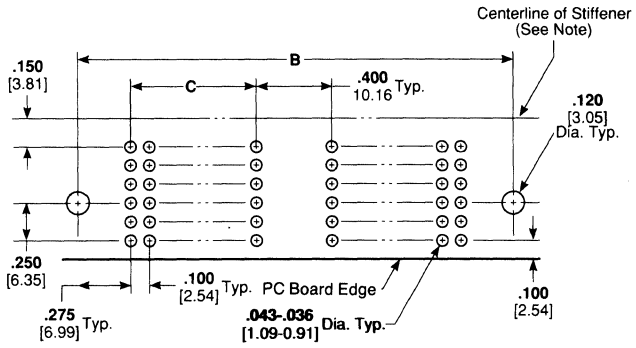
With Two Center Guides



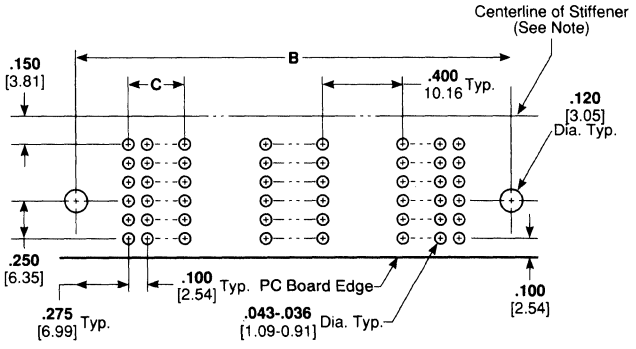
Without Center Guide



With One Center Guide



With Two Center Guides



Recommended PC Board Layouts
(Connector Side Shown)

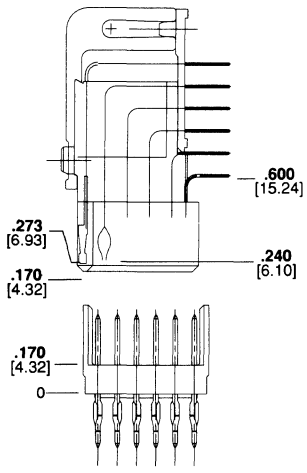
Note: Recommended mounting screw for stiffener is a stainless steel No. 2 pan head with thread-forming Type AB threads. Recommended clearance hole is .120 [3.05].

Modular Receptacle Assemblies
(Continued)

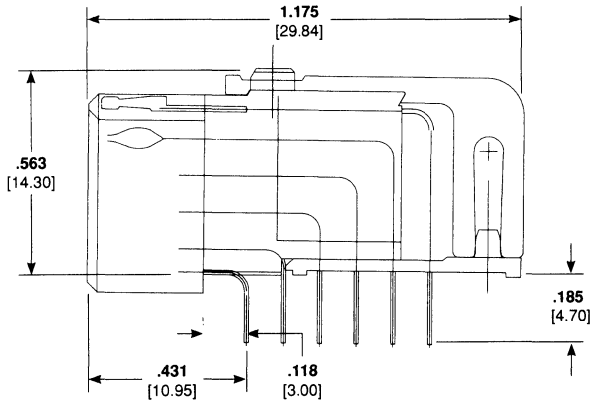
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.
Dimensions are shown for reference purposes only.

Related Product Data:
Mating Pin Headers - pages 3086, 3089
Materials - page 3083
Performance Specifications - page 3084
Accessories - page 3092
Power Modules - page 3093
Technical Documents - page 3082
AMP Product Specification 108-1188
AMP Application Specification 114-25036



Reference Mating Dimensions



No. of Guides	No. of Positions	Dimensions A	B	C	D	E	Part Numbers
0	180	**3.730** 94.74	**3.450** 87.63	**2.900** 7.66	—	—	535919-1
	210	**4.230** 107.44	**3.950** 100.33	**3.400** 86.36	—	—	535919-2
	240	**4.730** 120.14	**4.450** 113.03	**3.900** 99.06	—	—	535919-3
	270	**5.230** 132.84	**4.950** 125.73	**4.400** 111.76	—	—	535919-4
	300	**5.730** 145.54	**5.450** 140.72	**4.900** 124.46	—	—	535919-5
	330	**6.230** 158.24	**5.950** 151.13	**5.400** 137.16	—	—	535919-6
	360	**6.730** 170.94	**6.450** 163.83	**5.900** 149.86	—	—	535919-7
	390	**7.230** 183.64	**6.950** 176.53	**6.400** 162.56	—	—	535919-8
	420	**7.730** 196.34	**7.450** 189.23	**6.900** 175.26	—	—	535919-9
	450	**8.230** 209.04	**7.950** 201.93	**7.400** 187.96	—	—	1-535919-0

No. of Guides	No. of Positions	Dimensions A	B	C	D	E	Part Numbers
0	480	**8.730** 221.74	**8.450** 214.63	**7.900** 200.66	—	—	1-535919-3
	540	**9.730** 247.14	**9.450** 240.03	**8.900** 226.06	—	—	1-535919-1
	600	**10.730** 272.54	**10.450** 265.43	**9.900** 251.46	—	—	1-535919-2
1	480	**9.030** 229.36	**8.750** 222.25	**3.900** 99.06	**4.375** 111.13	—	650362-1
	540	**10.030** 254.76	**9.750** 247.65	**4.400** 111.76	**4.875** 123.83	—	650362-2
	600	**11.030** 280.16	**10.750** 273.05	**4.900** 124.46	**5.375** 136.25	—	650362-3
	660	**12.030** 305.56	**11.750** 298.45	**5.400** 137.16	**5.875** 149.23	—	650362-4
2	720	**13.350** 339.09	**13.050** 331.47	**3.900** 99.06	**4.395** 111.63	**4.300** 109.22	650363-1
	810	**14.850** 377.19	**14.550** 369.57	**4.400** 111.76	**4.875** 123.83	**4.800** 121.92	650363-2

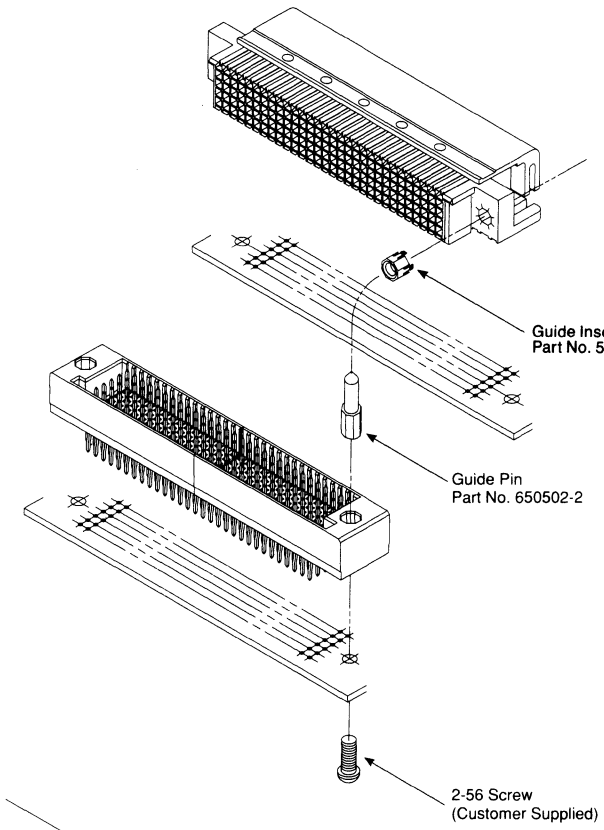
Specifications subject to change.
For latest design specifications...
1-800-522-6752

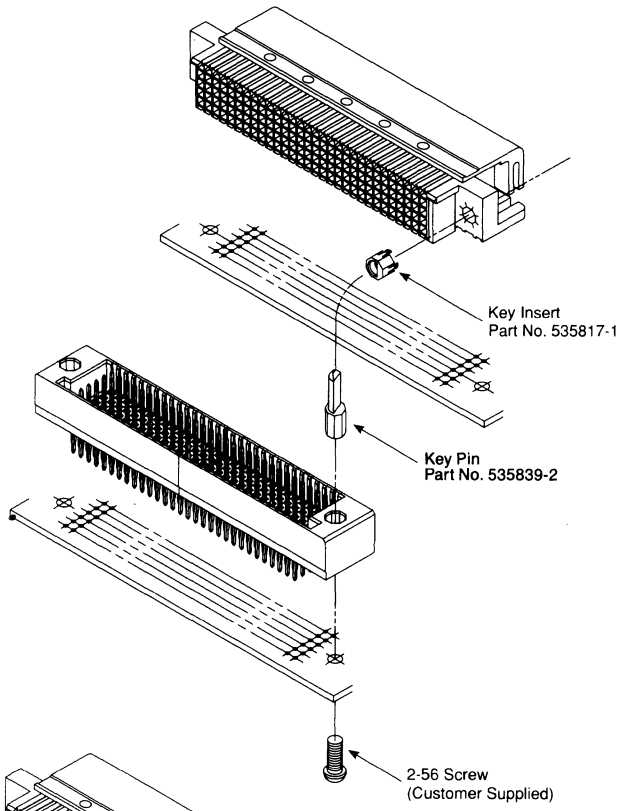
Guidance, Power and Keying Hardware and Applications

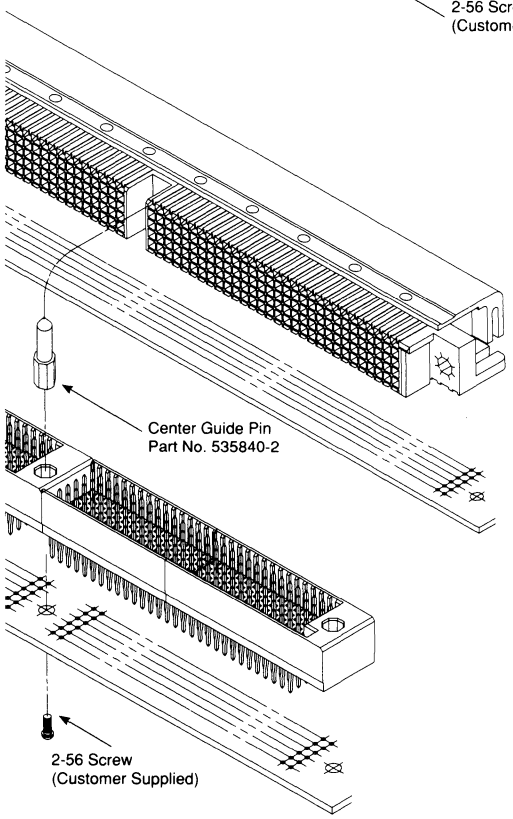
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

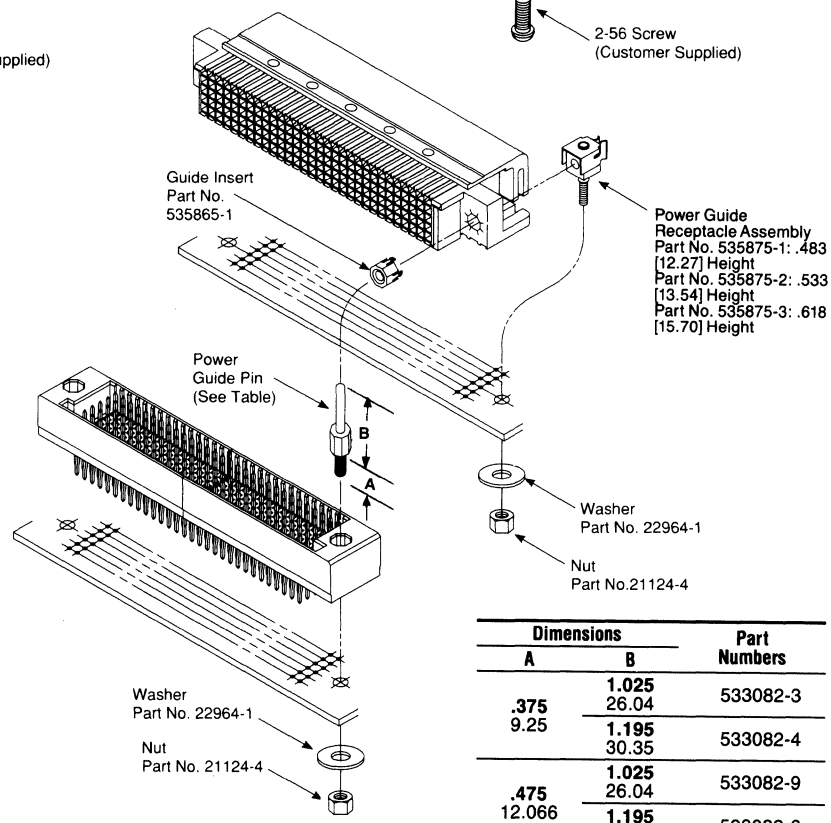
Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.









Dimensions		Part Numbers
A	B	
.375 9.25	1.025 26.04	533082-3
	1.195 30.35	533082-4
.475 12.066	1.025 26.04	533082-9
	1.195 30.35	533082-6
.560 14.22	1.025 26.04	1-533082-1

Note: Receptacle mounting screws are customer supplied. Recommended screws for .093 [2.36] to .125 [3.18] thick boards are stainless steel No. 2-56 binding head screws .375 [9.53] long.

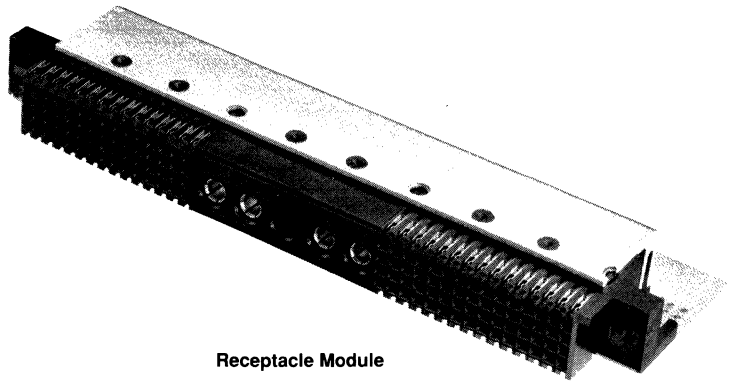
Power Modules

Specifications subject to change.
For latest design specifications...
1-800-522-6752

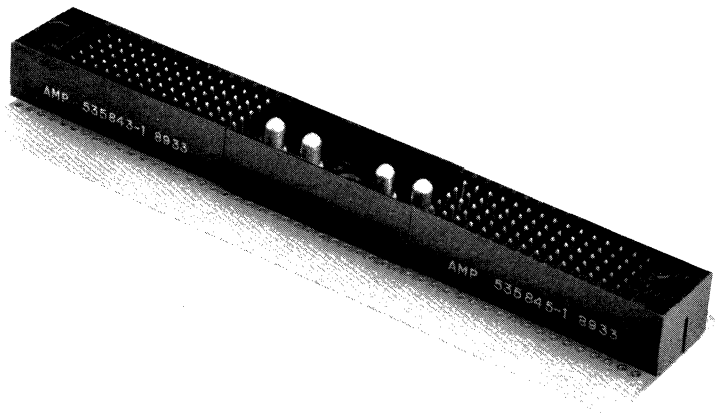
Power modules permit power to be carried from board to board without using parallel signal pins. The modules, available with various numbers of Type 8 contacts, offer the same form factor as TBC Plus connectors. Receptacle modules are attached to the connector's stiffener, thus becoming an integral part of the connector.

For further information on power modules, contact AMP Incorporated.

Coaxial contacts are also available.



Receptacle Module



Pin Module

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters unless specified otherwise. Values in brackets are metric equivalents.

Application Tooling for TBC Plus Pin Assemblies with ACTION PIN Posts

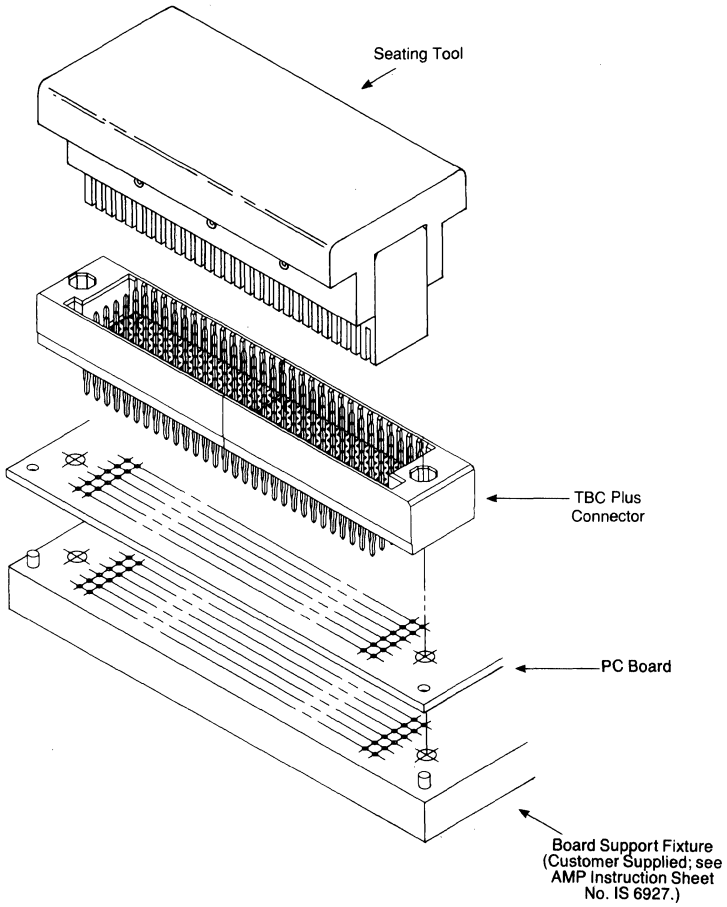
TBC Plus pin headers use ACTION PIN posts to allow fast, solderless backplane construction through reliable press-fit application. Press-fitting connectors to PC boards requires special seating tools that transfer application force directly to the contacts.

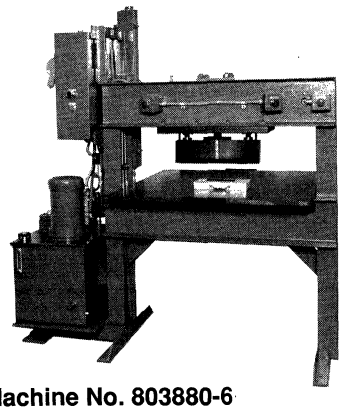
Force applied to the tool to seat the connectors can be provided in several ways, although the high pin counts of TBC Plus connectors typically require power applicators such as the AMP seating machines shown below.

There are also commercially available arbor presses such as Greenerd 3A or 3B with a seating pressure capacity of 40 lbs. [178 N] per contact.

Board support fixtures are used to support PC boards or backplanes while connectors are being assembled to the boards or backplanes. AMP Instruction Sheet No. IS 6927 provides AMP recommendations for manufacturing board support fixtures.

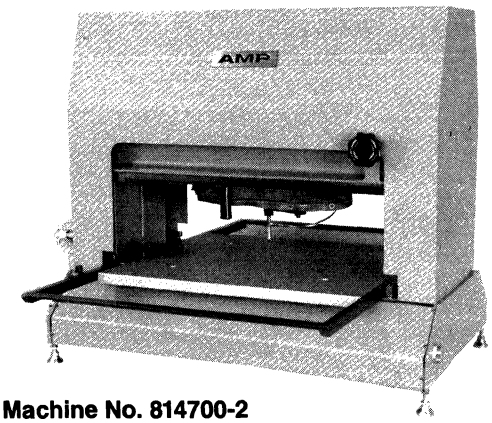
For **tooling information,** call Customer Assistance Hotline **1-800-722-1111.**





SM-10/20 Machine No. 803880-6

This machine is hydraulically operated with a capacity of 40,000 lbs. [178 000 N]. Each contact requires 40 lbs. [178 N] for insertion. Cycling time of 2 to 2-1/2 seconds is adequate for seating large connectors or multiple smaller connectors.



SM-3 Machine No. 814700-2

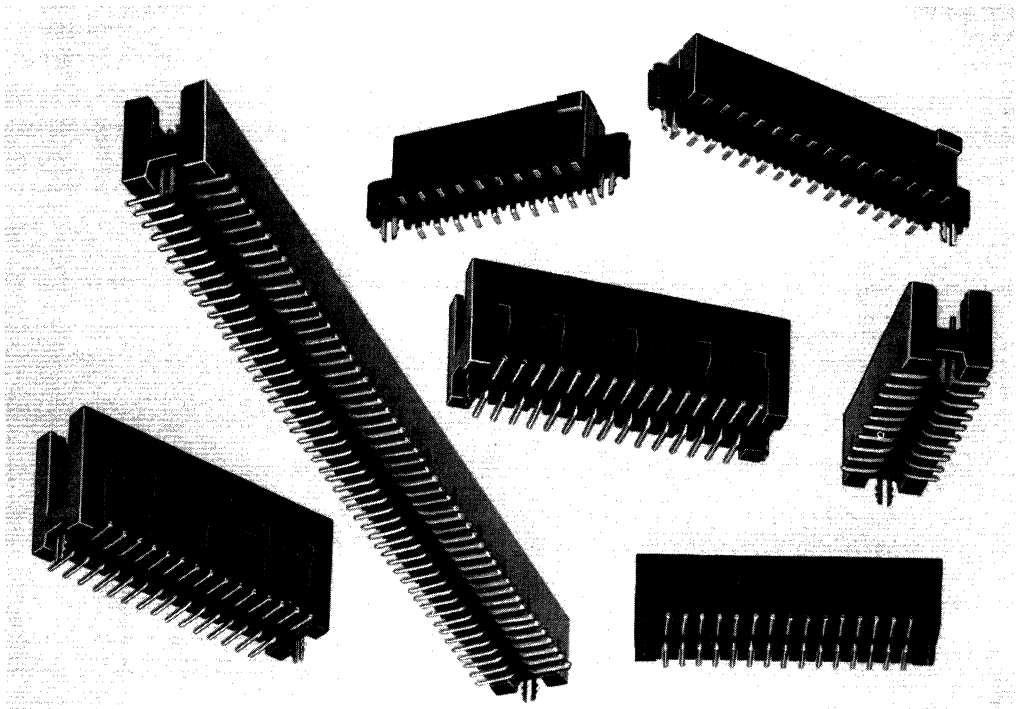
This air-powered machine has a capacity of 6000 lbs. [26 700 N], which is adequate for individual TBC Plus modules. This unit has a pressure response mode and a board sensor mode which compensate for variations in board thicknesses. Cycle time is 4 seconds.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPMODU 50/50 Grid Surface-Mount Connector System

.050 x .050 [1.27 x 1.27] Centers

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



The AMPMODU 50/50 Grid Connector System consists of surface-mount connectors designed for parallel board-to-board stacking in high density applications.

The system includes double row, vertical shrouded headers and receptacles in sizes ranging from 10 through 100 positions (in 10 position increments).

Board-to-board stack heights of .250 [6.35], .320 [8.13] and .390 [9.91] are achievable by selection of the appropriate header. The receptacle is the same for all three stack height headers.

Non-protrusive metallic holddowns are designed for use in .062 [1.57] thick PC boards and allow surface mounting to both sides of the board. In addition to providing retention during processing, the holddowns are soldered during reflow and therefore provide long term strain relief for the lead solder joints.

AMPMODU 50/50 Grid Connector System products are compatible with standard surface-mount processes; IR (infrared) and VPR (vapor phase reflow). The surface-mount connectors have been designed to ensure that dimensioning, tolerances, referenced datums, holddown characteristics and packaging methods result in a system that is compatible with robotic assembly.

The headers and receptacles feature polarization to prevent misalignment. Polarization to the PC board is achieved through the use of a polarized hand tool.

Product Facts

- Surface-mount product for parallel board-to-board applications
- Double row, vertical shrouded headers and receptacles
- High density .050 x .050 [1.27x1.27] centerline grid
- Three board-to-board stack heights: .250 [6.35], .320 [8.13] and .390 [9.91]
- Non-protrusive metallic holddowns designed for .062 [1.57] PC boards
- Reliable dual beam receptacle contacts for redundant contact
- Duplex plated receptacle and post contacts; gold plated on mating areas, tin-lead plated on tails
- Compatible with standard surface-mount processing (VPR and IR)
- Receptacle and header allow for drainage of processing fluids
- Anti-static tube packaging
- Polarized header and receptacle assemblies.
- Sizes of 10, 20, 30, 40, 50, 60, 70, 80, 90 and 100 positions
- Recognition under the Component Program of Underwriters Laboratories Inc. pending
- Certification by Canadian Standards Association pending

Dimensioning:
Dimensions are in inches and millimeters unless specified otherwise.
Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)
N (newton)

AMPMODU 50/50 Grid Surface-Mount Connector System

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

Performance Specifications

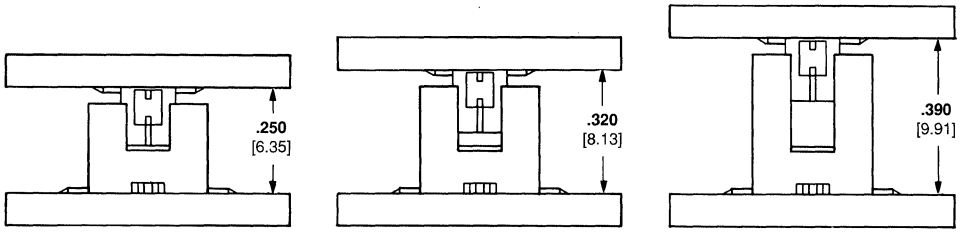
Mating Force: 6.4 oz. [1.78 N] max. per contact
Unmating Force: 4.8 OZ. [1.33 N] min. per contact
Durability: 200 cycles min.
Current Rating: (30°C T rise) .5 amperes per contact
Operating Temperature Range: -65°C to +105°C
Termination Resistance: 16 milliohms max. initial
Insulation Resistance: 5000 megohms min. initial
Dielectric Withstanding Voltage: 300 VAC

Technical Documents

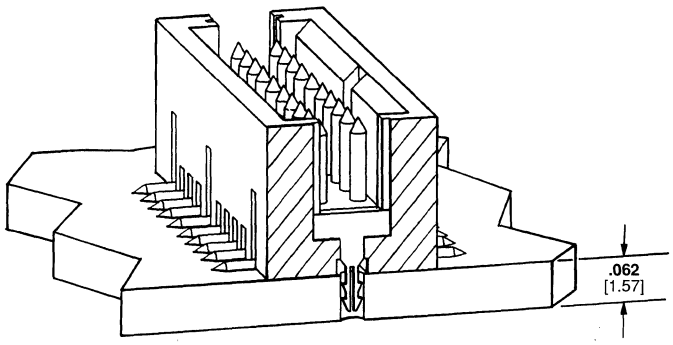
Product Specifications:
108-1332 Connector, AMPMODU 50/50 Grid System
Application Specification:
114-7010 AMPMODU 50/50 Grid Connector System
Instruction Sheets:
IS 9665 AMPMODU 50/50 Grid Placement/Seating Tools

The AMPMODU 50/50 Grid Connector System features polarized surface-mount headers and receptacles on a .050 x .050 [1.27 x 1.27] centerline grid. Board-to-board stack heights of .250 [6.35], .320 [8.13] and .390 [9.91] are available.

This system is ideal for parallel stacking applications for computers, computer peripheral equipment, communication systems, medical instrumentation and environmental control systems as well as other high density applications.



Three Board Stack Heights



Non-Protrusive Metallic Holddowns

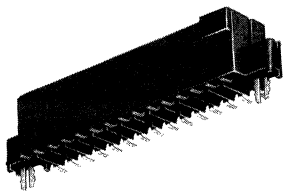
Vertical Receptacles, Double Row (For use with all Headers)

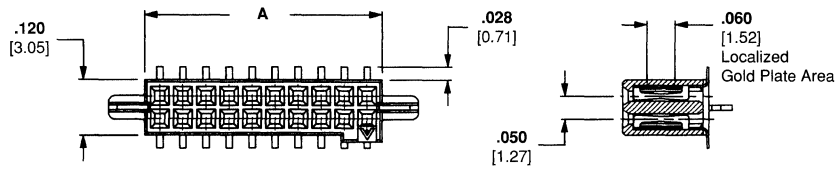
Specifications subject to change.
For latest design specifications...
1-800-522-6752

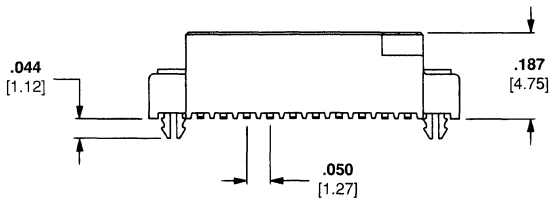
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.







Material and Finish:

Housing—Black glass-filled thermoplastic, 94V-0 rated.

Contacts—Berylium copper, duplex plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder tail, with entire contact underplated .000050 [0.00127] nickel

Holddown—Copper alloy, plated .000150 [0.00381] tin-lead over .000050 [0.00127] nickel.

Related Product Data:

Performance Specifications - page 3096
Technical Documents - page 3096
Mating Headers - page 3098
PC Board Layouts - page 3099
Seating Tools - page 3100

No. of Pos.	Dimension A	Receptacle Part Numbers	Seating Tool Numbers	
			Non-Polarized	Polarized
10	**2.66** 6.75	104652-1	104723-1	104724-1
20	**.516** 13.11	104652-2	104723-2	104724-2
30	**.766** 19.46	104652-3	104723-3	104724-3
40	**1.016** 25.81	104652-4	104723-4	104724-4
50	**1.266** 32.16	104652-5	104723-5	104724-5
60	**1.516** 38.51	104652-6	104723-6	104724-6
70	**1.766** 44.86	104652-7	104723-7	104724-7
80	**2.016** 51.21	104652-8	104723-8	104724-8
90	**2.266** 57.56	104652-9	104723-9	104724-9
100	**2.516** 63.91	1-104652-0	1-104723-0	1-104724-0

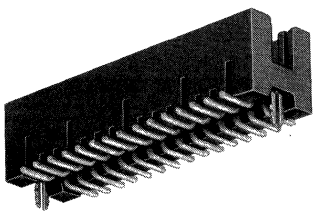
Vertical Headers, Double Row

Specifications subject to change.
For latest design specifications...
1-800-522-6752

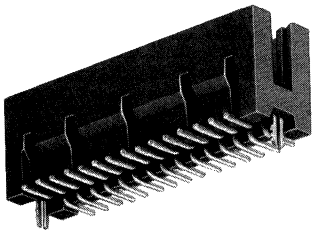
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

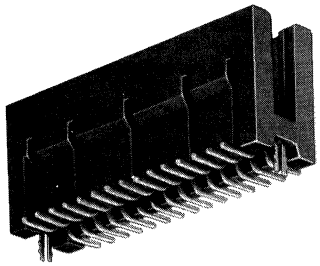
Dimensions are shown for reference purposes only.



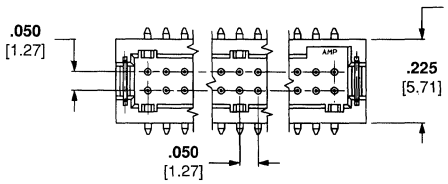
For .250 [6.35] Mated Height

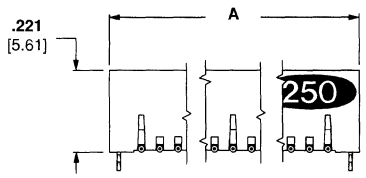


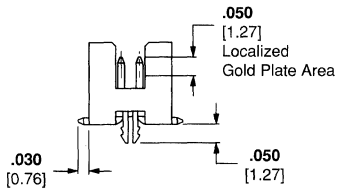
For .320 [8.13] Mated Height

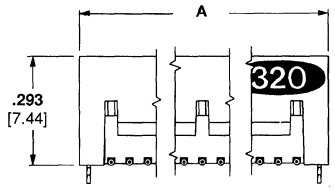


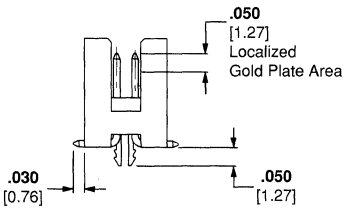
For .390 [9.91] Mated Height

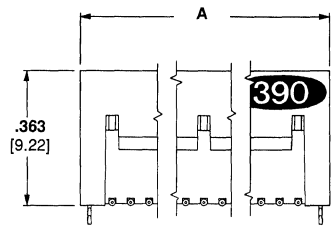


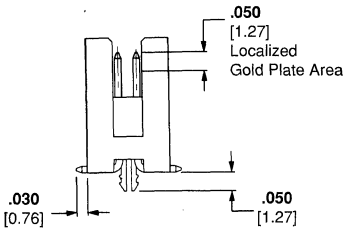












Material and Finish:

Housing—Black glass-filled thermoplastic, 94V-0 rated.

Contacts—Phosphor bronze, duplex plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder tail, with entire contact underplated .000050 [0.00127] nickel.

Holddown—Copper alloy, plated .000150 [0.00381] tin-lead over .000050 [0.00127] nickel.

Related Product Data:

Performance Specifications - page 3096
Technical Documents - page 3096
Mating Receptacles - page 3097
PC Board Layouts - page 3099
Seating Tools - page 3100

No. of Pos.	Dimension A	Header Part Numbers			Seating Tool Numbers	
		.250[6.35] Mated Height	.320[8.13] Mated Height	.390[9.91] Mated Height	Non-Polarized	Polarized
10	.372 9.44	104655-1	104656-1	104693-1	104725-1	104726-1
20	.622 15.79	104655-3	104656-2	104693-2	104725-2	104726-2
30	.872 22.14	104655-4	104656-3	104693-3	104725-3	104726-3
40	1.122 28.49	104655-5	104656-4	104693-4	104725-4	104726-4
50	1.372 34.84	104655-6	104656-5	104693-5	104725-5	104726-5
60	1.622 41.19	104655-7	104656-6	104693-6	104725-6	104726-6
70	1.872 47.54	104655-8	104656-7	104693-7	104725-7	104726-7
80	2.122 53.89	104655-9	104656-8	104693-8	104725-8	104726-8
90	2.372 60.24	1-104655-0	104656-9	104693-9	104725-9	104726-9
100	2.622 66.59	1-104655-1	1-104656-0	1-104693-0	1-104725-0	1-104726-0

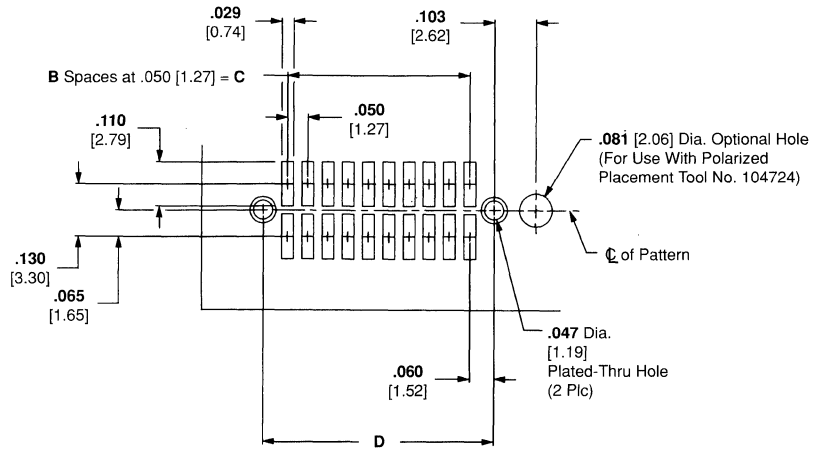
Recommended PC Board Layouts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

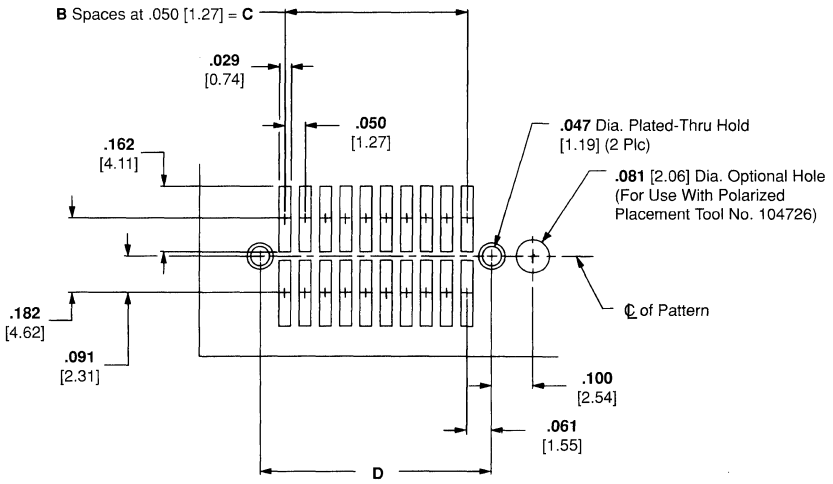
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.



Receptacles (page 3097)

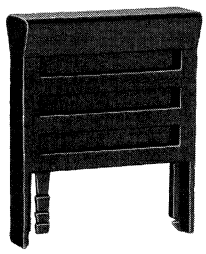


Headers (page 3098)

No. of Positions	Receptacle Dimensions			Header Dimensions		
	B	C	D	B	C	D
10	4	**.200** 5.08	**.320** 8.12	4	**.200** 5.08	**.322** 8.17
20	9	**.450** 11.43	**.570** 14.48	9	**.450** 11.43	**.572** 14.52
30	14	**.700** 17.78	**.820** 20.83	14	**.700** 17.78	**.822** 20.87
40	19	**.950** 24.13	**1.070** 27.19	19	**.950** 24.13	**1.072** 27.22
50	24	**1.200** 30.48	**1.320** 33.53	24	**1.200** 30.48	**1.322** 33.57
60	29	**1.450** 36.83	**1.570** 39.88	29	**1.450** 36.83	**1.572** 39.92
70	34	**1.700** 43.18	**1.820** 46.23	34	**1.700** 43.18	**1.822** 46.27
80	39	**1.950** 49.53	**2.070** 52.58	39	**1.950** 49.53	**2.072** 52.62
90	44	**2.200** 55.88	**2.320** 58.93	44	**2.200** 55.88	**2.322** 58.97
100	49	**2.450** 62.23	**2.570** 65.28	49	**2.450** 62.23	**2.572** 65.32

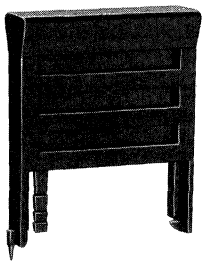
Note: Refer to AMP Customer Drawings for additional PC board layout information and dimensional tolerances.

Seating tools are required for the header and receptacle assemblies. In addition to ensuring proper seating of the product, the tool serves to minimize product damage due to handling. Refer to pages 3097 and 3098 for proper tool numbers.

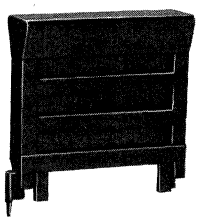


Header Tool: Non-Polarized
104725 Series

Receptacle Tool: Non-Polarized
104723 Series



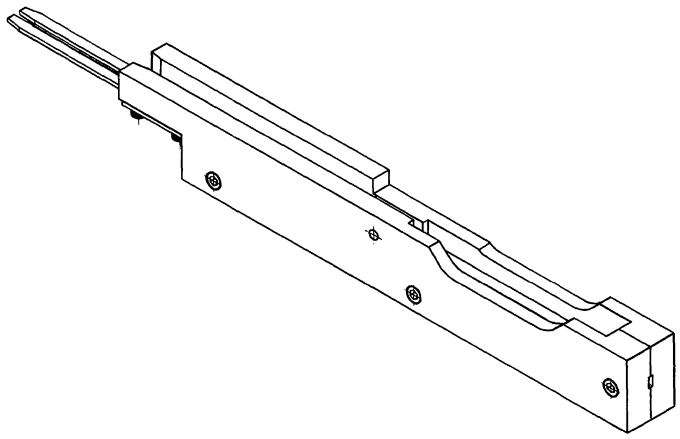
Header Tool: Polarized*
104726 Series



Receptacle Tool: Polarized*
104724 Series

*Refer to PC board layouts (page 3099) for additional holes required for polarized seating tool.
Note: See AMP Instruction Sheet No. IS 9665 for complete placement/seating tool information.

It is recommended that a dispensing system be employed to maintain coplanarity of the solder leads. This system can be as simple as a track which takes product from the tubes and allows for pick-up with the seating tool. Handling by the operator is eliminated.

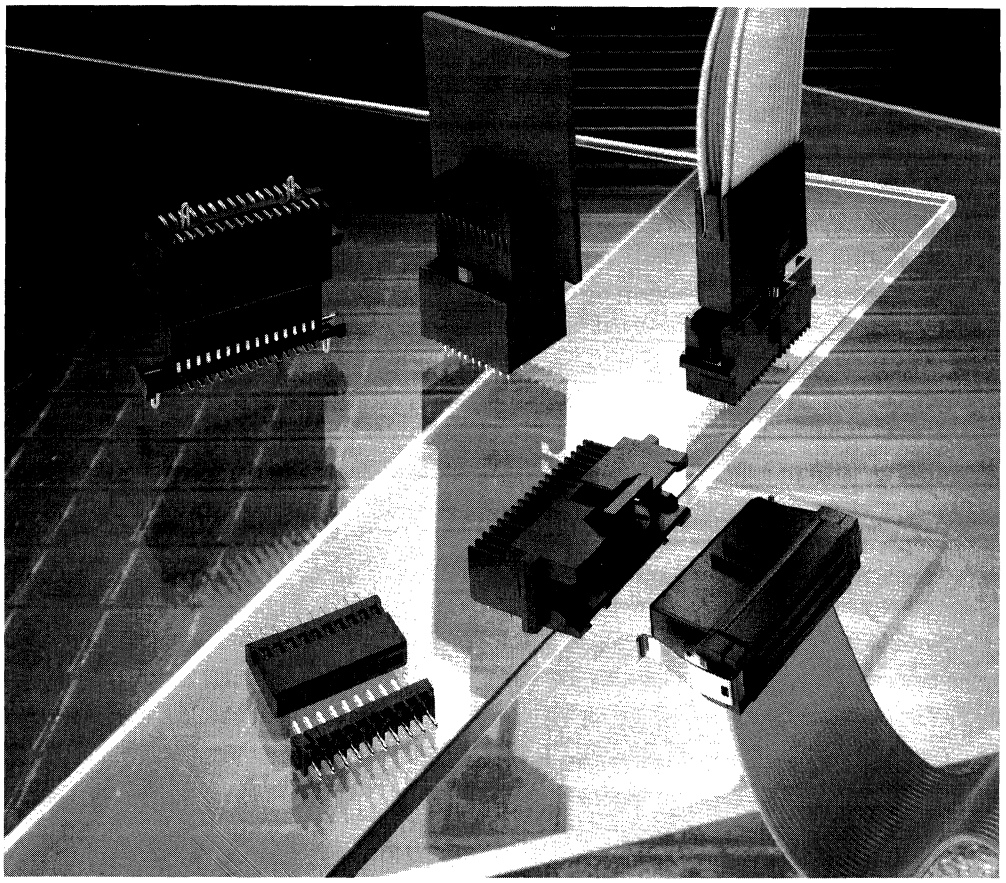


Typical Header Track

Drawings for these tracks are available from AMP Incorporated to allow for in-house manufacture, if desired.
A gravity fed dispensing system will be available for purchase. Please contact AMP Incorporated for further information.

AMPMODU System 50 Connectors
(.050 x .100[1.27 x 2.54] centers)

Specifications subject to change.
For latest design specifications...
1-800-522-6752



The AMPMODU System 50 connector family includes a wide variety of high density board-to-board (through-hole and surface-mount) and cable-to-board connectors. System 50 is composed of one- and two- row receptacles and post headers on .050 X .100 [1.27 X 2.54] spacing between contacts for extreme density and efficient use of printed circuit board area.

System 50 receptacles and header assemblies can be categorized in three groups: board-mount headers, board-mount receptacles and cable-to-board receptacles. Receptacle contacts and mating .015 [0.38] square posts are formed from high conductivity copper alloy and are selectively plated with gold to insure high performance and reliability.

Board-mounted through-hole post headers and receptacle connectors are available for right-angle and vertical mating configurations. Surface mounted connectors are available in vertical, double row styles for parallel stacking applications. Shrouded post headers provide polarization to mating cable receptacles and aid alignment of mating connectors. Unshrouded headers allow close stacking of daughter cards. Vertical stacking connectors space parallel mated boards as shown in the illustration on page 3. Housings on all board-mount assemblies are made of high temperature tolerant materials and incorporate stand-offs for free drainage of flux cleaning solutions.

Cable-to-board connectors have integral latches for positive locking to shrouded mating headers (through-hole or surface-mount). Ribbon cable connectors mass terminate 30 AWG [0.05 mm^2] solid and 32 AWG [0.03 mm^2] stranded, .025 [0.64] centerline ribbon cable with PVC or TEFLON insulation.

Connectors for mass termination to FFC cable or flexible etched circuitry have dual beam contacts; options include shielded cable and solder tabs. Both types of cable connectors are available as component parts and as completed assemblies.

The variety of components and application possibilities, combined with small size and outstanding quality, make System 50 perfect for high density systems.

Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476

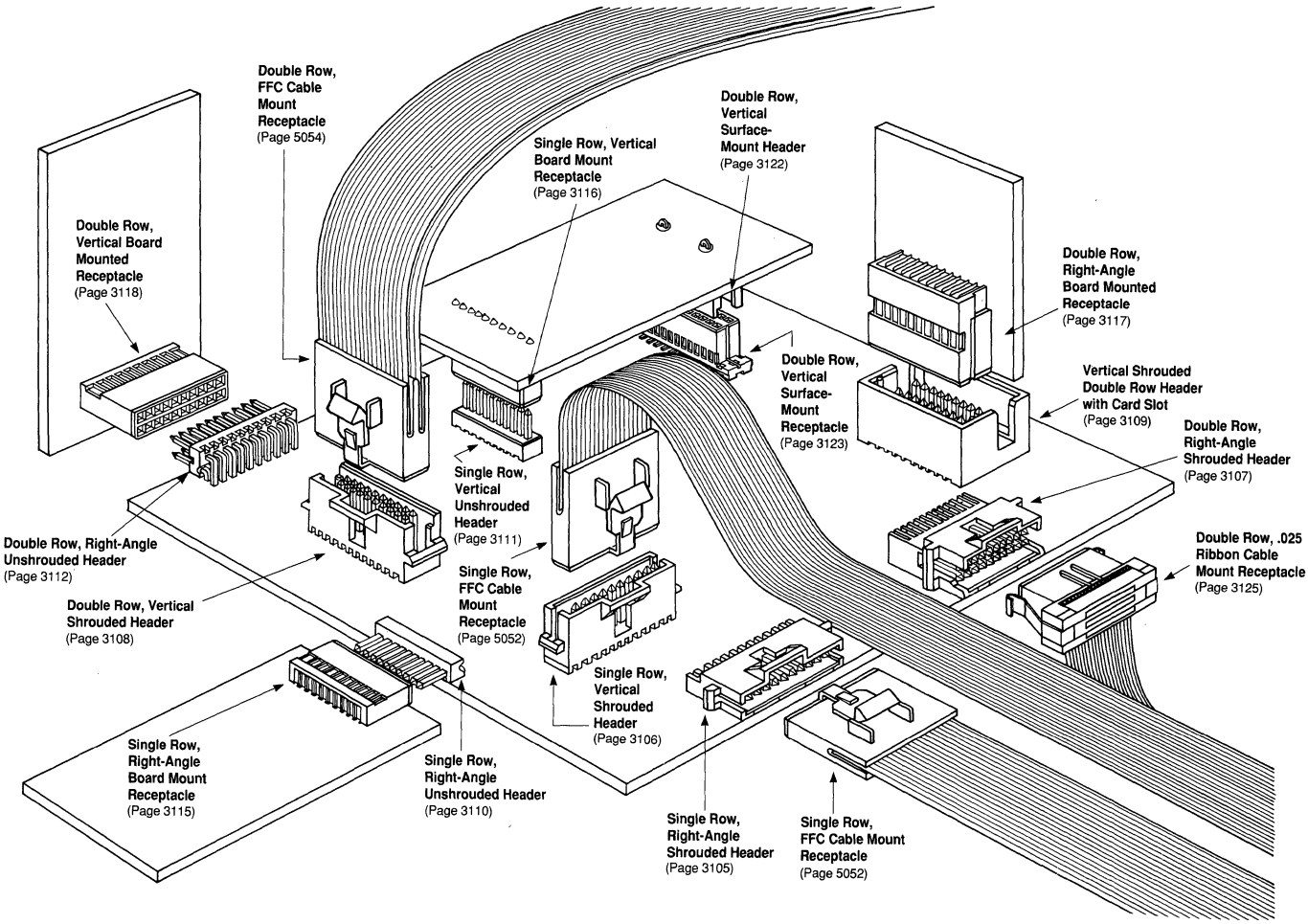
Certified by Canadian Standards Association*, File No. LR 7189

*CSA certification pending on certian products, as noted.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Metric symbols used are:
- mm (millimeter)
- cm (centimeter)
- mm^2 (square millimeter)
- C (Celsius)
- N (Newton)
- kg (kilogram)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPMODU
System 50 Connectors
(.050 x .100[1.27 x 2.54] centers)



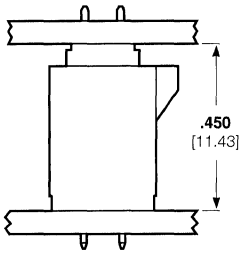
AMPMODU
System 50 Connectors
(.050 x .100 [1.27 x 2.54] centers)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

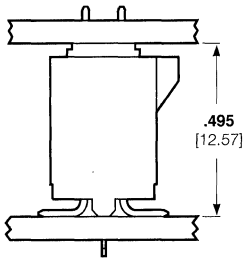
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

Board-to-Board Spacing for Through-Hole and Surface-Mount Connector Combinations

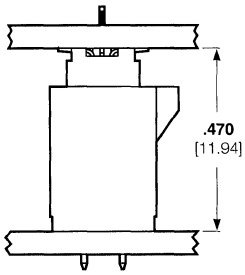
Through-Hole Receptacle – Through-Hole Header
(Single and Double Row, Shrouded and Unshrouded)



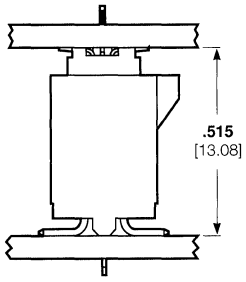
Through-Hole Receptacle – Surface-Mount Header
(Double Row, Shrouded)



Surface-Mount Receptacle – Through-Hole Header
(Double Row, Shrouded and Unshrouded)



Surface-Mount Receptacle – Surface-Mount Header
(Double Row, Shrouded)



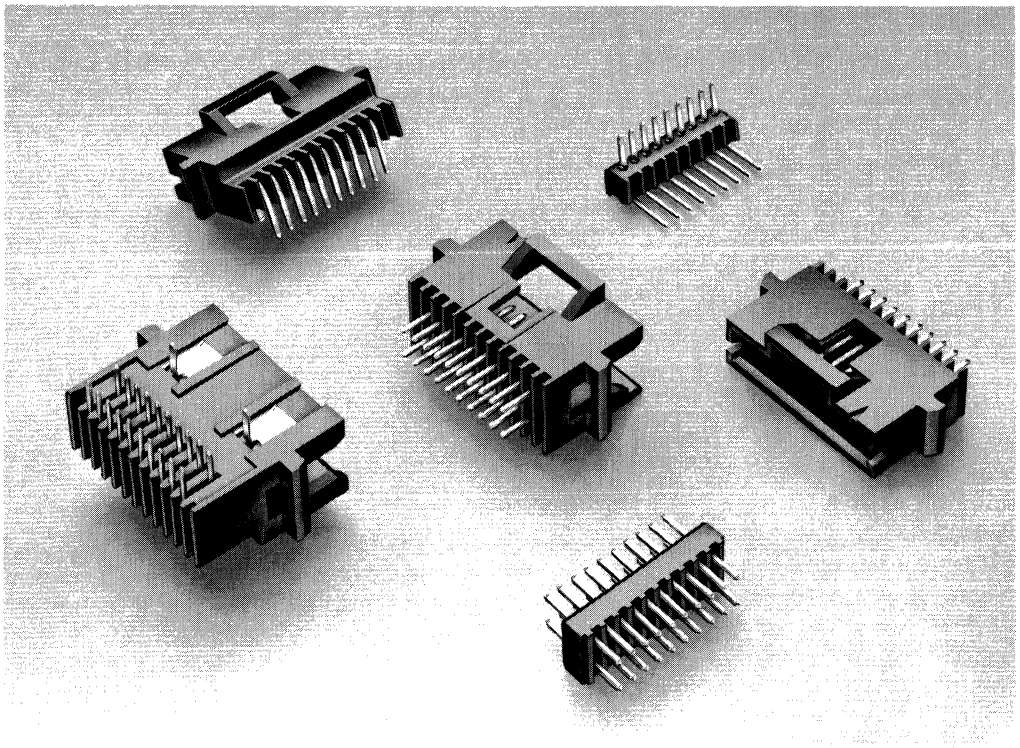
Performance Characteristics

Description	Board-to-Board, Through-Hole, Headers and Receptacles	Board-to-Board, Surface-Mount, Headers and Receptacles	Cable-to-Board .050 [1.27] Centerline FFC Cable Receptacles (See pages 5048 thru 5059)	Cable-to-Board, .025 [0.64] Centerline Ribbon Cable Receptacles
Size Range - Single Row Double Row	4 thru 50 8 thru 100	– 10 thru 100	4 thru 50 8 thru 100	– 20 thru 100
Current Rating (per contact)	1.0 amperes	1.0 amperes	1.5 amperes	0.5 amperes
Dielectric Withstanding Voltage	300 VAC	300 VAC	300 VAC	200 VAC
Insulation Resistance	5,000 Megohms	5,000 Megohms	5,000 Megohms	5,000 Megohms
Durability Test Results	200 Cycles	200 Cycles	200 Cycles	150 Cycles
Mating Force (per contact)	5 oz. [1.38 N] Max.	5 oz. [1.38 N] Max.	8 oz. [2.22 N] Max.	4 oz. [1.11 N] Max.
Unmating Force (per contact)	0.8 oz. [0.22 N] Min.	0.8 oz. [0.22 N] Min.	1.0 oz. [0.27 N] Min.	0.5 oz. [0.13 N] Min.
Operating Temperature	-65°C to +105°C	-25°C to +105°C	-55°C to +105°C	-65°C to +105°C

Board-to-Board Connectors, Through-Hole Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.



Product Facts

- High density; contacts spaced on .050 X .100 [1.27 X 2.54] centers
- Single row; select sizes 4 thru 50 positions
- Double row; select sizes 8 thru 100 positions
- Stand-offs for ease of cleaning
- High temperature tolerant thermoplastic housings
- Shrouded and unshrouded headers available in single and double row, vertical and right-angle configurations

The AMPMODU System 50 interconnection system is designed to meet industry's need for a high density, interconnect system. The Board Mounted Through-Hole Headers are available in shrouded and unshrouded versions. They are composed of single and double row post headers with .050 X .100 [1.27 X 2.54] spacing between contacts for extreme density and efficient use of printed circuit board area. The headers are available in 4 through 50 positions, in a single row configuration and 8 through 100 positions, in a double row design.

Board mounted post headers are available in right-angle and vertical configurations. Shrouded post headers provide polarization and alignment features for mating printed circuit boards and cable connectors, while unshrouded headers allow close stacking of daughter cards. Housings for the headers are made of black thermoplastic material with a 94V-0 rating. The housings have stand-offs for free drainage of flux cleaning solutions.

Board-to-Board Connectors, Through-Hole Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Shrouded, Single Row Right-Angle

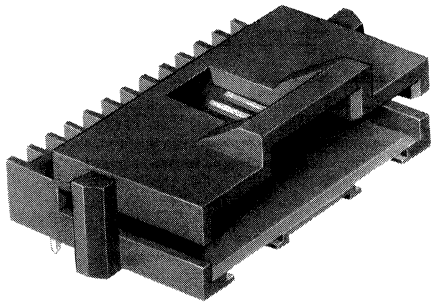
Material and Finish:

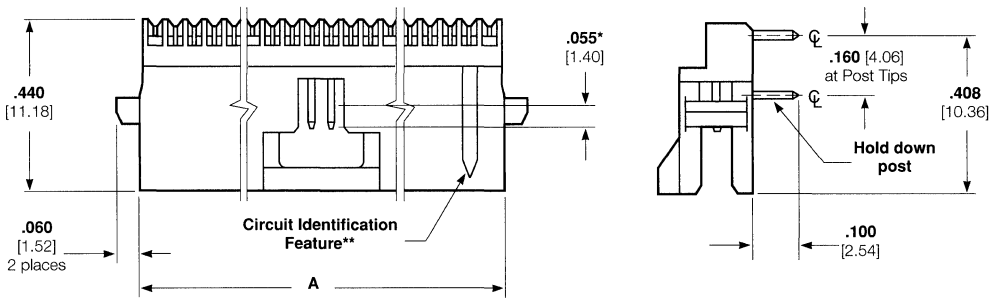
Housing–Black thermoplastic, 94V-0 rated

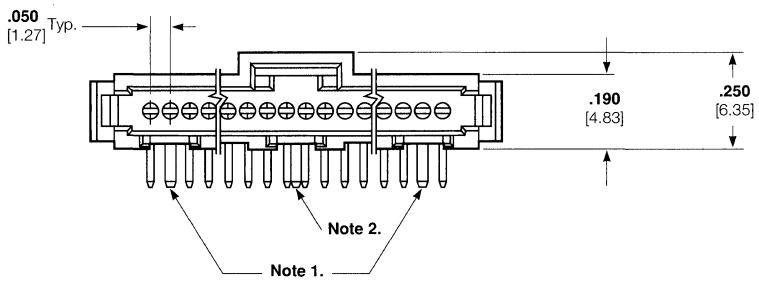
Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Characteristics - page 3103
Mateable Connectors - pages 3116, 5052 & 5053
PCB Hole Layout - page 3119
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031







No. of Positions	Dim. A	Part Number
4	.330 8.38	104074-7
5	.380 9.65	104074-2
6	.430 10.92	104074-8
7	.480 12.19	104074-9
8	.530 13.46	1-104074-0
10	.630 16.00	104074-1
12	.730 18.54	1-104074-1
13	.780 19.81	1-104074-2
15	.880 22.35	104074-3

No. of Positions	Dim. A	Part Number
17	.980 24.89	1-104074-3
20	1.130 28.70	104074-4
22	1.230 31.24	1-104074-4
25	1.380 35.05	104074-5
30	1.630 41.40	104074-6
36	1.930 49.02	1-104074-6
40	2.130 54.10	1-104074-7
45	2.380 60.45	1-104074-8
50	2.630 66.80	1-104074-9

* Point of measurement for gold thickness.
**Circuit identification feature omitted on 4, 5, 6 and 7 position headers.
Notes:
1. Hold down posts located as shown for 10 through 30 position headers.
2. Hold down post located as shown for 4 through 8 and 30 through 50 position headers.

Board-to-Board Connectors, Through-Hole Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Shrouded, Single Row Vertical

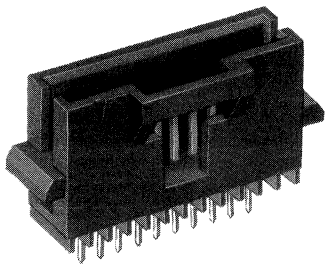
Material and Finish:

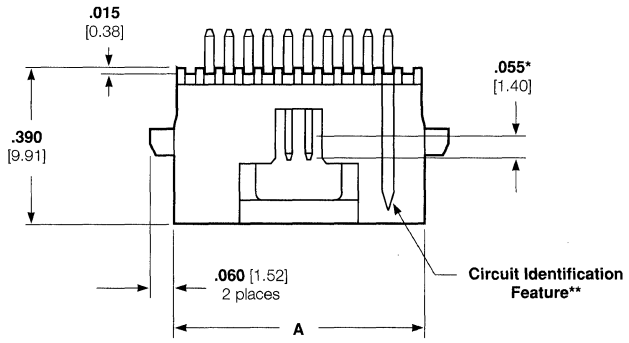
Housing–Black thermoplastic, 94V-0 rated

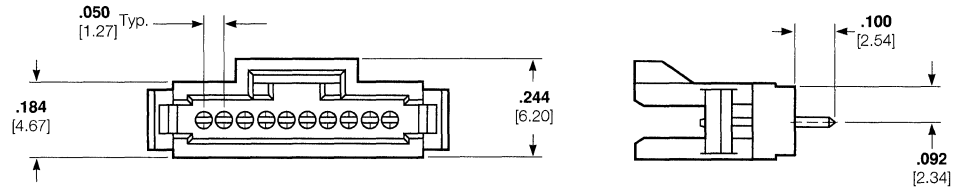
Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Characteristics - page 3103
Mateable Connectors - pages 3116, 5052 & 5053
Board-to-Board Spacing - page 3103
PCB Hole Layout - page 3120
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031







No. of Positions	Dim. A	Part Number
4	.330 8.38	104071-7
5	.380 9.65	104071-2
6	.430 10.92	104071-8
7	.480 12.19	104071-9
8	.530 13.46	1-104071-0
10	.630 16.00	104071-1
12	.730 18.54	1-104071-1
13	.780 19.81	1-104071-2
15	.880 22.35	104071-3

No. of Positions	Dim. A	Part Number
17	.980 24.89	1-104071-3
20	1.130 28.70	104071-4
22	1.230 31.24	1-104071-4
25	1.380 35.05	104071-5
30	1.630 41.40	104071-6
36	1.930 49.02	1-104071-6
40	2.130 54.10	1-104071-7
45	2.380 60.45	1-104071-8
50	2.630 66.80	1-104071-9

*Point of measurement for gold thickness.
**Circuit identification feature omitted on 4, 5, 6 and 7 position headers.

Board-to-Board Connectors, Through-Hole Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Shrouded, Double Row Right-Angle

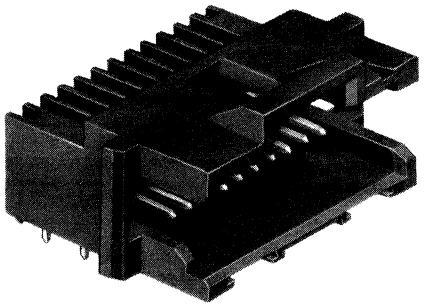
Material and Finish:

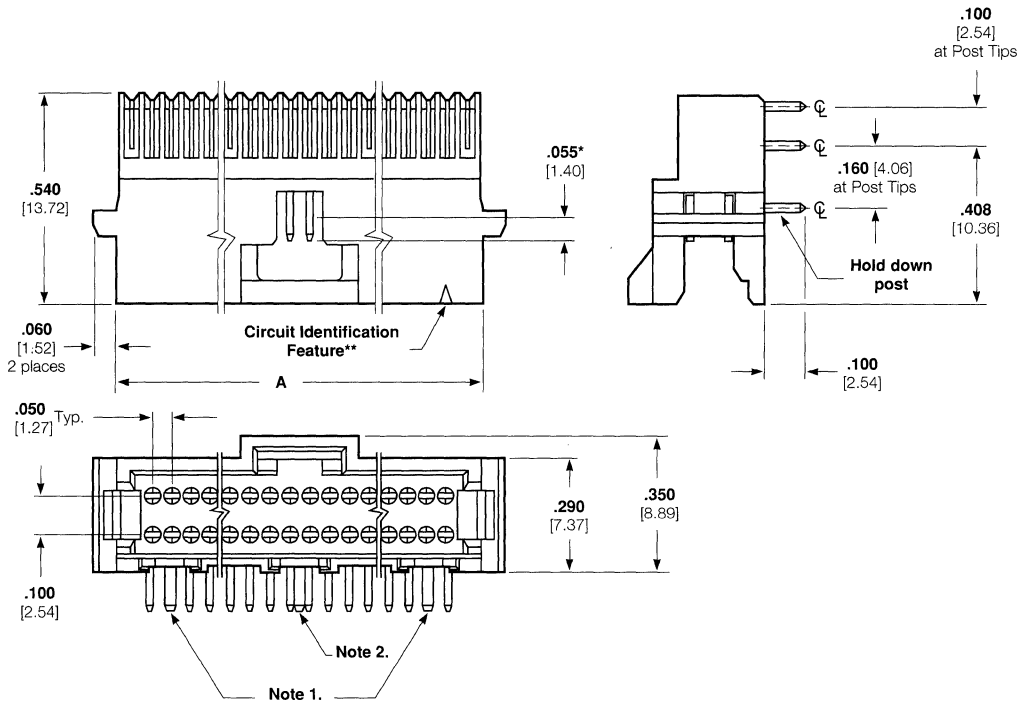
Housing–Black thermoplastic, 94V-0 rated

Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Characteristics - page 3103
Mateable Connectors - pages 3118, 3123, 3125, 5054 & 5055
PCB Hole Layout - page 3119
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031





No. of Positions	Dim. A	Part Number
8	.330 8.38	104069-8
10	.380 9.65	104069-4
12	.430 10.92	104069-9
14	.480 12.19	1-104069-0
16	.530 13.46	1-104069-1
20	.630 16.00	104069-1
24	.730 18.54	1-104069-2
26	.780 19.81	1-104069-3
30	.880 22.35	104069-5

No. of Positions	Dim. A	Part Number
34	.980 24.89	1-104069-4
40	1.130 28.70	104069-6
44	1.230 31.24	1-104069-5
50	1.380 35.05	104069-2
60	1.630 41.40	104069-7
72	1.930 49.02	1-104069-6
80	2.130 54.10	104069-3
100	2.630 66.80	1-104069-7

*Point of measurement for gold thickness.
**Circuit identification feature omitted on 8, 10, 12 and 14 position headers.
Notes:
1. Hold down posts located as shown for 16 through 100 position headers.
2. Hold down post located as shown for 8 through 14 and 60 through 100 position headers.

Board-to-Board Connectors, Through-Hole Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Shrouded, Double Row Vertical

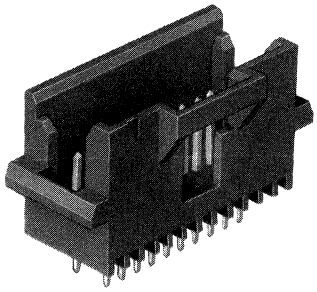
Material and Finish:

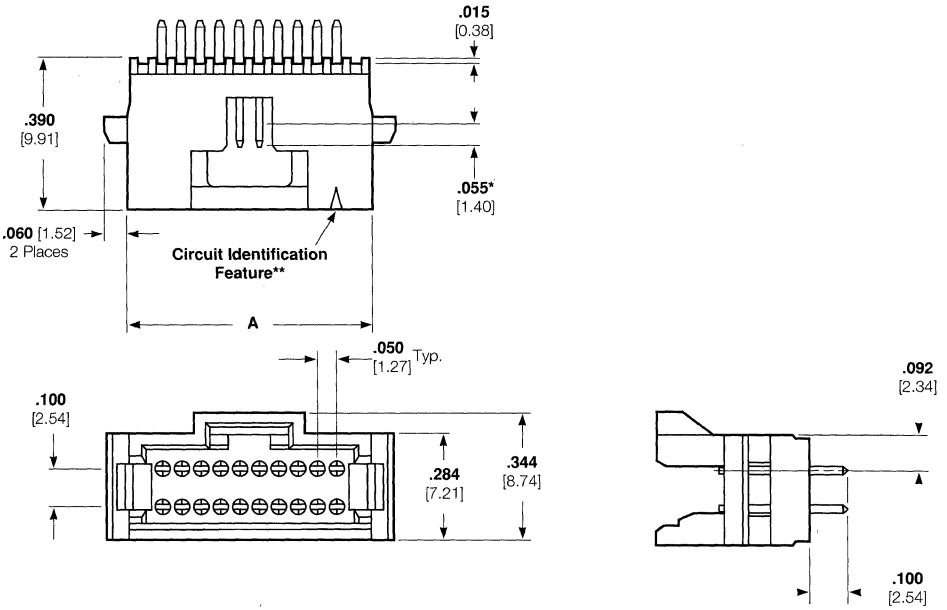
Housing–Black thermoplastic, 94V-0 rated

Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Specifications - page 3103
Mateable Connectors - pages 3118, 3123, 3125, 5054 & 5055
Board-to-Board Spacing - page 3103
PCB Hole Layout - page 3120
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031





No. of Positions	Dim. A	Part Number
8	.330 8.38	104068-7
10	.380 9.65	104068-2
12	.430 10.92	104068-8
14	.480 12.19	104068-9
16	.530 13.46	1-104068-0
20	.630 16.00	104068-1
24	.730 18.54	1-104068-1
26	.780 19.81	1-104068-2
30	.880 22.35	104068-3

No. of Positions	Dim. A	Part Number
34	.980 24.89	1-104068-3
40	1.130 28.70	104068-4
44	1.230 31.24	1-104068-4
50	1.380 35.05	104068-5
60	1.630 41.40	104068-6
72	1.930 49.02	1-104068-5
80	2.130 54.10	1-104068-6
100	2.630 66.80	1-104068-7

*Point of measurement for gold thickness.
**Circuit identification feature omitted on 8, 10, 12 and 14 position headers.

Board-to-Board Connectors, Through-Hole Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Shrouded, Double Row Vertical With Card Slots

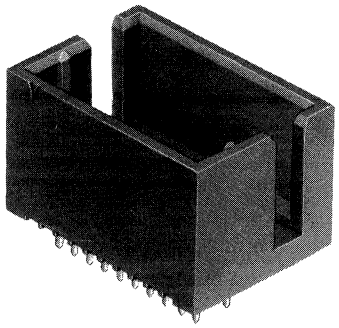
Material and Finish:

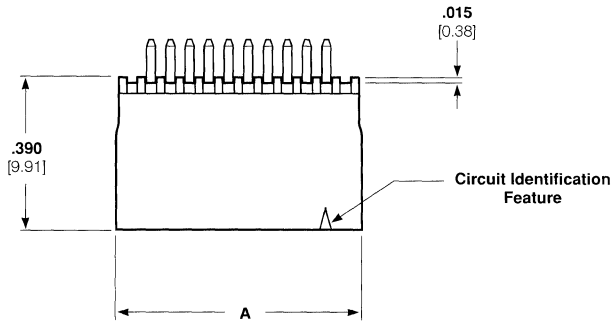
Housing–Black thermoplastic, 94V-0 rated

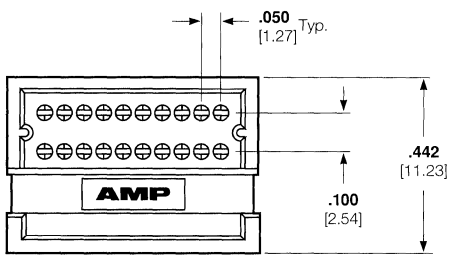
Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

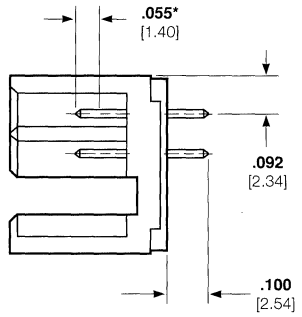
Related Product Data:

Performance Specifications - page 3103
Mateable Connectors - page 3117
PCB Hole Layout - page 3120
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031









No. of Positions	Dim. A	Part Number
10	**.394** 10.01	104076-5
20	**.644** 16.36	104076-1
30	**.894** 22.71	104076-6
40	**1.144** 29.06	104076-3
50	**1.394** 35.41	104076-7
60	**1.644** 41.76	104076-2
80	**2.144** 54.46	104076-4
100	**2.644** 67.16	104076-8

*Point of measurement for gold thickness.

Board-to-Board Connectors, Through-Hole Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Unshrouded, Single Row Right-Angle

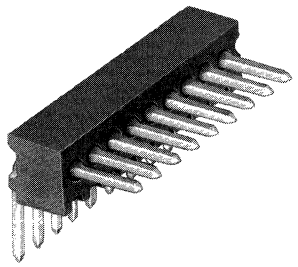
Material and Finish:

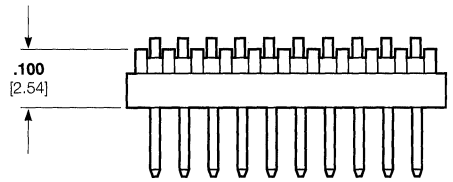
Housing–Black thermoplastic, 94V-0 rated

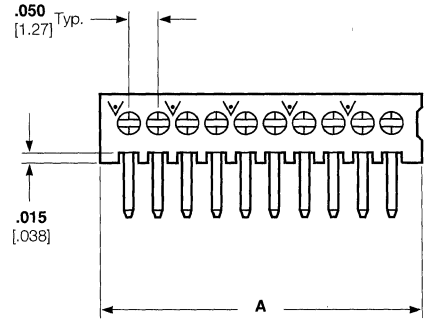
Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

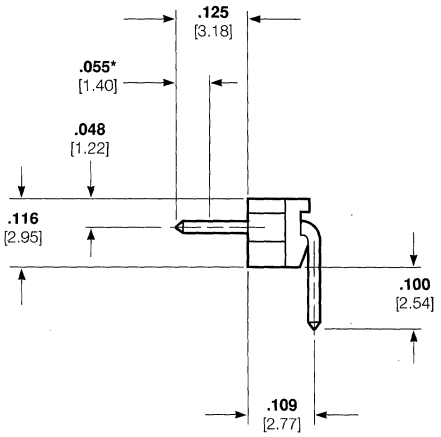
Related Product Data:

Performance Characteristics - page 3103
Mateable Connectors - pages 3115, 3116, 5052 & 5053
PCB Hole Layout - page 3120
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031









No. of Positions	Dim. A	Part Number
4	**.215** 5.46	104186-1
5	**.265** 6.73	104186-2
6	**.315** 8.00	104186-3
7	**.365** 9.27	104186-4
8	**.415** 10.54	104186-5
10	**.515** 13.08	104186-6
12	**.615** 15.62	104186-7
13	**.665** 16.89	104186-8

No. of Positions	Dim. A	Part Number
15	**.765** 19.43	104186-9
17	**.865** 21.97	1-104186-0
20	**1.015** 25.78	1-104186-1
22	**1.115** 28.32	1-104186-2
25	**1.265** 32.13	1-104186-3
30	**1.515** 38.48	1-104186-5
40	**2.015** 51.18	1-104186-7
50	**2.515** 63.88	1-104186-9

*Point of measurement for gold thickness.

Board-to-Board Connectors, Through-Hole Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Unshrouded, Single Row Vertical

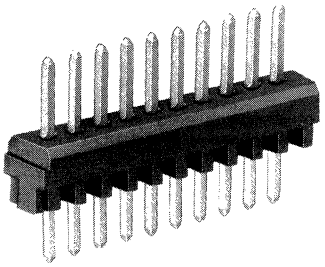
Material and Finish:

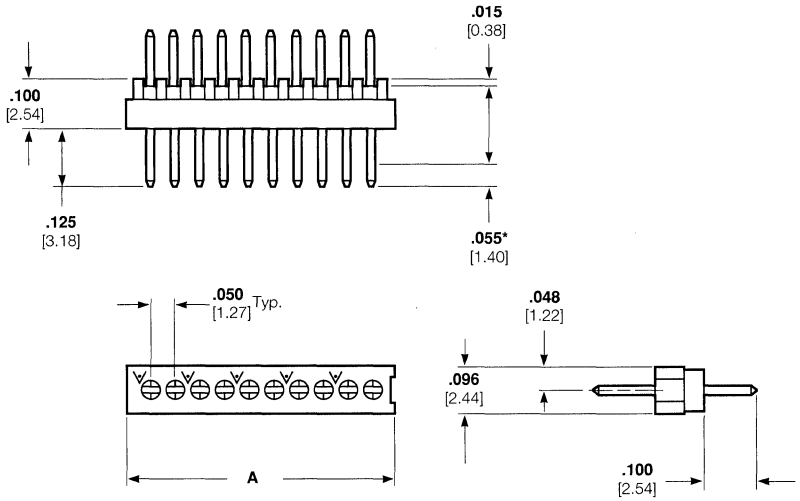
Housing–Black thermoplastic, 94V-0 rated

Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Specifications - page 3103
Mateable Connectors - pages 3115, 3116, 5052 & 5053
Board-to-Board Spacing - page 3103
PCB Hole Layout - page 3120
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031





No. of Positions	Dim. A	Part Number
4	**.215** 5.46	104178-1
5	**.265** 6.73	104178-2
6	**.315** 8.00	104178-3
7	**.365** 9.27	104178-4
8	**.415** 10.54	104178-5
10	**.515** 13.08	104178-6
12	**.615** 15.62	104178-7
13	**.665** 16.89	104178-8

No. of Positions	Dim. A	Part Number
15	**.765** 19.43	104178-9
17	**.865** 21.97	1-104178-0
20	**1.015** 25.78	1-104178-1
22	**1.115** 28.32	1-104178-2
25	**1.265** 32.13	1-104178-3
30	**1.515** 38.48	1-104178-5
40	**2.015** 51.18	1-104178-7
50	**2.515** 63.88	1-104178-9

*Point of measurement for gold thickness.

Board-to-Board Connectors, Through-Hole Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Unshrouded, Double Row Right-Angle

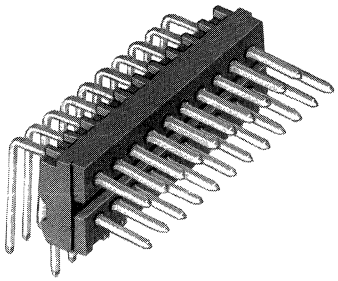
Material and Finish:

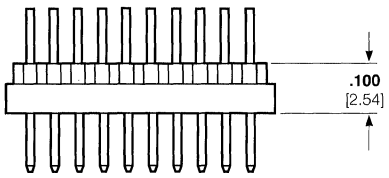
Housing–Black thermoplastic, 94V-0 rated

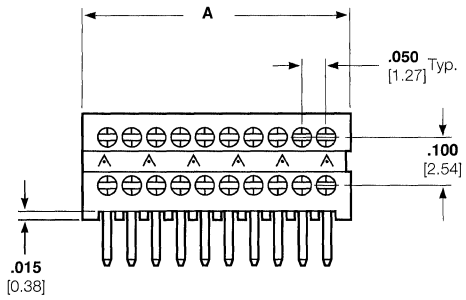
Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

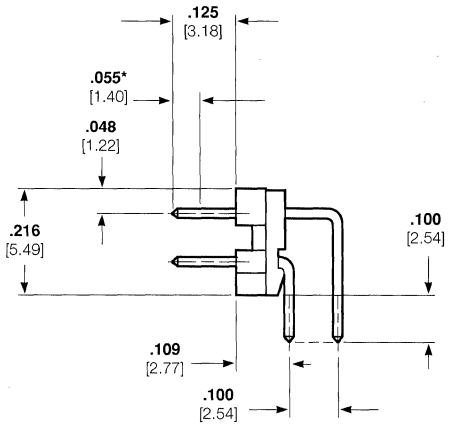
Related Product Data:

Performance Specifications - page 3103
Mateable Connectors - pages 3117, 3118, 3123, 5054 & 5055
PCB Hole Layout - page 3120
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031









No. of Positions	Dim. A	Part Number
8	.215 5.46	104118-2
10	.265 6.73	104118-3
12	.315 8.00	104118-4
14	.365 9.27	104118-5
16	.415 10.54	104118-6
20	.515 13.08	104118-7
24	.615 15.62	104118-8
26	.665 16.89	104118-9
30	.765 19.43	1-104118-0

No. of Positions	Dim. A	Part Number
34	.865 21.97	1-104118-1
40	1.015 25.78	1-104118-2
44	1.115 28.32	1-104118-3
50	1.265 32.13	104118-1
60	1.515 38.48	1-104118-4
72	1.815 46.10	1-104118-5
80	2.015 51.18	1-104118-6
100	2.515 63.88	1-104118-7

*Point of measurement for gold thickness.

Board-to-Board Connectors, Through-Hole Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Unshrouded, Double Row Vertical

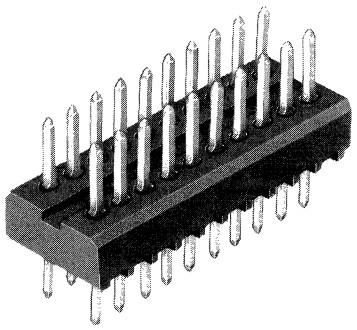
Material and Finish:

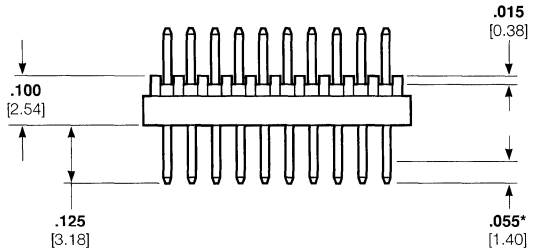
Housing–Black thermoplastic, 94V-0 rated

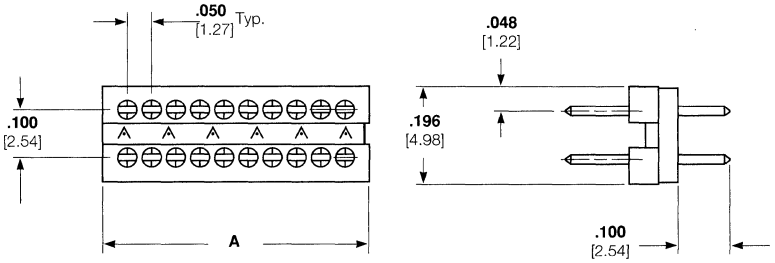
Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Characteristics - page 3103
Mateable Conectors - pages 3117, 3118, 3123, 5054 & 5055
Board-to-Board Spacing - page 3103
PCB Hole Layout - page 3120
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031







No. of Positions	Dim. A	Part Number
8	.215 5.46	103916-3
10	.265 6.73	103916-1
12	.315 8.00	103916-4
14	.365 9.27	103916-5
16	.415 10.54	103916-6
20	.515 13.08	103916-2
24	.615 15.62	103916-7
26	.665 16.89	103916-8
30	.765 19.43	103916-9

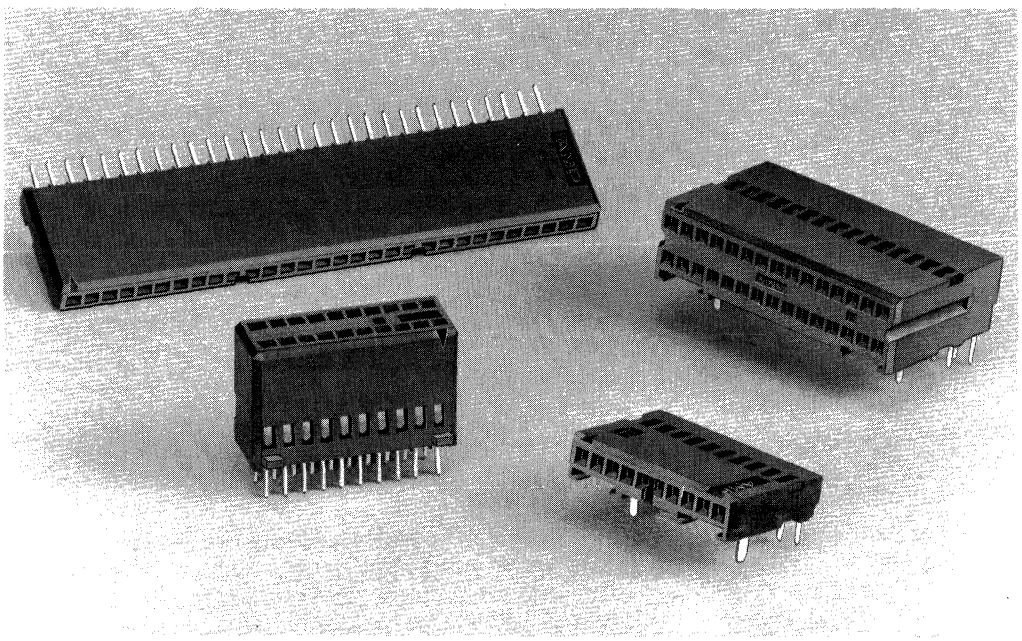
No. of Positions	Dim. A	Part Number
34	.865 21.97	1-103916-0
40	1.015 25.78	1-103916-1
44	1.115 28.32	1-103916-2
50	1.265 32.13	1-103916-3
60	1.515 38.48	1-103916-4
72	1.815 46.10	1-103916-5
80	2.015 51.18	1-103916-6
100	2.515 63.88	1-103916-7

*Point of measurement for gold thickness.

Board-to-Board Connectors, Through-Hole Receptacles

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.



The AMPMODU System 50 through-hole receptacles offer a wide variety of high density board-to-board connectors. The .050 [1.27] spacing between each contact provides an extremely dense interconnect package and results in a more efficient use of the printed circuit board space.

AMPMODU System 50 through-hole receptacles are available in right-angle and vertical configurations and are composed of single and double row versions. The single row versions are available in select sizes of 5 thru 30 positions and double row in positions from 10 thru 100. Receptacle contacts and mating .015 [0.38] square posts are formed from high conductivity copper alloy and are selectively plated with gold for high performance and reliability. The receptacle housings are made of black thermoplastic, with a 94V-0 rating to withstand high temperatures of reflow soldering and incorporate stand-offs for free drainage of flux cleaning solutions.

Product Facts

- High density; contacts spaced on .050 X .100 [1.27 X 2.54] centers
- Right-angle and vertical styles
- Single row; select sizes 5 thru 30 positions
- Double row; select sizes 10 thru 100 positions
- Contacts are selectively plated with gold
- Stand-offs for removal of solder flux

Board-to-Board Connectors, Through-Hole Receptacles

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Single Row Right-Angle

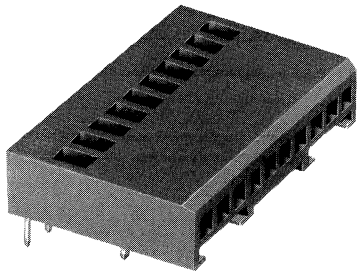
Material and Finish:

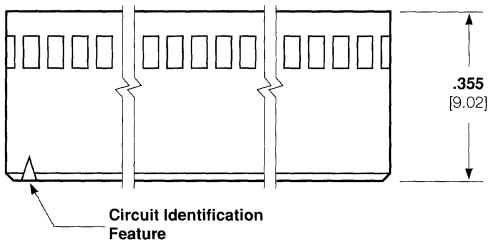
Housing–Black thermoplastic, 94V-0 rated

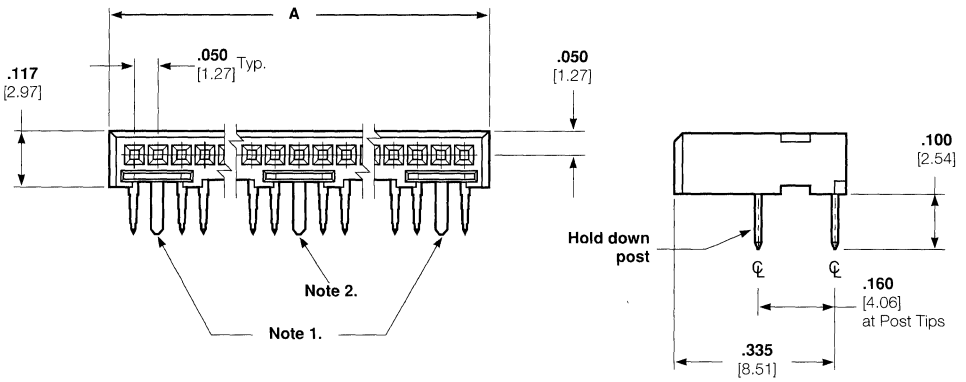
Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Specifications - page 3103
Mateable Connectors - pages 3110 & 3111
PCB Hole Layout - page 3119
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031







No. of Positions	Dim. A	Part Number
5	**.294** 7.47	104196-8
10	**.544** 13.82	104196-2
12	**.644** 16.36	104196-3
15	**.794** 20.17	104196-4
20	**1.044** 26.52	104196-5
25	**1.294** 32.87	104196-6
30	**1.544** 39.22	104196-7

Notes:
1. Hold down posts located as shown for 10 through 30 position receptacles.
2. Hold down posts located as shown for 5 and 30 position receptacles.

Board-to-Board Connectors, Through-Hole Receptacles

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Single Row Vertical

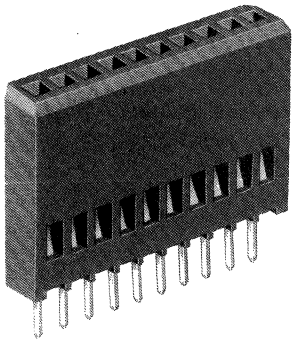
Material and Finish:

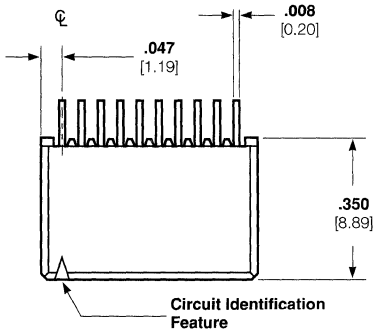
Housing–Black thermoplastic, 94V-0 rated

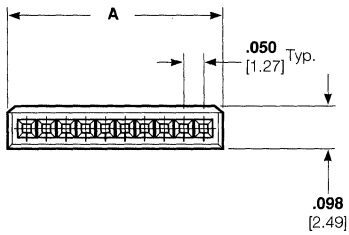
Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

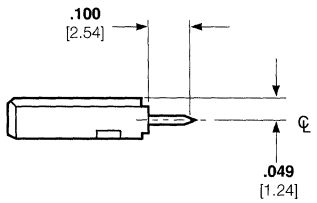
Related Product Data:

Performance Specifications - page 3103
Mateable Connectors - pages 3105, 3106, 3110 & 3111
Board-to-Board Spacing - page 3103
PCB Hole Layout - page 3120
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031









No. of Positions	Dim. A	Part Number
5	**.294** 7.47	104192-8
10	**.544** 13.82	104192-2
12	**.644** 16.36	104192-3
15	**.794** 20.17	104192-4
20	**1.044** 26.52	104192-5
25	**1.294** 32.87	104192-6
30	**1.544** 39.22	104192-7

Board-to-Board Connectors, Through-Hole Receptacles

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Double Row Right-Angle

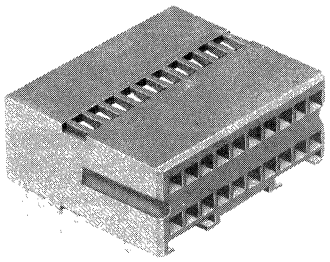
Material and Finish:

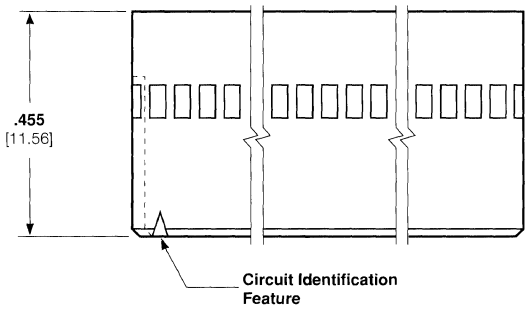
Housing–Black thermoplastic, 94V-0 rated

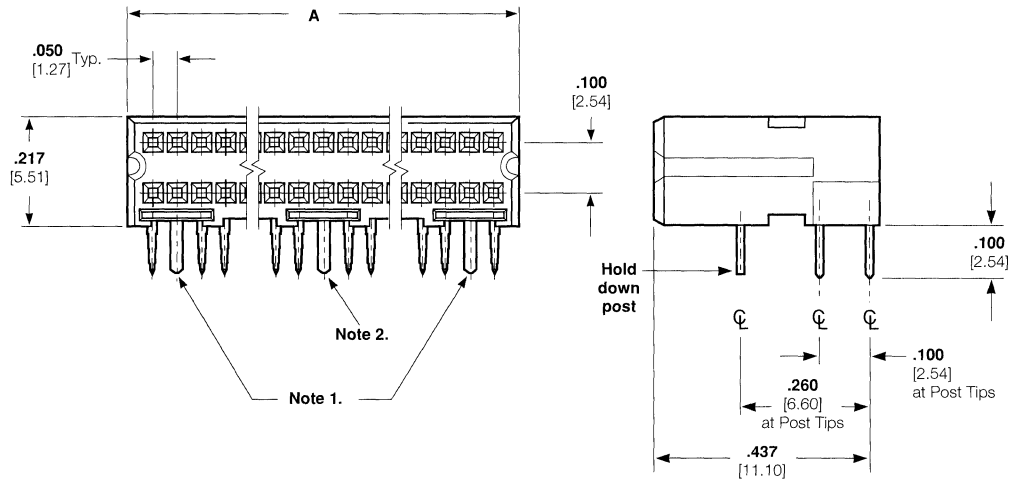
Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Characteristics - page 3103
Mateable Connectors - pages 3109, 3112 & 3113
PCB Hole Layout - page 3119
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031







No. of Positions	Dim. A	Part Number
10	**.294** 7.47	103911-1
20	**.544** 13.82	103911-2
24	**.644** 16.36	103911-9
30	**.794** 20.17	103911-7
40	**1.044** 26.52	103911-5
50	**1.294** 32.87	103911-4
60	**1.544** 39.22	103911-3
80	**2.044** 51.92	103911-6
100	**2.544** 64.62	103911-8

Notes:
1. Hold down posts located as shown for 20 through 100 position receptacles.
2. Hold down post located as shown for 10, 60, 80 and 100 position receptacles.

Board-to-Board Connectors, Through-Hole Receptacles

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Double Row Vertical

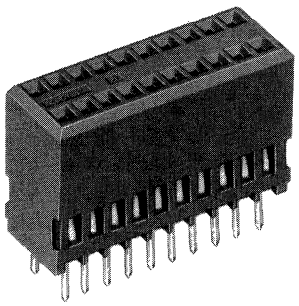
Material and Finish:

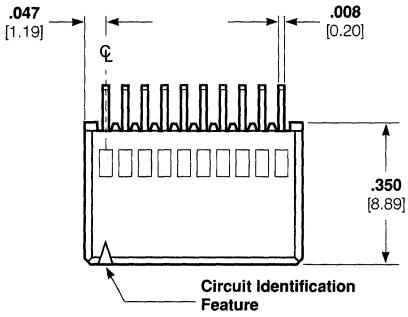
Housing–Black thermoplastic, 94V-0 rated

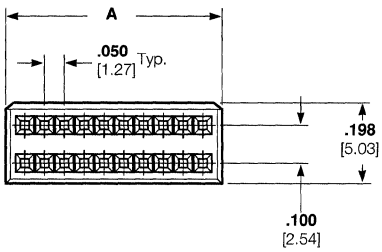
Contacts–Copper alloy, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder posts, with entire contact underplated .000050 [0.00127] nickel

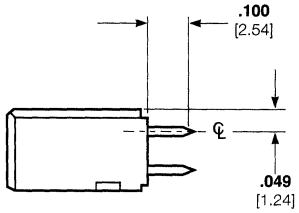
Related Product Data:

Performance Specifications - page 3103
Mateable Connectors - pages 3107, 3108, 3112, 3113 & 3122
Board-to-Board Spacing - page 3103
PCB Hole Layout - page 3120
Technical Documents - page 3127
AMP Product Specification 108-1093
AMP Application Specification 114-25031









No. of Positions	Dim. A	Part Number
10	**.294** 7.47	104078-3
20	**.544** 13.82	104078-1
24	**.644** 16.36	104078-9
30	**.794** 20.17	104078-4
40	**1.044** 26.52	104078-2
50	**1.294** 32.87	104078-5
60	**1.544** 39.22	104078-6
80	**2.044** 51.92	104078-7
100	**2.544** 64.62	104078-8

Board-to-Board Connectors, Through-Hole Mounted Recommended Pc Board Hole Layouts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

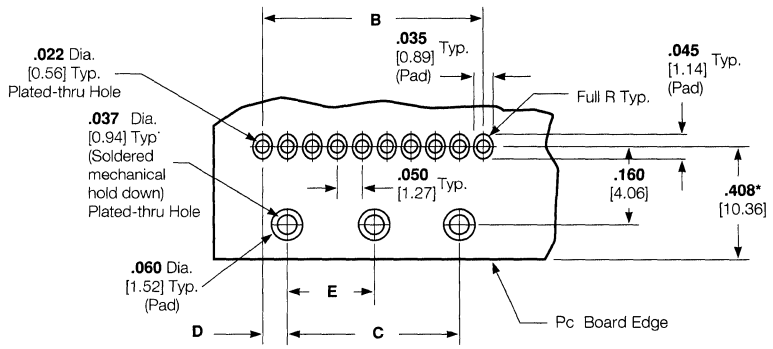
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Charts contain dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Single Row, Right-Angle with Hold Down Posts

Note: Consult AMP Incorporated for customer drawings detailing tolerances.

*This dimension is for Shrouded, Single Row Right-Angle Headers only.



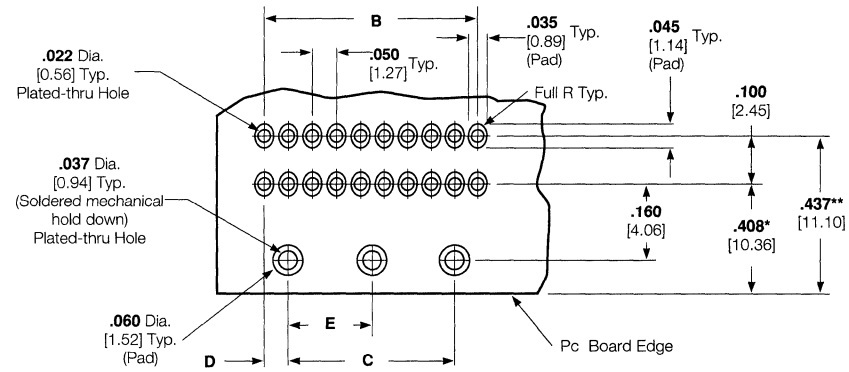
No. of Positions	Dimensions			
	B	C	D	E
4	.150 3.81	–	.075 1.91	–
5	.200 5.08	–	.100 2.54	–
6	.250 6.35	–	.125 3.18	–
7	.300 7.62	–	.150 3.81	–
8	.350 8.89	–	.175 4.45	–
10	.450 11.43	.350 8.89	.050 1.27	–
12	.550 13.97	.450 11.43	.050 1.27	–
13	.600 15.24	.500 12.70	.050 1.27	–
15	.700 17.78	.600 15.24	.050 1.27	–

No. of Positions	Dimensions			
	B	C	D	E
17	.800 20.32	.700 17.78	.050 1.27	–
20	.950 24.13	.850 21.59	.050 1.27	–
22	1.050 26.67	.950 24.13	.050 1.27	–
25	1.200 30.48	1.100 27.94	.050 1.27	–
30	1.450 36.83	1.350 34.29	.050 1.27	.675 17.15
36	1.750 44.45	1.650 41.91	.050 1.27	.825 20.96
40	1.950 49.53	1.850 46.99	.050 1.27	.925 23.50
45	2.200 55.88	2.100 53.34	.050 1.27	1.050 26.67
50	2.450 62.23	2.350 59.69	.050 1.27	1.175 29.85

Double Row, Right-Angle with Hold Down Posts

Note: Consult AMP Incorporated for customer drawings detailing tolerances.

*This dimension is for Shrouded, Double Row Right-Angle Headers only.
**This dimension is for Double Row Right-Angle Receptacles only.



No. of Positions	Dimensions			
	B	C	D	E
8	.150 3.81	–	.075 1.91	–
10	.200 5.08	–	.100 2.54	–
12	.250 6.35	–	.125 3.18	–
14	.300 7.62	–	.150 3.81	–
16	.350 8.89	–	.175 4.45	–
20	.450 11.43	.350 8.89	.050 1.27	–
24	.550 13.97	.450 11.43	.050 1.27	–
26	.600 15.24	.500 12.70	.050 1.27	–
30	.700 17.78	.600 15.24	.050 1.27	–

No. of Positions	Dimensions			
	B	C	D	E
34	.800 20.32	.700 17.78	.050 1.27	–
40	.950 24.13	.850 21.59	.050 1.27	–
44	1.050 26.67	.950 24.13	.050 1.27	–
50	1.200 30.48	1.100 27.94	.050 1.27	–
60	1.450 36.83	1.350 34.29	.050 1.27	.675 17.15
72	1.750 44.45	1.650 41.91	.050 1.27	.825 20.96
80	1.950 49.53	1.850 46.99	.050 1.27	.925 23.50
100	2.450 62.23	2.350 59.69	.050 1.27	1.175 29.85

Board-to-Board Connectors, Through-Hole Mounted Recommended Pc Board Hole Layouts

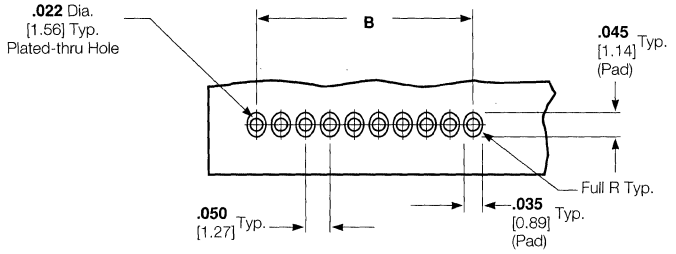
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Charts contain dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Single Row

Note: Consult AMP Incorporated for customer drawings detailing tolerances.

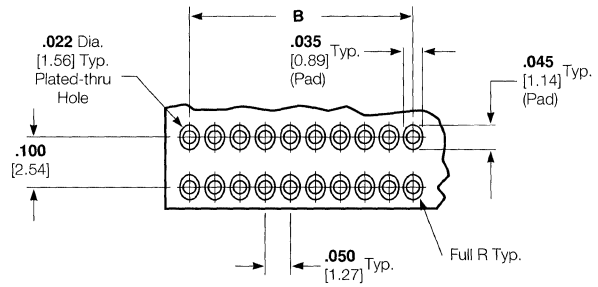


No. of Positions	Dim. B
4	.150 3.81
5	.200 5.08
6	.250 6.35
7	.300 7.62
8	.350 8.89
10	.450 11.43
12	.550 13.97
13	.600 15.24
15	.700 17.78

No. of Positions	Dim. B
17	.800 20.32
20	.950 24.13
22	1.050 26.67
25	1.200 30.48
30	1.450 36.83
36	1.750 44.45
40	1.950 49.53
45	2.200 55.88
50	2.450 62.23

Double Row

Note: Consult AMP Incorporated for customer drawings detailing tolerances.



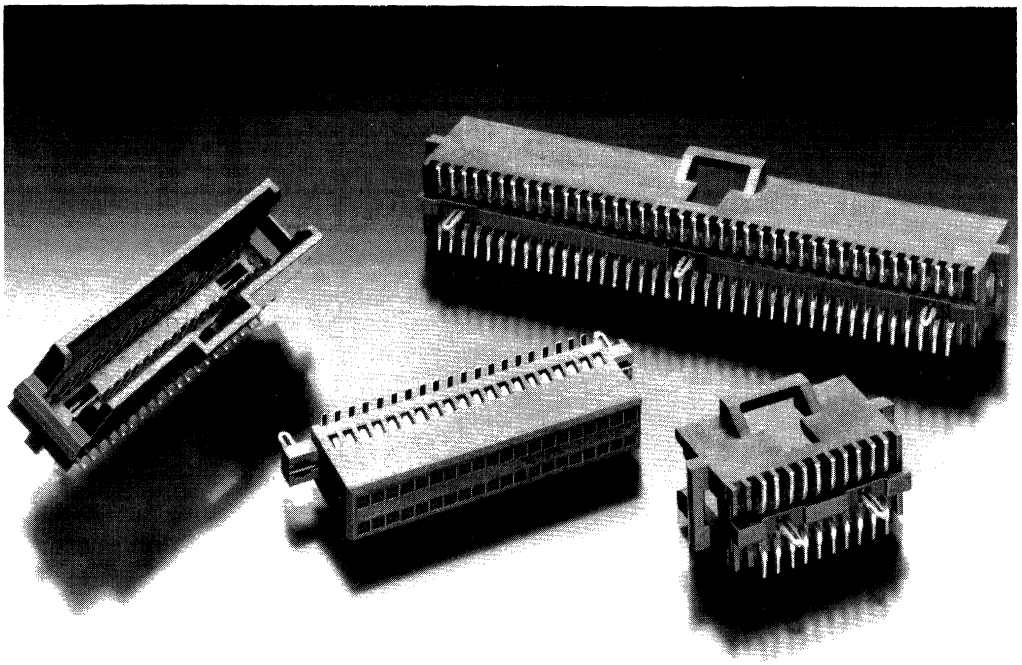
No. of Positions	Dim. B
8	.150 3.81
10	.200 5.08
12	.250 6.35
14	.300 7.62
16	.350 8.89
20	.450 11.43
24	.550 13.97
26	.600 15.24
30	.700 17.78

No. of Positions	Dim. B
34	.800 20.32
40	.950 24.13
44	1.050 26.67
50	1.200 30.48
60	1.450 36.83
72	1.750 44.45
80	1.950 49.53
100	2.450 62.23

Board-to-Board Connectors, Surface-Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.



Product Facts

- Surface-mount option for parallel board-to-board applications; completely intermateable with AMPMODU System 50 through-hole board-to-board and cable-to-board systems
- Double row, vertical, shrouded header and receptacle assemblies
- Available in select sizes from 10 through 100 positions
- High Density; contacts spaced on .050 x .100 [1.27 x 2.54] centers; compact footprint
- Compatible with standard surface-mount processes
- Stand-offs for free drainage of flux cleaning solutions; visible solder joints for easy inspection
- Simple, low insertion-force holddown for process retention and long-term strain relief for solder joints

The High-density surface-mount connector is another mounting option in the AMPMODU System 50 connector family.

This surface-mount system is totally intermateable with the AMPMODU System 50 through-hole and cable-to-board connectors.

Additionally, the design of the mating interface has not been changed, and is thus as reliable as the thru-hole product.

The new surface-mount system includes double row, vertical, shrouded header and receptacle assemblies in select sizes from 8 through 100 positions. It meets the tight dimensional requirements of surface-mount technology. The simple, low insertion-force holddown provides both processing retention and long-term strain relief for the solder joints in the headers and receptacles.

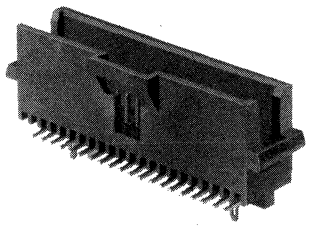
Board-to-Board Connectors, Surface-Mount Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Double Row Vertical



Material and Finish:

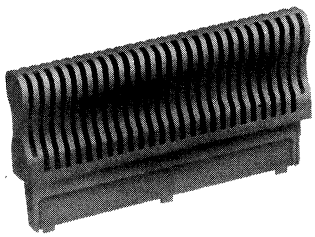
Housing–Glass-filled, black thermoplastic,94V-0 rated

Contacts–Phosphor bronze, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder tail, with entire contact underplated .000050 [0.00127] nickel

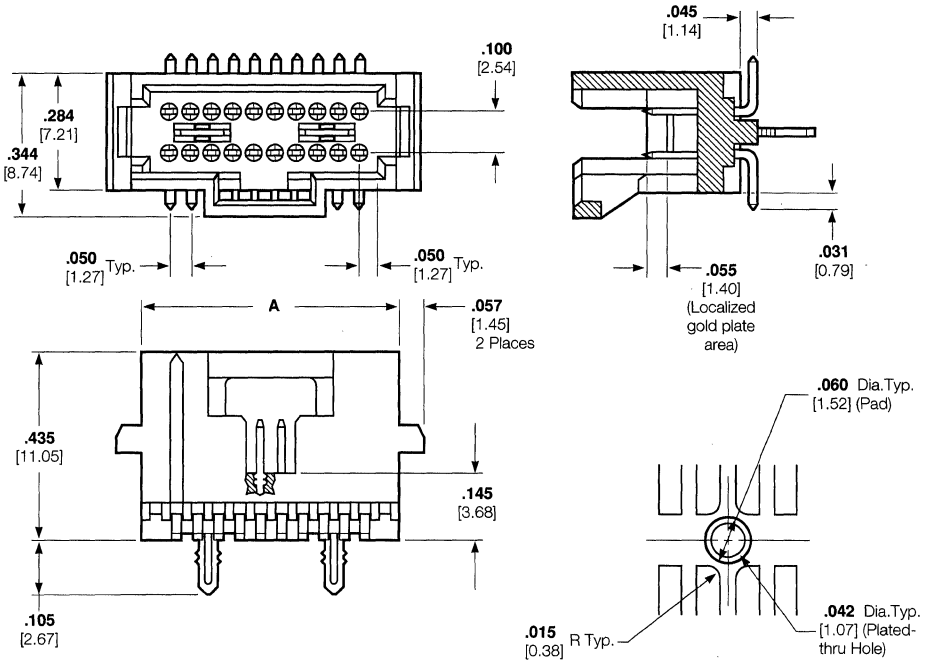
Hold down–Copper alloy, plated .000150 tin-lead over .000050 [0.00127] nickel

Related Product Data:

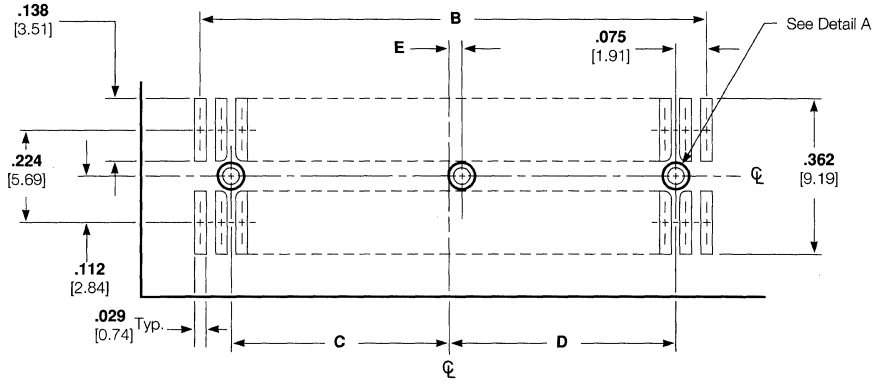
Performance Characteristics - page 3103
Mateable Connectors - pages 3118, 3123, 3125, 5054 & 5055
Board-to-Board Spacing - page 3103
Technical Documents - page 3127
AMP Product Specification 108-1203
AMP Application Specification 114-25035
AMP Instruction Sheet IS 9530



Hand Seating Tool



Detail A



Recommended Pc Board Layout

No. of Positions	Dimensions					Part Numbers	
	A	B	C	D	E	Header	Hand Seating Tool
10	.380 9.65	.200 5.08	-	.025 0.64	-	104549-1	104695-1
20	.630 16.00	.450 11.43	.150 3.81	.150 3.81	-	104549-2	104695-2
24	.730 18.54	.550 13.97	.200 5.08	.200 5.08	-	104549-3	104695-3
30	.880 22.35	.700 17.78	.275 6.99	.275 6.99	-	104549-5	104695-5
40	1.130 28.70	.950 24.13	.400 10.16	.400 10.16	-	104549-6	104695-6
50	1.380 35.05	1.200 30.48	.525 13.34	.525 13.34	.025 0.64	104549-7	104695-7
60	1.630 41.40	1.450 36.83	.650 16.51	.650 16.51	.000	104549-8	104695-8
80	2.130 54.10	1.950 49.53	.900 22.86	.900 22.86	.000	104549-9	104695-9
100	2.630 66.80	2.450 62.23	1.150 29.21	1.150 29.21	.000	1-104549-0	1-104695-0

*Point of measurement for gold thickness.

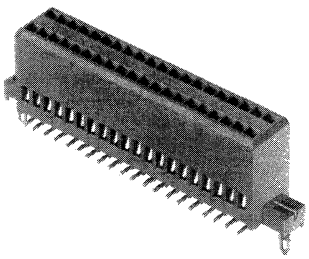
Board-to-Board Connectors, Surface-Mount Receptacles

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Charts contain dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Double Row Vertical



Material and Finish:

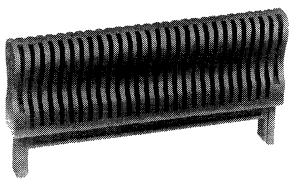
Housing– Glass-filled, black thermoplastic, 94V-0 rated

Contacts– Phosphor bronze, plated .000030 [0.00076] gold in mating area, .000150 [0.00381] tin-lead on solder tail, with entire contact underplated .000050 [0.00127] nickel

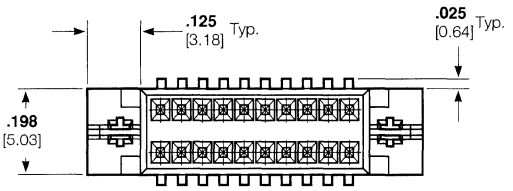
Hold down– Copper alloy, plated .000150 tin-lead over .000050 [0.00127] nickel

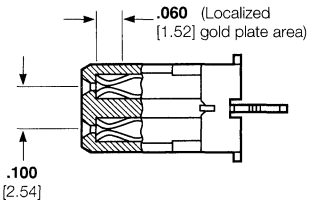
Related Product Data:

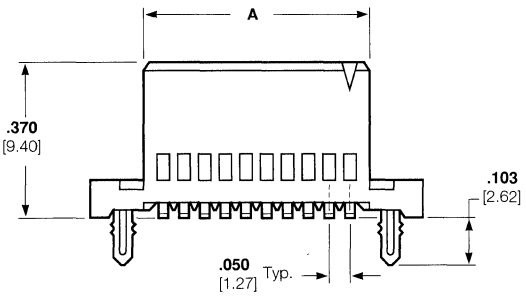
Performance Characteristics - page 3103
Mateable Connectors - pages 3107, 3108, 3112, 3113 & 3122
Board-to-Board Spacing - page 3103
Technical Documents - page 3127
AMP Product Specification 108-1203
AMP Application Specification 114-25035
AMP Instruction Sheet IS 9530

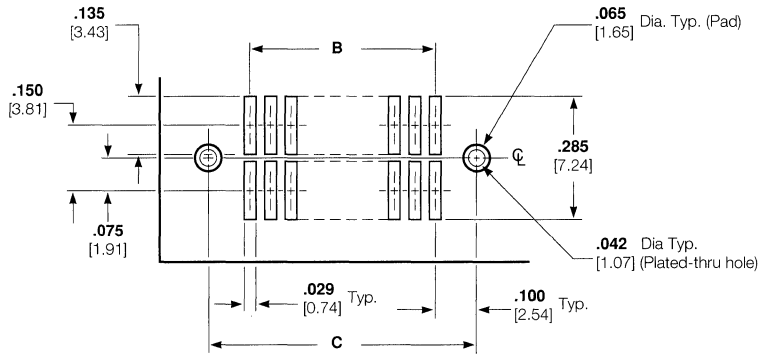


Hand Seating Tool









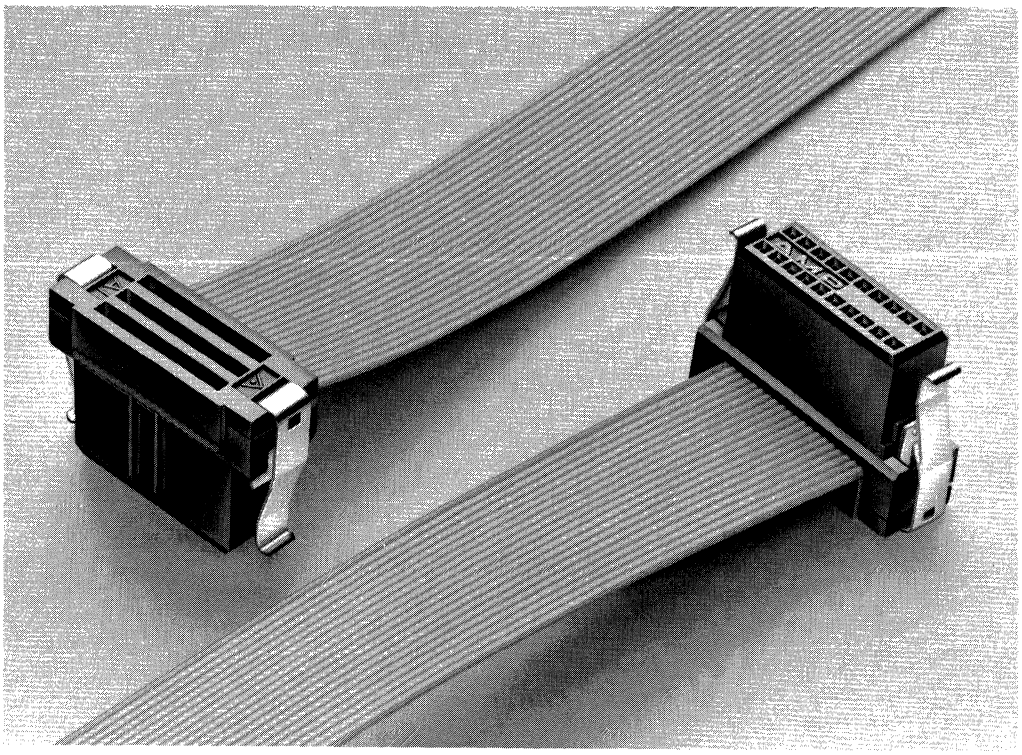
Recommended Pc Board Layout

No. of Positions	Dimensions			Part Numbers	
	A	B	C	Receptacle	Hand Seating Tool
10	**.294** 7.47	**.200** 5.08	**.400** 10.16	104550-1	104696-1
20	**.544** 13.82	**.450** 11.43	**.650** 16.51	104550-2	104696-2
24	**.644** 16.36	**.550** 13.97	**.750** 19.05	104550-3	104696-3
30	**.794** 20.17	**.700** 17.78	**.900** 22.86	104550-4	104696-4
40	**1.044** 26.52	**.950** 24.13	**1.150** 29.21	104550-5	104696-5
50	**1.294** 32.87	**1.200** 30.48	**1.400** 35.56	104550-6	104696-6
60	**1.544** 39.22	**1.450** 36.83	**1.650** 41.91	104550-7	104696-7
80	**2.044** 51.92	**1.950** 49.53	**2.150** 54.61	104550-8	104696-8
100	**2.544** 64.62	**2.450** 62.23	**2.650** 67.31	104550-9	104696-9

Cable-to-Board Connectors, .025 [0.64] Centerline Ribbon Cable

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.



The AMPMODU System 50 Ribbon Cable connector is a receptacle connector that will terminate ribbon cable on .025 [0.64] centerlines. It is available in select sizes from 20 to 100 positions and will accommodate 30 AWG [0.05 mm²] solid and 32 AWG [0.03 mm²]* stranded conductors, and both TEFLON and PVC cable insulations.

The housing and cover are of a high temperature tolerant thermoplastic (black) with a 94V-0 rating. A beryllium copper single mating beam contact provides the interconnect between the conductor and the .015 [0.38] square posts on the .050 X .100 [1.27 x 2.54] grid. The contacts are plated with 30 gold duplex plating. The latching feature is located on the receptacle, not the header, and saves board space and eliminates future problems of "latch height compatibility".

Product Facts

- Preassembled housing and cover
- One step termination
- End and daisy chain termination
- Positive end latching of connector to universal headery
- Terminates 30 AWG [0.05 mm²] solid and 32 AWG [0.03 mm²]* stranded .025 [0.64] centerline ribbon cable.
- 0.5 ampere current rating (Limited by cable)

*Consult AMP Incorporated for recommendations when using 32 AWG [0.03 mm²] stranded cable

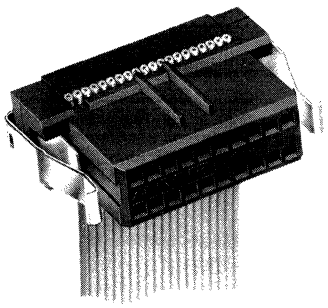
Cable-to-Board Connectors, .025 [0.64] Centerline Ribbon Cable

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Dimensions are shown for reference purposes only.

Double Row Receptacle



Material and Finish:

Housing–Black thermoplastic, 94V-0 rated

Latches–Stainless steel

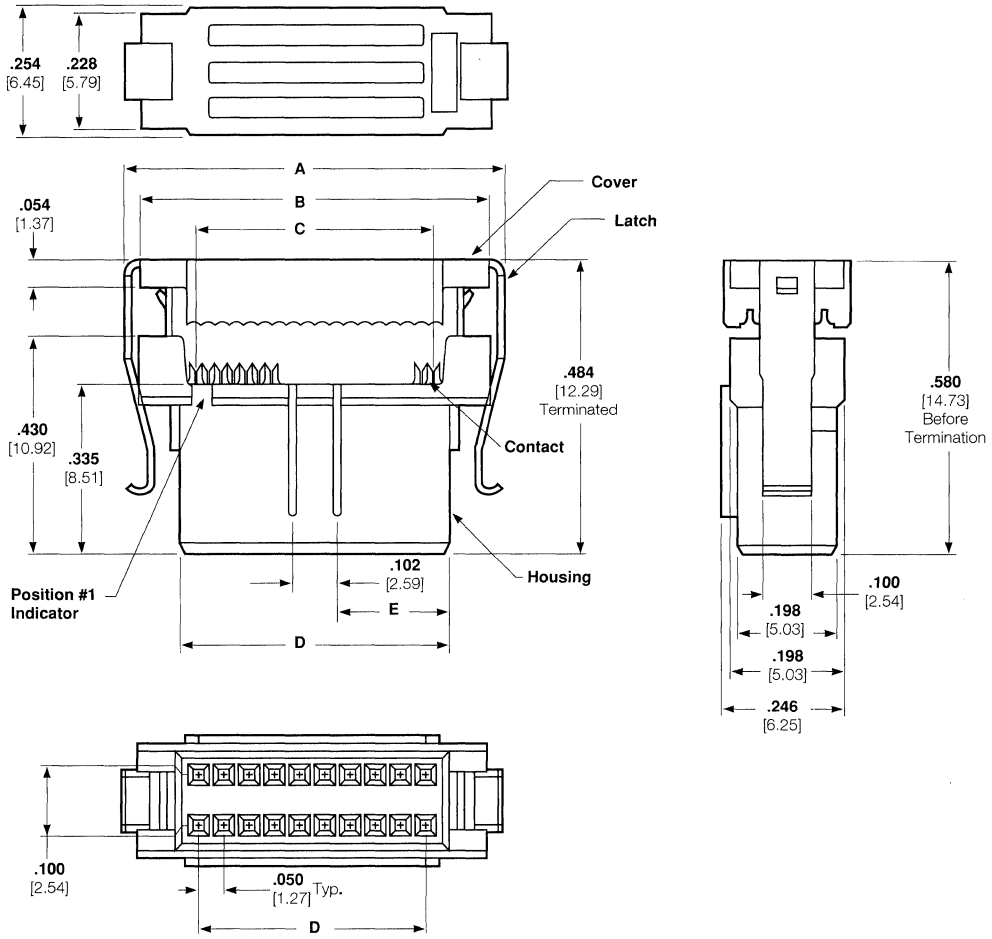
Contacts–Copper alloy, plated gold over nickel with tin-lead in termination area

Related Product Data:

Performance Characteristics - page 3103

Mateable Connectors - pages 3107, 3108 & 3122

Mates with Posts–.015 [0.38] square,.125 ± .010 [3.18 ± 0.25] long, on .050 x .100 (1.27 x 2.54) grid



No. of Positions	Dimensions						Part Number*
	A	B	C	D	E	F	
20	**.760** 19.30	**.695** 17.65	**.475** 12.07	**.450** 11.43	**.221** 5.61	**.544** 13.82	111196-4
24	**.860** 20.32	**.795** 20.19	**.575** 14.61	**.550** 13.97	**.271** 6.88	**.644** 16.36	111196-5
30	**1.010** 25.65	**.945** 24.00	**.725** 18.42	**.700** 17.78	**.346** 8.79	**.794** 20.17	111196-7
40	**1.260** 32.00	**1.195** 30.35	**.975** 24.77	**.950** 24.13	**.471** 11.96	**1.044** 26.52	111196-9
44	**1.360** 34.54	**1.295** 32.89	**1.075** 27.31	**1.050** 26.67	**.521** 13.23	**1.144** 29.06	1-111196-0
50	**1.510** 38.35	**1.445** 36.70	**1.225** 31.12	**1.200** 30.48	**.596** 15.14	**1.294** 32.87	1-111196-1
60	**1.760** 44.70	**1.695** 43.05	**1.475** 37.47	**1.450** 36.83	**.721** 18.31	**1.544** 39.22	1-111196-2
80	**2.260** 57.40	**2.195** 55.75	**1.975** 50.17	**1.950** 49.53	**.971** 24.66	**2.044** 51.92	1-111196-5
100	**2.760** 70.10	**2.695** 68.45	**2.475** 62.87	**2.450** 62.23	**1.221** 31.01	**2.544** 64.62	1-111196-6

*CSA Certification pending

Specifications subject to change.
For latest design specifications...
1-800-522-6752

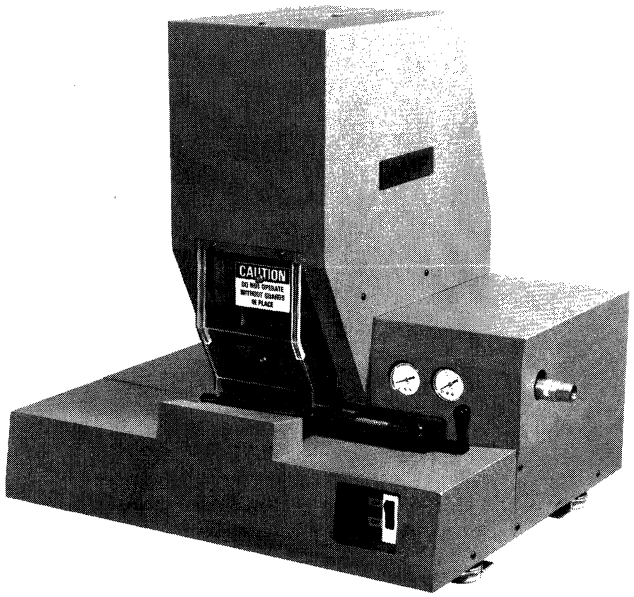
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

MTF Mass Termination Machine for Flexible Film Contacts

The MTF mass termination machine terminates preloaded MTF connectors and MTF contact combs to flexible flat conductor cable, flexible etched circuitry or conductive ink circuitry.

For preloaded connectors, the machine terminates the contacts, removes the carrier strip and seats the contacts into the housing. Contact combs are simply terminated and the carrier strip removed. A complete cycle can be performed in less than 8 seconds.

The MTF mass termination machine can terminate flexible flat conductor cable and flexible etched circuitry (See Application Spec. 114-16008) in sizes of 6 to 50 conductors .050 [1.27] centers and up to 26 contacts to conductive ink circuitry.

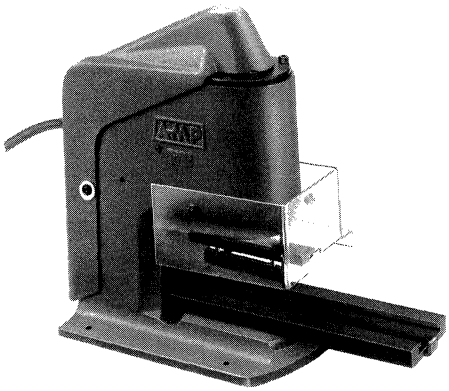


Part Number 818973-1

Specifications:
Width–22 [559]
Depth–20 [508]
Height–20 [508]
Weight–190 lb. [86.2 kg]
Air Supply–9.7 SCFM at 90 psi
Electrical Source–110 VAC, 60 Hz

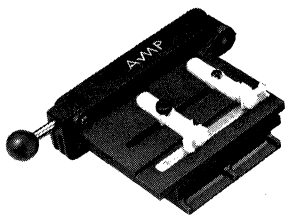
Tooling for AMPMODU System 50 .025 [0.64] Centerline Ribbon Cable

These application tools are designed for one-step termination of ribbon cable to planar, ground plane and shielded/jacketed ribbon cable with round conductors on .025 [0.64] centers. The terminating die set may be used in the Manual Arbor Tool or the Pneumatic Arbor Tool with auto-cycle feature.



Pneumatic Tool
Part No. 91112-3
(Auto-Cycle)

Arbor Tool
Part No. 91085-2



Terminating Die Set
Part No. 931078-1*

For additional **tooling information** and **options,** call Customer Assistance Hotline: **1-800-722-1111.**

*An Upper Tool Kit No. 1226850-1 is required for use with the Terminating Die Set used with the Pneumatic and Arbor tools.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Dimensions are shown for reference purposes only.

The following is a list of technical documents covering the application, performance and maintenance of AMPMODU System 50 connectors.

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-1093–Interconnection System, Board-to-Board AMPMODU System 50
108-1109–Connector, AMPMODU System 50 Receptacle
108-1203–AMPMODU System 50 Surface-Mount Connectors
108-16022–Connector System, .050 [1.27] Centerline FFC Cable
108-16025–Connector, ZIF-Line 50
108-16029–Shielded Flexible Flat Conductor Assemblies
108-40002–Flexible Flat Conductor Cable

Application Specifications describe requirements for using the product in its intended application and or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-16008–Multiple Crimp contact for .050 [1.27] Centerline FFC and FEC cable
114-16009–AMP ZIF-Line 50 Connectors
114-16014–AMP ZIF-Line 50 & 100 PCB Connectors
114-25029–AMPMODU System 50 Ribbon Cable Connectors
114-25031–AMPMODU System 50 Through-Hole Connectors
114-25035–AMPMODU System 50 Surface-Mount Connectors

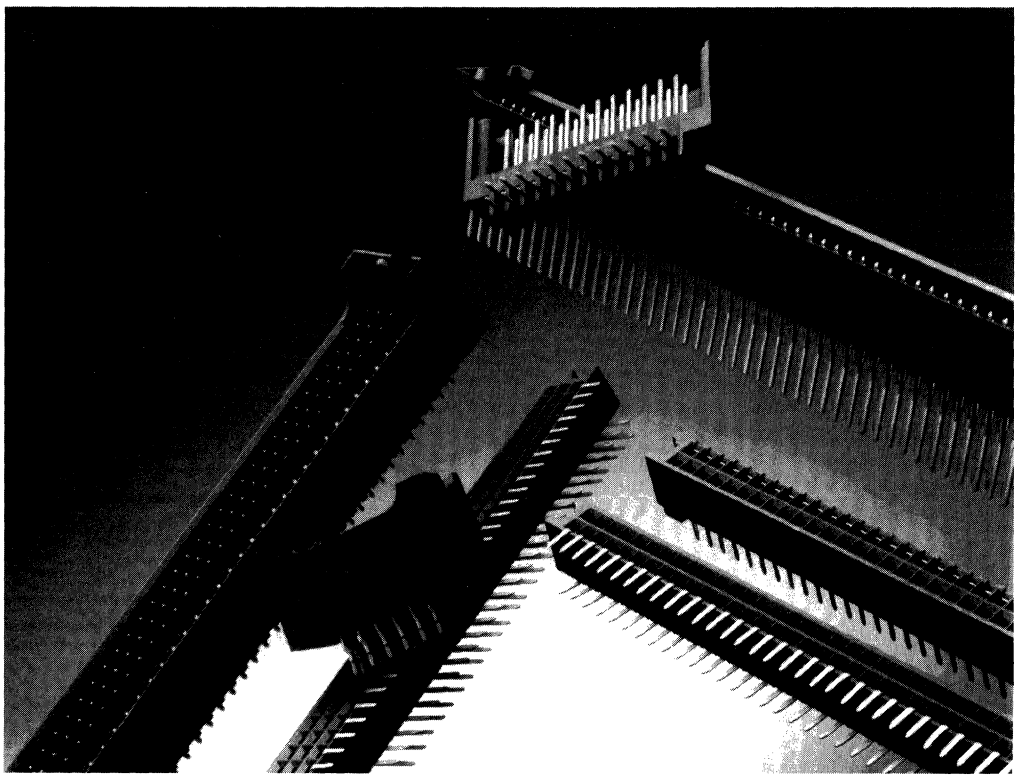
Instruction Sheets provide instructions for assembling or applying the product. They are intended for the manufacturing Assembler or Operator.

IS 6732–Pneumatic Tool, Part Number 91112-3 (Auto-Cycle)
IS 7763–Pneumatic Tool, Part Number 91112-2
IS 7777–Manual Tool, Part Number 91085-2
IS 9530–AMP Seating Tools

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Two-Piece Printed Circuit Board Connectors (AMPMODU)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



AMPMODU Two-Piece Printed Circuit Board connectors are designed to reliably and economically meet the packaging and interconnection requirements of today's sophisticated electronics.

The double row system is produced in 10 thru 200 positions in the vertical headers and horizontal receptacles, and 10 thru 160 positions in the right angle headers and vertical receptacles.

The AMPMODU three-row connector system is produced in 30 through 300 positions (straight post headers and mating horizontal receptacles).

Both two- and three-row vertical headers are available with press-fit ACTION PIN posts or standard .025 [0.64] square solder posts. There is a simple seating tool for headers with ACTION PIN posts.

A board retention feature is offered in the two-row horizontal receptacles, two-row right angle headers and two- and three-row vertical headers. Built-in guides assure accurate header and receptacle alignment before contact engagement.

Closed entry receptacle housings provide a lead-in ramp for positive mating of contacts.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
N (newton)
mm^2 (square millimeter)
C (Celsius)

Note: Dimensions in this catalog are for reference purposes only. Customer drawings are available upon request.

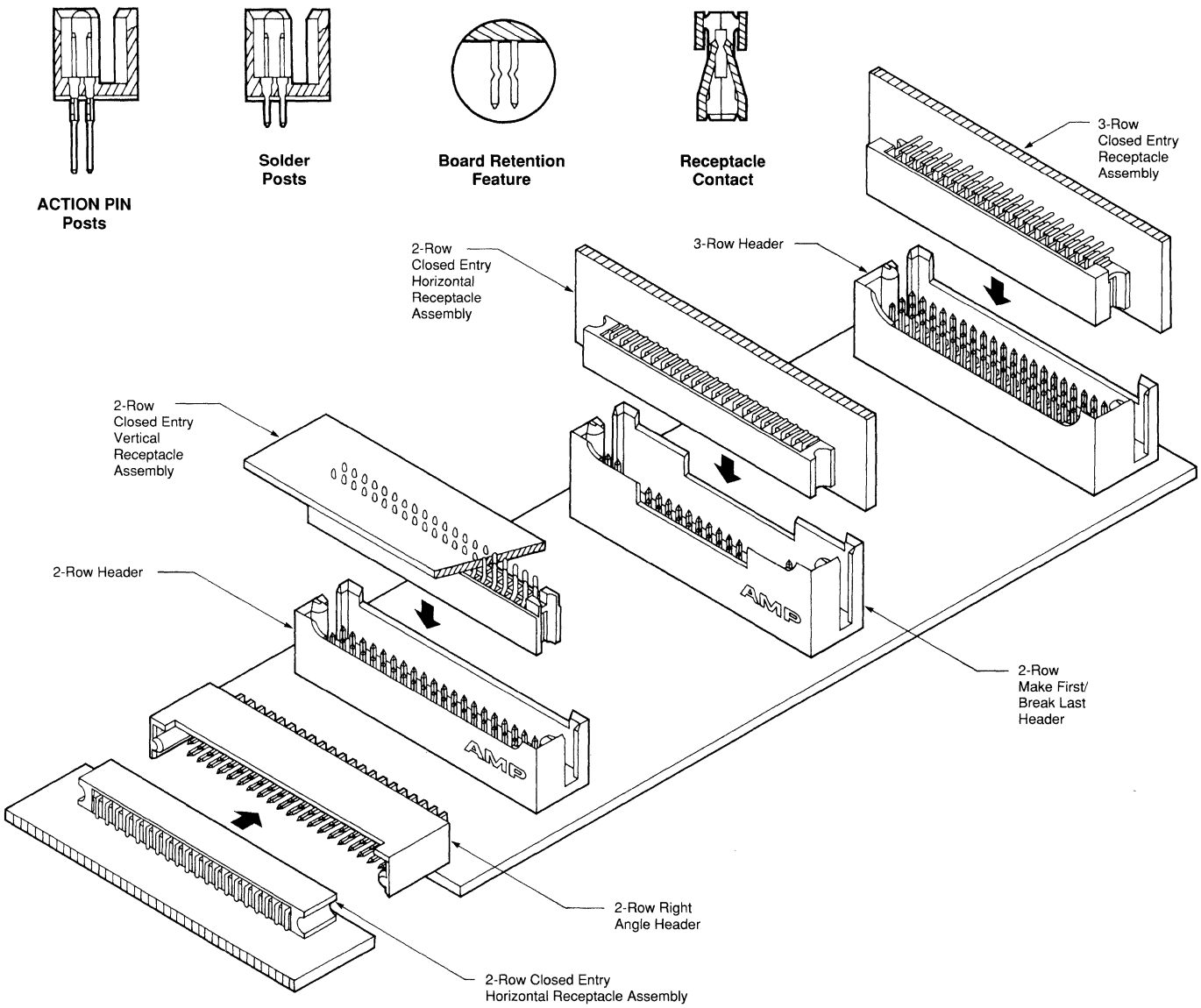
Product Facts

- Two-Piece reliability
- Two- and three-row systems available
- Short signal path for VLSI applications
- Receptacles employ dual cantilever beams and built-in anti-overstress to provide reliable connections
- Built-in guides assure alignment before contact engagement
- Closed entry receptacle housings provide lead-in ramp for positive mating of contacts
- Shrouded headers provide full pin protection
- Polarized headers
- Vertical headers available with ACTION PIN posts or .025 [0.64] square solder posts
- Repairable ACTION PIN posts
- Simple seating tooling for headers with ACTION PIN posts
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association*, File No. LR 7189

*CSA certification pending on certain products, as noted.

AMPMODU Two-Piece Interconnection System

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Board Retention Features

These features are designed to provide a hold down for the connector during wave soldering thus eliminating the need for a clinching operation.

The standard configuration for all AMP Board Retention Features is two pair of contacts on each end up to 98 position connectors, two pair on each end and an additional two pair in the center of connectors 100 position and larger.

Note: Connectors with Board Retention Features are designed to be inserted into the printed circuit board hole one time. Additional insertions will result in loss of retention.

Performance Specifications

Specifications subject to change. Consult AMP Incorporated for latest design specifications.

Current Rating:
3 amp max. for single contact;
2 amp max. per contact for fully energized connector

Voltage Rating:
250 VAC

Dielectric Rating:
750 VAC between contacts for one minute

Termination Resistance:
12 milliohms max. at 100 milliamps test current, and 50 millivolts open circuit voltage

Insulation Resistance:
103 megohms after temperature/humidity cycling

Temperature Rating:
2658C to 11058C (glass-filled thermoplastic housings)
2658C to 11258C (polyphenelyne sulfide housings)

Mating Force:
Standard—4 oz. [1.1 N] average per contact
Low Force—2.75 oz. [0.8 N] average (or less) per contact

Unmating Force:
Standard—.75 oz. [0.2 N] minimum per contact after three mating cycles
Low Force—.50 oz. [0.14 N] minimum per contact after three mating cycles

Technical Documents

Various technical documents are available for your use:

Product Specifications describe technical performance characteristics and verification tests. Intended for the design engineer, the component engineer and the quality engineer.

108-25017	Interconnection System, AMPMODU, 2 Piece
108-26003	ACTION PIN Contacts

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-9009	Header Assembly, 2-Piece, Double Row, AMPMODU

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

IS 9054	Seating Tools
IS 9185	ACTION PIN Contact Front Extraction Tool
IS 2636	ACTION PIN Contact Rear Extraction and Replacement Tool

Handbook

HB 5697	Guide to Application of ACTION PIN Connectors

Two-Row Headers
Straight Post, .100 [2.54] Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Solder Post and ACTION PIN Contacts (with Pin Protection and Guide Pins)

Material:

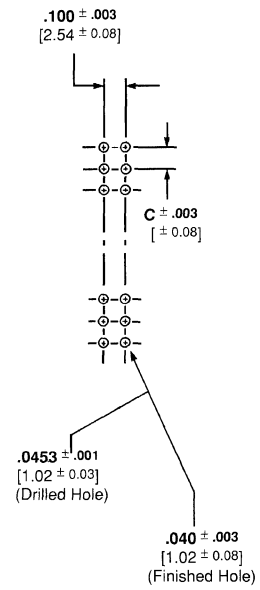
Housing — Glass filled thermoplastic, flame retardant.

Contacts — Phosphor bronze, plated as follows:

A — Duplex plated .000015 [0.00038] gold on mating end, .000100 – .000200 [0.00254 – 0.00508] bright tin-lead on termination end, with entire contact underplated .000050 [0.00127] nickel.

B — Duplex plated .000030 [0.00076] on mating end, .000100 – .000200 [0.00254 – 0.00508] bright tin-lead on termination end, with entire contact underplated .000050 [0.00127] nickel.

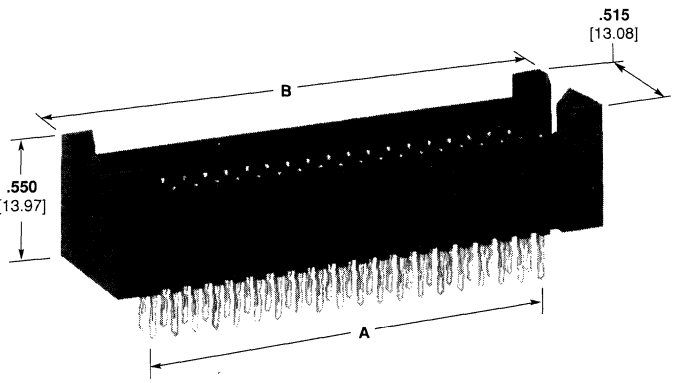
C — Selectively plated gold flash over .000050 [0.00127] nickel on entire contact, with additional .000030 [0.00076] gold on mating end and .000015 [0.00038] gold on termination end.

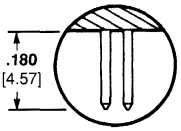


Recommended Pc Board Hole Layout

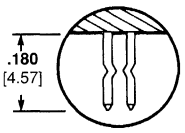
C — Hole centerline to be .100 ± .003 [2.54 ± 0.08] tolerances not to accumulate within one connector pattern.

For more information on ACTION PIN Press-Fit Contacts
See page 3412





.025 [0.64] Square Solder Posts



.025 [0.64] Square Board Retention Posts

No. of Pos.	Dimensions A	Dimensions B	Header Part Nos. with .180 [4.57] Solder Posts — Standard Solder Posts Plating A	Standard Solder Posts Plating B	Board Retention Posts Plating A	Board Retention Posts Plating B
12	**.500** 12.70	**.980** 24.89	102567-1	102692-1	534257-5	1-534978-6
14	**.600** 15.24	**1.080** 27.43	2-102567-3	—	1-534257-4	—
16	**.700** 17.78	**1.180** 29.97	—	1-102692-5	—	534978-2
20	**.900** 22.86	**1.380** 35.05	1-102567-1	1-102692-6	534257-6	534978-3
24	**1.100** 27.94	**1.580** 40.13	102567-2	102692-2	534257-7	534978-4
30	**1.400** 35.56	**1.880** 47.75	1-102567-3	1-102692-7	534257-8	534978-5
36	**1.700** 43.18	**2.180** 55.37	102567-3	102692-3	534257-9	534978-6
40	**1.900** 48.26	**2.380** 60.45	1-102567-2	1-102692-3	1-534257-0	534978-7
50	**2.400** 60.96	**2.880** 73.15	102567-6	102692-4	1-534257-5	534978-8
60	**2.900** 73.66	**3.380** 85.85	102567-4	102692-5	1-534257-1	534978-9
70	**3.400** 86.36	**3.880** 98.55	1-102567-0	1-102692-4	1-534257-2	1-534978-5
72	**3.500** 88.90	**3.980** 101.09	1-102567-6	1-102692-8	—	1-534978-0
80	**3.900** 99.06	**4.380** 111.25	102567-8	102692-6	534257-1	1-534978-1
86	**4.200** 106.68	**4.680** 118.87	1-102567-7	1-102692-9	—	—
90	**4.400** 111.76	**4.880** 123.95	1-102567-4	1-102692-2	—	—
96	**4.700** 119.38	**5.180** 131.57	—	102692-7	1-534257-3	1-534978-7
100	**4.900** 124.46	**5.380** 136.65	102567-9	102692-8	534257-2	—
110	**5.400** 137.16	**5.880** 149.35	1-102567-5	1-102692-0	—	1-534978-2
120	**5.900** 149.86	**6.380** 162.05	102567-7	102692-9	534257-3	1-534978-3
130	**6.400** 162.56	**6.880** 174.75	—	2-102692-0	—	—
140	**6.900** 175.26	**7.380** 187.45	2-102567-0	2-102692-1	—	1-534978-4
148	**7.300** 185.42	**7.780** 197.61	—	2-102692-3	—	—
160	**7.900** 200.66	**8.380** 212.85	2-102567-2	—	534257-4	—
180	**8.900** 226.06	**9.380** 238.25	2-102567-8	—	—	—
200	**9.900** 251.46	**10.380** 263.65	—	1-102692-1	—	534978-1

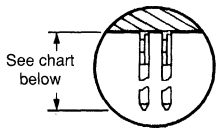
Notes: 1. Other header sizes can be made available upon request.
2. Headers with make first/break last contacts can be made available upon request.

Two-Row Headers
Straight Post, .100 [2.54] Centers
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Related Product Data:
Performance Specifications — page 3130
Mating Receptacles — pages 3134, 3135 and 3136
ACTION PIN Contacts — page 3139
Application Tooling — page 3140
Technical Documents — page 3130
AMP Product Specifications
108-25017, 108-26003
AMP Application Specification
114-9009
AMP Instruction Sheets
IS 2636, IS 9054, IS 9185



.025 [0.64] Square
ACTION PIN Posts

ACTION PIN Replacement Contact Part Numbers

.250 [6.35] Post Length
Plating A 102824-9
Plating B 1-102824-0
.480 [12.19] Post Length
Plating A 102824-6
Plating B 102824-2
Plating C 102824-3
.680 [17.27] Post Length
Plating C 102824-7

No. of Pos.	Dimensions A	Dimensions B	Header Part Nos. with ACTION PIN Posts .250 [6.35] Tail Length Plating A	.250 [6.35] Tail Length Plating B	.480 [12.19] Tail Length Plating B	.480 [12.19] Tail Length Plating C	.680 [17.27] Tail Length Plating C
12	.500 12.70	.980 24.89	—	102690-1	—	—	—
14	.600 15.24	1.080 27.43	103291-3	—	—	—	—
20	.900 22.86	1.380 35.05	—	1-102690-3	—	—	—
24	1.100 27.94	1.580 40.13	—	102690-2	—	—	—
30	1.400 35.56	1.880 47.75	103291-8	1-102690-5	—	—	—
36	1.700 43.18	2.180 55.37	—	102690-3	—	—	—
40	1.900 48.26	2.380 60.45	103291-2	1-102690-6	—	—	—
50	2.400 60.96	2.880 73.15	1-103291-0	102690-4	—	—	—
60	2.900 73.66	3.380 85.85	—	102690-5	102691-5	—	102777-5
70	3.400 86.36	3.880 98.55	—	1-102690-7	—	—	—
72	3.500 88.90	3.980 101.09	—	1-102690-8	—	—	—
80	3.900 99.06	4.380 111.25	—	102690-6	—	—	—
90	4.400 111.76	4.880 123.95	—	1-102690-1	—	—	—
96	4.700 119.38	5.180 131.57	—	102690-7	—	—	—
100	4.900 124.46	5.380 136.65	—	102690-8	102691-8	102666-8	102777-3
120	5.900 149.86	6.380 162.05	—	102690-9	102691-9	1-102666-1	102777-1
130	6.400 162.56	6.880 174.75	—	—	1-102691-1	102666-9	102777-2
140	6.900 175.26	7.380 187.45	—	—	1-102691-0	2-102666-0	—
200	9.900 251.46	10.380 263.65	—	1-102690-0	—	—	—

Notes: 1. Other header sizes can be made available upon request.
2. Headers with ACTION PIN posts are for use with .093 [2.36] nominal or thicker pc boards.
3. Application tooling for installing headers with ACTION PIN posts is shown on page 3140.
4. Headers with .250 [6.35] tail length can be made available with make first/break last contacts, consult AMP Incorporated.

Two-Row Headers Right-Angle Post .100 [2.54] Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Card Extender (with Pin Protection and Guide Pins)

Material and Finish:

Housing — Glass filled thermoplastic, flame retardant.

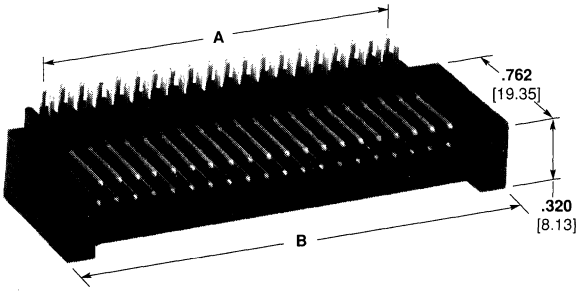
Contacts — Phosphor bronze, duplex plated as follows:

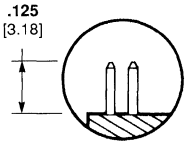
A — .000015 [0.00038] gold on mating end, .000100 – .000200 [0.00254 – 0.00508] bright tin-lead on solder tail, with entire contact underplated .000050 [0.00127] nickel.

B — .000030 [0.00076] gold on mating end, .000100 – .000200 [0.00254 – 0.00508] bright tin-lead on solder tail, with entire contact underplated .000050 [0.00127] nickel.

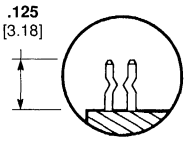
Related Product Data:

Performance Specifications — page 3130
Mating Receptacles — pages 3134, 3135 and 3136
Technical Documents — page 3130
AMP Product Specification 108-25017
AMP Application Specification 114-9009

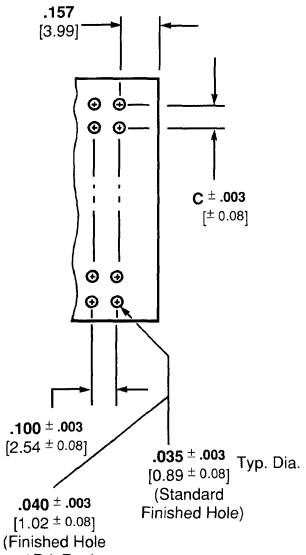




.025 [0.64] Square Solder Posts



.025 [0.64] Square Board Retention Posts



Recommended Pc Board Hole Layout

C — Hole centerline to be .100 ± .003 [2.54 ± 0.08] tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions A	Dimensions B	Header Part Nos. with .125 [3.18] Solder Posts — Standard Solder Posts Plating A	Standard Solder Posts Plating B	Board Retention Posts Plating A*	Board Retention Posts Plating B
12	**.500** 12.70	**.980** 24.89	102589-8	1-102802-2	—	534245-5
16	**.700** 17.78	**1.180** 29.97	—	—	—	534245-4
20	**.900** 22.86	**1.380** 35.05	1-102589-2	—	—	534245-6
24	**1.100** 27.94	**1.580** 40.13	102589-6	1-102802-3	—	534245-7
30	**1.400** 35.56	**1.880** 47.75	102589-4	1-102802-6	535568-1	534245-2
36	**1.700** 43.18	**2.180** 55.37	102589-2	102802-3	—	534245-8
40	**1.900** 48.26	**2.380** 60.45	1-102589-3	102802-8	535568-2	—
44	**2.100** 53.30	**2.580** 65.53	—	2-102802-3	—	—
50	**2.400** 60.96	**2.880** 73.15	102589-5	102802-4	—	534245-1
60	**2.900** 73.66	**3.380** 85.85	102589-7	102802-9	—	—
70	**3.400** 86.36	**3.880** 98.55	—	102802-7	—	534245-9
72	**3.500** 88.90	**3.980** 101.09	1-102589-7	1-102802-7	—	—
80	**3.900** 99.06	**4.380** 111.25	102589-1	102802-5	535568-3	1-534245-0
86	**4.200** 106.68	**4.680** 118.87	—	1-102802-8	—	—
90	**4.400** 111.76	**4.880** 123.95	1-102589-4	—	535568-4	—
96	**4.700** 119.38	**5.180** 131.57	102589-9	—	—	—
100	**4.900** 124.46	**5.380** 136.65	102589-3	102802-6	535568-5	1-534245-1
110	**5.400** 137.16	**5.880** 149.35	1-102589-5	—	—	1-534245-2
120	**5.900** 149.86	**6.380** 162.05	1-102589-1	102802-2	535568-6	534245-3
130	**6.400** 162.56	**6.880** 174.75	—	1-102802-9	—	1-534245-3
140	**6.900** 175.26	**7.380** 187.45	—	—	—	—
160	**7.900** 200.66	**8.380** 212.85	—	2-102802-4	—	—

*CSA certification pending

Notes: 1. Other header sizes can be made available upon request.
2. Headers with make first/break last contacts can be made available upon request.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Two-Row Closed Entry Receptacle Assemblies Board Mounted, .100 [2.54] Centers

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Vertical Mount (with Guide Pin Slots and Standoffs)

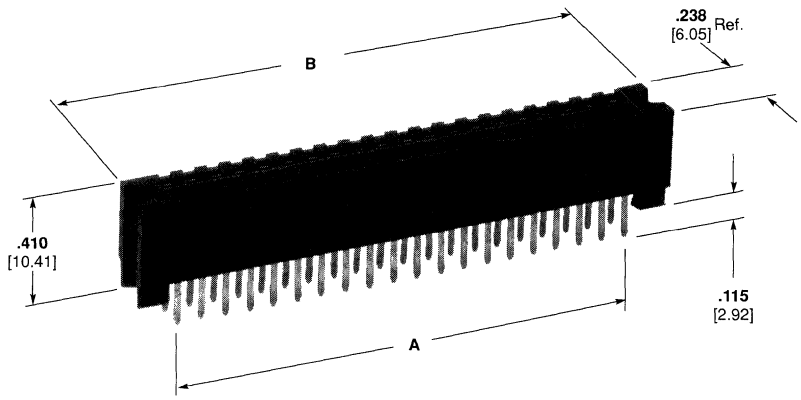
Material and Finish:

Housing — Polyphenylene sulfide.

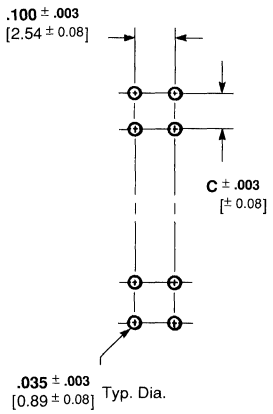
Contacts — Phosphor bronze, duplex plated .000030 [0.00076] gold on mating area, .000050–.000100 [0.00127–0.00254] bright tin-lead on solder tail, with entire contact underplated .000050 [0.00127] nickel.

Related Product Data:

Performance Specifications — page 3130
Mating Headers — pages 3131, 3132 and 3133
Technical Documents — page 3130
AMP Product Specification 108-25017
AMP Application Specification 114-9009

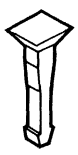


No. of Pos.	Dimensions A	Dimensions B	Receptacle Assembly Part Nos.
30	**1.400** 35.56	**1.758** 44.65	534972-1
40	**1.900** 48.26	**2.258** 57.35	534972-2
50	**2.400** 60.96	**2.758** 70.05	534972-3
60	**2.900** 73.66	**3.258** 82.75	534972-4
70	**3.400** 86.36	**3.758** 95.45	534972-5
80	**3.900** 99.06	**4.258** 108.15	534972-6
90	**4.400** 111.76	**4.758** 120.85	534972-7
100	**4.900** 124.46	**5.258** 133.55	534972-8
104	**5.100** 129.54	**5.458** 138.63	534972-9
120	**5.900** 149.86	**6.258** 158.95	1-534972-0
130	**6.400** 162.56	**6.758** 171.65	1-534972-1
140	**6.900** 175.26	**7.258** 184.35	1-534972-2
160	**7.900** 200.66	**8.258** 209.75	1-534972-3



Recommended Pc Board Hole Layout

C — Hole centerline to be .100±.003 [2.54±0.08] tolerances not to accumulate within one connector pattern.



Keying Plug Part N0. 86286-1

Material: Natural Color Nylon

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Two-Row Closed Entry Receptacle Assemblies Board Mounted, .100 [2.54] Centers

(Continued)

Horizontal Mount (with Guide Pin Slots and Standoffs)

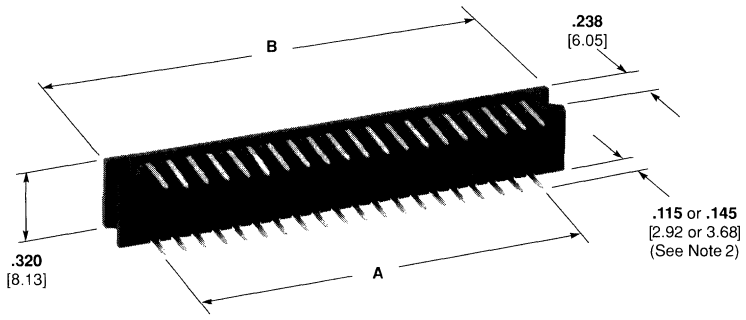
Material and Finish:

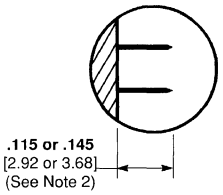
Housing — Polyphenylene sulfide.

Contacts — Phosphor bronze, duplex plated as follows:

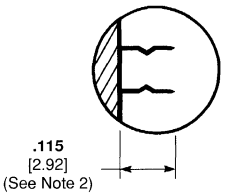
A — .000015 [0.00038] gold on mating end, .000050 – .000100 [0.00127 – 0.00254] bright tin-lead on solder tail, with entire contact underplated .000050 [0.00127] nickel.

B — .000030 [0.00076] gold on mating area, .000050 – .000100 [0.00127 – 0.00254] bright tin-lead on solder tail, with entire contact underplated .000050 [0.00127] nickel.

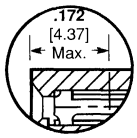




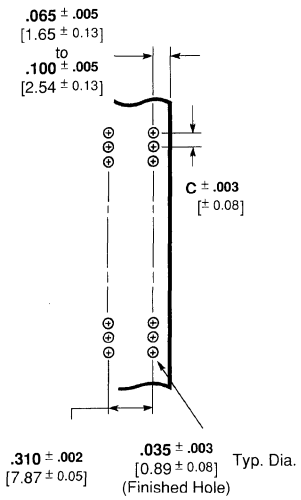
Standard Solder Posts



Board Retention Posts

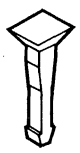


Point of Contact



Recommended Pc Board Hole Layout

C — Hole centerline to be .100 ± .003 [2.54 ± 0.08] tolerances not to accumulate within one connector pattern.



Keying Plug
Part No. 86286-1

Material: Natural Color Nylon

No. of Pos.	Dimensions A	Dimensions B	Receptacle Assembly Part Nos. with .115 [2.92] Solder Posts: Standard Solder Posts Plating A	Standard Solder Posts Plating B	Board Retention Posts Plating A	Board Retention Posts Plating B	Receptacle Assembly Part Nos. with .145 [3.68] Solder Posts: Standard Solder Posts Plating A	Standard Solder Posts Plating B
12	**.500** 12.70	**.858** 21.79	532955-1	532956-1	534975-5	534204-2	—	533009-1
14	**.600** 15.24	**.958** 24.33	2-532955-5	2-532956-5	—	—	—	—
16	**.700** 17.78	**1.058** 26.87	—	532956-2	1-534975-5	1-534204-0	—	—
20	**.900** 22.86	**1.258** 31.95	532955-3	532956-3	534975-6	534204-9	—	—
24	**1.100** 27.94	**1.458** 37.03	532955-4	532956-4	534975-7	1-534204-1	—	—
30	**1.400** 35.56	**1.758** 44.65	532955-5	532956-5	534975-8	534204-4	—	533009-5
36	**1.700** 43.18	**2.058** 52.27	532955-6	532956-6	534975-9	534204-3	—	—
40	**1.900** 48.26	**2.258** 57.35	532955-7	532956-7	1-534975-0	1-534204-2	532993-9	—
44	**2.100** 53.34	**2.458** 62.43	2-532955-4	2-532956-8	—	—	—	—
50	**2.400** 60.96	**2.758** 70.05	532955-8	532956-8	1-534975-1	534204-1	—	533009-8
60	**2.900** 73.66	**3.258** 82.75	532955-9	532956-9	1-534975-2	534204-5	—	533009-9
70	**3.400** 86.36	**3.758** 95.45	1-532955-0	1-532956-0	1-534975-3	1-534204-3	—	—
72	**3.500** 88.90	**3.858** 97.99	1-532955-1	1-532956-1	—	1-534204-4	532993-2	—
80	**3.900** 99.06	**4.258** 108.15	1-532955-2	1-532956-2	1-534975-4	534204-8	—	1-533009-2
86	**4.200** 106.68	**4.558** 115.77	1-532955-3	1-532956-3	—	—	532993-3	1-533009-3

Notes: 1. Other receptacle sizes and solder tail lengths can be made available upon request.
2. .115 [2.92] tail length is for use with .062 [1.57] pc boards; .145 [3.68] tail length is for use with .093 [2.36] pc boards.
3. Receptacle assemblies with low force contacts available upon request.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Two-Row Closed Entry Receptacle Assemblies Board Mounted, .100 [2.54] Centers
(Continued)

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Related Product Data:
Performance Specifications — page 3130
Mating Headers — pages 3131, 3132 and 3133
Technical Documents — page 3130
AMP Product Specification 108-25017
AMP Application Specification 114-9009

No. of Pos.	Dimensions A	Dimensions B	Receptacle Assembly Part Nos. with .115 [2.92] Solder Posts — Standard Solder Posts Plating A	Standard Solder Posts Plating B	Board Retention Posts Plating A	Board Retention Posts Plating B	Receptacle Assembly Part Nos. with .145 [3.68] Solder Posts — Standard Solder Posts Plating A	Standard Solder Posts Plating B
90	**4.400** 111.76	**4.758** 120.85	1-532955-4	1-532956-4	—	—	—	—
96	**4.700** 119.38	**5.058** 128.47	1-532955-5	1-532956-5	—	1-534204-5	1-532993-5	1-533009-5
100	**4.900** 124.46	**5.258** 133.55	1-532955-6	1-532956-6	534975-1	534204-6	1-532993-6	—
110	**5.400** 137.16	**5.758** 146.25	1-532955-7	1-532956-7	—	1-534204-6	1-532993-7	—
120	**5.900** 149.86	**6.258** 158.95	1-532955-8	1-532956-8	534975-2	534204-7	—	1-533009-8
128	**6.300** 160.02	**6.658** 169.11	1-532955-9	1-532956-9	—	—	—	—
130	**6.400** 162.56	**6.758** 171.65	2-532955-0	2-532956-0	—	1-534204-7	—	—
140	**6.900** 175.26	**7.258** 184.35	2-532955-1	2-532956-1	—	1-534204-8	—	2-533009-1
148	**7.300** 185.42	**7.658** 194.51	—	2-532956-2	—	—	—	—
160	**7.900** 200.66	**8.258** 209.75	2-532955-7	—	534975-3	1-534204-9	—	—
180	**8.900** 226.06	**9.258** 235.15	2-532955-8	2-532956-4	—	—	—	—
200	**9.900** 251.46	**10.258** 260.55	2-532955-3	2-532956-3	534975-4	—	—	2-533009-3

Notes: 1. Other receptacle sizes and solder tail lengths can be made available upon request.
2. .115 [2.92] tail length is for use with .062 [1.57] pc boards; .145 [3.68] tail length is for use with .093 [2.36] pc boards.
3. Receptacle assemblies with low force contacts available upon request.

Three-Row Headers
Straight Post, .100 [2.54] Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Solder Post and ACTION PIN Contacts (with Pin Protection and Guide Pins)

Material and Finish:

Housing — Glass filled thermoplastic, flame retardant.

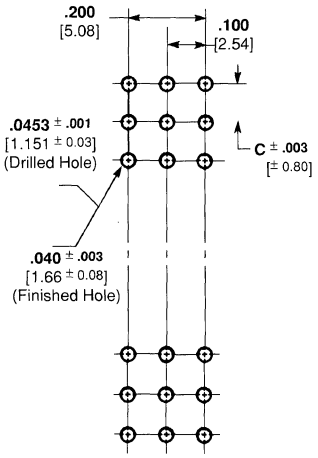
Contacts — Phosphor bronze, duplex plated as follows:

A — Duplex plated .000030 [0.00076] gold on mating end, .000100 – .000200 [0.00254 – 0.00508] bright tin-lead on termination end, with entire contact underplated .000050 [0.00127] nickel.

B — Selectively plated gold flash over .000050 [0.00127] nickel on entire contact, with additional .000030 [0.00076] gold on mating end and .000015 [0.00038] gold on termination end.

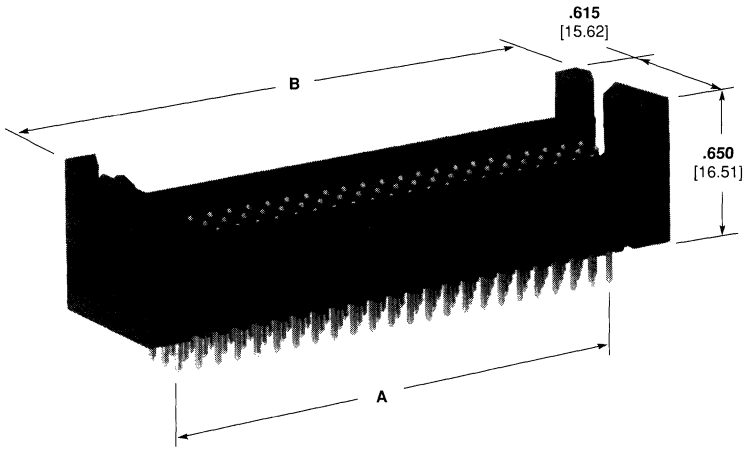
Related Product Data:

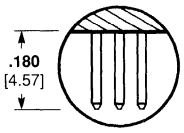
Performance Specifications — page 3130
Mating Receptacles — pages 3138
ACTION PIN Contacts — page 3139
Application Tooling — page 3140
Technical Documents — page 3130
AMP Product Specifications
108-25017, 108-26003
AMP Application Specification
114-9009
AMP Instruction Sheets
IS 2636, IS 9054, IS 9185



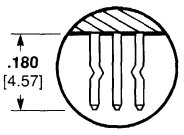
Recommended Pc Board Hole Layout

C — Hole centerline to be .100 ± .003 [2.54 ± 0.08] tolerances not to accumulate within one connector pattern.

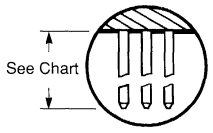




.025 [0.64] Square Solder Posts



.025 [0.64] Square Board Retention Posts



.025 [0.64] Square ACTION PIN Posts

No. of Pos.	Dimensions A	Dimensions B	Header Part Nos. with .180 [4.57] Solder Posts: Standard Solder Posts Plating A	Header Part Nos. with .180 [4.57] Solder Posts: Board Retention Posts Plating A	Header Part Nos. with ACTION PIN Posts: .250 [6.35] Tail Length Plating A	Header Part Nos. with ACTION PIN Posts: .480 [12.19] Tail Length Plating B	Header Part Nos. with ACTION PIN Posts: .680 [17.27] Tail Length Plating B
36	**1.100** 27.94	**1.580** 40.13	103264-7	—	—	—	—
60	**1.900** 48.26	**2.380** 60.45	—	534258-2	—	—	—
72	**2.300** 58.42	**2.780** 70.61	103264-1	534258-1	—	—	—
93	**3.300** 83.82	**3.480** 88.39	—	534258-3	—	—	—
96	**3.100** 78.74	**3.580** 90.93	—	—	103263-1	—	—
105	**3.400** 86.36	**3.880** 98.55	103264-2	—	103263-2	—	—
120	**3.900** 99.06	**4.380** 111.25	103264-5	534259-1[1]	103263-3	—	—
150	**4.900** 124.46	**5.380** 136.65	103264-3	—	103263-8	—	—
195	**6.400** 162.56	**6.880** 174.75	103264-6	—	103263-7	532959-1	532960-1
204	**6.700** 170.18	**7.180** 182.37	—	—	103263-4	—	—
210	**6.900** 175.26	**7.380** 187.45	103264-4	—	103263-5	—	—
300	**9.900** 251.46	**10.380** 263.65	—	—	103263-6	—	—

[1]Housing height for this part is .550 [13.97].

Three-Row Closed Entry Receptacle Assemblies Board Mounted

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Horizontal Mount (with Guide Pin Slots and Standoffs)

Material and Finish:

Housing — Polyphenylene sulfide.

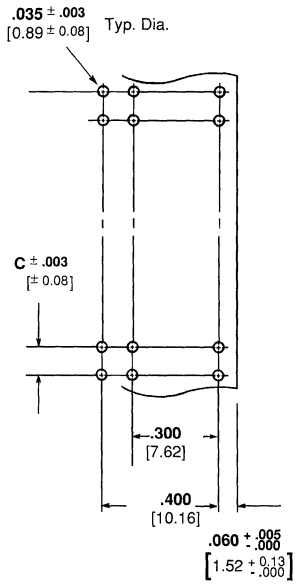
Contacts — Phosphor bronze, duplex plated as follows:

A — .000015 [0.00038] gold on mating area, .000050 – .000100 [0.00127 – 0.00254] bright tin-lead on solder tail, with entire contact underplated .000050 [0.00127] nickel.

B — .000030 [0.00076] gold on mating area, .000050 – .000100 [0.00127 – 0.00254] bright tin-lead on solder tail, with entire contact underplated .000050 [0.00254] nickel.

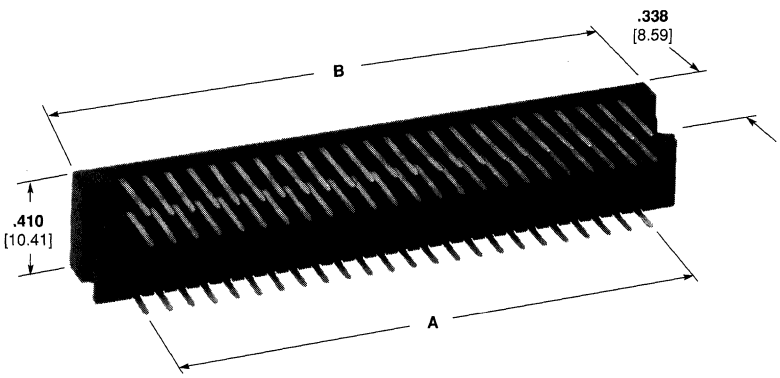
Related Product Data:

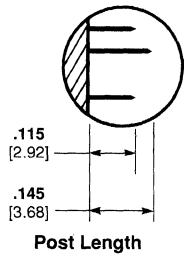
Performance Specifications — page 3130
Mating Headers — pages 3137
Technical Documents — page 3130
AMP Product Specification 108-25017
AMP Application Specification 114-9009



Recommended Pc Board Hole Layout

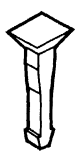
C — Hole centerline to be .100 ± .003 [2.54 ± 0.08] tolerances not to accumulate within one connector pattern.





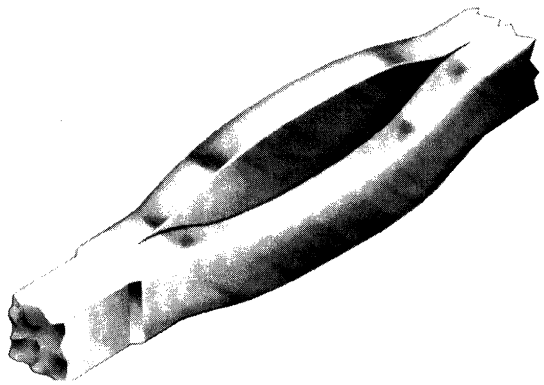
Post Length

No. of Pos.	Dimensions A	Dimensions B	Receptacle Assembly Part Nos. Plating A	Receptacle Assembly Part Nos. Plating B
30	**.900** 22.86	**1.258** 31.95	—	534974-1
36	**1.100** 27.94	**1.458** 37.08	—	1-534974-4
42	**1.300** 33.02	**1.658** 42.11	—	1-534974-3
60	**1.900** 48.26	**2.258** 57.35	—	534974-2
72	**2.300** 58.42	**2.658** 67.51	—	534974-3
75	**2.400** 60.96	**2.758** 70.05	534997-2	—
90	**2.900** 73.66	**3.258** 82.75	534997-1	—
93	**3.000** 76.20	**3.358** 85.29	—	534974-4
96	**3.100** 78.74	**3.458** 87.83	—	534974-5
105	**3.400** 86.36	**3.758** 95.45	—	534974-6
120	**3.900** 99.06	**4.258** 108.15	—	534974-7
150	**4.900** 124.46	**5.258** 133.55	—	534974-8
195	**6.400** 162.56	**6.758** 171.65	—	534974-9
204	**6.700** 170.18	**7.058** 179.27	—	1-534974-0
210	**6.900** 175.26	**7.258** 184.35	—	1-534974-1
300	**9.900** 251.46	**10.258** 260.55	—	1-534974-2



Keying Plug
Part No. 86286-1

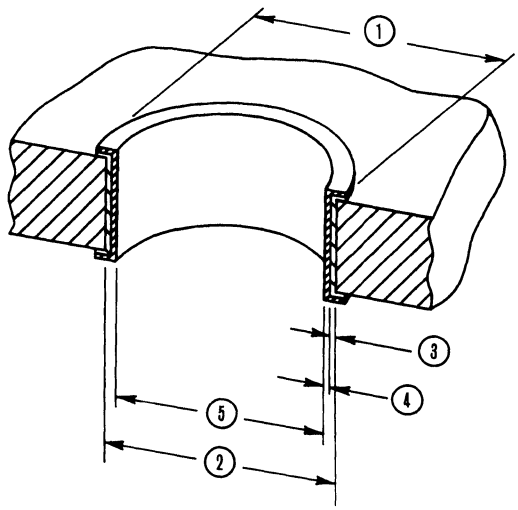
Material: Natural Color Nylon



ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area ensures oxide break-through and prevents corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

PC Board Thickness

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To ensure optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



① Annular Ring (See Note)
② Drilled Hole
③ Copper Thickness
④ Tin-Lead Thickness
⑤ Plated-Through Hole

For more information on
ACTION PIN Press-Fit Contacts
See page 3412

ACTION PIN Contact/PC Board Applications

Connector Type	ACTION PIN Contact Material Thickness	Drilled Hole Diameter ②	Plating Thicknesses		Plated-Through Hole Diameter ⑤	Distortion Specification**	
			Copper ③*	Tin-Lead ④		Average	Maximum
Two- and Three-Row Headers, Straight Post	**.025** 0.64	**.0453±.001** 1.151±0.03	**.001 - .003** 0.03 - 0.08	**.0003** 0.008 Min.	**.037 - .043** 0.94 - 1.09	**.0015** 0.038	**.002** 0.05

* Maximum hardness of copper layer is 150 Knoop
** Radial hole distortion
Note: Recommended annular ring diameter is hole diameter plus **.020** [0.51]

Application Tooling for AMPMODU Two-Piece Headers with ACTION PIN Posts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters unless specified otherwise.
Values in brackets are metric equivalents.

Pin headers with ACTION PIN contacts allow high speed, solderless back-plane construction through reliable press-fit application. Press fitting connectors to printed circuit boards requires special seating tools which transfer application force directly to the contacts.

Force applied to the tool to seat the connectors can be provided by the AMP seating machines shown below, or by commercially available arbor presses such as Greenerd 3A or 3B. The selected press must have a seating pressure capacity of 40 lbs [178 N] per contact.

For **tooling information**, call Customer Assistance Hotline **1-800-722-1111.**

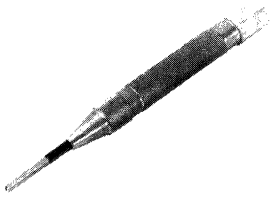
Two-Row Connector Seating Tools

Position	Tool Assembly
12	91170-5
14	91170-6
16	91170-7
20	91170-9
24	1-91170-1
30	1-91170-4
36	1-91170-7
40	1-91170-9
44	2-91170-1
50	2-91170-4
60	2-91170-9
70	3-91170-0
72	3-91170-1
80	3-91170-2
86	3-91170-3
90	3-91170-4
94	4-91170-4
96	3-91170-5
100	3-91170-6
110	3-91170-7
120	3-91170-8
128	4-91170-5
130	3-91170-9
140	4-91170-0
148	4-91170-6
160	4-91170-7
180	4-91170-3
200	4-91170-2

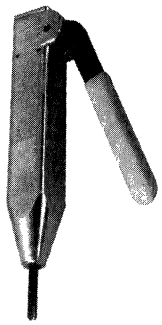
Three-Row Connector Seating Tools

Position	Tool Assembly
72	91169-4
96	91169-8
105	91169-6
120	91169-7
150	91169-3
195	91169-2
204	91169-1
210	91169-5
300	91169-9

ACTION PIN Contact Replacement Tooling



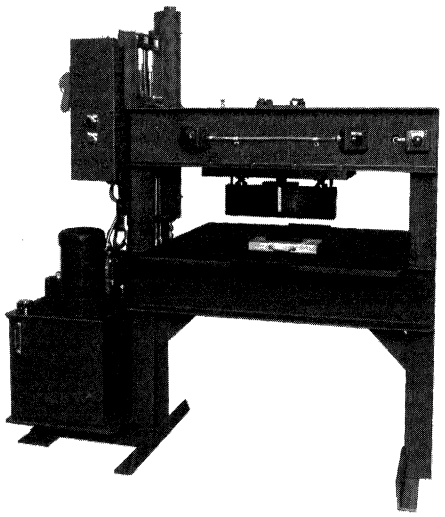
Rear Insertion/Extraction Tool
No. 265871-7 (Ref. IS 2636-1)
Includes:
Impact Tool No. 380392-8
Removal Tool No. 265964-1
Replacement Tip No. 380554-1



Front Extraction Tool
No. 58209-1 (Ref. IS 9185)

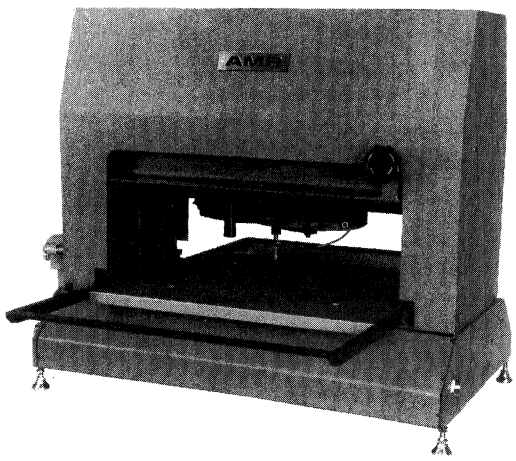
SM-10/20 Machine No. 803880-6

This machine is hydraulically operated with a capacity of 40,000 lbs [178,000 N]. Each contact requires 40 lbs [178 N] for insertion. Cycling time of 2 to 2½ seconds is adequate for AMP's largest connectors or multiple seating.



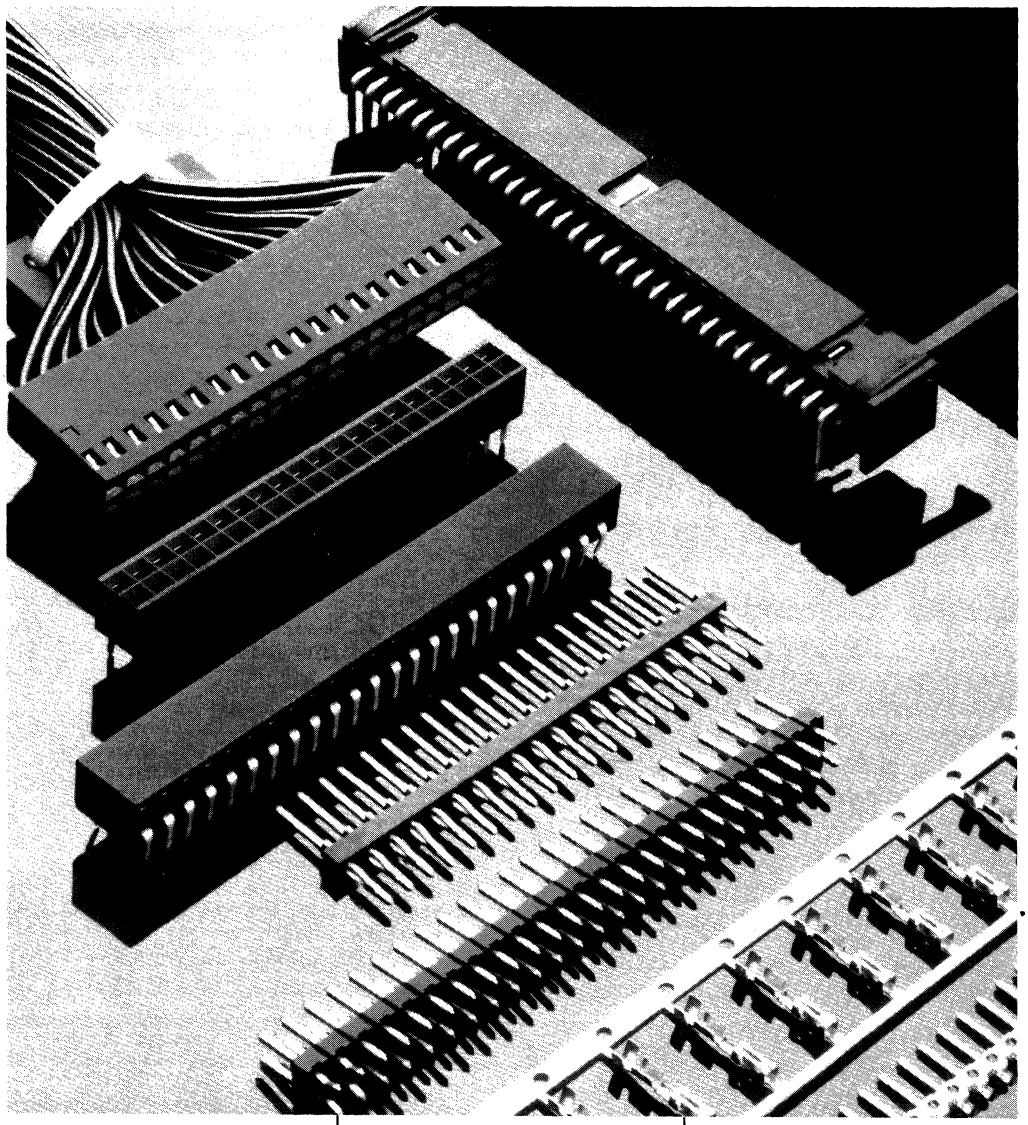
SM-3 Machine No. 814700-2

This machine is air powered with a capacity of 6000 lbs [26,700 N]. Each contact requires 40 lbs [178 N] for insertion. It utilizes .750 [19.05] thick board support fixtures and has adjustable seating force. It also has a board sensing feature to compensated for board thickness variations. The machine has the capability of processing boards up to 20 [508] wide and all but the largest connectors. Connectors up to 150 positions can be seated using the SM-3 machine. Cycling time is 4 seconds.



AMPMODU .025 Square Interconnection System

Specifications subject to change.
For latest design specifications...
1-800-522-6752



The AMPMODU interconnection system provides interconnections with a unique modular concept, utilizing precision formed receptacles and mating posts.

Mating of the post and receptacle of this system is very tolerant. This is made possible by a post with a burr-free lead in and a receptacle featuring double cantilever beams and anti-overstress stops.

AMPMODU receptacles and posts categorically fall into three general classifications of products, which include: board mounted posts and receptacle assemblies, posted header assemblies and wire-applied contact housings for crimp snap-in pin and receptacle contacts.

Board mounted receptacle assemblies are available in various geometries, offering packaging interconnections that include perpendicular, parallel and stacking capabilities.

Crimp snap-in pins for 26-22 AWG wire and crimp snap-in receptacles for 32-20 AWG wire provide excellent discrete wire terminations. Housings for these contacts provide ease of handling terminations in high density applications.

Machine applied terminations, through matched application equipment, are geared for virtually any production volume requirement, assuring the lowest possible applied cost.

AMPMODU mating posts are supplied typically as header assemblies. They are available in various populations to meet the interconnection and packaging requirements of your system. However, in instances where packaging configurations do not lend themselves to the economies of header assemblies, AMP can provide application equipment for the discrete location of individual posts.

Looking at the electronic industry's standard "levels of packaging," the AMPMODU .025 square interconnection system is primarily used in levels three and four.

In level three it is used as a connection between two or more printed circuits. A mother/daughter board connection is typical. In level four it is used as a connection between two subassemblies, such as a power supply and an associated subassembly.

It is also important to note this product can serve as an interconnection in more than one level, depending on the application.

The .025 square interconnection system offers the most complete line of post/receptacle packaging products available today. This system, rated at 3 amperes per contact, has been used by almost every industry and marketplace over the last decade and is one of the oldest, most versatile and reliable interconnection systems employing .025 square packaging technology.

Mating Post Selection Guide

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

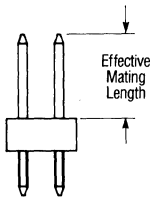
The following selection guide is provided to help in choosing a mating product after a receptacle, header or post has been selected.

In some instances references are given on the catalog page to specific mating connectors. In other instances the reader is referred here to the selection guide for mating product recommendations.

If your application requirement is not answered here, consult AMP Incorporated for further recommendations.

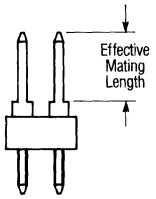
Posts Without Shoulder

For drawn wire products (ie, AMPMODU Breakaway and Low Profile Headers) and for products having the shoulder of the post below the housing or pc board surface (ie, AMPMODU MTE and Single Row Shrouded Headers) the effective mating length starts at the housing or pc board surface.



Posts With Shoulder

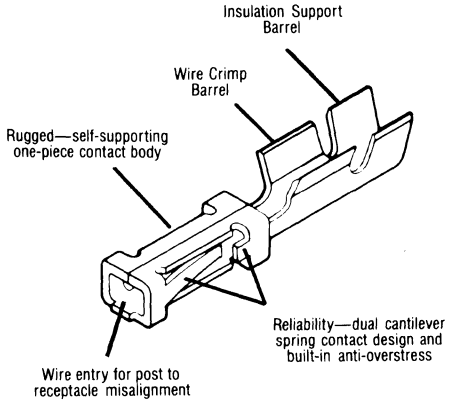
For product having the shoulder of the post extending above the housing or pc board surface (ie, Standard AMPMODU Shrouded and Unshrouded Headers) the effective mating length starts at the top of the shoulder.



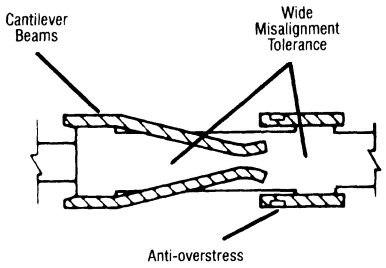
Receptacle Type		Recommended Effective Mating Post Lengths	
		Minimum	Maximum
AMPMODU Mod. II Horizontal Board Mount Receptacle, Double Row, Short Point-of-Contact—page 3147		.230	.280
AMPMODU Mod. II Vertical Board Mount Receptacle, Single Row, Standard Profile, Top Entry - page 3149		.207	.330
AMPMODU Mod. II Vertical Board Mount Receptacle, Standard Profile, Double Row, Top Entry - pages 3150 & 3151	.100 x .100 Mt.	.207	.330
	.100 x .150 Mt.	.207	*
AMPMODU Mod. IV Vertical Board Mount Receptacle, Low Profile, Single Row, Top Entry—page 3152	Single Tine	.203	.255
	Dual Tine	.220	*
AMPMODU Mod. IV Vertical Board Mount Receptacle, Low Profile, Single Row, Bottom Entry - page 3153		.280	*
AMPMODU Mod. IV Vertical Board Mount Receptacle, Low Profile, Double Row, Top Entry—pages 3154 & 3155	535542 Series	.203	*
	534998 Series	.203	.255
AMPMODU Mod. IV Vertical Board Mount Receptacle, Low Profile, Double Row, Bottom Entry - page 3156		.280	*
AMPMODU Mod. II Edge Mount Receptacle, Standard Profile, Double Row—page 3157		.253	.330
AMPMODU .600 Mod. IV Housing with Standard Pressure Contact—pages 3159 - 3172		.210	.283
AMPMODU .600 Mod. IV Housing with Intermediate Pressure Contact—pages 3159 - 3172		.205	.283
AMPMODU .600 Mod. IV Housing with High Pressure Contact—pages 3159 - 3172		.185	.283
AMPMODU .645 or .545 Mod. IV Housing with Standard Pressure Contact—pages 3160, 3161, 3164, 3165, 3170, 3171 & 3173		.256	.323

*Maximum post length is determined by customer's application (ie, available space beyond rear of horizontal receptacle assembly, or above bottom entry vertical receptacle assembly).

Receptacle Type		Recommended Effective Mating Post Lengths	
		Minimum	Maximum
AMPMODU .645 or .545 Mod. IV Housing with Intermediate Pressure Contact—pages 3160, 3161, 3164, 3165, 3170, 3172 & 3173		.251	.323
AMPMODU .645 or .545 Mod. IV Housing with High Pressure Contact pages 3160, 3161, 3164, 3165, 3170, 3172 & 3173		.231	.323
AMPMODU Mod. III Housing with Contact—Catalog 82187		.225	.323
AMPMODU MT IDC Assembly with Standard Pressure Contact—Catalog 82104		.222	.273
AMPMODU MT IDC Assembly with High Pressure Contact—Catalog 82104		.200	.273
AMPMODU MTE IDC Assembly with Standard Pressure Contact—Catalog 82160		.200	.250
Locking Clip Housing with Contact—pages 3175-3177		.273	.350
Locking Clip Contact without Housing—page 3175		.200	.277
Flexible Flat Conductor Cable Receptacle with Round Wire Crimp High Pressure Contact—Catalog 82007	Single Row	.267	.323
	Double Row	.282	.323
Flexible Flat Conductor Cable Receptacle with Multiple Crimp High Pressure Contact—Catalog 82007	Single Row.	.210	.323
	Double Row	.225	.323
Flexible Flat Conductor Cable Receptacle with Round Wire Crimp Standard Pressure Contact—Catalog 82007	Single Row	.267	.323
	Double Row	.282	.323
Flexible Flat Conductor Cable Receptacle with Multiple Crimp Standard Pressure Contact—Catalog 82007	Single Row	.220	.323
	Double Row	.235	.323
AMP-LATCH Standard Receptacles—Catalog 82012		.230	.323
AMP-LATCH Novo Receptacles—Catalog 82013		.190	.245



Offers standard, intermediate and high contact forces



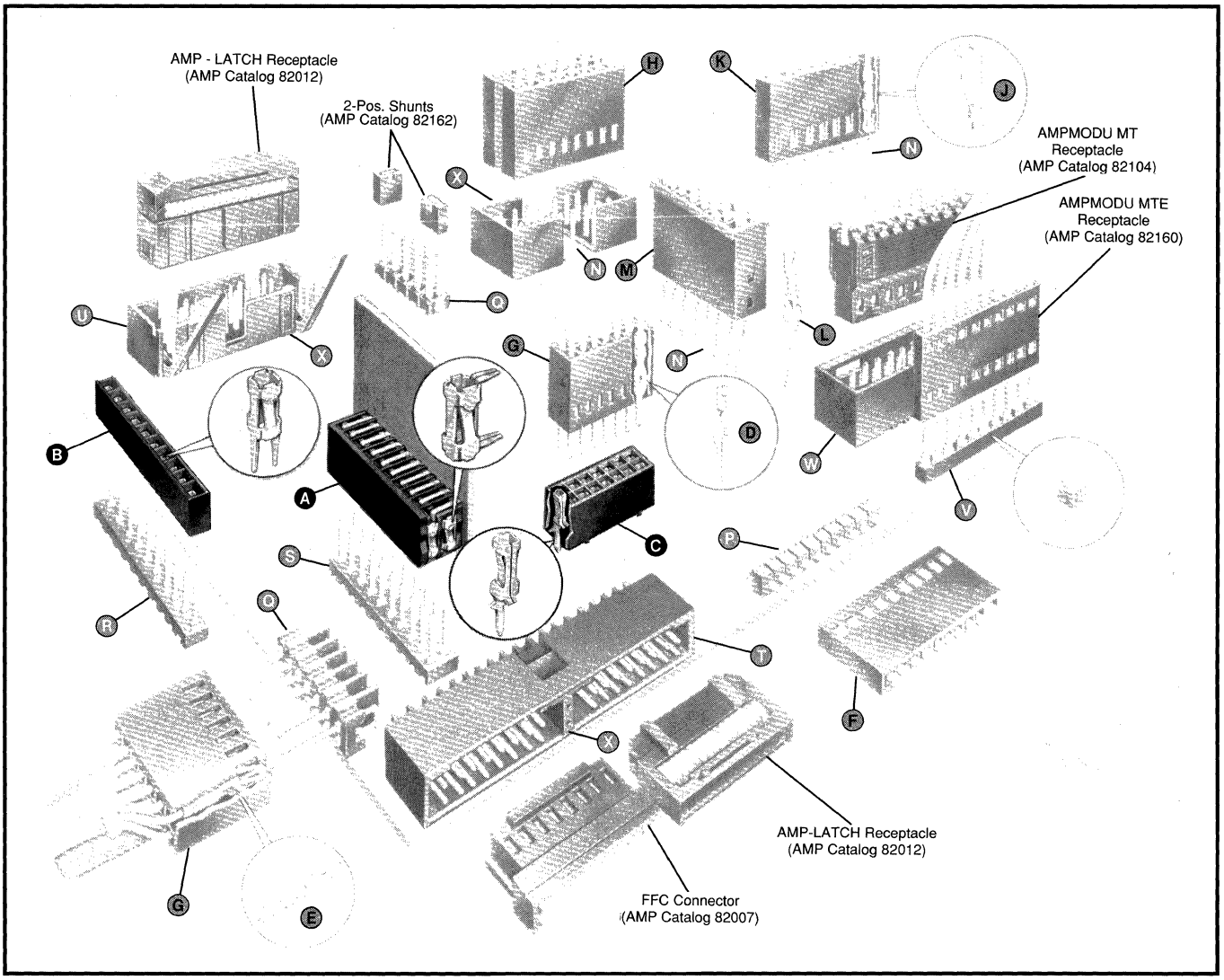
The AMPMODU receptacle cross-section is primarily rectangular, with rounded corners. Two integral cantilever beams contact the mating square male posts. Deflection of these spring members is limited by anti-overstress and excessive permanent deformation is prevented. This feature allows a wide range for tolerance of misalignment of mating contacts.

The configuration of the receptacle completely encloses the spring members preventing damage during handling and assembly and makes the system compatible with automatic application techniques.

Note: Application of a contact lubricant is part of the manufacturing process of all AMPMODU tin-plated crimp products. However, it is not part of the manufacturing process of products that customers will solder, then clean. For these products, AMP recommends that customers use the contact lubricant. The contact lubricant may be purchased using the following part numbers.

Part Numbers

561232-1, 8 oz. aerosol can
561232-4, 1 qt. bulk can


AMP - LATCH Receptacle
(AMP Catalog 82012)
2-Pos. Shunts
(AMP Catalog 82162)
AMPMODU MT
Receptacle
(AMP Catalog 82104)
AMPMODU MTE
Receptacle
(AMP Catalog 82160)
AMP-LATCH Receptacle
(AMP Catalog 82012)
FFC Connector
(AMP Catalog 82007)

Ⓐ Mod. II Horizontal Board Mount Receptacle Assemblies, Double Row, .100 x .100 Centers (page 3147).

Ⓑ Mod. II and Mod. IV Vertical Board Mount Receptacle Assemblies, Single Row, .100 Centers (pages 3149, 3152 and 3153).

Ⓒ Mod. II and Mod. IV Vertical Board Mount Receptacle Assemblies, Double Row, .100 x .100 Centers (pages 3150, 3151 and 3154 thru 3156), Double Row (.100 x .100 Centers) edge mount version also available, see page 3157.

Ⓓ Mod. IV Pin Contacts for Wire-Applied Housings, Crimp Snap-In (page 3159).

Ⓔ Mod. IV Receptacle Contacts for Wire-Applied Housings, Crimp Snap-In; Standard, Intermediate and High Pressure Applications (pages 3160 and 3161). No-strip and special type receptacle contacts also available, see page 3159.

Ⓕ Mod. IV Wire-Applied Housings, Single Row; .100 Centers (pages 3162 and 3163), .125 Centers (page 3170), .150 Centers (page 3172).

Ⓖ Mod. IV Wire-Applied Housings, Double Row; .100 x .100 Centers (pages 3164 thru 3168), .100 x .200 Centers (page 3169), .125 x .125 Centers (page 3170), .150 x .150 Centers (page 3173), Triple row (.100 grid) also available, see page 3169.

Ⓗ Mod. IV Wire-Applied Housings, Double Row, .125 x .250 Centers (page 3171).

Ⓙ Mod. III Receptacle Contacts for Wire-Applied Housings, Crimp Snap-In; High Current/High Pressure Applications (see AMP Catalog 82187).

Ⓚ Mod. III Wire-Applied Housings, Single Row, .125 Centers (see AMP Catalog 82187).

Ⓛ Locking Clip Contacts, Wire Crimp (page 3175).

Ⓜ Wire-Applied Housings for Locking Clip Contacts; Single Row, .100 Centers (pages 3176 and 3177), Double Row, .100 x .100 Centers (pages 3176 and 3177).

Ⓝ Uninsulated Posts, Bandolier and Machine-Applied (page 3178).

Ⓟ Breakaway Headers (Unshrouded), Straight and Right-Angle Post, Single Row, .100 Centers (pages 3180 thru 3183).

Ⓠ Breakaway Headers (Unshrouded), Straight and Right-Angle Post, Double Row, .100 x .100 Centers (pages 3184 thru 3187).

Ⓡ Standard Headers (Unshrouded), Straight and Right-Angle Post, Single Row, .100 Centers (pages 3192 and 3193).

Ⓢ Standard Headers (Unshrouded), Straight and Right-Angle Post, Double Row, .100 x .100 Centers (pages 3194 and 3195). Triple Row (.100 grid) also available, see page 3196.

Ⓣ Standard Profile Headers (Shrouded), Straight and Right-Angle Post; Single Row, .100 Centers (pages 3198 and 3199); Double Row, .100 x .100 Centers (pages 3200 thru 3211).

Ⓤ Low Profile Headers (Shrouded), Straight and Right-Angle Post, Double Row, .100 x .100 Centers, with and without latches (see AMP Catalog 82187).

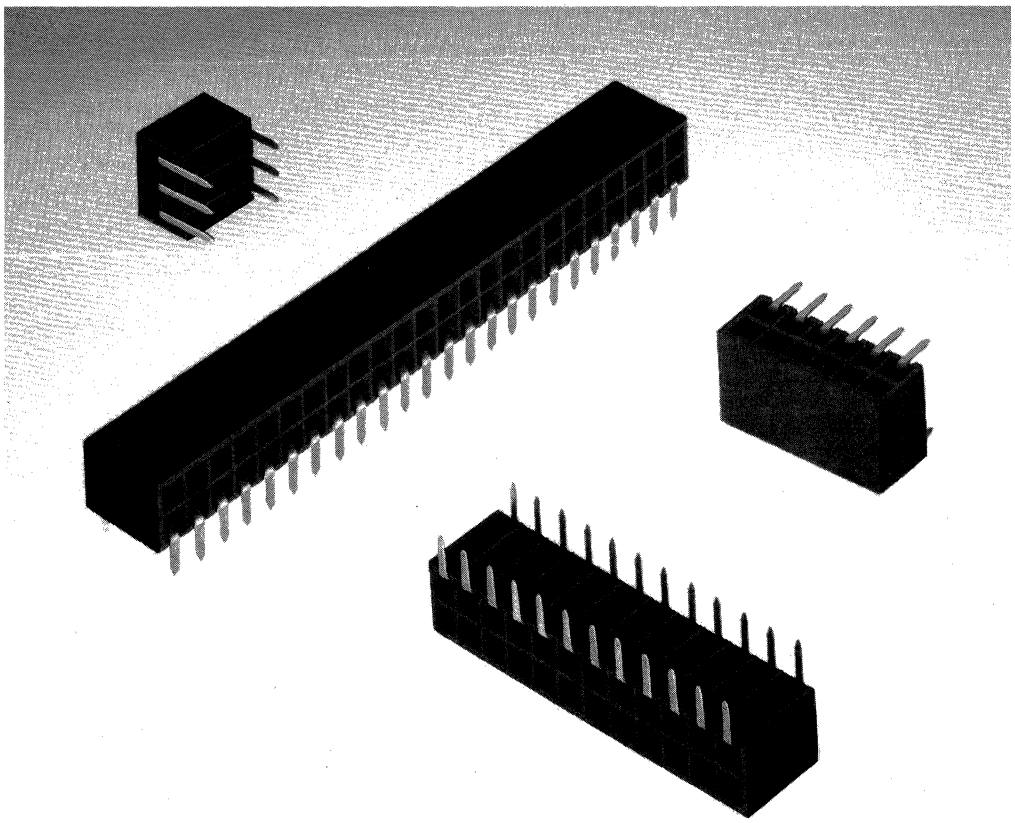
Ⓥ ACTION PIN Headers (Unshrouded), Straight Post, Single Row, .100 x .100 Centers (page 3214); Double Row, .100 x .100 Centers (page 3215).

Ⓦ ACTION PIN Headers (Shrouded), Straight Post Double Row, .100 x .100 Centers (pages 3216 thru 3218).

Ⓧ Accessories; End Shrouds (page 3219), Barrier Insert (page 3220).

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Receptacle Assemblies, Horizontal Mount



Product Facts

- Contact design employs dual cantilever beams with built-in anti-overstress feature
- Closed entry housings prevent post stubbing
- Wide range of sizes available, 4 thru 130 positions
- Single-row and other versions available upon request
- Housings made of high temperature flame retardant glass-filled thermoplastic material, 94V-0 rated
- Duplex gold and bright tin-lead plated contacts have full nickel underplate
- Housings feature pc board standoffs
- Solder tails accommodate a pc board thickness of .062
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455

Performance Characteristics:

Mechanical Characteristics

Insertion Force—6.0 oz. per contact (max.)

Withdrawal Force—1.0 oz. per contact (min.)

Durability—Tested at 200 cycles

Environmental Characteristics:

Operating Temperature— −65°C to +125°C

Electrical Characteristics

Current Rating—3.0 amperes (max.) for single contact; 2.0 amperes (max.) per contact when connector is fully energized

Contact Resistance—12 milliohms (max.)

Insulation resistance—5000 megohms (min.) between adjacent contacts

Dielectric Withstanding Voltage (at sea level)—750 V rms

Mod. II Receptacle Assemblies Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Closed Entry, Short Point-of-Contact, with Standoffs

Material:

Housing—Black high temperature glass-filled thermoplastic, flame retardant

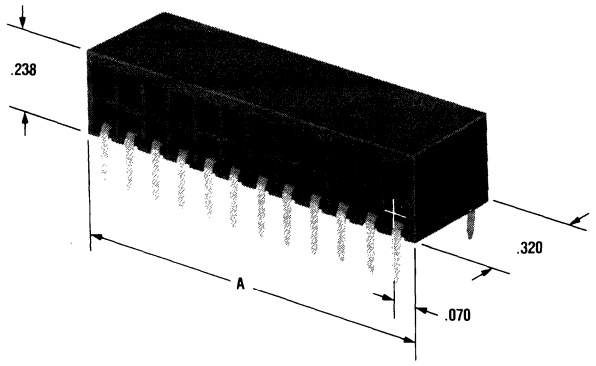
Contacts—Phosphor bronze, duplex plated .000030 gold on contact area, .000050-.000100 bright tin-lead on solder area, with entire receptacle underplated .000050 nickel

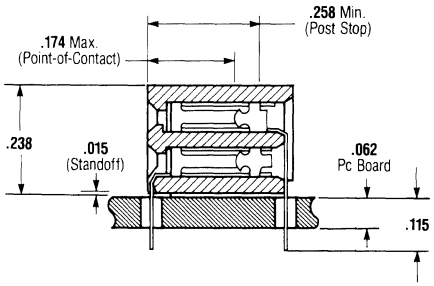
Related Product Data:

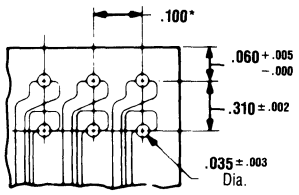
Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

Performance Characteristics - page 3146

Technical Documents - page 3223







Recommended Pc Board Hole Layout

* ±.003 tolerances not to accumulate within one connector pattern.

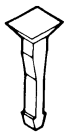
No. of Pos.	A Dim.	Part Numbers
4	.240	6-535512-1
6	.340	6-535512-2
8	.440	6-535512-3
10	.540	6-535512-4
12	.640	535512-1
14	.740	1-535512-7
16	.840	1-535512-8
18	.940	1-535512-6
20	1.040	535512-2
22	1.140	1-535512-9
24	1.240	535512-3
26	1.340	2-535512-0
28	1.440	2-535512-1
30	1.540	2-535512-2
32	1.640	2-535512-3
34	1.740	535512-4
36	1.840	535512-5
38	1.940	2-535512-4
40	2.040	2-535512-5
42	2.140	2-535512-6
44	2.240	535512-6
46	2.340	2-535512-7
48	2.440	1-535512-5
50	2.540	535512-7
52	2.640	2-535512-8
54	2.740	535512-8
56	2.840	535512-9
58	2.940	2-535512-9
60	3.040	3-535512-0
62	3.140	3-535512-1
64	3.240	3-535512-2
66	3.340	3-535512-3

No. of Pos.	A Dim.	Part Numbers
68	3.440	3-535512-4
70	.3.540	1-535512-0
72	3.640	3-535512-5
74	3.740	3-535512-6
76	3.840	1-535512-1
78	3.940	1-535512-2
80	4.040	1-535512-3
82	4.140	3-535512-7
84	4.240	3-535512-8
86	4.340	3-535512-9
88	4.440	4-535512-0
90	4.540	4-535512-1
92	4.640	4-535512-2
94	4.740	4-535512-3
96	4.840	4-535512-4
98	4.940	4-535512-5
100	5.040	4-535512-6
102	5.140	4-535512-7
104	5.240	4-535512-8
106	5.340	4-535512-9
108	5.440	5-535512-0
110	5.540	5-535512-1
112	5.640	5-535512-2
114	5.740	5-535512-3
116	5.840	5-535512-4
118	5.940	5-535512-5
120	6.040	5-535512-6
122	6.140	5-535512-7
124	6.240	1-535512-4
126	6.340	5-535512-8
128	6.440	5-535512-9
130	6.540	6-535512-0

Notes: 1. AMP, part number, date code and word "front" stamped on housing where size permits.
2. AMP recommends mating gold or duplex plated headers with duplex plated receptacles.

Keying Plug

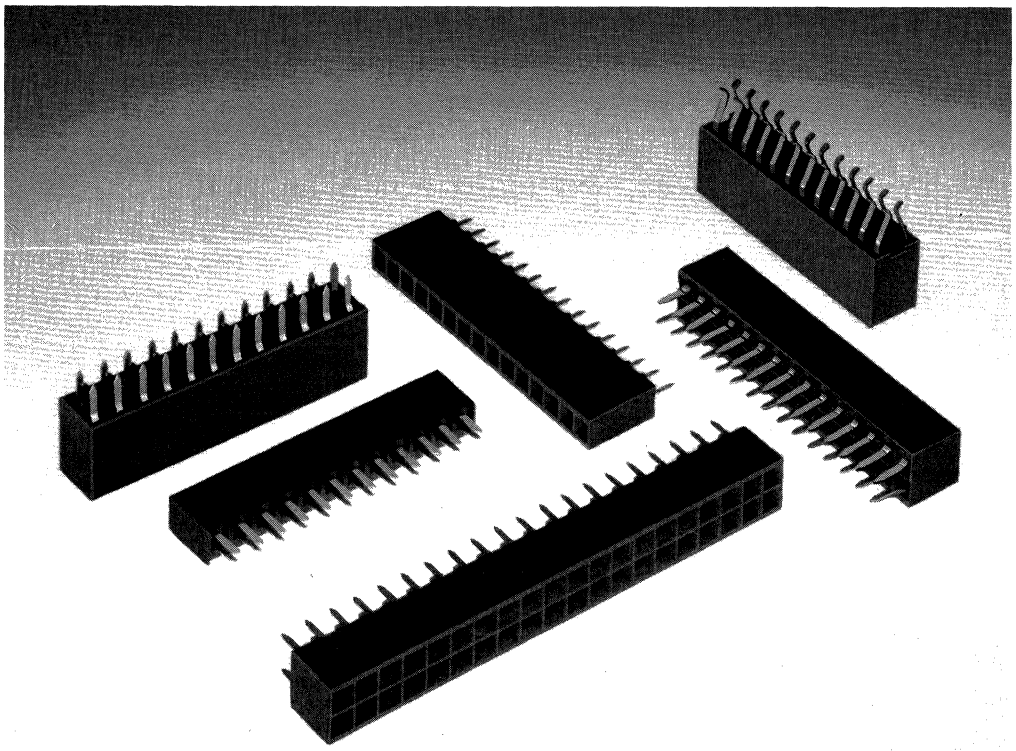
Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

Receptacle Assemblies, Vertical and Edge Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Performance Characteristics:

Mechanical Characteristics

Insertion Force—6.0 oz. per contact (max.)

Withdrawal Force—1.0 oz. per contact (min.)

Durability—Tested at 200 cycles

Environmental Characteristics:

Operating Temperature—
Glass-filled polyester— – 65°C to + 125°C
Glass-filled nylon— – 65°C to + 105°C

Electrical Characteristics

Current Rating—3.0 amperes (max.) for single contact; 2.0 amperes (max.) per contact when connector is fully energized

Contact Resistance—12 milliohms (max.)

Insulation resistance—5000 megohms (min.) between adjacent contacts

Dielectric Withstanding Voltage (at sea level)—750 V rms

Product Facts

- Dual-cantilever beam contact with box design and anti-overstress protection
- Single-row assemblies have .100 centerline contact spacing; double-row assemblies have .100 x .100 centerline contact spacing
- 3 through 40 positions in single-row assemblies; 2 through 80 positions in double-row assemblies
- Mod. II Standard (.340) and Mod. IV low (.265) profiles
- Available as a card extender connector for pc board edge mounting
- Mod. II standard profile available in top entry
- Mod. IV low profile available in top and bottom entry
- Duplex gold and bright tin-lead plated contacts have full nickel underplate
- Glass-filled polyester or nylon flame retardant housings
- Standoffs for easy flux cleaning
- All assemblies are end stackable
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455

Mod. II Receptacle Assemblies Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Closed Top Entry, End Stackable, with Single Tine Contacts

Material:

Housing—Black glass-filled polyester, flame retardant

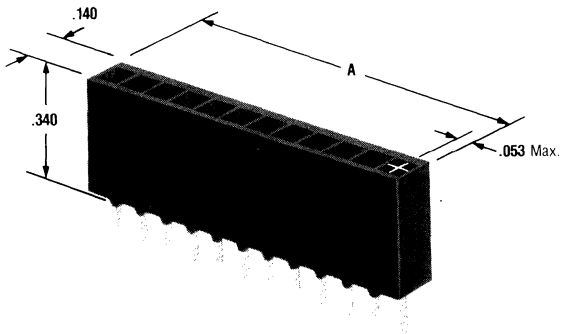
Contacts—Phosphor bronze, duplex plated .000030 gold on contact area, .000050-.000100 bright tin-lead on solder area, with entire receptacle underplated .000050 nickel

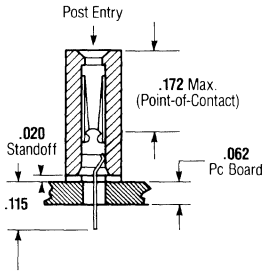
Related Product Data:

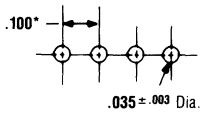
Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

Performance Characteristics - page 3146

Technical Documents - page 3223







Recommended Pc Board Hole Layout

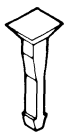
* ±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Part Numbers	No. of Pos.	A Dim.	Part Numbers
3	.300	534237-1	22	2.200	2-534237-0
4	.400	534237-2	23	2.300	2-534237-1
5	.500	534237-3	24	2.400	2-534237-2
6	.600	534237-4	25	2.500	2-534237-3
7	.700	534237-5	26	2.600	2-534237-4
8	.800	534237-6	27	2.700	2-534237-5
9	.900	534237-7	28	2.800	2-534237-6
10	1.000	534237-8	29	2.900	2-534237-7
11	1.100	534237-9	30	3.000	2-534237-8
12	1.200	1-534237-0	31	3.100	2-534237-9
13	1.300	1-534237-1	32	3.200	3-534237-0
14	1.400	1-534237-2	33	3.300	3-534237-1
15	1.500	1-534237-3	34	3.400	3-534237-2
16	1.600	1-534237-4	35	3.500	3-534237-3
17	1.700	1-534237-5	36	3.600	3-534237-4
18	1.800	1-534237-6	37	3.700	3-534237-5
19	1.900	1-534237-7	38	3.800	3-534237-6
20	2.000	1-534237-8	39	3.900	3-534237-7
21	2.100	1-534237-9	40	4.000	3-534237-8

Notes: 1. AMP part number and date code stamped on housing where size permits.
2. AMP recommends mating gold or duplex plated headers with duplex plated receptacles.

Keying Plug

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

Mod. II Receptacle Assemblies Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Closed Top Entry, .100 x .150 Mounting Pattern

Material:

Housing—Black glass-filled polyester, flame retardant

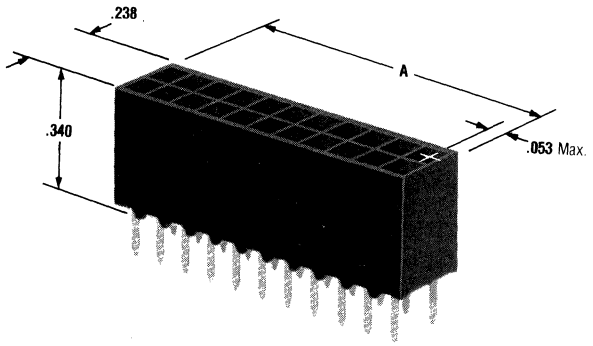
Contacts—Phosphor bronze, duplex plated .000030 gold on contact area, .000050-.000100 bright tin-lead on solder area, with entire receptacle underplated .000050 nickel

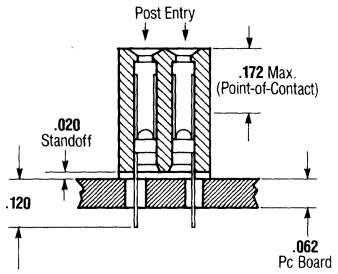
Related Product Data:

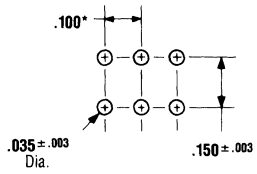
Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

Performance Characteristics - page 3146

Technical Documents - page 3223





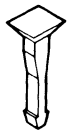


Recommended Pc Board Hole Layout

* ±.003 tolerances not to accumulate within one connector pattern.

Keying Plug

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

No. of Pos.	A Dim.	Part Numbers
2	.100	534236-1
4	.200	534236-2
6	.300	534236-3
8	.400	534236-4
10	.500	534236-5
12	.600	534236-6
14	.700	534236-7
16	.800	534236-8
18	.900	534236-9
20	1.000	1-534236-0
22	1.100	1-534236-1
24	1.200	1-534236-2
26	1.300	1-534236-3
28	1.400	1-534236-4
30	1.500	1-534236-5
32	1.600	1-534236-6
34	1.700	1-534236-7
36	1.800	1-534236-8
38	1.900	1-534236-9
40	2.000	2-534236-0

No. of Pos.	A Dim.	Part Numbers
42	2.100	2-534236-1
44	2.200	2-534236-2
46	2.300	2-534236-3
48	2.400	2-534236-4
50	2.500	2-534236-5
52	2.600	2-534236-6
54	2.700	2-534236-7
56	2.800	2-534236-8
58	2.900	2-534236-9
60	3.000	3-534236-0
62	3.100	3-534236-1
64	3.200	3-534236-2
66	3.300	3-534236-3
68	3.400	3-534236-4
70	3.500	3-534236-5
72	3.600	3-534236-6
74	3.700	3-534236-7
76	3.800	3-534236-8
78	3.900	3-534236-9
80	4.000	4-534236-0

Notes: 1. AMP part number and date code stamped on housing where size permits.
2. AMP recommends mating gold or duplex plated headers with duplex plated receptacles.

Mod. II Receptacle Assemblies Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Closed Top Entry, .100 x .100 Mounting Pattern

Material:

Housing—Black glass-filled polyester, flame retardant

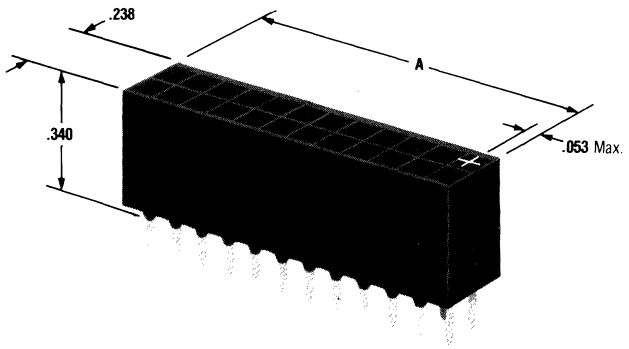
Contacts—Phosphor bronze, duplex plated .000030 gold on contact area, .000050-.000100 bright tin-lead on solder area, with entire receptacle underplated .000050 nickel

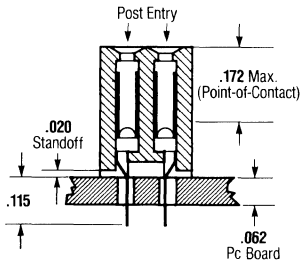
Related Product Data:

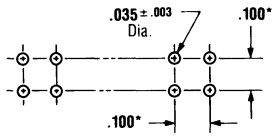
Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

Performance Characteristics - page 3146

Technical Documents - page 3223







Recommended Pc Board Hole Layout

* ± .003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Part Numbers
2	.100	534206-1
4	.200	534206-2
6	.300	534206-3
8	.400	534206-4
10	.500	534206-5
12	.600	534206-6
14	.700	534206-7
16	.800	534206-8
18	.900	534206-9
20	1.000	1-534206-0
22	1.100	1-534206-1
24	1.200	1-534206-2
26	1.300	1-534206-3
28	1.400	1-534206-4
30	1.500	1-534206-5
32	1.600	1-534206-6
34	1.700	1-534206-7
36	1.800	1-534206-8
38	1.900	1-534206-9
40	2.000	2-534206-0

No. of Pos.	A Dim.	Part Numbers
42	2.100	2-534206-1
44	2.200	2-534206-2
46	2.300	2-534206-3
48	2.400	2-534206-4
50	2.500	2-534206-5
52	2.600	2-534206-6
54	2.700	2-534206-7
56	2.800	2-534206-8
58	2.900	2-534206-9
60	3.000	3-534206-0
62	3.100	3-534206-1
64	3.200	3-534206-2
66	3.300	3-534206-3
68	3.400	3-534206-4
70	3.500	3-534206-5
72	3.600	3-534206-6
74	3.700	3-534206-7
76	3.800	3-534206-8
78	3.900	3-534206-9
80	4.000	4-534206-0

Notes: 1. AMP part number and date code stamped on housing where size permits.
2. AMP recommends mating gold or duplex plated headers with duplex plated receptacles.

Keying Plug

Material: Natural color nylon

Part No. 86286-1
(Plugs into receptacle contact)

Mod. IV Receptacle Assemblies Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Closed Top Entry, End Stackable, Low Profile, with Single or Dual Tine Contacts

Material:

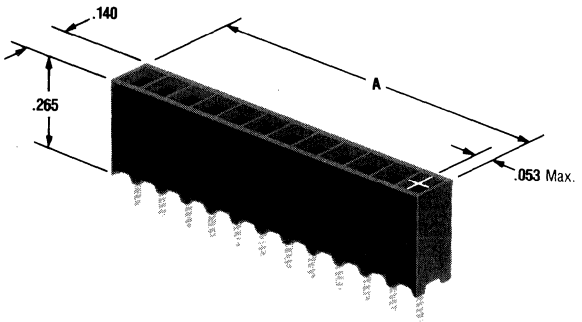
Housing—
Single Tine—Black glass-filled polyester, flame retardant
Dual Tine—Black glass-filled nylon, flame retardant
Contacts—Phosphor bronze

Related Product Data:

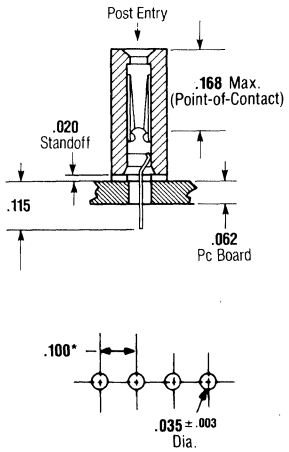
Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142
Performance Characteristics - page 3146
Technical Documents - page 3223

Plating Specifications:

Duplex B—.000030 gold on contact area, .000050-.000100 bright tin-lead on solder area, with entire receptacle underplated .000050 nickel
Sel. Gold/Nickel A—Gold flash over .000050 nickel on entire receptacle, with additional .000030 gold on contact area

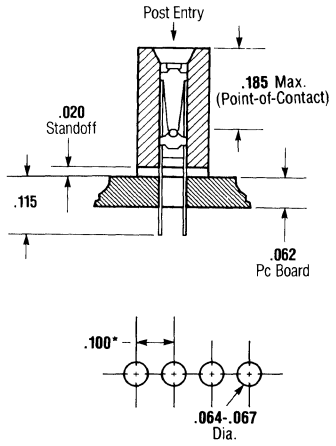


Single Tine



Recommended Pc Board Hole Layout

Dual Tine



Recommended Pc Board Hole Layout

* ± .003 tolerances not to accumulate within one connector pattern.

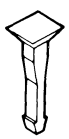
No. of Pos.	A Dim.	Part Numbers: Single Tine Duplex B Plated	Part Numbers: Dual Tine Sel. Gold/Nickel A Plated
3	.300	535541-1	3-87334-7
4	.400	535541-2	3-87334-6
5	.500	535541-3	—
6	.600	535541-4	87334-1
7	.700	535541-5	1-87334-9
8	.800	535541-6	87334-2
9	.900	535541-7	2-87334-0
10	1.000	535541-8	87334-3
11	1.100	535541-9	2-87334-1
12	1.200	1-535541-0	87334-4
13	1.300	1-535541-1	2-87334-2
14	1.400	1-535541-2	87334-5
15	1.500	1-535541-3	2-87334-3
16	1.600	1-535541-4	87334-6
17	1.700	1-535541-5	2-87334-4
18	1.800	1-535541-6	87334-7
19	1.900	1-535541-7	—
20	2.000	1-535541-8	87334-8
21	2.100	1-535541-9	2-87334-6

No. of Pos.	A Dim.	Part Numbers: Single Tine Duplex B Plated	Part Numbers: Dual Tine Sel. Gold/Nickel A Plated
22	2.200	2-535541-0	87334-9
23	2.300	2-535541-1	—
24	2.400	2-535541-2	1-87334-0
25	2.500	2-535541-3	2-87334-8
26	2.600	2-535541-4	1-87334-1
27	2.700	2-535541-5	2-87334-9
28	2.800	2-535541-6	1-87334-2
29	2.900	2-535541-7	3-87334-0
30	3.000	2-535541-8	1-87334-3
31	3.100	2-535541-9	3-87334-1
32	3.200	3-535541-0	—
33	3.300	3-535541-1	3-87334-2
34	3.400	3-535541-2	1-87334-5
35	3.500	3-535541-3	—
36	3.600	3-535541-4	1-87334-6
37	3.700	3-535541-5	3-87334-4
38	3.800	3-535541-6	—
39	3.900	3-535541-7	3-87334-5
40	4.000	3-535541-8	1-87334-8

Notes: 1. AMP part number and date code stamped on housing where size permits.
2. AMP recommends mating gold or duplex plated headers with select gold plated receptacles.

Keying Plug

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

Mod. IV Receptacle Assemblies Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Bottom Entry, End Stackable, Low Profile, with Dual Tine Contacts

Material:

Housing—Black glass-filled nylon, flame retardant

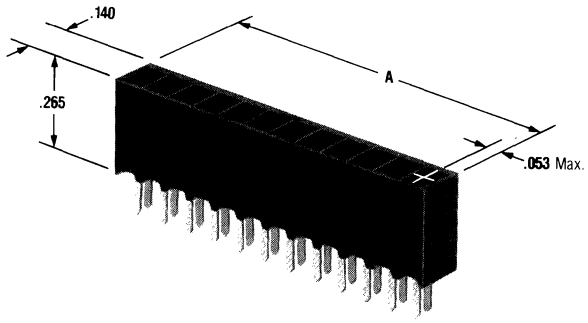
Contacts—Phosphor bronze, plated gold flash over .000050 nickel on entire receptacle, with additional .000030 gold on contact area

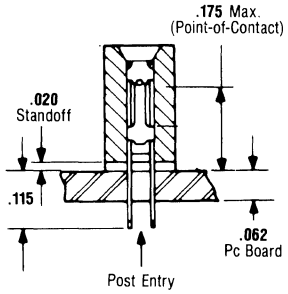
Related Product Data:

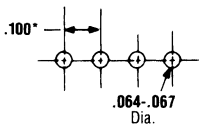
Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

Performance Characteristics - page 3146

Technical Documents - page 3223







Recommended Pc Board Hole Layout

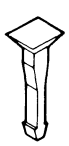
* ±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Part Numbers
3	.300	3-87879-7
4	.400	3-87879-6
6	.600	87879-3
7	.700	87879-4
8	.800	87879-1
9	.900	87879-5
10	1.000	87879-2
11	1.100	87879-6
12	1.200	87879-7
13	1.300	87879-8
14	1.400	87879-9
15	1.500	1-87879-0
16	1.600	1-87879-1
17	1.700	1-87879-2
18	1.800	1-87879-3
20	2.000	1-87879-5
22	2.200	1-87879-7
24	2.400	1-87879-9
25	2.500	2-87879-0
26	2.600	2-87879-1
27	2.700	2-87879-2
30	3.000	2-87879-5
31	3.100	2-87879-6
34	3.400	2-87879-9
40	4.000	3-87879-5

Notes: 1. AMP part number and date code stamped on housing where size permits.
2. AMP recommends mating gold or duplex plated headers with select gold plated receptacles.

Keying Plug

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

Mod. IV Receptacle Assemblies Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Closed Top Entry, Low Profile

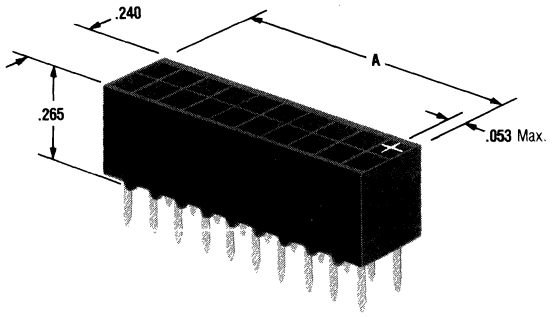
Material:

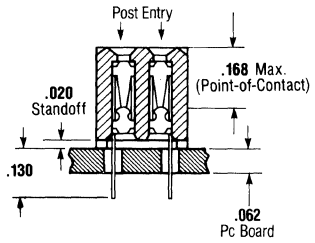
Housing—Black glass-filled polyester, flame retardant

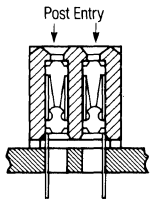
Contacts—Phosphor bronze, duplex plated .000030 gold on contact area, .000050-.000100 bright tin-lead on solder area, with entire receptacle underplated .000050 nickel

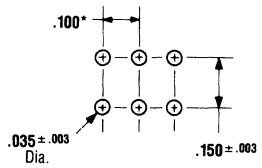
Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142
Performance Characteristics - page 3146
Technical Documents - page 3223

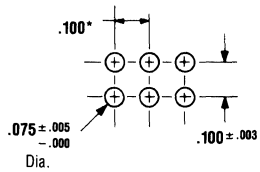








Recommended Pc Board Hole Layout Alternate
(Closed bottom)



Recommended Pc Board Hole Layout (For post tip clearance through board)

* ± .003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Part Numbers
2	.100	535542-1
4	.200	535542-2
6	.300	535542-3
8	.400	535542-4
10	.500	535542-5
12	.600	535542-6
14	.700	535542-7
16	.800	535542-8
18	.900	535542-9
20	1.000	1-535542-0
22	1.100	1-535542-1
24	1.200	1-535542-2
26	1.300	1-535542-3
28	1.400	1-535542-4
30	1.500	1-535542-5
32	1.600	1-535542-6
34	1.700	1-535542-7
36	1.800	1-535542-8
38	1.900	1-535542-9
40	2.000	2-535542-0

No. of Pos.	A Dim.	Part Numbers
42	2.100	2-535542-1
44	2.200	2-535542-2
46	2.300	2-535542-3
48	2.400	2-535542-4
50	2.500	2-535542-5
52	2.600	2-535542-6
54	2.700	2-535542-7
56	2.800	2-535542-8
58	2.900	2-535542-9
60	3.000	3-535542-0
62	3.100	3-535542-1
64	3.200	3-535542-2
66	3.300	3-535542-3
68	3.400	3-535542-4
70	3.500	3-535542-5
72	3.600	3-535542-6
74	3.700	3-535542-7
76	3.800	3-535542-8
78	3.900	3-535542-9
80	4.000	4-535542-0

Notes: 1. AMP part number and date code stamped on housing where size permits.
2. AMP recommends mating gold or duplex plated headers with duplex plated receptacles.

Keying Plug

Material: Natural color nylon

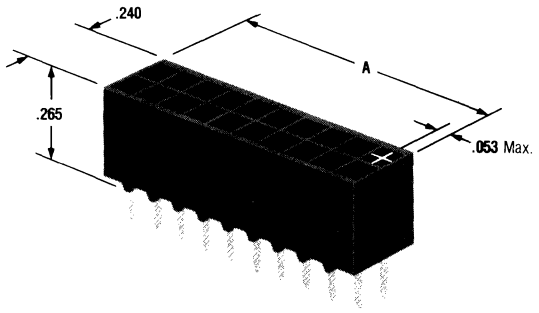
Part No. 86286-1
(Plugs into receptacle contact)

Mod. IV Receptacle Assemblies Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Closed Top Entry, Low Profile, .100 x .100 Mounting Pattern



Material:

Housing—Black glass-filled polyester, flame retardant

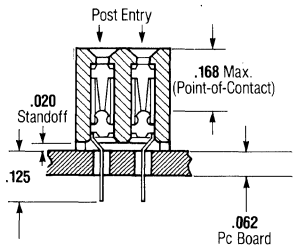
Contacts—Phosphor bronze, duplex plated .000030 gold on contact area, .000050-.000100 bright tin-lead on solder area, with entire receptacle underplated .000050 nickel

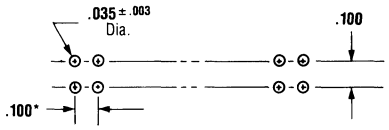
Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

Performance Characteristics - page 3146

Technical Documents - page 3223





Recommended Pc Board Hole Layout

* ± .003 tolerances not to accumulate within one connector pattern.

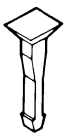
No. of Pos.	A Dim.	Part Numbers
2	.100	534998-1
4	.200	534998-2
6	.300	534998-3
8	.400	534998-4
10	.500	534998-5
12	.600	534998-6
14	.700	534998-7
16	.800	534998-8
18	.900	534998-9
20	1.000	1-534998-0
22	1.100	1-534998-1
24	1.200	1-534998-2
26	1.300	1-534998-3
28	1.400	1-534998-4
30	1.500	1-534998-5
32	1.600	1-534998-6
34	1.700	1-534998-7
36	1.800	1-534998-8
38	1.900	1-534998-9
40	2.000	2-534998-0

No. of Pos.	A Dim.	Part Numbers
42	2.100	2-534998-1
44	2.200	2-534998-2
46	2.300	2-534998-3
48	2.400	2-534998-4
50	2.500	2-534998-5
52	2.600	2-534998-6
54	2.700	2-534998-7
56	2.800	2-534998-8
58	2.900	2-534998-9
60	3.000	3-534998-0
62	3.100	3-534998-1
64	3.200	3-534998-2
66	3.300	3-534998-3
68	3.400	3-534998-4
70	3.500	3-534998-5
72	3.600	3-534998-6
74	3.700	3-534998-7
76	3.800	3-534998-8
78	3.900	3-534998-9
80	4.000	4-534998-0

Notes: 1. AMP part number and date code stamped on housing where size permits.
2. AMP recommends mating gold or duplex plated headers with duplex plated receptacles.

Keying Plug

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

Mod. IV Receptacle Assemblies Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Bottom Entry, Low Profile

Material:

Housing—Black glass-filled nylon, flame retardant

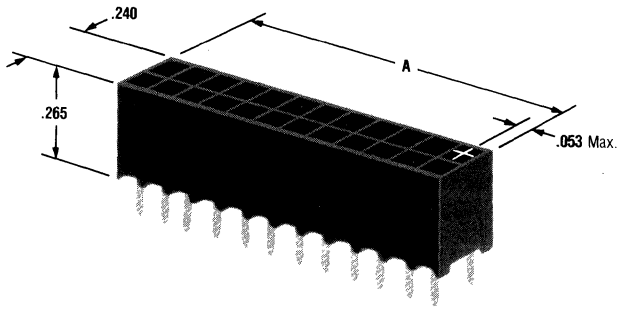
Contacts—Phosphor bronze, plated gold flash over .000050 nickel on entire receptacle, with additional .000030 gold on contact area

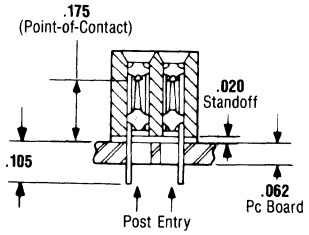
Related Product Data:

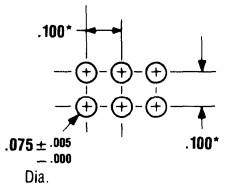
Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

Performance Characteristics - page 3146

Technical Documents - page 3223





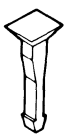


Recommended Pc Board Hole Layout

* ± .003 tolerances not to accumulate within one connector pattern.

Keying Plug

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

No. of Pos.	A Dim.	Part Numbers
2	.100	102261-1
4	.200	102261-2
6	.300	102261-3
8	.400	102261-4
10	.500	102261-5
12	.600	102261-6
14	.700	102261-7
16	.800	102261-8
18	.900	102261-9
20	1.000	1-102261-0
22	1.100	1-102261-1
24	1.200	1-102261-2
26	1.300	1-102261-3
28	1.400	1-102261-4
30	1.500	1-102261-5

No. of Pos.	A Dim.	Part Numbers
32	1.600	1-102261-6
34	1.700	1-102261-7
36	1.800	-1-102261-8
38	1.900	1-102261-9
40	2.000	2-102261-0
42	2.100	-2-102261-1
46	2.300	2-102261-3
50	2.500	2-102261-5
52	2.600	2-102261-6
56	2.800	2-102261-8
60	3.000	3-102261-0
64	3.200	3-102261-2
70	3.500	3-102261-5
72	3.600	3-102261-6
80	4.000	4-102261-0

Notes: 1. AMP part number and date code stamped on housing where size permits.
2. AMP recommends mating gold or duplex plated headers with select gold plated receptacles.

Mod. II Receptacle Assemblies Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Edge Mount, End Stackable

Material:

Housing—Brown glass-filled nylon, flame retardant

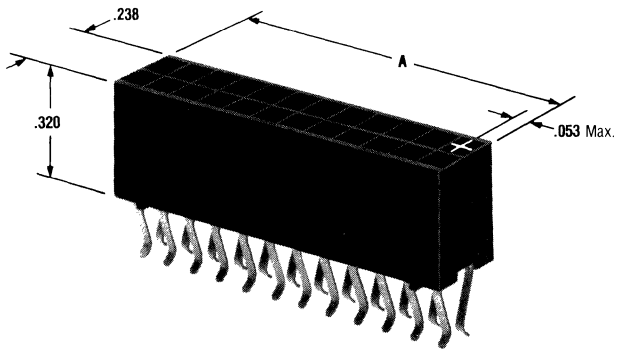
Contacts—Phosphor bronze, plated gold flash over .000050 nickel on entire receptacle, with additional .000030 gold on contact area

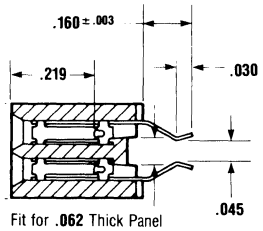
Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

Performance Characteristics - page 3146

Technical Documents - page 3223





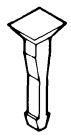
Fit for **.062** Thick Panel

No. of Pos.	A Dim.	Part Numbers
14	.700	1-87331-5
16	.800	87331-5
18	.900	2-87331-0
20	1.000	87331-4
24	1.200	1-87331-6
26	1.300	1-87331-7
28	1.400	87331-3
34	1.700	1-87331-8
40	2.000	87331-1
44	2.200	1-87331-2
50	2.500	87331-8
54	2.700	1-87331-9
60	3.000	1-87331-1

Notes: 1. AMP part number and date code stamped on housing where size permits.
2. AMP recommends mating gold or duplex plated headers with select gold plated receptacles.

Keying Plug

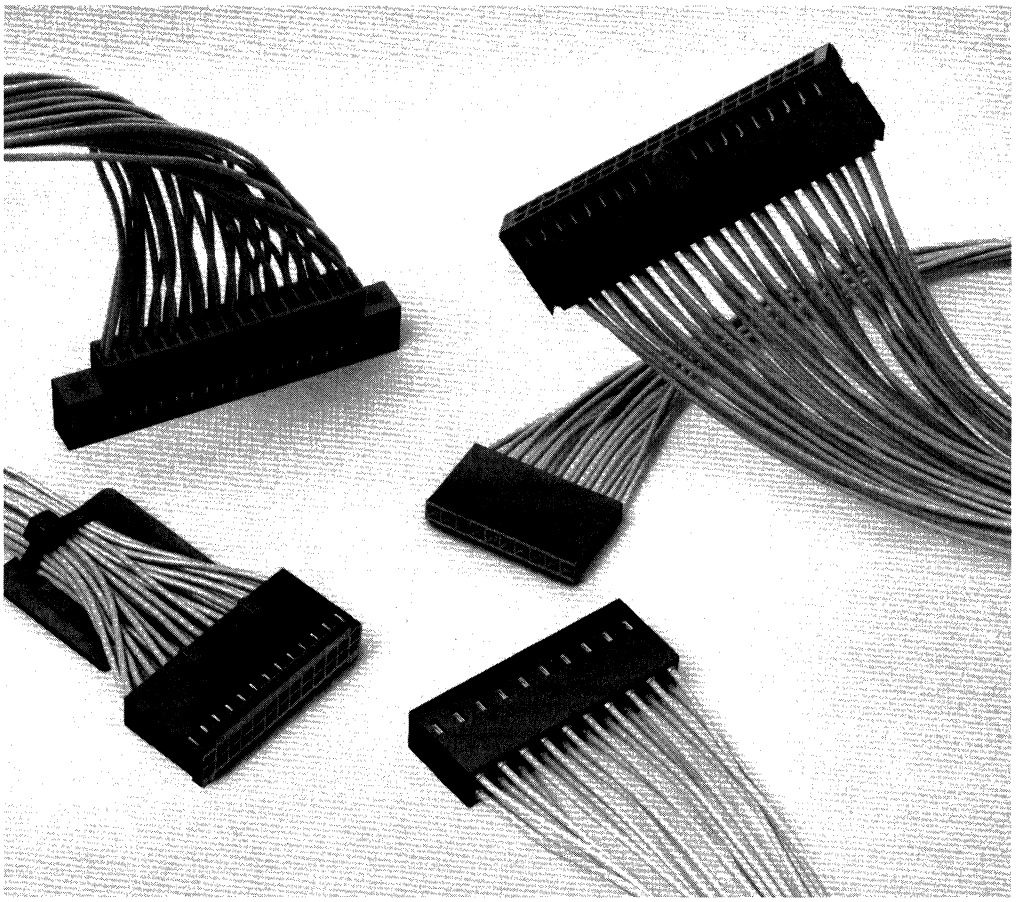
Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

Mod. IV Wire-Applied Contacts and Housings

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Performance Characteristics

Contact Current Rating: 3 amperes

Termination Resistance: 12 milliohms (max.)

	Standard Pressure Receptacle	Intermediate Pressure Receptacle	High Pressure Receptacle
Maximum Mating Force	9.0 oz.	16.0 oz.	20.0 oz.
Minimum Unmating Force	1.5 oz.	2.0 oz.	3.0 oz.
Durablity Test Results			
.000030 gold	200 cycles	150 cycles	50 cycles
.000015 gold	75 cycles	50 cycles	—
.000100 tin	75 cycles	50 cycles	25 cycles

Product Facts

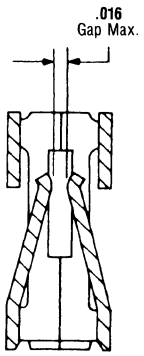
- Terminates 32-20 AWG discrete wire
- Contacts have insulation support
- Choice of three contact mating pressures
- Available in a variety of gold and tin platings
- Receptacles mate with .025 square or round posts
- Dual cantilever contact beam with built-in anti-overstress feature for reliable matings
- Housings accept a variety of receptacle and pin contacts
- Housing sizes range up to 100 positions
- Housing configurations include single, double and triple rows on .100, .125 and .150 centerlines
- Housing options include detent latching, polarization, mounting ears and bonded strain relief/pull tabs
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455

Mod. IV Pin and Receptacle Contacts

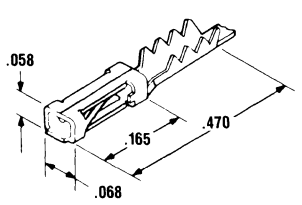
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

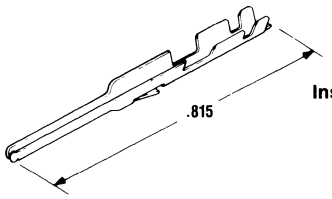
Crimp Snap-In (No-strip) Receptacle, Crimp Snap-In Pins with Insulation Support and Special Solder Tab and Card Extender Receptacles (Standard Pressure)



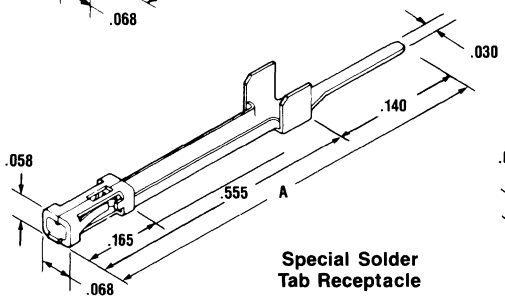
Standard Pressure Configuration



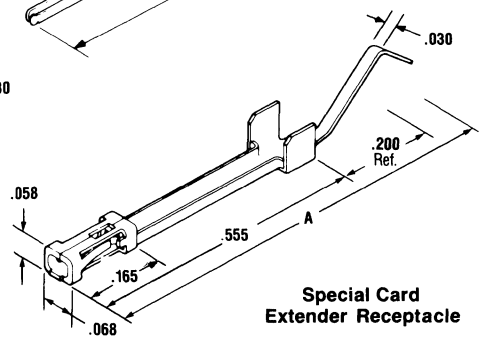
No-Strip Receptacle



Pin with Insulation Support



Special Solder Tab Receptacle



Special Card Extender Receptacle

Crimp Snap-In (No-strip) Receptacles
Material: Beryllium copper

Ins. Dia. Range	Plating	Part Numbers		Quick-Change Applicator No. (for AMP-O-LECTRIC Machine)	Hand Tool
		Strip Form	Loose Form		
.040-.055	Sel. Gold/Nickel A	87107-5	102348-2	687677-2	90381-1
	Br. Tin-Lead/Nickel B	87107-6	102348-3		

Crimp Snap-In Pins with Insulation Support
Material: Phosphor bronze

Wire Size Range AWG	Ins. Dia. (Max.)	Plating	Part Numbers		Quick-Change Applicator No. (for AMP-O-LECTRIC Machine)	Hand Tool
			Strip Form	Loose Form		
26-22	.061	Sel. Gold/Nickel A	102095-3	102107-2	466812-2	90418-1
		Br. Tin-Lead/Nickel A	102095-4	102107-3		
		Sel. Gold/Nickel B	102095-2	102107-1		

Special Solder Tab and Card Extender Receptacles
Material: Copper-tin-phosphor alloy 521

Receptacle Type		A Dim.	Plating	Part Numbers
Card Extender*		.755	Duplex C	102075-1
			Duplex D	102075-2
Solder Tab	For .600 High Housings Only	.695	Duplex D	102437-1
			Br. Tin-Lead/Nickel B	102437-2
	For .645 High Housings Only	.695	Duplex D	534201-1

*Can be used in Mod. IV wire-applied double row housings, .125 x .250 centers, see page 3171.
Note: Applicators for AMPOMATOR CLS II Machines are available, consult AMP Incorporated.

Related Product Data:
Housings Used With - pages 3162 - 3173
Performance Characteristics - page 3158
Application Tooling - page 3221
Technical Documents - page 3223

Plating Specifications:
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on crimp area, with entire contact underplated .000050 nickel
Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on crimp area, with entire contact underplated .000050 nickel
Sel. Gold/Nickel A—Gold flash over .000050 nickel on entire contact, with additional .000030 gold on contact area
Sel. Gold/Nickel B—Gold flash over .000050 nickel on entire contact, with additional .000015 gold on contact area
Br. Tin-Lead/Nickel A—.000100-.000200 bright tin-lead over .000050 nickel on entire contact
Br. Tin-Lead/Nickel B—.000100-.000200 bright tin-lead over .000030 nickel on entire contact

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Crimp Snap-In Receptacles with Insulation Support (Standard, Intermediate and High Pressure)

Related Product Data:
Housings Used With - pages 3162 - 3173
Performance Characteristics - page 3158
Application Tooling - page 3221
Technical Documents - page 3223

Plating Specifications:

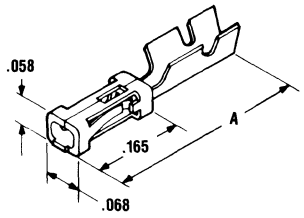
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on crimp area, with entire contact underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on crimp area, with entire contact underplated .000050 nickel

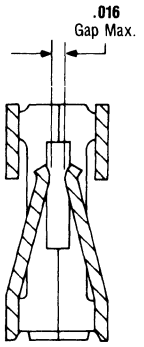
Sel. Gold/Nickel A—Gold flash over .000050 nickel on entire contact, with additional .000030 gold on contact area

Sel. Gold/Nickel B—Gold flash over .000050 nickel on entire contact, with additional .000015 gold on contact area

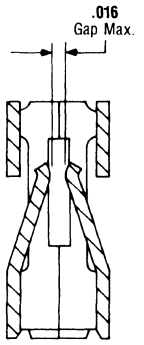
Br. Tin-Lead/Nickel B—.000100-.000200 bright tin over .000030 nickel on entire contact



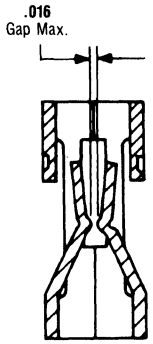
Standard Pressure



Intermediate Pressure



High Pressure



Mod. IV Receptacle Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Pressure

Wire Size Range AWG	Ins. Dia. (Max.)	A Dim.	Material	Plating	Part Numbers		Quick-Change Applicator for AMP-O-LECTRIC Machine	Applicator for Stripper/ Crimper Machine	Hand Tool
					Strip Form	Loose Form			
32-27	.040	.445	Cu-Sn-Ph Bz	Br. Tin-Lead/Nickel B	102316-5	1-102316-2	466655-2	466921-1	90417-1
			Cu-Sn-Ph Bz	Duplex D	102316-6	1-102316-3			
			Cu-Sn-Ph Bz	Duplex C	102316-8	1-102316-4			
			Be Cu	Sel. Gold/Nickel B	102917-5	102917-6			
			Be Cu	Sel. Gold/Nickel A	102917-1	102917-2			
26-22	.061	.445	Cu-Sn-Ph Bz	Br. Tin-Lead/Nickel B	87756-6	87756-7	466571-2	466918-1	90418-1
			Cu-Sn-Ph Bz	Duplex D	1-87756-2	1-87756-6			
			Cu-Sn-Ph Bz	Duplex C	1-87756-7	1-87756-8			
			Be Cu	Br. Tin-Lead/Nickel B	87666-3	87667-3			
			Be Cu	Sel. Gold/Nickel B	87666-5	87667-5			
			Be Cu	Sel. Gold/Nickel A	87666-2	87667-2			
24-20	.069	.470	Cu-Sn-Ph Bz	Br. Tin-Lead/Nickel B	87523-5	87523-6	466562-2	466905-1	90202-2
			Cu-Sn-Ph Bz	Duplex D	1-87523-5	1-87523-6			
			Cu-Sn-Ph Bz	Duplex C	1-87523-8	1-87523-9			
			Be Cu	Br. Tin-Lead/Nickel B	85969-9	86016-3			
			Be Cu	Sel. Gold/Nickel B	85969-6	86016-5			
			Be Cu	Sel. Gold/Nickel A	85969-8	86016-2			

Intermediate Pressure

Wire Size Range AWG	Ins. Dia. (Max.)	A Dim.	Material	Plating	Part Numbers		Quick-Change Applicator for AMP-O-LECTRIC Machine	Applicator for Stripper/ Crimper Machine	Hand Tool
					Strip Form	Loose Form			
			Cu-Sn-Ph Bz	Duplex C	102920-1	102920-2			
32-27	.040	.445	Be Cu	Sel. Gold/Nickel B	102918-3	102918-4	466655-2	466921-1	90417-1
			Be Cu	Sel. Gold/Nickel A	102918-1	102918-2			
			Cu-Sn-Ph Bz	Duplex D	103171-1	103171-2			
26-22	.061	.445	Cu-Sn-Ph Bz	Duplex C	103171-4	103171-5	466571-2	466918-1	90418-1
			Be Cu	Sel. Gold/Nickel B	102548-1	102548-3			
			Be Cu	Sel. Gold/Nickel A	102548-5	102548-6			
			Cu-Sn-Ph Bz	Duplex D	1-87195-7	1-87195-8			
			Cu-Sn-Ph Bz	Duplex C	2-87195-0	2-87195-1			
24-20	.069	.470	Be Cu	Br. Tin-Lead/Nickel B	86492-9	87046-4	466562-2	466905-1	90202-2
			Be Cu	Sel. Gold/Nickel B	86492-2	87046-1			
			Be Cu	Sel. Gold/Nickel A	86492-6	87046-3			

High Pressure
Material: Phosphor Bronze

Wire Size Range AWG	Ins. Dia. (Max.)	A Dim.	Plating	Part Numbers		Quick-Change Applicator for AMP-O-LECTRIC Machine	Applicator for Stripper/ Crimper Machine	Hand Tool
				Strip Form	Loose Form			
32-27	.040	.445	Br. Tin-Lead /Nickel B	103455-4	103455-5	466655-2	466921-1	90417-1
			Sel. Gold/Nickel A	103455-1	103455-2			
26-22	.061	.445	Br. Tin-Lead/Nickel B	87809-2	102128-2	466571-2	466918-1	90418-1
			Sel. Gold/Nickel A	87809-1	102128-1			
24-20	.069	.470	Br. Tin-Lead/Nickel B	87309-8	1-87309-3	466562-2	466905-1	90202-2
			Sel. Gold/Nickel A	87309-9	1-87309-4			

Note: Applicators for AMPOMATOR CLS II Machines are available, consult AMP Incorporated.

Mod. IV Wire-Applied Housings Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

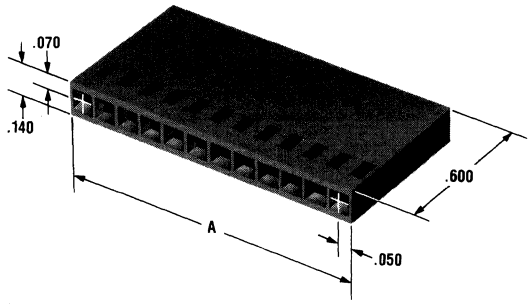
Non-Polarized (with and without Strain Relief/Pull Tab)

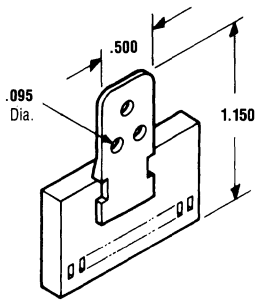
Material:

Black thermoplastic, flame retardant

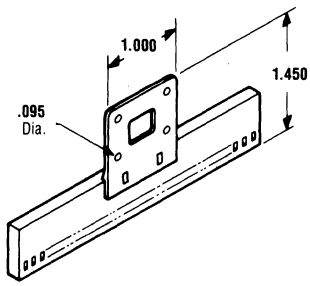
Related Product Data:

Contacts - pages 3159 - 3161
Mateable Headers and Posts: Refer to the Mating Post Selection Guide - page 3142
Unshrouded Headers, Breakaway and Retention, Single Row, Straight or Right-Angle Posts - pages 3180 - 3183, 3188, 3189, 3192 & 3193
Shrouded Headers, Single Row, Straight or Right-Angle Posts - pages 3198 & 3199
Technical Documents - page 3223





Housing with Strain Relief/Pull Tab
Strain Relief Part No. 87921-1
(5 thru 9 positions)



Housing with Strain Relief/Pull Tab
Strain Relief Part No. 87975-1
(10 position and larger)

No. of Pos.	A Dim.	Part Numbers			
		without Strain Relief		with Strain Relief	
		Stamped*	Unstamped**	Stamped*	Unstamped**
1	.105	7-87499-1	7-87499-2	—	—
2	.205	87499-3	87499-4	—	—
3	.305	87499-5	87499-6	—	—
4	.405	87499-7	87499-8	—	—
5	.505	87499-9	1-87499-0	—	—
6	.605	1-87499-1	1-87499-2	—	—
7	.705	87499-1	87499-2	—	—
8	.805	1-87499-3	1-87499-4	87339-8	87339-7
9	.905	1-87499-5	1-87499-6	1-87339-0	—
10	1.005	1-87499-7	1-87499-8	—	—
11	1.105	1-87499-9	2-87499-0	—	—
12	1.205	2-87499-1	2-87499-2	—	—
13	1.305	2-87499-3	2-87499-4	—	—
14	1.405	2-87499-5	2-87499-6	2-87339-0	—
15	1.505	2-87499-7	2-87499-8	—	—
16	1.605	2-87499-9	3-87499-0	—	—
17	1.705	3-87499-1	3-87499-2	—	—
18	1.805	3-87499-3	3-87499-4	—	—
19	1.905	3-87499-5	3-87499-6	—	—
20	2.005	3-87499-7	3-87499-8	—	—
21	2.105	3-87499-9	4-87499-0	—	—
22	2.205	4-87499-1	4-87499-2	—	—
25	2.505	4-87499-7	4-87499-8	—	—
26	2.605	—	5-87499-0	—	—
30	3.005	—	5-87499-8	—	—
36	3.605	6-87499-9	7-87499-0	—	—

*Cavity identification, AMP, part number and date code stamped on housing and/or strain relief where size permits.
**No marking on housing or strain relief.

Notes: 1. The Strain Relief/Pull Tab can be bonded to any thermoplastic connector housing.
2. Strain reliefs may be purchased separately.
3. Contact extraction/lance reset tool—No. 843996-3.

Keying Plugs

Material: Natural color nylon

Part No. 86286-1
(Plugs into receptacle contact)

Part No. 87077-2
(Plugs directly into housing)

Mod. IV Wire-Applied Housings Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

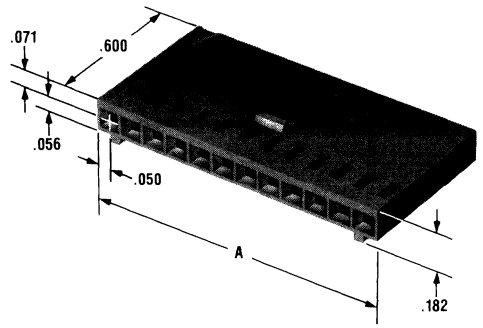
Polarized (with Detent Latching)

Material:

Black thermoplastic, flame retardant

Related Product Data:

Contacts - pages 3159 - 3161
Mateable Headers and Posts: Refer to the Mating Post Selection Guide - page 3142
Shrouded Headers, Single Row, Straight or Right-Angle Posts - pages 3198 & 3199
Flexible Film Connectors, Single Row Pin Assemblies - Catalog 82007
Technical Documents - page 3223

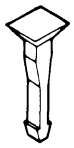


No. of Pos.	A Dim.	Part Numbers Unstamped*
3	.300	102241-1
4	.400	102241-2
5	.500	102241-3
6	.600	102241-4
7	.700	102241-5
8	.800	102241-6
9	.900	102241-7
10	1.000	102241-8
11	1.100	102241-9
12	1.200	1-102241-0
13	1.300	1-102241-1
14	1.400	1-102241-2
15	1.500	1-102241-3
16	1.600	1-102241-4
18	1.800	1-102241-6
20	2.000	1-102241-8
22	2.200	2-102241-0
28	2.800	2-102241-6
30	3.000	2-102241-8
36	3.600	3-102241-4

*No marking on housing.
Note: Contact extraction/lance reset tool—No. 843996-3.

Keying Plugs

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

Part No. 87077-2
(Plugs directly into housing)

Mod. IV Wire-Applied Housings Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Non-Polarized (with and without Strain Relief/Pull Tab)

Material:

Black thermoplastic, flame retardant

Related Product Data:

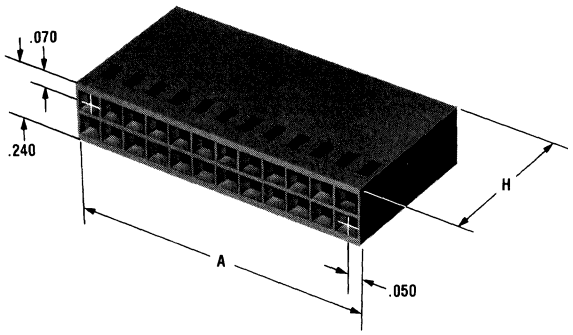
Contacts - pages 3159 - 3161

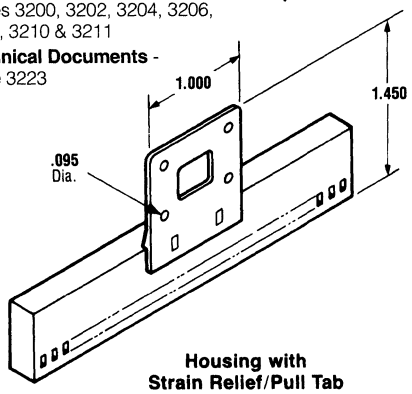
Mateable Headers and Posts: Refer to the Mating Post Selection Guide - page 3142

Unshrouded Headers, Breakaway and Retention, Double Row, Straight or Right-Angle Posts - pages 3184 - 3187, 3190, 3191, 3194 & 3195

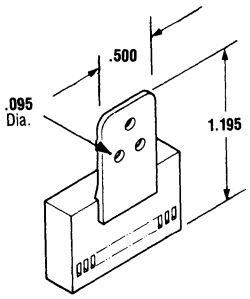
Shrouded Headers, Double Row, Straight or Right - Angle Posts - pages 3200, 3202, 3204, 3206, 3208, 3210 & 3211

Technical Documents - page 3223

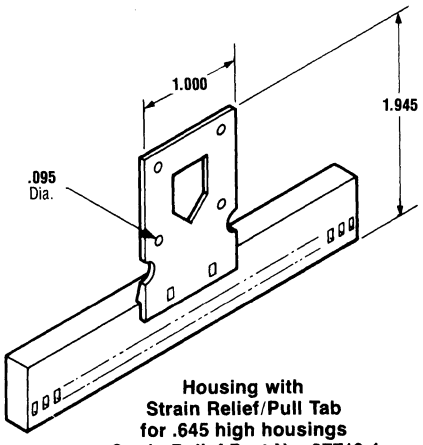




Housing with Strain Relief/Pull Tab for .600 high housings Strain Relief Part No. 87975-1
(20 position and larger)



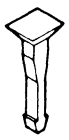
Housing with Strain Relief/Pull Tab for .645 high housings Strain Relief Part No. 87921-1
(10 thru 18 positions)



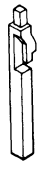
Housing with Strain Relief/Pull Tab for .645 high housings Strain Relief Part No. 87710-1
(20 position and larger)

Keying Plugs

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)



Part No. 87077-1
(for .645 high housings)
Part No. 87077-2
(for .600 high housings)
(Plugs directly into housing)

No. of Pos.	A. Dim.	Part Numbers H=.600 without Strain Relief Stamped*	H=.600 without Strain Relief Unstamped**	H=.600 with Strain Relief Stamped*	H=.600 with Strain Relief Unstamped**	H=.645 without Strain Relief Stamped*	H=.645 with Strain Relief Stamped
2	.100	—	5-87456-3	—	—	—	—
4	.200	5-87456-0	4-87456-9	—	—	—	—
6	.300	87456-2	87456-1	—	—	1-86148-8	—
8	.400	87456-4	87456-3	—	—	2-86148-0	—
10	.500	87456-6	87456-5	—	—	1-86148-2	2-87835-0
12	.600	87456-8	87456-7	—	—	1-86148-3	2-87835-1
14	.700	1-87456-0	87456-9	—	—	1-86148-4	2-87835-2
16	.800	1-87456-2	1-87456-1	—	—	1-86148-5	2-87835-3
18	.900	1-87456-4	1-87456-3	—	—	1-86148-6	—
20	1.000	1-87456-6	1-87456-5	—	87832-3	86148-1	—
24	1.200	2-87456-0	1-87456-9	2-87832-5	—	86148-3	—
26	1.300	2-87456-2	2-87456-1	2-87832-1	87832-1	86148-4	—
28	1.400	2-87456-4	2-87456-3	—	—	86148-5	—
30	1.500	2-87456-6	2-87456-5	—	—	—	—
34	1.700	3-87456-0	2-87456-9	2-87832-9	—	86148-8	1-87835-1
38	1.900	3-87456-4	3-87456-3	—	—	—	—
40	2.000	3-87456-6	3-87456-5	2-87832-2	87832-2	1-86148-1	1-87835-4
50	2.500	4-87456-0	3-87456-9	3-87832-4	—	2-86148-1	87835-2
60	3.000	5-87456-2	5-87456-1	—	1-87832-7	—	—

*Cavity identification, AMP, part number and date code stamped on housing and/or strain relief where size permits.
**No marking on housing or strain relief.

Notes: 1. The Strain Relief/Pull Tab can be bonded to any thermoplastic connector housing.
2. Strain reliefs may be purchased separately.
3. Contact extraction/lance reset tool—No. 843996-3.

Mod. IV Wire-Applied Housings Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

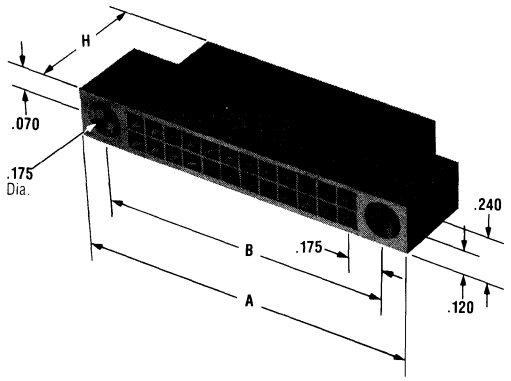
Non-Polarized (with Mounting Ears)

Material:

Black thermoplastic, flame retardant

Related Product Data:

Contacts - pages 3159 - 3161
Mateable Headers and Posts: Refer to the Mating Post Selection Guide - page 3142
Technical Documents - page 3223



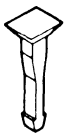
No. of Pos.	Dimensions		Part Numbers			
			H = .600		H = .645	
	A	B	Stamped*	Unstamped**	Stamped*	Unstamped**
10	1.000	.750	2-87483-0	1-87483-9	2-86256-5	2-86264-5
12	1.100	.850	2-87483-2	2-87483-1	—	—
14	1.200	.950	—	2-87483-3	—	—
16	1.300	1.050	87483-2	87483-1	2-86256-2	2-86264-2
18	1.400	1.150	—	2-87483-5	—	—
20	1.500	1.250	87483-4	87483-3	2-86256-0	2-86264-0
24	1.700	1.450	3-87483-0	2-87483-0	—	—
26	1.800	1.550	87483-6	87483-5	1-86256-7	1-86264-7
32	2.100	1.850	—	87483-7	1-86256-4	1-86264-4
34	2.200	1.950	3-87483-6	3-87483-5	—	—
36	2.300	2.050	3-87483-8	3-87483-7	—	—
40	2.500	2.250	1-87483-0	87483-9	1-86256-0	1-86264-0
50	3.000	2.750	—	4-87483-7	—	—

*Cavity identification, AMP, part number and date code stamped on housing and/or strain relief where size permits.
**No marking on housing or strain relief.

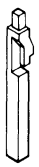
Notes: 1. The Strain Relief/Pull Tab can be bonded to any thermoplastic connector housing.
2. Mounting hardware is customer supplied.
3. Contact extraction/lance reset tool—No. 843996-3.

Keying Plugs

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)



Part No. 87077-1
(for .645 high housings)
Part No. 87077-2
(for .600 high housings)
(Plugs directly into housing)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

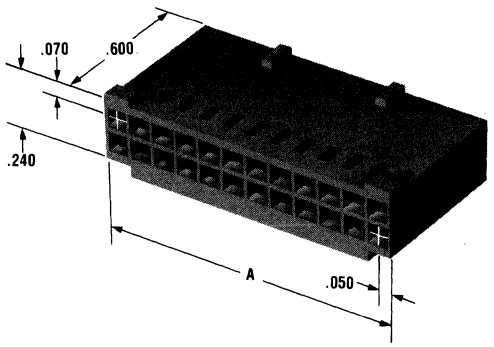
Mod. IV Wire-Applied Housings Double Row, .100 x .100 Centers

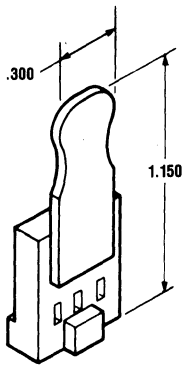
Dimensioning:
Dimensions are in inches

Polarized (with and without Strain Relief/Pull Tab)

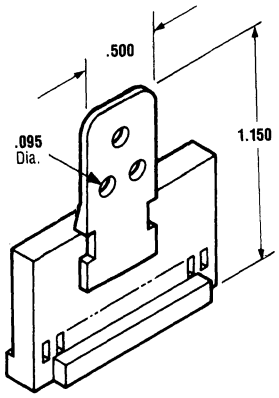
Material:
Black thermoplastic, flame retardant

Related Product Data:
Contacts - pages 3159 - 3161
Mateable Headers and Posts: Refer to the Mating Post Selection Guide - page 3142
Shrouded Headers, Double Row, Straight or Right-Angle Posts - pages 3200 - 3211
Technical Documents - page 3223

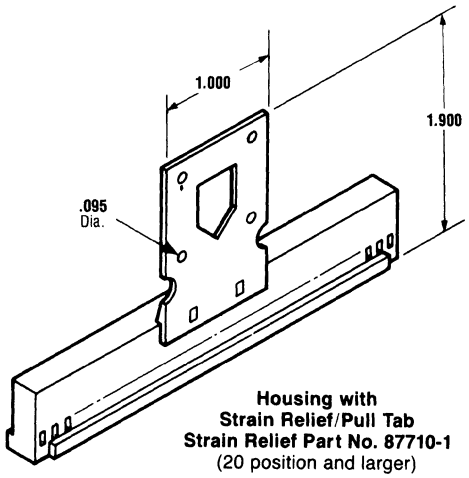




Housing with Strain Relief/Pull Tab
Strain Relief Part No. 102168-1
(6 and 8 positions)



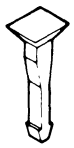
Housing with Strain Relief/Pull Tab
Strain Relief Part No. 87921-1
(10 thru 18 positions)



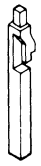
Housing with Strain Relief/Pull Tab
Strain Relief Part No. 87710-1
(20 position and larger)

Keying Plugs

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)



Part No. 87077-2
(Plugs directly into housing)

No. of Pos.	A Dim.	Part Numbers			
		Without Strain Relief		With Strain Relief	
		Stamped*	Unstamped**	Stamped*	Unstamped**
6	.300	87977-1	2-87977-8	—	2-102184-8
8	.400	87977-2	2-87977-9	—	2-102184-9
10	.500	87977-3	3-87977-0	—	3-102184-0
12	.600	87977-4	3-87977-1	102184-4	—
14	.700	87977-5	3-87977-2	—	—
16	.800	87977-6	3-87977-3	—	—
18	.900	—	3-87977-4	102184-7	—
20	1.000	87977-8	3-87977-5	102184-8	—
24	1.200	1-87977-0	3-87977-7	—	—
26	1.300	1-87977-1	3-87977-8	—	—
28	1.400	—	3-87977-9	—	—
34	1.700	—	4-87977-2	—	—
40	2.000	—	4-87977-5	—	—
50	2.500	2-87977-1	4-87977-8	—	—
60	3.000	2-87977-4	5-87977-1	—	5-102184-1

*Cavity identification, AMP, part number and date code stamped on housing and/or strain relief where size permits.
**No marking on housing or strain relief.

Notes: 1. The Strain Relief/Pull Tab can be bonded to any thermoplastic connector housing.
2. Strain reliefs may be purchased separately.
3. Contact extraction/lance reset tool—No. 843996-3.

Mod. IV Wire-Applied Housings Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

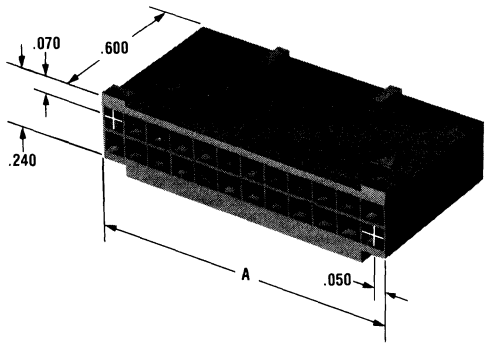
Polarized (with Detent Latching, with and without Strain Relief/Pull Tab)

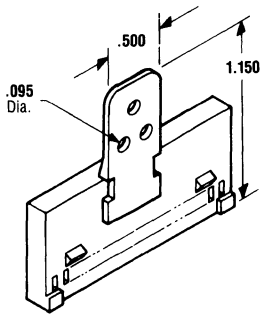
Material:

Black thermoplastic, flame retardant

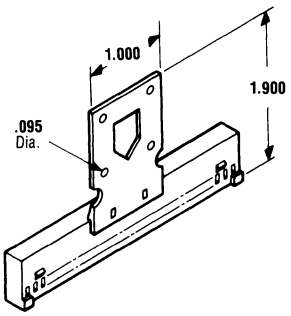
Related Product Data:

Contacts - pages 3159 - 3161
Mateable Headers and Posts: Refer to the Mating Post Selection Guide - page 3142
Shrouded Headers, Double Row, Straight or Right-Angle Posts - pages 3200 - 3211
Technical Documents - page 3223





Housing with Strain Relief/Pull Tab
Strain Relief Part No. 87921-1
(10 thru 18 positions)



Housing with Strain Relief/Pull Tab
Strain Relief Part No. 87710-1
(20 positions and larger)

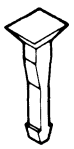
No. of Pos.	Dimensions A	Dimensions B	No. of Detents	Part Numbers: Without Strain Relief, Stamped*	Part Numbers: Without Strain Relief, Unstamped**	Part Numbers: With Strain Relief, Stamped*
6	.200	.300	1	87631-2	87631-1	—
8	.300	.400	1	87631-4	87631-3	—
10	.400	.500	1	87631-6	87631-5	87922-1
12	.500	.600	1	87631-8	87631-7	87922-2
14	.600	.700	1	1-87631-0	87631-9	87922-3
16	.700	.800	1	1-87631-2	1-87631-1	87922-4
18	.800	.900	1	1-87631-4	1-87631-3	87922-5
20	.900	1.000	2	1-87631-6	1-87631-5	87733-1
22	1.000	1.100	2	1-87631-8	1-87631-7	—
24	1.100	1.200	2	2-87631-0	1-87631-9	87733-3
26	1.200	1.300	2	2-87631-2	2-87631-1	87733-4
28	1.300	1.400	2	2-87631-4	2-87631-3	—
30	1.400	1.500	2	2-87631-6	2-87631-5	87733-6
32	1.500	1.600	2	2-87631-8	2-87631-7	87733-7
34	1.600	1.700	2	3-87631-0	2-87631-9	87733-8
36	1.700	1.800	2	3-87631-2	3-87631-1	87733-9
38	1.800	1.900	2	3-87631-4	3-87631-3	—
40	1.900	2.000	2	3-87631-6	3-87631-5	1-87733-1
42	2.000	2.100	2	3-87631-8	3-87631-7	—
44	2.100	2.200	2	4-87631-0	3-87631-9	—
50	2.400	2.500	2	4-87631-2	4-87631-1	1-87733-4
52	2.500	2.600	2	4-87631-4	4-87631-3	—
54	2.600	2.700	2	4-87631-6	4-87631-5	—
56	2.700	2.800	2	6-87631-2	6-87631-1	—
60	2.900	3.000	2	5-87631-2	5-87631-1	1-87733-7
64	3.100	3.200	2	6-87631-6	6-87631-5	—
72	3.500	3.600	2	5-87631-8	5-87631-7	—

*Cavity identification, AMP, part number and date code stamped on housing and/or strain relief where size permits.
**No marking on housing or strain relief.

Notes: 1. The Strain Relief/Pull Tab can be bonded to any thermoplastic connector housing.
2. Strain reliefs may be purchased separately.
3. Contact extraction/lance reset tool—No. 843996-3.

Keying Plugs

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

Part No. 87077-2
(Plugs directly into housing)

Mod. IV Wire-Applied Housings Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Center Polarized

Material:

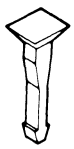
Black thermoplastic, flame retardant

Related Product Data:

Contacts - pages 3159 - 3161
Mateable Headers and Posts - Refer to the Mating Post Selection Guide - page 3142
Low Profile Shrouded Headers, Double Row, Straight or Right-Angle Posts - Catalog 82187
Low Profile Shrouded Headers, Double Row, Straight or Right-Angle Posts, with Ejection Latches - Catalog 82187
AMP-LATCH Ejection Headers with .576 Ejection Latches - Catalog 82012, Part Nos. 102186-1 & 102320-1
Technical Documents - page 3223

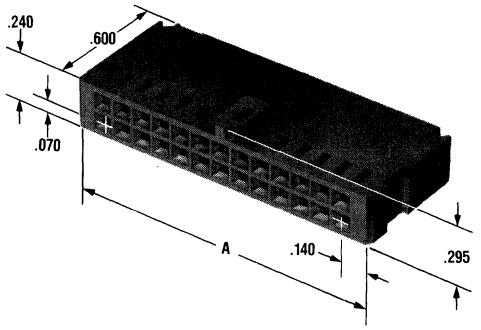
Keying Plugs

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

Part No. 87077-2
(Plugs directly into housing)



No. of Pos.	A Dim.	Part Numbers Unstamped*
10	.680	102387-1
14	.880	102387-2
16	.980	102387-3
20	1.180	102387-4
24	1.380	102387-5
26	1.480	102387-6
30	1.680	102387-7
34	1.880	102387-8
40	2.180	102387-9
44	2.380	1-102387-3
50	2.680	1-102387-0
60	3.180	1-102387-1
64	3.380	1-102387-2

*No marking on housing.
Note: Contact extraction/lance reset tool—No.843996-3.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Mod. IV Wire-Applied Housings Double Row, .100 x .200 Centers Triple Row, .100 Grid

Double Row .100 x .200 Centers Non-Polarized

Material:

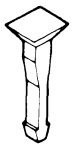
Black thermoplastic, flame retardant

Related Product Data:

Contacts - pages 3159 - 3161
Mateable Headers and Posts - Refer to the Mating Post Selection Guide - page 3142
Technical Documents - page 3223

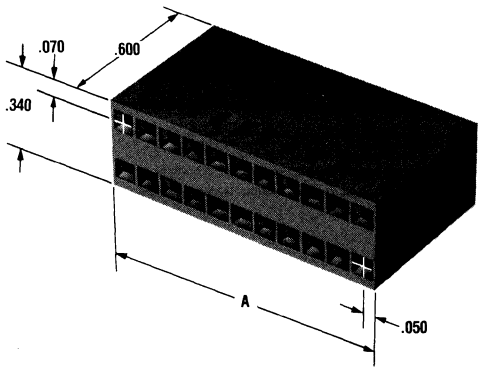
Keying Plugs

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

Part No. 87077-2
(Plugs directly into housing)



No. of Pos.	A Dim.	Part Numbers	
		Stamped*	Unstamped**
10	.500	86450-2	86451-2
12	.600	86450-3	86451-3
16	.800	86450-5	86451-5
20	1.000	86450-7	86451-7
22	1.100	86450-8	86451-8
24	1.200	86450-9	86451-9
30	1.500	1-86450-2	1-86451-2
34	1.700	1-86450-4	1-86451-4
38	1.900	1-86450-6	1-86451-6
40	2.000	1-86450-7	1-86451-7
50	2.500	2-86450-2	2-86451-2
60	3.000	2-86450-7	2-86451-7
72	3.600	3-86450-3	3-86451-3
80	4.000	3-86450-7	3-86451-7

*AMP, part no. and date code stamped on housing where size permits.
**No marking on housing.

Note: Contact extraction/lance reset tool—No. 843996-3.

Triple Row, .100 Grid Polarized (Raised Surfaces on Rear of Housing For Orientation)

Material:

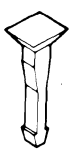
Black thermoplastic, flame retardant

Related Product Data:

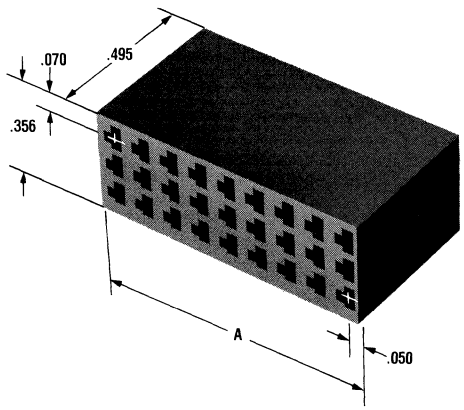
Contacts - pages 3159 - 3161
Mateable Headers and Posts - Refer to the Mating Post Selection Guide - page 3142
Unshrouded Headers, Triple Row - page 3196
Technical Documents - page 3223

Keying Plugs

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)



No. of Pos.	A Dim.	Part Numbers	
		Stamped*	Unstamped**
27	.900	86308-1	86308-2
42	1.400	86308-6	86308-5
60	2.000	86308-4	86308-3

*Cavity identification, AMP, part no. and date code stamped on housing where size permits.
**No marking on housing.

Note: Contact extraction tool—No. 843473-1

Mod. IV Wire-Applied Housings
Single Row, .125 Centers
Double Row, .125 x .125 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Single Row .125 Centers Non-Polarized

Material:

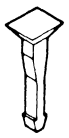
Black thermoplastic, flame retardant

Related Product Data:

Contacts - pages 3159 - 3161
Mateable Headers and Posts - Refer to the Mating Post Selection Guide - page 3142
Technical Documents - page 3223

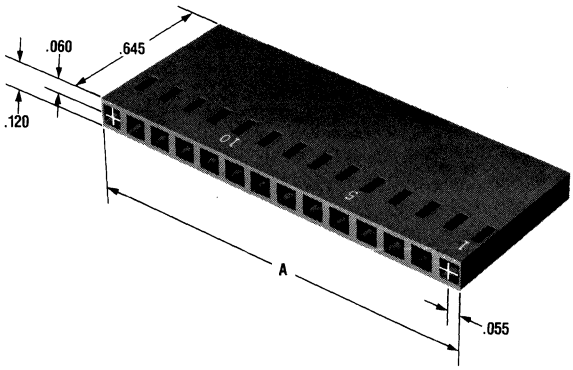
Keying Plugs

Material: Natural color nylon



Part No. 86286-1 (Plugs into receptacle contact)

Part No. 87077-2 (Plugs directly into housing)



No. of Pos.	A Dim.	Part Numbers	
		Stamped*	Unstamped**
2	.235	86402-5	86401-5
3	.360	86402-9	86401-9
4	.485	86402-2	86401-2
5	.610	86402-6	86401-6
6	.735	1-86402-4	1-86401-4
8	.985	86402-3	86401-3
10	1.235	86402-8	86401-8
12	1.485	86402-4	86401-4
14	1.735	86402-7	86401-7
20	2.485	86402-1	86401-1

*Cavity identification, AMP, part no. and date code stamped on housing and or strain relief where size permits.
**No marking on housing or strain relief.

Note: Contact extraction/lance reset tool—No. 843996-2.

Double Row .125 x .125 Centers Non-Polarized

Material:

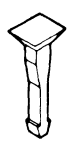
Black thermoplastic, flame retardant

Related Product Data:

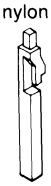
Contacts - pages 3159 - 3161
Mateable Headers and Posts - Refer to the Mating Post Selection Guide - page 3142
Technical Documents - page 3223

Keying Plugs

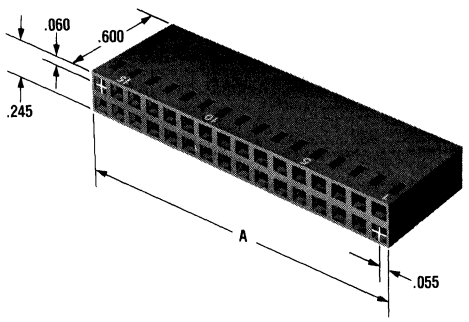
Material: Natural color nylon



Part No. 86286-1 (Plugs into receptacle contact)



Part No. 87077-2 (Plugs directly into housing)



No. of Pos.	A Dim.	Part Numbers	
		Stamped*	Unstamped**
6	.360	102454-3	102454-4
32	1.985	2-102454-9	3-102454-0
42	2.610	3-102454-9	4-102454-0
50	3.110	4-102454-7	4-102454-8
56	3.485	5-102454-3	5-102454-4

*Cavity identification, AMP, part no. and date code stamped on housing and/or strain relief where size permits.
**No marking on housing or strain relief.

Note: Contact extraction/lance reset tool—No. 843996-2.

Mod. IV Wire-Applied Housings Double Row, .125 x .250 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

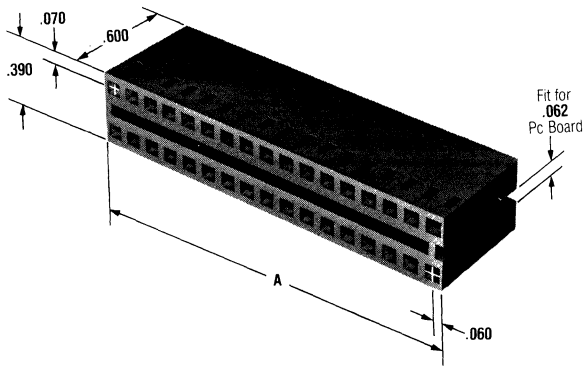
Polarized (with Center Rib)

Material:

Black thermoplastic, flame retardant

Related Product Data:

Contacts - pages 3159 - 3161
Mateable Headers and Posts - Refer to the Mating Post Selection Guide - page 3142
End Shrouds - page 3219
Technical Documents - page 3223



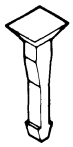
No. of Pos.	A Dim.	Part Numbers	
		Stamped*	Unstamped**
4	.249	—	102056-2
16	.999	—	102056-8
20	1.249	1-102064-0	1-102056-0
24	1.499	—	1-102056-2
34	2.124	—	1-102056-7
40	2.499	2-102064-0	2-102056-0
56	3.499	2-102064-8	2-102056-8
60	3.749	—	3-102056-0
64	3.999	—	3-102056-2
72	4.499	3-102064-6	3-102056-6
80	4.999	4-102064-0	4-102056-0
84	5.249	—	4-102056-2
100	6.249	5-102064-0	5-102056-0

*Cavity identification, AMP, part no. and date code stamped on housing where size permits.
**No marking on housing.

Note: 1. These housings also accept card extender contacts shown on page 3159.
2. Contact extraction/lance reset tool—No. 843996-3.

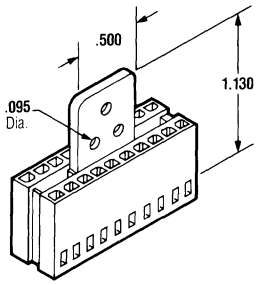
Keying Plugs

Material: Natural color nylon

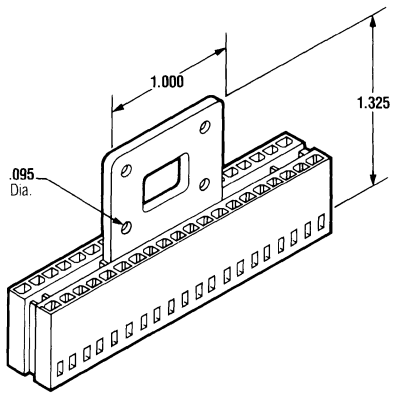


Part No. 86286-1
(Plugs into receptacle contact)

Part No. 87077-2
(Plugs directly into housing)



Snap-In Strain Relief
Part No. 102058-1
(10 thru 20 position)



Snap-In Strain Relief
Part No. 102059-1
(20 position and larger)

Mod. IV Wire-Applied Housings Single Row, .150 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

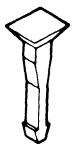
Non-Polarized

Material:
Black thermoplastic, flame retardant

Related Product Data:
Contacts - pages 3159 - 3161
Mateable Headers and Posts - Refer to the Mating Post Selection Guide - page 3142
End Shrouds - page 3219
Technical Documents - page 3223

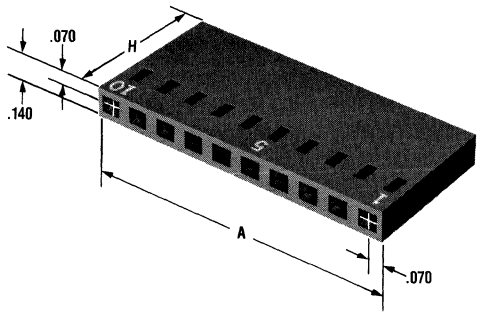
Keying Plugs

Material: Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)

Part No. 87077-1
(for .645 Housings)
Part No. 87077-2
(for .600 Housings)
(Plugs directly into housing)



No. of Pos.	A Dim.	Part Numbers		
		H = .600		H = .645
		Stamped*	Unstamped**	Stamped*
2	.290	—	—	86459-2
3	.440	102269-4	102269-3	86459-3
5	.740	102269-8	102269-7	86459-5
6	.890	1-102269-0	102269-9	—
7	1.040	1-102269-2	1-102269-1	—
8	1.190	1-102269-4	1-102269-3	86459-8
10	1.490	1-102269-6	1-102269-5	1-86459-0
12	1.790	—	—	1-86459-2
14	2.090	—	—	1-86459-4
21	3.140	—	—	1-86459-5

*Cavity identification, AMP, part no. and date code stamped on housing where size permits.
**No marking on housing.

Note: Contact extraction/lance reset tool—No. 843996-3.

Mod. IV Wire-Applied Housings Double Row, .150 x .150 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

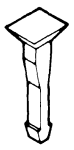
Non-Polarized

Material:
Black thermoplastic, flame retardant

Related Product Data:
Contacts - pages 3159 - 3161
Mateable Headers and Posts - Refer to the Mating Post Selection Guide - page 3142
Technical Documents - page 3223

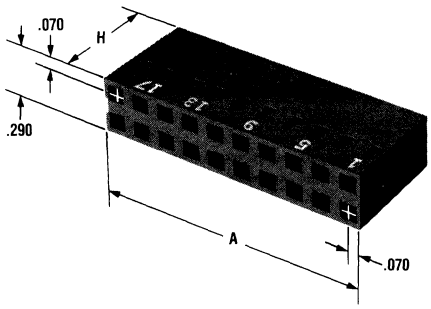
Keying Plugs

Material: Natural color nylon



Part No. 86286-1 (Plugs into receptacle contact)

Part No. 87077-1 (Plugs directly into housing)



No. of Pos.	A Dim.	Part Numbers			
		H = .545		H = .645	
		Stamped*	Unstamped**	Stamped*	Unstamped**
4	.290	—	—	—	87146-1
6	.440	—	1-86263-9	87147-2	87146-2
8	.590	2-86262-0	2-86263-0	87147-3	87146-3
10	.740	86262-1	86263-1	87147-4	87146-4
12	.890	86262-2	86263-2	87147-5	87146-5
14	1.040	86262-3	86263-3	87147-6	87146-6
16	1.190	86262-4	86263-4	87147-7	87146-7
18	1.340	86262-5	86263-5	87147-8	87146-8
20	1.490	86262-6	86263-6	87147-9	87146-9
28	2.090	—	—	1-87147-1	1-87146-1
30	2.240	1-86262-1	1-86263-1	1-87147-2	1-87146-2
32	2.390	—	—	1-87147-3	1-87146-3
40	2.990	1-86262-6	1-86263-6	1-87147-4	1-87146-4
50	3.740	2-86262-3	2-86263-3	—	—
84	6.290	2-86262-4	2-86263-4	—	—

*Cavity identification, AMP, part no. and date code stamped on housing where size permits.
**No marking on housing.

Note: Contact extraction/lance reset tool—No. 843996-3.

Non-Polarized (with Mounting Ears)

Material:
Black thermoplastic, flame retardant

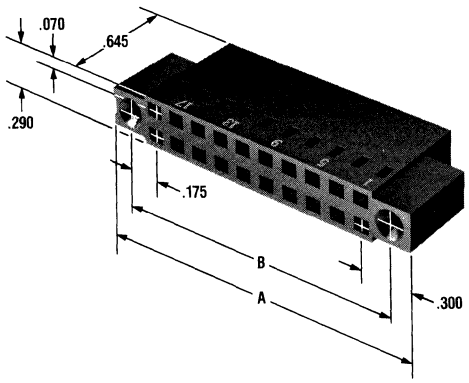
Related Product Data:
Contacts - pages 3159 - 3161
Mateable Headers and Posts - Refer to the Mating Post Selection Guide - page 3142
Technical Documents - page 3223

Keying Plugs

Material: Natural color nylon

Part No. 86286-1 (Plugs into receptacle contact)

Part No. 87077-1 (Plugs directly into housing)



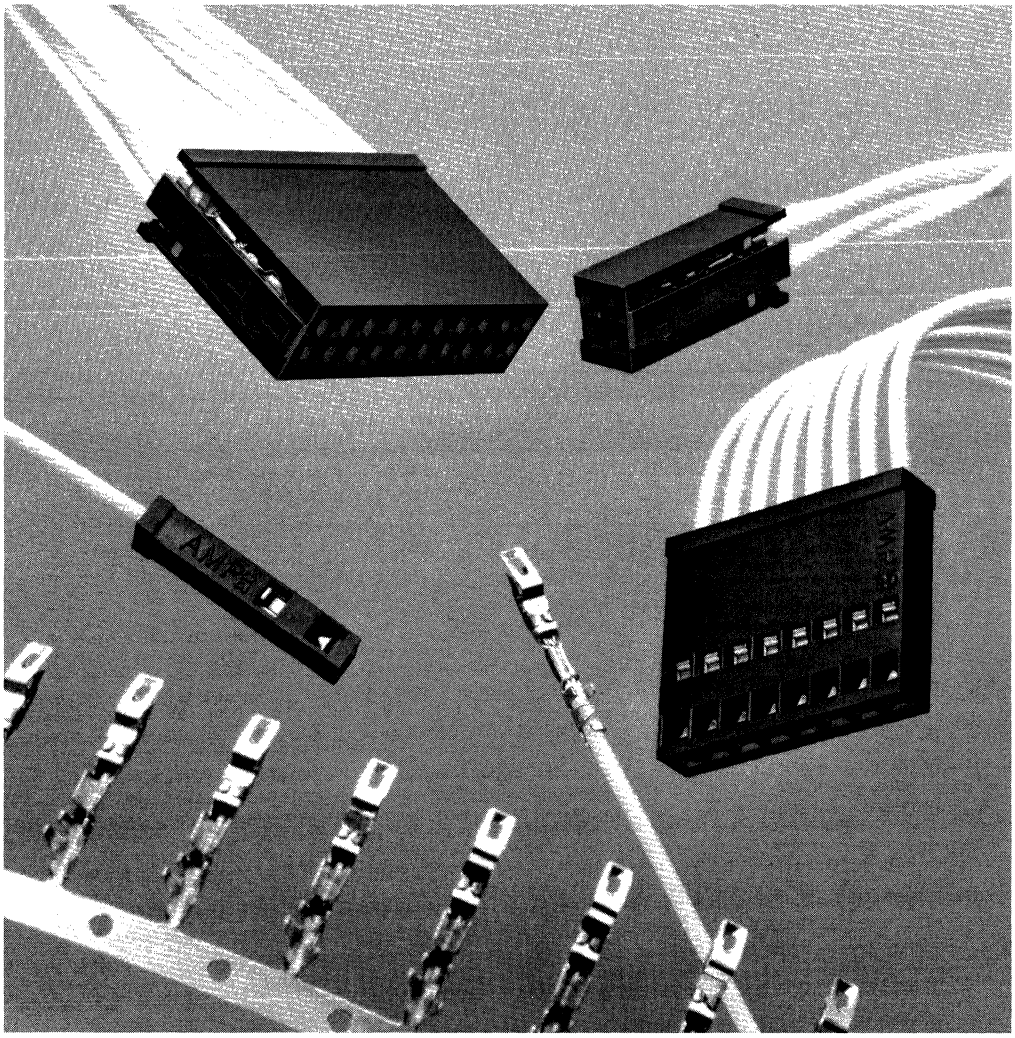
No. of Pos.	Dimensions		Part Numbers	
	A	B	Stamped*	Unstamped**
10	1.200	.950	87149-6	87148-6
12	1.350	1.100	87149-8	87148-8
20	1.950	1.700	87149-2	87148-2
28	2.550	2.300	87149-3	87148-3
32	2.850	2.600	87149-4	87148-4
40	3.450	3.200	87149-5	87148-5
60	4.950	4.700	87149-7	87148-7

*Cavity identification, AMP, part no. and date code stamped on housing where size permits.
**No marking on housing.

Note: Contact extraction/lance reset tool—No. 843996-3.

Locking Clip Contacts and Housings

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Product Facts

- Self-retaining contacts provide permanent connection with quick connect and disconnect
- Fast, easy installation with no additional locking hardware required
- Mates with .025 square posts in a variety of configurations
- Single- and double-row configurations in up to 20 positions on .100 centers
- Modular design permits end-to-end stacking (double row only) for circuit grouping
- Choice of tin or select gold plating
- Housings made of 94V-0 rated glass-filled nylon
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455

Locking Clip Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches.

Wire Crimp Contacts with Insulation Support

Material:

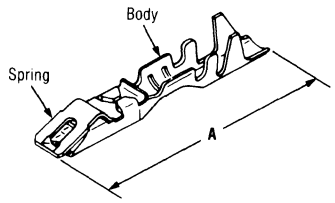
Contact Body—Phosphor bronze
Contact Spring—Stainless steel

Related Product Data:

Housings Used With - pages 3176 & 3177
Application Tooling - page 3221
Technical Documents - page 3223

Plating Specifications:

Sel. Gold/Nickel—Gold flash over .000050 nickel on entire contact, with additional .000030 gold on contact area
Br. Tin-Lead/Nickel—.000100-.000200 bright tin-lead over .000050 nickel on entire contact



Wire Size Range AWG	Ins. Dia. Range	A Dim.	Plating	Part Numbers		Quick-Change Applicator for AMP-O-LECTRIC Machine	Hand Tool
				Strip Form	Loose Form		
30-28	.029-.039	.550	Sel. Gold/Nickel	87190-1	87191-1	687792-2	90295-1
			Br. Tin/Nickel	87190-2	87191-2		
26-22	.038-.062	.584	Sel. Gold/Nickel	87124-1	87165-1	466721-2	90289-1
			Br. Tin/Nickel	87124-2	87165-2		
20	.038-.062	.584	Sel. Gold/Nickel	867052-2	—	466721-2	—
			Br. Tin/Nickel	867052-1	—		

Notes: 1. These contacts must be crimped in accordance with AMP Specification No. 114-25006 in order to function properly in a connector housing.
2. Extraction tool No. 91084-1 is used for removing individual contacts from connector housings and for detaching contacts from mating posts.

Extraction Tool
Part No. 91084-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

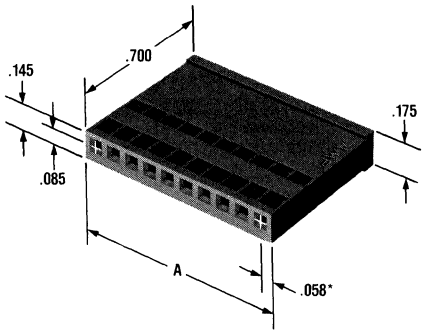
Dimensioning:
Dimensions are in inches

Wire-Applied Housings for Locking Clip Contacts Single Row, .100 Centers Double Row, .100 x .100 Centers

Single Row

Material:
Glass-filled nylon, 94V-0 rated

Related Product Data:
Contacts - page 3175
Mateable Headers and Posts - Refer to the Mating Post Selection Guide - page 3142
Technical Documents - page 3223

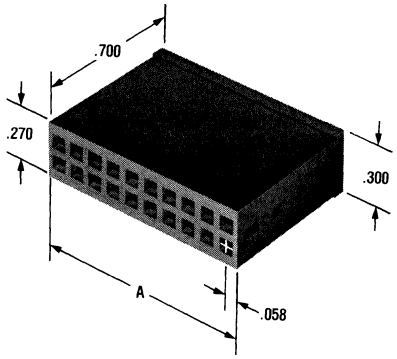


*This dimension is .054 for the 1 position housing.

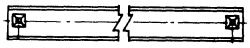
Double Row

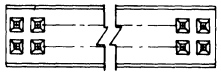
Material:
Glass-filled nylon, 94V-0 rated

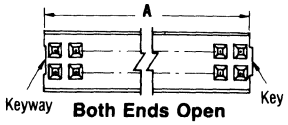
Related Product Data:
Contacts - page 3175
Mateable Headers and Posts - Refer to the Mating Post Selection Guide - page 3142
Technical Documents - page 3223



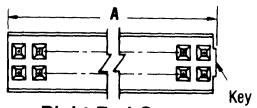
Note: Housings illustrated above are the "Both Ends Closed" version.


Both Ends Closed

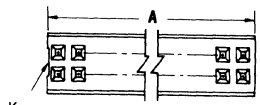

Both Ends Closed



Both Ends Open



Right End Open



Left End Open

Housing Configuration	No. of Pos.	A Dim.	Housing Part No.	
			Stamped	Unstamped
Single Row Both Ends Closed	1	.108	—	87175-2
	2	.216	—	87175-6
	3	.316	—	87175-8
	4	.416	—	1-87175-0
	5	.516	—	1-87175-2
	6	.616	1-87175-3	1-87175-4
	7	.716	1-87175-5	1-87175-6
	8	.816	1-87175-7	1-87175-8
	9	.916	1-87175-9	2-87175-0
	10	1.016	2-87175-1	2-87175-2
	11	1.116	2-87175-3	2-87175-4
	12	1.216	2-87175-5	2-87175-6
	13	1.316	2-87175-7	2-87175-8
	15	1.516	87175-3	87175-4
Double Row Both Ends Closed	2	.116	—	87176-2
	4	.216	—	87133-1
	6	.316	87133-8	87133-7
	8	.416	1-87133-0	87133-9
	10	.516	87133-5	87133-2
	12	.616	1-87133-2	1-87133-1
	16	.816	1-87133-4	1-87133-3
	18	.916	—	1-87133-5
	20	1.016	87133-6	87133-3
Double Row Both Ends Open	4	.199	—	87125-1
	10	.499	—	87125-2
	20	.999	87125-6	87125-3
Double Row Right End Open	4	.216	—	87132-1
	10	.516	—	87132-2
	20	1.016	87132-6	87132-3
Double Row Left End Open	4	.216	—	87131-1
	10	.516	—	87131-2
	20	1.016	87131-6	87131-3

Note: See AMP Instruction Sheet No. IS 7606 for proper contact orientation within the housings.

Keying Plug

Material: Natural color nylon

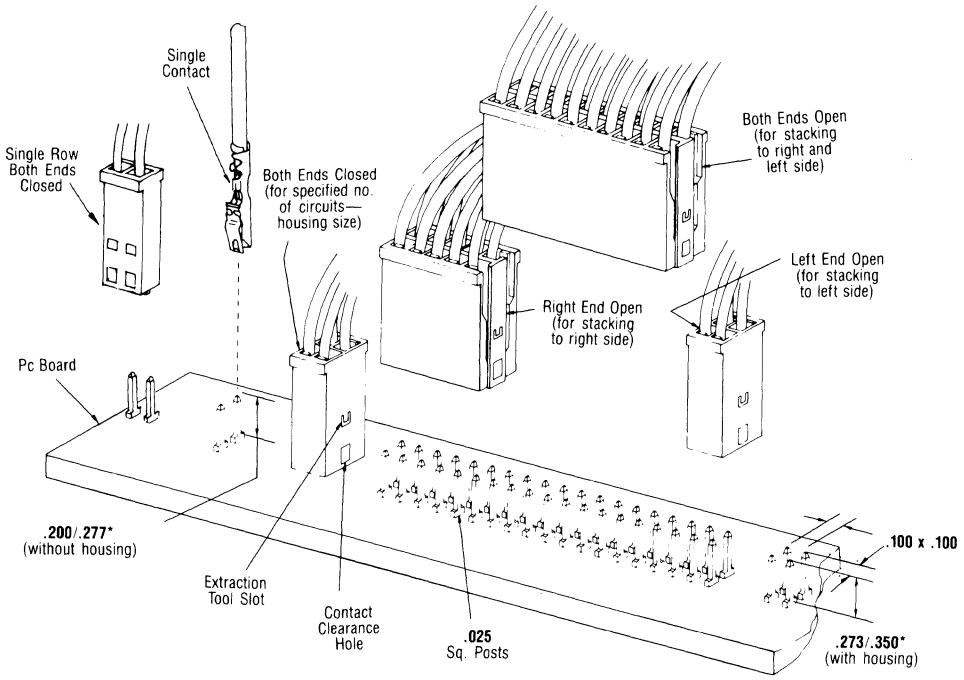
Part No. 87179-1
(Plugs directly into housings for .025 square-post contacts)

Wire-Applied Housings for Locking Clip Contacts Single Row, .100 Centers Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

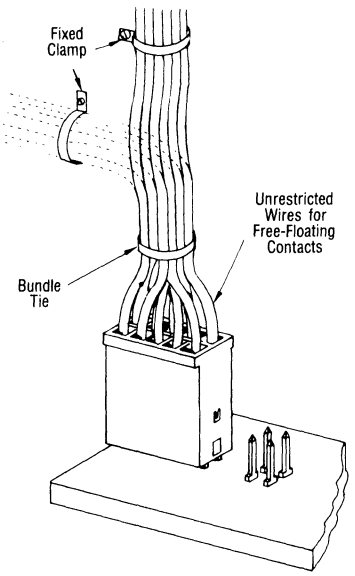
Typical Application



*If post is longer than maximum specified, post tip may butt against wire ends.

Wire Harnessing

If necessary, wires can be grouped with bundle ties and secured to a panel with fixed clamps. However, locking clip contacts must be free to float within the connector housings to ensure proper extraction. Therefore, harnessing hardware or the use of multiple terminations per contact must not restrict the free-floating action of contacts in the housing.



.025 Square Posts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

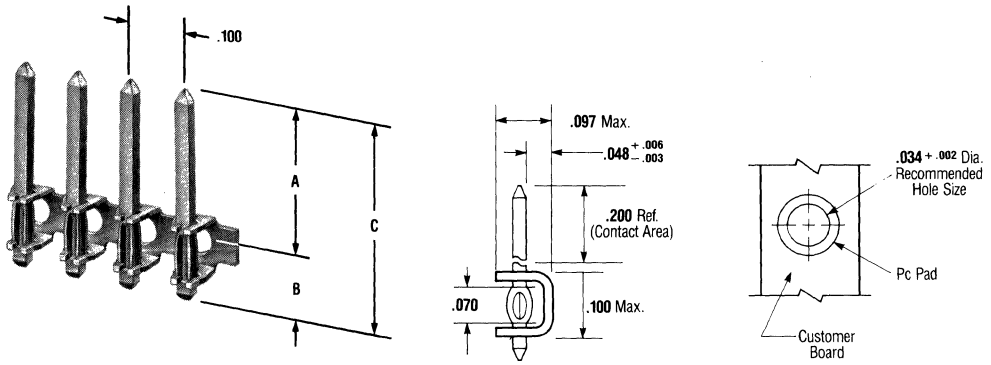
Bandolier Posts (Uninsulated)

Material:

Bandolier—Brass
Post—Phosphor Bronze

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142
Application Tooling - page 3222
Technical Documents - page 3223



Dimensions			Post Plating			Insertion Machine
A	B	C	Duplex C	Duplex D	Tin-Lead/Nickel	
.318	.106	.424	103577-1	1-103577-3	103577-7	816535-1
.283	.106	.389	103577-3	1-103577-5	103577-9	—
.235	.106	.341	103577-5	1-103577-7	1-103577-1	816535-2

Notes: 1. Posts can be applied using hand tool 91419-1.
2. Posts per reel—30,000.

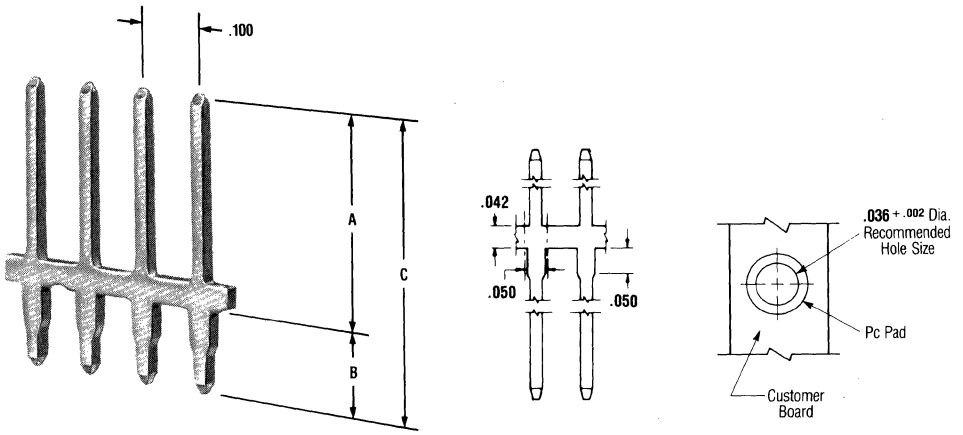
Strip Form Posts (Uninsulated)

Material:

Phosphor Bronze

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142
Application Tooling - page 3222
Technical Documents - page 3223



Dimensions			Post Plating			
A	B	C	Duplex C	Duplex D	Gold/Nickel	Tin-Lead/Nickel
.252	.185	.437	—	—	87878-6	1-87022-4
.320	.123	.443	87623-1	87623-4	87022-1	1-87022-0
.320	.242	.562	—	—	1-87022-3	—
.320	.696	1.016	—	—	87022-2	87022-4
.360	.123	.483	—	—	4-87022-1	4-87022-3
.537	.123	.660	—	—	—	9-87022-6

Notes: 1. Posts per reel—20,000.
2. Other post lengths are available, consult AMP Incorporated.
3. AMP-O-MATIC Insertion Machine No. 2-457382-0.

Plating Specifications:

Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Gold/Nickel—.000030 gold over .000050 nickel on entire post

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post

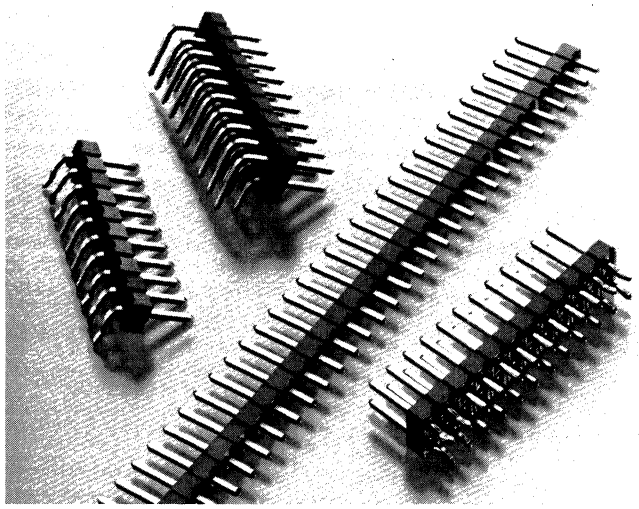
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association File No. LR 16455

Breakaway, Retention and Standard Headers—Unshrouded

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

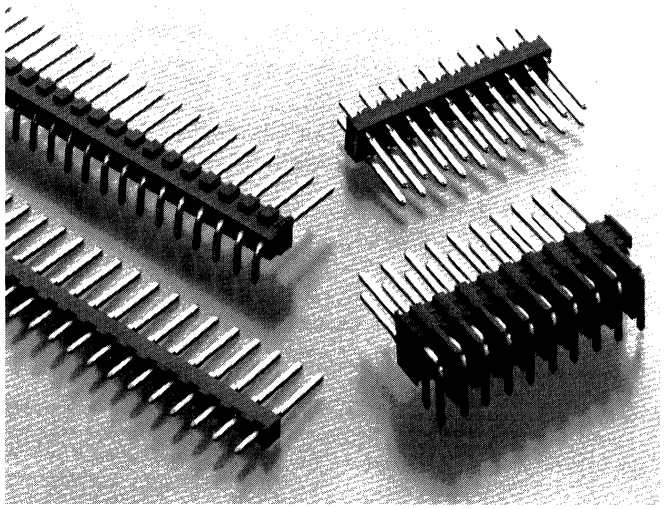
Breakaway and Retention Headers—Unshrouded



Product Facts

- Design and inventory versatility—headers can be broken into any size needed
- Variety of popular sizes available
- Substantial time/labor savings—install all posts at one time
- Vertical and right-angle versions available in single- and double-row configurations
- Copper alloy, posts
- Choice of gold duplex or tin-lead plated posts
- Post lengths include .230 and .318 for connector mating
- Board retention feature available
- Flame retardant, black thermoplastic housings; 94V-0 rated
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455

Standard Headers—Unshrouded



Product Facts

- Variety of popular sizes available
- Substantial time/labor savings—install all posts at one time
- Vertical and right-angle versions available in single- and double-row configurations
- Triple-row version available in vertical configuration
- Copper alloy, drawn wire posts
- Choice of select gold or tin-lead plated posts
- Post length is .318 for connector mating
- Flame retardant, black thermoplastic housings; 94V-0 rated
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455

Performance Characteristics:

Electrical

Insulation Resistance—5,000 megohms minimum initial

Dielectric Withstanding Voltage—750 RMS at sea level

Environmental

Operating Temperature— −65° C to +105° C (black thermoplastic housings)

Current—3 amperes maximum per contact

Breakaway Headers—Unshrouded Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Straight Post

Material:

Housing—Black Thermoplastic, flame retardant

Posts—Copper Alloy

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

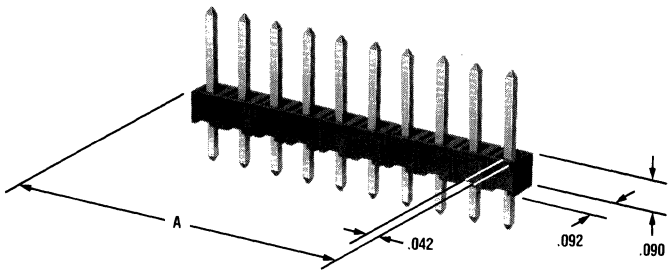
Technical Documents - page 3223

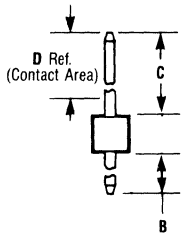
Plating Specifications:

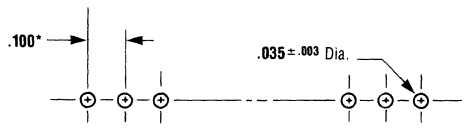
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post







Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

Breakaway Headers—Unshrouded Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

No. of Pos.	A Dim.	Packaging Quantity	B = .090 C = .230 D = .185		B = .120 C = .230 D = .185			B = .125 C = .318 D = .200		
			Post Plating		Post Plating			Post Plating		
			Duplex C	Tin-Lead/Nickel	Duplex C	Duplex D	Tin-Lead/Nickel	Duplex C	Duplex D	Tin-Lead/Nickel
1	.084	250	103747-1	103741-1	103239-1	103185-1	103327-1	102976-1	102972-1	103321-1
2	.184	250	103747-2	103741-2	103239-2	103185-2	103327-2	102976-2	102972-2	103321-2
3	.284	250	103747-3	103741-3	103239-3	103185-3	103327-3	102976-3	102972-3	103321-3
4	.384	250	103747-4	103741-4	103239-4	103185-4	103327-4	102976-4	102972-4	103321-4
5	.484	250	103747-5	103741-5	103239-5	103185-5	103327-5	102976-5	102972-5	103321-5
6	.584	250	103747-6	103741-6	103239-6	103185-6	103327-6	102976-6	102972-6	103321-6
7	.684	250	103747-7	103741-7	103239-7	103185-7	103327-7	102976-7	102972-7	103321-7
8	.784	250	103747-8	103741-8	103239-8	103185-8	103327-8	102976-8	102972-8	103321-8
9	.884	250	103747-9	103741-9	103239-9	103185-9	103327-9	102976-9	102972-9	103321-9
10	.984	250	1-103747-0	1-103741-0	1-103239-0	1-103185-0	1-103327-0	1-102976-0	1-102972-0	1-103321-0
11	1.084	100	1-103747-1	1-103741-1	1-103239-1	1-103185-1	1-103327-1	1-102976-1	1-102972-1	1-103321-1
12	1.184	100	1-103747-2	1-103741-2	1-103239-2	1-103185-2	1-103327-2	1-102976-2	1-102972-2	1-103321-2
13	1.284	100	1-103747-3	1-103741-3	1-103239-3	1-103185-3	1-103327-3	1-102976-3	1-102972-3	1-103321-3
14	1.384	100	1-103747-4	1-103741-4	1-103239-4	1-103185-4	1-103327-4	1-102976-4	1-102972-4	1-103321-4
15	1.484	100	1-103747-5	1-103741-5	1-103239-5	1-103185-5	1-103327-5	1-102976-5	1-102972-5	1-103321-5
16	1.584	100	—	—	1-103239-6	1-103185-6	1-103327-6	1-102976-6	1-102972-6	1-103321-6
17	1.684	100	—	—	1-103239-7	1-103185-7	1-103327-7	1-102976-7	1-102972-7	1-103321-7
18	1.784	100	—	—	1-103239-8	1-103185-8	1-103327-8	1-102976-8	1-102972-8	1-103321-8
19	1.884	100	—	—	1-103239-9	1-103185-9	1-103327-9	1-102976-9	1-102972-9	1-103321-9
20	1.984	100	2-103747-0	2-103741-0	2-103239-0	2-103185-0	2-103327-0	2-102976-0	2-102972-0	2-103321-0
21	2.084	100	—	—	2-103239-1	2-103185-1	2-103327-1	2-102976-1	2-102972-1	2-103321-1
22	2.184	100	—	—	2-103239-2	2-103185-2	2-103327-2	2-102976-2	2-102972-2	2-103321-2
23	2.284	100	—	—	2-103239-3	2-103185-3	2-103327-3	2-102976-3	2-102972-3	2-103321-3
24	2.384	100	—	—	2-103239-4	2-103185-4	2-103327-4	2-102976-4	2-102972-4	2-103321-4
25	2.484	100	2-103747-5	2-103741-5	2-103239-5	2-103185-5	2-103327-5	2-102976-5	2-102972-5	2-103321-5
26	2.584	100	—	—	2-103239-6	2-103185-6	2-103327-6	2-102976-6	2-102972-6	2-103321-6
27	2.684	100	—	—	2-103239-7	2-103185-7	2-103327-7	2-102976-7	2-102972-7	2-103321-7
28	2.784	100	—	—	2-103239-8	2-103185-8	2-103327-8	2-102976-8	2-102972-8	2-103321-8
29	2.884	100	—	—	2-103239-9	2-103185-9	2-103327-9	2-102976-9	2-102972-9	2-103321-9
30	2.984	100	3-103747-0	3-103741-0	3-103239-0	3-103185-0	3-103327-0	3-102976-0	3-102972-0	3-103321-0
31	3.084	100	—	—	3-103239-1	3-103185-1	3-103327-1	3-102976-1	3-102972-1	3-103321-1
32	3.184	100	—	—	3-103239-2	3-103185-2	3-103327-2	3-102976-2	3-102972-2	3-103321-2
33	3.284	100	—	—	3-103239-3	3-103185-3	3-103327-3	3-102976-3	3-102972-3	3-103321-3
34	3.384	100	—	—	3-103239-4	3-103185-4	3-103327-4	3-102976-4	3-102972-4	3-103321-4
35	3.484	100	3-103747-5	3-103741-5	3-103239-5	3-103185-5	3-103327-5	3-102976-5	3-102972-5	3-103321-5
36	3.584	100	—	—	3-103239-6	3-103185-6	3-103327-6	3-102976-6	3-102972-6	3-103321-6
37	3.684	100	—	—	3-103239-7	3-103185-7	3-103327-7	3-102976-7	3-102972-7	3-103321-7
38	3.784	100	—	—	3-103239-8	3-103185-8	3-103327-8	3-102976-8	3-102972-8	3-103321-8
39	3.884	100	—	—	3-103239-9	3-103185-9	3-103327-9	3-102976-9	3-102972-9	3-103321-9
40	3.984	100	4-103747-0	4-103741-0	4-103239-0	4-103185-0	4-103327-0	4-102976-0	4-102972-0	4-103321-0

Notes: 1. Headers may be broken to desired number of positions using Hand Tool No. 91406-1.
2. Other post lengths are available, consult AMP Incorporated.

Header Cutter Pistol-Grip Tool Kit
Part No. 314818-1

Cuts single or double rows with straight- or right-angle posts. Kit contains a ratcheted pistol-grip handle, interchangeable head, header positioner and replacement cutter blades. The positioner mounts on either side of the head, and is adjustable up to 25-position lengths.

Hand Tool No. 91406-1

Breakaway Headers—Unshrouded Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Right-Angle Post

Material:

Housing—Black thermoplastic, flame retardant

Posts—Copper Alloy

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

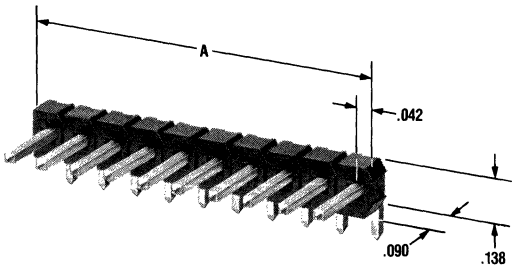
Technical Documents - page 3223

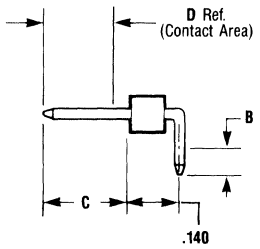
Plating Specifications:

Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post





Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

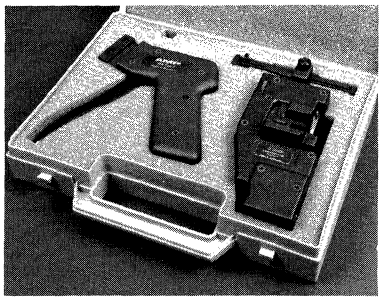
Breakaway Headers—Unshrouded Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

No. of Pos.	A Dim.	Packaging Quantity	B = .090 C = .230 D = .185 Post Plating		B = .120 C = .230 D = .185 Post Plating			B = .110 C = .318 D = .200 Post Plating		
			Duplex C	Tin-Lead/Nickel	Duplex C	Duplex D	Tin-Lead/Nickel	Duplex C	Duplex D	Tin-Lead/Nickel
1	.084	250	103765-1	103759-1	103148-1	103325-1	103329-1	102978-1	102974-1	103323-1
2	.184	250	103765-2	103759-2	103148-2	103325-2	103329-2	102978-2	102974-2	103323-2
3	.284	250	103765-3	103759-3	103148-3	103325-3	103329-3	102978-3	102974-3	103323-3
4	.384	250	103765-4	103759-4	103148-4	103325-4	103329-4	102978-4	102974-4	103323-4
5	.484	250	103765-5	103759-5	103148-5	103325-5	103329-5	102978-5	102974-5	103323-5
6	.584	250	103765-6	103759-6	103148-6	103325-6	103329-6	102978-6	102974-6	103323-6
7	.684	250	103765-7	103759-7	103148-7	103325-7	103329-7	102978-7	102974-7	103323-7
8	.784	250	103765-8	103759-8	103148-8	103325-8	103329-8	102978-8	102974-8	103323-8
9	.884	250	103765-9	103759-9	103148-9	103325-9	103329-9	102978-9	102974-9	103323-9
10	.984	250	1-103765-0	1-103759-0	1-103148-0	1-103325-0	1-103329-0	1-102978-0	1-102974-0	1-103323-0
11	1.084	100	1-103765-1	1-103759-1	1-103148-1	1-103325-1	1-103329-1	1-102978-1	1-102974-1	1-103323-1
12	1.184	100	1-103765-2	1-103759-2	1-103148-2	1-103325-2	1-103329-2	1-102978-2	1-102974-2	1-103323-2
13	1.284	100	1-103765-3	1-103759-3	1-103148-3	1-103325-3	1-103329-3	1-102978-3	1-102974-3	1-103323-3
14	1.384	100	1-103765-4	1-103759-4	1-103148-4	1-103325-4	1-103329-4	1-102978-4	1-102974-4	1-103323-4
15	1.484	100	1-103765-5	1-103759-5	1-103148-5	1-103325-5	1-103329-5	1-102978-5	1-102974-5	1-103323-5
16	1.584	100	—	—	1-103148-6	1-103325-6	1-103329-6	1-102978-6	1-102974-6	1-103323-6
17	1.684	100	—	—	1-103148-7	1-103325-7	1-103329-7	1-102978-7	1-102974-7	1-103323-7
18	1.784	100	—	—	1-103148-8	1-103325-8	1-103329-8	1-102978-8	1-102974-8	1-103323-8
19	1.884	100	—	—	1-103148-9	1-103325-9	1-103329-9	1-102978-9	1-102974-9	1-103323-9
20	1.984	100	2-103765-0	2-103759-0	2-103148-0	2-103325-0	2-103329-0	2-102978-0	2-102974-0	2-103323-0
21	2.084	100	—	—	2-103148-1	2-103325-1	2-103329-1	2-102978-1	2-102974-1	2-103323-1
22	2.184	100	—	—	2-103148-2	2-103325-2	2-103329-2	2-102978-2	2-102974-2	2-103323-2
23	2.284	100	—	—	2-103148-3	2-103325-3	2-103329-3	2-102978-3	2-102974-3	2-103323-3
24	2.384	100	—	—	2-103148-4	2-103325-4	2-103329-4	2-102978-4	2-102974-4	2-103323-4
25	2.484	100	2-103765-5	2-103759-5	2-103148-5	2-103325-5	2-103329-5	2-102978-5	2-102974-5	2-103323-5
26	2.584	100	—	—	2-103148-6	2-103325-6	2-103329-6	2-102978-6	2-102974-6	2-103323-6
27	2.684	100	—	—	2-103148-7	2-103325-7	2-103329-7	2-102978-7	2-102974-7	2-103323-7
28	2.784	100	—	—	2-103148-8	2-103325-8	2-103329-8	2-102978-8	2-102974-8	2-103323-8
29	2.884	100	—	—	2-103148-9	2-103325-9	2-103329-9	2-102978-9	2-102974-9	2-103323-9
30	2.984	100	3-103765-0	3-103759-0	3-103148-0	3-103325-0	3-103329-0	3-102978-0	3-102974-0	3-103323-0
31	3.084	100	—	—	3-103148-1	3-103325-1	3-103329-1	3-102978-1	3-102974-1	3-103323-1
32	3.184	100	—	—	3-103148-2	3-103325-2	3-103329-2	3-102978-2	3-102974-2	3-103323-2
33	3.284	100	—	—	3-103148-3	3-103325-3	3-103329-3	3-102978-3	3-102974-3	3-103323-3
34	3.384	100	—	—	3-103148-4	3-103325-4	3-103329-4	3-102978-4	3-102974-4	3-103323-4
35	3.484	100	3-103765-5	3-103759-5	3-103148-5	3-103325-5	3-103329-5	3-102978-5	3-102974-5	3-103323-5
36	3.584	100	—	—	3-103148-6	3-103325-6	3-103329-6	3-102978-6	3-102974-6	3-103323-6
37	3.684	100	—	—	3-103148-7	3-103325-7	3-103329-7	3-102978-7	3-102974-7	3-103323-7
38	3.784	100	—	—	3-103148-8	3-103325-8	3-103329-8	3-102978-8	3-102974-8	3-103323-8
39	3.884	100	—	—	3-103148-9	3-103325-9	3-103329-9	3-102978-9	3-102974-9	3-103323-9
40	3.984	100	4-103765-0	4-103759-0	4-103148-0	4-103325-0	4-103329-0	4-102978-0	4-102974-0	4-103323-0

Notes: 1. Headers may be broken to desired number of positions using Hand Tool No. 91406-1.
2. Other post lengths are available, consult AMP Incorporated.



Header Cutter Pistol-Grip Tool Kit Part No. 314818-1

Cuts single or double rows with straight- or right-angle posts. Kit contains a ratcheted pistol-grip handle, interchangeable head, header positioner and replacement cutter blades. The positioner mounts on either side of the head, and is adjustable up to 25-position lengths.

Hand Tool No. 91406-1

Breakaway Headers—Unshrouded Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Straight Post

Material:

Housing—Black thermoplastic, flame retardant

Posts—Copper Alloy

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

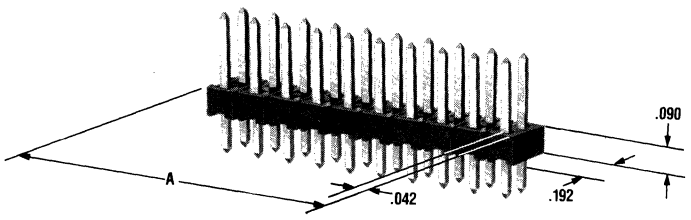
Technical Documents - page 3223

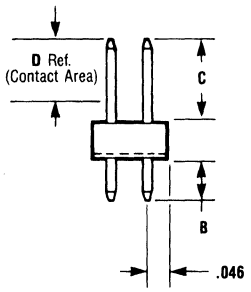
Plating Specifications:

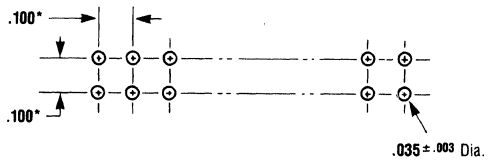
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post







Recommended Pc Board Hole Layout

*± .003 tolerances not to accumulate within one connector pattern.

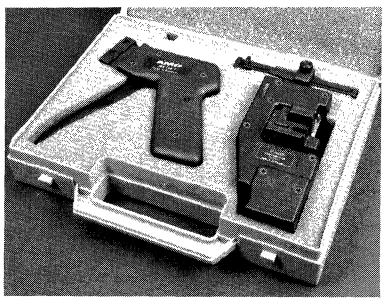
Breakaway Headers—Unshrouded Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

No. of Pos.	A Dim.	Packaging Quantity	B = .090 C = .230 D = .185 Post Plating		B = .120 C = .230 D = .185 Post Plating			B = .125 C = .318 D = .200 Post Plating		
			Duplex C	Tin-Lead/Nickel	Duplex C	Duplex D	Tin-Lead/Nickel	Duplex C	Duplex D	Tin-Lead/Nickel
2	.084	250	103783-1	103777-1	103240-1	103186-1	103328-1	102977-1	102973-1	103322-1
4	.184	250	103783-2	103777-2	103240-2	103186-2	103328-2	102977-2	102973-2	103322-2
6	.284	250	103783-3	103777-3	103240-3	103186-3	103328-3	102977-3	102973-3	103322-3
8	.384	250	103783-4	103777-4	103240-4	103186-4	103328-4	102977-4	102973-4	103322-4
10	.484	250	103783-5	103777-5	103240-5	103186-5	103328-5	102977-5	102973-5	103322-5
12	.584	100	103783-6	103777-6	103240-6	103186-6	103328-6	102977-6	102973-6	103322-6
14	.684	100	103783-7	103777-7	103240-7	103186-7	103328-7	102977-7	102973-7	103322-7
16	.784	100	103783-8	103777-8	103240-8	103186-8	103328-8	102977-8	102973-8	103322-8
18	.884	100	103783-9	103777-9	103240-9	103186-9	103328-9	102977-9	102973-9	103322-9
20	.984	100	1-103783-0	1-103777-0	1-103240-0	1-103186-0	1-103328-0	1-102977-0	1-102973-0	1-103322-0
22	1.084	100	1-103783-1	1-103777-1	1-103240-1	1-103186-1	1-103328-1	1-102977-1	1-102973-1	1-103322-1
24	1.184	100	1-103783-2	1-103777-2	1-103240-2	1-103186-2	1-103328-2	1-102977-2	1-102973-2	1-103322-2
26	1.284	100	1-103783-3	1-103777-3	1-103240-3	1-103186-3	1-103328-3	1-102977-3	1-102973-3	1-103322-3
28	1.384	100	—	—	1-103240-4	1-103186-4	1-103328-4	1-102977-4	1-102973-4	1-103322-4
30	1.484	100	1-103783-5	1-103777-5	1-103240-5	1-103186-5	1-103328-5	1-102977-5	1-102973-5	1-103322-5
32	1.584	100	—	—	1-103240-6	1-103186-6	1-103328-6	1-102977-6	1-102973-6	1-103322-6
34	1.684	100	1-103783-7	1-103777-7	1-103240-7	1-103186-7	1-103328-7	1-102977-7	1-102973-7	1-103322-7
36	1.784	100	—	—	1-103240-8	1-103186-8	1-103328-8	1-102977-8	1-102973-8	1-103322-8
38	1.884	100	—	—	1-103240-9	1-103186-9	1-103328-9	1-102977-9	1-102973-9	1-103322-9
40	1.984	100	2-103783-0	2-103777-0	2-103240-0	2-103186-0	2-103328-0	2-102977-0	2-102973-0	2-103322-0
42	2.084	100	—	—	2-103240-1	2-103186-1	2-103328-1	2-102977-1	2-102973-1	2-103322-1
44	2.184	100	—	—	2-103240-2	2-103186-2	2-103328-2	2-102977-2	2-102973-2	2-103322-2
46	2.284	100	—	—	2-103240-3	2-103186-3	2-103328-3	2-102977-3	2-102973-3	2-103322-3
48	2.384	100	—	—	2-103240-4	2-103186-4	2-103328-4	2-102977-4	2-102973-4	2-103322-4
50	2.484	100	2-103783-5	2-103777-5	2-103240-5	2-103186-5	2-103328-5	2-102977-5	2-102973-5	2-103322-5
52	2.584	100	—	—	2-103240-6	2-103186-6	2-103328-6	2-102977-6	2-102973-6	2-103322-6
54	2.684	100	—	—	2-103240-7	2-103186-7	2-103328-7	2-102977-7	2-102973-7	2-103322-7
56	2.784	100	—	—	2-103240-8	2-103186-8	2-103328-8	2-102977-8	2-102973-8	2-103322-8
58	2.884	100	—	—	2-103240-9	2-103186-9	2-103328-9	2-102977-9	2-102973-9	2-103322-9
60	2.984	50	3-103783-0	3-103777-0	3-103240-0	3-103186-0	3-103328-0	3-102977-0	3-102973-0	3-103322-0
62	3.084	50	—	—	3-103240-1	3-103186-1	3-103328-1	3-102977-1	3-102973-1	3-103322-1
64	3.184	50	—	—	3-103240-2	3-103186-2	3-103328-2	3-102977-2	3-102973-2	3-103322-2
66	3.284	50	—	—	3-103240-3	3-103186-3	3-103328-3	3-102977-3	3-102973-3	3-103322-3
68	3.384	50	—	—	3-103240-4	3-103186-4	3-103328-4	3-102977-4	3-102973-4	3-103322-4
70	3.484	50	3-103783-5	3-103777-5	3-103240-5	3-103186-5	3-103328-5	3-102977-5	3-102973-5	3-103322-5
72	3.584	50	—	—	3-103240-6	3-103186-6	3-103328-6	3-102977-6	3-102973-6	3-103322-6
74	3.684	50	—	—	3-103240-7	3-103186-7	3-103328-7	3-102977-7	3-102973-7	3-103322-7
76	3.784	50	—	—	3-103240-8	3-103186-8	3-103328-8	3-102977-8	3-102973-8	3-103322-8
78	3.884	50	—	—	3-103240-9	3-103186-9	3-103328-9	3-102977-9	3-102973-9	3-103322-9
80	3.984	50	4-103783-0	4-103777-0	4-103240-0	4-103186-0	4-103328-0	4-102977-0	4-102973-0	4-103322-0

Notes: 1. Headers may be broken to desired number of positions using Hand Tool No. 91406-1.
2. Other post lengths are available, consult AMP Incorporated.



Header Cutter Pistol-Grip Tool Kit Part No. 314818-1

Cuts single or double rows with straight- or right-angle posts. Kit contains a ratcheted pistol-grip handle, interchangeable head, header positioner and replacement cutter blades. The positioner mounts on either side of the head, and is adjustable up to 25-position lengths.

Hand Tool No. 91406-1

Breakaway Headers—Unshrouded Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Right-Angle Post

Material:

Housing—Black thermoplastic, flame retardant

Posts—Copper Alloy

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

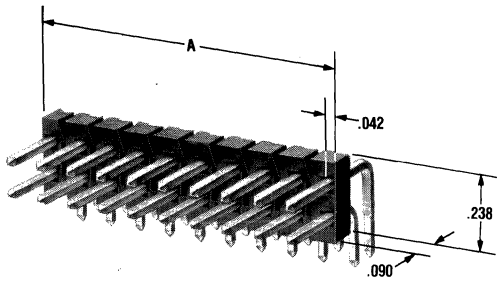
Technical Documents - page 3223

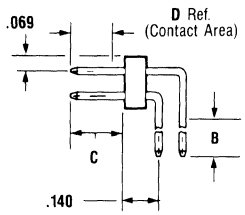
Plating Specifications:

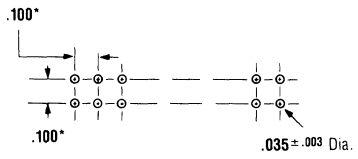
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post







Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

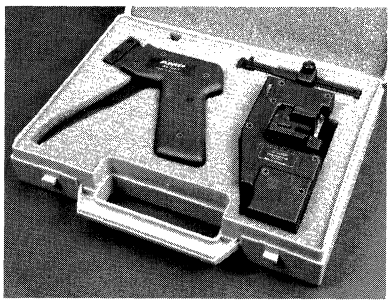
Breakaway Headers—Unshrouded Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

No. of Pos.	A Dim.	Packaging Quantity	B = .090 C = .230 D = .185		B = .120 C = .230 D = .185			B = .110 C = .318 D = .200		
			Post Plating		Post Plating			Post Plating		
			Duplex C	Tin-Lead/Nickel	Duplex C	Duplex D	Tin-Lead/Nickel	Duplex C	Duplex D	Tin-Lead/Nickel
2	.084	250	103801-1	103795-1	103149-1	103326-1	103330-1	102979-1	102975-1	103324-1
4	.184	250	103801-2	103795-2	103149-2	103326-2	103330-2	102979-2	102975-2	103324-2
6	.284	250	103801-3	103795-3	103149-3	103326-3	103330-3	102979-3	102975-3	103324-3
8	.384	250	103801-4	103795-4	103149-4	103326-4	103330-4	102979-4	102975-4	103324-4
10	.484	250	103801-5	103795-5	103149-5	103326-5	103330-5	102979-5	102975-5	103324-5
12	.584	100	103801-6	103795-6	103149-6	103326-6	103330-6	102979-6	102975-6	103324-6
14	.684	100	103801-7	103795-7	103149-7	103326-7	103330-7	102979-7	102975-7	103324-7
16	.784	100	103801-8	103795-8	103149-8	103326-8	103330-8	102979-8	102975-8	103324-8
18	.884	100	103801-9	103795-9	103149-9	103326-9	103330-9	102979-9	102975-9	103324-9
20	.984	100	1-103801-0	1-103795-0	1-103149-0	1-103326-0	1-103330-0	1-102979-0	1-102975-0	1-103324-0
22	1.084	100	1-103801-1	1-103795-1	1-103149-1	1-103326-1	1-103330-1	1-102979-1	1-102975-1	1-103324-1
24	1.184	100	1-103801-2	1-103795-2	1-103149-2	1-103326-2	1-103330-2	1-102979-2	1-102975-2	1-103324-2
26	1.284	100	1-103801-3	1-103795-3	1-103149-3	1-103326-3	1-103330-3	1-102979-3	1-102975-3	1-103324-3
28	1.384	100	—	—	1-103149-4	1-103326-4	1-103330-4	1-102979-4	1-102975-4	1-103324-4
30	1.484	100	1-103801-5	1-103795-5	1-103149-5	1-103326-5	1-103330-5	1-102979-5	1-102975-5	1-103324-5
32	1.584	100	—	—	1-103149-6	1-103326-6	1-103330-6	1-102979-6	1-102975-6	1-103324-6
34	1.684	100	1-103801-7	1-103795-7	1-103149-7	1-103326-7	1-103330-7	1-102979-7	1-102975-7	1-103324-7
36	1.784	100	—	—	1-103149-8	1-103326-8	1-103330-8	1-102979-8	1-102975-8	1-103324-8
38	1.884	100	—	—	1-103149-9	1-103326-9	1-103330-9	1-102979-9	1-102975-9	1-103324-9
40	1.984	100	2-103801-0	2-103795-0	2-103149-0	2-103326-0	2-103330-0	2-102979-0	2-102975-0	2-103324-0
42	2.084	100	—	—	2-103149-1	2-103326-1	2-103330-1	2-102979-1	2-102975-1	2-103324-1
44	2.184	100	—	—	2-103149-2	2-103326-2	2-103330-2	2-102979-2	2-102975-2	2-103324-2
46	2.284	100	—	—	2-103149-3	2-103326-3	2-103330-3	2-102979-3	2-102975-3	2-103324-3
48	2.384	100	—	—	2-103149-4	2-103326-4	2-103330-4	2-102979-4	2-102975-4	2-103324-4
50	2.484	100	2-103801-5	2-103795-5	2-103149-5	2-103326-5	2-103330-5	2-102979-5	2-102975-5	2-103324-5
52	2.584	100	—	—	2-103149-6	2-103326-6	2-103330-6	2-102979-6	2-102975-6	2-103324-6
54	2.684	100	—	—	2-103149-7	2-103326-7	2-103330-7	2-102979-7	2-102975-7	2-103324-7
56	2.784	100	—	—	2-103149-8	2-103326-8	2-103330-8	2-102979-8	2-102975-8	2-103324-8
58	2.884	100	—	—	2-103149-9	2-103326-9	2-103330-9	2-102979-9	2-102975-9	2-103324-9
60	2.984	50	3-103801-0	3-103795-0	3-103149-0	3-103326-0	3-103330-0	3-102979-0	3-102975-0	3-103324-0
62	3.084	50	—	—	3-103149-1	3-103326-1	3-103330-1	3-102979-1	3-102975-1	3-103324-1
64	3.184	50	—	—	3-103149-2	3-103326-2	3-103330-2	3-102979-2	3-102975-2	3-103324-2
66	3.284	50	—	—	3-103149-3	3-103326-3	3-103330-3	3-102979-3	3-102975-3	3-103324-3
68	3.384	50	—	—	3-103149-4	3-103326-4	3-103330-4	3-102979-4	3-102975-4	3-103324-4
70	3.484	50	3-103801-5	3-103795-5	3-103149-5	3-103326-5	3-103330-5	3-102979-5	3-102975-5	3-103324-5
72	3.584	50	—	—	3-103149-6	3-103326-6	3-103330-6	3-102979-6	3-102975-6	3-103324-6
74	3.684	50	—	—	3-103149-7	3-103326-7	3-103330-7	3-102979-7	3-102975-7	3-103324-7
76	3.784	50	—	—	3-103149-8	3-103326-8	3-103330-8	3-102979-8	3-102975-8	3-103324-8
78	3.884	50	—	—	3-103149-9	3-103326-9	3-103330-9	3-102979-9	3-102975-9	3-103324-9
80	3.984	50	4-103801-0	4-103795-0	4-103149-0	4-103326-0	4-103330-0	4-102979-0	4-102975-0	4-103324-0

Notes: 1. Headers may be broken to desired number of positions using Hand Tool No. 91406-1.
2. Other post lengths are available, consult AMP Incorporated.



Header Cutter Pistol-Grip Tool Kit
Part No. 314818-1

Cuts single or double rows with straight- or right-angle posts. Kit contains a ratcheted pistol-grip handle, interchangeable head, header positioner and replacement cutter blades. The positioner mounts on either side of the head, and is adjustable up to 25-position lengths.

Hand Tool No. 91406-1

Retention Headers—Unshrouded Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Straight Post (with Board Retention Feature)

Material:

Housing—Black Thermoplastic, flame retardant

Posts—Copper Alloy

Performance Characteristics:

Insertion Force—10 lb. maximum

Retention Force—.5 lb. minimum

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

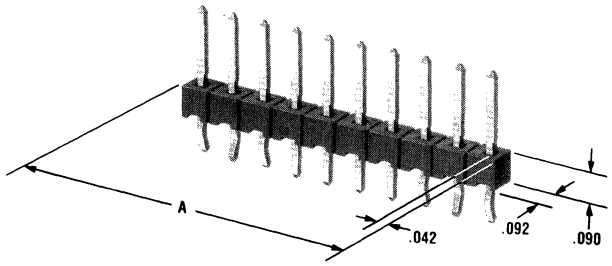
Technical Documents - page 3223

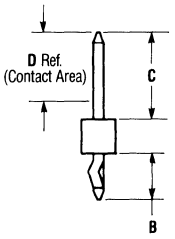
Plating Specifications:

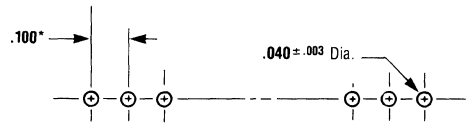
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post







Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Packaging Quantity	B = .120 C = .230 D = .185 Post Plating			B = .125 C = .318 D = .200 Post Plating		
			Duplex C	Duplex D	Tin-Lead/Nickel	Duplex C	Duplex D	Tin-Lead/Nickel
3	.284	250	104344-1	104345-1	104346-1	104426-1	104427-1	104428-1
4	.384	250	104344-2	104345-2	104346-2	104426-2	104427-2	104428-2
5	.484	250	104344-3	104345-3	104346-3	104426-3	104427-3	104428-3
6	.584	250	104344-4	104345-4	104346-4	104426-4	104427-4	104428-4
7	.684	250	104344-5	104345-5	104346-5	104426-5	104427-5	104428-5
8	.784	250	104344-6	104345-6	104346-6	104426-6	104427-6	104428-6
9	.884	250	104344-7	104345-7	104346-7	104426-7	104427-7	104428-7
10	.984	250	104344-8	104345-8	104346-8	104426-8	104427-8	104428-8
11	1.084	100	104344-9	104345-9	104346-9	104426-9	104427-9	104428-9
12	1.184	100	1-104344-0	1-104345-0	1-104346-0	1-104426-0	1-104427-0	1-104428-0
13	1.284	100	1-104344-1	1-104345-1	1-104346-1	1-104426-1	1-104427-1	1-104428-1
14	1.384	100	1-104344-2	1-104345-2	1-104346-2	1-104426-2	1-104427-2	1-104428-2
15	1.484	100	1-104344-3	1-104345-3	1-104346-3	1-104426-3	1-104427-3	1-104428-3
16	1.584	100	1-104344-4	1-104345-4	1-104346-4	1-104426-4	1-104427-4	1-104428-4
17	1.684	100	1-104344-5	1-104345-5	1-104346-5	1-104426-5	1-104427-5	1-104428-5
18	1.784	100	1-104344-6	1-104345-6	1-104346-6	1-104426-6	1-104427-6	1-104428-6
19	1.884	100	1-104344-7	1-104345-7	1-104346-7	1-104426-7	1-104427-7	1-104428-7
20	1.984	100	1-104344-8	1-104345-8	1-104346-8	1-104426-8	1-104427-8	1-104428-8
21	2.084	100	1-104344-9	1-104345-9	1-104346-9	1-104426-9	1-104427-9	1-104428-9
22	2.184	100	2-104344-0	2-104345-0	2-104346-0	2-104426-0	2-104427-0	2-104428-0
23	2.284	100	2-104344-1	2-104345-1	2-104346-1	2-104426-1	2-104427-1	2-104428-1
24	2.384	100	2-104344-2	2-104345-2	2-104346-2	2-104426-2	2-104427-2	2-104428-2
25	2.484	100	2-104344-3	2-104345-3	2-104346-3	2-104426-3	2-104427-3	2-104428-3
26	2.584	100	2-104344-4	2-104345-4	2-104346-4	2-104426-4	2-104427-4	2-104428-4
30	2.984	100	2-104344-5	2-104345-5	2-104346-5	2-104426-5	2-104427-5	2-104428-5
35	3.484	100	2-104344-6	2-104345-6	2-104346-6	2-104426-6	2-104427-6	2-104428-6
40	3.984	100	2-104344-7	2-104345-7	2-104346-7	2-104426-7	2-104427-7	2-104428-7

Notes: 1. Refer to the product drawing to determine the number and location of the Board Retention Posts.
2. Other post lengths are available, consult AMP Incorporated.

Retention Headers—Unshrouded Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Right-Angle Post (with Board Retention Feature)

Material:

Housing—Black Thermoplastic, flame retardant

Posts—Copper Alloy

Performance Characteristics:

Insertion Force—10 lb. maximum

Retention Force—.5 lb. minimum

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

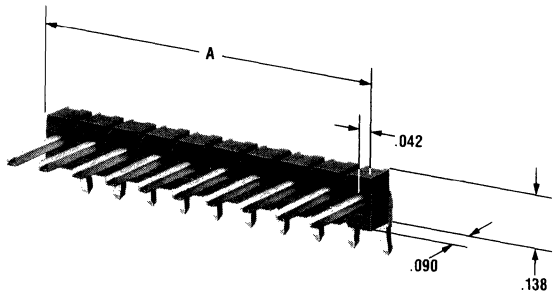
Technical Documents - page 3223

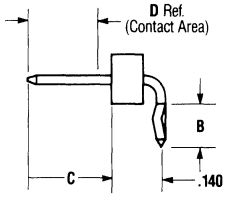
Plating Specifications:

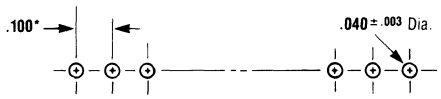
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post







Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Packaging Quantity	B = .120 C = .230 D = .185 Post Plating			B = .110 C = .318 D = .200 Post Plating		
			Duplex C	Duplex D	Tin-Lead/Nickel	Duplex C	Duplex D	Tin-Lead/Nickel
3	.284	250	104347-1	104348-1	104349-1	104429-1	104430-1	104431-1
4	.384	250	104347-2	104348-2	104349-2	104429-2	104430-2	104431-2
5	.484	250	104347-3	104348-3	104349-3	104429-3	104430-3	104431-3
6	.584	250	104347-4	104348-4	104349-4	104429-4	104430-4	104431-4
7	.684	250	104347-5	104348-5	104349-5	104429-5	104430-5	104431-5
8	.784	250	104347-6	104348-6	104349-6	104429-6	104430-6	104431-6
9	.884	250	104347-7	104348-7	104349-7	104429-7	104430-7	104431-7
10	.984	250	104347-8	104348-8	104349-8	104429-8	104430-8	104431-8
11	1.084	100	104347-9	104348-9	104349-9	104429-9	104430-9	104431-9
12	1.184	100	1-104347-0	1-104348-0	1-104349-0	1-104429-0	1-104430-0	1-104431-0
13	1.284	100	1-104347-1	1-104348-1	1-104349-1	1-104429-1	1-104430-1	1-104431-1
14	1.384	100	1-104347-2	1-104348-2	1-104349-2	1-104429-2	1-104430-2	1-104431-2
15	1.484	100	1-104347-3	1-104348-3	1-104349-3	1-104429-3	1-104430-3	1-104431-3
16	1.584	100	1-104347-4	1-104348-4	1-104349-4	1-104429-4	1-104430-4	1-104431-4
17	1.684	100	1-104347-5	1-104348-5	1-104349-5	1-104429-5	1-104430-5	1-104431-5
18	1.784	100	1-104347-6	1-104348-6	1-104349-6	1-104429-6	1-104430-6	1-104431-6
19	1.884	100	1-104347-7	1-104348-7	1-104349-7	1-104429-7	1-104430-7	1-104431-7
20	1.984	100	1-104347-8	1-104348-8	1-104349-8	1-104429-8	1-104430-8	1-104431-8
21	2.084	100	1-104347-9	1-104348-9	1-104349-9	1-104429-9	1-104430-9	1-104431-9
22	2.184	100	2-104347-0	2-104348-0	2-104349-0	2-104429-0	2-104430-0	2-104431-0
23	2.284	100	2-104347-1	2-104348-1	2-104349-1	2-104429-1	2-104430-1	2-104431-1
24	2.384	100	2-104347-2	2-104348-2	2-104349-2	2-104429-2	2-104430-2	2-104431-2
25	2.484	100	2-104347-3	2-104348-3	2-104349-3	2-104429-3	2-104430-3	2-104431-3
26	2.584	100	2-104347-4	2-104348-4	2-104349-4	2-104429-4	2-104430-4	2-104431-4
30	2.984	100	2-104347-5	2-104348-5	2-104349-5	2-104429-5	2-104430-5	2-104431-5
35	3.484	100	2-104347-6	2-104348-6	2-104349-6	2-104429-6	2-104430-6	2-104431-6
40	3.984	100	2-104347-7	2-104348-7	2-104349-7	2-104429-7	2-104430-7	2-104431-7

Notes: 1. Refer to the product drawing to determine the number and location of the Board Retention Posts.
2. Other post lengths are available, consult AMP Incorporated.

Retention Headers—Unshrouded Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Straight Post (with Board Retention Feature)

Material:

Housing—Black Thermoplastic, flame retardant

Posts—Copper Alloy

Performance Characteristics:

Insertion Force—10 lb. maximum

Retention Force—.5 lb. minimum

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

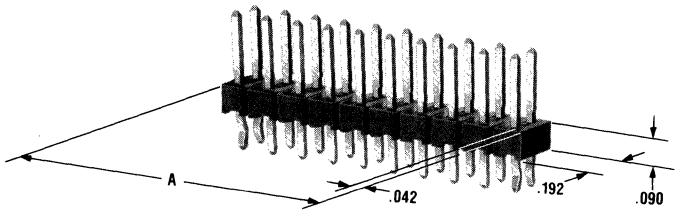
Technical Documents - page 3223

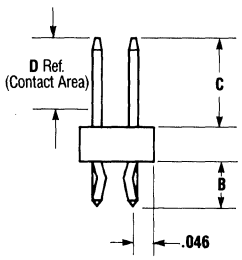
Plating Specifications:

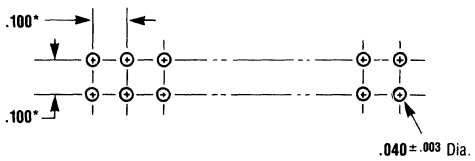
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post







Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Packaging Quantity	B = .120 C = .230 D = .185 Post Plating			B = .125 C = .318 D = .200 Post Plating		
			Duplex C	Duplex D	Tin-Lead/Nickel	Duplex C	Duplex D	Tin-Lead/Nickel
2	.084	250	104350-1	104351-1	104352-1	104432-1	104433-1	104434-1
4	.184	250	104350-2	104351-2	104352-2	104432-2	104433-2	104434-2
6	.284	250	104350-3	104351-3	104352-3	104432-3	104433-3	104434-3
8	.384	250	104350-4	104351-4	104352-4	104432-4	104433-4	104434-4
10	.484	250	104350-5	104351-5	104352-5	104432-5	104433-5	104434-5
12	.584	100	104350-6	104351-6	104352-6	104432-6	104433-6	104434-6
14	.684	100	104350-7	104351-7	104352-7	104432-7	104433-7	104434-7
16	.784	100	104350-8	104351-8	104352-8	104432-8	104433-8	104434-8
18	.884	100	104350-9	104351-9	104352-9	104432-9	104433-9	104434-9
20	.984	100	1-104350-0	1-104351-0	1-104352-0	1-104432-0	1-104433-0	1-104434-0
22	1.084	100	1-104350-1	1-104351-1	1-104352-1	1-104432-1	1-104433-1	1-104434-1
24	1.184	100	1-104350-2	1-104351-2	1-104352-2	1-104432-2	1-104433-2	1-104434-2
26	1.284	100	1-104350-3	1-104351-3	1-104352-3	1-104432-3	1-104433-3	1-104434-3
28	1.384	100	1-104350-4	1-104351-4	1-104352-4	1-104432-4	1-104433-4	1-104434-4
30	1.484	100	1-104350-5	1-104351-5	1-104352-5	1-104432-5	1-104433-5	1-104434-5
34	1.684	100	1-104350-6	1-104351-6	1-104352-6	1-104432-6	1-104433-6	1-104434-6
40	1.984	100	1-104350-7	1-104351-7	1-104352-7	1-104432-7	1-104433-7	1-104434-7
50	2.484	100	1-104350-8	1-104351-8	1-104352-8	1-104432-8	1-104433-8	1-104434-8
60	2.984	50	1-104350-9	1-104351-9	1-104352-9	1-104432-9	1-104433-9	1-104434-9
80	3.984	50	2-104350-0	2-104351-0	2-104352-0	2-104432-0	2-104433-0	2-104434-0

Notes: 1. Refer to the product drawing to determine the number and location of the Board Retention Posts.
2. Other post lengths are available, consult AMP Incorporated.

Retention Headers—Unshrouded Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Right-Angle Post (with Board Retention Feature)

Material:

Housing—Black Thermoplastic, flame retardant
Posts—Copper Alloy

Performance Characteristics:

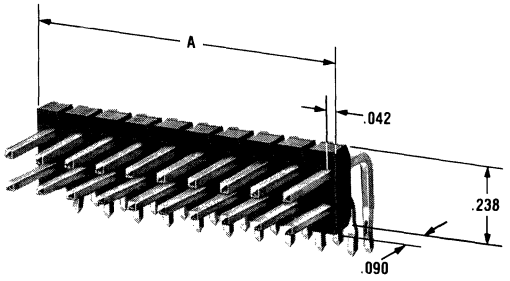
Insertion Force—10 lb. maximum
Retention Force—.5 lb. minimum

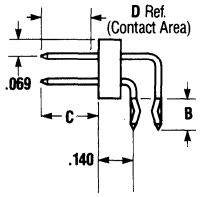
Related Product Data:

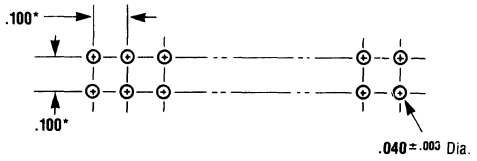
Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142
Technical Documents - page 3223

Plating Specifications:

Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel
Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel
Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post







Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Packaging Quantity	B = .120 C = .230 D = .185 Post Plating			B = .125 C = .318 D = .200 Post Plating		
			Duplex C	Duplex D	Tin-Lead/Nickel	Duplex C	Duplex D	Tin-Lead/Nickel
2	.084	250	104353-1	104354-1	104355-1	104435-1	104436-1	104437-1
4	.184	250	104353-2	104354-2	104355-2	104435-2	104436-2	104437-2
6	.284	250	104353-3	104354-3	104355-3	104435-3	104436-3	104437-3
8	.384	250	104353-4	104354-4	104355-4	104435-4	104436-4	104437-4
10	.484	250	104353-5	104354-5	104355-5	104435-5	104436-5	104437-5
12	.584	100	104353-6	104354-6	104355-6	104435-6	104436-6	104437-6
14	.684	100	104353-7	104354-7	104355-7	104435-7	104436-7	104437-7
16	.784	100	104353-8	104354-8	104355-8	104435-8	104436-8	104437-8
18	.884	100	104353-9	104354-9	104355-9	104435-9	104436-9	104437-9
20	.984	100	1-104353-0	1-104354-0	1-104355-0	1-104435-0	1-104436-0	1-104437-0
22	1.084	100	1-104353-1	1-104354-1	1-104355-1	1-104435-1	1-104436-1	1-104437-1
24	1.184	100	1-104353-2	1-104354-2	1-104355-2	1-104435-2	1-104436-2	1-104437-2
26	1.284	100	1-104353-3	1-104354-3	1-104355-3	1-104435-3	1-104436-3	1-104437-3
28	1.384	100	1-104353-4	1-104354-4	1-104355-4	1-104435-4	1-104436-4	1-104437-4
30	1.484	100	1-104353-5	1-104354-5	1-104355-5	1-104435-5	1-104436-5	1-104437-5
34	1.684	100	1-104353-6	1-104354-6	1-104355-6	1-104435-6	1-104436-6	1-104437-6
40	1.984	100	1-104353-7	1-104354-7	1-104355-7	1-104435-7	1-104436-7	1-104437-7
50	2.484	100	1-104353-8	1-104354-8	1-104355-8	1-104435-8	1-104436-8	1-104437-8
60	2.984	50	1-104353-9	1-104354-9	1-104355-9	1-104435-9	1-104436-9	1-104437-9
80	3.984	50	2-104353-0	2-104354-0	2-104355-0	2-104435-0	2-104436-0	2-104437-0

Notes: 1. Refer to the product drawing to determine the number and location of the Board Retention Posts.
2. Other post lengths are available, consult AMP Incorporated.

Standard Headers—Unshrouded Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Straight Post

Material:

Housing—Black Thermoplastic, flame retardant

Posts—Copper Alloy

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

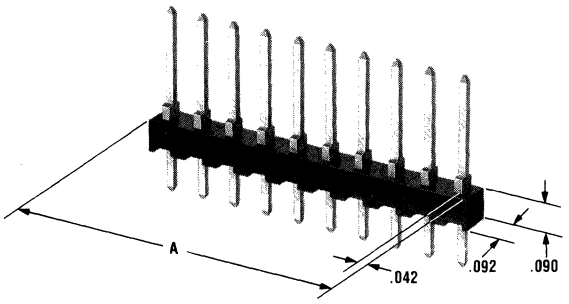
Technical Documents - page 3223

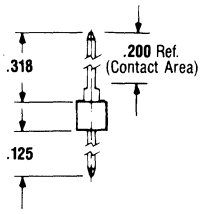
Plating Specifications:

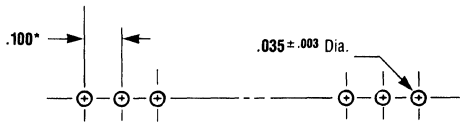
Sel. Gold/Nickel A—Gold flash over .000050 nickel on entire post, with additional .000030 gold on contact area

Sel. Gold/Nickel B—Gold flash over .000050 nickel on entire post, with additional .000015 gold on contact area

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post







Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Packaging Quantity	Post Plating		
			Sel. Gold/Nickel A	Sel. Gold/Nickel B	Tin-Lead/Nickel
1	.084	250	87220-1	87224-1	87348-1
2	.184	250	87220-2	87224-2	87348-2
3	.284	250	87220-3	87224-3	87348-3
4	.384	250	87220-4	87224-4	87348-4
5	.484	250	87220-5	87224-5	87348-5
6	.584	250	87220-6	87224-6	87348-6
7	.684	250	87220-7	87224-7	87348-7
8	.784	250	87220-8	87224-8	87348-8
9	.884	250	87220-9	87224-9	87348-9
10	.984	250	1-87220-0	1-87224-0	1-87348-0
11	1.084	100	1-87220-1	1-87224-1	1-87348-1
12	1.184	100	1-87220-2	1-87224-2	1-87348-2
13	1.284	100	1-87220-3	1-87224-3	1-87348-3
14	1.384	100	1-87220-4	1-87224-4	1-87348-4
15	1.484	100	1-87220-5	1-87224-5	1-87348-5
20	1.984	100	2-87220-0	2-87224-0	2-87348-0
25	2.484	100	2-87220-5	2-87224-5	2-87348-5
30	2.984	100	3-87220-0	3-87224-0	3-87348-0
35	3.484	100	3-87220-5	3-87224-5	3-87348-5
40	3.984	100	4-87220-0	4-87224-0	4-87348-0

Standard Headers—Unshrouded Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Right-Angle Post

Material:

Housing—Black Thermoplastic, flame retardant

Posts—Copper Alloy

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

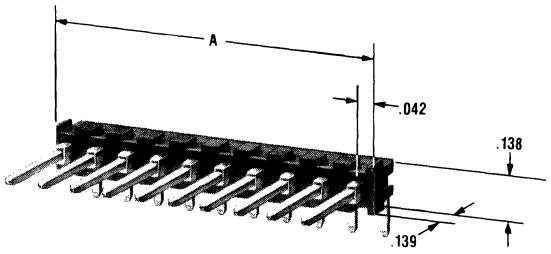
Technical Documents - page 3223

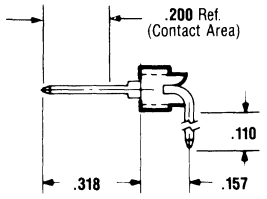
Plating Specifications:

Sel. Gold/Nickel A—Gold flash over .000050 nickel on entire post, with additional .000030 gold on contact area

Sel. Gold/Nickel B—Gold flash over .000050 nickel on entire post, with additional .000015 gold on contact area

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post





Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Packaging Quantity	Post Plating		
			Sel. Gold/Nickel A	Sel. Gold/Nickel B	Tin-Lead/Nickel
1	.084	250	87232-1	87233-1	87551-1
2	.184	250	87232-2	87233-2	87551-2
3	.284	250	87232-3	87233-3	87551-3
4	.384	250	87232-4	87233-4	87551-4
5	.484	250	87232-5	87233-5	87551-5
6	.584	250	87232-6	87233-6	87551-6
7	.684	250	87232-7	87233-7	87551-7
8	.784	250	87232-8	87233-8	87551-8
9	.884	250	87232-9	87233-9	87551-9
10	.984	250	1-87232-0	1-87233-0	1-87551-0
11	1.084	100	1-87232-1	1-87233-1	1-87551-1
12	1.184	100	1-87232-2	1-87233-2	1-87551-2
13	1.284	100	1-87232-3	1-87233-3	1-87551-3
14	1.384	100	1-87232-4	1-87233-4	1-87551-4
15	1.484	100	1-87232-5	1-87233-5	1-87551-5
20	1.984	100	2-87232-0	2-87233-0	2-87551-0
25	2.484	100	2-87232-5	2-87233-5	2-87551-5
30	2.984	100	3-87232-0	3-87233-0	3-87551-0
35	3.484	100	3-87232-5	3-87233-5	3-87551-5
40	3.984	100	4-87232-0	4-87233-0	4-87551-0

Standard Headers—Unshrouded Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Straight Post

Material:

Housing—Black thermoplastic, flame retardant

Posts—Copper Alloy

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

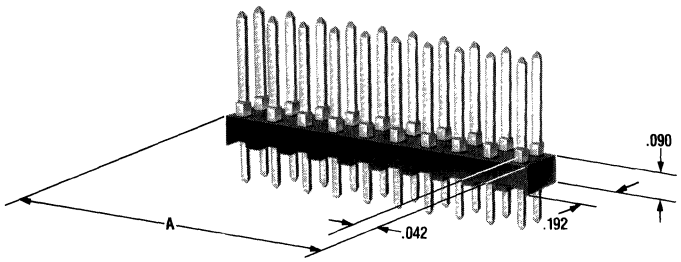
Technical Documents - page 3223

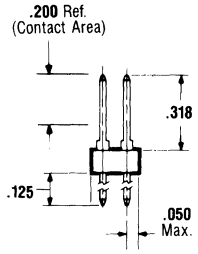
Plating Specifications:

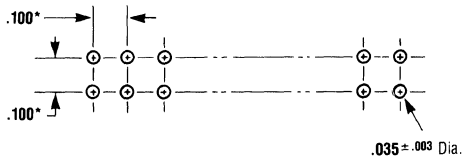
Sel. Gold/Nickel A—Gold flash over .000050 nickel on entire post, with additional .000030 gold on contact area

Sel. Gold/Nickel B—Gold flash over .000050 nickel on entire post, with additional .000015 gold on contact area

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post







Recommended Pc Board Hole Layout

*± .003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Packaging Quantity	Post Plating		
			Sel. Gold/Nickel A	Sel. Gold/Nickel B	Tin-Lead/Nickel
2	.084	250	1-87215-0	87227-1	87543-1
4	.184	250	1-87215-1	87227-2	87543-2
6	.284	250	1-87215-2	87227-3	87543-3
8	.384	250	87215-1	87227-4	87543-4
10	.484	250	87215-2	87227-5	87543-5
12	.584	100	87215-3	87227-6	87543-6
14	.684	100	87215-4	87227-7	87543-7
16	.784	100	87215-5	87227-8	87543-8
18	.884	100	87215-6	87227-9	87543-9
20	.984	100	87215-7	1-87227-0	1-87543-0
22	1.084	100	1-87215-3	1-87227-1	1-87543-1
24	1.184	100	87215-8	1-87227-2	1-87543-2
26	1.284	100	87215-9	1-87227-3	1-87543-3
30	1.484	100	1-87215-5	1-87227-5	1-87543-5
34	1.684	100	1-87215-7	1-87227-7	1-87543-7
40	1.984	100	2-87215-0	2-87227-0	2-87543-0
50	2.484	50	2-87215-5	2-87227-5	2-87543-5
60	2.984	50	3-87215-0	3-87227-0	3-87543-0
70	3.484	50	3-87215-5	3-87227-5	3-87543-5
80	3.984	50	4-87215-0	4-87227-0	4-87543-0

Standard Headers—Unshrouded Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Right-Angle Post

Material:

Housing—Black thermoplastic, flame retardant

Posts—Copper Alloy

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

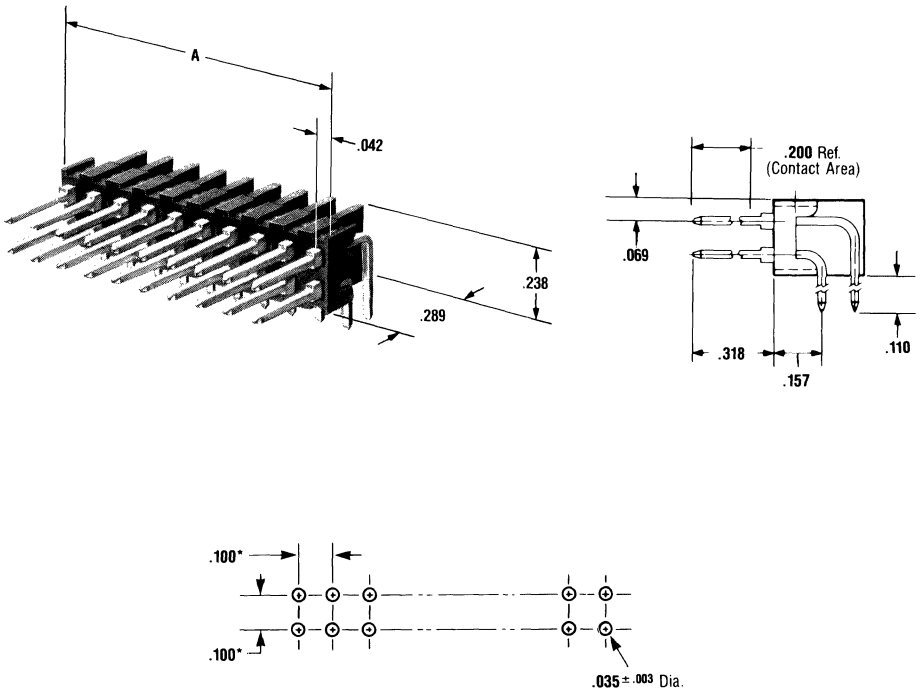
Technical Documents - page 3223

Plating Specifications:

Sel. Gold/Nickel A—Gold flash over .000050 nickel on entire post, with additional .000030 gold on contact area

Sel. Gold/Nickel B—Gold flash over .000050 nickel on entire post, with additional .000015 gold on contact area

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post



Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Packaging Quantity	Post Plating		
			Sel. Gold/Nickel A	Sel. Gold/Nickel B	Tin-Lead/Nickel
2	.084	250	1-86479-3	87230-1	87563-1
4	.184	250	1-86479-4	87230-2	87563-2
6	.284	250	1-86479-5	87230-3	87563-3
8	.384	250	1-86479-6	87230-4	87563-4
10	.484	250	86479-3	87230-5	87563-5
12	.584	100	86479-4	87230-6	87563-6
14	.684	100	86479-5	87230-7	87563-7
16	.784	100	86479-2	87230-8	87563-8
18	.884	100	86479-6	87230-9	87563-9
20	.984	100	86479-1	1-87230-0	1-87563-0
22	1.084	100	1-86479-7	1-87230-1	1-87563-1
24	1.184	100	86479-7	1-87230-2	1-87563-2
26	1.284	100	1-86479-0	1-87230-3	1-87563-3
30	1.484	100	1-86479-9	1-87230-5	1-87563-5
34	1.684	100	2-86479-1	1-87230-7	1-87563-7
40	1.984	100	2-86479-4	2-87230-0	2-87563-0
50	2.484	50	2-86479-9	2-87230-5	2-87563-5
60	2.984	50	3-86479-4	3-87230-0	3-87563-0
70	3.484	50	3-86479-9	3-87230-5	3-87563-5
80	3.984	50	4-86479-4	4-87230-0	4-87563-0

Standard Headers—Unshrouded Triple Row, .100 Grid

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Straight Post

Material:

Housing—Black thermoplastic, flame retardant

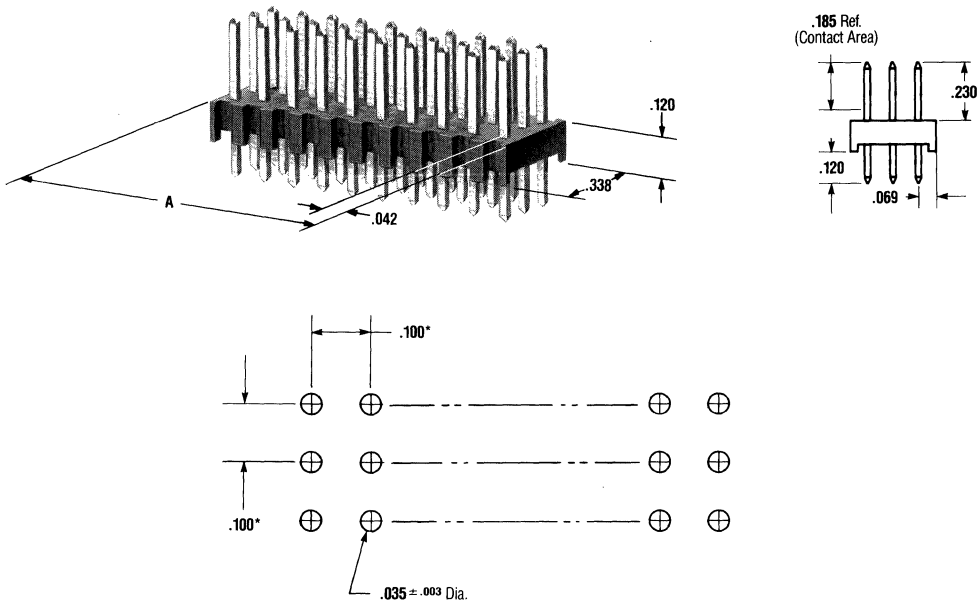
Posts—Copper Alloy

Related Product Data:

Technical Documents - page 3223

Plating Specifications:

Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel



Recommended Pc Board Hole Layout

*± .003 tolerances not to accumulate within one connector pattern.

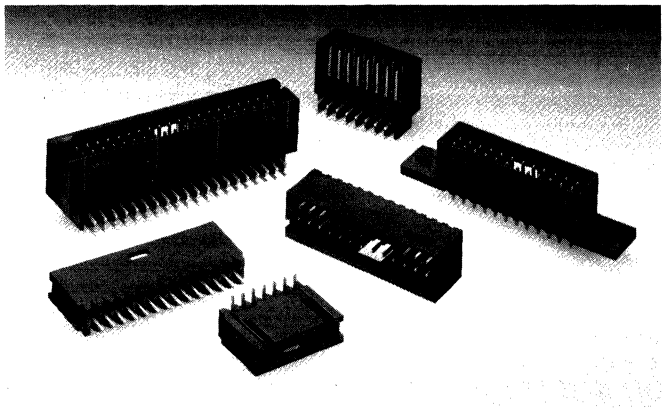
No. of Pos.	A Dim.	Packaging Quantity	Duplex C Post Plating
9	.284	250	103817-1
12	.384	100	103817-2
15	.484	100	103817-3
18	.584	100	103817-4
21	.684	100	103817-5
24	.784	100	103817-6
27	.884	100	103817-7
30	.984	100	103817-8
42	1.384	50	1-103817-2
60	1.984	50	1-103817-8
72	2.384	50	2-103817-2
75	2.484	50	2-103817-3
90	2.984	50	2-103817-8
96	3.184	50	3-103817-0
120	3.984	50	3-103817-8

Standard and Low Profile Headers—Shrouded

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Headers—Shrouded



Product Facts

- Available in several styles—right-angle with three- and four-sided pin protection, and straight post with pin protection and mounting ears
- Can be used for feed-to and feed-thru applications
- Housings are black thermoplastic, flame retardant 94V-0 rated
- Contacts are copper alloy
- Available in gold duplex, gold over nickel and tin-lead over nickel platings
- Headers with .066 and .150 end dimensions are available in select sizes up to 60 positions
- Can be select loaded, consult AMP Incorporated
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455

Performance Characteristics:

Electrical

Insulation Resistance—5,000 megohms minimum initial

Dielectric Withstanding Voltage—750 RMS at sea level

Environmental

Operating Temperature—
−65° C to +105° C (black thermoplastic housings)

Current—3 amperes maximum per contact

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded Single Row, .100 Centers

.025 Square Straight Post (with Standoffs)

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors:

AMPMODU Wire-Applied Receptacles - pages 3162 & 3163

Flexible Film Connectors - Catalog 82007

AMPMODU MTE Connectors - Catalog 82160

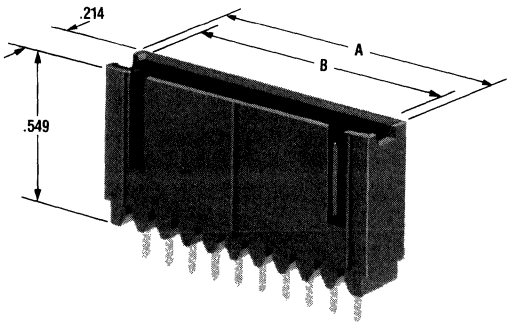
Technical Documents - page 3223

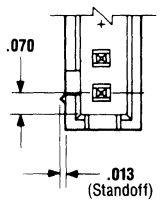
Plating Specifications:

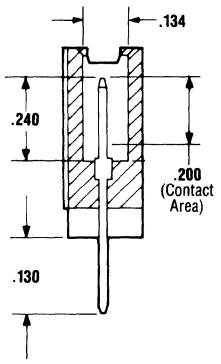
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

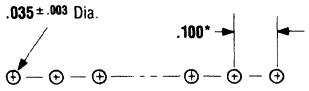
Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post









Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions		Packaging Quantity	Post Plating		
	A	B		Duplex C	Duplex D	Tin-Lead/Nickel
3	.420	.340	100	103414-1	3-102202-4	103080-1
4	.520	.440	100	103414-2	102202-1	103080-2
5	.620	.540	100	103414-3	102202-2	103080-3
6	.720	.640	100	103414-4	102202-3	103080-4
7	.820	.740	100	103414-5	102202-4	103080-5
8	.920	.840	100	103414-6	102202-5	103080-6
10	1.120	1.040	100	103414-8	102202-7	103080-8
12	1.320	1.240	100	1-103414-0	102202-9	1-103080-0
14	1.520	1.440	100	1-103414-2	1-102202-1	1-103080-2
20	2.120	2.040	100	1-103414-8	1-102202-7	—
22	2.320	2.240	100	2-103414-0	1-102202-9	—

Standard Profile Headers—Shrouded Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Right-Angle Post (with Standoffs)

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors:

AMPMODU Wire-Applied Receptacles - pages 3162 & 3163

Flexible Film Connectors - Catalog 82007

AMPMODU MTE Connectors - Catalog 82160

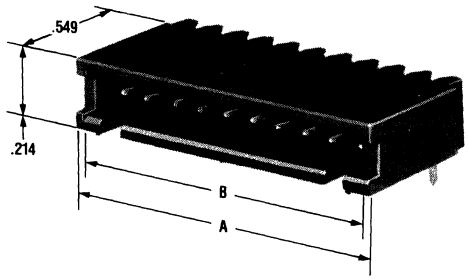
Technical Documents - page 3223

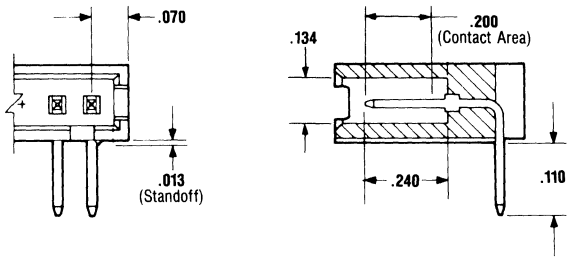
Plating Specifications:

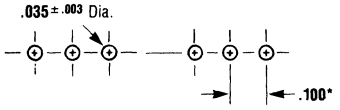
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post







Recommended Pc Board Hole Layout

*± .003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions		Packaging Quantity	Post Plating		
	A	B		Duplex C	Duplex D	Tin-Lead/Nickel
3	.420	.340	100	103361-1	3-102203-4	102523-2
4	.520	.440	100	103361-2	102203-1	102523-1
5	.620	.540	100	103361-3	102203-2	102523-3
6	.720	.640	100	103361-4	102203-3	102523-4
7	.820	.740	100	103361-5	102203-4	102523-5
8	.920	.840	100	103361-6	102203-5	102523-6
10	1.120	1.040	100	103361-8	102203-7	102523-8
12	1.320	1.240	100	1-103361-0	102203-9	1-102523-0
14	1.520	1.440	100	1-103361-2	1-102203-1	1-102523-2
24	2.520	2.440	100	2-103361-2	2-102203-1	—

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded with .066 End Dimension Double Row, .100 x .100 Centers

.025 Square Straight Post (with Detent Windows)

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors:

AMPMODU Board Mount Receptacles - pages 3150, 3151, 3154, 3155 & 3157

AMPMODU Wire-Applied Receptacles - pages 3164, 3166 & 3167

Wire-Applied Locking Clip Connectors - pages 3176 & 3177

AMPMODU MT Connectors - Catalog 82104

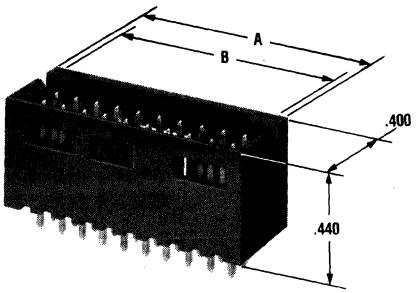
Technical Documents - page 3223

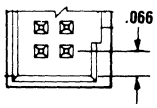
Plating Specifications:

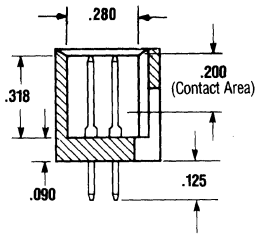
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

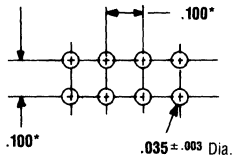
Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post









Recommended Pc Board Hole Layout

* ± .003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions		Packaging Quantity	Post Plating		
	A	B		Duplex C	Duplex D	Tin-Lead/Nickel
6	.412	.332	100	103168-1	102618-1	—
8	.512	.432	100	103168-2	102618-2	3-87589-5
10	.612	.532	100	103168-3	102618-3	87589-1
12	.712	.632	100	103168-4	102618-4	87589-2
14	.812	.732	100	103168-5	102618-5	87589-3
16	.912	.832	100	103168-6	102618-6	87589-4
18	1.012	.932	50	103168-7	102618-7	87589-5
20	1.112	1.032	50	103168-8	102618-8	87589-6
24	1.312	1.232	50	1-103168-0	1-102618-0	87589-8
26	1.412	1.332	50	1-103168-1	1-102618-1	87589-9
30	1.612	1.532	50	1-103168-3	1-102618-3	1-87589-1
34	1.812	1.732	50	1-103168-5	1-102618-5	1-87589-3
40	2.112	2.032	50	1-103168-8	1-102618-8	1-87589-6
50	2.612	2.532	50	2-103168-3	2-102618-3	2-87589-1
60	3.112	3.032	50	2-103168-8	2-102618-8	2-87589-6

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded with .150 End Dimension Double Row, .100 x .100 Centers

.025 Square Straight Post (with Detent Windows)

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors:

AMPMODU Wire-Applied Receptacles - pages 3166 & 3167

AMP-LATCH Connectors - Catalog 82012

Flexible Film Connectors - Catalog 82007

AMPMODU MTE Connectors - Catalog 82160

AMPMODU MT Connectors - Catalog 82104

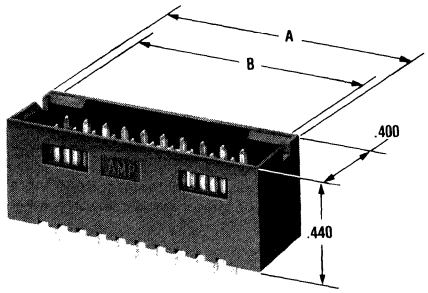
Technical Documents - page 3223

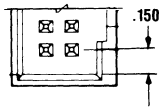
Plating Specifications:

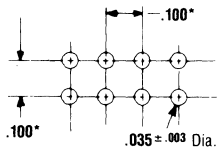
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

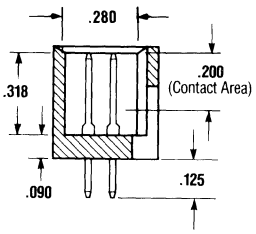
Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post









Recommended Pc Board Hole Layout

*± .003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions		Packaging Quantity	Post Plating		
	A	B		Duplex C	Duplex D	Tin-Lead/Nickel
6	.580	.500	100	103169-1	102619-1	—
8	.680	.600	100	103169-2	102619-2	—
10	.780	.700	100	103169-3	102619-3	87587-1
16	1.080	1.000	100	103169-6	102619-6	87587-4
20	1.280	1.200	50	103169-8	102619-8	87587-6
24	1.480	1.400	50	1-103169-0	1-102619-0	87587-8
26	1.580	1.500	50	1-103169-1	1-102619-1	87587-9
30	1.780	1.700	50	1-103169-3	1-102619-3	1-87587-1
34	1.980	1.900	50	1-103169-5	1-102619-5	1-87587-3
40	2.280	2.200	50	1-103169-8	1-102619-8	1-87587-6
50	2.780	2.700	50	2-103169-3	2-102619-3	2-87587-1
60	3.280	3.200	50	2-103169-8	2-102619-8	2-87587-6

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded with .066 End Dimension Double Row, .100 x .100 Centers

.025 Square Right-Angle Post (with Detent Windows)

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors:

AMPMODU Board Mount Receptacles - pages 3150, 3151, 3154, 3155 & 3157

AMPMODU Wire-Applied Receptacles - pages 3164, 3166 & 3167

Wire- Applied Locking Clip Connectors - pages 3176 & 3177

AMPMODU MT Connectors - Catalog 82104

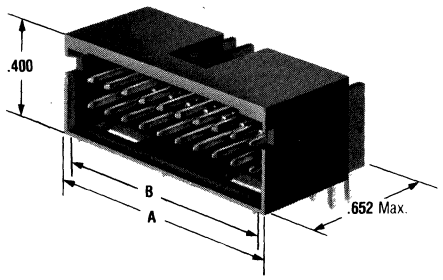
Technical Documents - page 3223

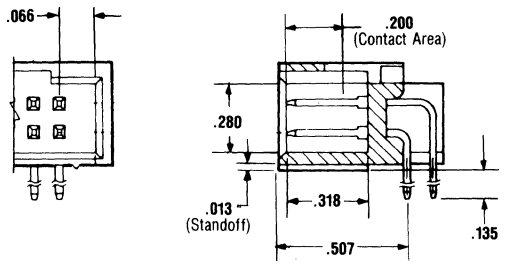
Plating Specifications:

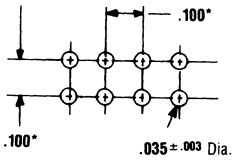
Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post







Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions A	Dimensions B	Packaging Quantity	Post Plating Duplex C	Post Plating Duplex D	Post Plating Tin-Lead/Nickel
6	.412	.332	100	103166-1	102617-1	3-87579-5
8	.512	.432	100	103166-2	102617-2	87579-1
10	.612	.532	100	103166-3	102617-3	87579-2
20	1.112	1.032	50	103166-8	102617-8	87579-7
24	1.312	1.232	50	1-103166-0	1-102617-0	87579-9
26	1.412	1.332	50	1-103166-1	1-102617-1	1-87579-0
34	1.812	1.732	50	1-103166-5	1-102617-5	—
40	2.112	2.032	50	1-103166-8	1-102617-8	1-87579-7
50	2.612	2.532	50	2-103166-3	2-102617-3	2-87579-2
60	3.112	3.032	50	2-103166-8	2-102617-8	2-87579-7

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded with .150 End Dimension Double Row, .100 x .100 Centers

.025 Square Right-Angle Post (with Detent Windows)

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors:

AMPMODU Wire-Applied Receptacles - pages 3166 & 3167

AMP-LATCH Connectors - Catalog 82012

Flexible Film Connectors - Catalog 82007

AMPMODU MTE Connectors - Catalog 82160

AMPMODU MT Connectors - Catalog 82104

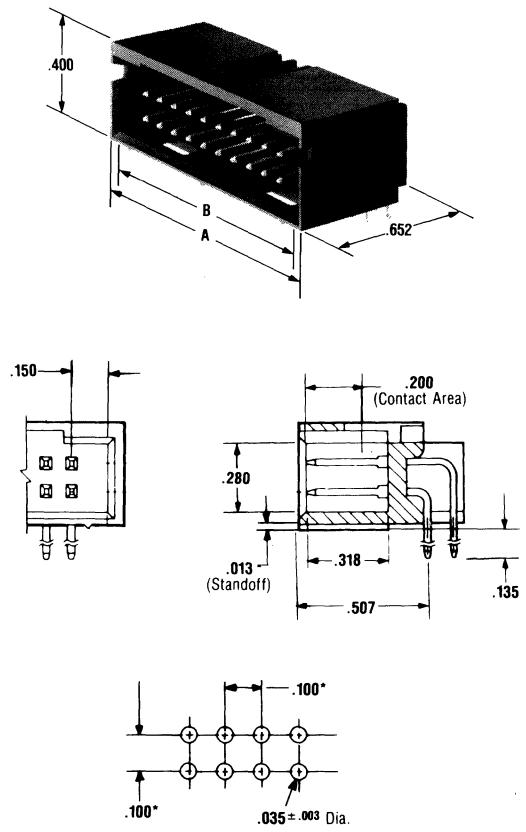
Technical Documents - page 3223

Plating Specifications:

Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post



Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions A	Dimensions B	Packaging Quantity	Post Plating Duplex C	Post Plating Duplex D	Post Plating Tin-Lead/Nickel
8	.680	.600	100	103167-1	102570-2	87577-1
10	.780	.700	100	103167-2	102570-3	87577-2
20	1.280	1.200	50	103167-7	102570-8	87577-7
24	1.480	1.400	50	103167-9	1-102570-0	87577-9
26	1.580	1.500	50	1-103167-0	1-102570-1	1-87577-0
34	1.980	1.900	50	1-103167-4	1-102570-5	1-87577-4
40	2.280	2.200	50	1-103167-7	102570-1	1-87577-7
50	2.780	2.700	50	2-103167-2	2-102570-2	2-87577-2
60	3.280	3.200	50	2-103167-7	2-102570-7	2-87577-7

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded with .066 End Dimension Double Row, .100 x .100 Centers

.025 Square Right-Angle Post (with Pin Protection on 3 Sides)

Material:

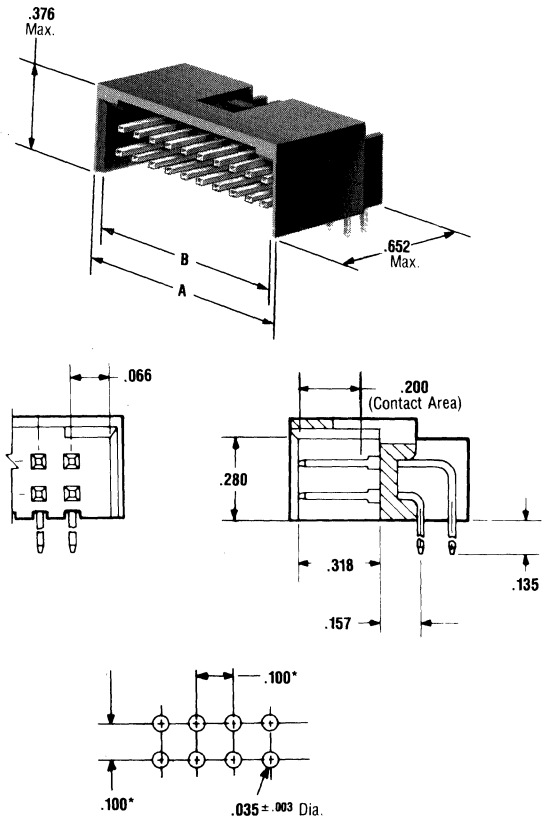
Housing—Black thermoplastic, flame retardant
Contacts—Copper alloy

Related Product Data:

Mateable Connectors:
AMPMODU Board Mount Receptacles - pages 3150, 3151, 3154, 3155 & 3157
AMPMODU Wire-Applied Receptacles - pages 3164, 3166 & 3167
Wire-Applied Locking Clip Connectors - pages 3176 & 3177
AMPMODU MT Connectors - Catalog 82104
Technical Documents - page 3223

Plating Specifications:

Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel
Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel
Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post



Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions		Packaging Quantity	Post Plating		
	A	B		Duplex C	Duplex D	Tin-Lead/Nickel
6	.412	.332	100	103164-1	102055-2	—
8	.512	.432	100	103164-2	102055-3	87572-1
10	.612	.532	100	103164-3	102055-4	87572-2
16	.912	.832	100	103164-6	102055-7	87572-5
20	1.112	1.032	50	103164-8	102055-1	87572-7
24	1.312	1.232	50	1-103164-0	1-102055-0	87572-9
26	1.412	1.332	50	1-103164-1	1-102055-1	1-87572-0
30	1.612	1.532	50	1-103164-3	1-102055-3	1-87572-2
34	1.812	1.732	50	1-103164-5	1-102055-5	1-87572-4
40	2.112	2.032	50	1-103164-8	1-102055-8	1-87572-7
50	2.612	2.532	50	2-103164-3	2-102055-3	2-87572-2
60	3.112	3.032	50	2-103164-8	2-102055-8	2-87572-7

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded with .150 End Dimension Double Row, .100 x .100 Centers

.025 Square Right-Angle Post (with Pin Protection on 3 Sides)

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors:

AMPMODU Wire-Applied Receptacles - pages 3166 & 3167

AMP-LATCH Connectors - Catalog 82012

Flexible Film Connectors - Catalog 82007

AMPMODU MTE Connectors - Catalog 82160

AMPMODU MT Connectors - Catalog 82104

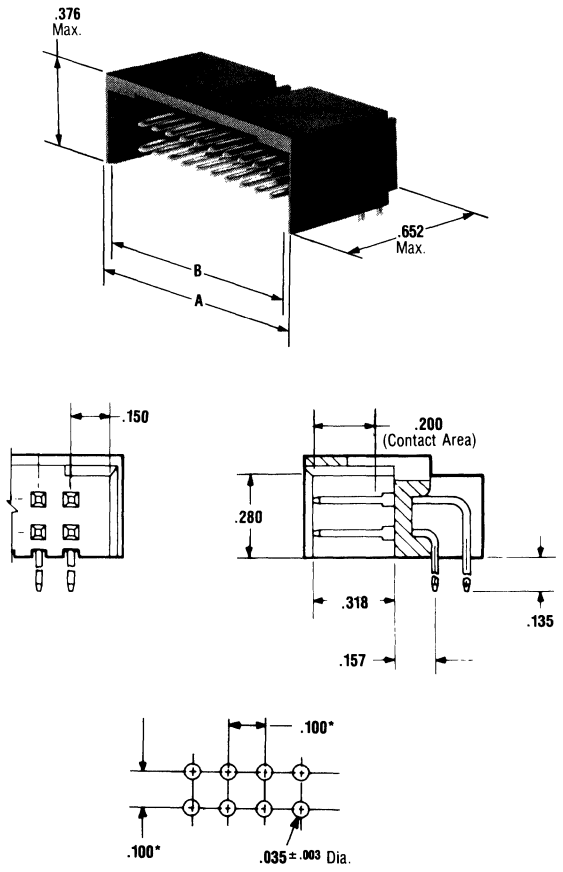
Technical Documents - page 3223

Plating Specifications:

Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Duplex D—.000015 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel

Tin-Lead/Nickel—.000100-.000200 tin-lead over .000050 nickel on entire post



Recommended Pc Board Hole Layout

*± .003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions		Packaging Quantity	Post Plating		
	A	B		Duplex C	Duplex D	Tin-Lead/Nickel
10	.780	.700	100	103165-1	102620-1	—
20	1.280	1.200	50	103165-6	102620-6	87568-6
24	1.480	1.400	50	103165-8	102620-8	87568-8
26	1.580	1.500	50	103165-9	102620-9	87568-9
34	1.980	1.900	50	1-103165-3	1-102620-3	1-87568-3
40	2.280	2.200	50	1-103165-6	1-102620-6	1-87568-6
50	2.780	2.700	50	2-103165-1	2-102620-1	2-87568-1
60	3.280	3.200	50	2-103165-6	2-102620-6	2-87568-6

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded with .066 End Dimension Double Row, .100 x .100 Centers

.025 Square Straight-Post (with Detent Windows and Mounting Ears)

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors:

AMPMODU Board Mount Receptacles - pages 3150, 3151, 3154, 3155 & 3157

AMPMODU Wire-Applied Receptacles - pages 3164, 3166 & 3167

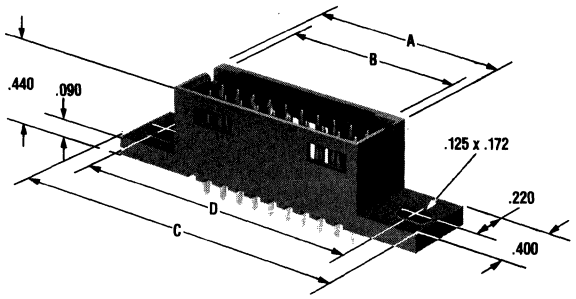
Wire-Applied Locking Clip Connectors - pages 3176 & 3177

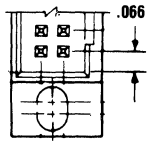
AMPMODU MT Connectors - Catalog 82104

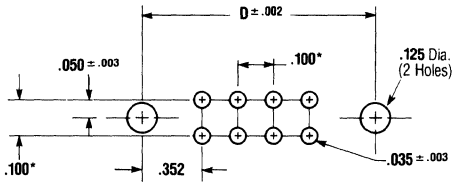
Technical Documents - page 3223

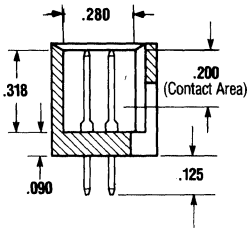
Plating Specifications:

Gold/Nickel—.000030 gold over .000050 nickel on entire post









Recommended Pc Board Hole Layout

*± .003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions A	B	C	D	Packaging Quantity	Gold/Nickel Post Plating
10	.612	.532	1.304	1.104	100	87525-1
20	1.112	1.032	1.804	1.604	50	87525-6
24	1.312	1.232	2.004	1.804	50	87525-8
26	1.412	1.332	2.104	1.904	50	87525-9
34	1.812	1.732	2.504	2.304	50	1-87525-3
40	2.112	2.032	2.804	2.604	50	1-87525-6
50	2.612	2.532	3.304	3.104	50	2-87525-1
60	3.112	3.032	3.804	3.604	50	2-87525-6

Note: A minimum order greater than the package quantity may be required, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded with .150 End Dimension Double Row, .100 x .100 Centers

.025 Square Straight Post (with Detent Windows and Mounting Ears)

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors:

AMPMODU Wire-Applied Receptacles - pages 3166 & 3167

AMP-LATCH Connectors - Catalog 82012

Flexible Film Connectors - Catalog 82007

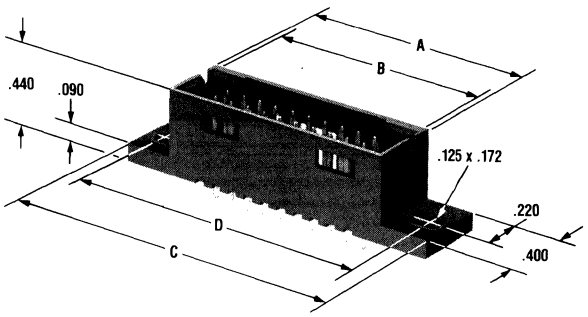
AMPMODU MTE Connectors - Catalog 82160

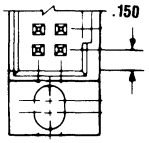
AMPMODU MT Connectors - Catalog 82104

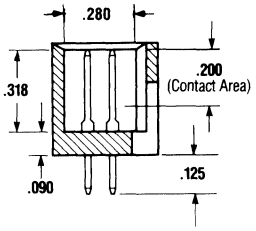
Technical Documents - page 3223

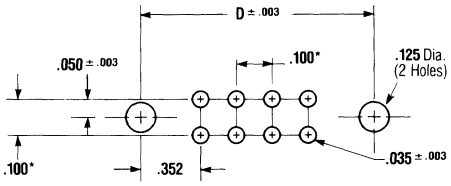
Plating Specifications:

Gold/Nickel—.000030 gold over .000050 nickel on entire post









Recommended Pc Board Hole Layout

*± .003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions A	B	C	D	Packaging Quantity	Gold/Nickel Post Plating
10	.780	.700	1.304	1.104	100	87474-1
20	1.280	1.200	1.804	1.604	50	87474-2
24	1.480	1.400	2.004	1.804	50	87474-3
26	1.580	1.500	2.104	1.904	50	1-87474-3
34	1.980	1.900	2.504	2.304	50	87474-4
40	2.280	2.200	2.804	2.604	50	87474-6
50	2.780	2.700	3.304	3.104	50	87474-7
60	3.280	3.200	3.804	3.604	50	2-87474-6

Note: A minimum order greater than the package quantity may be required, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded Bulkhead Type; with .066 End Dimensions Double Row, .100 x .100 Centers

.025 Square Straight Post (with Detent Windows and Mounting Ears)

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors:

AMPMODU Board Mount Receptacles - pages 3150, 3151, 3154, 3155 & 3157

AMPMODU Wire-Applied Receptacles - pages 3164, 3166 & 3167

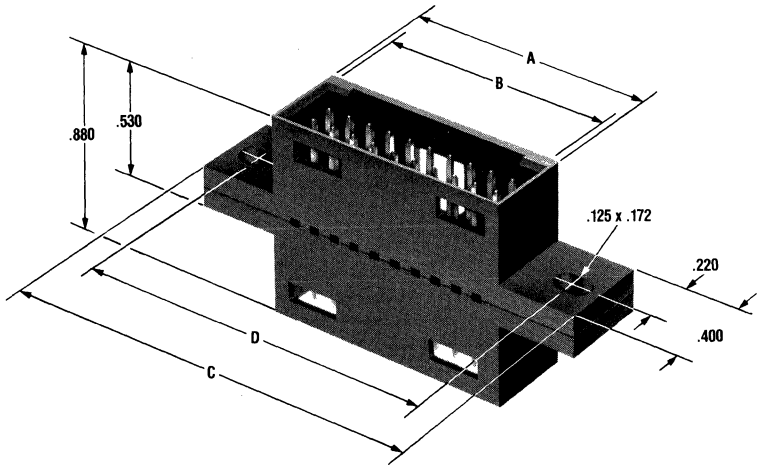
Wire-Applied Locking Clip Connectors - pages 3176 & 3177

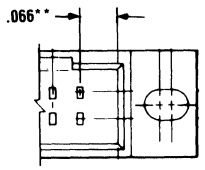
AMPMODU MT Connectors - Catalog 82104

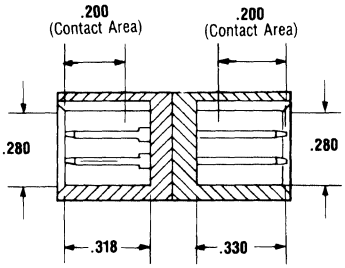
Technical Documents - page 3223

Plating Specifications:

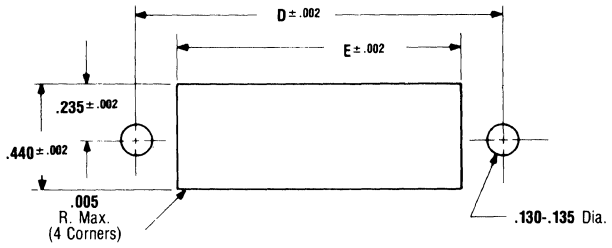
Gold/Nickel—.000030 gold over .000050 nickel on entire post







**Both mating faces have same end dimension.



Recommended Panel Cutout

No. of Pos.	Dimensions					Packaging Quantity	Gold/Nickel Post Plating
	A	B	C	D	E		
10	.612	.532	1.304	1.104	.632	100	87608-1
20	1.112	1.032	1.804	1.604	1.132	50	87608-6
24	1.312	1.232	2.004	1.804	1.332	50	87608-8
26	1.412	1.332	2.104	1.904	1.432	50	87608-9
34	1.812	1.732	2.504	2.304	1.832	50	1-87608-3
40	2.112	2.032	2.804	2.604	2.132	50	1-87608-6
50	2.612	2.532	3.304	3.104	2.632	50	2-87608-1
60	3.112	3.032	3.804	3.604	3.132	50	2-87608-6

Note: A minimum order greater than the package quantity may be required, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded Bulkhead Type; with .150 End Dimensions Double Row, .100 x .100 Centers

.025 Square Straight Post (with Detent Windows and Mounting Ears)

Material:

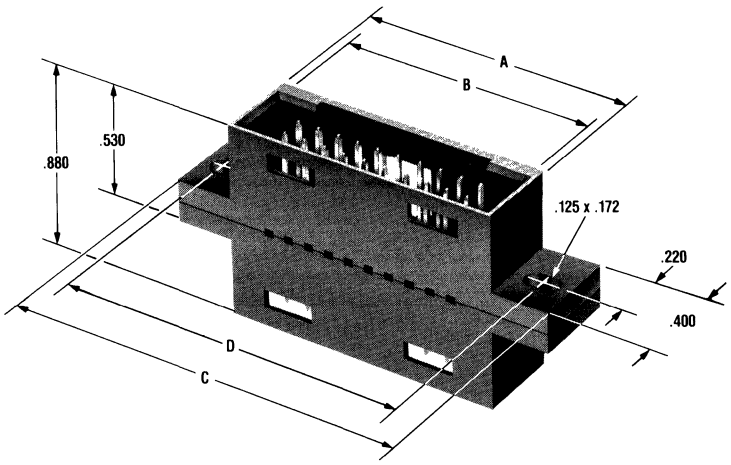
Housing—Black thermoplastic, flame retardant
Contacts—Copper alloy

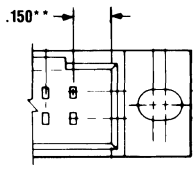
Related Product Data:

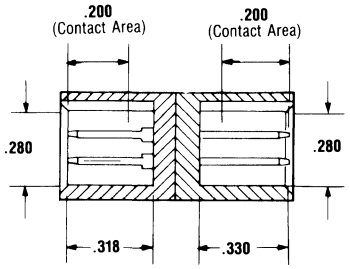
Mateable Connectors:
AMPMODU Wire-Applied Receptacles - page 3166 & 3167
AMP-LATCH Connectors - Catalog 82012
Flexible Film Connectors - Catalog 82007
AMPMODU MTE Connectors - Catalog 82160
AMPMODU MT Connectors - Catalog 82104
Technical Documents - page 3223

Plating Specifications:

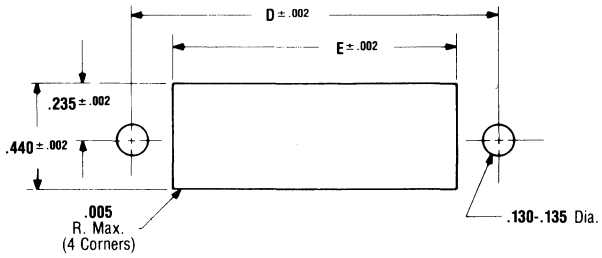
Gold/Nickel—.000030 gold over .000050 nickel on entire post







**Both mating faces have same end dimension.



Recommended Panel Cutout

No. of Pos.	Dimensions					Packaging Quantity	Gold/Nickel Post Plating
	A	B	C	D	E		
10	.780	.700	1.304	1.104	.800	100	87605-1
20	1.280	1.200	1.804	1.604	1.300	50	87605-6
24	1.480	1.400	2.004	1.804	1.500	50	87605-8
26	1.580	1.500	2.104	1.904	1.600	50	87605-9
34	1.980	1.900	2.504	2.304	2.000	50	1-87605-3
40	2.280	2.200	2.804	2.604	2.300	50	1-87605-6
50	2.780	2.700	3.304	3.104	2.800	50	2-87605-1
60	3.280	3.200	3.804	3.604	3.300	50	2-87605-6

Note: A minimum order greater than the package quantity may be required, consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded Bulkhead Type; with .066/.150 End Dimensions Double Row, .100 x .100 Centers

.025 Square Straight Post (with Detent Windows and Mounting Ears)

Material:

Housing—Black thermoplastic, flame retardant

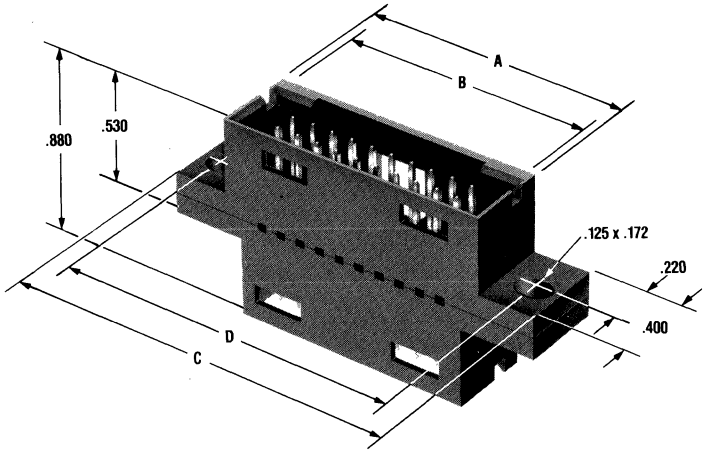
Contacts—Copper alloy

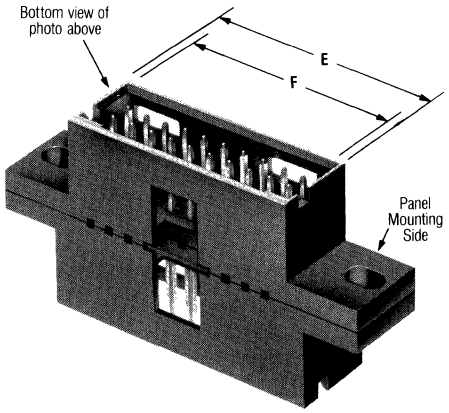
Related Product Data:

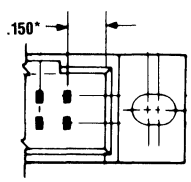
Mateable Connectors - with .066 End Dimension:
AMPMODU Board Mount Receptacles - pages 3150, 3151, 3154, 3155 & 3157
AMPMODU Wire-Applied Receptacles - pages 3164, 3166 & 3167
Wire-Applied Locking Clip Connectors - pages 3176 & 3177
AMPMODU MT Connectors - Catalog 82104
with .150 End Dimension:
AMPMODU Wire-Applied Receptacles - pages 3166 & 3167
AMP-LATCH Connectors - Catalog 82012
Flexible Film Connectors - Catalog 82007
AMPMODU MTE Connectors - Catalog 82160
AMPMODU MT Connectors - Catalog 82104
Technical Documents - page 3223

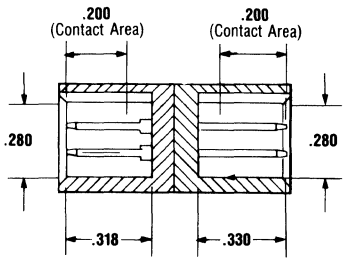
Plating Specifications:

Gold/Nickel—.000030 gold over .000050 nickel on entire post







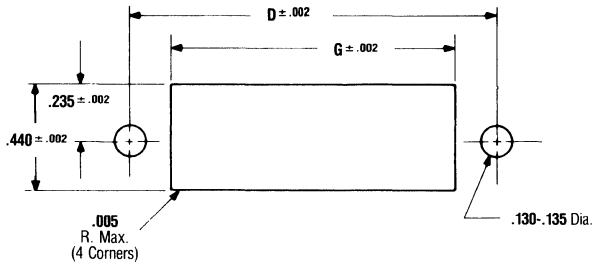


*Other mating face end dimension is .066.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Standard Profile Headers—Shrouded Bulkhead Type; with .066/.150 End Dimensions Double Row, .100 x .100 Centers



Recommended Panel Cutout

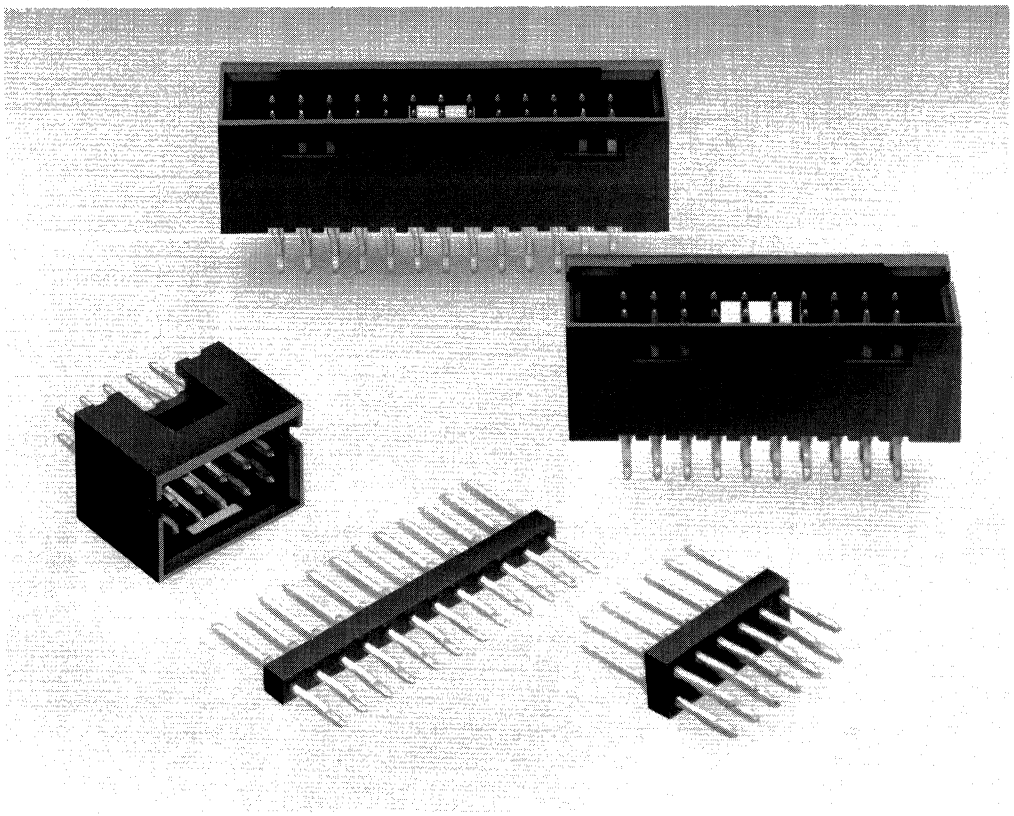
No. of Pos.	Dimensions							Packaging Quantity	Gold/Nickel Post Plating
	A	B	C	D	E	F	G		
10	.780	.700	1.304	1.104	.612	.532	.632	100	87496-2
20	1.280	1.200	1.804	1.604	1.112	1.032	1.132	50	87496-7
24	1.480	1.400	2.004	1.804	1.312	1.232	1.332	50	87496-9
26	1.580	1.500	2.104	1.904	1.412	1.332	1.432	50	1-87496-0
34	1.980	1.900	2.504	2.304	1.812	1.732	1.832	50	1-87496-4
40	2.280	2.200	2.804	2.604	2.112	2.032	2.132	50	1-87496-7
50	2.780	2.700	3.304	3.104	2.612	2.532	2.632	50	87496-1
60	3.280	3.200	3.804	3.604	3.112	3.032	3.132	50	2-87496-6

Note: A minimum order greater than the package quantity may be required, consult AMP Incorporated.

ACTION PIN Headers—Unshrouded and Shrouded

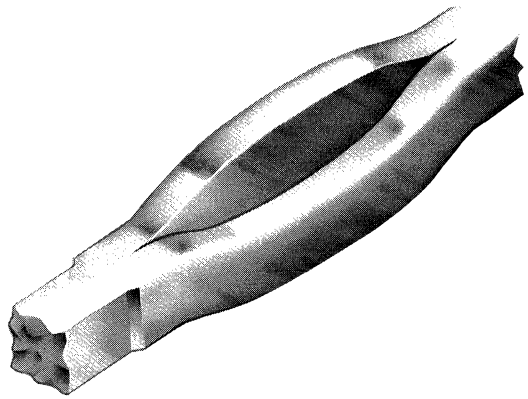
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches



Product Facts

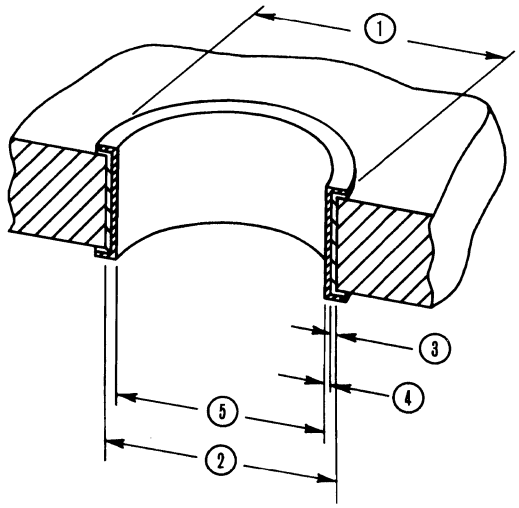
- Straight posted unshrouded and shrouded versions
- .025 square posts with ACTION PIN feature
- ACTION PIN posts make a gas-tight, press-fit connection in plated-through holes
- Does not damage plated-through holes
- Available in selected positions 4 through 80
- Flame retardant, black thermoplastic housings, 94V-0 rated
- Available in .100 Centerline spacing in an insulator header that is directly mounted on a printed circuit board
- Mates with AMP Ribbon Cable Connectors
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association File No. LR 16455



ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area ensures oxide break-through and prevents corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

PC Board Thickness

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To ensure optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



① Annular Ring (See Note)
② Drilled Hole
③ Copper Thickness
④ Tin-Lead Thickness
⑤ Plated-Through Hole

For more information on ACTION PIN Press-Fit Contacts
See page 3412

ACTION PIN Contact/PC Board Applications

Connector Type	ACTION PIN Contact Material Thickness	Drilled Hole Diameter ②	Plating Thicknesses		Plated-Through Hole Diameter ⑤	Distortion Specification**	
			Copper ③*	Tin-Lead ④		Average	Maximum
Headers for .062 Thick PC Boards	.025	.0435±.001	.001 - .003	.0003 Min.	.037 - .043	Not Specified	Not Specified
Headers for .093-.125 Thick PC Boards	.025	.0435±.001	.001 - .003	.0003 Min.	.037 - .043	.0015	.002

* Maximum hardness of copper layer is 150 Knoop
** Radial hole distortion
Note: Recommended annular ring diameter is hole diameter plus **.020** [0.51]

ACTION PIN Headers— Unshrouded Single Row, .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Straight Post

Material:

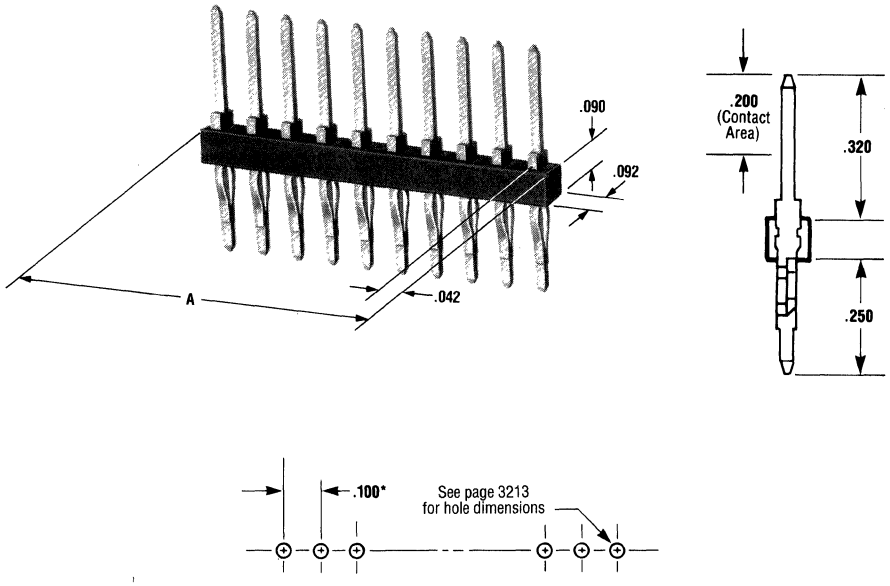
Housing—Black thermoplastic, flame retardant
Contacts—Copper alloy

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142
ACTION PIN Contacts - pages 3213 & 3412
Application Tooling - page 3222
Technical Documents - page 3223

Plating Specifications:

Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel



Recommended Pc Board Hole Layout

*± .003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Packaging Quantity	For .062 Thick Pc Boards — Duplex C Post Plating	For .093–.125 Thick Pc Boards — Duplex C Post Plating
8	.784	250	103336-1	102898-1
10	.984	250	103336-3	102898-3
11	1.084	100	103336-4	102898-4
12	1.184	100	103336-5	102898-5
13	1.284	100	103336-6	102898-6
16	1.584	100	103336-9	102898-9
17	1.684	100	1-103336-0	1-102898-0
18	1.784	100	1-103336-1	1-102898-1
19	1.884	100	1-103336-2	1-102898-2
20	1.984	100	1-103336-3	1-102898-3
24	2.384	100	1-103336-7	1-102898-7
25	2.484	100	1-103336-8	1-102898-8
30	2.984	100	2-103336-3	2-102898-3
32	3.184	100	2-103336-5	2-102898-5
36	3.584	100	2-103336-9	2-102898-9
40	3.994	100	3-103336-3	3-102898-3

Note: To insert header into pc board, use Seating Tool 91171-1 with arbor tool or air powered machine— page 3222.

ACTION PIN Headers— Unshrouded Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Straight Post

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors - Refer to the Mating Post Selection Guide - page 3142

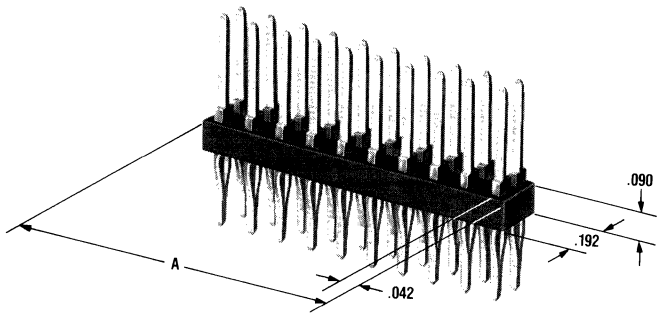
ACTION PIN Contacts - pages 3213 & 3412

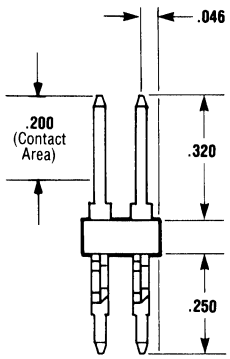
Application Tooling - page 3222

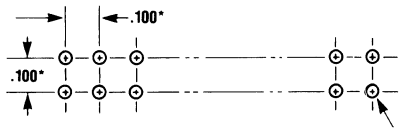
Technical Documents - page 3223

Plating Specifications:

Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel







See page 3213
for hole dimensions

Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	A Dim.	Packaging Quantity	For .062 Thick Pc Boards — Duplex C Post Plating	For .093–.125 Thick Pc Boards — Duplex C Post Plating	Seating Tool*
4	.184	250	103542-1	103233-1	91170-1
8	.384	250	103542-3	103233-3	—
10	.484	250	103542-4	103233-4	91170-3
12	.584	100	103542-5	103233-5	91170-4
16	.784	100	103542-7	103233-7	—
20	.984	100	103542-9	103233-9	—
24	1.184	100	1-103542-1	1-103233-1	—
26	1.284	100	1-103542-2	1-103233-2	1-91170-1
30	1.484	100	1-103542-4	1-103233-4	—
32	1.584	100	1-103542-5	1-103233-5	—
34	1.684	100	1-103542-6	1-103233-6	—
40	1.984	100	1-103542-9	1-103233-9	1-91170-8
42	2.084	50	2-103542-0	2-103233-0	1-91170-9
50	2.484	50	2-103542-4	2-103233-4	—
60	2.984	50	2-103542-9	2-103233-9	—
70	3.484	50	3-103542-4	3-103233-4	3-91170-0
80	3.984	50	3-103542-9	3-103233-9	3-91170-2

*To insert header into pc board, use seating tool with arbor tool or air powered machine— page 3222.

ACTION PIN Headers—Shrouded with .066 End Dimension Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Straight Post (with Detent Windows, for .093–.125 Thick Pc Board)

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors - AMPMODU Board Mount Receptacles - pages 3150, 3151, 3154, 3155 & 3157

AMPMODU Wire-Applied Receptacles - pages 3164, 3166 & 3167

Wire-Applied Locking Clip Connectors - pages 3176 & 3177

AMPMODU MT Connectors - Catalog 82104

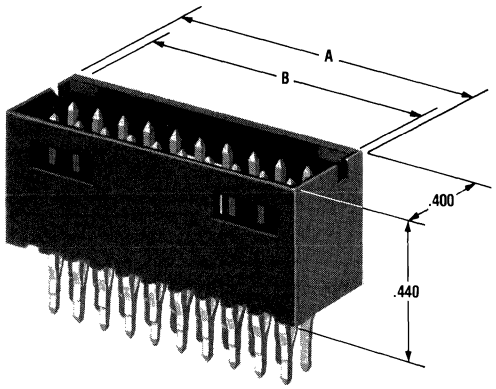
ACTION PIN Contacts - pages 3213 & 3412

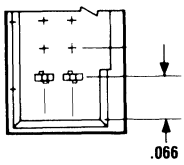
Application Tooling - page 3222

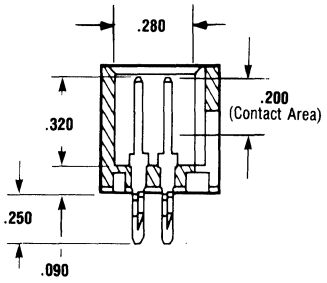
Technical Documents - page 3223

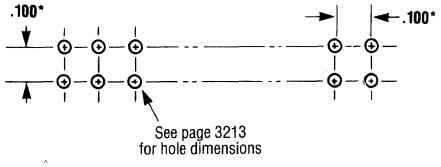
Plating Specifications:

Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel









Recommended Pc Board Hole Layout

*±.003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions A	Dimensions B	Packaging Quantity	Duplex C Post Plating	Seating Tool*
10	.612	.532	100	102699-4	91170-3
20	1.112	1.032	50	1-102699-9	—
26	1.412	1.332	50	1-102699-2	1-91170-1
30	1.612	1.532	50	1-102699-4	—
34	1.812	1.732	50	1-102699-6	—
40	2.112	2.032	50	1-102699-9	1-91170-8
50	2.612	2.532	50	2-102699-3	—
60	3.112	3.032	50	2-102699-8	—

*To insert header into pc board, use seating tool with arbor tool or air powered machine—page 3222.

ACTION PIN Headers—Shrouded with .150 End Dimension Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Straight Post (with Detent Windows, for .093–.125 Thick Pc Board)

Material:

Housing—Black thermoplastic, flame retardant

Contacts—Copper alloy

Related Product Data:

Mateable Connectors - AMPMODU Wire-Applied Receptacles - pages 3166 & 3167

AMP-LATCH Connectors - Catalog 82012

Flexible Film Connectors - Catalog 82007

AMPMODU MTE Connectors - Catalog 82160

AMPMODU MT Connectors - Catalog 82104

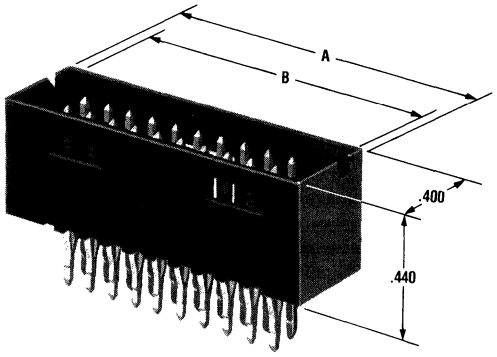
ACTION PIN Contacts - pages 3213 & 3412

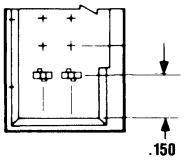
Application Tooling - page 3222

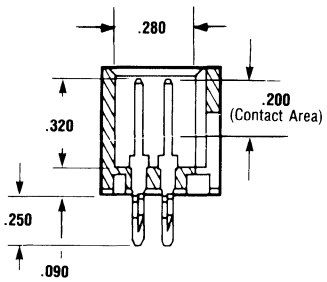
Technical Documents - page 3223

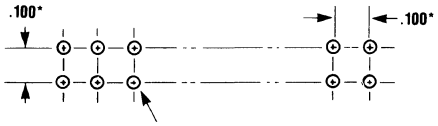
Plating Specifications:

Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel









See page 3213 for hole dimensions

Recommended Pc Board Hole Layout

*± .003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions A	Dimensions B	Packaging Quantity	Duplex C Post Plating	Seating Tool*
10	.780	.700	100	102557-9	91170-4
16	1.080	1.000	100	1-102557-4	91170-7
20	1.280	1.200	50	102557-2	91170-9
26	1.580	1.500	50	102557-3	1-91170-2
30	1.780	1.700	50	102557-4	—
34	1.980	1.900	50	102557-5	1-91170-6
40	2.280	2.200	50	102557-1	1-91170-9
50	2.780	2.700	50	102557-6	2-91170-4
60	3.280	3.200	50	102557-7	2-91170-9

*To insert header into pc board, use seating tool with arbor tool or air powered machine—page 3222.

ACTION PIN Headers—Shrouded with .150 End Dimension Double Row, .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

.025 Square Straight Post (with Detent Windows, for .062 Thick Pc Board)

Material:

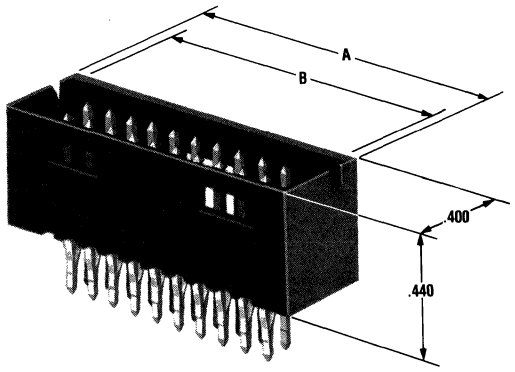
Housing—Black thermoplastic, flame retardant
Contacts—Copper alloy

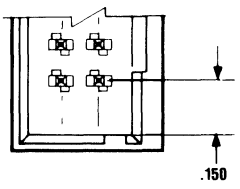
Related Product Data:

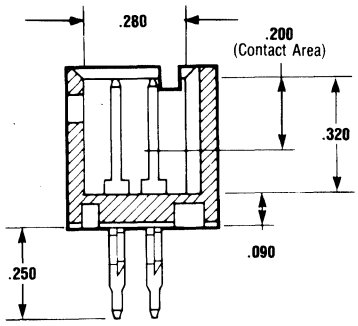
Mateable Connectors -
AMPMODU Wire-Applied Receptacles - pages 3166 & 3167
AMP-LATCH Connectors - Catalog 82012
Flexible Film Connectors - Catalog 82007
AMPMODU MTE Connectors - Catalog 82160
AMPMODU MT Connectors - Catalog 82104
ACTION PIN Contacts - pages 3213 & 3412
Application Tooling - page 3222
Technical Documents - page 3223

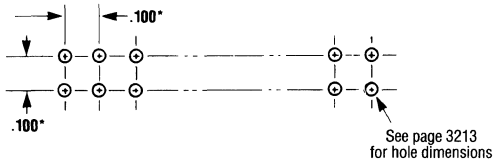
Plating Specifications:

Duplex C—.000030 gold on contact area, .000100-.000200 tin-lead on solder area, with entire post underplated .000050 nickel









Recommended Pc Board Hole Layout

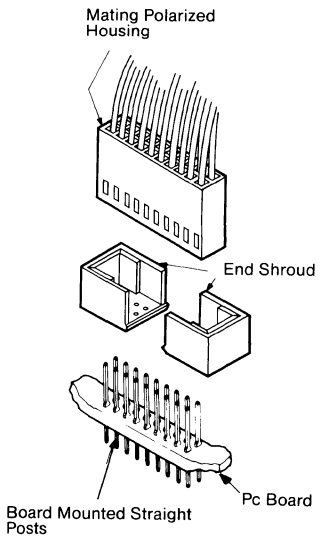
*± .003 tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions A	Dimensions B	Packaging Quantity	Duplex C Post Plating	Seating Tool*
10	.780	.700	100	103337-3	91170-4
16	1.080	1.000	100	103337-6	91170-7
20	1.280	1.200	50	103337-8	91170-9
26	1.580	1.500	50	1-103337-1	1-91170-2
30	1.780	1.700	50	1-103337-3	—
34	1.980	1.900	50	1-103337-5	1-91170-6
40	2.280	2.200	50	1-103337-8	1-91170-9
50	2.780	2.700	50	2-103337-3	2-91170-4
60	3.280	3.200	50	2-103337-8	2-91170-9

*To insert header into pc board, use seating tool with arbor tool or air powered machine— page 3222.

End Shrouds for Machine-Applied Posts

Typical Assembly

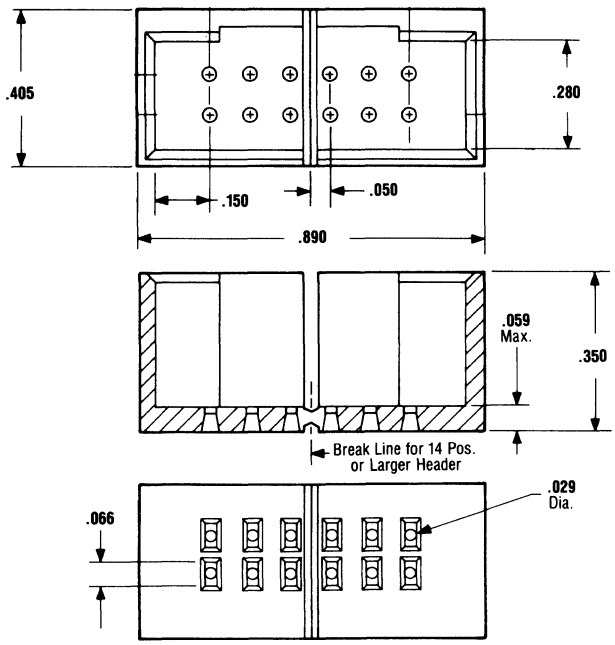


Related Product Data:
Technical Documents - page 3223

Double Row, .100 x .100 Centers Part No. 102114-1

Material:

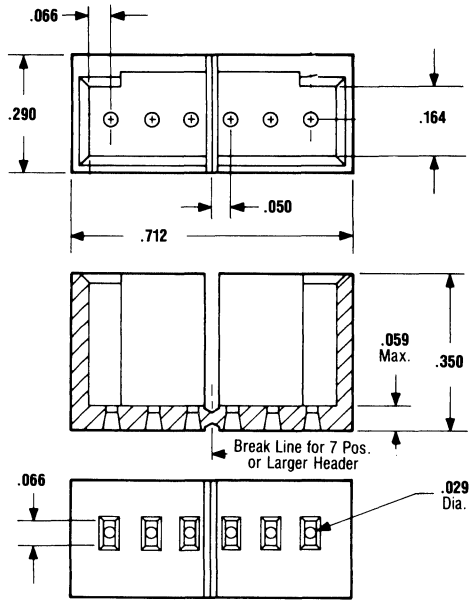
Black glass-filled polyester



Single Row, .100 Centers Part No. 102338-1

Material:

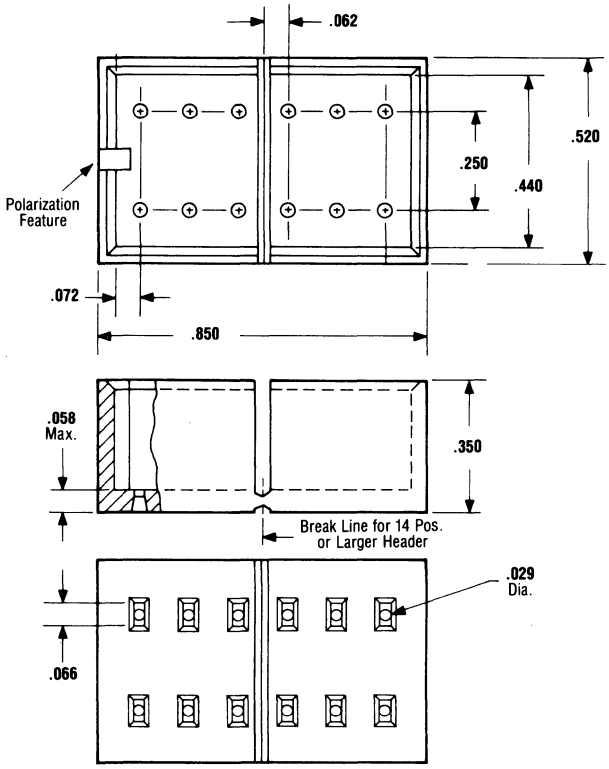
Black thermoplastic, flame retardant



Double Row, .125 x .250 Centers Part No. 102112-1

Material:

Black glass-filled polyester



Barrier Insert Part No. 87743-1

Material:

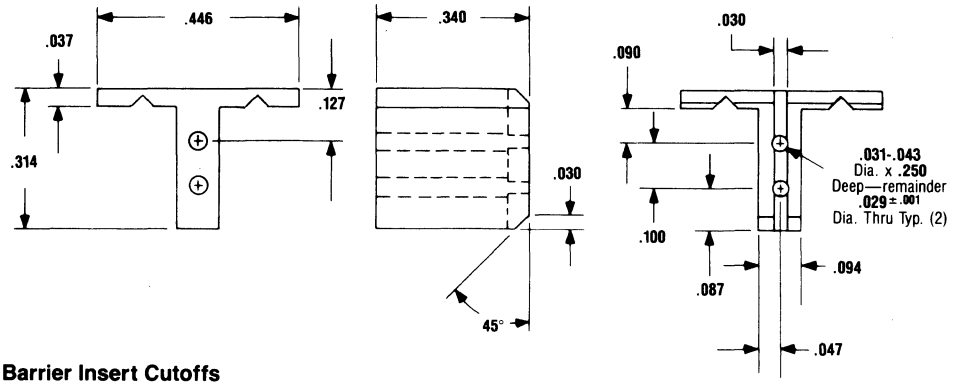
Black polyester

Related Product Data:

Technical Documents - page 3223

The barrier insert can be used on double row headers (.100 x .100 Centers), including shrouded versions—3 and 4 sides, as well as unshrouded straight post headers. With one barrier insert several configurations can be obtained, providing headers with capabilities of accepting various combinations of polarized and non-polarized AMPMODU connectors.

For unshrouded headers, the barrier insert is used to establish polarization and to compartmentalize the header. For shrouded headers, the barrier insert is used to compartmentalize the header, while maintaining polarization. The barrier insert itself is notched to facilitate cutting off the ends with a simple tool such as tin snips or scissors to achieve the desired configuration.



Barrier Insert Cutoffs

Fig. 1
Partial Cutoff
(Left and Right Sides)

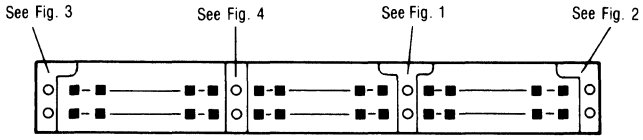
Fig. 2
Partial Cutoff
(Left Side)
Complete Cutoff
(Right Side)

Fig. 3
Complete Cutoff
(Left Side)
Partial Cutoff
(Right Side)

Fig. 4
Complete Cutoff
(Left and Right Sides)

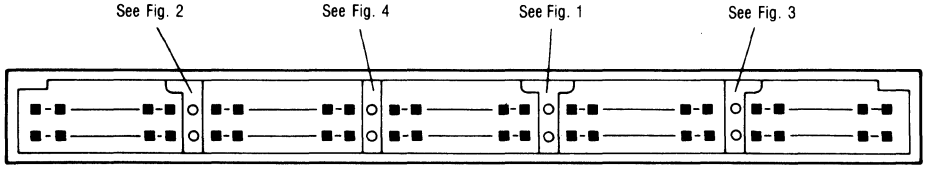
Typical Barrier Insert Applications

For Unshrouded Double Row, Straight Post Headers .100 x .100 Centers



Note: All configurations of barrier inserts compartmentalize headers and maintain polarization, except bar (Fig. 4) configuration, which is used primarily for compartmentalizing headers.

For Shrouded Double Row, 3 and 4 Sided Headers, .100 x .100 Centers



Note: Right angle (Figs. 2 and 3) and "T" (Fig. 1) configurations of barrier insert establish polarization; bar (Fig. 4) configuration of barrier insert compartmentalizes header.

Application Tooling for Wire Crimp Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

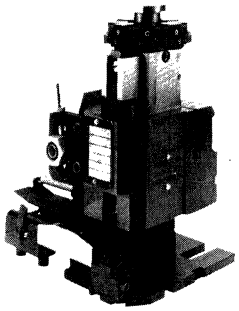
Dimensioning:
Dimensions are in inches

Quick-Change Applicator

(For use with the AMPOMATOR and AMP-O-LECTRIC Machines shown on this page)

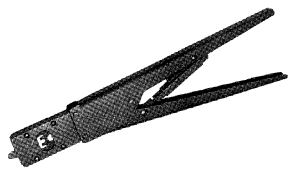
Featuring a "quick-change" design, this applicator can be changed in a matter of minutes to afford maximum flexibility and minimum production downtime.

Crimping height on both terminal barrel and insulation support barrel for a given wire size is simply "dialed in". Since all adjustments are made with the applicator in the machine, there is no major interruption in production.



CERTI-CRIMP Hand Tool

For limited production, prototype, experimental and servicing applications, CERTI-CRIMP hand tools are ideal. The ratchet device located between the tool handles assures precise pressure needed to form a proper crimp. Refer to the specific contact table for tool part numbers.

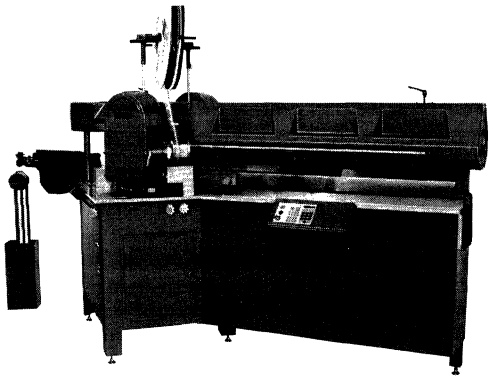


AMPOMATOR CLS II Machine No. 815800-1

This contemporary machine is low in cost and simple to operate. Application rate depends on length of leads. The machine is capable of producing leads at rates up to 3400 per hour. Leads as long as 120 inches can be produced.

AMP's Quick-Change applicators common to existing bench and lead making equipment are also used in this machine. The "T"-style terminating units are "air glide" to facilitate applicator changeover.

Various accessories to this machine are available, consult AMP Incorporated.

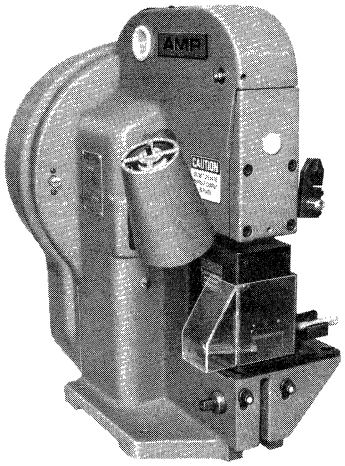


Wire Size Range: 26-12 AWG
Maximum Insulation Thickness:
12-14 AWG—2/64"
16-26 AWG—4/64"
Weight: 2,200 lb.
Height: 79"
Width: 65"
Length: 134"

Air: 80 psi 22 SCFM
Voltage: 220 VAC, 15 amperes, 1 phase, 3 wire plus ground
Insulation Types: Polyvinyl Chloride (PVC), Cross-link (PVC), Cross-link Polyethylene, Vulkene*, Silicone Rubber
*Trademark of General Electric Company

AMP-O-LECTRIC Model K and Model KII Terminating Unit

Weight: Approximately 230 lbs. [104.3 kg]
Height: 24 in. [61 cm] (without reel)
Width: 21 in. [53.3 cm]
Depth: 20 in. [50.8 cm]
Air Supply: 80-120 psi [5.52-8.27 bars] when necessary
Power Requirements: 115 vac, 60 Hz, 6.0 amp (1/4 hp motor)



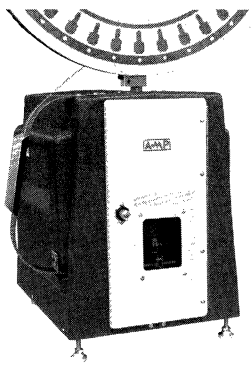
Rates of 1000 terminations per hour or more are typical.

Height:
19.75" without reel bracket
45.5" with 24" diameter reel
Depth: 26"
Width: 13.5"
Weight: 265 lb.
Power Requirements:
117 VAC, 6 A, single-phase, 60 Hz
Tilt Adjustment: 0 to 5°
Foot switch operated

AMP-O-MATIC Stripper/Crimper Machine No. 463345-2

This pneumatically operated bench-top machine is capable of stripping wires and crimping side-feed terminals.

Interchangeable applicators used in this machine are similar to the quick-change type applicator. They feature wire and insulation crimp adjustment on the top of the applicator ram.



Depending on operator dexterity and work being processed, rates to 1000 terminations/hour are attainable.

Height: 33" includes reel support
Depth: 18"
Width: 14"
Weight: 95 lb.
Power Requirements:
115 VAC, 60 Hz
Air: 80-100 psi at 1½ cfm
Wire Range: 28-16 AWG
Type Terminal: Side-feed open barrel

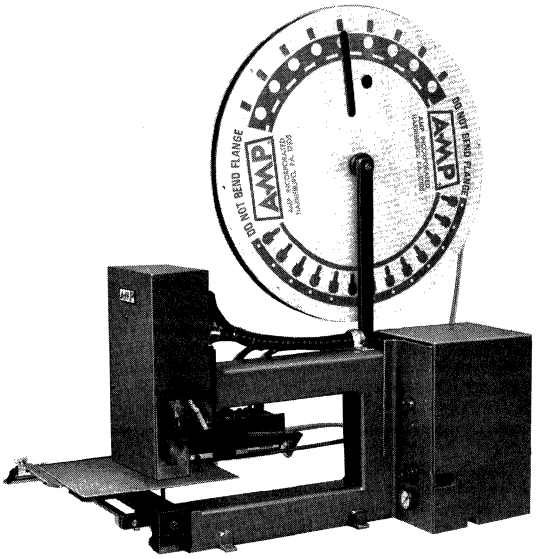
Application Tooling for Post Insertion

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Insertion Machine for Bandolier and Strip Form Posts

This insertion machine is capable of installing posts into printed circuit boards at rates to 2000 per hour. A spotlight highlights the insertion area and a lower tooling assures precise board location. The machine is actuated by a foot pedal and is bench mounted.



Weight: 135 lb.
Width: 27.5″
Height: 31.5″
Depth: 24″
Air Supply: 80 psi at 2 cfm min.
Electrical Power: 115 VAC, 60 Hz, 1 amp
Max. Board Size Using Holding Fixture: 21″ x 18″

AMP-O-MATIC Insertion Machine for Strip Form Posts—
No. 2-457382-0
(Vertically mounted reel)

AMP-O-MATIC Insertion Machine for Bandolier Posts—
No. 816535-( )
(Horizontally mounted reel)

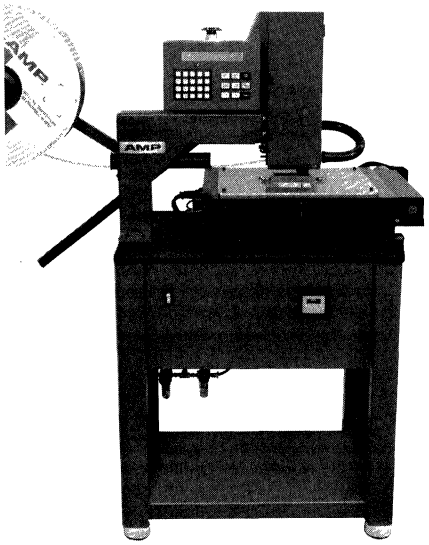
AMP Comp-U-Sertor Insertion Machine No. 816100-7

The AMP Comp-U-Sertor machine is a computer-numerical-control positioning system used with interchangeable AMP insertion heads to insert a variety of products into printed circuit boards.

Production rates range up to 14,000 contacts per hour.

The machine is easily programmable, directly into the machine's internal memory, by minicassette tape, or by remote computer. Simple, flexible commands control board positioning and tooling cycles, with the accuracy required for any of today's boards.

Consult AMP Incorporated for information on insertion heads.

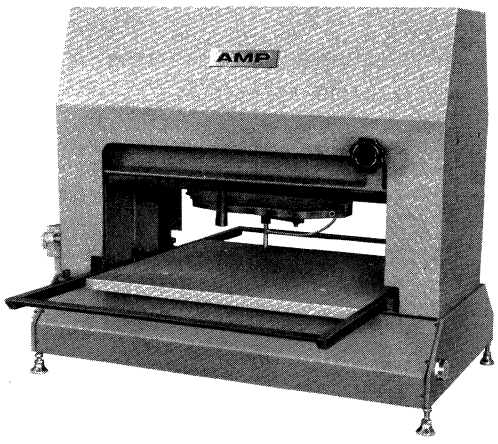


Maximum Board Size: 13″ x 19″
Maximum Insertable Area: 12″ x 18″
Maximum Board Thickness: 0.125″
Insertion Rate: 500 to 14,000 contacts per hour, depending on product type, board loading, board patterns, etc.

Height: 61″
Width: 64″
Depth: 38″
Weight: 400 lb.
Electrical Requirements: 115 VAC, 50 or 60 Hz, 7 A
Air Requirements: 2 SCFM at 80 psi minimum

AMP Seating Machine (SM-3) for ACTION PIN Headers No. 814700-1

This machine is air powered with a capacity of 6000 lbs. (120 contacts). It utilizes .750 thick templates and has an adjustable seating force. It also has a board sensing feature to compensate for board thickness variations. Cycle time is 4 seconds. Boards up to 20 inches wide can be processed.



The following is a list of technical documents covering the application, performance and maintenance of the AMPMODU .025 Square Interconnection System.

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

Board Mount Receptacle Assemblies - Pages 3146 thru 3157

108-9007 —Interconnection System, AMPMODU Mod. II Standard, Short-Point and High Pressure Receptacle Assemblies with Mating Header Assemblies
108-25022—Interconnection System, AMPMODU Mod. IV Vertical Assemblies
108-25026—Interconnection System, AMPMODU Mod. II Standard Pressure Receptacle Assembly and Header Assembly
108-25027—Interconnection System, AMPMODU Mod. II Short-Point Receptacle Assembly and Header Assembly

Wire-Applied Contacts and Housings - Pages 3158 thru 3177

108-9008 —Interconnection System, AMPMODU Wire-Applied
108-9030 —Connector, AMPMODU Mod. III Special Hi-Pressure
108-25019—AMPMODU Mod. IV Male Connectors
108-25020—Interconnection System, AMPMODU Mod. IV (Standard Pressure)
108-25021—Interconnection System, AMPMODU Mod. IV.v (Intermediate Pressure)
108-25007—Interconnection System, AMPMODU Mod. V Wire-Applied (Hi-Pressure)
108-25000—Connector Test Methods, Circuit Component Division
108-25002—Bell Weight Test for AMPMODU Special Hi-Pressure Interconnection System
108-36028—Connector, Locking Clip, .025 Square

Headers and Posts - Pages 3178 thru 3220

108-25032—ACTION PIN Header Assemblies

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Setup person.

Board Mount Receptacle Assemblies - Pages 3146 thru 3157

114-25018—Receptacle Assembly, Pc Board Mounted Vertical, AMPMODU Mod. II and IV, Application of

Wire-Applied Contacts and Housings - Pages 3158 thru 3177

114-25003—AMPMODU Mod. IV (Standard Pressure), IV.v (Intermediate Pressure) and V (Hi-Pressure) Receptacle Contacts, Application of
114-25010—AMPMODU Mod. III Special Hi-Pressure Contact, Application of
114-25006—Contact, Locking Clip, .025 Square, Application of

Headers and Posts - Pages 3178 thru 3220

114-25028—AMP Header Assemblies with ACTION PIN Contacts

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

Board Mount Receptacle Assemblies - Pages 3146 thru 3157

IS 7297—Inserting Solder Tine Receptacle Contacts in AMPMODU Mod. II Horizontal Connectors
IS 7411—Suggestions for Flow Soldering Vertical AMPMODU Receptacles
IS 7700—Replacing Solder Tine Receptacle Contacts in AMPMODU Mod. II and Mod. IV Vertical Connectors

Wire-Applied Contacts and Housings - Pages 3158 thru 3177

IS 7245—AMP Hand Tool 90170-2
IS 7250—AMP Hand Tool 90071-4
IS 7351—AMP Hand Tool 90173-3
IS 7579—AMP Hand Tool 90278-1
IS 7603—AMP Hand Tool 90291-1
IS 9453—AMP Extraction Tools 843996 and 843477 for Removing AMPMODU Crimp Snap-In Receptacle Contacts from Wire-Applied Housings
IS 7481—AMP Extraction Tool 91065-1 for AMPMODU Wire-Applied Housings 86308
IS 7935—AMPMODU Receptacle Connectors with Strain Relief/Pull Tabs
IS 7538—AMP Hand Tool 90202-2
IS 9231—AMP Hand Tool 90417-1
IS 9222—AMP Hand Tool 90418-1
IS 7443—AMP Hand Tool 90289-1
IS 7604—AMP Extraction Tool 91084-1
IS 7606—AMP Locking Clip Contacts and Connectors
IS 7627—AMP Hand Tool 90295-1

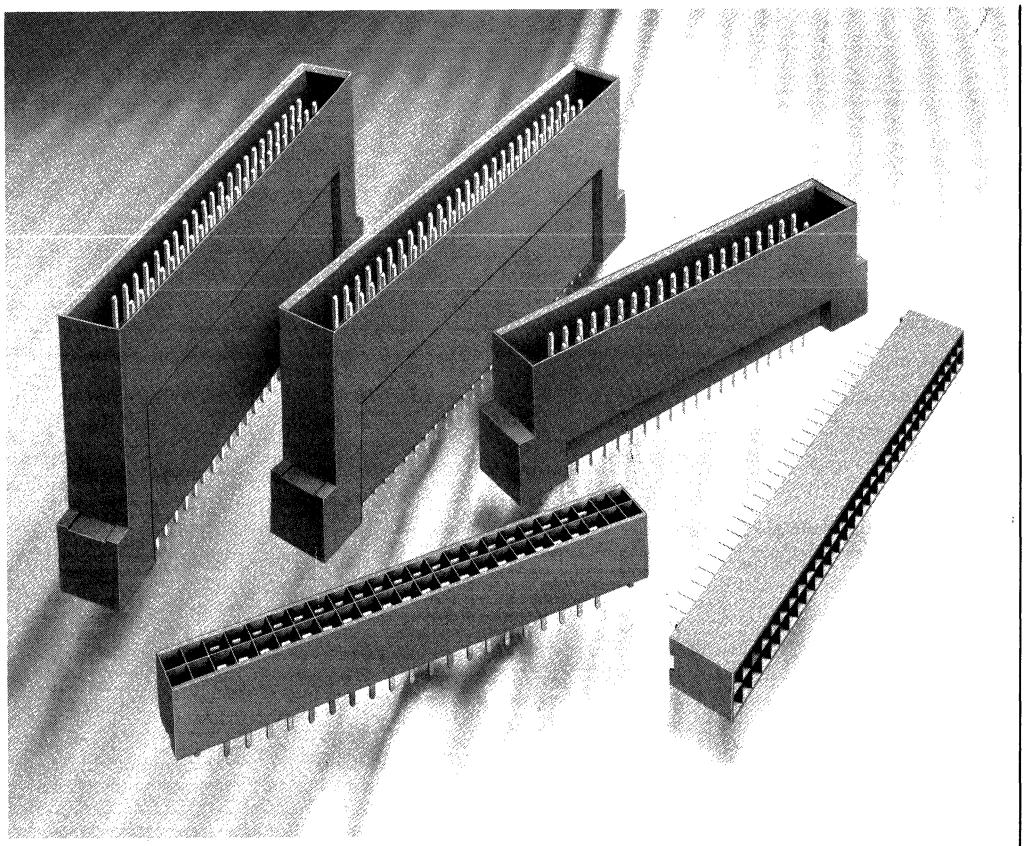
Headers and Posts - Pages 3178 thru 3220

IS 6944—AMP Uninsulated Bandolier Post Insertion Tool 91419-1
IS 7977—End Shrouds for AMPMODU Double Row Straight Post, .100 x .100 Centers
IS 7878—Barrier Inserts for AMPMODU Header Assemblies
IS 9009—Hand Tool for Breakaway Headers, Part No. 91406-1
IS 9054—Seating Tool for ACTION PIN Header Assemblies, 91170 Series

Handbook 5697—Guide to Application of ACTION PIN Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPMODU Stacking Connectors .025 x .025 [0.64 x 0.64] Posts



AMPMODU stacking connectors are a two-piece interconnection system designed for parallel stacking printed circuit boards, without the use of mother boards.

Vertical mount header and receptacle assemblies feature duplex plated posts and receptacle contacts on a double-row, .100 x .100 [2.54 x 2.54] grid. The .025 [0.64] sq. header posts are fully protected, and the top-entry receptacle contacts utilize the proven AMPMODU receptacle contact design; dual cantilever beams with built-in overstress protection.

Header assemblies are available in two heights: .785 [19.94] and 1.200 [30.48]. This allows the customer to use the height of the header to keep wire-to-board connections up and away from other board components, particularly if the components are densely packaged around the header.

Technical Documents

AMP Product Specification No. 108-25026 — Interconnection System, AMPMODU Mod. II Vertical Assemblies

AMP Application Specification No. 114-25018 — Receptacle Assembly, AMPMODU Mod. II, Vertical Mounted, Pc Board, Application of

AMP Instruction Sheet No. IS 7411 — Flow-Soldering AMPMODU Receptacles

Product Facts

- Parallel pc board stacking without use of mother boards
- Provides space between boards for interference-free routing of wire-to-board connections
- Two header heights available: .785 [19.94] and 1.200 [30.48].
- Vertical mount headers are fully shrouded
- Receptacle contacts have dual cantilever beams with built-in overstress protection
- .025 [0.64] sq. posts and receptacle contacts on double row, .100 x .100 [2.54 x 2.54] centers
- Header posts and receptacle contacts are phosphor bronze, duplex plated
- Housings are made of flame retardant, glass-filled thermoplastic

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Note: Dimensions are for reference purposes only. Customer drawings are available upon request.

Header Assemblies — Double Row .785 [19.94] Height

Specifications subject to change.
For latest design specifications...
1-800-522-6752

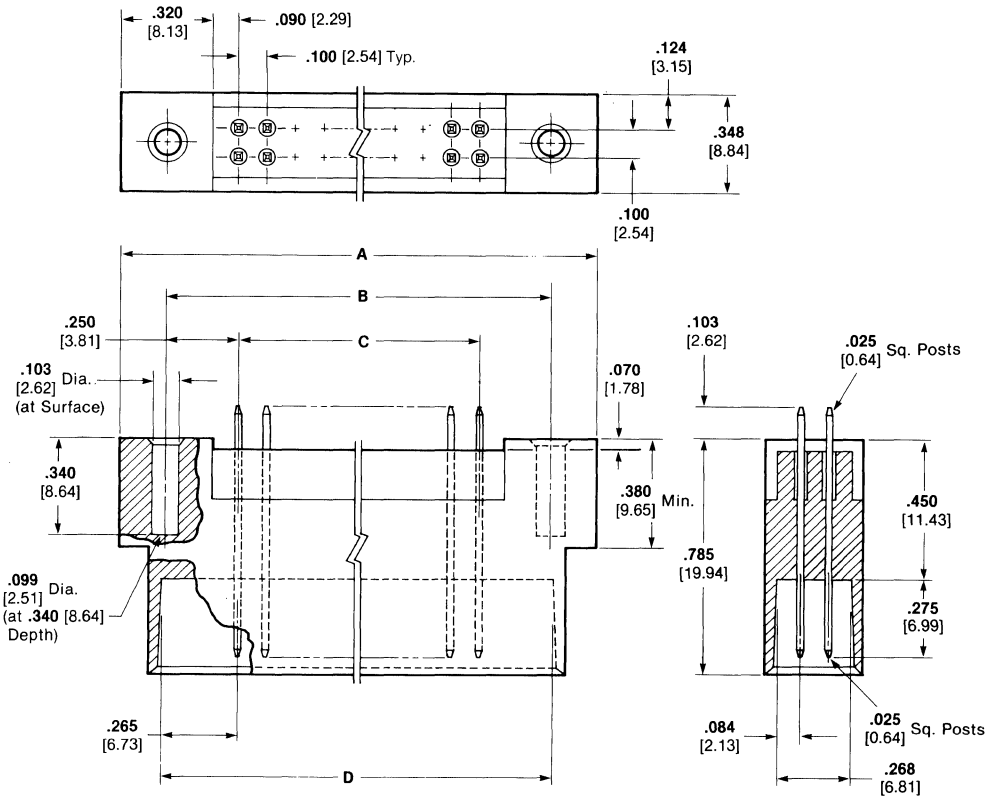
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

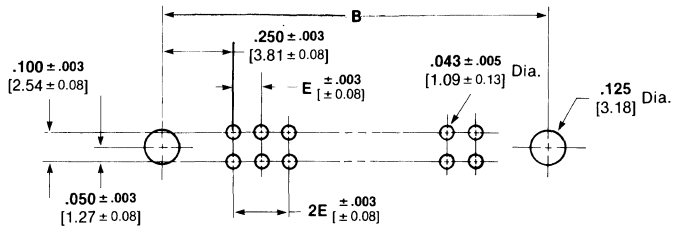
.025 x .025 [0.64 x 0.64] Straight Post (with Pin Protection)

Material and Finish:

Housing — Brown Glass-Filled Thermoplastic, Flame Retardant

Posts — Phosphor Bronze, duplex plated .000015 [0.00038] gold on mating area, .000100-.000200 [0.00254-0.00508] tin-lead on solder area, with entire post underplated .000050 [0.00127] nickel





Recommended Pc Board Hole Layout

E — Post centerline to be .100 [2.54]; ± .003 [± 0.08] tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions A	B	C	D	Header Assembly Part No.
40	**2.720** 69.09	**2.400** 60.96	**1.900** 48.26	**2.430** 61.27	102871-2
52	**3.320** 84.33	**3.000** 76.2	**2.500** 63.5	**3.030** 76.96	102871-1

Note: These headers mate with receptacle assemblies having the same number of *active* positions. See page 3227.

Header Assemblies — Double Row 1.200 [30.48] Height

Specifications subject to change.
For latest design specifications...
1-800-522-6752

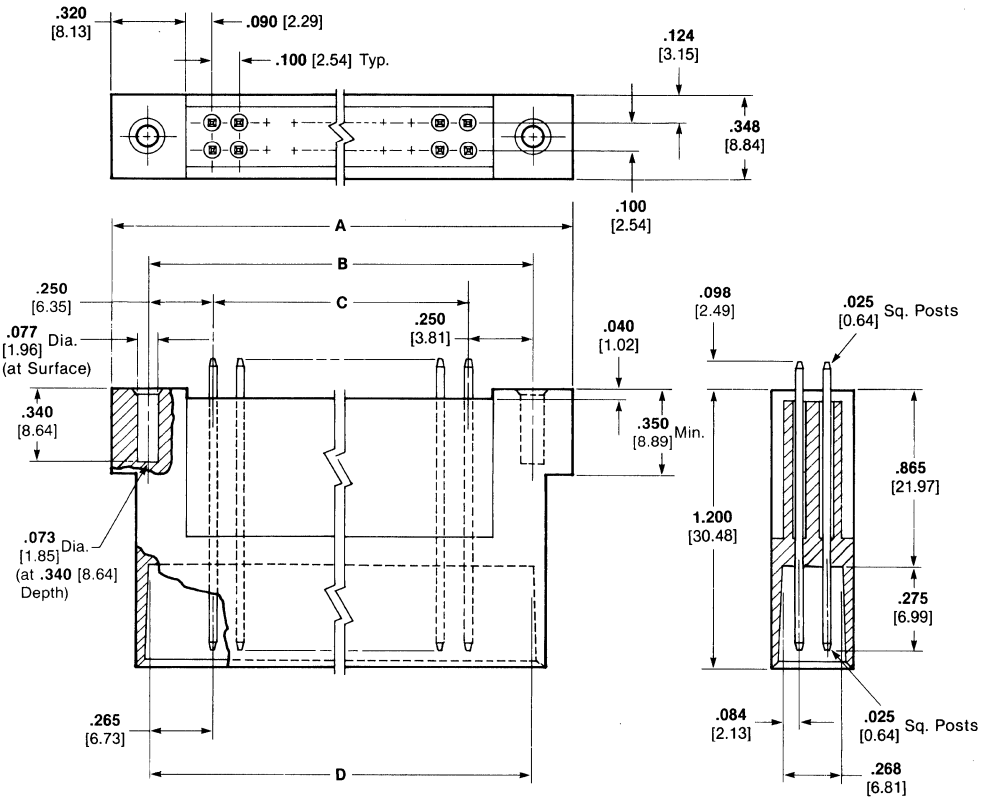
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

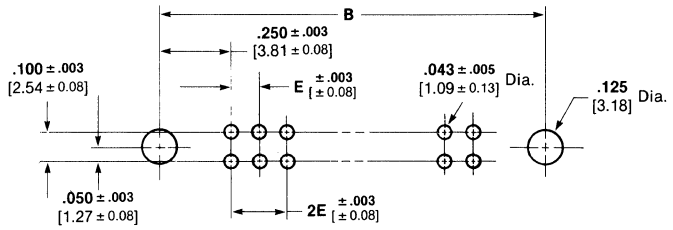
.025 x .025 [0.64 x 0.64] Straight Post (with Pin Protection)

Material and Finish:

Housing — Brown Glass-Filled Thermoplastic, Flame Retardant

Posts — Phosphor Bronze, duplex plated .000015 [0.00038] gold on mating area, .000100-.000200 [0.00254-0.00508] tin-lead on solder area, with entire post underplated .000050 [0.00127] nickel





Recommended Pc Board Hole Layout

E — Post centerline to be .100 [2.54]; ± .003 [± 0.08] tolerances not to accumulate within one connector pattern.

No. of Pos.	Dimensions A	B	C	D	Header Assembly Part No.
52	**3.320** 84.33	**3.000** 76.2	**2.500** 63.5	**3.030** 76.96	102826-1

Note: This header mates with receptacle assembly having the same number of *active* positions. See page 3227

Receptacle Assemblies — Double Row Board Mounted

Specifications subject to change.
For latest design specifications...
1-800-522-6752

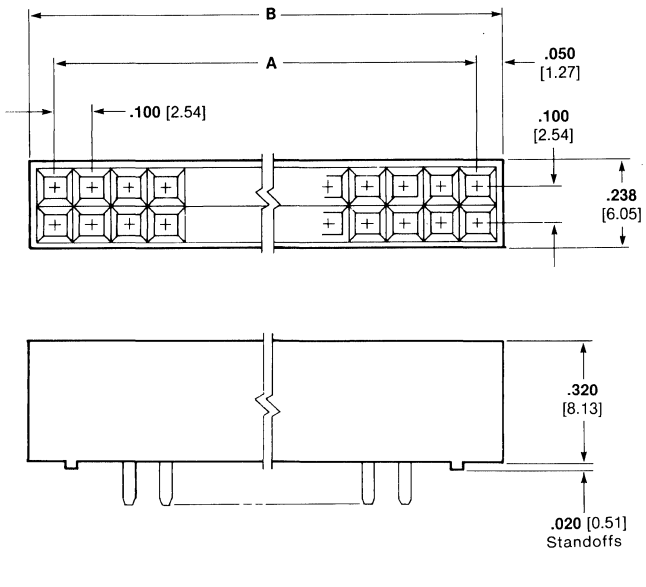
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

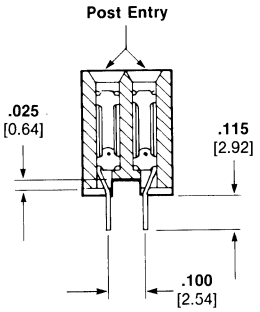
Vertical Mount, Top Entry, High Profile, Selectively Loaded (with Standoffs)

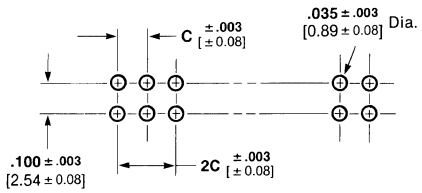
Material and Finish:

Housing — Brown Thermoplastic, Flame Retardant

Contacts — Phosphor Bronze, duplex plated .000015 [0.00038] gold on mating area, .000050-.000100 [0.00127-0.00254] bright tin-lead on solder area, with entire contact underplated .000050 [0.00127] nickel







Recommended Pc Board Hole Layout

C — Post centerline to be .100 [2.54]; ±.003 [±0.08] tolerances not to accumulate within one connector pattern.

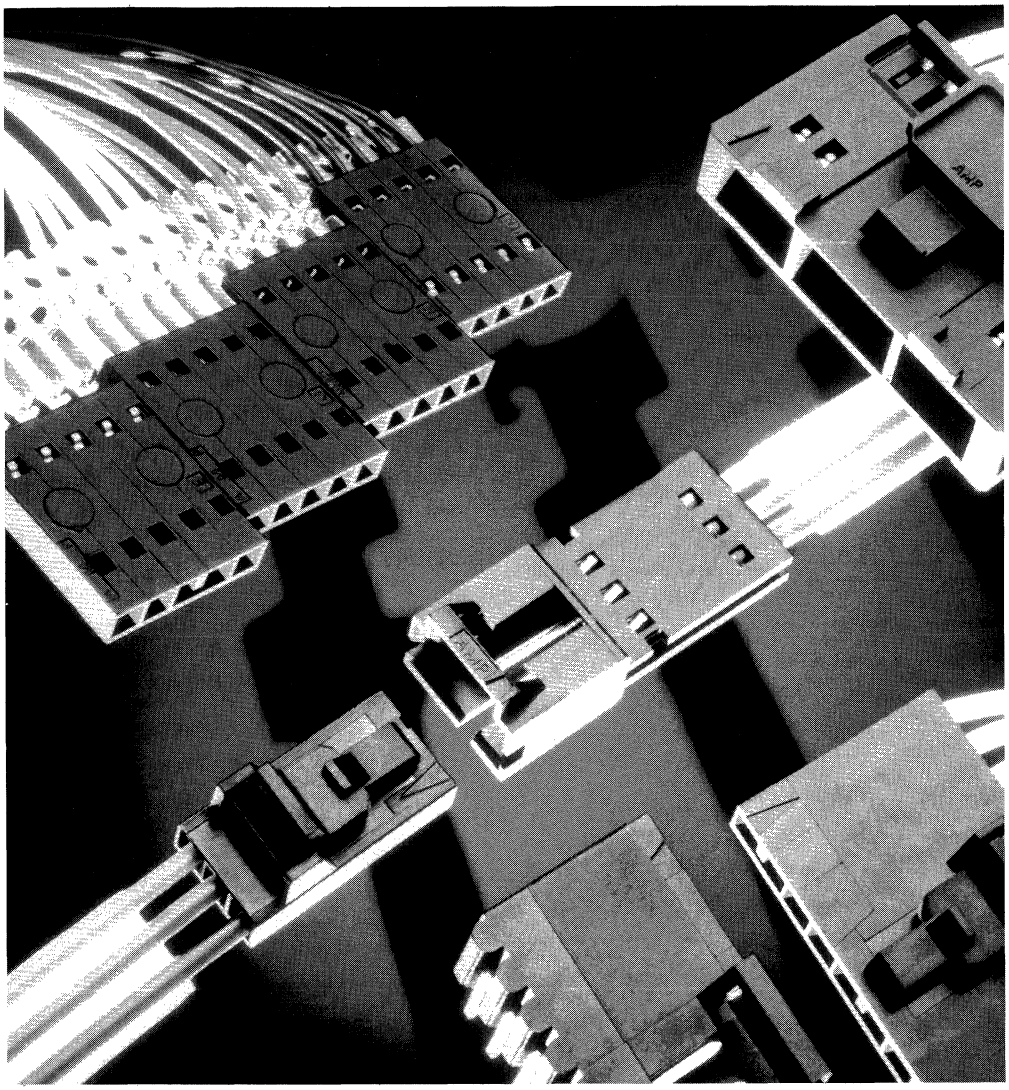
No. of Pos.	Dimensions A	Dimensions B	Receptacle Assembly Part No.
48* (40 Active)	**2.300** 58.42	**2.400** 60.96	102766-1
60* (52 Active)	**2.900** 73.66	**3.000** 76.2	102766-4

*In addition to the active positions, each receptacle has four cavities on each end that are not loaded with contacts. These empty cavities aid in aligning the receptacle with header posts during mating.

Notes: 1. AMP, part no. and date code stamped on housing where size permits.
2. These receptacle assemblies mate with headers of the same size as the active positions listed above. Refer to pages 3225 and 3226.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPMODU MTE Interconnection System



The AMPMODU MTE Interconnection System offers both wire-to-board and wire-to-wire connectors using .025 [0.64] sq. post technology.

The AMPMODU MTE Interconnection System consists of single row housings with contacts preloaded on .100 [2.54] centers. Housings are furnished with contacts partially inserted, leaving the termination areas exposed. Final contact insertion is accomplished automatically by AMP application equipment, and manually when terminated with the AMP pistol grip hand tool.

The heart of the system is the insulation displacement contact design, featured in both pin and receptacle contacts. The receptacle contact, available in either standard or high-pressure, features dual cantilever beams in an enclosed "box." The post stop prevents a mating post from disturbing the wire termination and also limits the mating depth of a long post to protect a wrap-type termination at the base of the post. The forward contact stop prevents contact overinsertion prior to termination. All contacts are furnished on carrier strips which are interlocked for stability and positive location during termination.

Single row housings are available in sizes 2 through 25 positions. Included are three styles of receptacle housings—plain, polarized/latching and ribbed and two styles of pin housings, shrouded with polarizing/latching feature and ribbed.

See pages 3249 and 3250 for AMP application tooling.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Metric symbols used are:
mm² (square millimeter)
C (Celsius)
N (newton)

Note: Dimensions are for reference purposes only. Customer drawings are available on request.

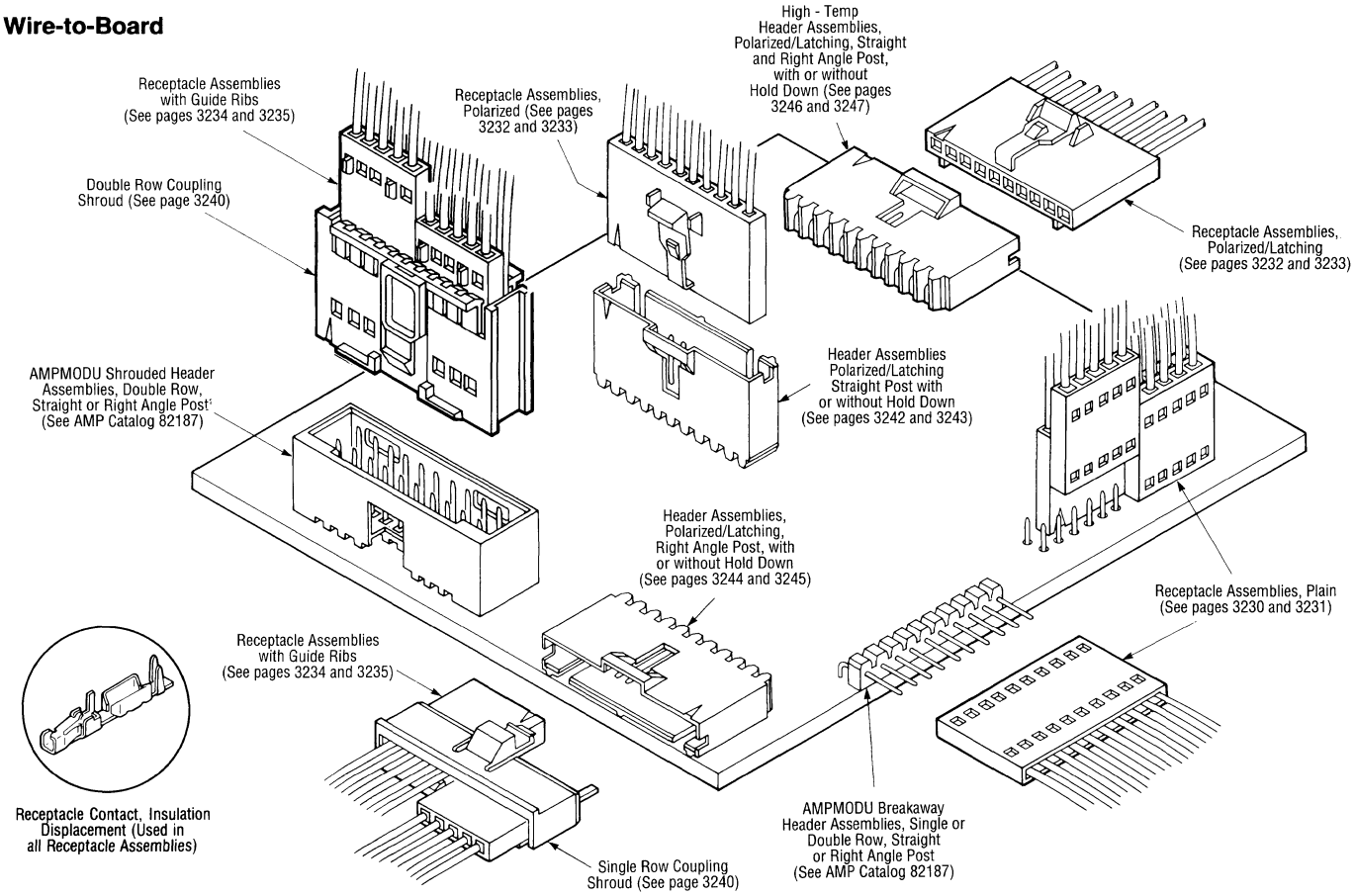
Product Facts

- Receptacle assemblies mate with .025 [0.64] sq. posts; mating post length is .200 [5.08] min., .250 [6.35] max.
- Proven AMPMODU receptacle contact design; dual cantilever beams, built-in anti-overstress, completely enclosed "box" design, standard or high-pressure
- Insulation displacement technology
- Two contact sizes for terminating 30-22 AWG [0.05-0.3 mm²] wire range; .054 [1.37] max. insulation diameter with an insulation wall thickness of .015 [0.38] max.
- Choice of gold duplex or tin plated contacts
- Interchangeable crimp snap-in pin and receptacle contacts available
- Housing sizes 2 through 25 positions, single row .100 [2.54] centers
- Plain housings are end-to-end and/or back-to-back stackable for open pin field applications
- Optional header "hold down" feature prevents movement prior to flow soldering
- Integral latch provides positive retention between header and receptacle housing
- Coupling shrouds permit ganging of smaller connectors with guide ribs to form larger single or double row latching connectors
- Mass terminating tooling assures lowest applied cost for all production needs
- SMT compatible, high-temp headers available
- Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476
- Certified by Canadian Standards Association File No. LR16455

Specifications subject to change.
For latest design specifications...
1-800-522-6752

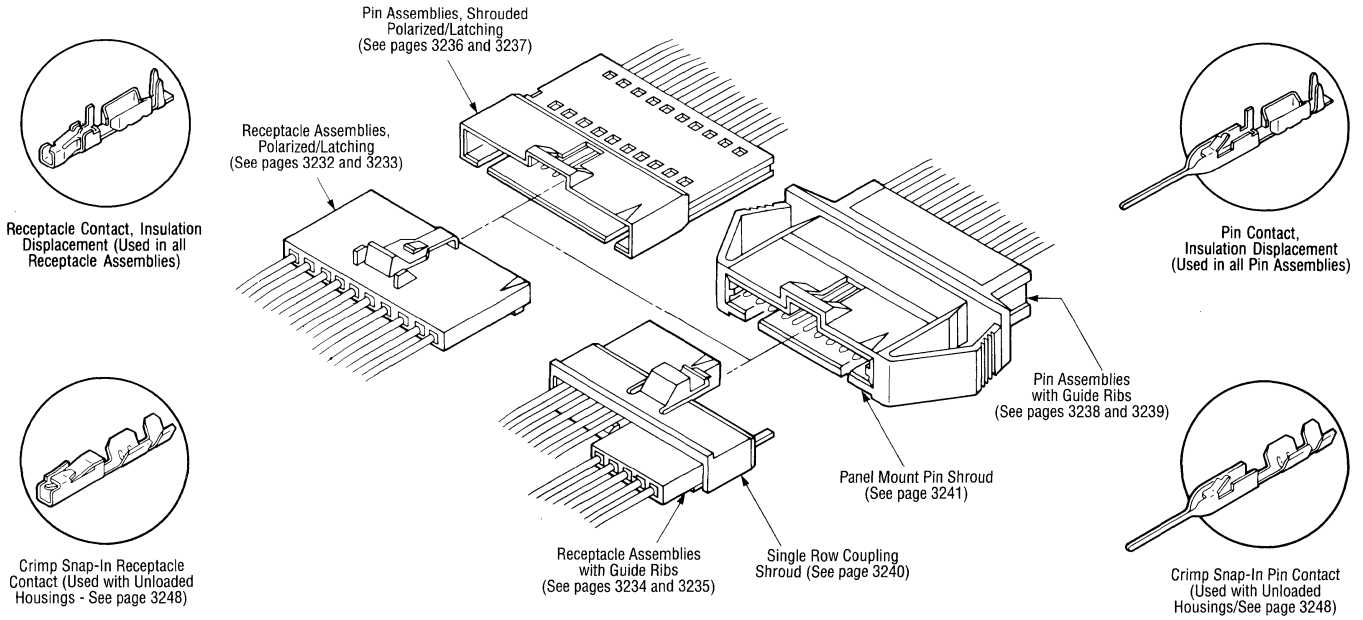
AMPMODU MTE Interconnection System
(Continued)

Wire-to-Board



[1]Mating AMPMODU Double Row Shrouded Header Assemblies must have .318 [8.08] mating post length and .150 [3.81] dimension from centerline of last post to inside of end shroud wall.

Wire-to-Wire



Note: For wire-to-wire applications shown above, all pin and receptacle assembly combinations are intermateable.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Receptacle Assemblies Plain, Single Row .100 [2.54] Centers

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material and Finish:

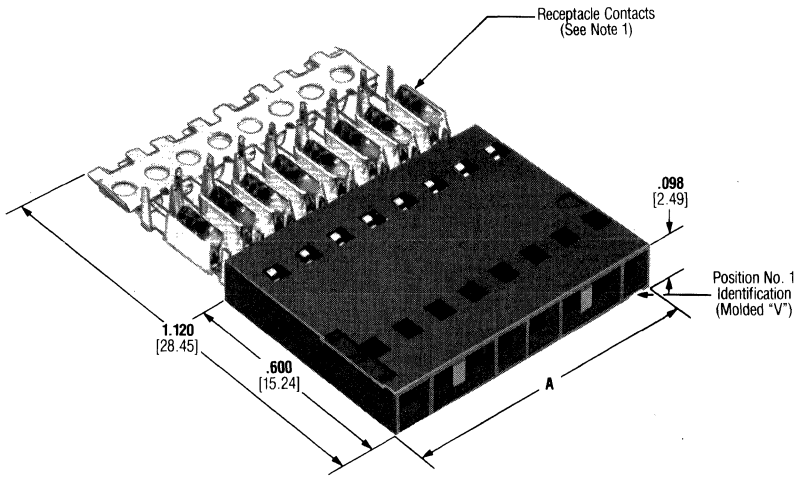
Housing—Black thermoplastic, 94V-0 rated

Contact—Copper alloy, plated tin or gold duplex

Related Product Data:

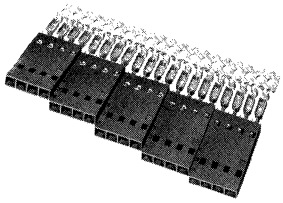
Mateable AMPMODU Products:
Breakaway Header Assemblies - AMP Catalog 82187
Machine Applied Bandolier Posts - AMP Catalog 82187
Single or Double Row Shrouded Headers with .066 [1.676] End Dimension - AMP Catalog 82187
Interchangeable Crimp Contacts - page 3248
Application Tooling - Pages 3249 and 3250
Performance Specifications - Page 3251
Technical Documents - Page 3251

Note: Insulation displacement contacts accept an insulation diameter of .030 [0.76] min. to .054 [1.37] max. with an insulation wall thickness of .015 [0.38] max. Mating post length for preloaded housings is .200 [5.08] min., 250 [6.35] max.



Standard and High Pressure Assemblies in Strip Form

Preassembled housings in strip form are available in positions 2 through 5 in Standard Assemblies and 2 through 10 in High Pressure Assemblies.



Standard Strip Form Receptacles

No. of Pos.	Housing Quantities per Strip Segment	Unit Package Order Quantities	Standard Strip Form Receptacle					
			30-26 AWG [0.05-0.15mm²] Wire			26-22 AWG [0.12-0.3mm²] Wire		
			Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]
2	10	110	103977-1	103978-1	103979-1	103974-1	103975-1	103976-1
3	5	70	103977-2	103978-2	103979-2	103974-2	103975-2	103976-2
4	5	55	103977-3	103978-3	103979-3	103974-3	103975-3	103976-3
5	4	44	103977-4	103978-4	103979-4	103974-4	103975-4	103976-4

High Pressure Strip Form Receptacles

No. of Pos.	Housing Quantities per Strip Segment	Unit Package Order Quantities	30-26 AWG [0.05-0.15mm²] Wire	26-22 AWG [0.12-0.3mm²] Wire
2	10	110	104438-1	104439-1
3	5	70	104438-2	104439-2
4	5	55	104438-3	104439-3
5	4	44	104438-4	104439-4
6	4	36	104438-5	104439-5
7	2	30	104438-6	104439-6
8	2	26	104438-7	104439-7
9	2	24	104438-8	104439-8
10	2	22	104438-9	104439-9

[1] 0.000100 [0.00254] tin-lead over 0.000050 [0.00127] nickel on entire contact.
[2] 0.000015 [0.00038] gold on mating area, 0.000050 [0.00127] min. tin-lead on termination area, with entire contact underplated 0.000050 [0.00127] nickel.
[3] 0.000030 [0.00076] gold on mating area, 0.000050 [0.00127] min. tin-lead on termination area, with entire contact underplated 0.000050 [0.00127] nickel.

Notes:
1. Receptacle assemblies are furnished with strip contacts partially inserted into housing--contacts latched into "preload" windows. Contacts are fully inserted into housings automatically when terminated with AMP application machines, or manually when terminated with AMP pistol grip hand tool.
2. Order quantity reflects number of individual housings required.
3. Keying Plugs available, see page 3248
4. High pressure receptacle contacts can be made available in other housing styles and position sizes. Contact your AMP sales representative.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Individual Assemblies

No. of Pos.	Dimension A	Unit Package Order Quantities	Individual Receptacle Assembly 30-26 AWG [0.05-0.15mm²] Wire			Individual Receptacle Assembly 26-22 AWG [0.12-0.3mm²] Wire			Unloaded[4] Housings
			Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	
2	**.198** 5.03	—	—	—	—	—	—	—	103688-1
3	**.298** 7.57	—	—	—	—	—	—	—	103688-2
4	**.398** 10.11	—	—	—	—	—	—	—	103688-3
5	**.498** 12.65	—	—	—	—	—	—	—	103688-4
6	**.598** 15.19	36	103685-5	103684-5	103903-5	103687-5	103686-5	103902-5	103688-5
7	**.698** 17.73	30	103685-6	103684-6	103903-6	103687-6	103686-6	103902-6	103688-6
8	**.798** 20.27	26	103685-7	103684-7	103903-7	103687-7	103686-7	103902-7	103688-7
9	**.898** 22.81	24	103685-8	103684-8	103903-8	103687-8	103686-8	103902-8	103688-8
10	**.998** 23.35	22	103685-9	103684-9	103903-9	103687-9	103686-9	103902-9	103688-9
11	**1.098** 27.89	20	1-103685-0	1-103684-0	1-103903-0	1-103687-0	1-103686-0	1-103902-0	1-103688-0
12	**1.198** 30.43	18	1-103685-1	1-103684-1	1-103903-1	1-103687-1	1-103686-1	1-103902-1	1-103688-1
13	**1.298** 32.97	17	1-103685-2	1-103684-2	1-103903-2	1-103687-2	1-103686-2	1-103902-2	1-103688-2
14	**1.398** 35.51	15	1-103685-3	1-103684-3	1-103903-3	1-103687-3	1-103686-3	1-103902-3	1-103688-3
15	**1.498** 38.05	14	1-103685-4	1-103684-4	1-103903-4	1-103687-4	1-103686-4	1-103902-4	1-103688-4
16	**1.598** 40.59	13	1-103685-5	1-103684-5	1-103903-5	1-103687-5	1-103686-5	1-103902-5	1-103688-5
17	**1.698** 43.13	13	1-103685-6	1-103684-6	1-103903-6	1-103687-6	1-103686-6	1-103902-6	1-103688-6
18	**1.798** 45.67	12	1-103685-7	1-103684-7	1-103903-7	1-103687-7	1-103686-7	1-103902-7	1-103688-7
19	**1.898** 48.21	11	1-103685-8	1-103684-8	1-103903-8	1-103687-8	1-103686-8	1-103902-8	1-103688-8
20	**1.998** 50.75	11	1-103685-9	1-103684-9	1-103903-9	1-103687-9	1-103686-9	1-103902-9	1-103688-9
21	**2.098** 53.29	10	2-103685-0	2-103684-0	2-103903-0	2-103687-0	2-103686-0	2-103902-0	2-103688-0
22	**2.198** 55.83	10	2-103685-1	2-103684-1	2-103903-1	2-103687-1	2-103686-1	2-103902-1	2-103688-1
23	**2.298** 58.37	9	2-103685-2	2-103684-2	2-103903-2	2-103687-2	2-103686-2	2-103902-2	2-103688-2
24	**2.398** 60.91	9	2-103685-3	2-103684-3	2-103903-3	2-103687-3	2-103686-3	2-103902-3	2-103688-3
25	**2.498** 63.45	8	2-103685-4	2-103684-4	2-103903-4	2-103687-4	2-103686-4	2-103902-4	2-103688-4

[1] .000100 [0.00254] tin-lead over .000050 [0.00127] nickel on entire contact.
[2] .000015 [0.00038] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[3] .000030 [0.00076] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[4] May be used with crimp type contacts, see page 3248.

Note: Use Extraction/Lance Reset Tool, Part No. 843477-1 to remove receptacle contact.

These receptacle assemblies with plain housings can be stacked end-to-end and/or side-to-side for single or double row connections to an open pin field with a .100 [2.54] centerline grid.

Receptacle Assemblies Polarized/Latching, Single Row .100 [2.54] Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material and Finish:

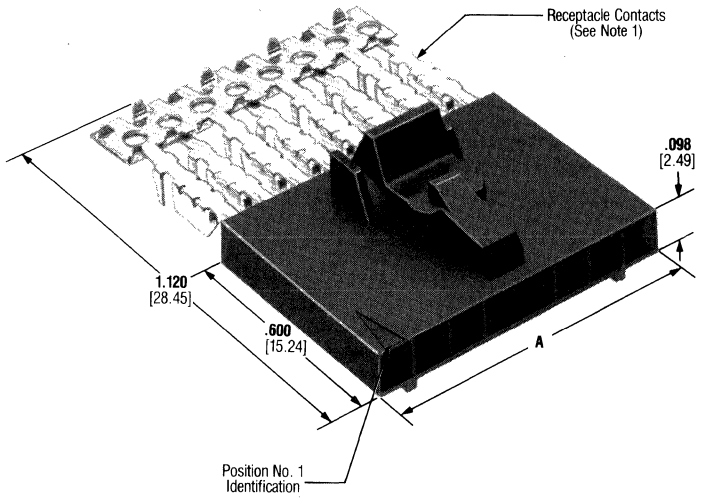
Housing—Black thermoplastic, 94V-0 rated

Contact—Copper alloy, plated tin or gold duplex

Related Product Data:

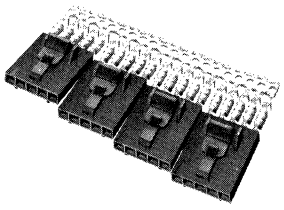
Mateable AMPMODU Products:
Pin Assemblies (Polarized/ Latching) - Pages 3236 and 3237
Pin Assemblies with Guide Ribs (installed in Panel Mount Pin Shroud) - Pages 3238, 3239 and 3241
Header Assemblies (Polarized/ Latching) - Pages 3242 thru 3245
Interchangeable Crimp Contacts - Page 3248
Application Tooling - Pages 3249 and 3250
Performance Specifications - Page 3251
Technical Documents - Page 3251

Note: Insulation displacement contacts accept an insulation diameter of .030 [0.76] min. to .054 [1.37] max. with an insulation wall thickness of .015 [0.38] max. Mating post length for preloaded housings is .200 [5.08] min., 250 [6.35] max.



Strip Form

Preassembled housings in strip form are available in positions 2 through 5.



No. of Pos.	Housing Quantities per Strip Segment	Unit Package Order Quantities	Strip Form Receptacle Assembly 30-26 AWG [0.05-0.15mm²] Wire			Strip Form Receptacle Assembly 26-22 AWG [0.12-0.3mm²] Wire		
			Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]
2	10	110	103959-1	103960-1	103961-1	103956-1	103957-1	103958-1
3	5	70	103959-2	103960-2	103961-2	103956-2	103957-2	103958-2
4	5	55	103959-3	103960-3	103961-3	103956-3	103957-3	103958-3
5	4	44	103959-4	103960-4	103961-4	103956-4	103957-4	103958-4

[1] .000100 [0.00254] tin-lead over .000050 [0.00127] nickel on entire contact.
[2] .000015 [0.00038] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[3] .000030 [0.00076] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.

Notes: 1. Receptacle assemblies are furnished with strip contacts partially inserted into housing—contacts latched into "preload" windows. Contacts are fully inserted into housings automatically when terminated with AMP application machines, or manually when terminated with AMP pistol grip hand tool.
2. Order quantity reflects number of individual housings required.
3. Keying Plugs available, see page 3248.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Individual Assemblies

No. of Pos.	Dimension A	Unit Package Order Quantities	Individual Receptacle Assembly 30-26 AWG [0.05-0.15mm²] Wire			Individual Receptacle Assembly 26-22 AWG [0.12-0.3mm²] Wire			Unloaded[4] Housings
			Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	
2	**.198** 5.03	—	—	—	—	—	—	—	104257-1
3	**.298** 7.57	—	—	—	—	—	—	—	104257-2
4	**.398** 10.11	—	—	—	—	—	—	—	104257-3
5	**.498** 12.65	—	—	—	—	—	—	—	104257-4
6	**.598** 15.19	36	103641-5	103640-5	103897-5	103645-5	103644-5	103734-5	104257-5
7	**.698** 17.73	30	103641-6	103640-6	103897-6	103645-6	103644-6	103734-6	104257-6
8	**.798** 20.27	26	103641-7	103640-7	103897-7	103645-7	103644-7	103734-7	104257-7
9	**.898** 22.81	24	103641-8	103640-8	103897-8	103645-8	103644-8	103734-8	104257-8
10	**.998** 23.35	22	103641-9	103640-9	103897-9	103645-9	103644-9	103734-9	104257-9
11	**1.098** 27.89	20	1-103641-0	1-103640-0	1-103897-0	1-103645-0	1-103644-0	1-103734-0	1-104257-0
12	**1.198** 30.43	18	1-103641-1	1-103640-1	1-103897-1	1-103645-1	1-103644-1	1-103734-1	1-104257-1
13	**1.298** 32.97	17	1-103641-2	1-103640-2	1-103897-2	1-103645-2	1-103644-2	1-103734-2	1-104257-2
14	**1.398** 35.51	15	1-103641-3	1-103640-3	1-103897-3	1-103645-3	1-103644-3	1-103734-3	1-104257-3
15	**1.498** 38.05	14	1-103641-4	1-103640-4	1-103897-4	1-103645-4	1-103644-4	1-103734-4	1-104257-4
16	**1.598** 40.59	13	1-103641-5	1-103640-5	1-103897-5	1-103645-5	1-103644-5	1-103734-5	1-104257-5
17	**1.698** 43.13	13	1-103641-6	1-103640-6	1-103897-6	1-103645-6	1-103644-6	1-103734-6	1-104257-6
18	**1.798** 45.67	12	1-103641-7	1-103640-7	1-103897-7	1-103645-7	1-103644-7	1-103734-7	1-104257-7
19	**1.898** 48.21	11	1-103641-8	1-103640-8	1-103897-8	1-103645-8	1-103644-8	1-103734-8	1-104257-8
20	**1.998** 50.75	11	1-103641-9	1-103640-9	1-103897-9	1-103645-9	1-103644-9	1-103734-9	1-104257-9
21	**2.098** 53.29	10	2-103641-0	2-103640-0	2-103897-0	2-103645-0	2-103644-0	2-103734-0	2-104257-0
22	**2.198** 55.83	10	2-103641-1	2-103640-1	2-103897-1	2-103645-1	2-103644-1	2-103734-1	2-104257-1
23	**2.298** 58.37	9	2-103641-2	2-103640-2	2-103897-2	2-103645-2	2-103644-2	2-103734-2	2-104257-2
24	**2.398** 60.91	9	2-103641-3	2-103640-3	2-103897-3	2-103645-3	2-103644-3	2-103734-3	2-104257-3
25	**2.498** 63.45	8	2-103641-4	2-103640-4	2-103897-4	2-103645-4	2-103644-4	2-103734-4	2-104257-4

[1] .000100 [0.00254] tin-lead over .000050 [0.00127] nickel on entire contact.
[2] .000015 [0.00038] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[3] .000030 [0.00076] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[4] May be used with crimp type contacts, see page 3248.

Note: Use Extraction/Lance Reset Tool, Part No. 843477-1 to remove receptacle contact.

Receptacle Assemblies with Guide Ribs, Single Row .100 [2.54] Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material and Finish:

Housing—Black thermoplastic, 94V-0 rated

Contact—Copper alloy, plated tin or gold duplex

Related Product Data:

Coupling Shrouds used with:
Single Row - Page 3240
Double Row - Page 3240

Mateable AMPMODU Products (with Receptacle Assemblies Installed in Single Row Coupling Shrouds):
Pin Assemblies (Polarized/ Latching) - Pages 3236 and 3237
Pin Assemblies with Guide Ribs (installed in Panel Mount Pin Shroud) - Pages 3238, 3239 and 3241
Header Assemblies (Polarized/ Latching) - Pages 3242 thru 3245

Mateable AMPMODU Products (with Receptacle Assemblies Installed in Double Row Coupling Shrouds):
Header Assemblies, Shrouded, Double Row (.318 [8.08] mating post length, .150 [3.81] end dimension) - AMP Catalog 82187

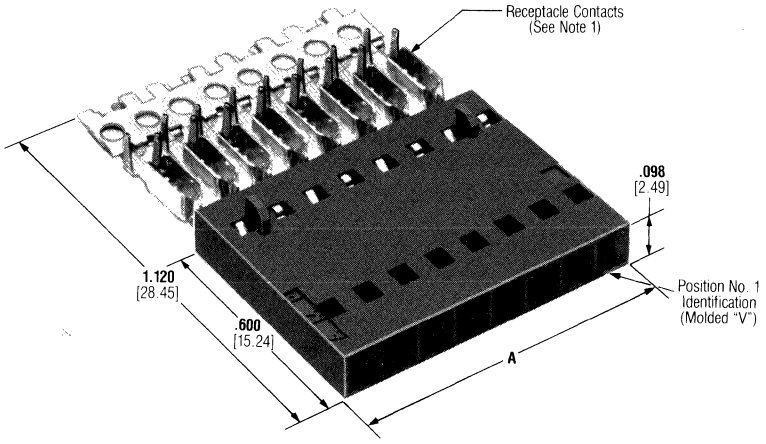
Interchangeable Crimp Contacts - Page 3248

Application Tooling - Pages 3249 and 3250

Performance Specifications - Page 3251

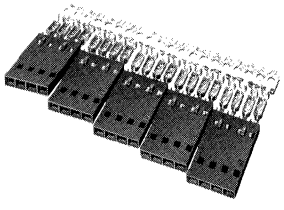
Technical Documents - Page 3251

Note: Insulation displacement contacts accept an insulation diameter of .030 [0.76] min. to .054 [1.37] max. with an insulation wall thickness of .015 [0.38] max. Mating post length for preloaded housings is .200 [5.08] min., 250 [6.35] max.



Strip Form

Preassembled housings in strip form are available in positions 2 through 5.



No. of Pos.	Housing Quantities per Strip Segment	Unit Package Order Quantities	Strip Form Receptacle Assembly 30-26 AWG [0.05-0.15mm²] Wire			Strip Form Receptacle Assembly 26-22 AWG [0.12-0.3mm²] Wire		
			Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]
2	10	110	103971-1	103972-1	103973-1	103968-1	103969-1	103970-1
3	5	70	103971-2	103972-2	103973-2	103968-2	103969-2	103970-2
4	5	55	103971-3	103972-3	103973-3	103968-3	103969-3	103970-3
5	4	44	103971-4	103972-4	103973-4	103968-4	103969-4	103970-4

[1] .000100 [0.00254] tin-lead over .000050 [0.00127] nickel on entire contact.

[2] .000015 [0.00038] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.

[3] .000030 [0.00076] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.

Notes: 1. Receptacle assemblies are furnished with strip contacts partially inserted into housing—contacts latched into "preload" windows. Contacts are fully inserted into housings automatically when terminated with AMP application machines, or manually when terminated with AMP pistol grip hand tool.
2. Order quantity reflects number of individual housings required.
3. Keying Plugs available, see page 3248.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Individual Assemblies

No. of Pos.	Dimension A	Unit Package Order Quantities	Individual Receptacle Assembly 30-26 AWG [0.05-0.15mm²] Wire			Individual Receptacle Assembly 26-22 AWG [0.12-0.3mm²] Wire			Unloaded[4] Housings
			Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	
2	**.198** 5.03	—	—	—	—	—	—	—	103648-1
3	**.298** 7.57	—	—	—	—	—	—	—	103648-2
4	**.398** 10.11	—	—	—	—	—	—	—	103648-3
5	**.498** 12.65	—	—	—	—	—	—	—	103648-4
6	**.598** 15.19	36	103650-5	103649-5	103901-5	103652-5	103651-5	103900-5	103648-5
7	**.698** 17.73	30	103650-6	103649-6	103901-6	103652-6	103651-6	103900-6	103648-6
8	**.798** 20.27	26	103650-7	103649-7	103901-7	103652-7	103651-7	103900-7	103648-7
9	**.898** 22.81	24	103650-8	103649-8	103901-8	103652-8	103651-8	103900-8	103648-8
10	**.998** 23.35	22	103650-9	103649-9	103901-9	103652-9	103651-9	103900-9	103648-9
11	**1.098** 27.89	20	1-103650-0	1-103649-0	1-103901-0	1-103652-0	1-103651-0	1-103900-0	1-103648-0
12	**1.198** 30.43	18	1-103650-1	1-103649-1	1-103901-1	1-103652-1	1-103651-1	1-103900-1	1-103648-1
13	**1.298** 32.97	17	1-103650-2	1-103649-2	1-103901-2	1-103652-2	1-103651-2	1-103900-2	1-103648-2
14	**1.398** 35.51	15	1-103650-3	1-103649-3	1-103901-3	1-103652-3	1-103651-3	1-103900-3	1-103648-3
15	**1.498** 38.05	14	1-103650-4	1-103649-4	1-103901-4	1-103652-4	1-103651-4	1-103900-4	1-103648-4
16	**1.598** 40.59	13	1-103650-5	1-103649-5	1-103901-5	1-103652-5	1-103651-5	1-103900-5	1-103648-5
17	**1.698** 43.13	13	1-103650-6	1-103649-6	1-103901-6	1-103652-6	1-103651-6	1-103900-6	1-103648-6
18	**1.798** 45.67	12	1-103650-7	1-103649-7	1-103901-7	1-103652-7	1-103651-7	1-103900-7	1-103648-7
19	**1.898** 48.21	11	1-103650-8	1-103649-8	1-103901-8	1-103652-8	1-103651-8	1-103900-8	1-103648-8
20	**1.998** 50.75	11	1-103650-9	1-103649-9	1-103901-9	1-103652-9	1-103651-9	1-103900-9	1-103648-9
21	**2.098** 53.29	10	2-103650-0	2-103649-0	2-103901-0	2-103652-0	2-103651-0	2-103900-0	2-103648-0
22	**2.198** 55.83	10	2-103650-1	2-103649-1	2-103901-1	2-103652-1	2-103651-1	2-103900-1	2-103648-1
23	**2.298** 58.37	9	2-103650-2	2-103649-2	2-103901-2	2-103652-2	2-103651-2	2-103900-2	2-103648-2
24	**2.398** 60.91	9	2-103650-3	2-103649-3	2-103901-3	2-103652-3	2-103651-3	2-103900-3	2-103648-3
25	**2.498** 63.45	8	2-103650-4	2-103649-4	2-103901-4	2-103652-4	2-103651-4	2-103900-4	2-103648-4

[1] .000100 [0.00254] tin-lead over .000050 [0.00127] nickel on entire contact.
[2] .000015 [0.00038] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[3] .000030 [0.00076] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[4] May be used with crimp type contacts, see page 3248.

Note: Use Extraction/Lance Reset Tool, Part No. 843477-1 to remove receptacle contact.

These receptacle assemblies with ribbed housings can be stacked end-to-end inside a single row coupling shroud to form a larger single-row latching connector, or end-to-end and/or back-to-back inside a double row coupling shroud to form a double-row latching connector.

Pin Assemblies, Shrouded Polarized/Latching, Single Row .100 [2.54] Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material and Finish:

Housing—Black thermoplastic, 94V-0 rated

Contact—Copper alloy, plated tin or gold duplex

Related Product Data:

Mateable AMPMODU Products:

Receptacle Assemblies (Polarized/Latching) - Pages 3232 and 3233

Receptacle Assemblies with Guide Ribs (installed in Single Row Coupling Shroud) - Pages 3234 and 3235

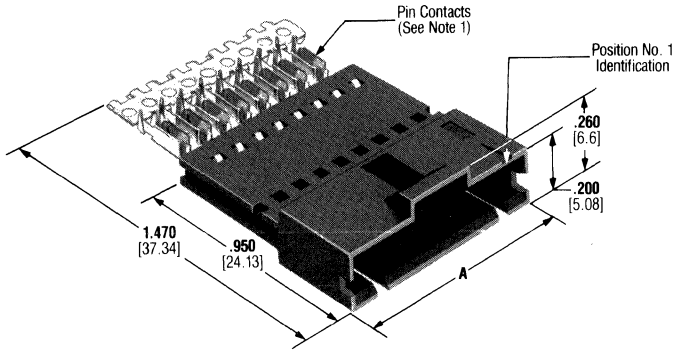
Interchangeable Crimp Contacts - Page 3248

Application Tooling - Pages 3249 and 3250

Performance Specifications - Page 3251

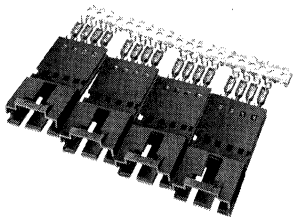
Technical Documents - Page 3251

Note: Insulation displacement Contacts accept an insulation diameter of .030 [0.76] min. to .054 [1.37] max. with an insulation wall thickness of .015 [0.38] max.



Strip Form

Preassembled housings in strip form are available in positions 2 through 5.



No. of Pos.	Housing Quantities per Strip Segment	Unit Package Order Quantities	Strip Form Pin Assembly 30-26 AWG [0.05-0.15mm²] Wire			Strip Form Pin Assembly 26-22 AWG [0.12-0.3mm²] Wire		
			Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]
2	5	70	103947-1	103948-1	103949-1	103944-1	103945-1	103946-1
3	5	55	103947-2	103948-2	103949-2	103944-2	103945-2	103946-2
4	4	44	103947-3	103948-3	103949-3	103944-3	103945-3	103946-3
5	4	36	103947-4	103948-4	103949-4	103944-4	103945-4	103946-4

[1] .000100 [0.00254] tin-lead over .000050 [0.00127] nickel on entire contact.
[2] .000015 [0.00038] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[3] .000030 [0.00076] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.

Notes: 1. Pin assemblies are furnished with strip contacts partially inserted into housing—contacts latched into "preload" windows. Contacts are fully inserted into housings automatically when terminated with AMP application machines, or manually when terminated with AMP pistol grip hand tool.
2. Order quantity reflects number of individual housings required.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Individual Assemblies

No. of Pos.	Dimension A	Unit Package Order Quantities	Individual Pin Assembly 30-26 AWG [0.05-0.15mm²] Wire			Individual Pin Assembly 26-22 AWG [0.12-0.3mm²] Wire			Unloaded[4] Housings
			Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	
2	.300 7.62	—	—	—	—	—	—	—	103653-1
3	.400 10.16	—	—	—	—	—	—	—	103653-2
4	.500 12.7	—	—	—	—	—	—	—	103653-3
5	.600 15.24	—	—	—	—	—	—	—	103653-4
6	.700 17.78	30	103659-5	103658-5	103894-5	103661-5	103660-5	103893-5	103653-5
7	.800 20.32	26	103659-6	103658-6	103894-6	103661-6	103660-6	103893-6	103653-6
8	.900 22.86	24	103659-7	103658-7	103894-7	103661-7	103660-7	103893-7	103653-7
9	1.000 25.4	22	103659-8	103658-8	103894-8	103661-8	103660-8	103893-8	103653-8
10	1.100 27.94	20	103659-9	103658-9	103894-9	103661-9	103660-9	103893-9	103653-9
11	1.200 30.48	18	1-103659-0	1-103658-0	1-103894-0	1-103661-0	1-103660-0	1-103893-0	1-103653-0
12	1.300 33.02	17	1-103659-1	1-103658-1	1-103894-1	1-103661-1	1-103660-1	1-103893-1	1-103653-1
13	1.400 35.56	15	1-103659-2	1-103658-2	1-103894-2	1-103661-2	1-103660-2	1-103893-2	1-103653-2
14	1.500 38.1	14	1-103659-3	1-103658-3	1-103894-3	1-103661-3	1-103660-3	1-103893-3	1-103653-3
15	1.600 40.64	13	1-103659-4	1-103658-4	1-103894-4	1-103661-4	1-103660-4	1-103893-4	1-103653-4
16	1.700 43.18	13	1-103659-5	1-103658-5	1-103894-5	1-103661-5	1-103660-5	1-103893-5	1-103653-5
17	1.800 45.72	12	1-103659-6	1-103658-6	1-103894-6	1-103661-6	1-103660-6	1-103893-6	1-103653-6
18	1.900 48.26	11	1-103659-7	1-103658-7	1-103894-7	1-103661-7	1-103660-7	1-103893-7	1-103653-7
19	2.000 50.8	11	1-103659-8	1-103658-8	1-103894-8	1-103661-8	1-103660-8	1-103893-8	1-103653-8
20	2.100 53.34	10	1-103659-9	1-103658-9	1-103894-9	1-103661-9	1-103660-9	1-103893-9	1-103653-9
21	2.200 55.88	10	2-103659-0	2-103658-0	2-103894-0	2-103661-0	2-103660-0	2-103893-0	2-103653-0
22	2.300 58.42	9	2-103659-1	2-103658-1	2-103894-1	2-103661-1	2-103660-1	2-103893-1	2-103653-1
23	2.400 60.96	9	2-103659-2	2-103658-2	2-103894-2	2-103661-2	2-103660-2	2-103893-2	2-103653-2
24	2.500 63.5	8	2-103659-3	2-103658-3	2-103894-3	2-103661-3	2-103660-3	2-103893-3	2-103653-3
25	2.600 66.04	8	2-103659-4	2-103658-4	2-103894-4	2-103661-4	2-103660-4	2-103893-4	2-103653-4

[1] .000100 [0.00254] tin-lead over .000050 [0.00127] nickel on entire contact.
[2] .000015 [0.00038] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[3] .000030 [0.00076] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[4] May be used with crimp type contacts, see page 3248.

Note: Use Extraction/Lance Reset Tool, Part No. 843477-1 to remove pin contact.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Pin Assemblies with Guide Ribs, Single Row .100 [2.54] Centers

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material and Finish:

Housing—Black thermoplastic, 94V-0 rated

Contact—Copper alloy, plated tin or gold duplex

Related Product Data:

Pin Shrouds used with:

Panel Mount, Single Row - Page 3241

Mateable AMPMODU MTE Products (with Pin Assembly Installed in Panel Mount Pin Shroud):

Receptacle Assemblies (Polarized/ Latching) - Pages 3232 and 3233

Receptacle Assemblies with Guide Ribs (installed in Single Coupling Shroud) - Pages 3234 and 3235

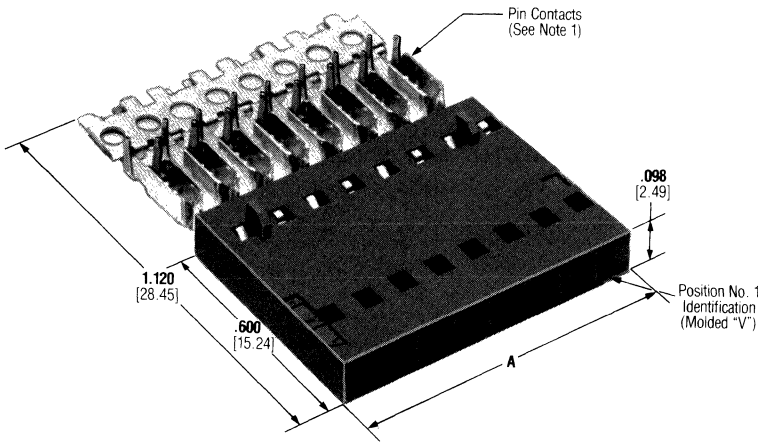
Interchangeable Crimp Contacts - Page 3248

Application Tooling - Pages 3249 and 3250

Performance Specifications - Page 3251

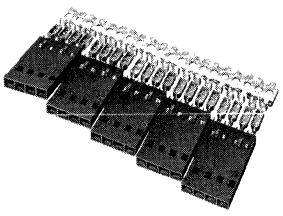
Technical Documents - Page 3251

Note: Insulation displacement contacts accept an insulation diameter of .030 [0.76] min. to .054 [1.37] max. with an insulation wall thickness of .015 [0.38] max.



Strip Form

Preassembled housings in strip form are available in positions 2 through 5.



No. of Pos.	Housing Quantities per Strip Segment	Unit Package Order Quantities	Strip Form Pin Assembly 30-26 AWG [0.05-0.15mm²] Wire			Strip Form Pin Assembly 26-22 AWG [0.12-0.3mm²] Wire		
			Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]
2	10	110	103953-1	103954-1	103955-1	103950-1	103951-1	103952-1
3	5	70	103953-2	103954-2	103955-2	103950-2	103951-2	103952-2
4	5	55	103953-3	103954-3	103955-3	103950-3	103951-3	103952-3
5	4	44	103953-4	103954-4	103955-4	103950-4	103951-4	103952-4

[1] .000100 [0.00254] tin-lead over .000050 [0.00127] nickel on entire contact.
[2] .000015 [0.00038] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[3] .000030 [0.00076] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.

Notes: 1. Pin assemblies are furnished with strip contacts partially inserted into housing—contacts latched into "preload" windows. Contacts are fully inserted into housings automatically when terminated with AMP application machines, or manually when terminated with AMP pistol grip hand tool.
2. Order quantity reflects number of individual housings required.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Individual Assemblies

No. of Pos.	Dimension A	Unit Package Order Quantities	Individual Pin Assembly 30-26 AWG [0.05-0.15mm²] Wire			Individual Pin Assembly 26-22 AWG [0.12-0.3mm²] Wire			Unloaded[4] Housings
			Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	
2	**.198** 5.03	—	—	—	—	—	—	—	104503-1
3	**.298** 7.57	—	—	—	—	—	—	—	104503-2
4	**.398** 10.11	—	—	—	—	—	—	—	104503-3
5	**.498** 12.65	—	—	—	—	—	—	—	104503-4
6	**.598** 15.19	36	103656-5	103657-5	103896-5	103654-5	103655-5	103895-5	104503-5
7	**.698** 17.73	30	103656-6	103657-6	103896-6	103654-6	103655-6	103895-6	104503-6
8	**.798** 20.27	26	103656-7	103657-7	103896-7	103654-7	103655-7	103895-7	104503-7
9	**.898** 22.81	24	103656-8	103657-8	103896-8	103654-8	103655-8	103895-8	104503-8
10	**.998** 23.35	22	103656-9	103657-9	103896-9	103654-9	103655-9	103895-9	104503-9
11	**1.098** 27.89	20	1-103656-0	1-103657-0	1-103896-0	1-103654-0	1-103655-0	1-103895-0	1-104503-0
12	**1.198** 30.43	18	1-103656-1	1-103657-1	1-103896-1	1-103654-1	1-103655-1	1-103895-1	1-104503-1
13	**1.298** 32.97	17	1-103656-2	1-103657-2	1-103896-2	1-103654-2	1-103655-2	1-103895-2	1-104503-2
14	**1.398** 35.51	15	1-103656-3	1-103657-3	1-103896-3	1-103654-3	1-103655-3	1-103895-3	1-104503-3
15	**1.498** 38.05	14	1-103656-4	1-103657-4	1-103896-4	1-103654-4	1-103655-4	1-103895-4	1-104503-4
16	**1.598** 40.59	13	1-103656-5	1-103657-5	1-103896-5	1-103654-5	1-103655-5	1-103895-5	1-104503-5
17	**1.698** 43.13	13	1-103656-6	1-103657-6	1-103896-6	1-103654-6	1-103655-6	1-103895-6	1-104503-6
18	**1.798** 45.67	12	1-103656-7	1-103657-7	1-103896-7	1-103654-7	1-103655-7	1-103895-7	1-104503-7
19	**1.898** 48.21	11	1-103656-8	1-103657-8	1-103896-8	1-103654-8	1-103655-8	1-103895-8	1-104503-8
20	**1.998** 50.75	11	1-103656-9	1-103657-9	1-103896-9	1-103654-9	1-103655-9	1-103895-9	1-104503-9
21	**2.098** 53.29	10	2-103656-0	2-103657-0	2-103896-0	2-103654-0	2-103655-0	2-103895-0	2-104503-0
22	**2.198** 55.83	10	2-103656-1	2-103657-1	2-103896-1	2-103654-1	2-103655-1	2-103895-1	2-104503-1
23	**2.298** 58.37	9	2-103656-2	2-103657-2	2-103896-2	2-103654-2	2-103655-2	2-103895-2	2-104503-2
24	**2.398** 60.91	9	2-103656-3	2-103657-3	2-103896-3	2-103654-3	2-103655-3	2-103895-3	2-104503-3
25	**2.498** 63.45	8	2-103656-4	2-103657-4	2-103896-4	2-103654-4	2-103655-4	2-103895-4	2-104503-4

[1] .000100 [0.00254] tin-lead over .000050 [0.00127] nickel on entire contact.
[2] .000015 [0.00038] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[3] .000030 [0.00076] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[4] May be used with crimp type contacts, see page 3248.

Note: Use Extraction/Lance Reset Tool, Part No. 843477-1 to remove pin contact.

These pin assemblies with ribbed housings can be stacked end-to-end inside a panel mount pin shroud to form a larger single row latching connector for panel mounting.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Coupling Shrouds for Receptacle Assemblies with Guide Ribs

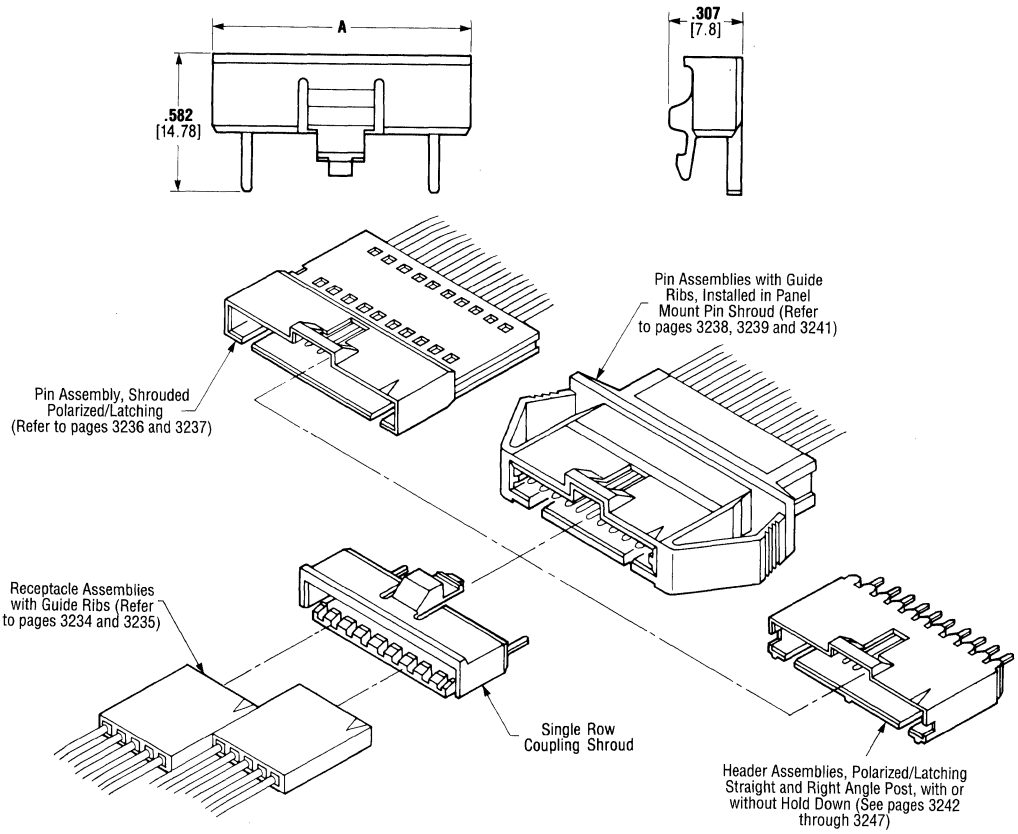
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches and millimeters.

Material:
Black thermoplastic, 94V-0 rated

No. of Pos.	Dimension A		Single Row Coupling Shroud
	Inch	mm	
4	.485	12.32	103680-1
5	.585	14.86	103680-2
6	.685	17.4	103680-3
7	.785	19.94	103680-4
8	.885	22.48	103680-5
9	.985	25.02	103680-6
10	1.085	27.56	103680-7
11	1.185	30.1	103680-8
12	1.285	32.64	103680-9
13	1.385	35.18	1-103680-0
14	1.485	37.72	1-103680-1
15	1.585	40.26	1-103680-2
16	1.685	42.8	1-103680-3
17	1.785	45.34	1-103680-4
18	1.885	47.88	1-103680-5
19	1.985	50.42	1-103680-6
20	2.085	52.96	1-103680-7
21	2.185	55.5	1-103680-8
22	2.285	58.04	1-103680-9
23	2.385	60.58	2-103680-0
24	2.485	63.12	2-103680-1
25	2.585	65.66	2-103680-2

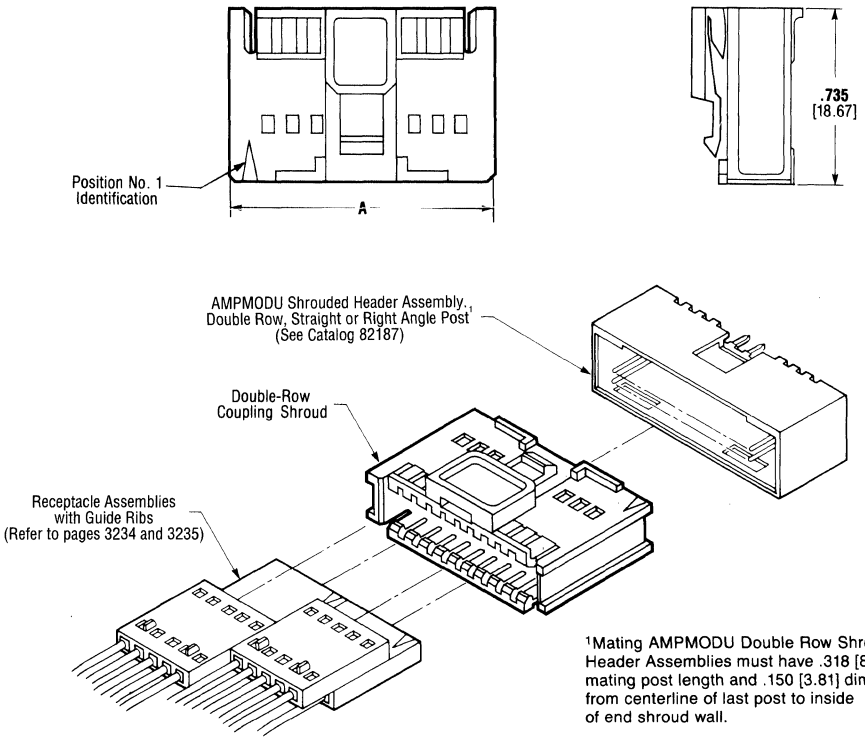
Single Row



Typical Application of Single Row Coupling Shroud and Mating AMPMODU MTE Products

No. of Pos.	Dimension A		Double Row Coupling Shroud
	Inch	mm	
8	.585	14.86	103681-1
10	.685	17.4	103681-2
12	.785	19.94	103681-3
14	.885	22.48	103681-4
16	.985	25.02	103681-5
18	1.085	27.56	104500-1
20	1.185	30.1	104500-2
22	1.285	32.64	104500-3
24	1.385	35.18	104500-4
26	1.485	37.72	104500-5
28	1.585	40.26	104500-6
30	1.685	42.8	104500-7
32	1.785	45.34	104500-8
34	1.885	47.88	104500-9
40	2.185	55.5	1-104500-0
50	2.685	68.2	1-104500-1

Double Row



[1]Mating AMPMODU Double Row Shrouded Header Assemblies must have .318 [8.08] mating post length and .150 [3.81] dimension from centerline of last post to inside of end shroud wall.

Typical Application of Double Row Coupling Shroud and Mating AMPMODU Products

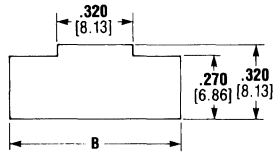
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Panel Mount Pin Shrouds for Pin Assemblies with Guide Ribs, Single Row

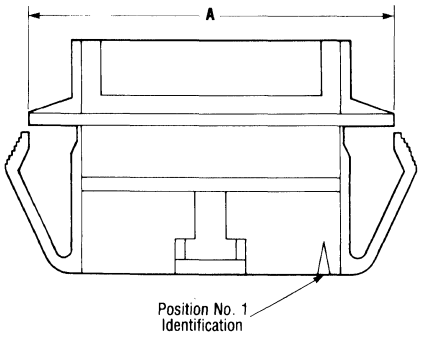
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

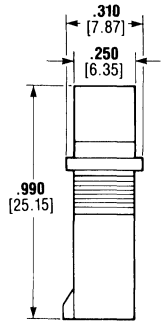
Chart contains dimensions in inches and millimeters.

Material:
Black thermoplastic, 94V-0 Rated



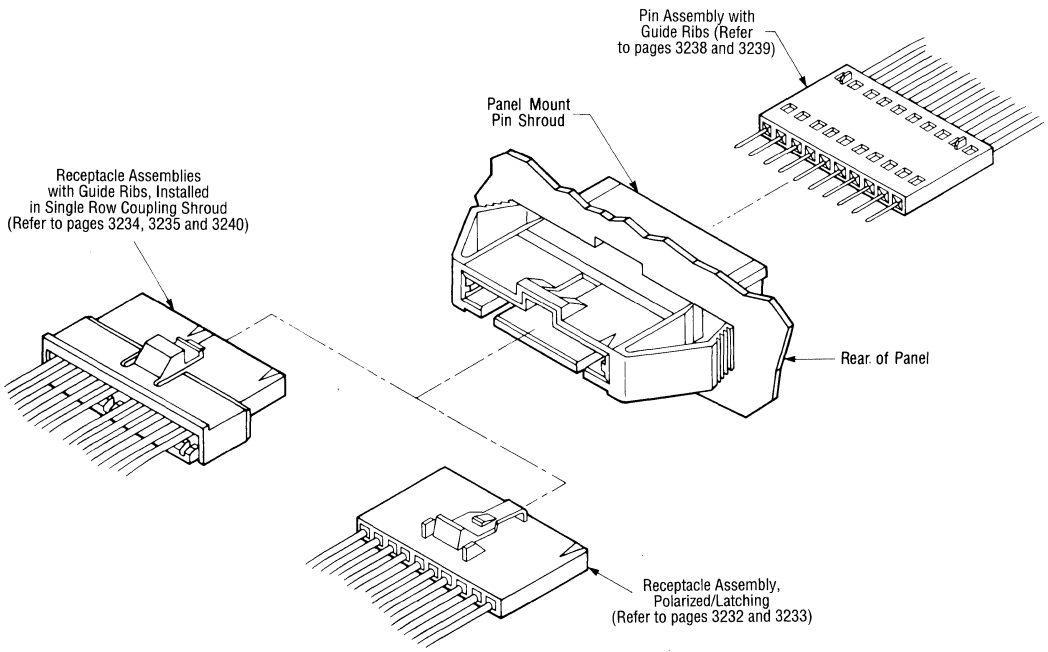
Recommended Panel Cutout
(.030 to .125 [0.76 to 3.18] thick)





No. of Pos.	Dimensions A Inch	A mm	B Inch	B mm	Panel Mount Pin Shroud
2	.735	18.67	.625	15.88	103682-1
3	.835	21.21	.725	18.42	103682-2
4	.935	23.75	.825	20.96	103682-3
5	1.035	26.29	.925	23.5	103682-4
6	1.135	28.83	1.025	26.04	103682-5
7	1.235	31.37	1.125	28.58	103682-6
8	1.335	33.91	1.225	31.12	103682-7
9	1.435	36.45	1.325	33.66	103682-8
10	1.535	38.99	1.425	36.2	103682-9
11	1.635	41.53	1.525	38.74	1-103682-0
12	1.735	44.07	1.625	41.28	1-103682-1
13	1.835	46.61	1.725	43.82	1-103682-2

No. of Pos.	Dimensions A Inch	A mm	B Inch	B mm	Panel Mount Pin Shroud
14	1.935	49.15	1.825	46.36	1-103682-3
15	2.035	51.69	1.925	48.9	1-103682-4
16	2.135	54.23	2.025	51.44	1-103682-5
17	2.235	56.77	2.125	53.98	1-103682-6
18	2.335	59.31	2.225	56.52	1-103682-7
19	2.435	61.85	2.325	59.06	1-103682-8
20	2.535	64.39	2.425	61.6	1-103682-9
21	2.635	66.93	2.525	64.14	2-103682-0
22	2.735	69.47	2.625	66.68	2-103682-1
23	2.835	72.01	2.725	69.22	2-103682-2
24	2.935	74.55	2.825	71.76	2-103682-3
25	3.035	77.09	2.925	74.3	2-103682-4



Typical Application of Panel Mount Pin Shroud and Mating AMPMODU Products

Header Assemblies, Shrouded Polarized/Latching, Single Row .100 [2.54] Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

.025 [0.64] Square Straight Post (With or Without Hold Down)

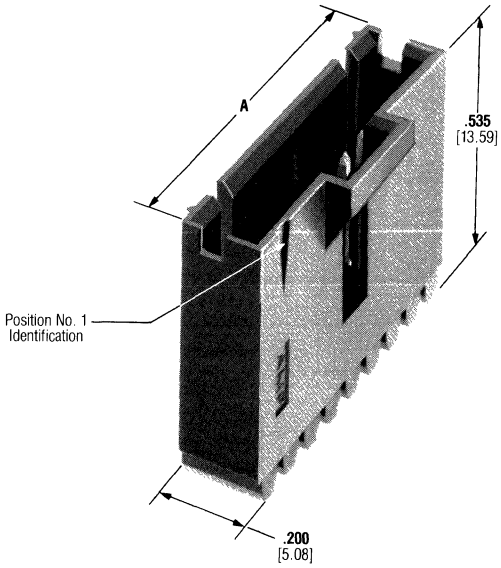
Materials and Finish:

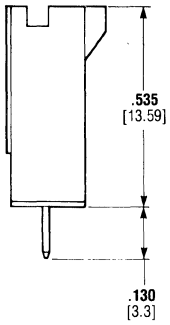
Housing—Black thermoplastic, 94V-0 rated

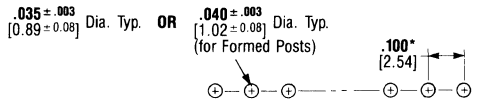
Contacts—Copper alloy, plated tin or gold duplex

Related Product Data:

Mateable AMPMODU MTE Products:
Receptacle Assemblies (Polarized/Latching) - pages 3232 and 3233
Receptacle Assemblies with Guide Ribs (installed in Single Row Coupling Shroud) - pages 3234, 3235 and 3240
Technical Documents - page 3251







Recommended Pc Board Hole Layout

*Post centerline tolerance is ±.003 [± 0.08]; tolerances not to accumulate within one connector pattern.

Note: Formed posts in "Hold Down" versions only. Formed posts are provided in a minimum of two locations per header assembly.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

No. of Pos.	Dimension A	Unit Package Order Quantities	Header Assembly With Hold Down			Header Assembly Without Hold Down		
			Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]
2	**.300** 7.62	284	103669-1	103670-1	103908-1	103639-1	103638-1	103735-1
3	**.400** 10.16	212	103669-2	103670-2	103908-2	103639-2	103638-2	103735-2
4	**.500** 12.7	172	103669-3	103670-3	103908-3	103639-3	103638-3	103735-3
5	**.600** 15.24	140	103669-4	103670-4	103908-4	103639-4	103638-4	103735-4
6	**.700** 17.78	120	103669-5	103670-5	103908-5	103639-5	103638-5	103735-5
7	**.800** 20.32	104	103669-6	103670-6	103908-6	103639-6	103638-6	103735-6
8	**.900** 22.86	92	103669-7	103670-7	103908-7	103639-7	103638-7	103735-7
9	**1.000** 25.4	84	103669-8	103670-8	103908-8	103639-8	103638-8	103735-8
10	**1.100** 27.94	76	103669-9	103670-9	103908-9	103639-9	103638-9	103735-9
11	**1.200** 30.48	68	1-103669-0	1-103670-0	1-103908-0	1-103639-0	1-103638-0	1-103735-0
12	**1.300** 33.02	64	1-103669-1	1-103670-1	1-103908-1	1-103639-1	1-103638-1	1-103735-1
13	**1.400** 35.56	60	1-103669-2	1-103670-2	1-103908-2	1-103639-2	1-103638-2	1-103735-2
14	**1.500** 38.1	56	1-103669-3	1-103670-3	1-103908-3	1-103639-3	1-103638-3	1-103735-3
15	**1.600** 40.64	52	1-103669-4	1-103670-4	1-103908-4	1-103639-4	1-103638-4	1-103735-4
16	**1.700** 43.18	48	1-103669-5	1-103670-5	1-103908-5	1-103639-5	1-103638-5	1-103735-5
17	**1.800** 45.72	44	1-103669-6	1-103670-6	1-103908-6	1-103639-6	1-103638-6	1-103735-6
18	**1.900** 48.26	44	1-103669-7	1-103670-7	1-103908-7	1-103639-7	1-103638-7	1-103735-7
19	**2.000** 50.8	40	1-103669-8	1-103670-8	1-103908-8	1-103639-8	1-103638-8	1-103735-8
20	**2.100** 53.34	40	1-103669-9	1-103670-9	1-103908-9	1-103639-9	1-103638-9	1-103735-9
21	**2.200** 55.88	36	2-103669-0	2-103670-0	2-103908-0	2-103639-0	2-103638-0	2-103735-0
22	**2.300** 58.42	36	2-103669-1	2-103670-1	2-103908-1	2-103639-1	2-103638-1	2-103735-1
23	**2.400** 60.96	32	2-103669-2	2-103670-2	2-103908-2	2-103639-2	2-103638-2	2-103735-2
24	**2.500** 63.5	32	2-103669-3	2-103670-3	2-103908-3	2-103639-3	2-103638-3	2-103735-3
25	**2.600** 66.04	32	2-103669-4	2-103670-4	2-103908-4	2-103639-4	2-103638-4	2-103735-4

[1] .000100 [0.00254] tin-lead over .000050 [0.00127] nickel on entire contact.
[2] .000015 [0.00038] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[3] .000030 [0.00076] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.

Note: Use Keying Tool No. 91417-1 to remove post for keying.

Header Assemblies, Shrouded Polarized/Latching, Single Row .100 [2.54] Centers
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

.025 [0.64] Square Right Angle Post

Material and Finish:

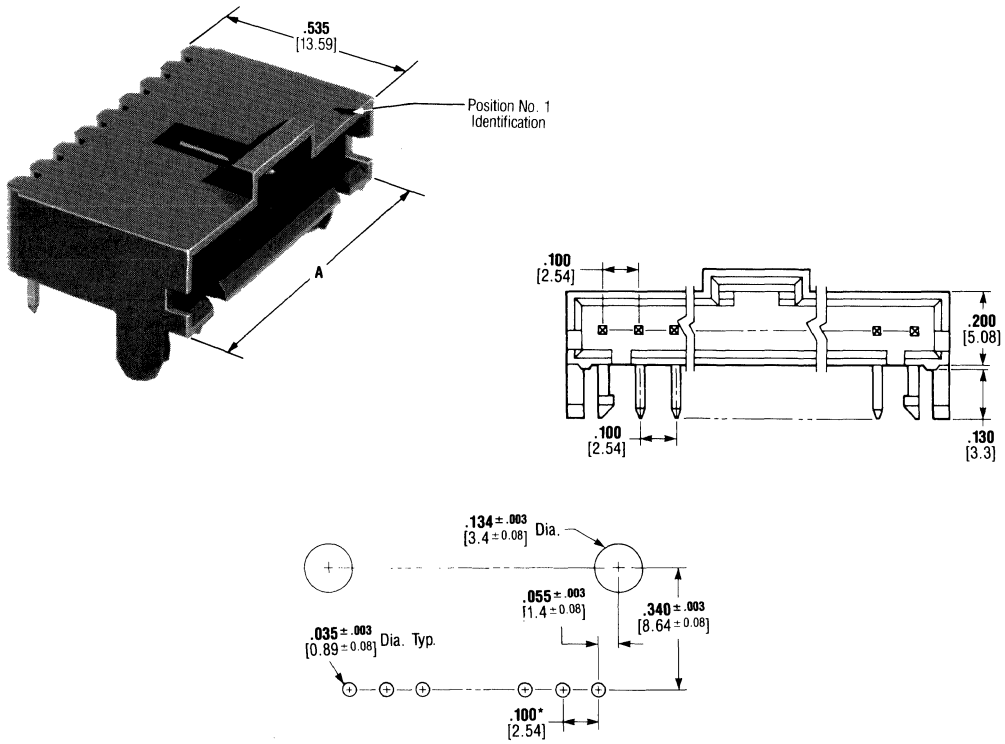
Housing—Black thermoplastic, 94V-0 rated

Contacts—Copper alloy, plated tin or gold duplex

Related Product Data:

Mateable AMPMODU MTE Products:
Receptacle Assemblies (Polarized/Latching) - pages 3232 and 3233
Receptacle Assemblies with Guide Ribs (installed in Single Row Coupling Shroud) - pages 3234, 3235 and 3240
Technical Documents - page 3251

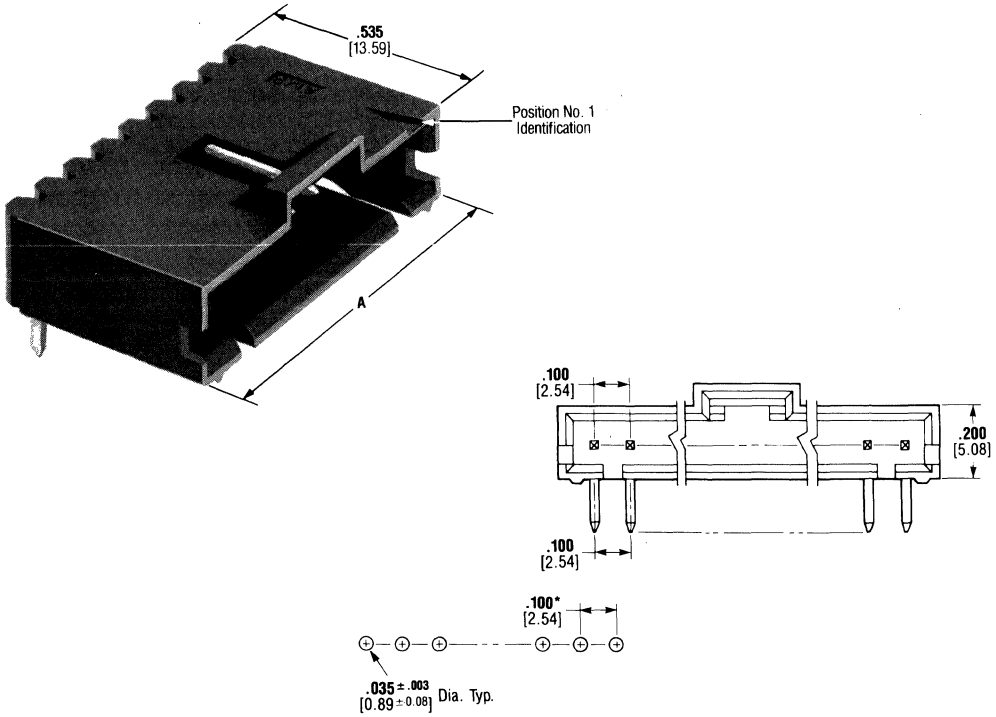
With Hold Down



Recommended Pc Board Hole Layout
Pc board thickness (for Hold Down Feature) is .062 ± .008 [1.57 ± 0.2]

*Post centerline tolerance is ± .003 [± 0.08]; tolerance not to accumulate within one connector pattern.

Without Hold Down



Recommended Pc Board Hole Layout

*Post centerline tolerance is ± .003 [± 0.08]; tolerance not to accumulate within one connector pattern.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Individual Assemblies

No. of Pos.	Dimension A	Unit Package Order Quantities	Header Assembly With Hold Down			Header Assembly Without Hold Down		
			Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]	Tin Plating[1]	Duplex Plating[2]	Duplex Plating[3]
2	**.300** 7.62	284	103672-1	103673-1	103904-1	103634-1	103635-1	103906-1
3	**.400** 10.16	212	103672-2	103673-2	103904-2	103634-2	103635-2	103906-2
4	**.500** 12.7	172	103672-3	103673-3	103904-3	103634-3	103635-3	103906-3
5	**.600** 15.24	140	103672-4	103673-4	103904-4	103634-4	103635-4	103906-4
6	**.700** 17.78	120	103672-5	103673-5	103904-5	103634-5	103635-5	103906-5
7	**.800** 20.32	104	103672-6	103673-6	103904-6	103634-6	103635-6	103906-6
8	**.900** 22.86	92	103672-7	103673-7	103904-7	103634-7	103635-7	103906-7
9	**1.000** 25.4	84	103672-8	103673-8	103904-8	103634-8	103635-8	103906-8
10	**1.100** 27.94	76	103672-9	103673-9	103904-9	103634-9	103635-9	103906-9
11	**1.200** 30.48	68	1-103672-0	1-103673-0	1-103904-0	1-103634-0	1-103635-0	1-103906-0
12	**1.300** 33.02	64	1-103672-1	1-103673-1	1-103904-1	1-103634-1	1-103635-1	1-103906-1
13	**1.400** 35.56	60	1-103672-2	1-103673-2	1-103904-2	1-103634-2	1-103635-2	1-103906-2
14	**1.500** 38.1	56	1-103672-3	1-103673-3	1-103904-3	1-103634-3	1-103635-3	1-103906-3
15	**1.600** 40.64	52	1-103672-4	1-103673-4	1-103904-4	1-103634-4	1-103635-4	1-103906-4
16	**1.700** 43.18	48	1-103672-5	1-103673-5	1-103904-5	1-103634-5	1-103635-5	1-103906-5
17	**1.800** 45.72	44	1-103672-6	1-103673-6	1-103904-6	1-103634-6	1-103635-6	1-103906-6
18	**1.900** 48.26	44	1-103672-7	1-103673-7	1-103904-7	1-103634-7	1-103635-7	1-103906-7
19	**2.000** 50.8	40	1-103672-8	1-103673-8	1-103904-8	1-103634-8	1-103635-8	1-103906-8
20	**2.100** 53.34	40	1-103672-9	1-103673-9	1-103904-9	1-103634-9	1-103635-9	1-103906-9
21	**2.200** 55.88	36	2-103672-0	2-103673-0	2-103904-0	2-103634-0	2-103635-0	2-103906-0
22	**2.300** 58.42	36	2-103672-1	2-103673-1	2-103904-1	2-103634-1	2-103635-1	2-103906-1
23	**2.400** 60.96	32	2-103672-2	2-103673-2	2-103904-2	2-103634-2	2-103635-2	2-103906-2
24	**2.500** 63.5	32	2-103672-3	2-103673-3	2-103904-3	2-103634-3	2-103635-3	2-103906-3
25	**2.600** 66.04	32	2-103672-4	2-103673-4	2-103904-4	2-103634-4	2-103635-4	2-103906-4

[1] .000100 [0.00254] tin-lead over .000050 [0.00127] nickel on entire contact.
[2] .000015 [0.00038] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.
[3] .000030 [0.00076] gold on mating area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel.

Note: Use Keying Tool No. 91417-1 to remove post for keying.

Header Assemblies, Shrouded High-Temp, Polarized/Latching (Thru-Hole, SMT Compatible) Single Row, .100 [2.54] Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Materials and Finish:

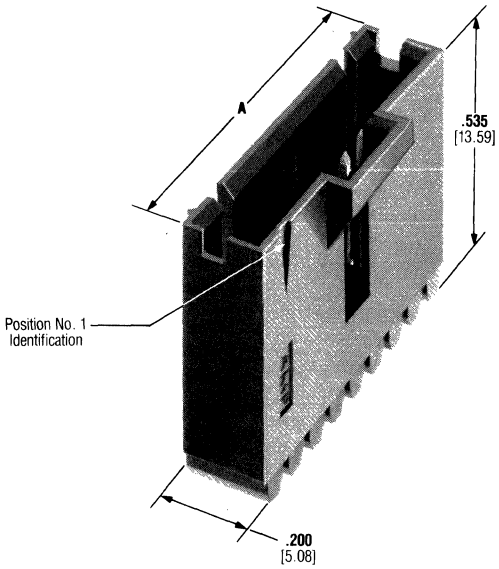
Housing—Black thermoplastic, 94V-0 rated

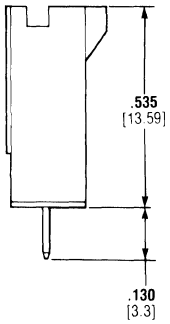
Contacts—Copper alloy, plated .000015 [0.00038] gold in mating area, .000100 [0.00254] min. matte tin-lead on the solder tail, all over .000050 [0.00127] nickel

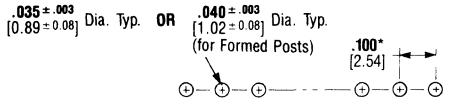
Related Product Data:

Mateable AMPMODU MTE Products:
Receptacle Assemblies (Polarized/Latching) - pages 3232 and 3233
Receptacle Assemblies with Guide Ribs (installed in Single Row Coupling Shroud) - pages 3234, 3235, and 3240
Technical Documents - page 3251

.025 [0.64] Square Straight Post (With or Without Hold Down)



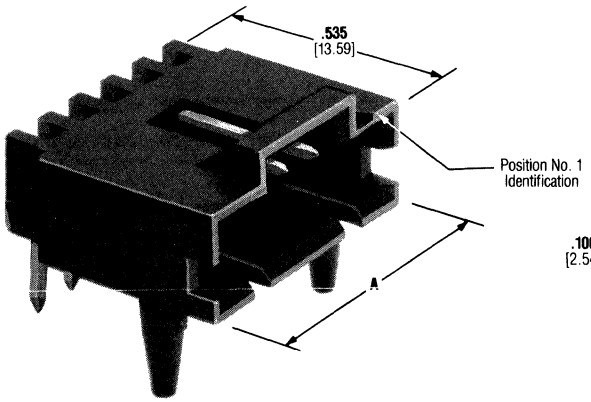


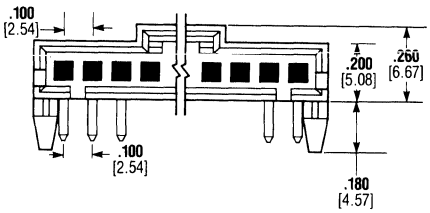


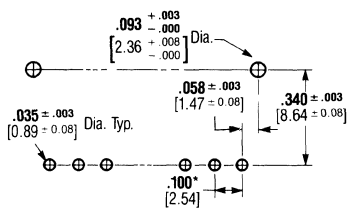
Recommended Pc Board Hole Layout
*Post centerline tolerance is ±.003 [±0.08]; tolerance not to accumulate within one connector pattern.

Note: Formed posts in "Hold Down" versions only. Formed posts are provided in a minimum of two locations per header assembly.

.025 [0.64] Square Right Angle Post (With Hold Down)







Recommended Pc Board Hole Layout

Pc board thickness (for Hold Down Feature) is .062 ± .008 [1.57 ± 0.2]
*Post centerline tolerance is ±.003 [±0.08]; tolerance is not to accumulate within one connector pattern.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

No. of Pos.	Dimension A	Package Order Quantities	Straight Header Assembly		Right Angle Header Assembly With Hold Down
			With Hold Down	Without Hold Down	
2	.300 7.62	284	104362-1	104363-1	104361-1
3	.400 10.16	212	104362-2	104363-2	104361-2
4	.500 12.7	172	104362-3	104363-3	104361-3
5	.600 15.24	140	104362-4	104363-4	104361-4
6	.700 17.78	120	104362-5	104363-5	104361-5
7	.800 20.32	104	104362-6	104363-6	104361-6
8	.900 22.86	92	104362-7	104363-7	104361-7
9	1.000 25.4	84	104362-8	104363-8	104361-8
10	1.100 27.94	76	104362-9	104363-9	104361-9
11	1.200 30.48	68	1-104362-0	1-104363-0	1-104361-0
12	1.300 33.02	64	1-104362-1	1-104363-1	1-104361-1
13	1.400 35.56	60	1-104362-2	1-104363-2	1-104361-2
14	1.500 38.1	56	1-104362-3	1-104363-3	1-104361-3
15	1.600 40.64	52	1-104362-4	1-104363-4	1-104361-4
16	1.700 43.18	48	1-104362-5	1-104363-5	1-104361-5
17	1.800 45.72	44	1-104362-6	1-104363-6	1-104361-6
18	1.900 48.26	44	1-104362-7	1-104363-7	1-104361-7
19	2.000 50.8	40	1-104362-8	1-104363-8	1-104361-8
20	2.100 53.34	40	1-104362-9	1-104363-9	1-104361-9
21	2.200 55.88	36	2-104362-0	2-104363-0	2-104361-0
22	2.300 58.42	36	2-104362-1	2-104363-1	2-104361-1
23	2.400 60.96	32	2-104362-2	2-104363-2	2-104361-2
24	2.500 63.5	32	2-104362-3	2-104363-3	2-104361-3
25	2.600 66.04	32	2-104362-4	2-104363-4	2-104361-4

Note: Use Keying Tool No. 91417-1 to remove post for keying.

Interchangeable Contacts
Wire Crimp (Snap-In)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

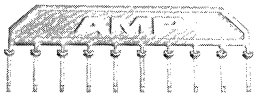
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Material and Finish:

Copper alloy, plated tin or gold duplex (See chart)

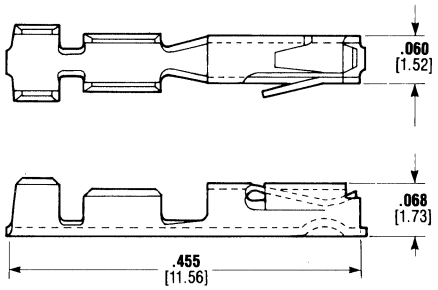
These wire crimp contacts can be intermixed with insulation.

Keying Plug
Part No. 104072-1



Ten plugs are supplied per strip. Order quantity reflects the number of strips required.

Receptacles*

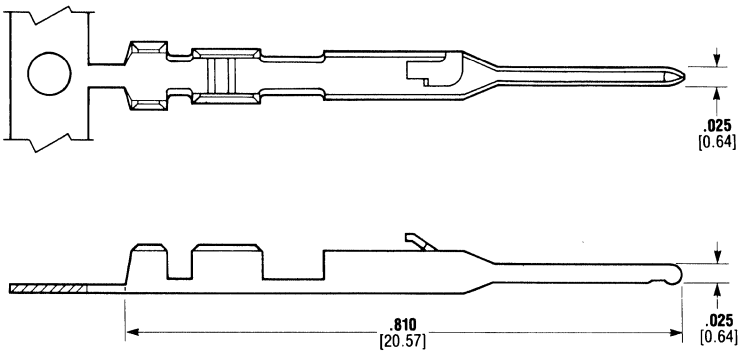


*Tandem Spring Product Family, Catalog 82055

Wire Size Range AWG	Wire Size Range [mm²]	Ins. Dia. Range	Contact Finish	Contact Part No. (Standard Pressure) Strip Form	Contact Part No. (Standard Pressure) Loose Piece	Quick-Change Applicator No. for AMP-O-LECTRIC Machine	Applicator No. for AMP-O-MATIC Stripper/Crimper Machine	Hand Tool
32-28	0.03-0.08	.025-.054 0.64-1.37	Duplex[1]	103358-3	103358-4	466723-1	466952-1	58342-2
			Duplex[2]	103358-5	103358-6	466723-1	466952-1	58342-2
			Tin[3]	103358-7	103358-8	466723-1	466952-1	58342-2
26-22	0.14-0.32	.036-.054 0.91-1.37	Duplex[1]	530151-5	530151-6	466819-2	466943-1	58342-1
			Duplex[2]	530151-7	530151-8	466819-2	466943-1	58342-1
			Tin[3]	530151-9	1-530151-0	466819-2	466943-1	58342-1

[1] .000015 [0.00038] gold alloy inlay over nickel mating area, tin-lead on termination area.
[2] .000030 [0.00076] gold alloy inlay over nickel mating area, tin-lead on termination area.
[3] .000100 [0.00254] min. tin-lead over .000030 [0.00076] nickel on entire contact.

Pins



Wire Size Range AWG	Wire Size Range [mm²]	Ins. Dia. Range	Contact Finish	Contact Part No. (Standard Pressure) Strip Form	Contact Part No. (Standard Pressure) Loose Piece	Quick-Change Applicator No. for AMP-O-LECTRIC Machine	Hand Tool
32-28	0.03-0.08	.025-.054 0.64-1.37	Duplex[1]	104506-4	104506-5	567240-1	58342-2
			Duplex[2]	104506-6	104506-7	567240-1	58342-2
			Tin[3]	104506-2	104506-3	567240-1	58342-2
26-22	0.14-0.32	.036-.054 0.91-1.37	Duplex[1]	104505-4	104505-5	567239-2	58342-1
			Duplex[2]	104505-6	104505-7	567239-2	58342-1
			Tin[3]	104505-2	104505-3	567239-2	58342-1

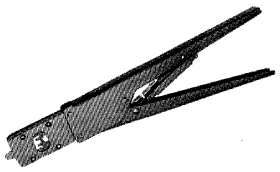
[1] .000015 [0.00038] gold alloy inlay over nickel mating area, tin-lead on termination area.
[2] .000030 [0.00076] gold alloy inlay over nickel mating area, tin-lead on termination area.
[3] .000100 [0.00254] min. tin-lead over .000030 [0.00076] nickel on entire contact.

Application Tooling for Interchangeable Contacts Wire Crimp (Snap-In)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMP hand tools are ideal for small production prototype and experimental applications. They are used for terminating precision formed contacts to wire and feature the CERTI-CRIMP ratchet device to assure perfectly formed crimps, time after time.

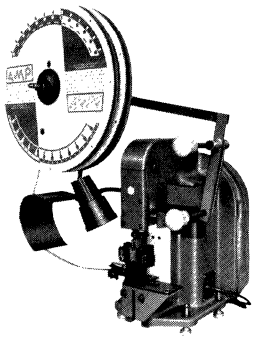


AMP Crimp Snap-In Receptacle and Pin Hand Tool, Nos. 58342-2 and 58342-1

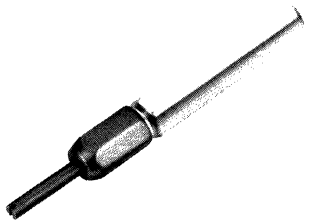
Extraction/Lance Reset Tool No. 843477-1

AMP-O-LECTRIC Terminating Machine

This bench mounted machine is electrically operated from any standard factory outlet and is actuated by a foot pedal. It is designed to install a wide range of AMP terminals on a wider range of wire sizes.



This keying tool is used to remove posts from a header assembly, either before or after the header assembly is mounted to a pc board. The removal of posts is necessary when keying plugs are used in mating AMPMODU connectors.

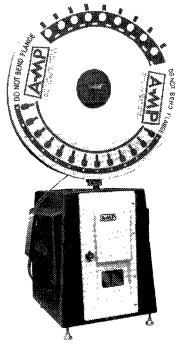


Keying Tool No. 91417-1

AMP-O-MATIC Stripper/ Crimper Machine

This pneumatically operated bench-top machine is capable of stripping wires and crimping side-feed terminals.

Interchangeable applicators used in this machine are similar to the quick-change type applicator. They feature wire and insulation crimp adjustment on the top of the applicator ram.

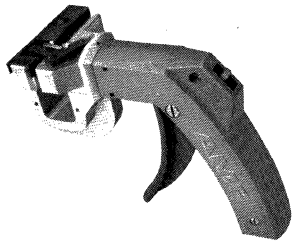


Specifications subject to change.
For latest design specifications...
1-800-522-6752

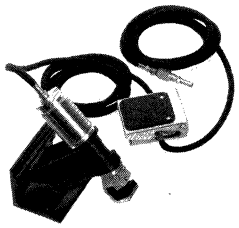
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Application Tooling for AMPMODU MTE Pin and Receptacle Connectors with Insulation Displacement Contacts

This family of application tooling is used to terminate the insulation displacement contacts in AMPMODU MTE connectors presented on pages 3230 through 3239. For optimum productivity, cable making equipment (not shown) can be made available, consult AMP Incorporated.



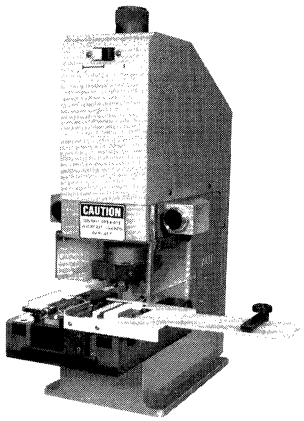
Manual Pistol Grip Tool; Handle Assembly No. 58074-1 with Modular Head No. 58336-1



Bench Mount Power Assembly No. 58338-1 with Modular Head Assembly No. 58336-1

The AMP hand tool features a fully interchangeable modular terminating head used with either a manual pistol style tool or a bench mount power assembly. The heads terminate one unstripped wire per cycle and index the connector to the next terminating position. The head rotates to permit optimum access to the wiring area.

The bench mounted power assembly is air actuated with either a foot or knee switch. This capability frees the operator's hands for optimum positioning permitting termination of 1000 wires per hour typically.



Mass Termination Bench Machine No. 820750-1
(for Discrete Wire)
.100 Centerline Ribbon Cable Adapter Kit Part No. 527273-1

This bench machine is designed to simultaneously terminate all contacts partially inserted in an AMPMODU MTE connector housing. It uses a slide applicator which is automatically positioned under the terminating head. Carrier strip shearing and contact insertion are accomplished during the termination cycle. As many as 120 cycles per hour can be terminated with this AMP machine. The basic machine is suitable for terminating discrete wire, with optional adapter kits available for terminating ribbon and jacketed cable.

For **tooling information**, call Customer Assistance Hotline **1-800-722-1111.**

Performance Specifications

Electrical Characteristics

Contact Current Rating: 3 amperes for single contact in free air
(Amperage could vary due to ambient temperature, wire size and duty cycles.)
Contact Termination Resistance: 15 milliohms (max.)
Dielectric Withstanding Voltage:
At Sea Level—600 VAC, rms
At 70,000 Ft. [21 336 m]—225 VAC, rms
Insulation Resistance: 5,000 megohms (min.)

Environmental Characteristics

Operating Temperature: -65°C to +105°C
Vibration: 15 G's
Physical Shock: 50 G's
Industrial Mixed Flow Gasing: Class 1 (20 days)

Technical Documents

Various technical documents are available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-25034 AMPMODU MTE Connectors

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-25026 AMPMODU MTE Interconnection system

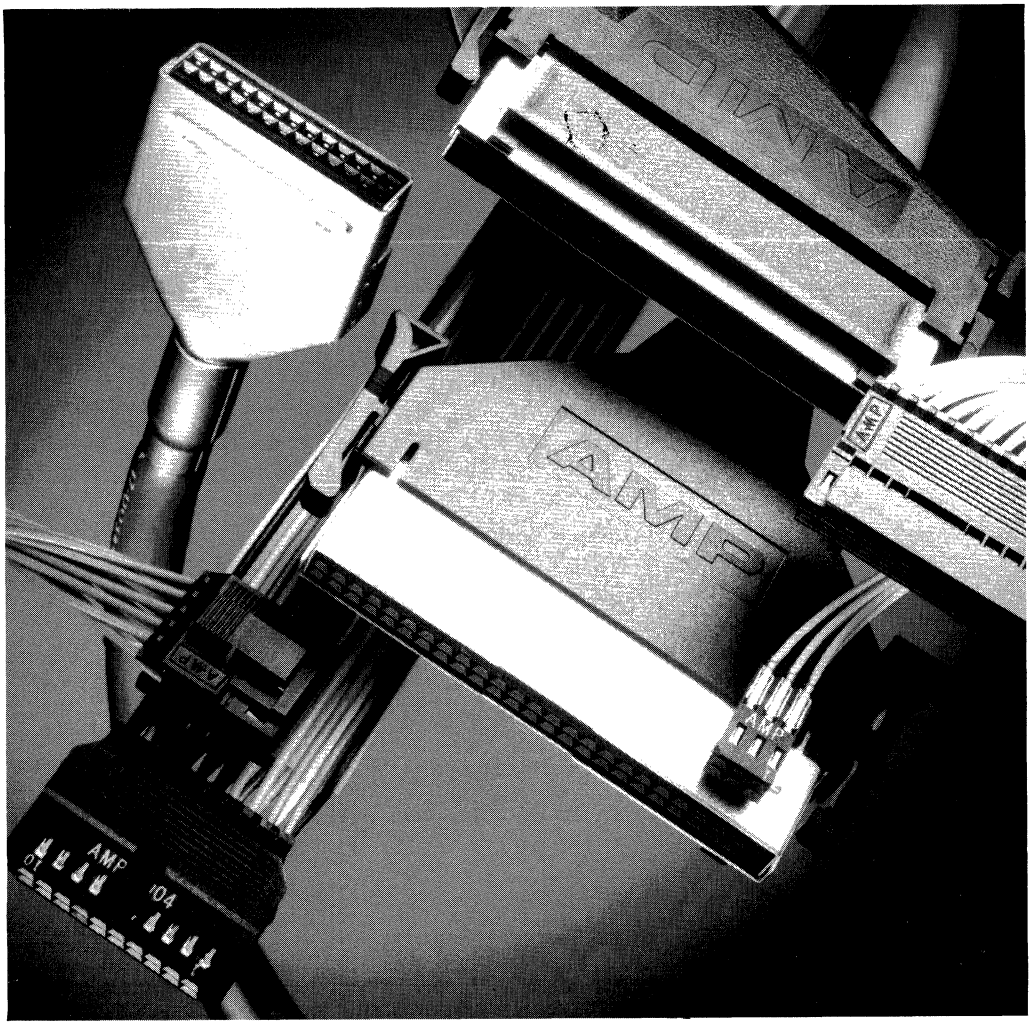
Instruction Sheets provide instructions for assembling or applying the product. They are intended for the manufacturing Assembler or Operator.

IS 6919 AMPMODU MTE Connectors

Instructional material covering operation, setup, maintenance, repair, etc. is included with each machine, tool or die set. If this material is required prior to receiving your tooling, call the AMP Customer Service hotline 1-800-722-1111 for the applicable document.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPMODU MT and Shielded MT Interconnection System



Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476

Certified by Canadian Standards Association, File No. LR 16455

Introduction

The AMPMODU MT and Shielded MT Interconnection System offers labor and cost savings through mass termination technology, while maintaining the time-proven reliability of the AMPMODU product family. The MT system is comprised of preloaded, double row connectors with snap-on covers and a variety of shielding hardware and accessories. The system is supported by a full line of mass termination tooling to meet virtually all production needs.

The insulation displacement contact, the heart of the MT system, features a mating interface that is the same as the conventional AMPMODU crimp, snap-in contact, featuring dual cantilever beams, built-in overstress protection and a completely enclosed "box" design.

To reduce EMI/ESD (electromagnetic interference/electrostatic discharge) at the input-output interface, add-on metal shields convert standard MT connectors to shielded MT connectors. Extended shroud shielded MT connectors are available with squeeze-to-release latching design and feature plastic receptacle latching boots for static discharge protection and positive polarization and retention when mated.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
N (newton)
mm^2 (square millimeter)
C (Celsius)

Note: Dimensions are for reference purposes only. Customer drawings are available upon request.

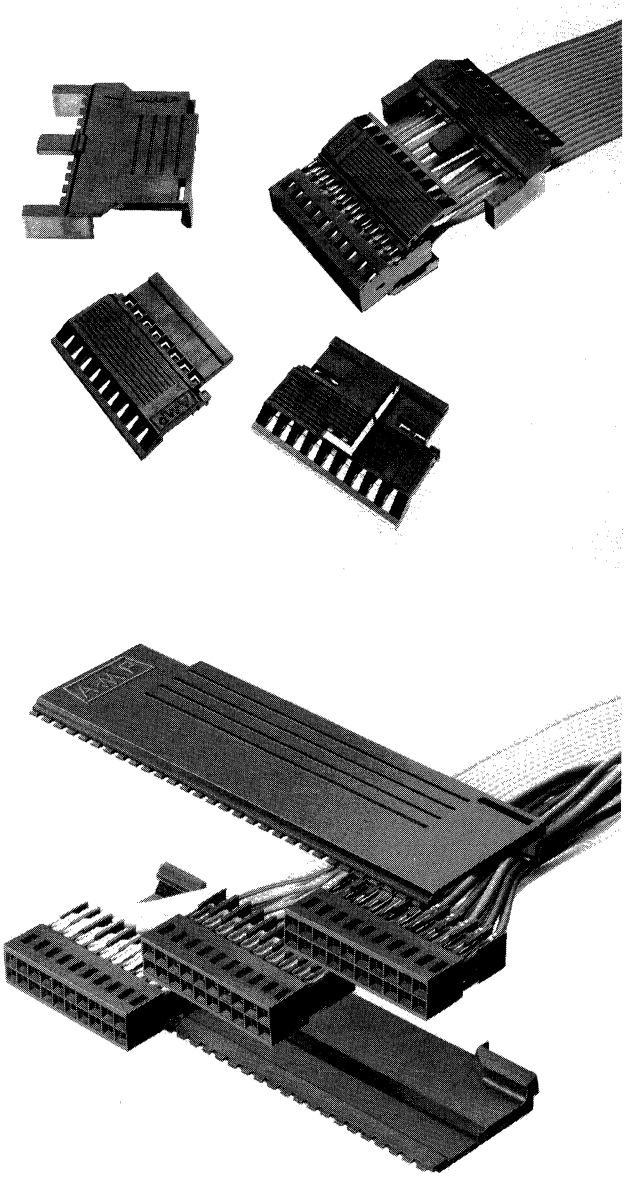
AMPMODU MT Interconnection System

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

- Full line of mass termination tooling offers low installed cost for all production needs.
- Dual cantilever beams with anti-overstress features provide redundant contact of mating post and limit beam deflection, preventing permanent deformation.
- Redundant insulation displacement slots assure maximum reliability.
- Integral wire strain relief on contact prevents wire motion from being transmitted to wire termination areas.
- Built-in contact post stop protects terminated wire from being disturbed by over-insertion of mating post, prevents wire from entering contact area and positively limits mating connector depth . . . thus eliminating the possibility of a connector disturbing a wire-wrapped post.
- Insulation displacement contacts and crimp, snap-in contacts are interchangeable.
- Complete serviceability with replacement contacts.
- Cover styles include low profile (polarized, non-polarized, latching and ejection) and standard profile (hermaphroditic and ejection).
- Connector housings may be stacked end-to-end within one pair of covers. All varieties of covers in this catalog are suitable for multiple housing stacking applications similar to the example illustrated in the photograph to the right.



Typical Application of End-to-End Stacking

The AMPMODU MT Interconnection System features double row connector housings preloaded with insulation displacement contacts on .100 x .100 [2.54 x 2.54] centers. They are available in a selected range of popular sizes – 6 through 64 positions. Connectors offer termination capabilities for discrete wire in sizes 30-26 AWG [0.05-0.15 mm²], 26-22 AWG [0.3-0.6 mm²] and 22-20 AWG [0.3-0.6 mm²], and for jacketed cable as well as bonded ribbon cable with conductors separated. Connector housings are designed for end-to-end stacking within one cover (see photo this page).

The insulation displacement contact has two identical slot systems; each displaces the insulation, makes contact with the conductor and provides the residual force required for a reliable connection. A wire strain relief (insulation crimp) prevents wires from being pulled up and out of the termination area, and a post stop is incorporated to prevent the wires from entering the box area as well as protecting the terminated wires from accidental movement caused by post insertion.

If the application requires crimp, snap-in contacts, these can be ordered separately and used interchangeably with the insulation displacement contacts.

Performance Characteristics

Contact Current Rating: 3 amperes for single contact in free air. (Amperage could vary due to ambient temperature, wire size and duty cycles.)
Operating Temperature: – 65° to + 105°C
Termination Resistance: 12 milliohms max.
Max. Mating Force: High pressure - 26 oz. [7.23 N]
Standard pressure - 9 oz. [2.50 N]
Min. Unmating Force: High pressure - 5 oz. [1.39 N]
Standard pressure - 1.5 oz. [0.417 N]
Contact Retention in Housing: 5 lbs. [22.24 N]/contact min.

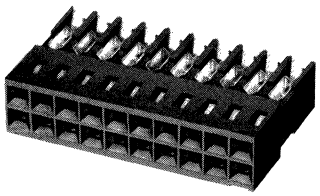
Double Row MT Receptacle Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

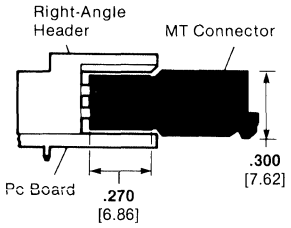
Chart contains dimensions in inches over millimeters.

Housings Preloaded with Standard Pressure Contacts

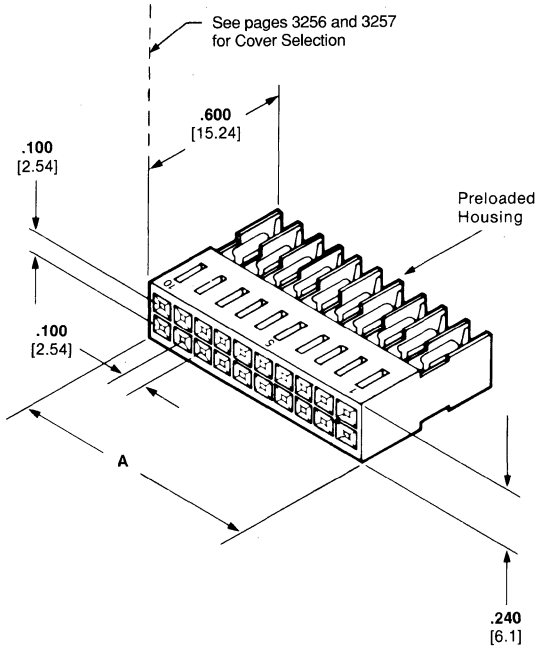


Material and Finish:
Housing - Black thermoplastic, flame retardant
Contacts - Copper alloy; duplex plated with .000030 [0.00076] gold on contact area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:
Cable -
Insulation wall thickness - .015 [0.39] max.
Insulation diameter - .050 [1.27] max.
Mating Post Length - .222-.273 [5.64-6.94] max.
Performance Characteristics - page 3253
Replacement and Crimp Snap-In Contacts - page 3259
Connector Covers - pages 3256 & 3257
Application Tooling - page 3260
Technical Documents - page 3261

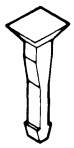


Typical Mated Assembly

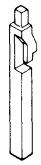


Keying Plugs

Material:
Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)



Part No. 87077-2
(Plugs directly into housing)

No. of Pos.	A Dim.	Part Numbers (Stamped*) Wire Size 30-26 AWG [0.05-0.15 mm²]	26-22 AWG [0.12-0.3 mm²]	22-20 AWG [0.3-0.6 mm²]
6	.300 7.62	102393-1	102398-1	102448-1
8	.400 10.16	102393-2	102398-2	—
10	.500 12.7	102393-3	102398-3	102448-3
12	.600 15.24	102393-4	102398-4	102448-4
14	.700 17.78	102393-5	102398-5	102448-5
16	.800 20.32	102393-6	102398-6	102448-6
18	.900 22.86	102393-7	102398-7	102448-7
20	1.000 25.4	102393-8	102398-8	102448-8
22	1.100 27.94	—	102398-9	—
24	1.200 30.48	1-102393-0	1-102398-0	1-102448-0
26	1.300 33.02	1-102393-1	1-102398-1	1-102448-1
28	1.400 35.56	1-102393-2	1-102398-2	1-102448-2
30	1.500 38.1	1-102393-3	1-102398-3	1-102448-3
32	1.600 40.64	1-102393-4	1-102398-4	—
34	1.700 43.18	1-102393-5	1-102398-5	1-102448-5
40	2.000 50.8	1-102393-8	1-102398-8	1-102448-8
50	2.500 63.5	2-102393-3	2-102398-3	2-102448-3
60	3.000 76.2	2-102393-8	2-102398-8	—
64	3.200 81.28	3-102393-0	3-102398-0	—

*Cavity identification - every fifth cavity (one side); AMP Part No. and date code stamped on housing where size permits; yellow ink stamping for 30-26 AWG [0.05-0.15 mm²], white ink stamping for 26-22 AWG [0.12-0.3 mm²] and green ink stamping for 22-20 AWG [0.3-0.6 mm²].

Note: Contact extraction/lance reset tool - No. 843477-3, see page 3259.

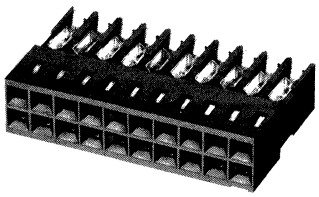
Double Row MT Receptacle Connectors
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

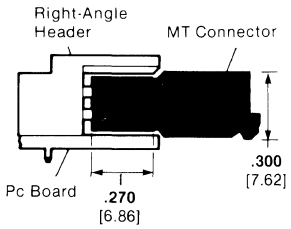
Chart contains dimensions in inches over millimeters.

Housings Preloaded with High Pressure Contacts

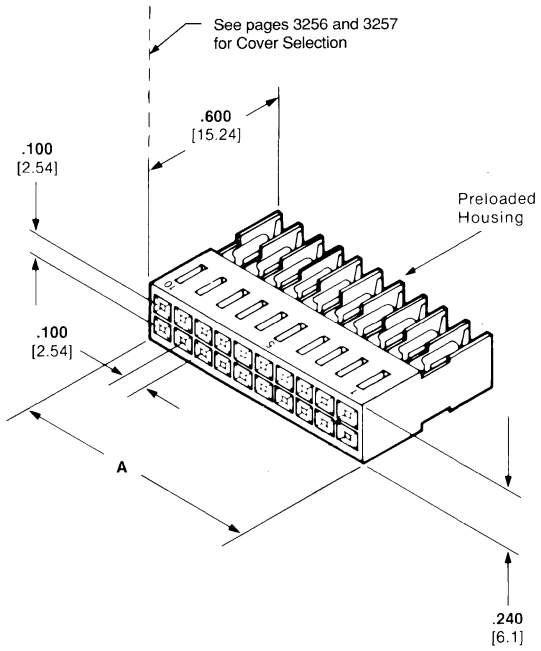


Material and Finish:
Housing - Black thermoplastic, flame retardant
Contacts - Copper alloy; duplex plated .000030 [0.00076] gold on contact area, .000050 [0.00127] min. tin-lead on termination area, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:
Cable -
Insulation wall thickness - .015 [0.39] max.
Insulation diameter - .050 [1.27] max.
Mating Post Length - .200-.273 [5.64-6.94] max.
Performance Characteristics - page 3253
Replacement and Crimp Snap-In Contacts - page 3259
Connector Covers - pages 3256 & 3257
Application Tooling - page 3260
Technical Documents - page 3261

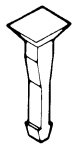


Typical Mated Assembly

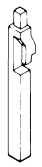


Keying Plugs

Material:
Natural color nylon



Part No. 86286-1
(Plugs into receptacle contact)



Part No. 87077-2
(Plugs directly into housing)

No. of Pos.	A Dim.	Part Numbers (Stamped*) Wire Size 30-26 AWG [0.05-0.15 mm²]	26-22 AWG [0.12-0.3 mm²]	22-20 AWG [0.3-0.6 mm²]
6	.300 7.62	102693-1	102694-1	102695-1
8	.400 10.16	—	102694-2	102695-2
10	.500 12.7	—	102694-3	—
12	.600 15.24	—	102694-4	—
14	.700 17.78	—	102694-5	—
16	.800 20.32	—	102694-6	—
20	1.000 25.4	—	102694-8	—

*Cavity identification - every fifth cavity (one side); AMP Part No. and date code stamped on housing where size permits; yellow ink stamping for 30-26 AWG [0.05-0.15 mm²], white ink stamping for 26-22 AWG [0.12-0.3 mm²] and green ink stamping for 22-20 AWG [0.3-0.6 mm²].
Note: Contact extraction/lance reset tool - No. 843477-3, see page 3259.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Double Row MT Receptacle Connectors
(Continued)

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

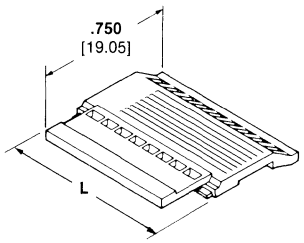
Low Profile Covers for Double Row Connectors
(See page 3257 for part numbers)

Material:
Black thermoplastic, flame retardant

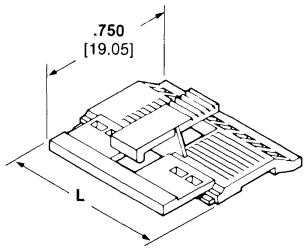
Related Product Data:
For use on Double Row MT Receptacle Connectors - pages 3254 & 3255
Technical Documents - page 3261

Front Covers

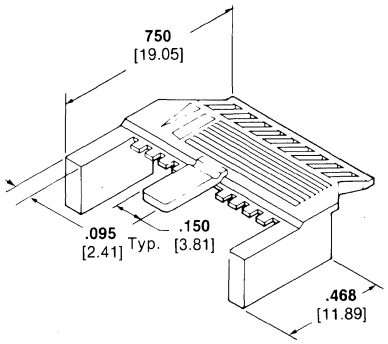
A - Polarizing Cover
(Mates with AMPMODU 4-sided shrouded headers. See AMP Catalog 82187)



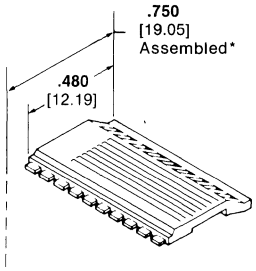
B - Latching Cover
(Mates with AMPMODU 4-sided shrouded headers with extraction slot. See AMP Catalog 82187)



C - Ejection Cover
(Mates with AMP-LATCH universal ejection style pin headers equipped with latching ears, Part No. 102185-2 (with push tabs) or Part No. 102312-2 (without push tabs), see AMP Catalog 82012 or AMPMODU low profile shrouded headers, see AMP Catalog 82187.



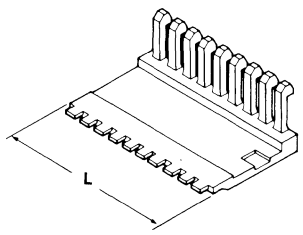
D - Non-Polarizing Cover
(Designed for use with shielded connectors.)



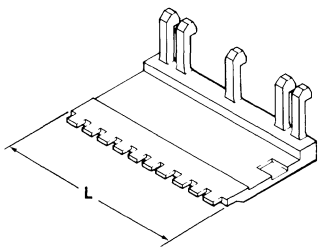
*Dimension applies to cover when installed on connector housing.

Back Covers

E - For Shielding and Non-Shielding Applications
(For use with any low profile cover)



F - For Shielding Applications
(For use with Non-Polarizing Cover only)



Double Row MT Receptacle Connectors
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

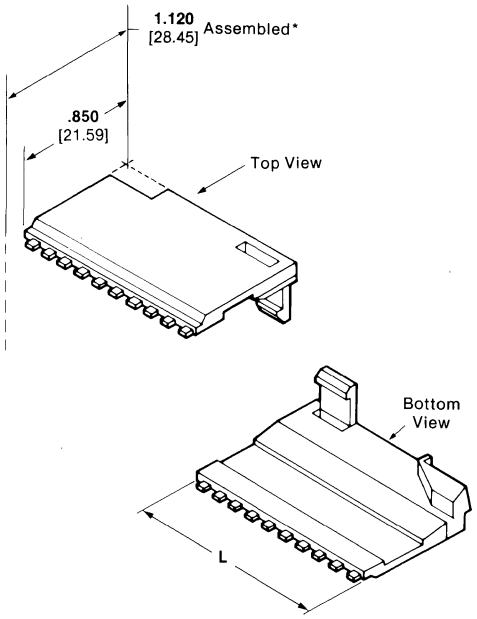
Chart contains dimensions in inches over millimeters.

Standard Profile Covers for Double Row Connectors

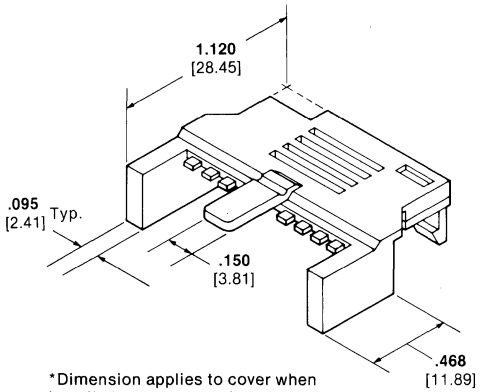
Material:
Black thermoplastic, flame retardant

Related Product Data:
For use on Double Row MT Receptacle Connectors - pages 3254 & 3255
Technical Documents - page 3261

G - Hermaphroditic Cover
(Two hermaphroditic covers can be used or one hermaphroditic cover can be used with an H Ejection Cover.)



H - Ejection Cover
(Mates with AMP-LATCH universal ejection style pin headers equipped with latching ears, Part No. 102185-2 (with push tabs) or Part No. 102312-2 (without push tabs), see AMP Catalog 82012, or AMPMODU low profile shrouded headers, see AMP Catalog 82187. This cover is used with one Hermaphroditic Cover (G).



*Dimension applies to cover when installed on connector housing.

No. of Pos.	Dim. L	Low Profile Covers						Standard Profile Covers	
		Front Covers				Back Covers			
		A Polarizing	B Latching	C Ejection	D Non-Polarizing	E Shielding and Non-Shielding Applications	F Shielding Applications	G Hermaphroditic	H Ejection
6	.300 7.62	102540-1	—	—	102541-1	102536-1	—	102396-1	—
8	.400 10.16	102540-2	—	—	102541-2	102536-2	—	102396-2	—
10	.500 12.7	102540-3	—	102537-3	102541-3	102536-3	—	102396-3	—
12	.600 15.24	102540-4	102681-1	—	102541-4	102536-4	—	102396-4	—
14	.700 17.78	—	102681-2	102537-5	102541-5	102536-5	—	102396-5	—
16	.800 20.32	102540-6	102681-3	102537-6	102541-6	102536-6	—	102396-6	—
18	.900 22.86	—	102681-4	—	102541-7	102536-7	102823-1	102396-7	—
20	1.000 25.4	102540-8	102681-5	102537-8	102541-8	102536-8	102823-4	102396-8	103268-6
22	1.100 27.94	102540-9	—	—	102541-9	102536-9	—	102396-9	—
24	1.200 30.48	1-102540-0	102681-7	1-102537-0	1-102541-0	1-102536-0	—	1-102396-0	—
26	1.300 33.02	1-102540-1	102681-8	1-102537-1	1-102541-1	1-102536-1	1-102823-0	1-102396-1	103268-8
28	1.400 35.56	—	—	—	1-102541-2	1-102536-2	—	1-102396-2	—
30	1.500 38.1	1-102540-3	1-102681-0	1-102537-3	1-102541-3	1-102536-3	—	1-102396-3	—
32	1.600 40.64	—	1-102681-1	—	1-102541-4	1-102536-4	—	1-102396-4	
34	1.700 43.18	—	1-102681-2	1-102537-5	1-102541-5	1-102536-5	—	1-102396-5	1-103268-0
40	2.000 50.8	—	1-102681-5	1-102537-8	1-102541-8	1-102536-8	102823-2	1-102396-8	1-103268-1
50	2.500 63.5	—	2-102681-0	2-102537-3	2-102541-3	2-102536-3	102823-3	2-102396-3	1-103268-3
60	3.000 76.2	—	—	2-102537-8	2-102541-8	2-102536-8	2-102823-5	—	—
64	3.200 81.28	—	—	3-102537-0	3-102541-0	3-102536-0	—	3-102396-0	—

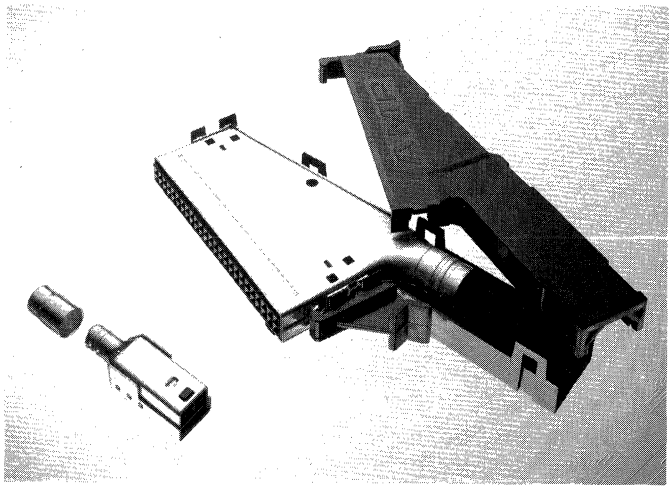
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Shielding Hardware and Accessories for AMPMODU MT Interconnection System

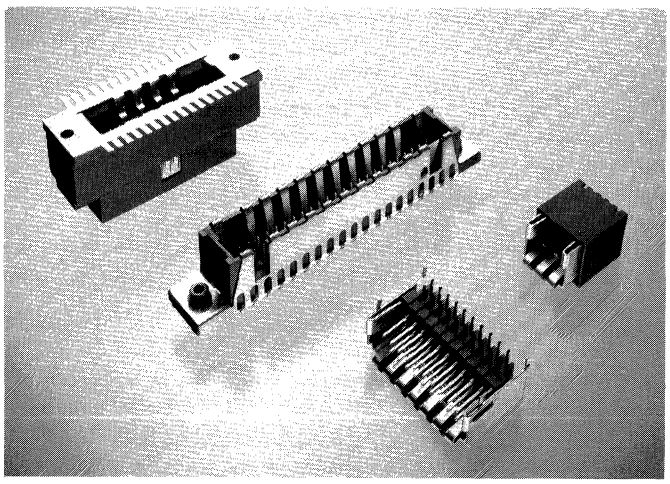
Product Facts

- Add-on shielding accessories for existing AMPMODU Standard MT connectors and pc board mounted pin headers
- Metal ground planes for panel and pc board mounted headers, including preassembled extended shroud headers
- Plastic latching boots available for static discharge protection and positive polarization and latching
- Compact design
- Tin plated copper alloy material
- Redundant cantilever beams assure good peripheral contact, eliminating the need for a separate RF gasket
- Polarized mating
- Detent latching on high pressure ground planes
- 360° cable braid termination with cable jacket support
- Cable shielding hardware permits molded cable terminations after assembly
- Must be used with braided shielded cables.
- Solder tabs on right-angle header shields are self-retaining in a pc board

Typical Performance Characteristics

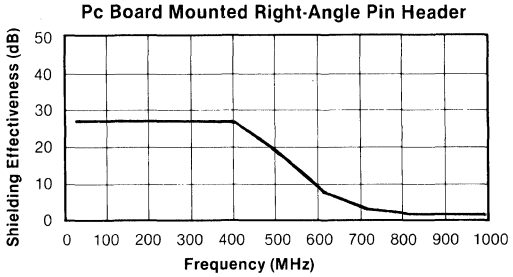


MT Receptacle Shielding Kits and Boots

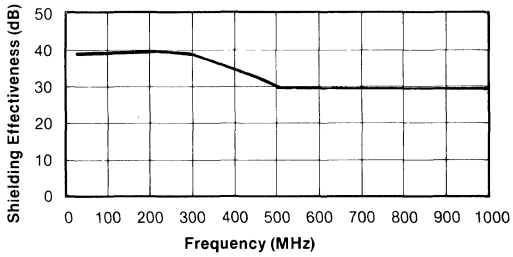


Shielded Headers

Pc Board Mounted Right-Angle Pin Header



Panel Mounted Feed-Thru Header



The shielded AMPMODU MT system features add-on metal shielding kits for double row standard MT receptacle connectors and AMPMODU double row right angle headers, as well as metal ground planes for AMPMODU feed-thru and AMP-LATCH headers. In addition, preassembled extended shroud versions of feed-thru, ribbon cable, board-mounted right-angle (with and without boardlocks) and vertical headers are available. These are designed to be used with plastic latching boots that provide static discharge protection and positive polarization and retention when mated.

Cable shielding hardware consists of a ferrule and two stamped and formed shell halves. The inner shell half has a series of integral cantilever beams to provide good peripheral contact with the mating outer shell half. This feature also eliminates the need for a separate RF gasket. Detents in the cantilever beam assure a positive lock when the two halves are mated. During assembly the inner and outer shell halves are snapped together over a terminated standard MT connector. If required, extended shroud latching boots can then be easily snapped over the assembly when using shells with alignment holes.

Shields for AMPMODU right-angle pin headers and ground planes for panel mounted feed-thru headers and pin headers have integral cantilever beams which provide good contact with the mating shielded MT connector, without the use of a separate RF gasket.

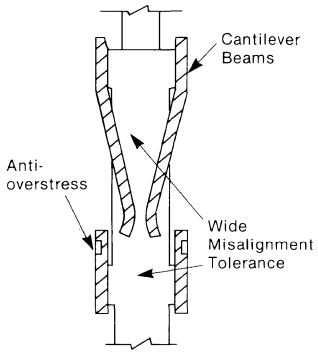
For complete information on shielding hardware and accessories for the AMPMODU MT Interconnection System, refer to AMP Catalog 82104.

AMPMODU MT Replacement Receptacle Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

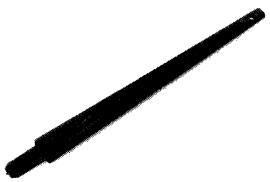
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMPMODU receptacle contacts incorporate the following features regardless of termination style - insulation displacement (this page) or wire crimp (page 3160 & 3161).



The AMPMODU receptacle cross-section is primarily rectangular, with rounded corners. Two integral cantilever beams contact the mating square male posts. Deflection of these spring members is limited by anti-overstress and excessive permanent deformation is prevented. This feature allows a wide range for tolerance of misalignment of mating contacts.

The configuration of the receptacle completely encloses the spring members preventing damage during handling and assembly, and makes the system compatible with automatic application techniques.



Contact Extraction and Lance Reset Tool Part No. 843477-3

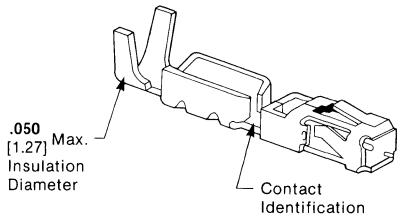
Insulation Displacement Contacts

Material:
Copper alloy

Plating Specifications:
Duplex - .000030 [0.00076] gold on contact area, .000100-.000200 [0.00254-0.00508] tin-lead on termination end, with entire contact underplated .000050 [0.000127] nickel

Related Product Data:

These contacts are pre-loaded into housings - pages 3254 & 3255
Performance Characteristics - page 3253
Application Tooling - page 3260
Technical Documents - page 3261



Wire Size Range		Standard Pressure Receptacle Part No.		High Pressure Receptacle Part No.		Inking on Preloaded Housings
AWG	mm²	Contact Ident.	Duplex Plated	Contact Ident.	Duplex Plated[1]	
30-26	0.05-0.15	1	102395-3	4	102641-3	Yellow
26-22	0.12-0.3	2	102399-3	5	102642-3	White
22-20	0.3-0.6	3	102449-3	6	102643-3	Green

Notes: 1. These receptacle contacts are pre-loaded into the housings shown on pages 3254 and 3255.
2. Termination tooling for MT receptacle insulation displacement contacts is shown on page 3260.
3. For crimp snap-in replacement contacts, refer to pages 3160 and 3161.

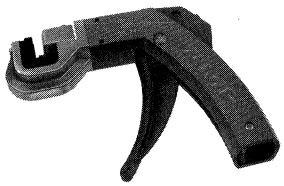
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Application Tooling for MT Receptacle Connectors and Insulation Displacement Contacts

Pistol Grip Manual and Air Powered MT Hand Tools

These tools are self-indexing and terminate one wire per cycle. The modular head can be rotated to adjust to the required work position. The manual tool is designed for prototype or low volume production, while the air operated version has excellent rates for moderate volume production. An air actuated bench mount tool is available with a foot switch. This capability frees the operator's hands for optimum positioning permitting termination of 1000 wires per hour typically.

Part Numbers:
Manual Pistol Grip Handle - 58074-1
Air-Powered Pistol Grip Handle - 58075-1
Bench Mount Power Assembly - 58338-1
Modular Head (for tools above) - 58062-1



Manual Tool

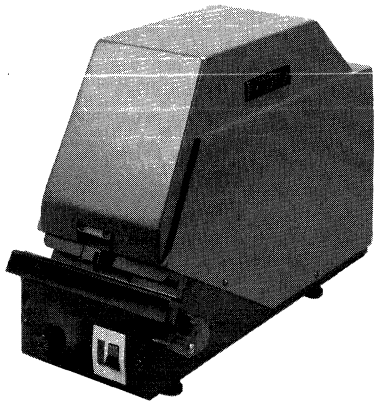
Air Operated Tool

Bench Mount Power Assembly

Single Lead Bench Terminator

This electrically operated bench machine inserts one contact per cycle and indexes to the next position.

Part Number 58020-2



The following is a list of technical documents covering the application, performance and maintenance of the AMPMODU MT and Shielded MT Interconnection System.

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.
108-25015 - AMPMODU MT Standard Pressure Connectors
108-25018 - AMPMODU MT High Pressure Connectors
108-25030 - AMPMODU MT Shielding Accessories

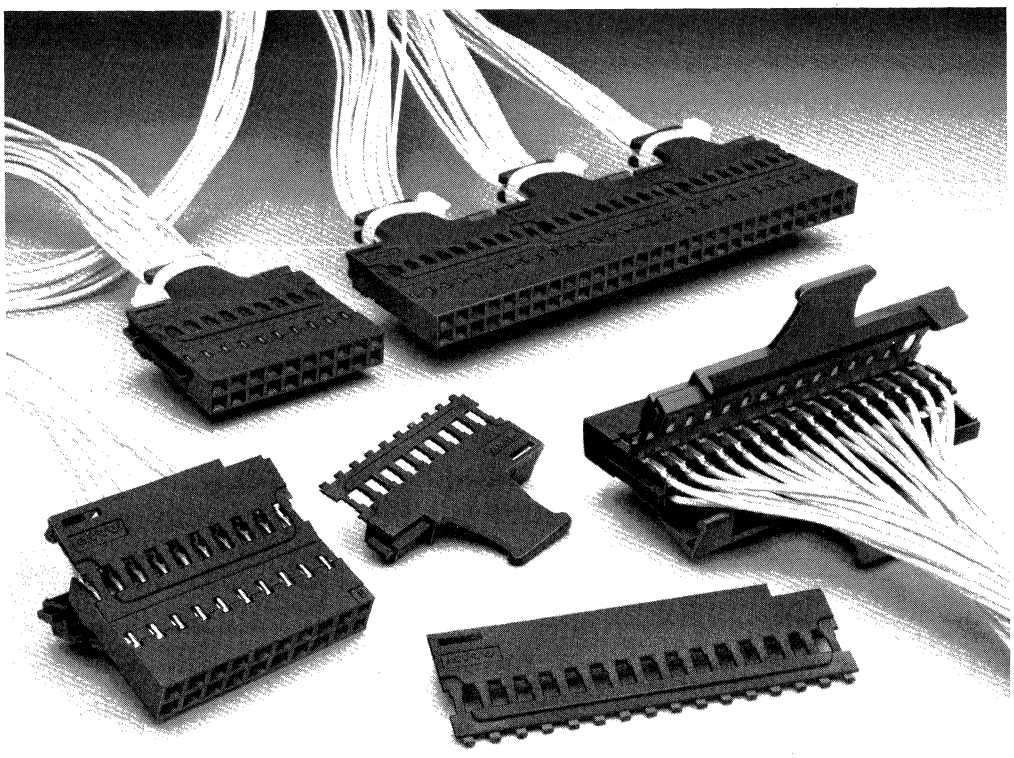
Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.
114-25032 - AMPMODU MT Interconnection System and AMPMODU Shielding Accessories
AL 8083 - Ferrule Crimping Applicator 812407-1

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.
IS 6532 - AMPMODU MT Connectors
IS 6682 - Shielded Accessories for AMPMODU MT Connectors

Instructional material covering operation, setup, maintenance, repair, etc. is included with each machine, tool or die set. If this material is required prior to receiving your tooling, call the AMP Customer Service Hotline 1-800-722-1111 for the applicable document.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPMODU Level V IDC Connectors, .125 x .125 [3.18 x 3.18] Centers



AMPMODU Level V IDC connectors provide cost effective discrete wire connections that are compatible with today's telecommunications packaging techniques. These AMP connectors are designed to mate with .025 [0.64] sq. posts on .125 × .125 [3.18 × 3.18] centers and are comprised of double-row housings preloaded with insulation displacement receptacle contacts, snap-on hermaphroditic covers, and a full line of mass termination tooling to meet virtually every production need. For modular flexibility, connectors without alignment ribs can be stacked end-to-end or side-to-side, maintaining a .125 × .125 [3.18 × 3.18] centerline spacing.

Both connector housings and covers are available with and without alignment ribs. Covers also can be furnished with and without a cable tie paddle. The covers are simply snapped onto a housing after the connector has been terminated.

The receptacle contacts feature AMP's insulation displacement crimp technique for achieving top quality, low cost terminations. These contacts employ dual cantilever beams for redundant interface with a mating post, an integral post stop to limit post mating depth and protect the crimp termination, and a wire support (strain relief) crimp to prevent accidental wire pull-out. The contacts are made of high conductivity copper alloy and are duplex plated. They are field repairable.

Technical Documents

AMP Product Specification No. 108-25028—Interconnection System, Insulation Displacement Connector, IDC Level V

AMP Application Specification No. 114-25020—Interconnection System, IDC Level V, Application of

AMP Instruction Sheet No. IS 6863—AMPMODU Level V Insulation Displacement Connector

AMP Instruction Sheet No. IS 6843—AMP Extraction Tool 91409-1

Features

- Termination of discrete wire sizes 30-26 AWG [0.05-0.15 mm^2], 26-22 AWG [0.12-0.3 mm^2] and 22-20 AWG [0.3-0.6 mm^2], as well as jacketed cable and bonded ribbon cable (conductors separated).
- Connectors stackable end-to-end and side-to-side on .125 [3.18] centers.
- Connectors preloaded with insulation displacement receptacle contacts.
- Contact design employs dual cantilever beams, redundant insulation displacement slots, built-in post stop and wire support crimp.
- Copper alloy contacts are duplex plated.
- Complete serviceability with replacement contacts.
- Snap-on covers with or without cable tie paddles.
- Full line of mass termination tooling offers lowest installed costs for all production needs.
- Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476

Dimensioning:
All dimensions in inches and millimetres. Values in brackets are metric equivalents.
Metric symbol used is:
mm2 (square millimetre)

Housing Assemblies, Double Row without Alignment Ribs, .125 x .125 [3.18 x 3.18] Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Housings Preloaded with Insulation Displacement Crimp Receptacle Contacts

Material and Finish:

Housing — Black Thermoplastic, Flame Retardant

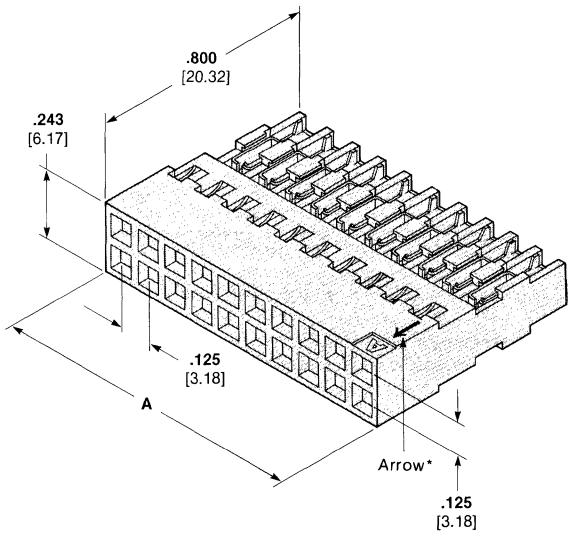
Contacts — Copper Alloy, duplex plated as follows:

A — .000050 [0.00127] gold on mating end, .000100 [0.00254] min. bright tin-lead on termination end, with entire contact underplated .000050 [0.00127] nickel.

B — .000075 [0.00191] gold on mating end, .000100 [0.00254] min. bright tin-lead on termination end, with entire contact underplated .000050 [0.00127] nickel.

Note: Preloaded contacts accept max. insulation dia. of .050 [1.27]. The minimum point of contact, as measured from front edge of housing, is .095 [2.41].

Connectors without alignment ribs can be stacked end-to-end and side-to-side on .125 x .125 [3.18 x 3.18] centers.



No. of Pos.	A Dim.	Connector (Stamped[1]) for 30-26 AWG [0.05-0.15 mm²] Wire		Connector (Stamped[2]) for 26-22 AWG [0.12-0.3 mm²] Wire		Connector (Stamped[3]) for 22-20 AWG [0.3-0.6 mm²] Wire	
		Plating A	Plating B	Plating A	Plating B	Plating A	Plating B
8	**.493** 12.52	102936-3	102936-4	102935-3	102935-4	102934-3	102934-4
10	**.618** 15.7	102936-5	102936-6	102935-5	102935-6	102934-5	102934-6
14	**.868** 22.05	102936-9	1-102936-0	102935-9	1-102935-0	102934-9	1-102934-0
16	**.993** 25.22	1-102936-1	1-102936-2	1-102935-1	1-102935-2	1-102934-1	1-102934-2
20	**1.243** 31.57	1-102936-5	1-102936-6	1-102935-5	1-102935-6	1-102934-5	1-102934-6
24	**1.493** 37.92	1-102936-9	2-102936-0	1-102935-9	2-102935-0	1-102934-9	2-102934-0
32	**1.993** 50.62	2-102936-7	2-102936-8	2-102935-7	2-102935-8	2-102934-7	2-102934-8
40	**2.493** 63.32	3-102936-5	3-102936-6	3-102935-5	3-102935-6	3-102934-5	3-102934-6

*Arrow ink stamped on housing to show polarization.

[1]Yellow ink stamped, one side — 8-position with arrow; 10-position with AMP part no. and arrow; 14- thru 40-position with AMP part no., date code and arrow.
[2]White ink stamped, one side — 8-position with arrow; 10-position with AMP part no. and arrow; 14- thru 40-position with AMP part no., date code and arrow.
[3]Green ink stamped, one side — 8-position with arrow; 10-position with AMP part no. and arrow; 14- thru 40-position with AMP part no., date code and arrow.

Notes: 1. Covers for these housings are shown on page 3264.
2. Use **Extraction Tool No. 91409-1** to remove receptacle contacts.
3. Replacement contacts and termination tooling for these connectors are shown on page 3265.
4. Other sizes can be made available upon request.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

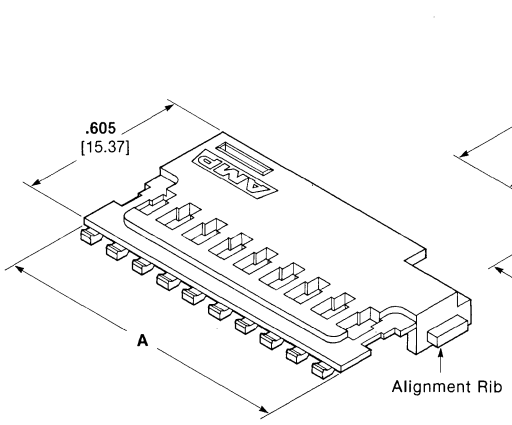
Hermaphroditic Covers for Level V IDC Connectors, Double Row, .125 x .125 [3.18 x 3.18] Centers

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

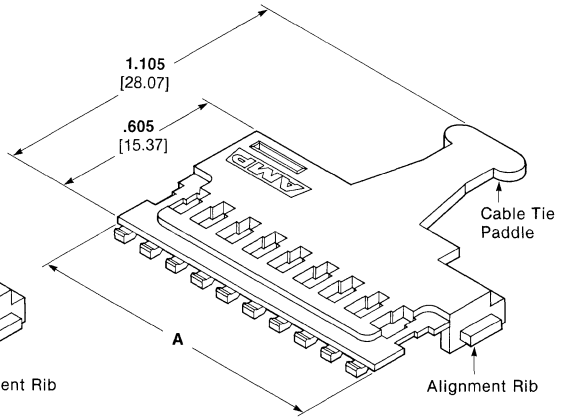
Chart contains dimensions in inches over millimeters.

All covers illustrated on this page can be used on the double-row Level V IDC connectors shown on page 3263.

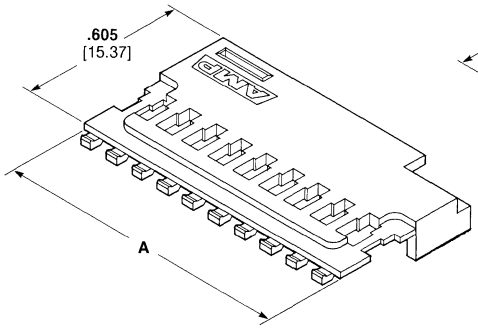
Material:
Black Thermoplastic, Flame Retardant



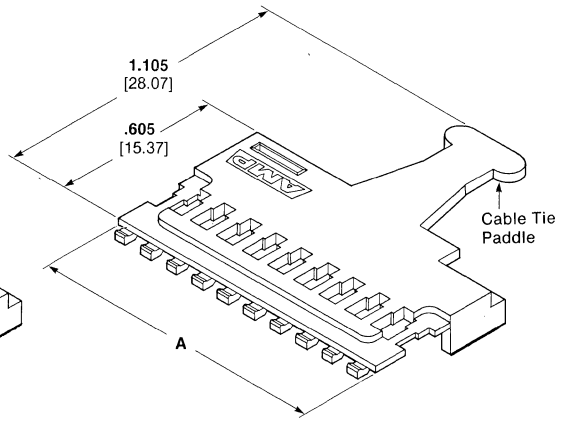
Cover 103057
with Alignment Rib



Cover 103055
with Alignment Rib
and Cable Tie Paddle



Cover 103056
without Alignment Rib

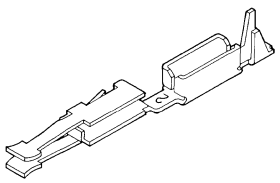


Cover 103058
without Alignment Rib,
with Cable Tie Paddle

No. of Pos. (Housing Size)	A Dim.	Cover Part No. with Alignment Rib	with Alignment Rib and Cable Tie Paddle	without Alignment Rib	without Alignment Rib, with Cable Tie Paddle
8	**.491** 12.47	103057-2	103055-2	103056-2	103058-2
10	**.616** 15.65	103057-3	103055-3	103056-3	103058-3
14	**.866** 22	103057-5	103055-5	103056-5	103058-5
16	**.991** 25.17	103057-6	103055-6	103056-6	103058-6
20	**1.241** 31.52	103057-8	103055-8	103056-8	103058-8
24	**1.491** 37.87	1-103057-0	1-103055-0	1-103056-0	1-103058-0
32	**1.991** 50.57	1-103057-4	1-103055-4	1-103056-4	1-103058-4
40	**2.491** 63.27	1-103057-8	—	1-103056-8	—

Notes: 1. Two hermaphroditic covers of any style can be installed on a double-row connector housing.
2. Other sizes can be made available upon request.

Insulation Displacement Crimp, Snap-In (Replacement)



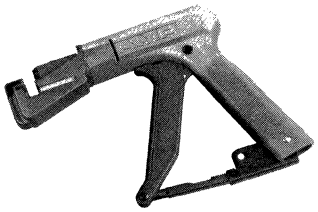
Material:
Copper Alloy

Wire Size Range		Loose Piece Contact Part No.			Inking on Preloaded Housings
AWG	mm²	Contact Identification	Duplex[1] Plated	Duplex[2] Plated	
30-26	0.05-0.15	1	102928-6	102928-7	Yellow
26-22	0.12-0.3	2	102929-6	102929-7	White
22-20	0.3-0.6	3	102930-6	102930-7	Green

[1]Duplex plated .000050 [0.00127] gold on mating end, .000100 [0.00254] min. bright tin-lead on termination end, with entire contact underplated .000050 [0.00127] nickel.
[2]Duplex plated .000075 [0.00191] gold on mating end, .000100 [0.00254] min. bright tin-lead on termination end, with entire contact underplated .000050 [0.00127] nickel.

Notes: 1. These receptacle contacts are preloaded into the housings shown on page 3263.
2. Use **Extraction Tool No. 91409-1** to remove receptacle contacts from housing.
3. Termination tooling for receptacle contacts is shown below.

Application Tooling for AMPMODU Level V IDC Connectors and Contacts



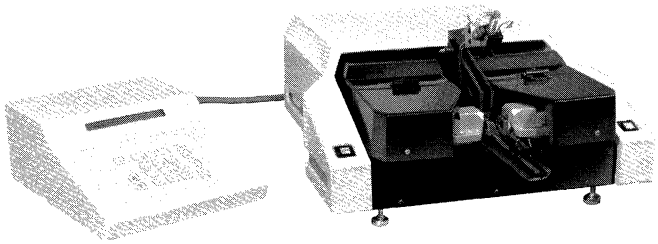
Manual, Self-Indexing Pistol Grip Tool

This sequential termination tool is suitable for production and servicing. One wire is inserted into the tool and crimped during each hand cycle.

.125 [3.18] Centerline

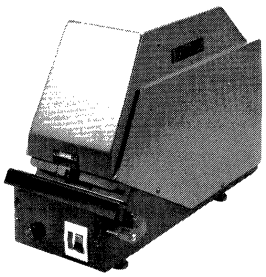
Tool for 30-20 AWG [0.05-0.6 mm²] Wire
Part No. 91407-1

Note: A pneumatic version of the self-indexing pistol grip tool is available, **Part No. 91408-1.**



CHAMPOMATOR 2.5 Terminating Machine

Complete AMP form 4670 to identify tooling package part numbers for specific applications.



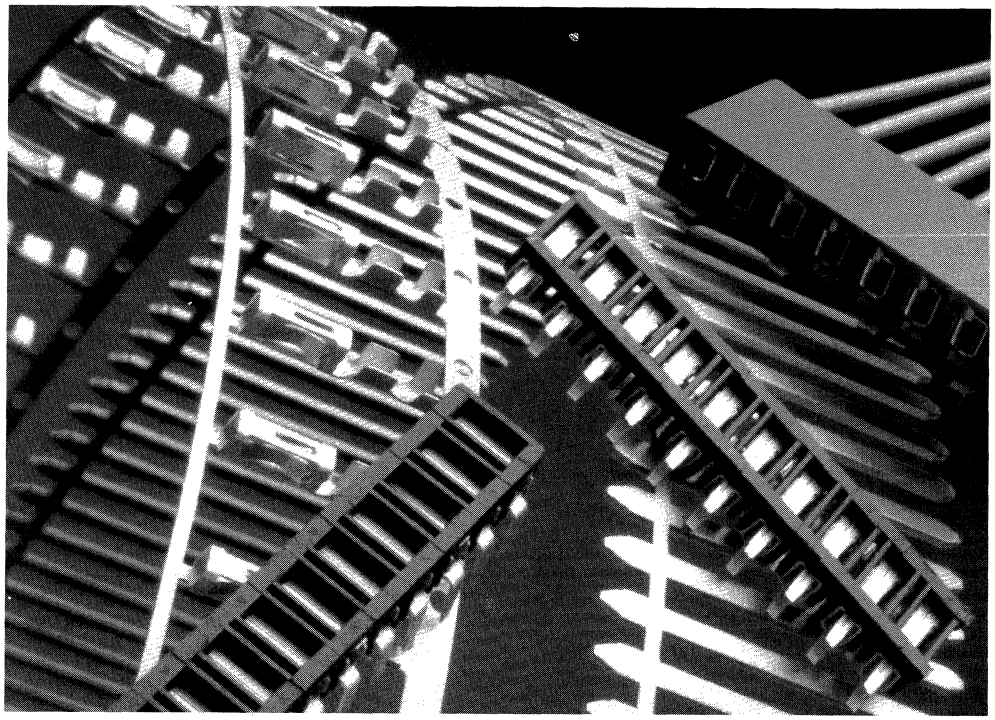
Single Lead Bench Terminator

.125 [3.18] Centerline

Double Row:
Part No. 58020-5

.031 x .062 AMPMODU Interconnection System

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Recognized under the Component Program of Underwriters Laboratories Inc., ® File No. E28476

Certified by Canadian Standards Association File No. LR 16455

The .031 x .062 interconnection system has served as an industry standard for modular packaging for over two decades. It is a rugged, large scale system designed for board-to-board and board-to-wire or cable applications that has offered millions of reliable interconnections and countless mating cycles. This versatile interconnection system successfully meets the requirements for most modular power supply packaging.

Board mounted receptacles and receptacle assemblies are available in various geometries, offering packaging interconnections that include perpendicular, parallel and stacking capabilities. Machine applied terminations, through matched application equipment, are geared to virtually any production requirement, and provide a low applied cost.

Crimp snap-in receptacles for 26-18 AWG wire provide excellent discrete wire terminations. Housings for these contacts provide for ease of handling terminations in high density applications.

AMPMODU mating posts are supplied typically as header assemblies. They are available in various sizes to meet the interconnection and packaging requirements of your system. However, in instances where packaging configurations do not lend themselves to the economies of assemblies, AMP can provide for the discrete location of individual posts and receptacles.

If your interconnections require Top Entry, Bottom Entry and/or Side Entry for perpendicular, parallel and stacked configurations, the .031 x .062 interconnection system can fulfill your needs with low applied cost through efficient interconnections and supporting application equipment.

Numerical Values

Dimensions in this catalog are in inches.

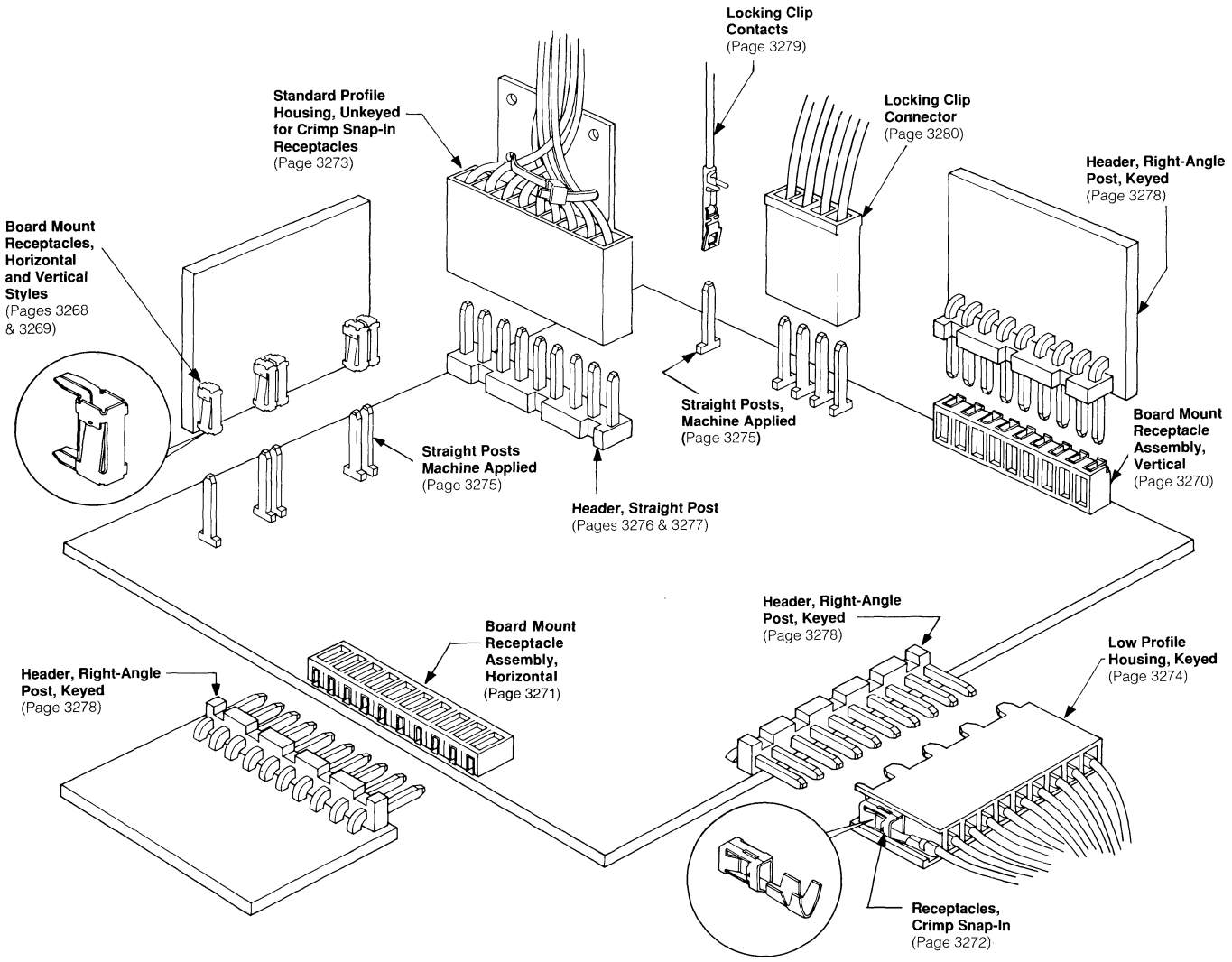
To convert U.S. customary unit values in this catalog to their metric equivalents, use the following formulas:

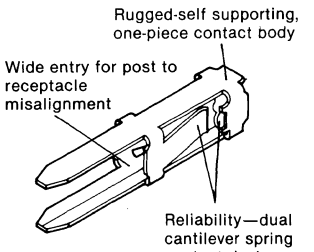
To convert from	to	Multiple by
inch	millimetre (mm)	2.540 000 x 10
pound-force	newton (N)	4.448 222
pound-force/inch^2	pascal (Pa)	6.894 757 x 10^3
pound-mass	kilogram (kg)	4.535 924 x 10^{-1}
ounce (fluid)	millilitre (ml)	2.957 353 x 10
pint (fluid)	litre (l)	4.731 765 x 10^{-1}
quart (fluid)	litre (l)	9.463 529 x 10^{-1}
gallon (fluid)	litre (l)	3.785 412

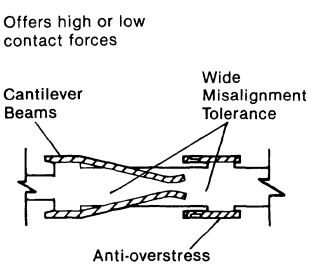
To convert wire size (AWG) to equivalent metric value using the circular mil area of the wire, use the following formula:
circular mil area (CMA)/1550.003 = square millimetre (mm^2)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPMODU
Interconnection System
(Continued)



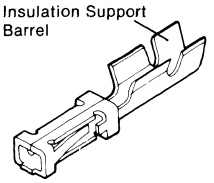




The AMPMODU receptacle cross-section is primarily rectangular, with rounded corners. Two integral cantilever beams contact the mating square or rectangular posts. Deflection of these spring members is limited by anti-overstress and excessive permanent deformation is prevented. This feature allows a wide range of tolerances for misalignment of mating contacts.

The configuration of the receptacle completely encloses the spring members preventing damage during handling and assembly and makes the system compatible with automatic application techniques.

This designs also permits the use of the receptacles without housings or encapsulation.



Wire Crimp Receptacle

Note: Application of a contact lubricant is part of the manufacturing process of all AMPMODU tin-plated crimp products. However, it is not part of the manufacturing process of products that customers will solder, then clean. For these products, AMP recommends that customers purchase the contact lubricant listed below:

Part Nos: 561232-1, 8 oz. aerosol can
561232-4, 1 qt. bulk can

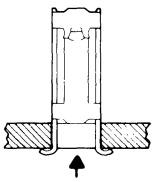
Receptacles, Board Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

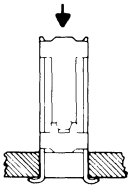
Vertical and Horizontal Board Mount

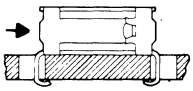
Material: Copper Alloy



Bottom Post Entry Type A

Top Post Entry Type B



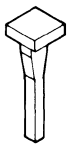


Horizontal Post Entry Type C

Related Product Data:

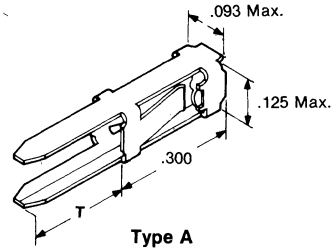
Recommended Board Layout for Type C - Page 3271
Mates with
Machine Applied Posts - Page 3275
Headers - Pages 3276, 3277 & 3278
Application Tooling - Page 3281
Performance Specifications - Page 3282
Technical Documents - Page 3282

Keying Plug

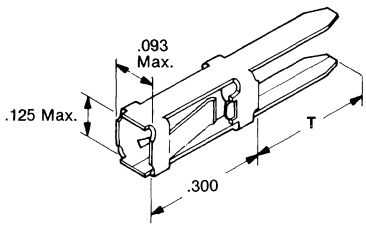


Part No. 86181-2
Use in Board Mount Receptacles

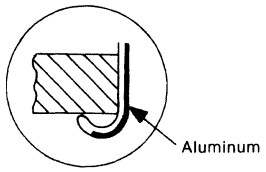
Receptacle Styles



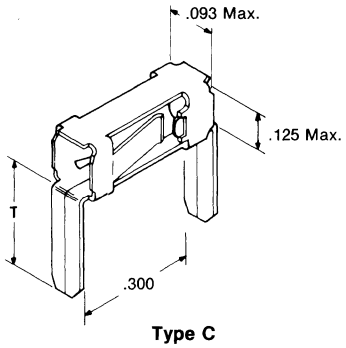
Type A



Type B

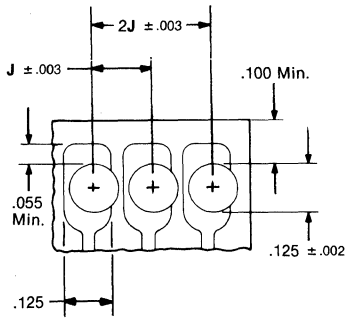


Typical Solder Resist Tab (Type A or B)



Type C

Recommended Board Layout for Receptacle Assemblies and Individual Receptacles (Type A and B)



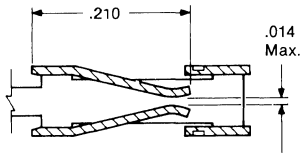
Round Hole (Post Entry Type A or B)

J—Receptacle centers may vary depending on requirements. For individual receptacles, minimum nominal centerline spacing between adjacent receptacles is .150; for receptacle assemblies, centerline spacing between adjacent receptacles is .156. The .003 tolerances are not to accumulate over length of board. For solder mask, see AMP IS 7411.

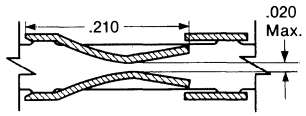
Note: Drawings depict normal use of the contact in a one- or two-sided printed circuit board. When using plated thru-holes, refer to AMP Engineering Report ER-001 and IS 7411. For solder mask, see AMP IS 7411.

Receptacles, Board Mount
(Continued)

Dimensioning:
Dimensions are in inches



Standard Pressure Receptacle



High Pressure Receptacle

Type	Board Thickness	Dim. T	Finish	Standard Pressure Part Numbers		High Pressure Part Numbers		Insertion Applicator No. for "U" Frame Machine
				Strip Form	Loose Piece	Strip Form	Loose Piece	
A	.070-.055	.112	Tin[1]	86477-3	86480-3	87316-3	87509-2	466376-1
			Gold[2]	86477-2	86480-2	—	—	466376-1
			Solder Resist[3]	87772-2	87776-2	—	—	466376-1
B	.070-.055	.112	Tin[1]	87003-2	87105-2	87954-1	87955-1	466376-1
			Gold[2]	87003-1	87105-1	—	—	466376-1
			Solder Resist[3]	87774-2	87778-2	—	—	466376-1
C	.103-.055	.145	Tin[1]	85487-3	85493-3	86432-1	86434-1	565967-3
			Gold[2]	85487-4	85493-4	—	—	

[1] .000030 minimum tin on entire receptacle.
[2] .000030 gold on contact area, gold flash over .000050 nickel on entire receptacle.
[3] .000030 gold over .000050 nickel on contact area, .000500 aluminum on inside area of solder tines, remainder of receptacle unfinished.

Notes: 1. All strip form parts in packaged quantities of 5,000 each.
2. All loose piece parts in packaged quantities of 500 each.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

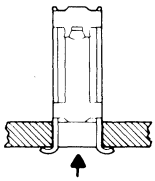
Receptacle Assemblies, Vertical Board Mount

Single Row .156 Centers

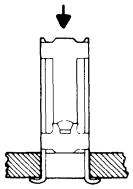
Materials:

Housing—Black Thermoplastic, 94V-0 Rated

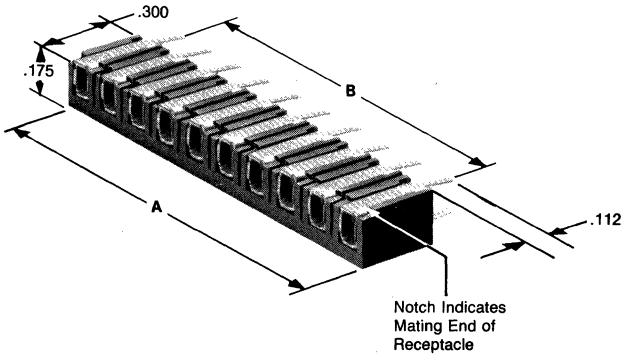
Receptacles—Copper Alloy



Post Entry Type A



Post Entry Type B



No. of Pos.	Dimensions		Packaged Quantities	Type A				Type B		
				Standard Pressure			High Pressure	Standard Pressure		
	A	B		Tin Plated[1]	Gold Plated[2]	Solder Resist[3]	Tin Plated[1]	Tin Plated[1]	Gold Plated[2]	Solder Resist[3]
2	.312	.156	500	87983-2	87984-2	87989-2	87993-2	87985-2	87986-2	87990-2
3	.468	.312	500	87983-3	87984-3	87989-3	87993-3	87985-3	87986-3	87990-3
4	.624	.468	500	87983-4	87984-4	87989-4	87993-4	87985-4	87986-4	87990-4
5	.780	.624	250	87983-5	87984-5	87989-5	87993-5	87985-5	87986-5	87990-5
6	.936	.780	250	87983-6	87984-6	87989-6	87993-6	87985-6	87986-6	87990-6
7	1.092	.936	250	87983-7	87984-7	87989-7	87993-7	87985-7	87986-7	87990-7
8	1.248	1.092	250	87983-8	87984-8	87989-8	87993-8	87985-8	87986-8	87990-8
10	1.560	1.404	100	1-87983-0	1-87984-0	1-87989-0	1-87993-0	1-87985-0	1-87986-0	1-87990-0
12	1.872	1.716	100	1-87983-2	1-87984-2	1-87989-2	1-87993-2	1-87985-2	1-87986-2	1-87990-2
14	2.184	2.028	100	1-87983-4	1-87984-4	1-87989-4	1-87993-4	1-87985-4	1-87986-4	1-87990-4

[1] .000030 minimum tin on entire receptacle.

[2] .000030 gold on contact area, gold flash over .000050 nickel on entire receptacle.

[3] .000030 gold over .000050 nickel on contact area, .000500 aluminum on select area inside of solder tines, remainder of receptacle unfinished.

Related Product Data:

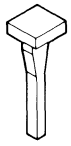
Recommended Board Layout - Page 3268

Mates with
Machine applied Posts - Page 3275
Headers - Pages 3276, 3277, & 3278

Performance Specifications - Page 3282

Technical Documents - Page 3282

Keying Plug



Part No. 86181-2
Use in Board Mount Receptacles

Receptacle Assemblies, Horizontal Board Mount

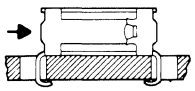
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

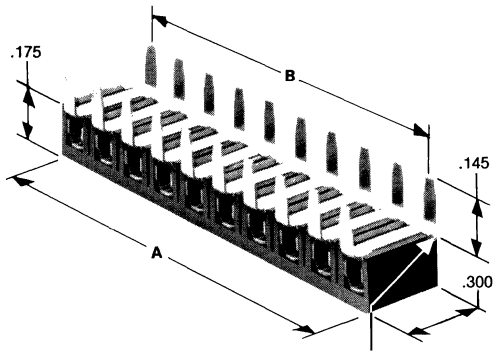
Single Row, .156 Centers

Materials:

Housing—Black Thermoplastic, 94V-0 Rated
Receptacles—Copper Alloy



Post Entry Type C



Notch Indicates Mating End of Receptacle

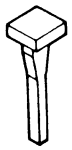
Related Product Data:

Mates with
Machine Applied Posts - Page 3275
Headers - Pages 3276, 3277 & 3278
Performance Specifications - Page 3282
Technical Documents - Page 3282

No. of Pos.	Dimensions		Packaged Quantities	Tin Plated Receptacles[1]		Gold Plated Receptacles[2]
	A	B		Standard Pressure	High Pressure	Standard Pressure
2	.312	.156	500	87987-2	87995-2	87988-2
3	.468	.312	500	87987-3	87995-3	87988-3
4	.624	.468	500	87987-4	87995-4	87988-4
5	.780	.624	250	87987-5	87995-5	87988-5
6	.936	.780	250	87987-6	87995-6	87988-6
7	1.092	.936	250	87987-7	87995-7	87988-7
8	1.248	1.092	250	87987-8	87995-8	87988-8
10	1.560	1.404	100	1-87987-0	1-87995-0	1-87988-0
12	1.872	1.716	100	1-87987-2	1-87995-2	1-87988-2
14	2.184	2.028	100	1-87987-4	1-87995-4	1-87988-4

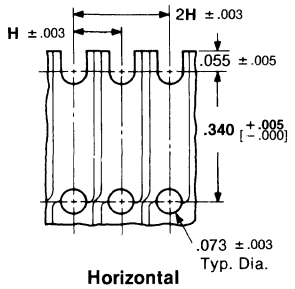
[1] .000030 minimum tin on entire receptacle.
[2] .000030 gold on contact area, gold flash over .000050 nickel on entire receptacle.

Keying Plug



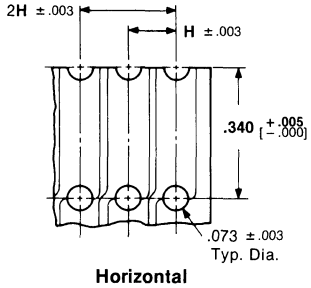
Part No. 86181-2
Use in Board Mount Receptacles

Recommended Board Layouts for Receptacle Assemblies and Individual Receptacles (Type C)



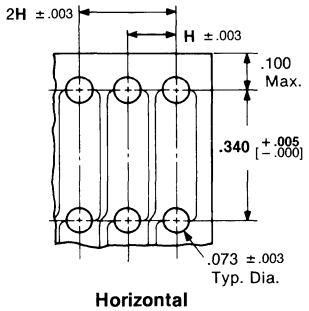
Horizontal

This configuration recommended for use with machine applied posts or headers with a .405 minimum mating end post length.*



Horizontal

This configuration recommended for use with machine applied posts or headers with a .345 minimum mating end post length.*



Horizontal

This configuration recommended for use with machine applied posts or headers with a .500 minimum mating end post length.*

*The mating post length is depicted by the **A** dimension on page 3275 (machine applied posts) and the **C** dimension on pages 3276, 3277 and 3278 (headers).

H—Receptacle centers may vary depending on requirements. For individual receptacles, minimum nominal centerline spacing between adjacent receptacles is .125; for receptacle assemblies, centerline spacing between adjacent receptacles is .156. The .003 tolerances are not to accumulate over length of board.

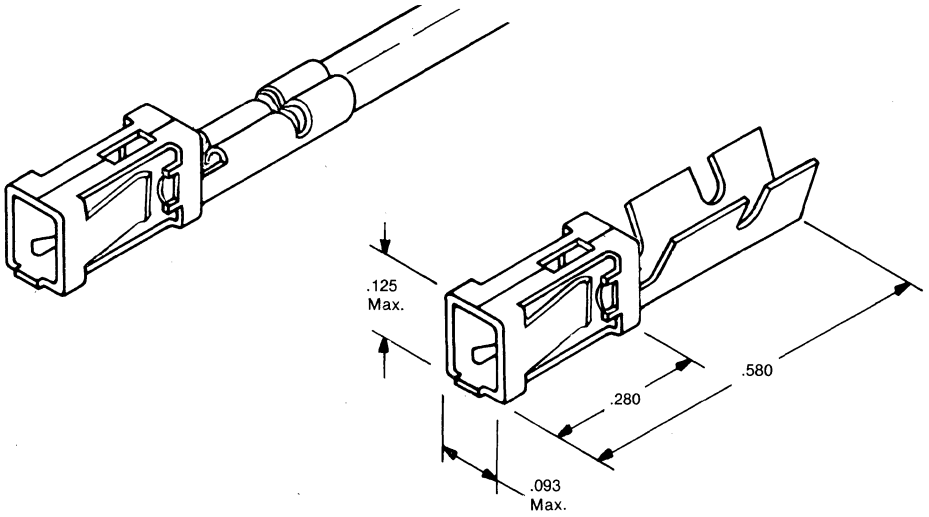
Receptacles, Crimp Snap-In (Wire Applied)

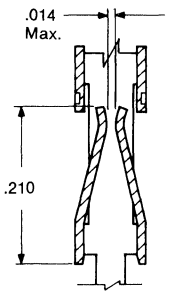
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Material: Copper Alloy

Related Product Data:
Housings used in -
Pages 3273 & 3274
Mate with
Machine Applied Posts -
Page 3275
Headers - Pages 3276, 3277, & 3278
Application Tooling -
Page 3281
Performance Specifications -
Page 3282
Technical Documents -
Page 3282

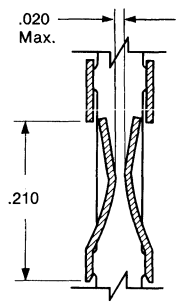




Standard Pressure Receptacle

Wire Size Range AWG	Ins. Dia. Range	Finish	Standard Pressure				Applicator No. for AMP-O-LECTRIC Machine[3]	Hand Tool No.
			Strip Form		Loose Piece			
			Packaged Quantities	Part Numbers	Packaged Quantities	Part Numbers		
22-18	.051-.090	Tin[1]	5,000	102099-5	500	102103-3	466764-2	90274-2
		Gold[2]	5,000	102099-2	500	102103-2		
26-22	.042-.073	Tin[1]	5,000	102101-5	500	102105-3	466763-2	90328-1
		Gold[2]	5,000	102101-2	500	102105-2		

[1] .000030 minimum tin on entire receptacle.
[2] .000030 gold on contact area, gold flash over .000050 nickel on entire receptacle.
[3] AMP-O-LECTRIC KII Machine. Applicators also available for AMPOMATOR Lead Making Machines and Stripper/Crimper Machines, consult AMP Incorporated, Harrisburg, PA 17105.



High Pressure Receptacle

Wire Size Range AWG	Ins. Dia. Range	Finish	High Pressure				Applicator No. for AMP-O-LECTRIC Machine[3]	Hand Tool No.
			Strip Form		Loose Piece			
			Packaged Quantities	Part Numbers	Packaged Quantities	Part Numbers		
22-18	.051-.090	Tin[1]	5,000	102100-5	500	102104-3	466764-2	90274-2
		Gold[2]	5,000	102100-2	500	102104-2		
26-22	.042-.073	Tin[1]	5,000	102102-5	500	102106-3	466763-2	90328-1
		Gold[2]	5,000	102102-2	500	102106-2		

[1] .000030 minimum tin on entire receptacle.
[2] .000030 gold on contact area, gold flash over .000050 nickel on entire receptacle.
[3] AMP-O-LECTRIC KII Machine. Applicators also available for AMPOMATOR Lead Making Machines and Stripper/Crimper Machines, consult AMP Incorporated, Harrisburg, PA 17105.

Extraction Tool No. 843473-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

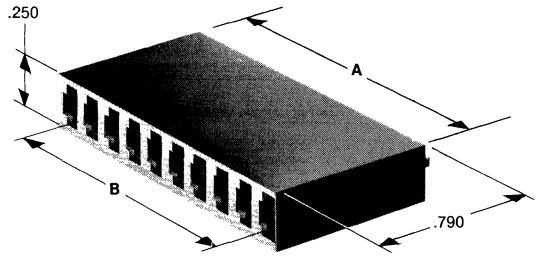
Receptacle Housings, Standard Profile (Unkeyed)

Dimensioning:
Dimensions are in inches

Without Strain Relief, Single Row, .156 Centers

Material: Black Thermoplastic, 94V-0 Rated

Related Product Data:
Contacts used with -
Page 3272
Mate with
Machine Applied Posts - Page 3275
Headers - Pages 3276, 3277, & 3278
Performance Specifications - Page 3282
Technical Documents - Page 3282



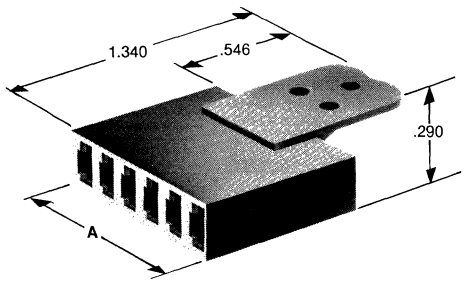
No. of Pos.	Dimensions		Packaged Quantities	Part Numbers	
	A	B		Stamped[1]	Unstamped[2]
2	.312	.156	300	—	2-87025-5[3]
3	.468	.312	300	—	2-87025-1
4	.624	.468	300	—	1-87025-3
5	.780	.624	300	—	2-87025-3
6	.936	.780	300	87025-1	87025-2
7	1.092	.936	300	3-87025-3	3-87025-4
8	1.248	1.092	300	1-87025-5	1-87025-6
9	1.404	1.248	300	87025-9	1-87025-0[3]
10	1.560	1.404	300	1-87025-7	1-87025-8
11	1.716	1.560	150	3-87025-5[3]	3-87025-6[3]
12	1.872	1.716	150	1-87025-1[3]	1-87025-2[3]
13	2.028	1.872	150	2-87025-9[3]	3-87025-0[3]
14	2.184	2.028	150	3-87025-7[3]	3-87025-8[3]
15	2.340	2.184	150	3-87025-1[3]	3-87025-2[3]
16	2.496	2.340	150	1-87025-9[3]	2-87025-0[3]
17	2.652	2.496	150	3-87025-9[3]	4-87025-0[3]
18	2.808	2.652	150	87025-3[3]	87025-4[3]
19	2.964	2.808	150	87025-5[3]	87025-6[3]
20	3.120	2.964	150	87025-7	87025-8
25	3.900	3.744	150	4-87025-9	5-87025-0

[1] AMP Trademark, Part No. and Data Code stamped on housing.
[2] No marking on housing.
[3] Minimum order greater than packaged quantities required. Consult AMP Incorporated, Harrisburg, PA 17105.

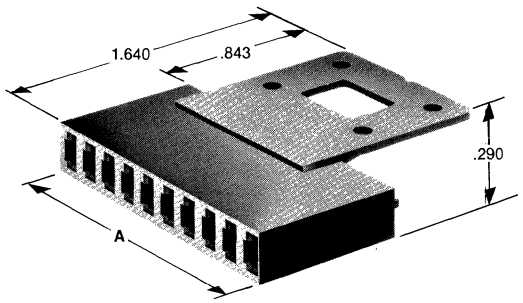
With Strain Relief, Single Row, .156 Centers

Material: Black Thermoplastic, 94V-0 Rated

Related Product Data:
Contacts used with -
Page 3272
Mate with
Machine Applied Posts - Page 3275
Headers - Pages 3276, 3277, & 3278
Performance specifications - Page 3282
Technical Documents - Page 3282



Type I



Type II

No. of Pos.	Dim. A	Packaged Quantities	Type	Part Numbers[1]
4	.624	150	I	102090-4
5	.780	150	I	102090-5
6	.936	150	I	102090-6[2]
7	1.092	150	II	102090-7[2]
8	1.248	150	II	102090-8[2]
9	1.404	150	II	102090-9[2]
10	1.560	150	II	1-102090-0[2]
11	1.716	75	II	1-102090-1[2]
12	1.872	75	II	1-102090-2[2]
13	2.028	75	II	1-102090-3[2]
14	2.184	75	II	1-102090-4[2]
15	2.340	75	II	1-102090-5[2]
16	2.496	75	II	1-102090-6[2]
17	2.652	75	II	1-102090-7[2]
18	2.808	75	II	1-102090-8[2]
19	2.964	75	II	1-102090-9[2]
20	3.120	75	II	2-102090-0[2]

[1] No marking on housing.
[2] Minimum order greater than packaged quantities required. Consult AMP Incorporated, Harrisburg, PA 17105.

Receptacle Housings, Low Profile (Keyed)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Single Row, .156 Centers

Material: Black Thermoplastic, 94V-0 Rated

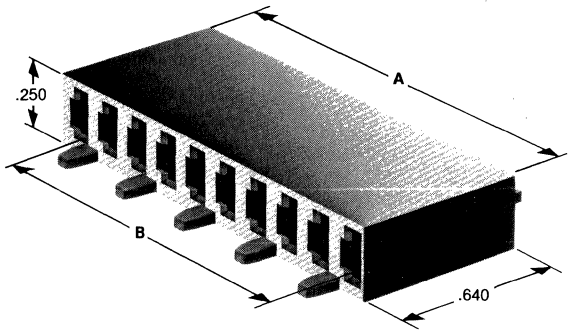
Related Product Data:

Contacts used with -
Page 3272

Mate with
Headers - Pages 3276, 3277, & 3278

Performance Specifications -
Page 3282

Technical Documents -
Page 3282



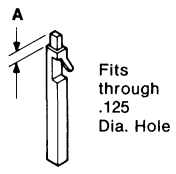
No. of Pos.	Dimensions A	Dimensions B	Packaged Quantities	No. of Keys	Part Numbers (Unstamped)[1]
2	.312	.156	300	1	87159-3
3	.468	.312	300	1	87159-4
4	.624	.468	300	2	87159-5
5	.780	.624	300	2	87159-1
6	.936	.780	300	3	87159-6
7	1.092	.936	300	3	87159-7
8	1.248	1.092	300	4	87159-8
9	1.404	1.248	300	3	87159-9
10	1.560	1.404	300	5	1-87159-0
11	1.716	1.560	150	4	1-87159-1
12	1.872	1.716	150	6	1-87159-2
13	2.028	1.872	150	4	87159-2
14	2.184	2.028	150	7	1-87159-3
15	2.340	2.184	150	5	1-87159-4
16	2.496	2.340	150	8	1-87159-5
17	2.652	2.496	150	6	1-87159-6
18	2.808	2.652	150	6	1-87159-7
19	2.964	2.808	150	8	1-87159-8
20	3.120	2.964	150	10	1-87159-9
25	3.900	3.744	150	11	2-87159-4[2]

[1] No marking on housing.

[2] Minimum order greater than packaged quantities required. Consult AMP Incorporated, Harrisburg, PA 17105.

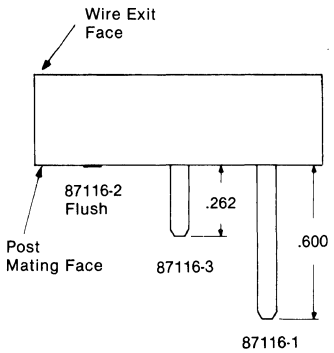
Keying Plugs

Material: Natural Color Nylon

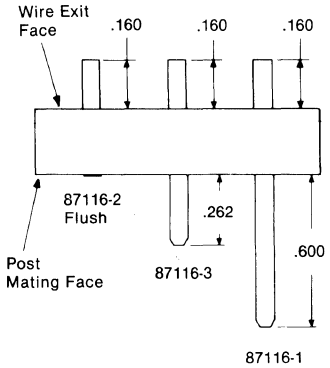


A	Part Numbers
.650	87116-1
.050	87116-2
.312	87116-3

Keying Plug References



For Standard Housings



For Low Profile Housings

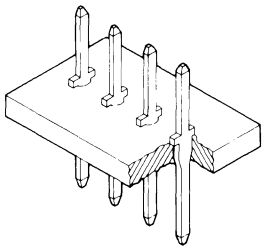
Posts, Machine Applied

Specifications subject to change.
For latest design specifications...
1-800-522-6752

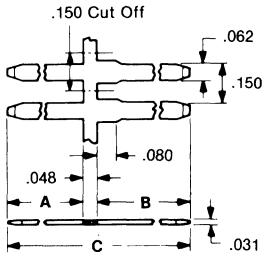
Dimensioning:
Dimensions are in inches

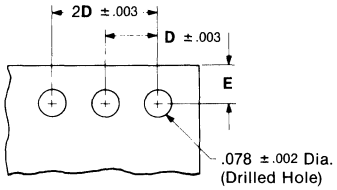
Straight Posts

Material: Brass



Typical Assembly





Recommended Mounting Holes

D—Post centers may vary depending on requirements. Minimum nominal centerline spacing between adjacent contacts is .125; .003 tolerances not to accumulate over length of board.

E—Post center location from edge of board may vary to satisfy application.

Related Product Data:

Mate with
Board Mount Receptacles - Pages 3268 & 3269
Board Mount Receptacle Assemblies - Pages 3270 & 3271
Crimp Snap-In Receptacles and Housings - Pages 3272 & 3273
Application Tooling - Page 3281
Performance Specifications - Page 3282
Technical Documents - Page 3282

Dimensions			Tin Plated[1] Part Numbers		Gold Plated[2] Part Numbers	
A	B	C	Strip Form[3]	Loose Piece[4]	Strip Form[3]	Loose Piece[4]
.360	.187	.595	86147-2	86182-2	86147-7	86182-7
.380	.320	.748	86147-9	86182-9	1-86147-5	1-86182-5
.400	.125	.573	3-86147-7	2-86182-5	4-86147-2	2-86182-9
.480	.187	.715	2-86147-2	2-86182-2	1-86147-8	1-86182-8
.565	.187	.800	86147-1	86182-1	86147-8	86182-8
.800	.150	.998	1-86147-0	1-86182-0	1-86147-2	1-86182-2

[1] .000100-.000200 bright tin over .000050 nickel on entire post.
[2] .000030 gold over .000050 nickel on entire post.
[3] Packaging quantity of 20,000 per reel.
[4] Packaging quantity of 1,000 per bag.
Note: Strip form posts applied with Insertion Machine No. 3-457382-1, includes power unit and applicator.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Headers, Straight Post (Keyed)

Dimensioning:
Dimensions are in inches

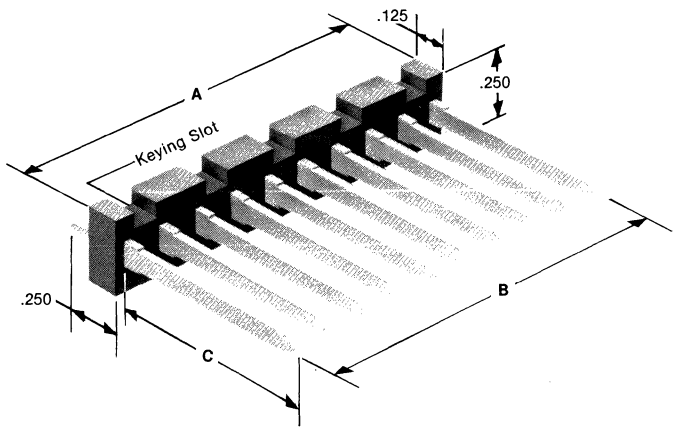
Single Row, .156 Centers

Materials:

Housing—Black Thermoplastic, 94V-0 Rated
Posts—Brass

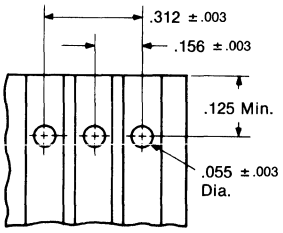
Related Product Data:

Mate with
Board Mount Receptacles - Pages 3268 & 3269
Board Mount Receptacle Assemblies - Pages 3270 & 3271
Crimp Snap-In Receptacles and Housings - Pages 3272, 3273 & 3274
Performance Specifications - Page 3282
Technical Documents - Page 3282



No. of Pos.	Dimensions A	Dimensions B	No. of Keying Slots	Packaged Quantities	Post Height C = .405 Bright Tin Plated Posts[1]	Post Height C = .405 Gold Plated Posts[2]	Post Height C = .587 Bright Tin Plated Posts[1]	Post Height C = .587 Gold Plated Posts[2]
2	.267	.156	1	500	87160-4	85829-2	87262-2	87247-2
3	.423	.312	1	500	87160-5	85829-3	87262-3	87247-3
4	.579	.468	2	500	87160-6	85829-4	87262-4	87247-4
5	.735	.624	2	250	87160-1	85829-5	87262-5	87247-5
6	.891	.780	3	250	87160-7	85829-6	87262-6	87247-6
7	1.047	.936	3	250	87160-8	85829-7	87262-7	87247-7
8	1.203	1.092	4	250	87160-9	85829-8	87262-8	87247-8
9	1.359	1.248	3	250	1-87160-0	85829-9	87262-9	87247-9
10	1.515	1.404	5	100	1-87160-1	1-85829-0	1-87262-0	1-87247-0
11	1.671	1.560	4	100	1-87160-2	1-85829-1	1-87262-1	1-87247-1
12	1.827	1.716	6	100	1-87160-3	1-85829-2	1-87262-2	1-87247-2
13	1.983	1.872	4	100	87160-2	1-85829-3	1-87262-3	1-87247-3
14	2.139	2.028	7	100	1-87160-4	1-85829-4	1-87262-4	1-87247-4
15	2.295	2.184	5	100	1-87160-5	1-85829-5	1-87262-5	1-87247-5
16	2.451	2.340	8	50	1-87160-6	1-85829-6	1-87262-6	1-87247-6
17	2.607	2.496	6	50	1-87160-7	1-85829-7	1-87262-7	1-87247-7
18	2.763	2.652	6	50	1-87160-8	1-85829-8	1-87262-8	1-87247-8
24	3.699	3.588	12	50	2-87160-4	2-85829-4	2-87262-4	2-87247-4
25	3.855	3.744	11	50	2-87160-5	2-85829-5	2-87262-5	2-87247-5

[1] .000100-.000200 bright tin over .000030 nickel on entire post.
[2] .000030 gold on contact area, gold flash over .000050 nickel on entire post.



Mounting Dimensions

Dimensioning:
Dimensions are in inches

No. of Pos.	Dimensions		No. of Keying Slots	Packaged Quantities	Post Height C = .750		Post Height C = 1.187		Post Height C = 1.310	
	A	B			Bright Tin Plated Posts[1]	Gold Plated Posts[2]	Bright Tin Plated Posts[1]	Gold Plated Posts[2]	Bright Tin Plated Posts[1]	Gold Plated Posts[2]
2	.267	.156	1	500	85875-7	85923-2	86207-8	87283-2	85840-2	85839-2
3	.423	.312	1	500	85875-8	85923-3	86207-2	87283-3	85840-3	85839-3
4	.579	.468	2	500	85875-1	85923-4	86207-9	87283-4	85840-4	85839-4
5	.735	.624	2	250	85875-2	85923-5	86207-3	87283-5	85840-5	85839-5
6	.891	.780	3	250	85875-9	85923-6	86207-4	87283-6	85840-6	85839-6
7	1.047	.936	3	250	1-85875-0	85923-7	1-86207-0	87283-7	85840-7	85839-7
8	1.203	1.092	4	250	1-85875-1	85923-8	86207-5	87283-8	85840-8	85839-8
9	1.359	1.248	3	250	85875-3	85923-9	86207-6	87283-9	85840-9	85839-9
10	1.515	1.404	5	100	1-85875-2	1-85923-0	86207-1	1-87283-0	1-85840-0	1-85839-0
11	1.671	1.560	4	100	1-85875-3	1-85923-1	—	1-87283-1	1-85840-1	1-85839-1
12	1.827	1.716	6	100	85875-4	1-85923-2	—	1-87283-2	1-85840-2	1-85839-2
13	1.983	1.872	4	100	1-85875-4	1-85923-3	—	1-87283-3	1-85840-3	1-85839-3
14	2.139	2.028	7	100	1-85875-5	1-85923-4	—	1-87283-4	1-85840-4	1-85839-4
15	2.295	2.184	5	100	1-85875-6	1-85923-5	—	1-87283-5	1-85840-5	1-85839-5
16	2.451	2.340	8	50	1-85875-7	1-85923-6	—	1-87283-6	1-85840-6	1-85839-6
17	2.607	2.496	6	50	1-85875-8	1-85923-7	—	1-87283-7	1-85840-7	1-85839-7
18	2.763	2.652	6	50	1-85875-9	1-85923-8	—	1-87283-8	1-85840-8	1-85839-8
24	3.699	3.588	12	50	2-85875-4	2-85923-4	—	2-87283-4	2-85840-4	2-85839-4
25	3.855	3.744	11	50	2-85875-5	2-85923-5	—	2-87283-5	2-85840-5	2-85839-5

[1] .000100-.000200 bright tin over .000030 nickel on entire post.
[2] .000030 gold on contact area, gold flash over .000050 nickel on entire post.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Headers, Right Angle Post (Keyed)

Dimensioning:
Dimensions are in inches

Single Row .156 Centers

Materials:

Housing—Black Thermoplastic, 94V-0 Rated

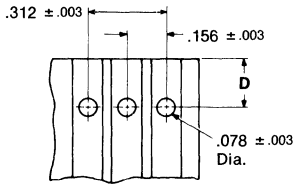
Posts—Brass

Related Product Data:

Mate with
Board Mount Receptacles - Pages 3268 & 3269
Board Mount Receptacle Assemblies - Pages 3270 & 3271
Crimp Snap-In Receptacles and Housings - Pages 3272, 3273 & 3274
Locking Clip Contacts and Housings (.500 Post Height Only) - Pages 3279 & 3280

Performance Specifications - Page 3282

Technical Documents - Page 3282

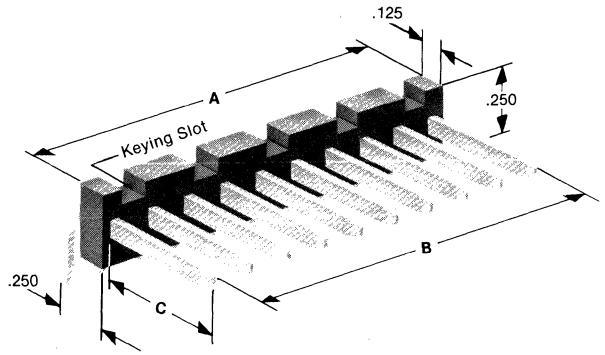


Mounting Dimensions

D Dimension:

.345 Post Height
.250 for mounting header flush with board edge; .595 for supporting mating connector on board.

.500 Post Height
.250 for mounting header flush with board edge; .750 for supporting mating connector on board.



No. of Pos.	Dimensions		No. of Keying Slots	Packaged Quantities	Post Height C = .345		Post Height C = .500	
	A	B			Bright Tin Plated Posts[1]	Gold Plated Posts[2]	Bright Tin Plated Posts[1]	Gold Plated Posts[3]
2	.267	.156	1	500	87655-2	87654-2	87194-1	87258-2
3	.423	.312	1	500	87655-3	87654-3	87194-2	87258-3
4	.579	.468	2	500	87655-4	87654-4	87194-3	87258-4
5	.735	.624	2	250	87655-5	87654-5	87194-4	87258-5
6	.891	.780	3	250	87655-6	87654-6	87194-5	87258-6
7	1.047	.936	3	250	87655-7	87654-7	87194-6	87258-7
8	1.203	1.092	4	250	87655-8	87654-8	87194-7	87258-8
9	1.359	1.248	3	250	87655-9	87654-9	87194-8	87258-9
10	1.515	1.404	5	100	1-87655-0	1-87654-0	87194-9	1-87258-0
11	1.671	1.560	4	100	1-87655-1	1-87654-1	1-87194-0	1-87258-1
12	1.827	1.716	6	100	1-87655-2	1-87654-2	1-87194-1	1-87258-2
13	1.983	1.872	4	100	1-87655-3	1-87654-3	1-87194-2	1-87258-3
14	2.139	2.028	7	100	1-87655-4	1-87654-4	1-87194-3	1-87258-4
15	2.295	2.184	5	100	1-87655-5	1-87654-5	1-87194-4	1-87258-5
16	2.451	2.340	8	50	1-87655-6	1-87654-6	1-87194-5	1-87258-6
17	2.607	2.496	6	50	1-87655-7	1-87654-7	1-87194-6	1-87258-7
18	2.763	2.652	6	50	1-87655-8	1-87654-8	1-87194-7	1-87258-8
24	3.699	3.588	12	50	2-87655-4	2-87654-4	2-87194-3	2-87258-4
25	3.855	3.744	11	50	2-87655-5	2-87654-5	2-87194-4	2-87258-5

[1] .000100-.000200 bright tin over .000030 nickel on entire post.
[2] .000030 gold on contact area, gold flash over .000050 nickel on entire post.
[3] .000015 gold over .000050 nickel on entire post.

Locking Clip Contacts, Crimp Snap-In (Wire Applied)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Materials:

Contact Body—
Phosphor Bronze

Contact Spring—Stainless Steel

Related Product Data:

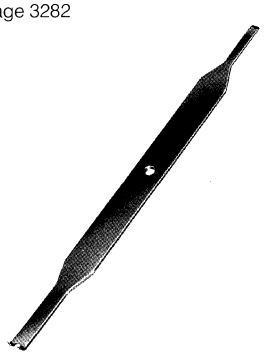
Mate with
Machine Applied Posts - Page 3275
Headers (.500 Post Height Only) - Page 3278

Housings used in - Page 3280

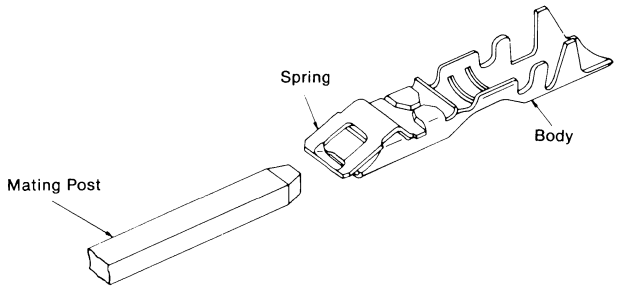
Application Tooling - Page 3281

Performance Specifications - Page 3282

Technical Documents - Page 3282



Extraction Tool No. 91104-1



Wire Size Range AWG	Ins. Dia. Range	Finish	Contact Part Numbers		Applicator Nos. for		Hand Tool No.
			Strip Form	Loose Piece	AMP-O-MATIC Stripper/Crimper Machine	AMP-O-LECTRIC Machine[3]	
22-18	.050-.100	Tin Plated[1]	87269-1	87278-1	466950-1	466007-2	90308-1
		Gold Plated[2]	87269-2	87278-2			

[1] .000100 minimum bright tin over nickel on entire contact.

[2] .000015 gold on post mating area, gold flash over nickel on entire contact.

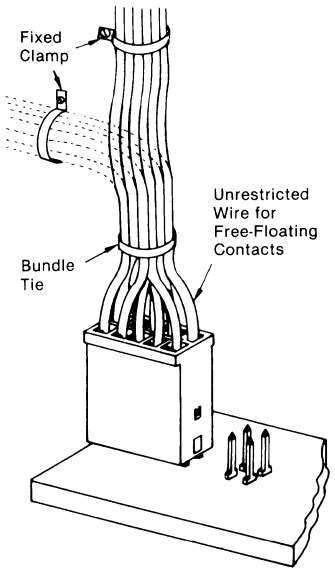
[3] AMP-O-LECTRIC KII Machine. Applicators also available for AMPOMATOR Lead Making Machines. Consult AMP Incorporated, Harrisburg, PA 17105.

Note: These contacts must be crimped in accordance with AMP Specification No. 114-25008 in order to function properly in a connector housing.

Extraction Tool No. 91104-1 is used for removing individual contacts from connector housings and for detaching contacts from mating posts.

Wire Harnessing

If necessary, wires can be grouped with bundle ties and secured to a panel with fixed clamps. However, locking clip contacts must be free to float within the connector housings to ensure proper extraction. Therefore, harnessing hardware or the use of multiple terminations per contact must not restrict the free-floating action of contacts in the housing.



Locking Clip Connector Housings

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Single Row, .156 Centers

Material: Black Thermoplastic, 94V-0 Rated

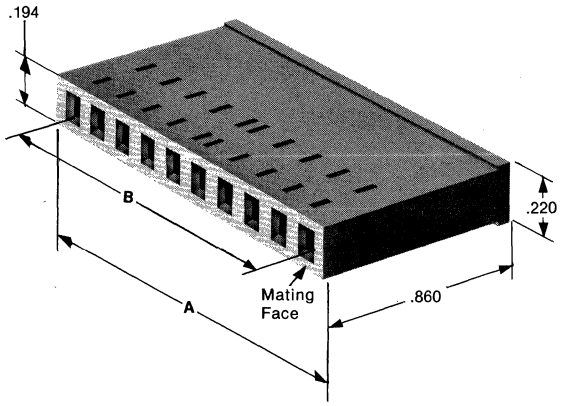
Related Product Data:

Contacts used with -
Page 3279

Mate with
Machine Applied Posts - Page 3275
Headers (.500 Post Height Only) - Page 3278

Performance Specifications - Page 3282

Technical Documents - Page 3282

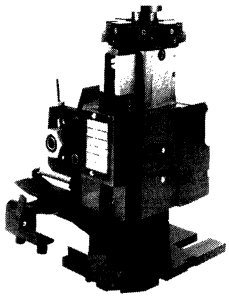


No. of Pos.	Dimensions A	Dimensions B	Housing Part No. Unkeyed	Housing Part No. Keyed	Keyed Positions on Mating Face
1	.200	—	87270-1	—	—
2	.376	.156	87270-2	—	—
3	.532	.312	1-87270-3	—	—
3 of 4	.688	.468	—	87270-3	□ □ ■ □
4			87270-4	—	—
4 of 5	.844	.624	—	1-87270-0	□ □ □ ■ □
5			1-87270-4	—	—
6	1.00	.780	87270-5	—	—
8	1.312	1.092	87270-6	—	—
10	1.624	1.404	87270-7	—	—

■ Indicates "closed cavity". No post entry hole in this position.

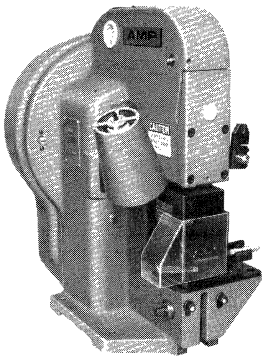
Notes: 1. All housings listed above will accept Locking Clip Contacts No. **87269** and **87278**, refer to page 3279.
2. Refer to AMP Instruction Sheet No. 7676 for proper contact orientation within the housings.

For Crimp Snap-In Receptacles and Locking Clip Contacts



Quick-Change Applicators

These applicators provide flexible operation for AMPOMATOR and AMP-O-LECTRIC machines. They can be changed rapidly with the crimping height on both terminal barrel and insulation support for a given wire size simply "dialed in". All adjustments are made with the applicator in the machine.



AMP-O-LECTRIC Model KII Terminating Unit

This bench-top unit is an improved version of the most commonly used terminating machine that provides a power source for operating quick-change applicators. It easily adapts to either mechanical or air feed systems.

Termination rates of 1800 per hour are attainable. For more information, see AMP Catalog 90-938.

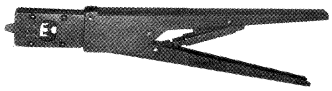
Weight: 230 lb. (approximately)
Height: 24 in. (without reel)
Width: 21 in.
Depth: 20 in.
Electrical Requirements: 115 VAC, 60 Hz, 6 A (¼ hp motor)
Air Supply: 80-120 psi (when required)

AMP-O-MATIC Stripper/Crimper Machine No. 463345-2

This pneumatically operated bench-top machine is capable of stripping wires and crimping side-feed contacts. Rates to 1000 terminations per hour are attainable.

Interchangeable applicators used in this machine are similar to the quick-change applicator.

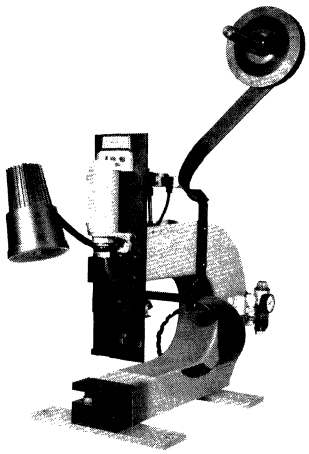
Weight: 95 lb.
Height: 33 in. (includes reel support)
Width: 14 in.
Depth: 18 in.
Electrical Requirements: 115 VAC, 60 Hz, 6 A (Single-Phase)
Air Supply: 80-100 psi at 1½ cfm



CERTI-CRIMP Hand Tools

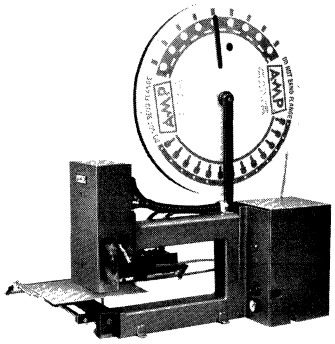
These hand tools are ideal for limited production, prototype, experimental and servicing applications. The ratchet device located between the tool handles assures the precise pressure needed to form a proper crimp.

For Board Mount Receptacles and Machine Applied Posts



Weight: 50 lb.
Height: 23 in.
Width: 18 in.
Depth: 19 in.
Electrical Requirements: 115 VAC, 60 Hz
Air Supply: 80 psi

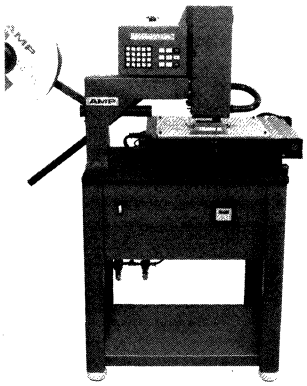
AMP-O-MATIC "U" Frame Machine No. 691679-1 (Installs Board Mount Receptacles)



Weight: 135 lb.
Height: 31.5 in.
Width: 27.5 in.
Depth: 24 in.
Electrical Requirements: 115 VAC, 60 Hz, 1 A
Air Supply: 80 psi at 2 cfm/min.
Max. Board Size (Using Holding Fixture): 21 in. × 18 in.

AMP-O-MATIC Insertion Machine No. 3-457382-1 (Installs Machine Applied Posts)

The two bench top insertion machines shown are capable of installing contacts into pc boards at rates to 2000 per hour. A spotlight highlights the insertion area, and lower tooling assures precise board location. The machines are actuated by a foot pedal.



Comp-U-Sertor Insertion Machine No. 816100-7

Insertion Head Nos.:
853562-1 (for Receptacles)
853563-1 (for Posts)

This computer-numerical-control positioning system uses interchangeable AMP insertion heads to insert board mount receptacles and posts into pc boards.

Production rates of up to 14,000 contacts per hour are attainable.

Weight: 400 lb.
Height: 61 in.
Width: 64 in.
Depth: 38 in.
Electrical Requirements: 115 VAC, 50 or 60 Hz, 7 A
Air Supply: 2 SCFM at 80 psi minimum

The electrical, mechanical and environmental characteristics of the AMPMODU .031 × .062 Interconnection System are listed below:

Electrical Characteristics

Contact Current Rating:
5 amperes max. for single contact in free air, could vary due to ambient temperature, wire size and duty cycles.

Contact Resistance:
12 milliohms at 100 ma and 50 mv open circuit.

Dielectric Rating:
At Sea Level—1200 VAC between contacts on .156 centers for 1 minute.

Insulation Resistance: 5×10^3 megohms (initial)

Mechanical Characteristics

Contact Durability Test Results:

Plating	Receptacles		Locking Clip Contacts
	Standard Pressure	High Pressure	
.000030 Tin	75 cycles	50 cycles	
.000015 Gold	75 cycles	50 cycles	25 cycles
.000030 Gold	200 cycles	100 cycles	

Connector Durability Test Results:

Receptacles	
Mating	—16 oz. max. per contact after 3 mating cycles (standard pressure) 30 oz. max. per contact after 3 mating cycles (high pressure)
Unmating	—1 oz. min. after 3 mating cycles (standard pressure) 3 oz. min. after 3 mating cycles (high pressure)
Locking Clip Contacts	
Mating	—4 lbs. per contact after 3 mating cycles.
Unmating	—2 lbs. per contact after 3 mating cycles.

Environmental Characteristics

Operating Temperature: -65°C to +105°C (Gold)
-65°C to +60°C (Tin)

Various technical documents are available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-25016 Interconnection System, Standard Pressure
108-25025 Interconnection System, High Pressure
108-36029 Locking Clip Connectors

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-25000 Application of AMPMODU Contacts and Receptacles
114-25004 Application of AMPMODU Female Contacts
114-25008 Application of AMPMODU Locking Clip Contacts
114-25011 Application of AMPMODU Posts

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

IS 7308 Clinching Procedures for AMPMODU Incremental Assemblies with .031 × .062 Posts
IS 7411 Suggestions for Flow Soldering AMPMODU Receptacles
IS 7594 AMP Hand Tool 90274-2 for Crimping Crimp Snap-In .031 × .062 Contacts
IS 7750 AMP Hand Tool 90328-1 for Crimping AMPMODU .031 × .062 Contacts
IS 7676 AMPMODU Locking Clip Connectors and Contacts
IS 7671 AMP Hand Tool 90308-1 for Crimping Locking Clip Contacts
IS 7678 AMP Extraction Tool 91104-1 for Locking Clip Contacts
IS 7981 AMPMODU .031 × .062 Receptacles Assemblies
IS 9451 AMP Extraction Tool 843473-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Z-PACK Interconnection System .100 inch and 2mm Centerlines

The AMP family of Z-PACK connectors addresses current and future interconnect requirements of high performance computer systems. IC technology is meeting the demand for higher processing speeds with advanced families of devices. System speeds supported by these devices are approaching 100MHz. Rise times will be under 1 (one) nanosecond. The interconnect plays a major role in system design with these speeds.

Controlled impedance, low inductance grounding, short electrical lengths, higher densities, and efficient power distribution are issues that must be considered when choosing a connector. Z-PACK connectors have been and are being designed to address these needs and are offered in two technologies, open pin field and stripline configurations. For added versatility open pin field modules can be combined with stripline modules within the same connector.

Electrical characterization of Z-PACK connectors, which have extremely complex geometries, is accomplished through finite element analysis and macro modeling. Electrical Performance Reports contain abstracts of the results of various computer simulations of electrical interconnection performance. Techniques employed in connector analysis are used by AMP to analyze the entire circuit.

For ease of application, the connectors have been designed to take advantage of current board and manufacturing technologies. High temperature materials ensure compatibility with surface-mount fabrication methods. Backplane connectors use ACTION PIN contacts for a fast, solderless press-fit application to backplanes and motherboards. Solder tails are available as well.

Product Facts

- Designed for high-speed applications
- Open pin field and stripline configurations
- Controlled impedance stripline technology
- Scalability
- Receptacle contacts blanked at 45° to minimize electrical length and skew
- Compatible with current manufacturing techniques
- Robust end blocks provide prealignment
- Keying hardware allows 64 combinations to prevent mismating
- Guide pins available for added alignment
- Stiffener reduces board warp and bow
- Unique twin-beam contact design provides reliable connection
- High temperature materials - SMT compatible
- ACTION PIN contacts and solder tail contacts

Technical Documents

Product Specifications:
108-1244 (Stripline 100)
108-1318 (2mm)

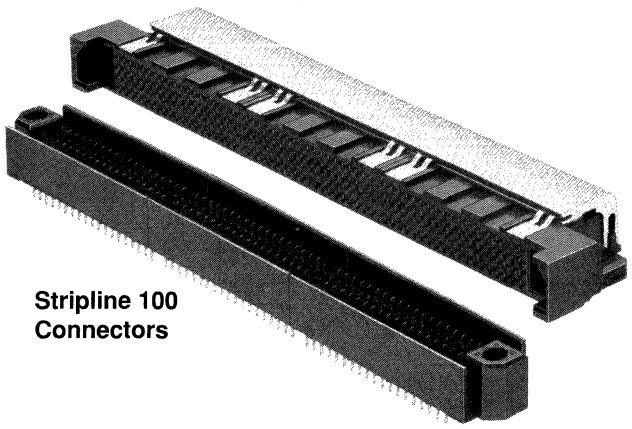
Application Specification:
114-1065

Technical Paper:
82509

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.

Metric symbols used are:
C (Celsius)
N (newton)
mm (millimeter)

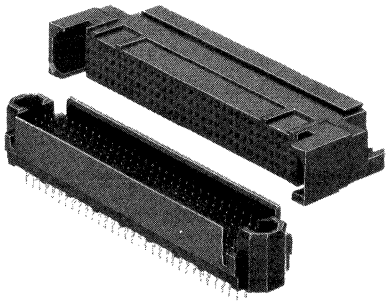
Specifications subject to change.
For latest design specifications...
1-800-522-6752



Stripline 100 Connectors

Stripline 100 Features

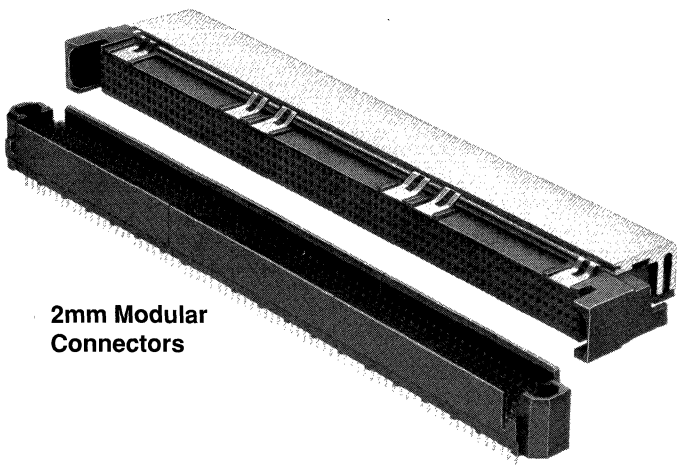
- Superior electrical performance down to 250 picosecond rise times
- Stripline technology for controlled impedance
- 40 high-speed signal lines per inch
- High density; signal pins not used as ground reference
- Receptacle contacts blanked at 45° angles to minimize skew
- Modular design with 60 and 80 position modules
- Receptacle modules preassembled to stiffener
- Compatible with current board manufacturing techniques
- Sequencing of ground, power and signal



2mm Integral Connectors

2mm Features

- 4 row, 2mm x 2mm grid, 50.8 signal lines per inch
- Integral design available up to 192 positions
- Modular design with 60, 80, 120 and 160 position modules
- Normal force; 50 grams minimum end-of-life
- Receptacle modules preassembled to stiffener
- Compliant pin or solder tail on pin header
- Housings withstand SMT soldering techniques
- DIN based, DIN profiled, DIN attachment
- Receptacle contacts blanked at 45° to minimize skew
- Available with 3 different mating post lengths for sequencing



2mm Modular Connectors

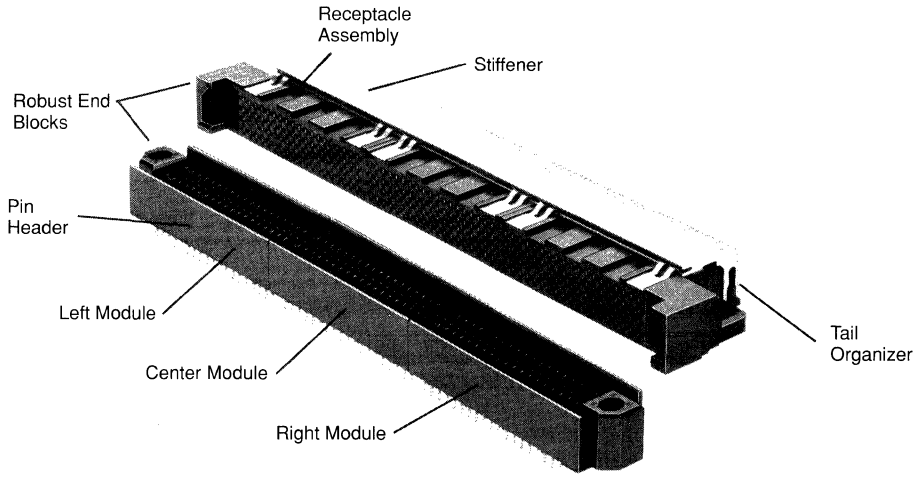
Technical Documents

Product Specifications:
108-1244 (Stripline 100)
108-1318 (2mm)
Application Specification:
114-1065
Technical Paper:
82509

Z-PACK Stripline 100 Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches unless specified otherwise.
Values in brackets are equivalent U.S. customary units.



Material and Finish:

Housings — High-temperature thermoplastic, black, 94V-0 rated

Receptacle Ground Contacts — Beryllium copper, duplex plated 0.00127 [.000050] AMP-DURAGOLD finish in mating area, tin-lead on solder tails

Receptacle Signal Contacts — Phosphor bronze, duplex plated 0.00127 [.000050] AMP-DURAGOLD finish in mating area, tin-lead on solder tails

Signal Pins and Ground Blades — Phosphor bronze, duplex plated 0.00127 [.000050] gold in mating area, tin-lead on 3.68 [.145] solder tails, or 0.00127 [.000050] gold on 10.80 [.425] tails

Stiffener—Aluminum

Performance Specifications

Mating Force: 0.56 N [2.0 oz] Avg. per contact

Unmating Force: 0.11 N [.4 oz] Min. per contact

Normal Force: 50 Grams Min., End-of-Life

Wipe: 2.54 [.100] with 4.45 [.175] Post

Current Rating:

Signal Contacts, 1.0 Ampere Continuous (fully derated)

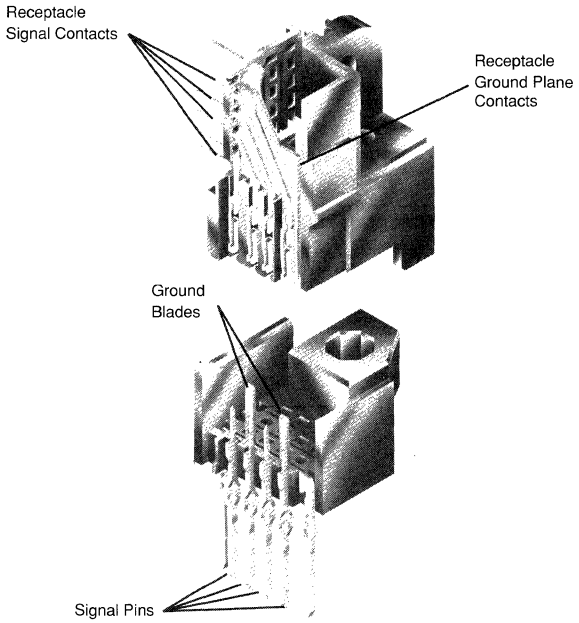
Power/Ground Contacts, 3 Amperes Continuous (fully derated)

Resistance:

Signal Contacts, 20 Milliohms Max.

Power/Ground Contacts, 10 Milliohms Max.

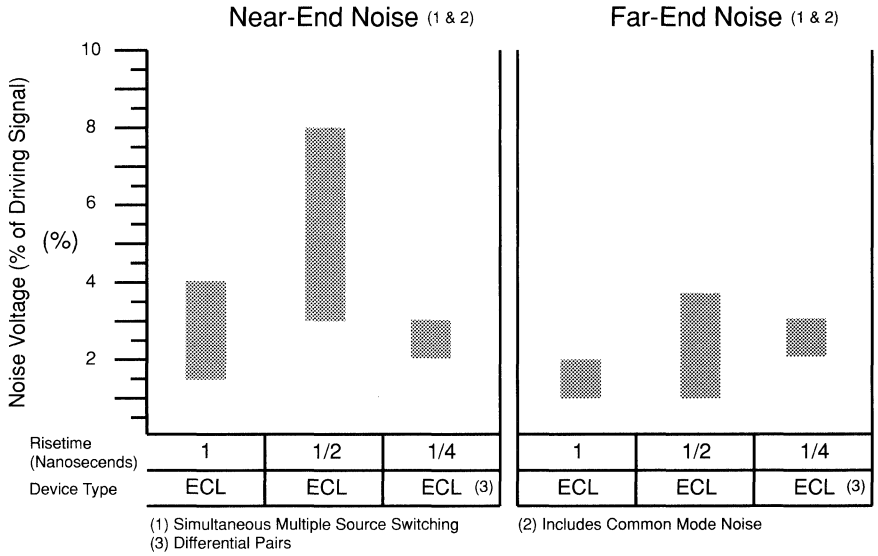
Operating Temperature: -65°C to +105°C



Z-PACK Stripline 100 connectors have an integral ground plane between each column of contacts to provide the controlled impedance that makes them ideal for applications in 50 ohm systems with edge speeds as fast as 250 picoseconds. Four rows of 0.38 [.015] square posts on 2.54 x 2.54 [.100 x .100] centerlines provide 40 high speed signal lines per inch. No signal lines have to be assigned as ground reference, enabling the connectors to maximize the number of signal lines per unit area.

Noise Voltage Analysis

Z-PACK Stripline 100 connectors provide excellent high speed performance for sub-nanosecond rise times. The accompanying graph shows near-end and far-end crosstalk noise voltage with multiple source switching for various rise times, 250 picoseconds through 1 (one) nanosecond. An Electrical Performance Report No. 82353, available through AMP, contains abstracts of computer simulations.



(1) Simultaneous Multiple Source Switching
(2) Includes Common Mode Noise
(3) Differential Pairs

3

Printed Circuit Board Connectors

Z-PACK Stripline 100
Modular Receptacle Assemblies

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are inch equivalents.
Dimensions are shown for reference purposes only.

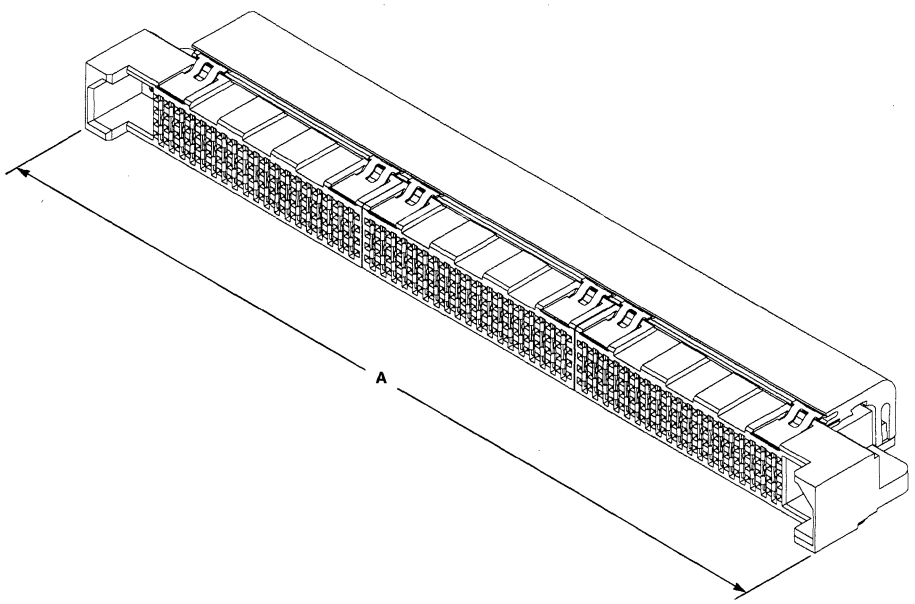
Receptacle assemblies come preassembled with end and center modules loaded onto an aluminum stiffener. This aluminum stiffener also can be used to minimize board warpage and bow. The solder tails are aligned by use of an organizer, which is integral to the assembly.

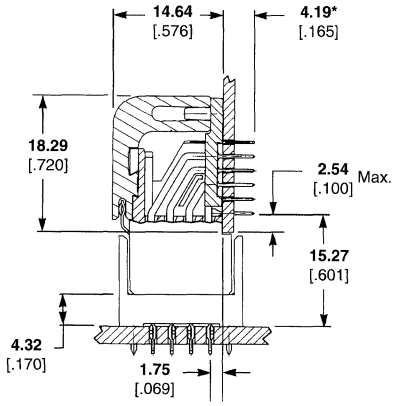
Modular pin headers (pages 3288, 3289 and 3290), available in 60 and 80 position center and end modules, are combined into the number of contacts needed to mate with the receptacle assemblies. To ensure proper mating, part numbers for these modules must be selected as called out in the charts on pages 3288 and 3289. The orientation of modules, both size and position, must be identical for both pin header and receptacle assembly to ensure proper mating since ground/power plates are not in place at the points where modules are stacked. The contacts in pin headers are offered with ACTION PIN press-fit tails or solder tails. The ACTION PIN tails require a 1.5 [.060] thick PC board or larger and are pressed into a 0.94/1.09 [.037/.043] finished hole.

A through-hole offset exists between the motherboard and daughtercard. While mounting holes between boards are in line, there is a 0.38 [.015] offset between through holes in the daughtercard and motherboard. See illustration at right for dimensions.

Related Product Data:

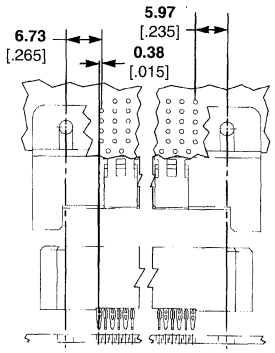
Technical Documents — page 3284
Material and Finish — page 3285
Performance Specifications — page 3285
Mateable Pin Headers — pages 3288, 3289 & 3290
Accessories — page 3299



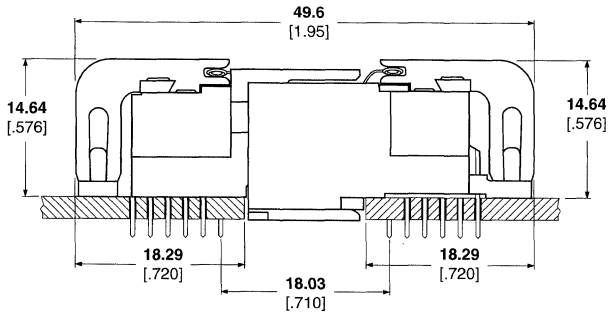


Mated Cross-Section
(Receptacle and Vertical Pin Header)

***4.95** [.195] and **6.48** [.255] solder lead lengths available.



Thru-Hole Offset for Mating Receptacle and Vertical Pin Header



Mated Receptacle and Right-Angle Pin Header

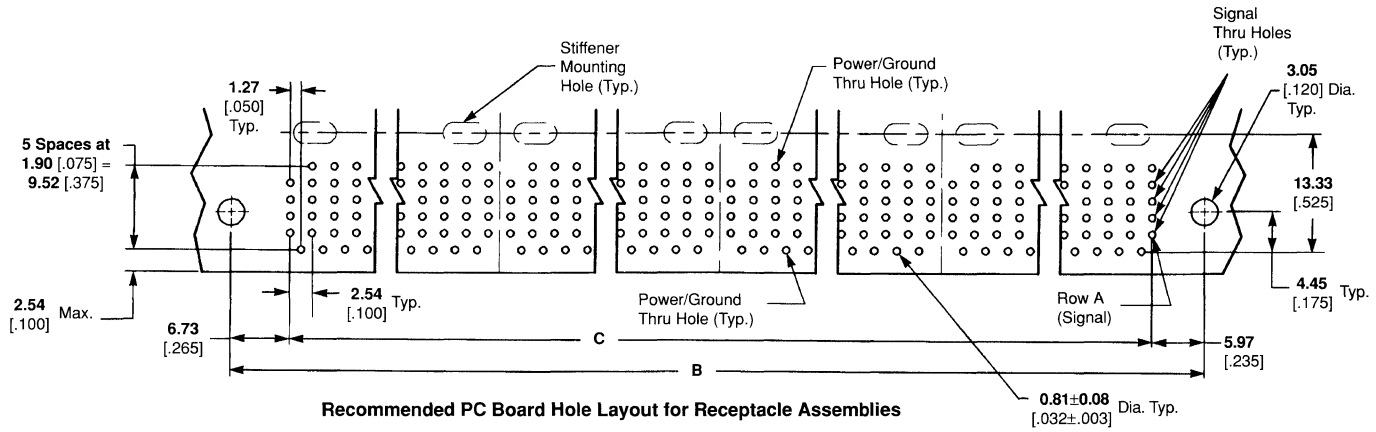
Z-PACK Stripline 100
Modular Receptacle Assemblies
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.

Chart contains dimensions in millimeters over inches.

Dimensions are shown for reference purposes only.



Recommended PC Board Hole Layout for Receptacle Assemblies

Receptacle Assembly Part Numbers – 4.19 [.165] Solder Tail Length*

Number of Positions	Dimensions A	Dimensions B	Dimensions C	Part Numbers
120	**99.06** 3.90	**86.36** 3.400	**73.66** 2.900	3-650318-1
140	**111.76** 4.40	**99.06** 3.900	**86.36** 3.400	3-650318-5
160	**124.46** 4.90	**111.76** 4.400	**99.06** 3.900	3-650318-2
180	**137.16** 5.40	**124.46** 4.900	**111.76** 4.400	3-650318-6
200	**149.86** 5.90	**137.16** 5.400	**124.46** 4.900	3-650318-3
220	**162.56** 6.40	**149.86** 5.900	**137.16** 5.400	3-650318-4
240	**175.26** 6.90	**162.56** 6.400	**149.86** 5.900	650318-1
260	**187.96** 7.40	**175.26** 6.900	**162.56** 6.400	650318-2
280	**200.56** 7.90	**187.96** 7.400	**175.26** 6.900	650318-3
300	**213.36** 8.40	**200.66** 7.900	**187.96** 7.400	650318-4
320	**226.06** 8.90	**213.36** 8.400	**200.66** 7.900	650318-5
340	**238.76** 9.40	**226.06** 8.900	**213.36** 8.400	650318-6
360	**251.46** 9.90	**238.76** 9.400	**226.06** 8.900	650318-7
380	**264.16** 10.40	**251.46** 9.900	**238.76** 9.400	650318-8
400	**276.86** 10.90	**264.16** 10.400	**251.46** 9.900	650318-9
420	**289.56** 11.40	**276.86** 10.900	**264.16** 10.400	1-650318-0
440	**302.26** 11.90	**289.56** 11.400	**276.86** 10.900	1-650318-1
460	**314.96** 12.40	**302.26** 11.900	**289.56** 11.400	1-650318-2
480	**327.66** 12.90	**314.96** 12.400	**302.26** 11.900	1-650318-3
500	**340.36** 13.40	**327.66** 12.900	**314.96** 12.400	1-650318-4
520	**353.06** 13.90	**340.36** 13.400	**327.66** 12.900	1-650318-5
540	**365.76** 14.40	**353.06** 13.900	**340.36** 13.400	1-650318-6
560	**378.46** 14.90	**365.76** 14.400	**353.06** 13.900	1-650318-7
580	**391.16** 15.40	**378.46** 14.900	**365.76** 14.400	1-650318-8
600	**403.86** 15.90	**391.16** 15.400	**378.45** 14.900	1-650318-9
620	**416.56** 16.40	**403.86** 15.900	**391.16** 15.400	2-650318-0
640	**429.26** 16.90	**416.56** 16.400	**403.86** 15.900	2-650318-1
660	**441.96** 17.40	**429.26** 16.900	**416.56** 16.400	2-650318-2
680	**454.66** 17.90	**441.96** 17.400	**429.26** 16.900	2-650318-3
700	**467.36** 18.40	**454.66** 17.900	**441.96** 17.400	2-650318-4
720	**480.06** 18.90	**467.36** 18.400	**454.66** 17.900	2-650318-5
740	**492.76** 19.40	**480.06** 18.900	**467.36** 18.400	2-650318-6
760	**505.46** 19.90	**492.76** 19.400	**480.06** 18.900	2-650318-7
780	**518.16** 20.40	**505.46** 19.900	**492.76** 19.400	2-650318-8
800	**530.86** 20.90	**518.16** 20.400	**505.46** 19.900	2-650318-9
820	**543.56** 21.40	**530.86** 20.900	**518.16** 20.400	3-650318-0

* 4.95 [.195] and 6.48 [.255] solder tail lengths available

Z-PACK Stripline 100 Modular Vertical Pin Headers with ACTION PIN Thin Stock Contacts

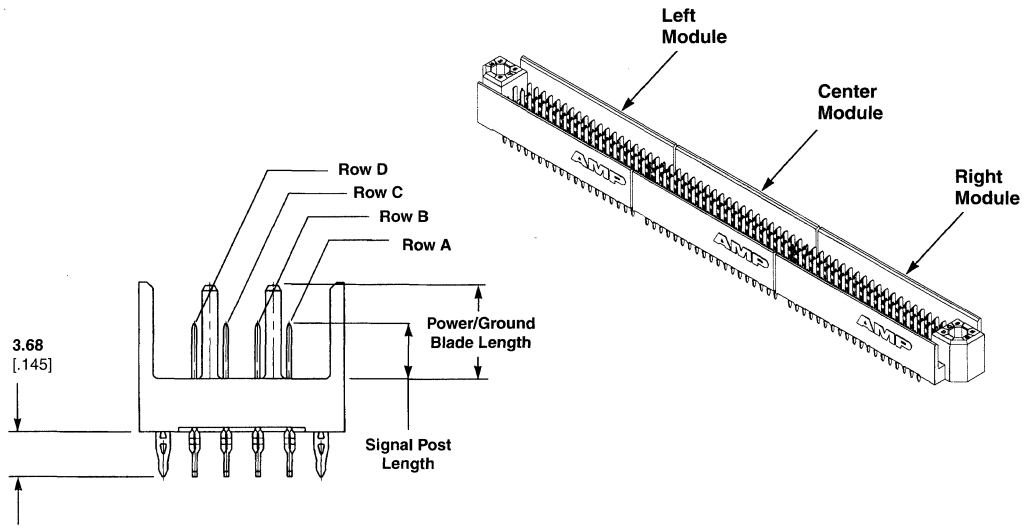
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.
Chart contains dimensions in millimeters over inches.
Dimensions are shown for reference purposes only.

3.68 [.145] Lead Length

Related Product Data:

Technical Documents — page 3284
Material and Finish — page 3285
Performance Specifications — page 3285
Mateable Receptacles — pages 3286 & 3287
Accessories — page 3299
ACTION PIN Contacts — page 3300 & 3412
Application Tooling — page 3301



Signal Post Length		Power/Ground Blade Length	Module Selection					
			Left Module		Center Module		Right Module	
Rows B&C	Rows A&D		60 Pos.	80 Pos.	60 Pos.	80 Pos.	60 Pos.	80 Pos.
4.45 .175	**4.45** .175	**6.02** .237	650573-1	650573-2	650572-1	650572-2	650571-1	650571-2
4.45 .175	**4.45** .175	**7.59** .299	650573-3	650573-4	650572-3	650572-4	650571-3	650571-4

Number of Positions	Number of Modules (Listed Above)					
120	1				1	
140		1			1	
160		1				1
180	1		1		1	
200	1			1	1	
220		1		1	1	
240		1		1		1
260		1	2		1	
280		1	2			1
300	1			2		1
320		1		2		1
340		1	3			1
360	1			3	1	
380		1		3	1	
400		1		3		1
420	1		5		1	
440	1			4	1	
460		1		4	1	
480		1		4		1
500		1	6		1	
520	1			5	1	
540		1		5	1	
560		1		5		1
580		1	7			1
600	1			6	1	
620		1		6	1	
640		1		6		1
660	1		9		1	
680	1			7	1	
700		1		7	1	
720		1		7		1
740		1	10		1	
760	1			8	1	
780		1		8	1	
800		1		8		1
820		1	11			1

Z-PACK Stripline 100 Modular Vertical Pin Headers with ACTION PIN Thin Stock Contacts (Used with High Performance Cable Assemblies)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.

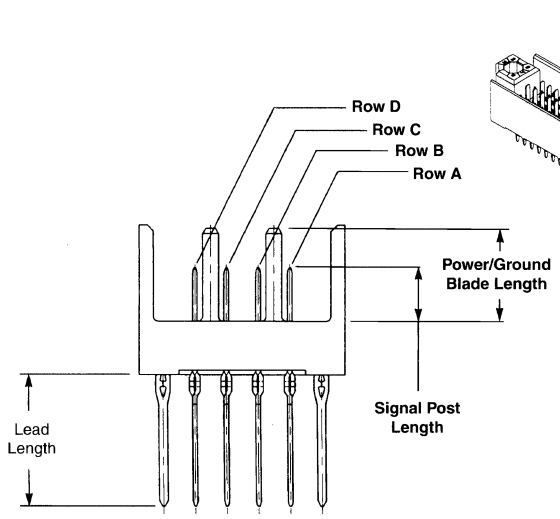
Chart contains dimensions in millimeters over inches.

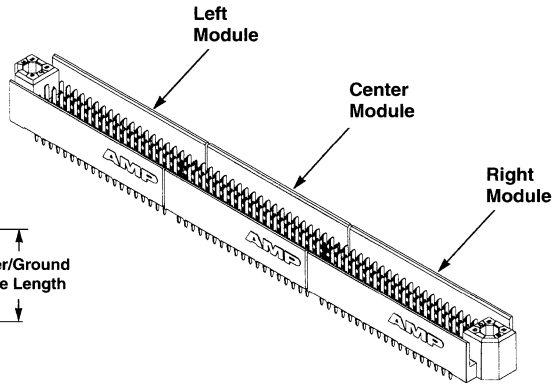
Dimensions are shown for reference purposes only.

10.80 [.425] and 13.59 [.535] Lead Lengths

Related Product Data:

Technical Documents — page 3284
Material and Finish — page 3285
Performance Specifications — page 3285
Mateable Receptacles — pages 3286 & 3287
Accessories — page 3299
ACTION PIN Contacts — page 3300 & 3412
Application Tooling — page 3301





Lead Length	Signal Post Length		Power/Ground Blade Length	Module Selection					
				Left Module		Center Module		Right Module	
	Rows B&C	Rows A&D		60 Pos.	80 Pos.	60 Pos.	80 Pos.	60 Pos.	80 Pos.
10.80 .425	**4.45** .175	**4.45** .175	**6.02** .237	650579-1	650579-2	650578-1	650578-2	650577-1	650577-2
13.59 .535	**4.45** .175	**4.45** .175	**6.02** .237	646189-1	646189-2	646188-1	646188-2	646187-1	646187-2

Number of Positions	Number of Modules (Listed Above)					
120	1				1	
140		1			1	
160		1				1
180	1		1		1	
200	1			1	1	
220		1		1	1	
240		1		1		1
260		1	2		1	
280		1	2			1
300	1			2		1
320		1		2		1
340		1	3			1
360	1			3	1	
380		1		3	1	
400		1		3		1
420	1		5		1	
440	1			4	1	
460		1		4	1	
480		1		4		1
500		1	6		1	
520	1			5	1	
540		1		5	1	
560		1		5		1
580		1	7			1
600	1			6	1	
620		1		6	1	
640		1		6		1
660	1		9		1	
680	1			7	1	
700		1		7	1	
720		1		7		1
740		1	10		1	
760	1			8	1	
780		1		8	1	
800		1		8		1
820		1	11			1

Z-PACK Stripline 100
Modular Vertical Pin Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

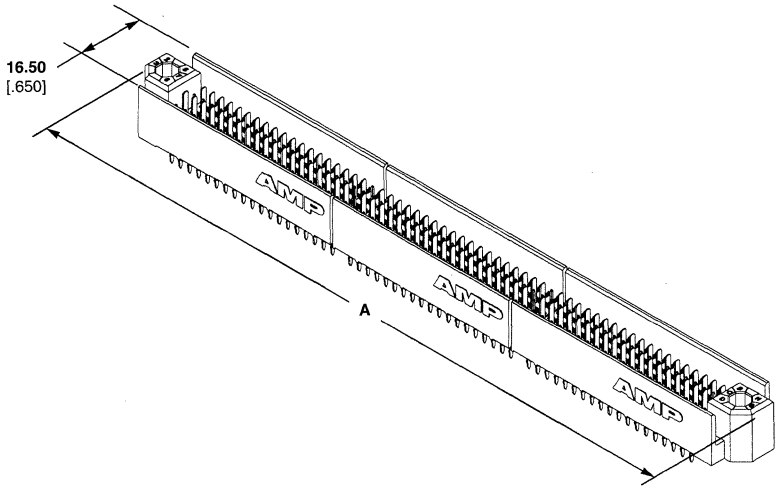
Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.

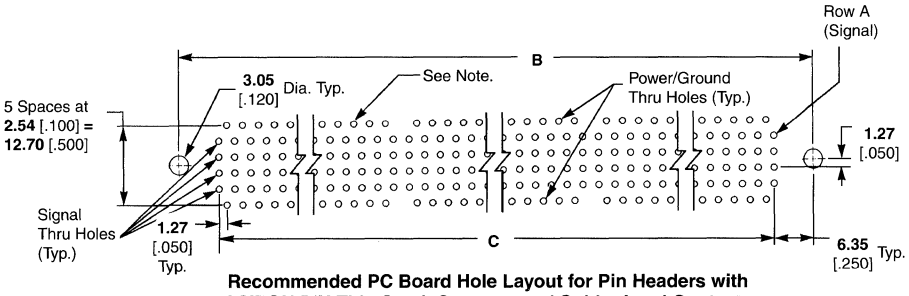
Chart contains dimensions in millimeters over inches.

Dimensions are shown for reference purposes only.

Related Product Data:

Technical Documents — page 3284
Material and Finish — page 3285
Performance Specifications — page 3285
Mateable Receptacles — pages 3286 & 3287
Accessories — page 3299
ACTION PIN Contacts — page 3300 & 3412
Application Tooling — page 3301





Recommended PC Board Hole Layout for Pin Headers with ACTION PIN Thin Stock Contacts and Solder Lead Contacts

Note: Typical hole diameter for ACTION PIN Thin Stock contacts is **1.02** ±**0.08** [.040 ±.003]; for solder lead contacts, **0.56 to 0.81** [.022 to .032].

Number of Positions	Dimensions A	B	C
120	**96.01** 3.78	**86.36** 3.400	**73.66** 2.900
140	**108.71** 4.28	**99.06** 3.900	**86.36** 3.400
160	**121.41** 4.78	**111.76** 4.400	**99.06** 3.900
180	**134.11** 5.28	**124.46** 4.900	**111.76** 4.400
200	**146.81** 5.78	**137.16** 5.400	**124.46** 4.900
220	**159.51** 6.28	**149.86** 5.900	**137.16** 5.400
240	**172.21** 6.78	**162.56** 6.400	**149.86** 5.900
260	**184.91** 7.28	**175.26** 6.900	**162.56** 6.400
280	**197.61** 7.78	**187.96** 7.400	**175.26** 6.900
300	**210.31** 8.28	**200.66** 7.900	**187.96** 7.400
320	**223.01** 8.78	**213.36** 8.400	**200.66** 7.900
340	**235.71** 9.28	**226.06** 8.900	**213.36** 8.400
360	**248.41** 9.78	**238.76** 9.400	**226.06** 8.900
380	**261.11** 10.28	**251.46** 9.900	**238.76** 9.400
400	**273.81** 10.78	**264.16** 10.400	**251.46** 9.900
420	**286.51** 11.28	**276.86** 10.900	**264.16** 10.400
440	**299.21** 11.78	**289.56** 11.400	**276.86** 10.900
460	**311.91** 12.28	**302.26** 11.900	**289.56** 11.400

Number of Positions	Dimensions A	B	C
480	**324.61** 12.78	**314.96** 12.400	**302.26** 11.900
500	**337.31** 13.28	**327.66** 12.900	**314.96** 12.400
520	**350.01** 13.78	**340.36** 13.400	**327.66** 12.900
540	**362.71** 14.28	**353.06** 13.900	**340.36** 13.400
560	**375.41** 14.78	**365.76** 14.400	**353.06** 13.900
580	**388.11** 15.28	**378.46** 14.900	**365.76** 14.400
600	**400.81** 15.78	**391.16** 15.400	**378.45** 14.900
620	**413.51** 16.28	**403.86** 15.900	**391.16** 15.400
640	**426.21** 16.78	**416.56** 16.400	**403.86** 15.900
660	**438.91** 17.28	**429.26** 16.900	**416.56** 16.400
680	**451.61** 17.78	**441.96** 17.400	**429.26** 16.900
700	**464.31** 18.28	**454.66** 17.900	**441.96** 17.400
720	**477.01** 18.78	**467.36** 18.400	**454.66** 17.900
740	**489.71** 19.28	**480.06** 18.900	**467.36** 18.400
760	**502.41** 19.78	**492.76** 19.400	**480.06** 18.900
780	**515.11** 20.28	**505.46** 19.900	**492.76** 19.400
800	**527.81** 20.78	**518.16** 20.400	**505.46** 19.900
820	**540.51** 21.28	**530.86** 20.900	**518.16** 20.400

Z-PACK 2mm Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches unless specified otherwise.
Values in brackets are equivalent U.S. customary units.

Material and Finish:

Housings — HIgh-temperature thermoplastic, black, 94V-0 rated

Receptacle Contacts — Phosphor bronze, duplex plated 0.00076 [.000030] AMP-DURAGOLD finish in mating area, tin-lead on solder tails

Signal Pins — Phosphor bronze, duplex plated 0.00076 [.000030] gold in mating area, tin-lead on 3.68 [.145] solder posts, or 0.00076 [.000030] gold on 10.80 [.425] tails

Stiffener — Aluminum

Performance Specifications

Mating Force: 0.56 N [2.0 oz] Avg. per contact

Unmating Force: 0.11 N [.4 oz] Min. per contact

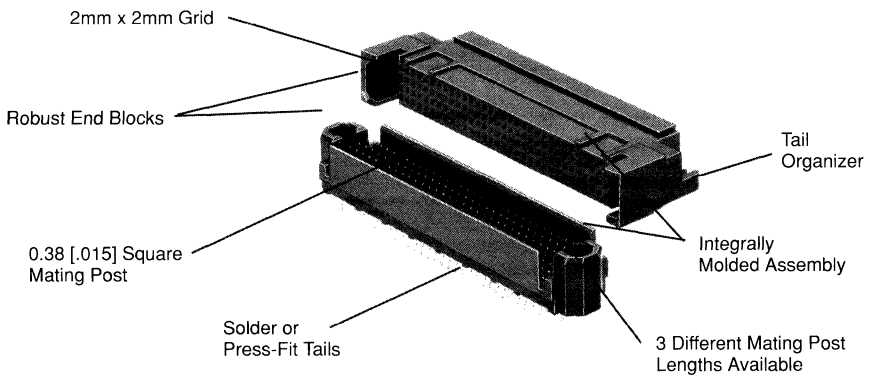
Normal Force: 50 Grams Min., End-of-Life

Wipe: 2.54 [.100] with 4.45 [.175] Post

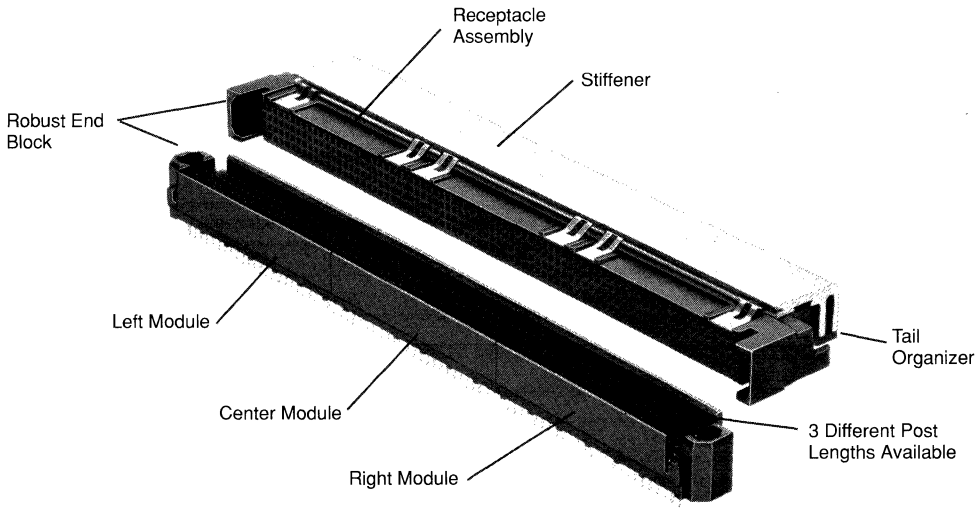
Current Rating: 1.0 Ampere Continuous (fully derated)

Resistance: 20 Milliohms Max.

Operating Temperature: -65°C to +105°C



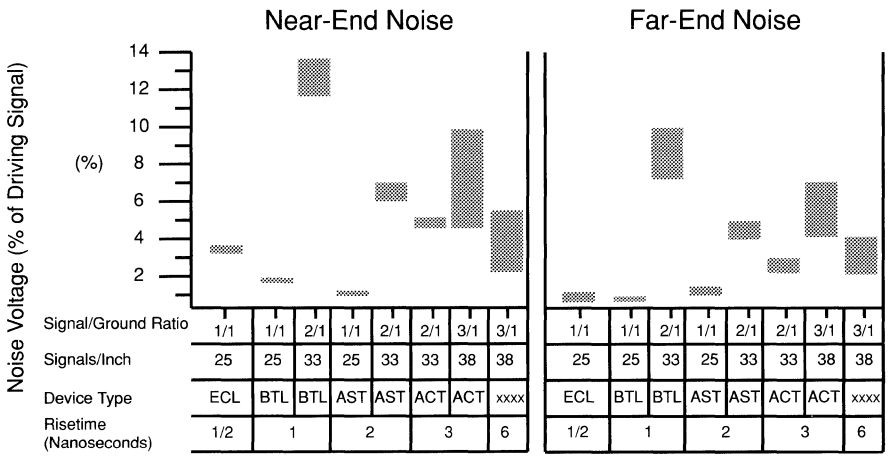
Z-PACK 2mm Integral Connector



Z-PACK 2mm Modular Connectors

Noise Voltage Analysis

Z-PACK 2mm connectors provide excellent high-speed performance. The accompanying graph shows near-end and far-end crosstalk noise voltage with multiple source switching for various logic families. Notice that the arrangement of ground pins throughout the connector offers lower noise levels. An Electrical Performance Report No. 82726, available through AMP, contains abstracts of computer simulations.



Z-PACK 2mm Integral Receptacles

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.

Chart contains dimensions in millimeters over inches.

Dimensions are shown for reference purposes only.

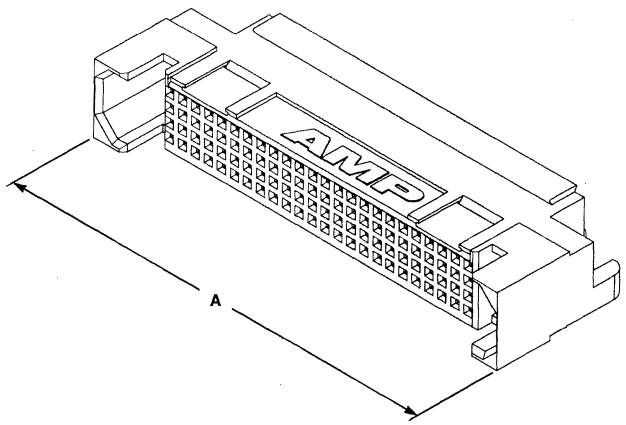
2mm integral receptacles offer four rows of contacts on 2.00 [.079] centers in a one-piece molded housing. Density is 50.8 signal lines per inch. Sizes are available from 96 through 192 positions. For larger positions (220 through 600) the 2mm modular connectors (pages 3294 through 3298) are recommended.

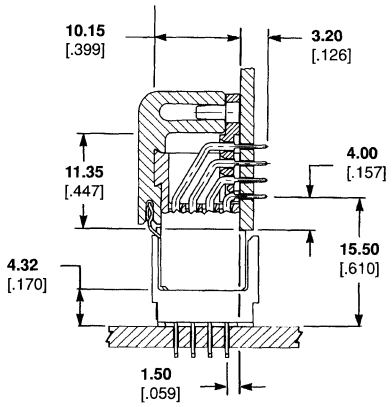
Receptacle solder tails are aligned by use of an organizer, integral to the assembly. Aluminum stiffeners, although not necessary for integral connectors, also can be made available to reduce board warpage and bow.

A through-hole offset exists between the motherboard and daughtercard. While mounting holes between boards are in line, there is a 0.38 [.015] offset between through holes in the daughtercard and motherboard. See illustration at right for dimensions.

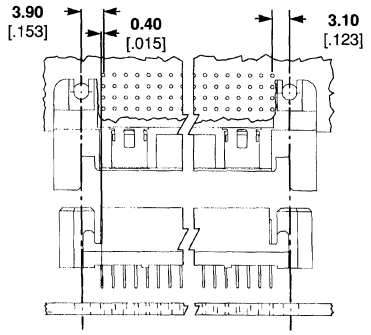
Related Product Data:

Technical Documents — page 3284
Material and Finish — page 3291
Performance Specifications — page 3291
Mateable Pin Headers — page 3293
Accessories — page 3299

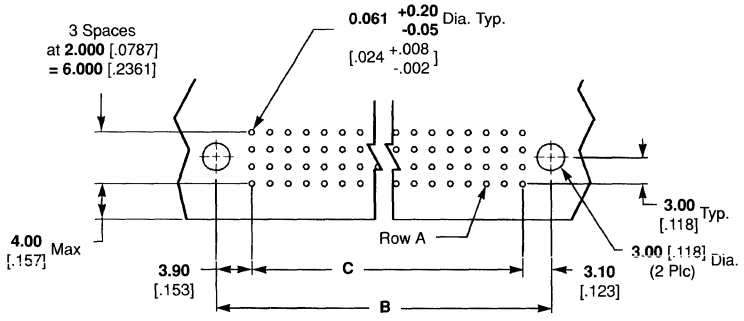




Mated Cross-Section



Thru-Hole Offset for Mating Connectors



Recommended PC Board Hole Layout for Receptacles

Receptacle Part Numbers — 3.20 [.126] Solder Tail Length*

No. of Positions	Dimensions A	Dimensions B	Dimensions C	Part Numbers
96	**62.00** 2.441	**53.00** 2.087	**46.00** 1.811	650555-1
128	**78.00** 3.071	**69.00** 2.717	**62.00** 2.441	650555-2
144	**86.00** 3.386	**77.00** 3.031	**70.00** 2.756	650555-3
160	**94.00** 3.701	**85.00** 3.346	**78.00** 3.071	650555-4
176	**102.00** 4.015	**93.00** 3.661	**86.00** 3.386	650555-5
192	**110.00** 4.331	**101.00** 3.976	**94.00** 3.701	650555-6

* 4.75 [.187] solder tail length available

Z-PACK 2mm Integral Pin Headers with Solder Tail and ACTION PIN Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.

Chart contains dimensions in millimeters over inches.

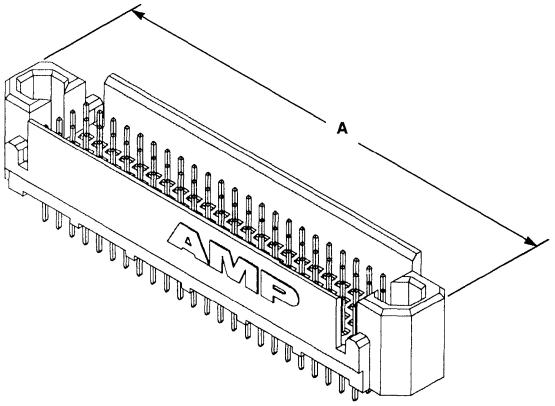
Dimensions are shown for reference purposes only.

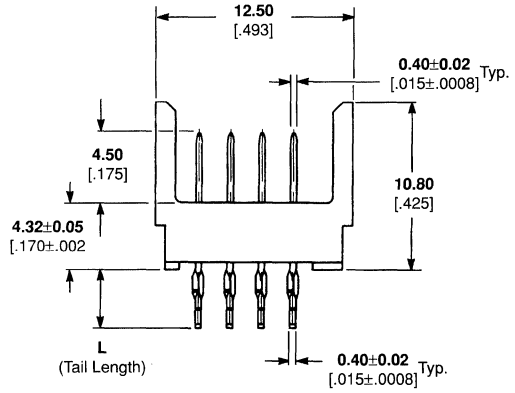
Contacts in pin headers are offered with ACTION PIN press-fit tails or solder tails. ACTION PIN tails require a 1.5 [.060] thick PC board or larger and are pressed into a 0.6/0.7 [.022/.026] finished hole.

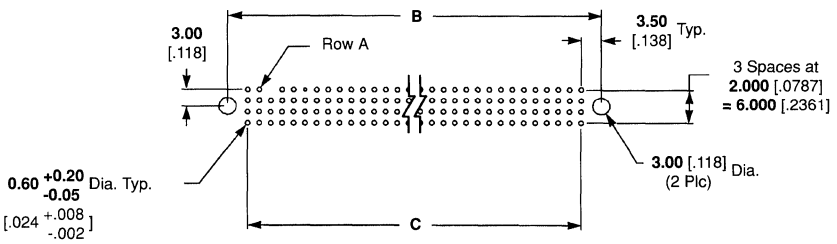
Three posts lengths are offered for three levels of sequencing; 4.5 [.175], 5.5 [.216] and 6.5 [.256]. Wipe on the shortest post, 4.5 [.175], is 2.5 [.098].

Related Product Data:

Technical Documents — page 3284
Material and Finish — page 3291
Performance Specifications — page 3291
Mateable Receptacles — page 3292
Accessories — page 3299
ACTION PIN Contacts — page 3300 & 3412
Application Tooling — page 3301







Recommended PC Board Hole Layout (Connector Side)

No. of Positions	Dimensions			Part Numbers		
				Solder Tails	ACTION PIN Tails*	
	A	B	C	L= 3.70 [.145]	L= 3.70 [.145]	L= 10.80 [.425]
96	**60.25** 2.373	**53.00** 2.087	**46.00** 1.811	650532-1	650632-1	650678-1
128	**76.25** 3.003	**69.00** 2.717	**62.00** 2.441	650532-2	650632-2	650678-2
144	**84.25** 3.317	**77.00** 3.031	**70.00** 2.756	650532-3	650632-3	650678-3
160	**92.25** 3.632	**85.00** 3.346	**78.00** 3.071	650532-4	650632-4	650678-4
176	**100.25** 3.947	**93.00** 3.661	**86.00** 3.386	650532-5	650632-5	650678-5
192	**108.25** 4.262	**101.00** 3.976	**94.00** 3.701	650532-6	650632-6	650678-6

* 7.62 [.300] ACTION PIN tail length available

Z-PACK 2mm
Modular Receptacle Assemblies

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.
Dimensions are shown for reference purposes only.

Receptacle assemblies come preassembled with end and center modules loaded onto an aluminum stiffener. This aluminum stiffener also can be used to minimize board warpage and bow. The solder tails are aligned by use of an organizer, which also is integral to the assembly.

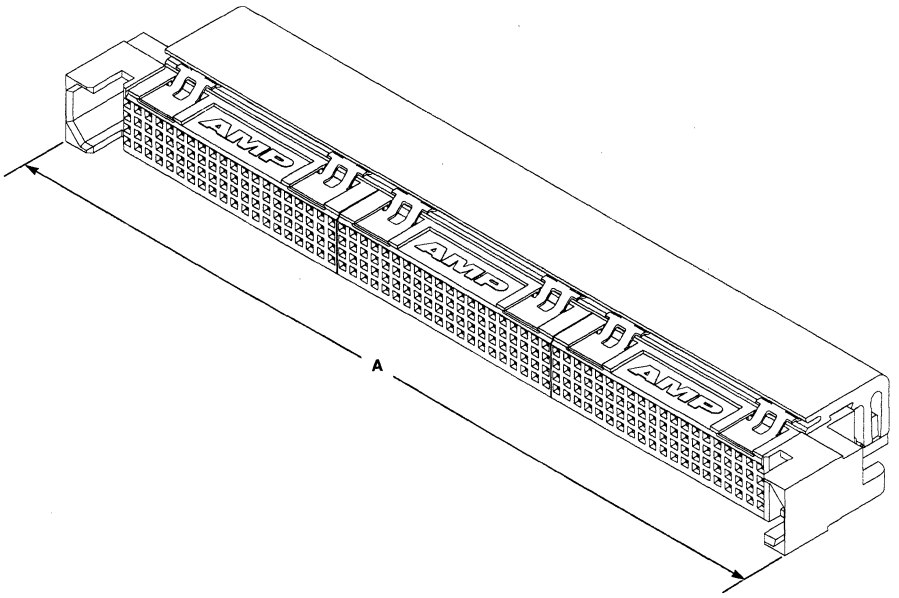
Modular pin headers (pages 3296, 3297 and 3298), available in 60, 80, 120 and 160 position center and end modules, are combined into the number of contacts needed to mate with the receptacle assemblies. To ensure proper mating, part numbers for these modules must be selected as called out in the charts on page 3296 and 3297. The orientation of modules, both size and position, must be identical for both pin header and receptacle assembly to ensure proper mating. The contacts in pin headers are offered with ACTION PIN press-fit tails or solder tails. The ACTION PIN tails require a 1.5 [.060] thick PC board or larger and are pressed into a 0.6/0.7 [.022/.026] finished hole.

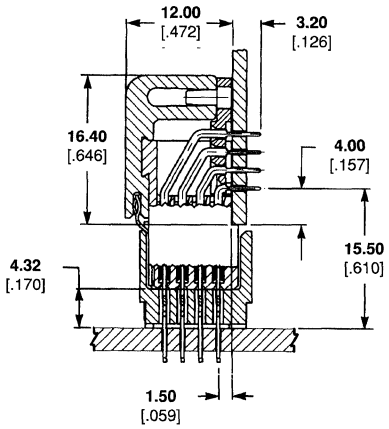
Three posts lengths are offered for three levels of sequencing; 4.5 [.175], 5.5 [.216] and 6.5 [.256]. Wipe on the shortest post, 4.5 [.175], is 2.5 [.098].

A through hole offset exists between motherboard and daughtercard. While mounting holes between boards are in line, there is a 0.38 [.015] offset between through holes in the daughtercard and motherboard. See illustration at right for dimensions.

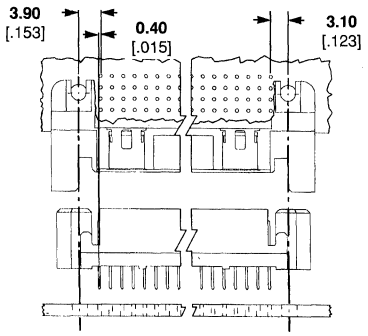
Related Product Data:

Technical Documents — page 3284
Material and Finish — page 3291
Performance Specifications — page 3291
Mateable Pin Headers — pages 3296, 3297 & 3298
Accessories — page 3299





Mated Cross-Section



Thru-Hole Offset for Mating Connectors

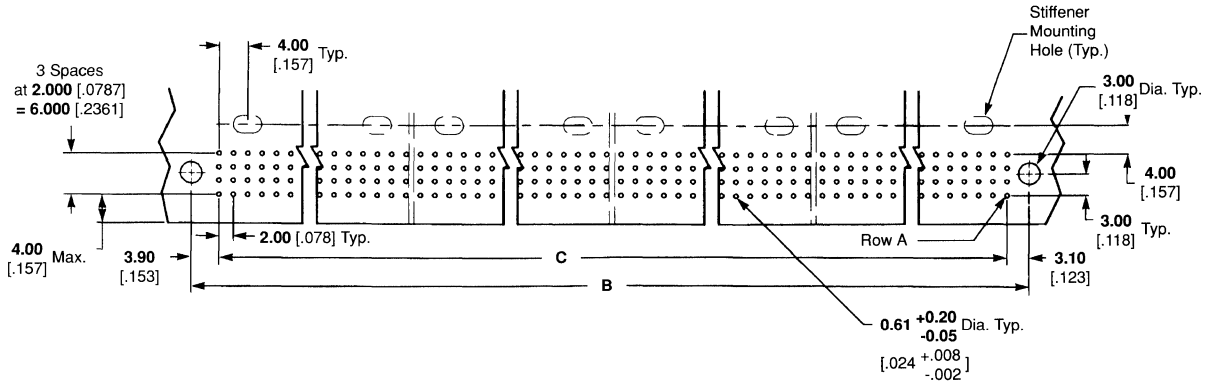
Z-PACK 2mm
Modular Receptacle Assemblies
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.

Chart contains dimensions in millimeters over inches.

Dimensions are shown for reference purposes only.



Recommended PC Board Hole Layout for Receptacle Assemblies

Receptacle Assembly Part Numbers — 3.20 [.126] Solder Tail Length

Number of Positions	Dimensions A	B	C	Part Numbers
220	**124.00** 4.883	**115.00** 4.528	**108.00** 4.252	650597-1
240	**134.00** 5.277	**125.00** 4.922	**118.00** 4.646	650597-2
260	**144.00** 5.670	**135.00** 5.315	**128.00** 5.039	650597-3
280	**154.00** 6.064	**145.00** 5.709	**138.00** 5.433	650597-4
300	**164.00** 6.458	**155.00** 6.103	**148.00** 5.8277	650597-5
320	**174.00** 6.851	**165.00** 6.496	**158.00** 6.220	650597-6
340	**184.00** 7.245	**175.00** 6.890	**168.00** 6.614	650597-7
360	**194.00** 7.639	**185.00** 7.284	**178.00** 7.008	650597-8
380	**204.00** 8.033	**195.00** 7.678	**188.00** 7.402	650597-9
400	**214.00** 8.426	**205.00** 8.071	**198.00** 7.795	1-650597-0

Number of Positions	Dimensions A	B	C	Part Numbers
420	**224.00** 8.820	**215.00** 8.465	**208.00** 8.189	1-650597-1
440	**234.00** 9.214	**225.00** 8.859	**218.00** 8.583	1-650597-2
460	**244.00** 9.607	**235.00** 9.252	**228.00** 8.976	1-650597-3
480	**254.00** 10.001	**245.00** 9.646	**238.00** 9.370	1-650597-4
500	**264.00** 10.395	**255.00** 10.04	**248.00** 9.764	1-650597-5
520	**274.00** 10.788	**265.00** 10.433	**258.00** 10.157	1-650597-6
540	**284.00** 11.182	**275.00** 10.827	**268.00** 10.551	1-650597-7
560	**294.00** 11.576	**285.00** 11.221	**278.00** 10.945	1-650597-8
580	**304.00** 11.970	**295.00** 11.615	**288.00** 11.339	1-650597-9
600	**314.00** 12.363	**305.00** 12.006	**298.00** 11.732	2-650597-0

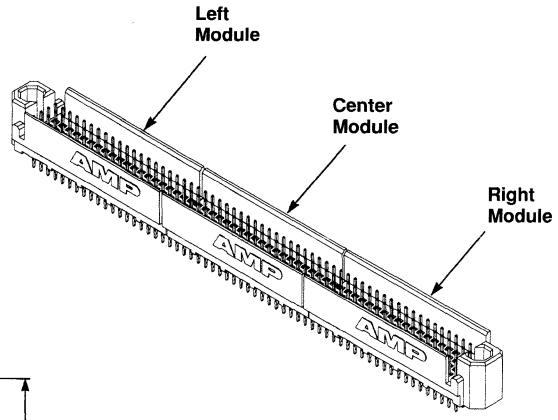
Z-PACK 2mm Modular Headers with ACTION PIN Contacts

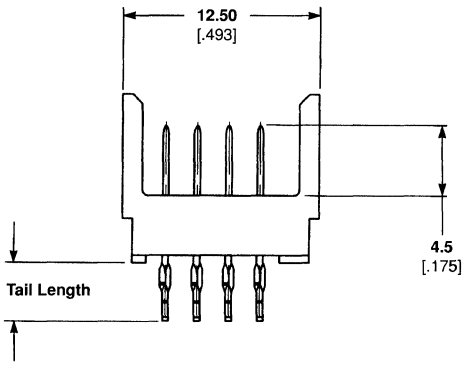
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.
Chart contains dimensions in millimeters over inches.
Dimensions are shown for reference purposes only.

Related Product Data:

Technical Documents — page 3284
Material and Finish — page 3291
Performance Specifications — page 3291
Mateable Receptacles — pages 3294 & 3295
Accessories — page 3299
ACTION PIN Contacts — page 3300 & 3412
Application Tooling — page 3301





ACTION PIN Tail Length	Number of Positions	Module Selection: Left Module 80 Pos.	Left Module 120 Pos.	Left Module 160 Pos.	Center Module 120 Pos.	Center Module 160 Pos.	Right Module 60 Pos.	Right Module 120 Pos.	Right Module 160 Pos.
3.7 .145		650627-3	650627-4	650627-5	650626-4	650626-5	650625-2	650625-4	650625-5
10.8 .425		650674-3	650674-4	650674-5	650673-4	650673-5	650672-2	650672-4	650672-5
	220			1			1		
	240		1						1
	260	1			1		1		
	280			1				1	
	300	1				1	1		
	320			1					1
	340		1			1	1		
	360		1		1			1	
	380			1		1	1		
	400		1			1		1	
	420		1		2		1		
	440			1		1		1	
	460			1	2		1		
	480			1		1			1
	500		1			2	1		
	520			1	2			1	
	540			1		2	1		
	560			1	2				1
	580			1	3		1		
	600		1		3			1	

Z-PACK 2mm Modular Headers with Sequencing and ACTION PIN Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

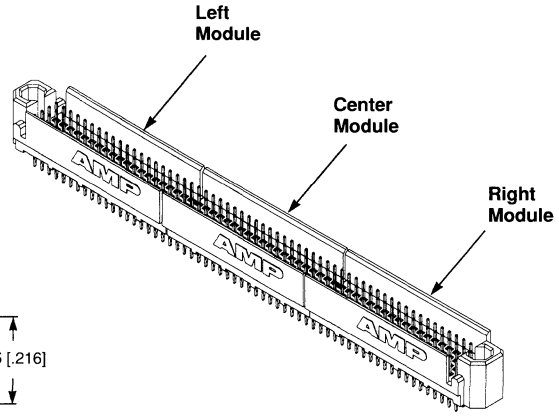
Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.

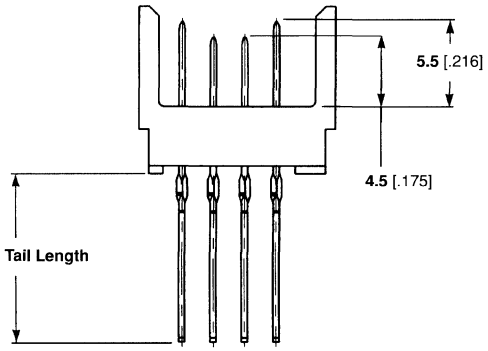
Chart contains dimensions in millimeters over inches.

Dimensions are shown for reference purposes only.

Related Product Data:

Technical Documents — page 3284
Material and Finish — page 3291
Performance Specifications — page 3291
Mateable Receptacles — pages 3294 & 3295
Accessories — page 3299
ACTION PIN Contacts — pages 3300 & 3412
Application Tooling — page 3301





ACTION PIN Tail Length	Number of Positions	Module Selection: Left Module 80 Pos.	Left Module 120 Pos.	Left Module 160 Pos.	Center Module 120 Pos.	Center Module 160 Pos.	Right Module 60 Pos.	Right Module 120 Pos.	Right Module 160 Pos.
3.7 .145		650640-3	650640-4	650640-5	650639-4	650639-5	650638-2	650638-4	650638-5
10.8 .425		650682-3	650682-4	650682-5	650681-4	650681-5	650680-2	650680-4	650680-5
	220			1			1		
	240		1						1
	260	1			1		1		
	280			1				1	
	300	1				1	1		
	320			1					1
	340		1			1	1		
	360		1		1			1	
	380			1		1	1		
	400		1			1		1	
	420		1		2		1		
	440			1		1		1	
	460			1	2		1		
	480			1		1			1
	500		1			2	1		
	520			1	2			1	
	540			1		2	1		
	560			1	2				1
	580			1	3		1		
	600		1		3			1	

Z-PACK 2mm Modular Pin Headers (Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

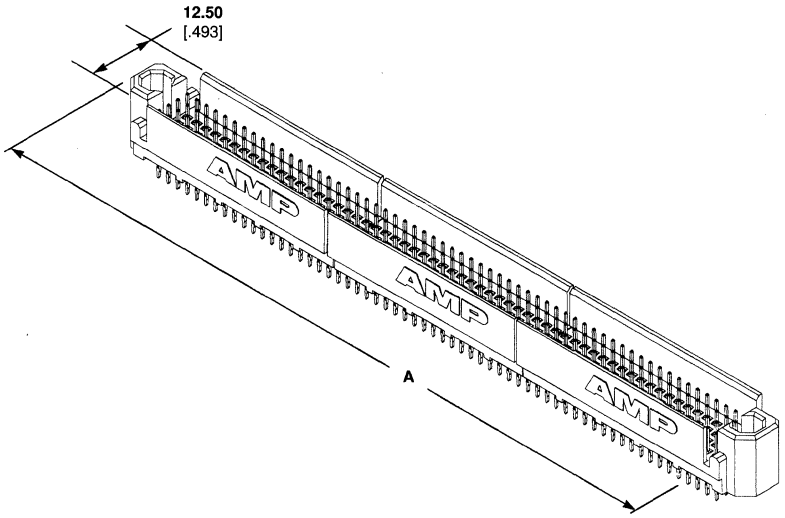
Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.

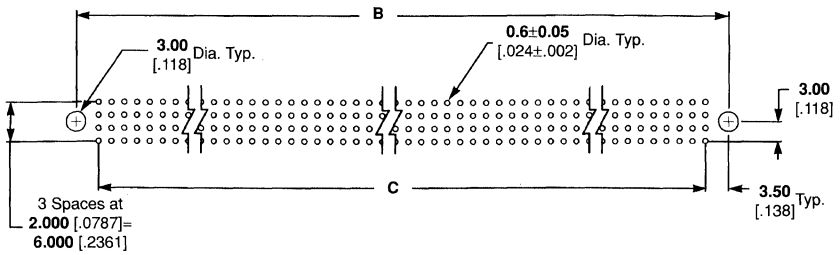
Chart contains dimensions in millimeters over inches.

Dimensions are shown for reference purposes only.

Related Product Data:

Technical Documents — page 3284
Material and Finish — page 3291
Performance Specifications — page 3291
Mateable Receptacles — pages 3294 & 3295
Accessories — page 3299
ACTION PIN Contacts — page 3300 & 3412
Application Tooling — page 3301





Recommended PC Board Hole Layout for Pin Headers with ACTION PIN Contacts

Number of Positions	Dimensions A	B	C
220	**122.25** 4.814	**115.00** 4.528	**108.00** 4.252
240	**132.25** 5.208	**125.00** 4.922	**118.00** 4.646
260	**142.25** 5.601	**135.00** 5.315	**128.00** 5.039
280	**152.25** 5.995	**145.00** 5.709	**138.00** 5.433
300	**162.25** 6.389	**155.00** 6.103	**148.00** 5.827
320	**172.25** 6.782	**165.00** 6.496	**158.00** 6.220
340	**182.25** 7.176	**175.00** 6.890	**168.00** 6.614
360	**192.25** 7.570	**185.00** 7.284	**178.00** 7.008
380	**202.25** 7.964	**195.00** 7.678	**188.00** 7.402
400	**212.25** 8.633	**205.00** 8.071	**198.00** 7.795

Number of Positions	Dimensions A	B	C
420	**222.25** 8.751	**215.00** 8.465	**208.00** 8.189
440	**232.25** 9.145	**225.00** 8.859	**218.00** 8.583
460	**242.25** 9.538	**235.00** 9.252	**228.00** 8.976
480	**252.25** 9.932	**245.00** 9.646	**238.00** 9.370
500	**262.25** 10.326	**255.00** 10.04	**248.00** 9.764
520	**272.25** 10.719	**265.00** 10.433	**258.00** 10.157
540	**282.25** 11.113	**275.00** 10.827	**268.00** 10.551
560	**292.25** 11.507	**285.00** 11.221	**278.00** 10.945
580	**302.25** 11.901	**295.00** 11.615	**288.00** 11.339
600	**312.25** 12.294	**305.00** 12.006	**298.00** 11.732

Note: ACTION PIN tails require a 1.5 [.060] board thickness.

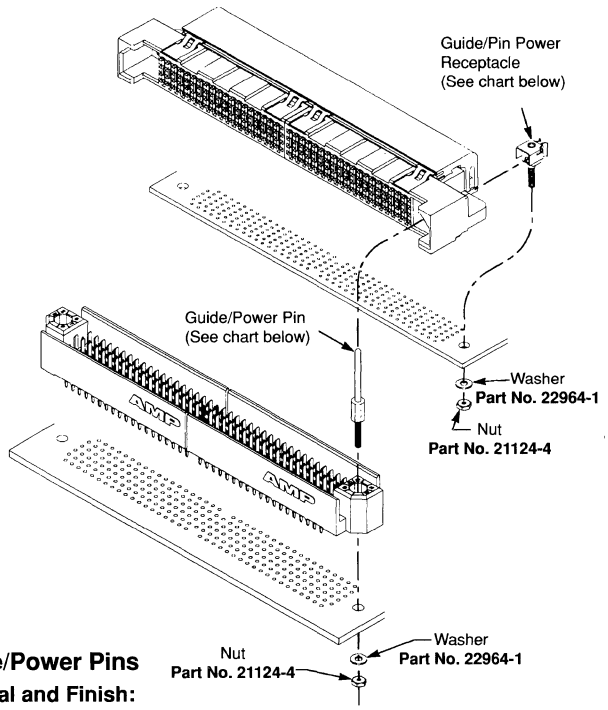
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.

Charts contain dimensions in millimeters and inches.

Dimensions are shown for reference purposes only.

Z-PACK Stripline 100 Connectors



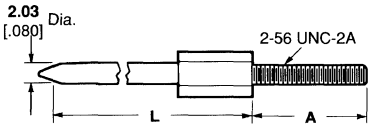
Guide/Power Pins

Material and Finish:

Brass, plated as follows:

A — 0.00076 [.000030] gold over 0.00127 [.000050] min. nickel

B — 0.00127 (.000050] gold over 0.00127 [.000050] min. nickel

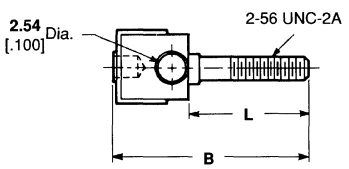


Dimensions				Finish	Part Numbers
A		L			
mm	Inch	mm	Inch		
9.52	.375	**26.04**	1.025	None	533082-1
		30.35	1.195	None	533082-2
		26.04	1.025	A	533082-3
		30.35	1.195	A	533082-4
		26.04	1.025	B	533082-5
12.06	.475	**30.35**	1.195	A	533082-6
				None	533082-7
12.06	.475	**26.04**	1.025	None	533082-8
				A	533082-9
14.22	.560	**26.04**	1.025	None	1-533082-0
				A	1-533082-1

Guide Pin/Power Receptacles

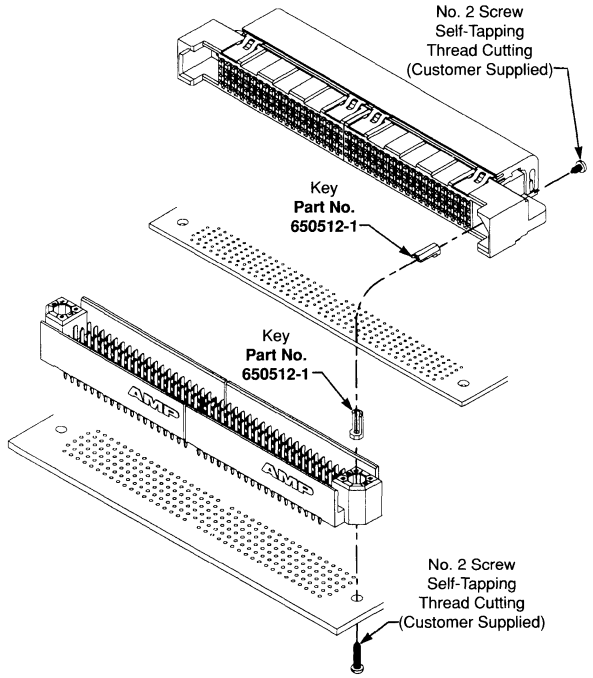
Material and Finish:

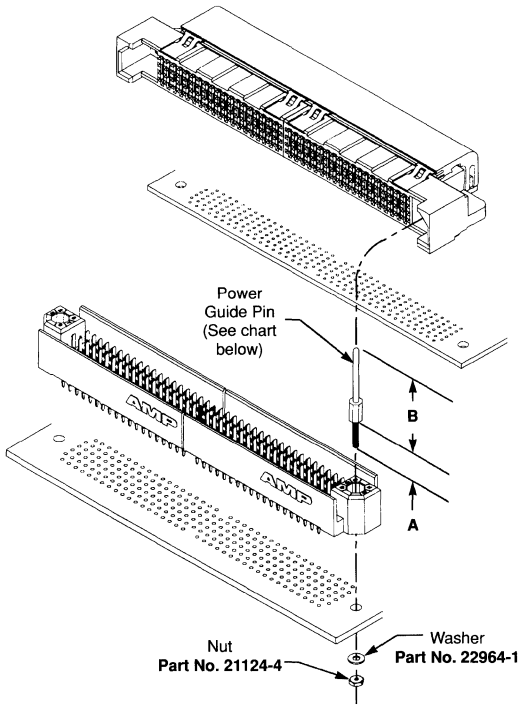
Brass, plated 0.00076 [.000030] gold in contact area and gold flash on remainder, with entire contact underplated 0.00127 [.000050] min. nickel



Dimensions				Part Numbers
B		L		
mm	Inch	mm	Inch	
17.22	.678	**10.80**	.425	532924-1
14.68	.578	**8.26**	.325	532924-3
13.67	.538	**7.25**	.285	532924-4

Z-PACK Stripline 100 and 2mm Connectors





Dimensions				Part Numbers
A		B		
mm	inch	mm	inch	
9.25	.375	**26.04**	1.025	533082-3
		30.35	1.195	533082-4
12.06	.475	**26.04**	1.025	533082-9
		30.35	1.195	533082-6
14.22	.560	**26.04**	1.025	1-533082-1

AMP ACTION PIN Press-Fit Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches. Values in brackets are inch equivalents.
Chart contains dimensions in millimeters over inches.

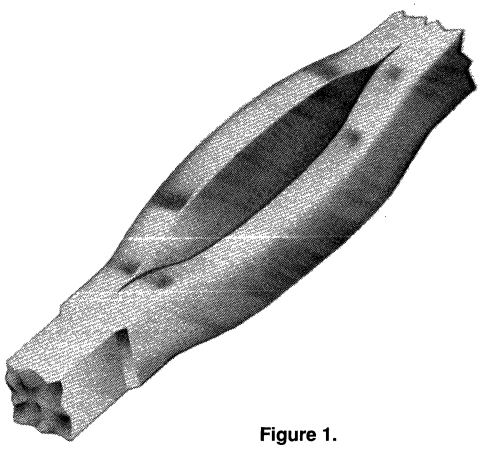


Figure 1.

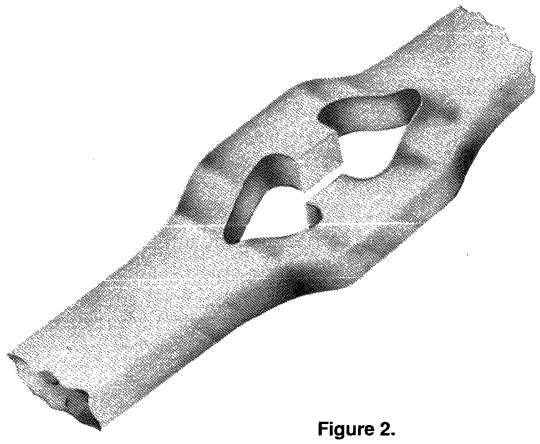


Figure 2.

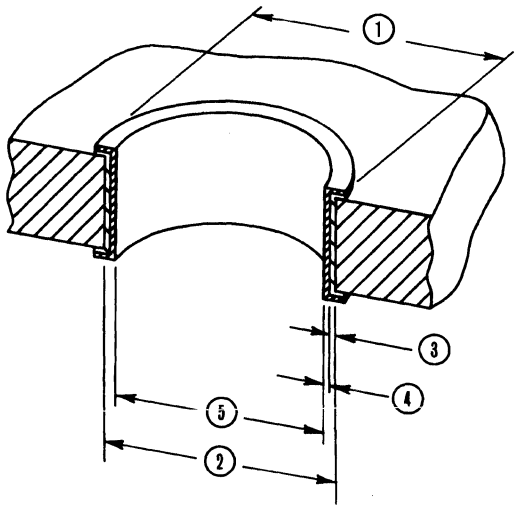
ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area ensures oxide breakthrough and prevents corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

ACTION PIN Thin Stock contacts extend the press-fit technology into thinner contact materials. The lower insertion force provided by this pin is ideal for applications requiring thinner contacts and/or toolless connector applications where wrap-type retention requirements are not needed.

ACTION PIN Thin Stock contacts maintain all of the interconnection properties of the ACTION PIN contact shown at the left.

PC Board Thickness

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To ensure optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



① Annular Ring (See Note)
② Drilled Hole
③ Copper Thickness
④ Tin-Lead Thickness
⑤ Plated-Through Hole

For more information on ACTION PIN Press-Fit Contacts
See page 3412

ACTION PIN Contact/PC Board Applications

Connector (Contact) Type	ACTION PIN Contact		Drilled Hole Diameter ②	Plating Thicknesses		Plated-Through Hole Diameter ⑤	Distortion Specification**	
	Configuration	Material Thickness		Copper ③*	Tin-Lead ④		Average	Maximum
Stripline 100 (Signal Pin)	Figure 2	**0.38** .015	**1.151±0.03** .0453±.001	**0.03 - 0.08** .001 - .003	**0.008** .0003 Min.	**0.94 - 1.09** .037 - .043	**0.038** .0015	**0.05** .002
Stripline 100 (Power/Ground Pin)	Figure 2	**0.30** .012	**1.151±0.03** .0453±.001	**0.03 - 0.08** .001 - .003	**0.008** .0003 Min.	**0.94 - 1.09** .037 - .043	**0.038** .0015	**0.05** .002
2mm (Signal Pin)	Figure 1	**0.38** .015	**0.701±0.013** .0276±.0005	**0.03 - 0.038** .001 - .0015	**0.008 - 0.03** .0003 - .001	**0.56 - 0.66** .022 - .026	**0.038** .0015	**0.05** .002

* Maximum hardness of copper layer is 150 Knoop
** Radial hole distortion
Note: Recommended annular ring diameter is hole diameter plus **0.51** [.020]

Application Tooling for Z-PACK Pin Headers with ACTION PIN Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimeters and inches unless specified otherwise.
Values in brackets are equivalent U.S. customary units.

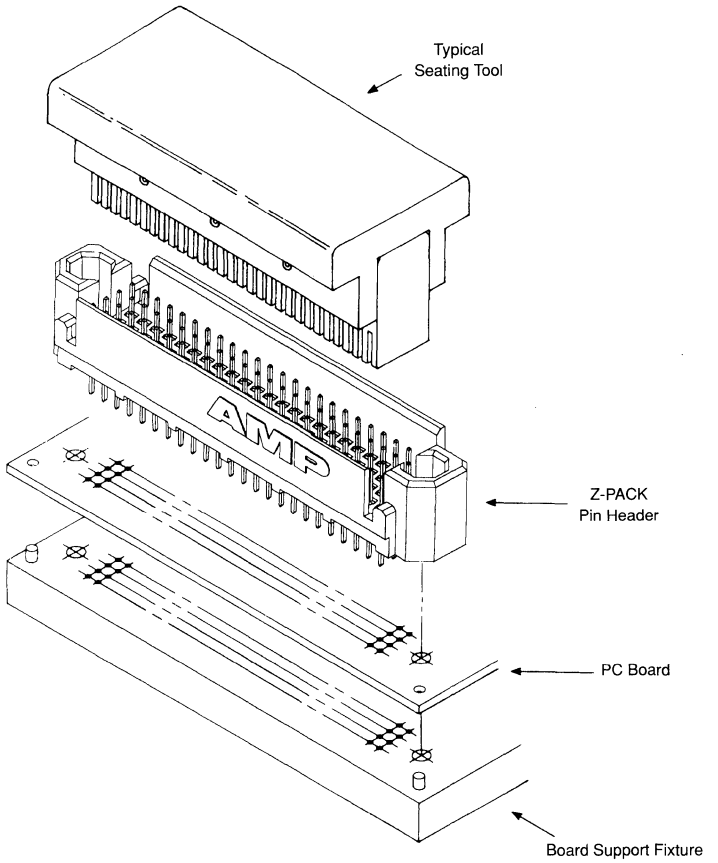
Z-PACK pin headers use ACTION PIN contacts to allow fast, solderless backplane construction through reliable press-fit application. Press-fitting connectors to PC boards requires special seating tools that transfer application force directly to the contacts.

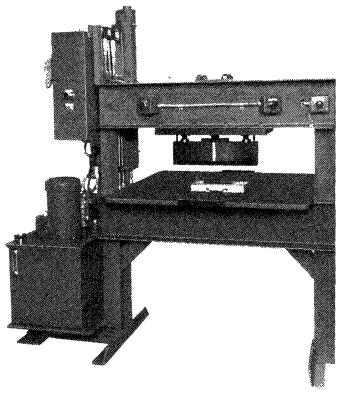
Force applied to the tool to seat the connectors can be provided in several ways, although the high pin counts of Z-PACK connectors typically require power applicators such as the AMP seating machines shown below.

There are also commercially available arbor presses such as Greenerd 3A or 3B with a seating pressure capacity of 40 lbs. [178 N] per contact.

Board support fixtures are used to support PC boards or backplanes while connectors are being assembled to the boards or backplanes. AMP Instruction Sheet No. IS 6927 provides AMP recommendations for manufacturing board support fixtures.

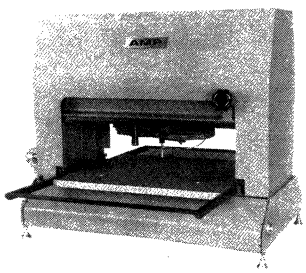
For more tooling information, see AMP Application Specification No. 114-1065.





M-10/20 Machine No. 803880-6

This machine is hydraulically operated with a capacity of 40,000 lbs. [178 000 N]. Each contact requires 40 lbs. [178 N] for insertion. Cycling time of 2 to 2-1/2 seconds is adequate for seating large connectors or multiple smaller connectors.

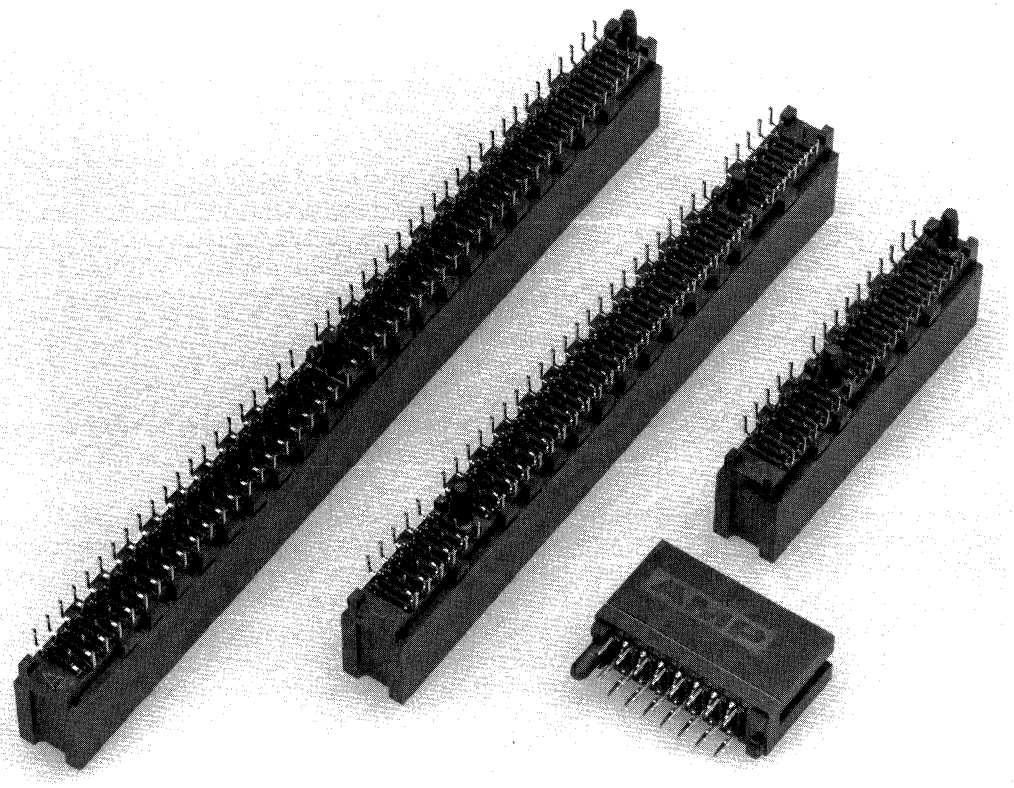


SM-3 Machine No. 814700-2

This air-powered machine has a capacity of 6000 lbs. [26 700 N], which is adequate for individual Z-PACK modules. This unit has a pressure response mode and a board sensor mode which compensate for variations in board thicknesses. Cycle time is 4 seconds.

Standard Edge .050 Series Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



The need to conserve space and pack more function into a given area has demanded that .050 [1.27] centerline spacing become a reality. AMP Standard Edge .050 Series connectors are the perfect vehicle for mother/daughter board applications requiring this real estate.

These rugged connectors have two rows of contacts on .050 [1.27] centerlines. Polarizing webs provide positive board-to-connector registration, while low insertion force allows even high circuit-count daughterboards to mate easily. The connectors accept .054 to .070 [1.37 to 1.78] thick daughterboards and feature an overstress protected contact design.

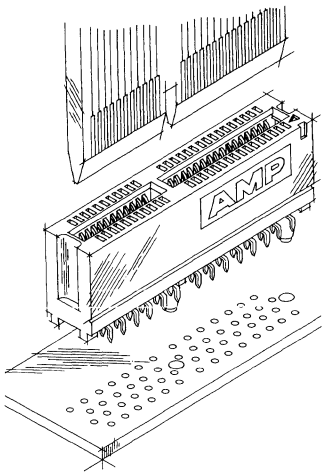
AMP Standard Edge .050 Series connectors are ideal for fast automated robotic assembly with registration features and dimensional tolerancing for accurate pickup and placement, and are packaged in robotics-compatible trays.

Guide posts align the connector with the motherboard and retain it for soldering. To make circuit routing easy, connector solder posts are arranged in a four-row .100 [2.54] staggered grid. High-temperature tolerant materials ensure that these connectors withstand vapor phase reflow soldering, while standoffs ease flux cleaning.

Technical Documents

Product Specification:
108-14034

Application Specification:
114-26012



High Density for Data Bus Applications

Dimensioning:
Dimensions are inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)
N (newton)

Product Facts

- High density .050 [1.27] centerline spacing of contacts
- Easy mating of high-circuit count daughterboards
- Compatible with vapor phase soldering techniques
- Polarizing web for positive board-to-connector registration
- Available sizes; 10 thru 120 dual positions
- Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189A-196

Performance Specifications

Contact Current Rating:
1 ampere

Termination Resistance:
30 milliohms max.

Dielectric Withstanding Voltage:
500 VAC min.

Insulation Resistance:
1000 megohms min.

Mating Force:
8 oz. [2.2 N] per contact pair

Unmating Force:
1 oz. [0.3 N] per contact pair

Application Temperature:
+215°C for 120 seconds max.

Temperature Range:
−55°C to +85°C

Standard Edge .050 Series Connectors Configuration; 1 Key—2 Pylons

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

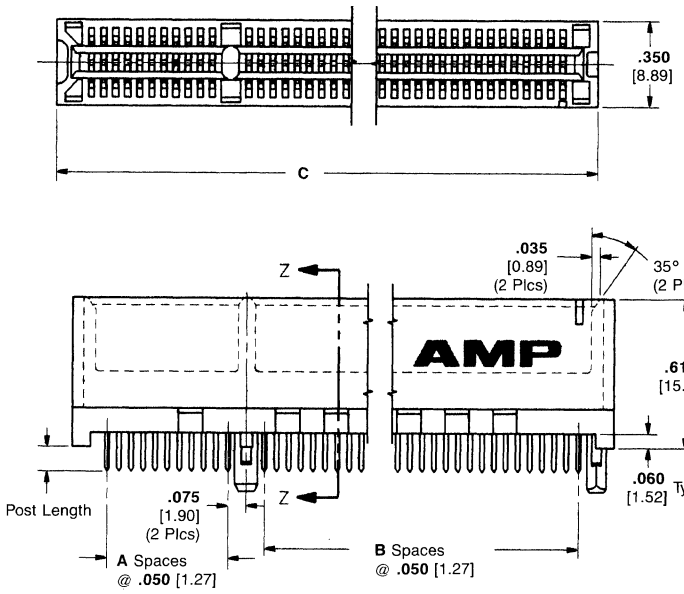
Material and Finish:

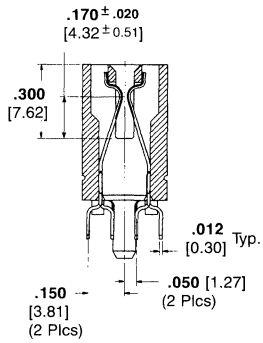
Housing—Polyphenylene sulfide

Contacts—Phosphor bronze, plated .000030 [0.00076] min. gold in mating area, .000100 [0.00254] min. tin-lead on solder posts, with entire contact underplated .000050 [0.00127] min. nickel

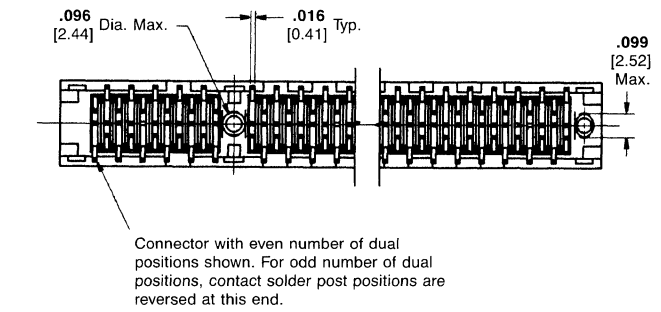
Related Product Data:

Performance Specifications—Page 3302
Technical Documents—Page 3302
PC Board Pattern and Layouts—Page 3304





Section Z-Z



Connector with even number of dual positions shown. For odd number of dual positions, contact solder post positions are reversed at this end.

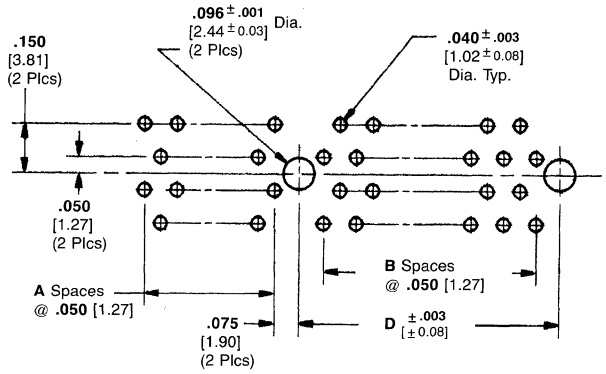
No. of Dual Positions	Dimensions						Post Length	Connector Part No.
	A	B	C	D	E	F		
23	10	11	**1.490** 37.85	**.700** 17.78	**.610** 15.49	**.660** 16.76	**.100** 2.54	650090-7
							.140 3.56	650181-3
30	10	18	**1.840** 46.74	**1.050** 26.67	**.610** 15.49	**1.010** 25.65	**.100** 2.54	650090-6
40	10	28	**2.340** 59.44	**1.550** 39.37	**.610** 15.49	**1.510** 38.35	**.100** 2.54	650090-3
							.140 3.56	650181-2
45	10	33	**2.590** 65.79	**1.800** 45.72	**.610** 15.49	**1.760** 44.70	**.100** 2.54	650090-2
56	10	44	**3.140** 79.76	**2.350** 59.69	**.610** 15.49	**2.310** 58.67	**.100** 2.54	650090-1
							.140 3.56	650181-1
91	41	48	**4.890** 124.21	**2.550** 64.77	**2.160** 54.86	**2.510** 63.75	**.100** 2.54	650092-1
							.140 3.56	650092-2

Standard Edge .050 Series Connectors, Configuration; 1 Key—2 Pylons
(Continued)

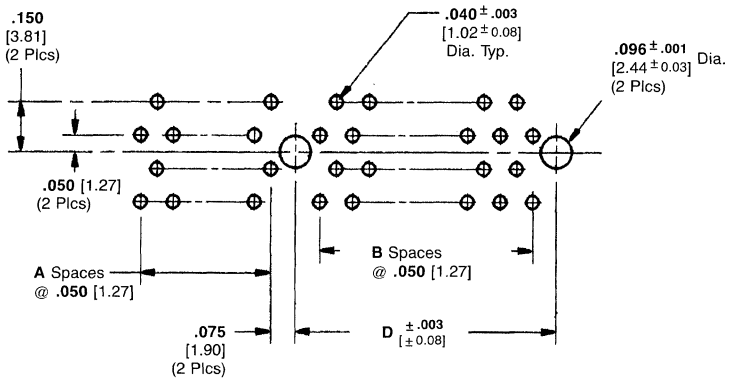
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Recommended PC Board Hole Layouts

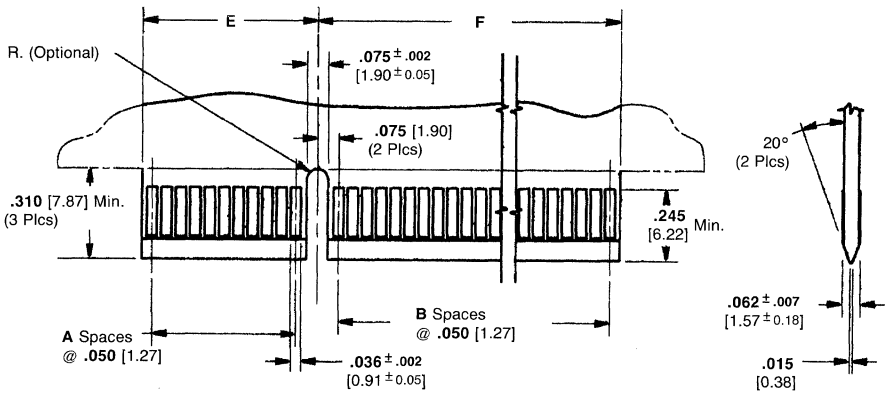


Even Number of Dual Positions (Connector Side Shown)



Odd Number of Dual Positions (Connector Side Shown)

Recommended Mating PC Board Edge Pattern



Specifications subject to change.
For latest design specifications...
1-800-522-6752

Standard Edge .050 Series Connectors, Configuration; 1 Key/1 Web—2 Pylons

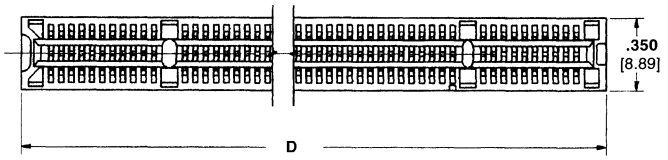
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

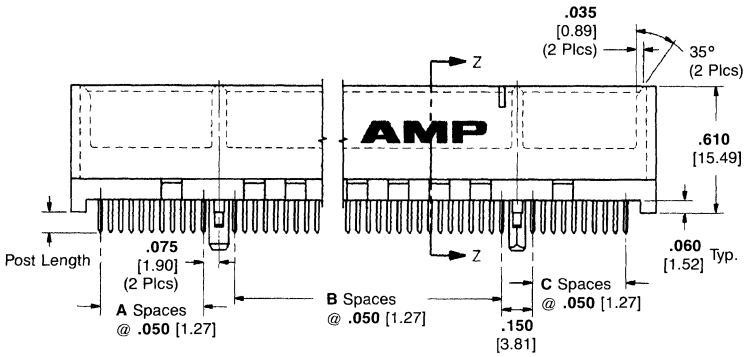
Material and Finish:

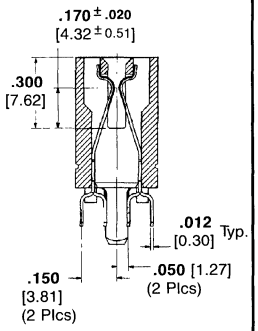
Housing—Polyphenylene sulfide
Contacts—Phosphor bronze, plated .000030 [0.00076] min. gold in mating area, .000100 [0.00254] min. tin-lead on solder posts, with entire contact underplated .000050 [0.00127] min. nickel

Related Product Data:

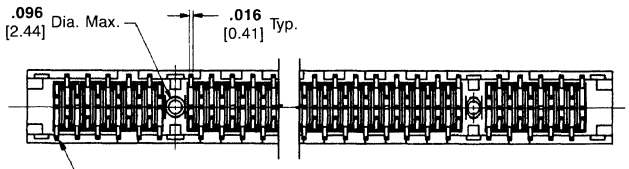
Performance Specifications—Page 3302
Technical Documents—Page 3302
PC Board Pattern and Layouts—Page 3306







Section Z-Z



Connector with even number of dual positions shown. For odd number of dual positions, contact solder post positions are reversed at this end.

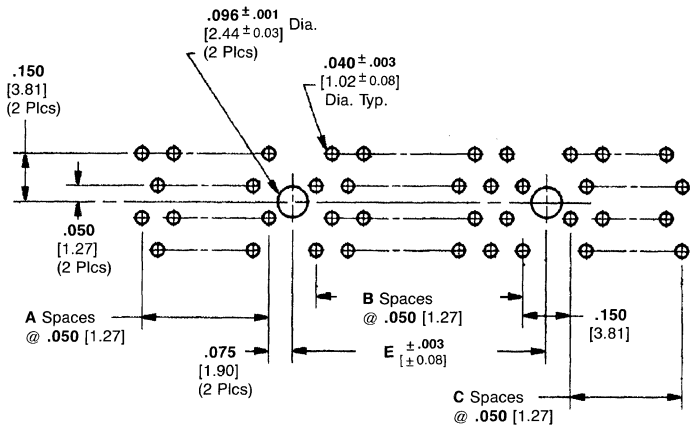
No. of Dual Positions	Dimensions							Post Length	Connector Part No.
	A	B	C	D	E	F	G		
66	10	44	9	**3.740** 95.00	**2.350** 59.69	**.610** 15.49	**2.910** 73.91	**.100** 2.54	650091-1
								.140 3.56	650091-2
97	41	44	9	**5.290** 134.37	**2.350** 59.69	**2.160** 54.86	**2.910** 73.91	**.100** 2.54	650706-1
								.140 3.56	650706-2
101	41	48	9	**5.490** 139.45	**2.550** 64.77	**2.160** 54.86	**3.110** 78.99	**.100** 2.54	650707-1
								.140 3.56	650707-2
120	10	44	63	**6.440** 163.58	**2.350** 59.69	**.610** 15.49	**5.610** 142.49	**.100** 2.54	650231-2
								.140 3.56	650231-1

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

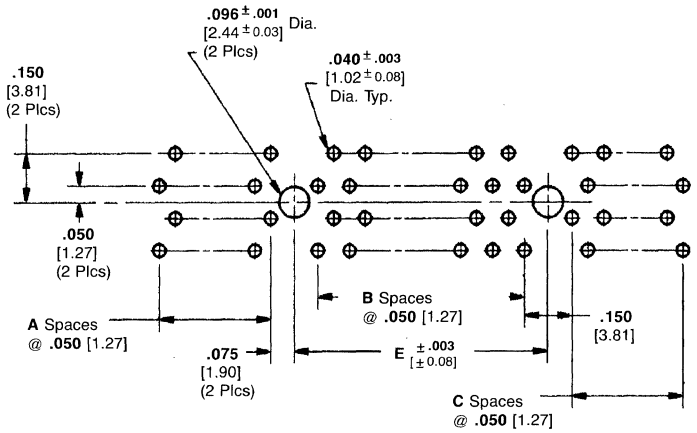
Standard Edge .050 Series Connectors, Configuration; 1 Key/1 Web—2 Pylons

(Continued)

Recommended PC Board Hole Layouts

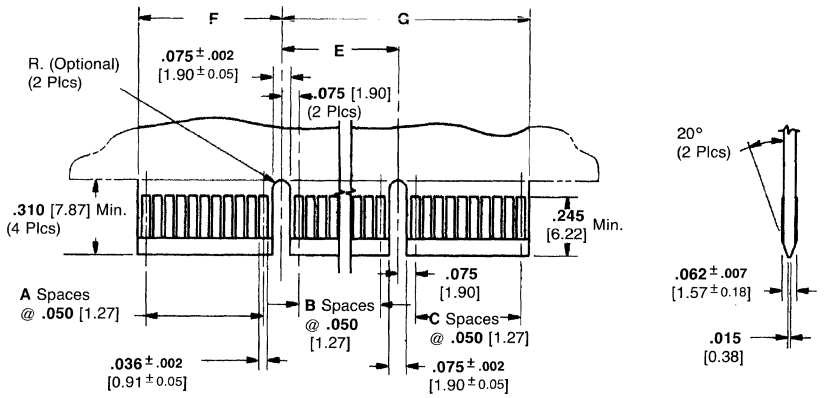


Even Number of Dual Positions (Connector Side Shown)



Odd Number of Dual Positions (Connector Side Shown)

Recommended Mating PC Board Edge Pattern



Standard Edge .050 Series Connectors Configuration; End Key

Specifications subject to change.
For latest design specifications...
1-800-522-6752

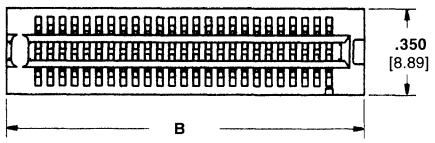
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

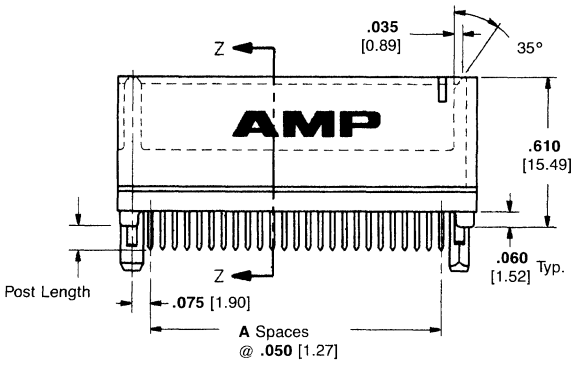
Material and Finish:

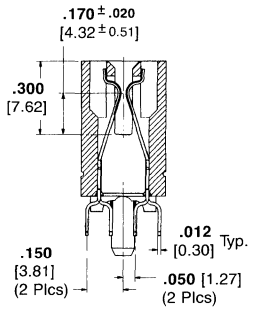
Housing—Polyphenylene sulfide
Contacts—Phosphor bronze, plated .000030 [0.00076] min. gold in mating area, .000100 [0.00254] min. tin-lead on solder posts, with entire contact underplated .000050 [0.00127] min. nickel

Related Product Data:

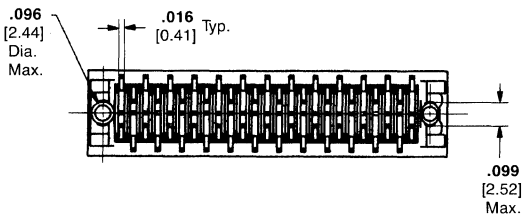
Performance Specifications—Page 3302
Technical Documents—Page 3302
PC Board Pattern and Layouts—Page 3308







Section Z-Z



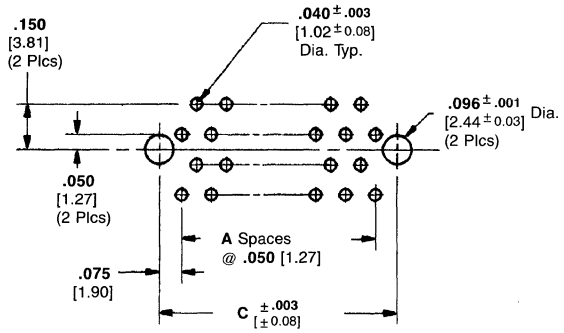
No. of Dual Positions	Dimensions				Post Length	Connector Part No.
	A	B	C	D		
15	14	**.980** 24.89	—	**.610** 15.49	**.100** 2.54	650712-1
25	24	**1.480** 37.59	**1.350** 34.29	**1.310** 33.27	**.100** 2.54	650719-1

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Standard Edge .050 Series Connectors, Configuration; End Key

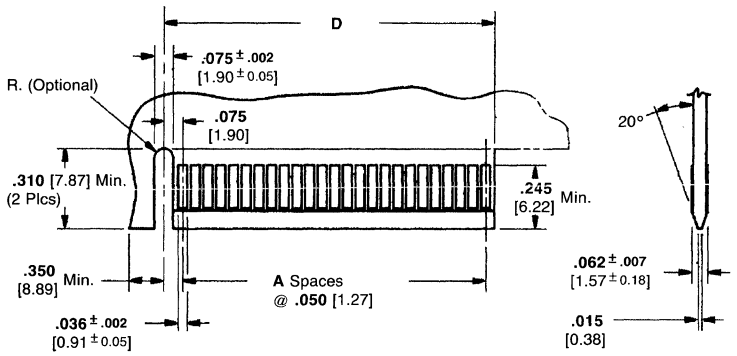
(Continued)

Recommended PC Board Hole Layouts



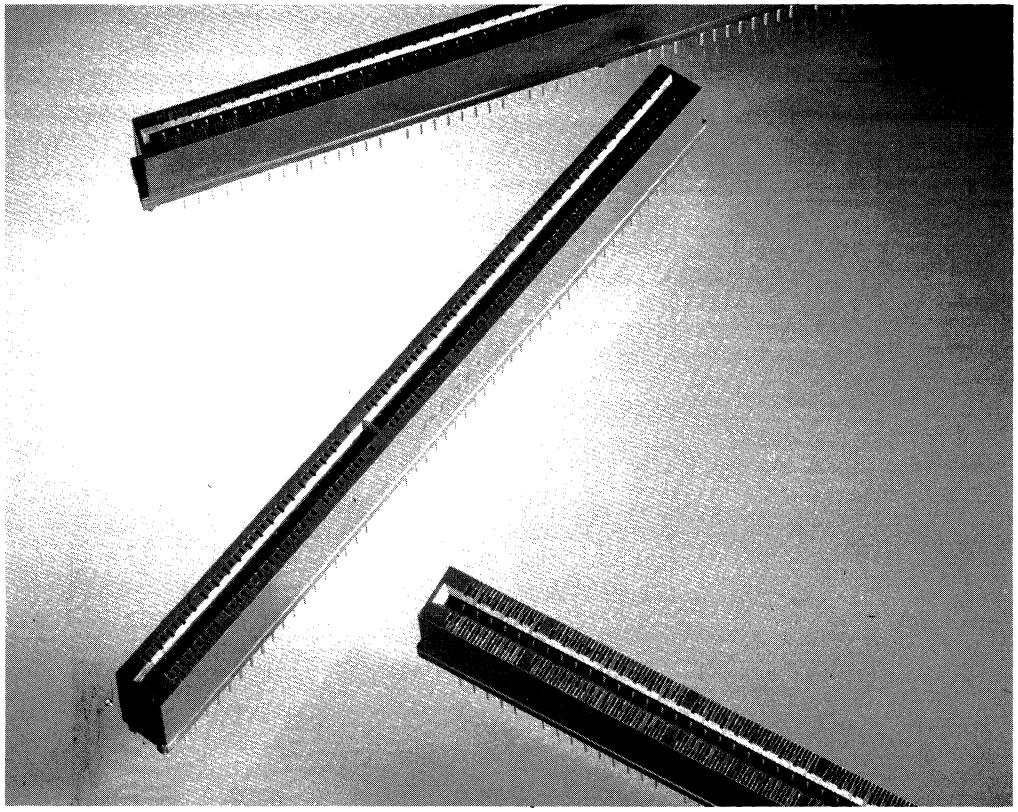
Odd Number of Dual Positions
(Connector Side Shown)

Recommended Mating PC Board Edge Pattern



Specifications subject to change.
For latest design specifications...
1-800-522-6752

Standard Edge EISA Connectors

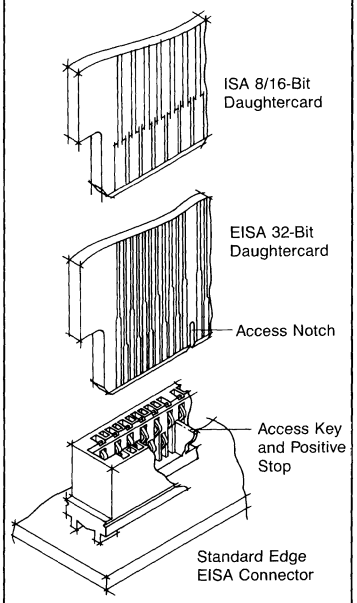


By meeting EISA and ISA requirements for two-sided printed circuit board connectors, the Standard Edge EISA connector offers the best of both worlds.

This versatile connector features a contact configuration that satisfies both industry standards without adjustments of any kind. To accommodate the EISA 32-bit bus, upper and lower rows of contacts are evenly staggered on .100 [2.54] centers to create an effective .050 [1.27] contact centerline spacing. The ISA 8/16-bit bus is handled by .100 [2.54] centerline spacing on the upper row of contacts and a positive stop that prevents interface with the lower contact row.

Copper alloy contacts with selective plating provide the required normal force for a reliable electrical interface with the daughter-card. A polarizing web provides positive EISA card-to-connector registration, while low insertion force allows daughtercards to mate easily. Access keys complement EISA card access notches and act as stops for proper positioning of ISA cards. The connector accepts .054 to .070 [1.37 to 1.78] thick daughtercards and features an overstress-protected contact design.

The Standard Edge EISA connector is dimensioned, toleranced and packaged to be compatible with robotic assembly. Guide posts align the connector with the motherboard and retain it for soldering. To make circuit routing easy, connector solder tails are arranged in four rows in a .100 [2.54] staggered grid. High-temperature tolerant materials ensure that these connectors withstand vapor phase reflow soldering, while standoffs ease flux removal.



Compatible with EISA and ISA Data-Bus Applications

Product Facts

- Meets EISA (Extended Industry Standard Architecture) and ISA (Industry Standard Architecture) requirements
- Accommodates .050 [1.27] and .100 [2.54] contact centerline daughtercards
- Contact design and plating ensure positive interface
- Withstands vapor phase reflow soldering techniques
- Polarizing web and EISA access keys also serve as positive stop for ISA cards

Performance Specifications

Contact Current Rating:
3 amperes (power and ground)
1 ampere (all others)

Termination Resistance:
30 milliohms max.

Dielectric Withstanding Voltage:
500 VAC min.

Insulation Resistance:
1000 megohms min.

Mating Force:
6 oz. [1.7 N] max. per contact pair

Application Temperature:
+215°C for 120 seconds max.

Operating Temperature Range:
−55°C to +85°C

Dimensioning:
Dimensions are inches and millimeters.
Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)
N (newton)

Standard Edge EISA Connector

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part No. 650226-1

Material and Finish:

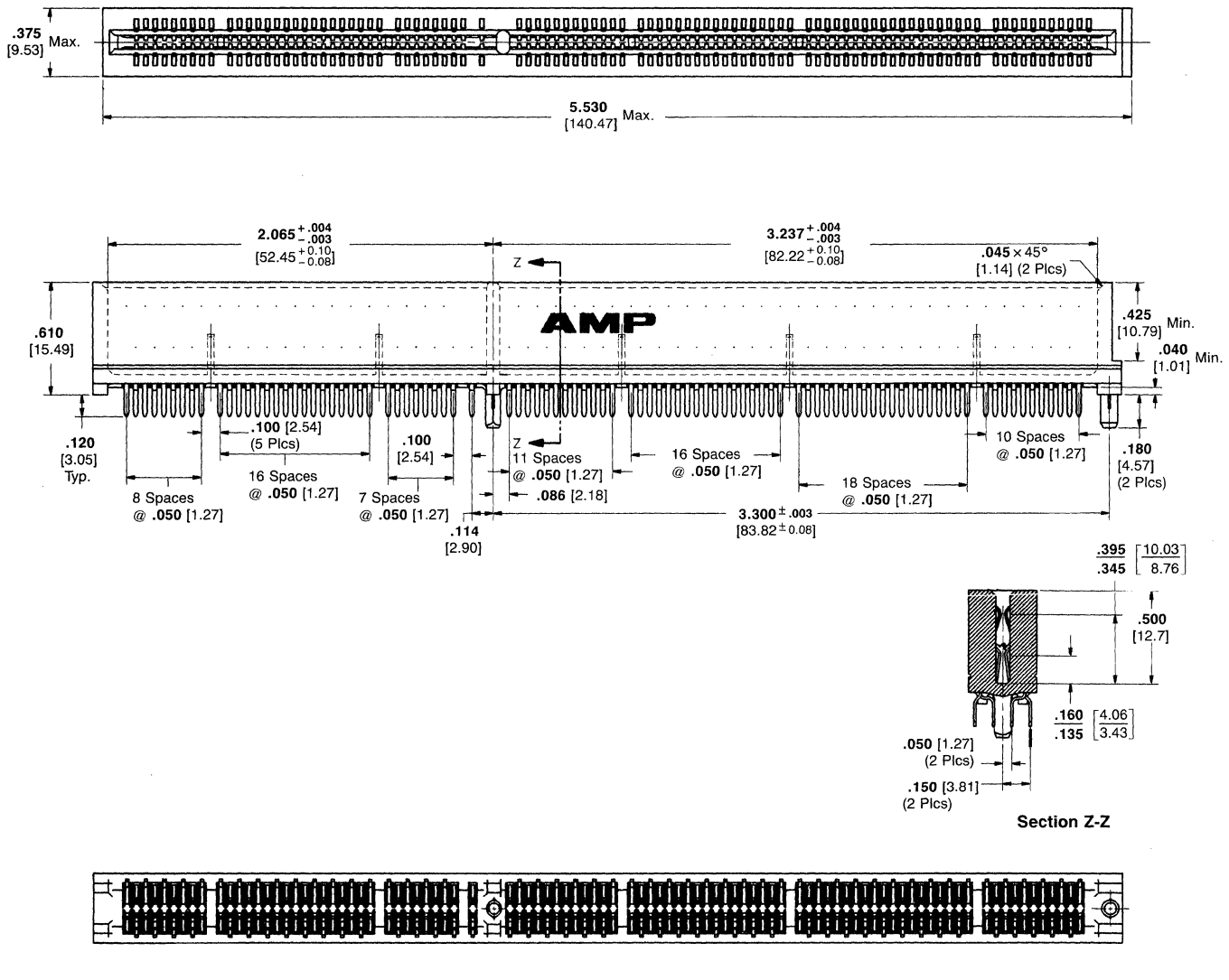
Housing—Polyphenylene sulfide

Contacts—Copper alloy, plated .000043 [0.00109] min. gold (AMP-DURAGOLD finish) or .000040 [0.00102] gold in mating area, .000100 [0.00254] min. tin-lead on solder posts, with entire contact underplated .000050 [0.00127] min. nickel

Related Product Data:

Performance Specifications - Page 3309

PC Board Pattern and Layout - Page 3311



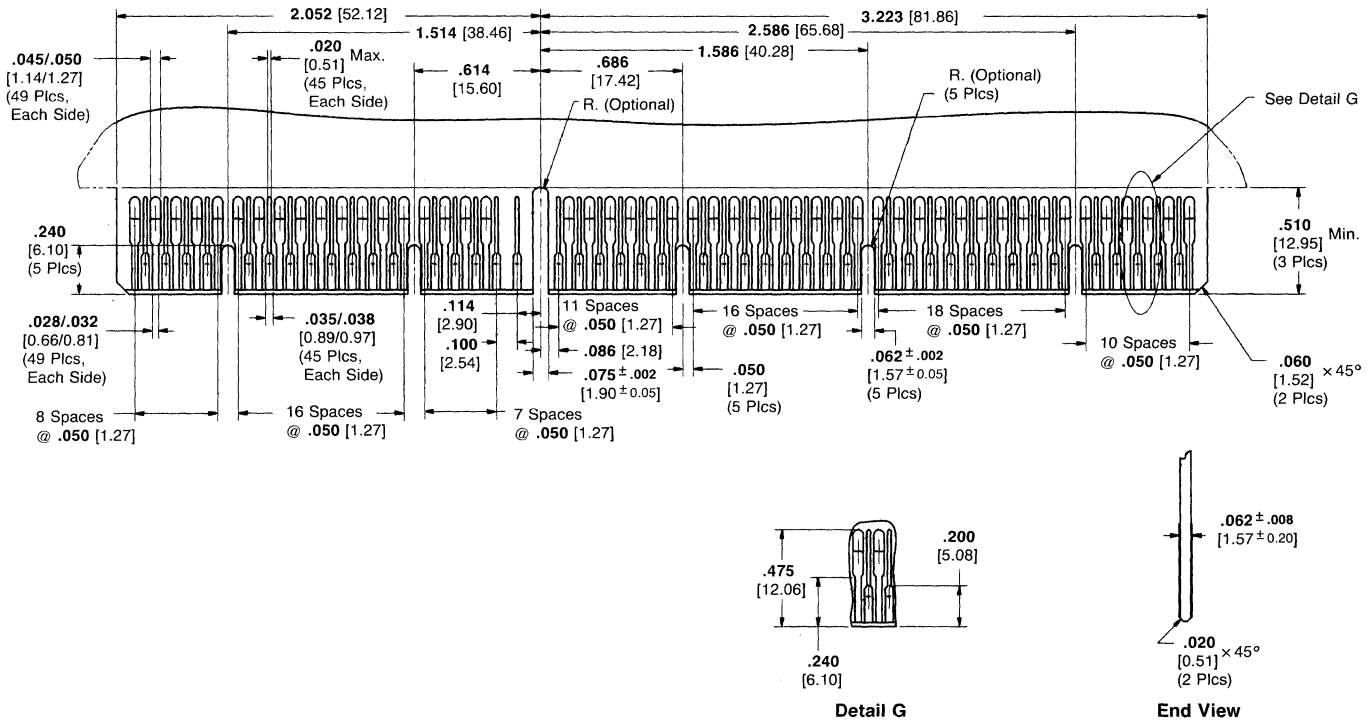
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Standard Edge EISA Connector

(Continued)

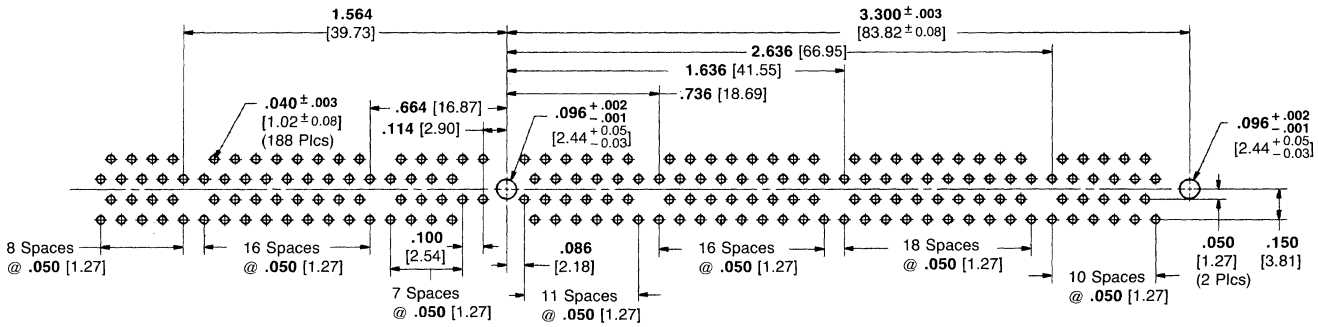
Recommended Mating PC Board Edge Pattern



Detail G

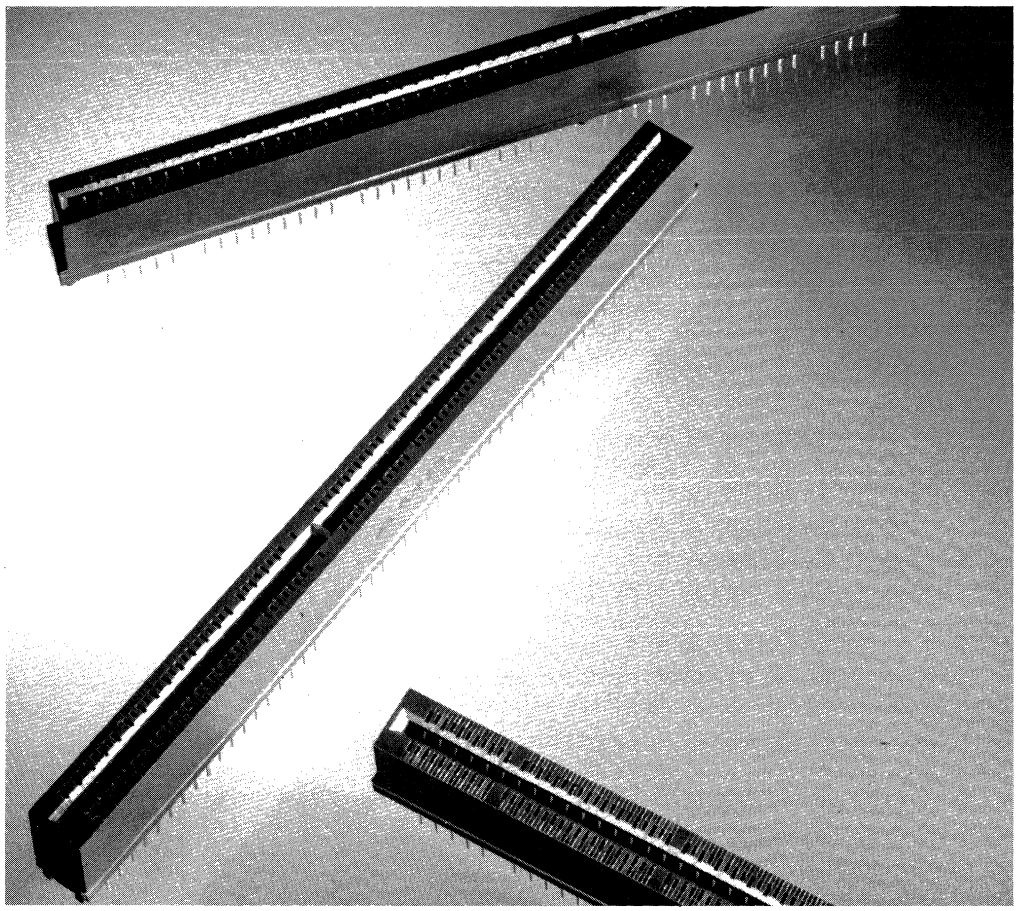
End View

Recommended PC Board Hole Layout



Specifications subject to change.
For latest design specifications...
1-800-522-6752

Standard Edge II Connectors



AMP Standard Edge II Connectors provide reliability and economy in packages compatible with industry standards for double sided printed circuit boards.

AMP offers Standard Edge II Connectors with or without mounting ears, for rack mounting and soldering. Contacts are arranged on .100 [2.54] centers, .200 [5.08] row-to-row; .125 [3.18] and .250 [6.35] row-to-row.

Card extenders with contacts on .100 [2.54] and .125 [3.18] centers also are available.

Precision formed phosphor bronze contacts are selectively gold plated. Phosphor bronze has excellent strength characteristics which help the connector absorb load deflection movement of a pc board while maintaining sufficient contact force for good electrical connection. Bifurcated cantilever beam contacts provide redundant contact.

Performance Specifications

Contact Rating: 3 amperes continuous

Contact Resistance: 10 milliohms max.

Operating Temperature: -55°C to +85°C

Voltage Rating (Sea Level):
.100 [2.54] centerline - 1000 VAC (test)
.125 [3.18] centerline - 1500 VAC (test)

Insulation Resistance: 5000 megohms min., after exposure to humidity

Vibration Tolerance: 10 to 500 hertz

Contact Engagement Force: 12.0 ounces [3.3N] average per pair with .062 [1.57] pc board

Contact Separation Force: 2 ounce [0.6 N] average per pair with .062 [1.57] pc board

Humidity Tolerance: 90% - 95% for 96 hours

Product Facts

- Maximum number of dual positions:
  .100 [2.54] Centerlines-70
  .125 [3.18] Centerlines-50
- Selective gold plating of contacts for high performance at low cost
- .025 [0.64] square solid posts meet standard wrap-type specifications
- .028 [0.71] diameter solid posts for flow solder applications
- Recognized under the Component Program of Underwriters Laboratories Inc.*, ® File No. E28476
- Certified by Canadian Standards Association**, File No. LR 16455
- Glass-filled polyester housing is 94V-0 rated
- Accepts double sided pc boards, .054-.070 [1.27-1.78] thick

* UL recognition pending on certain products, as noted.

** CSA certification pending on certain products, as noted.

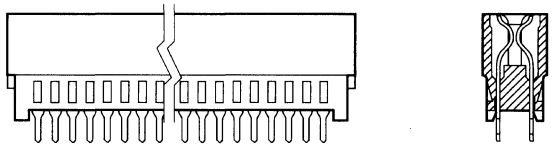
Technical Documents

Product Specifications:
108-9039 Solder Post and Wrap-Type Post Connectors

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Metric symbols used:
C (Celsius)
N (newton)

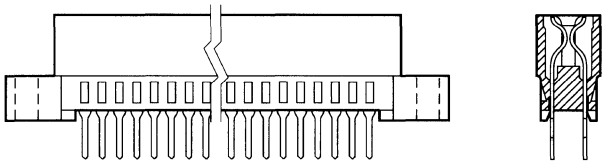
.100 [2.54] and .125 [3.18] Centerline Solder Posts without Mounting Ears

Pages 3314 and 3315



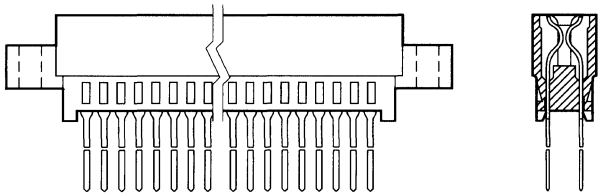
.100 [2.54] and .125 [3.18] Centerline Solder Post with Low Mounting Ears

Page 3316



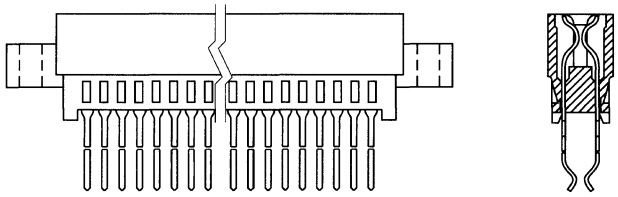
.100 [2.54] and .125 [3.18] Centerline Wrap-Type Posts with Mid-High Mounting Ears

Page 3317



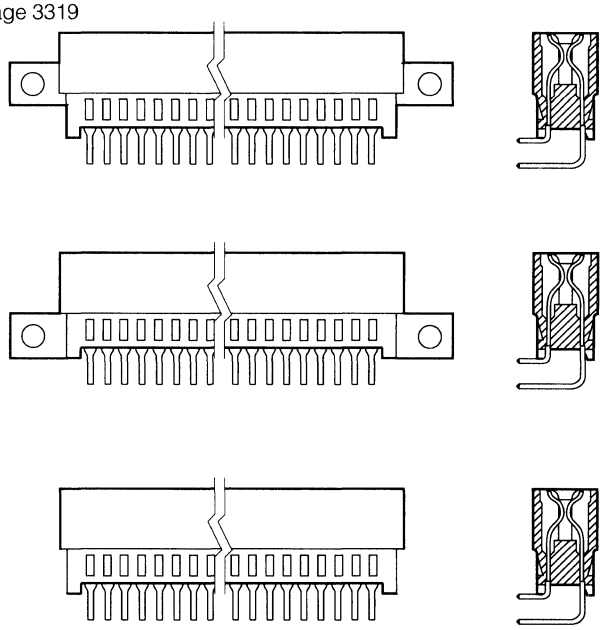
.100 [2.54] and .125 [3.18] Centerline Card Extenders

Page 3318



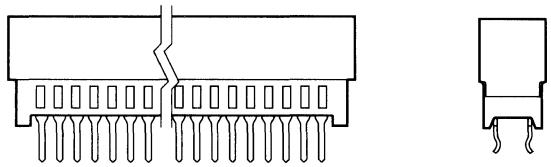
.100 [2.54] Centerline Right-Angle Posts with Mid-High, Low and No Mounting Ears

Page 3319



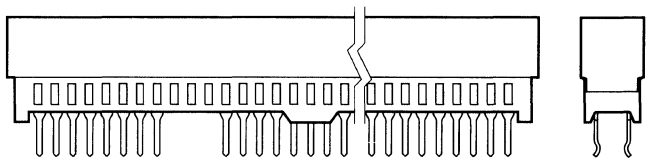
.100 [2.54] Centerline Solder Posts with Board Retention Feature, without Mounting Ears

Page 3320



.100 [2.54] Centerline Solder Posts (with Board Retention Feature), Wrap-Type Posts or Card Extender Contacts; Special 18/31 Dual Combination without Mounting Ears

Page 3321



Vertical Connectors with Solder Posts .100 [2.54] Centerline

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Without Mounting Ears

Materials:

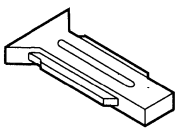
Housings: Black Glass-filled Polyester, 94V-0 rated
Contacts: Phosphor Bronze

Finish:

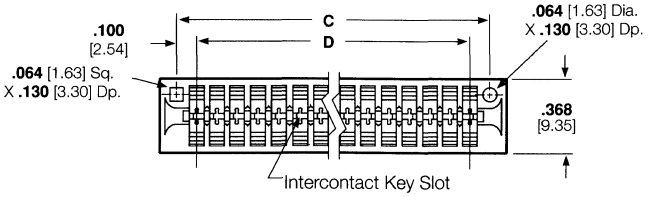
Contacts - Accu-Plate, Gold over Nickel Plating in Contact Area (See chart for thickness)
Posts: Tin Plate

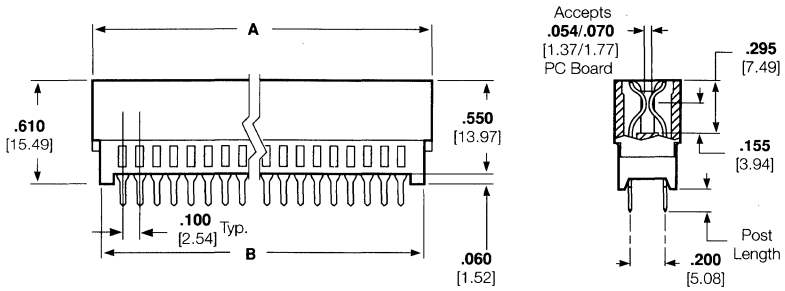
Related Product Data:

Recommended PC Board Layout Pg. 3322 & 3323
Recommended PC Mounting Hole Pattern - Pg. 3324



Intercontact Keying Plug
Part No. 650025-2
Material:
Natural Color Polyester





No. of Dual Positions	Dimensions				Post Length[1]	Part Numbers	
	A	B	C	D		.000030 [0.00076] Gold Plate	.000015 [0.00038] Gold Plate
3	.560 14.22	.450 11.43	.400 10.16	.200 5.08	.125	7-530843-7	–
6	.860 21.84	.750 19.05	.700 17.78	.500 12.70	.125 .187	7-530843-5 7-530843-6	–
10	1.260 32.00	1.150 29.21	1.100 27.94	.900 22.86	.125 .187	5-530843-0 4-530843-9	– 5-530843-2
12	1.460 37.08	1.350 34.29	1.300 33.02	1.100 27.94	.125 .187	530843-1 1-530843-2	2-530843-5 –
15	1.760 44.70	1.650 41.91	1.600 40.64	1.400 35.56	.125 .187	530843-2 1-530843-3	2-530843-6 –
17	1.960 49.78	1.850 46.99	1.800 45.72	1.600 40.64	.125	5-530843-3	–
18	2.060 52.32	1.950 49.53	1.900 48.26	1.700 43.18	.125 .187	530843-3 1-530843-4	2-530843-7 –
20	2.260 57.40	2.150 54.61	2.100 53.34	1.900 48.26	.125	5-530843-4	–
22	2.460 62.48	2.350 59.69	2.300 58.42	2.100 53.34	.125 .187	530843-4 1-530843-5	2-530843-8 –
25	2.760 70.10	2.650 67.31	2.600 66.04	2.400 60.96	.125 .187	530843-5 1-530843-6	2-530843-9 –
28	3.060 77.72	2.950 74.93	2.900 73.66	2.700 68.58	.125 .187	530843-6 1-530843-7	–
30	3.260 82.80	3.150 80.01	3.100 78.74	2.900 73.66	.125 .187	530843-7 1-530843-8	– 4-530843-2
31	3.360 85.34	3.250 82.55	3.200 81.28	3.000 76.20	.125 .187	6-530843-5 6-530843-3	7-530843-0 –
35	3.760 95.50	3.650 92.71	3.600 91.44	3.400 86.36	.125 .187	2-530843-3 2-530843-4	–
36	3.860 98.04	3.750 95.25	3.700 93.98	3.500 88.90	.125 .187	530843-8 1-530843-9	–
40	4.260 108.20	4.150 105.41	4.100 104.14	3.900 99.06	.125 .187	530843-9 2-530843-0	–
43	4.560 115.82	4.450 113.03	4.400 111.76	4.200 106.68	.125 .187	1-530843-0 2-530843-1	–
50	5.260 133.60	5.150 130.81	5.100 129.54	4.900 124.46	.125 .187	1-530843-1 2-530843-2	–
60	6.260 159.00	6.150 156.21	6.100 154.94	5.900 149.86	.125 .187	5-530843-5 5-530843-6	5-530843-7 5-530843-8
70	7.260 184.40	7.150 181.61	7.100 180.34	6.900 175.26	.125	5-530843-9	6-530843-1

[1] Metric equivalent for post lengths are **.125** = [3.18]; **.187** = [4.75].
Note: Hole size **.040** $^{\pm.003}$ [1.02 $^{\pm0.08}$].

Vertical Connectors with Solder Posts .125 [3.18] Centerline

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Without Mounting Ears

Materials:

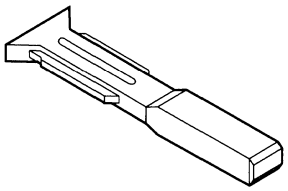
Housings - Black Glass-filled Polyester, 94V-0 rated
Contacts - Phosphor Bronze

Finish:

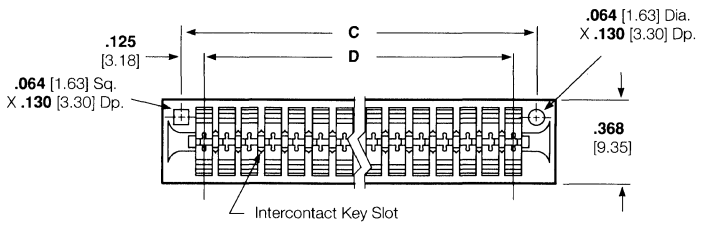
Contacts - Accu-Plate, .000030 [0.00076] Gold over Nickel Plating in Contact Area.
Posts - Tin Plated

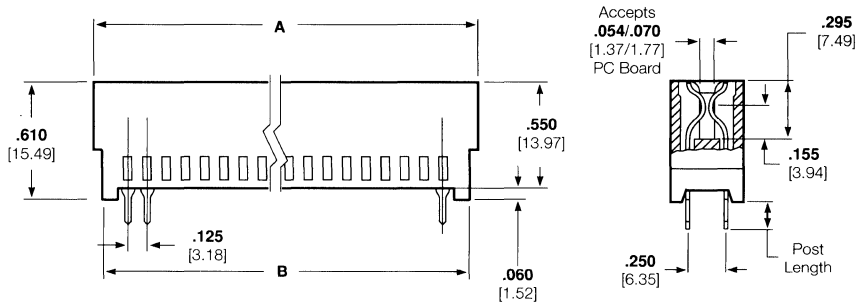
Related Product Data:

Recommended PC Board Layout - Pg. 3322 & 3323
Recommended PC Mounting Hole Pattern - Pg. 3324



Interconnect Keying Plug
Part No. 650025-1
Material:
Natural Color Polyester





Number of Dual Positions	Dimensions				Post Length[1]	Part Numbers**
	A	B	C	D		
6	**1.035** 26.29	**.875** 22.22	**.875** 22.22	**.625** 15.88	**.125** **.187**	**530844-1** **1-530844-2**
10	**1.535** 38.99	**1.375** 34.92	**1.375** 34.92	**1.125** 28.58	**.125** **.187**	**530844-2** **1-530844-3**
18	**2.535** 64.39	**2.375** 60.33	**2.375** 60.33	**2.125** 53.98	**.187**	**1-530844-5**
22	**3.035** 77.09	**2.875** 73.03	**2.875** 73.03	**2.625** 66.68	**.125** **.187**	**530844-5** **1-530844-6**
28	**3.785** 96.14	**3.625** 92.08	**3.625** 92.08	**3.375** 85.73	**.187**	**1-530844-7**
30	**4.035** 102.49	**3.875** 98.42	**3.875** 98.42	**3.625** 92.08	**.187**	**1-530844-8**
36	**4.785** 121.54	**4.625** 117.48	**4.625** 117.48	**4.375** 111.13	**.187**	**1-530844-9**
40	**5.285** 134.24	**5.125** 130.18	**5.125** 130.18	**4.875** 123.82	**.187**	**2-530844-0**
43	**5.660** 143.76	**5.500** 139.70	**5.500** 139.70	**5.250** 133.35	**.125**	**1-530844-0**
44	**5.785** 146.94	**5.625** 142.87	**5.625** 142.87	**5.375** 136.52	**.125**	**5-530844-4**
50	**6.535** 165.99	**6.375** 161.93	**6.375** 161.93	**6.125** 155.58	**.125** **.187**	**1-530844-1** **2-530844-2**

[1] Metric equivalent for post lengths are **.125** = [3.18]; **.187** = [4.75]
** CSA certification pending.

Note: Hole size **.040** $^{\pm.003}$ [$1.02^{\pm 0.08}$].

Vertical Connectors with Solder Posts .100 [2.54] and .125 [3.18] Centerlines

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Low Mounting Ears

Materials:

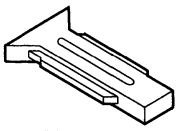
Housings - Black Glass-filled Polyester, 94V-0 rated
Contacts - Phosphor Bronze

Finish:

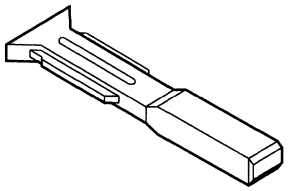
Contacts - Accu-Plate, .000030 [0.00076] Gold over Nickel Plating in Contact Area.
Posts - Tin Plated

Related Product Data:

Recommended PC Board Layout
Pg. 3322 & 3323
Recommended PC Mounting Hole Pattern - Pg. 3324

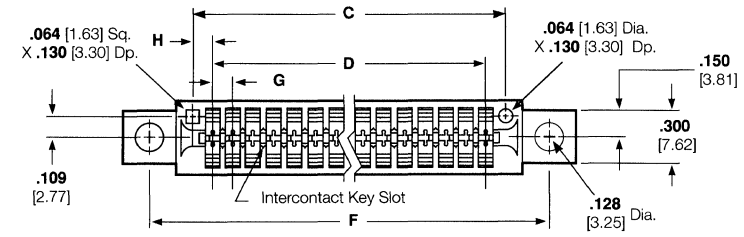


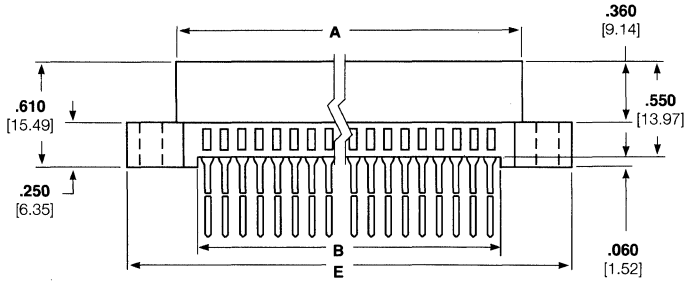
Part No. 650025-2
.100 [2.54] Centerline

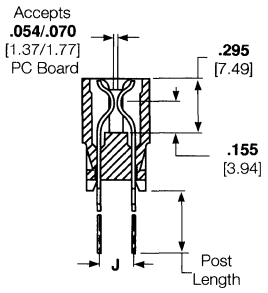


Part No. 650025-1
.125 [3.18] Centerline

Intercontact Keying Plugs
Material:
Natural Color Polyester







.100 [2.54] Centerline

Number of Dual Positions	Dimensions									Post Length[1]	Part Numbers
	A	B	C	D	E	F	G	H	J		
15	**1.760** 44.70	**1.650** 41.91	**1.600** 40.64	**1.400** 35.56	**2.385** 67.18	**2.075** 52.71	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.125**	**530841-2**
18	**2.060** 52.32	**1.950** 49.53	**1.900** 48.26	**1.700** 43.18	**2.645** 67.18	**2.375** 60.32	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.125**	**530841-3**
22	**2.460** 62.48	**2.350** 59.69	**2.300** 58.42	**2.100** 53.34	**3.045** 77.34	**2.775** 70.48	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.125**	**530841-4**
25	**2.760** 70.10	**2.650** 67.31	**2.600** 66.04	**2.400** 60.96	**3.345** 84.96	**3.075** 78.11	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.125** **.187**	**530841-5** **1-530841-6**
28	**3.060** 77.72	**2.950** 74.93	**2.900** 73.66	**2.700** 68.58	**3.645** 92.58	**3.375** 85.72	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.125**	**530841-6**
30	**3.260** 82.80	**3.160** 80.01	**3.100** 78.74	**2.900** 73.66	**3.845** 97.66	**3.575** 90.81	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.125** **.187**	**530841-7** **1-530841-8**
36	**3.860** 98.04	**3.750** 95.25	**3.700** 93.98	**3.500** 88.90	**4.445** 112.90	**4.175** 106.21	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.125** **.187**	**530841-8** **1-530841-9**
40	**4.260** 108.20	**4.150** 105.41	**4.100** 104.14	**3.900** 99.06	**4.845** 123.06	**4.575** 116.20	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.125**	**530841-9**
43	**4.560** 115.82	**4.450** 113.03	**4.400** 111.76	**4.200** 106.68	**5.145** 130.68	**4.875** 123.83	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.187**	**2-530841-1**
50	**5.260** 133.60	**5.150** 130.81	**5.100** 129.54	**4.900** 124.46	**5.845** 148.46	**5.575** 141.60	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.125** **.187**	**1-530841-1** **2-530841-2**
60	**6.260** 159.00	**6.150** 156.21	**6.100** 154.94	**5.900** 149.86	**6.845** 173.86	**6.575** 167.00	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.125**	**5-530841-3**

[1] Metric equivalent for post lengths are **.125** = [3.18]; **.187** = [4.75].
Note: Hole size **.040** $^{\pm.003}$ [1.02 $^{\pm0.08}$].

.125 [3.18] Centerline

Number of Dual Positions	Dimensions									Post Length[1]	Part Numbers**
	A	B	C	D	E	F	G	H	J		
28	**3.785** 96.14	**3.505** 89.03	**3.625** 92.08	**3.375** 85.73	**4.305** 109.35	**4.045** 102.74	**.125** 3.18	**.125** 3.18	**.250** 6.35	**.187**	**1-530842-7**
36	**4.785** 121.54	**4.505** 114.43	**4.625** 117.48	**4.375** 111.13	**5.035** 134.75	**5.045** 128.14	**.125** 3.18	**.125** 3.18	**.250** 6.35	**.187**	**1-530842-9**
50	**6.535** 165.99	**6.255** 158.88	**6.375** 161.93	**6.125** 155.58	**7.055** 179.20	**6.795** 172.59	**.125** 3.18	**.125** 3.18	**.250** 6.35	**.125** **.187**	**1-530842-1** **2-530842-2**

[1] Metric equivalent for post lengths are **.125** = [3.18]; **.187** = [4.75].
** CSA certification pending.
Note: Hole size **.040** $^{\pm.003}$ [1.02] $^{\pm0.08}$].

Vertical Connectors with Wrap-Type Posts .100 [2.54] and .125 [3.18] Centerlines

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Mid-High Mounting Ears

Materials:

Housings - Black Glass-filled Polyester, 94V-0 rated

Contacts - Phosphor Bronze

Finish:

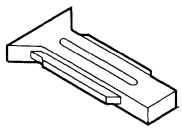
Contacts - Accu-Plate, .000030 [0.00076] Gold over Nickel Plating in Contact Area.

Posts - Tin Plated

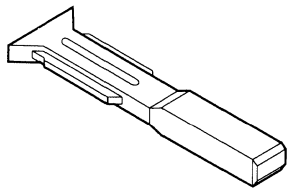
Related Product Data:

Recommended PC Board Layout - Pg. 3322 & 3323

Recommended PC Mounting Hole Pattern - Pg. 3324



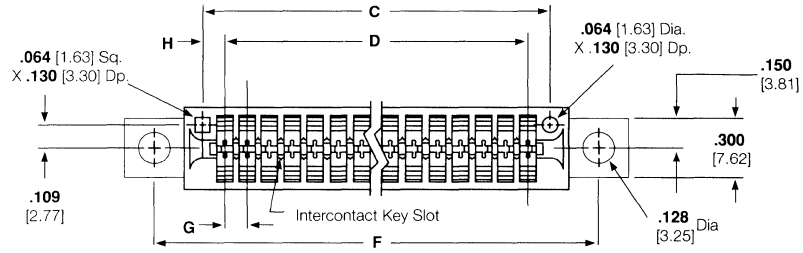
Part No. 650025-2
.100 [2.54] Centerline

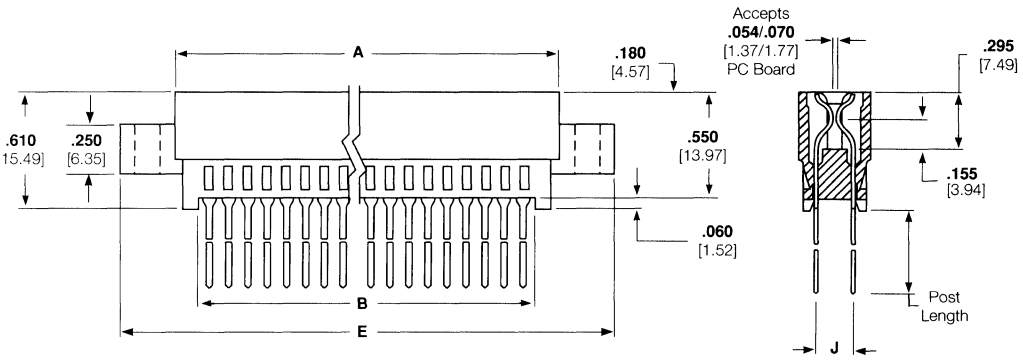


Part No. 650025-1
.125 [3.18] Centerline

Intercontact Keying Plugs

Material:
Natural Color Polyester





.100 [2.54] Centerline

Number of Dual Positions	Dimensions									Post Length[1]	Part Numbers**
	A	B	C	D	E	F	G	H	J*		
30	**3.260** 82.80	**3.150** 80.01	**3.100** 78.74	**2.900** 73.66	**3.845** 97.66	**3.575** 90.81	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.570**	**4-530396-3**
35	**3.760** 95.50	**3.650** 92.71	**3.600** 91.44	**3.400** 86.36	**4.345** 110.36	**4.075** 103.51	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.570**	**4-530396-5**
36	**3.860** 98.04	**3.750** 95.25	**3.700** 93.98	**3.500** 88.90	**4.445** 112.90	**4.175** 104.77	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.570**	**4-530396-4**
43	**4.560** 115.82	**4.450** 113.03	**4.400** 111.76	**4.200** 106.68	**5.145** 130.68	**4.875** 123.83	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.570**	**4-530396-7**
50	**5.260** 133.60	**5.150** 131.81	**5.100** 129.54	**4.900** 124.46	**5.845** 148.46	**5.575** 141.60	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.570**	**4-530396-8**
31	**3.360** 85.34	**3.250** 82.55	**3.200** 81.28	**3.000** 76.20	–	–	**.100** 2.54	**.100** 2.54	**.200** 5.08	**.570**	**650016-1[2]**
52	See page 3321 for Special 18/31 connector housing configuration.										

[1] Metric equivalent for post length is **.570** = [14.48].
[2] No mounting ears.
** CSA certification pending.
Note: Hole size **.042** $^{\pm.003}$ [1.07 $^{\pm0.08}$].

.125 [3.18] Centerline

Number of Dual Positions	Dimensions									Post Length[1]	Part Numbers**
	A	B	C	D	E	F	G	H	J		
10	**1.535** 38.99	**1.255** 31.88	**1.375** 34.92	**1.125** 28.57	**2.055** 52.20	**1.795** 45.59	**.125** 3.18	**.125** 3.18	**.250** 6.35	**.570**	**4-530825-2**
22	**3.035** 77.09	**2.755** 69.98	**2.875** 73.02	**2.625** 66.67	**3.555** 90.30	**3.295** 83.69	**.125** 3.18	**.125** 3.18	**.250** 6.35	**.570**	**4-530825-5**
28	**3.785** 96.14	**3.505** 89.03	**3.625** 92.08	**3.375** 85.73	**4.305** 109.35	**4.045** 102.74	**.125** 3.18	**.125** 3.18	**.250** 6.35	**.378** **.570**	**3-530825-3** **4-530825-6**
50	**6.535** 165.99	**5.255** 158.88	**6.375** 161.93	**6.125** 155.58	**7.055** 179.20	**6.795** 172.59	**.125** 3.18	**.125** 3.18	**.250** 6.35	**.570**	**5-530825-2**

[1] Metric equivalent for post length is **.570** = [14.48].
** CSA certification pending.
Note: Hole size is **.042** $^{\pm.003}$ [1.07 $^{\pm0.08}$].

Card Extender Connectors .100 [2.54] and .125 [3.18] Centerlines

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Materials:

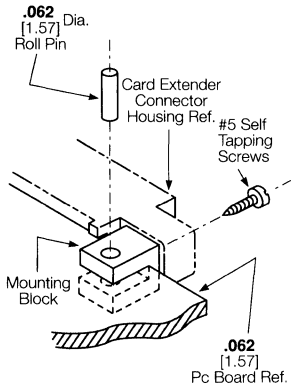
Housings - Black Glass-filled Polyester, 94V-0 rated
Contacts - Phosphor Bronze

Finish:

Contacts - Accu-Plate, .000030 [0.00076] Gold over Nickel Plating in Contact Area.
Posts - Tin Plated

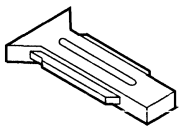
Related Product Data:

Recommended PC Board Layout - Pg. 3322 & 3323
Recommended PC Mounting Hole Pattern - Pg. 3324

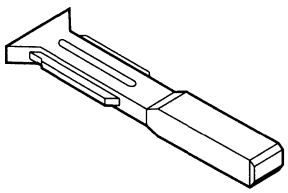


Mounting Block

Material:
Natural Color Nylon
Kit **Part No. 531250-1**
Each kit includes 2 mounting blocks
2 self tapping screws,
#5 X .375 [9.52]
2 roll pins,
.075 x .250 [1.57 X 6.35]

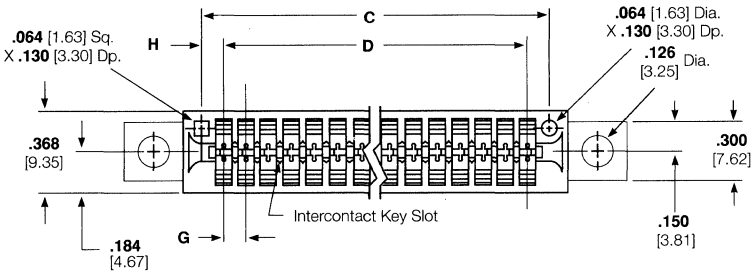


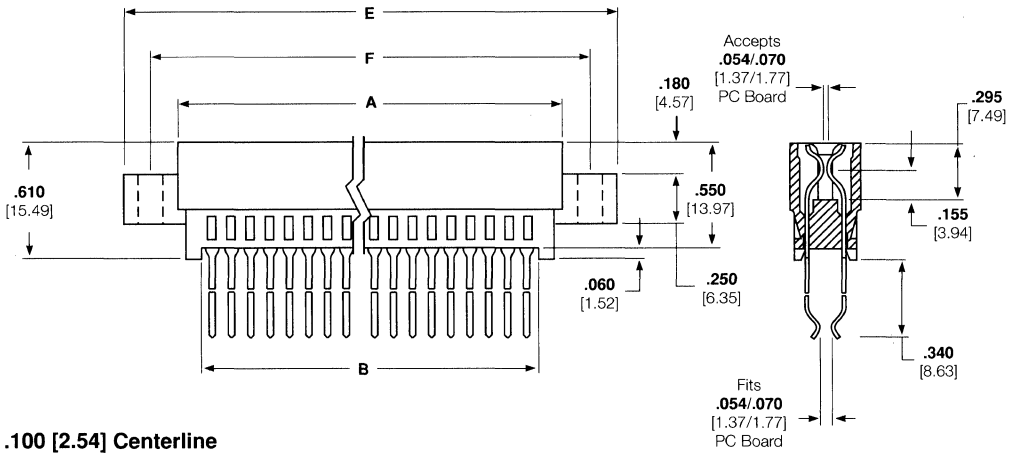
Part No. 650025-2
.100 [2.54] Centerline



Part No. 650025-1
.125 [3.18] Centerline

Intercontact Keying Plugs
Material:
Natural Color Polyester





.100 [2.54] Centerline

Number of Dual Positions	Dimensions A	B	C	D	E	F	G	H	Part Numbers**
30	**3.260** 82.80	**3.160** 80.01	**3.100** 78.74	**2.900** 73.66	**3.845** 97.66	**3.575** 90.81	**.100** 2.54	**.100** 2.54	**1-530826-0**
36	**3.860** 98.04	**3.750** 95.25	**3.700** 93.98	**3.500** 88.90	**4.445** 112.90	**4.175** 106.21	**.100** 2.54	**.100** 2.54	**530826-1**
40	**4.260** 108.20	**4.150** 105.41	**4.100** 104.14	**3.900** 99.06	**4.845** 123.06	**4.575** 116.20	**.100** 2.54	**.100** 2.54	**530826-2**
43	**4.560** 115.82	**4.450** 113.03	**4.400** 111.76	**4.200** 106.68	**5.145** 130.68	**4.875** 123.83	**.100** 2.54	**.100** 2.54	**1-530826-2**
50	**5.260** 133.60	**5.160** 130.81	**5.100** 129.54	**4.900** 124.46	**5.845** 148.46	**5.575** 141.60	**.100** 2.54	**.100** 2.54	**530826-3**
30	**3.260** 82.80	**3.160** 80.01	**3.100** 78.74	**2.900** 73.66	–	–	**.100** 2.54	**.100** 2.54	**530897-2** [1]
52	See page 3321 for Special 18/31 connector housing configuration.								

[1] No mounting ears.
** CSA certification pending.

.125 [3.18] Centerline

Number of Dual Positions	Dimensions A	B	C	D	E	F	G	H	Part Numbers**
18	**2.535** 64.39	**2.255** 57.28	**2.375** 60.33	**2.125** 53.98	**3.055** 77.60	**2.795** 70.99	**.125** 3.18	**.125** 3.18	**530384-8**
30	**4.035** 102.49	**3.755** 95.38	**3.875** 98.42	**3.625** 92.08	**4.555** 115.70	**4.295** 109.09	**.125** 3.18	**.125** 3.18	**530384-1**
36	**4.785** 121.54	**4.505** 114.43	**4.625** 117.48	**4.375** 111.13	**5.035** 134.75	**5.045** 128.14	**.125** 3.18	**.125** 3.18	**530384-2**
50	**6.535** 165.99	**6.255** 158.88	**6.375** 161.93	**6.125** 155.58	**7.055** 179.20	**6.795** 172.59	**.125** 3.18	**.125** 3.18	**530384-3**

** CSA certification pending.

Right-Angle Connectors with Solder Posts .100 [2.54] X .150 [3.81] Centerlines

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Mid-High, Low and No Mounting Ears

Materials:

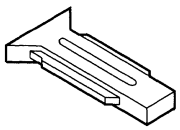
Housings - Black Glass-filled Polyester, 94V-0 rated
Contacts - Phosphor Bronze

Finish:

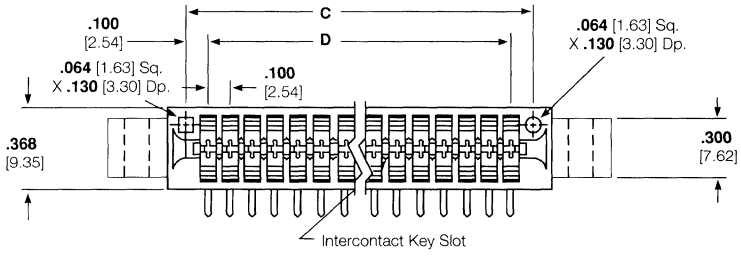
Contacts - Accu-Plate, Gold over Nickel Plating in Contact Area (See chart for thickness)
Posts - Tin Plated

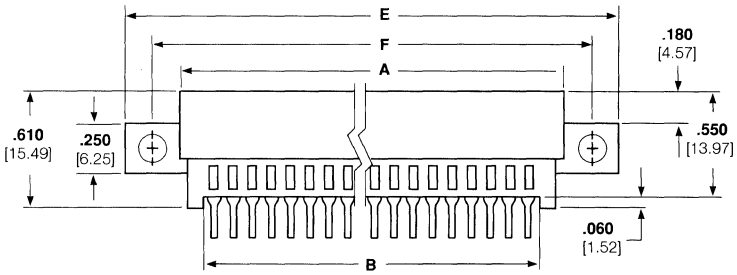
Related Product Data:

Recommended PC Board Layout - Pg. 3322 & 3323
Recommended PC Mounting Hole Pattern - Pg. 3324

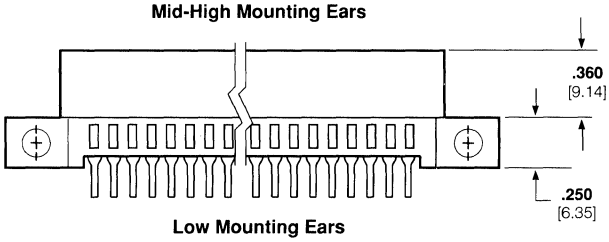


Intercontact Keying Plug
Part No. 650025-2
Material:
Natural Color Polyester

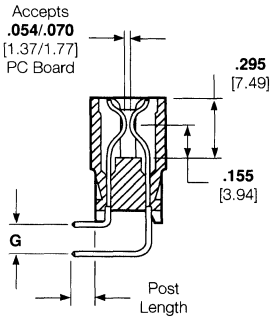




Mid-High Mounting Ears



Low Mounting Ears



Mid-High and Low Mounting Ears

Number of Dual Positions	Dimensions							Post Length²	Part Numbers*, **	
	A	B	C	D	E	F	G¹		Mid-High Mtg. Ears .000015 [0.00038] Gold Plate	Low Mtg. Ears .000030 [0.00076] Gold Plate
18	**2.060** 52.32	**1.950** 49.53	**1.900** 48.26	**1.700** 43.18	**2.645** 67.18	**2.375** 60.32	**.100x .150**	**.090**	–	**645384-1**
20	**2.260** 57.40	**2.150** 54.61	**2.100** 53.34	**1.900** 48.26	**2.845** 72.30	**2.575** 65.40	**.100x .150**	**.090**	–	**645384-3**
20	**2.260** 57.40	**2.150** 54.61	**2.100** 53.34	**1.900** 48.26	**2.845** 72.30	**2.575** 65.40	**.100x .200**	**.090**	**650145-1**	–
40	**4.260** 108.20	**4.150** 105.41	**4.100** 104.14	**3.900** 99.06	**4.845** 123.06	**4.575** 116.20	**.100x .150**	**.090**	–	**645384-2**
50	**5.260** 133.60	**5.160** 130.81	**5.100** 129.54	**4.900** 124.46	**5.845** 148.46	**5.575** 141.60	**.100x .150**	**.090**	**532632-1**	–

¹ Metric equivalent for **.100 X .150** and **.100 X .200** are [2.54 X 3.81] and [2.54 X 5.08].
² Metric equivalent for post length is **.090** = [2.27].
* UL recognition pending
** CSA certification pending.
Note: Hole size **.042** $^{\pm.003}$ [1.07 $^{\pm0.08}$].

No Mounting Ears

Number of Dual Positions	Dimensions							Post Length²	Part Numbers*, **	
	A	B	C	D	E	F	G¹		.000015 [0.00038] Gold Plate	.000030 [0.00076] Gold Plate
15	**1.760** 44.70	**1.650** 41.91	**1.600** 40.64	**1.400** 35.56	–	–	**.100x .150**	**.090**	–	**650118-1**
17	**1.960** 49.78	**1.850** 46.99	**1.800** 45.72	**1.600** 40.64	–	–	**.100x .200**	**.090**	–	**650187-1**
25	**2.760** 70.10	**2.350** 67.61	**2.600** 66.04	**2.400** 60.96	–	–	**.100x .150**	**.090**	**532600-2**	**650261-1**
31	**3.360** 85.34	**3.250** 82.55	**3.200** 81.28	**3.000** 76.20	–	–	**.100x .150**	**.090**	**532600-4**	–

¹ Metric equivalent for **.100 X .150** is [2.54 X 3.81].
² Metric equivalent for post length is **.090** = [2.27].
* UL recognition pending
** CSA certification pending.
Note: Hole size **.042** $^{\pm.003}$ [1.07 $^{\pm0.08}$].

Vertical Connectors with Solder Posts and Retention Feature .100 [2.54] Centerline

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Without Mounting Ears

Materials:

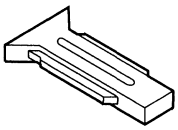
Housings - Black Glass-filled Polyester, 94V-0 rated
Contacts - Phosphor Bronze

Finish:

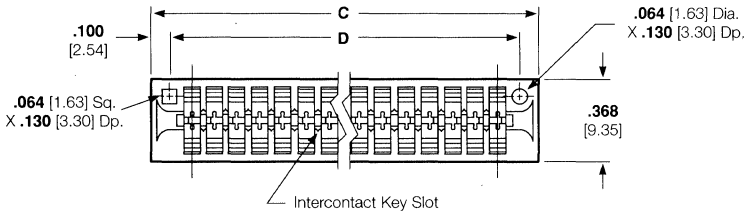
Contacts - Accu-Plate, .000030 [0.00076] Gold over Nickel Plating in Contact Area.
Posts - Tin Plated

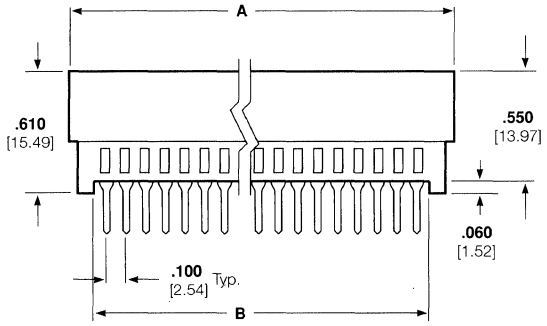
Related Product Data:

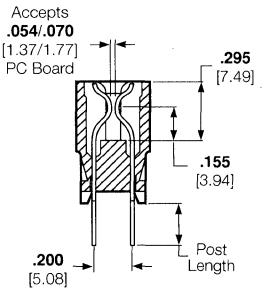
Recommended PC Board Layout - Pg. 3322 & 3323
Recommended PC Mounting Hole Pattern - Pg. 3324

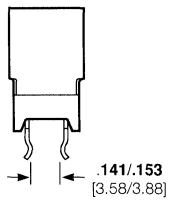


Intercontact Keying Plug
Part No. 650025-2
Material:
Natural Color Polyester









Retention Feature

Number of Dual Positions	Dimensions A	B	C	D	Post Length[1]	Retention Feature	Part Numbers**
12	**1.460** 37.08	**1.350** 34.29	**1.300** 33.02	**1.100** 27.94	**.125**	3-6,19-22	**645235-6**
13	**1.560** 39.62	**1.450** 36.83	**1.400** 35.56	**1.200** 30.48	**.125**	3-6,21-24	**645235-9**
18	**2.060** 52.32	**1.950** 49.53	**1.900** 48.26	**1.700** 43.18	**.125**	3-6,31-34	**645235-4**
22	**2.460** 62.48	**2.350** 59.69	**2.300** 58.42	**2.100** 53.34	**.125**	3-6,35-38	**645235-7**
31	**3.360** 85.34	**3.250** 82.55	**3.200** 81.28	**3.000** 76.20	**.125**	3-6,29-32 or 31-34,57-60	**645235-1**
36	**3.860** 98.04	**3.750** 95.25	**3.700** 93.98	**3.500** 88.90	**.125**	3-6,35-38,67-70	**645235-2**
40	**4.260** 108.20	**4.150** 105.41	**4.100** 104.14	**3.900** 99.06	**.125**	3-6,73-78	**645235-5**
50	**5.260** 133.60	**5.150** 130.81	**5.100** 129.54	**4.900** 124.46	**.125**	3-10,95-98	**645235-3**
60	**6.260** 159.00	**6.150** 156.21	**6.100** 154.94	**5.900** 149.86	**.125**	3-6, 55-58, 63-66, 115-118	**645235-8**

[1] Metric equivalent for post length is **.125** = [3.18].
** CSA certification pending.
Note: Hole size **.040** $^{\pm.003}$ [1.02 $^{\pm0.08}$].

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Special 18/31 Dual Combination Vertical Connectors with Solder Posts, Wrap-Type Posts or Card Extender Contacts .100 [2.54] Centerline

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Without Mounting Ears

Materials:

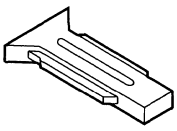
Housings - Black Glass-filled Polyester, 94V-0 rated
Contacts - Phosphor Bronze

Finish:

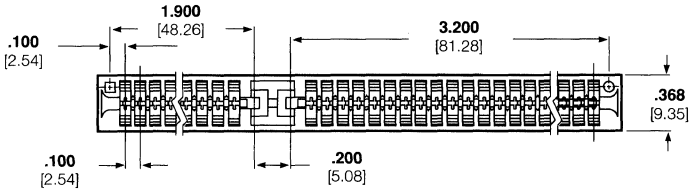
Contacts - .000030 [0.00076] Gold over Nickel Accu-Plated in Contact Area
Posts - Tin Plated

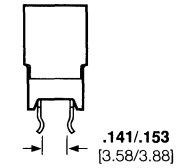
Related Product Data:

Recommended PC Board Layout Pg. 3322 & 3323
Recommended PC Mounting Hole Pattern - Pg. 3324

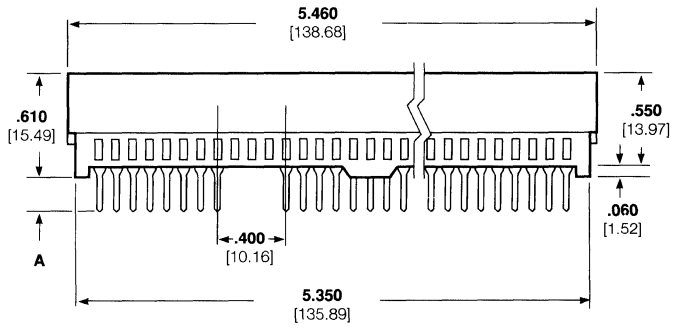


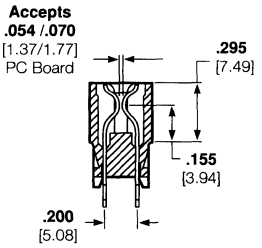
Intercontact Keying Plug
Part No. 650025-2
Material:
Natural Color Polyester



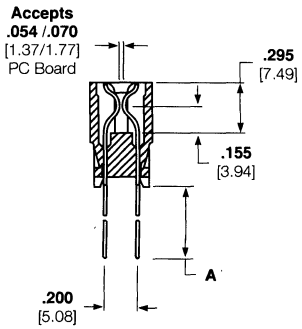


Retention Feature

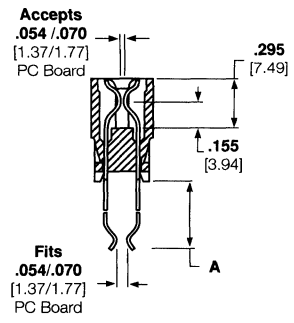




Solder Posts



Wrap-Type Posts

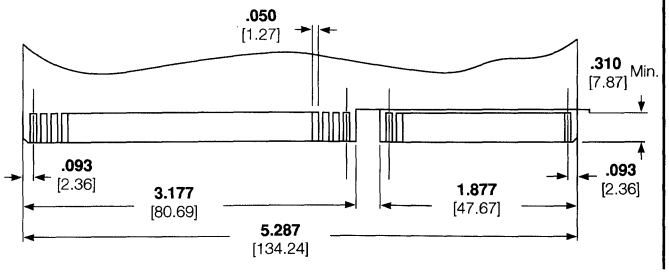


Card Extender Contacts

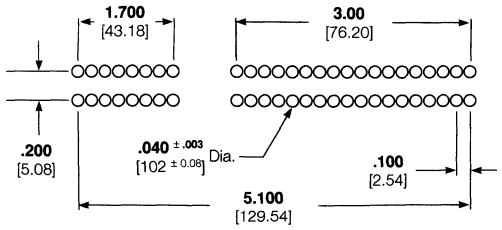
Dual Postions	Dimension A	Retention Feature	Part Numbers**
52	**.125** 3.18	3-6,41-44, 49-52,93-96	**645169-2**
52	**.125** 3.18	None	**645169-3**
52	**.125** 3.18	3-14,41-44, 49-52,85-96	**645169-4**
52	**.125** 3.18	None	**1-645169-3**[1]
52	**.570** 14.48	None	**650015-1**[2]
52	**.340** 8.63	None	**645405-1**[3]

[1] Same as 645169-3 except in slide pack.
[2] With wrap-type posts.
[3] With card extender contacts.
** CSA certification pending.

Recommended PC Board Layout



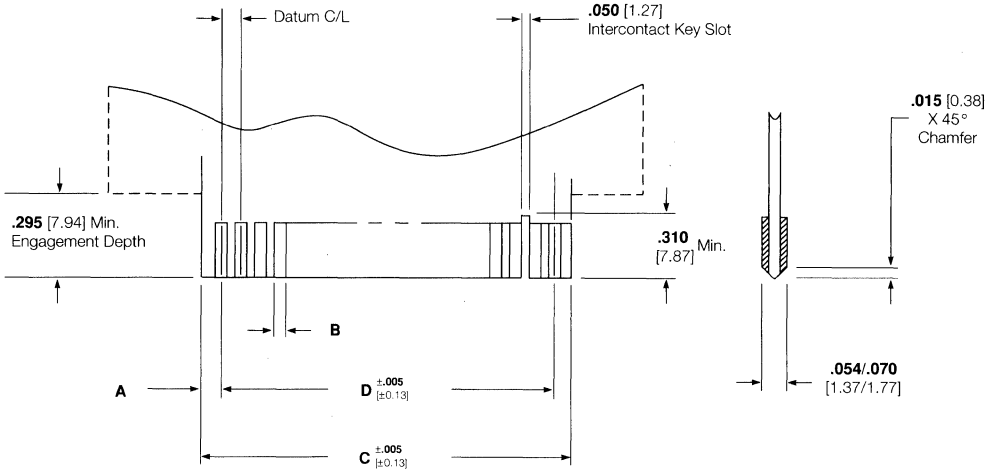
Recommended PC Board Hole Pattern



Recommended PC Board Layout

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

PC Board Layout for .100 [2.54] and .125 [3.18] Centerline



Dimensioning:
Chart contains dimensions in inches over millimeters.

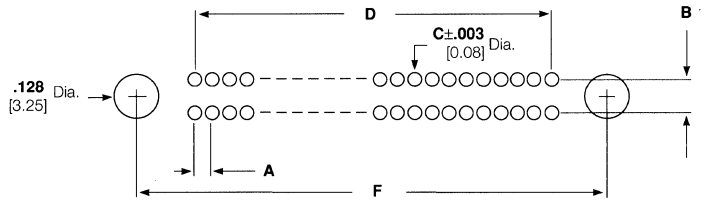
Number of Dual Positions	.100 [2.54] Centerline A = .093 [2.36] B = .050 [1.27]		.125 [3.18] Centerline A = .118 [3.00] B = .075 [1.90]	
	C	D	C	D
3	**.386** 9.80	**.200** 5.08	–	–
6	**.686** 17.42	**.500** 12.70	**.861** 21.87	**.625** 15.88
10	**1.086** 27.58	**.900** 22.86	**1.361** 34.57	**1.125** 28.58
12	**1.286** 32.66	**1.100** 27.94	–	–
13	**1.386** 35.20	**1.200** 30.48	–	–
15	**1.586** 40.28	**1.400** 35.56	–	–
17	**1.786** 45.36	**1.600** 40.64	–	–
18	**1.886** 47.90	**1.700** 43.18	**2.361** 59.97	**2.125** 53.98
22	**2.286** 58.06	**2.100** 53.34	**2.861** 72.67	**2.625** 66.68
25	**2.586** 65.68	**2.400** 60.96	–	–
28	**2.886** 73.30	**2.700** 68.58	**3.611** 91.72	**3.375** 85.73
30	**3.086** 78.38	**2.900** 73.66	**3.861** 98.07	**3.625** 92.08
31	**3.186** 80.92	**3.000** 76.20	**3.986** 101.24	**3.750** 95.25
35	**3.586** 91.08	**3.400** 86.36	–	–
36	**3.686** 93.62	**3.500** 88.90	**4.611** 117.12	**4.375** 111.13
40	**4.086** 103.78	**3.900** 99.06	**5.111** 129.82	**4.875** 123.82
43	**4.386** 111.40	**4.200** 106.68	–	–
50	**5.086** 129.18	**4.900** 124.46	**6.361** 161.57	**6.125** 155.58
60	**6.086** 154.58	**5.900** 149.86	–	–
70	**7.086** 179.98	**6.900** 175.26	–	–

Recommended PC Board Hole Patterns

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Vertical Post Connectors

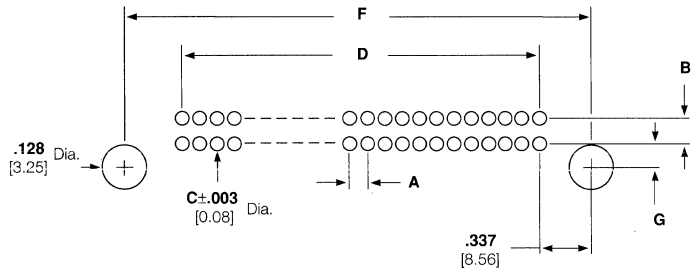


Solder and Wrap-Type Recommended Patterns

Connector Type	Dimensions				
	A	B	C	D	F
Solder Post/Retention	**.100** 2.54	**.200** 5.08	**.040** 1.02	See Note 1	See Note 2
Solder Post, Mounting Ears	**.125** 3.18	**.250** 6.35	**.040** 1.02	See Note 3	See Note 3
Solder Post, W/O Mounting Ears	**.100/.125** 2.54/3.18	**.200/.250** 5.08/6.35	**.040** 1.02	See Note 4	See Note 2
Wrap-Type Post	**.100** 2.54	**.200** 5.08	**.042** 1.07	See Note 5	See Note 5
Wrap-Type Post	**.125** 3.18	**.250** 6.35	**.042** 1.07	See Note 5	See Note 5

Notes:
1. See page 3320 for D Dimensions and Dual Positions.
2. No mounting ears. Dimensions do not apply.
3. See page 3316 for D and F Dimensions and Dual Positions.
4. See pages 3314 and 3315 for D Dimensions and Dual Positions.
5. See page 3317 for D and F Dimensions and Dual Positions.

Right-Angle Post Connectors



Right-Angle Recommended Patterns

Connector Type	Dimensions					
	A	B	C	D	F	G
Right-Angle Posts, Mounting Ears	**.100** 2.54	**.150** 3.81	**.042** 1.07	See Note 1	See Note 1	**.137** 3.48
Right-Angle Posts, No Mounting Ears	**.100** 2.54	**.150 or 2.00** 3.81 or 5.08	**.042** 1.07	See Note 2	See Note 3	See Note 3

Notes:
1. See page 3319 for D and F Dimensions and Dual Positions
2. See page 3319 for D Dimensions and Dual Positions
3. No Mounting Ears, dimensions do not apply

AMP PACE II Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMP PACE II connectors are the latest design in compliant pin card edge connectors. They have been designed as a functional replacement for AMP PACE standard edge connectors with ACTION PIN contacts and ECONOMATE I connectors. Reducing applied costs, AMP PACE II connectors are toolless (flat rock); they require no expensive seating tools.

These versatile AMP connectors incorporate AMP's newly developed "low force" ACTION PIN contact, which is available in a choice of styles and post lengths. Included is a "no post" tail .200 [5.08] long, preformed from .0125 [0.318] thick material. For wrap-type terminations, a .025 [0.64] square solid post is available in three lengths; .375 [9.52], .475 [12.07] and .700 [17.78].

The "low force" ACTION PIN contact requires reduced force to seat the connector, thus allowing multiple connector seating while eliminating damage to plated-thru holes.

The heart of the AMP PACE II connector is the preloaded cantilever contact which features a low spring rate with an extended deflection range. This, combined with the contact's spring characteristics, assures reliable electrical performance without sacrificing mechanical performance.

AMP PACE II connectors are available with standard housings or open end/closed end housings, as well as a choice of .300 [7.62] or .480 [12.19] card slots. Currently available post centerline spacings are: .100 × .200 [2.54 × 5.08], .125 × .250 [3.18 × 6.35] and .156 × .200 [3.96 × 5.08].

Product Facts

- Maximum number of dual positions:
  60–.100 [2.54] centerline
  50–.125 [3.18] centerline
  43–.156 [3.96] centerline
- Selective gold plating of contacts for high performance at low cost
- No seating tools required
- .025 [0.64] sq. solid posts meet standard wrap-type specifications
- Accepts double-sided PC boards .054 to .070 [1.37 to 1.78] thick

Technical Documents

Product Specifications:

108-1260	AMP PACE II Connectors
108-26003	ACTION PIN Contacts

Performance Specifications

Contact Rating:
3 amperes, continuous

Contact Resistance:
10 milliohms max.

Operating Temperature:
–55°C to +105°C

Voltage Rating (Sea Level):
1000 VAC, .100 [2.54] centerline
1500 VAC, .125 [3.18] centerline
1800 VAC, .156 [3.96] centerline

Insulation Resistance:
5000 megohms, min. (after exposure to humidity)

Vibration Tolerance:
10 to 500 Hz

Contact Engagement Force:
8 oz. [2.2 N], avg. per pair (with .070 [1.78] PC board)

Contact Separation Force:
1 oz. [0.28 N], avg. per pair (with .054 [1.37] PC board)

Humidity Tolerance:
90%-95% for 96 hours

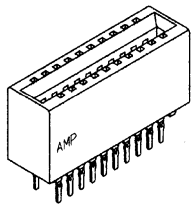
Dimensioning:
Dimensions are inches and millimeters unless specified otherwise.
Values in brackets are metric equivalents.
Metric symbols used are:
mm (millimeter)
C (Celsius)
N (newton)

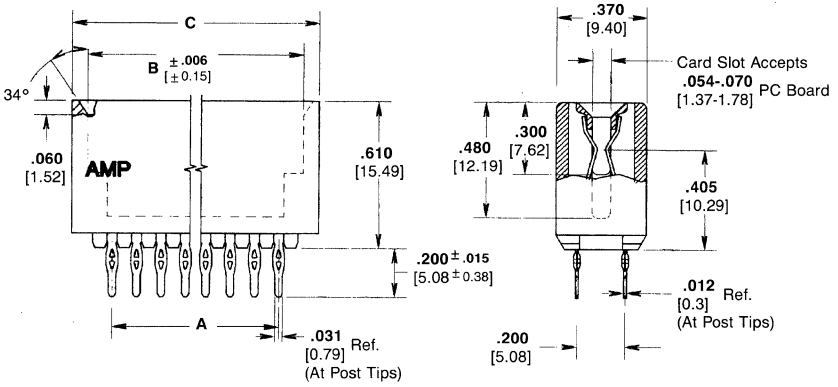
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

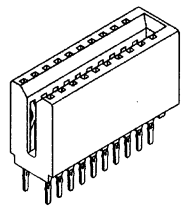
AMP PACE II Connectors .100 x .200 [2.54 x 5.08] Centerline .300 [7.62] Card Slot

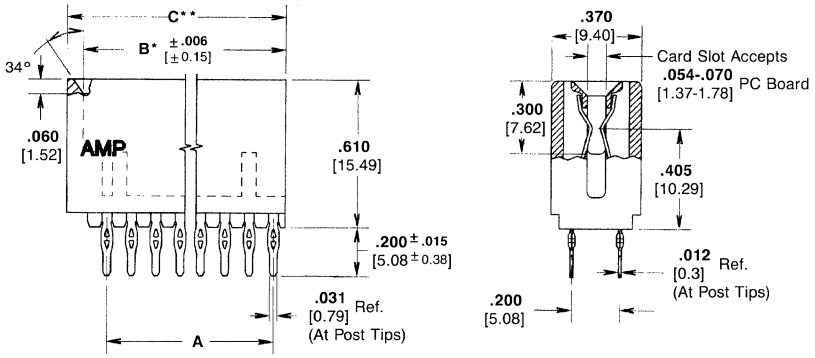
Standard Housing, .200 [5.08] Post Length



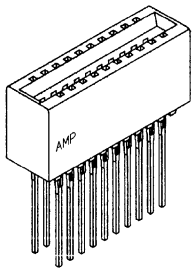


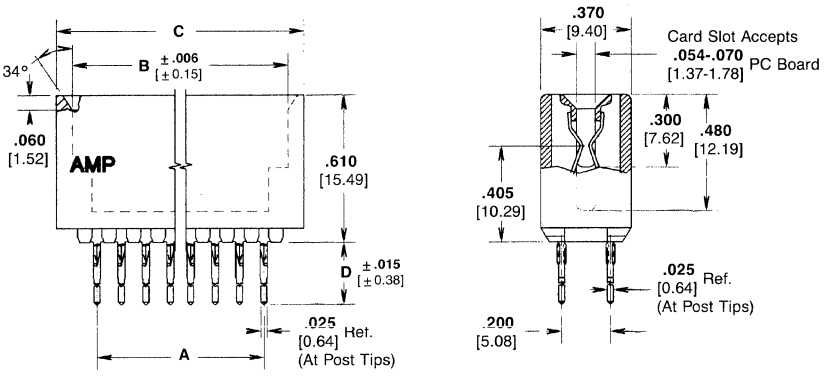
Open End/Closed End Housing, .200 [5.08] Post Length



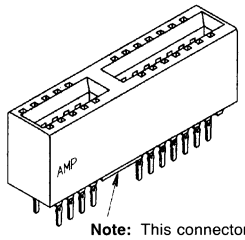


Standard Housing, .375 [9.52] or .700 [17.78] Post Length

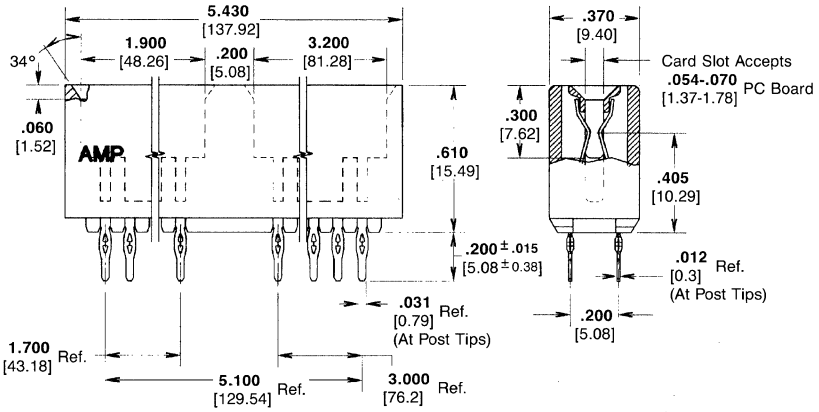




Special 18/31 Dual Combination Housing, .200 [5.08] Post Length



Note: This connector is a combination of 18 and 31 dual positions. Its length has been reduced for illustration only.



Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

AMP PACE II Connectors .100 x .200 [2.54 x 5.08] Centerline .300 [7.62] Card Slot (Continued)

Material and Finish:

Housing—Black glass-filled polyester

Contacts—Phosphor bronze, duplex plated .000030 [0.00076] gold in contact area, .000100 [0.00254] tin-lead on post, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Specifications - Page 3325
Technical Documents - Page 3325
PC Board Layouts - Page 3335
ACTION PIN Post Specifications - Pages 3336 & 3412

No. of Dual Postions	Dimensions			Post Length (D)	Connector Part Nos. (.300 [7.62] Card Slot)	
	A	B*	C**		Standard Housing	Open End/Closed End Housing
18	**1.700** 43.18	**1.900** 48.26	**2.030** 51.56	**.200** 5.08	650157-1	—
25	**2.400** 60.96	**2.600** 66.04	**2.730** 69.34	**.200** 5.08	650157-4	—
28	**2.700** 68.58	**2.900** 73.66	**3.030** 76.96	**.200** 5.08	650157-5	—
30	**2.900** 73.66	**3.100** 78.74	**3.230** 82.04	**.200** 5.08	650157-6	—
				.375 9.52	650271-3	—
31	**3.000** 76.20	**3.200** 81.28	**3.330** 84.58	**.200** 5.08	650157-2	—
35	**3.400** 86.36	**3.600** 91.44	**3.730** 94.74	**.200** 5.08	—	650380-1
				.375 9.52	650271-1	—
				.700 17.78	650271-2	—
36	**3.500** 88.90	**3.700** 93.98	**3.830** 97.28	**.200** 5.08	650157-7	—
40	**3.900** 99.06	**4.100** 104.14	**4.230** 107.44	**.200** 5.08	650157-8	—
43	**4.200** 106.68	**4.400** 111.76	**4.530** 115.06	**.200** 5.08	650157-9	—
50	**4.900** 124.46	**5.100** 129.54	**5.230** 132.84	**.200** 5.08	650157-3	—
52	**5.100** 129.54	**5.300** 134.62	**5.430** 137.92	**.200** 5.08	650220-1[1]	—

* For .100 [2.54] centerline connector with open end/closed end housing, subtract **.062** [1.57] from **B** dimension.

** For .100 [2.54] centerline connector with open end/closed end housing, subtract **.117** [2.97] from **C** dimension.

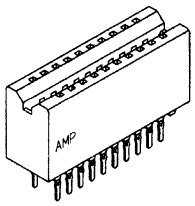
[1] Special 18/31 dual combination housing. Refer to page 3326.

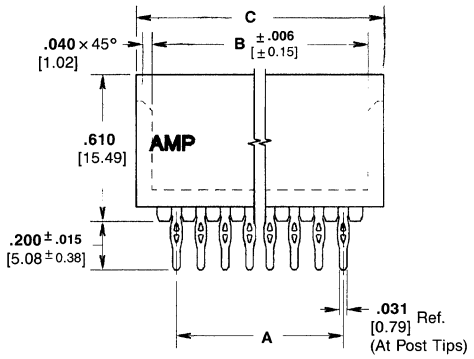
Specifications subject to change.
For latest design specifications...
1-800-522-6752

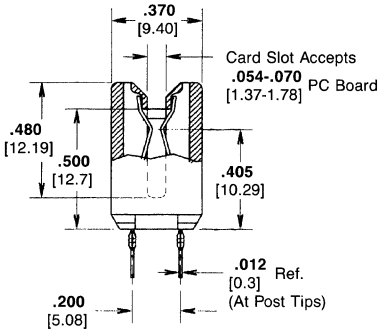
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMP PACE II Connectors .100 x .200 [2.54 x 5.08] Centerline .480 [12.19] Card Slot

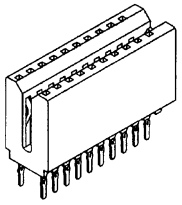
Standard Housing, .200 [5.08] Post Length

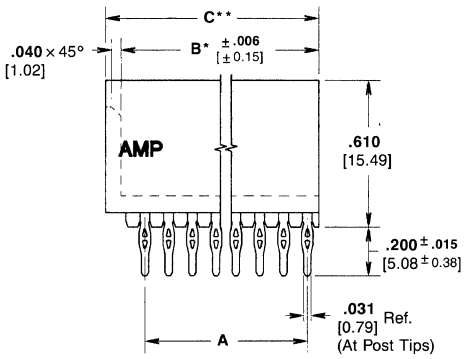


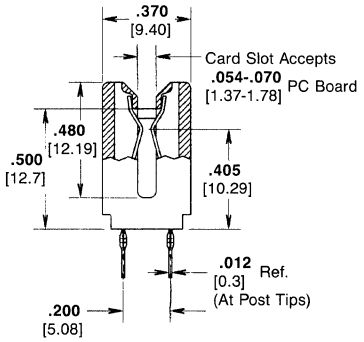




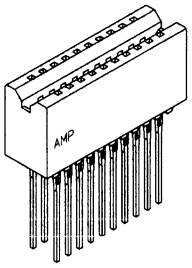
Open End/Closed End Housing, .200 [5.08] Post Length

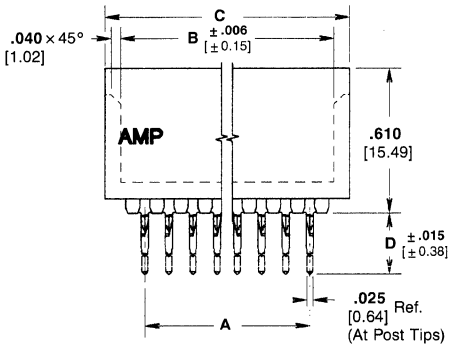


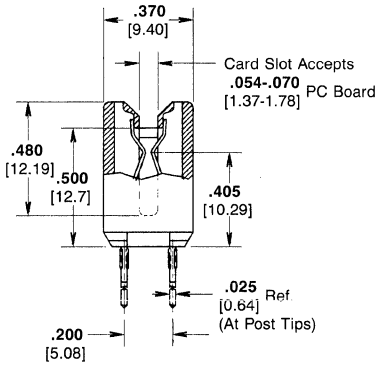




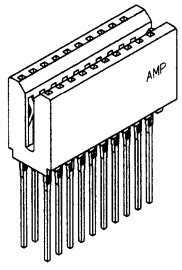
Standard Housing, .375 [9.52] or .700 [17.78] Post Length

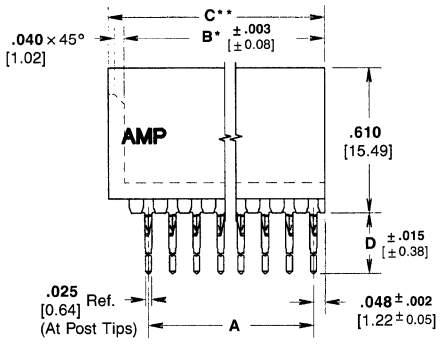


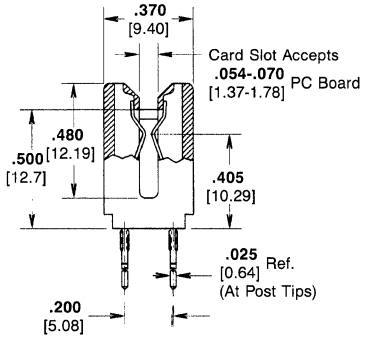




Open End/Closed End Housing, .375 [9.53] or .700 [17.78] Post Length







Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

AMP PACE II Connectors .100 x .200 [2.54 x 5.08] Centerline .480 [12.19] Card Slot (Continued)

Material and Finish:

Housing—Black glass-filled polyester

Contacts—Phosphor bronze, duplex plated .000030 [0.00076] gold in contact area, .000100 [0.00254] tin-lead on post, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Specifications - Page 3325
Technical Documents - Page 3325
PC Board Layouts - Page 3335
ACTION PIN Post Specifications - Pages 3336 & 3412

No. of Dual Postions	Dimensions			Post Length (D)	Connector Part Nos. (.480 [12.19] Card Slot)	
	A	B*	C**		Standard Housing	Open End/Closed End Housing
10	**.900** 22.86	**1.100** 27.94	**1.230** 31.24	**.200** 5.08	650219-4	—
18	**1.700** 43.18	**1.900** 48.26	**2.030** 51.56	**.375** 9.52	650219-1	—
30	**2.900** 73.66	**3.100** 78.74	**3.230** 82.04	**.200** 5.08	650219-2	650290-1
				.375 9.52	—	650156-1
				.700 17.78	650155-1	—
35	**3.400** 86.36	**3.600** 91.44	**3.730** 94.74	**.700** 17.78	—	650156-2
36	**3.500** 88.90	**3.700** 93.98	**3.830** 97.28	**.200** 5.08	650219-3	650290-2
				.375 9.52	—	650156-3
				.700 17.78	650155-2	—
40	**3.900** 99.06	**4.100** 104.14	**4.230** 107.44	**.700** 17.78	650155-3	—
42	**4.100** 104.14	**4.300** 109.22	**4.430** 112.52	**.375** 9.52	—	650156-4
43	**4.200** 106.68	**4.400** 111.76	**4.530** 115.06	**.200** 5.08	650219-6	—
50	**4.900** 124.46	**5.100** 129.54	**5.230** 132.84	**.200** 5.08	650219-5	—
				.700 17.78	650155-4	—
55	**5.400** 137.16	**5.600** 142.24	**5.730** 145.54	**.200** 5.08	—	650290-3
				.375 9.52	—	650156-5
56	**5.500** 139.70	**5.700** 144.78	**5.830** 148.08	**.200** 5.08	—	650290-4
				.375 9.52	—	650156-6

* For .100 [2.54] centerline connector with open end/closed end housing, subtract **.062** [1.57] from **B** dimension.

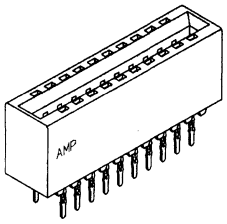
** For .100 [2.54] centerline connector with open end/closed end housing, subtract **.117** [2.97] from **C** dimension.

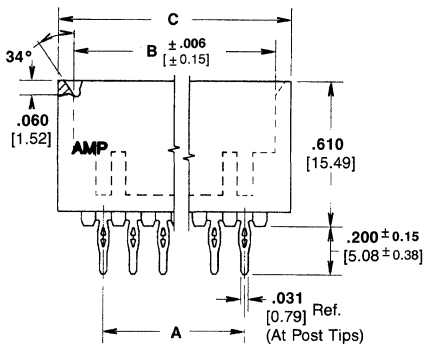
Specifications subject to change.
For latest design specifications...
1-800-522-6752

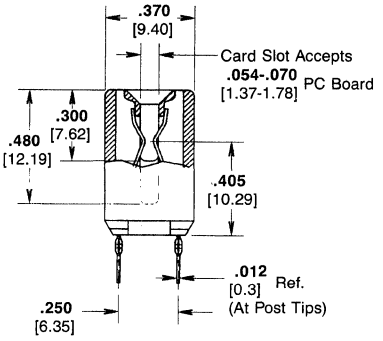
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMP PACE II Connectors .125 x .250 [3.18 x 6.35] Centerline .300 [7.62] Card Slot

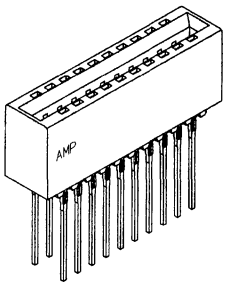
Standard Housing, .200 [5.08] Post Length

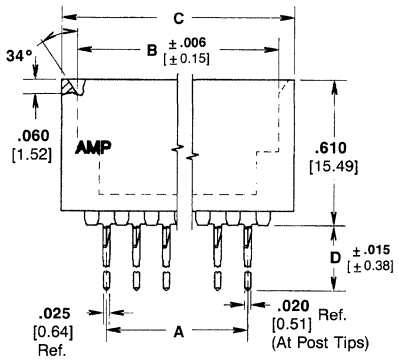


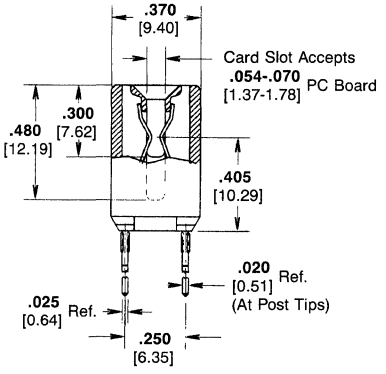




Standard Housing, .475 [12.06] or .700 [17.78] Post Length







Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

AMP PACE II Connectors .125 x .250 [3.18 x 6.35] Centerline .300 [7.62] Card Slot (Continued)

Material and Finish:

Housing—Black glass-filled polyester

Contacts—Phosphor bronze, duplex plated .000030 [0.00076] gold in contact area, .000100 [0.00254] tin-lead on post, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Specifications - Page 3325
Technical Documents - Page 3325
PC Board Layouts - Page 3335
ACTION PIN Post Specifications - Pages 3336 & 3412

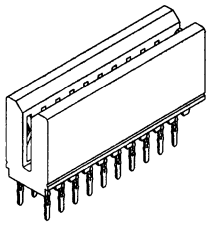
No. of Dual Postions	Dimensions			Post Length (D)	Connector Part Nos. (.300 [7.62] Card Slot, Standard Housing)
	A	B	C		
18	**2.125** 53.98	**2.375** 60.32	**2.505** 63.63	**.200** 5.08	650217-4
				.475 12.06	650147-3
28	**3.375** 85.72	**3.625** 92.08	**3.755** 95.38	**.200** 5.08	650217-5
				.475 12.06	650147-4
35	**4.250** 107.95	**4.500** 114.30	**4.630** 117.60	**.200** 5.08	650217-1
36	**4.375** 111.12	**4.625** 117.48	**4.755** 120.78	**.200** 5.08	650217-2
40	**4.875** 123.82	**5.125** 130.18	**5.255** 133.48	**.475** 12.06	650147-5
50	**6.125** 155.58	**7.625** 193.68	**7.755** 196.98	**.200** 5.08	650217-3
				.475 12.06	650147-2
				.700 17.78	650147-1

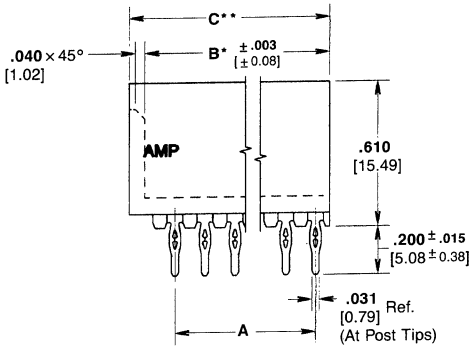
Specifications subject to change.
For latest design specifications...
1-800-522-6752

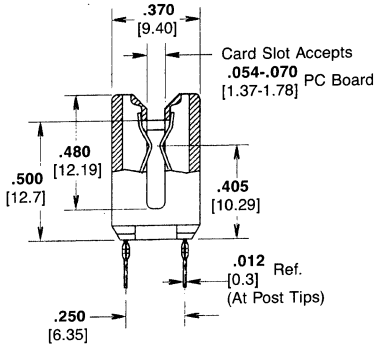
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMP PACE II Connectors .125 x .250 [3.18 x 6.35] Centerline .480 [12.19] Card Slot

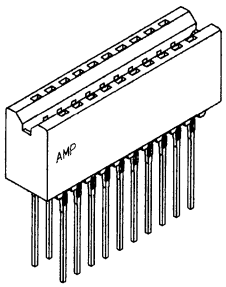
Standard Housing, .200 [5.08] Post Length

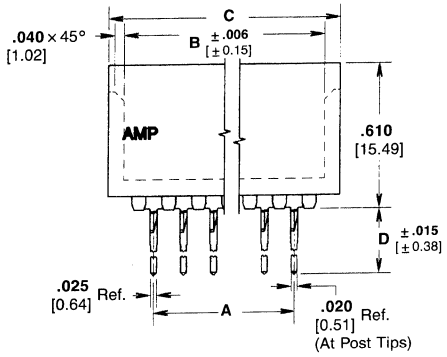


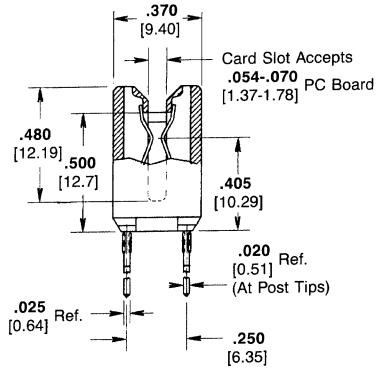




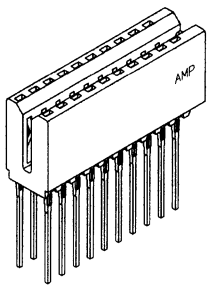
Standard Housing, .475 [12.06] or .700 [17.78] Post Length

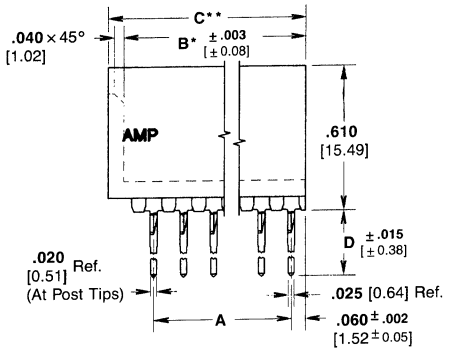


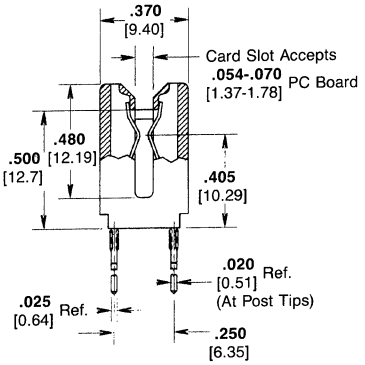




Open End/Closed End Housing, .475 [12.06] or .700 [17.78] Post Length







Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMP PACE II Connectors .125 x .250 [3.18 x 6.35] Centerline .480 [12.19] Card Slot (Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

Material and Finish:

Housing—Black glass-filled polyester

Contacts—Phosphor bronze, duplex plated .000030 [0.00076] gold in contact area, .000100 [0.00254] tin-lead on post, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Specifications - Page 3325
Technical Documents - Page 3325
PC Board Layouts - Page 3335
ACTION PIN Post Specifications - Pages 3336 & 3412

No. of Dual Postions	Dimensions			Post Length (D)	Connector Part Nos. (.480 [12.19] Card Slot)	
	A	B*	C**		Standard Housing	Open End/Closed End Housing
18	**2.125** 53.98	**2.375** 60.32	**2.505** 63.63	**.200** 5.08	—	650342-1
				.475 12.06	—	650135-1
22	**2.625** 66.68	**2.875** 73.02	**3.005** 76.33	**.475** 12.06	650134-6	—
28	**3.375** 85.72	**3.625** 92.08	**3.755** 95.38	**.475** 12.06	650134-1	—
35	**4.250** 107.95	**4.500** 114.30	**4.630** 117.60	**.700** 17.78	650134-3	—
36	**4.375** 111.12	**4.625** 117.48	**4.755** 120.78	**.475** 12.06	650134-2	—
				.700 17.78	650134-5	—
38	**4.625** 117.48	**4.875** 123.82	**5.005** 127.13	**.475** 12.06	—	650135-2
50	**6.125** 155.58	**7.625** 193.68	**7.755** 196.98	**.700** 17.78	650134-4	—

* For .125 [3.18] centerline connector with open end/closed end housing, subtract **.065** [1.65] from **B** dimension.

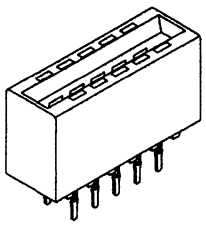
** For .125 [3.18] centerline connector with open end/closed end housing, subtract **.130** [3.3] from **C** dimension.

AMP PACE II Connectors .156 x .200 [3.96 x 5.08] Centerline .300 [7.62] Card Slot

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Standard Housing, .200 [5.08] Post Length



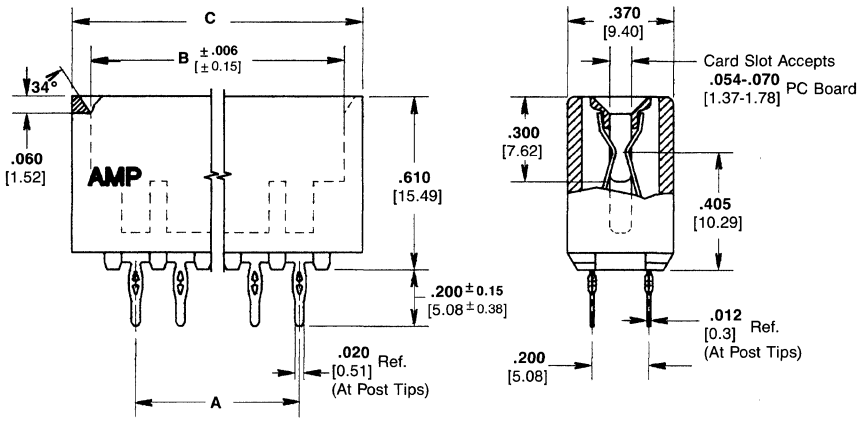
Material and Finish:

Housing—Black glass-filled polyester

Contacts—Phosphor bronze, duplex plated .000030 [0.00076] gold in contact area, .000100 [0.00254] tin-lead on post, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

Performance Specifications - Page 3325
Technical Documents - Page 3325
PC Board Layouts - Page 3335
ACTION PIN Post Specifications - Pages 3336 & 3412



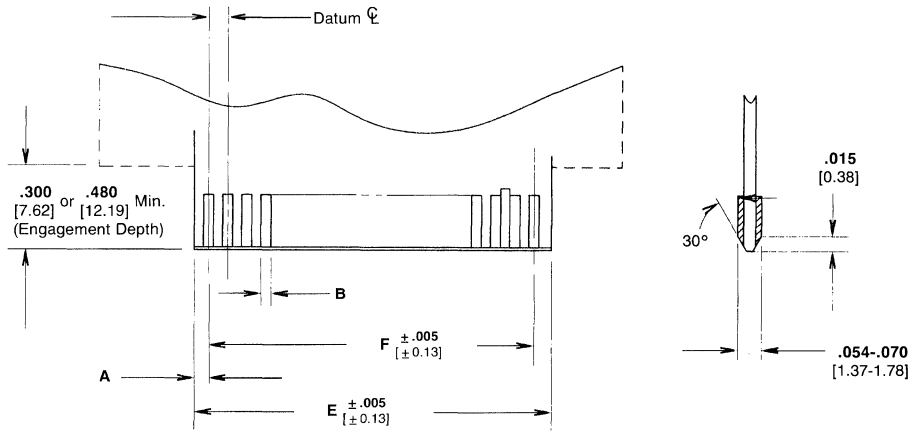
No. of Dual Positions	Dimensions			Connector Part Nos. (.300 [7.62] Card Slot, Standard Housing)
	A	B	C	
15	**2.184** 55.47	**2.496** 63.40	**2.626** 66.70	650276-1
22	**3.276** 83.21	**3.588** 91.14	**3.718** 94.44	650276-2
28	**4.212** 106.98	**4.524** 114.91	**4.654** 118.21	650276-3
43	**6.552** 166.42	**6.864** 174.35	**6.994** 177.65	650276-4

Recommended PC Board Hole Layouts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

PC Board Hole Layouts for .100 [2.54], .125 [3.18] and .156 [3.96] Centerline Connectors



No. of Dual Positions	Dimensions					
	.100 [2.54] Centerline A = .093 [2.36] B = .050 [1.27]		.125 [3.18] Centerline A = .118 [3.00] B = .075 [1.90]		.156 [3.96] Centerline A = .153 [3.89] B = .094 [2.39]	
	E	F	E	F	E	F
6	.386 9.80	.200 5.08	.861 21.87	.625 15.88	1.086 27.58	.780 19.81
9	—	—	1.236 31.39	1.000 2.540	—	—
10	1.086 27.58	.900 22.86	1.361 34.57	1.125 28.58	1.710 43.43	1.404 35.66
12	1.286 32.66	1.100 27.94	1.611 40.92	1.375 34.93	2.022 51.36	1.716 43.59
15	1.586 40.28	1.400 35.56	1.986 50.44	1.750 44.45	2.490 63.25	2.184 55.47
18	1.886 47.90	1.700 43.18	2.361 59.97	2.125 53.98	2.958 75.13	2.652 67.36
22	2.286 58.06	2.100 53.34	2.861 72.67	2.625 66.68	3.582 90.98	3.276 83.21
24	—	—	—	—	3.894 98.91	3.588 91.14
25	2.586 65.68	2.400 60.96	3.236 82.19	3.000 76.20	4.050 102.87	3.744 95.10
28	2.886 73.30	2.700 68.58	3.611 91.72	3.375 85.73	4.518 114.76	4.212 106.98
30	3.086 78.38	2.900 73.66	3.861 98.07	3.625 92.08	4.830 122.68	4.524 114.91
31	—	—	3.986 101.24	3.750 95.25	—	—
35	3.586 91.08	3.400 86.36	4.486 113.94	4.250 107.95	—	—
36	3.686 93.62	3.500 88.90	4.611 117.12	4.375 111.13	5.766 146.46	5.460 138.68
40	4.086 103.78	3.900 99.06	5.111 129.82	4.875 123.82	—	—
43	4.386 111.40	4.200 106.68	5.486 139.34	5.250 133.35	6.858 174.19	6.552 166.42
44	—	—	—	—	7.014 178.16	6.708 170.38
50	5.086 129.18	4.900 124.46	6.361 161.57	6.125 155.58	—	—
57	5.786 146.96	5.600 142.24	—	—	—	—
60	6.086 154.58	5.900 149.86	7.611 193.32	7.375 187.33	—	—
70	7.086 179.98	6.900 175.26	—	—	—	—

AMP ACTION PIN Press-Fit Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

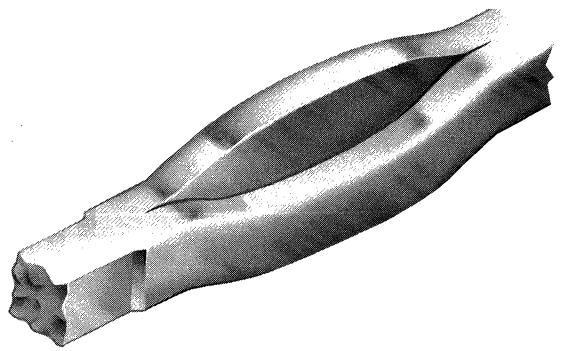


Figure 1.

ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area ensures oxide breakthrough and prevents corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

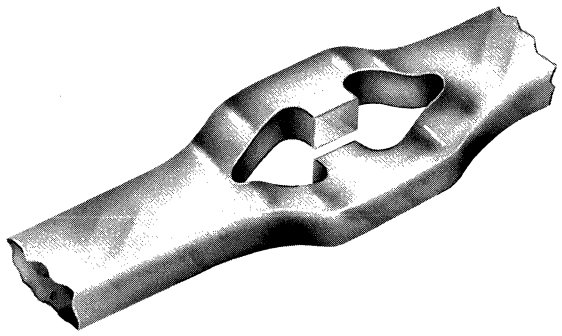


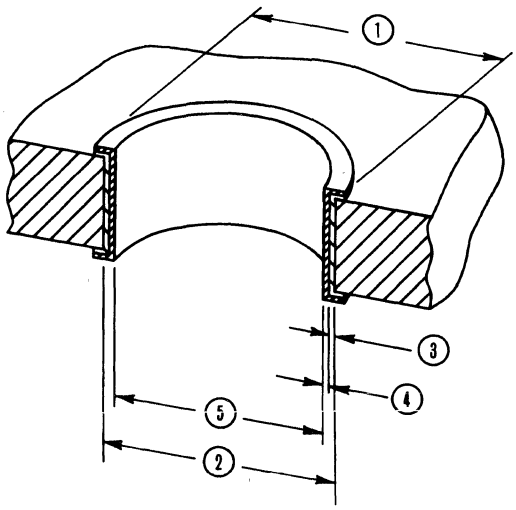
Figure 2.

ACTION PIN Thin Stock contacts extend the press-fit technology into thinner contact materials. The lower insertion force provided by this pin is ideal for applications requiring thinner contacts and/or toolless connector applications where wrap-type retention requirements are not needed.

ACTION PIN Thin Stock contacts maintain all of the interconnection properties of the ACTION PIN contact shown at the left.

PC Board Thickness

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To ensure optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



① Annular Ring (See Note)
② Drilled Hole
③ Copper Thickness
④ Tin-Lead Thickness
⑤ Plated-Through Hole

For more information on ACTION PIN Press-Fit Contacts
See page 3412

ACTION PIN Contact/PC Board Applications

Post Length	ACTION PIN Contact		Drilled Hole Diameter ②	Plating Thicknesses		Plated-Through Hole Diameter ⑤	Distortion Specification**	
	Configuration	Material Thickness		Copper ③*	Tin-Lead ④		Average	Maximum
.375 [9.52] **.475** [12.06] or **.700** [17.78]	Figure 1	**.025** 0.64	**.0453±.001** 1.151±0.03	**.001 - .003** 0.03 - 0.08	**.0003** 0.008 Min.	**.037 - .043** 0.94 - 1.09	**.0015** 0.038	**.002** 0.05
.200 [5.08]	Figure 2	**.012** 0.30	**.0453±.001** 1.151±0.03	**.001 - .003** 0.03 - 0.08	**.0003** 0.008 Min.	**.037 - .043** 0.94 - 1.09	**.0015** 0.038	**.002** 0.05

*Maximum hardness of copper layer is 150 Knoop
** Radial hole distortion
Note: Recommended annular ring diameter is hole diameter plus **.020** [0.51]

AMP PACE Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

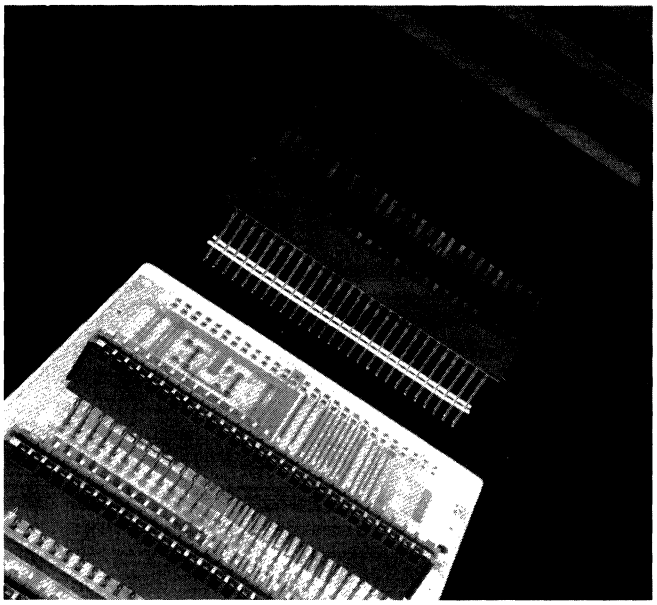
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

AMP PACE (Pre-Assembled Card Edge) Connectors are the latest innovation in the evolution of backplane architecture. Designed to shorten manufacturing time and reduce applied costs, these one-step, pre-assembled connectors are ready for mounting and mass insertion. In addition, design features such as removable housings and contacts, that are replaceable through the top of the connector housing, assure maximum flexibility in your backplane packaging.

At the heart of the AMP PACE Connector is AMP's proven and reliable ACTION PIN Contact. This unique contact has superior electrical and physical characteristics that are unmatched in the industry.

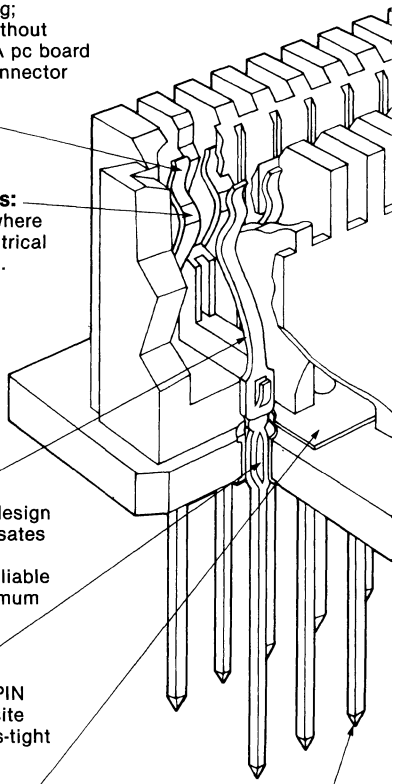
AMP PACE Connectors are available with post centerline spacings of:
.100 × .100 [2.54 × 2.54]
.100 × .200 [2.54 × 5.08]
.125 × .250 [3.18 × 6.35]

Important:
Application tooling is absolutely necessary to insert connectors into pc boards. See pages 3349 and 3350 for application tooling.



Features

Repairability:
(See page 3338 for details)
Individual contacts can be removed without removing the housing; housings can be removed without removing posts. **Important:** A pc board must be inserted into the connector when removing the contact.



Precision Plated Contacts:
Selective plating puts gold where it is needed for superior electrical contact at a reasonable cost.

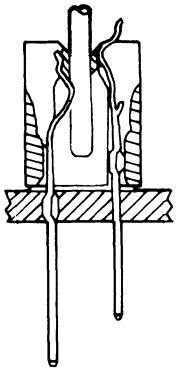
Beam Contact Design:
The contact's unique beam design accommodates and compensates for daughter board wrap and stress assuring long-term, reliable performance (100 gram minimum normal force).

Gas-Tight Connection:
Spring sections of ACTION PIN Contacts compress in opposite directions, maintaining a gas-tight fit with the pc board.

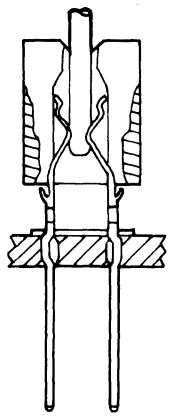
Contact Tip Alignment Strip:
Polyester strip assures straight and stable pin alignment for damage-free entry into the pc board.

Precision Plated Post:
Gold plated can be applied to the entire post, or just the post tip for improved pluggability.

Repairability Details



Remove and replace contacts without removing housing.



Remove and replace housing without removing contacts.

Electrical Characteristics

Contact Resistance—
ACTION PIN Contact Interface:
.5 milliohm
Spring Contact to Test Board:
11.5 milliohms

Total Circuit Resistance—
12 milliohms

Continuous Current Rating—
3 amperes

Insulation Resistance—
5,000 milliohms

Dielectric Withstanding Voltage—
.100 [2.54] Centerline Spacing:
1,000 VAC at sea level;
350 VAC at 50,000 ft. [15,240 m];
275 VAC at 70,000 ft. [21,336 m]
.125 [3.18] Centerline Spacing:
1,500 VAC at sea level;
500 VAC at 50,000 ft. [15,240 m];
235 VAC at 70,000 ft. [21,336 m]

Physical Characteristics

Card Insertion Force (Max.)—
16 oz. [4.45 N] per contact pair
ACTION PIN Contact Post

Card Extraction Force (Min.)—
1 oz. [.278 N] per contact pair
ACTION PIN Contact Post

Retention (in pc board)—
.100 × .100 [2.54 × 2.54]:
7.5 lb. [33.4 N] min.
All other connectors:
10 lb. [44.5 N] min.

Operating Temperature—
−55°C to +85°C

Salt Spray—MIL-STD-1344, Method 1001

Physical Shock—
MIL-STD-1344, Method 2004

Thermal Shock—
MIL-STD-1344, Method 1003, Cond. A

Humidity—MIL-STD-1344, Method 1002, Type II

Vibration—MIL-STD-1344, Method 2005

Technical Documents

AMP Instruction Sheets

IS 9091 Accessories and Tooling
IS 9188 Seating Tool .100 × .100 [2.54 × 2.54] Part No. 58200
IS 9067 Seating Tool .100 × .200 [2.54 × 5.08] Part No. 58140
IS 9063 Seating Tool .125 × .250 [3.18 × 6.35] Part No. 58142
IS 9058 Seating Tool .100 × .200 [2.54 × 5.08] with Card Scoops, Part No. 58150
IS 9119 Seating Tool .125 × .250 [3.18 × 6.35] with Card Scoops, Part No. 58184
IS 6881 Contact Replacement Tool .100 × .100 [2.54 × 2.54] with and without Scoops
IS 2933 Contact Replacement Tool .100 × .200 [2.54 × 5.08] and .125 × .250 [3.18 × 6.35]
IS 9186 Contact Replacement Tool .100 × .200 [2.54 × 5.08] and .125 × .250 [3.18 × 6.35] with Scoops
IS 2979 Seating Tool Power Distribution Module
IS 2978 Seating Tool Ground Module

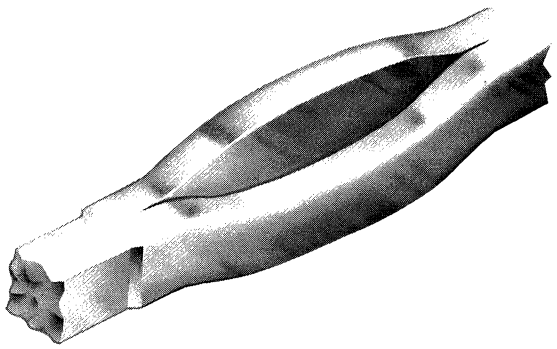
AMP Product Specification

108-14019

AMP Application Specification

114-26002

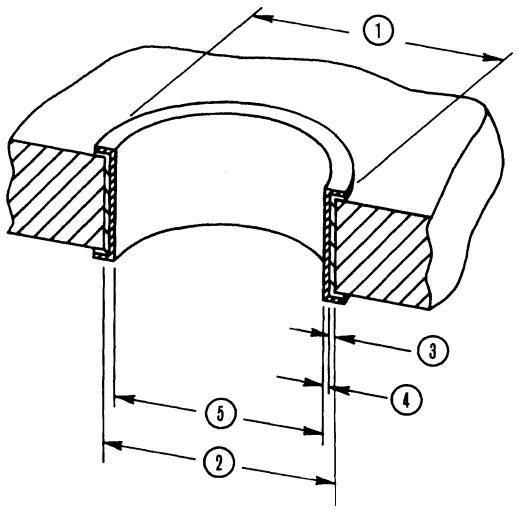
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)
kg (kilogram)
m (metre)
N (Newton)



ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area ensures oxide breakthrough and prevents corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

PC Board Thickness

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To ensure optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



① Annular Ring (See Note)
② Drilled Hole
③ Copper Thickness
④ Tin-Lead Thickness
⑤ Plated-Through Hole

For more information on ACTION PIN Press-Fit Contacts See page 3412

ACTION PIN Contact/PC Board Applications

Connector Centerline	ACTION PIN Contact Material Thickness	Drilled Hole Diameter ②	Plating Thicknesses		Plated-Through Hole Diameter ⑤	Distortion Specification**	
			Copper ③*	Tin-Lead ④		Average	Maximum
.100 x .100 [2.54 x 2.54] **.100 x .200** [2.54 x 5.08] **.125 x .250** [3.18 x 6.35]	**.025** 0.64	**.0435±.001** 1.153±0.03	**.001 - .003** 0.03 - 0.08	**.0003** 0.008 Min.	**.037 - .043** 0.94 - 1.09	**.0015** 0.038	**.002** 0.05

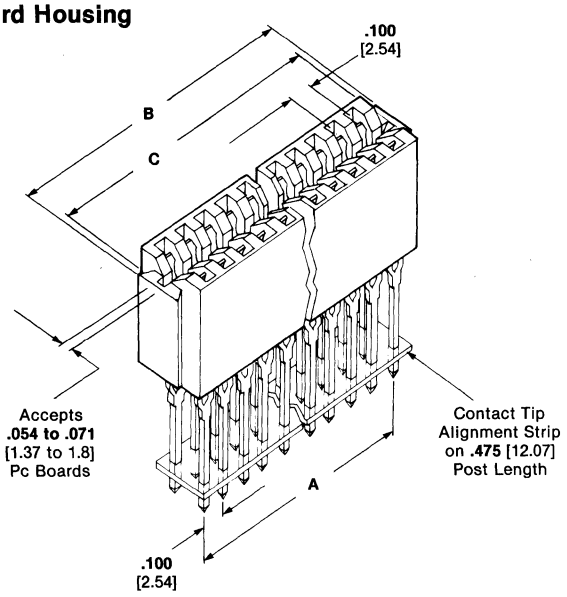
* Maximum hardness of copper layer is 150 Knoop
** Radial hole distortion
Note: Recommended annular ring diameter is hole diameter plus **.020** [0.51]

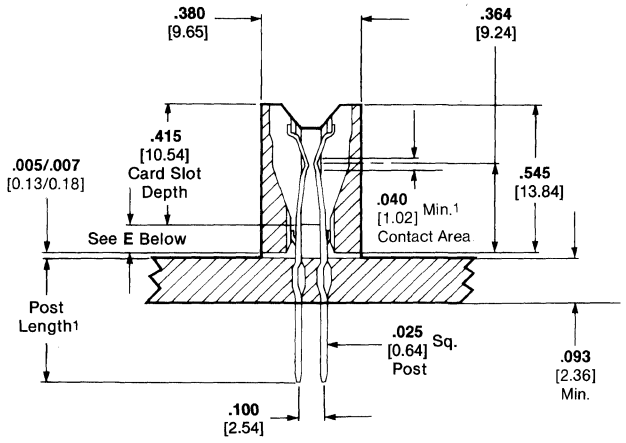
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

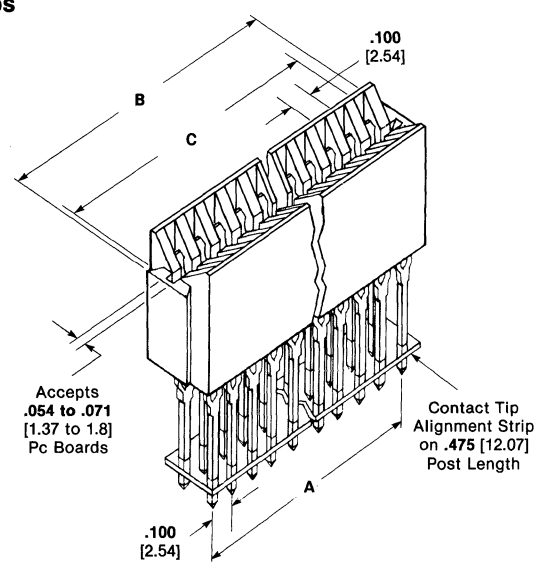
AMP PACE Connectors .100 x .100 [2.54 x 2.54] Centerline

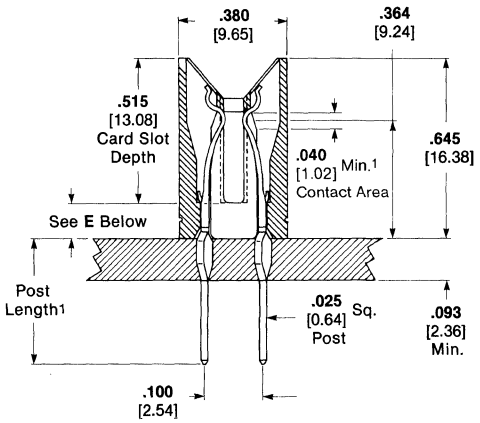
Standard Housing





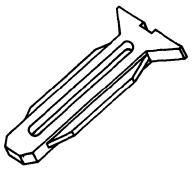
Housing with High Card Scoops



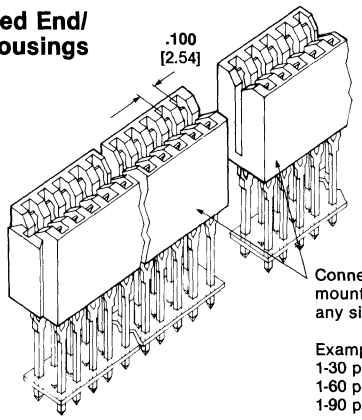


Keying Plugs

Intercontact (Plastic)
Part No. 119824-1

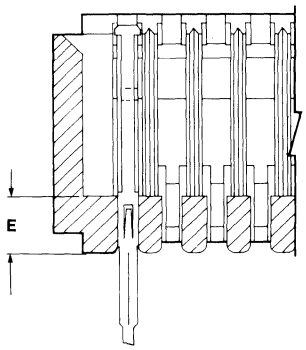


Typical Closed End/ Open End Housings



Connectors can be mounted in pairs using any size combinations.

Example:
1-30 pos. +
1-60 pos. =
1-90 pos.



E = .130 [3.30] Standard

[1]See materials on page 3341.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

AMP PACE Connectors .100 x .100 [2.54 x 2.54] Centerline
(Continued)

Materials:

Housings—Glass-filled polyester, blue, UL rated 94 V-O
Contacts—Copper alloy 725
Finish—
Contact Area: .000030 [0.00076] gold plate over nickel .000050 [0.00127] min.
Post Area: .000030 [0.00076] min. thk. solder tin-lead over .000050 [0.00127] min. thk. nickel plate.
Remainder of Contact: .000050 [0.00127] min. thk. nickel plate.

Contact Tip Alignment Strip—Polyester, clear type D

Note: Full gold plated posts and other platings and plating thicknesses can be made available.

No. of Dual Positions	Dimensions A	B	C	Post Lengths	Closed End/Closed End Standard	High Scoop	Closed End/Open End Standard
15	**1.400** 35.56	**1.734** 44.04	**1.604** 40.74	**.180** 4.75	119734-1	—	—
				.475 12.07	119237-1	—	—
25	**2.400** 60.96	**2.734** 69.44	**2.604** 66.14	**.180** 4.75	1-119734-1	—	—
28	**2.700** 68.58	**3.034** 77.06	**2.904** 73.76	**.180** 4.75	1-119734-4	—	—
30	**2.900** 73.66	**3.234** 82.14	**3.104** 78.84	**.180** 4.75	1-119734-6	—	—
35	**3.400** 83.36	**3.734** 94.84	**3.604** 91.54	**.180** 4.75	—	—	119831-6
				.475 12.07	—	—	119413-6
40	**3.900** 99.06	**4.234** 107.54	**4.104** 104.20	**.475** 12.07	2-119237-6	—	—
45	**4.400** 111.76	**4.734** 120.24	**4.604** 116.94	**.180** 4.75	—	3-119736-1	—
47	**4.600** 116.84	**4.934** 125.32	**4.804** 122.02	**.180** 4.75	—	3-119736-3	—
48	**4.700** 119.38	**5.034** 127.86	**4.904** 124.56	**.475** 12.07	3-119237-4	—	—
50	**4.900** 124.46	**5.234** 132.94	**5.104** 129.64	**.180** 4.75	3-119734-6	—	—
60	**5.900** 149.86	**6.234** 158.34	**6.104** 155.04	**.180** 4.75	4-119734-6	—	—

Notes:

1) Repair contacts (25 per strip)
.180 [4.75] Post Length—Part No. 1-119711-0
.475 [12.07] Post Length—Part No. 119711-1

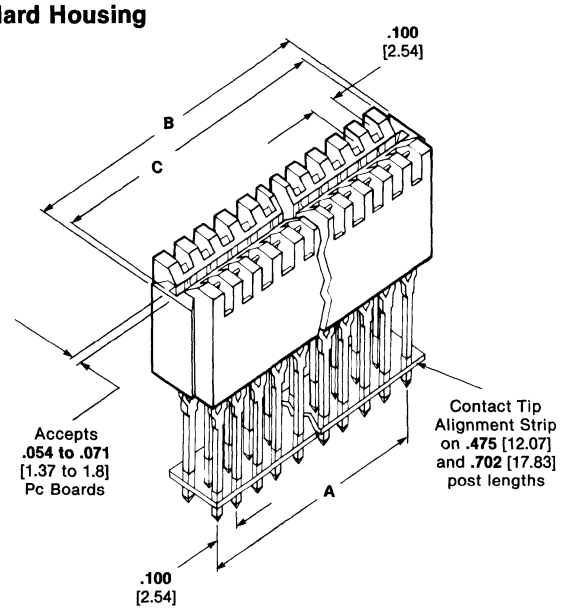
2) Other connectors and post lengths within the 15 through 60 dual position range are available. Consult AMP Incorporated, Harrisburg, PA 17105.

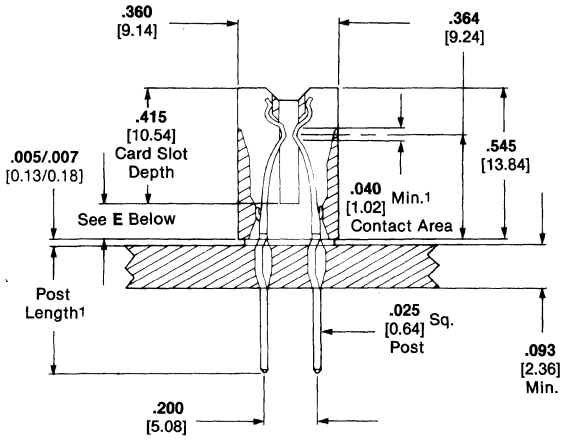
AMP PACE Connectors .100 x .200 [2.54 x 5.08] Centerline

Specifications subject to change.
For latest design specifications...
1-800-522-6752

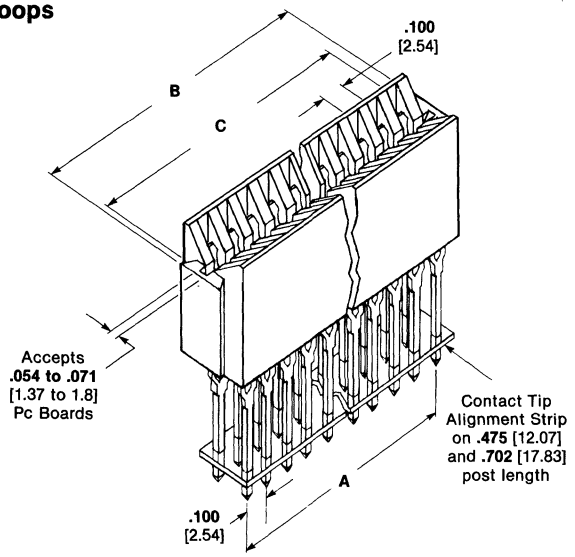
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

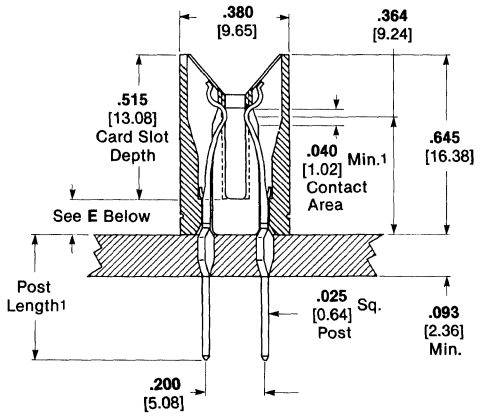
Standard Housing





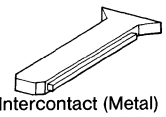
Housing with High Card Scoops



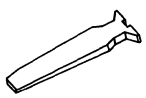


Keying Plugs

Intercontact (Plastic)
Part No. 118982-1

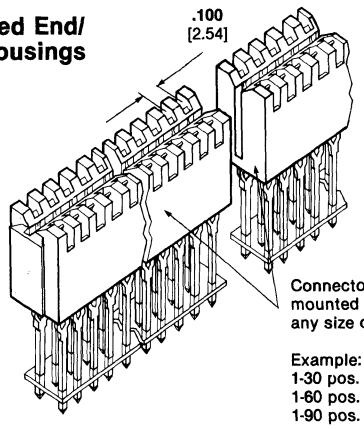


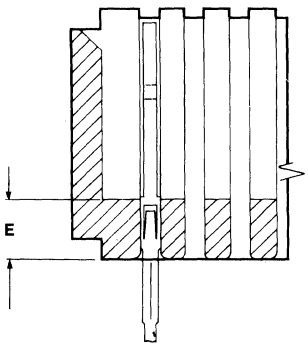
Intercontact (Metal)
Part No. 119129-2



[1]See materials on page 3343.

Typical Closed End/ Open End Housings





E = .130 [3.30] Standard

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMP PACE Connectors .100 x .200 [2.54 x 5.08] Centerline
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Materials:

Housings—Glass-filled polyester, blue, UL rated 94 V-O
Contacts—Copper alloy 725
Finish—
Contact Area: .000030 [0.00076] gold plate over nickel .000050 [0.00127] min.
Post Area: .000030 [0.00076] min. thk. solder tin-lead over .000050 [0.00127] min. thk. nickel plate.
Remainder of Contact: .000050 [0.00127] min. thk. nickel plate.

Contact Tip Alignment Strip—Polyester, clear type D

Note: Full gold plated posts and other platings and plating thicknesses can be made available.

No. of Dual Positions	Dimensions A	Dimensions B	Dimensions C	Post Lengths	Closed End/Closed End Standard	Closed End/Closed End High Scoop	Closed End/Open End Standard
15	**1.400** 35.56	**1.734** 44.04	**1.604** 40.74	**.180** 4.75	119738-1	119791-1	—
18	**1.700** 43.18	**2.034** 51.66	**1.904** 48.36	**.180** 4.75	119738-4	—	—
				.475 12.07	119216-4	—	—
20	**1.900** 48.26	**2.234** 56.74	**2.104** 53.44	**.180** 4.75	119738-6	—	—
28	**2.700** 68.58	**3.034** 77.06	**2.904** 73.76	**.180** 4.75	1-119738-4	—	—
30	**2.900** 73.66	**3.234** 82.14	**3.104** 78.84	**.180** 4.75	1-119738-6	1-119791-6	—
				.475 12.07	1-119216-6	—	—
32	**3.100** 78.74	**3.434** 87.22	**3.304** 83.92	**.180** 4.75	1-119738-8	—	—
35	**3.400** 86.36	**4.734** 94.84	**3.604** 91.54	**.702** 17.83	—	—	119467-6
36	**3.500** 88.90	**3.834** 97.38	**3.704** 94.08	**.180** 4.75	2-119738-2	—	—
				.475 12.07	2-119216-2	—	—
37	**3.600** 91.44	**3.934** 99.92	**3.804** 96.62	**.180** 4.75	2-119738-3	—	—
40	**3.900** 99.06	**4.234** 107.54	**4.104** 104.24	**.180** 4.75	2-119738-6	—	—
43	**4.200** 106.68	**4.534** 115.16	**4.404** 111.86	**.180** 4.75	2-119738-9	—	—
44	**4.300** 109.22	**4.634** 117.70	**4.504** 114.40	**.475** 12.07	3-119216-0	—	—
50	**4.900** 124.46	**5.234** 132.94	**5.104** 129.64	**.180** 4.75	3-119738-6	3-119791-6	—
				.475 12.07	3-119216-6	—	—
				.702 17.83	—	3-119726-6	—
55	**5.400** 137.16	**5.734** 145.54	**5.604** 142.34	**.180** 4.75	4-119738-1	—	—
60	**6.000** 152.40	**6.334** 160.88	**6.204** 157.58	**.180** 4.75	4-119738-6	—	—
				.702 17.83	4-119163-6	—	—

Notes:

1) Repair contacts (25 per strip)
.180 [4.75] Post Length—Part No. 119715-3
.475 [12.07] Post Length—Part No. 119715-1
.702 [17.83] Post Length—Part No. 119715-2

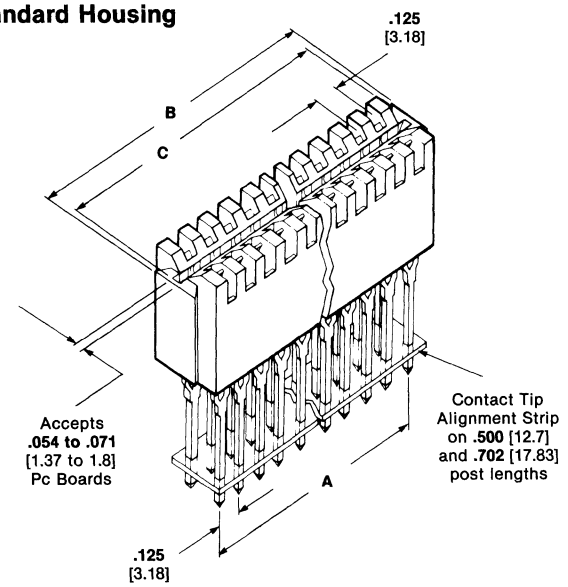
2) Other connectors and post lengths within the 15 through 60 dual position range are available. Consult AMP Incorporated, Harrisburg, PA 17105.

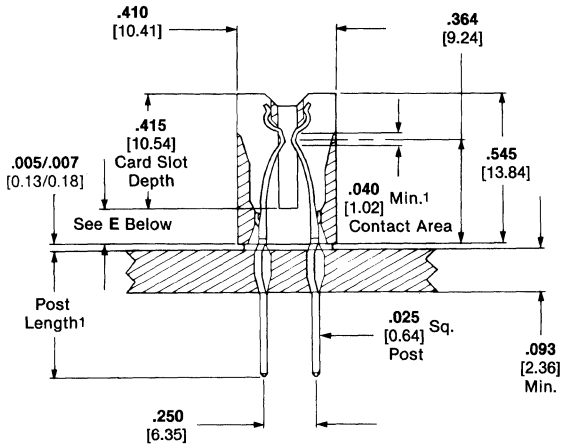
AMP PACE Connectors .125 x .250 [3.18 x 6.35] Centerline

Specifications subject to change.
For latest design specifications...
1-800-522-6752

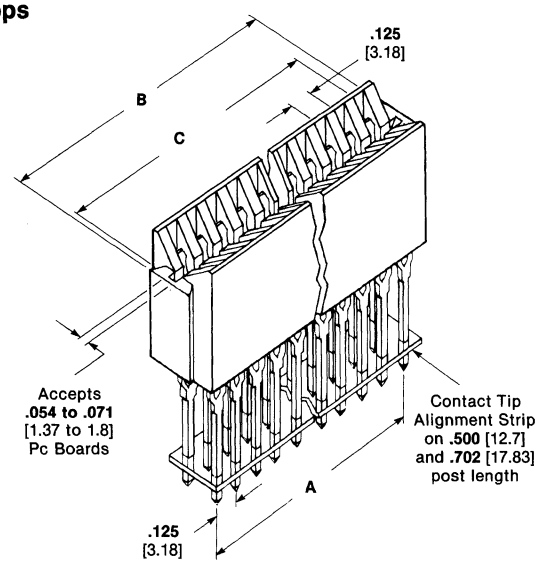
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

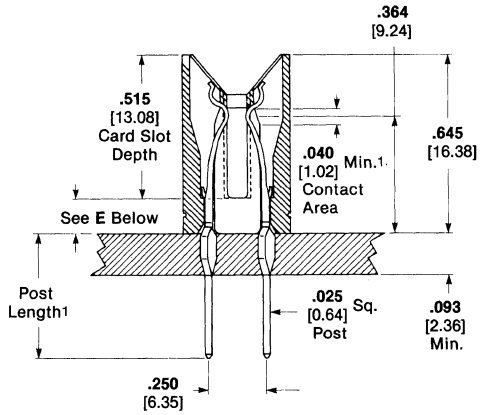
Standard Housing





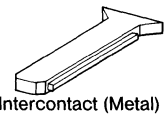
Housing with High Card Scoops



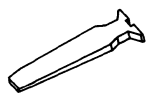


Keying Plugs

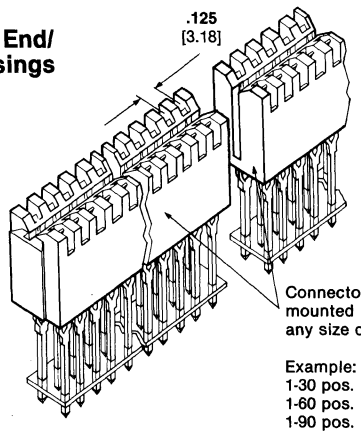
Intercontact (Plastic)
Part No. 118982-1



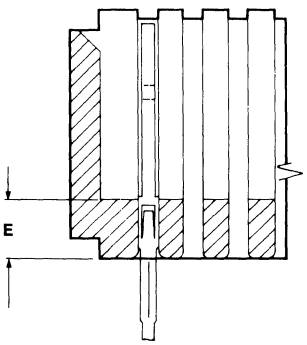
Intercontact (Metal)
Part No. 119129-2



Typical Closed End/ Open End Housings



Example:
1-30 pos. +
1-60 pos. =
1-90 pos.



E = .130 [3.30] Standard

[1]See materials on page 3345.

AMP PACE Connectors .125 x .250 [3.18 x 6.35] Centerline
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Materials:

Housings—Glass-filled polyester, blue, UL rated 94 V-O
Contacts—Copper alloy 725
Finish—
Contact Area: .000030 [0.00076] gold plate over nickel .000050 [0.00127] min.
Post Area: .000030 [0.00076] min. thk. solder tin-lead over .000050 [0.00127] min. thk. nickel plate.
Remainder of Contact: .000050 [0.00127] min. thk. nickel plate.

Contact Tip Alignment Strip—Polyester, clear type D

Note: Full gold plated posts and other platings and plating thicknesses can be made available.

No. of Dual Positions	Dimensions			Post Lengths	Closed End/Closed End		Closed End/Open End	
	A	B	C		Standard	High Scoop	Standard	High Scoop
22	**2.625** 66.68	**3.005** 76.33	**2.875** 73.02	**.180** 4.75	119822-8	—	—	—
28	**3.375** 85.72	**3.755** 95.38	**3.625** 92.08	**.180** 4.75	1-119822-4	—	—	—
				.500 12.70	1-119200-4	—	—	—
30	**3.625** 92.08	**4.005** 101.73	**3.875** 98.24	**.180** 4.75	1-119822-6	—	—	—
35	**4.250** 107.95	**4.630** 117.60	**4.500** 114.30	**.702** 17.83	—	2-119843-1	—	—
36	**4.375** 111.82	**4.755** 120.78	**4.625** 117.48	**.702** 17.83	2-119202-2	—	—	—
38	**4.625** 117.48	**5.005** 127.13	**4.875** 123.80	**.500** 12.70	—	—	—	119842-9
40	**4.875** 123.82	**5.255** 133.48	**5.125** 130.18	**.180** 4.75	2-119822-6	—	—	—
				.500 12.70	2-119200-6	—	—	—
				.702 17.83	2-119202-6	—	—	—
50	**6.125** 155.58	**6.505** 165.23	**6.375** 161.92	**.180** 4.75	3-119814-6	3-119814-6	—	—
56	**6.875** 174.62	**7.255** 184.28	**7.125** 180.98	**.702** 17.83	4-119202-2	—	—	—
60	**7.375** 187.32	**7.755** 196.98	**7.625** 193.68	**.180** 4.75	4-119822-6	—	—	—

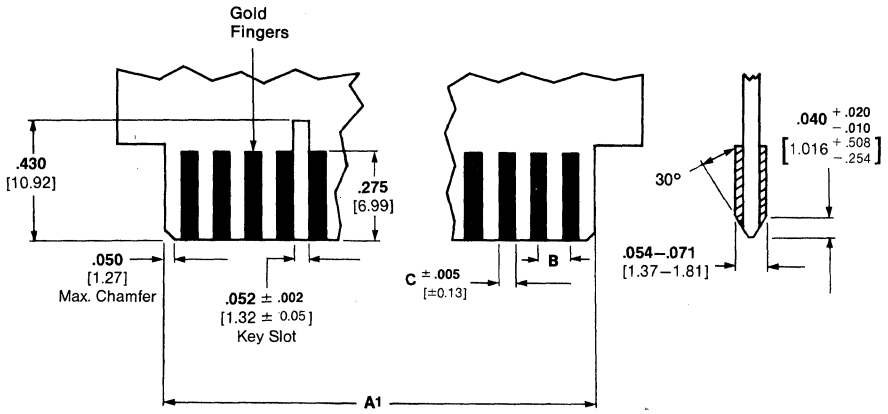
Notes:

1) Repair contacts (25 per strip)
.180 [4.75] Post Length—Part No. 119712-5
.500 [12.70] Post Length—Part No. 119712-2
.702 [17.83] Post Length—Part No. 119712-1

2) Other connectors and post lengths within the 15 through 60 dual position range are available. Consult AMP Incorporated, Harrisburg, PA 17105.

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Recommended Pc Board Layout



[1]A Max. = Minimum connector card slot −.001 [−0.03].
A Min. = Minimum connector card slot −.011 [−0.28].

Note: Finger pattern to be centered on daughter card.
Each finger can deviate .003 [0.08] from true position.

AMP PACE Connector Centerline Spacing	B	C
.100 x .100 2.54 x 2.54	**.100** 2.54	**.070** 1.78
.100 x .200 2.54 x 5.08	**.100** 2.54	**.070** 1.78
.125 x .250 3.18 x 6.35	**.125** 3.18	**.080** 2.03

AMP PACE Connectors Accessories

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Connector Card Guide

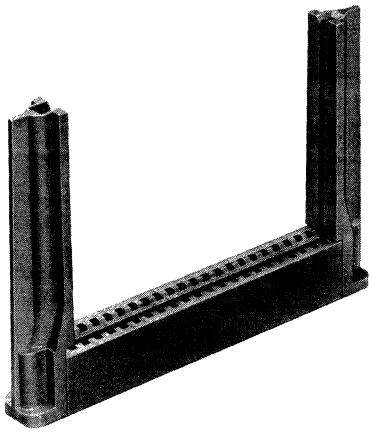
Materials:

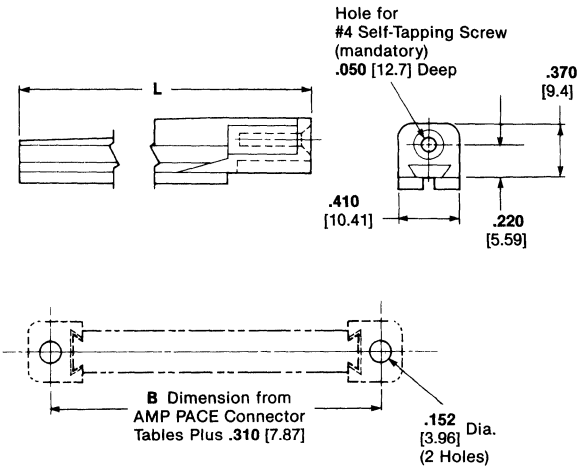
Housing—Glass filled polyester, blue

Note: Mates with all AMP PACE standard housings. Will not mate with some special housings.

L[1]	Part Number
.720 18.29	1-117169-2
2.500 63.5	117169-3
4.000 101.6	117169-6
6.000 152.4	1-117169-3

[1]Other lengths up to 6.0 [152.4] can be made available. Consult AMP Incorporated for details.





Power Distribution Module

Part No. 119337-1

Rating:

20 amperes per contact—copper bus

Materials:

Housings—Glass reinforced thermoplastic, blue

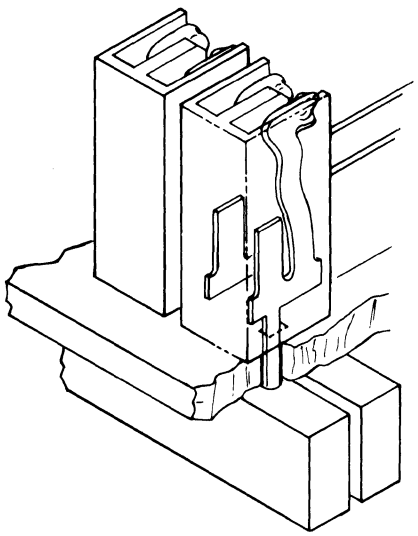
Contact—CA 195, 3/4 hard

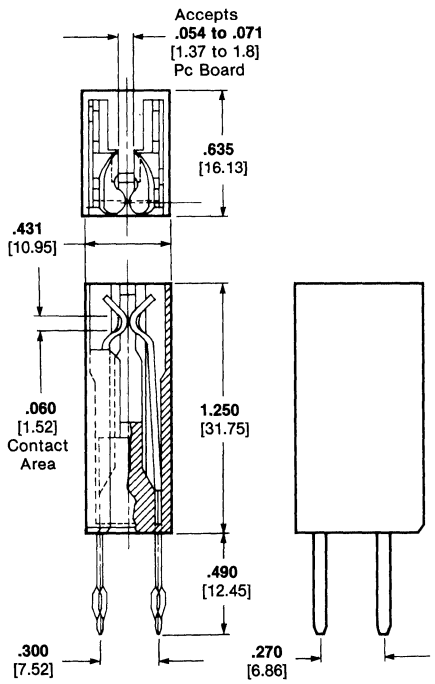
Contact Plating—.000050 [0.00127] min. thk. nickel all over; .000050 [0.00127] min. thk. gold in contact area (front face only); .000100 [0.00254] tin/lead on post.

Note: Mates with all AMP PACE standard housings. Will not mate with some special housings.

Seating Tool

Part No. 59882-1





AMP PACE Connectors Accessories

(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Ground Module

Part No. 119341-1

Rating:
20 amperes per contact—copper bus

Materials:

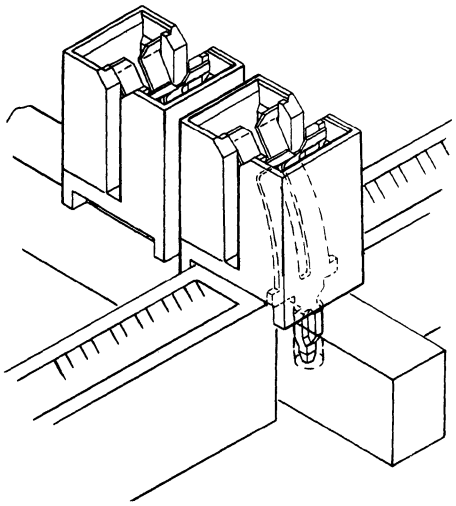
Housings—Glass reinforced thermoplastic, blue

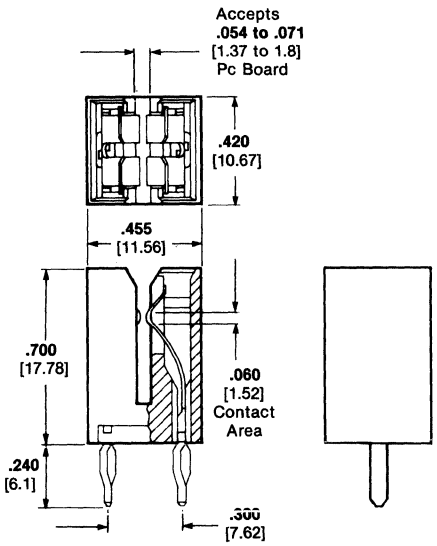
Contact—CA 195, 3/4 hard

Contact Plating—.000050 [0.00127] min. thk. nickel all over; .000050 [0.00127] min. thk. gold in contact area (front face only); .000100 [0.00254] tin/lead on post.

Seating Tool

Part No. 59881-1





AMP PACE Connectors Application Tooling

Specifications subject to change.
For latest design specifications...
1-800-522-6752

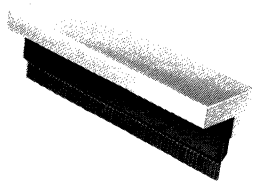
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Modular Seating Tools

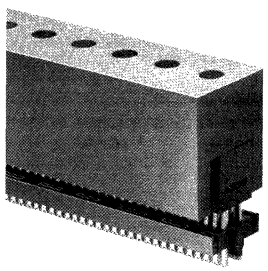
Available from AMP is a complete series of AMP PACE Modular Seating Tools for installing AMP PACE Connectors on printed circuit boards and panels. These tools are modular in design in that housing tool holders may be added or subtracted to accommodate several different connector sizes. In addition, all tool parts are individually replaceable should the tool become damaged. Modular seating tools are supplied in two basic designs: One which covers all connector centerlines except .100 × .100 [2.54 × 2.54] and one for the .100 × .100 [2.54 × 2.54] centerline connectors.

All seating tools have a common shut height of 1.500 inches [38.10]. This allows AMP PACE and other ACTION PIN products to be seated at the same time on AMP presses.

.100 × .100 [2.54 × 2.54] Centerline Spacing



.100 × .200 [2.54 × 5.08] .125 × .250 [3.18 × 6.35] Centerline Spacings



For Connectors without Scoops

No. of Dual Positions	Centerline .100 × .100 [2.54 × 2.54]	.100 × .200 [2.54 × 5.08]	.125 × .250 [3.18 × 6.35]
15	58200-1	58140-1	—
18	—	58140-4	—
20	—	58140-6	—
22	—	—	58142-8
25	1-58200-1	—	—
28	1-58200-4	1-58140-4	1-58142-4
30	1-58200-6	1-58140-6	1-58142-6
32	—	1-58140-8	—
35	2-58200-1	2-58140-1	—
36	—	2-58140-2	2-58142-2
37	—	2-58140-3	—
40	2-58200-6	2-58140-6	2-58142-6
43	—	2-58140-9	—
44	—	3-58140-0	—
48	3-58200-4	—	—
50	3-58200-6	3-58140-6	3-58142-6
55	—	4-58140-1	—
56	—	—	4-58142-2
60	4-58200-6	4-58140-6	4-58142-6

For Connectors with Scoops

No. of Dual Positions	Centerline .100 × .100 [2.54 × 2.54]	.100 × .200 [2.54 × 5.08]	.125 × .250 [3.18 × 6.35]
15	—	58150-1	—
30	—	1-58150-6	—
35	—	—	2-58184-1
38	—	—	2-58184-4
45	3-58200-1	—	—
47	3-58200-3	—	—
50	—	3-58150-6	3-58184-6

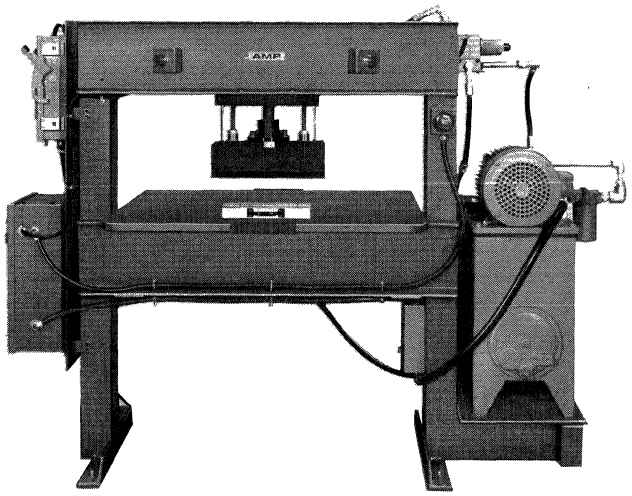
AMP PACE Connectors Application Tooling
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

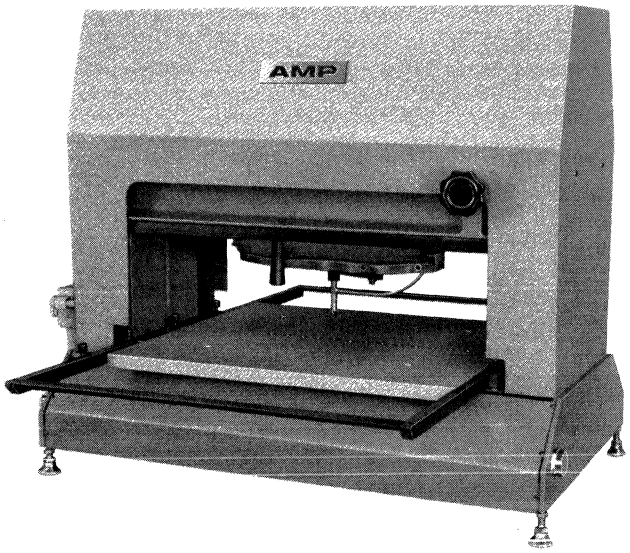
AMP H-Frame Power Units

For medium to high volume production, 36,000 lb. [16,329.3 kg] capacity and 20,000 lb. [9071.8 kg] capacity, the H-Frame Power Units will accept printed circuit boards up to 20.00 × 28.00 [508 × 711.2]. The unit includes a hydraulic pump and all necessary controls.



AMP SM-3 Machine

This three ton bench machine may be used as an alternative to the H-Frame machine for medium volume production. The machine is air-powered and easily adjustable to provide controlled force and quiet operation. A board surface sensing feature allows for board thickness variations.



Contact Replacement Tools

Centerline	Housing Style	
	Standard	Full Card Scoop
.100 × .100 2.54 × 2.54	266220-3	59960-1
.125 × .250 3.18 × 6.35	266220-2	58210-2
.100 × .200 2.54 × 5.08	266220-1	58210-1

Note: Contact Extraction Tool for all sizes, Part Number 1-265871-7.

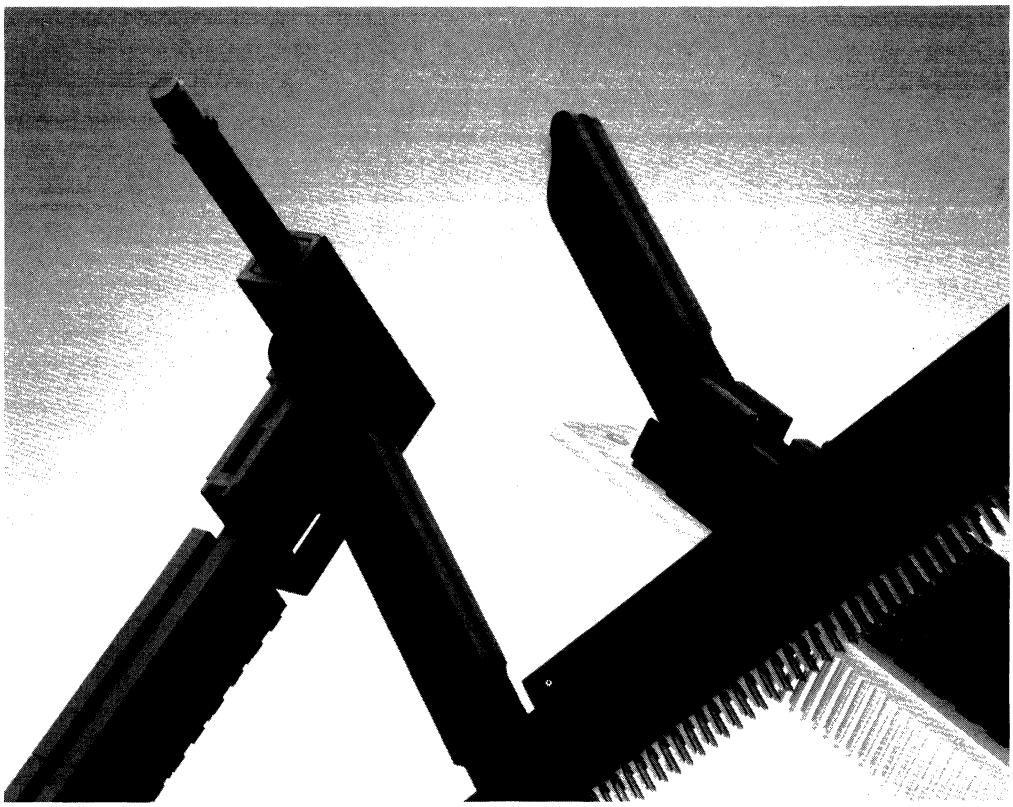
Linear ZIF PC Board Edge Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Product Facts

- Minimizes force needed to install and remove printed circuit boards
- Available in lever and bell crank styles
- Lever styles allow side and top card entry
- Wiping action contacts enhance electrical properties
- Contacts on .100 x .100 [2.54 x 2.54] or .125 x .125 [3.18 x 3.18] centers
- .025 [0.64] square posts
- Accepts pc boards from .054 to .070 [1.37 to 1.78] in thickness
- Normally closed design leaves springs in relaxed position
- 30 to 175 dual positions available on .100 [2.54] centerline connectors and 24 to 140 dual positions available on .125 [3.18] centerline connectors



Specifications

Current vs. Temperature Rise:
3 amperes at 30°C

Operating Temperature:
-65°C to +85°C

Contact Resistance:
16 milliohms max.

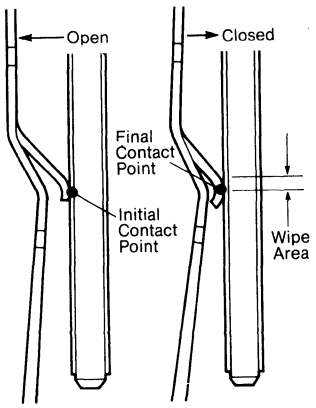
Durability:
250 cycles board to contact actuation based on test results.

AMP Linear ZIF PCB Edge Connectors are available in both lever and bell crank actuated styles and can be provided as panel assemblies, separate housings and contacts or as preassembled with solder post terminals.

Panel assemblies include a housing with ACTION PIN press fit solderless contacts mounted on an epoxy board for rack application. Separate housing assemblies and ACTION PIN contacts allow customer assembly. These can be mounted as close as .625 [16]. More design latitude for high density application is provided by the side entry lever-type connector, permitting use of all sides of the pc board for edge-type I/O connections (see page 3371). Where solder applications are required, AMP has a line of preassembled connectors with tin-plated solder terminals. All these configurations are available in a broad range of sizes.

With ZIF style connectors, intermittencies can occur if a contact comes to rest on a piece of foreign matter (dust and dirt particles) found on pc boards. To decrease the probability of this happening, all connectors have been designed to include a wiping contact which produces a wiping action. This action, produced by the geometry and bending movements of the beam, pushes aside debris and allows for good electrical connection by cleaning the actual point of contact.

In addition, all connectors have removable wings which make it possible to repair or replace damaged cam rails, handles, contacts and housing modules without removing the entire housing assembly from the board.



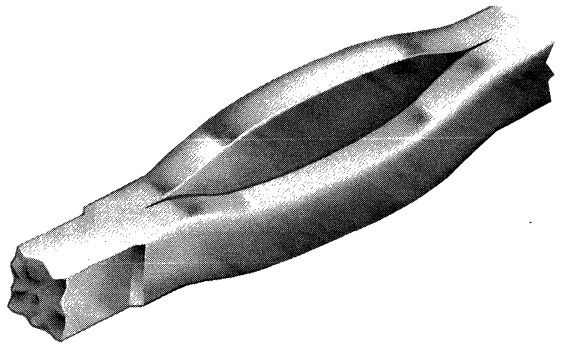
ZIF Wiping Contact

AMP ACTION PIN Press-Fit Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

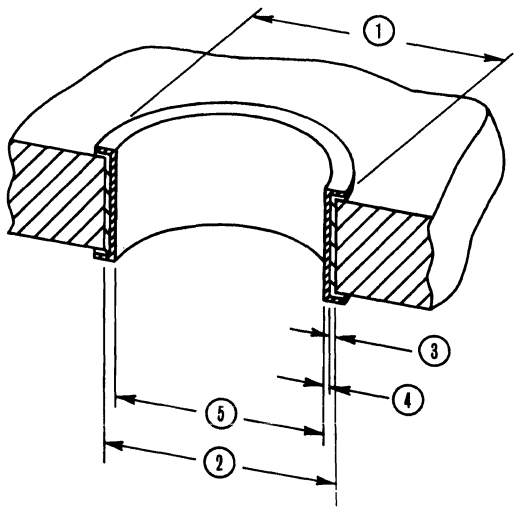
Chart contains dimensions in inches over millimeters.



ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area ensures oxide break-through and prevents corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

PC Board Thickness

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To ensure optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



① Annular Ring (See Note)
② Drilled Hole
③ Copper Thickness
④ Tin-Lead Thickness
⑤ Plated-Through Hole

For more information on ACTION PIN Press-Fit Contacts
See page 3412

ACTION PIN Contact/PC Board Applications

Connector Type	ACTION PIN Contact Material Thickness	Drilled Hole Diameter ②	Plating Thicknesses		Plated-Through Hole Diameter ⑤	Distortion Specification**	
			Copper ③*	Tin-Lead ④		Average	Maximum
Linear ZIF	**.025** 0.64	**.0435±.001** 1.153±0.03	**.001 - .003** 0.03 - 0.08	**.0003** 0.008 Min.	**.037 - .043** 0.94 - 1.09	**Not Specified**	**Not Specified**

* Maximum hardness of copper layer is 150 Knoop
** Radial hole distortion
Note: Recommended annular ring diameter is hole diameter plus **.020** [0.51]

Linear ZIF PC Board Edge Connectors
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

.100 x .100 [2.54 x 2.54] Panel Assemblies

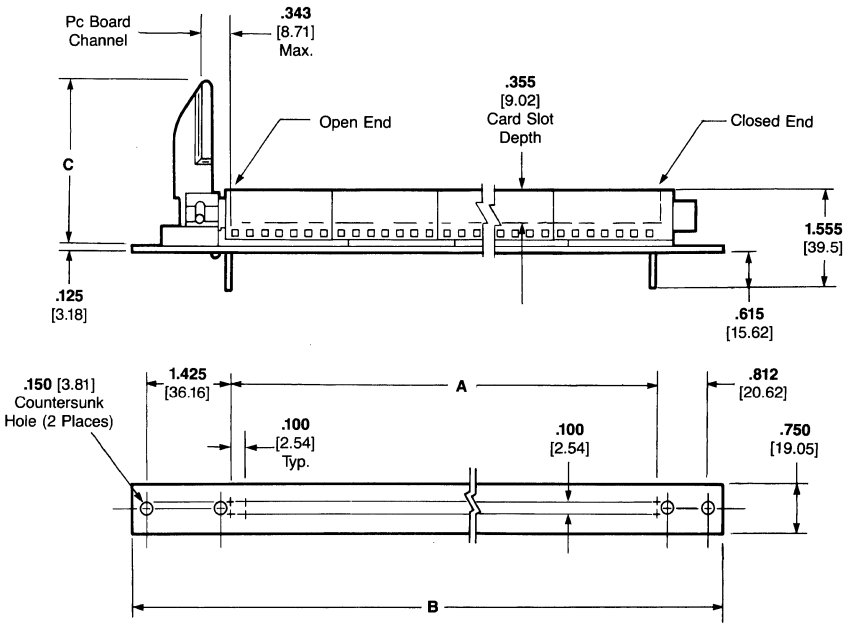
Materials and Finish:

Housing - Glass-filled polyester, black
Contact- Copper alloy 725
Contact Finish - .000015 [0.00038] min.thk.gold plate in contact area and .000001 [0.000025] min.thk.gold flash in post area per MIL-G-45204, over .000050 [0.00127] min.thk.nickel plate per QQ-N-290

Notes:

1. Accepts pc boards .054-.070 [1.37-1.78] thick.
2. See page 3357 for additional contact specifications.
3. See page 3360 for recommended pc board layouts.
4. See page 3372 for tooling information.

Lever Style, Side Entry



No. of Dual Positions	Dimensions A	B	C	Part Number	Packaging Quantities
30	**2.900** 73.66	**5.625** 142.88	**2.000** 50.8	645145-1	3 Pcs./Tube 2 Tubes/Box Total - 6 Pcs.
35	**3.400** 86.36	**6.125** 155.58	**2.000** 50.8	645145-2	
40	**3.900** 99.06	**6.625** 168.28	**2.000** 50.8	645145-3	
45	**4.400** 111.76	**7.125** 180.98	**2.000** 50.8	645145-4	2 Pcs./Tube 3 Tubes/Box Total - 6 Pcs.
50	**4.900** 124.46	**7.625** 193.68	**2.000** 50.8	645145-5	
55	**5.400** 137.16	**8.125** 206.38	**2.000** 50.8	645145-6	
60	**5.900** 149.86	**8.625** 219.08	**2.000** 50.8	645145-7	
65	**6.400** 162.56	**9.125** 231.78	**3.000** 76.2	645145-8	
70	**6.900** 175.26	**9.625** 244.48	**3.000** 76.2	645145-9	1 Pc./Tube 6 Tubes/Box Total - 6 Pcs.
75	**7.400** 187.96	**10.125** 257.18	**3.000** 76.2	1-645145-0	
80	**7.900** 200.66	**10.625** 269.88	**3.000** 76.2	1-645145-1	
85	**8.400** 213.36	**11.125** 282.58	**3.000** 76.2	1-645145-2	
90	**8.900** 226.06	**11.625** 295.28	**3.000** 76.2	1-645145-3	
95	**9.400** 238.76	**12.125** 307.98	**3.000** 76.2	1-645145-4	
100	**9.900** 251.46	**12.625** 320.68	**3.000** 76.2	1-645145-5	

No. of Dual Positions	Dimensions A	B	C	Part Number	Packaging Quantities
105	**10.400** 264.16	**13.125** 333.38	**3.000** 76.2	1-645145-6	1 Pc./Tube 3 Tubes/Box Total - 3 Pcs.
110	**10.900** 276.86	**13.625** 346.08	**3.000** 76.2	1-645145-7	
115	**11.400** 289.56	**14.125** 358.78	**3.000** 76.2	1-645145-8	
120	**11.900** 302.26	**14.625** 371.48	**3.000** 76.2	1-645145-9	
125	**12.400** 314.96	**15.125** 384.18	**3.000** 76.2	2-645145-0	
130	**12.900** 327.66	**15.625** 396.88	**3.000** 76.2	2-645145-1	
135	**13.400** 340.36	**16.125** 409.58	**3.000** 76.2	2-645145-2	
140	**13.900** 353.06	**16.625** 422.28	**3.000** 76.2	2-645145-3	
145	**14.400** 365.76	**17.125** 434.98	**3.000** 76.2	2-645145-4	
150	**14.900** 378.46	**17.625** 447.68	**3.000** 76.2	2-645145-5	
155	**15.400** 391.16	**18.125** 460.38	**3.000** 76.2	2-645145-6	
160	**15.900** 403.86	**18.625** 473.08	**3.000** 76.2	2-645145-7	
165	**16.400** 416.56	**19.125** 485.78	**3.000** 76.2	2-645145-8	
170	**16.900** 429.26	**19.625** 498.48	**3.000** 76.2	2-645145-9	
175	**17.400** 441.96	**20.125** 511.18	**3.000** 76.2	3-645145-0	

Linear ZIF PC Board Edge Connectors
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

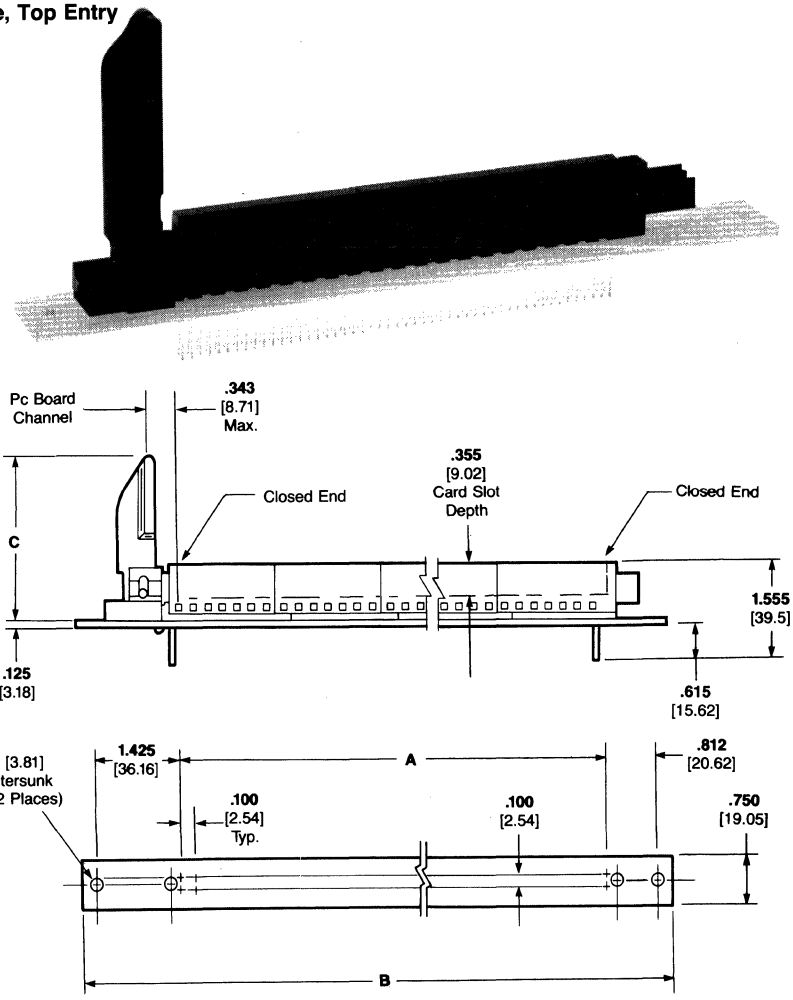
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

.100 x .100 [2.54 x 2.54] Panel Assemblies

Materials and Finish:
Housing - Glass-filled polyester, black
Contact - Copper alloy 725
Contact Finish - .000015 [.00038] min. thk. gold plate in contact area and .000001 [0.000025] min. thk. gold flash in post area per MIL-G-45204, over .000050 [0.00127] min. thk. nickel plate per QQ-N-290

Notes:
1. Accepts pc boards .054-.070 [1.37-1.78] thick.
2. See page 3357 for additional contact specifications.
3. See page 3360 for recommended pc board layouts.
4. See page 3372 for tooling information.

Lever Style, Top Entry



No. of Dual Positions	Dimensions A	B	C	Part Number	Packaging Quantities
30	**2.900** 73.66	**5.625** 142.88	**2.000** 50.8	645147-1	3 Pcs./Tube 2 Tubes/Box Total - 6 Pcs.
35	**3.400** 86.36	**6.125** 155.58	**2.000** 50.8	645147-2	
40	**3.900** 99.06	**6.625** 168.28	**2.000** 50.8	645147-3	
45	**4.400** 111.76	**7.125** 180.98	**2.000** 50.8	645147-4	2 Pcs./Tube 3 Tubes/Box Total - 6 Pcs.
50	**4.900** 124.46	**7.625** 193.68	**2.000** 50.8	645147-5	
55	**5.400** 137.16	**8.125** 206.38	**2.000** 50.8	645147-6	
60	**5.900** 149.86	**8.625** 219.08	**2.000** 50.8	645147-7	
65	**6.400** 162.56	**9.125** 231.78	**3.000** 76.2	645147-8	
70	**6.900** 175.26	**9.625** 244.48	**3.000** 76.2	645147-9	1 Pc./Tube 6 Tubes/Box Total - 6 Pcs.
75	**7.400** 187.96	**10.125** 257.18	**3.000** 76.2	1-645147-0	
80	**7.900** 200.66	**10.625** 269.88	**3.000** 76.2	1-645147-1	
85	**8.400** 213.36	**11.125** 282.58	**3.000** 76.2	1-645147-2	
90	**8.900** 226.06	**11.625** 295.28	**3.000** 76.2	1-645147-3	
95	**9.400** 238.76	**12.125** 307.98	**3.000** 76.2	1-645147-4	
100	**9.900** 251.46	**12.625** 320.68	**3.000** 76.2	1-645147-5	

No. of Dual Positions	Dimensions A	B	C	Part Number	Packaging Quantities
105	**10.400** 264.16	**13.125** 333.38	**3.000** 76.2	1-645147-6	1 Pc./Tube 4 Tubes/Box Total - 4 Pcs.
110	**10.900** 276.86	**13.625** 346.08	**3.000** 76.2	1-645147-7	
115	**11.400** 289.56	**14.125** 358.78	**3.000** 76.2	1-645147-8	
120	**11.900** 302.26	**14.625** 371.48	**3.000** 76.2	1-645147-9	
125	**12.400** 314.96	**15.125** 384.18	**3.000** 76.2	2-645147-0	
130	**12.900** 327.66	**15.625** 396.88	**3.000** 76.2	2-645147-1	
135	**13.400** 340.36	**16.125** 409.58	**3.000** 76.2	2-645147-2	
140	**13.900** 353.06	**16.625** 422.28	**3.000** 76.2	2-645147-3	
145	**14.400** 365.76	**17.125** 434.98	**3.000** 76.2	2-645147-4	
150	**14.900** 378.46	**17.625** 447.68	**3.000** 76.2	2-645147-5	
155	**15.400** 391.16	**18.125** 460.38	**3.000** 76.2	2-645147-6	
160	**15.900** 403.86	**18.625** 473.08	**3.000** 76.2	2-645147-7	
165	**16.400** 416.56	**19.125** 485.78	**3.000** 76.2	2-645147-8	
170	**16.900** 429.26	**19.625** 498.48	**3.000** 76.2	2-645147-9	
175	**17.400** 441.96	**20.125** 511.18	**3.000** 76.2	3-645147-0	

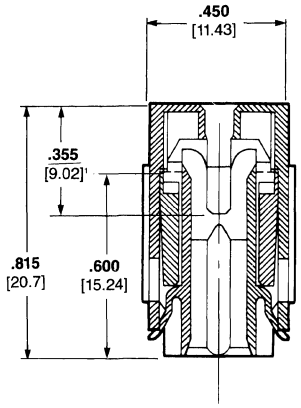
Linear ZIF PC Board Edge Connectors
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

.100 x .100 [2.54 x 2.54] Housing Assemblies

Material:
Glass-filled polyester, black

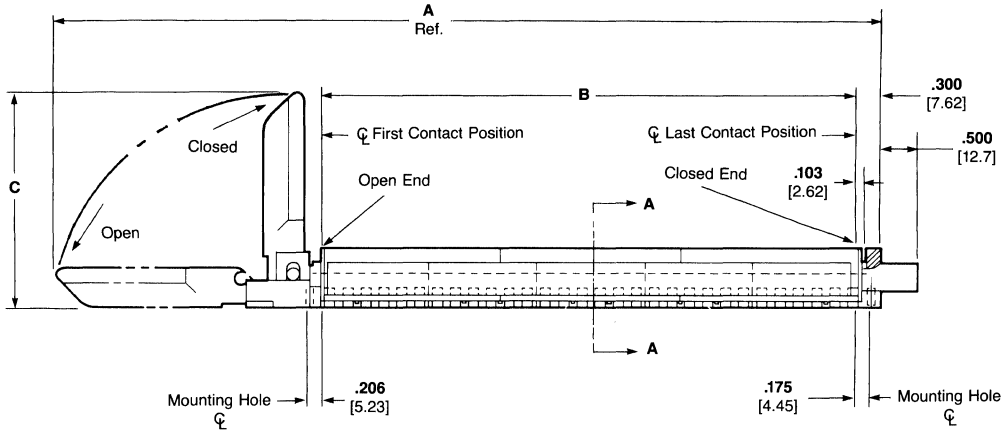
Notes:
1. Accepts pc boards .054-.070 [1.37-1.78] thick.
2. Customer supplied mounting screws must be applied before opening connector.
3. See page 3357 for contact specifications and part numbers.
4. See page 3360 for recommended pc board layout.
5. See page 3372 for tooling information.



Section A-A

¹Card slot depth.

Lever Style, Side Entry



No. of Dual Positions	Dimensions A	B	C	Part Number	Packaging Quantities
30	**5.613** 142.57	**2.900** 73.66	**2.000** 50.8	645115-1	6 Pcs./Tray 3 Trays/Box Total - 18 Pcs.
35	**6.113** 155.27	**3.400** 86.36	**2.000** 50.8	645115-2	
40	**6.613** 167.97	**3.900** 99.06	**2.000** 50.8	645115-3	
45	**7.113** 180.67	**4.400** 111.76	**2.000** 50.8	645115-4	4 Pcs./Tray 3 Trays/Box Total - 12 Pcs.
50	**7.613** 193.37	**4.900** 124.46	**2.000** 50.8	645115-5	
55	**8.113** 206.07	**5.400** 137.16	**2.000** 50.8	645115-6	
60	**8.613** 218.77	**5.900** 146.86	**2.000** 50.8	645115-7	
65	**10.113** 256.87	**6.400** 162.56	**3.000** 76.2	645115-8	
70	**10.613** 269.57	**6.900** 175.26	**3.000** 76.2	645115-9	
75	**11.113** 282.27	**7.400** 187.96	**3.000** 76.2	1-645115-0	
80	**11.613** 294.97	**7.900** 200.66	**3.000** 76.2	1-645115-1	2 Pcs./Tray 3 Trays/Box Total - 6 Pcs.
85	**12.113** 307.67	**8.400** 213.36	**3.000** 76.2	1-645115-2	
90	**12.613** 320.37	**8.900** 226.06	**3.000** 76.2	1-645115-3	
95	**13.113** 333.07	**9.400** 238.76	**3.000** 76.2	1-645115-4	
100	**13.613** 345.77	**9.900** 251.46	**3.000** 76.2	1-645115-5	

No. of Dual Positions	Dimensions A	B	C	Part Number	Packaging Quantities
105	**14.113** 358.47	**10.400** 264.16	**3.000** 76.2	1-645115-6	2 Pcs./Tray 3 Trays/Box Total - 6 Pcs.
110	**14.613** 371.17	**10.900** 276.86	**3.000** 76.2	1-645115-7	
115	**15.113** 383.87	**11.400** 289.56	**3.000** 76.2	1-645115-8	
120	**15.613** 396.57	**11.900** 302.26	**3.000** 76.2	1-645115-9	
125	**16.113** 409.27	**12.400** 314.96	**3.000** 76.2	2-645115-0	
130	**16.613** 421.97	**12.900** 327.66	**3.000** 76.2	2-645115-1	
135	**17.113** 434.67	**13.400** 340.36	**3.000** 76.2	2-645115-2	
140	**17.613** 447.37	**13.900** 353.06	**3.000** 76.2	2-645115-3	
145	**18.113** 460.07	**14.400** 365.76	**3.000** 76.2	2-645115-4	
150	**18.613** 427.77	**14.900** 378.46	**3.000** 76.2	2-645115-5	
155	**19.113** 485.47	**15.400** 391.16	**3.000** 76.2	2-645115-6	
160	**19.613** 498.17	**15.900** 403.86	**3.000** 76.2	2-645115-7	
165	**20.113** 510.87	**16.400** 416.56	**3.000** 76.2	2-645115-8	
170	**20.613** 523.57	**16.900** 429.26	**3.000** 76.2	2-645115-9	
175	**21.113** 536.27	**17.400** 441.96	**3.000** 76.2	3-645115-0	

Linear ZIF PC Board Edge Connectors
(Continued)

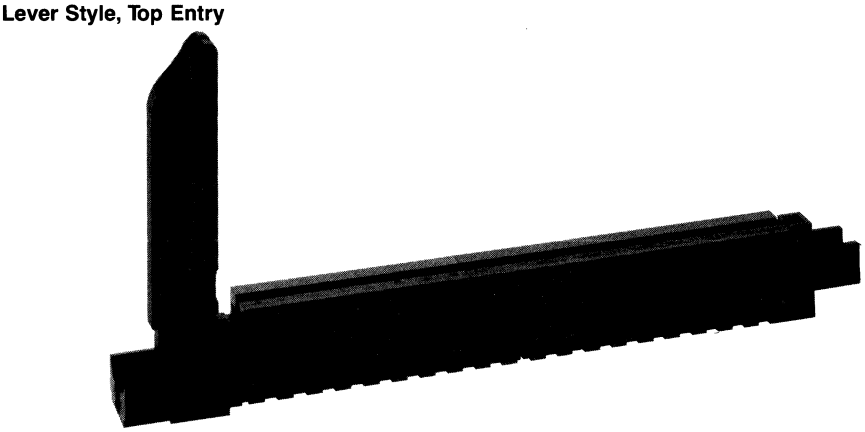
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

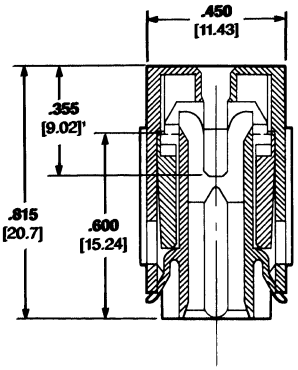
.100 x .100 [2.54 x 2.54] Housing Assemblies

Materials:
Glass-filled polyester, black

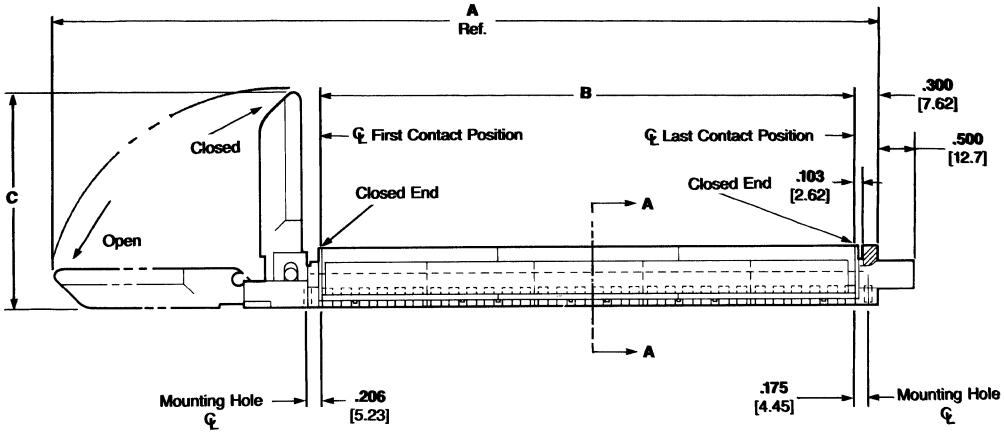
Notes:
1. Accepts pc boards .054-.070 [1.37-1.78] thick.
2. Customer supplied mounting screws must be applied before opening connector.
3. See page 3357 for contact specifications and part numbers.
4. See page 3360 for recommended pc board layout.
5. See page 3372 for tooling information.

Lever Style, Top Entry





Section A-A



[1]Card slot depth.

No. of Dual Positions	Dimensions A	B	C	Part Number	Packaging Quantities
30	**5.613** 142.57	**2.900** 73.66	**2.000** 50.8	645137-1	6 Pcs./Tray 3 Trays/Box Total - 18 Pcs.
35	**6.113** 155.27	**3.400** 86.36	**2.000** 50.8	645137-2	
40	**6.613** 167.97	**3.900** 99.06	**2.000** 50.8	645137-3	
45	**7.113** 180.67	**4.400** 111.76	**2.000** 50.8	645137-4	4 Pcs./Tray 3 Trays/Box Total - 12 Pcs.
50	**7.613** 193.37	**4.900** 124.46	**2.000** 50.8	645137-5	
55	**8.113** 206.07	**5.400** 137.16	**2.000** 50.8	645137-6	
60	**8.613** 218.77	**5.900** 146.86	**2.000** 50.8	645137-7	
65	**10.113** 256.87	**6.400** 162.56	**3.000** 76.2	645137-8	
70	**10.613** 269.57	**6.900** 175.26	**3.000** 76.2	645137-9	
75	**11.113** 282.27	**7.400** 187.96	**3.000** 76.2	1-645137-0	
80	**11.613** 294.97	**7.900** 200.66	**3.000** 76.2	1-645137-1	2 Pcs./Tray 3 Trays/Box Total - 6 Pcs.
85	**12.113** 307.67	**8.400** 213.36	**3.000** 76.2	1-645137-2	
90	**12.613** 320.37	**8.900** 226.06	**3.000** 76.2	1-545137-3	
95	**13.113** 333.07	**9.400** 238.76	**3.000** 76.2	1-645137-4	
100	**13.613** 345.77	**9.900** 251.46	**3.000** 76.2	1-645137-5	

No. of Dual Positions	Dimensions A	B	C	Part Number	Packaging Quantities
105	**14.113** 358.47	**10.400** 264.16	**3.000** 76.2	1-645137-6	2 Pcs./Tray 3 Trays/Box Total - 6 Pcs.
110	**14.613** 371.17	**10.900** 276.86	**3.000** 76.2	1-645137-7	
115	**15.113** 383.87	**11.400** 289.56	**3.000** 76.2	1-645137-8	
120	**15.613** 396.57	**11.900** 302.26	**3.000** 76.2	1-645137-9	
125	**16.113** 409.27	**12.400** 314.96	**3.000** 76.2	2-645137-0	
130	**16.613** 421.97	**12.900** 327.66	**3.000** 76.2	2-645137-1	
135	**17.113** 434.67	**13.400** 340.36	**3.000** 76.2	2-645137-2	
140	**17.613** 447.37	**13.900** 353.06	**3.000** 76.2	2-645137-3	
145	**18.113** 460.07	**14.400** 365.76	**3.000** 76.2	2-645137-4	
150	**18.613** 427.77	**14.900** 378.46	**3.000** 76.2	2-645137-5	
155	**19.113** 485.47	**15.400** 391.16	**3.000** 76.2	2-645137-6	
160	**19.613** 498.17	**15.900** 403.86	**3.000** 76.2	2-645137-7	
165	**20.113** 510.87	**16.400** 416.56	**3.000** 76.2	2-645137-8	
170	**20.613** 523.57	**16.900** 429.26	**3.000** 76.2	2-645137-9	
175	**21.113** 536.27	**17.400** 441.96	**3.000** 76.2	3-645137-0	

Linear ZIF PC Board Edge Connectors
(Continued)

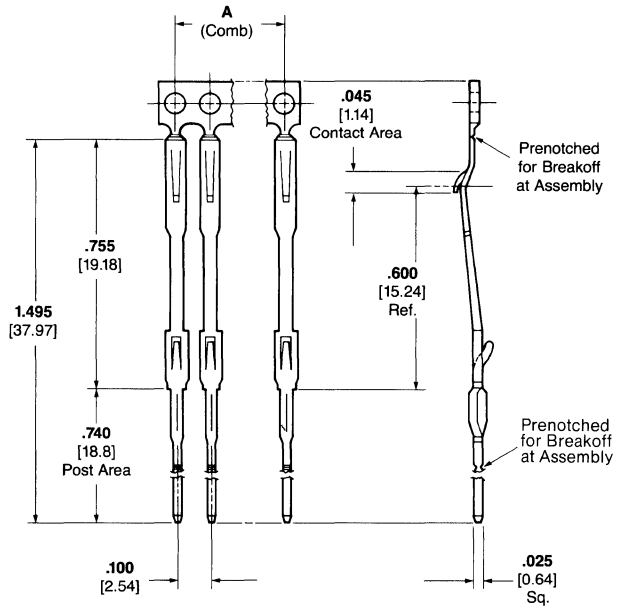
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

.100 [2.54] Centerline ACTION PIN Wiping Contacts (Combs and Reel)

Materials:
Copper alloy 725

Finish:
Contact area is .000015 [0.00038] min. thk. gold plate per MIL-G-45204 over .000050 [0.00127] min. thk. nickel plate per QQ-N-290. Post area is .000001 [0.000025] min. thk. gold flash per MIL-G-45204 over .000050 [0.00127] min. thk. nickel plate per QQ-N-290.



Contact Combs

No. of Contacts Per Comb[1]	Dimension A	Part Number
15	**1.400** 35.56	119311-1
20	**1.900** 48.26	119311-6
25	**2.400** 60.96	1-119311-1
30	**2.900** 73.66	1-119311-6
35	**3.400** 86.36	2-119311-1
40	**3.900** 99.06	2-119311-6
45	**4.400** 111.76	3-119311-1
50	**4.900** 124.46	3-119311-6
55	**5.400** 137.16	4-119311-1
60	**5.900** 149.86	4-119311-6

Contact Reel

No. of Contacts Per Reel	Part Number
35,000	119196-2

Note: Other plating combinations and thicknesses can be made available upon request. Contact AMP Incorporated for information.

[1]At least two (2) contact combs required per housing.

Linear ZIF PC Board Edge Connectors
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

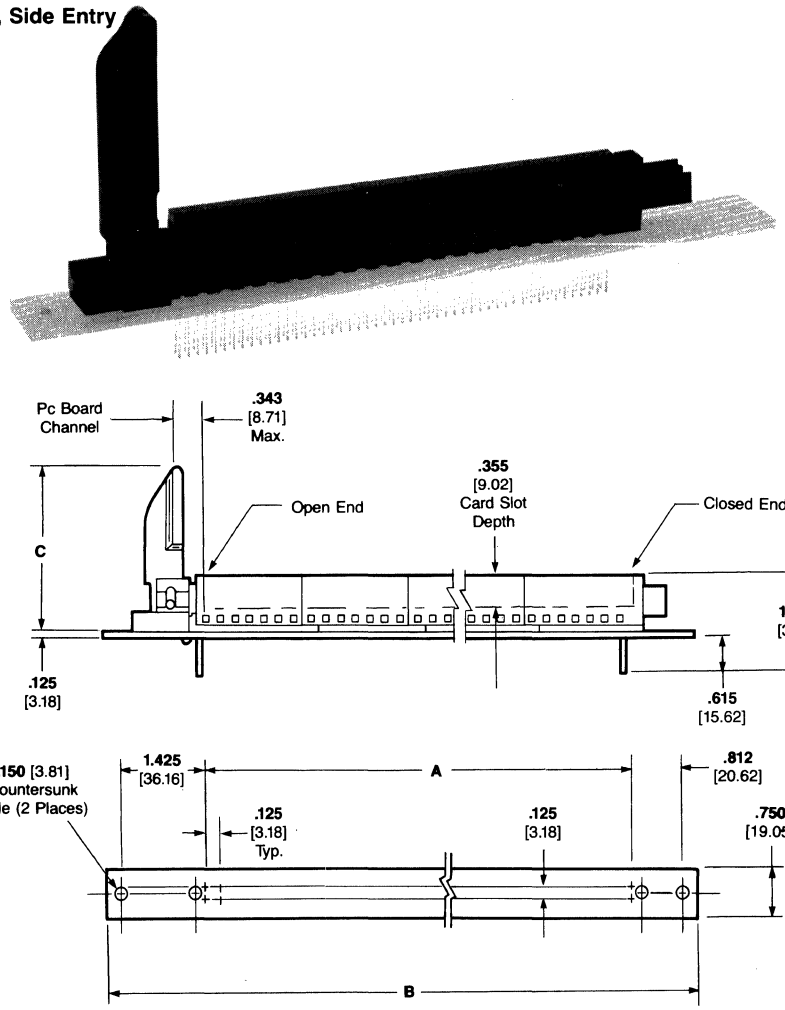
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

.125 x .125 [3.18 x 3.18] Panel Assemblies

Materials and Finish:
Housing - Glass-filled polyester, black
Contact - Copper alloy 725
Contact Finish - .000015 [.00038] min. thk. gold plate in contact area and .000001 [0.000025] min. thk. gold flash in post area per MIL-G-45204, all over .000050 [0.00127] min. thk. nickel plate per QQ-N-290.

Notes:
1. Accepts pc boards .054-.070 [1.37-1.78] thick.
2. See page 3360 for recommended pc board layout.
3. See page 3373 for tooling information.

Lever Style, Side Entry



No. of Dual Positions	Dimensions A	B	C	Part Number	Packaging Quantities
24	**2.875** 73.03	**5.625** 142.88	**2.000** 50.8	645146-1	3 Pcs./Tube 2 Tubes/Box Total - 6 Pcs.
28	**3.375** 85.73	**6.125** 155.58	**2.000** 50.8	645146-2	
32	**3.875** 98.43	**6.625** 168.28	**2.000** 50.8	645146-3	
36	**4.375** 111.13	**7.125** 180.98	**2.000** 50.8	645146-4	2 Pcs./Tube 3 Tubes/Box Total - 6 Pcs.
40	**4.875** 123.83	**7.625** 193.68	**2.000** 50.8	645146-5	
44	**5.375** 136.53	**8.125** 206.38	**2.000** 50.8	645146-6	
48	**5.875** 149.23	**8.625** 219.08	**2.000** 50.8	645146-7	
52	**6.375** 161.93	**9.125** 231.78	**3.000** 76.2	645146-8	
56	**6.875** 174.63	**9.625** 244.48	**3.000** 76.2	645146-9	1 Pc./Tube 6 Tubes/Box Total - 6 Pcs.
60	**7.375** 187.33	**10.125** 257.18	**3.000** 76.2	1-645146-0	
64	**7.875** 200.03	**10.625** 269.88	**3.000** 76.2	1-645146-1	
68	**8.375** 212.73	**11.125** 282.58	**3.000** 76.2	1-645146-2	
72	**8.875** 225.43	**11.625** 295.28	**3.000** 76.2	1-645146-3	
76	**9.375** 238.13	**12,125** 307.98	**3.000** 76.2	1-645146-4	
80	**9.875** 250.83	**12.625** 320.68	**3.000** 76.2	1-645146-5	

No. of Dual Positions	Dimensions A	B	C	Part Number	Packaging Quantities
84	**10.375** 250.83	**13.125** 320.68	**3.000** 76.2	1-645146-6	1 Pc./Tube 4 Tubes/Box Total - 4 Pcs.
88	**10.875** 276.23	**13.625** 346.08	**3.000** 76.2	1-645146-7	
92	**11.375** 288.93	**14.125** 358.78	**3.000** 76.2	1-645146-8	
96	**11.875** 301.63	**14.625** 371.48	**3.000** 76.2	1-645146-9	
100	**12.375** 314.33	**15.125** 384.18	**3.000** 76.2	2-645146-0	
104	**12.875** 327.03	**15.625** 396.88	**3.000** 76.2	2-645146-1	
108	**13.375** 339.73	**16.125** 409.58	**3.000** 76.2	2-645146-2	
112	**13.875** 352.43	**16.625** 422.28	**3.000** 76.2	2-645146-3	
116	**14.375** 365.13	**17.125** 434.98	**3.000** 76.2	2-645146-4	
120	**14.875** 377.83	**17.625** 447.68	**3.000** 76.2	2-645146-5	
124	**15.375** 390.53	**18.125** 460.38	**3.000** 76.2	2-645146-6	
128	**15.875** 403.23	**18.625** 473.08	**3.000** 76.2	2-645146-7	
132	**16.375** 415.93	**19.125** 485.78	**3.000** 76.2	2-645146-8	
136	**16.875** 428.63	**19.625** 498.48	**3.000** 76.2	2-645146-9	
140	**17.375** 441.33	**20.125** 511.18	**3.000** 76.2	3-645146-0	

Linear ZIF PC Board Edge Connectors
(Continued)

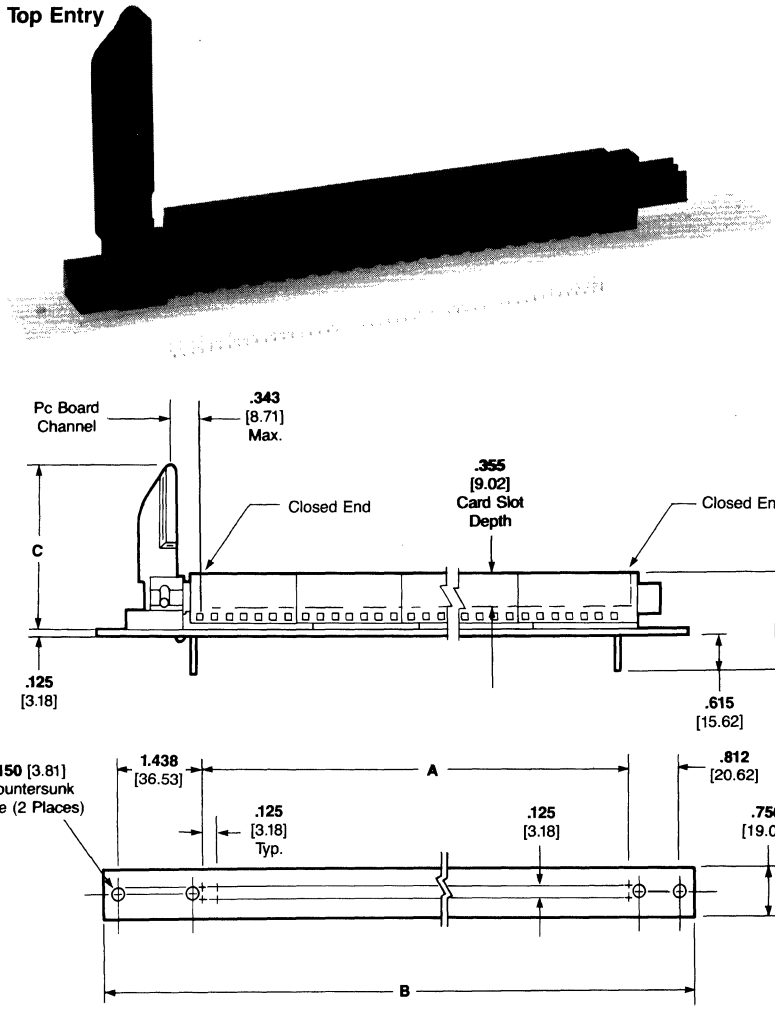
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

.125 x .125 [3.18 x 3.18] Panel Assemblies

Materials and Finish:
Housing - Glass-filled polyester, black
Contact - Copper alloy 725
Contact Finish - .000015 [.00038] min. thk. gold plate in contact area and .000001 [0.000025] min. thk. gold flash in post area per MIL-G-45204, all over .000050 [0.00127] min. thk. nickel plate per QQ-N-290.

Notes:
1. Accepts pc boards .054-.070 [1.37-1.78] thick.
2. See page 3360 for recommended pc board layout.
3. See page 3373 for tooling information.

Lever Style, Top Entry



No. of Dual Positions	Dimensions A	B	C	Part Number	Packaging Quantities
24	**2.875** 73.03	**5.625** 142.88	**2.000** 50.8	645148-1	3 Pcs./Tube 2 Tubes/Box Total - 6 Pcs.
28	**3.375** 85.73	**6.125** 155.58	**2.000** 50.8	645148-2	
32	**3.875** 98.43	**6.625** 168.28	**2.000** 50.8	645148-3	
36	**4.375** 111.13	**7.125** 180.98	**2.000** 50.8	645148-4	2 Pcs./Tube 3 Tubes/Box Total - 6 Pcs.
40	**4.875** 123.83	**7.625** 193.68	**2.000** 50.8	645148-5	
44	**5.375** 136.53	**8.125** 206.38	**2.000** 50.8	645148-6	
48	**5.875** 149.23	**8.625** 219.08	**2.000** 50.8	645148-7	
52	**6.375** 161.93	**9.125** 231.78	**3.000** 76.2	645148-8	
56	**6.875** 174.63	**9.625** 244.48	**3.000** 76.2	645148-9	1 Pc./Tube 6 Tubes/Box Total - 6 Pcs.
60	**7.375** 187.33	**10.125** 257.18	**3.000** 76.2	1-645148-0	
64	**7.875** 200.03	**10.625** 269.88	**3.000** 76.2	1-645148-1	
68	**8.375** 212.73	**11.125** 282.58	**3.000** 76.2	1-645148-2	
72	**8.875** 225.43	**11.625** 295.28	**3.000** 76.2	1-645148-3	
76	**9.375** 238.13	**12.125** 307.98	**3.000** 76.2	1-645148-4	
80	**9.875** 250.83	**12.625** 320.68	**3.000** 76.2	1-645148-5	

No. of Dual Positions	Dimensions A	B	C	Part Number	Packaging Quantities
84	**10.375** 250.83	**13.125** 320.68	**3.000** 76.2	1-645148-6	1 Pc./Tube 4 Tubes/Box Total - 4 Pcs.
88	**10.875** 276.23	**13.625** 346.08	**3.000** 76.2	1-645148-7	
92	**11.375** 288.93	**14.125** 358.78	**3.000** 76.2	1-645148-8	
96	**11.875** 301.63	**14.625** 371.48	**3.000** 76.2	1-645148-9	
100	**12.375** 314.33	**15.125** 384.18	**3.000** 76.2	2-645148-0	
104	**12.875** 327.03	**15.625** 396.88	**3.000** 76.2	2-645148-1	
108	**13.375** 339.73	**16.125** 409.58	**3.000** 76.2	2-645148-2	
112	**13.875** 352.43	**16.625** 422.28	**3.000** 76.2	2-645148-3	
116	**14.375** 365.13	**17.125** 434.98	**3.000** 76.2	2-645148-4	
120	**14.875** 377.83	**17.625** 447.68	**3.000** 76.2	2-645148-5	
124	**15.375** 390.53	**18.125** 460.38	**3.000** 76.2	2-645148-6	
128	**15.875** 403.23	**18.625** 473.08	**3.000** 76.2	2-645148-7	
132	**16.375** 415.93	**19.125** 485.78	**3.000** 76.2	2-645148-8	
136	**16.875** 428.63	**19.625** 498.48	**3.000** 76.2	2-645148-9	
140	**17.375** 441.33	**20.125** 511.18	**3.000** 76.2	3-645148-0	

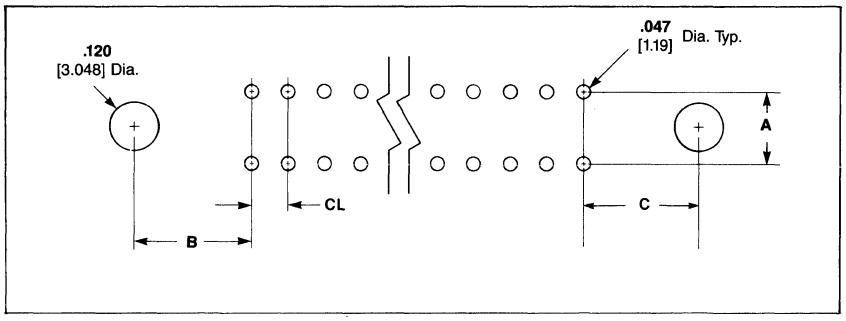
Linear ZIF PC Board Edge Connectors
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

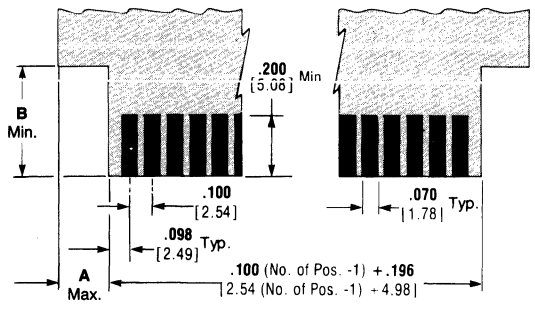
Recommended PC Board Layouts

Mother Board Layout - Preassembled Connectors

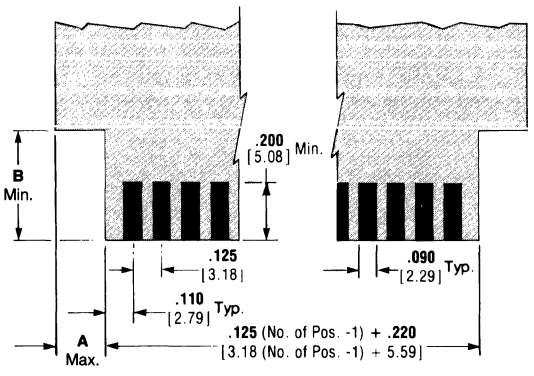


Connector Style	Dimensions			
	CL	A	B	C
Lever	.100 2.54	.100 2.54	.206 5.23	.175 4.45
Lever	.125 3.18	.125 3.18	.218 5.54	.187 4.75

.100 [2.54] Centerline Daughter Board



.125 [3.18] Centerline Daughter Board



Connector Style	Entry Style	Dimensions	
		A	B
Lever	Side	.240 6.10	—
	Top	.240 6.10	.320 8.13

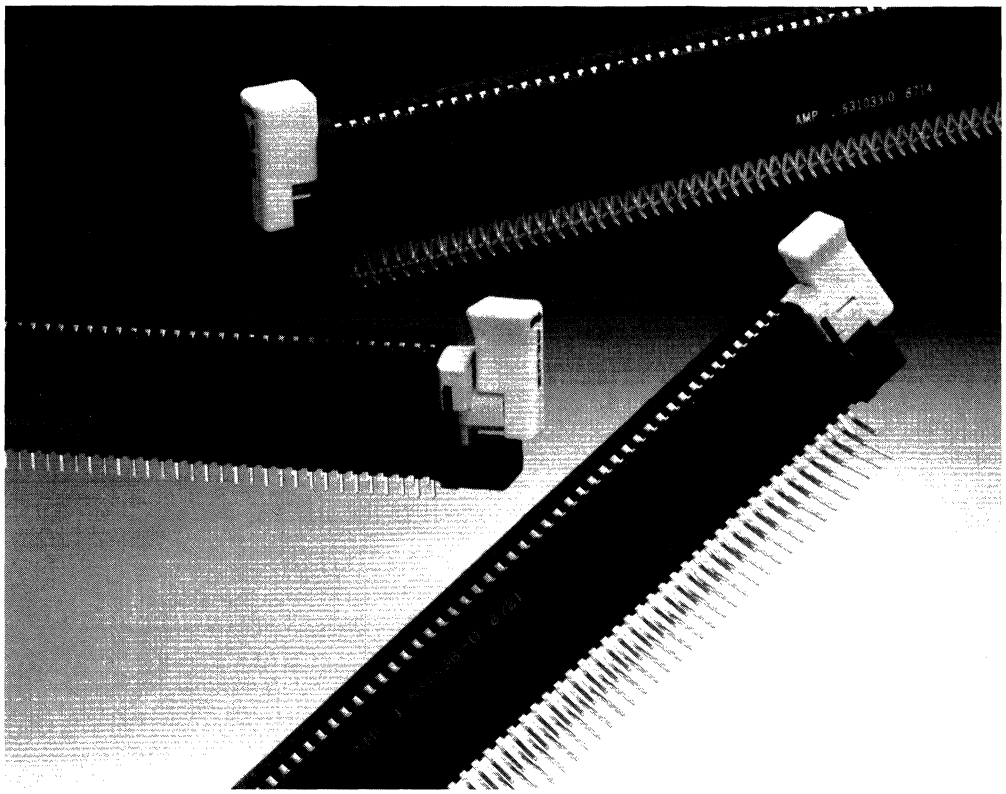
Rotary Cam ZIF PC Board Edge Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Product Facts

- Zero insertion force - little or no effort required to insert and withdraw pc boards
- Reduced pad wear for extended board life
- Allows all four sides of board to be used for input/output functions
- Accepts double-sided boards
- Four contact styles to choose from - vertical solder post, right angle solder post, wrap-type post (2 and 3 high) and card extender
- Available in .100 [2.54], .125 [3.18] and .156 [3.96] centerlines
- Three configurations available - open one end, open both ends and closed both ends
- Those products indicated are recognized under the Component Program of Underwriters Laboratories Inc., File E28476



AMP Rotary Cam ZIF Card Edge Connectors are available in sizes to fit most industry-standard printed circuit boards. A clockwise rotation of the cam handle opens contacts to allow zero-force insertion or removal of pc boards - even boards with a large number of contacts. Turning the cam handle to close the connector locks the board securely in place.

Rotary Cam ZIF Connectors accept double-sided pc boards .054-.070 [1.37-1.78] thick, with contact centerline intervals of .100 [2.54], .125 [3.18] and .156 [3.96]. Row-to-row spacing of connector posts is .200 [5.08] for .100 [2.54] and .156 [3.96] connectors and .250 [6.35] for .125 [3.18] connectors.

Contacts are nickel-underplated phosphor bronze with gold plate in the contact area and tin-lead plated posts. Contact configurations include vertical and right-angle solder posts, wrap-type posts and card extenders. Connectors are preassembled in housings made from 94 V-O rated glass-filled polyester with mounting ears for easy mounting to the mother board. Housings are available with one end open, both ends open and both ends closed for side and top daughter-board insertion. Integral board locks secure boards in connectors. Accessories include mounting blocks for card-extender connectors, dust covers, cam keys for nut-driver actuation and for tandem operation of connectors.

Specifications

Current vs. Temperature Rise:
3 amperes at 30°C

Operating Temperature:
-55 to 105°C

Contact Resistance:
20 milliohms max.

Durability:
5000 cycles based on test results.

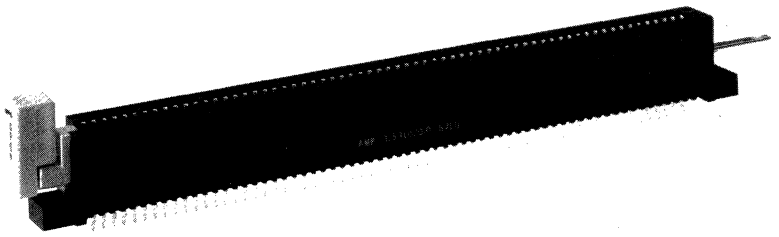
Rotary Cam ZIF PC Board Edge Connectors
(Continued)

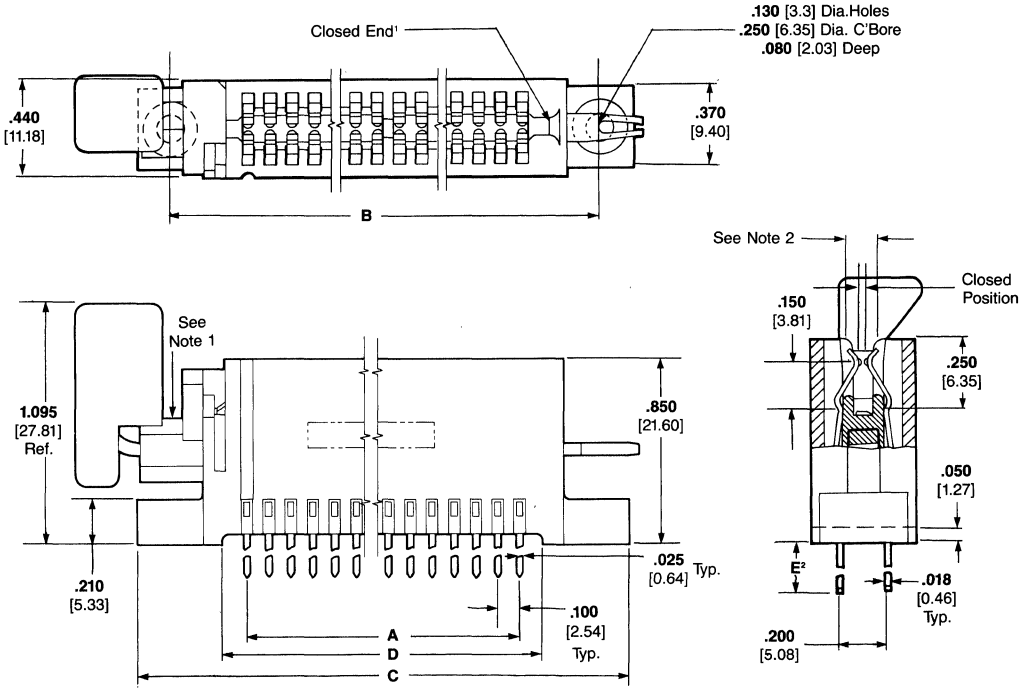
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

.100 x .200 [2.54 x 5.08] Centerline Vertical Connectors with Solder Post Terminals

Materials and Finish:
Housing - Glass-filled polyester, 94V-O rated
Contact - Phosphor bronze
Contact Finish - .000030 [0.00076] min. thk. gold plate per MIL-G-45204 in contact area and .000100 [0.0025] min. thk. tin-lead plate per MIL-P-81728 in post area, all over .000050 [0.00127] min. thk. nickel plate per QQ-N-290





Notes:
1. Connectors that are closed on both ends do not have board lock feature.
2. Accepts .054-.070 [1.37-1.78] thick pc boards.
3. See pages 3369 and 3370 for recommended pc board layouts.
4. 22- and 25-position connectors are packaged 50 per tray; 28- through 65-position connectors are packaged 25 per tray.

No. of Dual Positions	Dimensions					Part Numbers		
	A	B	C	D	E²	Open One End³	Open Both Ends³	Closed Both Ends
22	**2.100** 53.34	**2.800** 71.12	**3.100** 78.74	**2.300** 58.42	.125	531020-1	531021-1	531019-1
					.160	1-531020-1	1-531021-1	1-531019-1
25	**2.400** 60.96	**3.100** 78.74	**3.400** 86.36	**2.600** 66.04	.125	531020-2	531021-2	531019-2
					.160	1-531020-2	1-531021-2	1-531019-2
28	**2.700** 68.58	**3.400** 86.36	**3.700** 93.98	**2.900** 73.66	.125	531020-3	531021-3	531019-3
					.160	1-531020-3	1-531021-3	1-531019-3
31	**3.000** 76.20	**3.700** 93.98	**4.000** 101.60	**3.200** 81.28	.160	2-531020-1	—	—
36	**3.500** 88.90	**4.200** 106.68	**4.500** 114.30	**3.700** 93.98	.125	531020-4	531021-4	531019-4
					.160	1-531020-4	1-531021-4	1-531019-4
40	**3.900** 99.06	**4.600** 116.84	**4.900** 124.46	**4.100** 104.14	.125	531020-5	531021-5	531019-5
					.160	1-531020-5	1-531021-5	1-531019-5
42	**4.100** 104.14	**4.800** 121.92	**5.100** 129.54	**4.300** 109.22	.125	531020-6	531021-6	531019-6
					.160	1-531020-6	1-531021-6	1-531019-6
43	**4.200** 106.68	**4.900** 124.46	**5.200** 132.08	**4.400** 111.76	.125	531020-7	531021-7	531019-7
					.160	1-531020-7	1-531021-7	1-531019-7
50	**4.900** 124.46	**5.600** 142.24	**5.900** 149.86	**5.100** 129.54	.125	531020-8	531021-8	531019-8
					.160	1-531020-8	1-531021-8	1-531019-8
60	**5.900** 149.86	**6.600** 167.64	**6.900** 175.26	**6.100** 154.94	.125	531020-9	531021-9	531019-9
					.160	1-531020-9	1-531021-9	1-531019-9
65	**6.400** 162.56	**7.100** 180.34	**7.400** 187.96	**6.600** 167.64	.125	1-531020-0	1-531021-0	1-531019-0
					.160	2-531020-0	2-531021-0	2-531019-0

¹Connector with card slot open one end shown for illustration purposes.
²Metric equivalents for post lengths E in millimetres are .125 = [3.18]; .160 = [4.06].
³Recognized under the Component Program of Underwriters Laboratories Inc.

Rotary Cam ZIF PC Board Edge Connectors

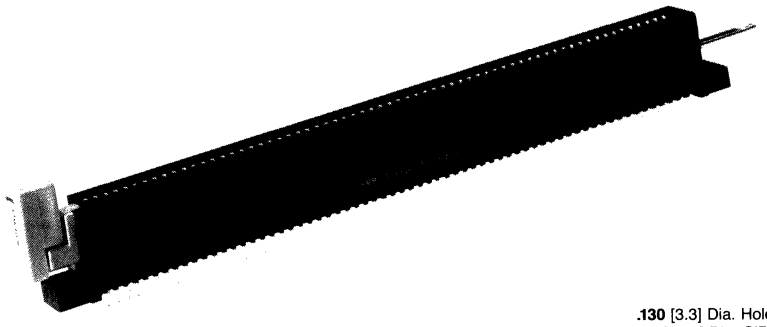
(Continued)

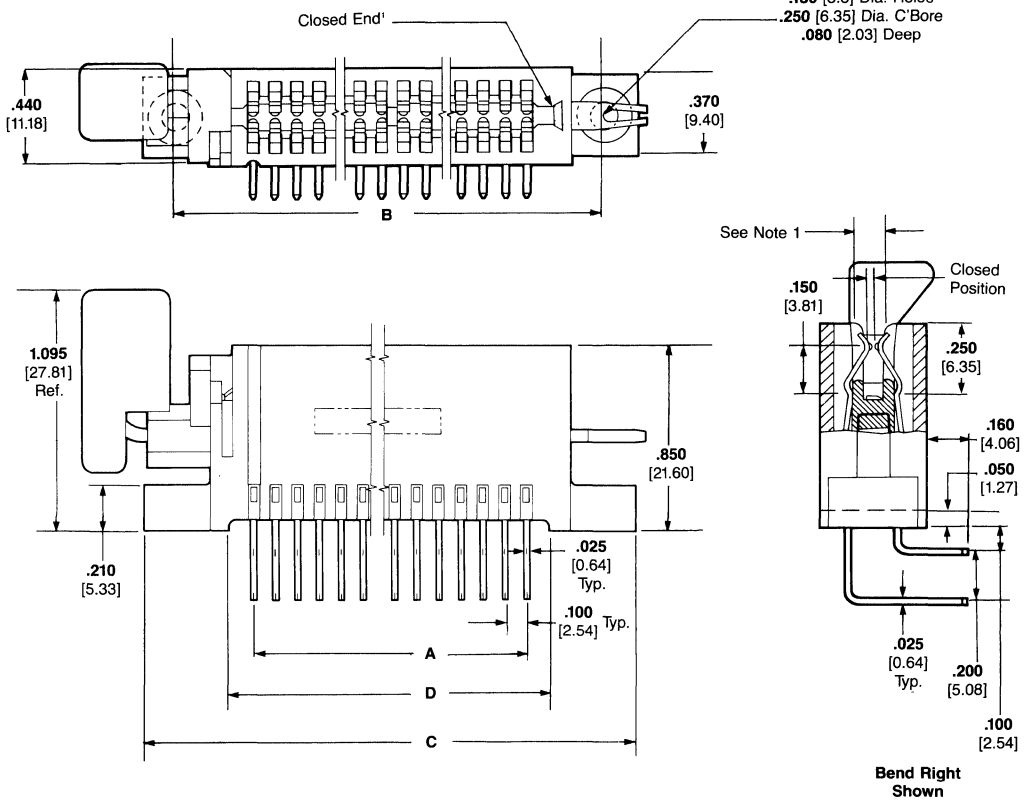
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

.100 x .200 [2.54 x 5.08] Centerline Right Angle Connectors with Solder Post Terminals

Materials and Finish:
Housing - Glass-filled polyester, 94V-O rated
Contact - Phosphor bronze
Contact Finish - .000030 [0.00076] min. thk. gold plate per MIL-G-45204 in contact area and .000100 [0.0025] min. thk. tin-lead plate per MIL-P-81728 in post area, all over .000050 [0.00127] min. thk. nickel plate per QQ-N-290





Bend Right Shown

Notes:

1. Accepts .054-.070 [1.37-1.78] thick pc boards.
2. See pages 3369 and 3370 for recommended pc board layouts.
3. 22- and 25-position connectors are packaged 50 per tray; 28- through 65-position connectors are packaged 25 per tray.

No. of Dual Positions	Dimensions A	B	C	D	Bend Left or Right	Part Numbers² Open One End	Open Both Ends
22	**2.100** 53.34	**2.800** 71.12	**3.100** 78.74	**2.300** 58.42	R	531396-1	531395-1
					L	1-531396-1	1-531395-1
25	**2.400** 60.96	**3.100** 78.74	**3.400** 86.36	**2.600** 66.04	R	531396-2	531395-2
					L	1-531396-2	1-531395-2
28	**2.700** 68.58	**3.400** 86.36	**3.700** 93.98	**2.900** 73.66	R	531396-3	531395-3
					L	1-531396-3	1-531395-3
36	**3.500** 88.90	**4.200** 106.68	**4.500** 114.30	**3.700** 93.98	R	531396-4	531395-4
					L	1-531396-4	1-531395-4
40	**3.900** 99.06	**4.600** 116.84	**4.900** 124.46	**4.100** 104.14	R	531396-5	531395-5
					L	1-531396-5	1-531395-5
42	**4.100** 104.14	**4.800** 121.92	**5.100** 129.54	**4.300** 109.22	R	531396-6	531395-6
					L	1-531396-6	1-531395-6
43	**4.200** 106.68	**4.900** 124.46	**5.200** 132.08	**4.400** 111.76	R	531396-7	531395-7
					L	1-531396-7	1-531395-7
50	**4.900** 124.46	**5.600** 142.24	**5.900** 149.86	**5.100** 129.54	R	531396-8	531395-8
					L	1-531396-8	1-531395-8
60	**5.900** 149.86	**6.600** 167.64	**6.900** 175.26	**6.100** 154.94	R	531396-9	531395-9
					L	1-531396-9	1-531395-9
65	**6.400** 162.56	**7.100** 180.34	**7.400** 187.96	**6.600** 167.64	R	1-531396-0	1-531395-0
					L	2-531396-0	2-531395-0

¹Connector with card slot open one end shown for illustration purposes.
²Recognized under the Component Program of Underwriters Laboratories Inc.

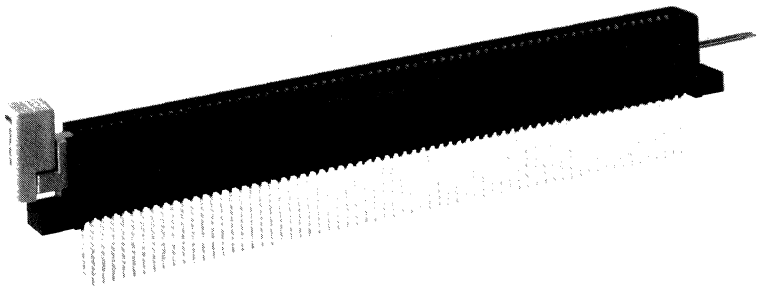
Rotary Cam ZIF PC Board Edge Connectors
(Continued)

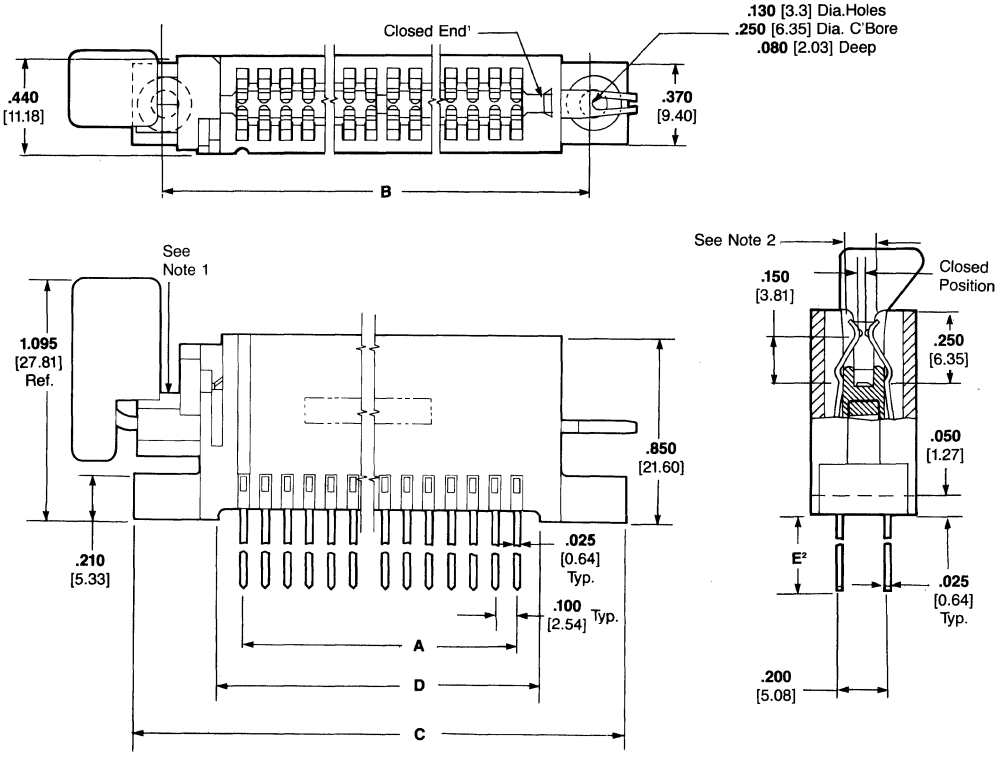
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

.100 x .200 [2.54 x 5.08] Centerline Vertical Connectors with Wrap-Type Post Terminals

Materials and Finish:
Housing - Glass-filled polyester, 94V-O rated
Contact - Phosphor bronze
Contact Finish - .000030 [0.00076] min. thk. gold plate per MIL-G-45204 in contact area and .000100 [0.0025] min. thk. tin-lead plate per MIL-P-81728 in post area, all over .000050 [0.00127] min. thk. nickel plate per QQ-N-290





Notes:
1. Connectors that are closed on both ends do not have board lock feature.
2. Accepts .054-.070 [1.37-1.78] thick pc boards.
3. See pages 3369 and 3370 for recommended pc board layouts.
4. 22- and 25-position connectors are packaged 50 per tray; 28- through 65-position connectors are packaged 25 per tray.

No. of Dual Positions	Dimensions					Part Numbers		
	A	B	C	D	E²	Open One End³	Open Both Ends³	Closed Both Ends
22	**2.100** 53.34	**2.800** 71.12	**3.100** 78.74	**2.300** 58.42	**.580**	531414-1	531413-1	531415-1
					.380	1-531414-1	1-531413-1	1-531415-1
25	**2.400** 60.96	**3.100** 78.74	**3.400** 86.36	**2.600** 66.04	**.580**	531414-2	531413-2	531415-2
					.380	1-531414-2	1-531413-2	1-531415-2
28	**2.700** 68.58	**3.400** 86.36	**3.700** 93.98	**2.900** 73.66	**.580**	531414-3	531413-3	531415-3
					.380	1-531414-3	1-531413-3	1-531415-3
36	**3.500** 88.90	**4.200** 106.68	**4.500** 114.30	**3.700** 93.98	**.580**	531414-4	531413-4	531415-4
					.380	1-531414-4	1-531413-4	1-531415-4
40	**3.900** 99.06	**4.600** 116.84	**4.900** 124.46	**4.100** 104.14	**.580**	531414-5	531413-5	531415-5
					.380	1-531414-5	1-531413-5	1-531415-5
42	**4.100** 104.14	**4.800** 121.92	**5.100** 129.54	**4.300** 109.22	**.580**	531414-6	531413-6	531415-6
					.380	1-531414-6	1-531413-6	1-531415-6
43	**4.200** 106.68	**4.900** 124.46	**5.200** 132.08	**4.400** 111.76	**.580**	531414-7	531413-7	531415-7
					.380	1-531414-7	1-531413-7	1-531415-7
50	**4.900** 124.46	**5.600** 142.24	**5.900** 149.86	**5.100** 129.54	**.580**	531414-8	531413-8	531415-8
					.380	1-531414-8	1-531413-8	1-531415-8
60	**5.900** 149.86	**6.600** 167.64	**6.900** 175.26	**6.100** 154.94	**.580**	531414-9	531413-9	531415-9
					.380	1-531414-9	1-531413-9	1-531415-9
65	**6.400** 162.56	**7.100** 180.34	**7.400** 187.96	**6.600** 167.64	**.580**	1-531414-0	1-531413-0	1-531415-0
					.380	2-531414-0	2-531413-0	2-531415-0

¹Connector with card slot open one end shown for illustration purposes.
²Metric equivalents for post lengths E in millimetres are .580 = [14.73] (3-high wrap-type); .380 = [9.65] (2-high wrap-type).
³Recognized under the Component Program of Underwriters Laboratories Inc.

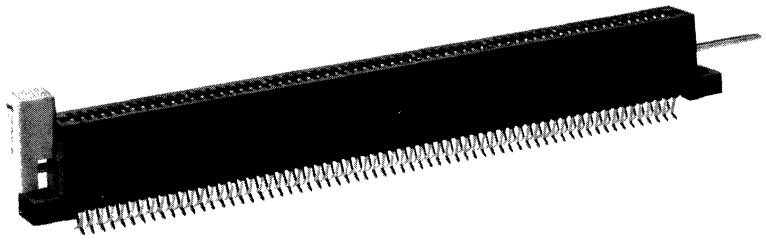
Rotary Cam ZIF PC Board Edge Connectors
(Continued)

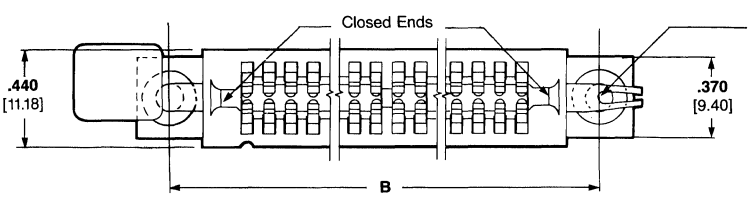
Specifications subject to change.
For latest design specifications...
1-800-522-6752

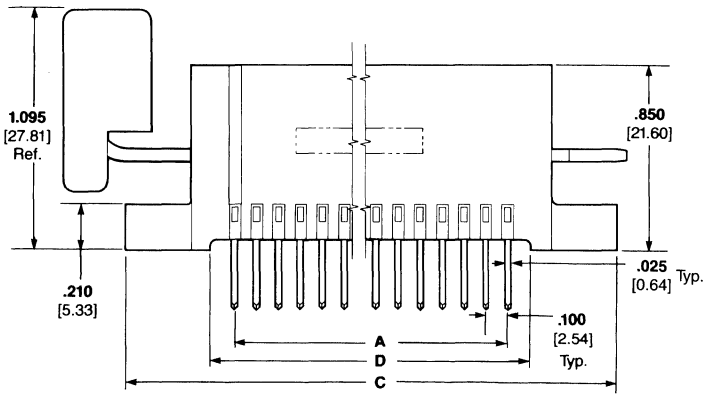
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

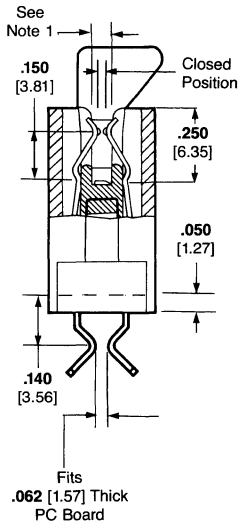
.100 x .200 [2.54 x 5.08] Centerline Vertical Connectors with Card Extender Terminals

Materials and Finish:
Housing - Glass-filled polyester, 94V-O rated
Contact - Phosphor bronze
Contact Finish - .000030 [0.00076] min. thk. gold plate per MIL-G-45204 in contact area and .000100 [0.0025] min. thk. tin-lead plate per MIL-P-81728 in post area, all over .000050 [0.00127] min. thk. nickel plate per QQ-N-290









No. of Dual Positions	Dimensions A	B	C	D	Part Number Closed Both Ends
22	**2.100** 53.34	**2.800** 71.12	**3.100** 78.74	**2.300** 58.42	531033-1
25	**2.400** 60.96	**3.100** 78.74	**3.400** 86.36	**2.600** 66.04	531033-2
28	**2.700** 68.58	**3.400** 86.36	**3.700** 93.98	**2.900** 73.66	531033-3
36	**3.500** 88.90	**4.200** 106.68	**4.500** 114.30	**3.700** 93.98	531033-4
40	**3.900** 99.06	**4.600** 116.84	**4.900** 124.46	**4.100** 104.14	531033-5
42	**4.100** 104.14	**4.800** 121.92	**5.100** 129.54	**4.300** 109.22	531033-6
43	**4.200** 106.68	**4.900** 124.46	**5.200** 132.08	**4.400** 111.76	531033-7
50	**4.900** 124.46	**5.600** 142.24	**5.900** 149.86	**5.100** 129.54	531033-8
60	**5.900** 149.86	**6.600** 167.64	**6.900** 175.26	**6.100** 154.94	531033-9
65	**6.400** 162.56	**7.100** 180.34	**7.400** 187.96	**6.600** 167.64	1-531033-0

Notes:
1. Accepts .054-.070 [1.37-1.78] thick pc boards.
2. See pages 3369 and 3370 for recommended pc board layouts.
3. See page 3368 for Card Extender Mounting Block Kit, **Part Number 531250-1.**
4. 22- and 25-position connectors are packaged 50 per tray; 28- through 65-position connectors are packaged 25 per tray.

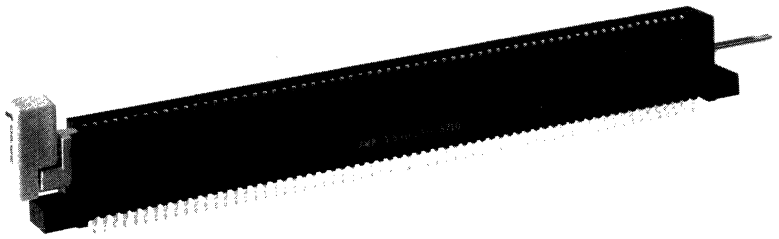
Rotary Cam ZIF PC Board Edge Connectors
(Continued)

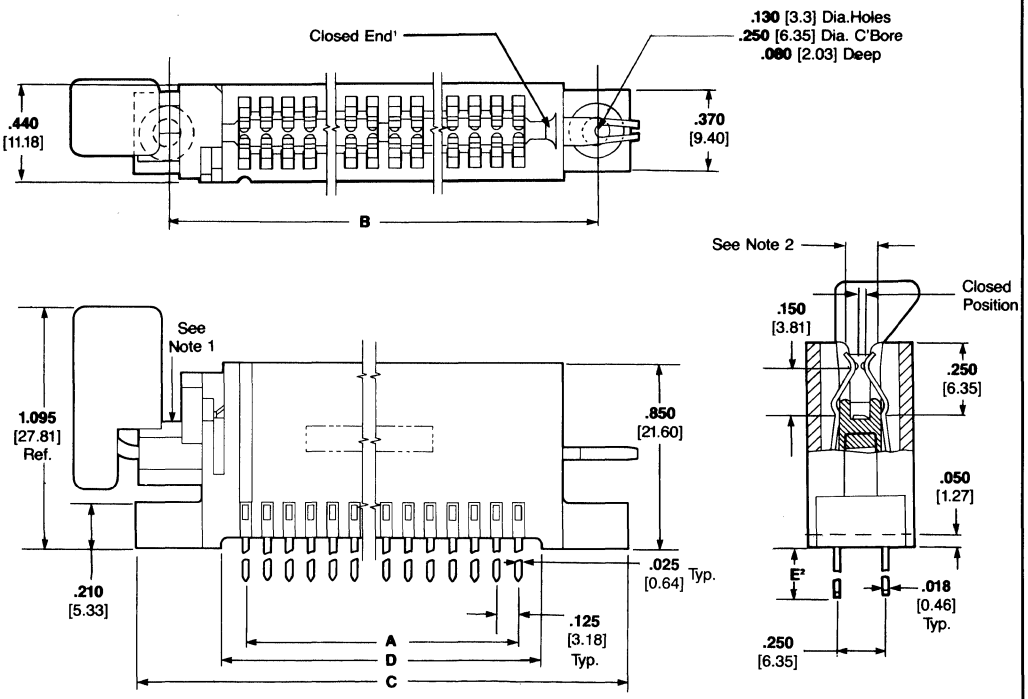
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

.125 x .250 [3.18 x 6.35] Centerline Vertical Connectors with Solder Post Terminals

Materials and Finish:
Housing - Glass-filled polyester, 94V-O rated
Contact - Phosphor bronze
Contact Finish - .000030 [0.00076] min. thk. gold plate per MIL-G-45204 in contact area and .000100 [0.0025] min. thk. tin-lead plate per MIL-P-81728 in post area, all over .000050 [0.00127] min. thk. nickel plate per QQ-N-290





Notes:
1. Connectors that are closed on both ends do not have board lock feature.
2. Accepts .054-.070 [1.37-1.78] thick pc boards.
3. See pages 3369 and 3370 for recommended pc board layouts.
4. 18- and 22-position connectors are packaged 50 per tray; 28- through 50-position connectors are packaged 25 per tray.

No. of Dual Positions	Dimensions					Part Numbers		
	A	B	C	D	E²	Open One End³	Open Both Ends³	Closed Both Ends
18	**2.125** 53.98	**2.875** 73.03	**3.175** 80.65	**2.375** 60.33	**.125**	531023-1	531024-1	531022-1
					.160	531023-9	531024-9	531022-9
22	**2.625** 66.68	**3.375** 85.73	**3.675** 93.35	**2.875** 73.03	**.125**	531023-2	531024-2	531022-2
					.160	1-531023-0	1-531024-0	1-531022-0
28	**3.375** 85.73	**4.125** 104.76	**4.425** 112.40	**3.625** 92.08	**.125**	531023-3	531024-3	531022-3
					.160	1-531023-1	1-531024-1	1-531022-1
30	**3.625** 92.08	**4.375** 111.13	**4.675** 118.75	**3.875** 98.43	**.125**	531023-4	531024-4	531022-4
					.160	1-531023-2	1-531024-2	1-531022-2
36	**4.375** 111.13	**5.125** 130.18	**5.425** 137.80	**4.625** 117.48	**.125**	531023-5	531024-5	531022-5
					.160	1-531023-3	1-531024-3	1-531022-3
40	**4.875** 123.83	**5.625** 142.88	**5.925** 150.50	**5.125** 130.18	**.125**	531023-6	531024-6	531022-6
					.160	1-531023-4	1-531024-4	1-531022-4
43	**5.250** 133.35	**6.000** 152.4	**6.300** 160.02	**5.500** 139.7	**.125**	531023-7	531024-7	531022-7
					.160	1-531023-5	1-531024-5	1-531022-5
50	**6.125** 155.58	**6.875** 174.63	**7.175** 182.25	**6.375** 161.93	**.125**	531023-8	531024-8	531022-8
					.160	1-531023-6	1-531024-6	1-531022-6

¹Connector with card slot open one end shown for illustration purposes.
²Metric equivalents for post lengths E in millimetres are .125 = [3.18]; .160 = [4.06].
³Recognized under the Component Program of Underwriters Laboratories Inc.

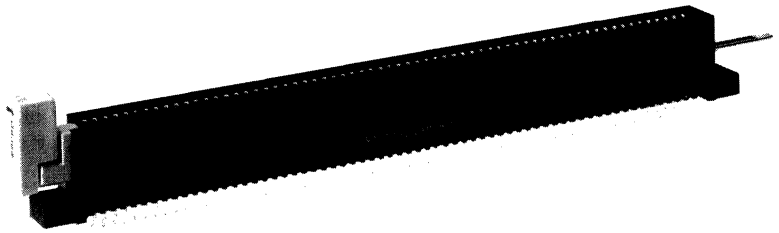
Specifications subject to change.
For latest design specifications...
1-800-522-6752

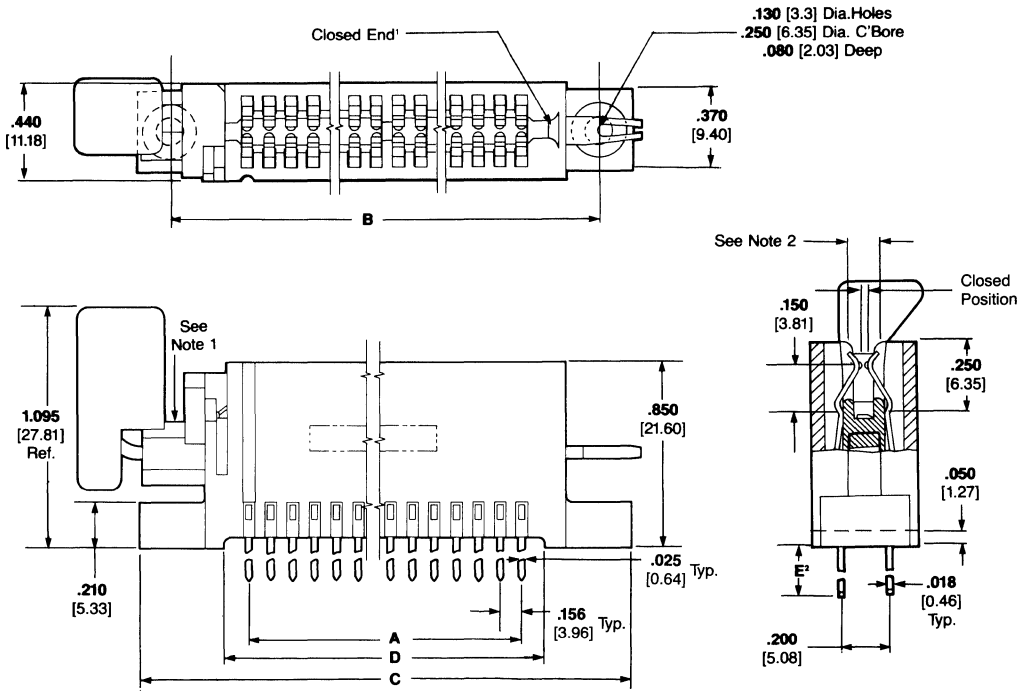
Rotary Cam ZIF PC Board Edge Connectors
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

.156 x .200 [3.96 x 5.08] Centerline Vertical Connectors with Solder Post Terminals

Materials and Finish:
Housing - Glass-filled polyester, 94V-O rated
Contact - Phosphor bronze
Contact Finish - .000030 [0.00076] min. thk. gold plate per MIL-G-45204 in contact area and .000100 [0.0025] min. thk. tin-lead plate per MIL-P-81728 in post area, all over .000050 [0.00127] min. thk. nickel plate per QQ-N-290





Notes:
1. Connectors that are closed on both ends do not have board lock feature.
2. Accepts .054-.070 [1.37-1.78] thick pc boards.
3. See pages 3369 and 3370 for recommended pc board layouts.
4. 15- and 18-position connectors are packaged 50 per tray; 22- through 43-position connectors are packaged 25 per tray.

No. of Dual Positions	Dimensions					Part Numbers		
	A	B	C	D	E²	Open One End³	Open Both Ends³	Closed Both Ends
15	**2.184** 55.47	**2.998** 76.10	**3.296** 83.72	**2.496** 63.40	**.125**	531025-1	531026-1	531007-1
					.160	531025-7	531026-7	531007-7
18	**2.652** 67.36	**3.464** 87.99	**3.764** 95.61	**2.954** 75.29	**.125**	531025-2	531026-2	531007-2
					.160	531025-8	531026-8	531007-8
22	**3.276** 83.21	**4.088** 103.84	**4.388** 111.46	**3.588** 91.14	**.125**	531025-3	531026-3	531007-3
					.160	531025-9	531026-9	531007-9
28	**4.212** 106.98	**5.024** 127.61	**5.324** 135.23	**4.524** 114.91	**.125**	531025-4	531026-4	531007-4
					.160	1-531025-0	1-531026-0	1-531007-0
36	**5.460** 138.68	**6.272** 159.31	**6.572** 166.93	**5.772** 146.61	**.125**	531025-5	531026-5	531007-5
					.160	1-531025-1	1-531026-1	1-531007-1
43	**6.552** 166.42	**7.364** 187.05	**7.664** 194.67	**6.864** 174.35	**.125**	531025-6	531026-6	531007-6
					.160	1-531025-2	1-531026-2	1-531007-2

¹Connector with card slot open one end shown for illustration purposes.
²Metric equivalents for post lengths E in millimetres are .125 = [3.18]; .160 = [4.06].
³Recognized under the Component Program of Underwriters Laboratories Inc.

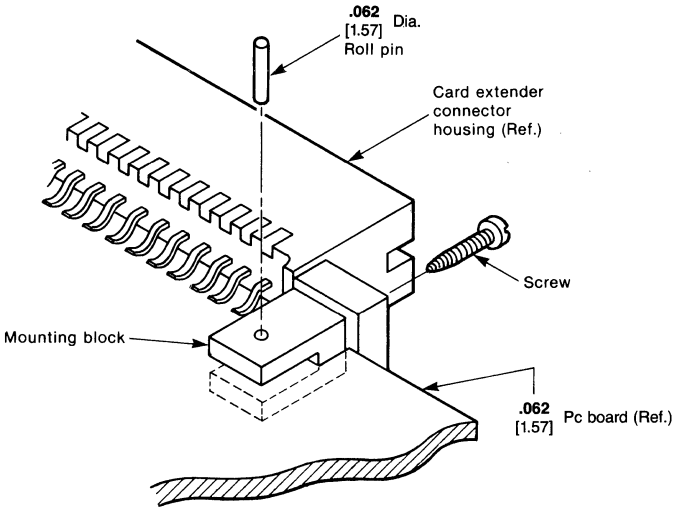
Rotary Cam ZIF PC Board Edge Connectors
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

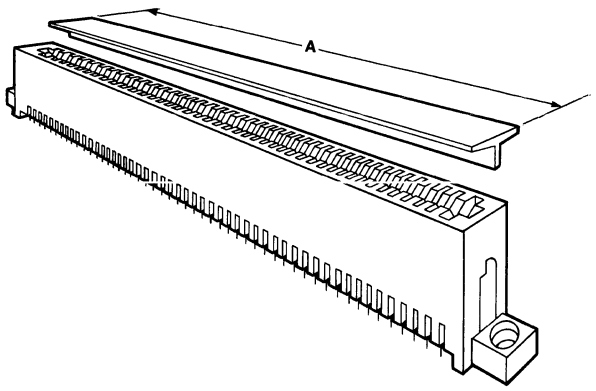
Accessories

Mounting Block Kit for Card Extender Connectors
Part Number 531250-1



Each kit includes:
2 Mounting blocks
2 Self-tapping screws, #5 x .375 [9.32]
2 Roll pins, .062 x .250 [1.57 x 6.35]

Dust Cover



Dimension A	Part Number
2.830 71.88	531863-4
10.790 274.07	531863-3
11.050 280.67	531863-2
48.000 1219.2	531863-1

Material:
Rigid vinyl, black

Note: Other lengths can be made available upon request; contact AMP Incorporated.

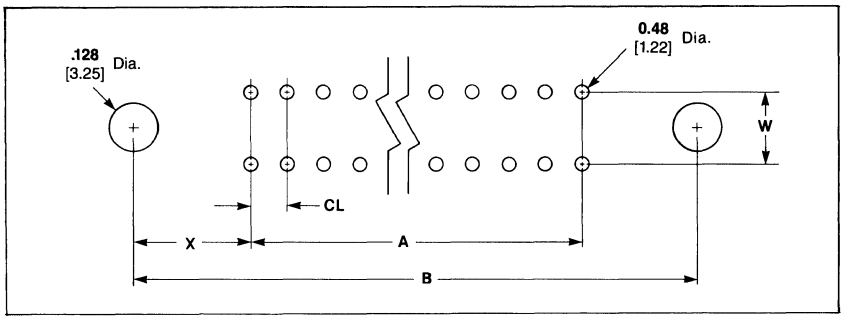
Rotary Cam ZIF PC Board Edge Connectors
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

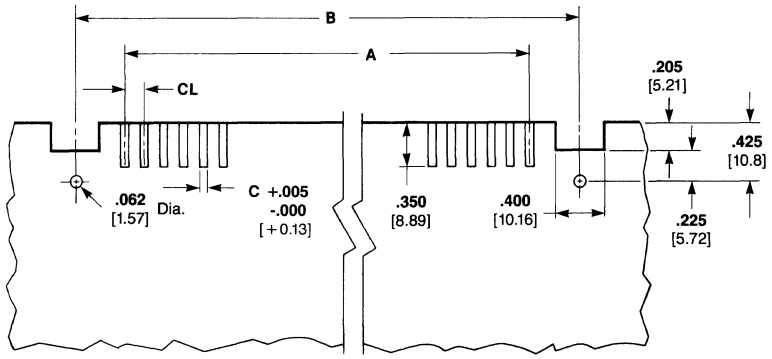
Recommended Pc Board Layouts

Mother-Board Layout - Through-Board Connectors



CL	W	X
.100 2.54	**.200** 5.08	**.350** 8.89
.125 3.18	**.250** 6.35	**.375** 9.53
.156 3.96	**.200** 5.08	**.406** 10.31

Mother-Board Layout - Card Extender Connectors



Number of Dual Positions	CL = .100 [2.54] C = .050 [1.27]	
	A	B
15	-	-
18	-	-
22	**2.100** 53.34	**2.800** 71.12
25	**2.400** 60.96	**3.100** 78.74
28	**2.700** 68.58	**3.400** 86.36
30	-	-
36	**3.500** 88.9	**4.200** 106.68
40	**3.900** 99.06	**4.600** 116.84
42	**4.100** 104.14	**4.800** 121.92
43	**4.200** 106.68	**4.900** 124.46
50	**4.900** 124.46	**5.600** 142.24
60	**5.900** 149.86	**6.600** 167.64
65	**6.400** 162.56	**7.100** 180.34

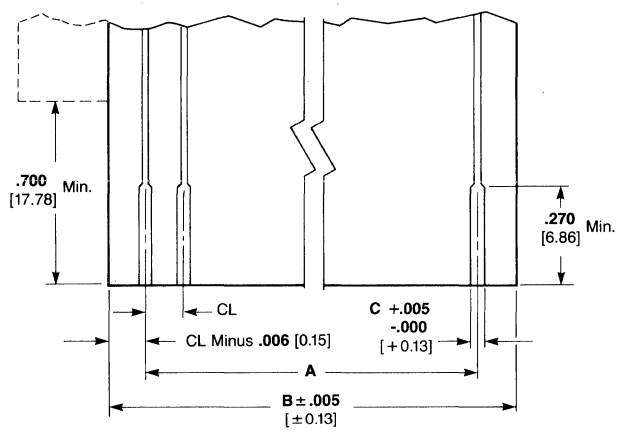
Rotary Cam ZIF PC Board Edge Connectors
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

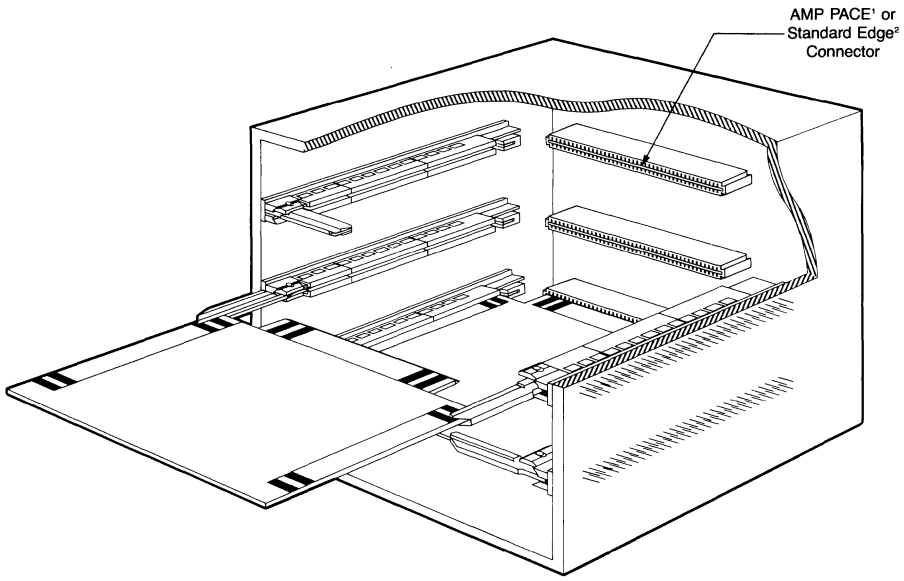
Recommended Pc Board Layouts (Continued)

Daughter-Board Layout

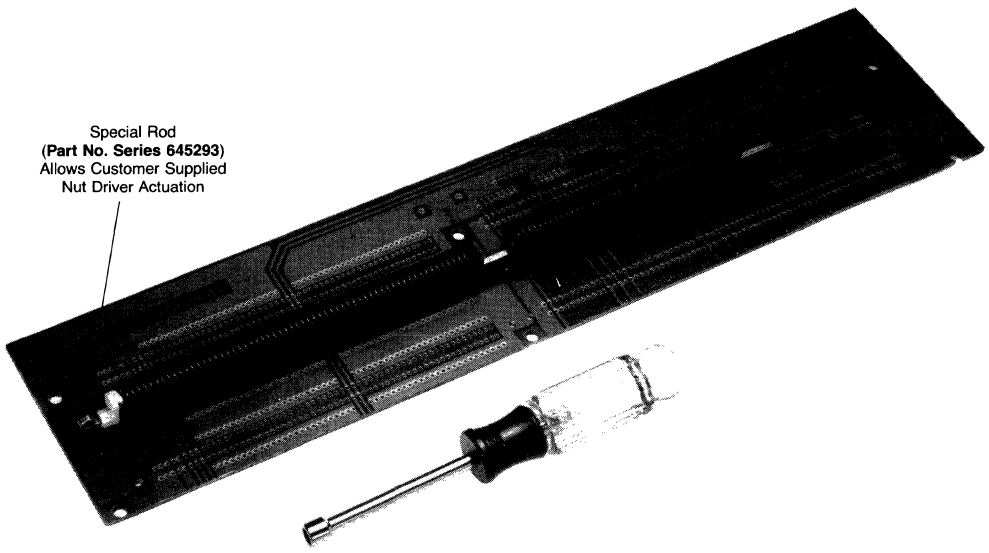


Number of Dual Positions	CL = .100 [2.54] C = .050 [1.27]		CL = .125 [3.18] C = .078 [1.98]		CL = .156 [3.96] C = .094 [2.39]	
	A	B	A	B	A	B
15	-	-	-	-	**2.1842** 55.47	**2.484** 63.09
18	-	-	**2.125** 53.98	**2.363** 60.02	**2.652** 67.36	**2.952** 74.98
22	**2.100** 53.34	**2.288** 58.12	**2.625** 66.68	**2.863** 72.72	**3.267** 83.21	**3.576** 90.83
25	**2.400** 60.96	**2.588** 65.74	-	-	-	-
28	**2.700** 68.58	**2.888** 73.36	**3.375** 85.73	**3.613** 91.77	**4.212** 106.98	**4.512** 114.60
30	-	-	**3.625** 92.08	**3.863** 98.12	-	-
36	**3.500** 88.9	**3.688** 93.68	**4.375** 111.12	**4.613** 117.17	**5.460** 138.68	**5.760** 146.30
40	**3.900** 99.06	**4.088** 103.84	**4.875** 123.83	**5.113** 129.87	-	-
42	**4.100** 104.14	**4.288** 108.92	-	-	-	-
43	**4.200** 106.68	**4.388** 111.46	**5.250** 133.35	**5.488** 139.40	**6.552** 166.42	**6.852** 174.04
50	**4.900** 124.46	**5.088** 129.24	**6.125** 155.58	**6.363** 161.62	-	-
60	**5.900** 149.86	**6.088** 154.64	-	-	-	-
65	**6.400** 162.56	**6.588** 167.34	-	-	-	-

Use Linear and Rotary ZIF Connectors as Card Guides to Access More Sides of the Daughter Board



Use Rotary ZIF Connectors for Tandem Applications



Note: Contact AMP Incorporated for information concerning special tandem connectors and long cam rods.

[1]Refer to AMP Catalog 82070

[2]Refer to AMP Catalog 82034

Assembly tooling is not required except when using connectors with ACTION PIN Contacts. ACTION PIN Contact assembly requires an arbor-style bench tool with a capacity of 50 pounds per contact, a support fixture, contact applicator, carrier removal tool and housing assembly tool.

AMP Handbook 5697, "Guide to Application of ACTION PIN Connectors", will provide helpful information for arbor tool selection and support fixture fabrication. Other tooling is listed below and on the following pages.

Typical procedure is to place a pc board on the support fixture, insert contact combs into the printed circuit board with the contact applicator and seat with the arbor tool. Next, remove the carrier strip from the contact combs with the carrier break-off tool. Place the housing over the contacts with the housing assembly tool, and repeat the entire process until the board is complete.

Linear ZIF .100 x .100 [2.54 x 2.54] Centerline Connectors

No. of Dual Positions	T-Bar Applicator	Carrier Removal Tool	Housing Assembly Tool	Housing Removal Tool	Wing Removal/ Replacement Tool	Housing Insertion Tool	Contact Replacement Tools	
							With Housing	Without Housing
30	266267-2	265924-2						
35	266267-3	265924-3						
40	266267-3	265924-3	313136-1					
45	266267-4	265924-4						
50	266267-4	265924-4						
55	266267-5	265924-5						
60	266267-5	265924-5						
65	266267-3	265924-3						
70	266267-3	265924-3	313136-2					
75	266267-3	265924-3						
80	266267-3	265924-3						
85	266267-4	265924-4						
90	266267-4	265924-4						
95	266267-4	265924-4						
100	266267-4	265924-4	313136-3	313256-1	266233-1	266264-1	266235-1	3-265871-2
105	266267-5	265924-5						
110	266267-5	265924-5						
115	266267-5	265924-5						
120	266267-5	265924-5						
125	266267-4	265924-4						
130	266267-4	265924-4	313136-4					
135	266267-4	265924-4						
140	266267-4	265924-4						
145	266267-4	265924-4						
150	266267-4	265924-4						
155	266267-5	265924-5						
160	266267-5	265924-5	313136-5					
165	266267-5	265924-5						
170	266267-5	265924-5						
175	266267-5	265924-5						

Tooling
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Linear ZIF .125 x .125 [3.18 x 3.18] Centerline Connectors

No. of Dual Positions	T-Bar Applicator	Carrier Removal Tool	Housing Assembly Tool	Housing Removal Tool	Wing Removal/ Replacement Tool	Housing Insertion Tool	Contact Replacement Tools	
							With Housing	Without Housing
24	313139-1	265924-2						
28	313139-1	265924-3						
32	313139-1	265924-3	313136-1					
36	313139-1	265924-4						
40	313139-1	265924-4						
44	313139-2	265924-5						
48	313139-2	265924-5						
52	313139-2	265924-6						
56	313139-2	265924-6	313136-2					
60	313139-2	265924-7						
64	313139-3	265924-7						
68	313139-3	265924-4						
72	313139-3	265924-4						
76	313139-3	265924-4						
80	313139-2	265924-4	313136-3	313256-1	266233-1	266264-1	266235-1	3-265871-2
84	313139-2	265924-5						
88	313139-2	265924-5						
92	313139-2	265924-5						
96	313139-2	265924-5						
100	313139-2	265924-6						
104	313139-2	265924-6	313136-4					
108	313139-2	265924-7						
112	313139-2	265924-7						
116	313139-2	265924-7						
120	313139-2	265924-7						
124	313139-2	265924-5						
128	313139-2	265924-5	313136-5					
132	313139-2	265924-5						
136	313139-2	265924-5						
140	313139-2	265924-5						

A variety of technical documents is available for your use.

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-26003 - ACTION PIN Contacts
108-14015 - Linear ZIF PC Board Edge Connectors, .100 [2.54] Centerline
108-9048 - Rotary Cam ZIF PC Board Edge Connectors

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Shop Person.

114-26003 - Linear ZIF Connectors, .100 x .100 [2.54 x 2.54] Centerline

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

IS 2665 - Linear ZIF, Carrier Removal Tool Series 265924
IS 2995 - Linear ZIF, Housing Wing Removal and Replacement Tool 266233-1
IS 2999 - Linear ZIF, T-Bar Insertion Tool Series 266267
IS 6915 - Linear ZIF, Housing Assembly Insertion Tool Series 313136
IS 6916 - Linear ZIF, T-Bar Insertion Tool Series 313139
IS 7911 - Rotary Cam ZIF, Connectors

Crimp Twin Leaf Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

Features

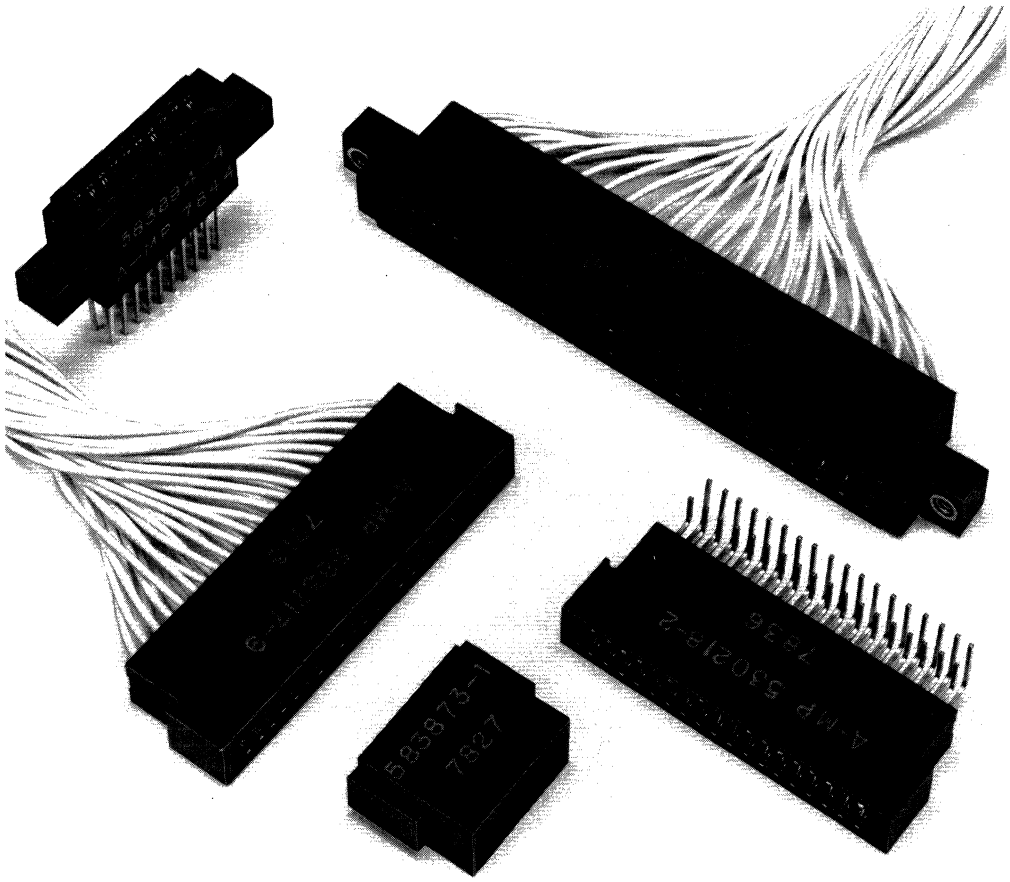
- Crimp, snap-in solder eyelet, .025 [0.64] square posted and right angle contacts on .100 [2.54], .125 [3.18] or .156 [3.96] centers
- Customer buys only enough contacts to meet circuit and retention requirements
- Contacts bifurcated for redundancy
- Miniature versions have single leaf for higher contact normal forces
- Low insertion forces
- Accommodates AWG 16-28 [1.4-0.08 mm^2] wire range and insulation diameters .035-.090 [0.89-2.29]
- Large variety of connector sizes
- Cavity identification on face of card slot and wire entry
- High speed automatic machine terminations provide uniform reliability at low applied cost
- Recognized under the Component Program of Underwriters Laboratories Inc. File E28476

Technical Documents

Instruction Sheets: IS 7498 & IS 7527 Crimp Twin Leaf

Product Specifications: 108-9027 &108-9031 Crimp Twin Leaf

Crimp Specifications: 114-9004 Crimp Twin Leaf



The Crimp Twin Leaf Connector is designed especially for high density board-to-wire applications. Termination styles include crimp, solder, posted and right angle, in a variety of sizes.

Design flexibility allows the customer to save by purchasing only enough contacts for the circuit requirements. Easy replaceability of each contact cuts repair cost in the event of contact or wire damage.

Electrical Characteristics

Contact Rating:
5 amperes, continuous

Contact Resistance:
10 milliohms, max.

Insulation Resistance:
5000 megohms (initial)
1000 megohms

Voltage Rating:
.100 [2.54] Centerline—1000 vrms
.125 [3.18] Centerline—1500 vrms
.156 [3.96] Centerline—1800 vrms

Mechanical Characteristics

Insertion Force (per pair):
Twin Leaf—10 oz. [2.78 N], max.; 7.6 oz. [2.11 N], avg.
Non-Bifurcated Contacts—12 oz. [3.34 N], max.; 11.8 oz. [3.28 N], avg.

Extraction Force (per pair):
Twin Leaf—0.7 oz. [0.195 N], min.; 1.2 oz. [0.334 N], avg.
Non-Bifurcated Contacts—0.9 oz. [0.250 N], min.; 1.9 oz. [0.528 N], avg.

Operating Temperature:
– 55°C to + 105°C

Materials

Phosphor Bronze:
QQ-B-750

Nylon:
MIL-M-20693

Platings

Gold:
MIL-G-45204

Nickel:
QQ-N-290

Tin:
MIL-T-10727

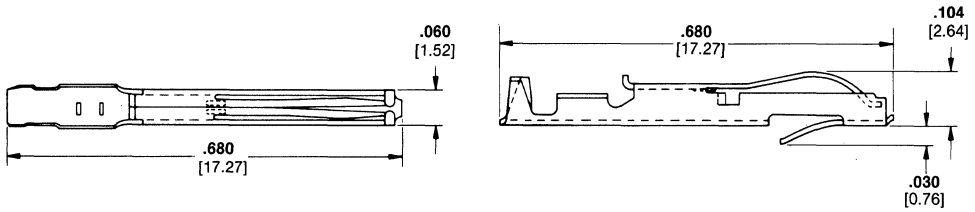
Crimp Twin Leaf Connectors
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimetres.

Crimp, Snap-In Twin Leaf Contacts

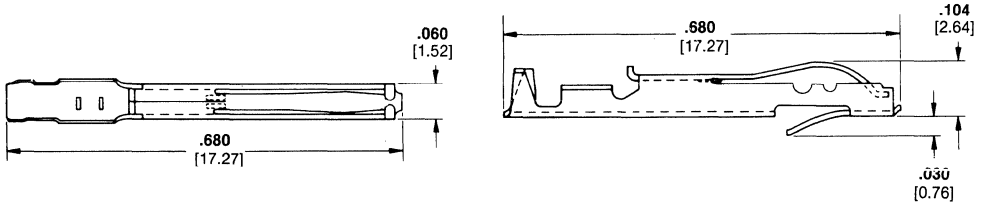
Material:
Phosphor bronze



Connector ℄	Wire Size Range AWG/mm²	Insulation Dia. Range	Gold Thickness See Finish Code	Contact: Loose Piece	Contact: Strip Form	Miniature Applicator for AMP-O-LECTRIC* Machine	Applicator for Stripper Crimper Machine	Color Code	Hand Tool Part No.
.100 2.54	28-24 0.08-0.2	.035-.055 0.89-1.40	A	583616-4	583616-2	466577-4	466912-1	Orange	90268-1
			B	583616-5	583616-3				
			C	583616-9	583616-8				
			D	1-583616-1	1-583616-0				
	24-20 0.2-0.6	.048-.060 1.22-1.52	A	583853-5	583853-3	466622-2	466919-1	Green	90272-1
			B	583853-4	583853-2				
			C	583853-9	583853-8				
			D	1-583853-1	1-583853-0				
.125 3.18	28-24 0.08-0.2	.035-.055 0.89-1.40	A	583616-4	583616-2	466577-4	466912-1	Orange	90268-1
			B	583616-5	583616-3				
			C	583616-9	583616-8				
			D	1-583616-1	1-583616-0				
	24-20 0.2-0.6	.048-.060 1.22-1.52	A	583853-5	583853-3	466622-2	466919-1	Green	90272-1
			B	583853-4	583853-2				
			C	583853-9	583853-8				
			D	1-583853-1	1-583853-0				
	22-18 0.3-0.9	.049-.095 1.24-2.41	A	583649-6	583649-3	466713-2	466928-1	Violet	90264-1
			B	583649-5	583649-2				
			C	583649-7	583649-4				
	20-16 0.6-1.4	.073-.090 1.85-2.29	A	583875-6	583875-5	687775-2	—	White	90285-1
			C	583875-3	583875-2				
.156 3.96	28-24 0.08-0.2	.035-.055 0.89-1.40	A	583616-4	583616-2	466577-4	466912-1	Orange	90268-1
			B	583616-5	583616-3				
			C	583616-9	583616-8				
			D	1-583616-1	1-583616-0				
	24-20 0.2-0.6	.048-.060 1.22-1.52	A	583853-5	583853-3	466622-2	466919-1	Green	90272-1
			B	583853-4	583853-2				
			C	583853-9	583853-8				
			D	1-583853-1	1-583853-0				
	22-18 0.3-0.9	.049-.095 1.24-2.41	A	583649-6	583649-3	466713-2	466928-1	Violet	90264-1
			B	583649-5	583649-2				
			C	583649-7	583649-4				
	20-16 0.6-1.4	.073-.090 1.85-2.29	A	583875-6	583875-5	487775-2	—	White	90285-1
			C	583875-3	583875-2				
		.085-.105 2.16-2.67	B	583875-3	530224-2	466525-2	—		

Crimp, Snap-In Non-Bifurcated Contacts

Material:
Phosphor bronze



Connector ℄	Wire Size Range AWG/mm²	Insulation Dia. Range	Gold Thickness See Finish Code	Contact: Loose Piece	Contact: Strip Form	Miniature Applicator for AMP-O-LECTRIC* Machine	Applicator for Stripper Crimper Machine	Color Code	Hand Tool Part No.
.100 2.54	28-24 0.08-0.2	.035-.055 0.89-1.40	A	531476-5	531476-4	466577-4	466912-1	Orange	90268-1
			B	531476-3	531476-2				
	24-20 0.2-0.6	.048-.060 1.22-1.52	A	531477-5	531477-4	466622-2	466919-1	Green	90272-1
			B	531477-3	531477-2				
.125 3.18	28-24 0.08-0.2	.035-.055 0.89-1.40	A	531476-5	531476-4	466577-4	466912-1	Orange	90268-1
			B	531476-3	531476-2				
	24-20 0.2-0.6	.048-.060 1.22-1.52	A	531477-5	531477-4	466622-2	466919-1	Green	90272-1
			B	531477-3	531477-2				
	22-18 0.3-0.9	.045-.095 1.14-2.41	A	531478-5	531478-4	466713-2	466928-1	Violet	90264-1
			B	531478-3	531478-2				
.156 3.96	28-24 0.08-0.2	.035-.055 0.89-1.40	A	531476-5	531476-4	466577-4	466912-1	Orange	90268-1
			B	531476-3	531476-2				
	24-20 0.2-0.6	.048-.060 1.22-1.52	A	531477-5	531477-4	466622-2	466919-1	Green	90272-1
			B	531477-3	531477-2				
	22-18 0.3-0.9	.045-.095 1.14-2.41	A	531478-5	531478-4	466713-2	466928-1	Violet	90264-1
			B	431478-3	531478-2				

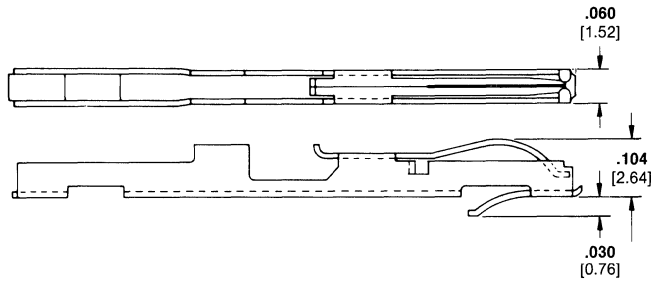
*Applicators available for AMPOMATOR machine; contact AMP Incorporated for information.

Crimp Twin Leaf Connectors
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
All dimensions in inches and millimetres. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimetres.

Snap-In Solder Eyelet Twin Leaf Contacts

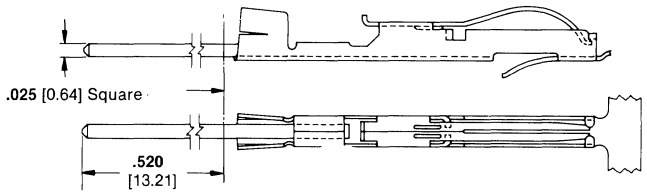


Material:
Phosphor bronze

Connector Centerline Spacing	Gold Thickness See Finish Code	Part Number
.100 2.54	A	583854-3
	B	583854-5
	C	583854-7
.125 3.18	A	530245-3
	B	530245-5
	C	530245-7
.156 3.81	A	583885-3
	B	583885-5

Note: Post is tin plated phosphor bronze

Snap-In Wrap Post Twin Leaf Contacts



Material:
Phosphor bronze

Connector Centerline Spacing	Gold Thickness See Finish Code	Part Number
.100 2.54	B	583879-4
.125 3.18	B	583884-1
.156 3.81	B	583884-1

Note: Post is tin plated phosphor bronze

Finish Code:

.000030 [0.00076] nickel over entire contact with one of the following on mating area:

A—.000030 [0.00076] selective gold.
B—.000015 [0.00038] selective gold.
C—.000050 [0.00127] selective gold.
D—.000015 [0.00038] selective gold; gold flash on remainder of contact.

Tin plating is also available upon request.

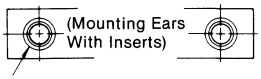
Note: Only loose piece contacts manufactured and supplied by AMP Incorporated are to be used with the hand tools listed on page 3376. No attempt should be made to produce loose piece parts from a strip since special cutoff tooling is required to assure a properly functioning part.

Crimp Twin Leaf Connectors
(Continued)

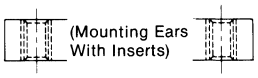
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
All dimensions in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Housings—.100 [2.54] Centerline



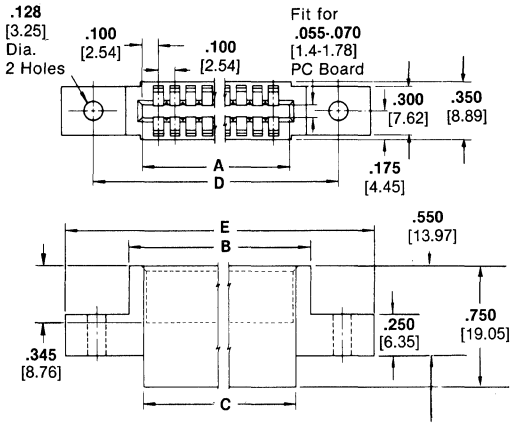
#4-40 Thd. Insert (Brass)



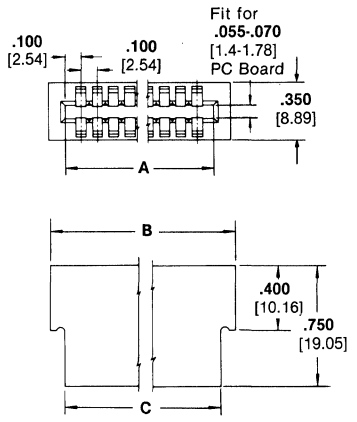
Material:
Glass filled nylon
94V-0 rated, black

Notes:
1. These housings accept all snap-in contacts shown on pages 3376 & 3377.
2. Other housings within the 6 to 50 dual position range are available upon request.

With Mounting Ears



Without Mounting Ears



No. of Dual Pos.	Dimensions A	B	C	D	E	Part Numbers Without Mounting Ears	With Mounting Ears	Mounting Ears With Inserts
6	.700 17.78	.900 22.86	.720 18.29	—	—	2-583717-1	—	—
				1.175 29.85	1.430 36.32	—	583861-5	—
7	.800 20.32	1.000 25.4	.820 20.83	—	—	2-583717-3	—	—
10	1.100 27.94	1.300 33.02	1.120 28.49	1.700 43.18	2.100 53.34	583717-1	583718-1	583890-1
				1.575 40.01	1.830 46.48	—	583861-7	—
13	1.200 30.48	1.400 35.56	1.600 40.64	—	—	3-583717-3	—	—
14	1.500 38.1	1.700 43.16	1.520 38.61	—	—	2-583717-7	—	—
15	1.600 40.64	1.800 45.72	1.620 41.15	2.200 55.88	2.600 66.04	583717-3	583718-3	583890-3
				2.075 52.71	2.330 59.18	—	583861-9	—
17	1.800 45.72	2.000 50.8	1.820 46.3	2.400 60.96	2.800 71.12	583717-5	583718-5	583890-5
				2.275 57.79	2.530 64.26	—	1-583861-1	—
18	1.900 48.26	2.100 53.34	1.920 48.77	2.500 63.5	2.900 73.66	583717-7	583718-7	583890-7
				2.375 60.33	2.630 66.8	—	1-583861-3	—
20	2.100 53.34	2.300 58.42	2.120 53.84	—	—	3-583717-1	—	—
22	2.300 58.42	2.500 63.5	2.320 58.93	2.900 73.66	3.300 83.82	583717-9	583718-9	583890-9
				2.775 70.49	3.030 76.96	—	1-583861-5	—
25	2.600 66.04	2.800 71.12	2.620 66.55	3.200 81.28	3.600 91.44	1-583717-1	1-583718-1	1-583890-1
				3.075 78.11	3.330 84.58	—	1-583861-7	—
28	2.900 73.66	3.100 78.74	2.920 74.17	3.500 88.9	3.900 99.06	2-583717-5	1-583718-9	1-583890-9
				3.375 85.73	3.630 92.2	—	1-583861-9	—
30	3.100 78.74	3.300 83.82	3.120 79.25	3.700 93.98	4.100 104.14	1-583717-3	1-583718-3	1-583890-3
				3.575 90.81	3.830 97.28	—	583861-1	—
36	3.700 93.98	3.900 99.06	3.720 94.49	4.175 106.04	4.430 112.52	3-583717-6	2-853861-5	—
40	4.100 104.14	4.300 109.22	4.120 104.65	4.700 119.38	5.100 129.54	1-583717-5	1-583718-5	1-583890-5
				4.575 116.21	4.830 122.68	—	583861-3	—
50	5.100 129.54	5.300 134.62	5.120 130.05	5.700 144.78	6.100 154.94	1-583717-9	1-583718-7	1-583890-7
				5.575 141.61	5.830 148.08	—	2-583861-1	—

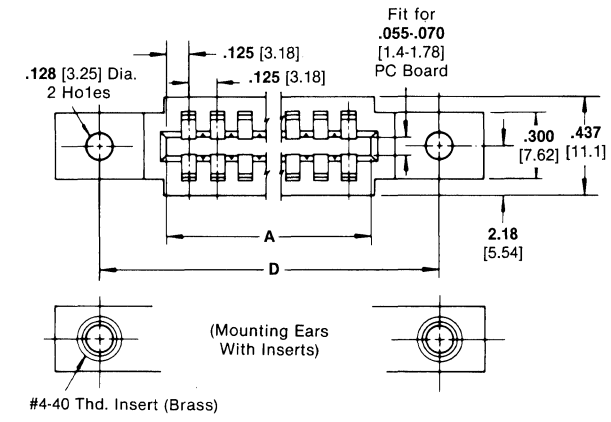
Crimp Twin Leaf Connectors
(Continued)

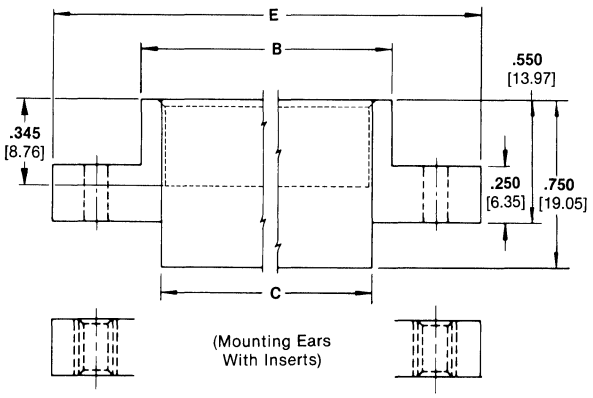
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
All dimensions in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

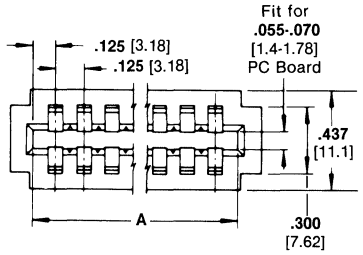
Housings—.125 [3.18] Centerline

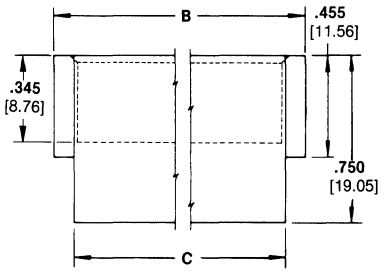
With Mounting Ears





Without Mounting Ears





Material:
Glass filled nylon 94V-0 rated, black

No. of Dual Pos.	Dimensions					Part Numbers		
	A	B	C	D	E	Without Mounting Ears	With Mounting Ears	Mounting Ears With Inserts
6	.875 22.23	1.035 26.29	.845 21.46	1.295 32.89	1.555 39.5	583873-1	583864-1	583891-1
10	1.375 34.93	1.535 38.99	1.345 34.16	1.795 45.59	2.055 52.2	583873-3	583864-3	583891-3
15	2.000 50.8	2.160 54.86	1.970 50.04	2.420 61.47	2.680 68.07	583873-5	583864-5	583891-5
18	2.375 60.33	2.535 64.39	2.345 59.56	2.795 70.99	3.055 77.6	583873-7	583864-7	583891-7
22	2.875 73.03	3.035 77.09	2.845 72.26	3.295 83.69	3.555 90.3	583873-9	583864-9	583891-9
25	3.250 82.55	3.410 86.61	3.220 81.79	3.670 93.22	3.930 99.82	1-583873-1	1-583864-1	1-583891-1
28	3.625 92.08	3.785 96.14	3.595 91.31	4.045 102.74	4.305 109.35	1-583873-3	1-583864-3	1-583891-3
30	3.875 98.43	4.035 102.49	3.845 47.66	4.295 109.09	4.555 115.7	2-583873-1	2-583864-1	2-583891-1
31	3.863 98.12	4.160 105.66	3.970 100.84	4.420 112.27	4.680 118.87	—	2-583864-5	—
	4.000 101.6	4.160 105.66	3.970 100.84	4.420 112.27	4.680 118.87	1-583873-5	1-583864-5	1-583891-5
36	4.625 117.48	4.785 121.54	4.595 116.71	5.045 128.14	5.305 134.75	—	2-583864-3	2-583891-3
40	5.125 130.18	5.285 134.24	5.095 129.41	5.545 140.84	5.805 147.45	1-583873-7	1-583864-7	1-583891-7
44	5.625 142.88	5.785 146.94	5.595 142.11	6.045 153.54	6.305 160.15	1-583873-9	1-583864-9	1-583891-9

Notes:
1. These housings accept all snap-in contacts shown on pages 3376 & 3377.
2. Other housings within the 6 to 44 dual position range are available upon request.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

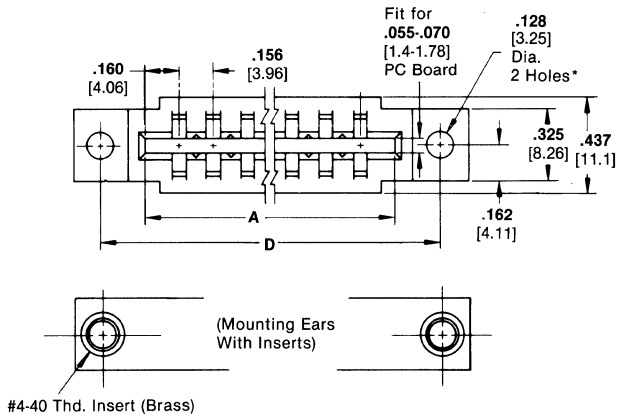
Crimp Twin Leaf Connectors
(Continued)

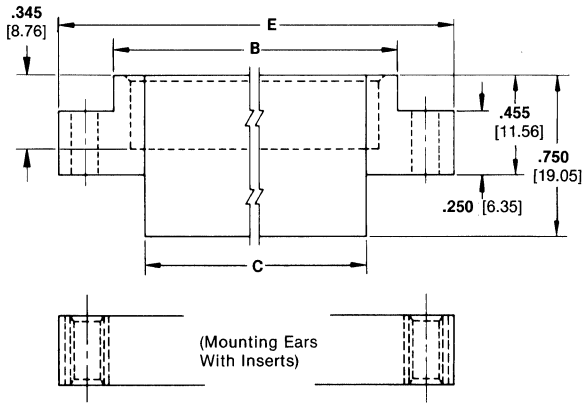
Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Housings—.156 [3.96] Centerline

Material:
Glass filled nylon
94V-0 rated, black

With Mounting Ears





No. of Dual Pos.	Dimensions					Part Numbers	
	A	B	C	D	E	Mounting Ears	Mounting Ears With Inserts
6	1.100 27.94	1.264 32.11	.976 24.79	1.535 38.99	1.785 45.34	1-583859-3	583888-1
8	1.412 35.86	1.576 40.03	1.288 32.72	1.847 46.91	2.097 53.26	2-583859-1	—
10	1.724 43.79	1.888 47.96	1.600 40.64	2.159 54.84	2.409 61.19	583859-9	583888-3
12	2.036 51.71	2.200 55.88	1.912 48.56	2.471 62.76	2.721 69.11	1-583859-5	—
14	2.348 59.64	2.512 63.80	2.224 56.49	2.783 70.69	3.033 77.04	2-583859-7	—
15	2.504 63.6	2.668 67.77	2.380 60.45	2.939 74.65	3.189 81	583859-7	—
18	2.972 75.49	3.136 79.65	2.848 72.34	3.407 86.54	3.657 92.89	583859-5 1-583859-1*	583888-5
22	3.596 91.34	3.760 95.5	3.472 88.19	4.031 102.39	4.281 108.74	583859-3	583888-9
24	3.908 99.26	4.072 103.43	3.784 96.11	4.343 110.31	4.593 116.66	1-583859-9	—
28	4.532 115.11	4.696 119.28	4.408 111.96	4.967 126.16	5.217 132.51	583859-1	583888-7
36	5.780 146.81	5.944 150.98	5.656 143.66	6.215 157.86	6.465 164.21	2-583859-3	—

*Mounting ear hole .156 [3.96] diameter for part no. 1-583859-1.

Notes:
1. These housings accept all snap-in contacts shown on pages 3376 & 3377.
2. Other connectors within the 6 to 36 dual position range are available upon request.

Crimp Twin Leaf Connectors
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
All dimensions in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Housing Assemblies—.100 [2.54] Centerline, Preloaded with Right Angle Posts

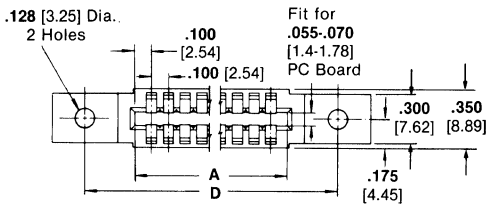
Housing Assemblies—.100 [2.54] Centerline, Preloaded with Wrap-Type Posts

Housing Material:
Glass filled nylon 94V-0 rated, black

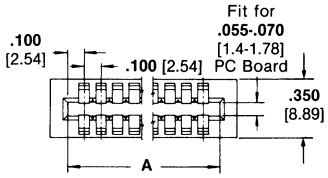
Contact Material:
Phosphor bronze

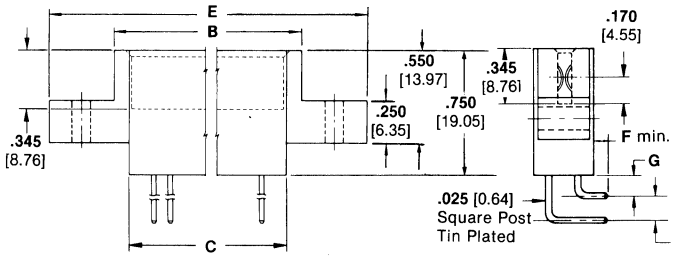
Contact Finish:
.000030 [0.00076] nickel over entire contact with .000015 [0.00038] selective gold on mating area. Post area is tin plated.

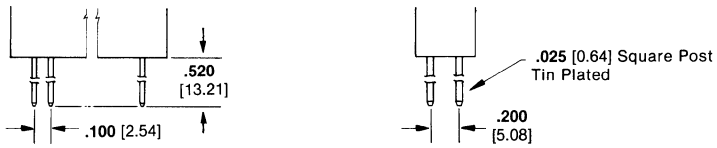
With Mounting Ears



Without Mounting Ears







No. of Dual Pos.	Dimensions							Part Numbers		
	A	B	C	D	E	F	G	Posted Assemblies with Mounting Ears	Right Angle Assemblies with Mounting Ears	Right Angle Assemblies without Mounting Ears
6	.700 17.78	.900 22.86	.720 18.29	1.175 29.85	1.430 36.32	—	—	583894-3	—	—
10	1.100 27.94	1.300 33.02	1.120 28.49	1.575 40.01	1.830 46.48	—	—	583894-4	583900-5	1-530218-0
15	1.600 40.64	1.800 45.72	1.620 41.15	2.200 55.88	2.600 66.04	—	—	583894-5	1-583900-1	1-530218-2
17	1.800 45.72	2.000 50.8	1.820 46.23	2.400 60.96	2.800 71.12	.090 2.29	.150 3.81	—	583900-8	530218-5
				2.275 57.79	2.530 64.26	—	—	583894-6	—	—
18	1.900 48.26	2.100 53.34	1.920 48.77	2.500 63.5	2.900 73.66	.090 2.29	.150 3.81	—	2-583900-2	530218-2
				2.375 60.33	2.630 66.8	—	—	583894-7	—	—
20	2.100 53.34	2.300 58.42	2.120 53.85	—	—	.090 2.29	.150 3.81	—	—	530218-4
22	2.300 58.42	2.500 63.5	2.320 58.93	2.900 73.66	3.300 83.82	.090 2.29	.150 3.81	—	583900-2	530218-9
				2.775 70.45	3.030 76.96	—	—	583894-8	—	—
25	2.600 66.04	2.800 71.12	2.620 66.55	3.200 81.28	3.600 91.44	.090 2.29	.150 3.81	—	583900-1	530218-1
				3.075 78.11	3.330 84.58	—	—	583894-9	—	—
28	2.900 73.66	3.100 78.74	2.920 74.17	3.375 85.73	3.630 92.2	—	—	1-583894-0	583900-6	—
30	3.100 78.74	3.200 83.82	3.120 79.25	3.700 93.98	4.100 104.14	.090 2.29	.150 3.81	—	583900-4	530218-6
				3.575 90.81	3.830 97.28	—	—	583894-1	—	—
36	3.700 93.98	3.900 99.06	3.720 94.49	4.175 106.05	4.430 112.52	.090 2.29	.150 3.81	—	1-583900-2	1-530218-1
40	4.100 104.14	4.300 109.22	4.120 104.65	—	—	.090 2.29	.150 3.81	—	583900-9	530218-7
				4.575 116.21	4.830 122.68	—	—	583894-2	—	—
44	4.500 114.3	4.700 119.38	4.520 114.81	4.975 126.37	5.230 132.84	.136 3.45	.100 2.54	—	583900-7	—
50	5.100 129.54	5.300 134.62	5.120 130.05	5.700 144.78	6.100 154.94	.250 6.35	.050 1.27	—	—	530218-8
				5.575 141.61	5.830 148.08	—	—	1-583894-1	583900-3	—

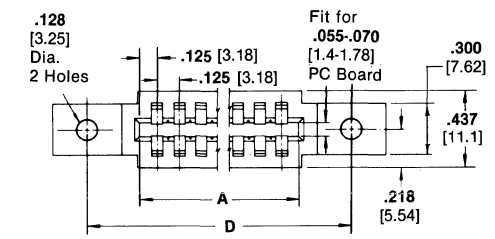
Specifications subject to change.
For latest design specifications...
1-800-522-6752

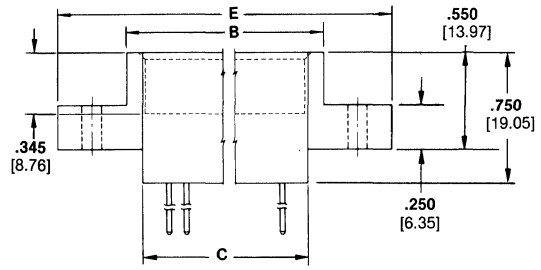
Crimp Twin Leaf Connectors
(Continued)

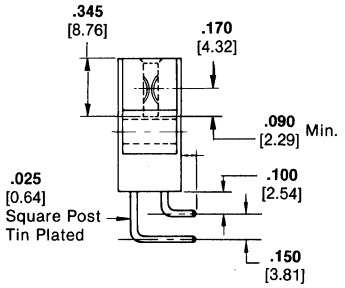
Dimensioning:
All dimensions in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Housing Assemblies—.125 [3.18] Centerline, Preloaded with Right Angle Posts

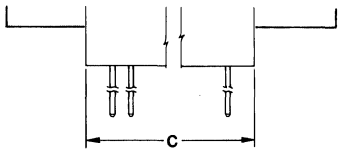
With Mounting Ears

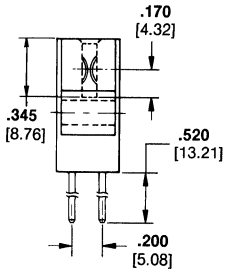






Housing Assemblies—.125 [3.18] Centerline, Preloaded with Wrap-Type Posts





Housing Material:
Glass filled nylon 94V-0 rated, black

Contact Material:
Phosphor bronze

Contact Finish:
.000030 [0.00076] nickel over entire contact with .000015 [0.00038] selective gold on mating area. Post area is tin plated.

No. of Dual Pos.	Dimensions					Part Numbers	
	A	B	C	D	E	Posted Assemblies	Right Angle Assemblies
6	.875 22.23	1.035 26.29	.845 21.46	1.295 32.89	1.555 39.5	583895-1	—
10	1.375 34.93	1.535 38.99	1.345 34.16	1.795 45.59	2.055 52.2	583895-2	—
15	2.000 50.8	2.160 54.86	1.970 50.04	2.420 61.47	2.680 68.07	583895-3	—
18	2.375 60.33	2.535 64.39	2.345 59.56	2.795 70.99	3.055 77.6	583895-4	—
22	2.875 70.03	3.035 77.09	2.845 72.26	3.295 83.69	3.555 90.3	583895-5	530238-4
25	3.250 82.55	3.410 86.61	3.220 81.79	3.670 93.22	3.930 99.82	583895-6	—
28	3.625 92.08	3.785 96.14	3.595 91.31	4.045 102.74	4.305 109.35	583895-7	530238-1
30	3.875 98.43	4.035 102.49	3.845 97.66	4.295 109.09	4.555 115.7	1-583895-1	530238-5
31	4.000 101.6	4.160 105.66	3.970 100.84	4.420 112.27	4.680 118.87	583895-8	—
36	4.625 117.48	4.785 121.54	4.595 116.71	5.045 128.14	5.305 134.75	—	530238-2
40	5.125 130.18	5.285 134.24	5.095 129.41	5.545 140.84	5.805 147.45	583895-9	530238-3
44	5.625 142.88	5.785 145.94	5.595 142.11	6.045 153.54	6.305 160.15	1-583895-0	530238-6

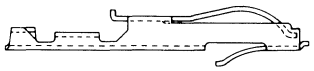
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Crimp Twin Leaf Connectors
(Continued)

Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Dummy Contact

Material:
Phosphor bronze

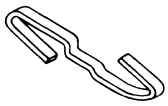


Tin Plated — **Part No. 583691-2**
.000030 [0.00076] Nickel Plated — **Part No. 583857-6**
Gold Flash Over Nickel Plate — **Part No. 583857-7**
Unplated — **Part No. 583857-8**

The dummy contact is used in sparsely loaded housings to balance contact pressure. For specific recommendations, consult AMP Incorporated.

Retaining Spring

Material:
Beryllium copper

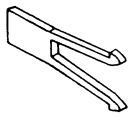


Unplated — **Part No. 583691-2**
Gold Flash Over Nickel Plate — **Part No. 83691-3**

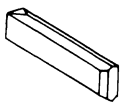
Retaining springs are used for single sided pc board applications. Use one spring per 6 empty cavities.

Keying Plugs

Material:
Nylon, natural



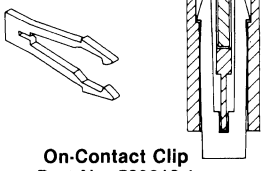
On-Contact Plug
Part No. 583764-1



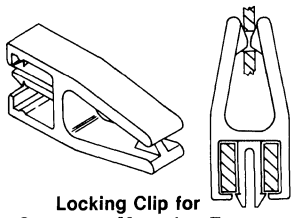
Inter-Contact Plug
Part No. 583274-1

Locking Keys

Material:
Nylon

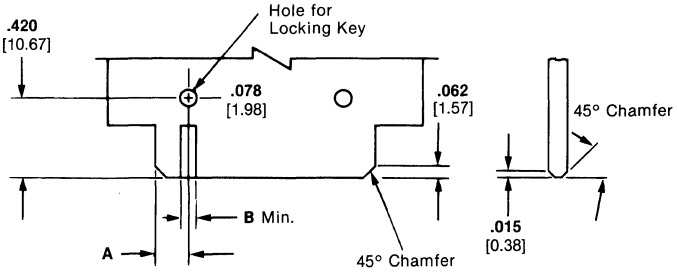


On-Contact Clip
Part No. 530213-1



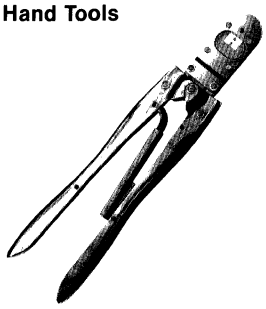
Locking Clip for Connector Mounting Ear
Part No. 530248-1

Recommended PC Board Layout



Connector Centerline Spacing	Dimension A	Dimension B
.100 2.54	.096 2.44	.045 1.14
.125 3.18	.121 3.07	.072 1.83
.156 3.96	.156 3.96	.080 2.03

Hand Tools



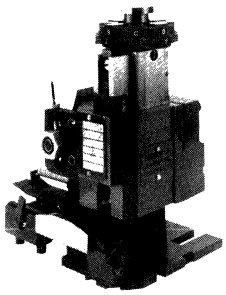
Hand Crimping Tool
(For crimp, snap-in contacts on page 3376)

Contact Extraction Tool
Part No. 91073-1

Note: See page 3384 for additional tooling.

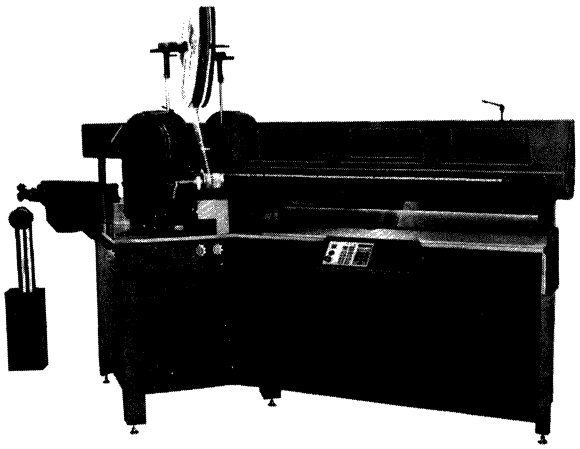
AMP-O-MATIC Stripper/Crimper Machine

This machine automatically strips and terminates wire in a single operation. It is a portable bench-mounted unit which can apply a wide range of open barrel, side feed strip contacts. Minimum lead length is only 1.5 [38] and production rates can be up to 1,200 terminations per hour.



Quick-Change Miniature Applicators

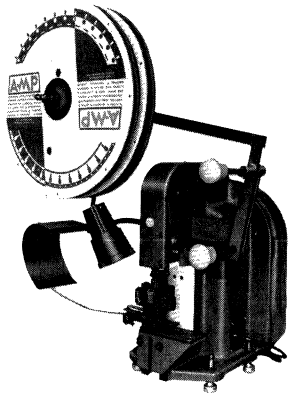
AMP miniature applicators provide flexible operation for the AMPOMATOR, AMP-O-LECTRIC and AMP-O-MATIC Single End Lead Machines. These applicators can be changed in minutes. Crimping height on both terminal barrel and insulation support for a given wire size is simply "dialed in". All adjustments are made rapidly, with no major interruptions in production. Unique control circuits protect every machine part, and visual indicators aid in adjustment and operation.



AMPOMATOR CLS II Machine

The AMPOMATOR CLS II is an automatic lead making machine designed for low volume and/or short production runs, yet it provides flexibility and ease of conversion to handle many production requirements. The unit automatically feeds, measures and cuts wire, then strips and terminates one or both ends of the wire.

The machine uses AMP's Quick-Change Applicators common to existing bench machines and lead making equipment. The "T"-style terminating units are "air glide" to facilitate applicator changeover.



AMP-O-LECTRIC Terminating Machine

The AMP-O-LECTRIC machine is capable of applying contacts to wire at rates up to 1,500 per hour and more, depending on operator dexterity. The machine is electrically powered and bench mounted and can be readily moved to any location where an electrical power source is available.

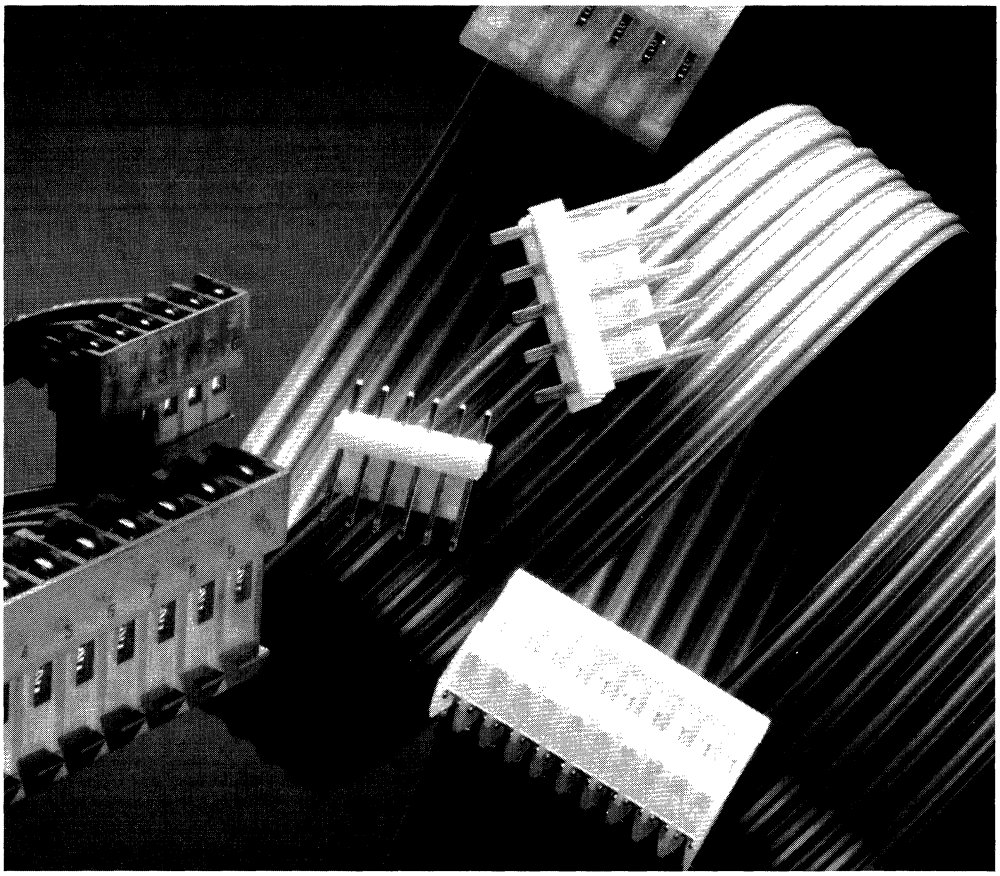
For high application rates, ease of maintenance and servicing, and for highest reliability at low applied cost, the AMP-O-LECTRIC machine has proven itself to be an excellent addition to any circuit production operation.

CERTI-CRIMP Hand Tools (See product section pages for appropriate part numbers)

AMP hand tools are ideal for small production, prototype and experimental applications. They feature the CERTI-CRIMP ratchet device which keeps the tool pressure locked until the jaws are brought together under the precise pressure needed to assure perfectly formed crimps, time after time.

MTA (Mass Termination Assemblies) Printed Circuit Board Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Introduction

MTA, Mass Termination Assemblies, is a complete printed circuit board interconnection system, offering design versatility and low applied cost. A variety of wire sizes and types from discrete to ribbon cable can be mass terminated in one step without wire stripping.

Mass termination of wire provides the lowest applied cost because it drastically reduces the labor content of virtually any cable or harness assembly required. Labor savings from 50 to 95 percent are attainable, depending on applications. Besides low applied cost, other desirable benefits are derived from the MTA system, such as:

- Increased Quality—
One step assembly
No wire stripping
No contact damage
No tooling wear

- Ease of Handling—
One step assembly
Reduced wiring errors
Preloaded contacts
Simpler tooling
Simple maintenance and repair

Wire-to-post connectors are preloaded with dual beam contacts. Card edge connectors are preloaded with leaf contacts. All contacts are slotted for the insulation displacement termination technique.

The MTA technique eliminates the need for prestripping the conductors. The insulation is displaced and the wire makes positive contact with the dual slotted beams. The wire deflection of the beams results in stored energy spring contact force which provides a stable, long life termination.

Four systems are available:
- MTA-100 on .100 centerlines for .025 square posts,
- MTA-156 on .156 centerlines for .045 round or square posts,
- MTA-156 Cable-to-Cable Posted Connectors on .156 centerlines,
- MTA-156 Card Edge Connectors on .156 centerlines for .062 thick single side printed circuit boards.

The four MTA systems are also available preterminated to ribbon cable. MTA Ribbon Cable Assemblies are available and can be shipped ready for use in any length, with any number of circuits, in any wire size, and can be terminated with one or more connectors.

Standard Features and Benefits

- Four MTA Systems:
MTA-100—.100 centers, receptacles and headers
MTA-156—.156 centers, receptacles and headers
MTA-156—posted connector
MTA-156—card edge connector

- Position Sizes:
MTA-100—Receptacles and headers for 2 through 28 positions
MTA-156—Receptacles and headers for 2 through 24 positions
MTA-156—Posted connectors for 2, 3, 4, 6, 9, 12, 15 and 24 positions
MTA-156—Card edge connectors for 3, 6, 9, 12, 15, 18, and 20 through 24 positions

- End stackable on MTA-100 receptacles and headers and MTA-156 receptacles and headers

- Receptacle styles include both closed-end and feed-thru, with and without polarizing tab

- Contacts are post lubricated to prevent fretting corrosion

- Color coded housings:

Orange–	18 AWG
Yellow–	20 AWG
Red–	22 AWG
Natural–	24 AWG
Blue–	26 AWG
Green–	28 AWG

- Meets the material requirements to Table 23.1 of UL 1410 Standards for Television Receiver and Video Products*

- Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476

- Certified by Canadian Standards Association File No. LR16455

***Minimum order quantities and extended lead times may apply on special desired features.**

***Wire-to-post connectors only**

Specifications subject to change.
For latest design specifications...
1-800-522-6752

MTA-100 Receptacles .100 Centers

Dimensioning:
Dimensions are in inches

Color Coding by Wire Size:

28 AWG—Green
26 AWG—Blue
24 AWG—Natural
22 AWG—Red

Accepts insulation range of .060 dia. max. when terminating one wire at a time.

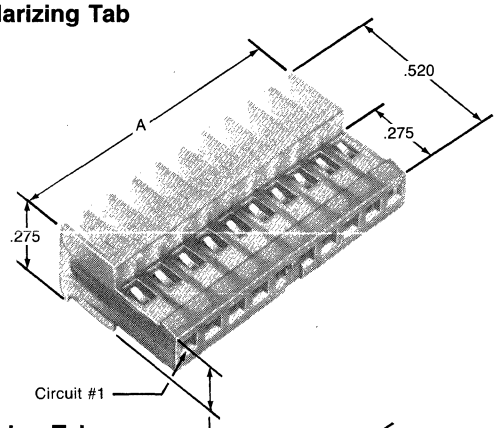
Accepts insulation range of .050 dia. max. when mass terminating.

Other features available upon request

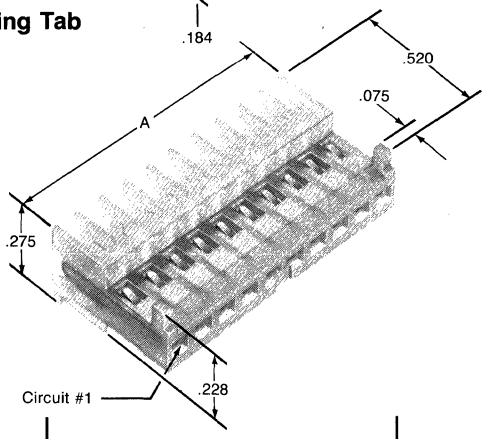
- .000015 and .000030 gold plating
- Receptacle circuits molded closed for keying purposes
- 28 and 26 AWG wire gauge in 15 to 28 position sizes in the receptacles without polarizing tabs
- Tape mounted receptacles available on reels

Minimum order quantities and extended lead times may apply on special desired features. Consult AMP Incorporated, Harrisburg, PA 17105.

Closed-End Without Polarizing Tab



Closed-End With Polarizing Tab



Material:

Housing—Thermoplastic 94V-2 rated
Contacts—Tin plated phosphor bronze

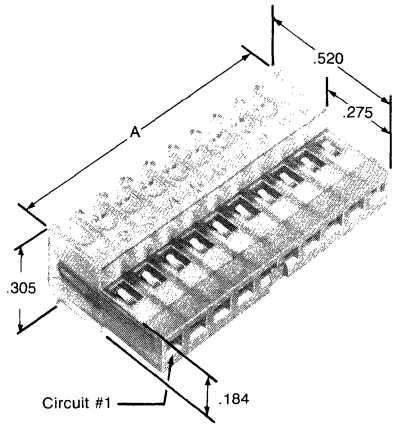
For AMP products that mate with these receptacles, see pages 3390 through 3393.

Circuits	Dim. A	Without Polarizing Tab				With Polarizing Tab		
		28 AWG	26 AWG	24 AWG	22 AWG	26 AWG	24 AWG	22 AWG
2	.200	640443-2	640442-2	640441-2	640440-2	643815-2	643814-2	643813-2
3	.300	640443-3	640442-3	640441-3	640440-3	643815-3	643814-3	643813-3
4	.400	640443-4	640442-4	640441-4	640440-4	643815-4	643814-4	643813-4
5	.500	640443-5	640442-5	640441-5	640440-5	643815-5	643814-5	643813-5
6	.600	640443-6	640442-6	640441-6	640440-6	643815-6	643814-6	643813-6
7	.700	640443-7	640442-7	640441-7	640440-7	643815-7	643814-7	643813-7
8	.800	640443-8	640442-8	640441-8	640440-8	643815-8	643814-8	643813-8
9	.900	640443-9	640442-9	640441-9	640440-9	643815-9	643814-9	643813-9
10	1.000	1-640443-0	1-640442-0	1-640441-0	1-640440-0	1-643815-0	1-643814-0	1-643813-0
11	1.100	1-640443-1	1-640442-1	1-640441-1	1-640440-1	1-643815-1	1-643814-1	1-643813-1
12	1.200	1-640443-2	1-640442-2	1-640441-2	1-640440-2	1-643815-2	1-643814-2	1-643813-2
13	1.300	1-640443-3	1-640442-3	1-640441-3	1-640440-3	1-643815-3	1-643814-3	1-643813-3
14	1.400	1-640443-4	1-640442-4	1-640441-4	1-640440-4	1-643815-4	1-643814-4	1-643813-4
15	1.500	—	—	1-640441-5	1-640440-5	1-643815-5	1-643814-5	1-643813-5
16	1.600	—	—	1-640441-6	1-640440-6	1-643815-6	1-643814-6	1-643813-6
17	1.700	—	—	1-640441-7	1-640440-7	1-643815-7	1-643814-7	1-643813-7
18	1.800	—	—	1-640441-8	1-640440-8	1-643815-8	1-643814-8	1-643813-8
19	1.900	—	—	1-640441-9	1-640440-9	1-643815-9	1-643814-9	1-643813-9
20	2.000	—	—	2-640441-0	2-640440-0	2-643815-0	2-643814-0	2-643813-0
21	2.100	—	—	2-640441-1	2-640440-1	2-643815-1	2-643814-1	2-643813-1
22	2.200	—	—	2-640441-2	2-640440-2	2-643815-2	2-643814-2	2-643813-2
23	2.300	—	—	2-640441-3	2-640440-3	2-643815-3	2-643814-3	2-643813-3
24	2.400	—	—	2-640441-4	2-640440-4	2-643815-4	2-643814-4	2-643813-4
25	2.500	—	—	2-640441-5	2-640440-5	2-643815-5	2-643814-5	2-643813-5
26	2.600	—	—	2-640441-6	2-640440-6	2-643815-6	2-643814-6	2-643813-6
27	2.700	—	—	2-640441-7	2-640440-7	2-643815-7	2-643814-7	2-643813-7
28	2.800	—	—	2-640441-8	2-640440-8	2-643815-8	2-643814-8	2-643813-8

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Feed-Thru Receptacle Without Polarizing Tabs



Circuits	Dim. A	Without Polarizing Tab	
		24 AWG	22 AWG
2	.200	640621-2	640620-2
3	.300	640621-3	640620-3
4	.400	640621-4	640620-4
5	.500	640621-5	640620-5
6	.600	640621-6	640620-6
7	.700	640621-7	640620-7
8	.800	640621-8	640620-8
9	.900	640621-9	640620-9
10	1.000	1-640621-0	1-640620-0
11	1.100	1-640621-1	640620-1
12	1.200	1-640621-2	1-640620-2
13	1.300	1-640621-3	1-640620-3
14	1.400	1-640621-4	1-640620-4

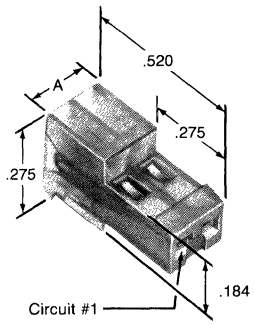
Minimum order quantities and extended lead times may apply on special desired features. Consult AMP Incorporated, Harrisburg, PA 17105.

Other features available on request
- .000015 and .000030 gold plating
- Receptacle circuits molded closed for keying purposes
- Tape mounted receptacles on reels
- 28 AWG and 26 AWG wire gauge in 2 through 28 position sizes and 24 AWG and 22 AWG wire gauge in 15 through 28 position sizes

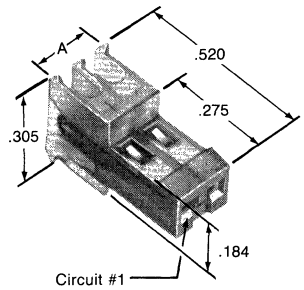
For AMP products that mate with these receptacles, see pages 3390 through 3393.

Special Connectors for .014-.020 Diameter or Square Leads

Closed-End Receptacle



Feed-Thru Receptacle



Wire Size AWG	Closed-End Receptacle		Feed-Thru Receptacle	
	2 Pos.	3 Pos.	2 Pos.	3 Pos.
28	641537-2	641537-3	641656-2	641656-3
26	641536-2	641536-3	641655-2	641655-3
24	641535-2	641535-3	641654-2	641654-3
22	641534-2	641534-3	641653-2	641653-3

Other sizes are available on request. Minimum order quantities and extended lead times may apply.

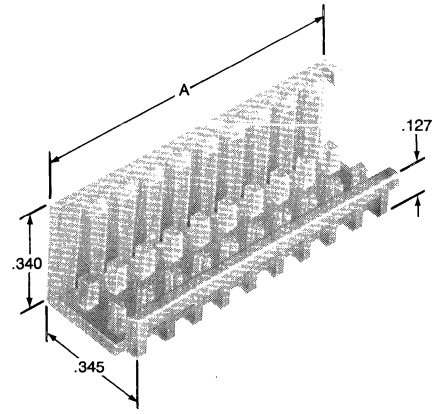
Material:

Housing—Thermoplastic 94V-2 rated

Contacts—Tin plated phosphor bronze

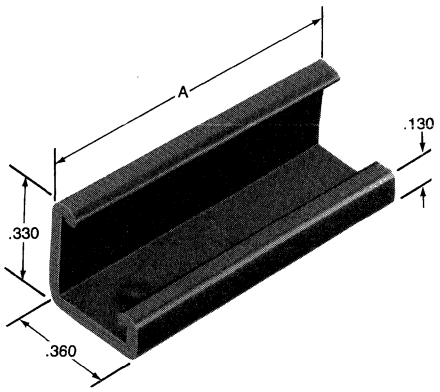
Closed-End Strain Relief Covers

Material: Thermoplastic, 94V-2 rated, natural



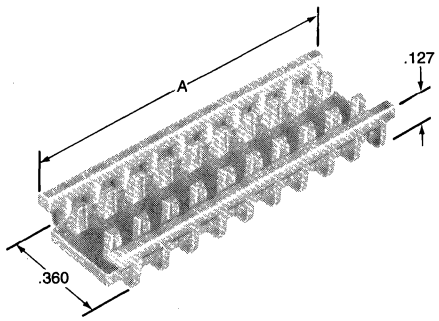
Closed-End Dust Covers

Material: Thermoplastic, 94V-2 rated, natural



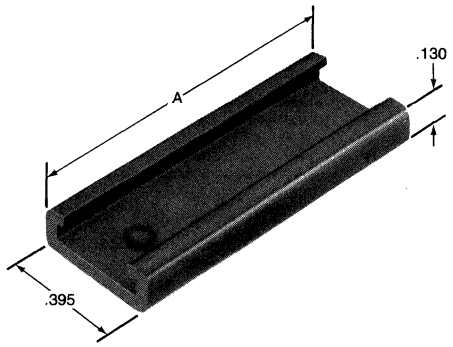
Feed-Thru Strain Relief Covers

Material: Thermoplastic, 94V-2 rated, natural



Feed-Thru Dust Covers

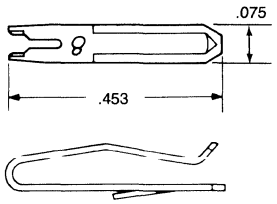
Material: Thermoplastic, 94V-2 rated, natural



Replacement Contacts

Material and Finish: Tin plated phosphor bronze

Stock Thickness: .0125



Note: Removal of contact is not necessary when using keying plug.

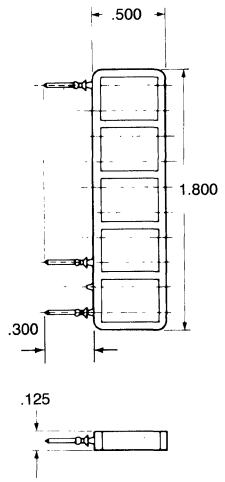
Wire Size AWG	Part Numbers	
	Standard Connectors	Special Connectors
28	640639-1	641646-1
26	640638-2	641645-1
24	640637-1	641644-1
22	640636-1	641643-1

Note: Contacts also available in .000015 and .000030 gold. Consult AMP Incorporated, Harrisburg, PA 17105.

Keying Plug with Carrier Strip

Materials: Thermoplastic, 94V-2 rated, natural

Part No. 641994-1



Strain Relief Covers and Dust Covers

No. of Circuits	Dim. A	Closed-End Strain Relief Covers	Feed-Thru Strain Relief Covers	Closed-End Dust Covers	Feed-Thru Dust Covers
2	.200	643075-2	643077-2	—	—
3	.300	643075-3	643077-3	640550-3	640642-3
4	.400	643075-4	643077-4	640550-4	640642-4
5	.500	643075-5	643077-5	640550-5	640642-5
6	.600	643075-6	643077-6	640550-6	640642-6
7	.700	643075-7	643077-7	640550-7	640642-7
8	.800	643075-8	643077-8	640550-8	640642-8
9	.900	643075-9	643077-9	640550-9	640642-9
10	1.000	1-643075-0	1-643077-0	1-640550-0	1-640642-0
11	1.100	1-643075-1	1-643077-1	1-640550-1	1-640642-1
12	1.200	1-643075-2	1-643077-2	1-640550-2	1-640642-2
13	1.300	1-643075-3	1-643077-3	1-640550-3	1-640642-3
14	1.400	1-643075-4	1-643077-4	1-640550-4	1-640642-4
15	1.500	1-643075-5	—	1-640550-5	—
16	1.600	1-643075-6	—	1-640550-6	—
17	1.700	1-643075-7	—	1-640550-7	—
18	1.800	1-643075-8	—	1-640550-8	—
19	1.900	1-643075-9	—	1-640550-9	—
20	2.000	2-643075-0	—	2-640550-0	—
21	2.100	2-643075-1	—	2-640550-1	—
22	2.200	2-643075-2	—	2-640550-2	—
23	2.300	2-643075-3	—	2-640550-3	—
24	2.400	2-643075-4	—	2-640550-4	—
25	2.500	2-643075-5	—	2-640550-5	—
26	2.600	2-643075-6	—	2-640550-6	—
27	2.700	2-643075-7	—	2-640550-7	—
28	2.800	2-643075-8	2-643077-8	2-640550-8	2-640642-8

Feed-thru covers for 15 through 27 position sizes are available on request

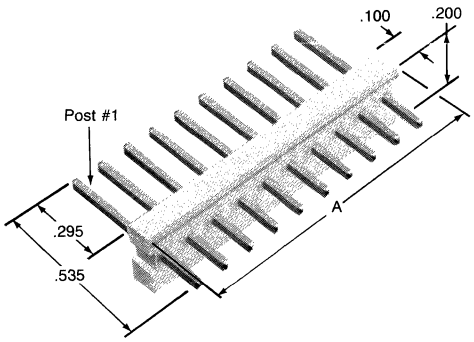
Minimum order quantities and extended lead times may apply on special requests. Consult AMP Incorporated, Harrisburg, PA 17105.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

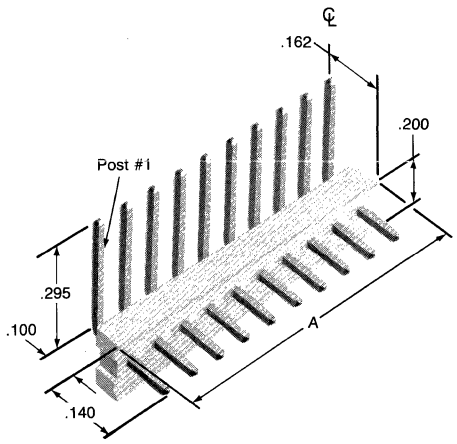
MTA-100 Post Headers .100 Centers, .200 Wide Flat Header

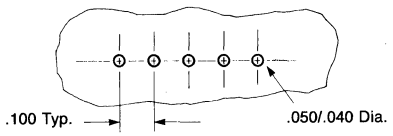
Dimensioning:
Dimensions are in inches

Straight Post (.025 Square)



Right Angle Post (.025 Square)





Recommended Mounting Hole Size for a 1/16 Thk. Pc Board

No. of Positions	Dim. A	Part Numbers
2	.200	640452-2
3	.300	640452-3
4	.400	640452-4
5	.500	640452-5
6	.600	640452-6
7	.700	640452-7
8	.800	640452-8
9	.900	640452-9
10	1.000	1-640452-0
11	1.100	1-640452-1
12	1.200	1-640452-2
13	1.300	1-640452-3
14	1.400	1-640452-4

Other features available on request

- .000015 and .000030 gold plating
- Post(s) can be omitted for keying purposes. Specify the desired post(s) to be omitted using the figure above identifying Post #1
- 15 through 28 position sizes also available

Minimum order quantities and extended lead times may apply on desired special features. Consult AMP Incorporated, Harrisburg, PA 17105.

For AMP products that mate with these headers, see pages 3386 and 3387.

No. of Positions	Dim. A	Part Numbers
2	.200	640453-2
3	.300	640453-3
4	.400	640453-4
5	.500	640453-5
6	.600	640453-6
7	.700	640453-7
8	.800	640453-8
9	.900	640543-9
10	1.000	1-640453-0
11	1.100	1-640453-1
12	1.200	1-640453-2
13	1.300	1-640453-3
14	1.400	1-640453-4

Material:

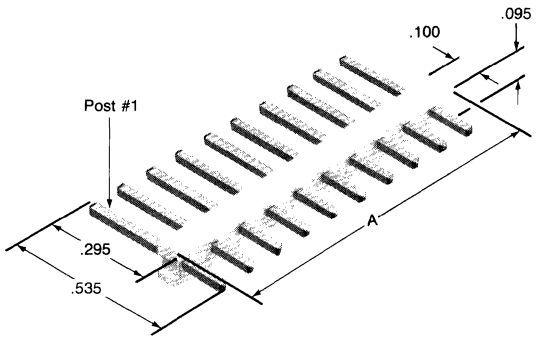
Housing—Polyester 94V-0 rated, natural
Posts—Tin plated copper alloy

Specifications subject to change.
For latest design specifications...
1-800-522-6752

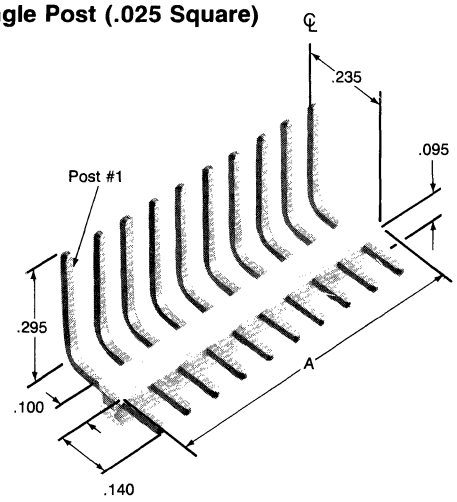
MTA-100 Post Header .100 Centers, .095 Wide Narrow Flat Header

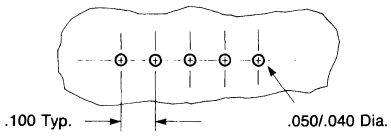
Dimensioning:
Dimensions are in inches

Straight Post (.025 Square)



Right Angle Post (.025 Square)





Recommended Mounting Hole Size for a 1/16 Thk. Pc Board

No. of Positions	A Dim.	Part Numbers
2	.200	643802-2
3	.300	643802-3
4	.400	643802-4
5	.500	643802-5
6	.600	643802-6
7	.700	643802-7
8	.800	643802-8
9	.900	643802-9
10	1.000	1-643802-0
11	1.100	1-643802-1
12	1.200	1-643802-2
13	1.300	1-643802-3
14	1.400	1-643802-4
15	1.500	1-643802-5
16	1.600	1-643802-6
17	1.700	1-643802-7
18	1.800	1-643802-8
19	1.900	1-643802-9
20	2.000	2-643802-0
21	2.100	2-643802-1
22	2.200	2-643802-2
23	2.300	2-643802-3
24	2.400	2-643802-4
25	2.500	2-643802-5
26	2.600	2-643802-6
27	2.700	2-643802-7
28	2.800	2-643802-8

For AMP products that mate with these headers, see pages 3386 and 3387.

No. of Positions	Dim. A	Part Numbers
2	.200	643163-2
3	.300	643163-3
4	.400	643163-4
5	.500	643163-5
6	.600	643163-6
7	.700	642163-7
8	.800	643163-8
9	.900	643163-9
10	1.000	1-643163-0
11	1.100	1-643163-1
12	1.200	1-643163-2
13	1.300	1-643163-3
14	1.400	1-643163-4
15	1.500	1-643163-5
16	1.600	1-643163-6
17	1.700	1-643163-7
18	1.800	1-643163-8
19	1.900	1-643163-9
20	2.000	2-643163-0
21	2.100	2-643163-1
22	2.200	2-643163-2
23	2.300	2-643163-3
24	2.400	2-643163-4
25	2.500	2-643163-5
26	2.600	2-643163-6
27	2.700	2-643163-7
28	2.800	2-643163-8

Material:

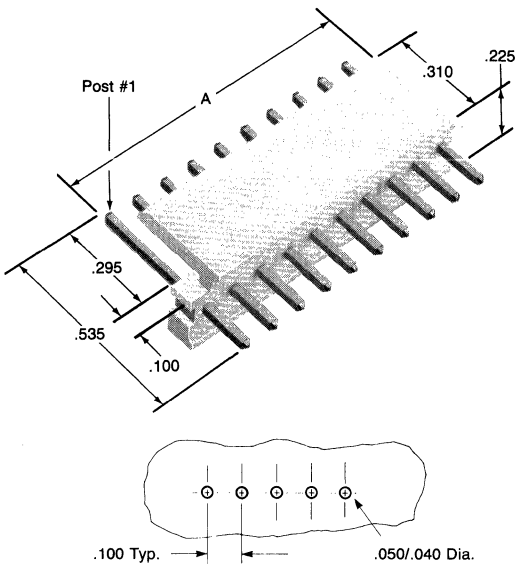
Housing—Polyester 94V-0 rated, natural
Posts—Tin plated copper alloy

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

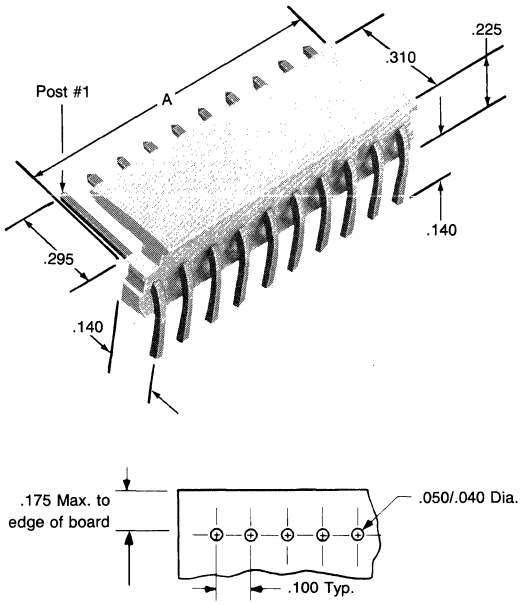
MTA-100 Post Headers .100 Centers Polarized Header with Polarizing Notches

Straight Post (.025 Square)



Recommended Mounting Hole Size for a 1/16 Thk. Pc Board

Right Angle Post (.025 Square)



Recommended Mounting Hole Size for a 1/16 Thk. Pc Board

No. of Positions	Dim. A	Part Numbers
2	.200	640454-2
3	.300	640454-3
4	.400	640454-4
5	.500	640454-5
6	.600	640454-6
7	.700	640454-7
8	.800	640454-8
9	.900	640454-9
10	1.000	1-640454-0
11	1.100	1-640454-1
12	1.200	1-640454-2
13	1.300	1-640454-3
14	1.400	1-640454-4
15	1.500	1-640454-5
16	1.600	1-640454-6
17	1.700	1-640454-7
18	1.800	1-640454-8
19	1.900	1-640454-9
20	2.000	2-640454-0
21	2.100	2-640454-1
22	2.200	2-640454-2
23	2.300	2-640454-3
24	2.400	2-640454-4
25	2.500	2-640454-5
26	2.600	2-640454-6
27	2.700	2-640454-7
28	2.800	2-640454-8

Other features available on request

- .000015 and .000030 gold plating
- Post(s) can be omitted for keying purposes. Specify the desired post(s) to be omitted using the figure above identifying Post #1

Minimum order quantities and extended lead times may apply on desired special features. Consult AMP Incorporated, Harrisburg, PA 17105.

For AMP products that mate with these headers, see pages 3386 and 3387.

Material:

Housing—Polyester 94V-0 rated, natural
Posts—Tin plated copper alloy

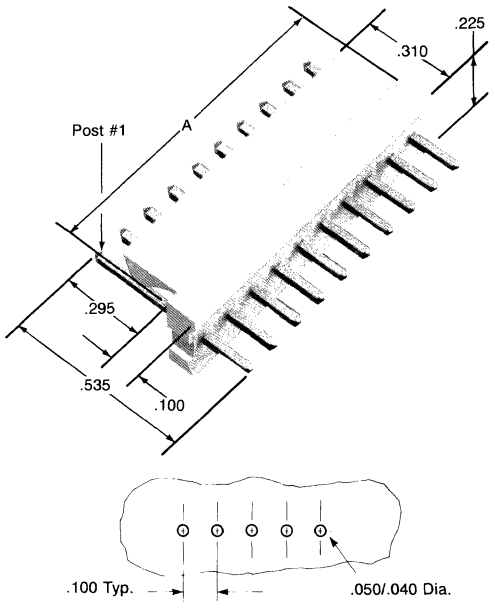
No. of Positions	Dim. A	Part Numbers
2	.200	640455-2
3	.300	640455-3
4	.400	640455-4
5	.500	640455-5
6	.600	640455-6
7	.700	640455-7
8	.800	640455-8
9	.900	640455-9
10	1.000	1-640455-0
11	1.100	1-640455-1
12	1.200	1-640455-2
13	1.300	1-640455-3
14	1.400	1-640455-4
15	1.500	1-640455-5
16	1.600	1-640455-6
17	1.700	1-640455-7
18	1.800	1-640455-8
19	1.900	1-640455-9
20	2.000	2-640455-0
21	2.100	2-640455-1
22	2.200	2-640455-2
23	2.300	2-640455-3
24	2.400	2-640455-4
25	2.500	2-640455-5
26	2.600	2-640455-6
27	2.700	2-640455-7
28	2.800	2-640455-8

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

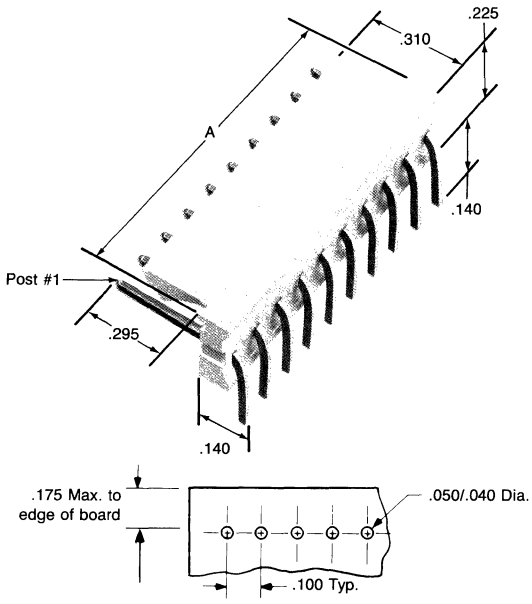
MTA-100 Post Header .100 Centers Friction Lock Header with Polarizing Notches

Straight Post (.025 Square)



Recommended Mounting Hole Size for a 1/16 Thk. Pc Board

Right Angle Post (.025 Square)



Recommended Mounting Hole Size for a 1/16 Thk. Pc Board

No. of Positions	Dim. A	Part Numbers
2	.200	640456-2
3	.300	640456-3
4	.400	640456-4
5	.500	640456-5
6	.600	640456-6
7	.700	640456-7
8	.800	640456-8
9	.900	640456-9
10	1.000	1-640456-0
11	1.100	1-640456-1
12	1.200	1-640456-2
13	1.300	1-640456-3
14	1.400	1-640456-4
15	1.500	1-640456-5
16	1.600	1-640456-6
17	1.700	1-640456-7
18	1.800	1-640456-8
19	1.900	1-640456-9
20	2.000	2-640456-0
21	2.100	2-640456-1
22	2.200	2-640456-2
23	2.300	2-640456-3
24	2.400	2-640456-4
25	2.500	2-640456-5
26	2.600	2-640456-6
27	2.700	2-640456-7
28	2.800	2-640456-8

Other features available on request

- .000015 and .000030 gold plating
- Post(s) can be omitted for keying purposes. Specify the desired post(s) to be omitted using the figure above identifying Post #1

Minimum order quantities and extended lead times may apply on desired special features. Consult AMP Incorporated, Harrisburg, PA 17105.

For AMP products that mate with these headers, see pages 3386 and 3387.

No. of Positions	Dim. A	Part Numbers
2	.200	640457-2
3	.300	640457-3
4	.400	640457-4
5	.500	640457-5
6	.600	640457-6
7	.700	640457-7
8	.800	640457-8
9	.900	640457-9
10	1.000	1-640457-0
11	1.100	1-640457-1
12	1.200	1-640457-2
13	1.300	1-640457-3
14	1.400	1-640457-4
15	1.500	1-640457-5
16	1.600	1-640457-6
17	1.700	1-640457-7
18	1.800	1-640457-8
19	1.900	1-640457-9
20	2.000	2-640457-0
21	2.100	2-640457-1
22	2.200	2-640457-2
23	2.300	2-640457-3
24	2.400	2-640457-4
25	2.500	2-640457-5
26	2.600	2-640457-6
27	2.700	2-640457-7
28	2.800	2-640457-8

Material:

Housing—Polyester 94V-0 rated, natural
Posts—Tin plated copper alloy

MTA-156 Receptacles
.156 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Color Coding by Wire Size:

24 AWG—Natural
22 AWG—Red
20 AWG—Yellow
18 AWG—Orange

Accepts insulation range of .095 dia. max. when terminating one wire at a time.

Accepts insulation range of .070 dia. max. when mass terminating.

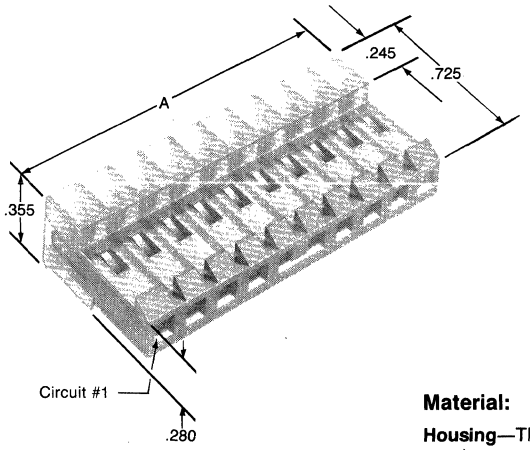
Other features available upon request

- .000015 and .000030 gold plating
- Receptacle circuits molded closed for keying purposes
- Tape mounted receptacles available on reels

Minimum order quantities and extended lead times may apply on special desired features. Consult AMP Incorporated, Harrisburg, PA 17105.

For AMP products that mate with these receptacles, see pages 3398 and 3400, and 3401 (without tab only).

Closed End With Lock, Without Polarizing Tab

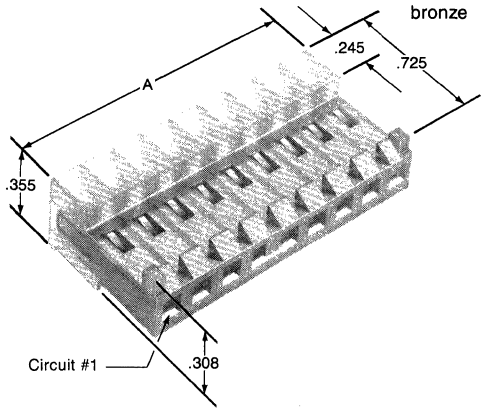


Material:

Housing—Thermoplastic 94V-2 rated

Contacts—Tin plated phosphor bronze

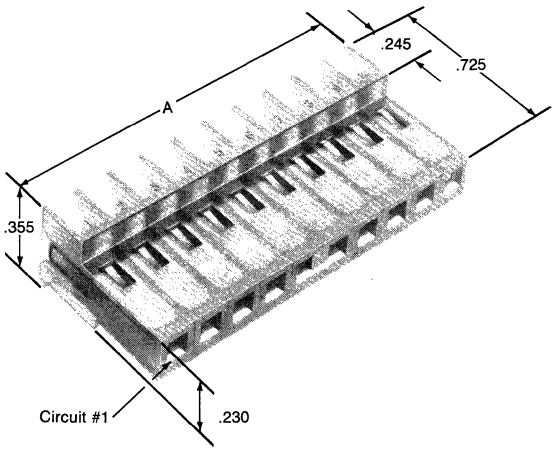
Closed End With Lock, With Polarizing Tab



No. of Circuits	Dim. A	Without Polarizing Tab				With Polarizing Tab			
		24 AWG	22 AWG	20 AWG	18 AWG	24 AWG	22 AWG	20 AWG	18 AWG
2	.312	640429-2	640428-2 643193-2*	640427-2	640426-2 643191-2*	643820-2	643819-2	643818-2	643817-2
3	.468	640429-3	640428-3 643193-3*	640427-3	640426-3 643191-3*	643820-3	643819-3	643818-3	643817-3
4	.624	640429-4	640428-4 643193-4*	640427-4	640426-4 643191-4*	643820-4	643819-4	643818-4	643817-4
5	.780	640429-5	640428-5 643193-5*	640427-5	640426-5 643191-5*	643820-5	643819-5	643818-5	643817-5
6	.936	640429-6	640428-6 643193-6*	640427-6	640426-6 643191-6*	643820-6	643819-6	643818-6	643817-6
7	1.092	640429-7	640428-7	640427-7	640426-7	643820-7	643819-7	643818-7	643817-7
8	1.248	640429-8	640428-8	640427-8	640426-8	643820-8	643819-8	643818-8	643817-8
9	1.404	640429-9	640428-9	640427-9	640426-9	643820-9	643819-9	643818-9	643817-9
10	1.560	1-640429-0	1-640428-0	1-640427-0	1-640426-0	1-643820-0	1-643819-0	1-643818-0	1-643817-0
11	1.716	1-640429-1	1-640428-1	1-640427-1	1-640426-1	1-643820-1	1-643819-1	1-643818-1	1-643817-1
12	1.872	1-640429-2	1-640428-2	1-640427-2	1-640426-2	1-643820-2	1-643819-2	1-643818-2	1-643817-2
13	2.028	—	—	—	1-640426-3	1-643820-3	1-643819-3	1-643818-3	1-643817-3
14	2.184	—	—	—	1-640426-4	1-643820-4	1-643819-4	1-643818-4	1-643817-4
15	2.340	—	—	—	1-640426-5	1-643820-5	1-643819-5	1-643818-5	1-643817-5
16	2.496	—	—	—	1-640426-6	1-643820-6	1-643819-6	1-643818-6	1-643817-6
17	2.652	—	—	—	1-640426-7	1-643821-7	1-643819-7	1-643818-7	1-643817-7
18	2.808	—	—	—	1-640426-8	1-643821-8	1-643819-8	1-643818-8	1-643817-8
19	2.964	—	—	—	1-640426-9	1-643821-9	1-643819-9	1-643818-9	1-643817-9
20	3.120	—	—	—	2-640426-0	2-643821-0	2-643819-0	2-643818-0	2-643817-0
21	3.276	—	—	—	2-640426-1	2-643821-1	2-643819-1	2-643818-1	2-643817-1
22	3.432	—	—	—	2-640426-2	2-643821-2	2-643819-2	2-643818-2	2-643817-2
23	3.588	—	—	—	2-640426-3	2-643821-3	2-643819-3	2-643818-3	2-643817-3
24	3.744	—	—	—	2-640426-4	2-643821-4	2-643819-4	2-643818-4	2-643817-4

*High force connectors
Note: Closed-end receptacles with lock and with or without polarizing tabs are available in 13 through 24 position sizes.

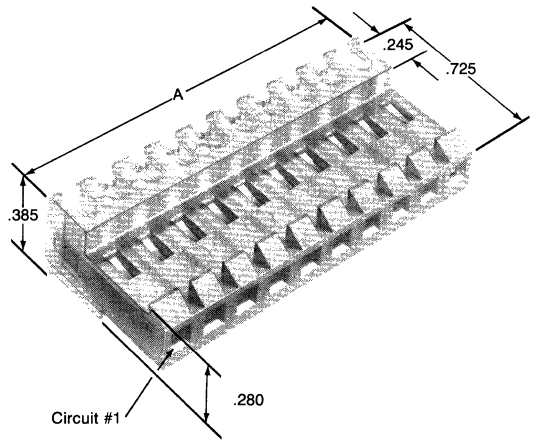
Closed End Without Lock, Without Polarizing Tabs



24, 22, and 20 AWG wire gauge receptacles in 13 through 24 position sizes are also available on request.
For AMP products that mate with these receptacles, see pages 3398 and 3399.

No. of Circuits	Dim. A	24 AWG	22 AWG	20 AWG	18 AWG
2	.312	640434-2	640433-2	640432-2	640431-2
3	.468	640434-3	640433-3	640432-3	640431-3
4	.624	640434-4	640433-4	640432-4	640431-4
5	.780	640434-5	640433-5	640432-5	640431-5
6	.936	640434-6	640433-6	640432-6	640431-6
7	1.092	640434-7	640433-7	640432-7	640431-7
8	1.248	640434-8	640433-8	640432-8	640431-8
9	1.404	640434-9	640433-9	640432-9	640431-9
10	1.560	1-640434-0	1-640433-0	1-640432-0	1-640431-0
11	1.716	1-640434-1	1-640433-1	1-640432-1	1-640431-1
12	1.872	1-640434-2	1-640433-2	1-640432-2	1-640431-2
13	2.028	—	—	—	1-640431-3
14	2.184	—	—	—	1-640431-4
15	2.340	—	—	—	1-640431-5
16	2.496	—	—	—	1-640431-6
17	2.652	—	—	—	1-640431-7
18	2.808	—	—	—	1-640431-8
19	2.964	—	—	—	1-640431-9
20	3.120	—	—	—	2-640431-0
21	3.276	—	—	—	2-640431-1
22	3.432	—	—	—	2-640431-2
23	3.588	—	—	—	2-640431-3
24	3.744	—	—	—	2-640431-4

Feed-thru With Lock, Without Polarizing Tabs

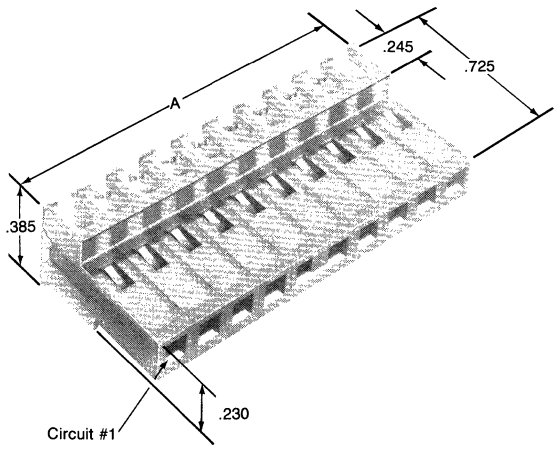


No. of Circuits	Dim. A	22 AWG	18 AWG
2	.312	640601-2	640599-2
3	.468	640601-3	640599-3
4	.624	640601-4	640599-4
5	.780	640601-5	640599-5
6	.936	640601-6	640599-6
7	1.092	640601-7	640599-7
8	1.248	640601-8	640599-8
9	1.404	640601-9	640599-9
10	1.560	1-640601-0	1-640599-0
11	1.716	1-640601-1	1-640599-1
12	1.872	1-640601-2	1-640599-2

Other features available on request
- High force tin plated receptacles in 2 through 6 position sizes only
- 22 and 18 AWG wire gauge receptacles in 13 through 24 position sizes
- 24 and 26 AWG wire gauge receptacles in 2 through 24 position sizes

For AMP products that mate with these receptacles, see pages 3398, 3400 and 3401.

Feed-Thru Without Lock, Without Polarizing Tabs



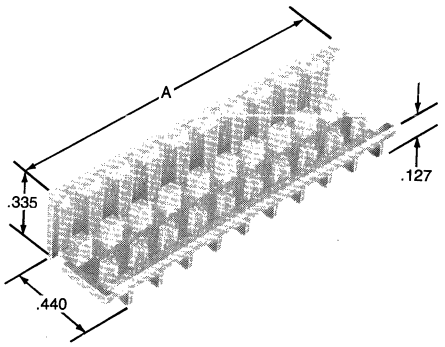
No. of Circuits	Dim. A	24 AWG	18 AWG
2	.312	640607-2	640604-2
3	.468	640607-3	640604-3
4	.624	640607-4	640604-4
5	.780	640607-5	640604-5
6	.936	640607-6	640604-6
7	1.092	640607-7	640604-7
8	1.248	640607-8	640604-8
9	1.404	640607-9	640604-9
10	1.560	1-640607-0	1-640604-0
11	1.716	1-640607-1	1-640604-1
12	1.872	1-640607-2	1-640604-2

Also available on request
- 24 and 18 AWG wire gauge receptacles in 13 through 24 position sizes
- 22 and 20 AWG wire gauge receptacles in 2 through 24 position sizes.

For AMP products that mate with these receptacles, see pages 3398 and 3399.

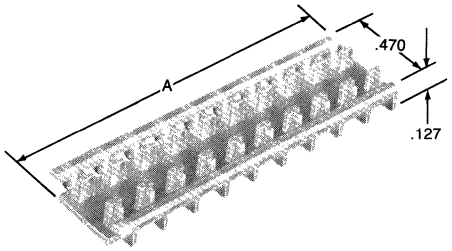
Closed-End Strain Relief Covers

Material:
Thermoplastic, 94V-2 rated, natural



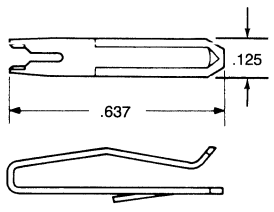
Feed-Thru Strain Relief Covers

Material:
Thermoplastic, 94V-2 rated, natural



Replacement Contacts

Material and Finish: Tin plated phosphor bronze
Stock Thickness: .0125

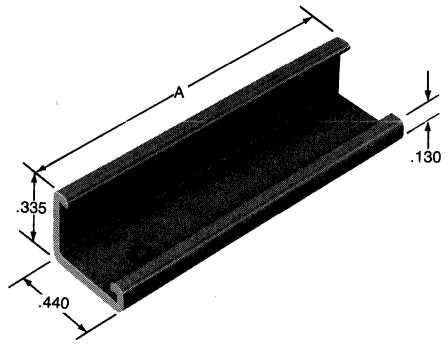


Wire Size AWG	Part Numbers
24	640634-2
22	640633-2
20	640632-2
18	640631-2

Note: Contacts also available in .000015 and .000030 gold. Contact AMP Incorporated, Harrisburg, PA 17105.

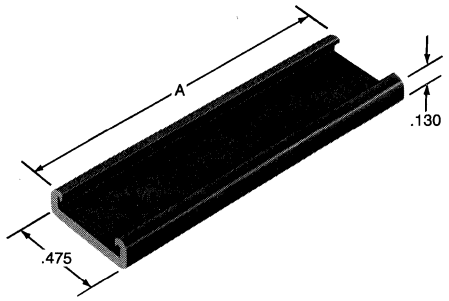
Closed-End Dust Covers

Material:
Thermoplastic, 94V-2 rated, natural



Feed-Thru Dust Covers

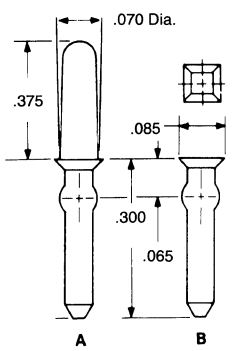
Material:
Thermoplastic, 94V-2 rated, natural



Loose Piece Keying Plugs

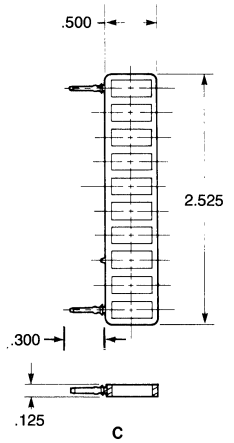
A Part No. 640630-1 (long nose)
Used with Staked Posts

B Part No. 640629-1 (flush)
Used with Keyed Headers



Keying Plug on Carrier Strip

C Part No. 641623-1 (flush) Keying Plug on Carrier Strip (10 per strip)



Note: Removal of contact is not necessary when using keying plug

Material: Thermoplastic, 94V-2 rated, natural

Strain Relief Covers and Dust Covers

No. of Circuits	Dim. A	Closed-End Strain Relief Covers .065 Max. O.D. 94V-2 (Black)	Closed-End Strain Relief Covers .095 Max O.D. 94V-2 (Natural)	Feed-Thru Strain Relief Covers .065 Max. O.D. 94V-2 (Black)	Feed-Thru Strain Relief Covers .095 Max O.D. 94V-2 (Natural)	Closed-End Dust Covers	Feed-Thru Dust Covers
2	.312	643069-2	643067-2	—	643071-2	—	—
3	.468	643069-3	643067-3	—	643071-3	640551-3	640643-3
4	.624	643069-4	643067-4	—	643071-4	640551-4	640643-4
5	.780	643069-5	643067-5	—	643071-5	640551-5	640643-5
6	.936	643069-6	643067-6	—	643071-6	640551-6	640643-6
7	1.092	643069-7	643067-7	—	643071-7	640551-7	640643-7
8	1.248	643069-8	643067-8	—	643071-8	640551-8	640643-8
9	1.404	643069-9	643067-9	—	643071-9	640551-9	640643-9
10	1.560	1-643069-0	1-643067-0	—	1-643071-0	1-640551-0	1-640643-0
11	1.716	1-643069-1	1-643067-1	—	1-643071-1	1-640551-1	1-640643-1
12	1.872	1-643069-2	1-643067-2	—	1-643071-2	1-640551-2	1-640643-2
13	2.028	—	1-643067-3	—	1-643071-3	1-640551-3	—
14	2.184	—	1-643067-4	—	1-643071-4	1-640551-4	—
15	2.340	—	1-643067-5	—	1-643071-5	1-640551-5	—
16	2.496	—	1-643067-6	—	1-643071-6	1-640551-6	—
17	2.652	—	1-643067-7	—	1-643071-7	1-640551-7	—
18	2.808	—	1-643067-8	—	1-643071-8	1-640551-8	—
19	2.964	—	1-643067-9	—	1-643071-9	1-640551-9	—
20	3.120	—	2-643067-0	—	2-643071-0	2-640551-0	—
21	3.276	—	2-643067-1	—	2-643071-1	2-640551-1	—
22	3.432	—	2-643067-2	—	2-643071-2	2-640551-2	—
23	3.588	—	2-643067-3	—	2-643071-3	2-640551-3	—
24	3.744	2-643069-4	2-643067-4	2-643072-4	2-643071-4	2-640551-4	2-640643-4

Closed-End Strain Relief Covers for 13 through 23 position sizes are available on request

Feed-Thru Strain Relief Covers for 2 through 23 position sizes are available upon request

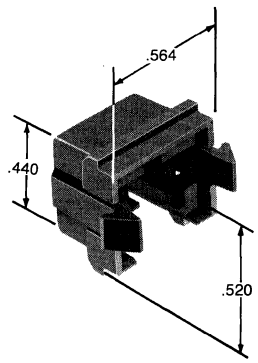
Feed-Thru Dust Covers for 13 through 23 position sizes are available upon request

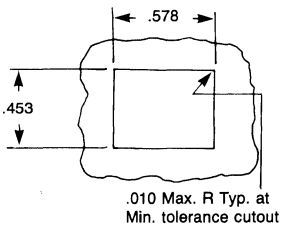
Minimum order quantities and extended lead times may apply on special requests.

Consult AMP Incorporated, Harrisburg, PA 17105.

Panel Mounting End Cap
(2 Pos. Only)

Material: Thermoplastic 94V-2 rated, black
Part No. 641533-1

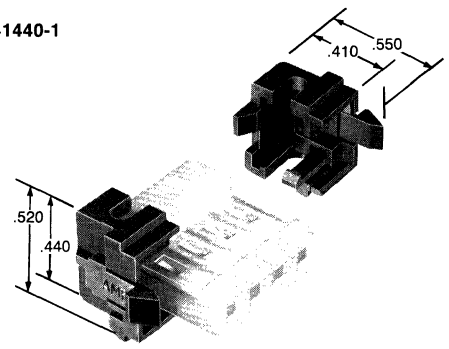


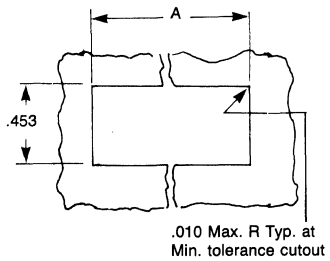


Recommended Panel Cutout
Panel Thickness .062

Panel Mounting End Caps

Material: Thermoplastic 94V-2 rated, black
Part No. 641440-1





Recommended Panel Cutout
Panel Thickness .062

No. of Positions	Dim. A
3	.736
4	.892
6	1.204
9	1.672
12	2.140
15	2.608
24	4.012

Both left hand and right hand end caps are attached by a connecting tab. This tab must be broken off prior to installing on receptacle.

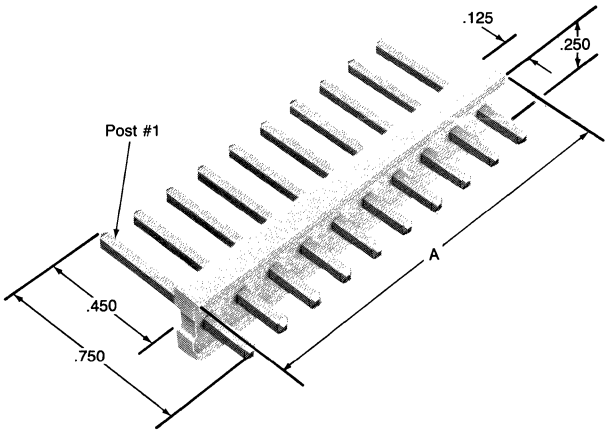
Panel mounting end caps can be attached to the posted connector or the receptacle. For best results attach end caps to the receptacle.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

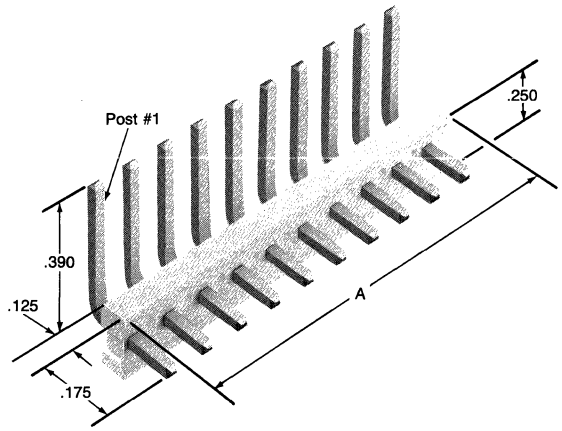
Dimensioning:
Dimensions are in inches

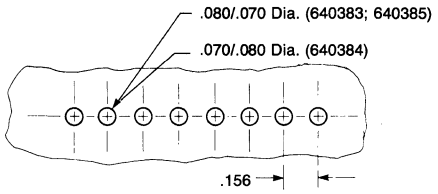
MTA-156 Post Headers
.156 Centers
Flat Header

Straight Post (.045 Square and Round)



Right Angle Post (.045 Square)





Recommended Mounting Hole Size for a 1/16 Thk. Pc Board

No. of Positions	Dim. A	Square Posts	Round Posts
2	.312	640383-2	640384-2
3	.468	640383-3	640384-3
4	.624	640383-4	640384-4
5	.780	640383-5	640384-5
6	.936	640383-6	640384-6
7	1.092	640383-7	640384-7
8	1.248	640383-8	640384-8
9	1.404	640383-9	640384-9
10	1.560	1-640383-0	1-640384-0
11	1.716	1-640383-1	1-640384-1
12	1.872	1-640383-2	1-640384-2
13	2.028	1-640383-3	—
14	2.184	1-640383-4	—
15	2.340	1-640383-5	—
16	2.496	1-640383-6	—
17	2.652	1-640383-7	—
18	2.808	1-640383-8	—
19	2.964	1-640383-9	—
20	3.120	2-640383-0	—
21	3.276	2-640383-1	—
22	3.432	2-640383-2	—
23	3.588	2-640383-3	—
24	3.744	2-640383-4	—

No. of Positions	Dim. A	Part Numbers
2	.312	640385-2
3	.468	640385-3
4	.624	640385-4
5	.780	640385-5
6	.936	640385-6
7	1.092	640385-7
8	1.248	640385-8
9	1.404	640385-9
10	1.560	1-640385-0
11	1.716	1-640385-1
12	1.872	1-640385-2
13	2.028	1-640385-3
14	2.184	1-640385-4
15	2.340	1-640385-5
16	2.496	1-640385-6
17	2.652	1-640385-7
18	2.808	1-640385-8
19	2.964	1-640385-9
20	3.120	2-640385-0
21	3.276	2-640385-1
22	3.432	2-640385-2
23	3.588	2-640385-3
24	3.744	2-640385-4

Material:

Housing—Polyester 94V-0 rated, natural

Posts—Tin plated copper alloy

For AMP products, that mate with these headers, see pages 3394 and 3395.

Other features available on request

- .000015 and .000030 gold plating
- Post(s) can be omitted for keying purposes. Specify the desired post(s) to be omitted using the figure above identifying Post #1
- 13 through 24 position sizes in the round and straight post flat header

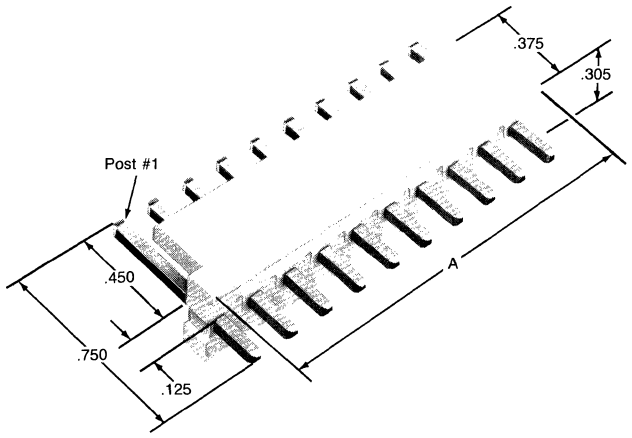
Minimum order quantities and extended lead times may apply on desired special features. Consult AMP Incorporated, Harrisburg, PA 17105.

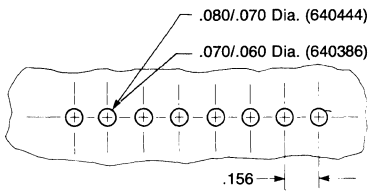
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

MTA-156 Post Header .156 Centers Polarized Header with Polarizing Notches

Straight Post (.045 Square and Round)

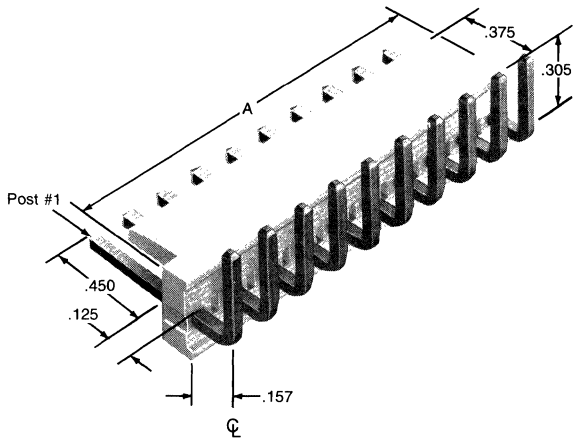


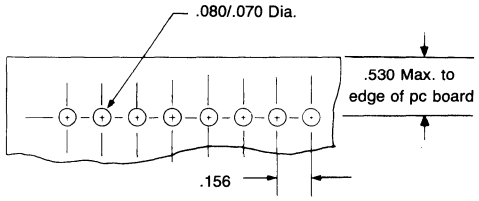


Recommended Mounting Hole Size for a 1/16 Thk. Pc Board

No. of Positions	Dim. A	Square Posts	Round Posts
2	.312	640444-2	640386-2
3	.468	640444-3	640386-3
4	.624	640444-4	640386-4
5	.780	640444-5	640386-5
6	.936	640444-6	640386-6
7	1.092	640444-7	640386-7
8	1.248	640444-8	640386-8
9	1.404	640444-9	640386-9
10	1.560	1-640444-0	1-640386-0
11	1.716	1-640444-1	1-640386-1
12	1.872	1-640444-2	1-640386-2
13	2.028	1-640444-3	—
14	2.184	1-640444-4	—
15	2.340	1-640444-5	—
16	2.496	1-640444-6	—
17	2.652	1-640444-7	—
18	2.808	1-640444-8	—
19	2.964	1-640444-9	—
20	3.120	2-640444-0	—
21	3.276	2-640444-1	—
22	3.432	2-640444-2	—
23	3.588	2-640444-3	—
24	3.744	2-640444-4	2-640386-4

Right Angle Post (.045 Square)





Recommended Mounting Hole Size for a 1/16 Thk. Pc Board

No. of Positions	Dim. A	Part Numbers
2	.312	640387-2
3	.468	640387-3
4	.624	640387-4
5	.780	640387-5
6	.936	640387-6
7	1.092	640387-7
8	1.248	640387-8
9	1.404	640387-9
10	1.560	1-640387-0
11	1.716	1-640387-1
12	1.872	1-640387-2
13	2.028	1-640387-3
14	2.184	1-640387-4
15	2.340	1-640387-5
16	2.496	1-640387-6
17	2.652	1-640387-7
18	2.808	1-640387-8
19	2.964	1-640387-9
20	3.120	2-640387-0
21	3.276	2-640387-1
22	3.432	2-640387-2
23	3.588	2-640387-3
24	3.744	2-640387-4

Material:

Housing—Polyester 94V-0 rated, natural

Posts—Tin plated copper alloy

For AMP products that mate with these headers, see page 3395 (receptacles without lock only).

Other features available on request

- .000015 and .000030 gold plating
- Post(s) can be omitted for keying purposes. Specify the desired post(s) to be omitted using the figure above identifying Post #1
- 13 through 23 position sizes in the round straight post polarized header are also available

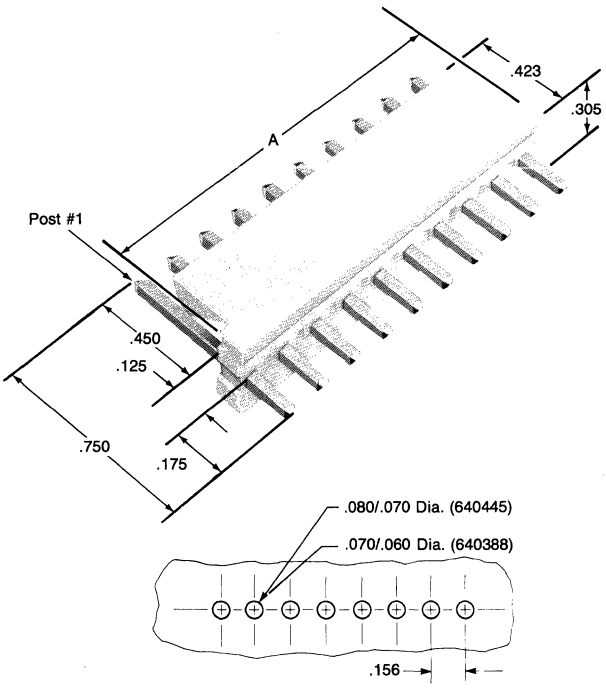
Minimum order quantities and extended lead times may apply on desired special features. Consult AMP Incorporated, Harrisburg, PA 17105.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

MTA-156 Post Header .156 Centers Friction Lock Header with Polarizing Notches

Dimensioning:
Dimensions are in inches

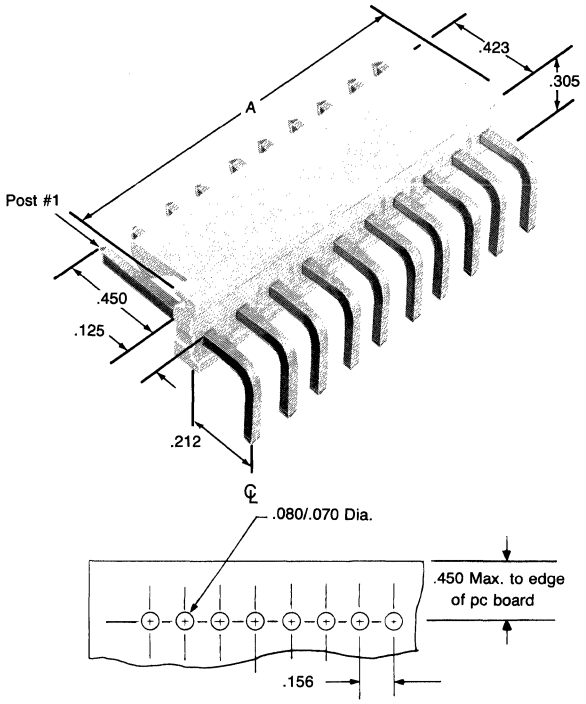
Straight Post (.045 Square and Round)



Recommended Mounting Hole Size for a 1/16 Thk. Pc Board

No. of Positions	Dim. A	Square Posts	Round Posts
2	.312	640445-2	640388-2
3	.468	640445-3	640388-3
4	.624	640445-4	640388-4
5	.780	640445-5	640388-5
6	.936	640445-6	640388-6
7	1.092	640445-7	640388-7
8	1.248	640445-8	640388-8
9	1.404	640445-9	640388-9
10	1.560	1-640445-0	1-640388-0
11	1.716	1-640445-1	1-640388-1
12	1.872	1-640445-2	1-640388-2
13	2.028	1-640445-3	1-640388-3
14	2.184	1-640445-4	1-640388-4
15	2.340	1-640445-5	1-640388-5
16	2.496	1-640445-6	1-640388-6
17	2.652	1-640445-7	1-640388-7
18	2.808	1-640445-8	1-640388-8
19	2.964	1-640445-9	1-640388-9
20	3.120	2-640445-0	2-640388-0
21	3.276	2-640445-1	2-640388-1
22	3.432	2-640445-2	2-640388-2
23	3.588	2-640445-3	2-640388-3
24	3.744	2-640445-4	2-640388-4

Right Angle Post (.045 Square)



Recommended Mounting Hole Size for a 1/16 Thk. Pc Board

No. of Positions	Dim. A	Part Numbers
2	.312	640389-2
3	.468	640389-3
4	.624	640389-4
5	.780	640389-5
6	.936	640389-6
7	1.092	640389-7
8	1.248	640389-8
9	1.404	640389-9
10	1.560	1-640389-0
11	1.716	1-640389-1
12	1.872	1-640389-2
13	2.028	1-640389-3
14	2.184	1-640389-4
15	2.340	1-640389-5
16	2.496	1-640389-6
17	2.652	1-640389-7
18	2.808	1-640389-8
19	2.964	1-640389-9
20	3.120	2-640389-0
21	3.276	2-640389-1
22	3.432	2-640389-2
23	3.588	2-640389-3
24	3.744	2-640389-4

Material:

Housing—Polyester 94V-0 rated, natural

Posts—Tin plated copper alloy

For AMP products that mate with these headers, see pages 3394 and 3395.

Note: Friction Lock Headers must be used with connectors with locking ramps.

Other features available on request

- .000015 and .000030 gold plating
- Post(s) can be omitted for keying purposes. Specify the desired post(s) to be omitted using the figure above identifying Post #1

Minimum order quantities and extended lead times may apply on desired special features. Consult AMP Incorporated, Harrisburg, PA 17105.

MTA-156 Cable-to-Cable Posted Connectors .156 Centers

Dimensioning:
Dimensions are in inches

Color Coding by Wire Size:

24 AWG—Natural
22 AWG—Red
20 AWG—Yellow
18 AWG—Orange

Accepts insulation range of .095 dia. max. when terminating one wire at a time.

Accepts insulation range of .070 dia. max. when mass terminating.

Material:

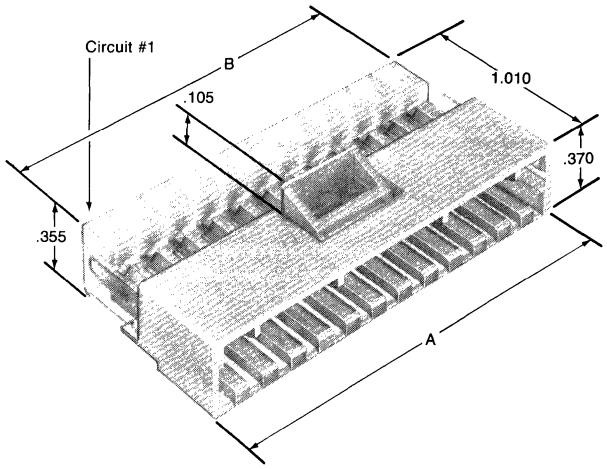
Housing—Thermoplastic 94V-2 rated
Contacts—Tin plated copper alloy

Other features available upon request

- .000015 and .000030 gold plating
- 24, 20 and 18 AWG wire gauge connectors in 2, 3, 4, 6, 9, 12, 15 and 24 position sizes are also available
- MTA-156 Closed-End Strain Relief Covers or Dust Covers can be used on this connector. See Page 3396

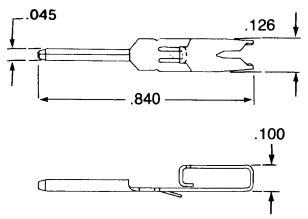
Minimum order quantities and extended lead times may apply on special desired features. Consult AMP Incorporated, Harrisburg, PA 17105.

For AMP products that mate with these receptacles, see pages 3394 through 3395.



No. of Circuits	Dimensions A	B	22 AWG
2	.468	.312	641437-2
3	.624	.468	641437-3
4	.780	.624	641437-4
6	1.092	.936	641437-6
9	1.560	1.404	641437-9
12	2.028	1.872	1-641437-2
15	2.496	2.340	1-641437-5
24	3.900	3.744	2-641437-4

Replacement Contacts
Part No. 641427-1



Material and Finish: Tin plated copper alloy
Stock Thickness: .012

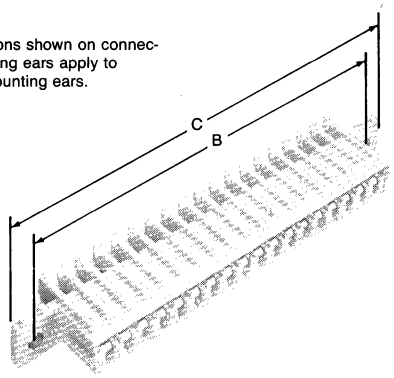
Note: Panel mounting end caps are available for use when mating a closed end receptacle with the cable-to-cable posted connectors. See page 3397.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

MTA-156
Card Edge Closed End Connectors

Dimensioning:
Dimensions are in inches

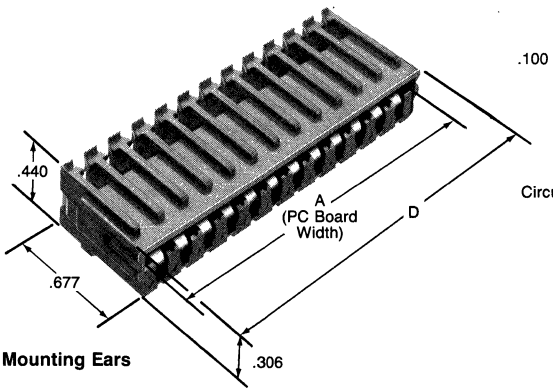
Note: All dimensions shown on connector without mounting ears apply to connector with mounting ears.



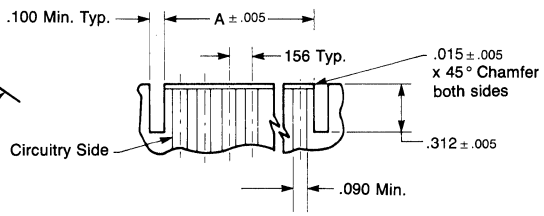
No. of Circuits	Dimensions A	B	C	D	24 AWG*	22 AWG**
3	.500	.926	1.248	.624	640867-3	640861-3
6	.968	1.394	1.716	1.092	640867-6	640861-6
9	1.436	1.862	2.184	1.560	640867-9	640861-9
12	1.904	2.330	2.652	2.028	1-640867-2	1-640861-2
15	2.372	2.798	3.120	2.496	1-640867-5	1-640861-5
18	2.840	3.266	3.588	2.964	1-640867-8	1-640861-8
20	3.152	3.578	3.900	3.276	2-640867-0	2-640861-0
21	3.308	3.734	4.056	3.432	2-640867-1	2-640861-1
22	3.464	3.890	4.212	3.588	2-640867-2	2-640861-2
23	3.620	4.046	4.368	3.744	2-640867-3	2-640861-3
24	3.776	4.202	4.524	3.900	2-640867-4	2-640861-4

*With mounting ears
**Without mounting ears

With Mounting Ears



Without Mounting Ears



Recommended Pc Board Layout for 1/16 Thk. Pc Board

No. of Circuits	Dim. A
3	.484
6	.952
9	1.420
12	1.888
15	2.356
18	2.824
20	3.136
21	3.292
22	3.448
23	3.604
24	3.760

Color Coding by Wire Size:

24 AWG—Natural
22 AWG—Red

Accepts insulation range of .095 dia. max. when terminating one wire at a time.

Accepts insulation range of .070 dia. max. when mass terminating.

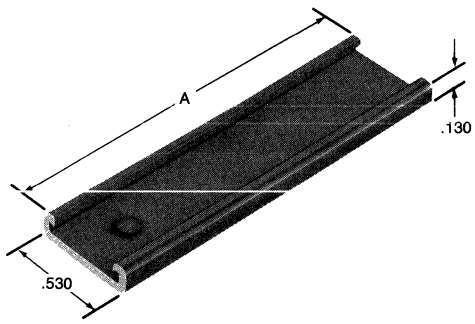
Material:

Housing—Thermoplastic 94V-0 natural

Contacts—Tin plated .0125 phosphor bronze

Connector Accessories

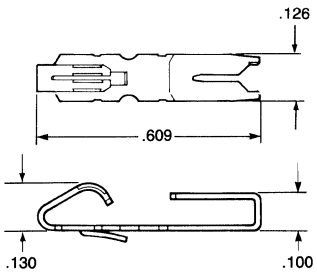
Standard Cover



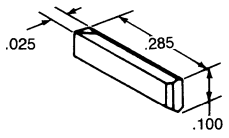
Material: Thermoplastic 94V-2 rated, natural

No. of Circuits	Dim. A	Part Numbers
3	.504	641106-3
6	.972	641106-6
9	1.440	641106-9
12	1.908	1-641106-2
15	2.376	1-641106-5
18	2.844	1-641106-8
20	3.156	2-641106-0
21	3.312	2-641106-1
22	3.468	2-641106-2
23	3.624	2-641106-3
24	3.780	2-641106-4

Replacement Contacts
Material and Finish:
Tin plated phosphor bronze
Stock Thickness: .0125
Part Numbers:
24 AWG wire size—640994-1
22 AWG wire size—640993-1



Interconnect Keying Plug
Material: Thermoplastic 94V-2 rated, natural
Part Number: 583274-1



Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

SL.156 Wire-to-Board Receptacle Housing Assemblies .156 Centers

Housing with and without Locking Ramp

Material:

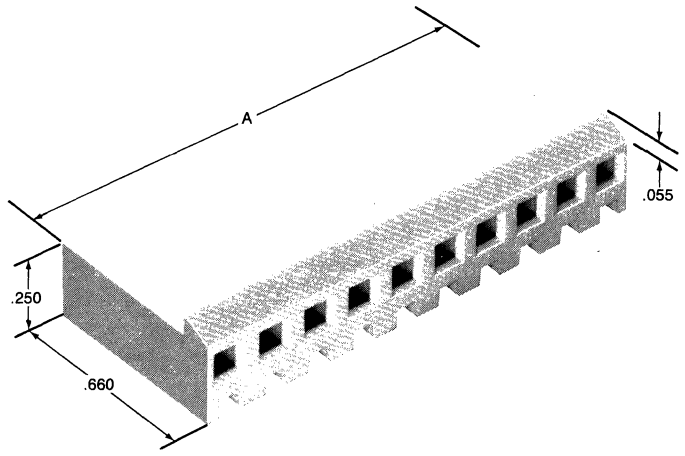
Thermoplastic, 94V-0 rated

Accepts contact No. 640252-1 for 1 through 12 positions and contact No. 350980-1 for 13 through 24 positions.

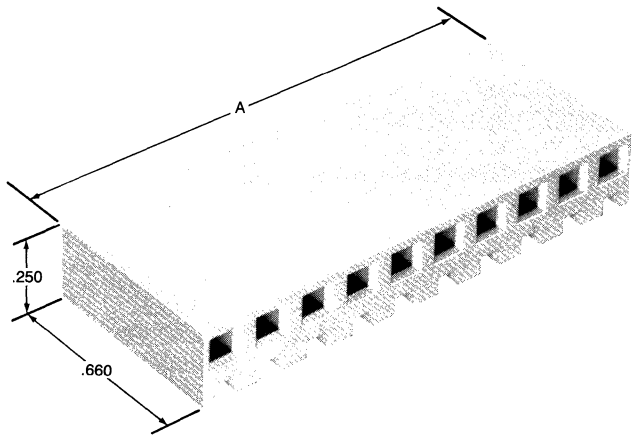
Max. allowable bow to be .005 per inch of housing

Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476

Note: Accepts either .045 square or round posts. Housings with locking ramps mate with headers shown on pages 3398 and 3400. Housings without locking ramps mate with headers shown on pages 3398 and 3399.



With Locking Ramp



Without Locking Ramp

No. of Positions	Dim. A	Part Numbers With Locking Ramp	Part Numbers Without Locking Ramp
1	.152	640250-1	640251-1
2	.308	640250-2	640251-2
3	.465	640250-3	640251-3
4	.620	640250-4	640251-4
5	.777	640250-5	640251-5
6	.933	640250-6	640251-6
7	1.090	640250-7	640251-7
8	1.246	640250-8	640251-8
9	1.402	640250-9	640251-9
10	1.558	1-640250-0	1-640251-0
11	1.715	1-640250-1	1-640251-1
12	1.871	1-640250-2	1-640251-2
13	2.027	1-640250-3	1-640251-3
14	2.183	1-640250-4	1-640251-4
15	2.340	1-640250-5	1-640251-5
16	2.496	1-640250-6	1-640251-6
17	2.652	1-640250-7	1-640251-7
18	2.808	1-640250-8	1-640251-8
19	2.965	1-640250-9	1-640251-9
20	3.121	2-640250-0	2-640251-0
21	3.277	2-640250-1	2-640251-1
22	3.433	2-640250-2	2-640251-2
23	3.590	2-640250-3	2-640251-3
24	3.746	2-640250-4	2-640251-4

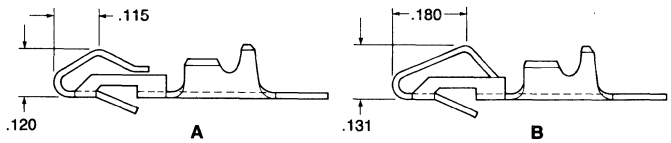
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

SL. 156
Wire-to-Board Receptacle Housing Assemblies .156 Centers

Contacts

Wire Range: 24-18 AWG
Insulation Diameter: .100

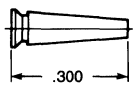


A
High Force

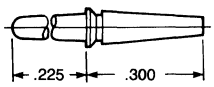
B
Low Force

Contact	Material and Finish	Part Numbers	
		Strip	Loose Piece
A	.012 brass, bright tin plated	640252-1	640706-1
	.012 pre-tin brass	640252-2	640706-2
B	.012 brass, bright tin plated	350980-1	640707-1
	.012 pre-tin brass	350980-2	—
	.012 brass, gold plated	350980-3	770258-1

Keying Plug Material:
Thermoplastic 94V-2 rated, natural



Keying Plug
Part No. 640254-1



Keying Plug
Part No. 640255-1

Application Note:
Contact part no. 640252 has a higher mating and unmating force than contact part no. 350980 and is recommended to be used in 1 through 12 position housings. All tin-plated contacts are post lubricated to resist fretting corrosion.

Contact part no. 350980 can be used in any size housing but is recommended to be used with 13 through 24 position housings. All tin-plated contacts are post lubricated to resist fretting corrosion.

Hand Tool Nos.:
90123-2 for .060-.100 insulation diameter range, and 90123-5 for .043-.075 insulation diameter range

Applicator Part No.:
466468-2 (AMP-O-LECTRIC Machine) Applicators for AMPOMATOR automatic lead making machines and stripper-crimper machines are also available. Contact AMP Incorporated, Harrisburg, PA 17105.

Extraction Tool No.:
457241-1

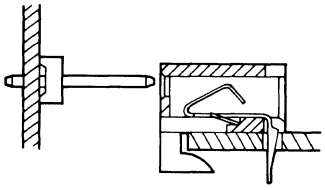
Specifications subject to change.
For latest design specifications...
1-800-522-6752

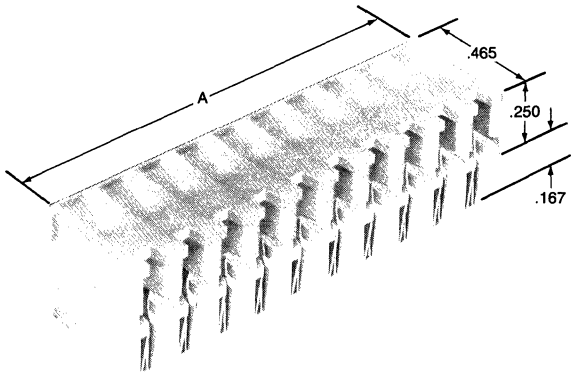
Dimensioning:
Dimensions are in inches

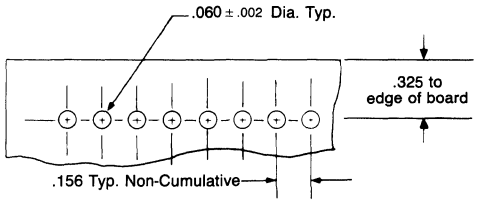
SL.156
Board-to-Board Receptacle Housing Assemblies .156 Centers

Right Angle Mounting

Hook Style

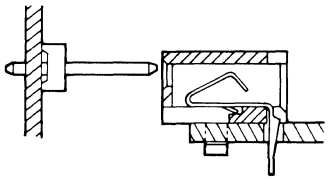


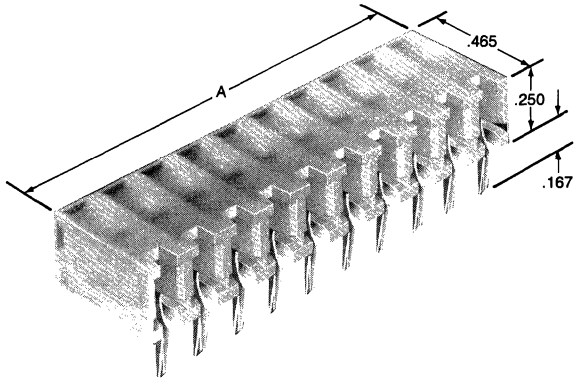




Recommended Mounting Hole Size for 1/16 thk. Pc Board

Robotic Style





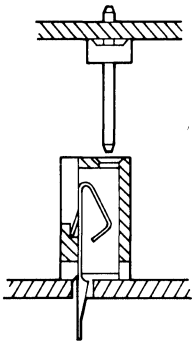
For mounting hole pattern, contact AMP Incorporated, Harrisburg, PA 17105

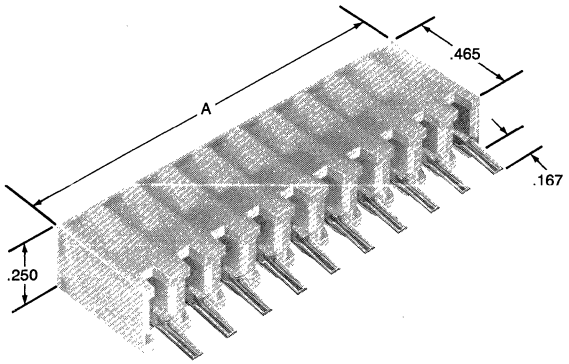
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

SL.156
Board-to-Board Receptacle Housing Assemblies .156 Centers

Vertical Mounting



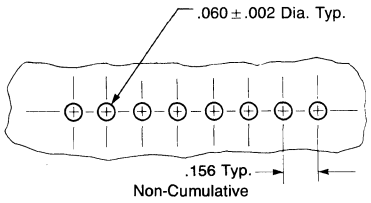


Materials:

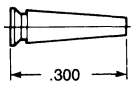
Housing—Thermoplastic 94V-2 rated

Contacts—Phosphor bronze, .010 thick

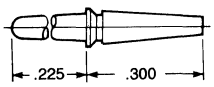
Finish—Gold or tin over nickel plating. See chart



Recommended Mounting Hole Size for 1/16 thk. Pc Board



Keying Plug Part No. 640254-1



Keying Plug Part No. 640255-1

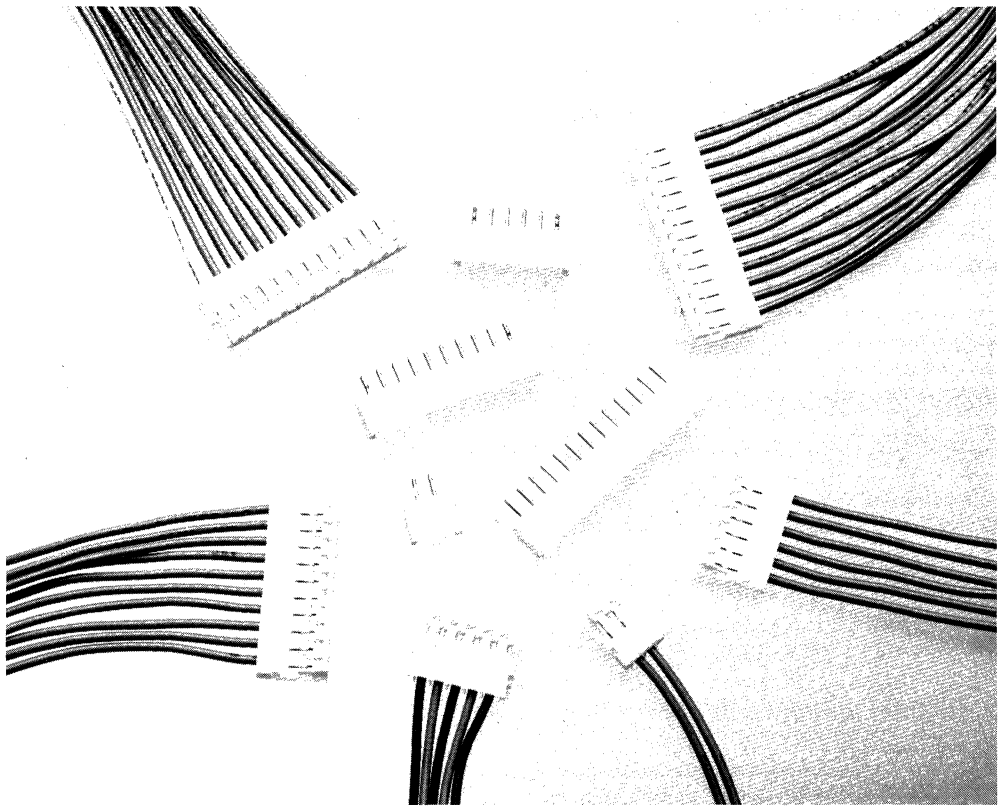
Note: Accepts either .045 square or round posts. Mates with all Headers on page 3398.

No. of Positions	Dim. A	Hook		Robotic		Vertical	
		Gold	Tin	Gold	Tin	Gold	Tin
3	.464	770219-3	770214-3	770220-3	770216-3	770221-3	770218-3
4	.620	770219-4	770214-4	770220-4	770216-4	770221-4	770218-4
5	.776	770219-5	770214-5	770220-5	770216-5	770221-5	770218-5
6	.932	770219-6	770214-6	770220-6	770216-6	770221-6	770218-6
7	1.088	770219-7	770214-7	770220-7	770216-7	770221-7	770218-7
8	1.244	770219-8	770214-8	770220-8	770216-8	770221-8	770218-8
9	1.400	770219-9	770214-9	770220-9	770216-9	770221-9	770218-9
10	1.556	1-770219-0	1-770214-0	1-770220-0	1-770216-0	1-770221-0	1-770218-0
11	1.712	1-770219-1	1-770214-1	1-770220-1	1-770216-1	1-770221-1	1-770218-1
12	1.868	1-770219-2	1-770214-2	1-770220-2	1-770216-2	1-770221-2	1-770218-2
13	2.024	1-770219-3	1-770214-3	1-770220-3	1-770216-3	1-770221-3	1-770218-3
14	2.180	1-770219-4	1-770214-4	1-770220-4	1-770216-4	1-770221-4	1-770218-4
15	2.336	1-770219-5	1-770214-5	1-770220-5	1-770216-5	1-770221-5	1-770218-5

Specifications subject to change.
For latest design specifications...
1-800-522-6752

2.5 Metric Interconnect System

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



The 2.5 [.098] centerline metric interconnect system is a compact level IV wire-to-board system which includes 2- to 13-position receptacles and headers. They have built-in locking and polarization features.

Receptacles provide a 180° wire exit and dual slot insulation displacement connector technology available for 24 through 28 AWG [0.02-0.09 mm²] wire sizes. A wire strain relief feature provides enhanced reliability for the wire termination.

A three-sided, shrouded header provides the mating half for this tin-tin interface system. The header features 0.64 [.025] diameter pins and pc board retention. Both header and receptacle housings are molded from UL94V-0 rated materials.

Specifications

Voltage Rating:	250 VAC
Current Rating:	3 amperes max.
Dielectric Voltage:	1000 VAC
Temperature Range:	-25° to +105° C
Termination Resistance:	10 MΩ max. initial, 20 MΩ max. after environmental testing
Insulation Resistance:	1000 MΩ min.
Applicable Wire:	24, 26, 28 AWG [0.2 mm²] 0.12-0.14 mm², 0.08-0.09 mm²] tin plated wire per UL1007
PCB Thickness:	1.6 [0.63]

Product Facts

- Compact—Low profile 2.5 [.098] pitch
- Two through thirteen positions
- Polarized with detent lock
- 94V-0 rated housing material
- Pc board retention feature on header
- Dual IDC slots for 24-28 AWG [0.2-0.09 mm²] wire
- Strain relief crimp for enhanced reliability
- Recognized under the Component Recognition Program of Underwriters Laboratories, Inc. File E28476

Technical Documents

Product Specification
108-1235 Metric Interconnect System

Application Specification
114-16013 Metric Interconnect System

Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are inch equivalents.
Metric symbols used are:
mm² (square millimeters)
C (Celsius)
MΩ (megohm)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

2.5 mm [.098] Metric Interconnect System

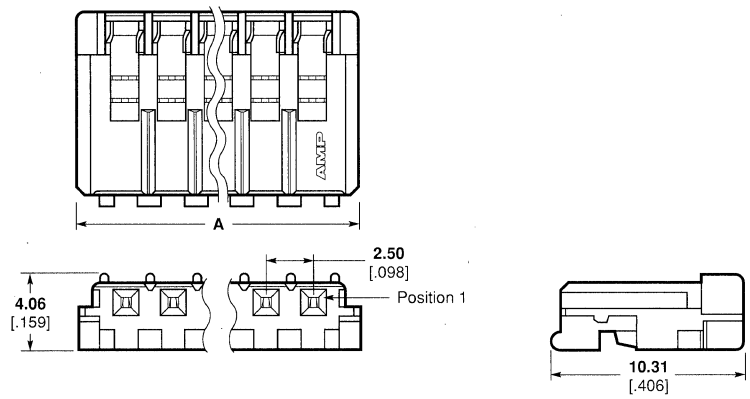
Dimensioning:
Dimensions are in millimeters and inches.
Values in brackets are inch equivalents.

Receptacles

Material and Finish:

Housing—94V-0 rated nylon 6/6, color coded to AWG size

Contacts—Phosphor bronze, bright tin-lead plated



No. of Positions	Dimension A	24 AWG [0.2 mm²] (black)	26 AWG [0.12-0.15 mm²] (white)	28 AWG [0.08-0.09 mm²] (green)
2	7.5 [.295]	770630-2	770631-2	770632-2
3	10.0 [.394]	770630-3	770631-3	770632-3
4	12.5 [.402]	770630-4	770631-4	770632-4
5	15.0 [.591]	770630-5	770631-5	770632-5
6	17.5 [.689]	770630-6	770631-6	770632-6
7	20.0 [.787]	770630-7	770631-7	770632-7
8	22.5 [.886]	770630-8	770631-8	770632-8
9	25.0 [.984]	770630-9	770631-9	770632-9
10	27.5 [1.083]	1-770630-0	1-770631-0	1-770632-0
11	30.0 [1.181]	1-770630-1	1-770631-1	1-770632-1
12	32.5 [1.280]	1-770630-2	1-770631-2	1-770632-2
13	35.0 [1.378]	1-770630-3	1-770631-3	1-770632-3

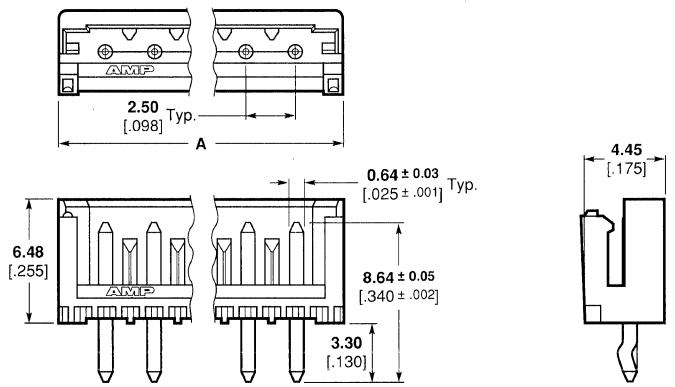
Headers

Material and Finish:

Housing—94V-0 rated nylon 6/6,

Posts—Brass, tin-lead plated over nickel

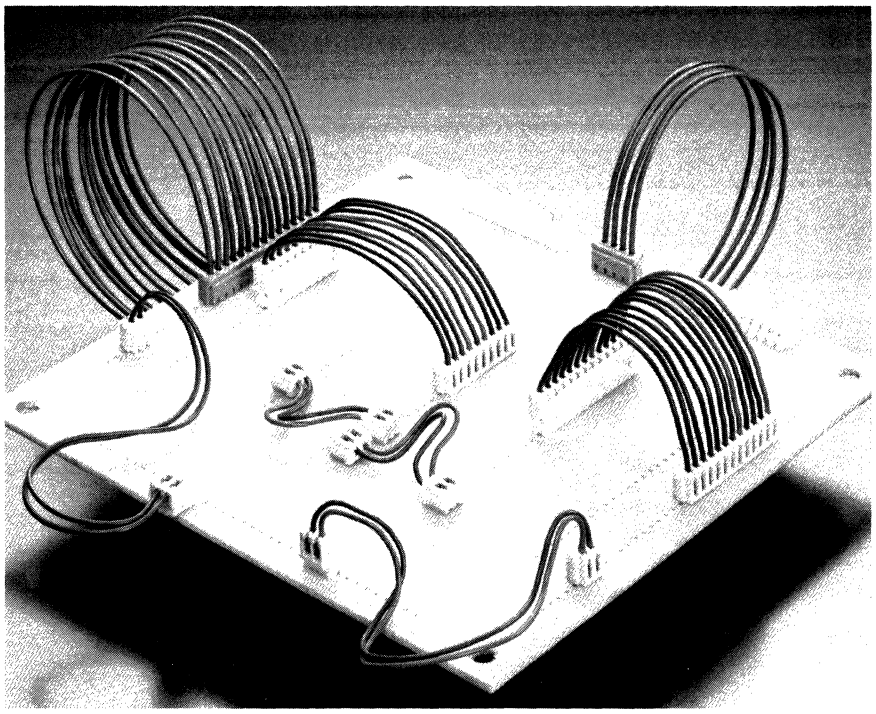
Note: Recommended pc board thickness is 1.6 [0.63].

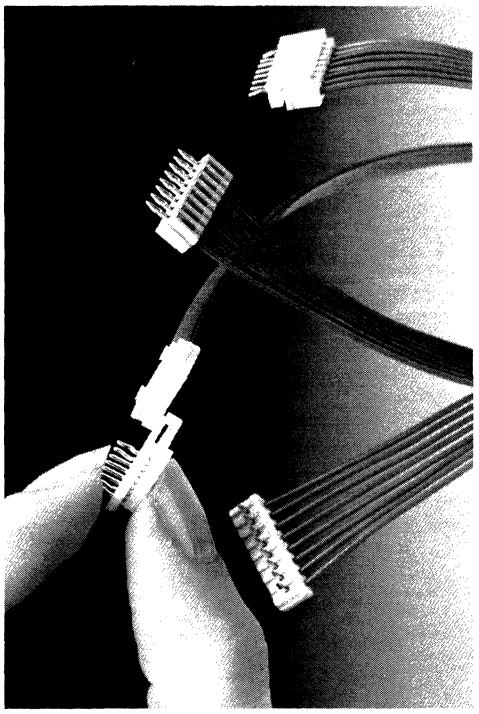


No. of Positions	Dimension A	Part Nos.
2	7.5 [.295]	770640-2
3	10.0 [.394]	770640-3
4	12.5 [.402]	770640-4
5	15.0 [.591]	770640-5
6	15.0 [.591]	770640-6
7	20.0 [.787]	770640-7
8	22.5 [.886]	770640-8
9	25.0 [.984]	770640-9
10	27.5 [1.083]	1-770640-0
11	30.0 [1.181]	1-770640-1
12	32.5 [1.280]	1-770640-2
13	35.0 [1.378]	1-770640-3

Specifications subject to change.
For latest design specifications...
1-800-522-6752

2 mm Common Termination Connector System





Based on true metric dimensions, the compact new 2 mm AMP Common Termination Connector system provides economical wire-to-board interconnections. Available in sizes from 2 to 15 contact positions for either separable or permanent connections, the system can be mass terminated with common tooling, eliminating the need for tooling changes. Application tooling ranges from a manual arbor press to high-speed automated harness assembly machines. The use of high-speed machinery cuts labor costs and provides consistent and cost-effective production.

Separable connections

An MT (mass-terminated) receptacle mates with right-angle, or vertical-mounted post headers soldered into the printed circuit board. The polarized receptacle of these MT Connectors helps guard against mismating and includes mechanical features that protect contacts from damage due to scooping.

Permanent connections

The one-piece AMP-IN MT Headers are designed for direct insertion into the printed circuit board and soldering with the wires already in place. The tapered legs are spring-loaded for easy insertion and are shaped to secure the cable assembly to the board prior to soldering.

Performance Data

Voltage rating:
125V AC/DC max.

Current rating:
1A max.

Overall low level resistance:
10 milliohms (initial)
20 milliohms (final)

Dielectric withstanding voltage:
1,000V AC for one minute

Insulation resistance:
1,000 megohms (initial)
500 megohms (final)

Operating temperature:
-30 to 105° C

Technical Documents

Product Specifications:
108-5218 (MT Connector)
108-5217 (AMP-IN MT Header)

Application Specifications:
114-5104 (MT Connector)
114-5103 (AMP-IN MT Header)

Features

- Most compact wire-to-board system of its type
- Permanent wire-to-board or separable wire-to-post versions
- Closed entry receptacles have lead-in ramp for positive mating
- Same tooling terminates all versions
- Receptacle mates with either vertical or horizontal post headers
- Wire-to-board headers have spring-action legs for easy insertion
- Both types of headers self-retaining prior to soldering
- Mass termination speeds production, reduces errors
- Economical tin-plated contacts
- 2 through 15 contact positions

2 mm Common Termination Connection System

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in millimetres. To convert millimetres to inches multiply by 0.03937.

MT Connector Receptacle Assembly
(Wire Application Side)

Material and Finish

Housing:
UL 94V-O rated glass-filled PBT, natural color
Contact:
Pre-tinned phosphor bronze
Wire Size:
AWG #28-26 (0.08-0.15 mm²)
Insulation Diameter:
0.85-1.05 mm

MT Connector Post Header Assembly
(PC Board Mount Side)

Material and Finish

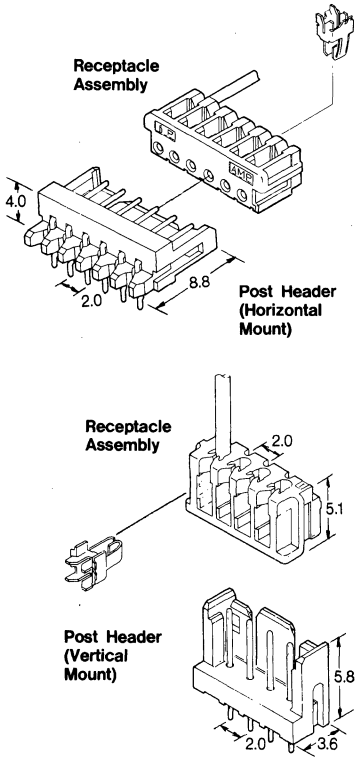
Housing:
UL 94V-O rated, 6/6 Nylon, natural color
Post Contact:
Tin-plated brass

AMP-IN MT Header
Wire-to-Board Header

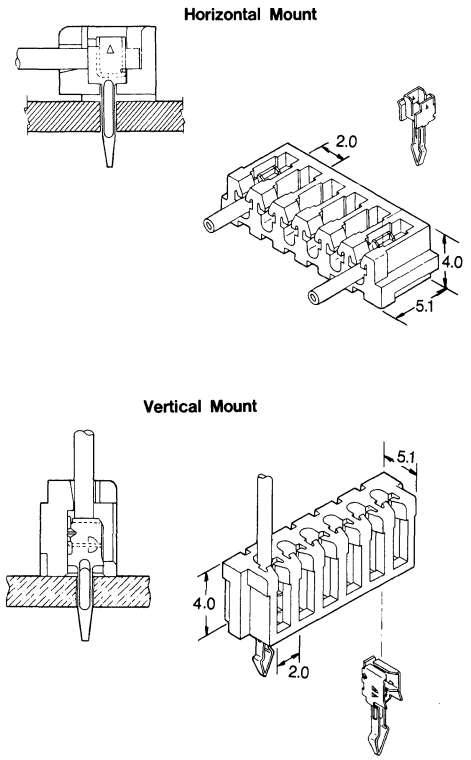
Material and Finish

Housing:
UL 94V-O rated glass-filled PBT, cream yellow (horizontal) and light blue (vertical)
Contact:
Pre-tinned phosphor bronze
Wire Size:
AWG #28-26 (0.08-0.15 mm²)
Insulation Diameter:
0.85-1.05 mm

MT Connector



AMP-IN MT Header



Pos.	Width (in mm)	Separable Connector			Wire-to-Board Header	
		Receptacle Assembly	Post Header			
			Horizontal	Vertical	Horizontal	Vertical
2	6.0	173977-2	173979-2	173981-2	2-173983-2	2-173985-2
3	8.0	173977-3	173979-3	173981-3	2-173983-3	2-173985-3
4	10.0	173977-4	173979-4	173981-4	2-173983-4	2-173985-4
5	12.0	173977-5	173979-5	173981-5	2-173983-5	2-173985-5
6	14.0	173977-6	173979-6	173981-6	2-173983-6	2-173985-6
7	16.0	173977-7	173979-7	173981-7	2-173983-7	2-173985-7
8	18.0	173977-8	173979-8	173981-8	2-173983-8	2-173985-8
9	20.0	173977-9	173979-9	173981-9	2-173983-9	2-173985-9
10	22.0	1-173977-0	1-173979-0	1-173981-0	3-173983-0	3-173985-0
11	24.0	1-173977-1	1-173979-1	1-173981-1	3-173983-1	3-173985-1
12	26.0	1-173977-2	1-173979-2	1-173981-2	3-173983-2	3-173985-2
13	—	—	—	—	3-173983-3	3-173985-3
14	—	—	—	—	3-173983-4	3-173985-4
15	32.0	1-173977-5	1-173979-5	—	3-173983-5	3-173985-5

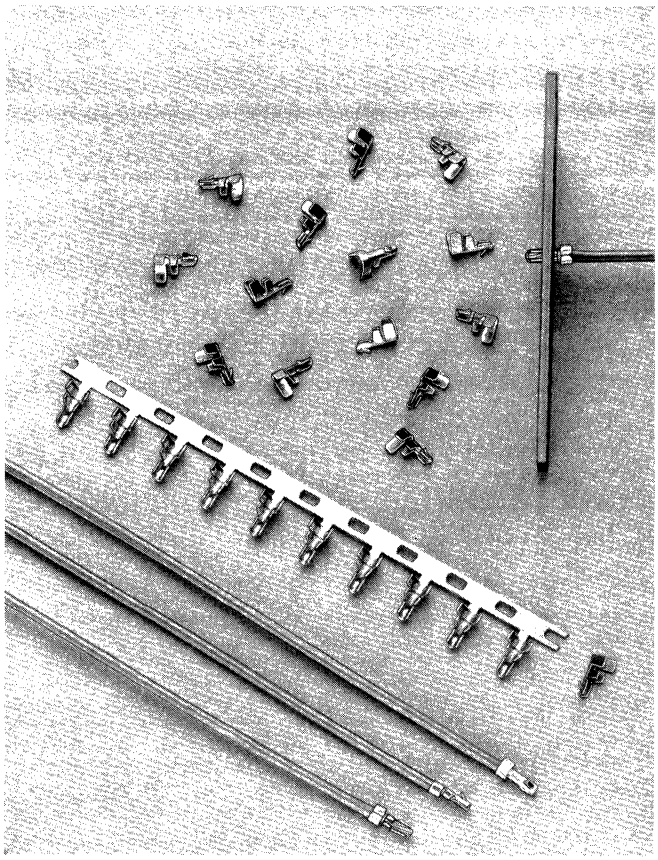
Miniature AMP-IN Terminals

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.

The miniature AMP-IN Terminal is designed to enhance soldering of hookup wires to printed circuit boards. The combination of terminal and application tooling eliminates costly manual preparation of wires prior to soldering, and positions the wire to achieve reliable solder joints. Movement of the wire during soldering is restricted, assuring proper solder flow.

Material: .008 phosphor bronze
Finish: Pre-tin plated
Pc Board Thickness: .062



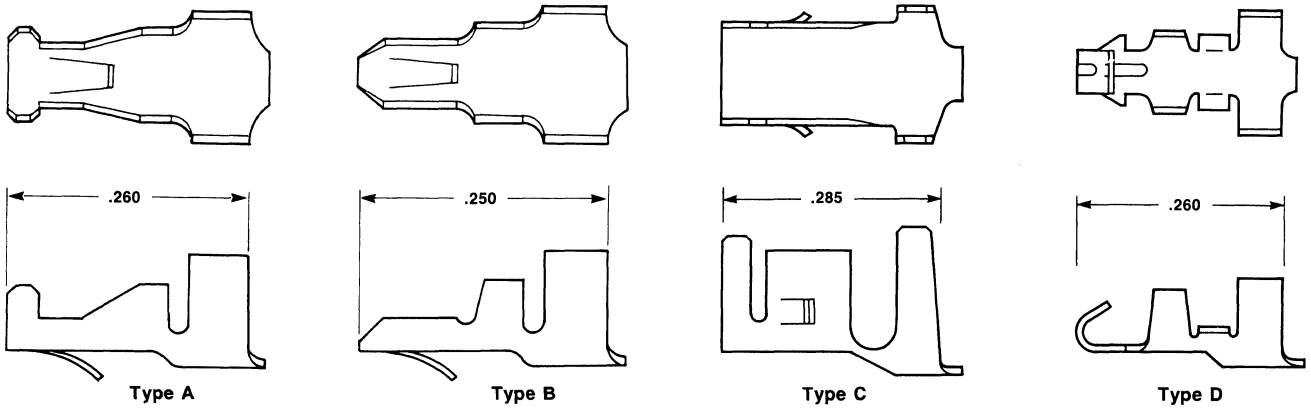
Product Facts

- Eliminates manual preparation of wires prior to soldering into pc boards
- Low applied cost
- Total height above pc board is less than most other components
- Available for 26-22 AWG, 22-18 AWG and 18-14 AWG wire ranges
- Terminal locking lance holds wire in pc board for flow soldering
- Design allows both wire and terminal to be soldered and assures proper solder flow
- Insulation support provides strain relief for wire and protection of solder joint

Technical Documents

Product Specification:
108-1081 Contact, AMP-IN, Miniature

Application Specifications:
114-1016 Mini AMP-IN Contacts



Type A Type B Type C Type D

Type	Wire Size Range AWG	Insulation Diameter	Board Hole Diameter	Extension Below Board (Ref.)	Terminal Part Nos.	Quick-Change Applicator
A	22-18	.060-.110	.073 ± .004	.145	640311-1	466648-4
	26-22	.040-.100	.055 ± .004	.145	640401-1	466676-4
B	22-18	.060-.110	.073 ± .004	.135	350566-1	687911-7
	26-22	.060-.100	.055 ± .004	.135	640108-1	466062-6
	26-22	.040-.070	.055 ± .004	.135	640663-1	466739-3
C	18-14	.150 Max.	.125 ± .003	.125	770060-1	567183-6
D	18-22	.040-.110	.073 ± .002	.084	770362-1	567262-1

Notes: 1. Higher tensile available with nose crimp types A and C.

The Reliable Plated-Through Hole Interconnect

Solderless interconnections have been popular in electrical and electronic applications with world-wide success for decades. They provide reliable electrical and mechanical stability and offer applied-cost savings across the board. For PC board applications, AMP compliant ACTION PIN contacts provide these features:

- Large gas-tight contact zone
- High reliability due to stored energy
- No damage to plated-through holes during installation
- Especially suited for multilayer PC boards
- Less costly board manufacturing due to larger hole tolerances compared to use of solid pins
- Application can be made by end-user
- Repairability — contact can be replaced in the same pin location (two repairs)
- Installation with no heat cycling of board
- Permits mass insertion by minimizing forces needed to insert pins as compared to solid pin press-fit application
- Significant applied-cost savings in many applications

Since AMP compliant ACTION PIN contacts do not have to be soldered, problems associated with solder are eliminated, such as:

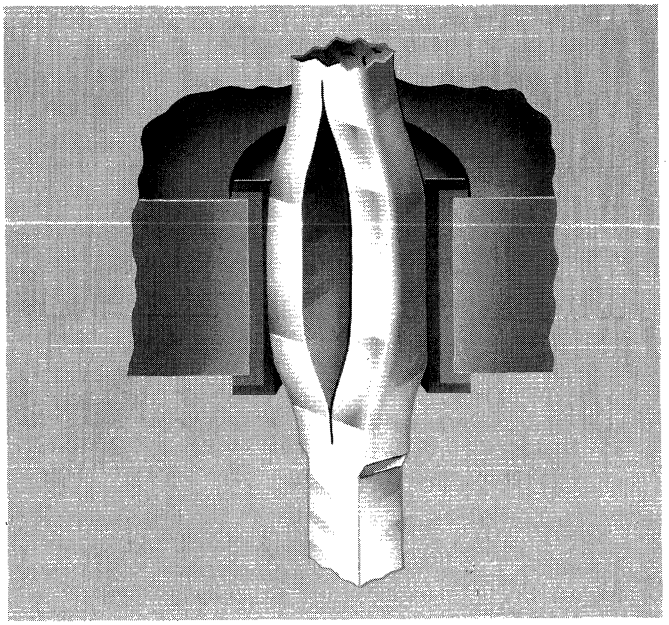
- Faulty solder joints
- Solder fumes; contaminants are deposited on the contacts
- Solder spots; short circuits between printed circuits
- Flux residuals
- Thermal strain on printed circuit boards and components
- Degasing of plated-through holes

Solderless press-fit interconnections using AMP's compliant pin are primarily integrated in, but not limited to, backplanes.

Solderless press-fit interconnections are used in racks, especially where connectors must be fixed on the solder side of the PC board and/or component side. In these applications, the holes for AMP ACTION PIN contact connectors are covered during the soldering process and press-fitting is performed after soldering.

Other applications for AMP ACTION PIN contact interconnections include PC boards that incorporate components using surface mount technology (SMT). Here, too, press-fit interconnections can be applied after soldering, thus eliminating complications associated with connectors suitable for surface mounting.

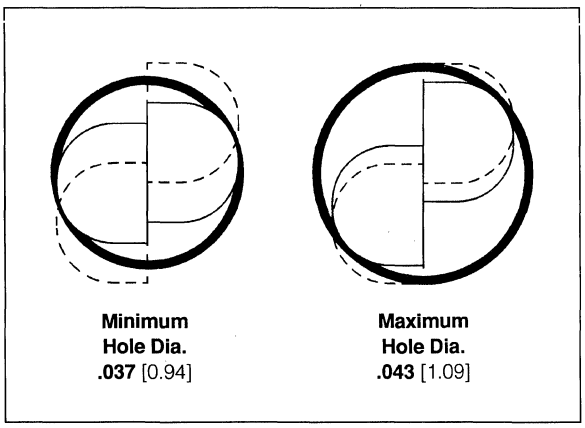
Note: Specific ACTION PIN Press-Fit Contact information as it relates to various connectors is shown with those connectors. See pages 3014, 3019, 3080, 3085, 3131, 3139, 3213, 3300, 3336, 3339, and 3352.



Principle of the AMP Compliant ACTION PIN Contact

When an AMP compliant ACTION PIN contact is inserted into a plated-through hole, two spring members are compressed, exerting force against the hole for a gas-tight connection. The diameter of the hole is smaller than the diagonal size of the pin (see cross-section illustration below).

The beam characteristics of the pin are designed so that a plastic, as well as an elastic, deformation takes place during insertion. The two spring members compress to different degrees to accommodate hole tolerances. The compliant pin also reduces strain on the board. With a rigid pin, the elastic strain energy is stored entirely in the board, leading to damage of the plated-through holes. With the AMP compliant ACTION PIN contact, the residual force of the elastic deformation maintains stored energy to produce a tight contact zone between the pin and the plated-through hole. This ensures long-term electrical and mechanical reliability of the interconnection.

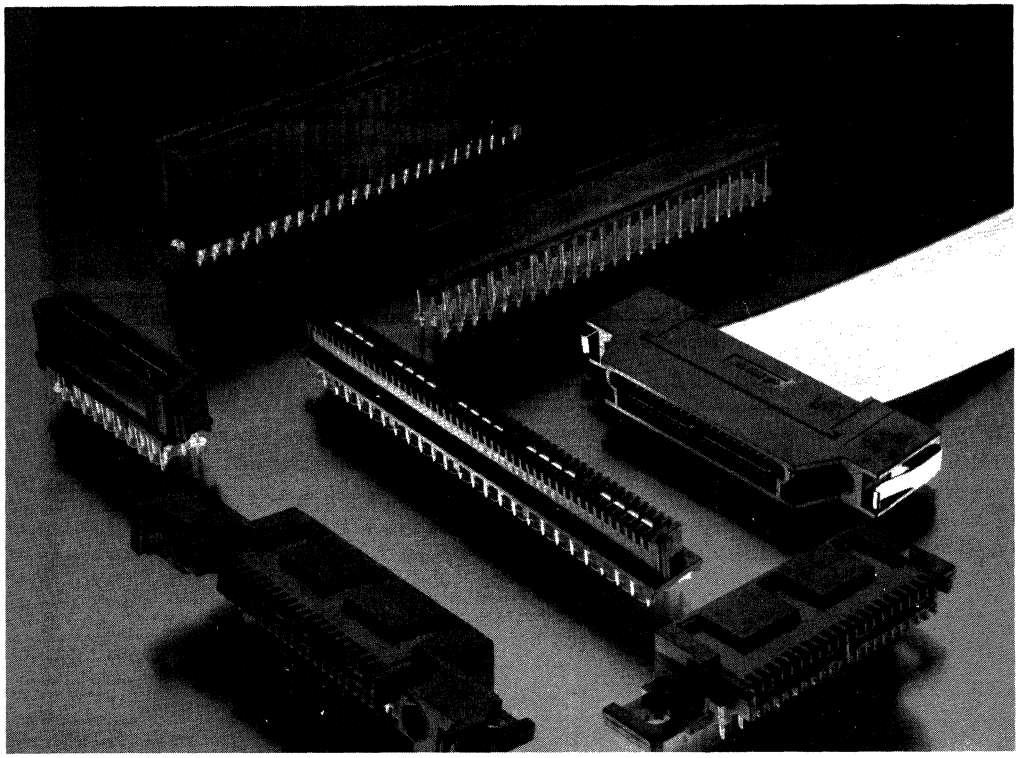


Cross-Section Area of AMP ACTION PIN Press-Fit Contact in Printed Circuit Board Holes

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Micro-Strip Interconnection System

(.050 x .100 [1.27 x 2.54] centerline)



AMP Micro-Strip connectors are a high density controlled impedance connector family, compatible with requirements of high density and high speed data transmission technologies.

Each signal line within the mated connector is located at a specific distance from an integral, separable bus bar serving as a ground plane in a Micro Strip configuration. Selection of housing dielectric, spacing from signal contact to ground plane and conductor geometry provide a characteristic impedance plus very low inductance and capacitance.

Discontinuities resulting from connector structure and solder interfaces are dimensionally small and therefore appear transparent to high speed signals. Both vertical and right angle cable to board connector versions of AMP Micro-Strip connectors share a normal impedance of 50 ohms.

Each one inch length of connector houses two electrically isolated high current contacts. When soldered to the PCB ground plane, that ground plane is extended through the mated connector.

Resistance is minimized by a large contact area and short electrical length, providing signal return paths with negligible ground loop voltages. Since signal return is via the bus bars, signal-ground-signal alternation, common to high speed applications, becomes unnecessary. All contacts can be dedicated to signal transmission, effectively doubling connector density.

Product Facts

- Designed for High Speed Applications
- Provides controlled impedance
- Low inductance
- High density
- Board to Board parallel and right angle to board configurations available in 40 to 240 positions
- Cable to board system in sizes 20 to 120 positions
- Vertical and right angle board mount receptacles for cable connectors
- Connector housings are keyed
- Latching and Keying options available
- Board mount product is compatible with standard through-hole flow solder and vapor phase reflow solder processes
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR7189
- Product Specifications 108-1252 (Cable to Board) 108-1272 (Board to Board)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Board to Board Application

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Vertical Plug

Housing Material:

Black, high temperature thermoplastic, flame retardant

Bus Bar Material and Finish:

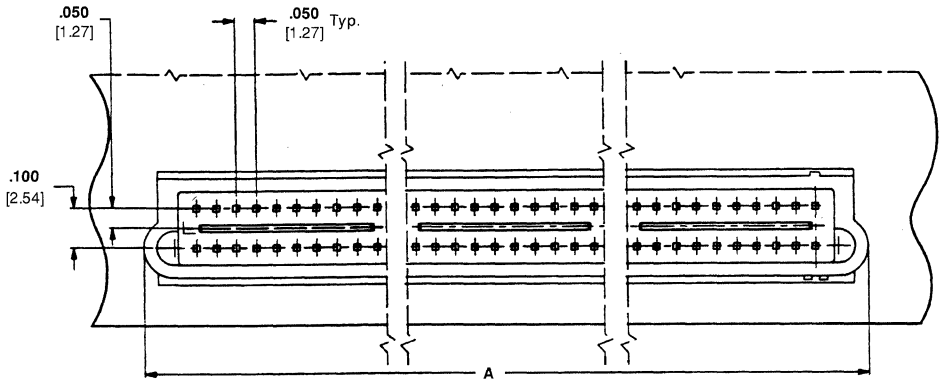
Phosphor bronze alloy plated .000030 [0.00076] gold over .000050 [0.00127] nickel in the mating area, .00015 [0.00381] 60/40 tin-lead over .00025 [0.00635] nickel in terminating area over .00050 [0.0127] nickel plate on the entire bus

Signal Pin Material and Finish:

Phosphor bronze alloy plated .000030 [0.00076] gold over .000050 [0.00127] nickel in the mating area, .00015 [0.00381] 60/40 tin-lead over .00025 [0.00635] nickel in terminating area over .00050 [0.0127] nickel plate on the entire contact

Related Product Data:

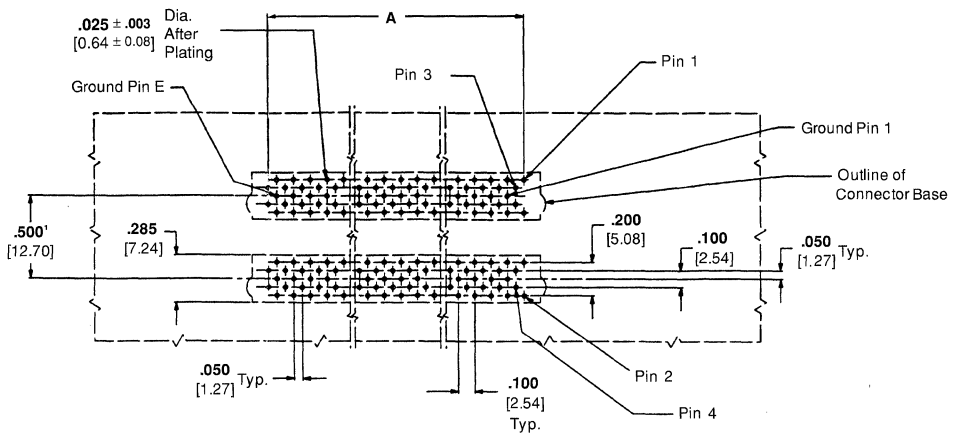
Mates with Receptacles — pages 3415 & 3416
Connector — Impedance, 50 ohms ±10% at 1 ns
Configuration — .100 [2.54] signal row to signal row, .050 [1.27] signal to ground, .050 [1.27] signal to signal
Electrical Testing — Contact AMP Incorporated for crosstalk and impedance profiles



Component Side

No. of Positions	Dimensions A	Dimensions B	Part Numbers .062 [1.58] Thk. PC Board	Part Numbers .125 [3.18] Thk. PC Board
40	**1.21** 30.73	**.950** 24.13	121344-1	2-121344-3
60	**1.71** 43.43	**1.450** 36.83	121344-2	2-121344-4
100	**2.71** 68.83	**2.450** 62.23	121344-4	2-121344-6
140	**3.71** 94.23	**3.450** 87.63	121344-6	2-121344-8
160	**4.21** 106.93	**3.950** 100.33	121344-7	2-121344-9

Recommended PC Board Layout



Component Side of Board

'Min. functional spacing when mated with a Right Angle Receptacle mounted to a .062 [1.58] pc board.

Board to Board Application

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Vertical Receptacle

Housing Material:

Black, high temperature thermoplastic, flame retardant

Bus Receptacle Material and Finish:

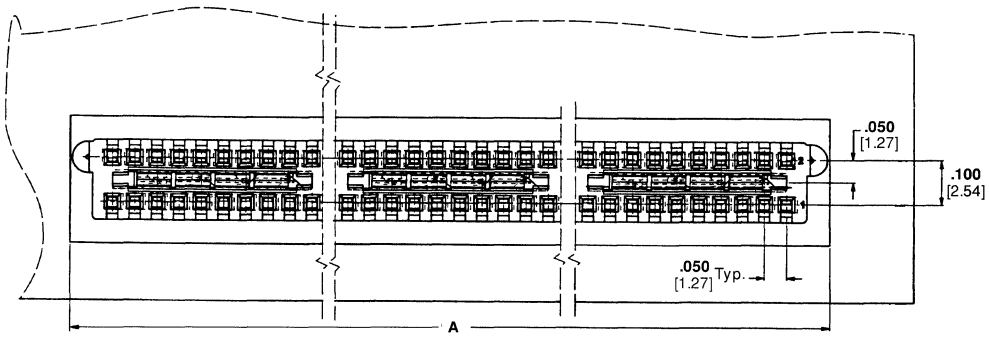
Phosphor bronze alloy plated .000030 [0.00076] gold over .000050 [0.00127] nickel in the mating area, .00015 [0.00381] 60/40 tin-lead over .00025 [0.00635] nickel in terminating area over .00050 [0.0127] nickel plate on the entire bus

Receptacle Contact Material and Finish:

Beryllium copper alloy ½ HM .0070 ±.0004 [0.178 ±0.010] plated .000030 [0.00076] gold over .000050 [0.00127] nickel with .00050 [0.0127] nickel plate on the entire contact

Related Product Data:

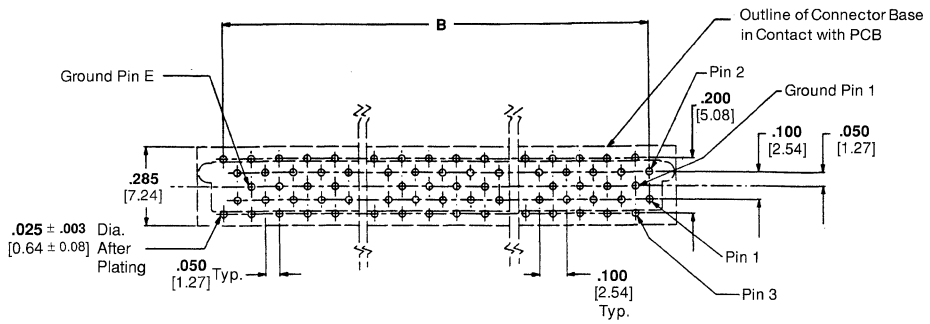
Mates with Plug — page 3414
Connector — Impedance, 50 ohms ±10% at 1 ns
Configuration — .100 [2.54] signal row to signal row, .050 [1.27] signal to ground, .050 [1.27] signal to signal
Electrical Testing — Contact AMP Incorporated for crosstalk and impedance profiles



Component Side

No. of Positions	Dimensions		Part Numbers	
	A	B	.062 [1.58] Thk. PC Board	.125 [3.18] Thk. PC Board
40	**1.140** 28.96	**.950** 24.13	121340-1	2-121340-3
60	**1.640** 41.66	**1.450** 36.83	121340-2	2-121340-4
100	**2.640** 67.06	**2.450** 62.23	121340-4	2-121340-6

Recommended PC Board Layout



Component Side of Board

Right-Angle Receptacle

Bus Receptacle Material and Finish:

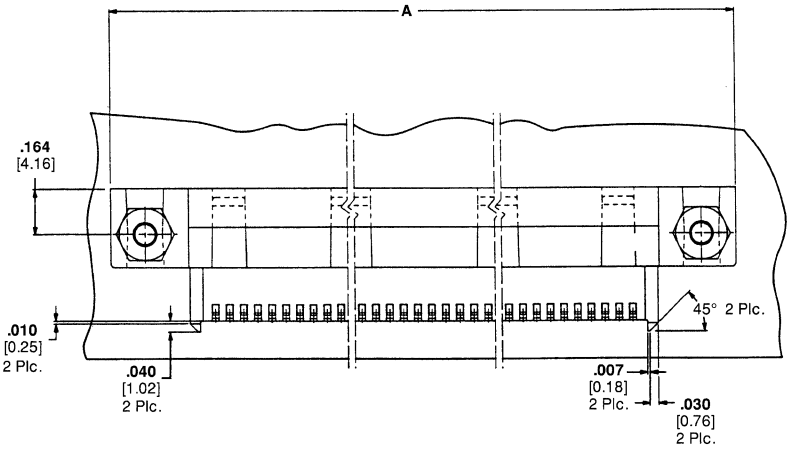
Phosphor bronze alloy plated .000030 [0.00076] gold over .000050 [0.00127] nickel in the mating area, .00015 [0.00381] 60/40 tin-lead over .00025 [0.00635] nickel in terminating area over .00050 [0.0127] nickel plate on the entire bus

Receptacle Contact Material and Finish:

Beryllium copper alloy 1/2 HM .0070 ±.0004 [0.178 ±0.010] plated .000030 [0.00076] gold over .000050 [0.00127] nickel with .00050 [0.0127] nickel plate on the entire contact

Related Product Data:

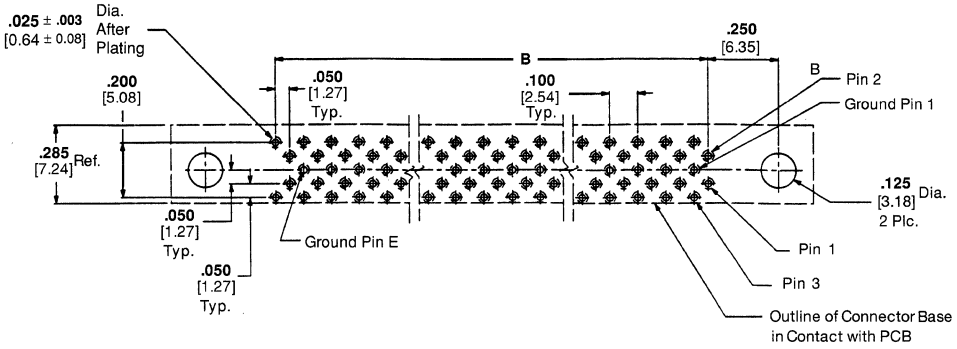
Mates with Plug — Plug, page 3414
Connector — Impedance, 50 ohms ±10% at 1 ns
Configuration — .100 [2.54] signal row to signal row, .050 [1.27] signal to ground, .050 [1.27] signal to signal
Electric Testing — Contact AMP Incorporated for crosstalk and impedance profiles



Component Side

No. of Positions	Dimensions A	Dimensions B	Part Numbers .062 [1.58] Thk. PC Board	Part Numbers .125 [3.18] Thk. PC Board
40	**1.700** 43.18	**.950** 24.13	121330-1	2-121330-3
140	**4.200** 27.94	**3.455** 9.02	121330-6	2-121330-8
160	**4.700** 35.56	**3.950** 9.40	121330-7	2-121330-9

Recommended PC Board Layout



Component Side of Board

Cable to Board Application

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Vertical Receptacle

Housing Material:

Black, high temperature thermoplastic, flame retardant

Bus Receptacle Material and Finish:

Phosphor bronze alloy plated .000030 [0.00076] gold over .000050 [0.00127] nickel in the mating area, .00015 [0.00381] 60/40 tin-lead over .00025 [0.00635] nickel in terminating area over .00050 [0.0127] nickel plate on the entire bus

Contact Material and Finish:

Beryllium copper alloy plated .000030 [0.00076] gold min. in contact area over .000050 [0.00127] min. nickel on the entire contact

Related Product Data:

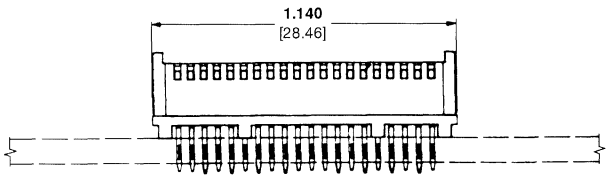
Cable Assembly Ordering Information — page 3420

Connector — Impedance, 50 ohms ±10% at 1 ns

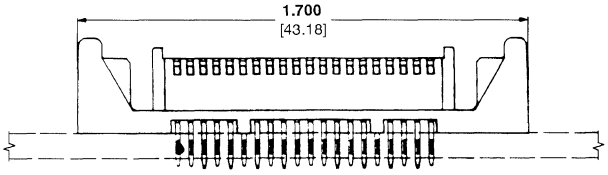
Configuration — .100 [2.54] signal row to signal row, .050 [1.27] signal to ground, .050 [1.27] signal to signal

Electrical Testing — Contact AMP Incorporated for crosstalk and impedance profiles

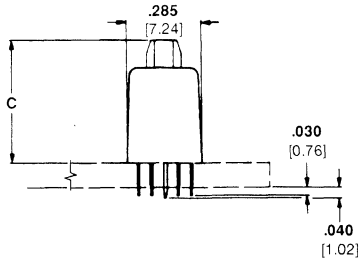
40 Position



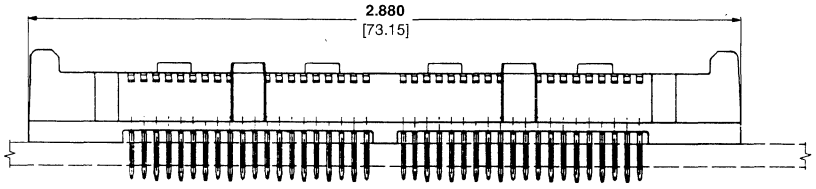
Plain



With Locking Latch

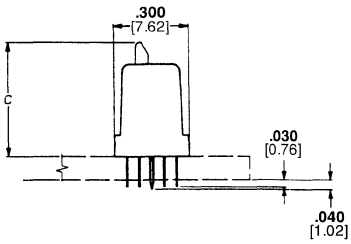


80 Position

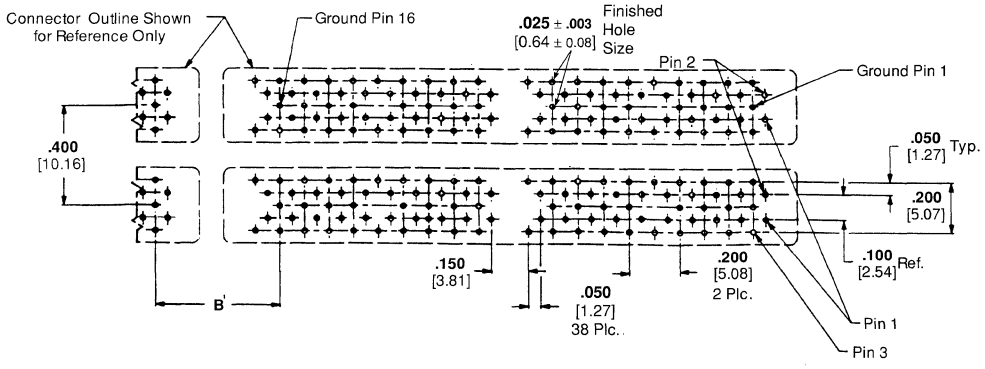


With Locking Latch

No. of Positions	Dimensions B	Dimensions C	Part Numbers .062 [1.58] Thk. PC Board	Part Numbers .125 [3.18] Thk. PC Board
40 Plain	.950 24.13	.320 8.13	121286-1	121286-3
40 W/Latch	1.100 27.94	.355 9.02	121286-6	121286-8
80 W/Latch	1.400 35.56	.370 9.40	121288-6	121288-8



Recommended PC Board Layout — 80 Position Connector



Component Side of Board

[1]Min. functional spacing.

3 Printed Circuit Board Connectors

Cable to Board Application

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Right Angle Receptacle

Housing Material:

Black, high temperature thermoplastic, flame retardant

Bus Receptacle Material and Finish:

Phosphor bronze alloy plated .000030 [0.00076] gold over .000050 [0.00127] nickel in the mating area, .00015 [0.00381] 60/40 tin-lead over .00025 [0.00635] nickel in terminating area over .00050 [0.0127] nickel plate on the entire bus

Contact Material and Finish:

Beryllium copper alloy plated .000030 [0.00076] gold min. in contact area over .000050 [0.00127] min. nickel on the entire contact

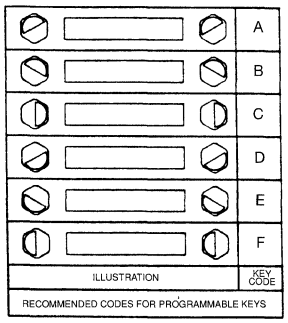
Related Product Data:

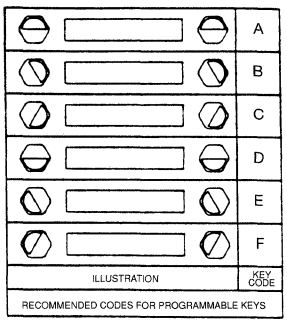
Cable Assembly Ordering Information — page 3420

Connector — Impedance, 50 ohms ±10% at 1 ns

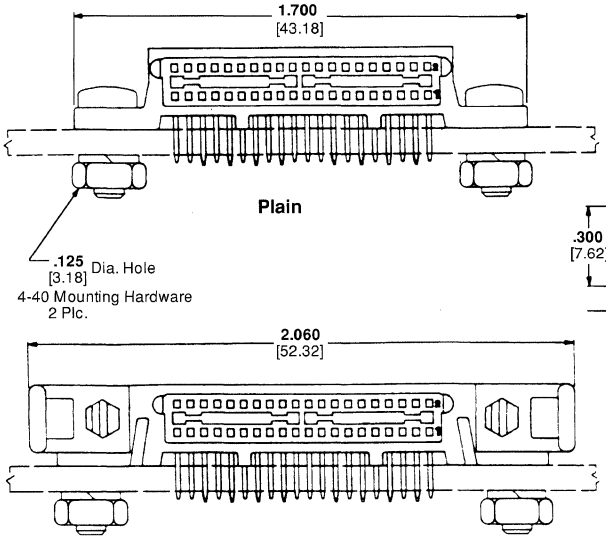
Configuration — .100 [2.54] signal row to signal row, .050 [1.27] signal to ground, .050 [1.27] signal to signal

Electrical Testing — Contact AMP Incorporated for crosstalk and impedance profiles





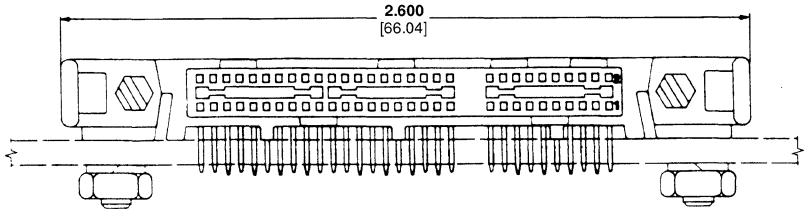
40 Position



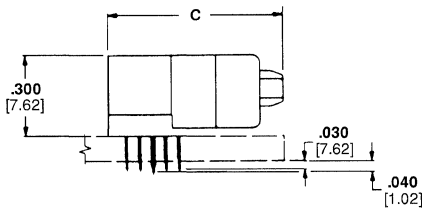
Note: Mounting hardware omitted from this view for clarity.

With Locking Latch & Programmable Key

60 Position



With Locking Latch & Programmable Key



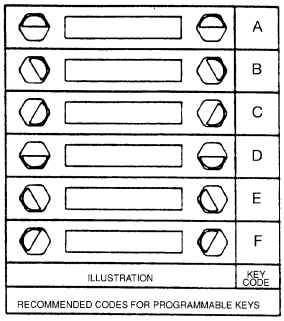
Note: Mounting hardware omitted from this view for clarity.

No. of Positions	Dimensions B	Dimensions C	Part Numbers .062 [1.58] Thk. PC Board	Part Numbers .125 [3.18] Thk. PC Board
40 Plain	.950 24.13	.520 13.21	121281-1	121281-3
40 W/Latch, Key	1.700 43.18	.665 16.89	1-121281-1	1-121281-3
60 W/Latch, Key	1.700 43.18	.665 16.89	1-121282-1	1-121282-3

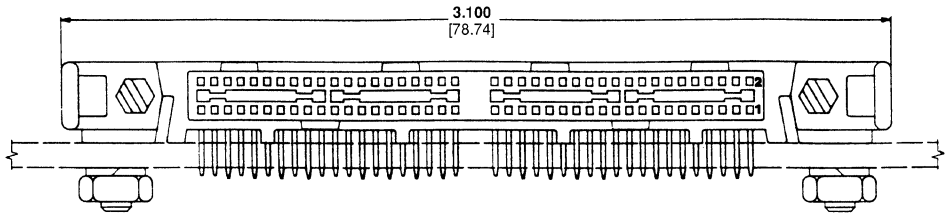
Cable to Board Application
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

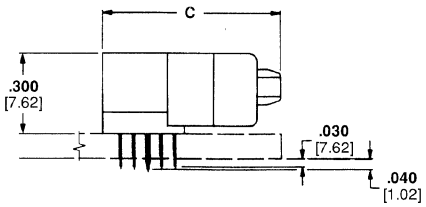
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



80 Position

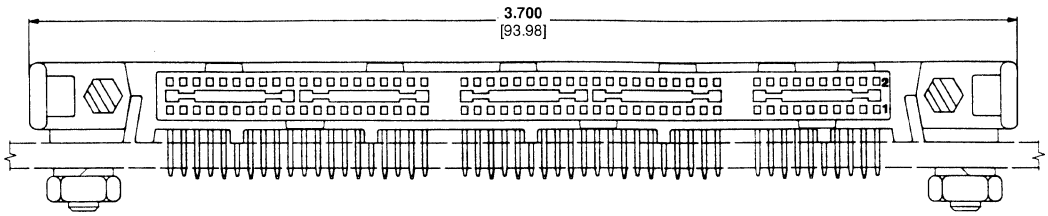


With Locking Latch & Programmable Key



Note: Mounting hardware omitted from this view for clarity.

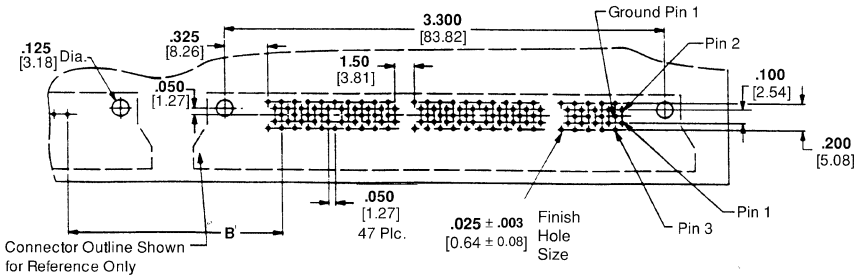
100 Position



With Locking Latch & Programmable Key

No. of Positions	Dimensions B	Dimensions C	Part Numbers .062 [1.58] Thk. PC Board	Part Numbers .125 [3.18] Thk. PC Board
80 W/Latch, Key	**1.700** 43.18	**.665** 16.89	1-121283-1	1-121283-3
100 W/Latch, Key	**1.700** 43.18	**.665** 16.89	1-121284-1	1-121284-3

Recommended PC Board Layout



Component Side of Board

[1]Min. functional spacing.

Cable Assembly

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Material Specifications

Housing Material:

Black, high temperature thermoplastic, flame retardant

Signal Contacts:

Phosphor bronze with .000030 [.000762] min. select gold over .000030 [.000762] min. nickel plate, in contact area

Ground Bus:

Brass with .000030 [.000762] min. select gold plate over .000030 [.000762] min. nickel plate, in contact area

Electrical Specifications

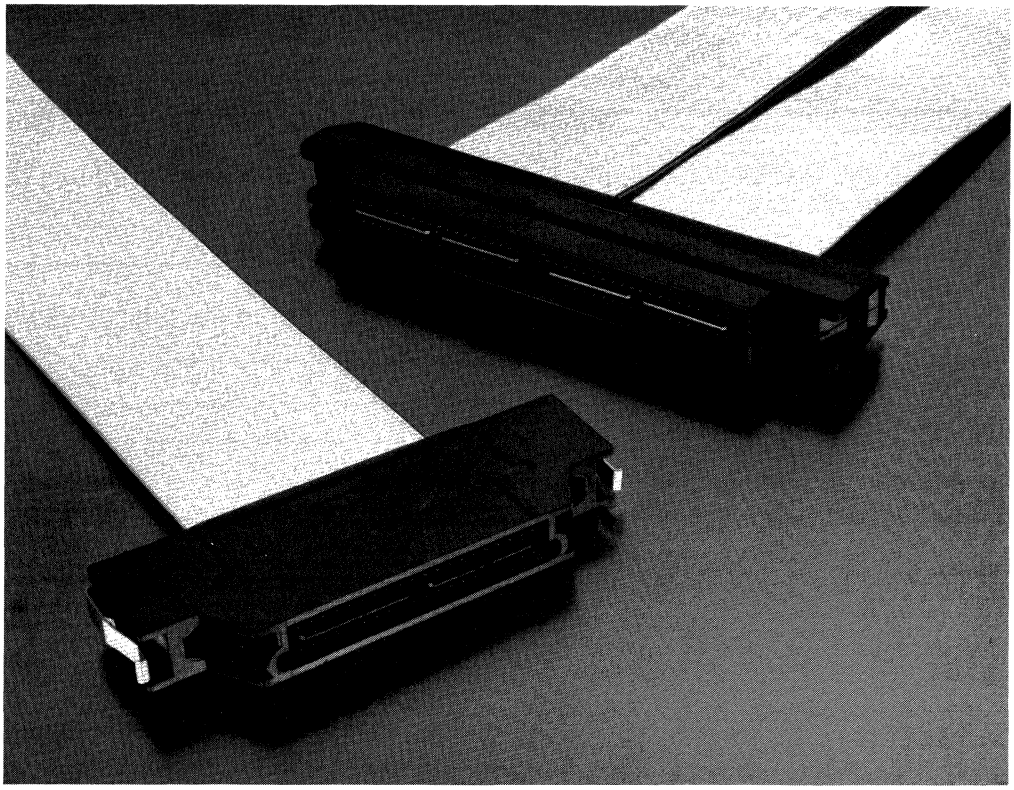
Impedance—50 ohms ±10% at 1 ns

Propagation delay—1.45±.03 ns/ft [4.757±.098 ns/m]

Cable insulation material—FEP or equivalent

Conductor resistance—.144 ohms/ft [.472 ohms/m]

Configuration—Signal ground signal (Planar Transmission) Signals are on .025 [0.64] spacing

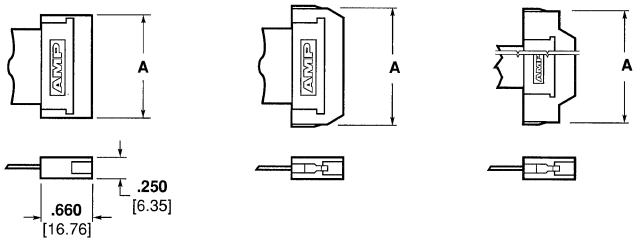


Cable Assembly Ordering Information

No. of Pos.	Dimension A		
	Plain	Latch	Latch/Key
20	—	—	**1.420** 36.07
40	**1.320** 33.50	**1.500** 38.10	**1.920** 48.77
60	—	—	**2.460** 62.48
80	—	**2.620** 66.55	**2.960** 75.18
100	—	**3.220** 81.79	**3.560** 90.42

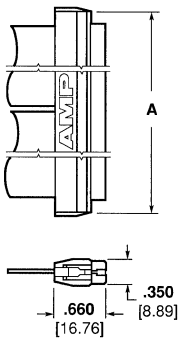
Notes: 1. Assembly length is measured from mating face to mating face of cable connector.
2. Minimum cable assembly length is 3.00 [76.2].
3. Cable assemblies mate with cable-to-board receptacles only.

20, 40 Position



Plain Latch Latch/Key

60, 80, 100 Position



4

AMP Coaxial and Flat Coaxial Cable Products

**Qualified AMP Products for Military Applications are summarized on page 2.*
◆ For information on Custom High Performance Cable Assemblies see page 3.
†NETCONNECT Open Wiring Systems are summarized on page 3.

AMP Guide to RF Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMP RF connectors are furnished in a wide variety of styles and configurations to suit almost any design requirement. For cable connectors, AMP offers a choice of tooling to meet your exact production needs. This combination of AMP connectors and matching tooling guarantees trouble-free terminations at a low applied cost.

The AMP engineering and marketing team is always ready to assist you with any particular design requirement. Please feel free to contact your nearest AMP Sales Representative or call the Product Information Center 800-522-6752.

The AMP Design Approach

Superior RF connector performance is realized when full consideration is given to all design factors. At AMP, experience has proven the accuracy of proprietary computer programs which provide precise electrical designs that are optimized by test simulation. This valuable experience has shown that the junction between the connector and the transmission line is a very important element in the design evaluation. With coaxial cable connectors, AMP specializes in compression crimping to provide predictable, repeatable performance at a low applied cost. Special crimp geometries are designed into appropriate tooling to maximize performance. And when the application allows some compromise in performance, an AMP RF connector designed for the Mil-standard hex crimp can be used.

AMP RF connectors are designed in accordance with Military Specification MIL-C-39012. The more popular of these connectors are then qualified to this specification. In several lines, commercial versions are also available. These commercial products offer equivalent quality performance at a substantial cost savings. This is accomplished through the use of less expensive materials and platings, as well as through the elimination of costly military marking and QPL testing.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Metric symbols used are:
- C (Celsius)
- N (Newton)
- m (meter)
- mm (millimeter)
- mm^2 (square millimeter)
- kg (kilogram)

Connector Selection

Choosing the proper coaxial connector is a balance between performance and economics. The performance of the connector must meet the overall electrical requirements of the system in which it is to be used. The economics of connector selection should include the cost of the connector as well as the cost of terminating the connector. There are three major considerations in the selection of an RF coaxial connector:

- Connector Interface (BNC, TNC, etc.)
- Method of Termination (pc board, cable, etc.)
- Physical Construction (Mil-type, commercial, plating, etc.)

Connector Interface

Most often the type of interface is dictated by the application. However, the electrical performance requirements must be considered.

Impedance - The connector should be matched to the system and cable impedance. Mismatches can cause reflections resulting in poor system performance. It should be noted that not all connector interfaces are available in 50, 75 and 95+ ohm impedances.

Voltage - Make sure the application will not exceed the maximum voltage rating of the connector. Figure 1 illustrates the maximum ratings of each interface type. If the application requires a high voltage pulse, the SHV connector is recommended.

Maximum Operating Frequency - Each connector interface has an upper frequency limitation. Figure 2 illustrates the comparative limitations of each design. Some designs have a lower frequency limit for the commercial or 75 ohm offering.

In addition to the electrical performance characteristics, each interface type has advantages to the user. The BNC interface is the most popular because of its easy connect/disconnect bayonet coupling. The TNC interface offers a threaded coupling that assures excellent performance even in applications where vibration is common, such as in aircraft and automobiles. The SMB has a snap detent feature which makes it easy to install and prevents the connector from becoming unmated during low levels of vibration. See pages 4012 and 4013 of this catalog for a detailed description of each interface type.

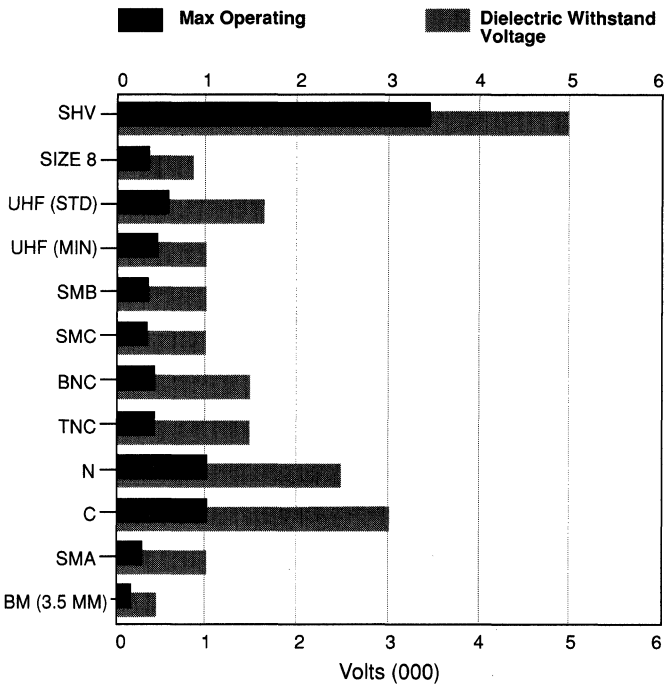


Figure 1

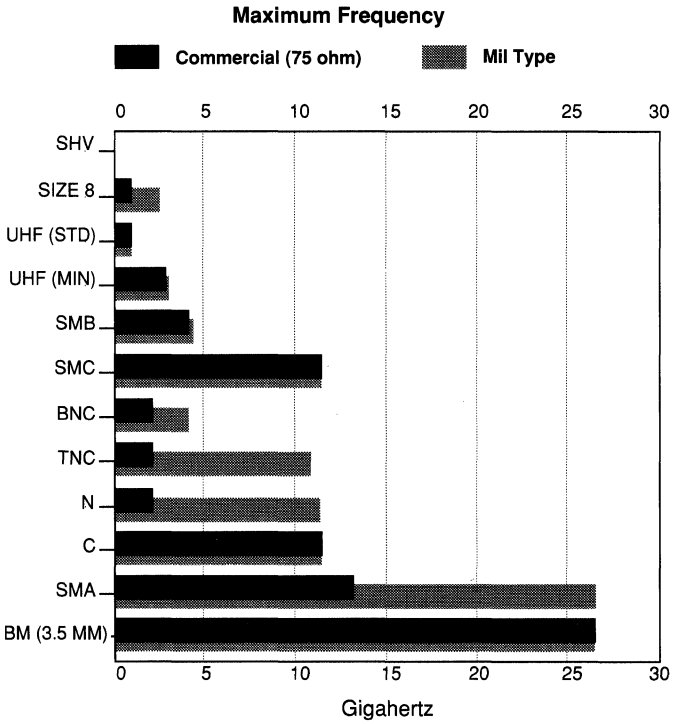


Figure 2

Method of Termination

AMP provides connectors that can be terminated to coaxial cable, printed circuit boards or other connector interfaces.

Selection of the proper connector to terminate to an RG cable is simplified by using the format of this catalog. Experience has proven that certain connector types lend themselves to termination of particular coax cable sizes. For example, miniature cables such as RG 188 are most practically terminated to subminiature connectors such as SMB and SMC styles. Figure 3 illustrates the interface diameters of each connector type and the dielectric outside diameter (DOD) of popular RG cables. It is most economical to select a connector that terminates to a cable with a dielectric diameter close in size to the connector's interface diameter. Also refer to the Cable-to-Connector Selection Guide on pages 4014 and 4015 where cables are grouped by size. The product information sections of this catalog have been organized so that all connector construction types are grouped together by cable size. This allows easy selection of the connector construction best suited for the application.

AMP offers a wide range of connector configurations for terminating to printed circuit boards. Also available are connectors which allow the interconnection of one interface type to another.

By reviewing this catalog, a connector can be found to match most any application. Since the RF connector is a part of a transmission line system, make sure when selecting a new connector design, that it is compatible with the overall system's performance.

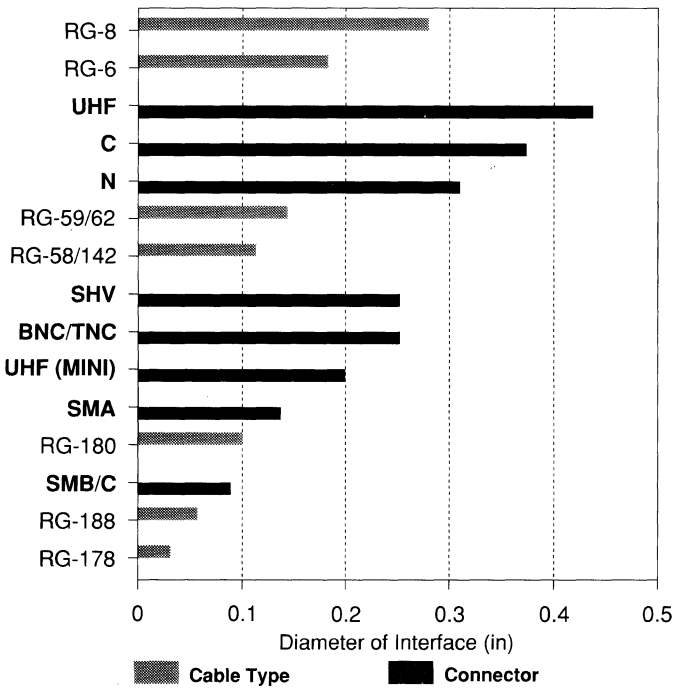


Figure 3

Construction

The construction of a connector will greatly affect the purchase price. The connector tables in this catalog include construction details that allow you to select connectors that meet your requirements at the lowest price. Each design is designated as Mil-Type or Commercial. Mil-Type connectors are built to MIL-C-39012 standards and will give the greatest reliability. They are made of all screw machine parts, Teflon insulators and gold-plated contacts. Commercial designs use lower cost materials, such as zinc diecast bodies, polypropylene insulators and silver-plated contacts. Specific details of connector construction are listed in each product section of this catalog.

The materials used affect both performance and cost. Common base metals include brass, beryllium copper and stainless steel. The most common plating used for the center contact is gold because of its low contact resistance, superior mating properties and corrosion resistance. MIL-C-39012 requires silver plating on the housing for N, TNC and BNC connectors. However, silver tarnishes easily, creating an unattractive finish. For this reason, many users prefer nickel finish for tarnish resistance.

TEFLON, polypropylene and polymethylpentene (TPX) are the most common connector dielectrics. TEFLON materials offer the lowest loss, the most stable electrical properties and highest operating temperature. But, since it cannot be injection molded, manufacturing is more costly than other materials. Be certain, when specifying connectors, that the temperature and voltage limitations are taken into consideration.

Assembly

There are several methods of assembly or termination, but they can be categorized into two major areas: (1) Solder center conductor and clamp braid (Category A) and (2) Crimp center conductor and crimp braid. Other methods are derived from combinations of the above, (e.g., solder center conductor and crimp braid.) Method (1) (Category A) is generally used where no specialized tools are available, such as with field installations. With the development of low cost assembly tools, method (2) is becoming more popular for field installation.

Crimping is preferred in most manufacturing environments where assembly tooling is available because terminations can be made in the least amount of time and with the greatest reliability. The crimp tools are designed to provide uniform terminations; this cannot be done with a clamp design without further testing or inspection. Figure 4 illustrates the difference between braid crimping using AMP "O" crimp and the industry-standard hex crimp. The AMP "O" crimp gives a more consistent pressure on the outer collar. In addition, the crimp of the center conductor provides superior VSWR as shown in Figure 5.

Benefits derived by using AMP "O" crimp:

- No soldering of center contact is required. This alleviates all prospective problems associated with the soldering process such as excess solder, cold solder joints and overheating the dielectric.
- Fewer parts resulting in less assembly errors
- Braid crimping which eliminates the need for the combing, screwing and torquing associated with the braid clamp.

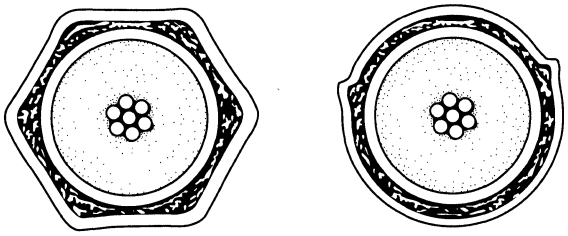


Figure 4

Hex Crimp vs. AMP "O" Crimp

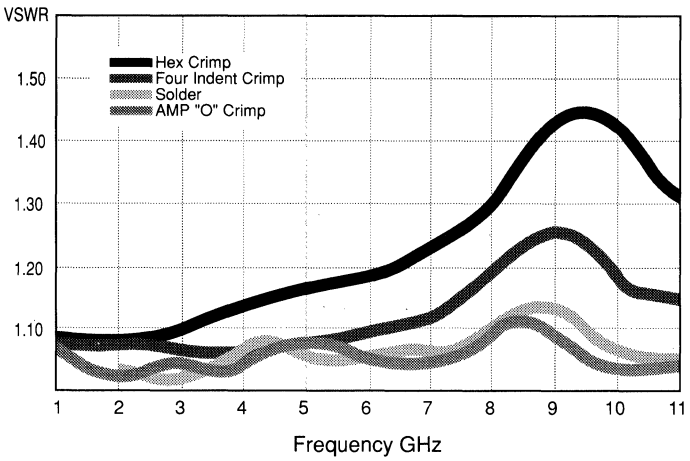
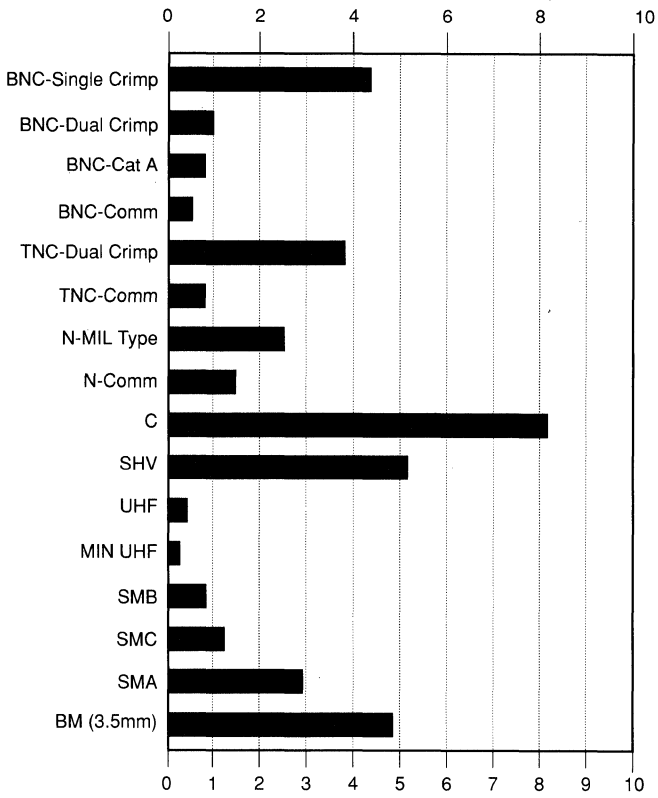


Figure 5

VSWR vs. Frequency
Comparison of Crimping or Soldering Center Contacts
Using Series N Plug on RG-214/U Cable

Cost Savings can be realized in many ways, several of which we have noted here, including choice of materials, assembly, etc. One additional savings tip to be considered is specifying AMP single crimp design connectors. This design requires only a one-crimp operation to terminate both the center conductor and the outer braid, resulting in labor time saved. Even though the single crimp connectors can be more expensive, the overall terminated cost can be less. An added advantage of this design is the ability to replace the front end of the connector if it should become worn or damaged. See Figure 6 for relative connector costs.



Cost Relative to BNC Dual Crimp
By Interface Type

Figure 6

Theory and Application

As a leading manufacturer of RF products, AMP Incorporated produces a large variety of coaxial connectors. The proper selection and application of these connectors requires a knowledge of factors not involved in other types of connectors and terminals. The following paragraphs have been prepared to improve understanding of the theory behind RF connectors:

Basic RF Theory

RF energy travels by electromagnetic waves, and it is primarily the frequency of these waves that we are interested in. Briefly, if an oscillating voltage source is connected to a cable, a continuous electromagnetic wave will propagate along the cable. A sensor placed at some point on the cable would indicate a varying voltage (E field) as well as a current and magnetic field (H field) as the wave travels past it. This is called an electromagnetic wave because both electric and magnetic fields are varying. The wave shape is initially determined by the variation of the source with time.

Figure 7 shows the radiant energy spectrum. Visible light, radio, television, x-rays and Gamma rays are all phenomenon of electromagnetic waves at different frequencies. This introduction will treat only those that are generated by an electrical source and propagated along a physical cable or other transmission media. That is, frequencies above zero and up to about 50 gigahertz.

Frequency or Wavelengths	Designation	Applications
0 - 29.9 KHz	VLF (Very Low Frequency)	Commercial AC electricity, deep depth sounders, ultrasonic grinders, sonic oscillators
30 - 299.9 KHz	LF (Low sonar Frequency)	Shallow-to-medium depth sounders
300 - 2999.9 KHz	MF (Medium Frequency)	Commercial AM radio broadcasting, marine radio telephone, direction finders
3 - 29.9 MHz	HF (High Frequency)	Citizen band radio, amateur radio, international broadcasting
30 - 299.9 MHz	VHF (Very High Frequency)	VHF television (Channels 2 thru 13), commercial FM radio broadcasting, amateur radio, fire and police radio
300 - 2999.9 MHz	UHF (Ultra-high Frequency)	UHF television (Channels 14 thru 83), microwave ovens, aeronautical radionavigation
3 - 29.9 GHz	SHF (Super High Frequency)	Microwave communications, marine radar, aircraft tracking and airborne radars
30 - 299.9 GHz	EHF (Extremely High Frequency)	Space communications, radio astronomy

Notes:
1. KHz = Kilohertz (1 thousand cycles per second)
2. MHz = Megahertz (1 million cycles per second)
3. GHz = Gigahertz (1 billion cycles per second)

Figure 7

Radiant Energy Spectrum

In the following paragraphs we will discuss waves in greater detail, including the relationship of frequency and wave length, how pulses are formed and used, how each differs from the other and the problems involved in their transmission.

Sine Waves

An RF wave is a sine wave, meaning that it smoothly swings from zero to a positive peak value, then back down past zero to a negative peak value, then back to zero to complete a 360 electrical degree cycle. The positive and negative peaks are always equal in amplitude. The two qualities which characterize this type of wave are amplitude and frequency (f). Figure 8 shows these two characteristics. Amplitude refers to the peak value attained by the wave and corresponds to voltage. Frequency refers to the number of oscillations per second. For example, the sign wave in Figure 8(B) has completed 12 cycles in one second. Therefore, we would say that this wave has a frequency of 12 cycles per second or 12 Hertz. The time for one complete cycle is defined as the period (T). The relationship between the period and frequency is given by the equation:

$$f = 1 / T \text{ in Hertz}$$

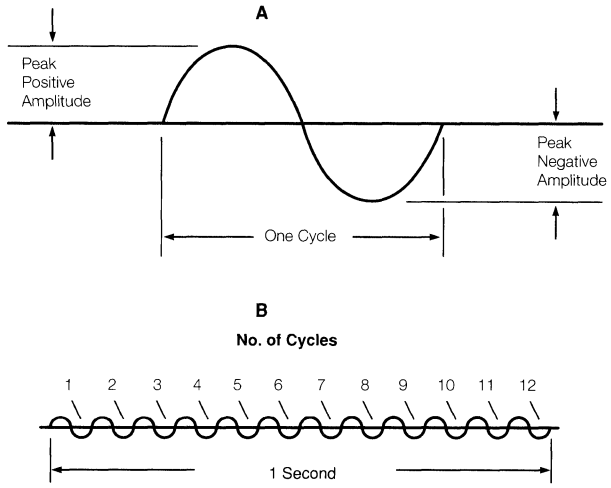


Figure 8

Typical Sine Wave Characteristics

The wave travels away from the generator at speeds approaching the speed of light. When an electromagnetic wave travels in a medium other than air or vacuum, the **speed** for the wave is reduced by a factor of the square root of the dielectric constant ε. The velocity (v) of the propagation of a signal is given by:

$$v = \frac{c}{\sqrt{\varepsilon}}$$

Where c is the speed of light, 3×10^8 m/sec or 1.18×10^{10} in/sec, and ε is the dielectric constant of the medium. (See Table 1 for dielectric constants of various materials)

The **wavelength** of a signal is given by the formula

$$\lambda = v/f = \frac{c}{\sqrt{\varepsilon} \times f\,(GHz)} \quad \frac{1.18 \times 10^{10}}{\sqrt{\varepsilon} \times f\,(GHz)} \text{ inches}$$

See Figure 9

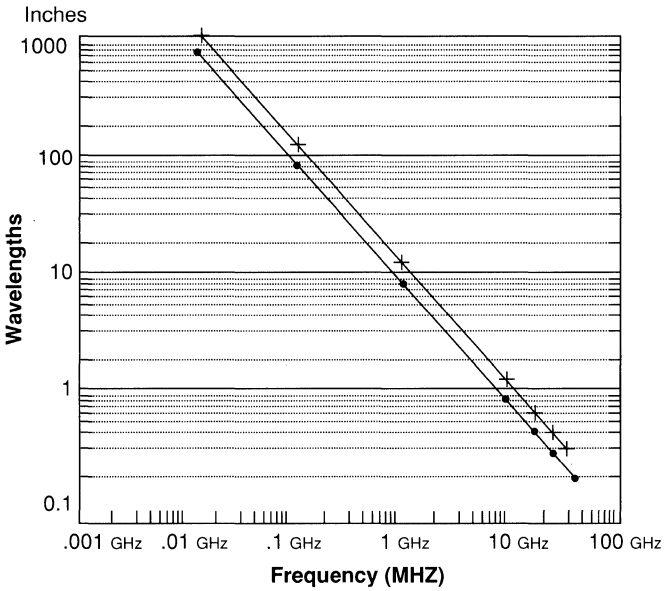


Figure 9

Table 1.
Properties of Insulating Materials

Dielectric Material	Dielectric Constant	Operating Temperature Range
TFE	2.03	-70 +250
Polyethylene	2.3	-60 +80
Nylon	4.6-4.0	-40 +120
TPX	2.12	-65 +85
Polypropylene	2.25	-40 +105
Acetal	3.7	-65 +85

Pulses

The sine wave is most often used for communication purposes where intelligence is imposed on the wave by a variation in amplitude (amplitude modulation, AM) or by a variation in frequency (frequency modulation, FM).

Pulses, on the other hand, are primarily used in computers and digital instrumentation. Since pulses are generally used for triggering purposes, the pulse rise/fall time, amplitude and width are the most important. Figure 10 shows a pulse and identifies these characteristics.

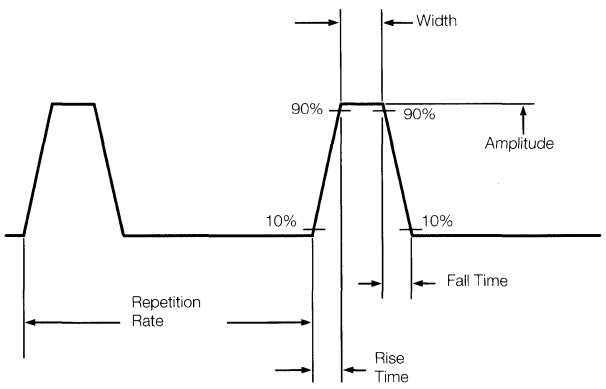


Figure 10

Pulse Characteristics

Notice that rise time is the time required for the pulse to rise from 10% to 90% of its amplitude - not from zero to maximum. Rise and fall time is perhaps the single most important characteristic of a pulse in today's high-speed digital equipment. Figure 11 shows that the faster the rise and fall time, the more pulses will fit in a given time frame.

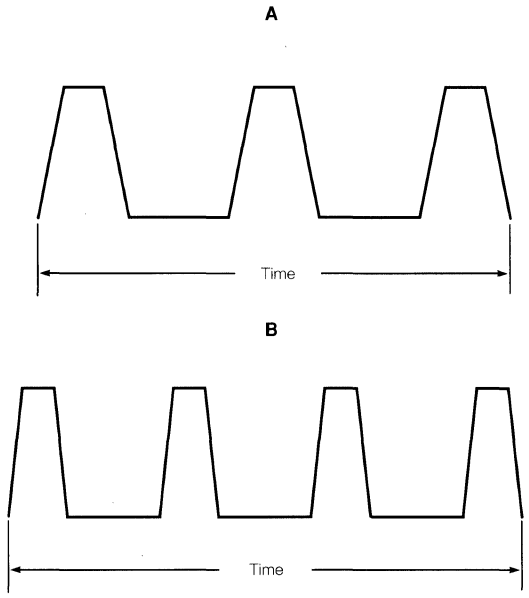


Figure 11

Pulse Rise and Fall Time

The bit rate for a system is the maximum rate of pulses per second that a system can process without causing data errors. The maximum performance can also be specified in terms of baud rate. The baud rate is defined as the number of characters (bytes) that are transmitted per second. Generally a character represents 10 bits (7 bits for the information, one parity bit, and two for start and stop, totalling 10).

Now that we know why fast pulses are required, the next problem is how to obtain faster rise times. A pulse is made up of a great number of different frequencies, and the more high frequencies a pulse contains, the faster will be its rise time and the flatter will be its peak. To better understand this, refer to Figure 12. At A, you will see a fundamental frequency (1), its third harmonic (3), and the resultant waveform (S3), which is a combination of 1 and 3. Although this does not yet resemble a square wave, you will note that the rise time is decreased, and a dip appears at the peak. At B of Figure 12, we have added the fifth harmonic. Rise time is further decreased, and the peak is beginning to flatten out. At C the seventh harmonic has been included, and the resultant wave S7 begins to resemble a square wave. As more high frequency harmonics are added to the waveform, it will more closely resemble a square wave, and the squarer it becomes, the faster will be the rise time.

Fast rise times and short pulse widths require high frequency components.

Two frequent causes of digital signal degradation can be (1) high capacitance of the transmission line and (2) impedence mismatches of connector transmission line or I/O devices. Selection of an impedance-matched connector on a digital line, especially if short cable assemblies are used, can be as important as connector selection for an RF modulated line. **Reflected pulses out of phase with the original pulse can cause false signals or high error rates in a digital system.**

Since pulses with fast rise times are necessary in high-speed computers, any circuit element which could reduce or attenuate high frequency response is undesirable.

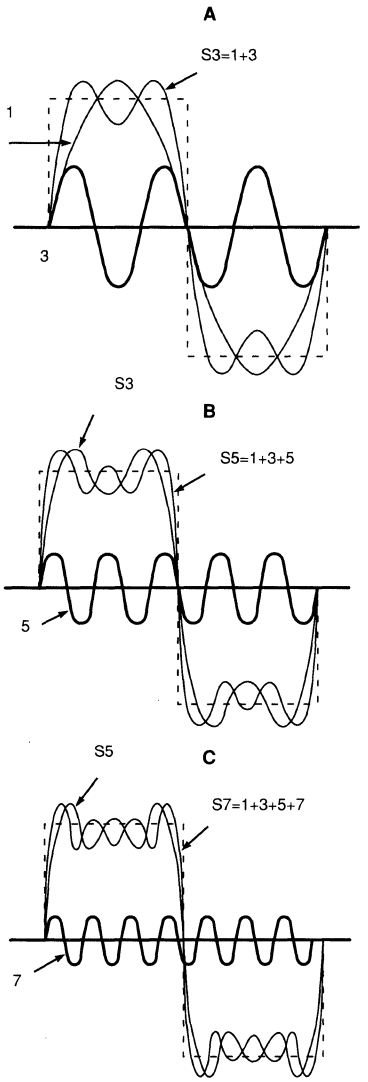


Figure 12

Development of a Square Wave

Signal Integrity and Propagation

To explain how to maintain signal integrity, it is necessary to review how the signal is configured in a cable and how it propagates. Ignoring digital signals for this discussion we will identify the issues that deal with the integrity of a sine wave. Consider a coaxial cable consisting of an inner conductor surrounded by a dielectric material and then an outer conductor (See Figure 13). The outer conductor may be a braid, a foil, or a solid metal.

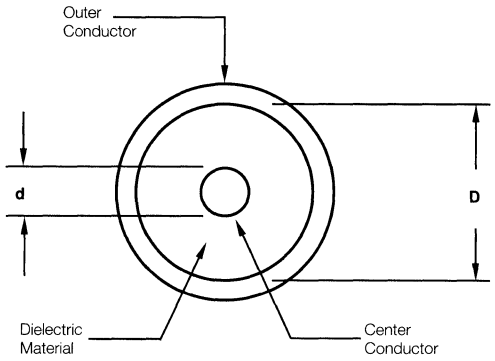


Figure 13

Diagram of a Cable

An electromagnetic wave traveling in a coaxial cable produces an electric and a magnetic field between the inner conductor and the outer conductor (Figure 14). The electric (E field) is radial and varies in time. An alternating current flows along the inner conductor and the outer conductor. An oscillating magnetic field (H field) circles the inner conductor.

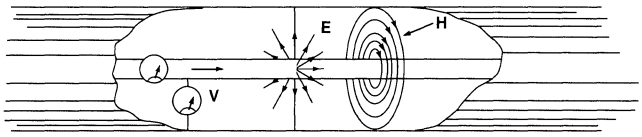


Figure 14

Electric field (E) and magnetic field (H) belonging to the principal mode in a coaxial line.

The alternating current on a conductor is not spread throughout the conductor but is strongest at the surface and decays exponentially at points further into the conductor. This is called the skin effect. At a frequency of 1MHz, three skin depths is 0.0078" (95% of the current is within three skin depths of the surface) and at 10GHz three skin depths is 0.00078". As a result, the current is on the outer surface of the inner conductor and the inner surface of the outer conductor over the entire range of interest for most RF systems. The dimensions and material beyond several skin depths have no effect on the wave; gold plated plastic will propagate as well as gold plated copper at sufficiently high frequencies.

Attenuation

A wave loses energy (attenuates) in several ways: (1) The resistance of the inner and outer conductors is small but can be significant over long lengths and will produce some heat. (2) The dielectric may be lossy; its resistance is high but not infinite, and some energy is lost. (3) Electromagnetic energy radiates at high frequencies; significant energy losses are caused by radiation of electromagnetic energy (the cable acts like an antenna). (4) Energy is reflected due to impedance mismatches. The combination of these four types of losses are referred to as the **insertion loss** of a transmission line system. Connectors have similar losses.

Characteristic Impedance

A parameter which defines the behavior of a cable, connector, or any propagating system is **Characteristic Impedance**, Zo. The characteristic impedance of a lossless cable is related to the inductance per unit length, L, and the capacitance per unit length, C, as follows:

$$Zo = \sqrt{L/C} \text{ in ohms}$$

The equivalent circuit of a transmission line is shown in Figure 15. R represents the conductor resistance for a unit length

For a coaxial cable the characteristic impedance is given by:

$$Zo = \frac{138}{\sqrt{\varepsilon}} \times \text{Log}_{10} \frac{D}{d} \text{ in ohms}$$

where D is the inner diameter of the outer conductor and d is the outer diameter of the inner conductor, respectively. Similar equations apply for other geometries such as two parallel wires.

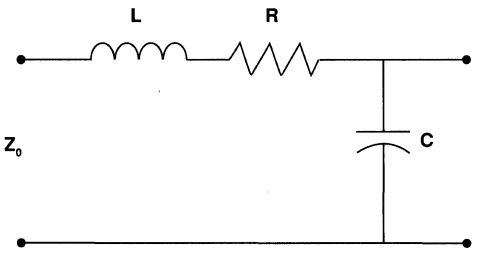


Figure 15

Typical Transmission Line Schematic

The maximum power is transferred between two systems if they have the same impedance. This is called impedance matching. However, impedance variations that are short compared to a wavelength can have a negligible effect on signal loss.

Standard impedances are 50 ohm, 75 ohm and 93-125 ohm. Most systems use 50 ohm because it is a compromise between maximum power transmission and minimum line loss. The telephone industry and the broadcast industry use 75 ohm for minimum line attenuation. The need for low capacitance instrumentation cable has produced the 93-125 ohm systems. The higher impedances are generally achieved by changing the conductor diameters and by modifying the dielectric material to add air.

Reflections

When the characteristic impedance changes in a transmission line system, part of an incident wave is reflected. The reflection coefficient can be calculated as:

$$\text{Reflection Coefficient} = \rho = \frac{V_i}{V_R} = \frac{Z_R - Z_O}{Z_R + Z_O}$$

Where V_i and Z_O are the incident voltage and impedance of the first media. V_R and Z_R represent the reflected voltage and impedance of the media that caused the reflection. The decibel loss due to reflection is given by:

$$\text{Return Loss} = 10 \text{ Log}_{10} \left(\frac{1}{1-\rho^2} \right) \text{ dB}$$

VSWR

The traditional way to determine the reflection coefficient is to measure the standing wave caused by the superposition of the incident wave and the reflected wave. Traditionally the voltage is measured at a series of points using a slotted line. The ratio of the maximum divided by the minimum is the Voltage Standing Wave Ratio (VSWR). The VSWR is infinite for total reflections because the minimum voltage is zero. If no reflection occurs the VSWR is 1.0. VSWR and reflection coefficient are related as follows:

$$VSWR = (1 + \rho)/(1 - \rho)$$

Most present instrumentation measures the reflection coefficient and calculates the VSWR.

Figure 16 represents the direct relationship between VSWR and its equivalent in return loss (expressed in dB).

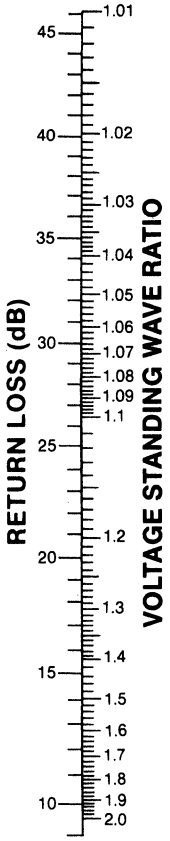


Figure 16

VSWR vs. Return Loss

Multiple Reflections

If there is a series of impedance changes, each one will have a reflection coefficient. The total reflection coefficient is the vector addition of each of the individual coefficients accounting for the distance between reflections and the reflection of any reflected waves. Even though the calculations are difficult, a total VSWR can still be measured.

Multiple reflections can produce a resonance phenomenon that is unique to wave theory. Properly understood some serious difficulties can be avoided. An example will make the point clear. Consider an electromagnetic wave with a wavelength of

4 inches traveling on a cable that changes from 50 ohms to 25 ohms. The reflection coefficient is -.33, which means that one third of the incident voltage is reflected toward the source. Assume that one inch (one quarter wavelength) down the cable the impedance changes back to 50 ohm. Again, one third of the wave is reflected, but without any phase shift. It travels back to the first interface where one third of this reflected wave is reflected back toward the second interface. Two thirds of the wave is transmitted through the interface and travels back to the source. Since the first (reflected) wave is shifted 180 degrees at the reflection, and the second (transmitted-reflected-transmitted) wave is shifted 180 degrees because it traveled the one inch separation twice, the two waves are in phase. The net result is that the VSWR is much larger because the length of the 25 ohm section was just the right length to cause a resonance. If the length of the 25 ohm section had been one half wavelength, the two waves would have interfered and the VSWR would be at a minimum.

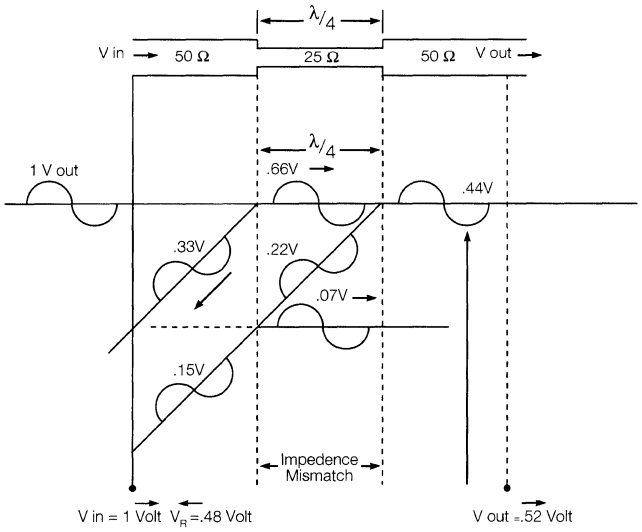


Figure 17

Multiple Wave Reflections
(Caused by Impedance Mismatch)

In summary, avoid cable lengths, printed circuit board paths, or connectors that are multiple of one quarter ($\lambda/4$, $3\lambda/4$, etc.) of the intended signal transmission wavelength. Coaxial cables, when manufactured, also have periodic variations in diameter that result in periodic changes in impedance (Zo), that can cause significant levels of reflected signal (high return loss) at specific frequencies.

Reflections of Digital Signals

The previous discussions dealing with attenuation, reflections and standing waves can apply to digital signals with some extra thought.

A single pulse can be thought of as a combination of high frequency sine waves. The maximum frequency component in a square wave pulse can be calculated by this equation:

$$f = 0.35/\text{rise time}$$

where

f = GHz when "t" is in nanoseconds

Attenuation of the frequencies necessary to support the short risetime will produce a slower rise and possibly prohibit the pulse from ever reaching the detector. This 'slurring' of the pulse is similar to the behavior of an RC circuit and the attenuation is sometimes called capacitive attenuation.

A series of pulses can demonstrate resonance. If a portion of a pulse is reflected at each interface, it is possible for them to come together and add up to form a new phantom pulse.
The critical frequency here is the bit rate. Think of a sine wave with a frequency the same as the bit rate; if it will resonate in the cable, the pulses will also. Extra pulses caused by resonance might easily result in an error signal from the receiving system requesting a retransmittal. The final result would be a communication system that is much slower than intended.

Cut-off Frequency

The cut-off frequency of a coaxial transmission line is the frequency at which modes of energy transmission, other than the "TEM" mode, can be generated.

$$fco = \frac{7.5}{\sqrt{\varepsilon}\,(D+d)} \text{ in GHz}$$

(D and d are measured in inches)

Types of Transmission Lines

Twin Lead transmission cable is generally used where impedance matching alone is important, since it provides only minimal shielding. Impedance values of 300 ohms and 600 ohms are common. Lower impedance values require closer spacing of the conductors and are not normally available in this type of cable. A typical application for twin lead cable is in antenna lead wire for television sets.

Twisted Pair is a variation of the twin lead type. It consists of two lengths of ordinary hookup wire twisted together. A twisted pair provides relatively constant impedance plus better magnetic shielding than twin lead cables. It is flexible, inexpensive, easy to terminate and is used extensively by the computer industry. However, it should not be used when maximum shielding is required.

Shielded Twisted Pair Cable is used to eliminate inductive and capacitive coupling. Twisting cancels out inductive coupling, while the shield eliminates capacitive coupling. Most applications for this cable are between equipment, racks and buildings.

Flexible (Braided) Coaxial Cable is by far the most common type of closed transmission line because of its flexibility. It is a coaxial cable, meaning that both the signal and the ground conductors are on the same center axis. The outer conductor is made from fine braided wire, hence the name "braided coaxial cable". This type of cable is used in practically all applications requiring complete shielding of the center conductor. The effectiveness of the shielding depends upon the weave of the braid and the number of braid layers. AMP manufacturers connectors for cable sizes ranging from less than 1/8 in. diameter, for low power applications of around 50 watts, to over 1/2 in. diameter for power of 850 watts at 100 MHz and voltages up to 5000. In addition to power handling capabilities, cables are available for high frequency applications, high and low temperature applications, severe environmental applications and many other specialized uses.

Triaxial Cable is used when higher "shielding" efficiency characteristics are required in applications similar to those using shielded twisted pair cable.

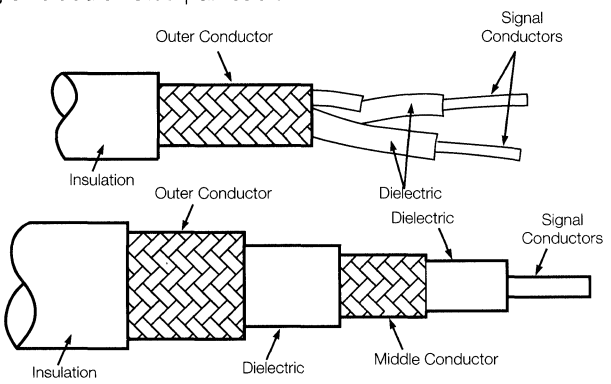


Figure 18

Twin Conductor and Triaxial Cable

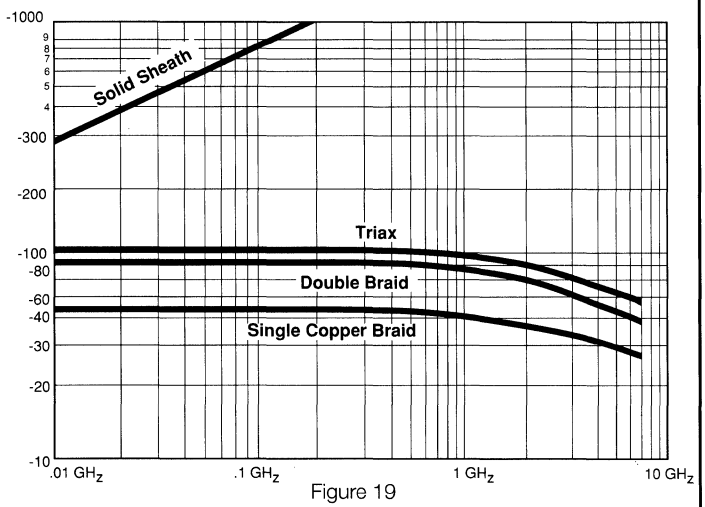


Figure 19

Shielding Efficiencies

Often you will hear the term "shielded cable". This is very similar to coaxial cable except the spacing between center conductor and shield is not carefully controlled during manufacture, resulting in non-constant impedance.

Semirigid Coaxial Cable uses a solid tubular outer conductor rather than the braided type, so that all the RF energy is contained within the cable. One of the drawbacks of braided cable is that the shielding is not 100% effective, especially at higher frequencies. This is because the braided construction can permit small amounts of short wavelength (high frequency) energy to radiate. Normally this does not present a problem; however, if a higher degree of shielding is required, semirigid coaxial cable is recommended. For applications using frequencies higher than 30 GHz a miniature semirigid cable is recommended. Various connectors are available from AMP to terminate these cables.

Ribbon Coaxial Cable is a relatively recent AMP innovation which combines the advantages of both ribbon cable and coaxial cable. AMP currently provides both the cable and the insulation displacing coaxial connector to terminate the cable. Each individual coaxial cable consists of the signal conductor, dielectric, a foil shield and a drain wire which is in continuous contact with the foil. The entire assembly is then covered with an outer insulating jacket. The unique manufacturing feature of this cable is the precise placement of the drain wires to permit gang stripping of the outer jacket and foil. The major advantage of this cable is the speed and ease with which it can be mass terminated with the AMP insulation displacement technique. They can also be separated into individual coaxial lines and terminated with standard coaxial connectors as required.

Connector Types

BNC connectors offer easy engagement and disengagement using bayonet couplings and overlapping dielectrics. They are most useful for frequently coupled and uncoupled RF connections with frequencies below 4 GHz. BNC connectors find applications in flexible networks, instrumentation, and computer peripheral interconnections.

TNC connectors have an interface similar to BNC except for a threaded coupling nut. The tighter fit provided by this screw-on connection improves interface control allowing connectors to operate up to 11 GHz. TNC connectors are excellent for mobile units or aircraft where top-notch performance is required under vibration.

SHV high voltage connectors also feature a bayonet coupling and have an extended overlapping dielectric to handle up to 5000 volts DC. They are recommended for high pulse EMP instrument applications.

SMA threaded connectors are widely used in avionics, radar and microwave communications and instrumentation. Connectors operate to at least 12.4 GHz on flexible coax cables, and up to 26.5 GHz on semi-rigid coax cables. Crimp-on SMA connectors that operate to 26.5 GHz are available.

Blind Mate connectors operate to 26.5 GHz for 3.5 mm and 40 GHz for 2.8 mm styles. These connectors offer easy slide-on connection and require less alignment between the cable and the equipment than other connectors with comparable band width. Blind Mate connectors are widely used as coaxial interconnects between plug-in modules and motherboards.

SMB connectors feature a snap coupling for fast connection. A self centering outer spring and overlapping dielectric allows easy snap-on and excellent performance even in moderate vibration. The SMB is smaller in size than the SMA and excellent where engineers are concerned about circuit miniaturization. Typical application is inter- or intra-board connection of RF or digital signals. Commercial 50 ohm versions operate to 4 GHz, and 75 ohm versions reach 2 GHz.

SMC connectors are similar to SMB versions, but use a screw-on connection for increased bandwidth (up to 10 GHz) and greater mechanical stability. These products are used primarily in military or high vibration environments.

UHF connectors are relatively inexpensive screw-on products. They have large impedance discontinuities that limit their range to about 500 MHz. Miniature versions, however, offer 2 GHz bandwidth. These products are used extensively in commercial communications and instrument applications.

N threaded connectors have an air dielectric interface, are low cost and are available in 50 and 75 ohm impedance types. These connectors operate to 11 GHz and are commonly used in cable-based local-area networks (LAN's) medium power transmitters and test equipment.

C connectors are bayonet-coupled versions of N connectors with overlapping dielectrics in the interface. They feature a substantial 11 GHz bandwidth; however, they are sensitive to mechanical vibration.

Triaxial, Twinaxial (Twin Coaxial) connectors find widespread use in computers, computer peripherals and control systems. The connectors accommodate balanced-mode transmission lines that are driven differentially for immunity to common-mode noise. Triaxial connectors feature bayonet coupling and accommodate several cable groups. Twinaxial connectors are available in a variety of soldered and crimped jacks and plugs. These include twin threaded, twin BNC and twin video versions.

Miscellaneous connector types include multiple-circuit connectors that use coaxial contacts in a pin-and-socket configuration, crimp-on ferrules that offer fast, reliable connections for attaching one or more ground taps to shielded wire and braided shield terminations for connecting cable shields to pc boards. Also available are network/premises interconnect products for Ethernet/IEEE 802.3 systems and coaxial taps for simple, dependable connections from transceiver to LAN without cutting the cable.

Cable-to-Connector Selection Guide

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

RF Coaxial Cable Groups

In the product section of this catalog the connector selection charts are arranged by cable range groups, indicated by a Selection Code. Various types and styles of connectors are listed for a particular code, showing all the options for that cable range.

The following Cable-to-Connector Selection Guide has been organized for the convenience of a customer trying to find connectors that match a specific coaxial cable. This guide will assist in identifying the selection code when the RG type or manufacturers' part number is known. A manufacturers' part number-to-selection code cross reference is also provided to assist in identifying the selection code for these cables. For cables not listed, consult AMP Incorporated for connector recommendations.

Connector Cable Range Selection Code	Dielectric Core Size		Core Material	Center Conductor O.D.		Nominal Impedance (ohms)	Number of Shields	RG Cable Numbers	Cable Manufacturer
	inch	[mm]		inch	[mm]				
A	.034	0.86	TFE	.012	0.3	50	1	178, 178A, 178B	–
	.034	0.86	TFE	.012	0.3	50	1	196, 196A	–
B	.060	1.52	PE	.020	0.51	70	1	174	–
	.060	1.52	TFE	.020	0.51	50	1	316, 188, 188A	–
B1	.063	1.6	TFE	.012	0.3	75	1	179, 179A, 179B	–
	.057	1.45	TFE	.012	0.3	70	1	161	–
	.060	1.52	TFE	.012	0.3	75	1	187, 187A	–
	.058	1.47	TFE	.012	0.3	75	1	–	Belden 9221
B2	.072	1.83	TFE	.011	0.28	–	1	–	IBM 5353914, Brand Rex T-209A
B3	.060	1.52	TFE	.020	0.51	50	2	–	Times RD 316
C	.096	2.44	PE	.028	0.71	50	1	–	Belden 9252
	0.96	2.44	PE	.030	0.76	50	1	122	–
C1	.102	2.59	TFE	.012	0.3	95	1	180, 180A, 180B	–
	.103	2.62	TFE	.012	0.3	95	1	195, 195A	–
C2	.102	2.59	PE/TFE	.037	0.94	50	1	–	Belden 9907, 89907
C3	.100	2.54	PE	.017	0.43	75	1	–	Belden 8218
C4	.110	2.79	TFE	.025	0.64	–	1	–	Raychem 7524A1312
D	.116	2.95	PE	.035	0.89	50	1	58, 58A, 58B, 58C	–
D1	.116	2.95	TFE	.039	0.99	50	1	141, 141A	–
	.116	2.95	TFE	.039	0.99	50	1	303	–
D2	.116	2.95	TFE	.032	0.81	50	1	–	Belden 88240, Berk-Tek BTDC-58
E	.116	2.95	PE	.035	0.89	50	2	223	–
	.116	2.95	PE	.032	0.81	50	2	55, 55A, 55B	–
E1*	.116	2.95	TFE	.039	0.99	50	2	142, 142A, 142B, 400	–
G	.135	3.43	TFE	.025	0.64	50	1	124 (use RG-140)	–
	.146	3.71	Foam PE	.025	0.64	75	1	–	Belden 9291, 9209
	.146	3.71	TFE	.025	0.64	73	1	140	–
	.146	3.71	TFE	.025	0.64	93	1	210	–
	.146	3.71	PE/Air	.025	0.64	93	1	62, 62A, 62B	–
	.146	3.71	PE	.025	0.64	75	1	59, 59A, 59B	–
	.146	3.71	PE/Air	.025	0.64	93	1	–	Belden 9268
G1	.135	3.43	TFE	.025	0.64	75	1	–	Belden 88241, Hi-Temp 62A, Times PL-62, Berk-Tek BTDC-59, BTDC-62
	.146	3.71	TFE	.025	0.64	75	1	302	–

*Can use D group connectors if not weatherproof.

Cable-to-Connector Selection Guide

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Connector Cable Range Selection Code	Dielectric Core Size inch	Dielectric Core Size [mm]	Core Material	Center Conductor O.D. inch	Center Conductor O.D. [mm]	Nominal Impedance (ohms)	Number of Shields	RG Cable Numbers	Cable Manufacturer
G2	.146	3.71	Foam TFE	.032	0.81	75	1	–	Hi-Temp 59, Times PL-59, PLF-59 (20 AWG C.C.)
G3	.146	3.71	PE	.025	0.64	75	2	Double Shield RG-59	–
G4	.146	3.71	Foam PE	.032	0.81	75	1	–	Belden 8212, 9104, 9112, 9240
	.146	3.71	Foam PE	.031	0.79	75	1	–	Belden 9167, 9259, 9266
	.146	3.71	Foam PE	.031	0.79	75	1	–	Times FM-59
G5	.146	3.71	Foam PE	.032	0.81	75	1	–	Belden 9145
H	.146	3.71	PE/Air	.025	0.64	93	2	71, 71A, 71B	–
J	.185	4.7	TFE	.059	1.5	50	2	304	
J1	.180	4.57	Foam PE	.037	0.94	75	1	–	Belden 9248, 8228
K	.185	4.7	PE	.028	0.71	75	2	6, 6A	–
K2	.200	5.08	PE	.032	0.81	75	2	–	Belden 8281, 9141, 9231 Western Electric 724, 728, 3049
K3	.180	4.57	PE	.037	0.94	75	2	–	Belden 9114, 9290
L	.250	6.35	PTFE	.084	2.13	50	2	115A	–
	.250	6.35	PTFE	.084	2.13	50	2	–	Belden 89880
	.250	6.35	Foam PE	.085	2.16	50	2	–	Belden 9880
M	.285	7.24	PE	.088	2.24	50	1	8,8A, 213	–
M1	.285	7.24	PE	.047	1.19	75	1	11, 11A	–
M2	.285	7.24	Foam PE	.103	2.62	50	1	–	Belden 8292, 9914
	.285	7.24	Foam PE	.103	2.62	50	1	–	Times FM-8
M3	.285	7.24	Foam TFE	.064	1.63	75	1	393	Belden 89292, Alpha 9847
	.285	7.24	Foam PE	.064	1.63	75	1	–	Belden 8213, 9292
M4	.250	6.35	PTFE	.093	2.36	50	2	225	–
M5	.285	7.24	Foam PE	.108	2.74	50	1	–	Belden 8214
N	.285	7.24	PE	.088	2.24	50	2	9, 9A, 9B, 214	–
O	.118	3.00	TFE	.036	0.91	50	Tube	402 Semi-Rigid/.141[3.58]	–
P	.066	1.68	TFE			50	Tube	405 Semi-Rigid/.086[2.18]	–

Manufacturers' Part Number-to-Selection Code Cross Reference

Manufacturers' Part No.	Connector Cable Range Selection Code
Alpha 8947	M3
Belden 8212	G4
Belden 8213	M3
Belden 8214	M5
Belden 8218	C3
Belden 8228	J1
Belden 88240	D2
Belden 88241	G1
Belden 8281	K2
Belden 8292	M2
Belden 9104	G4
Belden 9112	G4
Belden 9114	K3

Manufacturers' Part No.	Connector Cable Range Selection Code
Belden 9141	K2
Belden 9145	G5
Belden 9167	G4
Belden 9209	G
Belden 9221	B1
Belden 9231	K2
Belden 9240	G4
Belden 9246	E1
Belden 9248	J1
Belden 9252	C
Belden 9259	G4
Belden 9266	G4
Belden 9268	G

Manufacturers' Part No.	Connector Cable Range Selection Code
Belden 9290	K3
Belden 9291	G
Belden 9292	M3
Belden 89292	M3
Belden 9880	L
Belden 89880	L
Belden 9907	C2
Belden 89907	C2
Belden 9914	M2
Berk-Tek BTDC-58	D2
Berk-Tek BTDC-59	G1
Hi-Temp 59	G2
Hi-Temp 62A	G1

Manufacturers' Part No.	Connector Cable Range Selection Code
Raychem 7524A1312	C4
Times FM-8	M2
Times FM59	G4
Times PL-59	G2
Times PLF-59 (20 AWG C.C.)	G2
Times PL-62	G1
Times RD-316	B3
Berk-Tek BTDC-62	G1
Brand Rex T-209A	B2
IBM 5353914	B2

Connector Selection Guide

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Product	Nominal Impedance Ohms	Maximum Frequency GHz	Temperature Rating C	Cable Retention lb	Cable Retention [N]	Coupling Mechanism	Maximum Peak Voltage	Durability Cycle Test Results	Connector Body Finish	Product Specification	MIL-C39012 Qualification	Page No.
BNC Single Crimp	50	2.5	-65° to +165°	60 (RG-58C/U)	266.9	Bayonet	500	500	Silver or Nickel	108-12002	–	4020-4030
BNC Dual Crimp	50	4	-65° to +165°	60 (RG-58C/U)	266.9	Bayonet	500	500	Silver or Nickel	108-12020	Category B	4020-4030
BNC Dual Crimp Commercial	50	4	-55° to +85°	60 (RG-58C/U)	266.9	Bayonet	500	500	Nickel	108-12044	–	4020-4030
BNC Hex Crimp	50	4	-55° to +85°	60 (RG-58C/U)	266.9	Bayonet	500	500	Nickel	108-12044	–	4020-4030
BNC Field Serviceable	50	4	-65° to +165°	40 (RG-142B/U)	177.9	Bayonet	500	500	Nickel	108-12075	Category A	4024-4031
BNC 75 Ohm	75	2	-65° to +85°	60 (RG-59B/U)	266.9	Bayonet	500	500	Nickel	108-12095	–	4043-4046
TNC Single Crimp	50	7	-65° to +165°	60 (RG-58C/U)	266.9	Threaded	500	500	Silver	108-12003	–	4050-4057
TNC Dual Crimp	50	11	-65° to +165°	60 (RG-58C/U)	266.9	Threaded	500	500	Silver or Nickel	108-12001	Category B	4050-4057
TNC Commercial	50	7	-55° to +85°	60 (RG-58C/U)	266.9	Threaded	500	500	Nickel	108-12046	–	4050-4052
TNC 75 Ohm	75	2	-55° to +85°	60 (RG-59B/U)	266.9	Threaded	500	500	Nickel		–	4063
N Mil Type	50	11	-65° to +165°	90 (RG-214/U)	400.3	Threaded	1000	500	Silver or Nickel	108-12019	–	4065-4074
N Commercial	50	11	-65° to +85°	90 (RG-214/U)	400.3	Threaded	1000	500	Nickel	108-12056	–	4065-4067
C	50	11	-65° to +165°	90 (RG-214/U)	400.3	Bayonet	1000	500	Silver or Nickel	108-12005	–	4076-4077
SHV	Non-constant	–	-65° to +200°	60 (RG-58C/U)	266.9	Bayonet	5000	500	Silver or Nickel	108-12012	–	4079-4080
UHF Miniature	Non-constant	2	-55° to +85°	40 (RG-58/U)	177.9	Threaded	335	500	Nickel	108-12034	–	4083-4085
UHF Standard	Non-constant	.5	-55° to +85°	75 (RG-59B/U)	333.6	Threaded	500	500	Nickel	108-12016	–	4086-4087
SMA Semi-Rigid 18 GHz	50	18	-65° to +105°	60 (RG-402/U)	266.9	Threaded	1000	500	Gold or Passivated Stainless Steel	108-12055	Category C	4090-4094
SMA Semi-Rigid 26.5 GHz	50	26.5	-65° to +105°	60 (RG-402/U)	266.9	Threaded	1000	500	Passivated Stainless Steel	108-12089	–	4090-4094
SMA Semi-Rigid Solder	50	26.5	-65° to +105°	60 (RG-402/U)	266.9	Threaded	1000	500	Passivated Stainless Steel		–	4095
SMA Flexible	50	12.4	-65° to +165°	40 (RG-58C/U)	177.9	Threaded	335	500	Passivated Stainless Steel	108-12027	–	4096-4098
Blind Mate 3.5 mm	50	26.5	-65° to +105°	60 (RG-402/U)	266.9	Slide-On	335	500	Passivated Stainless Steel	108-12106	–	4104-4105
Blind Mate 2.8 mm	50	26.5	-65° to +105°	30 (RG-405/U)	133.4	Slide-On	–	500	Gold		–	4106-4107
SMB	50	4	-65° to +85°	20 (RG-316/U)	89	Snap-On	335	500	Nickel	108-12058	–	4110-4112
SMC	50	10	-65° to +85°	20 (RG-174/U)	89	Threaded	335	500	Gold	108-12030	–	4114-4115
Miniature Threaded	50	1	-55° to +85°	20 (RG-174/)	89	Threaded	335	200	Silver	108-12013	–	4117
Twin BNC	Non-constant	–	-55° to +85°	25 (RG-108/U)	111.2	Bayonet	500	200	Silver or Nickel	108-12006	–	4119-4121
Twin-Ax	Non-constant	–	-40° to +80°	75 (AWM 2498)	333.6	Threaded	500	250	Nickel	108-12050	–	4123-4125
Twin Threaded	Non-constant	–	-55° to +85°	75 (RG-108/U)	333.6	Threaded	335	200	Silver or Nickel	108-12015	–	4128-4129

*Consult AMP Incorporated for Product Specification.

BNC Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Product Facts

- Single crimp connectors offer one crimping operation for fast application
- Low VSWR
- Fully intermateable with comparable BNC UG/U connectors
- Bayonet lock coupling for quick connect/disconnect
- Low cost, light weight commercial type available
- Tarnish resistant nickel finish available
- Field serviceable (Category A) connectors qualified to MIL-C-39012
- Field replaceable (Category C) plugs with captivated center contact
- Field replaceable plugs can be terminated with industry standard tooling
- Twist-on connectors require no special tooling for application to the cable
- Choice of different dielectrics
- Various connectors available in 50 and 75 ohm versions

Related Product Data:

Connector Selection - Pages 4004-4006

Theory and Application - Pages 4007-4013

Cable-to-Connector Selection Guide - Pages 4014 & 4015

Connector Selection Guide - Page 4016

Performance Characteristics - Page 4018

Material Specifications -Page 4019

Tooling - Pages 4157-4159

Appendix - Pages 4160-4162

Technical Documents - Page 4163

Military Category - All crimp connectors are Category B Type (AMP Crimp Tooling), unless otherwise noted under the "Military No. and/or Comments" column in the connector specifications chart.

Packaging - All Mil Type connectors are packaged individually and all Commercial connectors are bulk packaged unless otherwise noted under the "Military No. and/or Comments" column in the connector specifications chart.

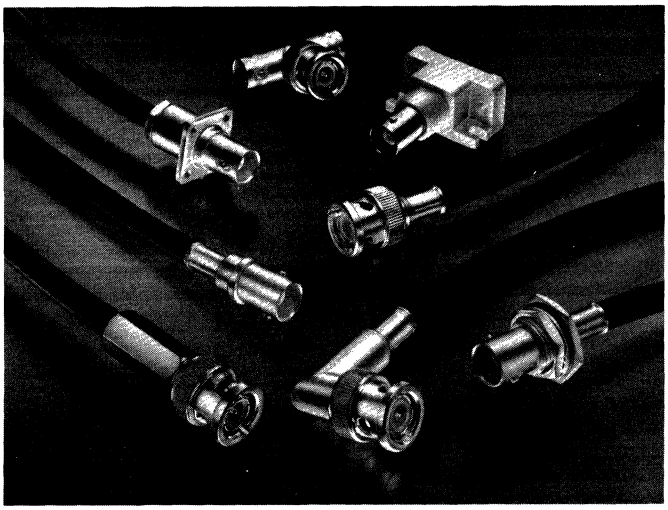


Table of Contents

The AMP BNC RF connector family with bayonet locking coupling provides highly reliable, quick connect /disconnect coaxial connections. AMP's exclusive single and dual crimp terminations insure positive insulation grip and require absolutely no soldering, providing terminations at the lowest overall applied cost.

Available in both 50 and 75 ohm versions, these connectors feature numerous styles including cable plugs and jacks, adapters and printed circuit board connectors. In addition to a variety of crimp type terminations, connectors are furnished in field replaceable and twist-on styles. These connectors accept a wide range of coaxial cables and are intermateable with industry standard connectors designed to MIL-C 39012 specifications.

Single crimp connectors provide reduced application time and lower applied costs. This is accomplished by using AMP one-crimp tooling which simultaneously terminates the inner conductor, outer braid and cable support with one controlled stroke.

When applications require military approved connectors, note that many of the dual crimp connectors meet and /or exceed all the requirements in specification MIL-C-39012, Class II, Category B, and carry the appropriate military designation number.

AMP can also supply low cost alternatives with an extensive commercial type product line. These connectors are designed around the mil-specifications, but utilize low-cost materials, offering comparable mechanical and electrical performance.

BNC Connector Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Characteristics	Single Crimp (Mil Type)	Category B Dual Crimp (Mil Type)	Category A (Mil Type)	Commercial Dual Crimp & Hex Crimp	Commercial Dual Crimp 75 Ohms	Commercial Pc Board 50 & 75 Ohms	Commercial Solder 50 Ohm Jacks
Electrical							
Impedance, Nom. (Ohms)	50	50	50	50	75	50 & 75	50 & 75
Working Voltage (Volts RMS)	500	500	500	500	500	500	500
Contact Resistance (Milliohms)	Inner: 1.5 Outer: 0.3	Inner: 1.5 Outer: 0.2	Inner: 1.5 Outer: 0.2	Inner: 2.0 Outer: 1.0	Inner: 2.0 Outer: 2.0	Inner: 6/1.5 Outer: 3/0.2	Inner: 2.75 Outer: 1.0
Initial Insulation Resistance (Megohms)	5000	5000	5000	5000	5000	5000	5000
Dielectric Withstanding Voltage (VAC)	1500	1500	1500	1500	1500	1500	1500
Corona Level at 70,000 ft. (Picocoulombs)	5 max.	5 max.	5 max.	5 max.	5 max.	–	5 max.
RF Leakage, Max. (dB)	–	- 55 at 2-3 GHz	- 55 at 2-3 GHz	- 55 at 2-3 GHz	- 55 at 1-2 GHz	–	–
RF Insertion Loss, Max. (dB)	–	0.2 at 3 GHz	0.2 at 3 GHz	0.2 at 3 GHz	0.15 at - 2 GHz	–	–
Frequency Range (GHz)	0-2.5	0-4	0-4	0-4	0-2	0-4 and 0-2	0-4
VSWR in Frequency Range Max.	1.35	1.30	1.30	1.30	1.30	–	–
Mechanical							
Force to Engage/ Couple, in. lbs. [N • m]	3/2.5 [0.3/0.28]	3/2.5 [0.3/0.28]	3/2.5 [0.3/0.28]	6/6.0 [0.7/0.68]	6/6.0 [0.7/0.68]	–	–
Coupling Nut Retention, Min. lbs. [N]	100 [444.8]	100 [444.8]	100 [444.8]	60 [266.9]	60 [266.9]	–	–
Cable Retention, lbs. [N]	60 [266.9] (RG58C/U)	60 [266.9] (RG58C/U)	40 [177.9] (RG58C/U)	60 [266.9] (RG58C/U)	60 [266.9] (RG58C/U)	60 [266.9] (PCB Ret)	–
Durability (Cycles) (Test Results)	500	500	500	500	500	500	500
Jam Nut Mounting Torque, Max. (in. lbs.) [N • m]	25 [2.8]	25 [2.8]	25 [2.8]	25 [2.8]	25 [2.8]	25 [2.8]	25 [2.8]
Environmental							
Temperature Range, Operating (C°)	-65 to +85	-65 to +165[1] -55 to +85[2]	-65 to +165	-55 to +85	- 55 to +85	-55 to +85	-65 to +165
Vibration	MIL-STD-202 Method 204 Cond. B	MIL-STD-202 Method 204 Cond. B	MIL-STD-202 Method 204 Cond B	MIL-STD-1344 Method 2005 Cond. III	MIL-STD-202 Method 204 Cond. B	MIL-STD-202 Method 201A	MIL-STD-202 Method 204 Cond. B
Physical Shock	MIL-STD-202 Method 213 Cond. G, 50 G's	MIL-STD-202 Method 213 Cond. G, 50 G's	MIL-STD-202 Method 213 Cond. D, 50 G's	MIL-STD-1344 Method 2004 Cond. G, 100 G's	MIL-STD-202 Method 213 Cond. I, 100 G's	MIL-STD-202 Method 213 Cond. I or A, 50 G's	MIL-STD-202 Method 213 Cond. I, 100 G's
Thermal Shock	MIL-STD-202 Method 107	MIL-STD-202 Method 107	MIL-STD-202 Method 107	MIL-STD-1344 Method 1003 Cond. A	MIL-STD-202 Method 107	MIL-STD-202 Method 107	MIL-STD-202 Method 107
Moisture Resistance	MIL-STD-202 Method 106	MIL-STD-202 Method 106	MIL-STD-202 Method 106	MIL-STD-1344 Method 1002 Type II	MIL-STD-202 Method 106	MIL-STD-202 Method 106	MIL-STD-202 Method 106
Salt Spray	MIL-STD-202 Method 101 Cond. B	MIL-STD-202 Method 101 Cond. B	MIL-STD-202 Method 101 Cond. B	MIL-STD-1344 Method 1001 Cond. B	MIL-STD-202 Method 101 Cond. B	MIL-STD-202 Method 101 Cond. B	MIL-STD-202 Method 101 Cond. B
Product Specification	108-12002	108-12020	108-12075	108-12044 108-12047	108-12095	108-12078 108-12103	108-12079

[1]Assembled to cable with polytetrafluorethylene dielectric.
[2]Assembled to cable with polyethylene dielectric.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Connector Component	Single Crimp (Mil Type)	Category B & C Dual Crimp (Mil Type)	Category A (Mil Type)	Commercial Dual Crimp Hex Crimp & Terminators	Commercial PCB Solder	Commercial PCB Press Fit	Commercial Solder Jacks	Adapters
Connector Material								
Collar	Brass QQ-B-626	Brass QQ-B-626	Brass QQ-B-626	Brass QQ-B-626 Zinc QQ-Z-363	–	–	–	Brass QQ-B-626
Outer Contact (Plug)	Brass QQ-B-626 Beryl. Copper QQ-C-530	Phos. Bronze QQ-B-750	Phos. Bronze QQ-B-750	Brass MIL-C-21768	–	–	–	Brass QQ-B-626 Beryl. Copper QQ-C-530
Shell (Jack)	Brass QQ-B-626	Brass QQ-B-626	Brass QQ-B-626	Zinc QQ-Z-363	Zinc QQ-Z-363	Zinc QQ-Z-363	Zinc QQ-Z-363 Brass QQ-B-626	Brass QQ-B-626
Dielectric	TEFLON MIL-P-19468 Polypropylene, Gen. Purpose	TEFLON MIL-P-19468	TEFLON MIL-P-19468	Polyethylene, Polypropylene, Polymethylpentene Gen. Purpose	Polypropylene, Gen. Purpose[1]	TEFLON MIL-P-19468	TEFLON MIL-P-19468 Polyester PBT MIL-P-24519	TEFLON MIL-P-19468 Polypropylene, Gen. Purpose
Center Contact (Plug)	Brass QQ-B-626	Brass QQ-B-626	Brass QQ-B-626	Brass QQ-B-626	–	–	–	Brass QQ-B-626 Beryl. Copper QQ-C-530
Center Contact (Jack)	Beryl. Copper ASTM-B-643 QQ-C-530	Beryl. Copper ASTM-B-643 QQ-C-530	Beryl. Copper QQ-C-530	Beryl. Copper QQ-C-530	Phos. Bronze QQ-B-750	Beryl. Copper QQ-C-530	Phos. Bronze QQ-B-570 Beryl. Copper QQ-C-530	Phos. Bronze QQ-B-570 Beryl. Copper QQ-C-530
Gasket	Silicon Rubber QQ-R-765	Silicon Rubber QQ-R-765	Silicon Rubber QQ-R-765	Silicon Rubber QQ-R-765	–	–	–	Silicon Rubber QQ-R-765
Ferrule	Copper QQ-C-576	Copper QQ-C-576	–	Copper QQ-C-576	–	–	–	–
Connector Primary Finishes[2]								
Collar	Silver QQ-S-365 Bright Nickel QQ-N-290	Silver QQ-S-365 Bright Nickel QQ-N-290	Silver QQ-S-365 Bright Nickel QQ-N-290	Bright Nickel QQ-N-290	–	–	–	Silver QQ-S-365 Bright Nickel QQ-N-290
Outer Contacts (Plug & Jack)	QQ-S-365 Gold	Silver QQ-S-365 Bright Nickel QQ-N-290	Silver QQ-S-365 Bright Nickel QQ-N-290	Bright or Matte Nickel QQ-N-290	Bright Nickel QQ-N-290	Bright Nickel QQ-N-290	Bright Nickel QQ-N-290	Silver QQ-S-365 Bright Nickel QQ-N-290
Center Contacts (Plug & Jack)	MIL-G-45204 Silver	Gold MIL-G-45204	Gold MIL-G-45204	Tin-Lead ASTM-B-545 Silver, QQ-S-365 Gold, MIL-G-45204	Tin-Lead ASTM-B-545 Silver, QQ-S-365 Gold, MIL-G-45204	Gold MIL-G-45204	Tin-Lead ASTM-B-545 Silver, QQ-S-365 Gold, MIL-G-45204	Silver QQ-S-365 Gold MIL-G-45204
Ferrule[3]	QQ-S-365	Silver QQ-S-365 Tin-Lead ASTM-B-545	–	Tin-Lead ASTM-B-545	–	–	–	–

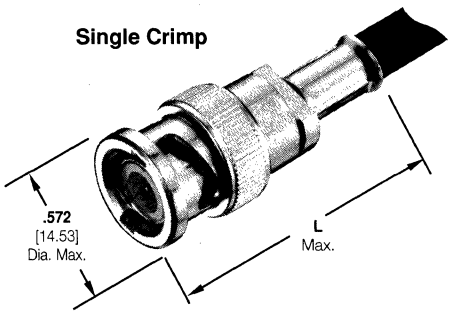
[1] Several pc board connectors have an outer polyester PBT insulator per MIL-P-24519.
[2] If more than one finish is listed, refer to individual catalog page(s) or customer drawings for exact specification.
[3] Ferrules with tin-lead finish are used with nickel plated outer contacts.

BNC Connectors, 50 Ohm

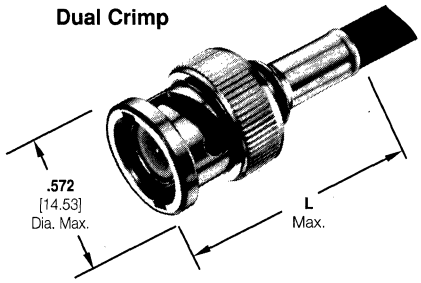
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Plugs, Crimp

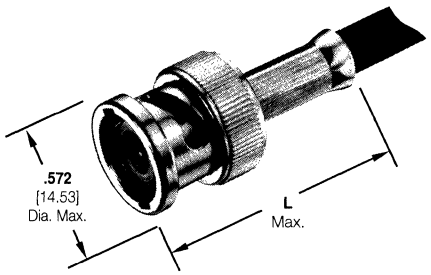
Single Crimp



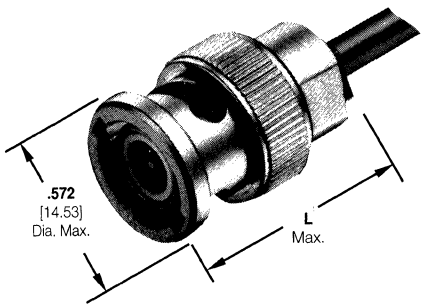
Dual Crimp



Hex Crimp



Semi-Rigid Cable



Connector Cable Range Selection Code†	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
A	178, 178A, 178B 196, 196A	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**1-225587-9**	**1.312** 33.33	69245-4	–	69471
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**330876**	**1.312** 33.33	69245-4	–	69471
B	174 188, 188A 316	Hex Crimp	Gold	Nickel	TEFLON	Commercial	Category C	**222188-5**	**1.130** 28.71	–	–	–
		Hex Crimp	Gold	Nickel	Polyethylene	Commercial	–	**2-221128-1**	**1.320** 33.53	–	58436-3	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225395-7**	**1.188** 30.18	220009-1	–	220026-1
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**1-227079-6**	**1.090** 27.69	220009-5	–	220217-3
		Dual Crimp	Silver	Nickel	Polypropylene	Commercial	–	**1-227079-5**	**1.090** 27.69	220009-5	–	220217-3
		Single Crimp	Gold	Silver	Polypropylene	Mil Type	–	**2-330058-1**	**1.312** 33.33	69245-1	–	69422
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-330061-1**	**1.312** 33.33	69245-1	–	69422
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-331350-4**	**1.188** 30.18	220009-1	–	220026-1
B1	179, 179A, 179B,161 187, 187A Belden 9221	Hex Crimp	Gold	Nickel	Polyethylene	Commercial	–	**2-221128-3**	**1.320** 33.53	–	58436-3	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225395-8**	**1.188** 30.18	220009-1	–	220026-1
		Dual Crimp	Silver	Nickel	Polypropylene	Commercial	–	**2-227079-1**	**1.090** 27.69	220009-5	–	220217-3
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**2-227079-2**	**1.090** 27.69	220009-5	–	220217-3
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-329446-1**	**1.312** 33.33	69245-1	–	69408
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-331350-5**	**1.188** 30.18	220009-1	–	220026-1
C	Belden 9252 122	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**6-331350-7**	**1.156** 29.37	69477-2	–	69669-2

† Refer to pages 4014 and 4015 for code specifications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Plugs, Crimp (Continued)

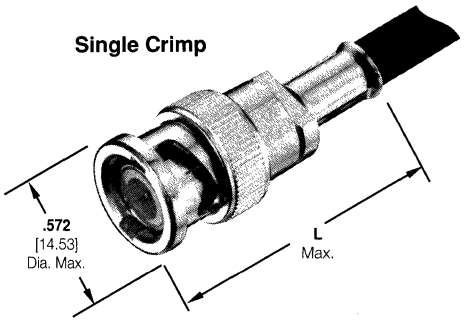
Connector Cable Range Selection Code†	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
C1	180, 180A, 180B 195, 195A	Hex Crimp	Gold	Nickel	Polyethylene	Commercial	–	**2-221128-5**	**1.320** 33.53	–	58436-3	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225395-9**	**1.395** 35.44	69477-2	–	69669-2
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-329447-1**	**1.312** 33.33	69246-1	–	69423
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-331350-6**	**1.395** 35.44	69477-2	–	69669-2
C2	Belden 9907, 89907	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**6-227079-7**	**1.090** 27.69	220187-1	58435-1[1]	220217-1
C3	Belden 8218	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**1-225395-0**	**1.188** 30.18	69477-2	–	69669-2
		Dual Crimip	Gold	Nickel	Polypropylene	Commercial	–	**1-227079-9**	**1.090** 27.69	69477-4	58330-1	–
		Dual Crimp	Silver	Nickel	Polypropylene	Commercial	–	**1-227079-8**	**1.090** 27.69	69477-4	58330-1	–
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-331350-2**	**1.188** 30.18	69477-2	–	69669-2
D	58, 58A, 58B, 58C	Hex Crimp	Gold	Nickel	Polyethylene	Commercial	Bulk Packaged	**221128-1**	**1.320** 33.53	–	58436-1[2]	–
		Hex Crimp	Gold	Nickel	Polyethylene	Commercial	–	**1-221128-0**	**1.320** 33.53	–	58436-1[2]	–
		Hex Crimp	Silver	Nickel	Polyethylene	Commercial	–	**221128-4**	**1.320** 33.53	–	58436-1[2]	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225395-1**	**1.328** 33.74	69478-1	220189-3	69727
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**227079-5**	**1.090** 27.69	220187-1	58435-1[1]	220217-1
		Dual Crimp	Silver	Nickel	Polypropylene	Commercial	–	**227079-9**	**1.090** 27.69	220187-1	58435-1[1]	220217-1
		Single Crimp	Gold	Silver	Polypropylene	Mil Type	–	**2-329082-1**	**1.312** 33.33	69140-1	–	69223-1
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-329444-1**	**1.312** 33.33	69140-1	–	69223-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	16B0004	**2-331350-1**	**1.328** 33.74	69478-1	220189-3	69727
D, D1	58, 58A, 58B, 58C, 141, 141A,	Hex Crimp	Gold	Nickel	TEFLON	Commercial	Category C	**222188-1**	**1.130** 28.71	–	–	–
D, D2	58, Belden 88240	Hex Crimp	Gold	Nickel	Polyethylene	Commercial	–	**1-221128-0**	**1.320** 33.53	–	58436-1[2]	–
D1	141, 141A 303	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225395-5**	**1.188** 30.18	69478-1	220189-3	69727
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-330358-1**	**1.312** 33.33	69140-1	–	–
D1, C2	141, Belden 9907, 89907	Hex Crimp	Gold	Nickel	Polyethylene	Commercial	–	**2-221128-7**	**1.320** 33.53	–	58436-1[2]	–
D2	Belden 88240 Berk-Tek BTDC-58,	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**4-227079-3**	**1.312** 33.33	220187-1	58435-1[1]	220217-1
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**4-225395-2**	**1.312** 33.33	69478-1	220189-3	69727
E	223 55, 55A, 55B	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225395-3**	**1.718** 43.64	69478-1	220189-3	69727
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**227079-6**	**1.090** 27.69	220187-1	58435-1[1]	220217-1
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-329444-2**	**1.312** 33.33	69140-1	–	69424
		Single Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**2-330884-3**	**1.546** 39.27	69376-3	–	69815
E, E1	223, 55, 55A, 55B,142, 142A 142B, 400 Belden 9246	Hex Crimp	Gold	Nickel	TEFLON	Commercial	Category C	**222188-2**	**1.130** 28.71	–	–	–
E1	142, 142A 142B, 400	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225395-6**	**1.188** 30.18	69478-1	220189-3	69727
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**6-227079-1**	**1.090** 27.69	220187-1	58435-1[1]	220217-1
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-330358-2**	**1.312** 33.33	69331-1	–	69429-1
		Single Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**2-330884-2**	**1.546** 39.27	69376	–	69493-1
		Dual Crimp	Silver	Silver	TEFLON	Mil Type	16B0007	**2-331350-9**	**1.188** 30.18	69478-1	220189-3	69727

† Refer to pages 4014 and 4015 for code specifications.

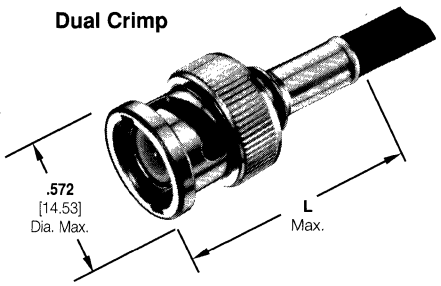
[1] Order AMP PRO-CRIMPER Coaxial "O" Crimp Hand Tool assembly 58433-1, which includes dies 58435-1
[2] Order AMP PRO-CRIMPER Coaxial Hex Crimp Hand Tool assembly 58433-2, which includes dies 58436-1.

Plugs, Crimp (Continued)

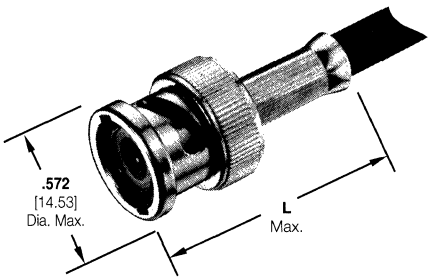
Single Crimp



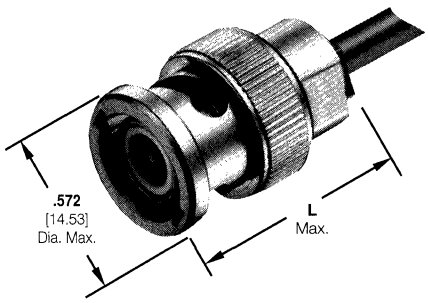
Dual Crimp



Hex Crimp



Semi-Rigid Cable



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
G	124, 140, 210, 62, 62A, 62B, 59, 59A, 59B, Belden 9291, 9209, 9268	Hex Crimp	Silver	Nickel	Polyethylene	Commercial	–	**1-221128-4**	**1.320** 33.53	–	58436-1[2]	–
		Hex Crimp	Silver	Nickel	Polyethylene	Commercial	Bulk Packaged	**221128-5**	**1.320** 33.53	–	58436-1[2]	–
		Hex Crimp	Gold	Nickel	Polyethylene	Commercial	–	**1-221128-1**	**1.320** 33.53	–	58436-1[2]	–
		Hex Crimp	Gold	Nickel	Polyethylene	Commercial	Bulk Packaged	**221128-2**	**1.320** 33.53	–	58436-1[2]	–
		Hex Crimp	Gold	Nickel	TEFLON	Commercial	Category C	**222188-3**	**1.130** 28.71	–	–	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225395-2**	**1.188** 30.18	69477-1	220189-4	–
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**227079-7**	**1.090** 27.69	220187-2	58435-1[1]	220189-2
		Dual Crimp	Silver	Nickel	Polypropylene	Commercial	–	**1-227079-1**	**1.090** 27.69	220187-2	58435-1[1]	220189-2
		Single Crimp	Gold	Silver	Polypropylene	Mil Type	–	**2-329083-1**	**1.312** 33.33	69141-1	–	–
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-329445-1**	**1.312** 33.33	69141-1	–	–
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	16B0008	**331350**	**1.188** 30.18	69477-1	–	–
G, G1	59, 62 Belden 88241	Hex Crimp	Gold	Nickel	Polyethylene	Commercial	–	**1-221128-1**	**1.320** 33.53	–	58436-1[2]	–
G1	302 Belden 88241 Hi-Temp 62A Times PL62, Berk-Tek, BTDC-59, BTDC-62	Hex Crimp	Gold	Nickel	TEFLON	Commercial	Category C	**222188-6**	**1.130** 28.71	–	–	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**4-225395-1**	**1.344** 34.14	69477-1	220189-4	69669-1
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**4-227079-9**	**1.312** 33.33	220187-2	58435-1[1]	220217-2

† Refer to pages 4014 and 4015 for code specifications.

[1] Order AMP PRO-CRIMPER Coaxial "O" Crimp Hand Tool assembly 58433-1, which includes dies 58435-1
[2] Order AMP PRO-CRIMPER Coaxial Hex Crimp Hand Tool assembly 58433-2, which includes dies 58436-1.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Plugs, Crimp (Continued)

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand Tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
G2	Hi-Temp 59 Times PL59, PLF59 (20 AWG C.C.)	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**5-227079-3**	**1.312** 33.33	–	220189-5	–
G4	Belden 8212, 9104, 9112, 9167, 9259, 9266 Times FM-59	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**2-225395-0**	**1.218** 30.94	69477-1	220189-4	69669-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**5-331350-3**	**1.188** 30.18	69477-1	220189-4	69669-1
		Hex Crimp	Gold	Nickel	Polypropylene	Commercial	–	**1-221128-7**	**1.320** 33.53	–	58436-1[2]	–
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**1-227079-3**	**1.090** 27.69	–	220189-5	–
H	71, 71A, 71B	Hex Crimp	Gold	Nickel	TEFLON	Commercial	Category C	**222188-4**	**1.130** 28.71	*	–	–
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-329445-2**	**1.312** 33.33	69141-2	–	69425
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	16B0012	**2-331350-3**	**1.188** 30.18	69477-1	220189-4	69669-1
J1	Belden 9248, 8228	Dual Crimp	Silver	Nickel	Polypropylene	Commercial	–	**3-227079-2**	**1.090** 27.69	220247-1	220244-1	–
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**4-331350-5**	**1.090** 27.69	220247-1	220244-1	–
K2	Belden 8281, 9141, 9231 Western Electric 724, 728, 3049	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**2-225395-9**	**1.500** 38.1	220043-1	220189-6	220088-1
		Hex Crimp	Silver	Nickel	Polypropylene	Commercial	Individually Packaged	**1-221128-5**	**1.320** 33.53	–	58436-2	–
		Hex Crimp	Silver	Nickel	Polypropylene	Commercial	–	**221128-6**	**1.320** 33.53	–	58436-2	–
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**5-227079-8**	**1.250** 31.75	220043-1	220189-6	220088-1
		Hex Crimp	Gold	Nickel	Polypropylene	Commercial	Individually Packaged	**1-221128-2**	**1.320** 33.53	–	58436-2	–
		Hex Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221128-3**	**1.320** 33.53	–	58436-2	–
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**4-331350-0**	**1.500** 38.1	220043-1	220189-6	220088-1
K3	Belden 9114, 9290	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**3-227079-0**	**1.188** 30.18	69477-3	–	–
M	8, 8A, 213	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**2-225395-1**	**1.075** 27.31	220015-1	–	–
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225886-1**	**1.075** 27.31	220015-1	–	–
M1	11, 11A	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225886-4**	**1.875** 47.63	220015-1	–	–
M2	Belden 8292, 9914 Times FM-8	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225886-7**	**1.875** 47.63	220015-1	–	–
M3	Belden 89292, 8213, 9292, 393 Alpha 9847	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225886-5**	**1.875** 47.63	220015-1	–	–
N	9, 9A, 9B, 214	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225886-2**	**2.062** 52.38	220015-1	–	–
O	402 Semi-Rigid/.141	Crimp	Gold	Nickel	TEFLON	Commercial	–	**222249-1**	**.925** 23.5	59980-1	[3]	[4]

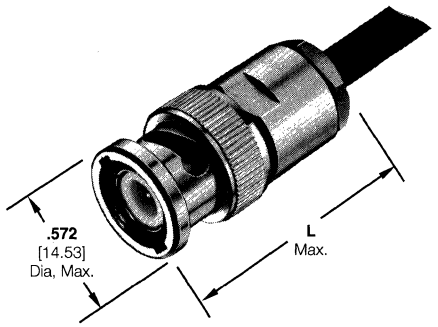
* Consult AMP Incorporated for recommended crimp tooling.
† Refer to pages 4014 and 4015 for code specifications.
[2] Order AMP PRO-CRIMPER Coaxial Hex Crimp Hand Tool assembly 58433-2, which includes dies 58436-1.
[3] Hand Tool **No. 59980-1**, requires (2) crimping dies **No. 312253-1** and (1) locator **No. 220220-2.**
[4] Pneumatic Tool **No. 58318-1**, requires (2) crimping dies **No. 313720-1** and (1) locator **No. 220241-1.**

BNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Plugs, Field Serviceable



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L
B, B1	174, 316, 188, 188A, 179, 179A, 179B, 161, 187, 187A Belden 9221	Solder Clamp	Gold	Nickel	TEFLON	Commercial	Category A	**1-221265-5**	**1.250** 31.75
D, D1, E, E1	58, 58A, 58B, 58C, 141, 141A, 303, 223, 55, 55A, 55B, 142, 142A, 142B, 400	Solder Clamp	Gold	Silver	TEFLON	Mil Type	16-0101 Category A UG-88/U	**221265-1**	**1.250** 31.75
		Solder Clamp	Gold	Nickel	TEFLON	Commercial	Category A	**1-221265-0**	**1.250** 31.75
G, G1, H	124, 140, 210, 62, 62A, 62B, 59, 59A, 59B, Belden 9291, 9209, 9268, 88241, Hi-Temp 62A, Times PL-62, Berk-Tek BTDC-59, BTDC-62, 302, 71, 71A, 71B	Solder Clamp	Gold	Silver	TEFLON	Mil Type	16-0102 Category A UG-260/U	**221265-2**	**1.250** 31.75
		Solder Clamp	Gold	Nickel	TEFLON	Commercial	Category A	**1-221265-1**	**1.250** 31.75

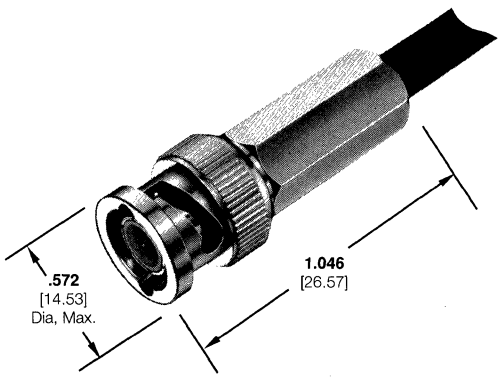
† Refer to pages 4014 and 4015 for code specifications.

Plugs, Twist-On

Related Product Data:

Twist-On plugs must be used with cable that has a solid conductor. These plugs are not recommended for applications where the cable frequently moves or flexes.

Mating Twist-On Jack - Page 4027



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.
D	58, 58A, 58B, 58C	Twist-on	Gold	Nickel	Acetal	Commercial	–	**221984-7**
G	62, 62A, 62B, 59, 59A, 59B	Twist-on	Gold	Nickel	Acetal	Commercial	–	**221984-1**
K2	Belden 8281, 9141, 9231 Western Electric 724, 728, 3049	Twist-on	Gold	Nickel	Acetal	Commercial	–	**221984-5**

† Refer to pages 4014 and 4015 for code specifications.

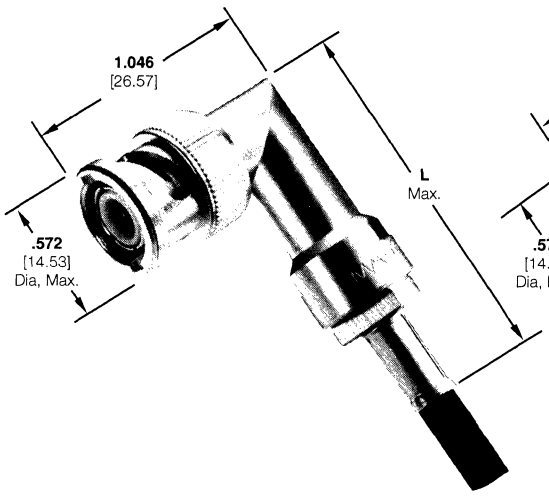
BNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

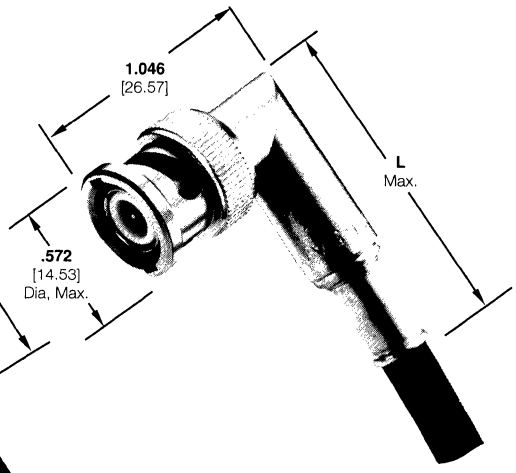
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Right-Angle Plugs, Crimp

Single Crimp



Dual Crimp



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand Tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
A	178, 178A, 178B 196, 196A	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331185**	**1.750** 44.45	69245-4	–	69471
B	174, 188, 188A, 316	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331178**	**1.750** 44.45	69245-1	–	69422
B1	179 , 179A, 179B, 161 187, 187A Belden 9221	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331179**	**1.750** 44.45	69245-1	– –	69408
C1	180, 180A, 180B 195, 195A	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331180**	**1.750** 44.45	69246-1	–	69423
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225973-1**	**1.468** 37.29	69478-1	220189-3	69727
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225974-1**	**1.468** 37.29	69478-1	220189-3	69727
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331175**	**1.750** 44.45	69140-1	–	69223-1
E	55, 55A, 55B, 223	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331182**	**1.750** 44.45	69140-2	–	69424
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225973-2**	**1.468** 37.29	69478-1	220189-3	69727
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225974-2**	**1.468** 37.29	69478-1	220189-3	69727
E1	142, 142A, 142B, 400	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225973-4**	**1.468** 37.29	69478-1	220189-3	69727
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331182**	**1.750** 44.45	69331-1	–	69429-1
G	124, 140, 210 62, 62A, 62B 59, 59A, 59B Belden 9291, 9209, 9268	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225973-5**	**1.468** 37.29	69477-1	220189-4	69669-1
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225974-5**	**1.468** 37.29	69477-1	220189-4	69669-1
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331176**	**1.750** 44.45	69141-1	–	69224-1
K2	Belden 8281, 9141, 9231 Western Electric 724, 728, 3049	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**50635**	**1.750** 44.45	69652	–	220000

† Refer to pages 4014 and 4015 for code specifications.

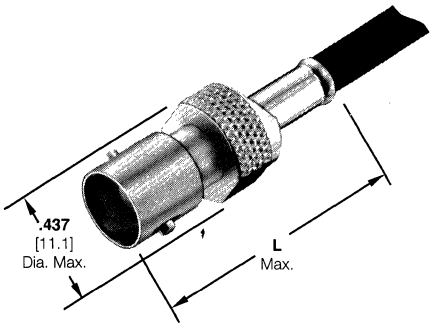
BNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

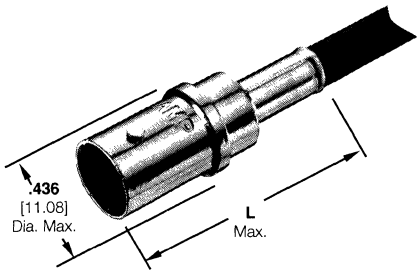
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Jacks, Crimp

Single Crimp



Dual Crimp



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand Tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
A	178, 178A,178B 196, 196A	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**330877**	**1.312** 33.33	69245-4	–	69471
B	174, 188,188A, 316	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413779-3**	**1.300** 33.02	–	58436-3	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225396-7**	**1.200** 30.48	220009-1	–	220026-1
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**228979-7**	**1.200** 30.48	220009-5	–	220217-3
		Single Crimp	Gold	Nickel	Polypropylene	Mil Type	–	**2-330059-1**	**1.312** 33.33	69245-1	–	69422
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**2-330062-1**	**1.312** 33.33	69245-1	–	69422
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-331351-4**	**1.200** 30.48	220009-1	–	220026-1
B1	179,179A,179B, 161, 187, 187A Belden 9221	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413779-4**	**1.300** 33.02	–	58436-3	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225396-8**	**1.200** 30.48	220009-1	–	220026-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-331351-5**	**1.200** 30.48	220009-1	–	220026-1
C1	180, 180A, 180B 195, 195A	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413779-5**	**1.300** 33.02	–	58436-3	–
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-329455-1**	**1.312** 33.33	69246-1	–	69423
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225396-1**	**1.200** 30.48	69478-1	220189-3	69727
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**228979-5**	**1.200** 30.48	220187-1	58435-1[1]	220217-1
		Single Crimp	Gold	Nickel	Polypropylene	Mil Type	–	**2-329065-1**	**1.312** 33.33	69140-1	–	69223-1
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**2-329545-1**	**1.312** 33.33	69140-1	–	69223-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	17B0004	**2-331351-1**	**1.200** 30.48	69478-1	220189-3	69727
D, D2	58, Belden 88240	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413779-1**	**1.300** 33.02	–	58436-1[2]	–
D1	141, 141A, 303	Dual Crimp	Gold	Silver	TEFLON	Mill Type	17B0006	**2-331351-8**	**1.200** 30.48	69478-1	220189-3	69727
D1, D2	141, 141A, 303 Belden 88240 Berk-Tek BTDC-58	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**2-225396-1**	**1.400** 35.56	69478-1	220189-3	69727
D1, C2	141, Belden 9907, 89907	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413779-6**	**1.300** 33.02	–	58436-1[2]	–
G	124, 140, 210, 62, 62A, 62B, 59, 59A, 59B, Belden 9219, 9209, 9268	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**228979-6**	**1.200** 30.48	220187-2	58435-1[1]	220217-2
		Dual Crimp	Gold	Nickel	TEFLON	Mill type	17B0008	**225396-2**	**1.200** 30.48	69477-1	220189-4	69669-1
G, G1	59, 62 Belden 88241	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413779-2**	**1.300** 33.02	–	58436-1[2]	–
K2	Belden 8281, 9141, 9231, Western Electric 724, 728, 3049	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**228979-8**	**1.500** 38.1	220043-1	220189-6	220088-1

† Refer to pages 4014 and 4015 for code specifications.

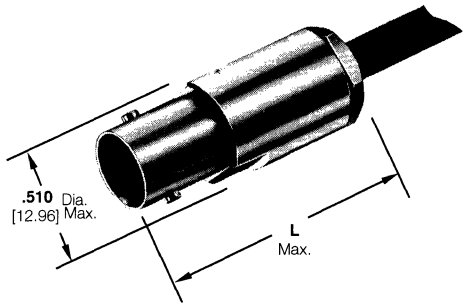
[1] Order AMP PRO-CRIMPER Coaxial "O" Crimp Hand Tool assembly 58433-1, which includes dies 58435-1
[2] Order AMP PRO-CRIMPER Coaxial Hex Crimp Hand Tool assembly 58433-2, which includes dies 58436-1.

BNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Jacks, Field Serviceable



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L
B	174, 316, 188, 188A	Solder Clamp	Gold	Nickel	TEFLON	Commercial	Category A	**1-221295-5**	**1.250** 31.75
B1	179, 179A, 179B, 161, 187, 187A Belden 9221	Solder Clamp	Gold	Nickel	TEFLON	Commercial	Category A	**1-221295-8**	**1.250** 31.75
D, D1, E, E1	58, 58A, 58B, 58C, 141, 141A, 223, 55, 55A, 55B, 142, 142A, 142B, 400	Solder Clamp	Gold	Silver	TEFLON	Mil Type	17-0101 Category A UG-88/U	**221295-1**	**1.250** 31.75
		Solder Clamp	Gold	Nickel	TEFLON	Commercial	Category A	**1-221295-0**	**1.250** 31.75
G, G1, H	124, 140, 210, 62, 62A, 62B, 59, 59A, 59B, Belden 9291, 9209, 9268, 88241, Hi-Temp 62A, Times PL-62, Berk-Tek BTDC-59, BTDC-62, 302, 71, 71A, 71B	Solder Clamp	Gold	Silver	TEFLON	Mil Type	17-0102 Category A UG-260/U	**221295-2**	**1.250** 31.75
		Solder Clamp	Gold	Nickel	TEFLON	Commercial	Category A	**1-221295-1**	**1.250** 31.75

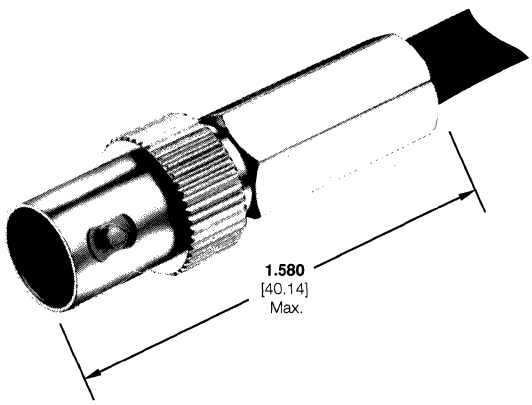
† Refer to pages 4014 and 4015 for code specifications.

Jacks, Twist-on

Related Product Data:

Twist-on jacks must be used with cable that has a solid conductor. These jacks are not recommended for applications where the cable frequently moves or flexes.

Mating Twist-On Plug - Page 4024



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.
D	58, 58A, 58B, 58C	Twist-On	Gold	Nickel	Acetal	Commercial	–	**222428-7**
G	62, 62A, 62B 59, 59A, 59B	Twist-On	Gold	Nickel	Acetal	Commercial	–	**222428-1**
K2	Belden 8281	Twist-On	Gold	Nickel	Acetal	Commercial	–	**222428-5**

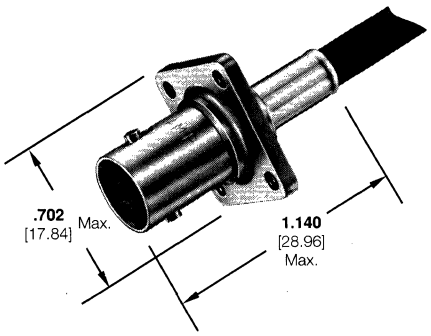
† Refer to pages 4014 and 4015 for code specifications.

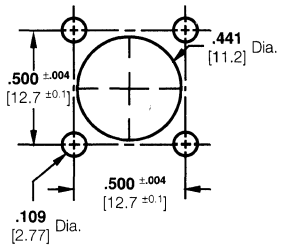
BNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Panel Jacks, Crimp





Recommended Panel Cutout

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand Tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
A	178,178A,178, 196, 196A	Single Crimp	Gold	Silver	TEFLON	Mil Type	-	**331002**	69245-4	-	69471
B	174, 188, 188A, 316	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	-	**225397-7**	220009-1	-	220026-1
B1	179, 179A, 179B, 161 187, 187A Belden 9221	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	-	**225397-8**	220009-1	-	220026-1
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	-	**225397-1**	69478-1	220189-3	69727
G	124, 140, 210, 62, 62A, 62B, 59,59A, 59B Belden, 9291, 9209 ,9268	Dual Crimp	Gold	Silver	TEFLON	Mil Type	18B0008	**331694**	69477-1	220189-4	69669-1

† Refer to pages 4014 and 4015 for code specifications.

BNC Connectors, 50 Ohm

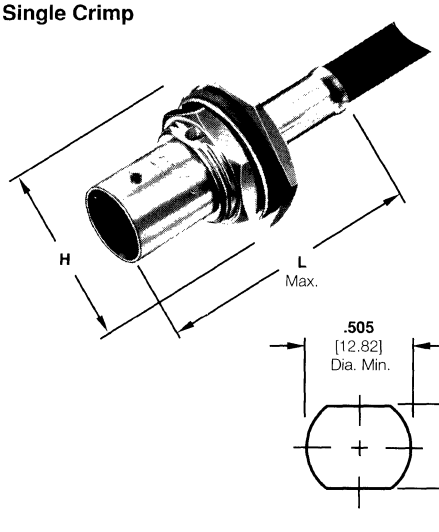
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

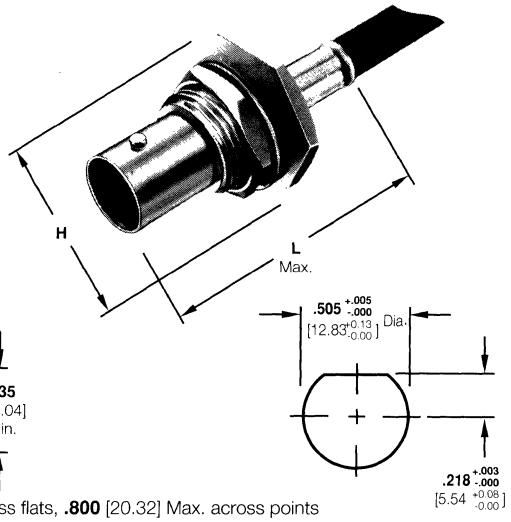
Bulkhead Jacks, Crimp

Note: Panel Insulating Bushings - Page 4031

Single Crimp



Dual Crimp



H = .687 [17.45] Max. across flats, **.800** [20.32] Max. across points

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand Tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
A	178, 178A, 178B 196, 196A	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331974**	**1.265** 32.13	69245-4	–	69471
B	174, 188, 188A, 316	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413771-3**	**1.450** 36.83	–	58436-3	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225398-7**	**1.406** 35.71	220009-1	–	220026-1
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**228980-7**	**1.375** 34.93	220009-5	–	220217-3
		Single Crimp	Gold	Nickel	Polypropylene	Mil Type	–	**2-330060-1**	**1.265** 32.13	69245-1	–	69422
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**2-330063-1**	**1.265** 32.13	69245-1	–	69422
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**1-331693-2**	**1.406** 35.71	220009-1	–	220026-1
B1	179, 179A,179B 161, 187,187A Belden 9221	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413771-4**	**1.450** 36.83	–	58436-3	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225398-8**	**1.406** 35.71	220009-1	–	220026-1
		Single Crimp	Gold	Nickel	Polypropylene	Mil Type	–	**2-329092-1**	**1.265** 32.13	69245-1	–	69408
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-329458-1**	**1.265** 32.13	69245-1	–	69408
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**1-331693-3**	**1.406** 35.71	220009-1	–	220026-1
B2	IBM 5353914 Brand Rex T-209A	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**2-331693-5**	**1.406** 35.71	69477-2	–	69669-2
B3	RD316	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**1-225398-5**	**1.406** 35.71	69477-2	–	69669-2
C1	180, 180A 180B 195, 195A	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413771-5**	**1.450** 36.83	–	58436-3	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225398-9**	**1.406** 35.71	69477-2	–	69669-2
		Single Crimp	Gold	Nickel	Polypropylene	Mil Type	–	**2-329093-1**	**1.265** 32.13	69246-1	–	69423
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**2-329459-1**	**1.265** 32.13	69246-1	–	69423
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**1-331693-4**	**1.406** 35.71	69477-2	–	69669-2
C2	Belden 9907, 89907	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**1-228980-6**	**1.600** 40.64	220187-1	58435-1[1]	220217-1
C3	Belden 8218	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**1-225398-0**	**1.406** 35.71	69477-2	–	69669-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**1-331693-0**	**1.406** 35.71	69477-2	–	69669-2
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**2-330002-1**	**1.265** 32.13	69246-2	–	–

† Refer to pages 4014 and 4015 for code specifications.
[1] Order AMP PRO-CRIMPER Coaxial "O" Crimp Hand Tool assembly 58433-1, which includes dies 58435-1.

BNC Connectors, 50 Ohm

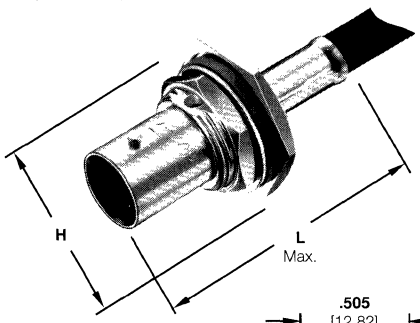
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

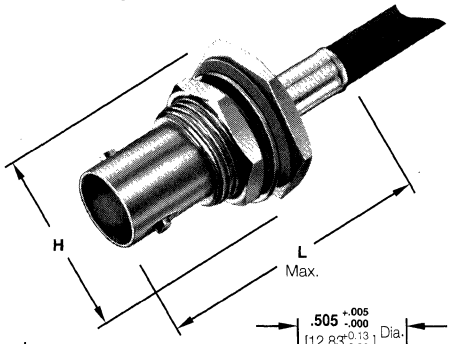
Bulkhead Jacks, Crimp (Continued)

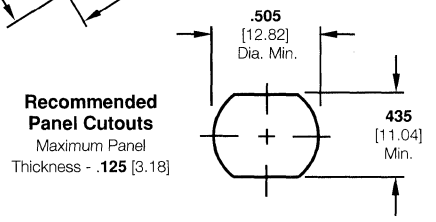
Note: Panel Insulating Bushings - Page 4031

Single Crimp

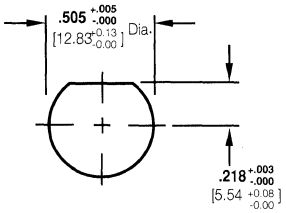


Dual Crimp





Recommended Panel Cutouts
Maximum Panel Thickness - **.125** [3.18]



H = **.687** [17.45] Max. across flats, **.800** [20.32] Max. across points

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand Tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225398-1**	**1.625** 41.28	69478-1	220189-3	69727
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	19B0003 Weatherproof	**1-225707-1**	**1.625** 41.28	69478-1	220189-3	69727
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**228980-5**	**1.375** 34.93	220187-1	58435-1[1]	220217-1
		Single Crimp	Gold	Nickel	Polypropylene	Mil Type	–	**2-329090-1**	**1.265** 32.13	69140-1	–	69223-1
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**2-329456-1**	**1.265** 32.13	69140-1	–	69223-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	19B0003	**1-331693-1**	**1.625** 41.28	69478-1	220189-3	69727
D, D2	58, Belden 88240	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413771-1**	**1.450** 36.83	–	58436-1[2]	–
D1	141, 141A 303	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225398-5**	**1.406** 35.71	69478-1	220189-3	69727
D1, C2	141, Belden 9907, 89907	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413771-6**	**1.450** 36.83	–	58436-1[2]	–
E	223 55, 55A, 55B	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225398-3**	**1.406** 35.71	69478-1	220189-3	69727
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	19B0004	**1-331693-6**	**1.406** 35.71	69478-1	220189-3	69727
E1	142, 142A, 142B, 400	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225398-6**	**1.406** 35.71	69478-1	220189-3	69727
		Single Crimp	Gold	Nickel	Polypropylene	Mil Type	–	**2-329090-2**	**1.265** 32.13	69331-1	–	69429-1
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**2-329456-2**	**1.265** 32.13	69331-1	–	69429-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	19B0006	**1-331693-8**	**1.406** 35.71	69478-1	220189-3	69727
G	124, 140, 210 62, 62A, 62B 59, 59A, 59B Belden 9291, 9209, 9268	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225398-2**	**1.625** 41.28	69477-1	220189-4	69669-1
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**228980-6**	**1.375** 34.93	220187-2	58435-1[1]	220217-2
		Single Crimp	Gold	Nickel	Polypropylene	Mil Type	–	**2-329091-1**	**1.265** 32.13	69141-1	–	69224-1
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**2-329457-1**	**1.265** 32.13	69141-1	–	69224-1
G, G1	59, 62 Belden 88241	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413771-2**	**1.450** 36.83	–	58436-1[2]	–
K2	Belden 8281, 9141, 9231, Western Electric 724, 728, 3049	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**331693**	**1.625** 41.28	69477-1	220189-4	69669-1
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**228980-8**	**1.600** 40.64	220043-1	220189-6	220088-1
		Single Crimp	Gold	Nickel	Polypropylene	Mil Type	–	**331300**	**1.265** 32.13	69652	–	220000

† Refer to pages 4014 and 4015 for code specifications.

[1] Order AMP PRO-CRIMPER Coaxial "O" Crimp Hand Tool assembly 58433-1, which includes dies 58435-1
[2] Order AMP PRO-CRIMPER Coaxial Hex Crimp Hand Tool assembly 58433-2, which includes dies 58436-1.

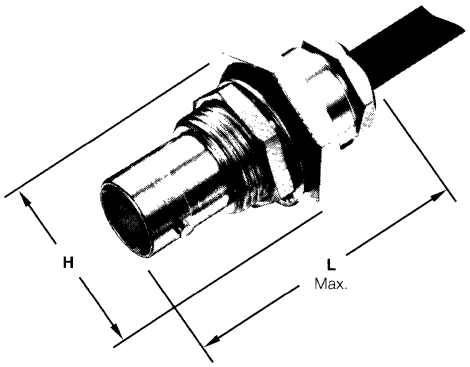
BNC Connectors, 50 Ohm

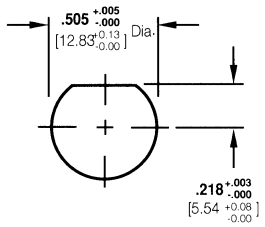
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Bulkhead Jacks, Field Serviceable

Note: Panel Insulating Bushings - See below.





Recommended Panel Cutout
Maximum Panel Thickness - **.240** [6.1]

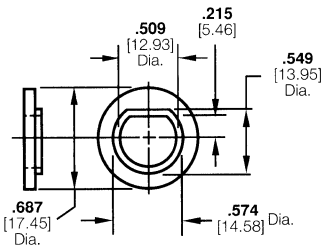
H = .687 [17.45] across flats, **.800** [20.32] Max. across points

Connector Cable Range Selection Code†	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim L
B	174, 316, 188, 188A,	Solder Clamp	Gold	Nickel	TEFLON	Commercial	Category A	**1-221313-5**	**1.250** 31.75
D, D1 E, E1	58, 58A, 58B, 58C, 141, 141A, 223, 55, 55A 55B, 142, 142A, 42B,400	Solder Clamp	Gold	Silver	TEFLON	Mil Type	19-0101 Category A	**221313-1**	**1.250** 31.75
G, G1, H	124, 140, 210, 62,62A, 62B, 59, 59A, 59B, Belden 9291 9209, 9268, 88241 Hi-Temp 62A, Times PL-62, Berk-Tek BTDC-59, BTDC-62, 302, 71, 71A, 71B	Solder Clamp	Gold	Silver	TEFLON	Mil Type	19-0102 Category A	**221313-2**	**1.200** 30.48

† Refer to pages 4014 and 4015 for code specifications.

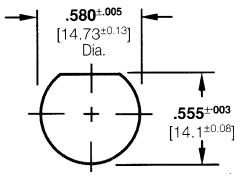
Panel Insulating Bushings for Mil Type Dual Crimp and Field Serviceable Bulkhead Jacks

Material: Nylon



Part No. 330620 (2 Required)
For Mil Type Dual Crimp and Field Serviceable Bulkhead Jacks

Recommended Panel Cutout



BNC Connectors
50 Ohm

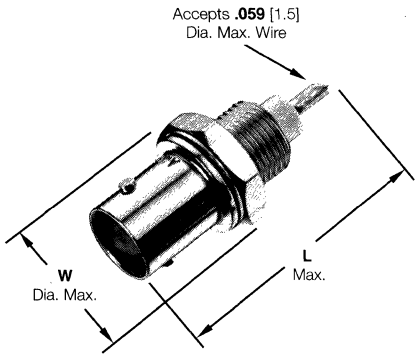
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

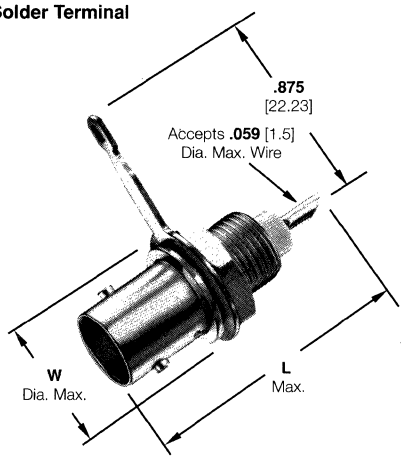
Bulkhead Solder Jacks

Body Plating: Nickel

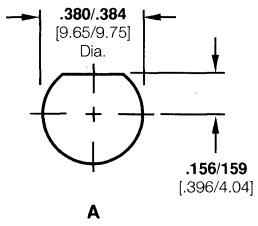
Without Solder Terminal



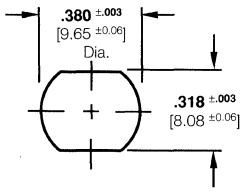
With Solder Terminal



Recommended Panel Cutouts



A



B

Contact Material	Dieletric	Style	Dimensions L	Dimensions W	Parts Numbers: Without Solder Terminal*	Parts Numbers: With Solder Terminal**	Panel Thickness	Panel Cutout	Insulating Bushing (Page 4033)
Silver	TEFLON	Mil Type	**1.125** 28.58	**.515** 13.09	**228509-8**	**1-228509-1**	**.125** Max. 3.18	A	**221951-1**
Gold	TEFLON	Mil Type	**1.125** 28.58	**.515** 13.09	**228509-9**	–	**.125** Max. 3.18	A	**221951-1**
Silver	VALOX	Commercial	**1.312** 33.33	**.515** 13.09	**227169-9**	**1-227169-2**	**.046 -.250** 1.17 -6.35	A	**227223-1**
		Commercial	**1.060** 26.93	**.515** 13.09	**227754-3**	**227755-3**	**.046 -.125** 1.17 -3.18	A	**227223-1**
	TEFLON	Commercial	**1.312** 33.33	**.515** 13.09	**1-227169-0**	**1-227169-1**	**.046 -.250** 1.17 -6.35	A	**227223-1**
		Commercial	**1.060** 26.93	**.515** 13.09	**227715-2**	–	**.046 -.125** 1.17 -3.18	A	**227223-1**
Gold	VALOX	Commercial	**1.312** 33.33	**.515** 13.09	**227169-3**	**227169-7**	**.046 -.250** 1.17 -6.35	A	**227223-1**
		Commercial	**1.060** 26.93	**.515** 13.09	**227754-2**	**227755-2**	**.046 -.125** 1.17 -3.18	A	**227223-1**
	TEFLON	Commercial	**1.312** 33.33	**.515** 13.09	**227169-4**	**227169-8**	**.046 -.250** 1.17 -6.35	A	**227223-1**
		Commercial	**1.060** 26.93	**.515** 13.09	**227715-3**	**227716-3**	**.046 -.125** 1.17 -3.18	A	**227223-1**
Gold	VALOX	Commercial	**1.060** 26.93	**.515** 12.83	**222024-1**	–	**.125** Max. 3.18	B	**221955-1**

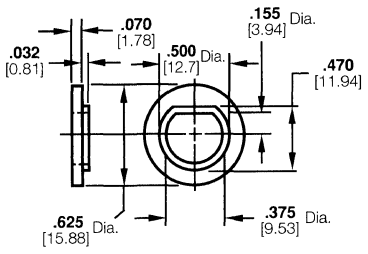
*Includes lockwasher and jam nut.
**Includes solder terminal and jam nut.

BNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

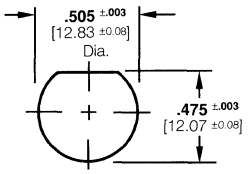
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

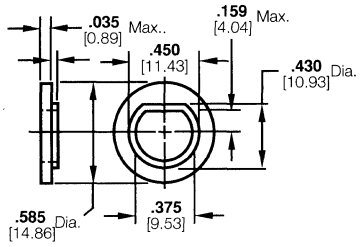
Insulating Bushings



Part No. 221951-1

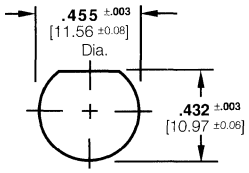
Recommended Panel Cutout

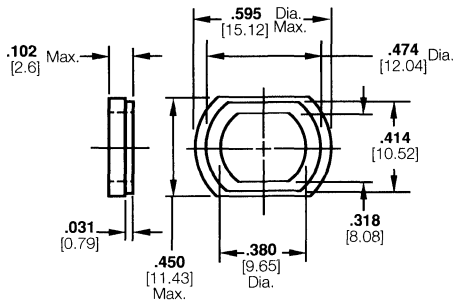




Part No. 227223-1

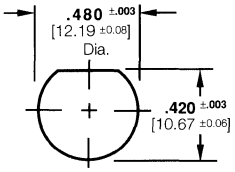
Recommended Panel Cutout





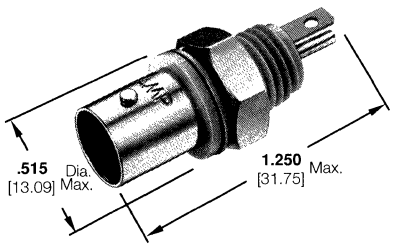
Part No. 221955-1

Recommended Panel Cutout

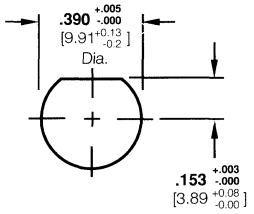


Isolated Bulkhead Solder Jack

Plating:
Body - Nickel
Center Contact - See chart at right
Dielectric: VALOX



Center Contact Plating	Part No.
Tin	227726-1
Silver	227726-2
Gold	227726-3



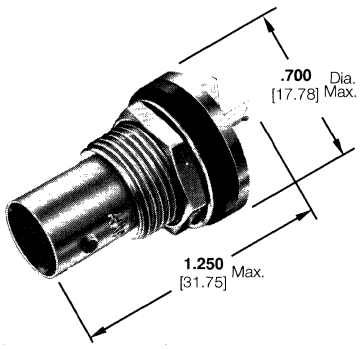
Panel Thickness - **.046-.250** [1.17-6.35]

Recommended Panel Cutout

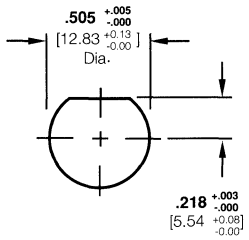
Sealed Bulkhead Solder Jack

Plating:
Body - Nickel
Center Contact - Gold
Dielectric: Polypropylene

This connector is designed to prevent moisture from entering the interface from the rear of the connector.



Part No. 227426-1



Maximum Panel Thickness - **.250** [6.35]

Recommended Panel Cutout

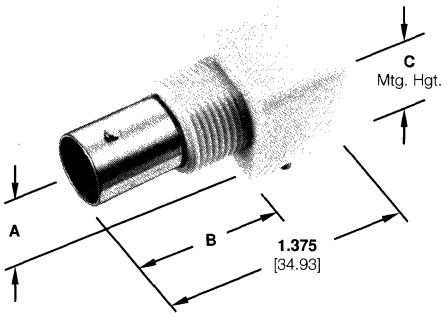
4

Coaxial and Flat Coaxial Cable Products

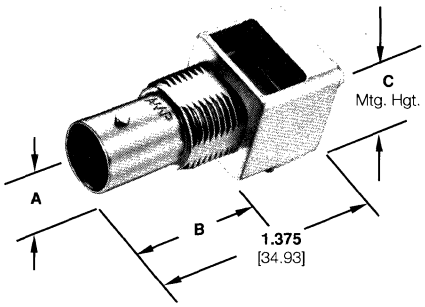
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Commercial Right-Angle Pc Board/Panel Mount Jacks

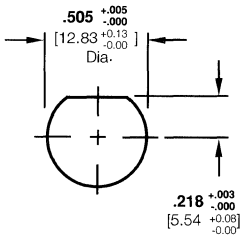
VALOX Body



Metal Body



Body Material	Center Contact Plating	Dimensions A	Dimensions B	Dimensions C	Parts Numbers Without Mounting Posts	Parts Numbers With Mounting Posts
VALOX, White	Tin	.338 8.59	.835 21.21	.625 15.88	226990-1	227161-1
	Gold	.338 8.59	.835 21.21	.625 15.88	226990-3	227161-3
	Tin	.272 6.91	.835 21.21	.519 13.18	–	227161-7
	Gold	.272 6.91	.835 21.21	.519 13.18	–	1-227161-1
VALOX, Black	Tin	.338 8.59	.835 21.21	.625 15.88	226990-2	227161-2
	Gold	.338 8.59	.835 21.21	.625 15.88	226990-6	227161-6
	Tin	.272 6.91	.835 21.21	.519 13.18	–	227161-9
Metal	Tin	.325 8.26	.820 20.83	.625 15.88	227433-1	227661-1
	Gold	.325 8.26	.820 20.8	.625 15.88	227676-1	227677-1



Maximum Panel Thickness - **.240** [6.1]

Recommended Panel Cutout

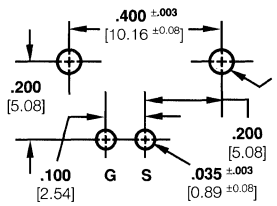
Lockwasher and Jam Nut

Part No. 1-329632-2

Part No. 1-329631-2

Recommended Pc Board Layouts

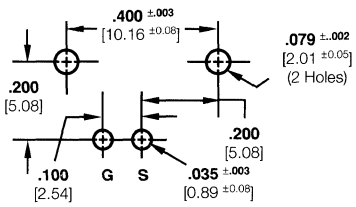
Without Mounting Posts



.104 [2.64] Dia. Clearance Hole for 2-56 Self-Tapping Screw* (2 Holes)

(Top View)

With Mounting Posts



(Top View)

* Screw for panel thickness of **3/32** [2.38] or greater - **Part No. 221108-2.**
Screw for panel thickness of less than **3/32** [2.38] - **Part No. 221108-4.**

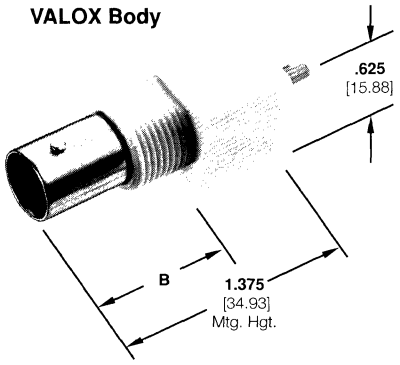
BNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

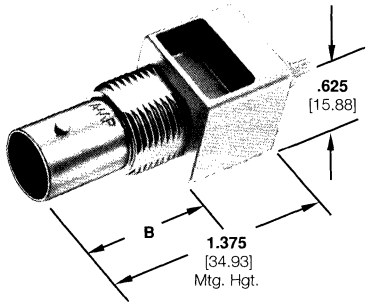
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Commercial Vertical Pc Board/Panel Mount Jacks

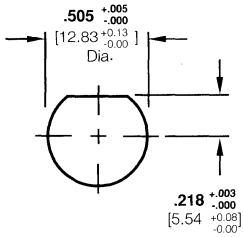
VALOX Body



Metal Body



Body Material	Center Contact Plating	Dim. B	Parts Numbers	
			Without Mounting Posts	With Mounting Posts
VALOX, White	Tin	.835 21.21	226993-1	227222-1
	Gold	.835 21.21	226993-3	227222-3
VALOX, Black	Tin	.835 21.21	226993-2	227222-2
	Gold	.835 21.21	226993-6	227222-6
Metal	Tin	.820 20.83	227670-1	227671-1
	Gold	.820 20.83	227672-1	227673-1



Maximum Panel Thickness - **.240** [6.1]

Recommended Panel Cutout

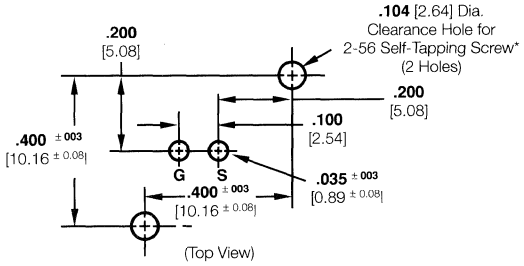
Lockwasher and Jam Nut

Part No. 1-329632-2

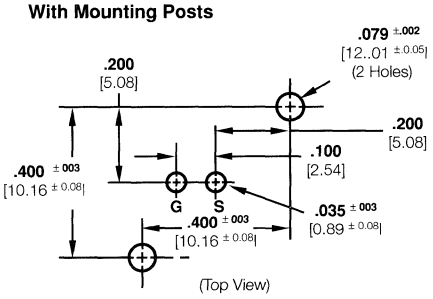
Part No. 1-329631-2

Recommended Pc Board Layouts

Without Mounting Posts



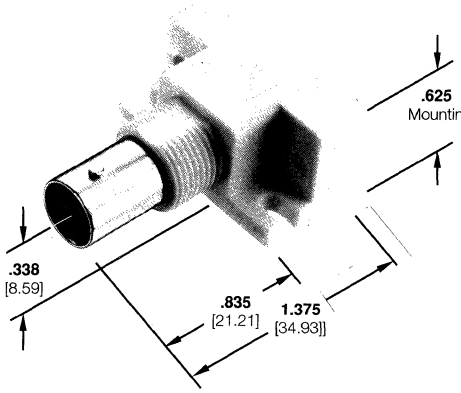
With Mounting Posts



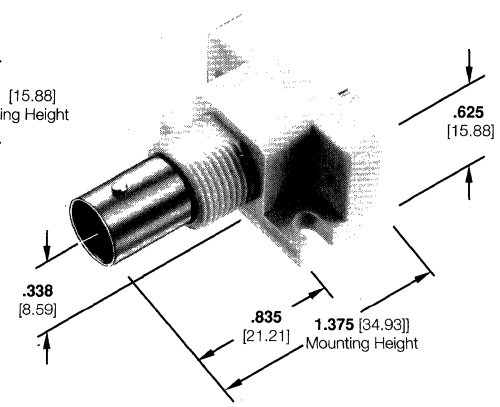
* Screw for panel thickness of **3/32** [2.38] or greater- **Part No. 221108-2.**
Screw for panel thickness of less than **3/32** [2.38]- **Part No. 221108-4.**

Commercial Pc Board/Panel Mount Jacks with Mounting Flanges

Right-Angle Mount

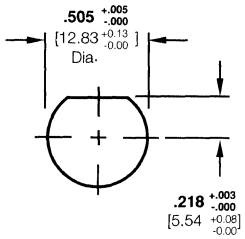


Vertical Mount



Maximum Panel Thickness - **.240** [6.1]

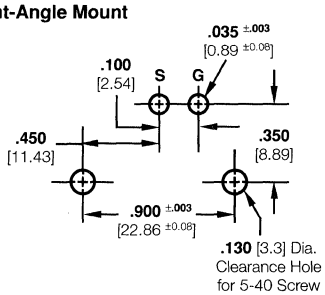
Recommended Panel Cutout



Body Material	Center Contact Plating	Part Numbers	
		Right-Angle Mount	Vertical Mount
VALOX, White	Tin	**226978-1**	–
	Gold	**226978-3**	**226987-7**

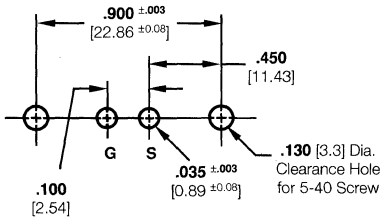
Recommended Pc Board Layouts

Right-Angle Mount



(Top View)

Vertical Mount



(Top View)

Lockwasher and Jam Nut

Part No.
1-329632-2

Part No.
1-329631-2

BNC Connectors
50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

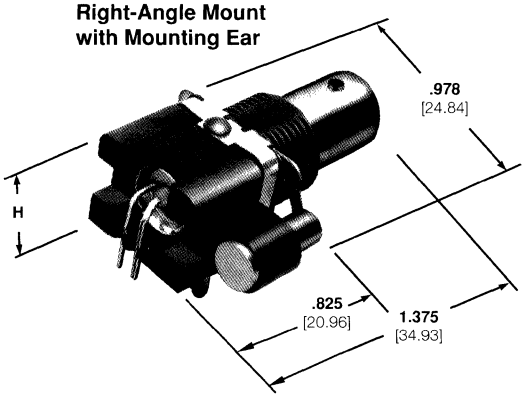
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Commercial Pc Board/Panel Mount Capacitively Decoupled Jacks

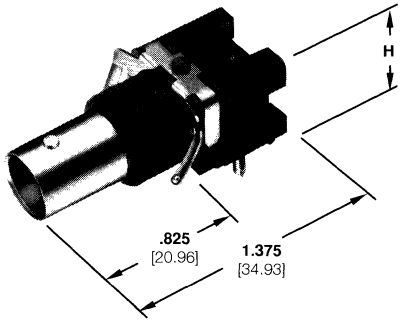
Body Material: VALOX, black

The capacitively decoupled BNC printed circuit board connector allows a cost effective and efficient means to reduce noise and eliminate ground loops on coaxial interconnections.

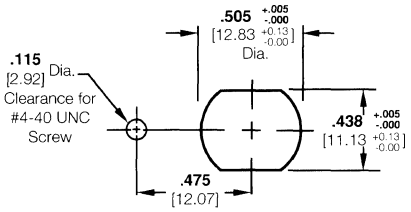
Right-Angle Mount with Mounting Ear

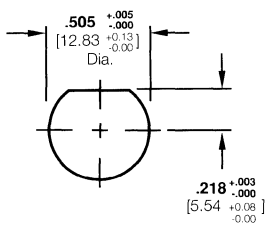


Right-Angle Mount



Recommended Panel Cutouts Maximum Panel Thickness - .240 [6.1]

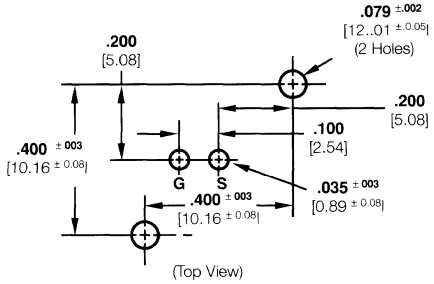




Connector Type	Capacitance/ Voltage	Dim. H	Part No.
Vertical	9400 pF, 500 V	.625 15.88	413476-1
	9400 pF, 1500 V	.625 15.88	413476-2
Standard Right-Angle	9400 pF, 500 V	.625 15.88	413524-1
	9400 pF, 1500 V	.625 15.88	413524-2
Low Profile Right-Angle	9400 pF, 500 V	.519 13.18	413515-1
	9400 pF, 1500 V	.519 13.18	413515-2
Low-Profile Right-Angle with Mounting Ear	9400 pF, 1500 V	.519 13.18	413711-1

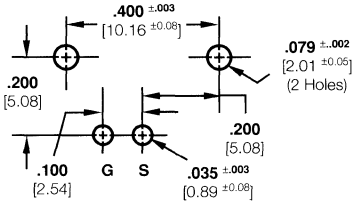
Recommended Pc Board Cutout

Vertical Mount



(Top View)

Right-Angle Mount



(Top View)

Lockwasher and Jam Nut

Part No. 1-329632-2

Part No. 1-329631-2

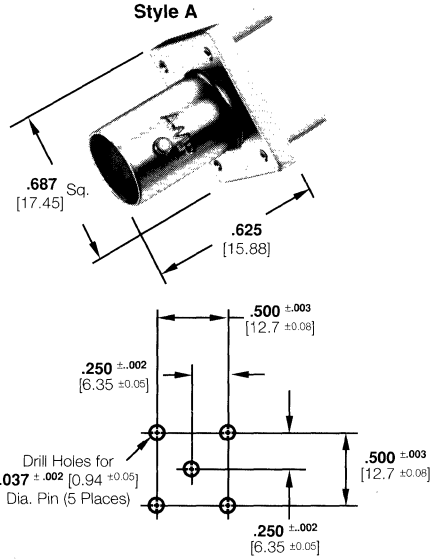
BNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

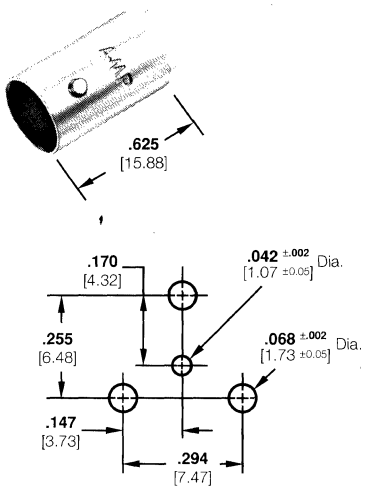
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Commercial Vertical Metalized

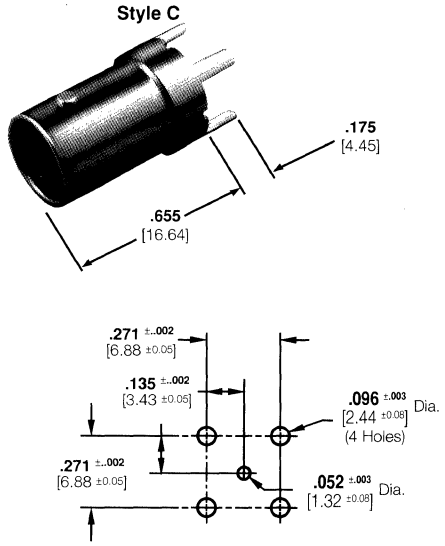
Style A



Style B



Style C



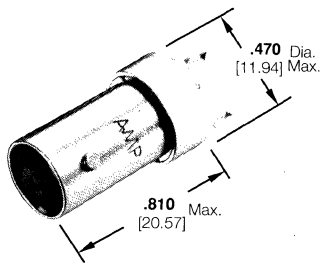
Plating:
Body - Nickel
Center Contact - See chart
Dielectric: VALOX

Recommended Pc Board Layouts

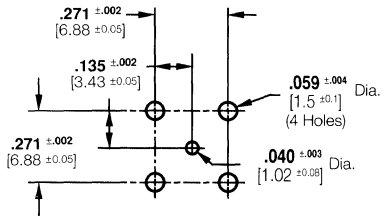
Center Contact Plating	Part Numbers		
	Style A	Style B	Style C
Silver	227699-1	–	222420-1
Gold	227699-2	221123-2	–
Tin	227699-3	221123-3	–

Press-Fit Terminal

Plating:
Body - Nickel
Center Contact - Gold
Dielectric: TEFLON



Part No. 222006-1

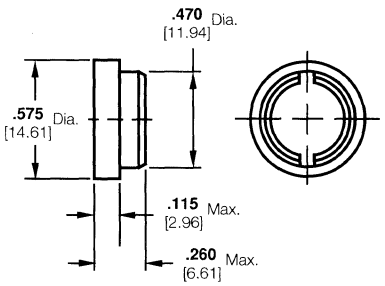


Recommended Pc Board Layout

Pc Board Thickness - Not Less Than **.093** [0.99]

Insulating Bushing

Material: Nylon
Part No. 222163-1

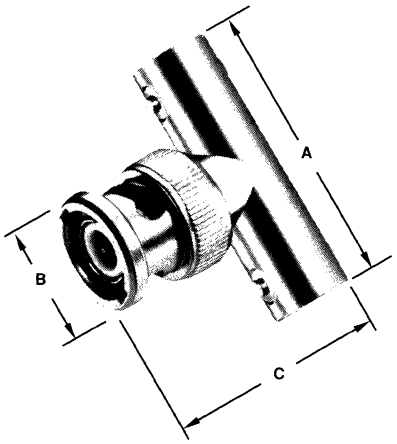


BNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

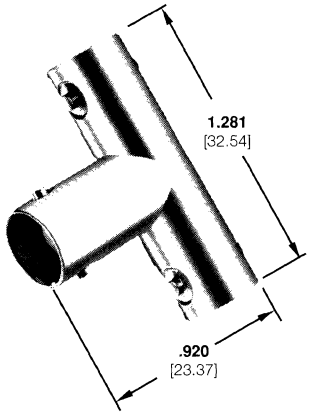
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Charts contain dimensions in inches over millimeters.

Tee Adapters
(Jack-Plug-Jack)



Body Material and Plating	Center Contact Plating	Dieletric	Dimensions A	B	C	Part No.	Comparable UG/U Connector
Brass, Nickel	Gold	TEFLON	**1.281** 32.54	**.562** 14.27	**1.031** 26.19	**221543-2**	274A
Zinc, Nickel	Gold	Acetal	**1.300** 33.02	**.571** 14.5	**1.075** 27.31	**413592-2**	–
	Silver	Acetal	**1.300** 33.02	**.571** 14.5	**1.075** 27.31	**413592-4**	–
Brass, Silver	Silver	TEFLON	**1.281** 32.54	**.562** 14.27	**1.031** 26.19	**329518**	274B

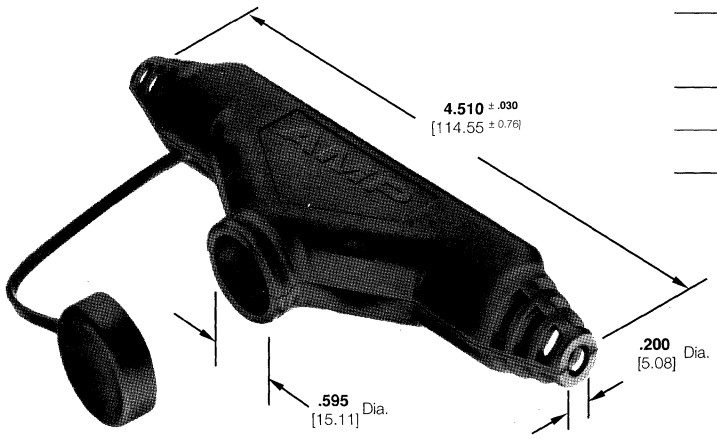
Tee Adapters
(Jack-Jack-Jack)



Body Plating	Center Contact Plating	Dielectric	Part No.
Nickel	Silver	TEFLON	**221988-1**
Nickel	Gold	TEFLON	**221988-3**

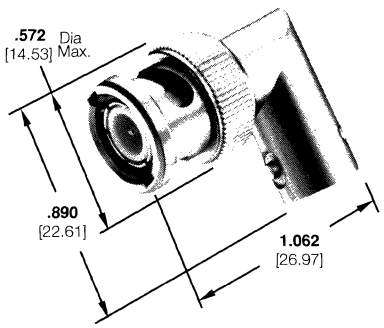
Tee Adapter Covers

Material: Polypropylene, general purpose



Color	Part No.
Black	**221586-1**
Ivory	**221586-3**

Right-Angle Adapters
(Jack-Plug)



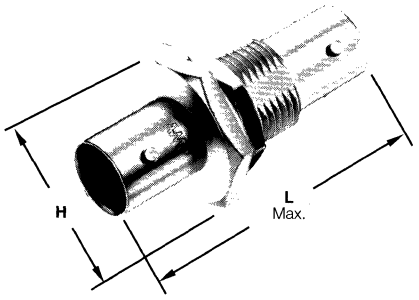
Body Plating	Center Contact Plating	Dielectric	Part No.	Comparable UG/U Connector
Nickel	Silver	TEFLON	**329517**	306B
Nickel	Gold	TEFLON	**222165-2**	306B

BNC Connectors, 50 Ohm

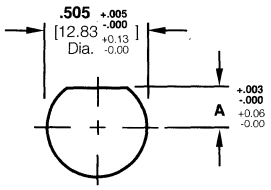
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Bulkhead Jack Adapters
(Jack-Jack)



Recommended Panel Cutout

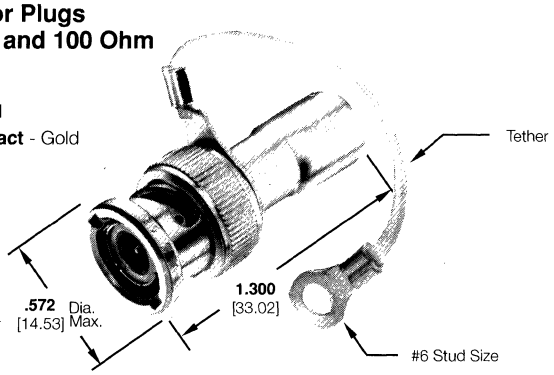


H= .687 [17.45] Max. across flats, **.800** [20.32] across points.

Body Plating	Center Contact Plating	Dimensions A	Dimensions L	Dielectric	Part No.	Comparable UG/U Connector
Silver	Silver	**.220** 5.59	**1.500** 38.1	TEFLON	**330024**	492D
Nickel	Gold	**.218** 5.54	**1.420** 36.07	Polypropylene	**228226-1**	
Nickel	Silver	**.218** 5.54	**1.420** 36.07	Polypropylene	**228226-2**	

Commercial Terminator Plugs 50, 75, 93 and 100 Ohm

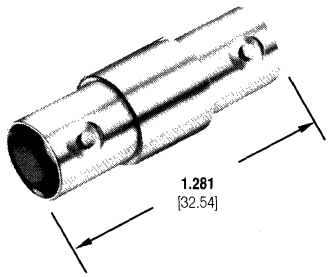
Plating:
Body - Nickel
Center Contact - Gold



Resistor Specification	Part Numbers With Tether	Part Numbers Without Tether
1 Watt, 50 Ohm	**221629-1***	**221629-4***
1 Watt, 75 Ohm	**221629-2***	**221629-5***
1 Watt, 93 Ohm	**221629-3***	**221629-6***
0.5 Watt, 100 Ohm	–	**221629-7***
1 Watt, 50 Ohm	–	**221629-9****
1 Watt, 75 Ohm	–	**1-221629-0****
0.5 Watt, 75 Ohm	**1-221629-1***	–

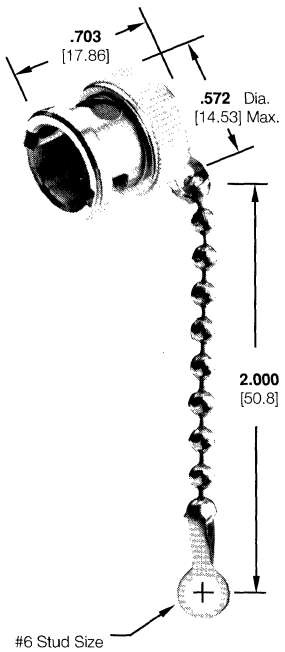
*Steel stamp
**Ink stamp

Feed-thru Adapters
(Jack-Jack)



Body Plating	Center Contact Plating	Dielectric	Part No.	Comparable UG/U Connector
Nickel	Silver	TEFLON	**221551-1**	914
Nickel	Gold	TEFLON	**221551-3**	

Jack Covers



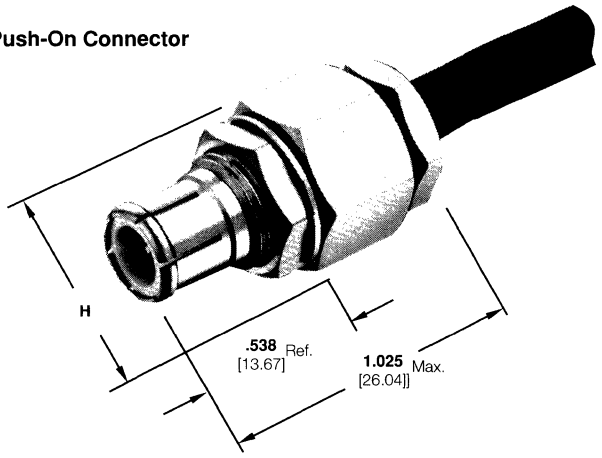
Body Plating	Part. No.	Comparable UG/U Connector
Silver	**330022**	CW123-A
Nickel	**1-330022-2**	

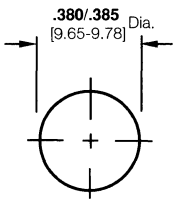
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Push-On Connector and Right-Angle Pc Board Mount Jack, 50 and 75 Ohm

Push-On Connector

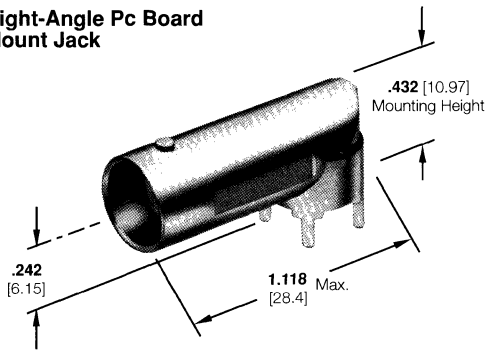


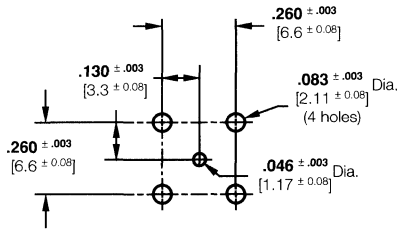


Maximum Pc Board Thickness -**.083** [2.11]

Recommended Panel Cutout

Right-Angle Pc Board Mount Jack





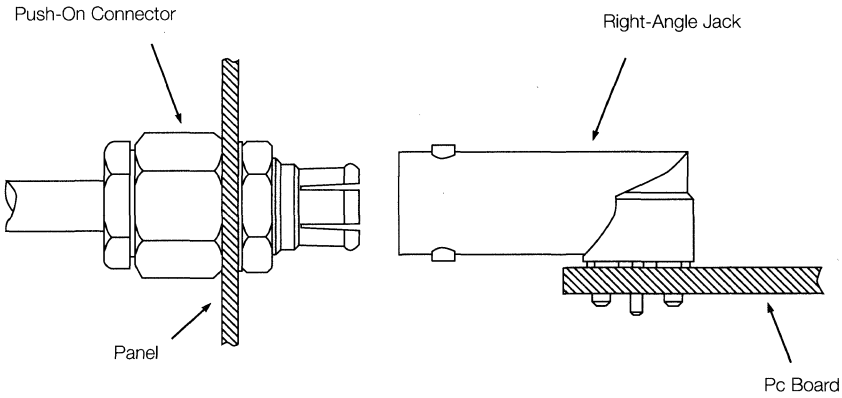
Maximum Pc Board Thickness -**.100** [2.54]

Recommended Pc Board Layout

H= **.500** [12.7] Max. across flats, **.580** [14.74] across points.

Impedance Value	Connector Cable Range Selection Code	Push-On Connector		Right-Angle Pc Board Jack
		RG/U Cable	Part No.	Part No.
50	D	58, 58A 58B, 58C	**222728-1**	**413631-1**
75	G	140, 210, 62, 62A, 62B, 59, 59A, 59B, Belden 9291, 9209, 9268	**222735-1**	**413558-1**

Application



BNC Connectors

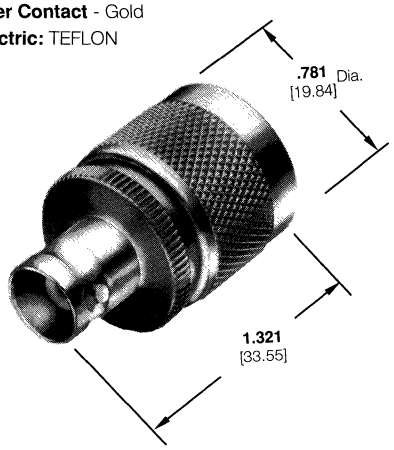
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

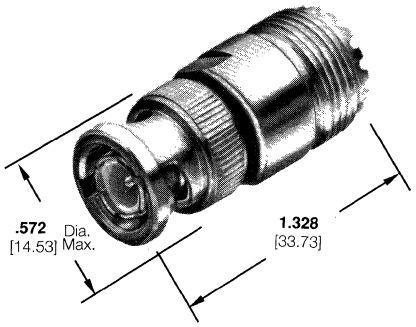
Adapters, Between Series

Plating:
Body - Nickel
Center Contact - Gold
Dielectric: TEFLON

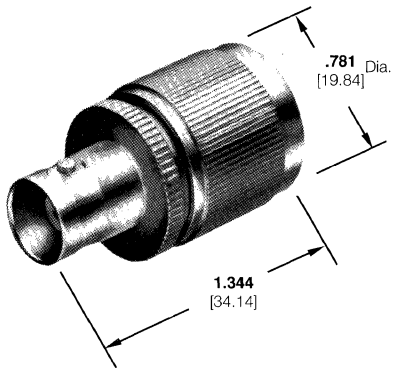
BNC Jack to N Plug
Part No. 222321-1



BNC Plug to UHF Jack
Part No. 222319-1



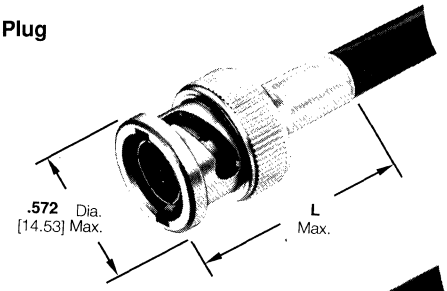
BNC Jack to UHF Plug
Part No. 222320-1



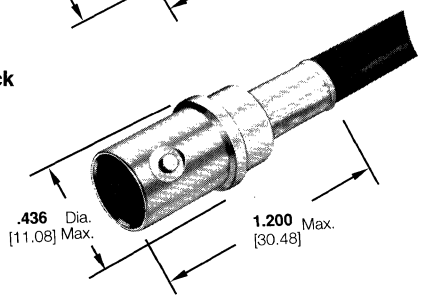
BNC Connectors, 75 Ohm

Plugs, Right-Angle Plugs and Jacks, Crimp

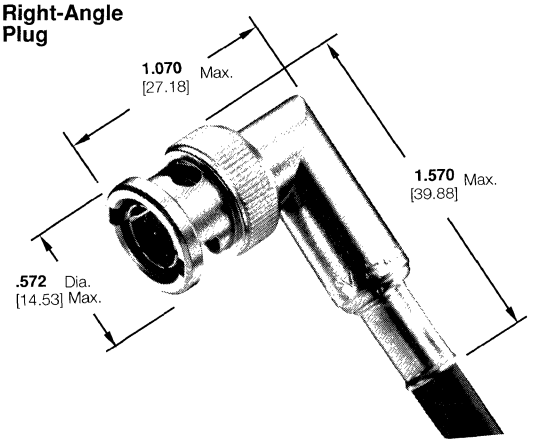
Plug



Jack



Right-Angle Plug



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
Plugs												
B1	179, 179A, 179B, 187, 187A, 161, Belden 9221	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221185-8**	**1.140** 35.56	–	58304-1	–
		Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413589-8**	**1.320** 33.53	–	58425-2	–
C3	Belden 8218	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413589-3**	**1.320** 33.53	–	58425-1	–
G	140, 210, 62, 62A, 62B, 59, 59A, 59B, Belden 9291, 9209, 9268	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221185-2**	**1.090** 27.69	–	58085-1	58248-2
		Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413589-2**	**1.320** 33.53	–	58425-1	–
G1	Belden 88241	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413589-1**	**1.320** 33.53	–	58425-1	–

† Refer to pages 4014 and 4015 for code specifications.

BNC Connectors, 75 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Plugs, Right-Angle Plugs and Jacks, Crimp (Continued)

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
Plugs (Continued)												
G3	Double Braided 59	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413589-6**	**1.320** 33.53	–	58425-3	–
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221185-6**	**1.090** 27.69	–	58086-1	–
G4	Belden 8212, 9104, 9112, 9240, 9167, 9259, 9266, Times FM-59, (RG-59 Type with 20 AWG C.C.)	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221185-9**	**1.160** 27.69	–	58085-1	58248-2
		Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413589-9**	**1.160** 29.46	–	58425-1	–
G5	Belden 9145	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**1-221185-0**	**1.090** 27.69	–	58085-1	–
J1	Belden 9248, 8228	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221185-1**	**1.010** 25.65	–	58086-1	–
K	6, 6A	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221185-7**	**1.490** 37.85	–	220189-7	58248-1
K2	Belden 8281, 9141, 9231 Western Electric 724, 728, 3049	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413589-5**	**1.320** 33.53	–	58425-3	–
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221185-5**	**1.120** 28.45	–	220189-7	58248-1
–	AT&T 734A	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413589-7**	**1.160** 29.46	–	58425-1	–
–	AT&T 735A	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**1-413589-0**	**1.320** 33.53	–	58425-2	–
–	AT&T KS 19224 L2 Cable	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413589-4**	**1.320** 33.53	–	58425-2	–
Right-Angle Plugs												
C3	Belden 8218	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221402-3**	**1.570** 39.88	–	58174-1	58248-3
G	140, 210, 62,62A, 62B, 59, 59A, 59B, Belden 9291, 9209, 9268	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221402-2**	**1.570** 39.88	–	58085-1	58248-2
G5	Belden 9145	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221402-4**	**1.570** 39.88	–	58085-1	–
J1	Belden 9248, 8228	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221402-1**	**1.570** 39.88	–	58086-1	–
K2	Belden 8281, 9141, 9231, Western Electric 724, 72B, 3049	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221402-5**	**1.645** 41.79	–	220189-7	–
Jacks												
B1	179, 179A, 179B, 161 187, 187A, Belden 9221	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221199-5**	**1.200** 30.48	–	58304-1	–
		Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413760-8**	**1.300** 33.02	–	58425-2	–
C3	Belden 8218	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221199-3**	**1.200** 30.48	–	58174-1	58248-3
		Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413760-3**	**1.300** 33.02	–	58425-1	–
G	140, 210, 62, 62A, 62B 59, 59A, 59B Belden 9291, 9209	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221199-2**	**1.200** 30.48	–	58085-1	58248-2
		Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413760-2**	**1.300** 33.02	–	58425-1	–
G1	Belden 88241	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413760-1**	**1.300** 33.02	–	58425-1	–
G3	Double Shield RG-59 .270 [6.86] OD Jacket	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413760-6**	**1.300** 33.02	–	58425-3	–
G4	Belden 8212, 9104, 9112, 9240, 9167, 9259, 9266, Times FM-59	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413760-9**	**1.300** 33.02	–	58425-1	–
J1	Belden 9248, 8228	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221199-1**	**1.300** 33.02	–	58086-1	–
K2	Belden 8281, 9141, 9231, Western Electric 724, 728, 3049	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413760-5**	**1.300** 33.02	–	58425-3	–
–	AT&T 734A	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413760-7**	**1.300** 33.02	–	58425-1	–
–	AT&T KS 19224 L2 Cable	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413760-4**	**1.300** 33.02	–	58425-2	–

† Refer to pages 4014 and 4015 for code specifications.

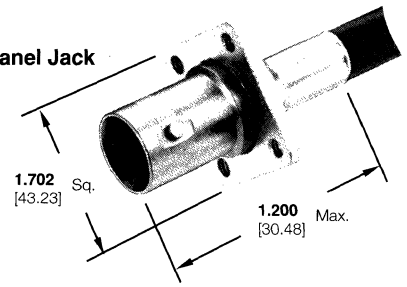
BNC Connectors, 75 Ohm

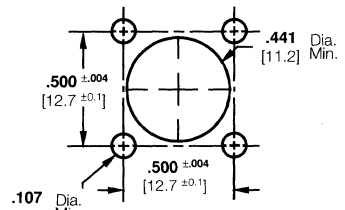
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Panel Jacks and Bulkhead Jacks, Crimp

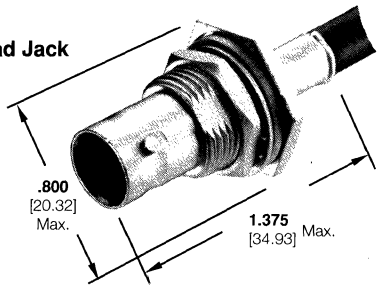
Panel Jack

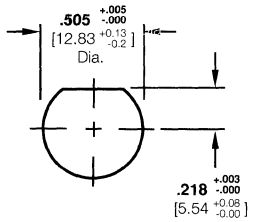




Recommended Panel Cutout

Bulkhead Jack





Maximum Panel Thickness - **.125** [3.18]

Recommended Panel Cutout

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
Panel Jacks											
C3	Belden 8218	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221203-3**	–	58174-1	58248-3
G	59, 59A, 59B Belden 9291, 9209	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221203-2**	–	58085-1	58248-2
J1	Belden 9248, 8228	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221203-1**	–	58086-1	–
Bulkhead Jacks											
B1	179, 179A, 179B, 161 187, 187A, Belden 9221	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221221-5**	–	58304-1	–
		Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413590-8**	–	58425-2	–
C3	Belden 8218	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221221-3**	–	58174-1	58248-3
		Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413590-3**	–	58425-1	–
G	140, 210, 62, 62A, 62B 59, 59A, 59B Belden 9291, 9209	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221221-2**	–	58085-1	58248-2
		Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413590-2**	–	58425-1	–
G1	Belden 88241	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413590-1**	–	58425-1	–
G3	Double Shield RG-59 .270 [6.86] OD Jacket	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413590-6**	–	58425-3	–
G4	Belden 8212, 9104, 9112, 9240, 99167, 9259, 9266, Times FM-59 (RG-59 Type with 20 AWG C.C.	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221221-7**	–	58085-1	58248-2
		Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413590-9**	–	58425-1	–
J1	Belden 9248, 8228	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**221221-1**	–	58086-1	–
K2	Belden 8281, 9141, 9231, Western Electric 724,728, 3049	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413590-5**	–	58425-3	–
–	AT&T 734A	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413590-7**	–	58425-1	–
–	AT&T KS 19224 L2 Cable	Hex Crimp	Gold	Nickel	Polymethylpentene	Commercial	–	**413590-4**	–	58425-2	–

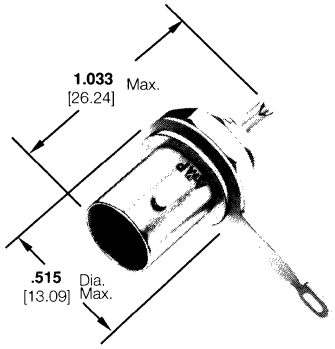
† Refer to pages 4014 and 4015 for code specifications.

BNC Connectors, 75 Ohm

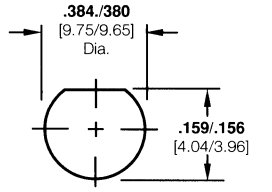
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Commercial Bulkhead Solder Jack



Part No. 221244-1

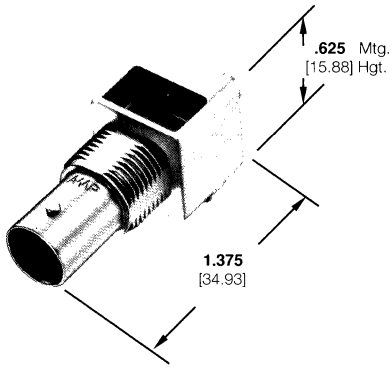


Maximum Panel Thickness - **.125** [3.18]

Recommended Panel Cutout

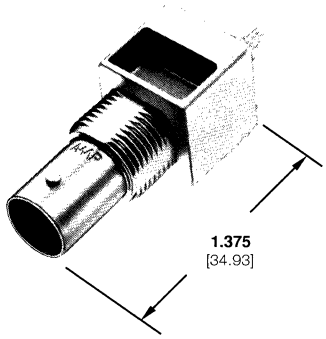
Commercial Right-Angle Pc Board Mount Jacks

Right-Angle

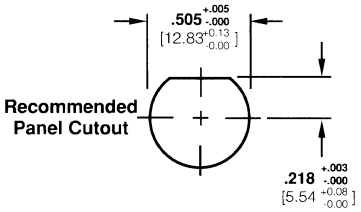


Center Contact Plating - Gold
Part No. 222092-1

Vertical



Center Contact Plating - Gold
Part No. 222132-1



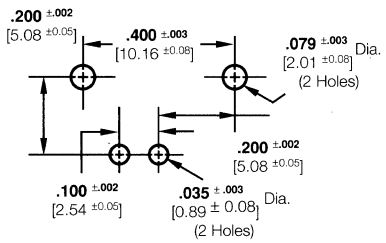
Maximum Panel Thickness - **.240** [6.1]

Lockwasher and Jam Nut

Part No. 1-329632-2

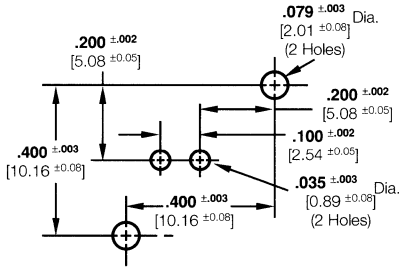
Part No. 1-329631-2

Right-Angle



(Top View)

Vertical



Maximum Pc Board Thickness -**.200** [5.08] (Top View)

Recommended Pc Board Layouts

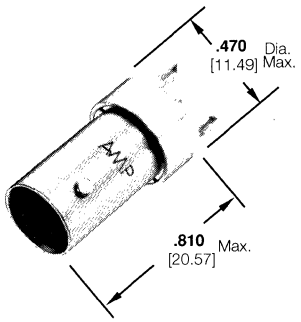
BNC Connectors, 75 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

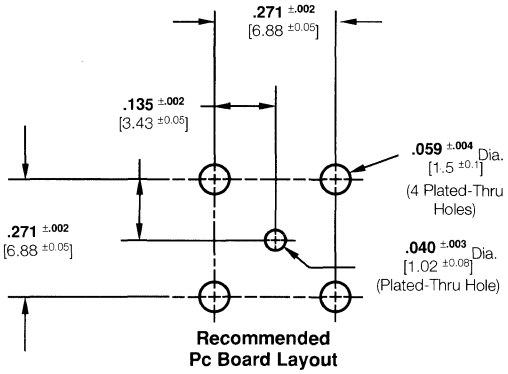
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Commercial Vertical Metalized Pc Board Mount Jacks
(Press Fit)

Plating:
Body - Nickel
Center Contact - Gold
Dielectric: TEFLON

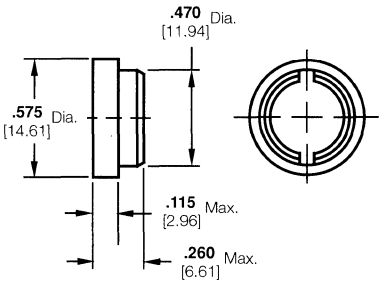


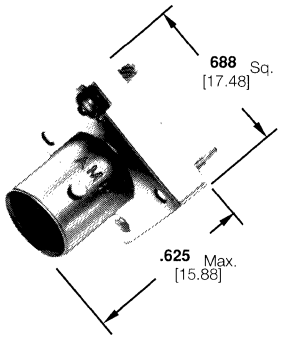
Part No. 222462-1



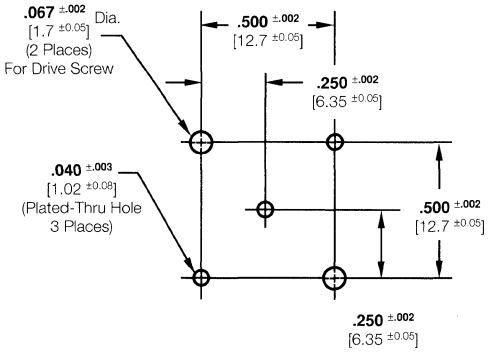
Recommended Pc Board Layout

Insulating Bushing
Material: Nylon
Part No. 222163-1





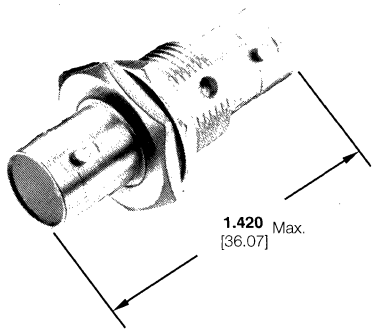
Pc Board Thickness - .093 [2.36] Min.
Part No. 221336-1
Pc Board Thickness - .125 [3.17] Min.
Part No. 221336-2



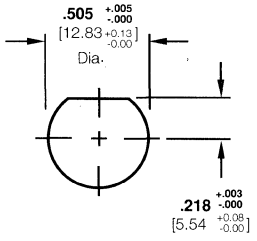
Recommended Pc Board Layout

Commercial Bulkhead Jack Adapter
(Jack-Jack)

Plating:
Body - Nickel
Center Contact - Gold
Dielectric: Polymethylpentene



Part No. 222117-1



Maximum Panel Thickness - **.250** [6.35]

Recommended Panel Cutout

TNC Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Product Facts

Single Crimp Connectors

- Fast application–one crimping operation terminates inner conductor, outer braid and cable support
- Low application cost

Dual Crimp Connectors

- Manufactured in accordance with all requirements of MIL-C-39012, Class II, Category B
- Choice of dielectric materials
- Standard and weatherproof versions available
- Plugs available for high temperature cable
- Low cost commercial type available
- Commercial type is smaller and lighter weight
- Provides excellent performance at frequencies up to 7 GHz
- Tarnish resistant nickel finish
- 50 and 75 ohm commercial versions available

Connectors for Semi-Rigid Cable

- Standard cable stripping dimensions
- Universal cable termination common to all configurations

Related Product Data:

Connector Selection - Pages 4004-4006
Theory and Application - Pages 4007-4013
Cable-to-Connector Selection Guide - Pages 4014 & 4015
Connector Selection Guide - Page 4016
Performance Characteristics - Page 4048
Material Specifications - Page 4049
Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163

Military Category - All crimp connectors are Category B Type (AMP Crimp Tooling), unless otherwise noted under the "Military No. and/or Comments" column in the connector specifications chart.

Packaging - All Mil-Type connectors are packaged individually and all Commercial connectors are bulk packaged unless otherwise noted under the "Military No. and/or Comments" column in the connector specifications chart.

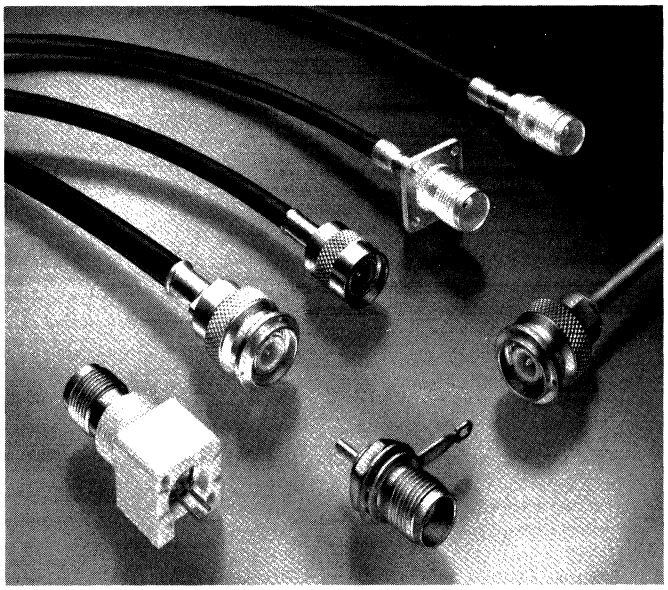


Table of Contents

The AMP TNC RF connector family, with 7/16-28 threaded couplings, provides low noise levels and optimum stability, and can withstand the shock and vibration often present in hostile environments.

Available in both 50 and 75 ohm versions, these connectors feature numerous styles including cable plugs and jacks, adapters and printed circuit board connectors. In addition to a variety of crimp type terminations, connectors are available in a twist-on style. These connectors accept a wide range of coaxial cables and are intermateable with industry standard connectors designed to MIL-C-39012 specifications.

Single crimp connectors provide reduced application time and lower applied costs. This is accomplished by using AMP one-crimp operation tooling which simultaneously terminates the inner conductor, outer braid and cable support with one controlled stroke.

When applications require military approved connectors, note that various dual crimp connectors meet or exceed all the requirements in specification MIL-C-39012, Class II, Category B, and carry the appropriate military designation number. For reduced cost with a high degree of reliability, these same connectors are offered in a tarnish resistant nickel finish.

AMP can also supply low-cost alternatives with a commercial type product line. These connectors are designed around the mil-specifications, offering comparable mechanical and electrical performance.

TNC Connectors, Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Characteristics	Single Crimp (Mil Type)	Category B Dual Crimp (Mil Type)	Commercial Dual Crimp 50 & 75 Ohm	Commercial PCB	Commercial Solder Jacks	Semi - Rigid
Electrical						
Impedance, Nom. (Ohms)	50	50	50	50	50	50
Working Voltage (Volts RMS)	500	500	500	500	500	335 @ Sea Level
Contact Resistance (Milliohms)	Inner: 1.5 Outer: 3	Inner: 1.5 Outer: 0.2	Inner: 2.0 Outer: 0.3	Inner: 6.0 Outer: 3.0	Inner: 2.75 Outer: 1.0	Inner: 1.5 Outer: 2
Initial Insulation Resistance (Megohms)	5000	5000	5000	5000	5000	5000
Dielectric Withstanding Voltage (VAC)	1500	1500	1500	1500	1500	1500
Corona Level at 70,000 ft. (Picocoulombs)	5 max. @ 375 VRMS	5 max. @ 375 VRMS	5 max. @ 375 VRMS	–	–	5 max. @ 375 VRMS
RF Leakage, Max. (dB)	–	60 @ 2-3 GHz	55 @ 2-3 GHz	–	–	60 @ 2-3 GHz
RF Insertion Loss, Max. (dB)	–	0.18 @ 9GHz	0.2 @ 3 GHz	–	–	0.06 @ 3-6 GHz
Frequency Range (GHz)	0-4	0-11	0-7	0-4	0-4	0-15
VSWR in Frequency Range Max.	1.35	1.3	1.40	–	–	1.35
Mechanical						
Force to Engage/ Couple, lbs. [N]	10/2 [44.5/8.9]	2/2 [8.9/8.9]	6/6 [26.7/26.7]	–	–	2/2 [8.9/8.9]
Coupling NutRetention, Min. lbs. [N]	100 [444.8]	100 [444.8]	60 [266.9]	–	–	–
Cable Retention, lbs. [N]	60 [266.9] RG58C/U	60 [266.9] RG58C/U	60 [266.9] RG58C/U	60 [266.9] (PCB Ret.)	–	60 [266.9]
Durability (Cycles) (Test Results)	500	500	500	500	500	500
Jam NutMounting Torque, Max.lbs. [N • m]	25 [2.8]	25 [2.8]	25 [2.8]	25 [2.8]	25 [2.8]	25 [2.8]
Environmental						
Temperature Range, Operating (C)	-65 to +85	-65 to +165 [1] -55 to +85 [2]	-55 to +85	-55 to +85	-65 to +165	-65 to +105
Vibration	MIL-STD-202 Method 204 Cond. B	MIL-STD-202 Method 204 Cond. B	MIL-STD-202 Method 204 Cond. B	MIL-STD-202 Method 201A Cond. A	MIL-STD-202 Method 204 Cond. B	MIL-STD-202 Method 204 Cond. B
Physical Shock	MIL-STD-202 Method 213 Cond. G, (50 G's)	MIL-STD-202 Method 213 Cond. I , (100 G's)	MIL-STD-202 Method 213 Cond. I , (100 G's)	MIL-STD-202 Method 213 Cond. I , (100 G's)	MIL-STD-202 Method 213 Cond. I , (100 G's)	MIL-STD-202 Method 213 Cond. I, (100 G's)
Thermal Shock	MIL-STD-202 Method 107	MIL-STD-202 Method 107 Cond. B	MIL-STD-20 Method 107 Cond. A	MIL-STD-202 Method 107	MIL-STD-202 Method 107	MIL-STD-202 Method 107
Moisture Resistance	MIL-STD-202 Method 106	MIL-STD-202 Method 106	MIL-STD-202 Method 106 Type II	MIL-STD-202 Method 106	MIL-STD-202 Method 106	MIL-STD-202 Method 106
Salt Spray	MIL-STD-202 Method 101 Cond. B	MIL-STD-202 Method 101 Cond. B	MIL-STD-202 Method 101 Cond. B	MIL-STD-202 Method 101 Cond. B	MIL-STD-202 Method 101 Cond. B	MIL-STD-202 Method 101 Cond. B
Product Specification	–	108-12001	108-12046	–	–	108-12032

[1] Assembled to cable with polytetrafluorethylene dielectric.
[2] Assembled to cable with polyethylene dielectric.

Connector Component	Single Crimp (Mil Style)	Category B Dual Crimp (Mil Type)	Commercial Dual Crimp 50 & 75 Ohm	Commercial PCB	Commercial Solder Jacks	Adapters
Connector Material						
Collar	Brass QQ-B-626	Brass QQ-B-626	Brass QQ-B-626	–	–	–
Outer Contact (Plug)	Phos. Bronze QQ-B-750, Beryl. Copper QQ-C-530	Phos. Bronze QQ-B-750, Beryl. Copper QQ-C-530	Brass MIL-C-21768	–	–	–
Outer Contact (Jack)	Brass QQ-B-626	Brass QQ-B-626	Zinc QQ-Z-363	Zinc QQ-Z-363	Zinc QQ-Z-363	Zinc QQ-Z-363 Brass QQ-B-626
Dielectric	TEFLON MIL-P-19468	TEFLON MIL-P-19468	Polyethylene; Polypropylene, Gen. Purpose	Polypropylene, Gen. Purpose[1]	TEFLON MIL-P-19468 Polyester PBT MIL-P-24519	Polypropylene, Gen. Purpose
Center Contact (Plug)	Brass QQ-B-626	Brass QQ-B-626	Brass QQ-B-626	–	–	–
Center Contact (Jack)	Beryl. Copper ASTM-B-643 , QQ-C-530	Beryl. Copper ASTM-B-643 , QQ-C-530	Beryl. Copper QQ-C-530	Phos. Bronze QQ-B-570	Phos. Bronze QQ-B-570	Phos. Bronze QQ-B-570
Gasket	Silicon Rubber QQ-R-765	Silicon Rubber QQ-R-765	Silicon Rubber QQ-R-765	–	–	–
Ferrule	Copper QQ-C-576	Copper QQ-C-576	Copper QQ-C-576	–	–	–
Connector Primary Finishes[2]						
Collar	Silver QQ-S-365	Silver QQ-S-365	Bright Nickel QQ-N-290	–	–	–
Outer Contact (Plug & Jack)	Silver QQ-S-365	Bright Nickel QQ-N-290	Bright or Matt Nickel QQ-N-290	Bright Nickel QQ-N-290	Bright Nickel QQ-N-290	Bright Nickel QQ-N-290
Center Contact (Plug & Jack)	Gold MIL-G-45204	Silver QQ-S-365	Tin-Lead, ASTM-B-545 Silver, QQ-S-365 Gold, MIL-G-45204	Tin-Lead, ASTM-B-545 Silver, QQ-S-365 Gold, MIL-G-45204	Tin-Lead, ASTM-B-545 Silver, QQ-S-365 Gold, MIL-G-45204	Gold MIL-G-45204
Ferrule	Silver QQ-S-365	Gold MIL-G-45204	Tin-Lead ASTM-B-5	–	–	–

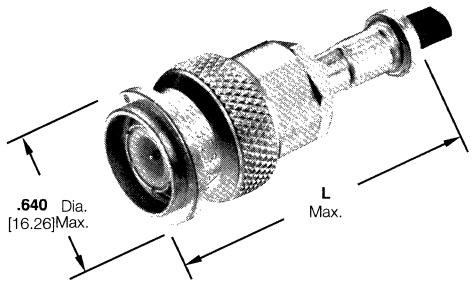
[1] Several pc board connectors have an outer polyester PBT insulator per MIL-P-24519.
[2] If several finishes are listed, refer to individual catalog page(s) or customer drawings for exact specifications.

TNC Connectors, 50 Ohm

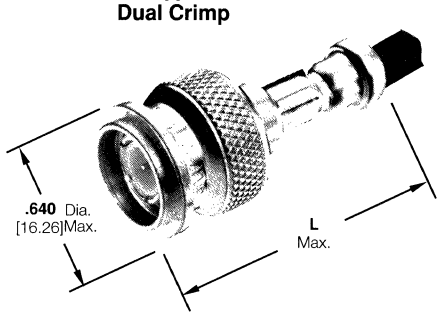
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Plugs, Crimp

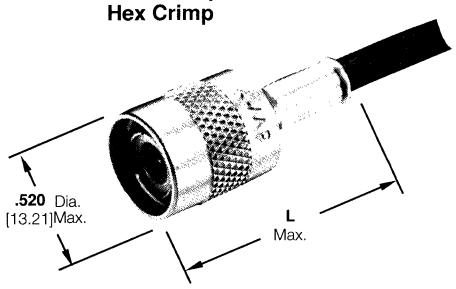
Single Crimp



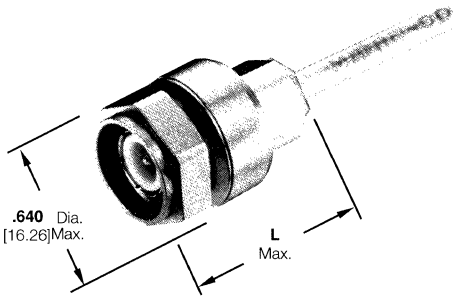
Mil Type Dual Crimp



Commercial Dual Crimp and Hex Crimp



Semi-Rigid Cable



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand Tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
B1	179, 179A, 179B 161, 187, 187A Belden 9221	Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**331103**	**1.435** 36.45	69245-1	–	69408
D	58, 58A, 58B, 58C	Hex Crimp	Gold	Nickel	Polypropylene	Commercial	–	**222506-1**	**1.230** 31.25	–	58436-1[2]	–
		Dual Crimp	Gold	Silver	TEFLON	Mil Type		**225550-2**	**1.375** 34.93	220045-2	–	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225555-2**	**1.375** 34.93	220045-2	–	–
		Single Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**330953**	**1.435** 36.45	69376-3	–	69815
D, D1	58, 58A, 58B, 58C 141, 141A, 303	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**227000-5**	**1.055** 26.8	220187-1	58435-1[1]	220217-1
D1	141, 141A, 303	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225555-5**	**1.375** 34.93	220045-2	–	–
		Single Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**2-330953-1**	**1.435** 36.45	69376-1	–	69493
D2	Belden 88240	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**2-227000-2**	**1.350** 34.29	220187-1	58435-1[1]	220217-1

† Refer to pages 4014 and 4015 for code specifications.
[1] Order AMP PRO-CRIMPER Coaxial "O" Crimp Hand Tool assembly 58433-1, which includes dies 58435-1.
[2] Order AMP PRO-CRIMPER Coaxial Hex Crimp Hand Tool assembly 58433-2, which includes dies 58436-1.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Plugs, Crimp (Continued)

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand Tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
E	223 55, 55A, 55B	Dual Crimp	Gold	Silver	TEFLON	Mil Type	26B0016 Weatherproof	**225550-1**	**1.375** 34.93	220045-2	–	–
		Single Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**2-330953-3**	**1.435** 36.45	69376-3	–	69815
E, E1	223, 55, 55A, 55B 142	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**227000-6**	**1.055** 26.8	220187-1	58435-1[1]	220217-1
E1	142, 142A, 142B 400	Dual Crimp	Gold	Silver	TEFLON	Mil Type	26B0006 Weaherproof	**225550-6**	**1.375** 34.93	220045-2	–	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225555-6**	**1.375** 34.93	220045-2	–	–
		Single Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**2-330953-2**	**1.435** 36.45	69376	–	69493-1
G	124, 140,210 62, 62A, 62B 59, 59A, 59B Belden 9291, 9209, 9268	Hex Crimp	Gold	Nickel	Polypropylene	Commercial	–	**222506-2**	**1.170** 29.72	–	58436-1[2]	–
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	26B0007 Weatherproof	**225550-3**	**1.187** 30.15	220045-3	–	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225555-3**	**1.187** 30.15	220045-3	–	–
		Dual Crimp	Silver	Nickel	Polypropylene	Commercial	–	**1-227000-1**	**1.055** 26.8	220187-2	58435-1[1]	220217-2
		Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**227000-7**	**1.055** 26.8	220187-2	58435-1[1]	220217-2
		Single Crimp	Gold	Silver	TEFLON	Mil Type	–	**331100**	**1.435** 36.45	69141-1	–	69224-1
G1	302 Belden 88241 Hi-Temp 62A Times PL-62 BerkTek BTDC-59, BTDC-62	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**1-227000-9**	**1.350** 34.29	220187-2	58435-1[1]	220217-2
G2	Hi-Temp 59 Times PL-59, PLF-59 (20 AWG C.C.)	Dual Crimp	Gold	Nickel	Polypropylene	Commercial	–	**3-227000-1**	**1.350** 34.29	–	220189-5	–
L	115A Belden 89880, 9880	Dual Crimp	Silver	Nickel	TEFLON	Mil Type	Weatherproof	**225555-9**	**2.000** 50.8	220015-1	–	–
M	8, 8A, 213 393	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225555-7**	**2.000** 50.8	220015-1	–	–
M3	Belden 89292, 8213, 9292 Alpha 8947	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**1-225550-3**	**1.995** 50.68	220015-1	–	–
M4	225	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**1-225550-2**	**2.000** 50.8	220015-1	–	–

† Refer to pages 4014 and 4015 for code specifications.
[1] Order AMP PRO-CRIMPER Coaxial "O" Crimp Hand Tool assembly 58433-1, which includes dies 58435-1.
[2] Order AMP PRO-CRIMPER Coaxial Hex Crimp Hand Tool assembly 58433-2, which includes dies 58436-1.

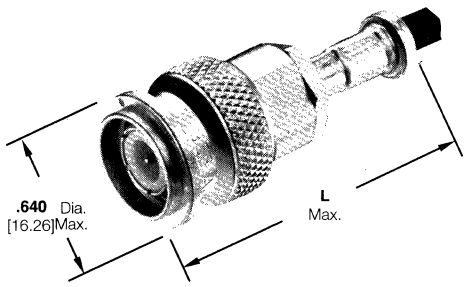
TNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

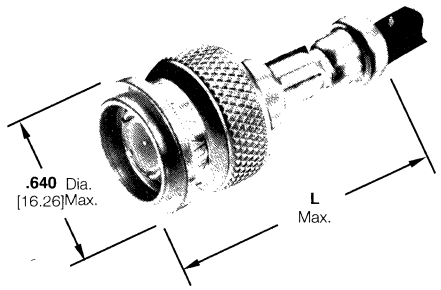
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Plugs, Crimp
(Continued)

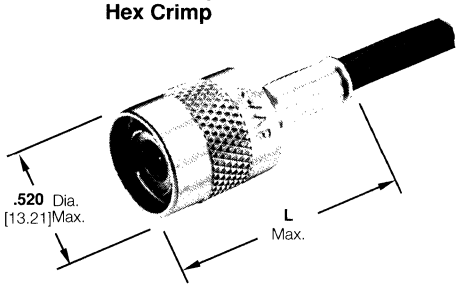
Single Crimp



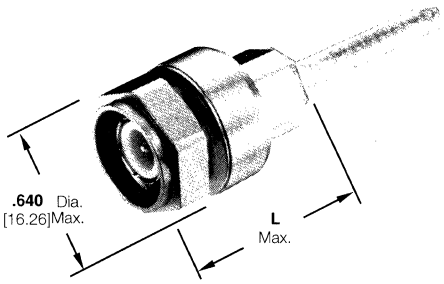
Mil Type Dual Crimp



Commercial Dual Crimp and Hex Crimp



Semi-Rigid Cable



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand Tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
N	9, 9A, 9B, 214	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225550-8**	**2.000** 50.8	220015-1	–	–
O	402 Semi-Rigid/.141	Crimp	Gold	Nickel	TEFLON	Commercial	–	**228179-2**	**.921** 23.4	–	[1]	[2]
		Crimp	Gold	Nickel	TEFLON	Commercial	Weatherproof	**228179-3**	**.921** 23.4	–	[1]	[2]
		Crimp	Gold	Stainless	TEFLON	Commercial	–	**228179-1**	**.921** 23.4	–	[1]	[2]
P	405 Semi-Rigid/.086	Crimp	Gold	Nickel	TEFLON	Commercial	–	**228179-4**	**.921** 23.4	–	[3]	[4]

[1] Hand Tool **No. 59980-1**, Requires (2) Crimping Dies **No. 312253-1** and (1) Locator **No. 220220-2.**
[2] Pneumatic Tool **No. 58318-1**, Requires (2) Crimping Dies **No. 313720-1** and (1) Locator **No. 220241-1.**
[3] Hand Tool **No. 59980-1**, Requires (2) Crimping Dies **No. 312253-2** and (1) Locator **No. 220221-2.**
[4] Pneumatic Tool **No. 58318-1**, Requires (2) Crimping Dies **No. 313719-1** and (1) Locator **No. 308075-2.**
† Refer to pages 4014 and 4015 for code specifications

TNC Connectors, 50 Ohm

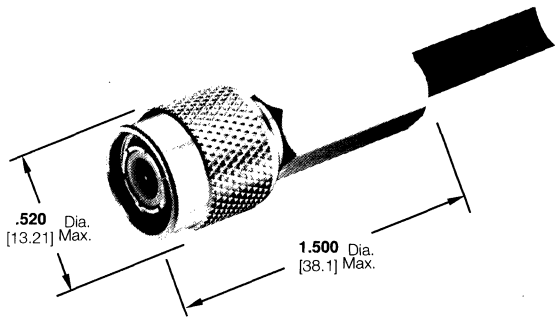
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Plugs, Twist-On

Related Product Data:

Twist-On plugs must be used with cable that has a solid conductor. These plugs are not recommended for applications where the cable frequently moves or flexes.

Mating Twist-On Jack - Page 4055



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.
D	58, 58A, 58B, 58C	Twist-on	Gold	Nickel	Acetal	Commercial	–	**221983-7**
G	62, 62A, 62B 59, 59A, 59B	Twist-on	Gold	Nickel	Acetal	Commercial	–	**221983-1**
K2	Belden 8281 9141, 9231 Western Electric 724, 728,3049	Twist-on	Gold	Nickel	Acetal	Commercial	–	**221983-5**

† Refer to pages 4014 and 4015 for code specifications.

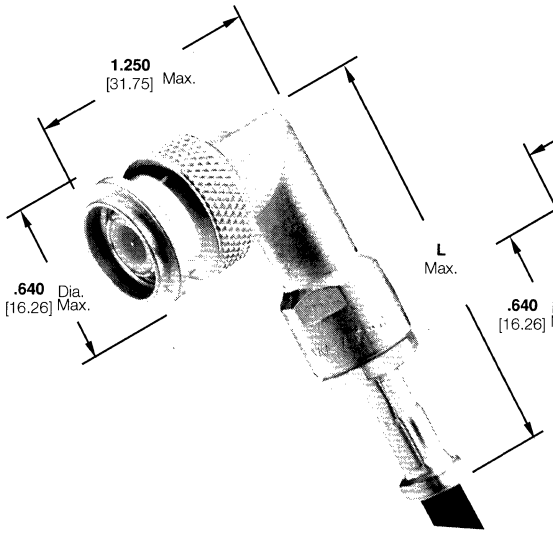
TNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

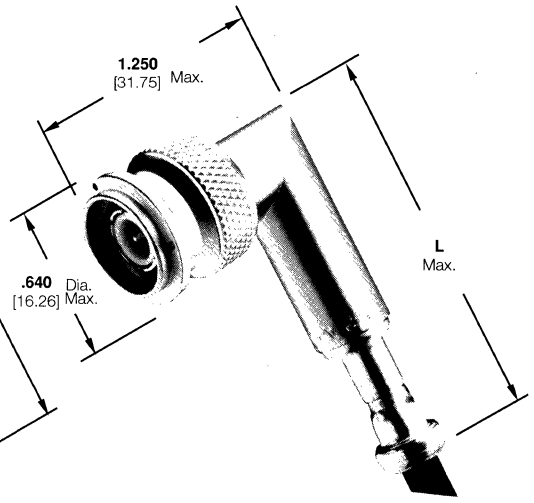
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Right-Angle Plugs, Crimp

Single Crimp



Dual Crimp



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand Tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225349-2**	**1.843** 46.82	220045-2	–	–
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225554-2**	**1.875** 47.83	220045-2	–	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225559-2**	**1.875** 47.63	220045-2	–	–
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**1-332292-3**	**1.600** 40.64	69376-3	–	69815
D1	141, 141A, 303	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225349-5**	**1.843** 46.82	220045-2	–	–
E1	142, 142A, 142B 400	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225349-6**	**1.843** 46.82	220045-2	–	–
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225554-6**	**1.875** 47.63	220045-2	–	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225559-6**	**1.875** 47.63	220045-2	–	–
G	124, 140, 210 62, 62A, 62B 59, 59A, 59B Belden 9291, 9209, 9268	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225403-3**	**1.687** 42.85	220045-3	–	–
J	304	Single Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**1-332292-7**	**1.600** 40.64	69811	–	20006-1
M	8, 8A, 213	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225349-8**	**2.343** 59.52	220015-1	–	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225559-8**	**2.500** 63.5	220015-1	–	–
M3	393 Belden 89292, 8213, 9292 Alpha 9847	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**1-225554-1**	**2.500** 63.5	220015-1	–	–
N	9, 9A, 9B, 214	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225349-9**	**2.343** 59.52	220015-1	–	–
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225554-9**	**2.500** 63.5	220015-1	–	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225559-9**	**2.500** 63.5	220015-1	–	–

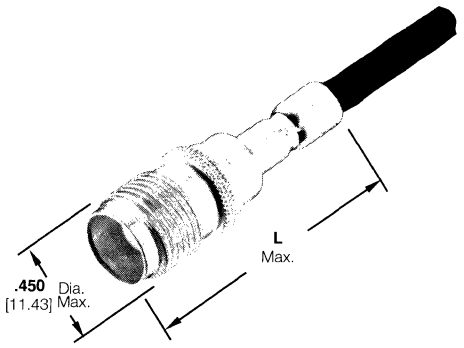
† Refer to pages 4014 and 4015 for code specifications.

TNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Jacks, Crimp



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Silver	TEFLON	Mil Type	27B0005	**225346-2**	**1.375** 34.93	220045-2
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225400-2**	**1.375** 34.93	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	27B0005 Weatherproof	**225551-2**	**1.406** 35.72	220045-2
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225556-2**	**1.406** 35.72	220045-2
D1	141, 141A, 303	Dual Crimp	Gold	Silver	TEFLON	Mil Type	27B0015 Weatherproof	**225551-5**	**1.406** 35.72	220045-2
E1	142, 142A,142B 400	Dual Crimp	Gold	Silver	TEFLON	Mil Type	27B0006 Weatherproof	**225551-6**	**1.406** 35.72	220045-2
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225556-6**	**1.406** 35.72	220045-2
G	124, 140, 210 62, 62A, 62B 59, 59A, 59B Belden 9291, 9209, 9268	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225400-3**	**1.218** 30.94	220045-3

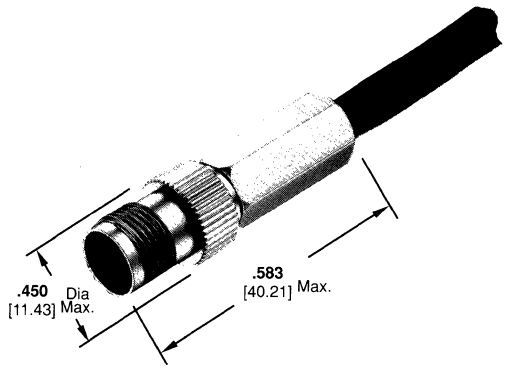
† Refer to pages 4014 and 4015 for code specifications.

Jacks, Twist-On

Related Product Data:

Twist-On Jacks must be used with cable that has a solid conductor. These plugs are not recommended for applications where the cable frequently moves or flexes.

Mating Twist-On Plug - Page 4053



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.
D	58, 58A, 58B, 58C	Twist-on	Gold	Nickel	Acetal	Commercial	–	**222429-7**
G	59, 59A, 59B 62, 62A, 62B	Twist-on	Gold	Nickel	Acetal	Commercial	–	**222429-2**
K2	Belden 8281, 9141, 9231	Twist-on	Gold	Nickel	Acetal	Commercial	–	**222429-5**

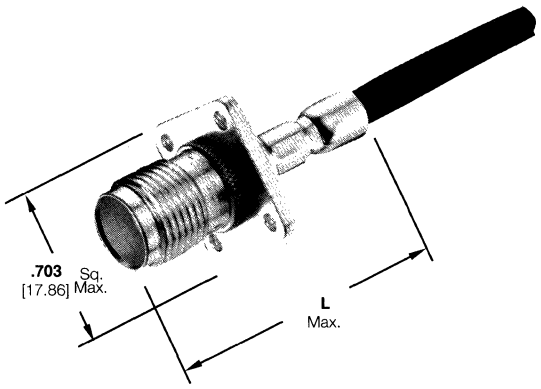
† Refer to pages 4014 and 4015 for code specifications.

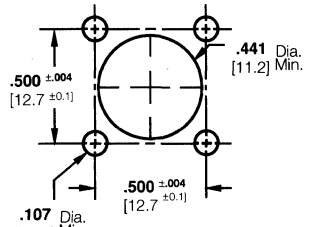
TNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Panel Jacks, Crimp





Recommended Panel Cutout

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Silver	TEFLON	Mil Type	29B0005	**225348-2**	**1.375** 34.93	220045-2
E1	142, 142A, 142B 400	Dual Crimp	Gold	Silver	TEFLON	Mil Type	29B0006 Weatherproof	**225553-6**	**1.406** 35.72	220045-2
M4	225	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**1-225553-0**	**2.031** 51.59	220015-1

† Refer to pages 4014 and 4015 for code specifications.

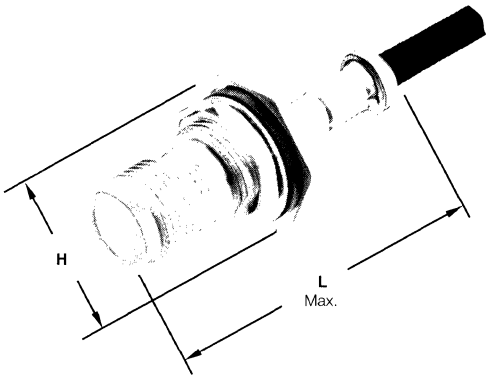
TNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

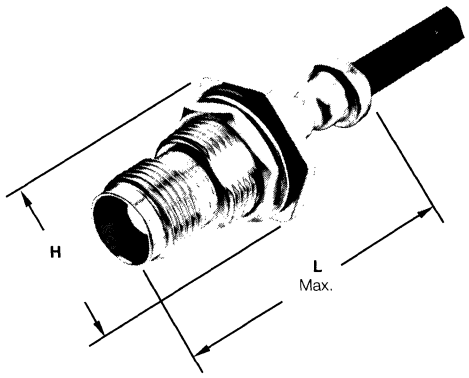
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

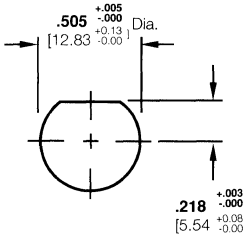
Bulkhead Jacks, Crimp

Single Crimp



Dual Crimp





Maximum Panel thickness- Single Crimp - **.125** [3.18];
Dual Crimp - **.250** [6.35]

Recommended Panel Cutout

H= .687 [17.45] max. across flats, **.800** [20.32] max. across points.

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	CERTI-CRIMP Hand Tool with Integral Die	Interchangeable Dies for PRO-CRIMPER Hand Tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
A	178, 178A, 178B 196, 196A	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331243**	**1.500** 38.1	69245-4	–	69471
B	174, 316 188, 188A	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331237**	**1.500** 38.1	69245-1	–	69422
B1	179, 179A, 179B 161 187, 187A Belden 9221	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331238**	**1.500** 38.1	69245-1	–	69408
C1	180, 180A, 180B 195, 195A	Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331239**	**1.500** 38.1	69246-1	–	69423
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**1-225552-1**	**1.531** 38.89	220045-2	–	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225557-2**	**1.500** 38.1	220045-2	–	–
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**331325**	**1.531** 38.89	69376-3	–	69815
D1	141, 141A, 303	Single Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**1-331325-1**	**1.500** 38.1	69376-1	–	69493
E	223 55, 55A, 55B	Dual Crimp	Gold	Silver	TEFLON	Mil Type	28B0016	**225347-1**	**1.500** 38.1	220045-2	–	–
E1	142, 142A, 142B 400	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225557-6**	**1.500** 38.1	220045-2	–	–
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**1-331325-2**	**1.531** 38.89	69376	–	69493-1
G	124, 140. 210 62, 62A, 62B 59, 59A, 59B Belden 9291 9209, 9268	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225347-3**	**1.343** 34.12	220045-3	–	–
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225401-3**	**1.343** 34.12	220045-3	–	–
		Single Crimp	Gold	Nickel	TEFLON	Mil Type	–	**331235**	**1.500** 38.1	69141-1	–	69224-1

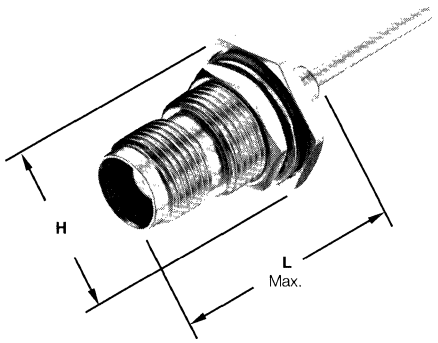
† Refer to pages 4014 and 4015 for code specifications.

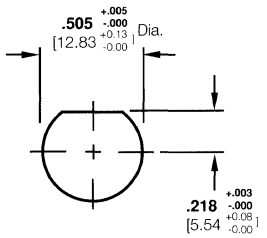
TNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Bulkhead Jacks for Semi-Rigid Cable, Rear Mount





Maximum Panel thickness- **.250** [6.35]

Recommended Panel Cutout

H= **.687** [17.45] max. across flats, **.800** [20.32] max. across points.

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Tooling
O	402 Semi-Rigid/.141	Crimp	Gold	Nickel	TEFLON	Mil Type	–	**228502-1**	**1.000** 25.4	*
P	405 Semi-Rigid/.086	Crimp	Gold	Nickel	TEFLON	Mil Type	–	**228507-1**	**1.169** 29.7	**

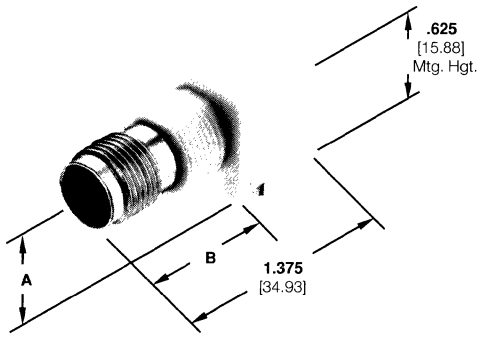
† Refer to pages 4014 and 4015 for code specifications.
* Tooling – Hand Tool **No. 59980-1**, Requires (2) Crimping Dies **No. 312253-1** and (1) Locator **No. 220220-2.**
Pneumatic Tool **No. 58318-1**, Requires (2) Crimping Dies **No. 313720-1** and (1) Locator **No. 220241-1.**
** Tooling – Hand Tool **No. 59980-1**, Requires (2) Crimping Dies **No. 312253-2** and (1) Locator **No. 220221-2.**
Pneumatic Tool **No. 58318-1**, Requires (2) Crimping Dies **No. 313719-1** and (1) Locator **No. 308075-2.**

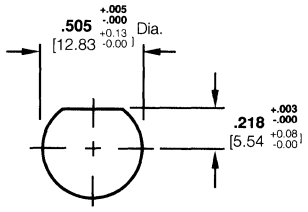
TNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Commercial Right-Angle Pc Board/Panel Mount Jacks





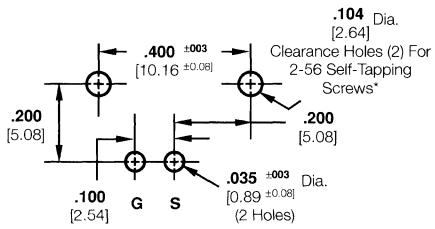
Maximum Panel thickness- **.240** [6.1]

Recommended Panel Cutout

Body Material	Center Contact Plating	Dimensions A	Dimensions B	Part Numbers Without Mounting Posts	Part Numbers With Mounting Posts
VALOX, White	Gold	**.337** 8.56	**.835** 21.21	**227812-1**	**227818-1**
VALOX, Black	Tin	**.337** 8.56	**.835** 21.21	–	**227819-3**
Metal	Tin	**.325** 8.26	**.820** 20.83	**227838-3**	**227839-3**
	Gold	**.325** 8.26	**.820** 20.83	**227838-1**	**227839-1**

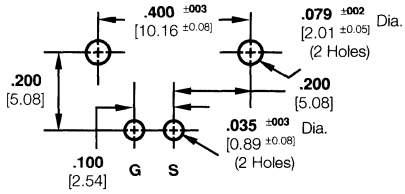
Recommended Pc Board Layouts

Without Mounting Posts



(Top View)

With Mounting Posts



(Top View)

*2-56 Self-Tapping Screws:
For 3/32 [1.57] or greater panel thickness - Part **No. 221108-2**
For less than 3/32 [1.57] panel thickness - Part **No. 221108-4**

Lockwasher and Jam Nut

Part No. 1-329632-2

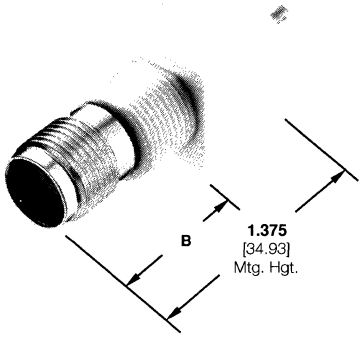
Part No. 1-329631-2

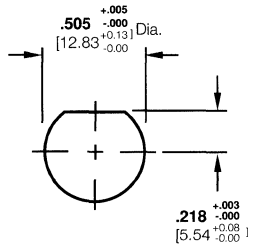
TNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Commercial Vertical Pc Board/Panel Mount Jacks





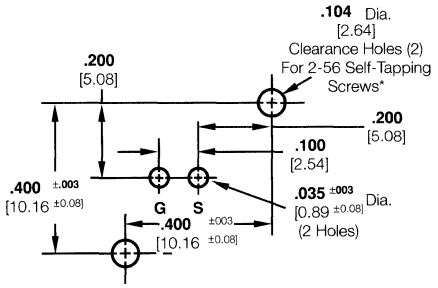
Maximum Panel thickness- **.240** [6.1]

Recommended Panel Cutout

Body Material	Center Contact Plating	Dim. B	Parts Numbers	
			Without Mounting Posts	With Mounting Posts
VALOX, White	Gold	.835 21.21	**227816-1**	-
VALOX, Black	Gold	.835 21.21	**227817-1**	-
Metal	Gold	.820 20.83	-	**227835-1**

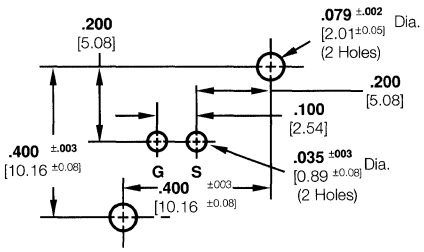
Recommended Pc Board Layouts

Without Mounting Posts



(Top View)

With Mounting Posts



(Top View)

*2-56 Self-Tapping Screws:
For 3/32 [1.57] or greater panel thickness - Part **No. 221108-2**
For less than 3/32 [1.57] panel thickness - Part **No. 221108-4**

Lockwasher and Jam Nut

Part No. 1-329632-2

Part No. 1-329631-2

TNC Connectors, 50 Ohm

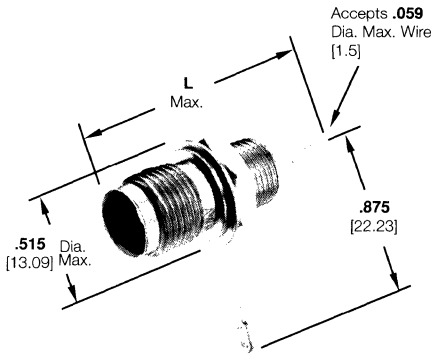
Specifications subject to change.
For latest design specifications...
1-800-522-6752

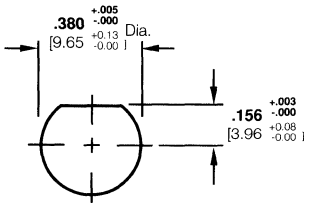
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Commercial Bulkhead Solder Jacks

Plating:

Body - Nickel
Center Contact - Gold

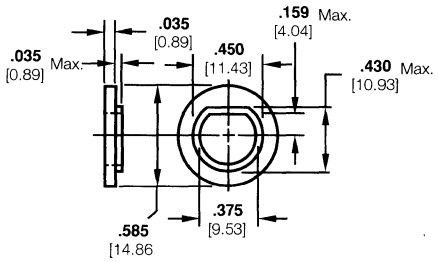


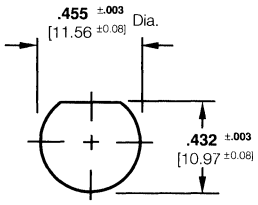


Recommended Panel Cutout (Jack)

Panel thickness: Refer to chart below.

Insulation Bushing
Material: Nylon
Part No. 227223-1





Recommended Panel Cutout (Bushing)

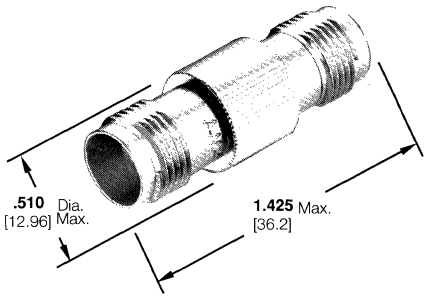
Dim. L	Panel Thickness	Part Numbers	
		With Solder Terminal	Without Solder Terminal
1.060 26.93	**.040-.156** 1.02-3.96	**227760-2**	**227758-2**
1.312 33.33	**.046-.250** 1.17-6.35	**227762-2**	**227764-2**

TNC Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

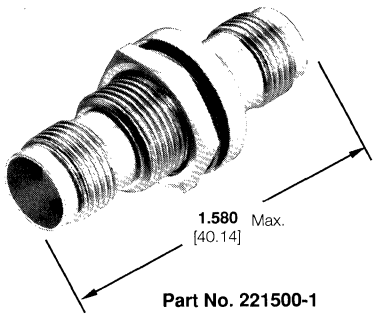
Jack Adapters



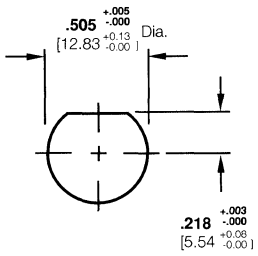
Body Plating	Center Contact Plating	Part No.
Nickel	Gold	**221325-1**
	Silver	**221325-2**

Bulkhead Jack Adapter

Plating:
Center Contact - Gold
Body - Nickel
Dielectric: Acetal



Part No. 221500-1



Maximum Panel thickness- **.250** [6.35]

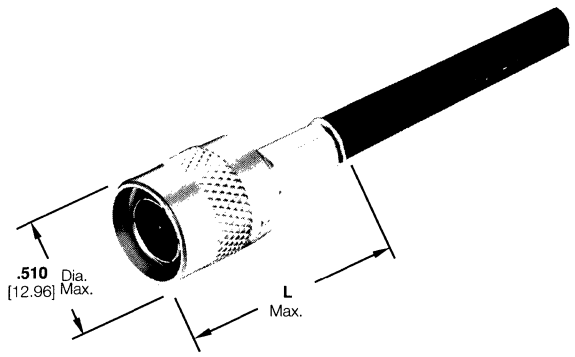
Recommended Panel Cutout

TNC Connectors, 75 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Commercial Plugs, Dual Crimp

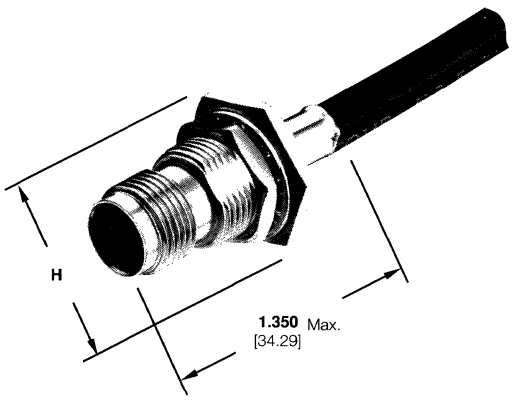


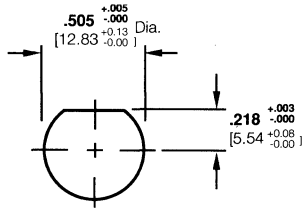
Connector Cable Range Selection Code †	RG/U Cable	Center Contact Plating	Body Plating	Dielectric	Style	AMP Part No.	Dim. L	Interchangeable Dies for PRO-CRIMPER Hand Tool	Interchangeable Dies for Hand Tool 69710-1 & Pneu. Tools 69365 & 69365-3
B1	179, 179A, 179B 187, 187A Belden 9221	Gold	Nickel	Polypropylene	Commercial	**221506-3**	**1.094** 27.79	58304-1	–
G	210 62, 62A, 62B, 59, 59A, 59B Belden 9291, 9209, 9268	Gold	Nickel	Polypropylene	Commercial	**221506-1**	**1.150** 29.21	58085-1	58248-2
K2	Belden 8281, 9141, 9231	Gold	Nickel	Polypropylene	Commercial	**221506-2**	**1.295** 32.9	220189-7	58248-1

† Refer to pages 4014 and 4015 for code specifications.

Commercial Bulkhead Jack, Dual Crimp

Plating:
Center Contact - Gold
Body - Nickel
Dielectric: Polypropylene





Maximum Panel thickness- **.250** [6.35]

Recommended Panel Cutout

H=.687 [17.45] max. across flats, **.800** [20.32] max. across points.

RG/U Cable - 210, 62, 62A, 62B, 59, 59A, 59B, Belden 9291, 9209, 9268
(Connector Cable Range Selection Code - G)

Part No. 221509-1

Tooling - Use Hand Tool No. **220190-1**
with Die Set No. **58085-1.**

Product Facts

- Designated connectors are MIL-C-39012, Class II, Category B qualified
- Captive center contacts
- Completely crimpable application – one hand tool crimps all cables with single or double braided shields of a given size
- Impedance matching crimps
- Broad band performance – low VSWR
- Superior cable retention
- TEFLON dielectric
- Silver or nickel finish
- Fully intermateable with MIL-C-39012 connectors

Related Product Data:

Connector Selection - Pages 4004-4006
Theory and Application - Pages 4007-4013
Cable-to-Connector Selection Guide - Pages 4014 & 4015
Connector Selection Guide - Page 4016
Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163

Military Category - All crimp connectors are Category B Type (AMP Crimp Tooling), unless otherwise noted under the "Military No. and/or Comments" column in the connector specifications chart.

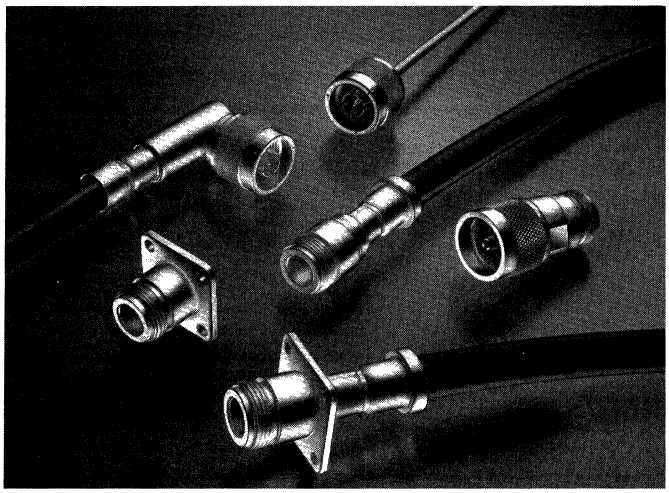
Packaging - All Mil Type connectors are packaged individually and all Commercial connectors are bulk packaged unless otherwise noted under to "Military No. and/or Comments" column in the connector specifications chart.

Materials

Brass: QQ-B-626
Beryllium Copper: QQ-C-530
TEFLON: MIL-P-19468
Copper, Annealed: QQ-C-576
Phosphor Bronze: QQ-B-750
Silicone Rubber: ZZ-R-765

Plating

Body:
Silver per QQ-S-365
Nickel per QQ-N-290
Center Contact:
Gold per MIL-G-45204
Silver, Tin



The AMP N Connector, featuring a 5/8 [15.88] - 24 threaded coupling for optimum stability, is highly suited for critical applications and environments. This medium sized connector can withstand shock and vibration to assure a low noise level and has a constant impedance of 50 ohms. It also features a captive center contact and provides excellent performance at frequencies up to 11 GHz, with voltages to 1000 volts rms.

This AMP connector offers the added benefits of low overall applied cost with a labor-saving two-crimp assembly. The contact is simply crimped to the cable's center conductor, then both braid and cable support are simultaneously crimped to complete the termination.
N Series Connectors are available in standard and weatherproof versions as well as plug, jack, panel jack, bulkhead jack and right-angle plug configurations. A smaller, light-weight commercial version that meets all the performance requirements of MIL-C-39012 is also available. Those connectors with a military designation (M39012) are furnished in accordance with all requirements of specification MIL-C-39012, Class II, Category B.

Table of Contents

Electrical Characteristics

Nominal Impedance: 50 ohms
Working Voltage: 1000 volts, rms at sea level
Frequency Range: 0 to 11 GHz
Voltage Standing Wave Ratio (VSWR):
Straight Plug or Jack- 1.3:1 max.
Right-Angle Plug-
1.35 max. at 0 to 9.0 GHz
1.50 max. at 9.0 to 11.0 GHz
Contact Resistance:
Outer contact - 0.2 milliohms
Center contact - 1.0 milliohms
Right Angle- 2.5 milliohms
Insulation Resistance: 5000 megohms min.
Dielectric Withstanding Voltage: 2500 Volts, rms at sea level
RF Leakage: Mil Type, -90 dB min. at 2 to 3 GHz
RF Insertion Loss: Mil Type, 0.15 dB max. at 10 GHz
Right-Angle Plug, 0.3 dB max. at 10 GHz
Corona Level: Mil Type, 500 volts min. at 70,000 ft. [21 336 m]
Terminator:
Resistance - 50 ohms ±1%
Power Rating - 1.0 watt max.

Mechanical Characteristics

Mating/Unmating: Threaded coupling
Cable Attachment: Crimp type - center contact and braid
Coupling Nut Retention: 100 lbs. [445 N] min.
Cable Retention: 90 lbs. [400 N] min. RG 214/U Cable
Durability: 500 cycles per MIL-C-39012
Captive Contact: 6 lbs. [27 N] min. axial retention, either direction

Environmental Characteristics

Temperature Range: Mil Type, -65°C to +165°C
Commercial, -55°C to +85°C
Vibration: MIL-STD-202, Method 204, Test Cond. B
Shock: MIL-STD-202, Method 213, Test Cond. I
Moisture Resistance: MIL-STD-202 Method 106
Salt Spray: MIL-STD-202, Method 101, Test Cond B
Temperature Cycling: MIL-STD-202, Method 107, Test Cond. B (except high temperature is +85°C)

Note: All data pertains to use with MIL-C-39012 specified cables only.

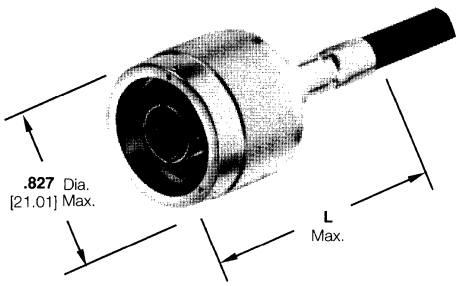
N Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

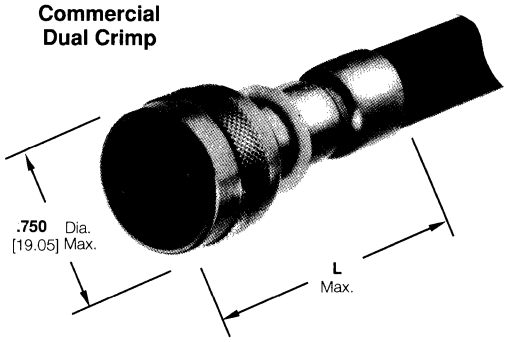
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Plugs, Crimp

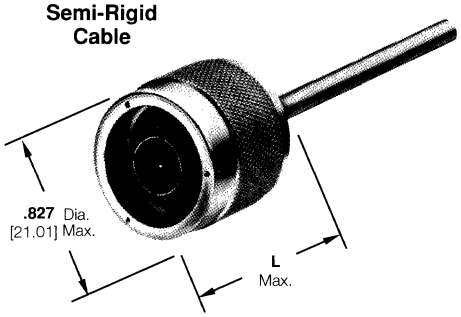
Mil Type Dual Crimp



Commercial Dual Crimp



Semi-Rigid Cable

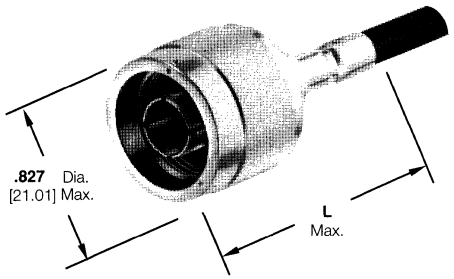


Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**1-225661-2***	**1.687** 42.85	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225361-1***	**1.687** 42.85	220045-2
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**1-225662-2***	**1.687** 42.85	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225392-7***	**1.687** 42.85	220045-2
D1	141, 141A, 303	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**1-225662-4***	**1.687** 42.85	220045-2
E	223 55, 55A, 55B	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**1-225661-3***	**1.687** 42.85	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225361-2***	**1.687** 42.85	220045-2
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**1-225662-3***	**1.687** 42.85	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225392-1***	**1.687** 42.85	220045-2
E1	142, 142A, 142B 400	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**1-225661-5***	**1.687** 42.85	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225361-4***	**1.687** 42.85	220045-2
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225699-1***	**1.687** 42.85	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225392-2***	**1.687** 42.85	220045-2
		Hex Crimp	Gold	Nickel	TEFLON	Commercial	–	**413672-1**	**1.687** 42.85	**
G	124, 140, 210 62, 62A, 62B 59, 59A, 59B Belden 9291, 9209, 9268	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**1-225092-6**	**1.687** 42.85	220045-3

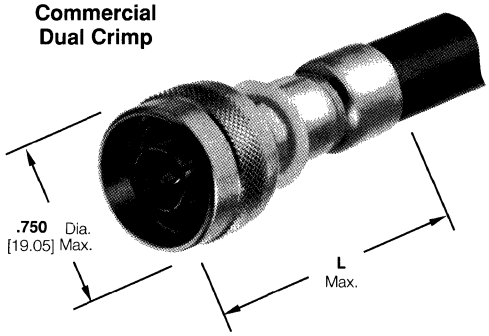
† Refer to pages 4014 and 4015 for code specifications.
* Hand Tool 69710-1, Pneumatic Tools 69365 and 69365-3, with Die Insert 220062-1, are available to terminate these connectors.
** Order AMP PRO-CRIMPER Coaxial Hex Crimp Hand Tool assembly 58433-2, which includes dies 58436-1.

Plugs, Crimp
(Continued)

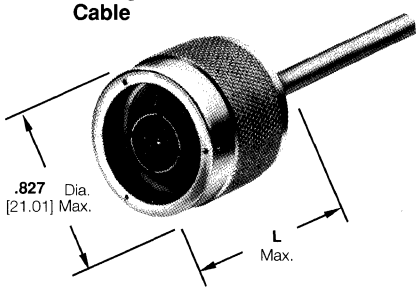
Mil Type Dual Crimp



Commercial Dual Crimp



Semi-Rigid Cable



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool
L	115A Belden 89880, 9880	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**1-225661-0**	**1.687** 42.85	220015-1
M	8, 8A, 213	Dual Crimp	Bright Tin	Nickel	TEFLON	Commercial	–	**227086-1**	**1.687** 42.85	220015-1
		Dual Crimp	Gold	Nickel	TEFLON	Commercial	–	**1-227086-0**	**1.687** 42.85	220015-1
		Dual Crimp	Silver	Nickel	TEFLON	Commercial	–	**1-227086-9**	**1.687** 42.85	220015-1
M	8, 8A, 213	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225661-2**	**1.687** 42.85	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	01B0007	**51692-2**	**1.687** 42.85	220015-1
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225662-2**	**1.859** 47.22	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	01B0007 Weatherproof	**225092-2**	**1.859** 47.22	220015-1
M1	11, 11A	Dual Crimp	Gold	Silver	TEFLON	Mil Type	01B0013	**51692-4**	**1.687** 42.85	220015-1
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225662-4**	**1.859** 47.22	220015-1
M3	393 Belden 89292, 8213, 9292 Alpha 9847	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225092-7**	**1.687** 42.85	220015-1
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**1-225662-1**	**1.859** 47.22	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**1-225092-1**	**1.859** 47.22	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**1-225662-8**	**1.859** 47.22	220015-1
M4	225	Dual Crimp	Gold	Silver	TEFLON	Mil Type	01B0012 Weatherproof	**225092-7**	**1.859** 47.22	220015-1

† Refer to pages 4014 and 4015 for code specifications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Plugs, Crimp (Continued)

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool
M5	Belden 8214	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**1-225661-6**	**1.687** 42.85	220015-1
N	9, 9A, 9B 214	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225661-1**	**1.687** 42.85	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	01B0008	**51692-1**	**1.687** 42.85	220015-1
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225662-1**	**1.859** 47.22	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	01B0008 Weatherproof	**225092-1**	**1.859** 47.22	220015-1
		Dual Crimp	Bright Tin	Nickel	TEFLON	Commercial	–	**227086-2**	**1.687** 42.85	220015-1
		Dual Crimp	Gold	Nickel	TEFLON	Commercial	–	**1-227086-1**	**1.687** 42.85	220015-1
O	402 Semi-Rigid/ .141	Crimp	Gold	Nickel	TEFLON	Mil Type	–	**228440-1**	**.968** 24.59	*
P	405 Semi-Rigid/ .086	Crimp	Gold	Nickel	TEFLON	Mil Type	–	**228440-2**	**1.140** 28.96	**

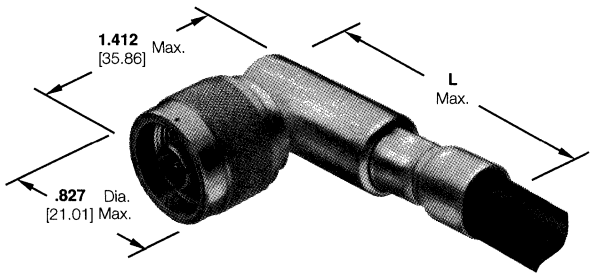
† Refer to pages 4014 and 4015 for code specifications.
* Tooling – Hand Tool No. 59980-1, Requires (2) Crimping Dies No. **312253-1** and (1) Locator No. **220220-2**.
Pneumatic Tool No. 58318-1, Requires (2) Crimping Dies No. **313720-1** and (1) Locator No. **220241-1.**
** Tooling – Hand Tool No. 59980-1, Requires (2) Crimping Dies No. **312253-2** and (1) Locator No. **220221-2.**
Pneumatic Tool No. 58318-1, Requires (2) Crimping Dies No. **313719-1** and (1) Locator No. **308075-2**.

N Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Right-Angle Plugs, Crimp



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**1-225669-2***	**2.275** 57.79	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225365-1***	**2.275** 57.79	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225394-4***	**2.275** 57.79	220045-2
E	223 55, 55A, 55B	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225365-2***	**2.275** 57.79	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225394-1***	**2.275** 57.79	220045-2
E1	142, 142A, 142B 400,Belden 9246	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225365-4***	**2.275** 57.79	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225394-2***	**2.275** 57.79	220045-2
L	115A Belden 89880, 9880	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225014-4**	**2.275** 57.79	220015-1
M	8, 8A, 213	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225669-2**	**2.275** 57.79	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	05B0002	**225014-2**	**2.275** 57.79	220015-1
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225670-2**	**2.275** 57.79	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	05B0002 Weatherproof	**225389-2**	**2.453** 62.31	220015-1
M3	393 Belden 89292, 8213, 9292 Alpha 9847	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225389-6**	**2.453** 62.31	220015-1
M4	225	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225389-3**	**2.543** 62.31	220015-1
N	9, 9A, 9B 214	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225669-1**	**2.275** 57.79	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	05B0003	**225014-3**	**2.275** 57.79	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	05B0003 Weatherproof	**225389-4**	**2.453** 62.31	220015-1

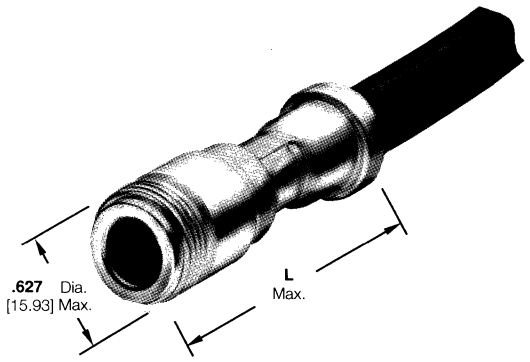
† Refer to pages 4014 and 4015 for code specifications.
* Hand Tool 69710-1, Pneumatic Tools 69365 and 69365-3, with Die Insert 220062-1, are available to terminate these connectors.

N Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Jacks, Crimp



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225362-1***	**1.765** 44.84	220045-2
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**1-225664-2***	**1.765** 44.84	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225723-4***	**1.765** 44.84	220045-2
E1	142, 142A, 142B 400	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**1-225663-5***	**1.765** 44.84	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mill Type	Weatherproof	**225723-2***	**1.765** 44.84	220045-2
M	8, 8A, 213	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225664-2**	**1.937** 49.2	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	02B0008	**225093-2**	**1.937** 49.2	220015-1
M1	11, 11A	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225664-4**	**1.937** 49.2	220015-1
N	9, 9A, 9B 214	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225664-1**	**1.937** 49.2	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	02B0009	**225093-1**	**1.937** 49.2	220015-1

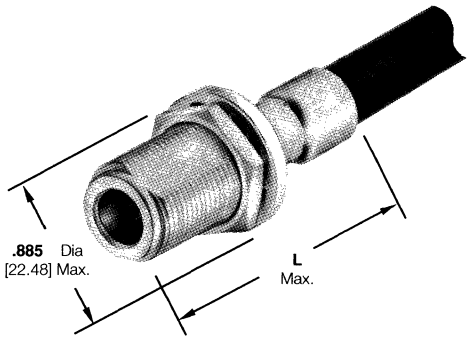
† Refer to pages 4014 and 4015 for code specifications.
* Hand Tool 69710-1, Pneumatic Tools 69365 and 69365-3, with Die Insert 220062-1, are available to terminate these connectors.

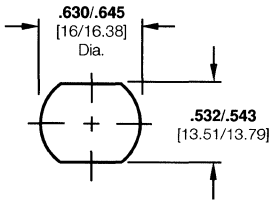
N Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Bulkhead Jacks, Crimp





Maximum Panel Thickness - **.250** [6.35]

Recommended Panel Cutout

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**1-225667-2***	**1.953** 49.61	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225363-1***	**1.953** 49.6	220045-2
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**1-225668-2***	**1.953** 49.61	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225393-4***	**1.953** 49.61	220045-2
E	223 55, 55A, 55B	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225363-2***	**1.953** 49.61	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225393-1***	**1.953** 49.61	220045-2
E1	142, 142A, 142B 400	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225363-4***	**1.953** 49.6	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225393-2***	**1.953** 49.61	220045-2
G	124, 140, 210 62, 62A, 62B 59, 59A, 59B Belden 9291, 9209, 9268	Dual Crimp	Gold	Silver	TEFLON	Mil Type	–	**225363-6**	**1.780** 45.21	220045-3
L	115A Belden 89880, 9880	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225094-8**	**2.125** 53.98	220015-1
M	8, 8A, 213	Dual Crimp	Gold	Silver	TEFLON	Mil Type	03B0004 Weatherproof	**225094-2**	**2.125** 53.98	220015-1
M3	393 Belden 89292, 8213, 9292 Alpha 9847	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**1-225668-1**	**2.125** 53.98	220015-1
N	9, 9A, 9B 214	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225667-1**	**1.953** 49.61	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	03B0005 Weatherproof	**225094-1**	**2.125** 53.98	220015-1

† Refer to pages 4014 and 4015 for code specifications.
* Hand Tool 69710-1, Pneumatic Tools 69365 and 69365-3, with Die Insert 220062-1, are available to terminate these connectors.

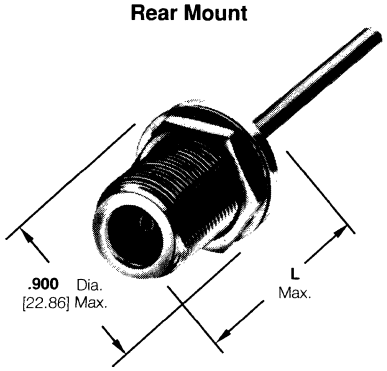
N Connectors, 50 Ohm

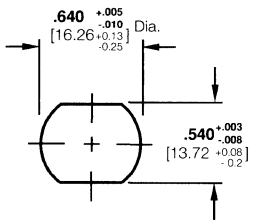
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Bulkhead Jacks for Semi-Rigid Cable

Rear Mount

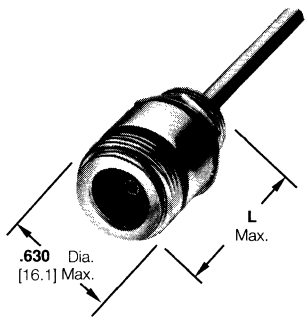


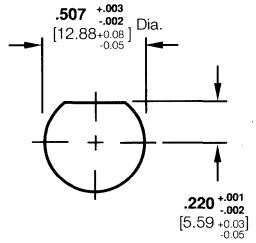


Maximum Panel Thickness - **.250** [6.35]

Recommended Panel Cutout

Front Mount





Maximum Panel Thickness - **.250** [6.35]

Recommended Panel Cutout

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool
O	402 Semi-Rigid/.141	Crimp	Gold	Nickel	TEFLON	Mil Type	Rear Mount	**228658-1**	**1.156** 29.37	*
		Crimp	Gold	Nickel	TEFLON	Mil Type	Front Mount	**228448-1**	**1.156** 29.37	*
P	405 Semi-Rigid/.086	Crimp	Gold	Nickel	TEFLON	Mil Type	Rear Mount	**228658-2**	**1.330** 33.79	**

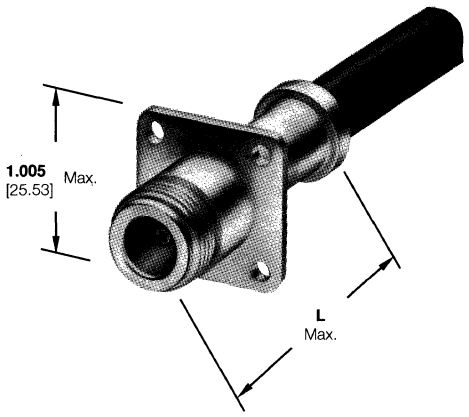
† Refer to pages 4014 and 4015 for code specifications.
* Tooling – Hand Tool No. 59980-1, Requires (2) Crimping Dies No. **312253-1** and (1) Locator No. **220220-2**.
Pneumatic Tool No. 58318-1, Requires (2) Crimping Dies No. **313720-1** and (1) Locator No. **220241-1.**
** Tooling –Hand Tool No. 59980-1, Requires (2) Crimping Dies No. **312253-2** and (1) Locator No. **220221-2.**
Pneumatic Tool No. 58318-1, Requires (2) Crimping Dies No. **313719-1** and (1) Locator No. **308075-2**.

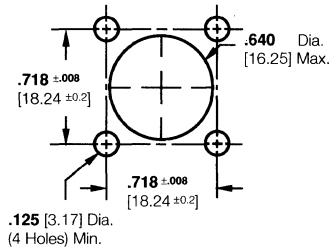
N Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Panel Jacks, Crimp





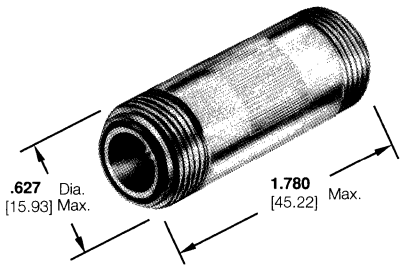
Recommended Panel Cutout

Connector Cable Range Selection Code†	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225606-4***	**1.937** 49.2	220045-2
M	8, 8A, 213	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225666-2**	**1.937** 49.2	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	02B0016 Weatherproof	**225089-2**	**1.937** 49.2	220015-1
N	9, 9A, 9B 214	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	–	**225665-1**	**1.765** 44.84	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	02B0017 Weatherproof	**225089-1**	**1.937** 49.2	220015-1

† Refer to pages 4014 and 4015 for code specifications.
* Hand Tool 69710-1, Pneumatic Tools 69365 and 69365-3, with Die Insert 220062-1, are available to terminate these connectors.

Feed-Thru Jack Adapter
(Jack-Jack)

Body - Nickel plated
Dielectric - General purpose polypropylene

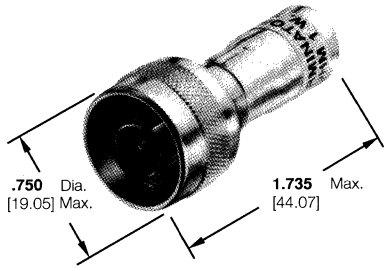


Contact - Silver plated
Part No. 227945-1
Contact - Gold plated
Part No. 227945-2

Terminators

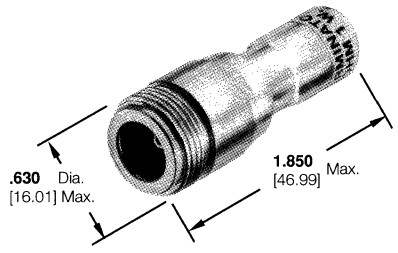
Dielectric - TEFLON

Plug



Body - Nickel plated
Contact - Gold plated
Part No. 227953-1

Jack

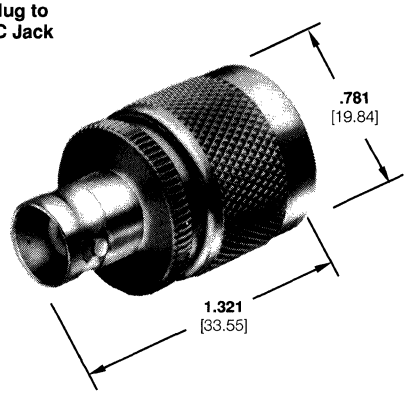


Body - Nickel plated
Contact - Gold plated
Part No. 227997-1
Body - Nickel plated
Contact - Silver plated
Part No. 227997-2

Adapters

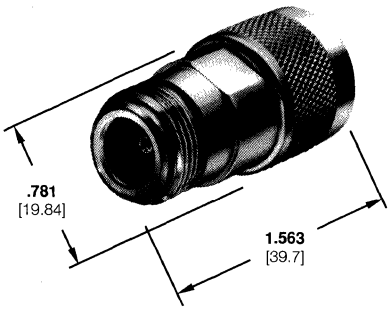
Body - Nickel plated
Contact - Gold plated
Dielectric - TEFLON

N Plug to BNC Jack



Part No. 222321-1

N Jack to UHF Plug



Part No. 222322-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

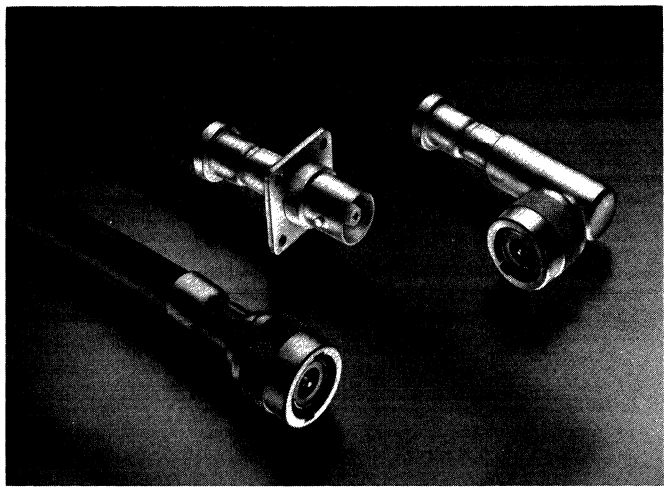
- Captive center contacts
- TEFLON dielectric
- Completely crimpable application - one hand tool crimps both center conductor and braid for maximum savings in time and labor
- Precision matched tooling applies impedance matching crimps
- No danger of heat damage to coaxial cable
- Low VSWR
- Superior cable retention

Related Product Data:

Connector Selection - Pages 4004-4006
Theory and Application - Pages 4007-4013
Cable-to-Connector Selection Guide - Pages 4014 & 4015
Connector Selection Guide - Page 4016
Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163

Military Category - All crimp connectors are Category B Type (AMP Crimp Tooling), unless otherwise noted under the "Military No. and/or Comments" column in the connector specifications chart.

Packaging - All connectors are packaged individually unless otherwise noted under the "Military No. and/or Comments" column in the connector specifications chart.



The C Connector, featuring a bayonet-locking coupling for quick connect/disconnect termination, is rated for use in applications where voltages do not exceed 1000 volts. Having a constant impedance of 50 ohms, this medium size connector is intended for use with medium size cables such as RG-8A, 9B. 213 and 214 but can be used with 75 ohm cables where impedance matching is not critical. It also provides excellent performance at frequencies up to 11 GHz.

The connector is also designed to assure optimum mechanical and RF performance at the lowest overall applied cost. It features a captivated center contact and is fully crimpable to coaxial cable using matching AMP tooling. Only one hand tool is required to completely terminate a given size cable with either a single-or double-braided shield.

C Series Connectors are available in both standard and weather-proof versions and can be furnished in a variety of configurations, including plug, panel jack and right-angle plug.

Table of Contents

Electrical Characteristics

Nominal Impedance: 50 ohms
Working Voltage: 1000 volts rms max. at sea level
Frequency Range: 0 to 11 GHz
VSWR:
Straight Plug or Panel Jack- 1.35 max.
Right-Angle Plug–1.50 max. at 9.0 to 11.0 GHz
Contact Resistance:
Outer contact – 0.15 milliohm max.
Center contact – 1 milliohm max.
Right-Angle Plug – 2.5 milliohm max.
Insulation Resistance: 5000 megohms (min.)
Dielectric Withstanding Voltage: 3000 volts, rms min. at sea level
RF Leakage: -55 dB min. (2 to 3 GHz)
RF Insertion Loss:
Straight Plug or Panel Jack– $.05\sqrt{f}$ (GHz)
Right-Angle Plug– $.07\sqrt{f}$ (GHz)

Environmental Characteristics

Temperature Range: -65°C to +165°c (TEFLON cables)
Vibration: MIL-STD-202, Method 204 Test Cond. B
Shock: MIL-STD-202, Method 213, 50 G's
Moisture Resistance: MIL-STD-202, Method 106
Salt Spray: MIL-STD-202, Method 101, Test Cond. B
Temperature Cycling: MIL-STD-202, Method 102, Test Cond. C

Mechanical Characteristics

Mating/Unmating: Bayonet coupling
Cable Attachment: Crimp type – center conductor and braid
Coupling Nut Retention: 100 lbs. [445 N] min.
Cable Retention: 90 lbs. [400 N] min., RG-214 cable
Durability: 500 cycles, per MIL-C-39012

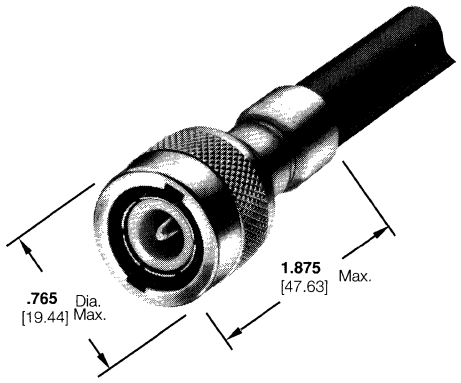
Materials

Brass: QQ-B-626
Beryllium Copper: QQ-C-530
TEFLON: MIL-P-19468
Copper, Annealed: QQ-C-576
Phosphor Bronze: QQ-B-750
Silicone Rubber: ZZ-R-765

Plating

Silver – QQ-S-365 .0002 [0.005] min.
Gold – MIL-G-45204 .0001 [0.003] min.

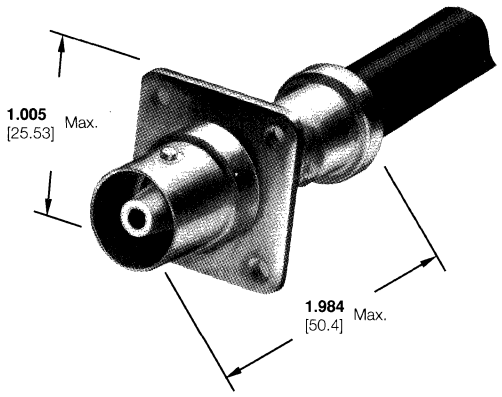
Plugs, Crimp

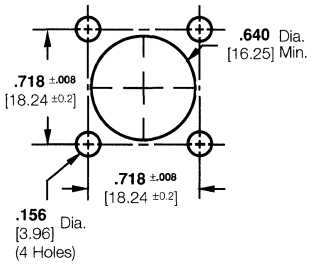


Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Integral Die Hand Tool
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225672-3**	220045-2
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225830-2**	220045-2
E	55, 55A, 55B 223	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225830-1**	220045-2
M	8, 8A, 213	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225407-2**	220015-1
		Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225672-5**	220015-1
N	9, 9A, 9B, 214	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225407-1**	220015-1
–	Microdot 250-4172, 250-4208	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225407-8**	220015-3

† Refer to pages 4014 and 4015 for code specifications.

Panel Jacks, Crimp





Maximum Panel Thickness - **.188** [4.78]

Recommended Panel Cutout

Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Integral Die Hand Tool
M	8, 8A, 213	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225409-2**	220015-1
N	9, 9A, 9B, 214	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225409-1**	220015-1

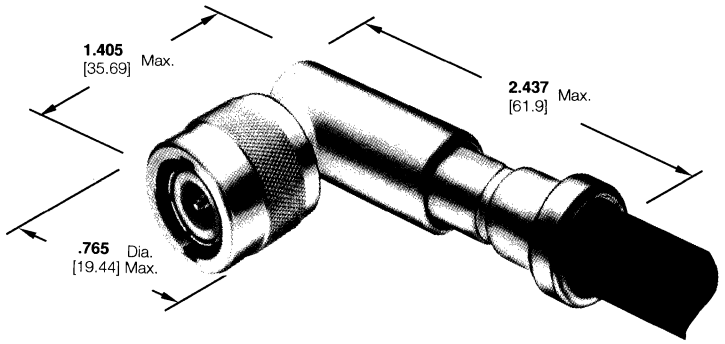
† Refer to pages 4014 and 4015 for code specifications.

C Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Right-Angle Plugs, Crimp



Connector Cable Range Selection Code †	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	M39012/ Military No. and/or Comments	AMP Part No.	Integral Die Hand Tool
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225919-1**	220045-2
M	8, 8A, 213	Dual Crimp	Gold	Nickel	TEFLON	Mil Type	Weatherproof	**225680-2**	220015-1
		Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225411-2**	220015-1
M4	225	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225411-3**	220015-1
N	9, 9A, 9B, 214	Dual Crimp	Gold	Silver	TEFLON	Mil Type	Weatherproof	**225411-1**	220015-1

† Refer to pages 4014 and 4015 for code specifications.

SHV Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

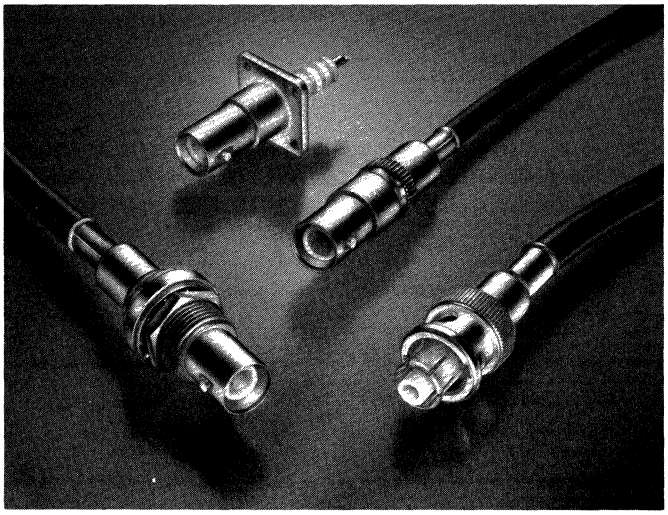
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

- Safe-tested at 5000 volts DC
- Polarized center contacts
- Heat-resistant TEFLON insulators
- Crimp contacts for low-cost applications
- Quick connect/disconnect bayonet coupling
- Positive insulation grip

Related Product Data:

Connector Selection - Pages 4004-4006
Theory and Application - Pages 4007-4013
Cable-to-Connector Selection Guide - Pages 4014 & 4015
Connector Selection Guide - Page 4016
Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163
Packaging - All connectors are packaged individually unless otherwise noted.



SHV Connectors are small, lightweight, weatherproof connectors designed to provide shielded disconnects for high-voltage applications up to 5,000 volts DC. They can be used with a wide range of small coaxial cables such as RG-58C, 59B, 62B and 188.

For maximum operating performance, the SHV Connector has been designed to comply with the National Bureau of Standards' specification ND-545. In addition, the connector meets all specifications for the NIM standard high-voltage connector of the Nuclear Regulatory Commission. This connector has non-constant impedance characteristics and features polarized center contacts which are recessed in the dielectric. The connector also has a bayonet-locking coupling similar to BNC con-nectors; however, the SHV connector will not intermate with the standard bayonet-type connector.

To reduce unit cost, the center contact of the plug is crimped to the center conductor prior to assembly. With the crimped contact inserted into the plug, a ferrule is simply dressed over the braid, then crimped to complete the assembly.

Panel or bulkhead solder jacks can be pre-positioned in a panel or bulkhead, since no crimping preparation is required.

Table of Contents

Electrical Characteristics

Working Voltage: 5000 volts DC
Contact Resistance:
Center contact - 2.1 milliohms
Outer contact - 1.5 Milliohms
Insulation Resistance: 1 x 106 megohms min.
Dielectric Withstanding Voltage 5000 volts AC

Mechanical Characteristics

Mating/Unmating: Bayonet-lock coupling
Cable attachment: Crimp type – center contact and braid
Coupling nut retention: 100 lbs. [444.8 N] min.
Cable retention: 60 Lbs. [266.9 N] Min. (RG-58C/U cable)
Durability: 500 cycles per MIL-C-39012

Environmental Characteristics

Temperature range: -65°C to +200°C
Vibration: MIL-STD-202, Method 204, Test Cond. A
Shock: MIL-STD-202, Method 213, Test Cond. A
Salt spray: MIL-STD-202, Method 101, Test Cond. B
Temperature cycling: MIL-STD-202, Method 102, Test Cond. D

Materials

Beryllium copper: QQ-C-530
Silicone rubber: ZZ-R-765
Brass: QQ-B-626
Copper: QQ-C-576
TEFLON insulation: MIL-P-19468

Plating

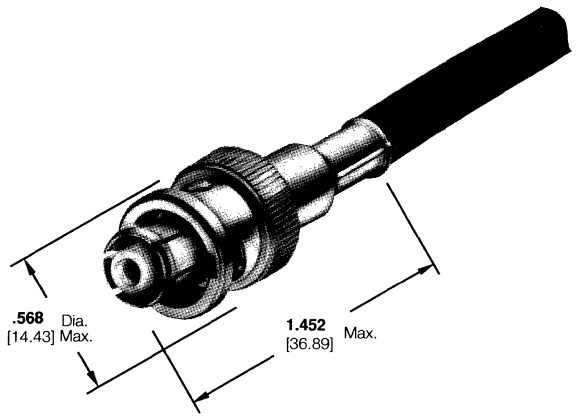
Silver–QQ-S-365
Gold–MIL-G-45204
Nickel–QQ-N-290

SHV Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

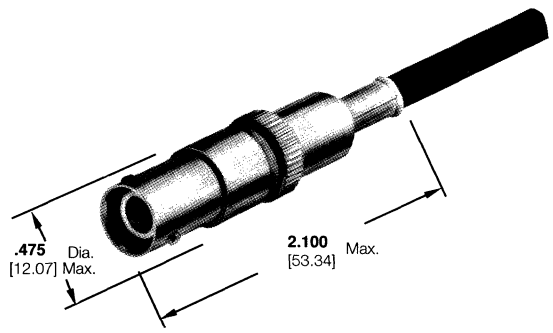
Plugs, Crimp



Connector Cable Range Selection Code†	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	AMP Part No.	Dim. L	Integral Die Hand Tool	Die Insert for Tools: Hand Tool- 69710-1 Pneu.- 69365, 69365-3
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Nickel	TEFLON	**51426-4**	**1.452** 36.89	220022-1	–
		Dual Crimp	Gold	Silver	TEFLON	**51426-1**	**1.452** 36.89	220022-1	–
G	124, 140, 210 62, 62A, 62B 59, 59A, 59B Belden 9291, 9209 9268	Dual Crimp	Gold	Nickel	TEFLON	**51426-5**	**1.452** 36.89	220022-2	220028-2
		Dual Crimp	Gold	Silver	TEFLON	**51426-2**	**1.452** 36.89	220022-2	220028-2

† Refer to pages 4014 and 4015 for code specifications.

Jacks, Crimp



Connector Cable Range Selection Code†	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	AMP Part No.	Dim. L	Integral Die Hand Tool	Die Insert for Tools: Hand Tool- 69710-1 Pneu.- 69365, 69365-3
D	58, 58A, 58B, 58C	Dual Crimp	Gold	Nickel	TEFLON	**225087-4**	**2.100** 53.34	220022-1	–
G	124, 140, 210 62, 62A, 62B 59, 59A, 59B Belden 9291,9209 9268	Dual Crimp	Gold	Nickel	TEFLON	**225087-5**	**2.100** 53.34	220022-2	220028-2

† Refer to pages 4014 and 4015 for code specifications.

SHV Connectors

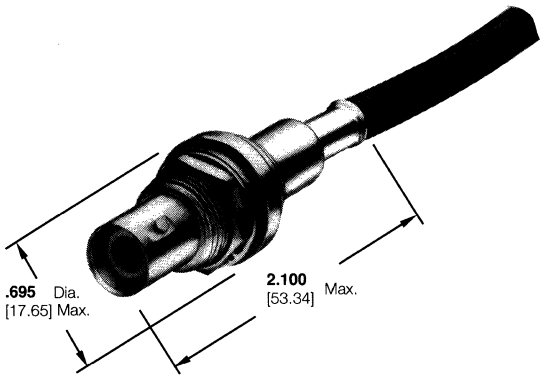
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

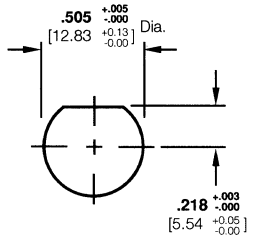
Bulkhead Jack, Crimp

Plating:
Body - Nickel
Center Contact - Gold
Dielectric: TEFLON

RG/U Cable - 59, 59A, 59B, 62, 62A, 62B,124, 140, 210, Belden 9291,
9209, 9268 (Connector Cable Range Selection Code - G)
Tooling - Hand Tool **220022-2**, Pneumatic Tool **69365** with dies **220028-2**



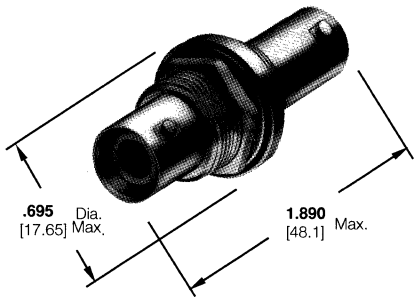
Part No. 225059-3



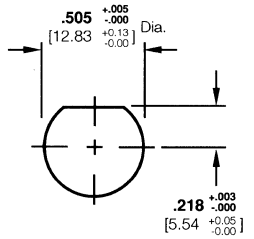
Maximum Panel Thickness - **.250** [6.35]
Recommended Panel Cutout

Bulkhead Jack Adapter (Jack-Jack)

Plating
Body - Nickel
Center Contact - Gold
Dielectric: TEFLON



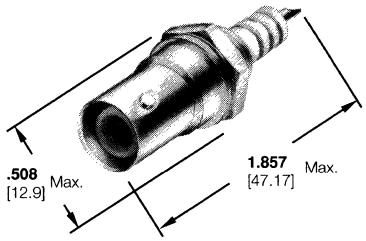
Part No. 225064-2



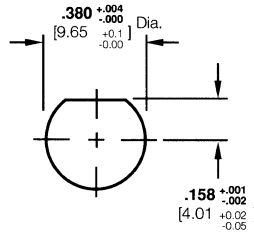
Maximum Panel Thickness - **.250** [6.35]
Recommended Panel Cutout

Bulkhead Solder Jack

Center Contact Plating: Gold
Dielectric: TEFLON



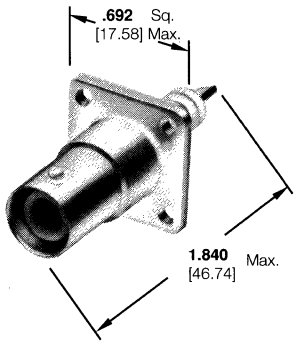
Silver Plated Body - Part No. 51494-1
Nickel Plated Body - Part No. 51494-2



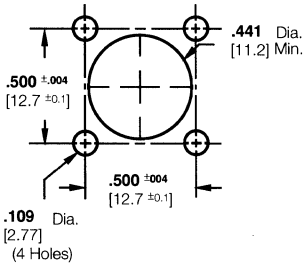
Maximum Panel Thickness - **.187** [4.75]
Recommended Panel Cutout

Panel Solder Jack

Center Contact Plating: Gold



Silver Plated Body - Part No. 51421-1
Nickel Plated Body - Part No. 51421-2



Recommended Panel Cutout

UHF Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Product Facts

Miniature:

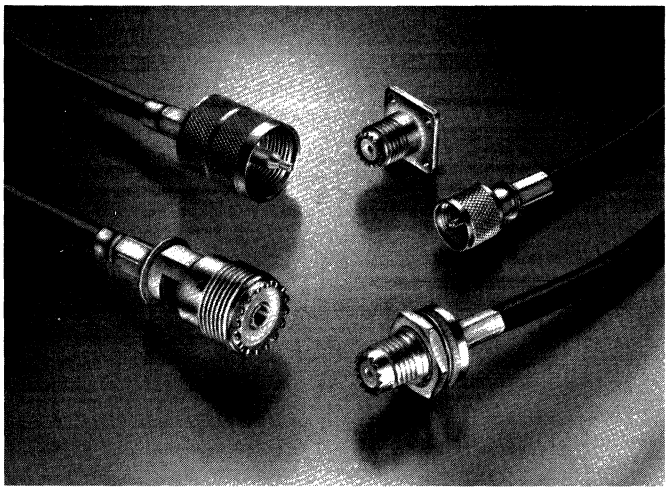
- Compact design
- Crimp type requires no solder
- Low applied cost
- Excellent performance characteristics for frequencies to 2.0 GHz
- Excellent cable retention
- Resists vibration, shock and hostile environments
- Accommodates RG/U58, 58A, 58B, 58C, 59, 59A, 59B, 188 and Tensolite 25850/28P-1
- Low VSWR characteristics
- Hand tool or machine terminations

Standard:

- Solderless single crimp connection – center conductor and braid simultaneously
- Insulation support
- Resists vibration, shock and other hostile environments
- High cable retention
- Plugs and jacks are fully intermateable with all standard UHF plugs and jacks
- Hand tool or machine applied

Related Product Data:

Connector Selection - Pages 4004-4006
Theory and Application - Pages 4007-4013
Cable-to-Connector Selection Guide - Pages 4014 & 4015
Connector Selection Guide - Page 4016
Performance Characteristics - Page 4082
Material Specifications - Page 4082
Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163
Packaging - All connectors are packaged individually unless otherwise noted.



AMP UHF Connectors are available in miniature and standard sizes.

The miniature size connectors are compact and lightweight. They are especially suited to applications where miniaturization is essential. These connectors accommodate RG/U58 and RG/U59, as well as some other coaxial cables. They are intended for use at fre-quencies up to 2.0 GHz and at peak voltages to 335 volts.

They are available in plug, jack, bulkhead jack, metric right-angle plug and panel solder jack configurations.

The standard size connector has found wide acceptance, particularly in the mobile communications field. Low initial cost and low applied cost, coupled with quality terminations and performance capabilities up to 500 MHz are a few of the benefits this connector offers.

Standard size connectors are available in plug and jack configurations. Adapters are also available to allow these connectors to interface with BNC and N type connectors.

Table of Contents

UHF Connector Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

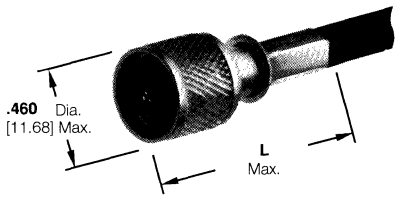
Characteristics	Miniature UHF Connectors	Standard UHF Connectors
Electrical		
Operating Voltage	335 volts rms at sea level	500 volts, rms at sea level
Frequency Range	0 to 2.0 GHz	To 0.5 GHz
Insulation Resistance	5000 megohms minimum	5000 megohms minimum
Dielectric Withstanding Voltage	1000 volts, 60 Hz rms (for 1 minute)	1500 volts rms at sea level
Voltage Standing Wave Ratio (VSWR)	Frequency MHz / Connector Assembly: 0-500 / 1.10; 500-1000 / 1.15; 1000-2000 / 1.25 (Values listed are for RG/U58C)	Frequency MHz / RG/U Cable 58, 59 / 8, 9, 213, 214: to 100 / 1.15 / 1.05; to 300 / 1.35 / 1.10; to 500 / 1.55 / 1.10
Mechanical		
Mating/Unmating	3/8-24 UNEF-2B threaded coupling	Threaded coupling
Durability (Test Results)	500 cycles	
Cable Attachment	Crimp type - center conductor and braid Solder type - panel jack	Crimp type - center conductor and braid
Cable Retention	RG-58 — 40 lb. [177.9 N] min.	RG-58C – 60 lb. [266.8 N] min. RG-59B – 75 lb. [333.6 N] min. RG-213 – 150 lb. [667.2 N] min.
Environmental		
Operating Temperature	-55°C to +85°C	-55°C to +85°C
Vibration	MIL-STD-202, Method 204, Cond. A	MIL-STD-202, Method 204, Cond. A
Physical Shock	MIL-STD-202, Method 213, Cond. 1	MIL-STD-202, Method 213, Cond. 1
Thermal Shock	MIL-STD-202, Method 107	MIL-STD-202, Method 102, Cond. B
Salt Spray	MIL-STD-202, Method 101, Cond. B	MIL-STD-202, Method 101, Cond. B
Materials		
Brass	MIL-C-50 and QQ-B-626	QQ-B-626
Zinc	QQ-Z-363	QQ-Z-363
Polypropylene	General purpose	General purpose
TEFLON	MIL-P-19468-A	–
Platings		
Bright Nickel	QQ-N-290	QQ-N-290
Tin	MIL-T-10727	MIL-T-10727
Copper	MIL-C-14550	–
Gold	MIL-C-45204B	–
Silver	–	QQ-S-365

UHF Connectors, Miniature

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

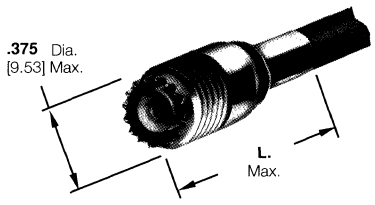
Plugs, Crimp

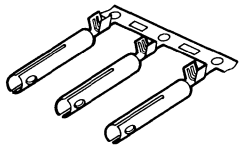


Connector Cable Range Selection Code†	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	AMP Part No.	Dim. L	Integral Die Hand Tool	Die Insert for Tools: Hand Tool- 69710-1 Pneu.- 69365, 69365-3	Dies for AMP-O-LECTRIC machine 220152-1
D	58, 58A, 58B, 58C	Dual Crimp	Tin	Nickel	Polypropylene	**226600-1**	**1.140** 28.96	220149-1	58158-1	220162-1
G	124, 140, 210 62, 62A, 62B 59, 59A, 59B Belden 9291, 9209, 9268	Dual Crimp	Tin	Nickel	Polypropylene	**226600-2**	**1.218** 30.94	–	–	220166-1

† Refer to pages 4014 and 4015 for code specifications.

Jacks, Crimp





(Stamped and Formed Center Contact for use with connector number 226849-1)
Part No. 226853-2

Connector Cable Range Selection Code†	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	AMP Part No.	Dim. L	Integral Die Hand Tool	Die Insert for Tools: Hand Tool- 69710-1 Pneu.- 69365, 69365-3	Dies for AMP-O-LECTRIC Machine 220152-1
D	58, 58A, 58B, 58C	Dual Crimp	Tin	Nickel	Polypropylene	**226602-1**	**1.185** 30.1	220149-1 58124-1**	58158-1	220162-1
		Dual Crimp	Tin	Nickel	Polypropylene	**226849-1***	**1.185** 30.1	–	–	–

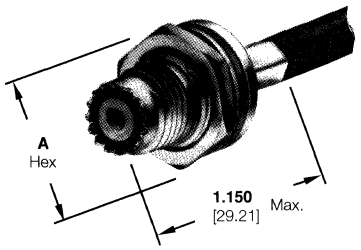
†Refer to pages 4014 and 4015 for code specifications.
*Connector body and ferrule only. For volume production, order stamped and formed center contact **226853-2** (illustrated above). To terminate stamped and formed center contact, use AMP-O-LECTRIC Machine **565435-5** with Applicator **466689-2**. To terminate the ferrule use AMP-O-LECTRIC Machine **220152-1** with dies **220162-1**.
**Economy hand tool does not have CERTI-CRIMP ratchet feature.

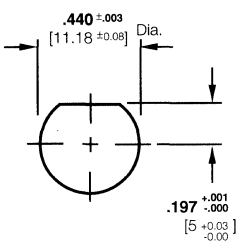
UHF Connectors, Miniature

Specifications subject to change.
For latest design specifications...
1-800-522-6752

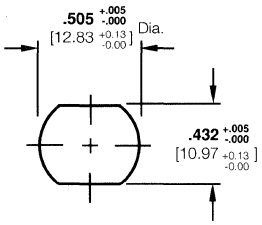
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Bulkhead Jacks, Crimp





X Type



Y Type

Maximum Panel Thickness - **.100** [2.54]

Recommended Panel Cutouts

Connector Cable Range Selection Code†	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Flange Shape	Rubber Gasket	AMP Part No.	Dim. A	Integral Die Hand Tool	Die Insert for Tools: Hand Tool-69710-1 Pneu.-69365, 69365-3	Recommended Panel Cutout Type
B	174, 316 188, 188A	Dual Crimp	Tin	Nickel	Polypropylene	Hex	No	**228665-2**	**.700** 17.78	58124-1**	58159-1	Y
		Dual Crimp	Tin	Nickel	Polypropylene	Round	Yes	**228903-2**	**.610** 15.49	59983-1 58124-1**	58159-1	X
		Dual Crimp	Tin	Nickel	Polypropylene	Round	No	**228903-4**	**.610** 15.49	59983-1 58124-1**	58159-1	X
D	58, 58A, 58B, 58C	Dual Crimp	Tin	Nickel	Polypropylene	Round	No	**228903-3**	**.610** 15.49	220149-1 58124-1**	58158-1	X

† Refer to pages 4014 and 4015 for code specifications.
**Economy hand tool - does not have CERTI-CRIMP ratchet feature.

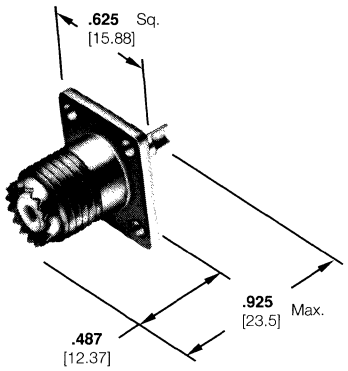
UHF Connectors, Miniature

Specifications subject to change.
For latest design specifications...
1-800-522-6752

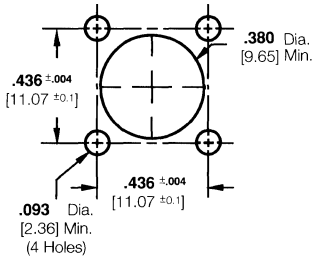
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Panel Solder Jack

Plating:
Body - Nickel
Center Contact - Tin
Dielectric: TEFLON



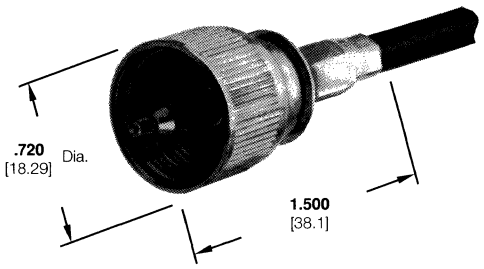
Part No. 226601-1



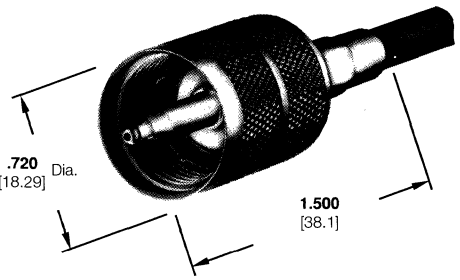
Recommended Panel Cutout

Plugs, Crimp

Style 1



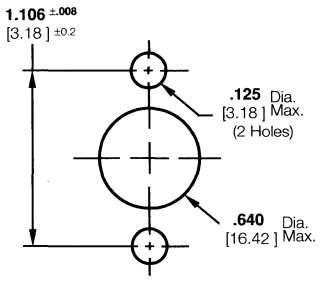
Style 2



Connector Cable Range Selection Code†	RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	Style	AMP Part No.	Integral Die Hand Tool	Crimping Dies for AMP-O-LECTRIC Machine 220152-1
D	58, 58A, 58B, 58C	Single Crimp	Tin	Nickel	Polypropylene	1	**226279-1**	220094-1* or 220148-1**	220157-2
		Single Crimp	Silver	Nickel	Polypropylene	2	**1-226208-3**	220094-1* or 220148-1**	–
G	124, 140, 210 59, 59A, 59B 62, 62A, 62B Belden 9291, 9209, 9268	Single Crimp	Silver	Nickel	Polypropylene	1	**226208-6**	220094-1* or 220148-1**	–
		Single Crimp	Tin	Nickel	Polypropylene	1	**226279-3**	220094-1* or 220148-1**	–
		Single Crimp	Silver	Nickel	Polypropylene	2	**1-226208-6**	220094-1* or 220148-1**	–
M	8, 8A, 213	Single Crimp	Tin	Nickel	Polypropylene	1	**226279-2**	220095-1	–

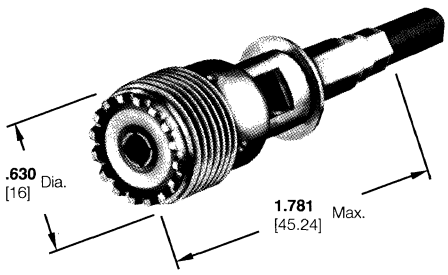
† Refer to pages 4014 and 4015 for code specifications.
* CERTI-CRIMP Hand Tool.
**Stamped Hand Tool - does not have CERTI-CRIMP ratchet feature.

Jack and Panel Jack, Crimp

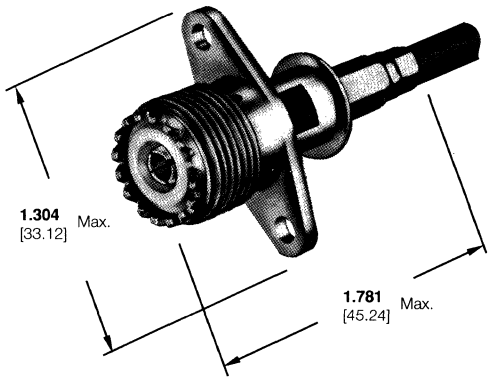


Recommended Panel Cutout

Jack



Panel Jack



Connector Cable Range Selection Code†	RG/U Cable	Connector Type	Termination Type	Center Contact Plating	Body Plating	Dielectric	AMP Part No.	Integral Die Hand Tool	Crimping Dies for AMP-O-LECTRIC Machine 220152-1
D	58, 58A, 58B, 58C	Jack	Single Crimp	Tin	Nickel	Polypropylene	**226694-1**	–	220165-1
		Panel Jack	Single Crimp	Tin	Nickel	Polypropylene	**226695-1**	–	220165-1

† Refer to pages 4014 and 4015 for code specifications.

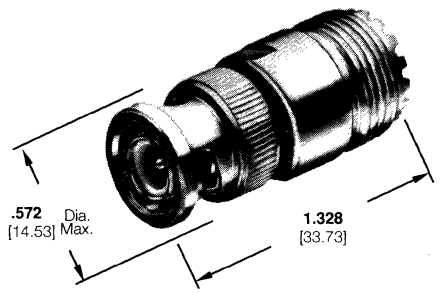
UHF Connectors, Standard

Specifications subject to change.
For latest design specifications...
1-800-522-6752

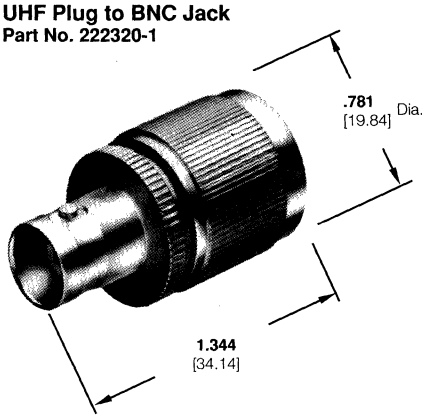
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Adapters

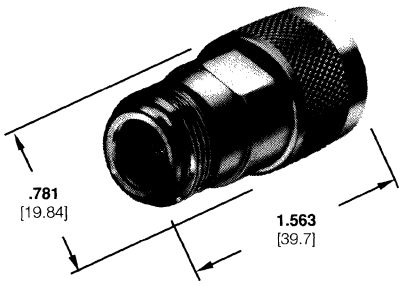
UHF Jack to BNC Plug
Part No. 222319-1



UHF Plug to BNC Jack
Part No. 222320-1



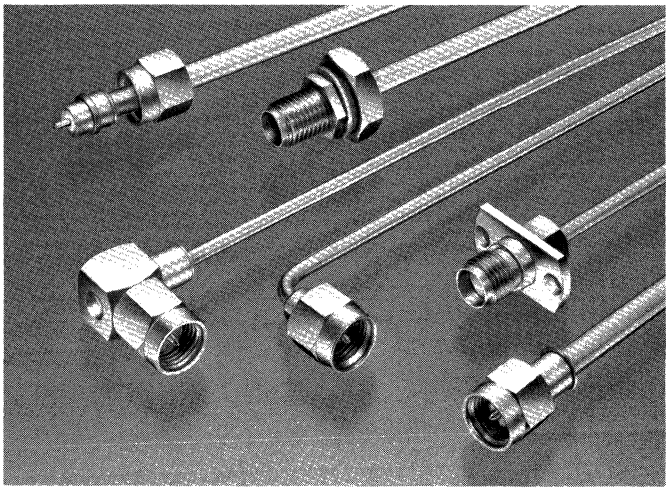
UHF Plug to N Jack
Part No. 222322-1



SMA Connectors for Semi-Rigid and Flexible Cable

Specifications subject to change.
For latest design specifications...
1-800-522-6752

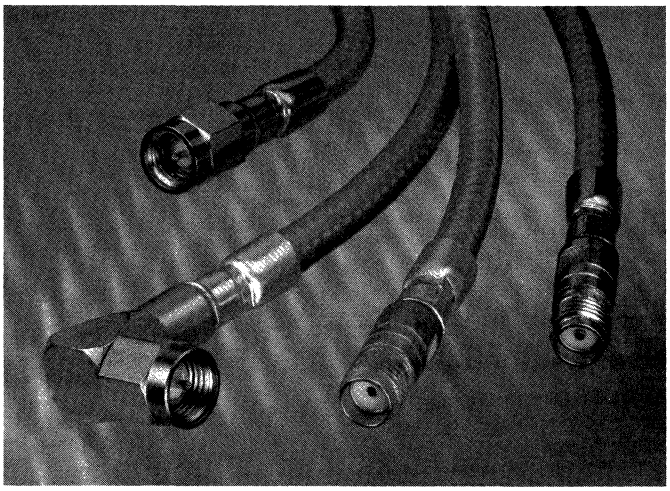
Semi-Rigid Cable Connectors



Product Facts

- Completely preassembled plug and jack
- Qualified to MIL-C-39012
- No heat or soldering required for termination
- Available in two performance ranges: 0-18 GHz, 0-26.5 GHz
- Environmentally sealed versions resistant to moisture and salt fog penetration
- Standard cable stripping dimensions
- Speed of assembly; plug or jack can be terminated in less than one minute with cable preparation machine and pneumatic tool
- Intermateable with all SMA connectors currently available
- Stainless steel shells with gold or passivated finish

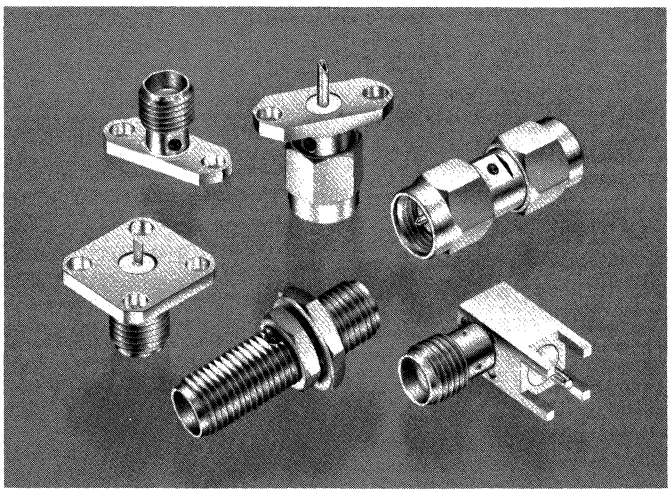
Flexible Cable Connectors



Product Facts

- Low VSWR
- Captive center conductor contacts
- Solderless application to cable–no heat damage
- Crimped terminations give consistent electrical and mechanical performance
- Rapid assembly to cable –no special skills required
- Qualified to MIL-C-39012, Class 2, Category B
- Lower cost commercial versions offer equivalent performance and intermateability with military connectors

Microstrip/Strip Line Launchers



Product Facts

- Completely preassembled
- Intermateable with all SMA connectors currently available
- Variety of configurations available
- Meet cable performance criteria

Related Product Data:

Connector Selection - Pages 4004-4006
Theory and Application - Pages 4007-4013
Cable-to-Connector Guide - Pages 4014 & 4015
Connector Selection Guide - Page 4016
Performance Characteristics - Page 4089
Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163
Packaging - All connectors are packaged individually unless otherwise noted.

SMA Connectors for Semi-Rigid and Flexible Cable

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Performance Characteristics for Semi-Rigid Cable Connectors, One-Step Solder Connectors, Micro-Strip/Strip Line Launchers, Adapters and Pc Board Connectors

Electrical Characteristics

Nominal Impedance:
50 ohms

VSWR for Straight Connectors (Frequencies to 26.5 GHz):
RG-402/U Cable (.141 [3.58] O.D.)
Captive Contact;
1.05 + .01f (GHz)
Cable Center
Conductor Contact;
1.035 + .005f (GHz)
RG-405/U Cable (.086 [2.18] O.D.)
Captive Contact;
1.07 + .01f (GHz)

VSWR for Right-Angle Connectors (Frequencies to 26.5 GHz):
RG-402/U and RG-405/U Cables (.141 [3.58] and .086 [2.18] O.D.)
Captive Contact;
1.10 + .01f (GHz)

RF Leakage:
-90 dB at 2.5 GHz
Dielectric Withstanding Voltage:
RG-402/U Cable (.141 [3.58] O.D.)
1500 volts rms at 60 Hz
(sea level)
RG-405/U Cable (.086 [2.18] O.D.)
1000 volts rms at 60 Hz
(sea level)

Contact Resistance (Max.):
Center contact
Straight Connectors;
3.0 milliohms
Right-Angle Connectors;
4.0 milliohms
Outer Contact:
2.0 milliohms

Insulation Resistance:
5000 megohms, min.

RF Insertion Loss (dB, Max.):
Straight Connectors -
$.03 \times \sqrt{f}$ (GHz)
Right-Angle Connectors -
$.05 \times \sqrt{f}$ (GHz)

Mechanical Characteristics

Cable Retention:
RG-402/U Cable (.141 [3.58] O.D.) – 60 lb [266.9 N], min.
RG-405/U Cable (.086 [2.18] O.D.) – 30 lb [133.4 N], min.

Mating/Unmating:
Threaded Coupling

Coupling Nut Retention:
60 lb [266.9 N], min.

Durability:
500 cycles per MIL-C-39012
(50 cycles with cable center conductor as center contact)

Environmental Characteristics

Temperature Range:
-65°C to +105°C

Vibration:
MIL-STD-202, Method 204, Condition D

Shock:
MIL-STD-202, Method 213, Condition 1 (100 G's)

Moisture Resistance:
MIL-STD-202, Method 106 - 200 megohms, min.

Corrosion (Salt Spray):
MIL-STD-202, Method 107, Condition B

Performance Characteristics for Flexible Cable Connectors

Electrical Characteristics

Nominal Impedance:
50 ohms

Working Voltage:
RG-142/U Cable –335 volts rms (sea level)
RG-316/U Cable –250 volts rms (sea level)

Frequency Range:
0 to 12.4 GHz

Contact Resistance (Max.):
Outer Contact –2.0 milliohms
Center Contact –3.0 milliohms

Insulation Resistance:
5000 megohms, min.

Dielectric Withstanding Voltage:
RG-142/U Cable – 1000 volts rms (sea level)
RG-316/U Cable – 750 volts rms (sea level)

RF Leakage:
-60 dB (min.) at 2-3 GHz

RF Insertion Loss (dB, Max.):
$.06 \times \sqrt{f}$ (GHz), tested at 6 GHz

Corona Level:
RG-142/U Cable – 250 volts (70,000 ft [21 336 m]
GR-316/U Cable – 190 volts (70,000 ft [21 336 m]

Mechanical Characteristics

Mating/Unmating:
Threaded Coupling

Cable Attachment:
Center Contact and Outer Conductor Crimped

Coupling Nut Retention:
60 lb [266.9 N], min.

Cable Retention:
RG-142/U Cable –
45 lb [200.2 N], min.
RG-316/U Cable –
20 lb [89 N], min.

Durability:
500 Cycles per MIL-C-39012

Environmental Characteristics

Temperature Range:
-65°C to +165°C

Vibration (High Frequency):
MIL-STD-202, Method 204, Condition D

Shock:
MIL-STD-202, Method 213, Condition 1 (100 G's)

Moisture Resistance:
MIL-STD-202, Method 106 - 200 megohms, min.

Corrosion (Salt Spray):
MIL-STD-202, Method 107, Condition B

Temperature Cycling:
MIL-STD-202, Method 102, Condition C, except high temperature to be +85°C.

Table of Contents

SMA Connectors for Semi-Rigid Cable

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Plugs, Compression Crimp

Materials:

Center Contacts - Beryllium copper per QQ-C-530, gold plated

Shells - Stainless steel per ASTM-A-582, passivated or gold plated

Coupling Nuts - Stainless steel per ASTM-A-582, passivated

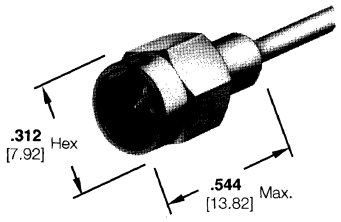
Dielectrics - TEFLON per MIL-P-19468

Grip Rings - Brass per MIL-C-50

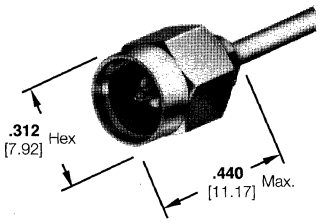
Gaskets - Silicone rubber per ZZ-R-765

Finishes:
Passivate per QQ-P-35
Gold per MIL-G-45204
Nickel per QQ-N-290

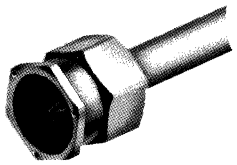
Plug with Center Contact



Plug with Retractable Collar



Plug with Safety Wire Holes



Connector Cable Range Selection Code†	RG/U Cable	Connector Configuration	Frequency Max.	Body Finish	AMP Part No.	Connector Part Numbers* Category B M39012/ Military No.	Category B AMP Part No.	Category F M39012/ Military No.	Category F AMP Part No.	Tooling Part Numbers Hand Tool Kit No. 59981-1 Die Set (M22520/)	Hand Tool Kit No. 59981-1 Locator	Pneumatic Tool No. 58318-1 Die Set[5]	Pneumatic Tool No. 58318-1 Locator
O	402 Semi-Rigid/ **.141** [3.58]	Plug with Center Contact	18 GHz	Passivated	–	79B3104	**227743-1**	79-3308	**228634-1**	312253-1 (36-03)	220221-2 (36-04)	313720-1	308075-2
				Gold Plated	**228634-2**	–	–	–	–				
			26.5 GHz Environmentally Sealed	Passivated	**221328-1**	–	–	–	–	312253-1 (36-03)	220221-2 (36-04)	313720-1	308075-2
		Plug with Center Contact & Safety Wire Holes	18 GHz	Passivated	–	79B3004	**	79-3208	**228634-3**	312253-1 (36-03)	220221-2 (36-04)	313720-1	308075-2
				Gold Plated	**228634-4**	–	–	–	–				
			26.5 GHz Environmentally Sealed	Passivated	**221328-2**	–	–	–	–	312253-1 (36-03)	220221-2 (36-04)	313720-1	308075-2
		Plug without Center Contact	18 GHz	Passivated	–	92B3101	**227531-1**	92-3301	**228635-1**	312253-1 (36-03)	220220-2 (36-06)	313720-1	220241-1
				Gold Plated	**228635-2**	–	–	–	–				
			26.5 GHz Environmentally Sealed	Passivated	**221329-1**	–	–	–	–	312253-1 (36-03)	313585-1[3]	313720-1	***
		Plug without Center Contact, with Safety Wire Holes	18 GHz	Passivated	–	92B3001	**	92-3201	**228635-3**	312253-1 (36-03)	220220-2 (36-06)	313720-1	220241-1
				Gold Plated	**228635-4**	–	–	–	–				
			26.5 GHz Environmentally Sealed	Passivated	**221329-2**	–	–	–	–	312253-1	313585-1[3]	313720-1	***
		Plug without Center Contact, with Retractable Collar	18 GHz	Passivated	**227531-5**	–	–	–	–	312962-1[3]	220220-2 (36-06)	313721-1	220241-1
				Gold Plated	**227531-6**	–	–	–	–				
			26.5 GHz Environmentally Sealed	Passivated	**221329-2**	–	–	–	–	312962-1[3]	313585-1[3]	313721-1	***
		Plug without Center Contact, with Retractable Collar & Safety Wire Holes	26.5 GHz Environmentally Sealed	Passivated	**221329-4**	–	–	–	–	312962-1[3]	313585-1[3]	313721-1	***

†Refer to pages 4014 and 4015 for code specifications.
[3]Not included in Hand Tool Kit **No. 59981-1**; must be purchased separately.
[5]Not included with Pneumatic Tool **No. 58318-1**; must be purchased separately.

* Consult latest issue of MIL-C-39012 and QPL for current military dash numbers.
** For product information call AMP Product Information Center.
***For tooling information call AMP Customer Service Hotline 1-800-722-1111

SMA Connectors for Semi-Rigid Cable

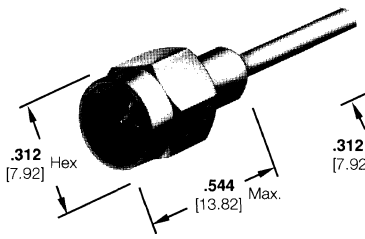
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

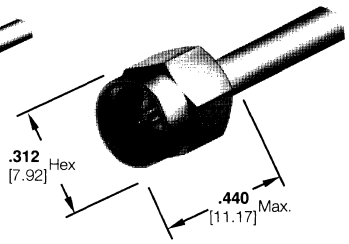
Plugs, Compression Crimp
(Continued)

Materials and Finishes:
(See page 4090)

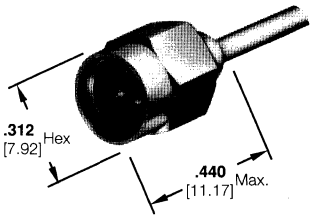
Plug with Center Contact



Short Plug with Center Contact



Plug with Retractable Collar

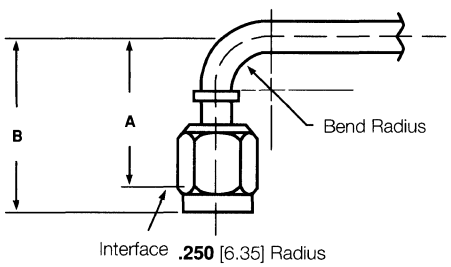


Connector Cable Range Selection Code†	RG/U Cable	Connector Configuration	Frequency Max.	Body Finish	AMP Part No.	Connector Part Numbers* Category B: M39012/ Military No.	Category B: AMP Part No.	Category F: M39012/ Military No.	Category F: AMP Part No.	Tooling Part Numbers: Hand Tool Kit No. 59981-1: Die Set (M22520/)	Hand Tool Kit No. 59981-1: Locator (M22520/)	Pneumatic Tool No. 58318-1: Die Set[5]	Pneumatic Tool No. 58318-1: Locator
P	405 Semi-Rigid/ **.086** [2.18]	Plug with Center Contact	18 GHz	Passivated	–	79B3103	**227868-1**	79-3307	**228639-1**	312253-2 (36-02)	220221-2 (36-04)	313719-1	308075-2
				Gold Plated	**228639-2**	–	–	–	–				
		Plug with Center Contact & Safety Wire Holes	18 GHz	Passivated	–	79B3003	**227868-3**	79-3207	**228639-3**	312253-2 (36-02)	220221-2 (36-04)	313719-1	308075-2
				Gold Plated	**228639-4**	–	–	–	–				
		Short Plug with Center Contact	18 GHz	Passivated	**221447-1**[1]	–	–	–	–	313113-1[3,4]	220221-3[3]	313719-1	313123-1[5]
				Gold Plated	**221447-2**[1]	–	–	–	–				
			26.5 GHz Environmentally Sealed	Passivated	**221812-1**	–	–	–	–	313113-1[3,4]	220221-3[3]	313719-1	313123-1[5]
		Short Plug with Center Contact & Safety Wire Holes	18 GHz	Passivated	**221447-3**[1]	–	–	–	–	313113-1[3,4]	220221-3[3]	313719-1	313123-1[5]
				Gold Plated	**221447-4**[1]	–	–	–	–				
			26.5 GHz Environmentally Sealed	Passivated	**221812-2**	–	–	–	–	313113-1[3,4]	220221-3[3]	313719-1	313123-1[5]
		Short Plug with Center Contact & Retractable Collar	18 GHz	Passivated	**221447-5**	–	–	–	–	313113-1[3,4]	220221-3[3]	313719-1	313123-1[5]

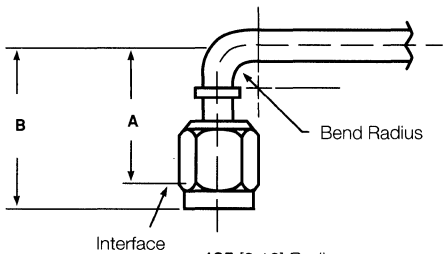
†Refer to pages 4014 and 4015 for code specifications.
[1]Meets or exceeds Air Force Drawing.
[3]Not included in Hand Tool Kit **No. 59981-1**; must be purchased separately.
[4]Die Set **No. 312253-2** also may be used; consult AMP Incorporated for straight cable length requirements.
[5]Not included with Pneumatic Tool **No. 58318-1**; must be purchased separately.

*Consult latest issue of MIL-C-39012 and QPL for current military dash numbers.

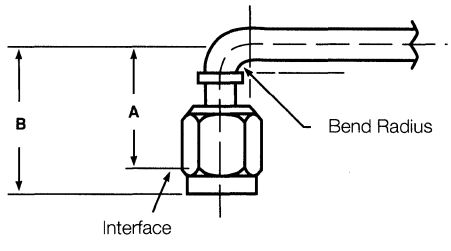
Right- Angle Bend Specifications
(See page 4158 for tooling)



.250 [6.35] Radius



.125 [3.18] Radius



.062 [1.57] Radius

Semi-Ridge Cable	SMA Plugs: Configuration	SMA Plugs: Part No.	Dimensions: .250[3.18] Radius A	.250[3.18] Radius B	.125[3.18]Radius A	.125[3.18]Radius B	.062[1.57]Radius A	.062[1.57]Radius B
RG-402/U (.141 [3.58] O.D.)	Plugs without Center Contact	227531-1 228635-1 thru-4	**.578** 14.68	**.713** 18.11	**.453** 11.51	**.588** 14.94	-	-
	Plugs with Center Contact	227743-1, 228634-1 thru -4	**.755** 19.18	**.890** 22.61	**.630** 16.00	**.765** 19.43	-	-
RG-405/U (.086[2.18] O.D.)	Plugs with Center Contact	227868-1 &-3, 228639-1 thru -4	-	-	**.603** 15032	**.738** 18.75	**.540** 13.72	**.675** 17.15
	Short Plugs with Center Contact	221447-1 thru -4	-	-	**.500** 12.70	**.625** 15.00	**.437** 11.10	**.562** 14.27

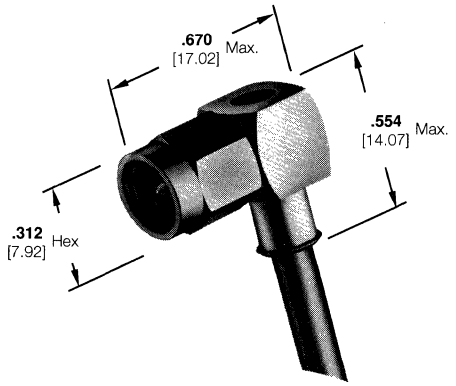
SMA Connectors for Semi-Rigid Cable

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Right-Angle Plugs, Compression Crimp

Materials and Finishes:
(See page 4090)



Connector Cable Range Selection Code†	RG/U Cable	Connector Configuration	Frequency Max.	Body Finish	AMP Part No.	Connector Part Numbers*				Tooling Part Numbers			
						Category B		Category F		Hand Tool Kit No. 59981-1		Pneumatic Tool No. 58318-1	
						M39012/ Military No.	AMP Part No.	M39012/ Military No.	AMP Part No.	Die Set (M22520/)	Locator[3] (M22520/)	Die Set[5]	Locator[5]
O	402 Semi-Rigid/ **.141** [3.58]	Right-Angle Plug with Center Contact	18 GHz	Passivated	–	–	–	80-3308	**228626-1**	312253-1 (36-03)	312173-1	313720-1	59966-1
				Gold Plated	**228626-2**	–	–	–	–				
			26.5 GHz Environmentally Sealed	Passivated	**222066-1**	–	–	–	–	312253-1 (36-03)	312173-1	313720-1	59966-1
		Right-Angle Plug with Center Contact & Safety Wire Holes	18 GHz	Passivated	–	–	–	80-3208	**228626-3**	312253-1 (36-03)	312173-1	313720-1	59966-1
				Gold Plated	**228626-4**	–	–	–	–				
			26.5 GHz Environmentally Sealed	Passivated	**222066-2**	–	–	–	–	312253-1 (36-03)	312173-1	313720-1	59966-1
P	405 Semi-Rigid/ **.086** [2.18]	Right-Angle Plug with Center Contact	18 GHz	Passivated	–	–	–	80-3307	**228583-1**	312253-2 (36-02)	312173-1	313719-1	59966-1
				Gold Plated	**228583-2**	–	–	–	–				
			26.5 GHz Environmentally Sealed	Passivated	**222264-1**	–	–	–	–	312253-2 (36-02)	312173-1	313719-1	59966-1
		Right-Angle Plug with Center Contact & Safety Wire Holes	18 GHz	Passivated	–	–	–	80-3207	**228583-3**	312253-2 (36-02)	312173-1	313719-1	59966-1
				Gold Plated	**228583-4**	–	–	–	–				
			26.5 GHz Environmentally Sealed	Passivated	**222264-2**	–	–	–	–	312253-2 (36-02)	312173-1	313719-1	59966-1

†Refer to pages 4014 and 4015 for code specifications.
*Consult latest issue of MIL-C-39012 and QPL for current military dash numbers.
[3]Not included in Hand Tool Kit **No. 59981-1**; must be purchased separately.
[5]Not included with Pneumatic Tool **No. 58318-1**; must be purchased separately.

SMA Connectors for Semi-Rigid Cable

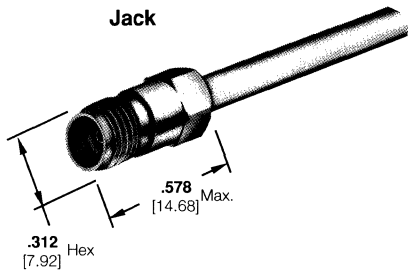
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

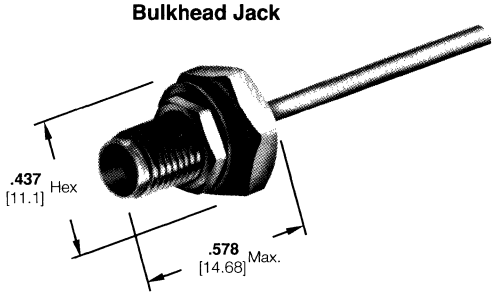
Jacks and Bulkhead Jacks, Compression Crimp

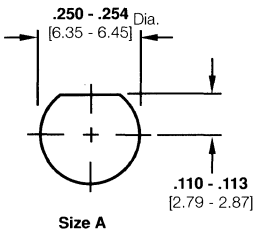
Materials and Finishes:
(See page 4090)

Jack

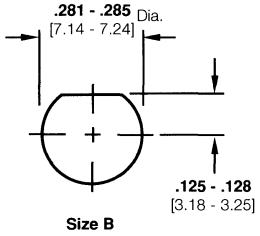


Bulkhead Jack





Size A



Size B

Panel Thickness - **.055 - .103** [1.4-2.62]

Recommended Panel Cutouts

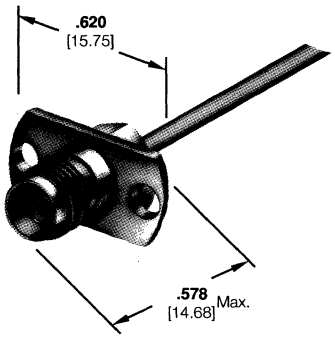
Connector Cable Range Selection Code†	RG/U Cable	Connector Configuration	Frequency Max.	Body Finish	AMP Part No.	Connector Part Numbers*				Tooling Part Numbers			
						Category B		Category F		Hand Tool Kit No. 59981-1		Pneumatic Tool No. 58318-1	
						M39012/ Military No.	AMP Part No.	M39012/ Military No.	AMP Part No.	Die Set (M22520/)	Locator (M22520/)	Die Set[5]	Locator
O	402 Semi-Rigid/ **.141** [3.58]	Jack	18 GHz	Passivated	–	81B3004	**227744-1**	81-3208	**228636-1**	312253-1 (36-03)	220222-2 (36-05)	313720-1	308075-2
				Gold Plated	**228636-2**	–	–	–	–				
		Bulkhead Jack	18 GHz	Passivated	**227746-3****	83B3004	**227746-1**	83-3208	**228638-1**	312253-1 (36-03	220222-2 (36-05)	313720-1	308075-2
				Gold Plated	**228638-2**	–	–	–	–				
P	405 Semi-Rigid/ **.086** [2.18]	Jack	18 GHz	Passivated	–	81B3003	**227869-1**	81-3207	**228640-1**	312253-2 (36-02)	220222-2 (36-05)	313719-1	308075-2
				Gold Plated	**228640-2**	–	–	–	–				
		Bulkhead Jack	18 GHz	Passivated	**227871-3****	83B3003	**227871-1**	83-3207	**228642-1**	312253-2 (36-02)	220222-2 (36-05)	313719-1	308075-2
				Gold Plated	**228642-2**	–	–	–	–				

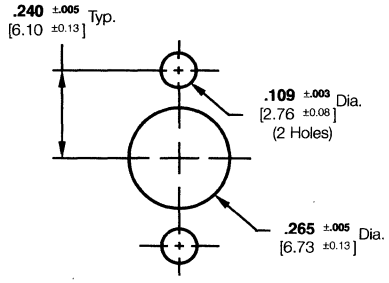
† Refer to pages 4014 and 4015 for code specifications.
* Consult latest issue of MIL-C-39012 and QPL for current military dash numbers.
**Use Recommended Panel Cutout Size B, All other Bulkhead Jacks use Recommended Panel Cutout Size A.
[5] Not included with Pneumatic Tool **No. 58318-1**; must be purchased separately.

Panel Jacks, Compression Crimp

Materials and Finishes:
(See page 4090)

2-Hole Panel Jack

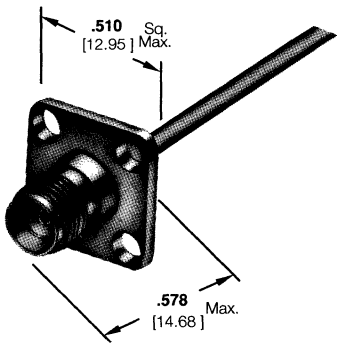


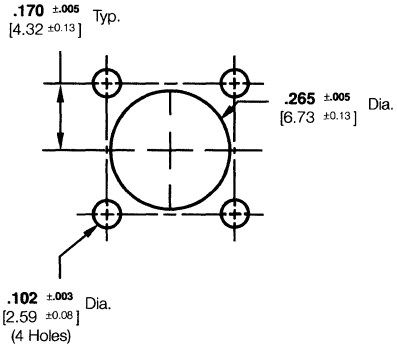


Maximum Panel Thickness - **.095** [2.41]

Recommended Panel Cutout

4-Hole Panel Jack





Maximum Panel Thickness - **.095** [2.41]

Recommended Panel Cutout

Connector Cable Range Selection Code†	RG/U Cable	Connector Configuration	Frequency Max.	Body Finish	AMP Part No.	Connector Part Numbers*				Tooling Part Numbers			
						Category B		Category F		Hand Tool Kit No. 59981-1		Pneumatic Tool No. 58318-1	
						M39012/ Military No.	AMP Part No.	M39012/ Military No.	AMP Part No.	Die Set (M22520/)	Locator (M22520/)	Die Set[5]	Locator
O	402 Semi-Rigid/ **.141** [3.58]	2-Hole Panel Jack	18 GHz	Passivated	**221676-1**	–	–	–	–	312253-1 (36-03)	220222-2 (36-05)	313720-1	308075-2
		4-Hole Panel Jack	18 GHz	Passivated	–	82B3004	**227745-1**	82-3208	**228637-1**	312253-1 (36-03)	220222-2 (36-05)	313720-1	308075-2
				Gold Plated	**228637-2**	–	–	–	–				
P	405 Semi-Rigid/ **.086** [2.18]	2-Hole Panel Jack	18 GHz	Passivated	**221666-1**	–	–	–	–	312253-2 (36-02)	220222-2 (36-05)	313719-1	308075-2
		4-Hole Panel Jack	18 GHz	Passivated	–	82B3003	**227870-1**	82-3207	**228641-1**	312253-2 (36-02)	220222-2 (36-05)	313719-1	308075-2
				Gold Plated	**228641-2**	–	–	–	–				

†Refer to pages 4014 and 4015 for code specifications.
*Consult latest issue of MIL-C-39012 and QPL for current military dash numbers.
[5]Not included with Pneumatic Tool **No. 58318-1**; must be purchased separately .

SMA Connectors for Semi-Rigid Cable, One-Step Solder

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Plugs

Materials:

Center Contacts - Beryllium copper per QQ-C-530, gold plated

Shells - Stainless steel per ASTM-A-582, gold plated*

Coupling Nuts - Stainless steel per ASTM-A-258, passivated

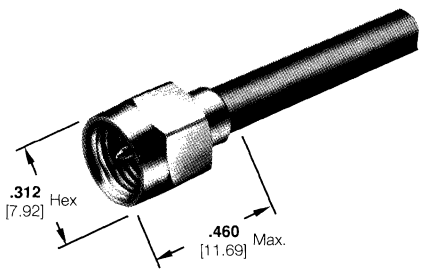
Dielectrics - TEFLON per MIL-P-19468

Crescent Rings - Beryllium copper alloy 25, nickel plated

Face Seals - Silicone rubber per ZZ-R-765

Finishes:
Passivated per QQ-P-35
Gold per MIL-G-45204
Nickel per QQ-N-290

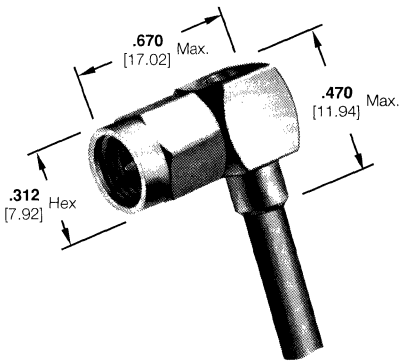
*Portions of the shell for Part No. **413072-1** and **446734-1** are also passivated.



Connector Cable Range Selection Code†	RG/U Cable	Frequency Max.	Part No.
O	402 Semi-Rigid/ **.141** [3.58]	18 GHz	**446736-1**
P	405 Semi-Rigid/ **.086** [2.18]	26.5 GHz	**413071-1**

†Refer to pages 4014 and 4015 for code specifications.

Right-Angle Plugs



Connector Cable Range Selection Code†	RG/U Cable	Frequency Max.	Part No.
O	402 Semi-Rigid/ **.141** [3.58]	18 GHz	**446734-1**
P	405 Semi-Rigid/ **.086** [2.18]	26.5 GHz	**413072-1**

†Refer to pages 4014 and 4015 for code specifications.

SMA Connectors for Flexible Cable

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Plugs, Crimp

Materials:

Center Contacts - Brass per QQ-B-626 or beryllium copper per QQ-C-530, gold plated

Bodies - Stainless steel per ASTM-A-582, passivated or brass, nickel plated

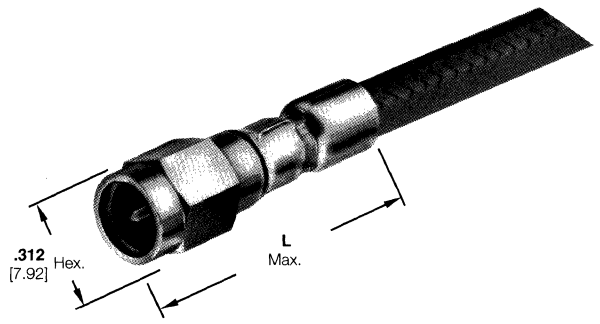
Coupling Nuts - Stainless steel per ASTM-A-582, passivated or brass, nickel plated

Ferrules - Copper, annealed per ASTM-B-188, tin-lead plated

Dielectrics - TEFLON per MIL-P-19468

Gaskets - Silicone Rubber per ZZ-R-765

Finishes:
Passivated per QQ-P-35
Gold per MIL-G-45204
Tin-Lead per ASTM-B-545



Connector Cable Range Selection Code†	RG/U Cable	Body and Coupling Nut Material and Plating	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool	Die Insert for Pneumatic Tools 69365, 69365-3
B	174 188, 188A, 316	Stainless Steel, Passivated	Mil Type	55B3019	**225532-4**	**.950** 24.13	220061-1	220091-1
		Brass, Nickel	Commercial	–	**221117-2**	**1.188** 30.18	220061-1	220091-1
B1	179, 179A, 179B 161, 187, 187A Belden 9221	Stainless Steel, Passivated	Mil Type	–	**225532-8**	**.950** 24.13	220061-1	220091-1
C1	180, 180A, 180B 195, 195A	Stainless Steel, Passivated	Mil Type	–	**225532-7**	**1.030** 26.17	220061-1	220091-1
D	58, 58A, 58B, 58C	Stainless Steel, Passivated	Mil Type	55B3021	**225532-1**	**1.030** 26.17	220061-1	220091-1
D1	141, 141A 303	Stainless Steel, Passivated	Mil Type	55B3024	**225532-9**	**1.030** 26.17	220061-1	220091-1
E	223 55, 55A, 55B	Stainless Steel, Passivated	Mil Type	55B3023	**1-225532-0**	**1.030** 26.17	220061-1	220091-1
E1	142, 142A, 142B 400 Belden 9246	Stainless Steel, Passivated	Mil Type	55B3022	**225532-3**	**1.030** 26.17	220061-1	220091-1
		Brass, Nickel	Commercial	–	**221117-1**	**1.188** 30.18	220061-1	220091-1
–	Gore CXN 1384	Stainless Steel, Passivated	Mil Type	–	**227781-1**	**1.030** 26.17	220061-1	–
–	Gore CXN 1362	Stainless Steel, Passivated	Mil Type	–	**227781-2**	**1.030** 26.1	220061-1	–
–	188 Double Braid	Stainless Steel, Passivated	Mil Type	–	**1-225532-1**	**.950** 24.13	59962-1	–
		Brass, Nickel	Commercial	–	**221117-3**	**1.188** 30.18	59962-1	–
–	Insulated Wire #50H155	Stainless Steel, Passivated	Mil Type	–	**1-225532-2**	**1.030** 26.17	220061-1	–

†Refer to pages 4014 and 4015 for code specifications.

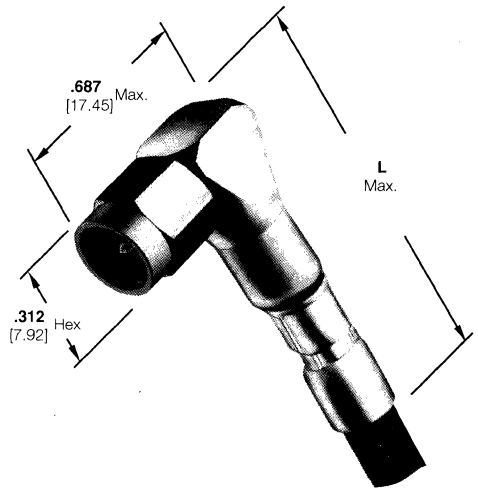
SMA Connectors for Flexible Cable

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Right-Angle Plugs, Crimp

Materials and Finishes:
(See page 4096)

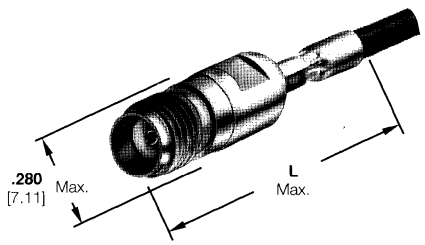


Connector Cable Range Selection Code†	RG/U Cable	Body and Coupling Nut Material and Plating	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool	Die Insert for Pneumatic Tools 69365, 69365-3
B	174 188, 188A, 316	Stainless Steel, Passivated	Mil Type	56B3019	**225609-4**	**1.187** 30.15	220061-1	220091-1
		Brass, Nickel	Commercial	–	**221171-2**	**1.359** 34.52	220061-1	220091-1
B1	179, 179A, 179B 161, 187, 187A Belden 9221	Stainless Steel, Passivated	Mil Type	–	**225609-8**	**1.187** 30.15	220061-1	220091-1
D	58, 58A, 58B, 58C	Stainless Steel, Passivated	Mil Type	56B3021	**225609-1**	**1.250** 31.75	220061-1	220091-1
E	223 55, 55A, 55B	Stainless Steel, Passivated	Mil Type	56B3023	**1-225609-0**	**1.250** 31.75	220061-1	220091-1
E1	142, 142A, 142B 400 Belden 9246	Stainless Steel, Passivated	Mil Type	56B3022	**225609-3**	**1.250** 31.75	220061-1	220091-1
		Brass, Nickel	Commercial	–	**221171-1**	**1.359** 34.52	220061-1	220091-1
–	188 Double Braid	Brass, Nickel	Commercial	–	**221171-3**	**1.359** 34.52	59962-1	–

†Refer to pages 4014 and 4015 for code specifications.

Jacks, Crimp

Materials and Finishes:
(See page 4096)



Connector Cable Range Selection Code†	RG/U Cable	Body and Coupling Nut Material and Plating	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool	Die Insert for Pneumatic Tools 69365, 69365-3
B	174 188, 188A, 316	Stainless Steel, Passivated	Mil Type	57B3019	**225542-4**	**1.060** 26.93	220061-1	220091-1
		Brass, Nickel	Commercial	–	**221119-2**	**1.188** 30.18	220061-1	220091-1
D	58, 58A, 58B, 58C	Stainless Steel, Passivated	Mil Type	57B3021	**225542-1**	**1.030** 26.17	220061-1	220091-1
E1	142, 142A, 142B 400 Belden 9246	Stainless Steel,	Mil Type	57B3022	**225542-3**	**1.140** 28.96	220061-1	220091-1
		Passivated	Commercial	–	**221119-1**	**1.188** 30.18	220061-1	220091-1
–	188 Double Braid	Brass, Nickel	Commercial	–	**221119-3**	**1.188** 30.18	59962-1	–

†Refer to pages 4014 and 4015 for code specifications.

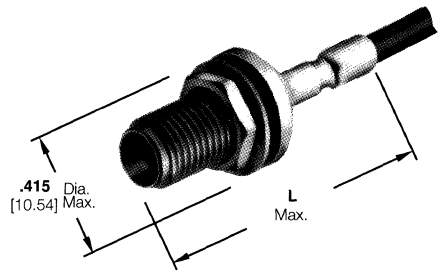
SMA Connectors for Flexible Cable

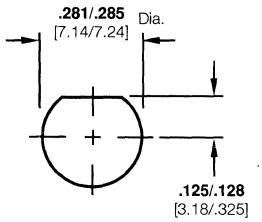
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Bulkhead Jacks, Crimp

Materials and Finishes:
(See page 4096)





Panel Thickness - **.055-.103** [1.4-2.62]

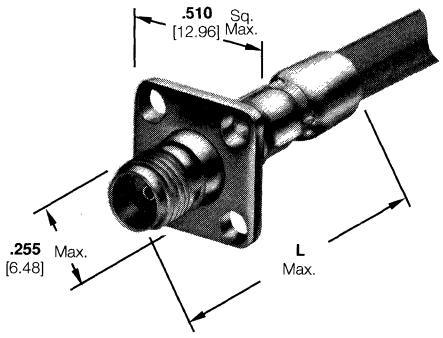
Recommended Panel Cutout

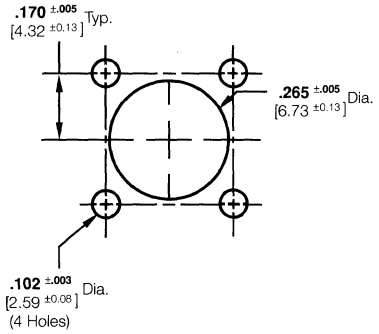
Connector Cable Range Selection Code†	RG/U Cable	Body and Coupling Nut Material and Plating	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool	Die Insert for Pneumatic Tools 69365, 69365-3
B	174 188, 188A, 316	Stainless Steel, Passivated	Mil Type	–	**225608-4**	**1.060** 26.93	220061-1	220091-1
		Brass, Nickel	Commercial	–	**221169-2**	**1.188** 30.18	220061-1	220091-1
D1	141, 141A, 303	Stainless Steel, Passivated	Mil Type	59B3024	**225608-9**	**1.140** 28.96	220061-1	220091-1
E1	142, 142A, 142B 400 Belden 9246	Stainless Steel, Passivated	Mil Type	59B3022	**225608-3**	**1.140** 28.96	220061-1	220091-1
		Brass, Nickel	Commercial	–	**221169-1**	**1.188** 30.18	220061-1	220091-1
–	188 Double Braid	Stainless Steel, Passivated	Mil Type	–	**1-225608-1**	**.950** 24.13	59962-1	–
		Brass, Nickel	Commercial	–	**221169-3**	**1.188** 30.18	59962-1	–

† Refer to pages 4014 and 4015 for code specifications.

Panel Jacks, Crimp

Materials and Finishes:
(See page 4096)





Maximum Panel Thickness - **.095** [2.41]

Recommended Panel Cutout

Connector Cable Range Selection Code†	RG/U Cable	Body and Coupling Nut Material and Plating	Style	M39012/ Military No. and/or Comments	AMP Part No.	Dim. L	Integral Die Hand Tool	Die Insert for Pneumatic Tools 69365, 69365-3
B	174 188, 188A, 316	Brass, Nickel	Commercial	–	**221126-2**	**1.188** 30.18	220061-1	220091-1
E1	142, 142A, 142B 400 , Belden 9246	Brass, Nickel	Commercial	–	**221126-1**	**1.188** 30.18	220061-1	220091-1
–	188 Double Braid	Brass, Nickel	Commercial	–	**221126-3**	**1.188** 30.18	59962 -1	–

†Refer to pages 4014 and 4015 for code specifications.

SMA Adapters and Pc Board Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Micro-Strip/Strip Line Launchers

Materials:

Center Contacts - Brass per QQ-B-626 or beryllium copper per QQ-C-530, gold plated

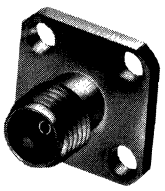
Bodies - Stainless steel per ASTM-A-582, passivated

Dielectrics - TEFLON per MIL-P-19468

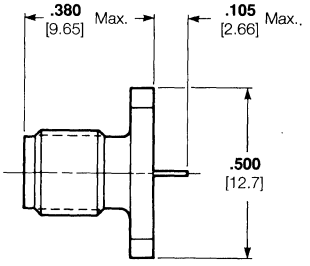
Gaskets - Silicone rubber per ZZ-R-765

Finishes:
Passivate per QQ-P-35
Gold per MIL-G-45204

Panel Jack with Tab

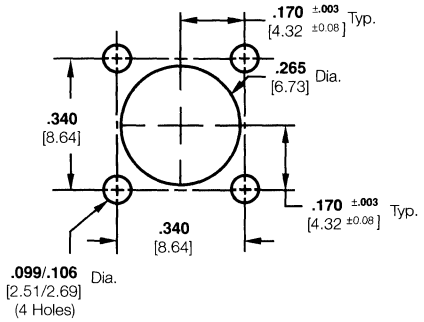


Part No. 221972-1

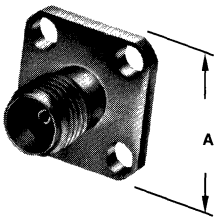


Maximum Panel Thickness -**.095** [2.41]

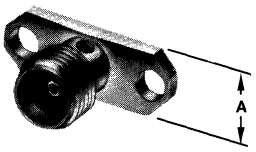
Recommended Panel Cutout



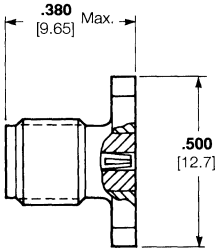
Field Replaceable Panel Jack



4-Hole Mount



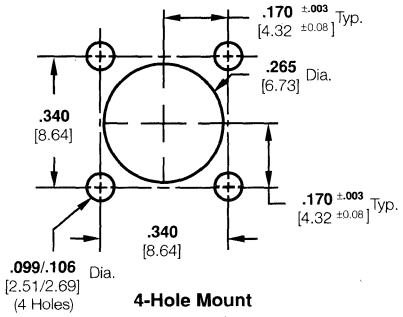
2-Hole Mount



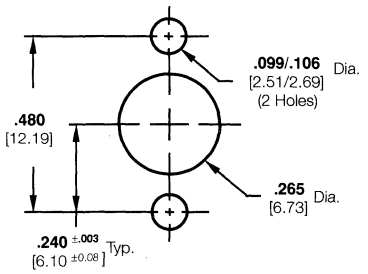
Pin Dia. Accepted	Dim. A	Mounting Style	Part No.
.011 0.28	.500 12.7	4-Hole	**221963-1**
.015 0.38	.500 12.7	4-Hole	**221964-1**
.020 0.51	.500 12.7	4-Hole	**221965-1**
.011 0.28	.235 5.97	2-Hole	**221966-1**
.015 0.38	.235 5.97	2-Hole	**221967-1**
.020 0.51	.235 5.97	2-Hole	**221968-1**

Recommended Panel Cutouts

Maximum Panel Thickness - **.095** [2.41]



4-Hole Mount



2-Hole Mount

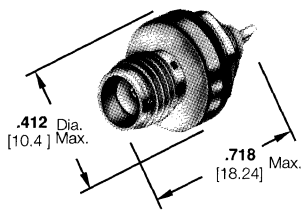
SMA Adapters and Pc Board Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

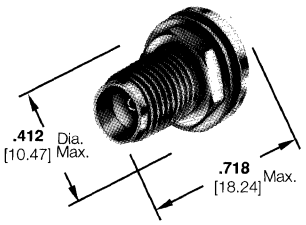
Bulkhead Solder Jacks

Rear Mount



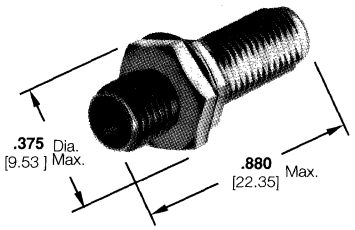
Part No. 228496-1
(Brass body, nickel plated)

Front Mount

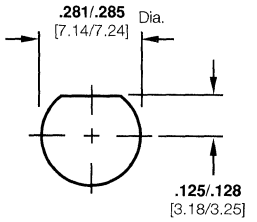


Part No. 228497-1
(Brass body, nickel plated)

Bulkhead Jack Adapter
(Jack-Jack)

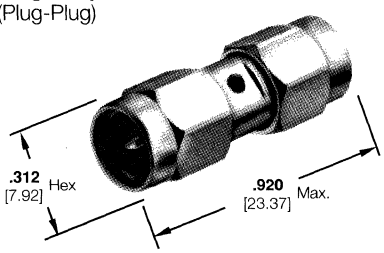


Part No. 221643-1



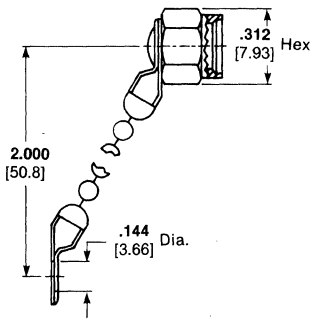
Panel Thickness - **.055/.103** [1.40/2.62]
Recommended Panel Cutout for Bulkhead Jacks

Plug Adapter
(Plug-Plug)



Part No. 221639-1

Protective Cap



Brass, Nickel Plated
Part No. 501368-1

Stainless Steel, Passivated with Safety Wire Holes
Part No. 501369-1

Materials:

Center Contacts - Brass per QQ-B-626 or beryllium copper per QQ-C-530, gold plated

Bodies - Stainless steel per ASTM-A-582, passivated

Dielectrics - TEFLON per MIL-P-19468

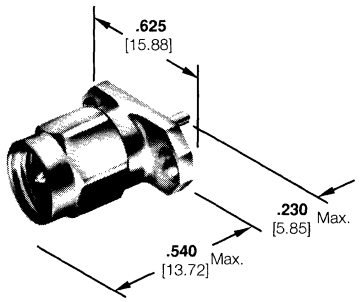
Gaskets - Silicone rubber per ZZ-R-765

Finishes:
Passivate per QQ-P-35
Gold per MIL-G-45204
Nickel per QQ-N-290

Panel Solder Plugs and Jacks

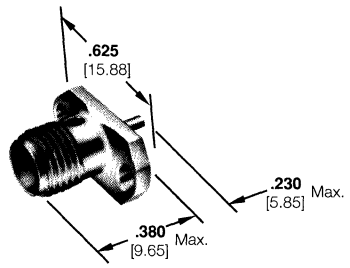
Materials and Finishes:
(See page 4100)

2-Hole Plug

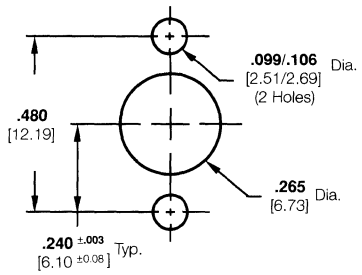


Part No. 221674-1

2-Hole Jack



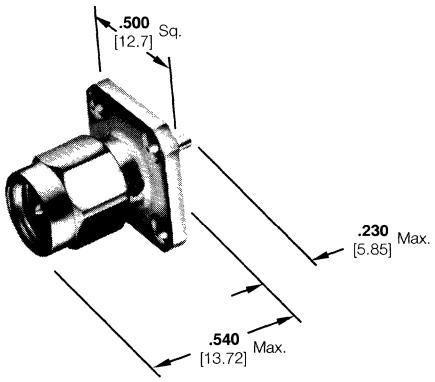
Part No. 221641-1



Maximum Panel Thickness - **.095** [2.41]

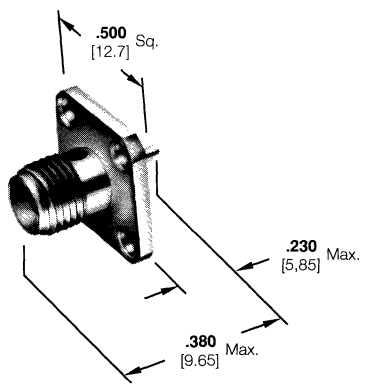
Recommended Panel Cutout

4-Hole Plug

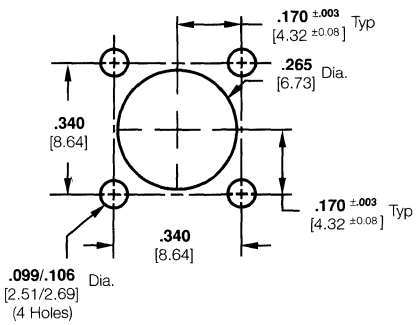


Part No. 221670-1

4-Hole Jack



Part No. 221640-1



Maximum Panel Thickness - **.095** [2.41]

Recommended Panel Cutout

SMA Adapters and Pc Board Connectors

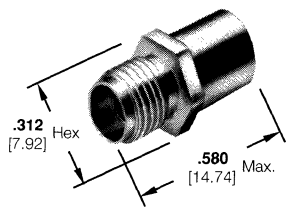
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Adapters

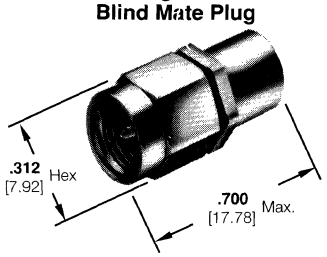
Materials and Finishes:
(See page 4100)

SMA Jack to 3.5 mm Blind Mate Plug



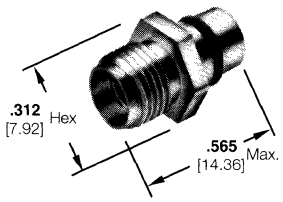
Part No. 222699-1

SMA Plug to 3.5 mm Blind Mate Plug



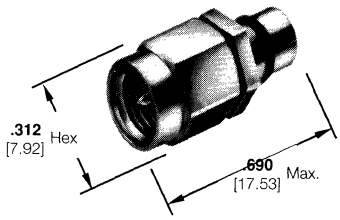
Part No. 222695-1

SMA Jack to 3.5 mm Blind Mate Jack



Part No. 222692-1

SMA Plug to 3.5 mm Blind Mate Jack

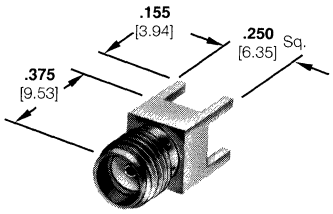


Part No. 222689-1

Pc Board Connectors

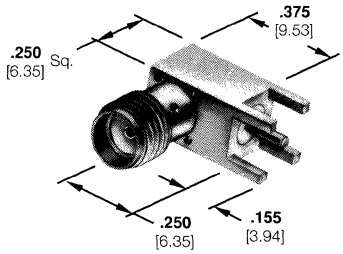
Materials and Finishes:
(See page 4100)

Vertical Jack



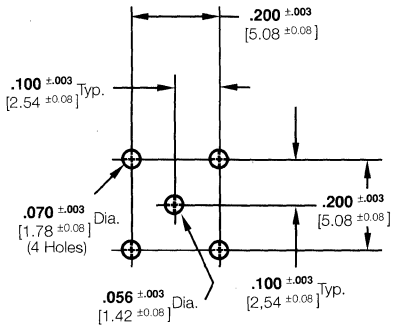
Brass Body, Gold Plated
Part No. 221789-1

Right-Angle Jack



Stainless Steel Body, Gold Plated
Part No. 221790-1

Recommended Pc Board Layout



Blind Mate Connectors for Semi-Rigid Cable

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

- 26.5 or 40 GHz performance
- Superior performance of air dielectric interface
- Solid telescoping alignment; no interface damage
- Shielded outer contact; low RF leakage
- Configurations include bulkhead jacks and plugs for panel and bulkhead applications
- 3.5 mm Blind Mate has interchangeable mounting/ panel spacing with other blind mate designs per DESC specification
- Crimped with standard military SMA hand tool and special locator inserts

Related Product Data:

Connector Selection - Pages 4004-4006
Theory and Application - Pages 4007-4013
Cable-to-Connector Selection Guide - Pages 4014 & 4015
Connector Selection Guide - Page 4016
Application Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163
Packaging - All connectors are packaged individually unless otherwise noted.

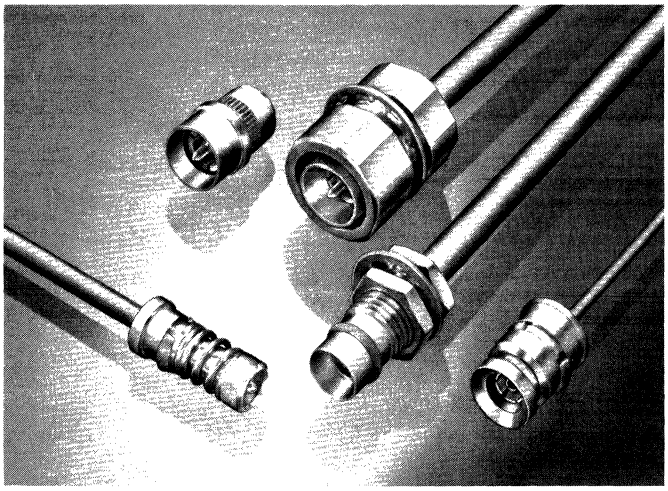


Table of Contents

Electrical Characteristics

Nominal Impedance:
50 ohms

Frequency Range:
0 to 26.5 GHz, 0-40 GHz

Operating Voltage:
RG-402/U Cable (.141 [3.58] O.D.)
500 volts rms at 60 Hz (sea level)
125 volts rms at 60 Hz
(70,000 ft [21 336 m])
RG-405/U Cable (.086 [2.18] O.D.)
335 volts rms at 60 Hz (sea level)
85 volts rms at 60 Hz
(70,000 ft [21 336 m])

Mechanical Characteristics

Cable Retention:
RG-402/U Cable (.141 [3.58] O.D.)–
60 lb [266.9 N], min.
RG-405/U Cable (.086 [2.18] O.D.)–
30 lb [133.4 N], min.

Connector Mating Force:
3 lb [13.34 N], max.

Environmental Characteristics

Temperature Range:
-65°C to +105°C

Materials

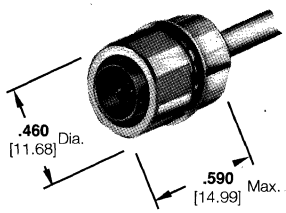
Center Contacts - Beryllium Copper per QQ-C-530, gold plated
Outer Contacts:
Plugs - Beryllium copper per QQ-C-530
Jack - Stainless steel per ASTM-A-582, gold plated
Shells - Stainless steel per ASTM-A-582, passivated
Panel Shells - Brass per QQ-B-626, nickel plated
Dielectrics - TEFLON per MIL-P-19468
Grip Rings - Brass per MIL-C-50 or Beryllium Copper per QQ-C-530, nickel plated
Springs - Steel wire per QQ-W-470
Bushings - Stainless steel per ASTM-A-582, passivated
Retention Springs - Beryllium Copper per QQ-C-530, Tin-Lead Plated
Finishes:
Passivate per QQ-P-35
Gold per MIL-G-45204
Nickel- per QQ-N-290
Tin-Lead per ASTM-B-545

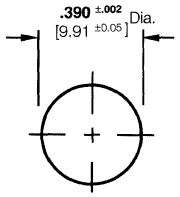
3.5 mm Blind Mate Connectors for Semi-Rigid Cable

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

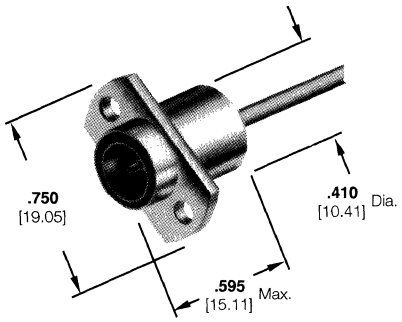
Bulkhead Plug

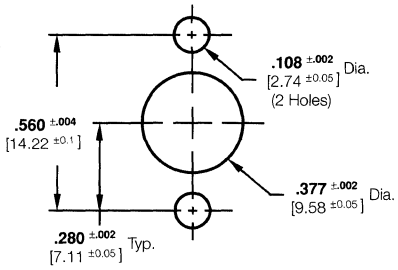




Maximum Panel Thickness - **.150** [3.81]
Recommended Panel Cutout

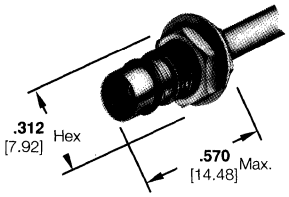
2-Hole Panel Plug

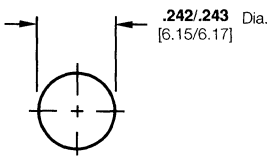




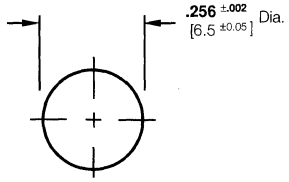
Maximum Panel Thickness - **.190** [4.83]
Recommended Panel Cutout

Bulkhead Jack





BMA Mount



BMB Mount

Maximum Panel Thickness - **.125** [3.18]
Recommended Panel Cutouts

Connector Cable Range Selection Code†	RG/U Cable	Connector Configuration	Part No.	Hand Tool Kit No. 59981-1	
				Die Set	Locator*
O	402 Semi-Rigid/ **.141** [3.58]	Bulkhead Plug	**222201-1**	312253-1	313745-1
		2-Hole Panel Plug	**222200-1**	312253-1	313745-1
		Bulkhead Jack (BMA Mount Cutout)	**222198-1**	312253-1	313746-1
		Bulkhead Jack (BMA Mount Cutout)	**222199-1**	312253-1	313746-1
P	405 Semi-Rigid/ **.086** [2.18]	Bulkhead Plug	**222197-1**	312253-2	313745-1
		2-Hole Panel Plug	**222193-1**	312253-2	313745-1
		Bulkhead Jack (BMA Mount Cutout)	**222194-1**	312253-2	313746-1
		Bulkhead Jack (BMA Mount Cutout)	**222196-1**	312253-2	313746-1

†Refer to pages 4014 and 4015 for code specifications.
*Not included in Hand Tool Kit No. 59981-1; must be purchased separately.

3.5 mm Blind Mate Connectors for Semi-Rigid Cable

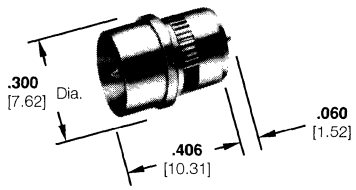
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

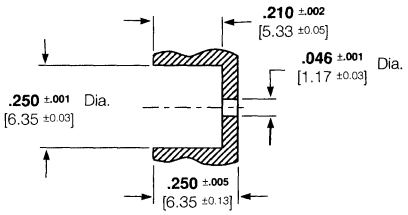
Press-Fit Connectors

Center Contact - Brass per QQ-B-626 or Beryllium Copper per QQ-C-530, gold plated

Plug

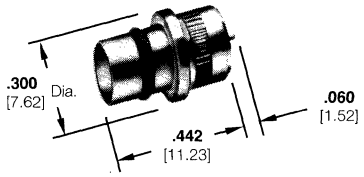


Part No. 222645-1

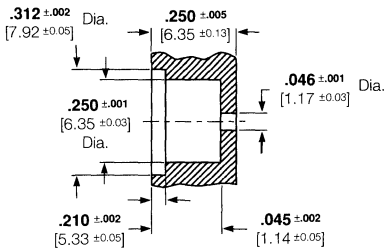


Recommended Panel Cutout

Jack



Part No. 222644-1

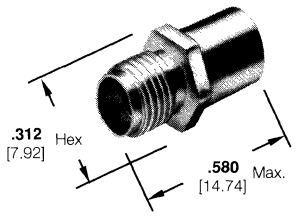


Recommended Panel Cutout

Adapters

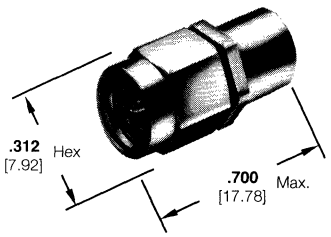
Center Contact - Brass per QQ-B-626 or Beryllium Copper per QQ-C-530, gold plated

SMA Jack to 3.5 mm Blind Mate Plug



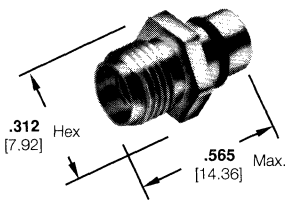
Part No. 222699-1

SMA Plug to 3.5 mm Blind Mate Plug



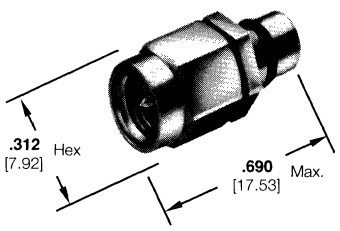
Part No. 222695-1

SMA Plug to 3.5 mm Blind Mate Jack



Part No. 222692-1

SMA Jack to 3.5 mm Blind Mate Jack



Part No. 222690-4

2.8 mm Blind Mate Connectors for Semi-Rigid Cable

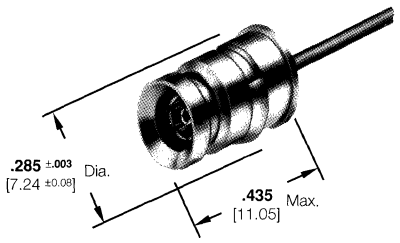
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

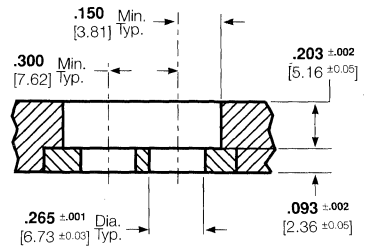
Floating Plug

Materials and Finishes:

Center Contact - Beryllium copper, gold plated
Outer Shell - Stainless steel, passivated
Shell - Beryllium copper, gold plated
Dielectric - TEFLON
Grip Ring - Beryllium copper, nickel plated
Spring - Steel wire
Retaining Clip - Beryllium copper, nickel plated
Shroud - Beryllium copper, nickel plated



RG-405 Semi-Rigid Cable - Part No. 413012-1
.047 [1.19] **Semi-Rigid Cable - Part No. 413025-1**

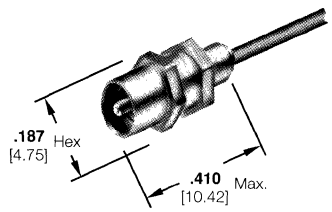


Recommended Panel Layout

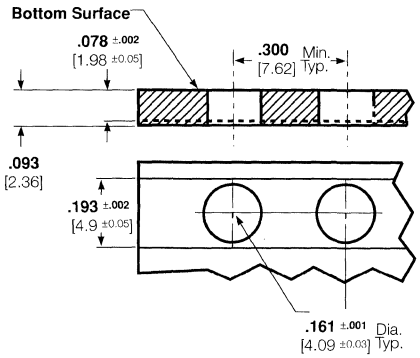
Bulkhead Jack

Material and Finishes:

Center Contact - Beryllium copper, gold plated
Shell - Beryllium copper, gold plated
Dielectric - TEFLON
Grip Ring - Beryllium copper, nickel plated
Shroud - Beryllium copper, gold plated



.047 [1.19] **Semi-Rigid Cable - Part No. 413024-1**

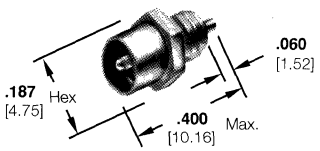


Recommended Panel Layout

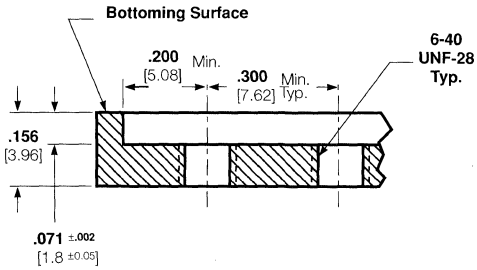
Launcher

Materials and Finishes:

Center Contact - Brass, gold plated
Shell - Beryllium copper, gold plated
Dielectric - TEFLON



Part No. 413020-1



Recommended Panel Layout

2.8 mm Blind Mate Contacts
(for Blind Mate Subminiature D Connectors with Size 8 Cavities)

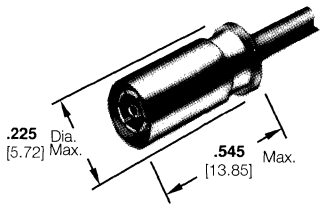
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Plug

Materials and Finishes:

Shroud and Grip Ring - Brass, nickel plated
Retaining Clip- Beryllium copper, gold plated
Shell and Contact- Beryllium copper, gold plated
Dielectric- TEFLON

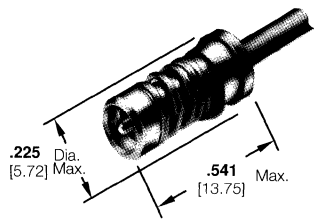


RG-405 Semi-Rigid/.086 Cable
Part No. 413242-1

Jack

Materials and Finishes:

Sleeve and Grip Ring- Brass, nickel plated
Retaining Clip- Beryllium copper, nickel plated
Shell and Contact- Beryllium copper, gold plated
Dielectric - TEFLON



RG-405 Semi-Rigid/.086 Cable
Part No. 413249-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Product Facts

- Unique spring mating
- Fast, clean cable assembly
- Low applied cost
- Available military tooling or AMP tooling
- Positive insulation grip
- Snap-fit coupling for quick connect/disconnect
- Low VSWR
- Tarnish resistant finish

Related Product Data:

Connector Selection - Pages 4004-4006

Theory and Application - Pages 4007-4013

Cable-to-Connector Selection Guide - Pages 4014 & 4015

Connector Selection Guide - Page 4016

Performance Characteristics - Page 4109

Material Specifications - Page 4109

Tooling - Pages 4157-4159

Appendix - Pages 4160-4162

Technical Documents - Page 4163

Military Category - All crimp connectors are Category B Type (AMP Crimp Tooling), unless otherwise noted under the "Military No. and/or Comments" column in the connector specifications chart.

Packaging - All connectors are packaged individually unless otherwise noted under the "Military No. and/or Comments" column in the connector specifications chart.

Table of Contents

AMP SMB Connectors feature unique spring mating with snap-fit couplings for quick connect/disconnect applications. These low-cost coaxial connectors are designed to be intermateable with MIL–C-39012 connectors and are comparable in all performance aspects with the standard SMB connector military specifications up to 4 GHz. They are fully inter-mateable with compatible military connectors and feature reliable dual crimp cable terminations, gold plated contacts and tarnish resistant bodies.

A wide range of configurations are available including a plug , right-angle plug, bulkhead jack and adapter, as well as printed circuit board and solder jacks. Fast, clean cable assemblies can be made using either the AMP Commercial Hand Tool or available military tooling.

SMB Connectors, Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Electrical Characteristics

Nominal Impedance:
50 ohm

Working Voltage:
335 volts rms

Frequency Range:
50 ohm - 0 to 4 GHz

Contact Resistance (max.):
Outer contact - 2.5 milliohms
Center contact - 8 milliohms

Dielectric Withstanding Voltage:
1000 volts rms (at sea level)

Insulation Resistance (min.):
1000 megohms

RF Leakage:
-55 dB min. at 2-3 GHz

RF Insertion Loss (max.):
Straight Connector - 0.3 dB at 1.5 GHz
Right-Angle Connector - 0.6 dB at 1.5 GHz

Corona Level:
250 volts rms min. at 70,000 ft

VSWR Max.:
Straight Connector - 1.25 + .04 (f in GHz)
Right-Angle Connector - 1.35 + .04 (f in GHz)

Mechanical Characteristics

Mating/Unmating:
Snap fit, quick connect/disconnect

Cable Attachment:
Crimp, both center contact and braid

Mating/Unmating Force:
2 to 16 lb [8.9 to 71.2 N] per MIL-C-39012

Cable Retention (min.):
20 lb [89 N] (RG 316 cable)

Durability:
500 cycles per MIL-C-39012

Environmental Characteristics

Temperature Range:
-65°C to +85°C (cabled connectors)
-65°C to +165°C (soldered connectors)

Vibration:
MIL-STD-202, Method 301

Shock:
MIL-STD-202, Method 213, Condition B

Moisture Resistance:
MIL-STD-202, Method 101, Condition B

Salt Spray:
MIL-STD-202, Method 101, Condition B

Temperature Cycling:
MIL-STD-202, Method 102, Condition C

Materials

Brass: QQ-B-626

Beryllium Copper: QQ-C-530

TEFLON: MIL-P-19468

Copper: QQ-C-576

Polypropylene: General Purpose

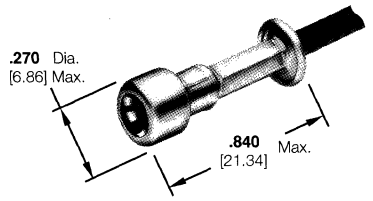
Plating:
Gold - MIL-G-45204
Nickel - QQ-N-290

SMB Connectors, 50 Ohm

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

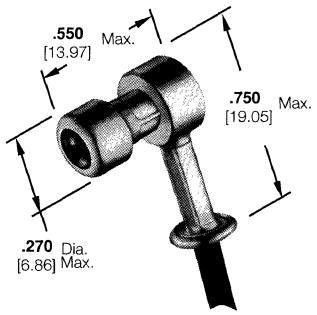
Plugs



Connector Cable Range Selection Code†	RG/U Cable	Part No.	Military Tooling			AMP Tooling		
			MIL-C-22520/2-01 Tool for Contact Crimp		MIL-C-22520/5-01 Tool for Braid Crimp	Dies for Hand Tool 220190-1		Dies for Pneu. Tool 69365, Hand Tools 69710 and 69710-1
			Daniels Positioner	Selector Position	Daniels Hex Die Set	Die Set	Position	
A	178, 178A, 178B 196, 196A	**228213-2**	K699	4	Y624	58046-1	B	–
B	174, 316 188, 188A	**228213-1**	K699	2	Y444	58046-1 or 59969-1	A	58108-1
		228213-6*	K699	2	Y444	58046-1 or 59969-1	A	–
B1	179, 179A, 179B 187, 187A, 161 Belden 9221	**228213-3**	K699	4	Y444	58046-1 or 59969-1	A	–
–	188 Double Shield	**228213-5***	K699	2	Y196 Location A	59969-2	–	–

† Refer to pages 4014 and 4015 for code specifications.

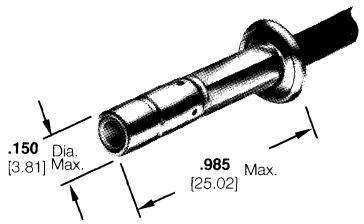
Right-Angle Plugs



Connector Cable Range Selection Code†	RG/U Cable	Part No.	Military Tooling			AMP Tooling		
			MIL-C-22520/2-01 Tool for Contact Crimp		MIL-C-22520/5-01 Tool for Braid Crimp	Dies for Hand Tool 220190-1		Dies for Pneu. Tool 69365, Hand Tools 69710 and 69710-1
			Daniels Positioner	Selector Position	Daniels Hex Die Set	Die Set	Position	
A	178, 178A, 178B 196, 196A	**228214-2**	–	–	Y624	58046-1	B	–
B	174, 316 188, 188A	**228214-1**	–	–	Y444	58046-1 or 59969-1	A	58108-1
		228214-4**	–	–	Y444	58046-1 or 59969-1	A	58108-1
B1	179, 179A, 179B 187, 187A, 161 Belden 9221	**228214-5*, ****	–	–	Y444	58046-1 or 59969-1	A	–
–	188 Double Shield	**228214-6***	–	–	Y196 Location A	59969-2	–	–

† Refer to pages 4014 and 4015 for code specifications.
* Shorter, unflanged ferrule.
**Heavier gold plating on center contact.

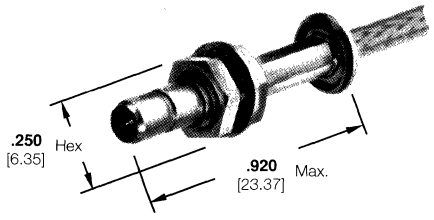
Jacks

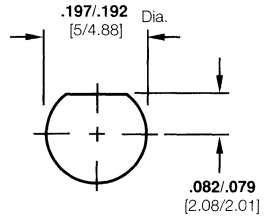


Connector Cable Range Selection Code†	RG/U Cable	Part No.	Military Tooling			AMP Tooling		
			MIL-C-22520/2-01 Tool for Contact Crimp		MIL-C-22520/5-01 Tool for Braid Crimp	Dies for Hand Tool 220190-1		Dies for Pneu. Tool 69365, Hand Tools 69710 and 69710-1
			Daniels Positioner	Selector Position	Daniels Hex Die Set	Die Set	Position	
A	178, 178A, 178B 196, 196A	**221145-2**	K727	4	Y624	58046-1	B	–
B	174, 316 188, 188A	**221145-1**	K727	2	Y444	58046-1 or 59969-1	A	58108-1
B1	179, 179A, 179B 187, 187A, 161 Belden 9221	**221145-3**	K727	4	Y444	58046-1	A	–

† Refer to pages 4014 and 4015 for code specifications.

Bulkhead Jacks





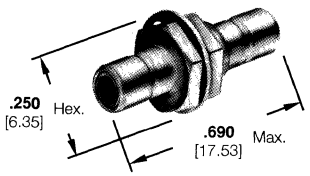
Maximum Panel Thickness - **.093** [2.36]

Recommended Panel Cutout

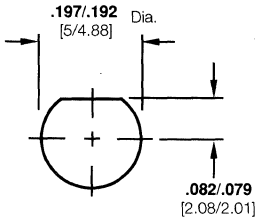
Connector Cable Range Selection Code†	RG/U Cable	Part No.	Military Tooling			AMP Tooling		
			MIL-C-22520/2-01 Tool for Contact Crimp		MIL-C-22520/5-01 Tool for Braid Crimp	Dies for Hand Tool 220190-1		Dies for Pneu. Tool 69365, Hand Tools 69710 and 69710-1
			Daniels Positioner	Selector Position	Daniels Hex Die Set	Die Set	Position	
A	178, 178A, 178B 196, 196A	**228217-2**	K727	4	Y624	58046-1	B	–
B	174, 316 188, 188A	**228217-1**	K727	2	Y444	58046-1 or 59969-1	A	58108-1
		228217-4*	K727	4	Y444	58046-1 or 59969-1	A	–
B1	179, 179A, 179B 187, 187A, 161 Belden 9221	**228217-3**	K727	4	Y444	58046-1 or 59969-1	A	–
–	188 Double Shield	**228217-5**	K727	2	Y196 Location A	59969-2	–	58046-2

† Refer to pages 4014 and 4015 for code specifications.
* Shorter, unflanged ferrule.

Bulkhead Jack Adapter
(Jack-Jack)



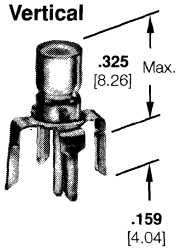
Part No. 228553-1



Maximum Panel Thickness - **.093** [2.36]
Recommended Panel Cutout

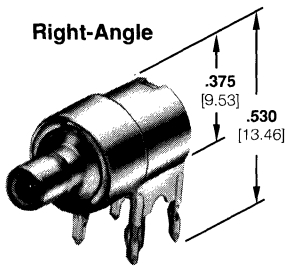
Pc Board Jacks

Vertical

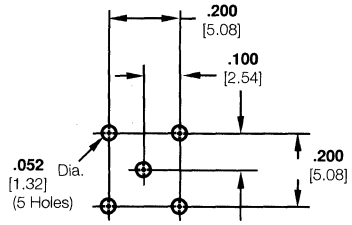


Part No. 221111-1

Right-Angle



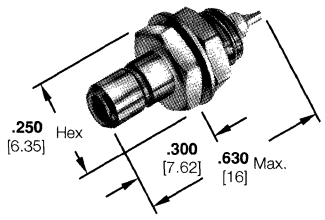
Part No. 228435-1



Pc Board Thickness -**.125** [3.18]
Recommended Pc Board Layout

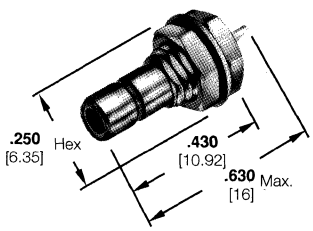
Bulkhead Solder Jacks

Front Mount

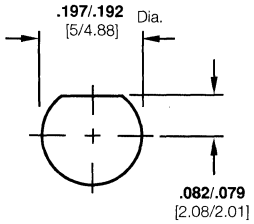


Part No. 228216-1

Rear Mount



Part No. 228215-1



Maximum Panel Thickness - **.093** [2.36]
Recommended
Panel Cutout

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

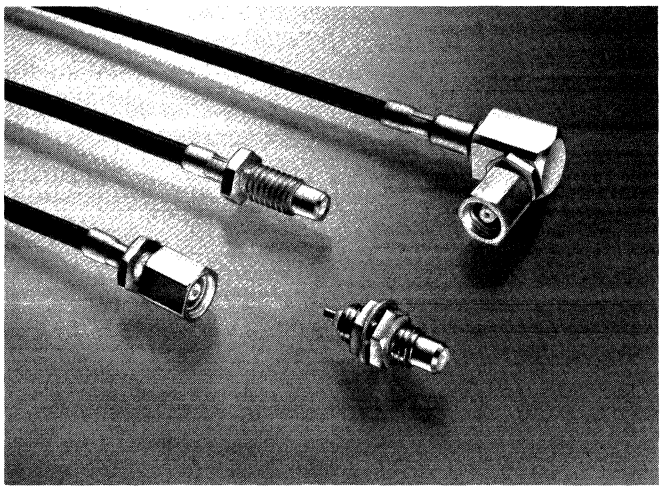
- Three-piece design
- Fast, clean cable assembly
- Center contacts mounted on tape for ease of handling
- Connector bodies preassembled
- Solderless termination — no danger of heat damage
- Center conductor and braid terminated with same tool
- Low noise level
- Miniature screw-on coupling
- TEFLON dielectric

Related Product Data:

Connector Selection - Pages 4004-4006
Theory and Application - Pages 4007-4013
Cable-to-Connector Selection Guide - Pages 4014 & 4015
Connector Selection Guide - Page 4016
Performance Characteristics - Page 4113
Material Specifications - Page 4113
Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163

Military Category - All crimp connectors are Category B Type (AMP Crimp Tooling), unless otherwise noted under the "Military No. and/or Comments" column in the connector specifications chart.

Packaging - All connectors are packaged individually unless otherwise noted under the "Military No. and/or Comments" column in the connector specifications chart.



The AMP SMC Connector is miniature and light-weight, especially designed for use in critical applications where limited space and vibration are of major concern.

This connector is designed in accordance with the requirements of Specification MIL-C-39012, Class II, Category B to assure the highest standards of electrical and mechanical performance. It has a constant impedance of 50 ohms, a voltage rating of 350 volts and provides excellent operation at frequencies up to 10 GHz. It also has a threaded coupling and can be used with a wide range of miniature coaxial cable sizes including RG-174, 179, 187, 188 and 316.

To reduce the difficulties of assembly inherent in this type of connector, the polarized center contacts are tape mounted for easy assembly and termination. This unique feature assures savings in both labor and time, resulting in low overall applied costs.

Table of Contents

Electrical Characteristics

Nominal Impedance: 50 ohms
Working Voltage: 335 volts rms
Frequency Range: 0 to 10 GHz
Insulation Resistance:
1000 megohms min.
Contact Resistance:
Outer Contact - 1 milliohm
Center Contact -
Straight Connectors - 6 millohms
Right-Angle Connectors - 12 milliohms
Dielectric Withstanding Voltage:
1000 volts rms
RF Leakage: -60 dB min., between 2 and 3 GHz
RF Insertion Loss:
Straight Connectors - 0.25 dB max. at 4 GHz
Right-Angle Connectors - 0.50 dB max. at 4GHz
Corona Level: 250 volts min. at 70,000 ft [21 336 m]

Mechanical Characteristics

Mating/Unmating:
10-32 threaded coupling
Cable Attachment:
Crimp type, both center contact and braid
Coupling Nut Retention:
35 lb [156 N] min.
Cable Retention:
20 lb [89 N] min., RG-174 cable
Durability:
500 cycles per MIL-C-39012

Environmental Characteristics

Temperature Range:
-65°C to +85°C
Vibration:
MIL-STD-1344, Method 2005 Condition IV
Salt Spray:
MIL-STD-1344, Method 1001, Condition B
Temperature Cycling:
MIL-STD-1344, Method 1003, Condition A (except low temperature is -65°C)

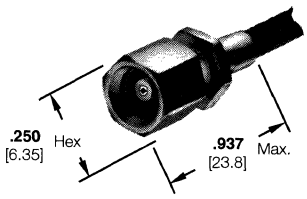
Materials

Brass: QQ-B-626
Beryllium Copper: QQ-C-530
Copper: QQ-C-576
TEFLON Insulation: MIL-P-19468
Plating:
Gold - MIL-G-45204

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

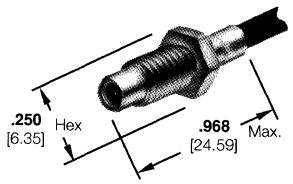
Plugs



Connector Cable Range Selection Code †	RG/U Cable	Part No.	Integral Die Hand Tool	Die Insert for Pneumatic Tool 69365
A	178, 178A, 178B 196, 196A	**51749-2**	220020-1	220018-1
B	174, 316 188, 188A	**51749-1**	220020-1	220018-1
B1	179, 179A, 179B 187, 187A, 161 Belden 9221	**51749-5**	220020-1	220018-1

† Refer to pages 4014 and 4015 for code specifications.

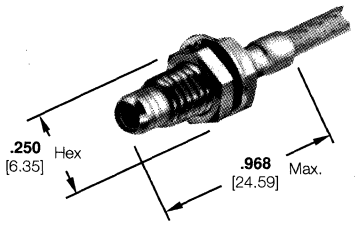
Jacks

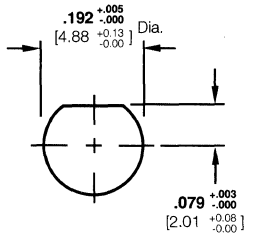


Connector Cable Range Selection Code †	RG/U Cable	Part No.	Integral Die Hand Tool	Die Insert for Pneumatic Tool 69365
A	178, 178A, 178B 196, 196A	**51750-2**	220020-1	220018-1
B	174, 316 188, 188A	**51750-1**	220020-1	220018-1

† Refer to pages 4014 and 4015 for code specifications.

Bulkhead Jacks





Recommended Panel Cutout

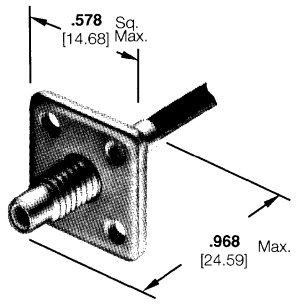
Connector Cable Range Selection Code †	RG/U Cable	Part No.	Integral Die Hand Tool	Die Insert for Pneumatic Tool 69365
A	178, 178A, 178B 196, 196A	**51751-2**	220020-1	220018-1
B	174, 316 188, 188A	**51751-1**	220020-1	220018-1

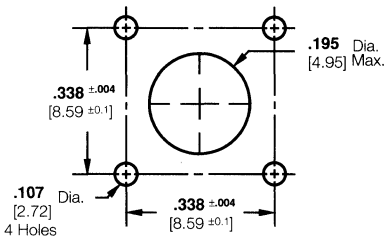
† Refer to pages 4014 and 4015 for code specifications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Panel Jacks





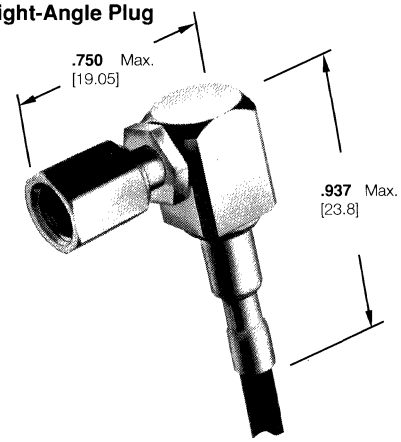
Recommended Panel Cutout

Connector Cable Range Selection Code †	RG/U Cable	Part No.	Integral Die Hand Tool	Die Insert for Pneumatic Tool 69365
A	178, 178A, 178B 196, 196A	**51752-2**	220020-1	220018-1
B	174, 316 188, 188A	**51752-1**	220020-1	220018-1

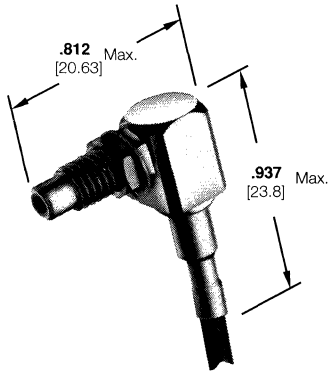
† Refer to pages 4014 and 4015 for code specifications.

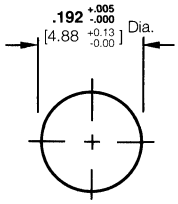
Right-Angle Plug and Bulkhead Jack

Right-Angle Plug



Right-Angle Bulkhead Jack





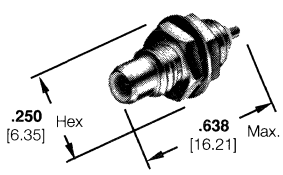
Recommended Panel Cutout

Connector Cable Range Selection Code †	RG/U Cable	Part. No.		Integral Die Hand Tool	Die Insert for Pneumatic Tool 69365
		Right-Angle Plug	Right-Angle Bulkhead Jack		
A	178, 178A, 178B 196, 196A	**51753-2**	–	220020-1	220018-1
B	174, 316 188, 188A	**51753-1**	**51754-1**	220020-1	220018-1
–	RD-316 188 Double Shield	**51753-9**	–	220020-2	220194-1

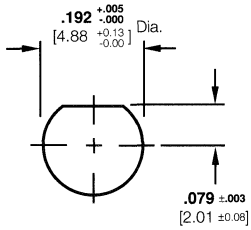
† Refer to pages 4014 and 4015 for code specifications.

Bulkhead Solder Jack

Front Mount



Part No. 227633-1



Maximum Panel Thickness - **.096** [2.44]
Recommended Panel Cutout

Miniature Threaded Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

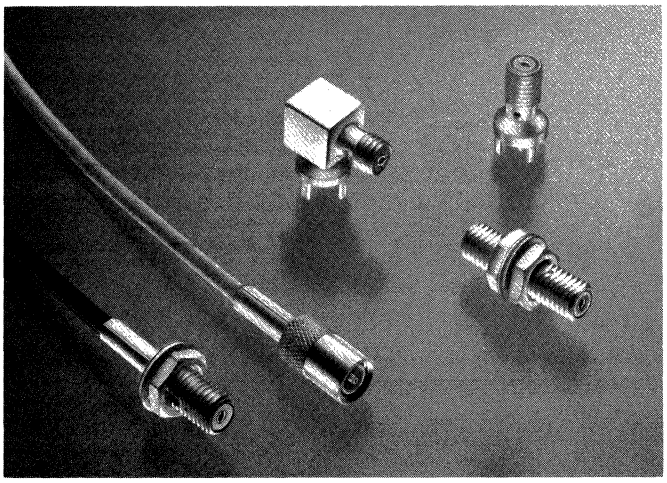
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

- Reduced noise level because of AMP's solderless crimping techniques
- Low application cost with time-saving, one-stroke crimping of inner conductor, outer braid and cable support
- Conductor and shield insertion facilitated by bell-mouth entry design in insulators and wire barrels
- Positive insulation grip with crimped braid ferrule
- No danger of heat damage to coaxial cable
- Two parts make up a complete plug or jack
- Ease of inspection
- Stabilized inner contacts
- Low VSWR
- Improved cable retention and insulation grip

Related Product Data:

Connector Selection - Pages 4004-4006
Theory and Application - Pages 4007-4013
Cable-to-Connector Selection Guide - Pages 4014 & 4015
Connector Selection Guide - Page 4016
Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163
Packaging - All connectors are packaged individually unless otherwise noted.



Miniature threaded connectors are a unique development of AMP Incorporated which has resulted in the production of minimum size components capable of high levels of performance. Termination of connector to cable is made with AMP's exclusive one-crimp method–simultaneous termination of inner conductor, outer braid and cable support with one stroke of the tool.

These rugged connectors accommodate a wide range of coaxial cables. Configurations available include straight plugs and jacks, plus a feed-thru adapter, pc board adapters and a solder adapter.

Table of Contents

Electrical Characteristics

Nominal Impedance: 50 ohm
Working Voltage: 335 volts, rms
Frequency Range: 0 to 1000 MHz
Contact Resistance: 3.0 MV
Contact Current Rating: 2 amps max.
Insulation Resistance: 5000 megohms min.
Dielectric Withstanding Voltage: 1000 volts rms at sea level
VSWR: 1.25 to 1.1 at 1000 MHz

Mechanical Characteristics

Mating/Unmating: 12-32 threaded coupling
Cable Attachment: Crimp type-simultaneous center contact and braid
Mating Characteristics: per AMP GPS-501-5
Cable Retention: 20 lb [88 N] min. RG-174A/U cable
Durability: 200 cycles - 10 cycles per minute (based on test results)

Environmental Characteristics

Temperature Range: -55°C to +85°C
Vibration: MIL-STD-202, Method 202, 50 G's
Temperature Cycling: MIL-STD-202, Method 102, Cond. D

Materials:

Brass - QQ-C-530
Beryllium Copper - QQ-C-530
Polypropylene - General Purpose
Copper - Annealed
Phosphor Bronze - QQ-B-750
TEFLON - MIL-P-19468

Plating:

Silver - QQ-S-365
Gold - MIL-G-45204
Nickel - QQ-N-290

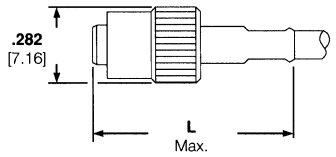
Miniature Threaded Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

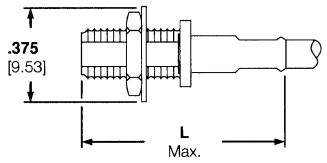
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

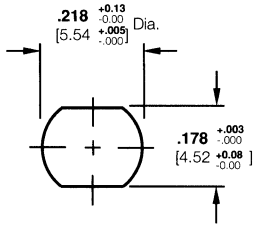
Plug and Jack

Plug



Jack





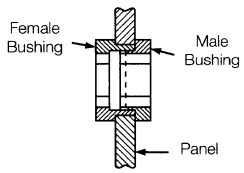
Maximum Panel Thickness - **.125** [3.18]

Recommended Panel Cutout

Connector Cable Range Selection Code†	RG/U Cable	Plugs			Jacks		Integral Die Hand Tool	Die Insert for Tools: Hand Tool - 69710 Pneu. Tool - 69365-2	Coaxial Cable Stripping Machine Strip Set
		Polypropylene Dielectric	TEFLON Dielectric	Dim. L	TEFLON Dielectric	Dim. L			
A	178, 178A, 178B 196, 196A	–	**2-330311-2**	**.890** 22.61	**2-330312-2**	**.875** 22.23	69188-1	–	–
B	174, 316 188, 188A	**2-329036-1**	**2-330311-1**	**.890** 22.61	**2-330312-1**	**.875** 22.23	45609	–	1-225888-9
B1	179, 179A, 179B 187, 187A, 161 Belden 9221	**2-329036-1**	**2-330311-1**	**.890** 22.61	**2-330312-1**	**.875** 22.23	69142	–	–
C1	180, 180A, 180B 195, 195A	–	**1-330723-0**	**.812** 20.62	**1-330599-0**	**.812** 20.62	69143	69229-1	225888-5

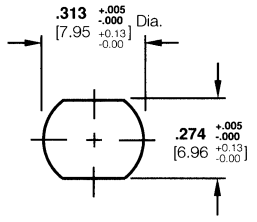
† Refer to pages 4014 and 4015 for code specifications.

Panel Insulating Bushings



Male Bushing
Part No. 329486

Female Bushing
Part No. 329487

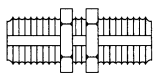


Panel Thickness - **.062** [1.59] to **.125** [3.18]

Recommended Panel Cutout

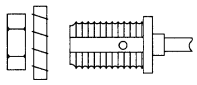
Adapters

Feed-Thru Adapter
(Jack-Jack)



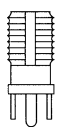
Part No. 330118

Solder Jack Adapter



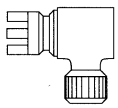
Part No. 329852

Pc Board Jack Adapter



Part No. 331899

Right-Angle Pc Board Plug Adapter



Part No. 330732

Twin BNC Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

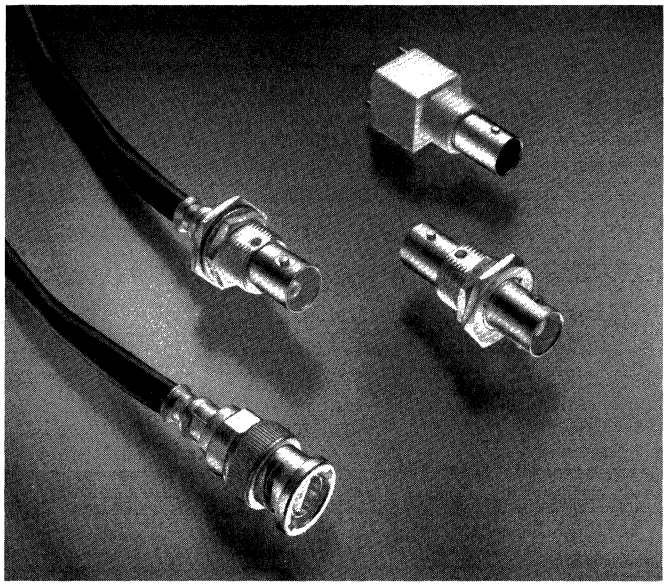
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

- Crimp connectors require only one-stroke crimping of both conductors, plus braid and cable support
- Lower installed cost with one-stroke crimp
- Reduced noise levels because of AMP's solderless crimping techniques
- Captive inner contact stability
- No danger of heat damage to coaxial cable
- Ease of inspection

Related Product Data:

Connector Selection - Pages 4004-4006
Theory and Application - Pages 4007-4013
Cable-to-Connector Selection Guide - Pages 4014 & 4015
Connector Selection Guide - Page 4016
Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163
Packaging - All connectors are packaged individually unless otherwise noted.



The Twin BNC Connector is a quick connect/disconnect, weatherproof connector designed in accordance with MIL-C-39012 to meet the stringent requirements of MIL-STD-1553 Multiplex Data Bus.

These twin coaxial cable connectors are a unique development by AMP which has resulted in the production of high level RF components. Termination of these connectors to twin conductor cable is made with AMP's exclusive one crimp method which simultaneously terminates inner conductors, outer braid and cable support with one stroke of the matching AMP tool.

These rugged connectors accommodate today's most commonly used twin conductor cable sizes.

Table of Contents

Electrical Characteristics

Nominal Impedance: Non-constant
Working Voltage: 500 volts rms sea level

Insulation Resistance:
5000 megohms min.
Dielectric Withstanding Voltage:
1500 volts rms sea level

Mechanical Characteristics

Mating/Unmating:
Bayonet lock-quick connect/disconnect

Cable Attachment:
Crimp type - Simultaneous center and braid

Coupling Nut Retention:
100 lbs. [444 N] min.

Cable Retention:
25 lbs. [111 N] min., RG-108A/U cable

Durability: 200 cycles per MIL-C-39012

Environmental Characteristics

Temperature Range:-55°C to +85°C

Vibration: MIL-STD-202, Method 204,Condition B

Shock: MIL-STD-202, Method 213, Condition I, 100 G's

Salt Spray: MIL-STD-202, Method 101,Condition B

Temperature Cycling: MIL-STD-202, Method 102, Condition C

Materials

Brass: QQ-B-626
Beryllium Copper: QQ-C-530
TEFLON: MIL-P-19468
Polypropylene: General purpose
Copper, Annealed: QQ-C-576
Phosphor Bronze: QQ-B-750
Silicone Rubber: ZZ-R-765

Plating:

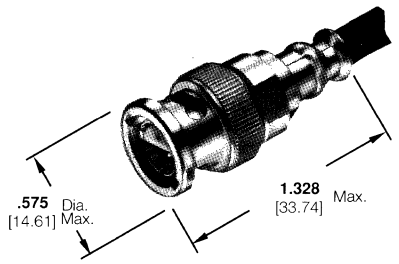
Silver - QQ-S-365
Nickel - QQ-N-290
Tin Lead - ASTM-B-545

Twin BNC Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

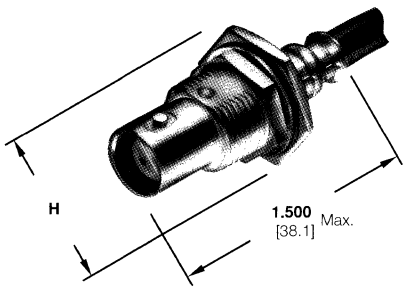
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Plugs

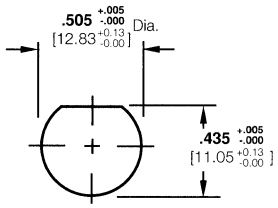


RG/U Cable	Center Contact Plating	Body Plating	Dielectric	Part No.	Integral Die Hand Tool
108, 108A	Silver	Silver	TEFLON	**332225**	69667
	Silver	Nickel	Polypropylene	**332225-5**	
Trompeter TWC-124-2	Silver	Silver	TEFLON	**332225-3**	69667
ROLM 49D2401 Raychem 7824D0130	Silver	Nickel	Polypropylene	**332225-6**	69667

Bulkhead Jack



H = **.687** [17.45] Max. across flats, **.800** [20.32] Max. across points



Maximum Panel Thickness - **.125** [3.18]

Recommended Panel Cutout

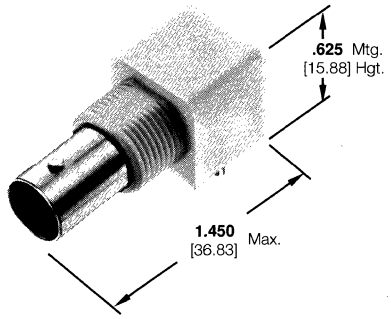
RG/U Cable	Center Contact Plating	Body Plating	Dielectric	Part No.	Integral Die Hand Tool	Die Insert for Tools: Hand Tool - 69710-1 Pneu. - 69365,
108, 108A	Silver	Nickel	Polypropylene	**332342**	69667	69708

Specifications subject to change.
For latest design specifications...
1-800-522-6752

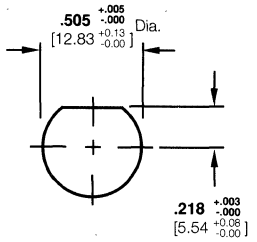
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Right-Angle Pc Board/ Panel Mount Jacks

Body Material: VALOX

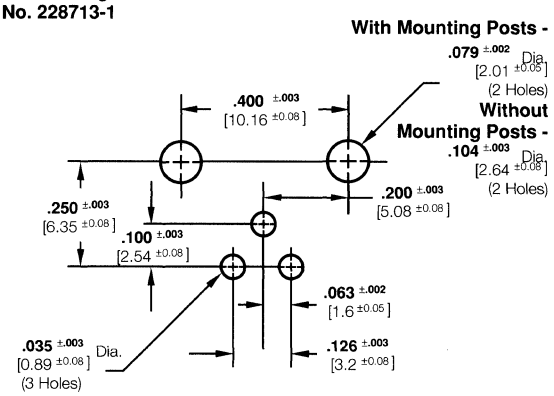


Body Color - White
With Mounting Posts
Part No. 228686-1
Without Mounting Posts
Part No. 228713-1



Maximum Panel Thickness - **.240** [6.1]

Recommended Panel Cutout



Recommended Pc Board Layout

Vertical Pc Board/ Panel Mount Jacks

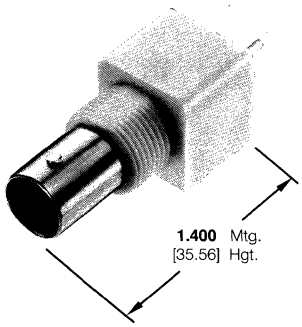
Body Material: VALOX

Lockwasher

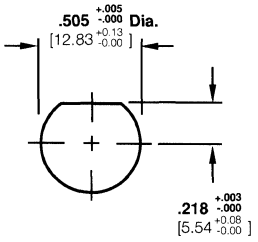
Part No. 1-329632-2

Jam Nut

Part No. 1-329631-2

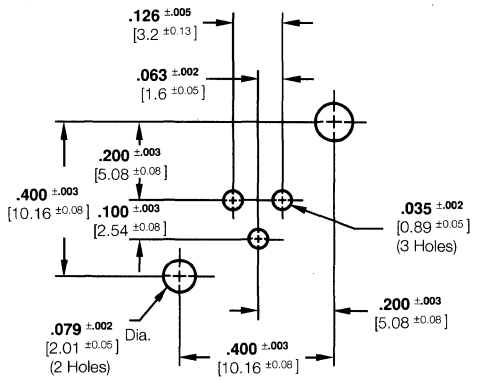


Body Color - White
With Mounting Posts
Part No. 221198-1
Without Mounting Posts
Part No. 228697-2



Maximum Panel Thickness - **.240** [6.1]

Recommended Panel Cutout



Recommended Pc Board Layout

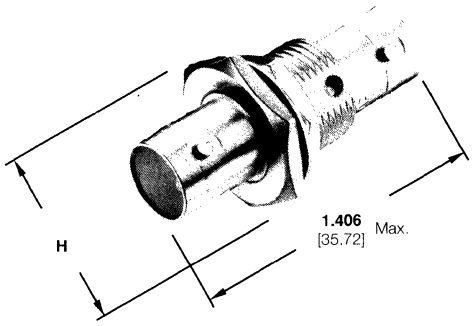
Twin BNC Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

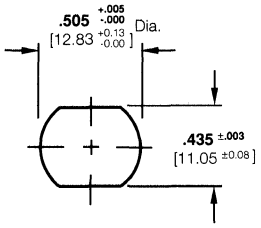
Bulkhead Jack Adapter

Plating:
Center Contact - Silver
Body - Nickel



H = **.687** [17.45] Max. across flats, **.800** [20.32] Max. across points

Part No. 332215

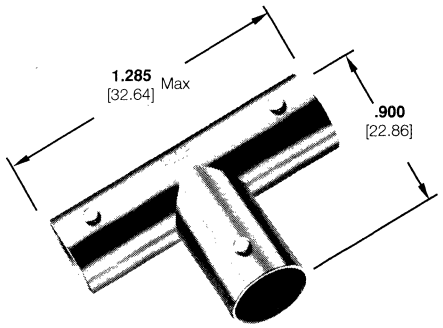


Maximum Panel Thickness - **.125** [3.18]

Recommended Panel Cutout

Tee Adapter
(Jack-Jack-Jack)

Plating:
Center Contact - Gold
Body - Nickel



Part No. 228833-1

4

Coaxial and Flat Coaxial Cable Products

Specifications subject to change.
For latest design specifications...
1-800-522-6752

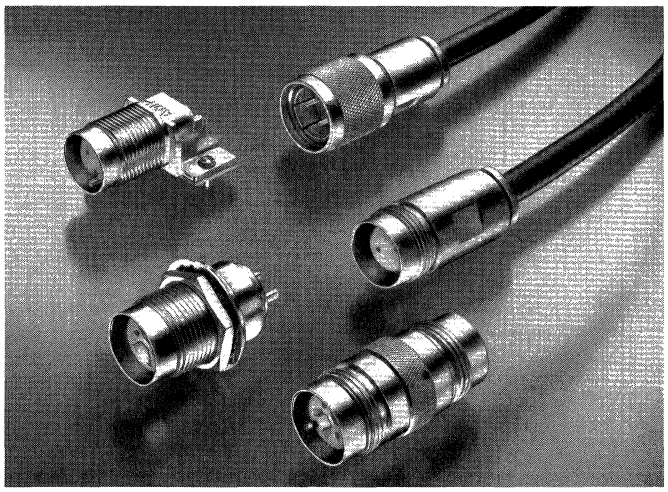
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

- Meets all interface specifications of MIL-C-3655
- Several connector styles available for packaging versatility
- Ruggedly constructed for heavy duty use
- Field appliable
- Capable of long runs
- Excellent noise immunity
- Superior signal propagation characteristics

Related Product Data:

Connector Selection - Pages 4004-4006
Theory and Application - Pages 4007-4013
Cable-to-Connector Selection Guide - Pages 4014 & 4015
Connector Selection Guide - Page 4016
Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163
Packaging - All connectors are packaged individually unless otherwise noted.



To accommodate the electronic industries' need for twin conductor connectors, AMP has developed the Twin-Ax Interconnection System. This family of twin conductor RF connectors meets all the interface specifications of MIL-C-3655 and features ruggedness and field appliability.

The AMP Twin-Ax Interconnection System is made up of a field appliable cable plug, BNC transformer adapter, resistor terminator, bulkhead solder jacks and a pc board jack.

Other connectors in the Twin-Ax Interconnection family include a cable jack and cable splice.

This system will provide long signal runs with excellent noise immunity. It is a very good interconnection method for computer systems, process equipment and other electronic equipment requiring freedom from electromagnetic problems and superior signal propagation characteristics.

Table of Contents

Electrical Characteristics

Contact Resistance:
Center Contact - 5.0 milliohms
Outer Contact - 1.0 milliohms

Insulation Resistance:
5000 megohms min.

Dielectric Withstanding Voltage:
1500 volts rms at sea level

Mechanical Characteristics

Cable Retention:
75 lb [333.6 N] min., RG-108/U cable

Durability: 250 cycles (based on test results)

Environmental Characteristics

Temperature Range: -55°C to +85°C

Vibration: MIL-STD-1344, Method 2005

Shock: MIL-STD-1344, Method 2004, 50 G's

Temperature Cycling: MIL-STD-1344, Method 1003, Condition D

Materials

Brass:
MIL-C-50
ASTM-B-136
QQ-B-626

Beryllium Copper: QQ-C-530 and QQ-C-533

Copper, Annealed: QQ-C-576

Phosphor Bronze: ASTM-B-140 (QQ-B-750)

Plating:
Silver - QQ-S-365
Gold - MIL-G-45204
Nickel - QQ-N-290
Copper - MIL-C-14550
Zinc - QQ-Z-363
Tin - MIL-T-10727

Silicone Rubber:
AA-R-765

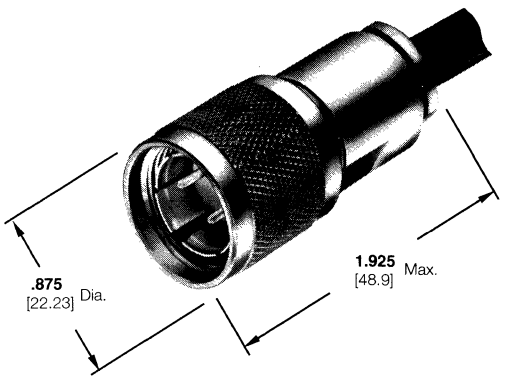
Nylon: MIL-M-20693 Type I

TEFLON TFE: MIL-P-19468

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

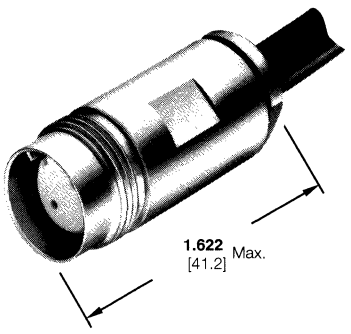
Plugs



Cable	Termination Type	Part No.
IBM 7362211, Belden 9207 AWM Style 2498 Cable	Solder	**227241-1**
	Crimp	**227241-2** **227241-7***
IBM 4716743	Solder	**227241-3****

* Bulk packaged
** Captivated contacts

Jack



Cable: IBM 7362211 and Belden 9207 AMW Style 2498 cable.

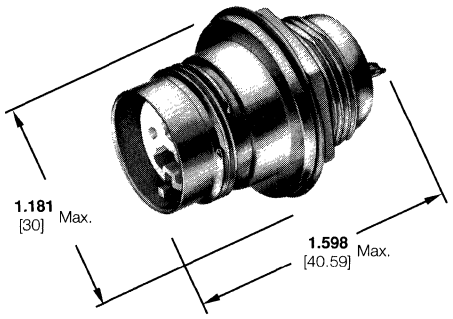
Part No. 227682-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

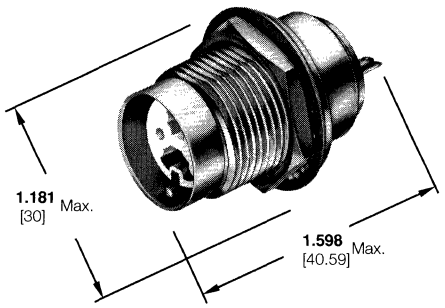
Bulkhead Solder Jacks

Front Mount

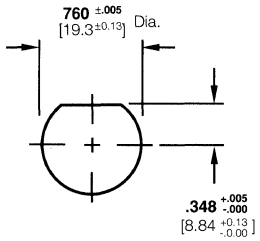


Body Plating - Zinc
Part No. 228284-1

Rear Mount



Body Plating - Zinc
Part No. 228523-1



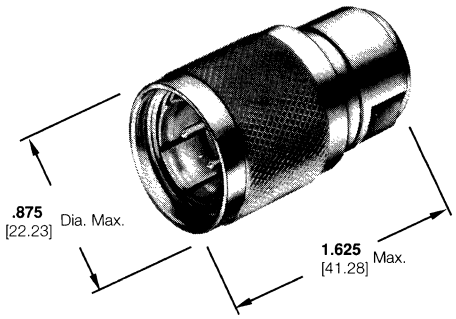
Maximum Panel Thickness - **.200** [5.08]

Recommended Panel Cutout

Specifications subject to change.
For latest design specifications...
1-800-522-6752

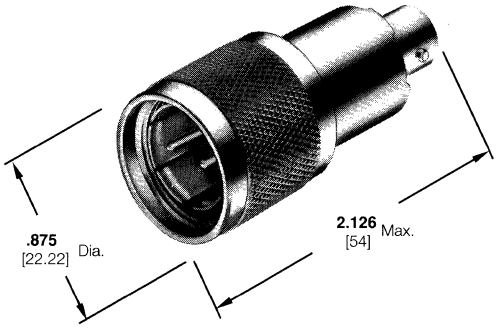
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

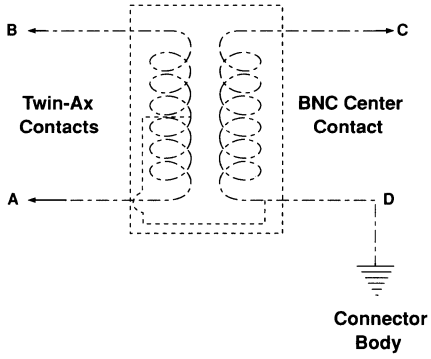
Terminator
(Resistor)



50 Ohm - Part No. 227504-1
75 Ohm - Part No. 227504-2

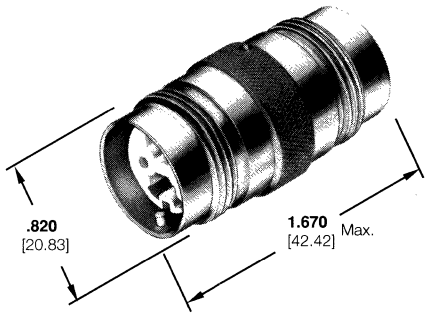
Adapter, Twin-Ax to BNC
(Transformer)





Part No. 227447-1

Cable Splice



Part No. 227502-1

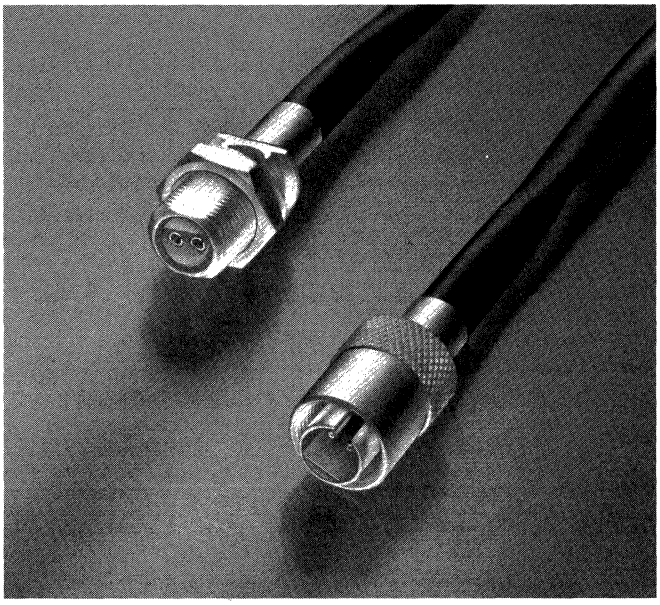
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Product Facts

- Crimp connectors require only one-stroke crimping of both conductors, plus braid and cable support
- Lower installed cost with one-stroke crimp
- Reduced noise levels because of AMP's solderless crimping techniques
- Captive inner contact stability
- No danger of heat damage to coaxial cable
- Ease of inspection

Related Product Data:

Connector Selection - Pages 4004-4006
Theory and Application - Pages 4007-4013
Cable-to-Connector Selection Guide - Pages 4014 & 4015
Connector Selection Guide - Page 4016
Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163
Packaging - All connectors are packaged individually unless otherwise noted.



RF Twin Threaded Coaxial Cable Connectors are a unique development by AMP which has resulted in the production of high level RF components. Termination of these connectors to twin conductor cable is made with AMP's exclusive one crimp method which simultaneously terminates inner conductors, outer braid and cable support with one stroke of the matching AMP tool.

These rugged connectors and plugs accommodate today's most commonly used twin conductor cable sizes.

Table of Contents

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Specifications

Electrical Characteristics

Nominal Impedance: Non-constant

Working Voltage: 335 volts rms

Contact Current Rating: 3 amps max.

Insulation Resistance: 5000 megohms min.

Dielectric Withstanding Voltage: 1500 volts rms at sea level

Mechanical Characteristics

Mating/Unmating: 3/8-32 threaded coupling

Cable Attachment: Crimp type - simultaneous center conductor and braid

Mating Characteristics: Per AMP GPS-501-14

Cable Retention: 75 lb [333 N] min., RG-108A/U cable

Environmental Characteristics

Temperature Range: -55°C to +85°C

Vibration: MIL-STD-202, Method 201

Shock: MIL-STD-202, Method 202, 50 G's

Temperature Cycling: MIL-STD-202, Method 102, Condition D

Materials

Brass: QQ-B-626

Beryllium Copper: QQ-C-530 H.T.

Polypropylene: Fed. Spec. L-P-394, Type I

Copper, Annealed: QQ-C-576

Phosphor Bronze: QQ-B-750

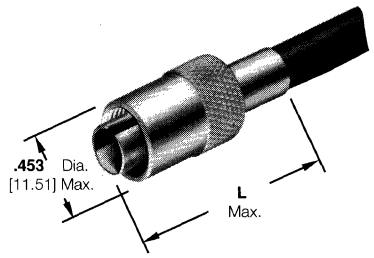
Plating:

Silver - QQ-S-365
Gold - MIL-G-45204
Nickel - QQ-N-29

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Plugs



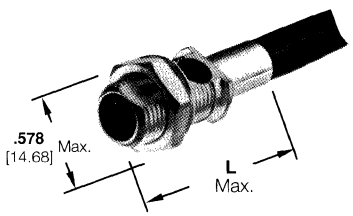
RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	AMP Part No.	Dim. L	Integral Die Hand Tool	Die Insert for Tools: Hand Tool- 69710 Pneu.- 69365-2
108, 108A (Ctr. Cond. 7/0126) Belden 8759	Single Crimp	Gold	Silver	Polypropylene	**2-329945-1**	**1.109** 28.17	69311-1	69410-1
	Single Crimp	Gold	Nickel	Polypropylene	**225687-2**	**1.109** 28.17	69311-1	69410-1
2-3932 Microdot 2-3934 Microdot	Single Crimp	Gold	Silver	Polypropylene	**2-329943-1**	**1.122** 28.5	69311-1	69410-1
Belden 8451, 8641, 8761	Single Crimp	Gold	Nickel	Polypropylene	**225687-4**	**1.109** 28.17	69311-1	69410-1

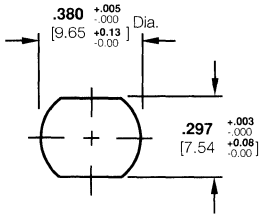
Twin Threaded Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Bulkhead Jacks

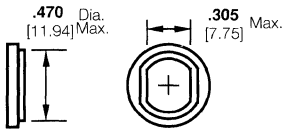




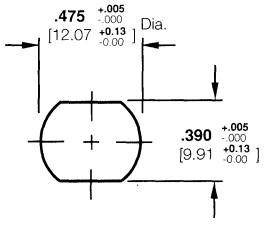
Recommended Panel Cutout

RG/U Cable	Termination Type	Center Contact Plating	Body Plating	Dielectric	AMP Part No.	Dim. L	Integral Die Hand Tool	Die Insert for Tools: Hand Tool- 69710 Pneu.- 69365-2
108, 108A (Ctr. Cond. 7/0126) Belden 8759	Single Crimp	Gold	Silver	Polypropylene	**2-329942-1**	**1.125** 28.58	69311-1	69410-1
	Single Crimp	Gold	Nickel	Polypropylene	**225689-2**	**1.125** 28.58	69311-1	69410-1
2-3932 Microdot 2-3934 Microdot	Single Crimp	Gold	Silver	Polypropylene	**2-329940-1**	**1.125** 28.58	69311-1	69410-1
Belden 8451,8641, 8761	Single Crimp	Gold	Nickel	Polypropylene	**2-329941-3**	**1.125** 28.58	69311-1	69410-1

Panel Insulating Bushing

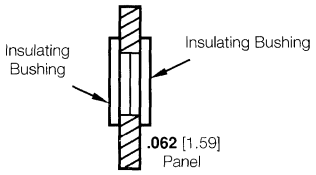


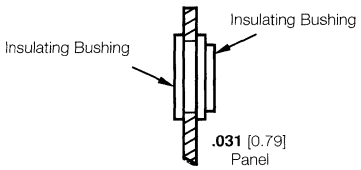
Part No. 331025 (2 required)



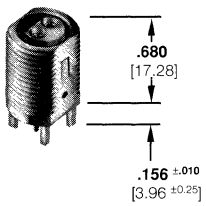
Maximum Panel Thickness - **.062** [1.58]

Recommended Panel Cutout

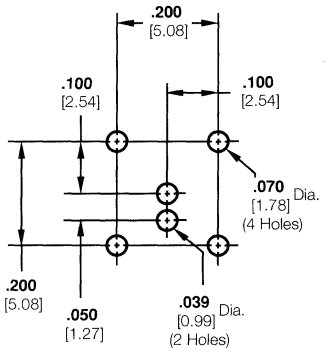




Pc Board Adapter



Part No. 330873

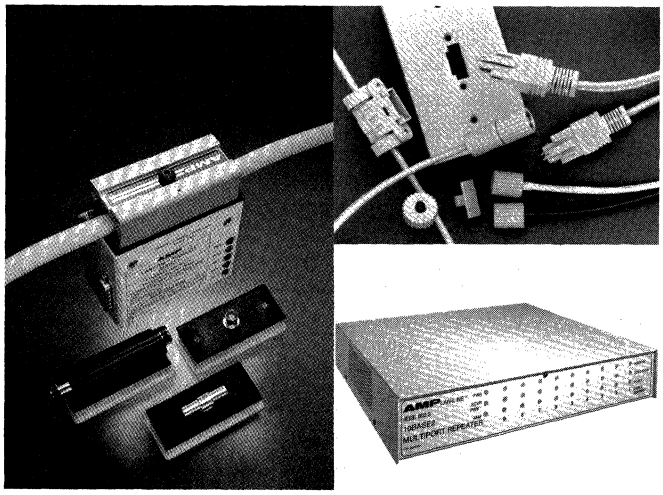


Recommended Pc Board Layout

The Network/Premises Wiring interconnection products listed in this section of the catalog demonstrates the AMP commitment to the needs of the design and installation professional. The key to on-site productivity is reliable, easy-to-apply interconnects. AMP pioneered the solderless crimp technique and precision portable tooling to give unsurpassed performance, while saving costly installation time and rework.

Today, you'll find AMP technology almost every place you look in the network environment, in the broadest, most flexible line of products you can imagine.

In the office, our communications outlets adapt to different equipment with a simple module change in the wiring closet. Panel systems are reconfiguring anything from twisted pair or coax to fiber optics, by simply moving jumpers.



From cables designed for networks to complete fiber optic systems, all of this comes from decades of involvement with emerging network technologies. And all of this, the products we sell and the technical support we provide, reflects the quality we're known for. It's what we do best.

Only a select group of products for network interconnection and troubleshooting are included here. For a more complete listing of coaxial and other network interconnection products, request catalog 82164 or call the AMP Product Information Center 1-800-522-6752.

As industry standards evolve, we will be ready with proven products for reliable performance and cost effectiveness.

Table of Contents

LAN-LINE Products for Ethernet/IEEE 802.3 Networks

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

LAN-LINE Transceivers and Adapters

Product Facts

- Compatible with Ethernet versions 1.0 and 2.0, and with the IEEE 802.3 standard
- Five built-in LEDs simplify network troubleshooting and maintenance
- Allows enable or disable of SQE test
- Made of tough cast aluminum and able to meet the demands of air handling spaces
- Choice of low profile active coaxial tap, and N Series, BNC Series and Vertical BNC Series transceiver adapters

Related Product Data:

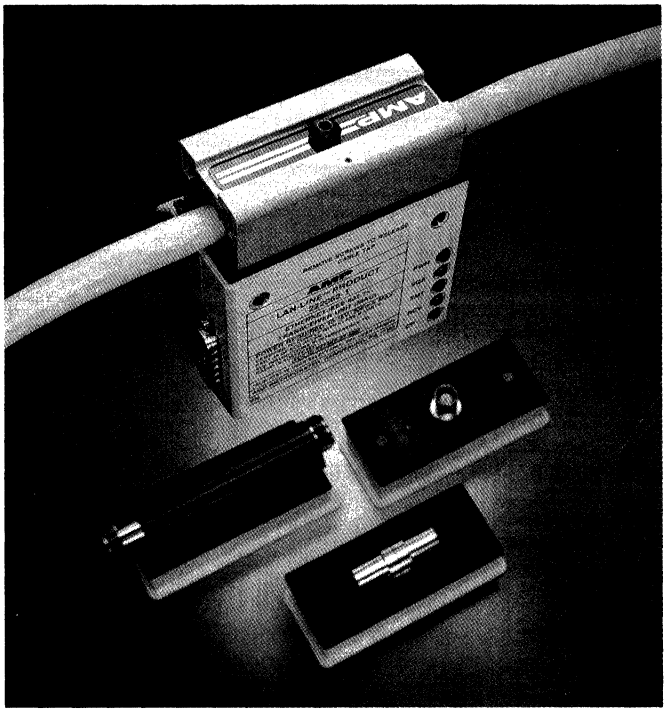
Connector Selection - Pages 4004-4006

Theory and Application - Pages 4007-4013

Appendix - Pages 4160-4162

Technical Documents - Page 4163

Packaging - All products are packaged individually unless otherwise noted.



The CSMA/CD (carrier sense multiple access with collision detection) world of local area networks creates special challenges in connection and detection—the need for a variety of interconnections, and quick detection of node and network events. Compatible with Ethernet versions 1.0 and 2.0, and with the IEEE 802.3 standard for 10 Mb/s baseband media LANs, the LAN-LINE transceiver faces both challenges with approachable ease.

The incorporation of five LEDs to display the presence of power, signal quality error (Heartbeat), transmission, reception and collision detection provides fast, accessible feedback to the network troubleshooter. The transceiver also allows easy enable or disable of the heartbeat (SQE) test, without the inconvenience of disassembly, making it ideal for use with both Ethernet versions. Checking the status of the heartbeat is reliable and swift since the SQE LED remains steadily lit when heartbeat is enabled.

AMP offers four types of transceiver connection to Ethernet coaxial cable and thinnet coaxial cable (used for personal computer local networks and for the DECconnect network): - the Low Profile Active Coaxial Tap, which can be attached while the network is active; the N Series Transceiver Adapter, attaching to the network between two N plug connectors; and two styles of BNC Transceiver Adapters, T and vertical, which permit the addition of nodes to thinnet cable segments.

In addition to following UL 910 suggested test procedures and conforming to NEC 300–22(c) requirements for use in air handling spaces, the LAN-LINE transceiver meets both FCC Class A and Class B interference limits. It is offered without the LED status display and in a DC coupled version that provides "full step" signaling.

Specifications

Temperature: +5°C to +55°C (operating); -20°C to +90°C (nonoperating)

Humidity Tolerance: From 5 through 95 percent Electromagnetic

Susceptibility: 2 V/meter, 10kHz to 30 MHz; 5 V/meter, 30 MHz to 100 MHz

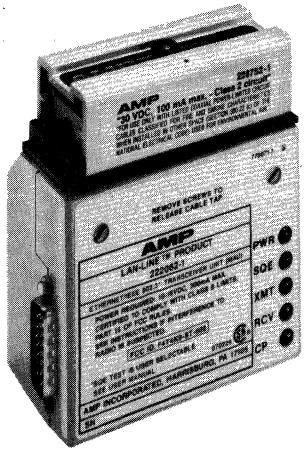
Dimensions (without tap adapter): 2.75" [69.85mm] h x 3.5" [88.9mm] w x 1.76" [44.7mm] d

Weight (without tap adapter): 8.7 oz. [221 g]

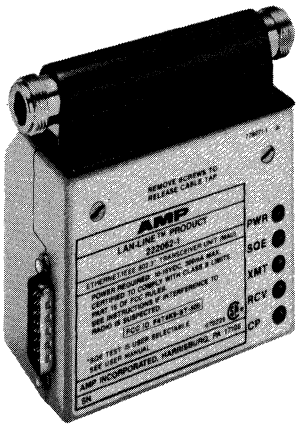
Isolation: 2000 VAC 50/60 Hz, applied between coaxial cable shield and transceiver cable or case shield

Specifications subject to change.
For latest design specifications...
1-800-522-6752

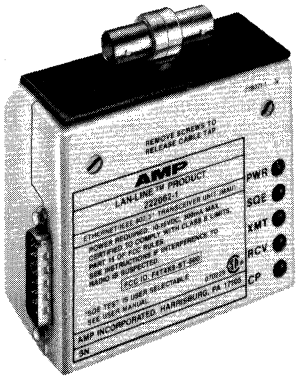
LAN-LINE Transceivers and Adapters



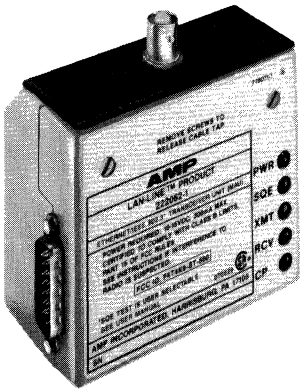
Low Profile
Coaxial Tap



N Connector
Adapter



BNC Connector
T Adapter



BNC Connector
Vertical Adapter

Transceiver	AMP Part Numbers			
	Low Profile Coaxial Tap	N Connector Adapter	BNC Connector T Adapter	BNC Connector Vertical Adapter
Full Status Display	222289-2	222289-1	222289-3	222289-4
No Status Display	222290-2	222290-1	222290-3	222290-4
DC Coupled	222288-2	222288-1	222288-3	222288-4
Tap or Adapter Only	228752-1	221914-1	221918-1	222455-1

Low Profile Coaxial Tap

Product Facts

- No cutting of coaxial cable
- No interruption of service
- Small in size
- Simple installation
- Residual stored energy connection for long-term reliability
- Low insertion loss
- Low capacitance
- Guide slots aid mounting alignment
- Compatible with AMP-MODU receptacle assemblies
- Reusable with replacement probes and braid terminators
- Fits a wide variety of coaxial cables –.370 to .410 [9.53 to 10.41] dia. with 10 to 14 AWG [6 to 2 mm] solid center conductors (IEEE 802.3 Specification)
- Recognized under the component program of Underwriters' Laboratories Inc., File E82634
- Recognized for use with listed coaxial power-limited circuit cables classified for fire and smoke, and may be used in accordance with Section 300-22 (c) of the National Electrical Code
- Anti-static packaging

Related Product Data:

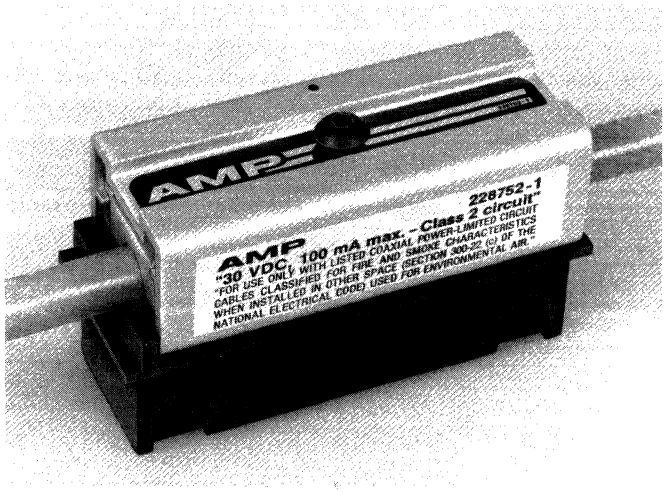
Connector Selection - Pages 4004-4006

Theory and Application - Pages 4007-4013

Appendix - Pages 4160-4162

Technical Documents - Page 4163

Packaging - All products are packaged individually unless otherwise noted.



The AMP Low Profile Coaxial Tap is very simple to install. It takes only a minute or two and no special skills to make a reliable tap in coaxial cable—without cutting or interrupting service.

The tap is designed for low profile, end mount, printed circuit board installation in a transceiver and will mate with an optional AMPMODU receptacle assembly. Supplied in kit form, the kit includes a tap body, clamp assembly, probe assembly, braid terminators and dust cover.

An application tool and hex wrench are the only tools needed to complete a dependable tap installation. The cable is simply located in the channel of the tap body, the clamp assembly slid onto the body and then secured with the socket screw.

A pair of braid terminators automatically pierce the cable jacket and shield, deforming to crimp the braid between compliant prongs. The cable is then cored with the optional application tool, and threaded probe assembly installed and tightened. Both the braid terminators and the probe assembly contain the necessary residual spring energy to maintain long-term electrical contact.

Taps are reusable by employing replacement probe sets which are available from AMP Incorporated. One low Profile Coaxial Tap will accept cable from .370 to .410 [9.53 to 10.41] in diameter with solid center conductors in the 10 to 14 AWG [6 to 2 mm²] range (IEEE 802.3 Specification).

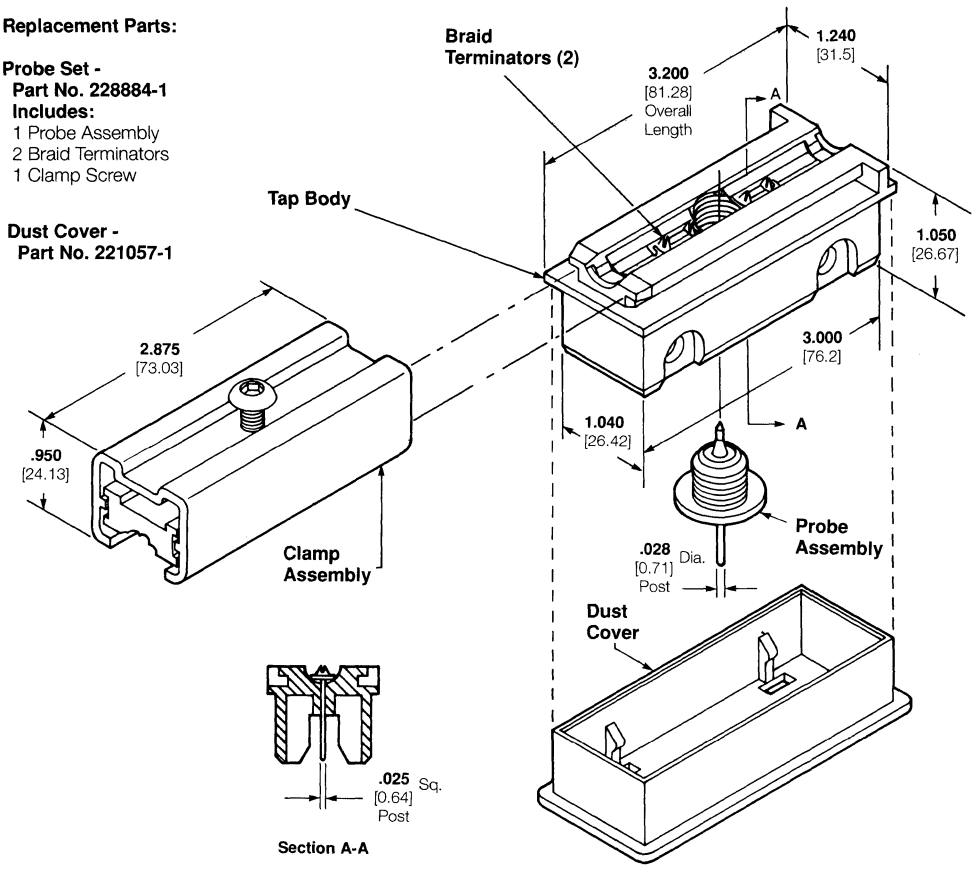
Low Profile Coaxial Tap

Tap Kit
Part No. 228752-1

Replacement Parts:

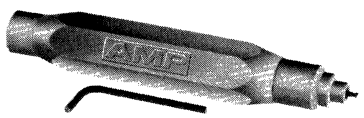
Probe Set -
Part No. 228884-1
Includes:
1 Probe Assembly
2 Braid Terminators
1 Clamp Screw

Dust Cover -
Part No. 221057-1

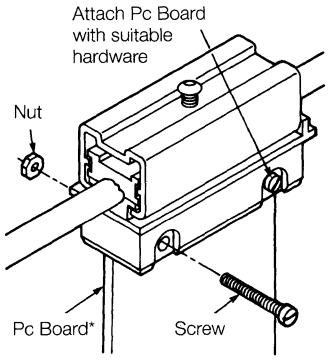


Tooling

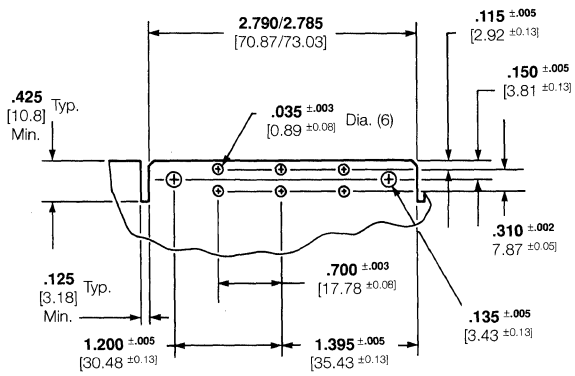
Tool Kit - Part No. 228917-1
Includes:
1 - Application Tool
1 - Hex Wrench



Tap Kit Assembled to Pc Board



Tap Kit Assembled to PC Board



Recommended Transceiver Board Layout

*AMPMODU Receptacle Assembly **Part No. 532965-1** available from AMP Incorporated.

LAN-LINE Thinnet Tap System

Product Facts

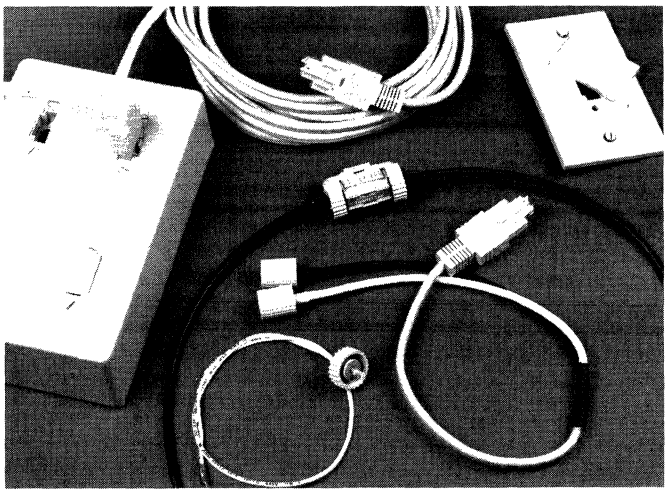
- Installs quickly on IEEE 802.3 10Base2 50-ohm cable without special tools
- Up to 30 taps per segment (per IEEE 802.3 10Base2)
- Mounts in standard wall box or allows free-hanging use in the ceiling, wire trays, floor ducts or over the floor
- Tap provides pluggable access to network backbone
- Tap, wall plate, terminator, and drop cable assemblies form a complete, station-connecting system
- Maintains series circuit so that drop cable connection and disconnection does not disrupt operating network
- Drop Cable Assemblies are UL categorized "Computer Interconnection Cable Assembly" in accordance with NEC Article 645. UL File No. E132498

Related Product Data:

Theory and Application - Pages 4007-4013
Appendix - Pages 4160-4162
Technical Documents - Page 4163
Design Guide HB 5795 - AMP LAN-LINE Thinnet Tap System
Product Specification 108-1166 - AMP Thinnet Tap System Instruction Sheet
IS 9365 - AMP LAN-LINE Tap Assembly 222503-1
Application Specification 114-12018 - AMP LAN-LINE Thinnet Tap System
Application Note DP 5727 - AMP LAN-LINE Assembly (Thinnet Tap) Thinnet Network Applications

Packaging - All connectors are packaged individually unless otherwise noted.

Application procedure video tape available.



The NEW Thinnet Tap System from AMP with enhanced Drop Cable Assembly performance virtually eliminates all of the problems associated with tapping an IEEE 802.3 10Base2 trunk cable.

The Tap installs easily with no special tool, a knife and screwdriver is all that is required. Insulation displacement contacts form a reliable, gas tight connection to thinwire Ethernet, RG58 style cable, plenum or non-plenum grade with 20-21 AWG stranded or solid center conductor. This rugged tap can be used in face plate-mount or free-hanging applications.

The improved AMP Thinnet Drop Cable Assemblies are UL Categorized "Computer Interconnection Cable Assembly" in accordance with NEC Article 645. UL File No. E132498.

The newly designed Drop Cables offer a greatly increased capability along with the same convenience and versatility as the existing product. With the new drop cables, 30 Thinnet Taps can be installed with no sacrifice in the 606 foot [185 m] segment length as defined in IEEE 802.3 10Base2. The segment length is the backbone length plus twice the length of each individual drop cable.

The drop cables are available in several lengths and consist of 50-ohm twin coaxial cable terminated with a special plug connector on one end and a BNC plug on the other. These durable drop cable assemblies feature a PVC Jacket and overmolded strain reliefs.

The Thinnet Tap features a novel contact arrangement that provides internal switching when the plug is disconnected. A series connection is maintained either through the trunk cable or through the drop cable. Therefore, the drop cable can be connected and disconnected at either end without disrupting "active" network operation.

Options include: a wall plate that allows the tap to be installed in a standard electrical wall box, a 50-ohm terminator for use when the tap is applied to the end of the network backbone, a convenient test cable assembly, and a protective dust cover for any unused tap ports. Also available are 2 port and 4 port drop boxes for additional network flexibility.

Thinnet Tap System Specifications:

Retention, Trunk Cable or Backbone to Tap Body - 20 lb [88.9 N]

Switch Transfer Time (Make before Break) - 500 ms (maximum)

Terminator - 50 ohm

Drop Cable Plug Insertion Force - 5 lb [22.2 N]

Retention Force - 20 lb [88.9 N]

Drop Cable Assembly- Manufactured from UL CL2 cable. Assembly is UL categorized "Computer Interconnection Cable Assembly" in accordance with NEC Article 645. UL File No. E132498

Capacitance - 27 pf/ft nominal

Velocity of Propagation - 77% minimum

Impedance - 50Ω ±2Ω

Material and Finish:

Tap Body, Contact Housing and Wire Nuts - Polyphenylene oxide, 94V-0 rated, gray

Tap Contacts - Phosphor bronze, tin and gold plated

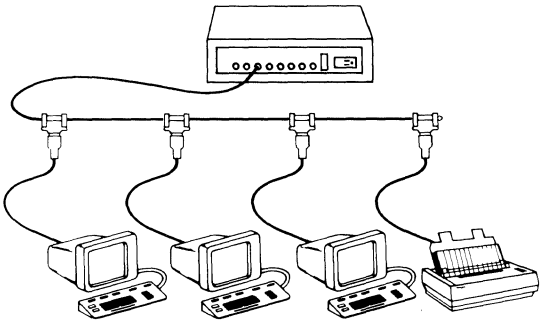
Wire Nut Ferrule - Brass, tin plated

Drop Cable Plug Body - Polyphenylene oxide, 94V-0 rated, gray

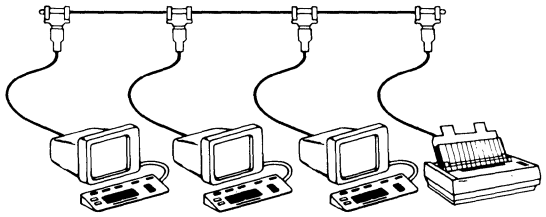
Plug Contacts - Phosphor bronze, gold plated

Typical Ethernet/10 Base 2 Network with Multiport Repeater

(Rear view)



Typical Stand-Alone Network



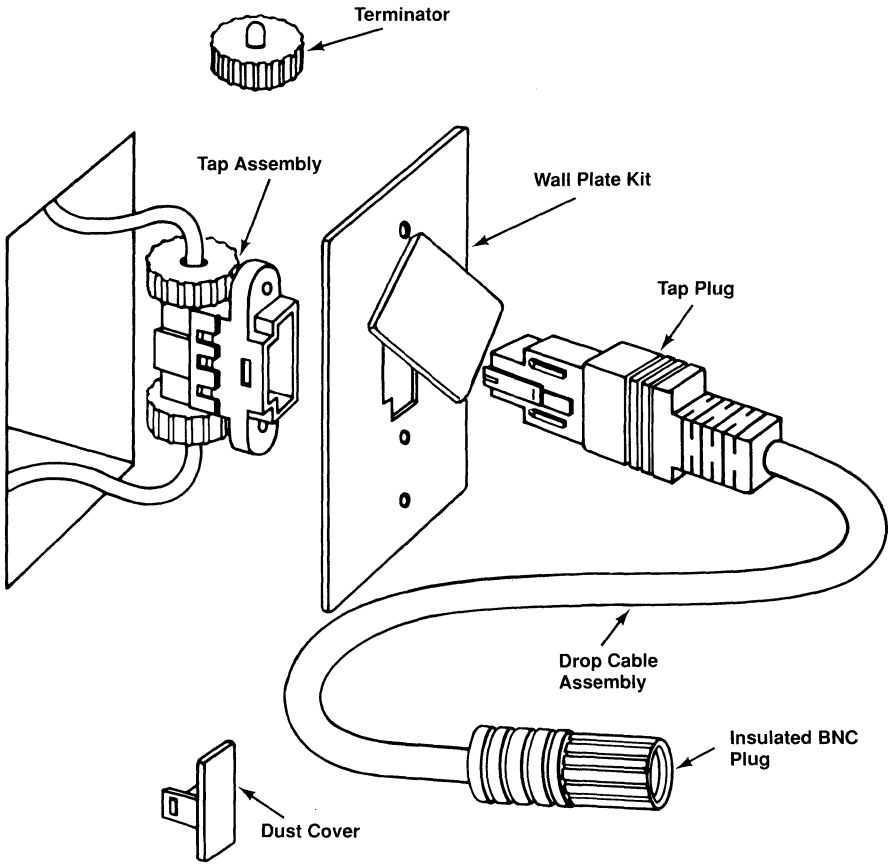
Note: See Catalog 82240 for network implementation.

Backbone Cable Recommendations

To achieve the full performance potential of AMP Thinnet Tap System, care must be taken in choosing the backbone cable. Choose only 50 ohm ± 2 ohm RG-58 type coaxial cable with a 21 or 20 AWG [0.4 or 0.6 mm²] solid or stranded conductor meeting the requirements of IEEE 802.3 10Base2. If the outer conductor (shield) includes a foil layer, this foil must have a single layer of aluminum (.002 inches [0.05 mm] min. thickness) with a polyester backing. The foil must not have a second layer of aluminum, thus creating an aluminum/polyester/aluminum configuration.

Supplier	Non-Plenum	Plenum
AMP	413840-1	–
	–	413850-1
Alpha	9858	–
Berk-Tek	650004	–
	–	640053
Comm/Scope	3135	–
	–	2135
Madison	01CZ00002	–
	–	012ZC00002
Montrose	6417	–
	–	6420
Mil Spec	M17/28-RGO58	–

Thinnet Tap System for Ethernet/IEEE 802-3 10Base2 Networks



Tap and Accessories

Description	Part No.
Tap Assembly	**222503-1**
Terminator	**222504-1**
Terminator with Grounding Strap	**413661-1**
Wall Plate Kit with 2 Screws	**222754-1**
Wall Plate with Integral Dust Cover	**413417-1**
Test Cable Assembly	**222814-1**
Dust Cover	**413294-1**
Faceplates for AMP, Access Floor Workstation Module (Request Catalog 90-924)	**769019-1 (Color: Almond)** **769019-2 (Color: Storm Gray)**

Drop Cable Assemblies

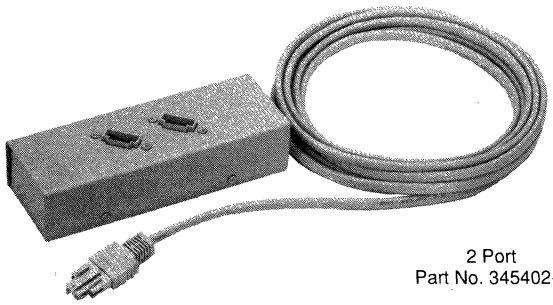
Length		Part No.
ft	[m]	
3.3	1.0	**222675-6**
6	1.82	**222675-2**
8.2	2.5	**222675-1**
12	3.66	**222675-5**
16	4.88	**222675-3**
25	7.62	**222675-4**
8.2	2.5	**413537-1***

* Right-Angle

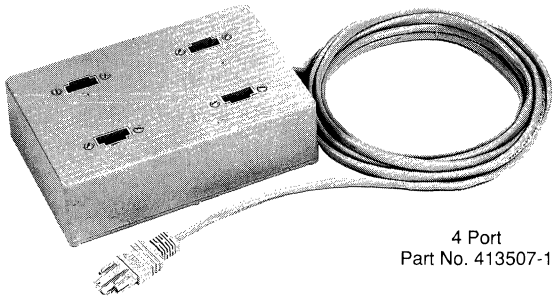
Drop Boxes

Drop Cable Length - 16 ft [4.88 m]
Color - Beige

Provides the capability to easily add Thinnet Taps (in series) to a network segment of a small office terminal cluster. Dust covers included.



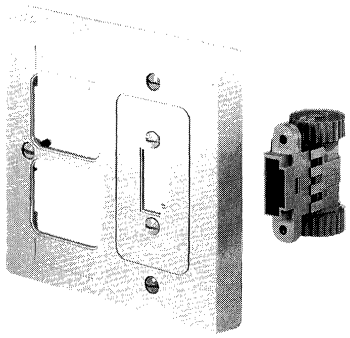
2 Port
Part No. 345402-2



4 Port
Part No. 413507-1

Thinnet Tap Kit

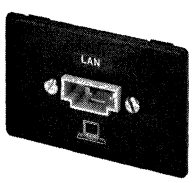
Part No. 556341-1
Kit includes Thinnet Tap, Faceplate, and Mounting Screws. AMP Communications Outlet components purchased separately. (Request Catalog 82204)



AMP FLEX-MODE Modules Thinnet Tap Kits

Part No. 608414-1 for Steel Case Modular Office Furniture/Panels

Part No. 608471-1 for Herman Miller Modular Office Furniture/Panels



Multiple Coaxial Connectors and Contacts (COAXICON)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

The AMP family of Multiple COAXICON Coaxial Connectors is composed of plastic rectangular housings or inserts with metal shells into which are inserted male and female contact members. A choice of optional fastening and accessory hardware is available.

Selection of components for a properly functioning connector should be made in the following manner:

Contacts are available in several types including twin standard, miniature, subminiature, microminiature, size 8, ARINC and 2.8 mm blind mate.

Housings are categorized by number of contact positions and by plastic material. The receptacle housing is normally used as the panel-mounted half with the contents flush with the surface of the housing. The plug housing always contains the protruding pin contacts.

Fastening Hardware should be used to adequately fasten the connector halves together. Fastening devices such as turnable and fixed jackscrews are available for this application. Fastening devices vary with the size of the housing.

Accessory Hardware may be selected to enhance certain connector properties. These include shields, guide assemblies, pin hoods, strain reliefs and locking springs.

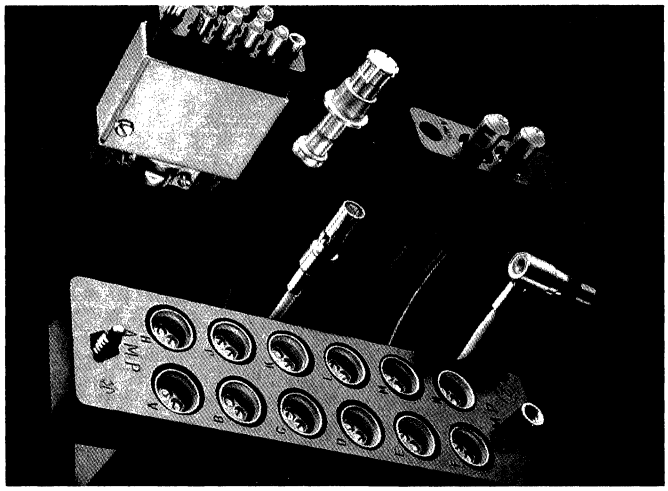


Table of Contents

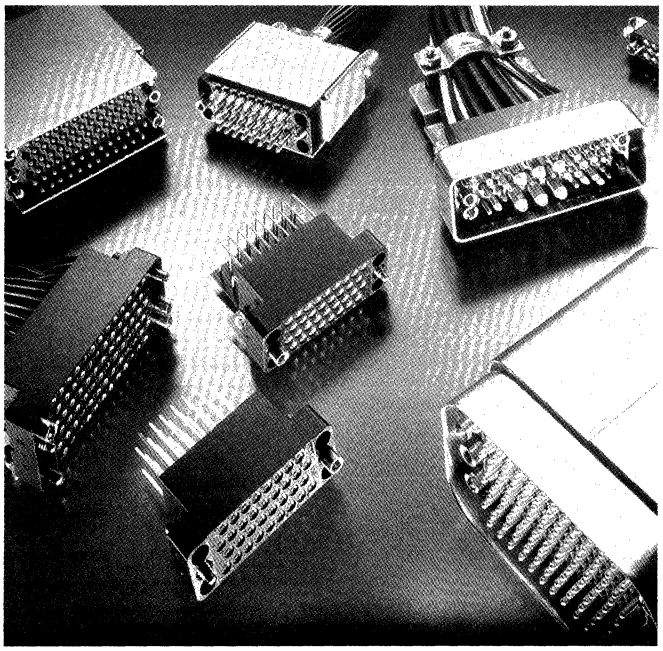
Related Product Data:
Theory and Application - Pages 4007-4013
Cable-to-Connector Selection Guide - Pages 4014 & 4015
Tooling - Pages 4157-4159
Appendix - Pages 4160-4162
Technical Documents - Page 4163
Packaging - All connectors are packaged individually unless otherwise noted.

Connector/Contact Selection Chart

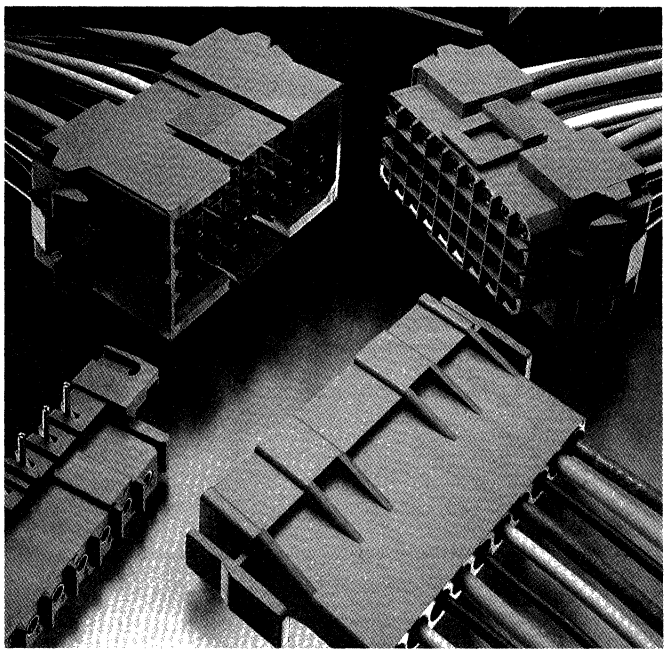
Contacts	Connectors								
	CPC Catalog 82012	Metrimate Catalog 82045	M Series Catalog 82003	G Series Catalog 82046	Box Contact Catalog 82015	HDI Catalog 82618	Subminiature D Series 109 Catalog 82069	ARINC 404 Catalog 82010	W Series
Twin Standard (Page 4144)			X						X
Miniature (Pages 4145 & 4146)			X	X					X
Subminiature (Page 4149)	X	X	X	X					
Microminiature (Pages 4150 & 4151)			X*		X				
Size 8 (Pages 4152 & 4153)						X	X		
ARINC (Pages 4154 & 4155)								X	
2.8 mm Blind Mate							X		

*Only available housings (Part Numbers **228675-1** and **228676-1**).

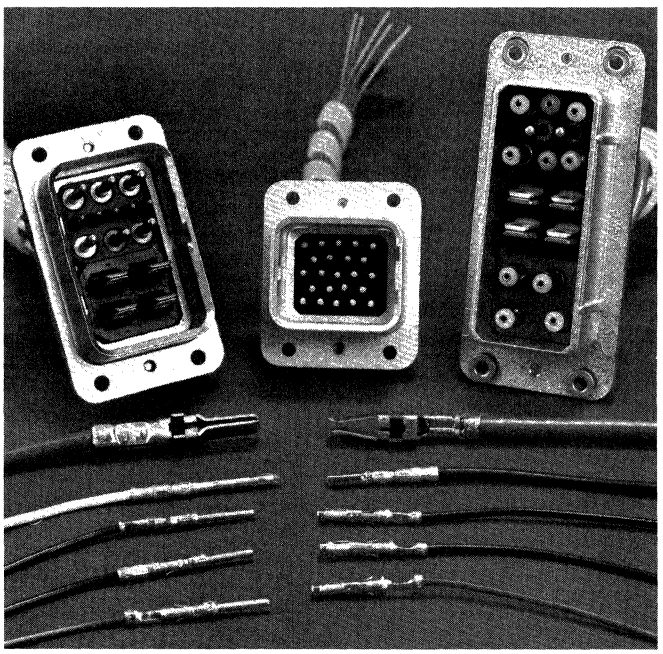
Circular Plastic Connectors (CPC)
Catalog 82021



M Series Connectors
Catalog 82003



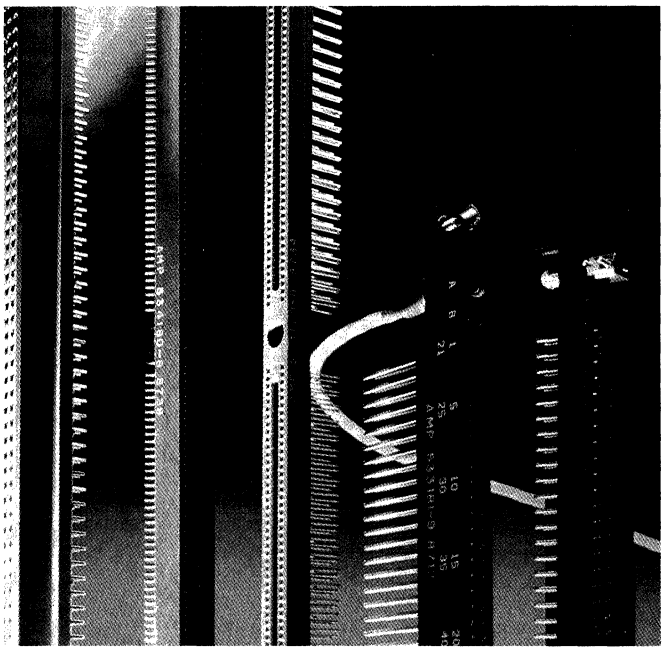
Metrimate Connectors
Catalog 82045



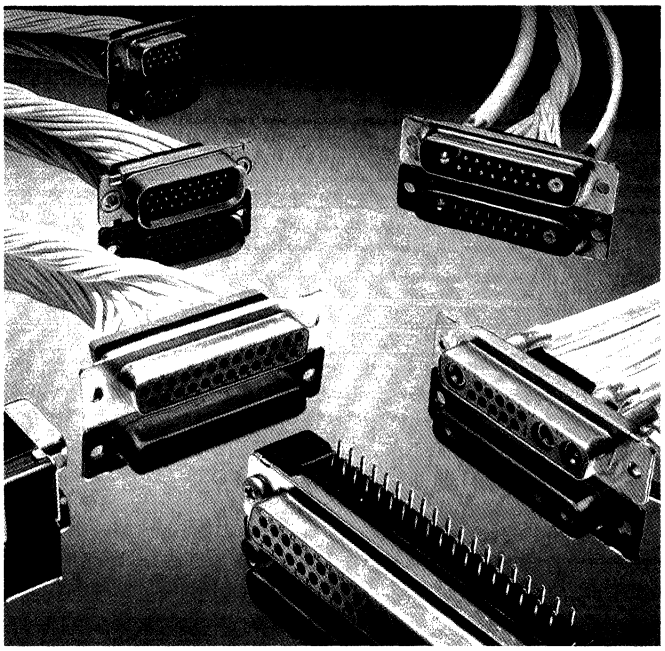
G Series Connectors
Catalog 82046

Multiple Coaxial Connectors (COAXICON)

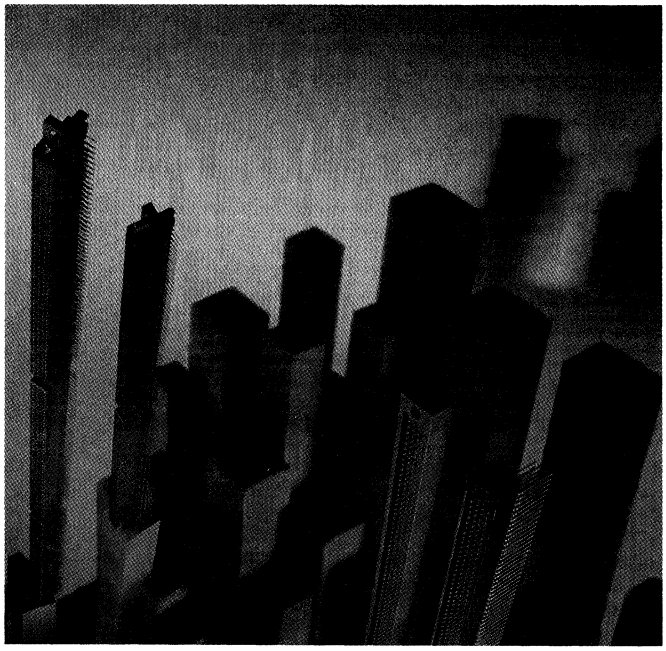
Specifications subject to change.
For latest design specifications...
1-800-522-6752



Box Contact Connectors
Catalog 82015



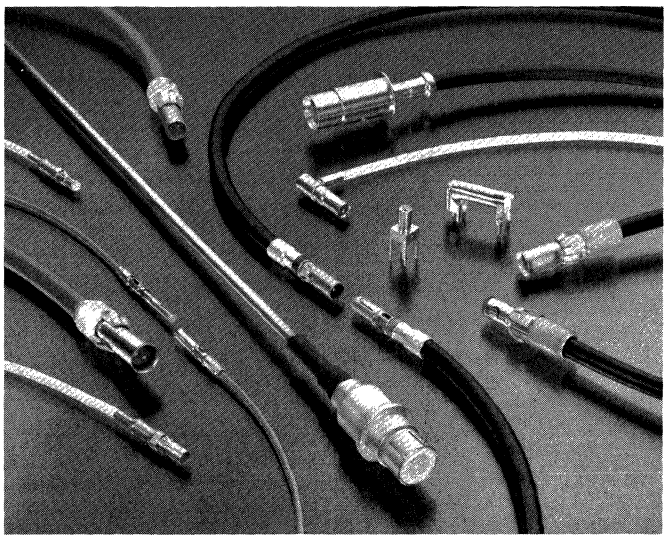
Subminiature D Series 109 Connectors
Catalog 82069



High Density Interconnection System (HDI) Connectors Catalog 82079

ARINC 404 Connectors
Catalog 82010

Multiple Coaxial Contacts (COAXICON)



AMP provides a variety of contacts for multiple coaxial connectors. Contacts are available in a range of sizes that may be used with the various types of coaxial cable on the market. COAXICON contacts are of the crimp, snap-in type and are available in the following designs:

Twin Standard Contacts are designed to be used in multiple connector housings. Structurally, the twin contacts include inner conductor contacts separated from each other and from the outer shell by dielectric material. A cantilever spring in the male outer shell provides contact pressure between the shells when mated.

Miniature Contacts are designed for high density multiple circuit connector applications. A wide range of cable sizes is accommodated by using three sizes of outer shell termination ends and three sizes of contacts.

Subminiature Contacts are used in high density applications and are ideal for mixing coaxial and other styles of pin and socket contacts in the same connector housing.

Microminiature Contacts are 50 ohm impedance matched products available for miniature coaxial cable or pc board applications. These contacts snap-fit special cavities in mini-box, standard box and various AMP pc board connectors.

Size 8 Contacts are compatible with industry standard size 8 connectors such as Subminiature D (AMPLIMITE) and AMP-HDI connector housings. Straight and right-angle styles, as well as pc board versions for AMP-HDI connectors are available.

ARINC Contacts are designed for multiple circuit connector applications, utilizing the ARINC RM and RME connectors. Contacts are designed to be crimped using both military and AMP tooling. Construction consists of male and female center contacts separated from outer shells by a dielectric material. Contacts are held in the housings with an internal spring post-molded into the housing. Housings are designed for rear release of contacts using an extraction tool.

Cable/Contact Selection Charts

Coaxial Cable

Connector Cable Range Selection Code†	RG/U Cable	Contacts						
		Twin Standard Page 4144	Miniature Page 4146	Subminiature Page 4149	Microminiature Pages 4150-4151	Size 8 Pages 4152-4153	ARINC Pages 4154-4155	2.8 mm Blind Mate Size 8 Page 4156
A	178, 178A, 178B 196, 196A	–	X	X	X	X	X	–
B	174, 316 188, 188A	–	X	X	X	X	X	–
B1	179, 179A, 179B 161, 187, 187A, Belden 9221	–	X	X	X	X	X	–
C	122, Belden 9252	–	X	–	–	–	–	–
C1	180, 180A, 180B 195, 195A	–	X	–	–	–	X	–
D	58, 58A, 58B, 58C	–	X	–	–	–	X	–
D1	141, 141A, 303	–	X	–	X	–	–	–
E	223, 55, 55A, 55B	–	X	–	–	X	X	–
E1	142, 142A, 142B, 400 Belden 9246	–	–	–	–	X	X	–
G	124, 140, 210, 62, 62A, 62B 59, 59A, 59B Belden 9291, 9209, 9268	–	X	–	–	–	–	–
M4	225	–	–	–	–	–	X	–
O	402 Semi-Rigid/.141 [3.58]	–	–	–	–	X	X	–
P	405 Semi-Rigid/.086 [2.18]	–	–	–	–	–	–	X

† Refer to pages 4014 and 4015 for code specifications.

Twisted Pair Wire

Wire Size or Type	Contacts						
	Twin Standard Page 4144	Miniature Page 4146	Subminiature Page 4149	Microminiature Pages 4150-4151	Size 8 Pages 4152-4153	ARINC Pages 4154-4155	2.8 mm Blind Mate Size 8 Page 4156
21-597	–	X	–	–	–	–	–
21-598	–	X	–	–	–	–	–
Brand Rex T5788A 26 AWG [0.12-0.15mm²]	–	X	–	–	–	–	–
108, 108A	X	–	–	–	–	–	–
Belden 8451, 8641, 8737, 8759, 8761, 8762	X	–	–	–	–	–	–
Microdot 202-3932, 202-3934	X	–	–	–	–	–	–
Trompeter TWC 78-1, TWC 124C	X	–	–	–	–	–	–
Gore CXN-1331, CXN-1644	–	–	–	X	–	–	–
Tensolite 30850 81T-1	–	–	–	X	–	–	–
Malco 250-3908	–	–	–	X	–	–	–
22 AWG [0.3-0.4 mm²] & 24 AWG [0.2 mm²] Stranded Copper	–	X	–	–	–	–	–
26 AWG [0.12-0.15 mm²] & 28 AWG [0.08-0.09 mm²] Solid or Stranded Copper	–	X	X	–	–	–	–
30 AWG [0.05 mm²] Solid Copper	–	–	X	–	–	–	–

Shielded Wire

Shielded Wire Size	Contacts						
	Twin Standard Page 4144	Miniature Page 4146	Subminiature Page 4149	Microminiature Pages 4150-4151	Size 8 Pages 4152-4153	ARINC Pages 4154-4155	2.8 mm Blind Mate Size 8 Page 4156
26 AWG [0.12-0.15 mm²], .075 [1.91] max. O.D.	–	–	X	–	–	–	–
22 AWG [0.3-0.4 mm²], NAS-702, Class B	–	X	–	–	–	–	–

Material:

Outer Shell - Brass per MIL-C-50

Center Conductor - Brass per QQ-B-626

Inner Dielectric - Polypropylene, general purpose

Alignment Bushing - Polyethylene, LP-390

Retention Spring - Beryllium copper per QQ-C-533

Ferrule - Copper per QQ-C-576

Finish:

Outer Shell, Center Conductor - .000030 [0.00076] gold over .000030 [0.00076] nickel

Retention Spring - Bright tin-lead per MIL-T-10727

Ferrule - Silver plated

Performance Characteristics:

Insulation Resistance - 5000 megohms min.

Dielectric Withstanding Voltage - 1,000 volts rms for 1 minute

Contact Resistance - 2.0 milliohms @ 1 ampere

Low-Level Conductivity - 10 millivolts DC min.

VSWR - 1.25 to 1.0 @ 2,000 MHz max.

Cable Retention - 50 lb [222.4 N]

Durability - 200 cycles @ 10 cycles per minute max. (based on test results)

Vibration - 2 hrs. per MIL-STD-202, Method 201

Shock - 50 G's per MIL-STD-202, Method 213, Cond. G

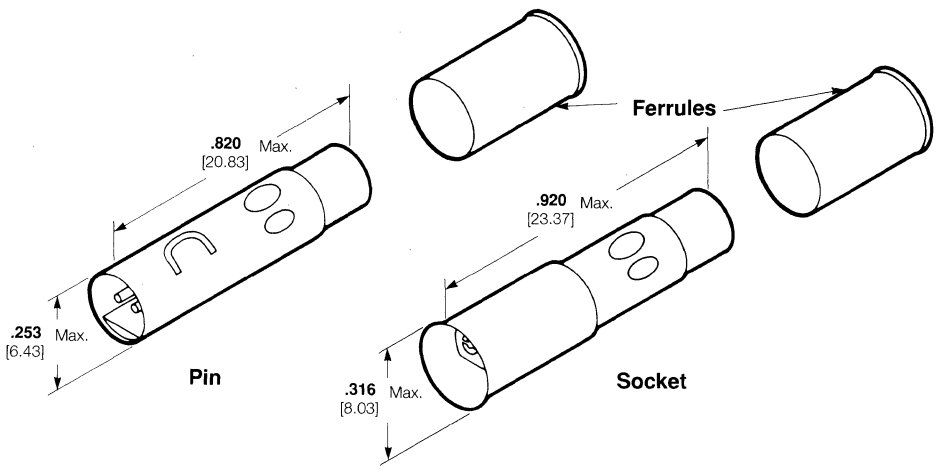
Temperature Cycling - 5 cycles per MIL-STD-202, Method 102, Cond. D

Temperature Range - -55°C to +85°C

Test Method for Electronic and Electrical Component Parts:

MIL-STD-202

Housing Information - See Chart on page 4139

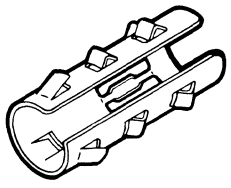


RG/U Cable	Part No.		Ferrule No.	Integral Die Hand Tool	Die Insert for Tools: Hand Tool - 69710-1 Pneu. - 69365-2, 69365-3[1]
	Pin	Socket			
Belden 8737 (Spiral Wrapped Shield) Trompeter TXC 124-2	**329009**	**329010**	329041	45707-2	69231-2
108, 108A (Center conductor stranded; 7 str., .0126 [0.32] Dia.) Belden 8761, 8762, 8759, 9154, 8737, 8961	**2-329009-1**	**2-329010-1**	329041	45707-2	69231-2
Belden 8451, 8641, 8761 Trompeter TWC 78-1	**329009**	**329010**	329056	45707-4	69494-1
Microdot 202-3932 Microdot 202-3934	**329054**	**329055**	329056	45707-2	–

[1] Includes bench mount and foot control; requires Manual Tape-Up Attachment **69689.**

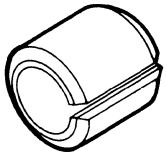
Retention Springs [2]

Part No. 329042

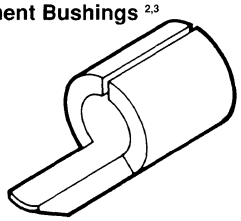


Part No. 51413-3

Alignment Bushings [2,3]



Part No. 329053[4]



Part No. 330576[5]

[2] Used only when inserted into housing.
[3] Used only with Retention Spring **329042**.
[4] Used with Ferrule **329041**.
[5] Used with Ferrule **329056**.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Performance Characteristics:

Insulation Resistance - 5000 megohms min

Dielectric Withstanding Voltage - 1,000 volts rms for 1 minute

Contact Resistance - 2.0 milliohms @ 1 ampere

Low-Level Conductivity - 10 millivolts DC min.

VSWR - 1.3 to 1.0 @ 1,000 MHz max.

Cable Retention -

RG/U Cable	Retention lbs [N]
58C	50 [222]
188A	30 [133]
180B	28 [125]
195A	16 [71]

Durability - 500 cycles @ 10 cycles per minute max. (based on test results)

Vibration - 2 hrs. per MIL-STD-202, Method 201

Shock - 50 G's per MIL-Std-202, Method 213, Cond. G

Temperature Cycling - 5 cycles per MIL-STD-202, Method 102, Cond C.

Temperature Range - -55°C to +125°C

Test Method for Electronic and Electrical Component Parts: MIL-STD-202

Material:

Outer Shell - Brass per MIL-C-50

Center Conductor - Brass per QQ-B-626

Inner Dielectric - Polypropylene, general purpose

Retention Spring - Beryllium copper per QQ-C-533

Ferrule - Copper per QQ-C-576

Finish:

Outer Shell, Center Conductor - .000030 [0.00076] gold over .000030 [0.00076] nickel

Retention Spring - Nickel per QQ-N-290

Ferrule - Bright tin-lead per MIL-T-10727

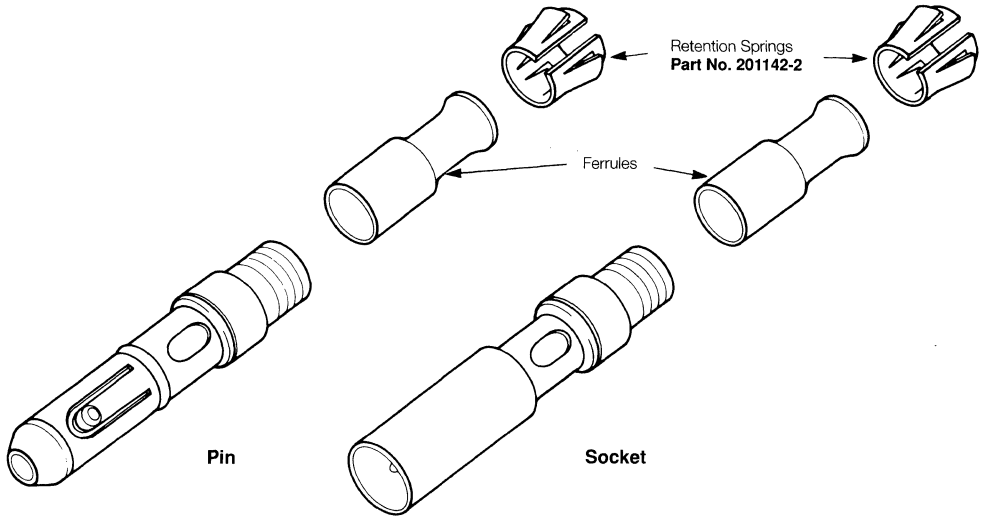
Housing Information - See Chart on page 4139

Miniature Contacts
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Note:
A ferrule and retention spring **(201142-2)** are required for each pin and socket.
Extraction Tool No. **305183-8**



Connector Cable Range Selection Code†	RG/U Cable	Part No.		Ferrule No.	Integral Die Hand Tool	Die Insert for Tools: Hand Tool- 69710-1 Pneu.- 69365-2, 69365-3[3]
		Pin	Socket			
A	178, 178A, 178B 196, 196A	**201511-1**	**201512-1**	328667	69186-2	69373
B	316, 188, 188A, 174	**201143-5**	**201144-5**	328666	45638-2	69227-2
B1	179, 179A, 179B 161, 187, 187A Belden 9221	**201143-1**	**201144-1**	221848-3	58290-1	–
B3	188 Double Braid 316 Double Braid	**201143-5**	**201144-5**	221848-3	58290-1	–
C	122	**201145-1**	**201146-1**	328664	45639-2	69222-2
C1	180, 180A, 180B, 195, 195A, 21-597	**201145-2**	**201146-2**	328664	45639-2	69222-2
C3	Belden 8218	**201145-2**	**201146-2**	328664	45639-2	69222-2
D	58, 58A, 58B, 58C	**201145-4**	**201146-4**	328663	45740-2	69220-2
D1, E	141 55, 55A, 55B, 223	**201145-4**	**201146-4**	330478	69248-4	69315-4
G	124, 140, 210 62, 62A, 62B, 59, 59A, 59B	**201097-1***	**201098-1***	329006	45634-3	69675-1
Twisted Pair						
–	28-26 AWG [0.08-0.15mm²] (Solid)[1]	**201511-1**	**201512-1**	328667	69186-2	69373
–	24-22 AWG [0.2-0.4mm²] (Stranded)[2]	**201143-5**	**201144-5**	328666	45638-3	69672
–	Shielded Wire 22, NAS-702, Class B	**201145-4**	**201146-4**	328663	45740-2	69220-2
–	Brand Rex T5788A 26 AWG [0.12-0.15mm²][4]	**201145-2**	**201146-2**	328664	45639-2	69222-2

†Refer to pages 4014 and 4015 for code specifications.
*These contacts are for use in the 22-position D Series and 4-position G Series connector modules only.
[1]Maximum insulation diameter - **.080** [2.03] (two wires combined).
[2]Maximum insulation diameter - **.115** [2.92] (two wires combined).
[3]Includes bench mount and foot control; requires Manual Take-Up Attachment No. **69689**.
[4]Dielectric O.D. - **.106** [2.69] max.; Cable O.D. - **.160** [4.06].

Miniature
Pc Board Sockets

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Material:

Shell and Center Contact - Brass per MIL-C-50 and QQ-B-626

Dielectric - VALOX DR48

Finish:

Center Contact - .000030 [0.00076] gold over copper

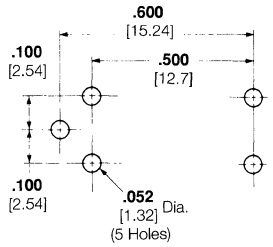
Shell - Tin plated per MIL-T-10727

Performance Characteristics:

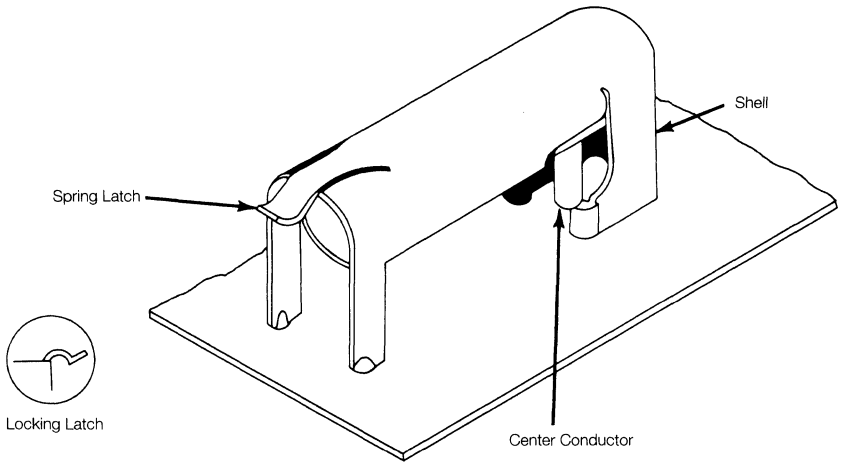
Dielectric Withstanding Voltage - 1,000 volts, rms

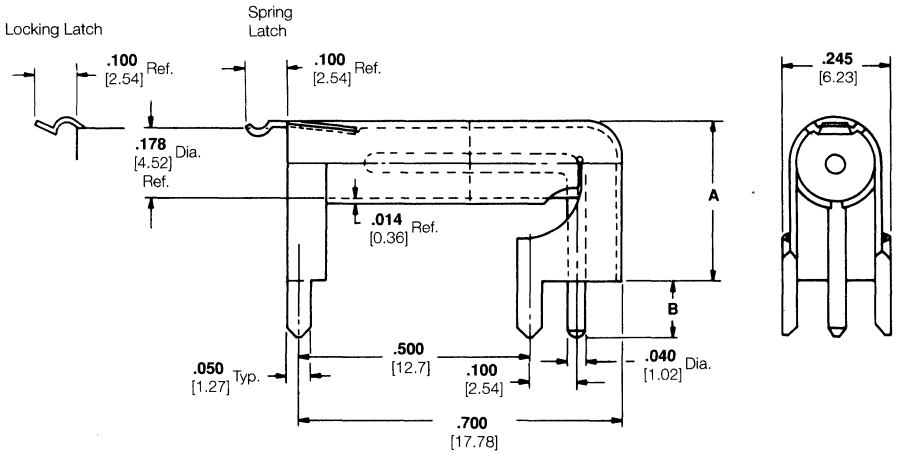
Impedance - Non-constant

Operating Temperature Range - -55°C to +85°C



Recommended Mounting Hole Layout





Type	Pc Board Thickness	Retention		Dimensions		Part No.
		lb.	[N]	A	B	
Spring Latch	.062 1.57	1.25	5.56	.357 9.07	.125 3.18	50084-1
Spring Latch	.125 3.18	1.25	5.56	.295 7.49	.187 4.75	50095-1
Locking Latch	.125 3.18	7	31.1	.295 7.49	.187 4.75	50105-1
Locking Latch	.062 1.57	7	31.1	.357 9.07	.125 3.18	50107-1

Note: For mateable Miniature Contacts, see page 4146.

Subminiature Pc Board Sockets

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Material:

Shell and Center Contact - Brass per MIL-C-50 and QQ-B-626

Dielectric - Glass-filled polyester, general purpose

Finish:

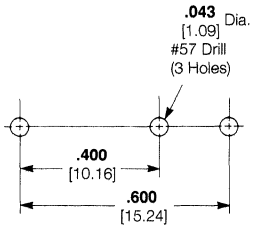
Center Contact - .000030[0.00076] gold per MIL-G-45204 over copper per MIL-C-14550

Shell - Tin-lead plated per ASTM-B-571

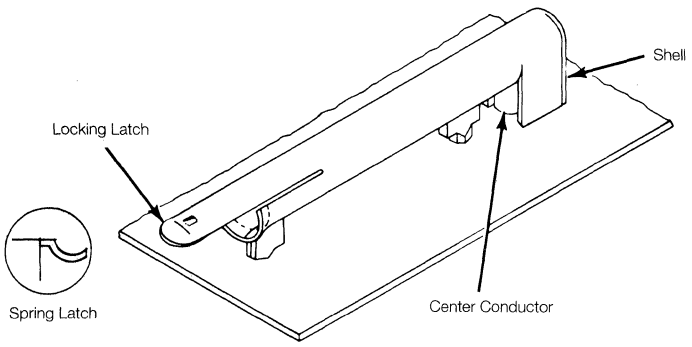
Performance Characteristics:

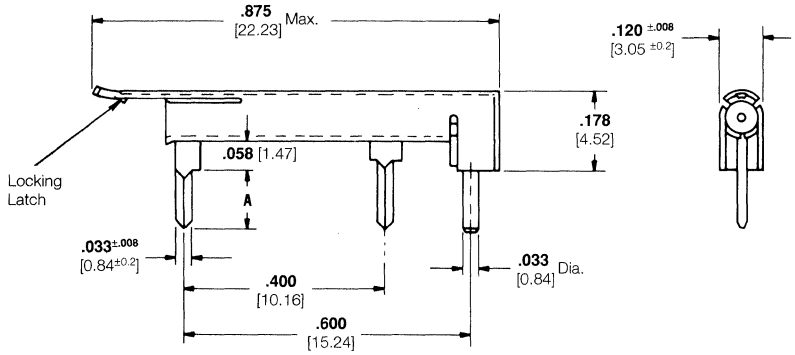
Dielectric Withstanding Voltage - 600 volts, rms

Operating Temperature Range - -55°C to +85°C



Recommended Mounting Hole Layout





Type	Pc Board Thickness	Dim. L	Part No.
Spring Latch	**.062** 1.57	**.100** 2.54	**226023-1**
Spring Latch	**.125** 3.18	**.157** 3.99	**226023-2**
Locking Latch	**.125** 3.18	**.157** 3.99	**226060-2**
Locking Latch	**.062** 1.57	**.100** 2.54	**226060-1**

Mating Subminiature COAXICON Pins

These short Subminiature COAXICON Pins are recommended for use with any of the sockets listed above.

Note: Alignment springs are not required for this application and are not included with the pin assemblies.

Connector Cable Range Selection Code†	RG/U Cable	Part No.	Ferrule No.	Integral Die Hand Tool	Die Insert for Tools: Hand Tool - 69710-1 Pneu. - 69365-2, 69365-3
A	178, 178A, 178B 196, 196A	**51563-9**	1-332057-0	69656-2	69690-2
B	174 316, 188, 188A	**51563-8**	1-332056-0	69656	69690
B1	179, 179A, 179B 187, 187A	**51563-8**	1-332056-0	69656-1	69690-1
B1	161	**51563-8**	1-332056-0	69656-5	–

†Refer to pages 4014 and 4015 for code specifications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material:

Outer Shell - Brass per MIL-C-50

Center Conductor - Beryllium copper per QQ-C-533 (Pin); Brass per QQ-B-626 (Socket)

Inner Dielectric - Polypropylene, general purpose

Retention Spring - Stainless steel per QQ-S-766

Ferrule - Copper per QQ-C-576

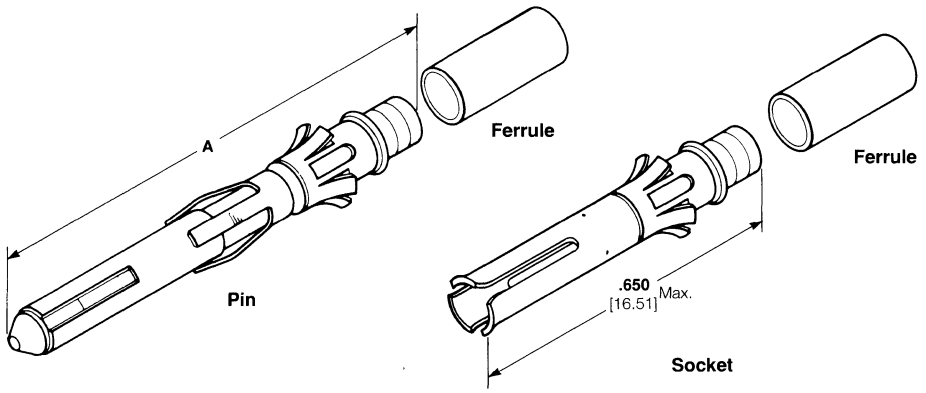
Finish:

Outer Shell and Socket Center Conductor - .000030 [0.00076] gold over .000050 [0.00127] nickel

Pin Center Conductor - .000030 [0.00076] gold over .000100 [0.00254] copper

Ferrule - Bright tin-lead per MIL-T-10727

Housing Information:
See page 4139



A = Multimate Pin - **1.010** [25.65]
Short Pin - **.892** [22.66]

Selection Chart for Coaxial Cable

Connector Cable Range Selection Code†	RG/U Cable	Contact Part Numbers				Integral Die Hand Tool	Die Insert for Tools: Hand Tool - 69710-1 Pneu. Tool - 69365-2, 69365-3*
		Multimate Pin	Short Pin	Socket	Ferrule		
A	178, 178A, 178B 196, 196A	**226537-2**	**51563-2**	**51565-2**	**1-332057-0**	69656-2	69690-2
–	196 (Double Braid)	**226537-2**	**51563-2**	**51565-2**	**225088-1**	69656-9	–
B	174, 316 188, 188A	**226537-1**	**51563-1**	**51565-1**	**1-332056-0**	69656	69690
–	174 (Double Braid)	**226537-1**	**51563-1**	**51565-1**	**225088-3**	69656-7	–
B1	179, 179A, 179B 187, 187A Belden 9221	**226537-1**	**51563-1**	**51565-1**	**1-332056-0**	69656-1	69690-1
–	187 (Double Braid)	**226537-1**	**51563-1**	**51565-1**	**225088-1**	69656-8	–
–	161	**226537-1**	**51563-1**	**51565-1**	**1-332056-0**	69656-5	

Selection Chart for Twisted Pairs and Shielded Wire

Wire Size		Contact Part Numbers				Integral Die Hand Tool	Die Insert for Tools: Hand Tool - 69710-1 Pneu. Tool - 69365-2, 69365-3*
AWG	[mm²]	Multimate Pin	Short Pin	Socket	Ferrule		
30 (Twisted Pair, Solid)	0.05	**226537-3**	**51563-3**	**51565-3**	**1-332057-0**	69656-2	69690-2
28 (Twisted Pair, Solid)	0.08-0.09	**226537-3**	**51563-3**	**51565-3**	**1-332057-0**	69656	69690
28 (Twisted Pair, Stranded; 7 str., .005 [0.13] Dia.)	0.08-0.09	**226537-3**	**51563-3**	**51565-3**	**1-332057-0**	69656-1 or 69656-2	69690-1 or 69690-2
26 (Twisted Pair, Solid or Stranded; 7 str., .0063 [0.16] Dia.)	0.12-0.15	**226537-3**	**51563-3**	**51565-3**	**1-332057-0**	69656	69690
26 (Shielded, 0.75 [1.91] Max. O.D.)	0.12-0.15	**226537-1**	**51563-1**	**51565-1**	**1-332057-0**	69656-3	69690-3

†Refer to pages 4014 and 4015 for code specifications.
*Includes bench mount and foot control.
Extraction Tool **No. 305183**
Insertion Tool for Twisted Pair-**No. 220035-1**
Note: A ferrule is required for each pin and socket.

Material and Finish:

Contact -
Stainless steel per QQ-S-766
Beryllium copper per QQ-C-530
Brass per QQ-B-626, TEFLON TFE per MIL-P-19468, Gold plate per MIL-G-45204, nickel plate per QQ-N-290

Ferrule-
Brass per MIL-C-50, tin plate per MIL-T-10727, Copper per ASTM-B-188, tin plate per ASTM-B-545

Performance Characteristics

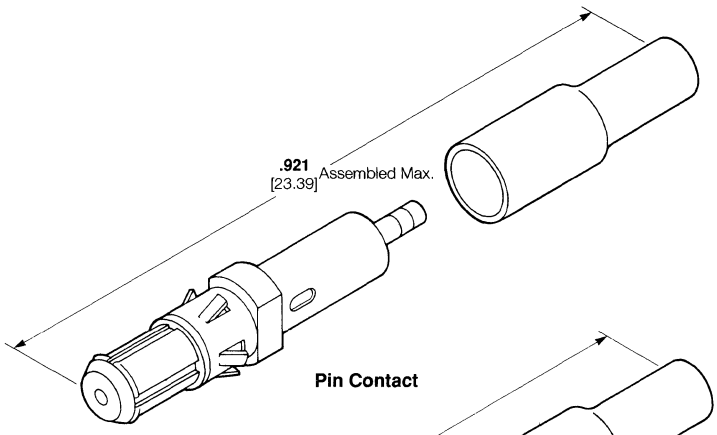
Nominal Impedance - 50 ohms

Frequency Range - 0-2 GHz
Maximum Operating Voltage (Sea Level) - 150 vac, rms

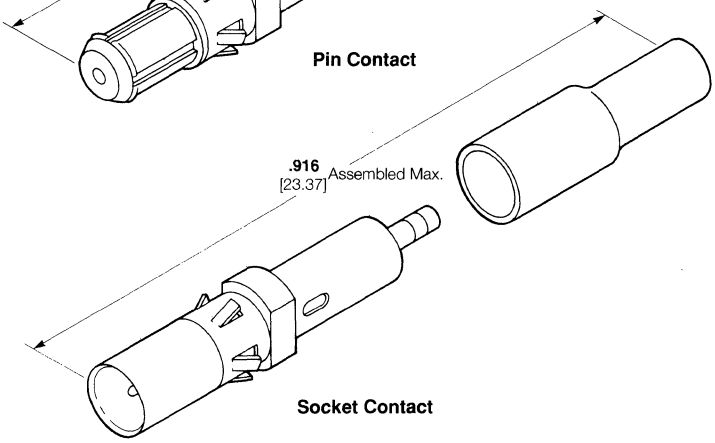
Operating Temperature Range- -55°C to +125°C

Cable Retention - 15 lb [66.7 N] min. (RG 178 type double braid)

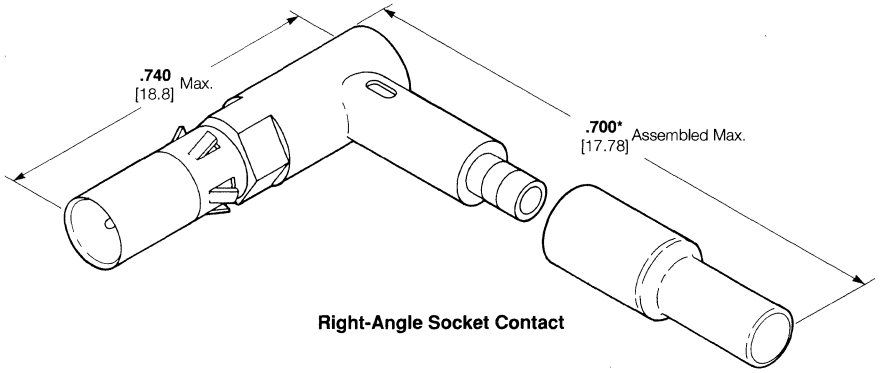
Housing Information:
See page 4139



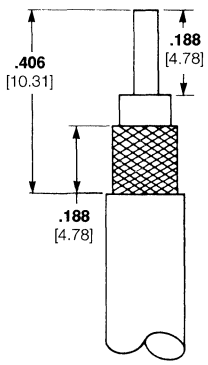
Pin Contact



Socket Contact



Right-Angle Socket Contact



Recommended Strip Length

RG/U Cable	Contact Finish	Contact Part Numbers			Integral Die Hand Tool
		Straight Pin	Straight Socket	Right-Angle Socket	
178 Double Braid, 196, Tensolite 30850/81T-1 Malco 250-3908	Gold[1]	**227604-1**	**227605-1**	**227606-1**	220215-1
	AMP-DURAGOLD[2]	**227604-6**	**227605-6**	–	
174, 188, 316, Belden 9221	Gold[1]	**227604-3**	**227605-3**	**227606-4**	220215-2
	AMP-DURAGOLD[2]	**227604-7**	**227605-7**	–	
179, 187 Gore CXN-1644	Gold[1]	**227604-4**	**227605-4**	–	220215-2
Gore CXN-1331	Gold[1]	**227604-5**	–	–	220215-2
	AMP-DURAGOLD[2]	–	**227605-5**	–	
316 Double Braid	Gold[1]	–	–	**227606-6**	220215-2

*.630 [16] max. for Part **No. 227606-6** only.
[1].000030 [0.00076] gold per MIL-B-45204
[2].000030 [0.00076] AMP-DURAGOLD (Proprietary AMP process)
Extraction Tool **No. 220216-1**

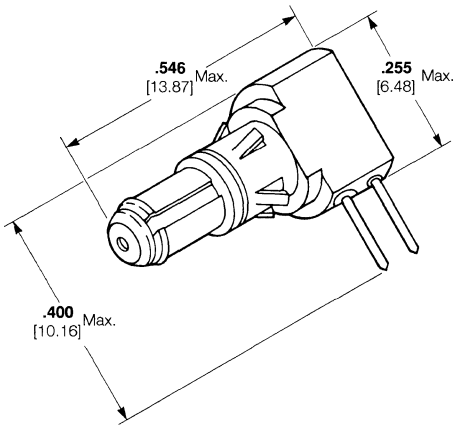
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

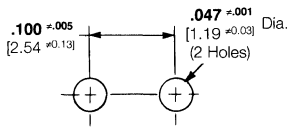
Pc Board Mount Contacts

Material and Finish:
See page 4150

Housing Information:
See page 4139

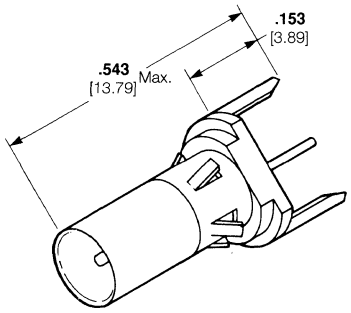


Right-Angle Pin

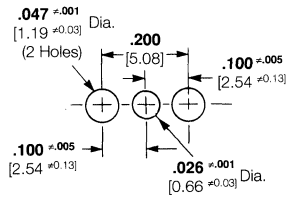


Maximum Pc Board Thickness - **.125** [3.18]

Pc Board Hole Layout



Vertical Socket



Maximum Pc Board Thickness - **.125** [3.18]

Pc Board Hole Layout

Contact Finish	Contact Part Numbers	
	Right-Angle Pin	Vertical Socket
Gold[1]	**227602-1**	**227603-1**
Gold[2]	**227602-2**	–
AMP-DURAGOLD[3]	**227602-3**	**227603-4**

[1].000030 [0.00076] gold per MIL-G-45204
[2].000050 [0.00127] gold per MIL-G-45204
[3].000030 [0.00076] AMP-DURAGOLD (Proprietary AMP process)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Performance Characteristics

Frequency Range - 0 to 500 MHz

Operating Voltage, Max. - 275 vac rms @ sea level

Termination Resistance, Max.
Center Contact: 6.0 milliohms
Outer Contact: 3.0 milliohms

Insulation Resistance, Min. - 5,000 megohms @ 500 vdc

Dielectric Withstanding Voltage -
Sea Level: 800 Volts rms
30,000 ft [9 144 m]: 525 volts rms
70,000 ft [21 336] m]: 275 volts rms

VSWR to 500 MHz, Max.

Pin/Socket	VSWR
Straight/Straight	1.30
Right-Angle/Straight	1.35
Right-Angle/Right-Angle	1.40

RF Crosstalk - 90 dB @ 5-500 MHz

Mating Force, Max. - 4.0 lb [17.8 N]

Unmating Force, Min. - 2.0 oz [0.556 N]

Contact Retention - 20 lb [89 N]

Contact Durability - 500 cycles (based on test results)

Cable RG/U	Force lb	Force [N]
316, 188, 174, 179, 179A, 179B	20	89
188-type Double Braid	35	155.8
142, 142A, 142B	50	222.5

Operating Temperature - -55°C to +125°C

Thermal Shock - -55°C to +125°C per MIL-STD-1344, Method 1003, Cond. A

Physical Shock - 50 G's per MIL-STD-1344, Method 2004, Cond. A

Vibration - MIL-STD-1344, Method 2005,Cond. II

Moisture Resistance - 240 hours per MIL-STD-1344, Method 1002, Cond. II

Salt Fog - 48 hours per MIL-STD-1344,Method 1001, Cond. B

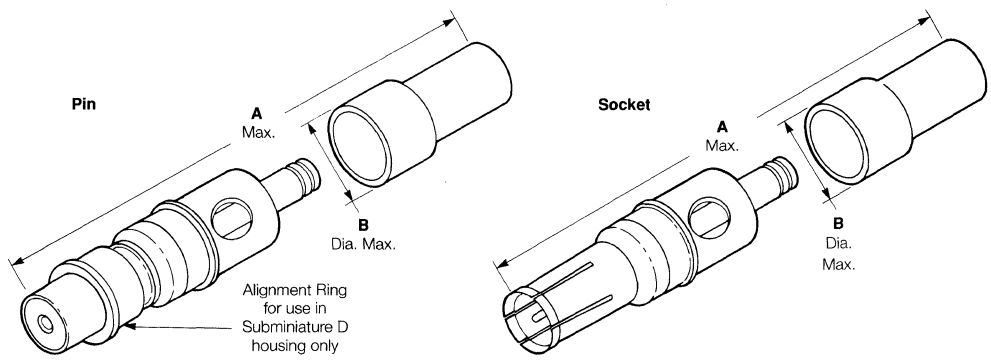
Extraction Tool Numbers:
Subminiature D Housings - 58095-1 (AMPLIMITE)
AMP-HDI Housings - 58095-2

Housing Information:
See page 4139

Material:
Brass - per QQ-B-626 and MIL-C-50
Phosphor Bronze - per QQ-B-750
Beryllium Copper - per QQ-C-530
TEFLON - per MIL-P-19468
Nylon - per MIL-M-20693

Finish:
Bright Tin-Lead Plating - per ASTM-B-571
Copper Plating - per MIL-C-14550
Gold Plating - per MIL-G-45204
Nickel Plating - per QQ-N-290

Straight Contacts



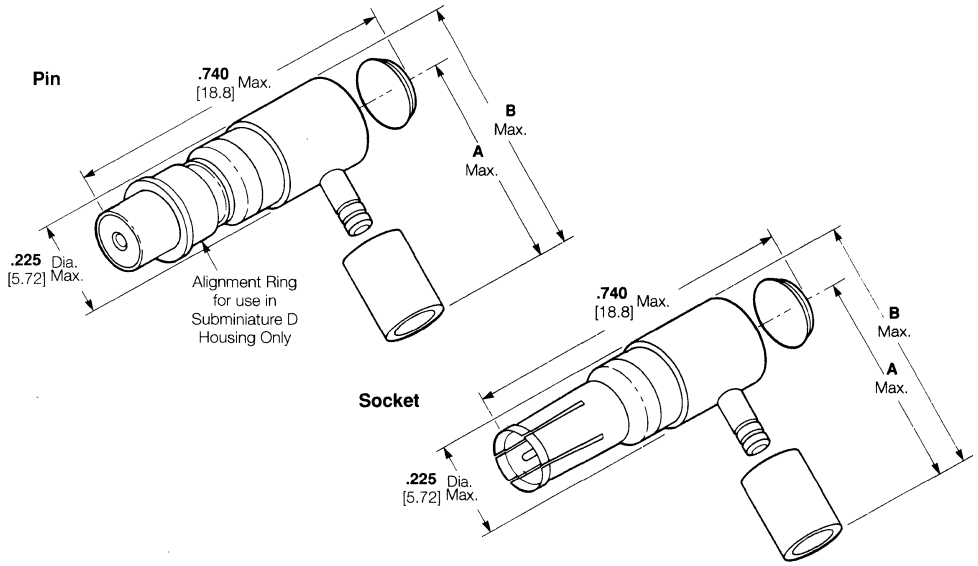
Connector Cable Range Selection Code†	RG/U Cable	Dimensions A	Dimensions B	Contact Part Numbers: Non-Impedance Matched Pin	Non-Impedance Matched Socket	50 Ohm Pin	50 Ohm Socket	Die Insert for Tools: Hand Tool- 69710-2 Pneu. Tool - 69365-8
A	178, 178A, 178B 196, 196A	**.950** 24.13	**.235** 5.94	**228618-5**	**228596-5**	–	–	59993-1
B	174, 316 188, 188A	**.956** 24.28	**.234** 5.94	**228618-1**	**228596-1**	**221980-1**	**221981-1**	59993-1
B1	179, 179A, 179B 187, 187A, 161 Belden 9221	**.956** 24.28	**.234** 5.94	**228618-2**	**228596-2**	**221980-3**	**221981-3**	59993-1
–	188-Type (Double Braid)	**.956** 24.28	**.234** 5.94	**228618-3**	**228596-3**	–	–	59993-1
E1	142, 142A, 142B 400, Belden 9246	**1.080** 27.43	**.255** 6.48	**228618-4**	**228596-4**	**221980-2**	**221981-2**	58212-1

† Refer to pages 4014 and 4015 for code specifications.
Note: Non Impedance Matched and 50 ohm are not intermatable.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Chart contains dimensions in inches over millimeters.

Right-Angle Contacts

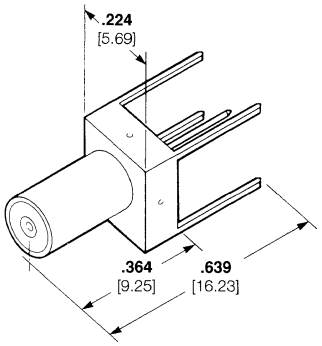


Connector Cable Range Selection Code†	RG/U Cable	Dimensions A	Dimensions B	Contact Part Numbers: Non-Impedance Matched Pin	Non-Impedance Matched Socket	50 Ohm Pin	50 Ohm Socket	Die Insert for Tools: Hand Tool- 69710-2 Pneu. Tool - 69365-8 Pin	Die Insert for Tools: Hand Tool- 69710-2 Pneu. Tool - 69365-8 Socket
B, B1	174, 316 188, 188A 179, 179A, 179B 187, 187A, 161 Belden 9221	**.412** 10.46	**.522** 13.26	**228611-1**	**228604-1**	**222150-1**	**222151-1**	58093-1	58094-1
–	188-Type (Double Braid)	**.412** 10.46	**.522** 13.26	**228611-2**	**228604-2**	–	–	58093-1	58094-1
E1	142, 142A, 142B 400 Belden 9246	**.600** 15.24	**.710** 18.03	**228611-3**	**228604-3**	–	–	58211-1	58211-1

† Refer to pages 4014 and 4015 for code specifications.

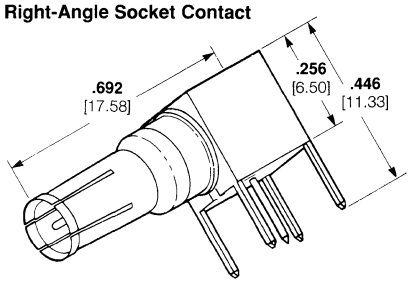
Pc Board Mount Contacts
(for AMP-HDI Connectors only)

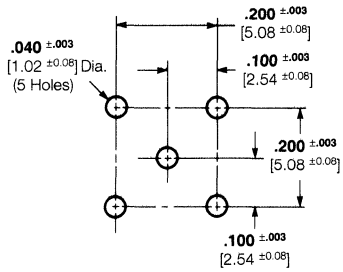
Vertical Pin Contact



Type	Contact Part Numbers: Non-Impedance Matched	50 Ohm
Vertical Pin Contact	**221158-1**	**222016-1**
Right-Angle Socket Contact	**221162-1**	**222015-1**

Right-Angle Socket Contact





Maximum pc board thickness -
Recommended Pc Board Layout

ARINC 404 Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Performance Characteristics

Nominal Impedance - 50 ohms

Frequency Range - 0 to 500 MHz

Operating Temperature - 65°C to +125°C

Operating Voltage (Rated) - 325 vac rms, 60 Hz

Contact Resistance (Milliohms) -
Sizes 5 and 9 with RG 58/U cable:
10 - Center Contact
1.5 - Outer Contact
Size 15 with RG 316/U cable:
15 - Center Contact
2 - Outer Contact

Insulation Resistance - 5,000 megohms @ 500 vdc

Dielectric Withstanding Voltage (60 Hz, rms) -
Sizes 5 and 9 with RG 58/U and 316/U cable:
750 - Sea Level
350 - 50,000 ft [15 240 m]
Size 15 with RG 316/U, 178/U and 196/U cable:
325 - Sea Level
150 - 50,000 ft [15 240 m]

VSWR - 1.3 to 1.0 @ 500 Mhz

Insertion/Withdrawal Force -

Sizes 5 and 9:

Insertion Force		Withdrawal Force	
lb	[N]	lb	[N]
5	22.24	1	4.45

Size 15:

Insertion Force		Withdrawal Force	
lb	[N]	lb	[N]
25	111.2	5	22.24

Cable Retention -
Sizes 5 and 9: 60 lb [266.9 N]
Size 15: 10 lb [44.5 N]

Durability - 500 cycles

Thermal Shock - per MIL-STD-202, Method 107, Cond. A

Physical Shock - per MIL-STD-202, Method 213, Cond. A

Vibration - per MIL-STD-202, Method 204, Cond.I D

Moisture Resistance - per MIL-STD-202, Method 106

Salt Spray - 48 hours per MIL-STD-202, Method 101, Cond. B

Material:

Connector Bodies - Brass and beryllium copper

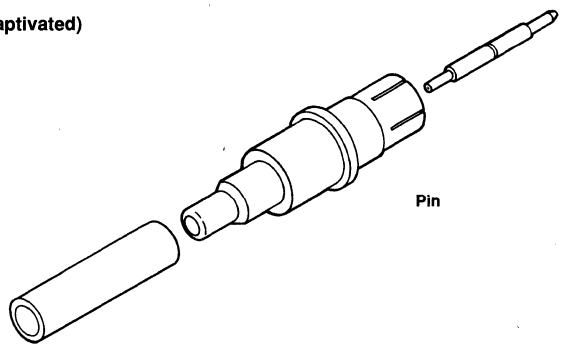
Ferrules - Annealed copper

Finish:

Connector Bodies - Gold (sizes 1, 3, 5, 7 & 9); tin (size 15)

Housing Information:
See page 4139

Size 1 (Captivated)



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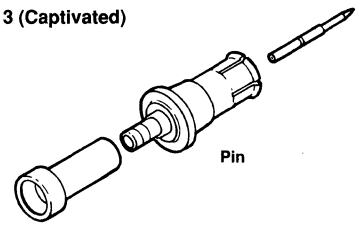
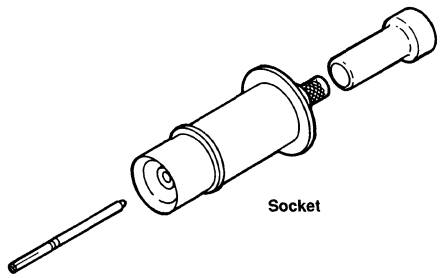
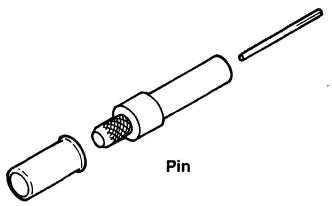
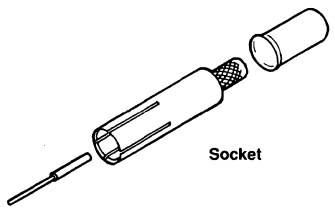




Size 5





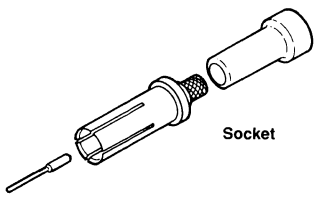
Contact Size	RG/U Cable	Contact Part No.		Center Contact Crimping Tool		Ferrule Crimping Tool
		Pin	Socket	Tool	Positioner	
1	141 Semi-Rigid	**225837-1**	–	601966-1 M22520/2-01[1]	1-601966-9	220066-1 or -2
3	58C	**226053-1**	**225792-3**	601966-1 M22520/2-01[1]	2-601966-4[2] 1-601966-8[3]	220066-1 or -2
	225	–	**225792-5**	220015-1	–	220015-1
5	58C	**225790-1**	**225791-1**	601966-1 M22520/2-01[1]	1-601966-6	220066-1
	142A, 142B	**225790-2**	**225791-2**	220066-2	–	220066-1 or -2
	141A	**225790-1**	**225791-1**	220066-2	–	220066-1 or -2
	141 Semi-Rigid	**225790-3**	**225791-6**	220066-2	–	220066-1 or -2
	174, 188, 316	**225790-5**	**225791-3**	601966-1 M22520/2-01[1]	1-601966-6	220066-1 or 12 or 220009-1
	180, 195	**225790-4**	**225791-8**	601966-1 M22520/2-01[1]	1-601966-6	220066-1 or -2
	179, 187	**225790-6**	**225791-4**	601966-1 M22520/2-01[1]	1-601966-6	220066-1 or -2 or 220009-1
	178, 196	**225790-7**	**225791-5**	601966-1 M22520/2-01[1]	1-601966-6	220020-1
	223	**225790-2**	**225791-2**	601966-1 M22520/2-01[1]	1-601966-6	220066-1 or -2

[1]Military designation
[2]Use with pin contact
[3]Use with socket contact

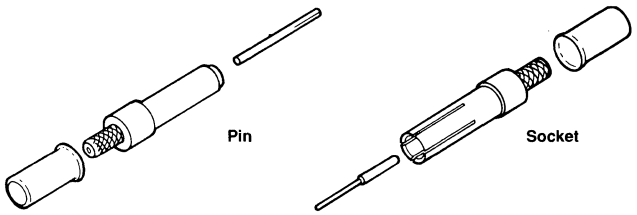
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Contacts (Continued)

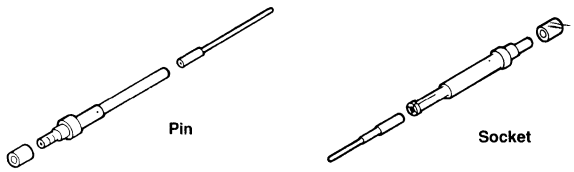
Size 7 (Captivated)



Size 9



Size 15



Contact Size	RG/U Cable	Contact Part No.		Center Contact Crimping Tool		Ferrule Crimping Tool
		Pin	Socket	Tool	Positioner	
7	223	–	**225796-2**	601966-1 M22520/2-01[1]	1-601966-7	220066-2
	142A, 142B	–	**225796-2**	220066-2	–	220066-1 or -2
9	58C	**225935-1**	**225936-2**	601966-1 M22520/2-01[1]	1-601966-6	220066-1 or -2
	141A	**225935-1**	**225936-2**	601966-1 M22520/2-01[1]	1-601966-6	220066-1 or -2
	174, 188, 316	**225935-4**	**225936-3**	601966-1 M22520/2-01[1]	1-601966-6	220066-1 or -2
	142A, 142B	**225935-5**	**225936-5**	601966-1 M22520/2-01[1]	1-601966-6	220066-1 or -2
15	188, 316	**226782-1**	**226781-1**	601966-1 M22520/2-01[1]	2-601966-8	601963-2 M22520/4-01[1]
	179, 187	**226782-2**	**226781-2**	601966-1 M22520/2-01[1]	2-601966-8	601963-2 M22520/4-01[1]
	178, 196	**226782-3**	**226781-3**	601966-1 M22520/2-01[1]	2-601966-1	601963-2 M22520/4-01[1]

[1]Military designation

Extraction Tools:
Sizes 5 and 9 - Part No. **901074-1**
Size 15 - Part No. **91066-3**

2.8 mm Blind Mate Contacts (for Size 8 Cavities)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material and Finish:

Plug

Shroud and Grip Ring - Brass, nickel plated

Retaining Clip - Beryllium copper, nickel plated

Shell and Contact - Beryllium copper, gold plated

Dielectric - TEFLON

Jack

Sleeve and Grip Ring - Brass, nickel plated

Retaining Clip - Beryllium copper, nickel plated

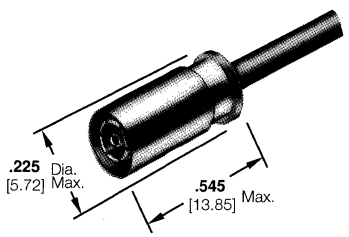
Shell and Contact - Beryllium copper, gold plated

Dielectric - TEFLON

Cable Size: RG-405 Semi-Rigid/**.086** [2.18]

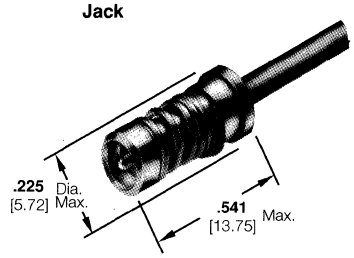
Application Tool: 59980-1

Plug



Part No. 413242-1

Jack



Part No. 413249-1

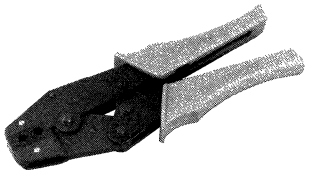
For terminating AMP RF connectors, AMP offers a choice of tools to suit your exact production requirements. All are designed for fast, trouble-free operation and use matching dies that fully "bottom" to produce uniform, reliable crimp terminations–every time. If more detailed information is needed on a particular tool listed in this catalog, consult your local AMP Sales Engineer or call the Customer Assistance Hotline **1-800-722-1111**.

Hand Tools

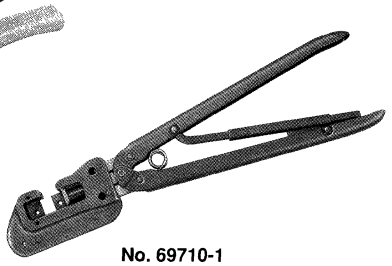
AMP hand tools feature the patented CERTI-CRIMP ratchet device which will not allow the tool handles to release until the crimping operation is fully completed. This prevents undercrimping, while the dies themselves prevent overcrimping. Pictured below are examples of various types of integral die and interchangeable die hand tools listed in this catalog.

Typical Integral Die Hand Tools

Typical Interchangeable Die Hand Tools



No. 220190-1

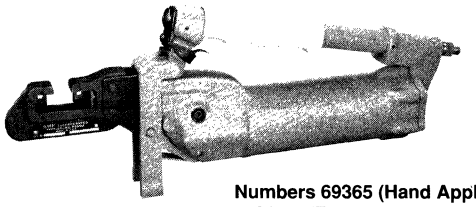


No. 69710-1

PRO-CRIMPER Hand Tool

Pneumatic Tools

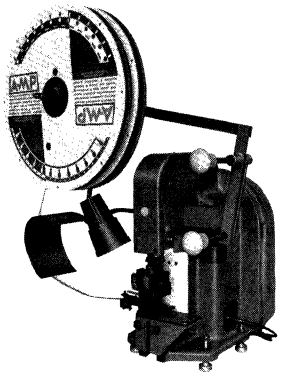
AMP pneumatic tools perform the same operation as the hand tools, except the crimping cycle is actuated automatically–a simple squeeze of the trigger or touch of the foot peddle completes the termination. The pneumatic tool utilizes interchangeable dies to accommodate a wide variety of connectors.



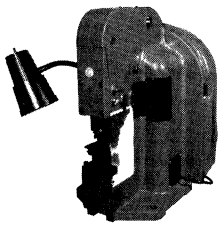
Numbers 69365 (Hand Application) 69365-3 (Foot actuated - preferred for highest production.)

Bench Mounted Machines

AMP-O-LECTRIC Bench Mounted Terminating Machines may be used to terminate certain lines of AMP RF products, such as UHF and Commercial Series BNC and TNC connectors. These semi-automatic machines are designed for a high rate of production and can be used with the AMP Quick Change Applicator for maximum flexibility and minimum production downtime.

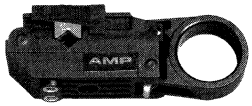


AMP-O-LECTRIC Terminating Machine No. 565435-5 (for Quick-Change Applicators)



UHF Connector Terminating Machine No. 220152-1

Coaxial Cable Stripping Hand Tool



No. 603995-1 (for Single Crimp BNC Connectors)

No. 603995-2 (for Commercial BNC and Miniature UHF Connectors)

No. 603995-3 (for Standard UHF Connectors)

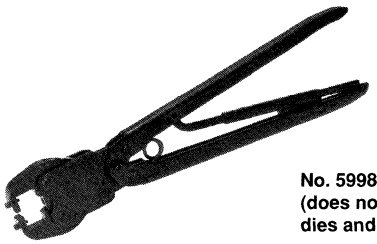
No. 603995-5 (for Mil Type Dual Crimp BNC Connectors)

No. 603995-6 (for Commercial Dual Crimp BNC Connectors)

Semi-Rigid Cable Tooling

The tools listed here are designed specifically to strip and terminate semi-rigid cable. These tools operate basically the same as the flexible cable tools, in that they produce uniform terminations time after time, without heat damage from soldering.

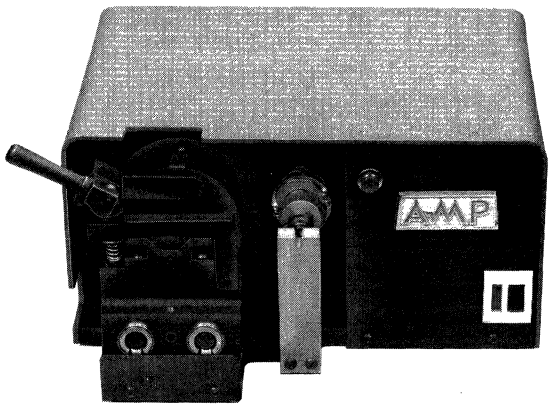
Hand Tool for BNC and TNC Semi-Rigid Cable Connectors



No. 59980-1 Frame only-(does not include dies and locator)

Cable Preparation Machine No. 220211-2

The AMP Cable Preparation Machine provides a fast and convenient means of preparing cable for the termination of AMP connectors for semi-rigid cable. The machine automatically cuts and removes the cable jacket and dielectric, and trims the cable to the proper dimension. Up to 120 cables can be prepared in one hour.



Stripping Kits

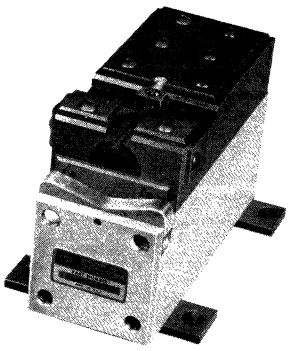
RG/U CABLE	For BNC and TNC Semi-Rigid Cable Connectors	For SMA and Blind Mate Connectors
402	**220227-1 & -2**	**813599-1**
405	**220227-3**	**813599-2**

Hand Tool Kit for SMA and Blind Mate Connectors No. 59981-1

Item Description	Part Numbers	
	AMP	Military (M22520/)
Hand Tool	**59980-1**	**36-01**
Plug Locator (without Center Contact)	**220220-2**	**36-06**
Plug Locator (with Center Contact)	**220221-2**	**36-04**
Jack Locator	**220222-2**	**36-05**
Die Set for RG-402/U Cable (**.141** [3.58] O.D.)	**312253-1**	**36-03**
Die Set for RG-405/U Cable (**.086** [2.18] O.D.)	**312253-2**	**36-02**
Cutoff Fixture	**311395-1**	**36-09**
Cable Dressing Fixture	**311396-1**	**36-07**
Trimmer Tool	**312317-1**	**36-08**
Cable Bend Fixture Assembly Includes following 6 items:	**220224-1**	**36-10**
Bend Segment, RG-402/U (**.125** [3.18] Radius)	**311386-1**	**36-11**
Bend Segment, RG-402/U (**.250** [6.35] Radius)	**311386-2**	**36-12**
Bend Segment, RG-405/U	**311386-3**	**36-13**
Tool Holder	**311392-1**	–
Limiting Pin	**307581-1**	–
Conforming Block	**312067-1**	–
Hex Wrench	**21027-6**	–
Carrying Case	**13126-1**	–
Insert, Case	**13127-1**	–

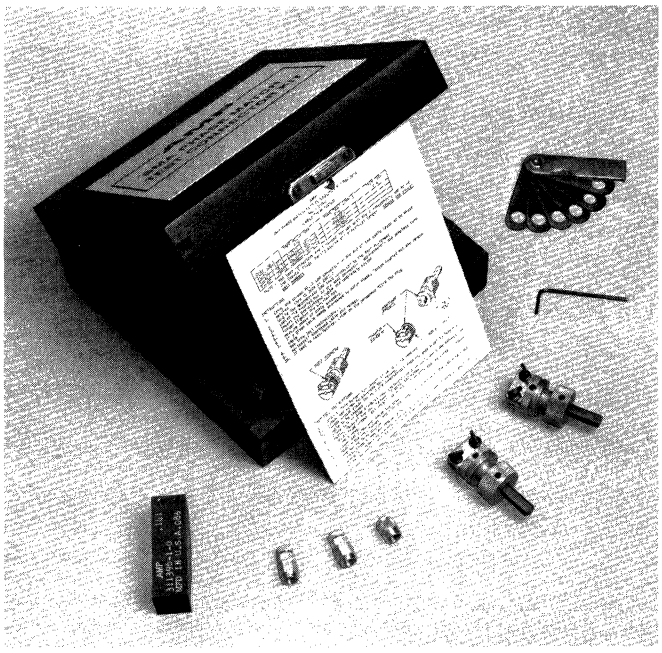
Pneumatic Tool for Terminating BNC, TNC, SMA and Blind Mate Connectors

(for RG-402/U and RG-405/U Cable)
No. 58318-1



This pneumatic tool is a bench-mounted, semi-automatic power tool designed for easy operation. The operator needs only to depress the trigger to complete a termination. It is used with the cable preparation machine to produce finished terminations.

Phase-Match Test Connector Kit for SMA Connectors
No. 228863-1



This kit is used to phase match RG-405/U and RG-402/U semi-rigid cables when used with AMP MIL-C-39012 SMA connectors.

The kit is packaged in a hardwood box and includes two trimming tools, a 1/16" [0.6 mm] hex socket key, a cable dressing fixture to deburr and/or repoint the center conductor of the cable, a thickness gauge to determine the amount of cable to be removed, and plug test connectors for interfacing to applicable test equipment.

Appendix E
UG Number to AMP Number Cross Reference

Specifications subject to change.
For latest design specifications...
1-800-522-6752

UG Part No.	AMP Part No.	AMP Tooling Required	Description	Connector Type	Page No.
21	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	1-227086-0	X	Plug	N	4066
	1-227086-1	X	Plug	N	4067
21A	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	1-227086-0	X	Plug	N	4066
	1-227086-1	X	Plug	N	4067
21B	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	1-227086-0	X	Plug	N	4066
	1-227086-1	X	Plug	N	4067
22	**225089-1**	X	Panel Jack	N	4072
	225089-2	X	Panel Jack	N	4072
	225665-1	X	Panel Jack	N	4072
	225666-2	X	Panel Jack	N	4072
22A	**225089-1**	X	Panel Jack	N	4072
	225089-2	X	Panel Jack	N	4072
	225665-1	X	Panel Jack	N	4072
	225666-2	X	Panel Jack	N	4072
22B	**225089-1**	X	Panel Jack	N	4072
	225089-2	X	Panel Jack	N	4072
	225665-1	X	Panel Jack	N	4072
	225666-2	X	Panel Jack	N	4072
22C	**225089-1**	X	Panel Jack	N	4072
	225089-2	X	Panel Jack	N	4072
	225665-1	X	Panel Jack	N	4072
	225666-2	X	Panel Jack	N	4072
22D	**225089-1**	X	Panel Jack	N	4072
	225089-2	X	Panel Jack	N	4072
	225665-1	X	Panel Jack	N	4072
	225666-2	X	Panel Jack	N	4072
22E	**225089-1**	X	Panel Jack	N	4072
	225089-2	X	Panel Jack	N	4072
	225665-1	X	Panel Jack	N	4072
	225666-2	X	Panel Jack	N	4072
23	**225093-1**	X	Jack	N	4069
	225093-2	X	Jack	N	4069
	225664-1	X	Jack	N	4069
	225664-2	X	Jack	N	4069
23A	**225093-1**	X	Jack	N	4069
	225093-2	X	Jack	N	4069
	225664-1	X	Jack	N	4069
	225664-2	X	Jack	N	4069
23B	**225093-1**	X	Jack	N	4069
	225093-2	X	Jack	N	4069
	225664-1	X	Jack	N	4069
	225664-2	X	Jack	N	4069
23C	**225093-1**	X	Jack	N	4069
	225093-2	X	Jack	N	4069
	225664-1	X	Jack	N	4069
	225664-2	X	Jack	N	4069
23D	**225093-1**	X	Jack	N	4069
	225093-2	X	Jack	N	4069
	225664-1	X	Jack	N	4069
	225664-2	X	Jack	N	4069
23E	**225093-1**	X	Jack	N	4069
	225093-2	X	Jack	N	4069
	225664-1	X	Jack	N	4069
	225664-2	X	Jack	N	4069
29	**227945-1**		Adapter	N	4073
	227945-2		Adapter	N	4073
29A	**227945-2**		Adapter	N	4073
29B	**227945-1**		Adapter	N	4073
58	**221546-1**		Panel Jack	N	4073
58A	**221546-1**		Panel Jack	N	4073
83	**222322-1**		Adapter	UHF-to-N	4074,4087
83A	**222322-1**		Adapter	UHF-to-N	4074,4087
83B	**222322-1**		Adapter	UHF-to-N	4074,4087
88	**1-221265-0**		Plug	BNC	4024
	221265-1		Plug	BNC	4024
88A	**1-221265-0**		Plug	BNC	4024
	221265-1		Plug	BNC	4024
88B	**1-221265-0**		Plug	BNC	4024
	221265-1		Plug	BNC	4024
88C	**1-221265-0**		Plug	BNC	4024
	221265-1		Plug	BNC	4024
88D	**1-221265-0**		Plug	BNC	4024
	221265-1		Plug	BNC	4024
88E	**1-221265-0**		Plug	BNC	4024
	221265-1		Plug	BNC	4024
89	**1-221295-0**		Jack	BNC	4024
	221295-1		Jack	BNC	4024
89A	**1-221295-0**		Jack	BNC	4024
	221295-1		Jack	BNC	4024
89B	**1-221295-0**		Jack	BNC	4024
	221295-1		Jack	BNC	4024
89C	**1-221295-0**		Jack	BNC	4024
	221295-1		Jack	BNC	4024
160	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	1-227086-0	X	Plug	N	4066
	1-227086-1	X	Plug	N	4067
160A	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	1-227086-0	X	Plug	N	4066
	1-227086-1	X	Plug	N	4067
160B	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	1-227086-0	X	Plug	N	4066
	1-227086-1	X	Plug	N	4067
160C	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	1-227086-0	X	Plug	N	4066
	1-227086-1	X	Plug	N	4067
160D	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	1-227086-0	X	Plug	N	4066
	1-227086-1	X	Plug	N	4067
188	**225361-1**	X	Plug	N	4065
	1-225661-2	X	Plug	N	4065
201	**222321-1**		Adapter	BNC-to-N	4042,4074
201A	**222321-1**		Adapter	BNC-to-N	4042,4074
224A	**227426-1**		Blkhd. Jack	BNC	4033
225A	**222319-1**		Adapter	UHF-to-BNC	4042,4087
254	**227426-1**		Blkhd. Jack	BNC	4033
254A	**227426-1**		Blkhd. Jack	BNC	4033
255	**222319-1**		Adapter	UHF-to-BNC	4042,4087
255A	**222319-1**		Adapter	UHF-to-BNC	4042,4087
260	**1-221265-1**		Plug	BNC	4024
	221265-2		Plug	BNC	4024
260A	**1-221265-1**		Plug	BNC	4024
	221265-2		Plug	BNC	4024
260B	**1-221265-1**		Plug	BNC	4024
	221265-2		Plug	BNC	4024
260C	**1-221265-1**		Plug	BNC	4024
	221265-2		Plug	BNC	4024
260D	**1-221265-1**		Plug	BNC	4024
	221265-2		Plug	BNC	4024
261	**1-221295-1**		Jack	BNC	4027
	221295-2		Jack	BNC	4027
261A	**221295-2**		Jack	BNC	4027
	1-221295-1		Jack	BNC	4027
261B	**1-221295-1**		Jack	BNC	4027

Appendix E
UG Number to AMP Number Cross Reference

Specifications subject to change.
For latest design specifications...
1-800-522-6752

UG Part No.	AMP Part No.	AMP Tooling Required	Description	Connector Type	Page No.
261B	**221295-2**		Jack	BNC	4027
261C	**1-221295-1**		Jack	BNC	4027
	221295-2		Jack	BNC	4027
262	**221285-2**		Panel Jack	BNC	4028
262A	**221285-2**		Panel Jack	BNC	4028
262B	**221285-2**		Panel Jack	BNC	4028
262C	**221285-2**		Panel Jack	BNC	4028
273	**222320-1**		Adapter	UHF-to-BNC	4042,4087
274	**221543-2**		T Adapter	BNC	4039
	329518		T Adapter	BNC	4039
274A	**221543-2**		T Adapter	BNC	4039
	329518		T Adapter	BNC	4039
274B	**221543-2**		T Adapter	BNC	4039
	329518		T Adapter	BNC	4039
291	**221285-1**		Panel Jack	BNC	4028
291A	**221285-1**		Panel Jack	BNC	4028
291B	**221285-1**		Panel Jack	BNC	4028
291C	**221285-1**		Panel Jack	BNC	4028
306	**329517**		Adapter	BNC	4039
306A	**329517**		Adapter	BNC	4039
306B	**329517**		Adapter	BNC	4039
318	**222322-1**		Adapter	UHF-to-N	4074,4087
421	**227241-1**		Plug	Twin-Ax	4123
	1-331495-1		Plug	Twin Video	4129
421A	**227241-1**		Plug	Twin-Ax	4123
	1-331495-1		Plug	Twin Video	4129
421B	**227241-1**		Plug	Twin-Ax	4123
	1-331495-1		Plug	Twin Video	4129
492	**330024**		Blkhd. Adapter	BNC	4040
492A	**330024**		Blkhd. Adapter	BNC	4040
492B	**330024**		Blkhd. Adapter	BNC	4040
492C	**330024**		Blkhd. Adapter	BNC	4040
492D	**330024**		Blkhd. Adapter	BNC	4040
536	**225361-1**	X	Plug	N	4065
	1-225661-2	X	Plug	N	4065
536A	**225361-1**	X	Plug	N	4065
	1-225661-2	X	Plug	N	4065
536B	**225361-1**	X	Plug	N	4065
	1-225661-2	X	Plug	N	4065
556	**225363-2**	X	Blkhd. Jack	N	4070
	225363-4	X	Blkhd. Jack	N	4070
556A	**225363-2**	X	Blkhd. Jack	N	4070
	225363-4	X	Blkhd. Jack	N	4070
556B	**225363-2**	X	Blkhd. Jack	N	4070
	225363-4	X	Blkhd. Jack	N	4070
571	**225409-1**	X	Panel Jack	C	4076
	225409-2	X	Panel Jack	C	4076
573	**225672-5**	X	Plug	C	4076
573A	**225672-5**	X	Plug	C	4076
573B	**225672-5**	X	Plug	C	4076
594	**225014-2**	X	Rt. Angle Plug	N	4068
	225014-3	X	Rt. Angle Plug	N	4068
	225669-1	X	Rt. Angle Plug	N	4068
	225669-2	X	Rt. Angle Plug	N	4068
594A	**225014-2**	X	Rt. Angle Plug	N	4068
	225014-3	X	Rt. Angle Plug	N	4068
	225669-1	X	Rt. Angle Plug	N	4068
	225669-2	X	Rt. Angle Plug	N	4068
624	**221313-2**		Blkhd. Jack	BNC	4031
625	**1-227169-0**		Blkhd. Jack	BNC	4032
	227169-4		Blkhd. Jack	BNC	4032
625B	**1-227169-0**		Blkhd. Jack	BNC	4032
	227169-4		Blkhd. Jack	BNC	4032
628	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	225661-1	X	Plug	N	4067
	225661-2	X	Plug	N	4066

UG Part No.	AMP Part No.	AMP Tooling Required	Description	Connector Type	Page No.
628A	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	225661-1	X	Plug	N	4067
	225661-2	X	Plug	N	4066
628B	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	225661-1	X	Plug	N	4067
	225661-2	X	Plug	N	4066
657	**1-227169-0**		Blkhd. Jack	BNC	4032
	227169-4		Blkhd. Jack	BNC	4032
657A	**1-227169-0**		Blkhd. Jack	BNC	4032
	227169-4		Blkhd. Jack	BNC	4032
710	**225411-1**	X	Rt. Angle Plug	C	4077
	225411-2	X	Rt. Angle Plug	C	4077
710A	**225411-1**	X	Rt. Angle Plug	C	4077
	225411-2	X	Rt. Angle Plug	C	4077
909	**221313-1**		Blkhd. Jack	BNC	4031
909B	**221313-1**		Blkhd. Jack	BNC	4031
914	**221551-1**		Adapter	BNC	4040
932	**51426-2**	X	Plug	SHV	4079
	51426-5	X	Plug	SHV	4079
932A	**51426-2**	X	Plug	SHV	4079
	51426-5	X	Plug	SHV	4079
959	**1-221265-6**		Plug	BNC	4024
1033	**225395-9**	X	Plug	BNC	4021
1052	**225606-4**	X	Panel Jack	N	4072
1094	**228509-8**		Blkhd. Jack	BNC	4032
1094A	**228509-8**		Blkhd. Jack	BNC	4032
1095	**225606-4**	X	Panel Jack	N	4072
1095A	**225606-4**	X	Panel Jack	N	4072
1185	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	225661-1	X	Plug	N	4067
	225661-2	X	Plug	N	4066
1185A	**51692-1**	X	Plug	N	4067
	51692-2	X	Plug	N	4066
	225661-1	X	Plug	N	4067
	225661-2	X	Plug	N	4066
1186	**225093-1**	X	Jack	N	4069
	225093-2	X	Jack	N	4069
	225664-1	X	Jack	N	4069
	225664-2	X	Jack	N	4069
1187	**225089-1**	X	Panel Jack	N	4072
	225089-2	X	Panel Jack	N	4072
	225665-1	X	Panel Jack	N	4072
	225666-2	X	Panel Jack	N	4072
1460	**51749-2**	X	Plug	SMC	4114
1462	**51750-2**	X	Jack	SMC	4114
1463	**51751-2**	X	Blkhd. Jack	SMC	4114
1464	**227633-1**	X	Blkhd. Jack	SMC	4115
1465	**51749-1**	X	Plug	SMC	4114
1467	**51750-1**	X	Jack	SMC	4114
1468	**51751-1**	X	Blkhd. Jack	SMC	4114
1619	**227633-1**	X	Blkhd. Jack	SMC	4115

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Appendix F
Military Number to AMP Part Number Cross Reference

MIL Part No. M39012/	AMP Part No	Page No.
01B0007	51692-2	4066
01B0007	225092-2	4066
01B0008	51692-1	4067
01B0008	225092-1	4067
01B0012	225092-7	4066
01B0013	51692-4	4066
02B0008	225093-2	4069
02B0009	225093-1	4069
02B0016	225089-2	4072
02B0017	225089-1	4072
03B0004	225094-2	4070
03B0005	225094-1	4070
05B0002	225014-2	4068
05B0002	225389-2	4068
05B0003	225014-3	4068
05B0003	225389-4	4068
16B0004	2-331350-1	4021
16B0007	2-331350-9	4021
16B0008	331350	4021
16B0012	2-331350-3	4023
16-0101	221265-1	4024
16-0102	221265-2	4024
17B0004	2-331351-1	4026
17B0006	2-331351-8	4026
17B0008	225396-2	4026
17-0101	221295-1	4027
17-0102	221295-2	4027
18B0008	331694	4028
18-0101	221285-2	4028
18-0102	221285-1	4028
19B0003	1-225707-1	4030
19B0003	1-331693-1	4030
19B0004	1-331693-6	4030
19B0006	225707-6	4030
19B0006	1-331693-8	4030
19B0007	331693	4030
19-0101	221313-1	4031
19-0102	221323-2	4031
26B0005	225550-2	4050
26B0006	225550-6	4051
26B0007	222506-2	4051
26B0016	225550-1	4051
27B0005	225346-2	4055
27B0005	225551-2	4055
27B0006	225551-6	4055
27B0015	225551-5	4055
28B0016	225347-1	4057
29B0005	225348-2	4056
29B0006	225553-6	4056
55B3019	225532-4	4096
55B3021	225532-1	4096
55B3022	225532-3	4096
55B3023	1-225532-0	4096
55B3024	225532-9	4096
56B3019	225609-4	4097
56B3021	225609-1	4097
56B3022	225609-3	4097
56B3023	1-225609-0	4097
57B3019	225542-4	4097
57B3021	225542-1	4097
57B3022	225542-3	4097
59B3022	225608-3	4098
59B3024	225608-9	4098
79B3003	227868-3	4091
79B3103	227868-1	4091
79B3104	227743-1	4090
79-3207	228639-3	4091
79-3208	228634-3	4090
79-3307	228639-1	4091
79-3308	228634-1	4090
80-3207	228583-3	4092
80-3208	228626-3	4092
80-3307	228583-1	4092
80-3308	228626-1	4092
81B3003	227869-1	4093
81B3004	227744-1	4093
81-3207	228640-1	4093
81-3208	228636-1	4093
82B3003	227870-1	4094
82B3004	227745-1	4094
82-3207	228641-1	4094
82-3208	228637-1	4094
83B3003	227871-1	4093
83B3004	227746-1	4093
83-3207	228642-1	4093
83-3208	228638-1	4093
92B3101	227531-1	4090
92-3201	228635-3	4090
92-3301	228635-1	4090

The following is a list of technical documents covering the application, performance and maintenance of AMP RF connectors.

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

BNC Connectors -- Pages 4017 thru 4046

108-12002 – BNC Single Crimp Connectors
108-12020 – BNC Dual Crimp Connectors
108-12044 – BNC Commercial Hex Crimp
108-12047 – BNC Commercial and Hex Crimp Connectors
108-12075 – BNC Connectors (Category A)
108-12078 – BNC Commercial PCB Panel-Mount Jacks
108-12079 – BNC Commercial Solder Jacks
108-12090 – BNC Commercial T Adapter
108-12095 – BNC Commercial 75 Ohm Connectors
108-12096 – BNC Commercial Feed-Thru Adapter
108-12098 – BNC Commercial 75 Ohm Solder Receptacle
108-12103 – BNC Commercial PCB Press-Fit Jacks

TNC Connectors -- Pages 4047 thru 4063

108-12001 – TNC Connectors
108-12032 – TNC for Semi-Rigid Cable
108-12046 – TNC Commercial Plugs

N Connectors -- Pages 4064 thru 4074

108-12019 – N Coaxial Connectors
108-12056 – N Dual Crimp Commercial Plug
108-12072 – N 50 Ohm Terminator
108-12084 – N Solder Connector
108-12093 – N Semi-Rigid Cable Connector

C Connectors -- Pages 4075 thru 4077

108-12005 – C Coaxial Connector

SHV Connectors -- Pages 4078 thru 4080

108-12012 – Standard High Voltage Connector

UHF Connectors -- Pages 4081 thru 4087

108-12016 – UHF Connector
108-12034 – Miniature UHF Connector

SMA Connectors -- Pages 4088 thru 4102

108-12027 – SMA Connector for Flexible Cable
108-12055 – SMA Connector for Semi-Rigid Cable
108-12076 – SMA Phase Matching Connector
108-12098 – SMA Weatherproof Connector

Blind Mate Connectors -- Pages 4103 thru 4107

108-12106 – 3.5mm Blind Mate Connector

SMB Connectors -- Pages 4108 thru 4112

108-12058 – SMB Commercial Connector
108-12071 – SMB Solder Connector
108-12074 – SMB PC Board Connector

SMC Connectors -- Pages 4113 thru 4115

108-12030 – SMC Connector

Miniature Threaded Connectors -- Pages 4116 thru 4117

108-12013 – Miniature Threaded Connector

Twin BNC Connectors -- Pages 4118 thru 4121

108-12006 – Twin BNC Connector

Twin-Ax Connectors -- Pages 4122 thru 4125

108-12017 – Twin-Ax Connector
108-12050 – Twin-Ax Plug and Jack Connector
108-12053 – Twin-Ax Resistor Assembly

Twin Threaded Connectors -- Pages 4126 thru 4129

108-12015 – Twin Threaded Connector

Network/Premises Interconnect Products -- Pages 4130 thru 4138

108-1166 – Thinnet Tap System
108-12073 – Low Profile Coaxial Tap
108-12100 – N and BNC Connector Adapters

Multiple Coaxial Connectors and Contacts -- Pages 4139 thru 4156

108-12008 – Subminiature PC Board Socket
108-12011 – Subminiature Contact
108-12021 – Miniature Contact
108-12023 – Twin Standard Contact
108-12038 – M Series Connector with Miniature Contacts
108-12045 – ARINC Contact for RM or RME Connectors
108-12049 – Microminiature Contact
108-12077 – Size 8 Contact
108-12081 – Miniature PC Board Socket
108-12102 – Size 8 Contact (50 ohm)
108-12104 – ARINC Pin size 1 Contact

Application Specifications describe requirements for using the product in its intended application and or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

BNC Connectors -- Pages 4017 thru 4046

114-12001 – BNC Commercial PCB Jack Press-Fit

C Connectors -- Pages 4075 thru 4077

114-12008 – C Coaxial Connector

SHV Connectors -- Pages 4078 thru 4080

114-12013 – Coaxial High Voltage Connector

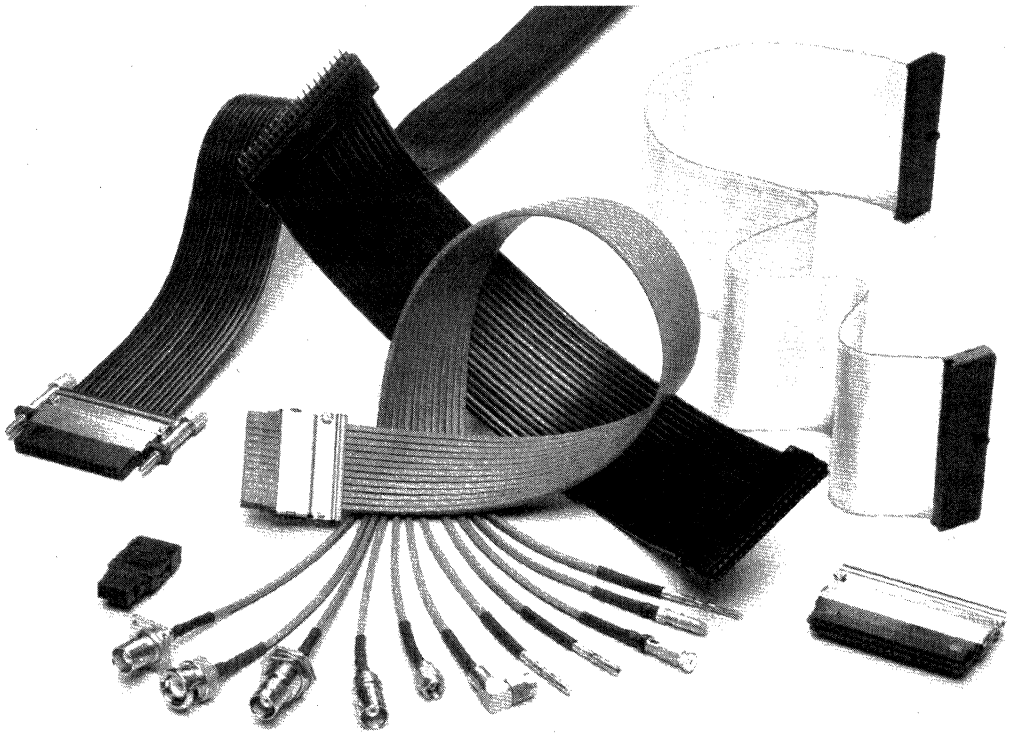
SMB Connectors -- Pages 4108 thru 4112

114-12015 – SMB Coaxial Connector

Instructional material covering operation, setup, maintenance, repair, etc. is included with each machine, tool or die set. If this material is required prior to receiving your tooling, call the AMP Customer Service hotline 1-800-722-1111 for the applicable document.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Multiple Transmission Cable Assemblies, Cable and Connectors



Speed in digital equipment has reached the point where cable shielding, low capacitance, low attenuation and impedance matching have become critical. Until now the use of transmission cable in volume applications was not economically feasible. With the introduction of AMP Coaxial Ribbon Cable Assemblies and Pro-G Cable Assemblies, the problems of economics are eliminated. This presents a major breakthrough in interconnection technology. AMP Coaxial Ribbon Cable Systems can be supplied as individual components (connector kits and application tooling) or as preassembled custom cable assemblies. AMP Pro-G Cable Assemblies are supplied as prefabricated custom assemblies only.

Recognized under the Component Recognition Program of Underwriters Laboratories Inc. Electrical File E28476 (Coaxial Ribbon Connectors). E53799 (Coaxial Ribbon Cable Assemblies) and UL Style 2741 (Coaxial Ribbon Cable).

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

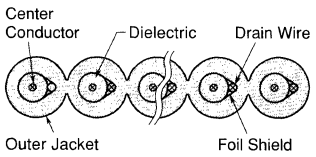
Metric symbols used are:

mm	(millimeter)
m	(meter)
mm^2	(square millimeter)
N	(newton)

Multiple Transmission Cable Assemblies, Cable and Connectors

Coaxial Ribbon Cables

AMP Coaxial Ribbon Cable consists of individual coaxial cables encased in a PVC jacket making up a standard flat ribbon cable configuration. Each coaxial lead has a solid center conductor and a foil shield with a drain wire. This unique construction allows the cable to be cut in any length, maintaining the exact positioning of the center conductor and drain wire.



Through the use of stripping and terminating equipment, all conductors are stripped simultaneously and mass terminated. On the receptacle connector, the signal conductors are terminated on one side of the connector and the drain wires are attached to the opposite side. These operations generally reduce assembly time, damage and overall applied cost. Coaxial ribbon cable assemblies are available in 50, 75 and 93 ohm designs, in widths from 4 to 25 positions.

Coaxial Receptacle Connectors

The multiposition AMP Coaxial Ribbon Cable Receptacle Connectors are available in standard, detent latching, positive locking and mounting flanged designs with 4 through 25 position configurations. Present designs accept 50, 75 and 93 ohm coaxial ribbon cable on .100 [2.54] centerlines. Various styles of pin headers are available to mate with all receptacle connectors. These connectors can be purchased in kit form or as part of custom-built cable assemblies. A low-profile version can be ordered as part of a custom cable assembly.

Discrete Contacts and Connectors

AMP COAXICON RF Connectors and Contacts allow the flexibility of discrete coaxial terminations combined with mass cable terminations, wherever desirable.

Custom Ribbon Cable Assemblies

Complete Coaxial Ribbon Cable Assemblies terminated to receptacles and/or discrete connectors and contacts are custom fabricated using 50, 75 and 93 ohm coaxial ribbon cables and are provided in a choice of lengths from 4 in. [101.6 mm] to 300 ft. [91.44 m]. All conductors are on .100 [2.54] centerlines for maximum space savings.

Application Tooling for Coaxial Ribbon Cables

Mass termination tooling is available to terminate the receptacles. Hand tools are available for discrete connector terminations.

AMP Pro-G Transmission Cable Assemblies

AMP Pro-G Transmission Cable Assemblies with programmed grounds include features to provide economy and reliability for made-to-order applications.

Cables are assembled with AMP Pro-G Receptacles in 10, 20, 26, 34, 40 and 50 positions to mate with a double row of posts on .100 × .100 [2.54 × 2.54] grid or with ejection style pin headers.

These custom made cable assemblies allow users the convenience of specifying the precise length and type of cable, number of lines, location of desired grounds, orientation of receptacle ends in relation to each other, ability to daisy chain and polarization if needed.

Special features of receptacles used on these cable assemblies include a common ground buss; gold over nickel plating on signal contacts and tin plated ground buss for reliability; flame retardant, glass-filled thermoplastic housing with a 94V-O rating and two gold plated spring members at each position for redundant contact.

Each cable assembly provided by AMP is checked for continuity, shorts and inspected for conformity to customer specifications. These custom cable assemblies provide the convenience and economy of preassembly and use high quality components. AMP Pro-G Transmission Cable Assemblies are a logical choice for applications requiring 50, 75, 90 or 95 ohm transmission cable interconnection.

Technical Documents

Instruction Sheets

(Coaxial Ribbon Cable Systems):

IS 2577—Application Procedure

IS 9071—Tooling for Coaxial Receptacles

Product Specifications:

108-12036—Coaxial Ribbon Cable Systems

108-12088—Pro-G Receptacles and Lead Assemblies

Qualification Test Report (Coaxial Ribbon Cable):

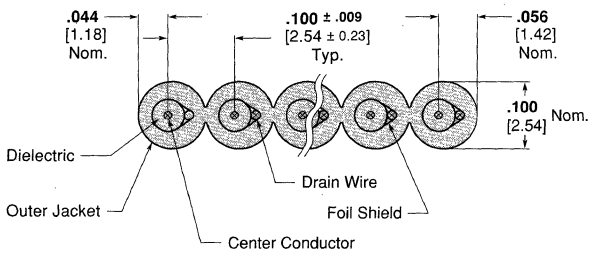
110-12025

Coaxial Ribbon Cable
50, 75 and 93 ohms

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Cable Cross-Section



Specifications

Properties	50 ohms	75 ohms	93 ohms
Electrical			
Impedance	50 ± 3 ohms	75 ± 4 ohms	93 ± 5 ohms
Capacitance	31 pf/ft. [304.8] nom.	17 pf/ft. [304.8] nom.	14 pf/ft. [304.8] nom.
Crosstalk Constant[1] (Adjacent Pair)	Far End 2% Near End 4%	Far End 2% Near End 4%	Far End 2% Near End 4%
Crosstalk Constant[1] (All Other Lines)	Far End 0% Near End 0%	Far End 0% Near End 0%	Far End 0% Near End 0%
Propagation Display	<1.6 ns/ft. [304.8]	<1.35 ns/ft. [304.8]	<1.35 ns/ft. [304.8]
Risetime Degradation (20–80% level)	<400 ps/10 ft. [3.05 m]	<350 ps/10 ft. [3.05 m]	<350 ps/10 ft. [3.05 m]
Attenuation (at 100 MHz)	<14 dB/100 ft. [30.48 m]	<10 dB/100 ft.[30.48 m]	<9 dB/100 ft. [30.48 m]
Mechanical			
Center Conductor	28 AWG [0.08–0.09 mm^2] Cu	30 AWG [0.05 mm^2] Cu	30 AWG [0.05 mm^2] Cu
Insulation Coating	Alkyd Enamel	Alkyd Enamel	Alkyd Enamel
Dielectric	Polypropylene	Foamed Polypropylene	Foamed Polypropylene
Dielectric Constant	2.3 nom.	1.6 nom.	1.6 nom.
Diameter	.041 [1.04] nom.	.048 [1.22] nom.	.064 [1.63] nom.
Shield	Al Mylar Foil .00135 [0.03429] Thk.	Al Mylar Foil .00135 [0.03429] Thk.	Al Mylar Foil .00135 [0.03429] Thk.
Drain Conductor	28 or 30 AWG [0.09–0.05] mm^2 Tin Plated Cu	28 or 30 AWG [0.09–0.05] mm^2 Tin Plated Cu	30 AWG [0.05] mm^2 Tin Plated Cu
Jacket	PVC (Fr)	PVC (Fr)	PVC (Fr)
Color per EIA STD RS-359	Black	Gray	Red
Centerline Spacing	.100 [2.54]	.100 [2.54]	.100 [2.54]

[1] Terminated cable assembly

Special Cable Requirements: If special requirements such as high speed, greater shielding effectiveness and ruggedized cable are required, contact AMP Incorporated, Harrisburg, PA.

Coaxial Ribbon Cable Receptacle Connector Kits and Custom Cable Assemblies

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMP Receptacle Connector Kits are available individually or may be purchased as part of a custom made cable assembly.

Receptacle connectors are available to accept 50, 75 and 93 ohm coaxial ribbon cables shown on page 4166.These connectors may be used in conjunction with the discrete coaxial connectors and contacts shown on page 4170 to form made-to-order cable assemblies.

When ordering cable assemblies using receptacle connectors, be sure to specify preferred orientation of signals and grounds. Standard termination consists of connectors oriented with signal side up on one end and ground side up on the opposite end. If specified, signal side can be oriented up on both ends (i.e. crossover termination).

Material and Finish

Housing—Black thermoplastic, 94V-0 Rated

Contacts—Beryllium copper with.000030 [0.00076] select gold plate in contact area over .000030 [0.00076] nickel plate.

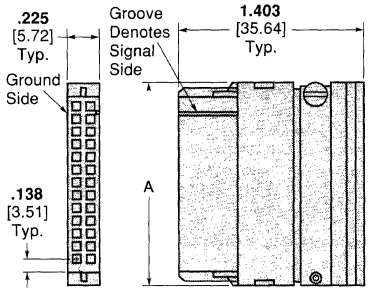
Related Product Data

Related Product Data Standard, Positive Lock and Mounting Flange Receptacles mates with — AMP-LATCH Universal Ejection Headers, see Catalog 82012

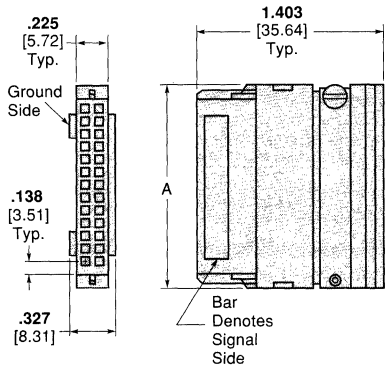
Detent Latch Receptacles mate with — AMPMODU Shrouded Double Row Headers, see Catalog 82187

Cable Assembly Proposal and Ordering Forms — pages 4174 thru 4176

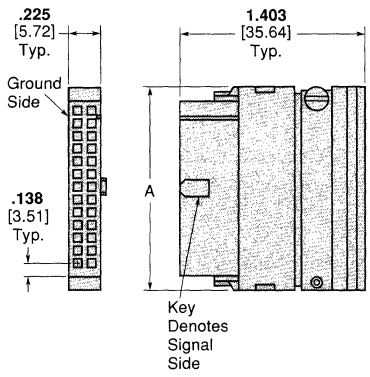
Mounting Hardware — page 4171



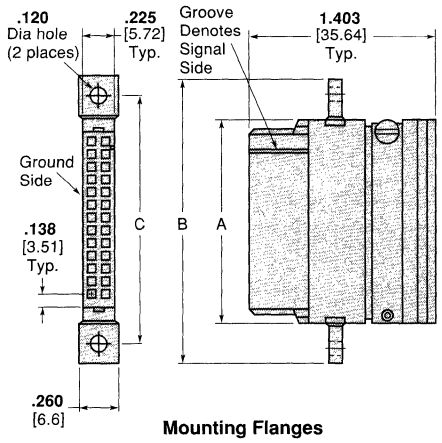
Standard



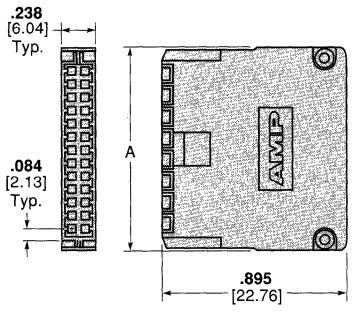
Detent Latching



Positive Locking



Mounting Flanges



Low Profile

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Receptacle Connector Kits

No. of Coaxial Pos.	Dimensions			Connector Kit Part Numbers[1]				Strain Relief Clamps		Crimper Assembly[2] for Tool No. 220144-1[4]
	A	B	C	Standard	Detent Latching	Positive Locking	Mounting Flanges[3]	Plastic	Metal	
4	**.686** 17.42	—	—	226634-1	226733-1	221327-1	—	X	—	220155-4
5	**.786** 19.96	**1.426** 36.22	**1.102** 27.99	226633-1	226733-2	221327-2[4]	226651-5	X	—	220155-5
6	**.886** 22.50	**1.526** 38.76	**1.202** 30.53	226530-1	226733-3	221327-3[4]	226651-6	X	—	220155-6
7	**.986** 24.94	**1.626** 41.30	**1.302** 33.07	—	226733-4	—	—	X	—	220155-7
8	**1.086** 27.58	**1.726** 43.84	**1.402** 35.61	—	226733-5	—	226651-8	X	—	220155-8
10	**1.286** 32.66	**1.926** 48.92	**1.602** 40.69	226476-1	226733-7	221327-4	1-226651-0	—	X	1-220155-0
13	**1.586** 40.28	**2.226** 56.54	**1.902** 48.31	226477-1	1-226733-0	221327-5	1-226651-3	—	X	1-220155-3
16	**1.886** 47.90	—	—	—	1-226733-3	—	—	—	X	1-220155-6
17	**1.986** 50.44	**2.626** 66.70	**2.302** 58.47	226478-1	1-226733-4	221327-6	1-226651-7	—	X	1-220155-7
20	**2.286** 58.06	**2.926** 74.32	**2.602** 66.09	226305-1	1-226733-7	221327-7	2-226651-0	—	X	2-220155-0
25	**2.786** 70.76	**3.426** 87.02	**3.102** 78.79	226479-1	2-226733-2	221327-8	2-226651-5	—	X	2-220155-5

1 Connector Kit includes: receptacle loaded with contacts, 2 cable strain relief clamps with foam insulators (screws are included with metal clamps).
2 Crimper assembly includes dies and comb.
3 See page 4171 for mounting hardware.
4 Minimum quantity order may be required.
Note: Keying plug (for all receptacles) is available, order Part Number 86286-1.

Receptacle Tool

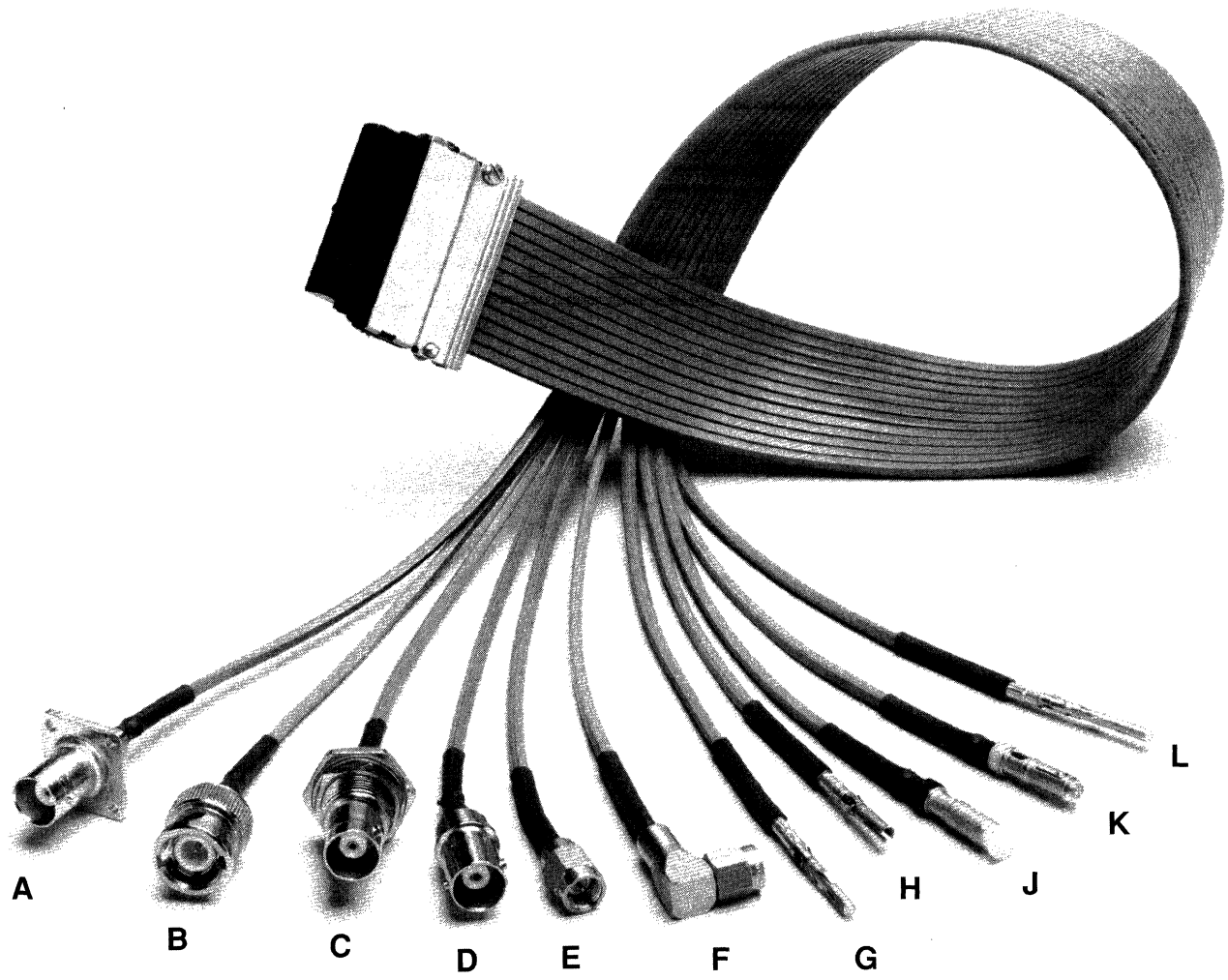
This hand operated application tool is used to terminate coaxial ribbon cable to AMP Coaxial Ribbon Cable Receptacle Connectors. In addition, each size connector requires a corresponding crimper assembly. See above chart for proper crimper assembly sizes and part numbers.

For termination and stripping information request AMP Instruction Sheet IS 2577.

Part No. 220144-1

Discrete COAXICON RF Connectors and Contacts for use with Custom Cable Assemblies

Specifications subject to change.
For latest design specifications...
1-800-522-6752



The photograph above illustrates the versatility of the AMP coaxial ribbon cable system. The ability to terminate discrete coaxial connectors permits the system to mate with existing interfaces, while allowing mass termination and high package density wherever desirable.

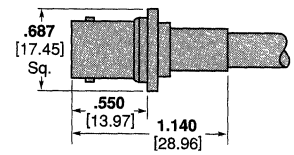
Custom cable assemblies using combinations of these products in conjunction with AMP receptacle connectors (page 4167 and 4168) can be fabricated to customer specifications. Discrete RF connectors other than those shown here may be utilized with the AMP coaxial ribbon cable system. Contact AMP Incorporated, Harrisburg, PA for additional information.

Note: See page 4175 for custom cable assembly proposal and ordering form.

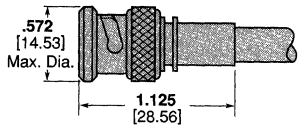
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

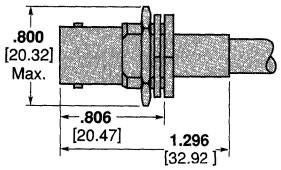
A-BNC Panel Jack



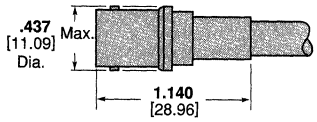
B-BNC Plug



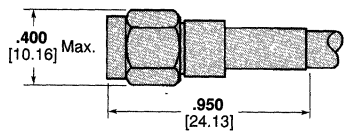
C-BNC Bulkhead Jack



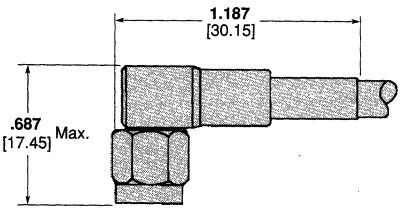
D-BNC Jack



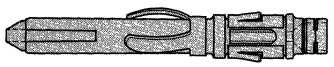
E-SMA Plug



F-SMA Right Angle Plug

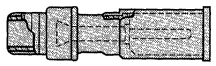


G-Subminiature Pin

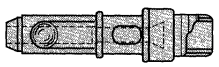


H-Subminiature Socket

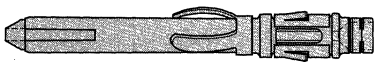
J-Miniature Socket



K-Miniature Pin



L-Multimate Pin



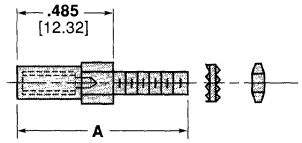
Note: For more information pertaining to Discrete COAXICON RF Connectors and Contacts, refer to catalog 82074.

Accessory Hardware (Jackscrews)

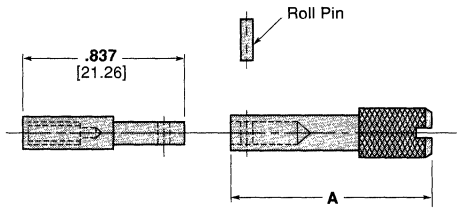
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

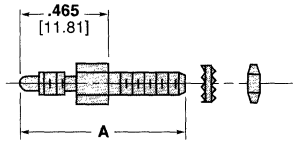
These jackscrews are recommended for mounting AMP Coaxial Ribbon Cable Receptacles and mating headers with mounting flanges.



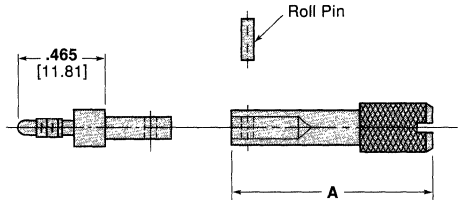
Fixed Female



Turnable Female



Fixed Male



Turnable Male

Type	Dimension A		Part Number
	inch	mm	
Fixed Male	.812	20.62	226790-1
Fixed Female	.840	21.34	200875-1
Turnable Male	1.098	27.89	226654-2
Turnable Female	1.098	27.89	226655-1

For **drawings, technical data or samples,** contact your AMP sales engineer or call the AMP Product Information Center **1-800-522-6752.**

Pro-G Receptacle Cable Assemblies

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

AMP Pro-G Receptacle Cable Assemblies are custom fabricated to customer specifications.

Materials

Cover, Strain Relief and Body—
Black thermoplastic, flame retardant

Contact—
Phosphor Bronze with .000030 [0.00076] gold over .000030 [0.00076] nickel

Ground Buss—
Phosphor bronze with .000100/.000200 [0.0025/0.0051] tin

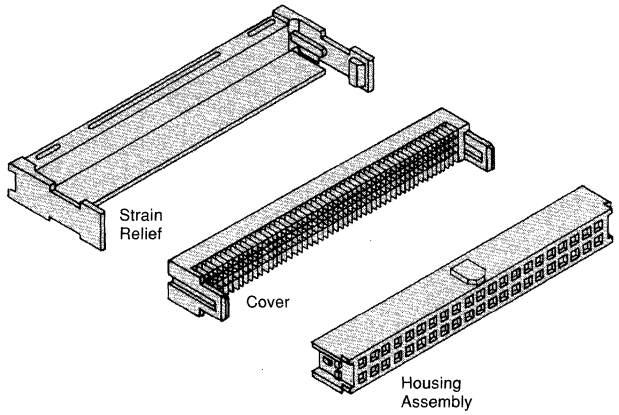
Related Product Data

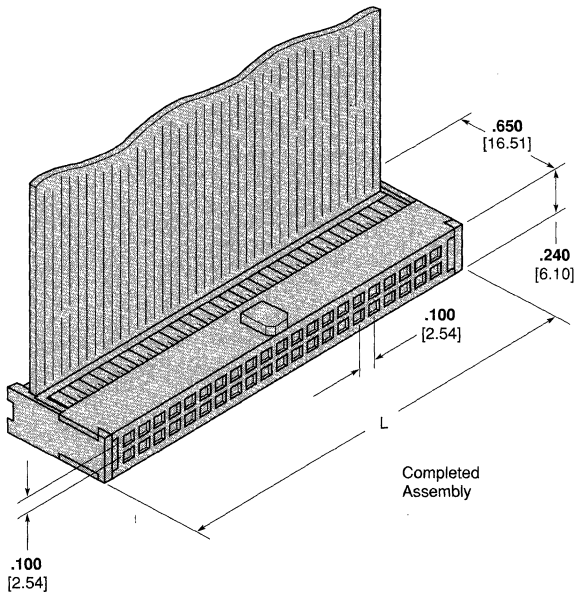
Mates with - Specific eject style headers having a .576 [14.63] latch height - contact AMP Incorporated

Custom cable assembly proposal and ordering forms - page 4176

Product Facts

- All grounds commoned to common buss.
- Signal contacts plated with gold over nickel.
- Flame retardant housing meets UL 94V-0 rating.
- Connector provides cable strain relief to 35 lbs. [155.7 N] min.
- Assemblies available in desired lengths with 50, 75, 90 and 95 ohm ribbon transmission cables with signal conductors on .050 [1.27] centers.
- Connectors mate with .025 × .025 [0.64 × 0.64] square or .028 [0.71] round posts on .100 × .100 [2.54 × 2.54] grid or comparable headers.
- All assemblies are inspected and continuity checked.
- Polarization, pull cords and keying plugs are available.
- Ability to daisy chain





Number of Positions	Connector Length L
10	**.680** 17.27
20	**1.180** 29.97
26	**1.480** 37.59
34	**1.880** 47.75
40	**2.180** 55.37
50	**2.680** 68.07

Note: Mating pin length range is .180–.250 [4.57–6.35]

For **drawings, technical data or samples,** contact your AMP sales engineer or call the AMP Product Information Center **1-800-522-6752.**

Mechanical Characteristics

Mating Force—
8 ounces [2.22 N] per contact, max.

Unmating Force—
1.5 ounces [0.42 N] per contact, min.

Vibration Tolerance—
10 G's, 10–5000 Hz

Physical Shock—
100 G's, 6 milliseconds

Electrical Characteristics

Current Rating—
1.0 ampere per contact, max. (unless limited by cable conductor size)

Termination Resistance—
25 milliohms per contact, max.

Insulation Resistance—
5000 megohms, min.

Dielectric Withstanding Voltage—
500 volts RMS (sea level)

Environmental Characteristics

Operating Temperature—
–65°C to +105°C

Thermal Shock Tolerance—
–65°C to +105°C, 5 cycles, min.

Humidity—
25°C to 65°C, 80% to 98% relative humidity, 10 days min.

Sulphur Dioxide Tolerance—
10%, 24 hours, min.

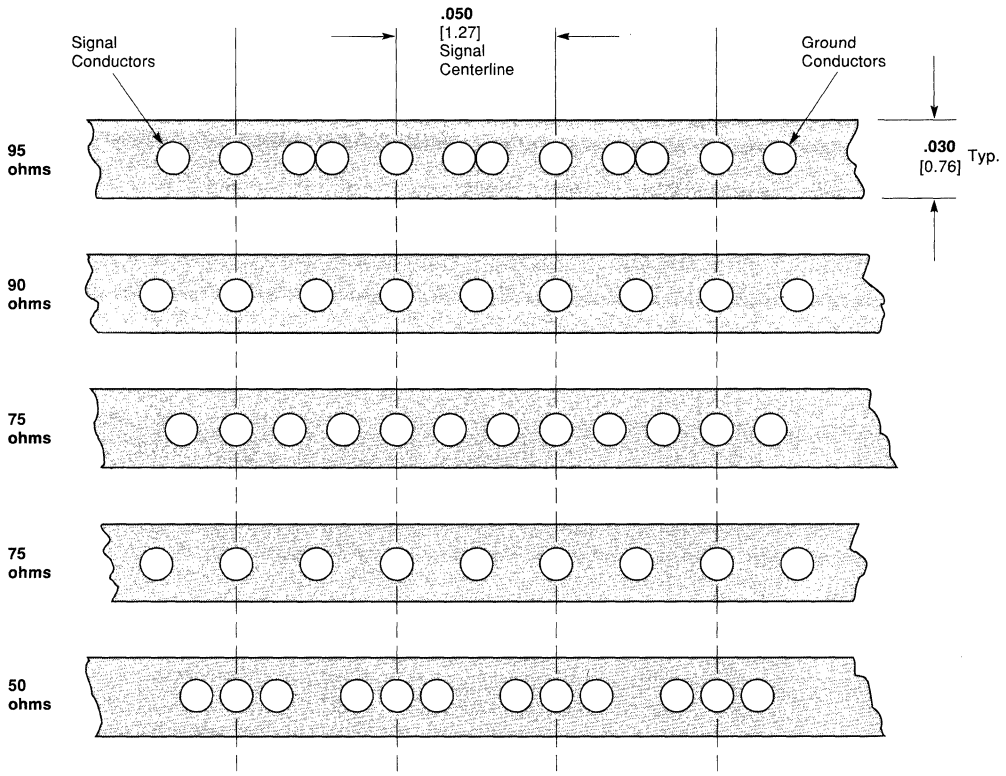
Pro-G Receptacle Cable Assemblies

(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Typical Designs of Transmission Cables Employable in AMP Pro-G Transmission Cable Assemblies



Transmission Cable Wire Gauges

Impedance (ohms)	Signal Conductors	Ground Conductors (numbers)	Insulation
95	33 AWG [.03 mm²]	33 AWG [.03 mm²](2)	PTFE
90	32 AWG [.03 mm²]	32 AWG [.03 mm²](1)	PVC
75	32 AWG [.03 mm²]	30 AWG [.05 mm²](2)	PTFE
75	30 AWG [.05 mm²]	30 AWG [.05 mm²](1)	PVC
50	30 AWG [.05 mm²]	30 AWG [.05 mm²](2)	FEP

For **drawings, technical data or samples,** contact your AMP sales engineer or call the AMP Product Information Center **1-800-522-6752.**

Custom Coaxial Ribbon Cable Assemblies Proposal and Ordering Form

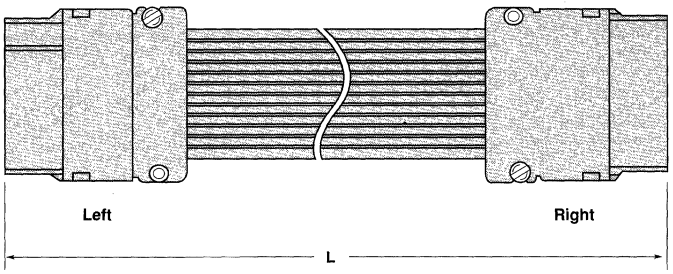
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Receptacle Connector Assemblies

Related Product Data

Cable Information — page 4166
Receptacle Connector Kit — pages 4167 and 4168

☐ Proposal Only ☐ Sample ☐ Order



Potential Usage:

Initial:

Estimated Annual Usage:

Customer:

Customer Phone No.:

Customer Address:

Ship To:

AMP Sales Engineer:

Delivery Date Required:

Cable Impedance	☐ 50 Ohms	☐ 75 Ohms	☐ 93 Ohms
Number of Coaxial Conductors (2-25)			
Overall Length (L)			
Connector Syle	Left End	Right End	
Standard	☐	☐	
Detent Latching	☐	☐	
Positive Locking	☐	☐	
Mounting Flanges	☐	☐	
Low Profile[1]			
Polarity			
☐ Standard (signal side up on left end and ground side up on right end)			
☐ Crossover (signal side up on both ends)			

[1] Contact AMP Inc. for proposal and ordering details

Custom Coaxial Ribbon Cable Assemblies Proposal and Ordering Form

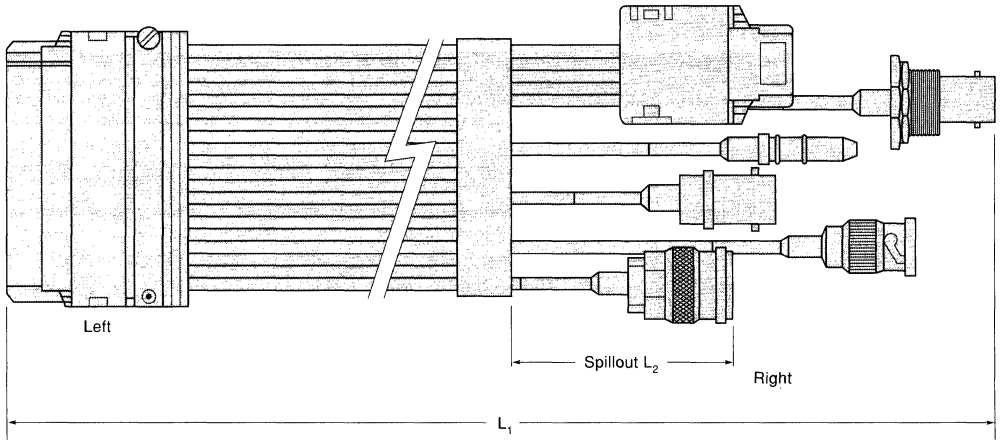
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Discrete RF Connector and Contact Assemblies

Related Product Data

Cable Information — page 4166
Discrete Connector and Contact — page 4169
Receptacle Connector Kit — pages 4167 and 4168

☐ Proposal Only ☐ Sample ☐ Order



Cable Impedance		☐ 50 Ohms ☐ 75 Ohms ☐ 93 Ohms	
Number of Coaxial Conductors (2-25)			
Overall Length (L1)			
Splitout Length (L2)			
Connector Style			Left End
	Standard		☐
	Detent Latching		☐
	Positive Locking		☐
	Mounting Flanges		☐
	Low Profile[1]		☐
Discrete Connectors			Right End
	BNC:	Plug	☐
		Cable Jack	☐
		Panel Jack	☐
		Bulkhead Jack	☐
	SMA:	Plug	☐
		Right Angle Plug	☐
Discrete Contacts			Right End
	Subminiature:	Multimate Pin	☐
		Short Pin	☐
		Socket	☐
	Miniature:	Pin	☐
		Socket	☐
	Standard	Pin	☐
		Socket	☐

[1] Contact AMP Inc. for proposal and ordering details

Potential Usage:

Initial:

Estimated Annual Usage:

Customer:

Customer Phone No.:

Customer Address:

Ship To:

AMP Sales Engineer:

Delivery Date Required:

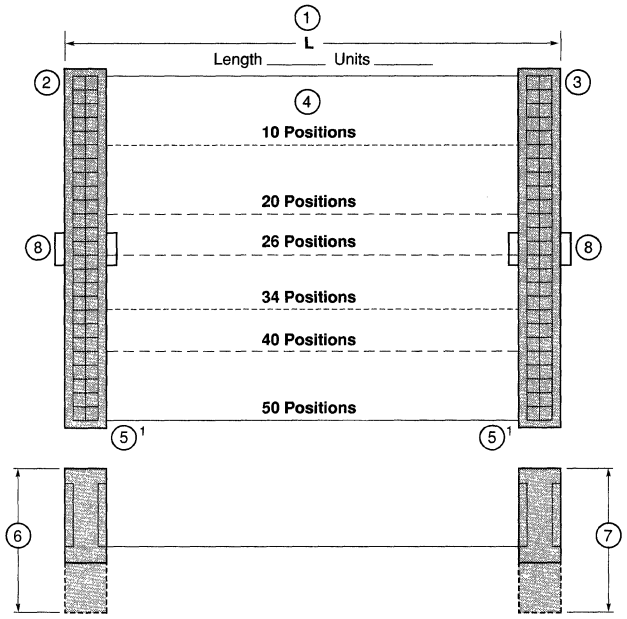
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Custom Pro-G Receptacle Cable Assemblies Proposal and Ordering Form

Related Product Data

Receptacle Connector and Transmission Cable— pages 4172 and 4173

☐ Proposal Only ☐ Sample ☐ Order



Potential Usage:

Initial:

Estimated Annual Usage:

Customer:

Customer Phone No.:

Customer Address:

Ship To:

AMP Sales Engineer:

Delivery Date Required:

Numbers 1–8 refer to diagram above:

1 Specify length (L) and units.

2 Designate which cavity is to be characterized number 1 by drawing an arrow to the cavity.

3 Designate which cavity is to be characterized number 1 by drawing an arrow to the cavity.

4 Circle the number of positions desired.

5 Mark with an (X) the cavities which are to be commoned to the ground buss.

6 Circle the end of the arrow pointing in the direction of the mounting face.

7 Circle the end of the arrow pointing in the direction of the mounting face.

8 Should the connectors be polarized? ☐ Yes ☐ No
If yes, darken the center of the polarizing key on the side where it should be positioned (one key on each connector).

Are connector pull cords required? ☐ Yes ☐ No

Cable Impedance

Conductor Sizes:

Signal

Ground

Total Number of Signal Conductors

Type of Insulation ☐ TEFLON ☐ PVC

Cable Vendor Preference

Cable Vendor's Part Number

[1] When mating face of connector is up, ground positions are identified from mating face of connector. When mating face of connector is down, ground positions are identified from the back of the connector.

5

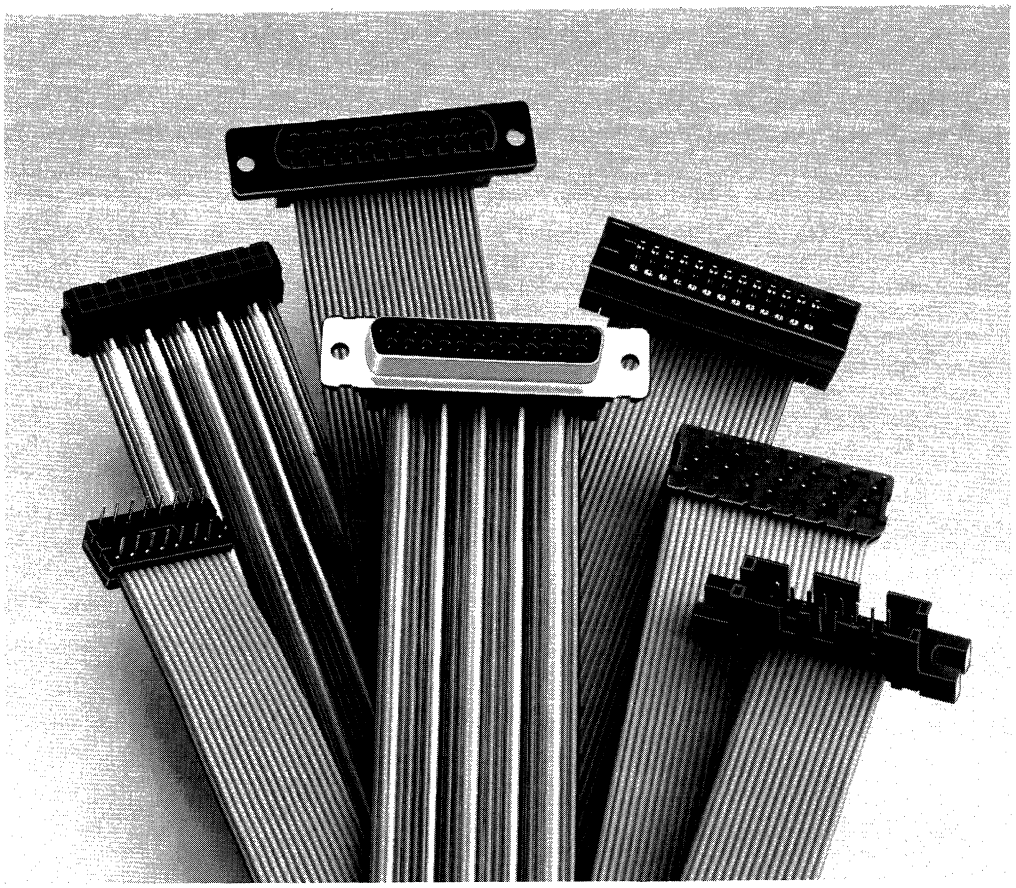
AMP Ribbon and Flat Cable Connectors

**Qualified AMP Products for Military Applications are summarized on page 2.*
For information on Custom High Performance Cable Assemblies see page 3.
Note: See sections 3, 7 and 9 for additional PC Board Connectors.

AMP-LATCH Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches



The mass-termination capabilities of the AMP-LATCH family of connectors have helped make ribbon cable and particularly .050-inch centerline cables popular with the industry. The ability to terminate up to 64 conductors simultaneously, without stripping or otherwise preparing the cable, presents obvious labor savings.

AMP-LATCH connectors are wire-to-board devices used to make the transition between cable and pc board circuitry. They find heavy use within equipment to connect one board to another or one subsystem to another. The connectors are also used in input/output applications, connecting different pieces of equipment.

The AMP-LATCH line of connectors consists of five main types of connectors:

- Receptacle connectors
- Pc board headers
- Pin connectors
- DIP plugs
- Card edge connectors

Receptacles feature two rows of contacts on .100 x .100-inch centers on selected sizes of 10 through 64 positions. Contacts mate with .025-inch square or round posts. Receptacles are available in two main versions: standard, using box-like receptacle design, and Novo, using a tuning-fork design. The Novo tuning-fork contact offers higher normal forces, a military-approved design, and a lower cost. Polarization options include dual, military, and center and military.

Universal Eject Headers accept all types of polarized connectors; each header is center, dual, and military polarized (by adding snap-in polarizers). Headers have an eject feature that provides a quick release for receptacles. Headers use .025-inch square posts with a choice of solder-post lengths of .110 or .155 inch. Also available are versions, which use compliant, press-fit ACTION PIN posts for solderless application to plated-through holes. Recent additions to the line include a high-temperature product, that can be processed with surface mount components, and a stacked right-angle connector.

Pin Connectors feature .025-inch round pins that mate, not only with AMP-LATCH receptacles, but with many other connectors using .025-inch-post compatible receptacles. They are offered with or without slotted mounting flanges or with 4-40 threaded inserts for bulkhead mounting. Their polarizing features match those of Novo receptacles. A dual version with detents offers high retention when mated with the comparable standard receptacle.

DIP (Dual In-line Package) Plugs provide a permanent connection of ribbon cable to a pc board or mating to DIP sockets. Using the same centerline dimensions as DIP integrated circuits, AMP-LATCH DIP plugs offer space efficiency and a very low profile of .253 inch.

Card Edge Connectors plug into the edge of double-sided pc boards having a nominal thickness of .062 inch. They are available without mounting ears, with round-hole mounting ears, or with slotted mounting ears in 10 through 64 positions.

Electrical Characteristics

Contact Current Rating:
1 ampere (continuous)

Operating Temperature:
-55°C to +105°C

Dielectric Withstanding Voltage:
Receptacles (all) — 500 volts, RMS
Card Edge Connectors — 1000 volts, RMS
DIP Plugs — 500 volts, RMS
Paddle Board Connectors — 500 volts, RMS
Pin Connectors — 500 volts, RMS
Ejection Style Pin Headers (all) — 1000 volts, RMS
Ribbon Cable — 2000 volts, RMS

Numerical values

To convert U. S. customary unit values in this catalog to their metric equivalents, use the following formulas:

To convert from	to	Multiply by
inch	millimetre (mm)	2.540 000 x 10
inch	metre (m)	2.540 000 x 10^{2}
inch	centimetre (cm)	2.540 000
foot	metre (m)	3.048 000 x 10^{1}
pound-mass	kilogram (kg)	4.535 924 x 10^{1}
ounce-mass	kilogram (kg)	2.834 952 x 10^{2}

To convert wire size (AWG) to the equivalent metric value using the circular mil area of the wire, use the following formula:
circular mil area (CMA)/1550.003 = square millimetre (mm^2)

Novo Receptacles .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Preassembled Receptacle and Optional Strain Relief

Material and Finish:

Housing, Cover and Strain Relief– Black thermoplastic, 94V-0 rated

Contacts - Phosphor bronze, duplex plated (See chart, page 5005)

Related Product Data:

Electrical Characteristics - page 5003

Mateable Pin Headers:
Universal - pages 5016 through 5019
High Temperature - page 5021
Stacked - page 5022

Mateable Pinless Headers - page 5020

Ribbon Cable - page 5029

Accessories:
Pull Tab - page 5030

Application Tooling - page 5032

Technical Documents - page 5034

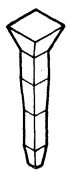
Contacts mate with .025 sq. or round pins with .245 max. and .195 min. lengths

Other sizes are available. Contact AMP Incorporated, Harrisburg, PA 17105

Keying Plug

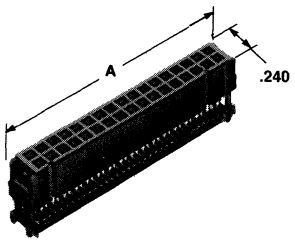
Material: Black thermoplastic, 94V-0 rated

Part No. 499712-1

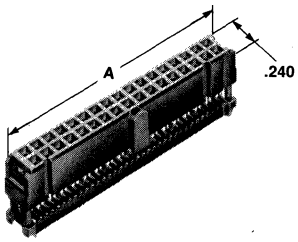


(Plugs into Contact)

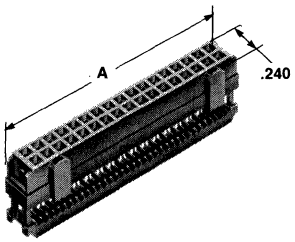
Military Polarized*



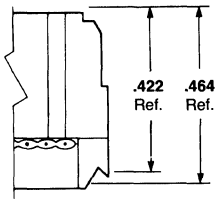
Center and Military Polarized**



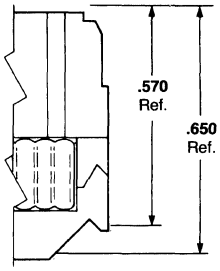
Dual Polarized



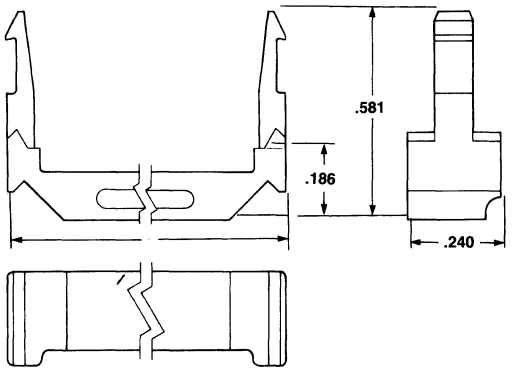
*These receptacles can be used in applications requiring non-polarization, as well as military polarization.
**These receptacles must be used in applications requiring center polarization



Terminated with Recessed Cover



Terminated with Recessed Cover and Strain Relief



Strain Relief

No. of Pos.	Dimension A	Strain Relief Part No.
10	.680	499252-5
14	.880	499252-9
16	.980	499252-8
20	1.180	499252-2
24	1.380	1-499252-0
26	1.480	499252-3
30	1.680	1-499252-2
34	1.880	499252-6
40	2.180	499252-1
50	2.680	499252-4
60	3.180	499252-7
64	3.380	1-499252-3

Ordering Information

When ordering a receptacle, use the "Base Part Number" chart to determine the 6-digit base no. for the desired contact plating and polarization.

Then, complete the part no. by adding the proper suffix or prefix/suffix for the desired size. The prefix/suffix nos. for all available sizes (10 through 64 positions) are listed in the "Prefixes and Suffixes" Chart.

Base Part Numbers

Military Polarized

Contact Plating	Base Part No.
Duplex[1]	499997
Duplex[2]	746290
Tin[3]	746291

Center and Military Polarized

Duplex[1]	746285
Duplex[2]	746288
Tin[3]	746286

Dual Polarization

Duplex[1]	746294
Duplex[2]	746292
Tin[3]	746293

[1] .000015 gold on post/pin mating end, .000100-.000200 bright tin-lead on termination end, with entire contact underplated .000050 nickel.

[2] .000030 gold on post/pin mating end, .000100-.000200 bright tin-lead on termination end, with entire contact underplated .000050 nickel.

[3] .000100-.000200 bright tin-lead over .000050 nickel on entire contact.

Note: These receptacles are preassembled and are available with or without strain reliefs. Strain reliefs may be purchased separately using the component part nos. listed.

Prefixes and Suffixes

No. of Pos.	Dimension A	Add to Base Part No.	
		Prefix	Suffix
10	.680		-1
14	.880		-2
16	.980		-3
20	1.180		-4
24	1.380		-5
26	1.480		-6
30	1.680		-7
34	1.880		-8
40	2.180		-9
50	2.680	1-	-0
60	3.180	1-	-1
64	3.380	1-	-2

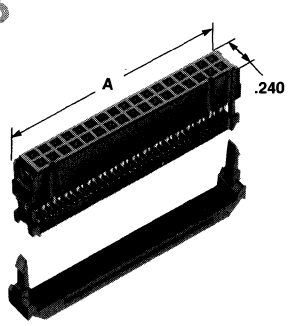
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Novo Receptacles, Military Polarized .100 x .100 Centers (MIL-C-83503 Qualified)

QUALIFIED
MIL-C-83503

Preassembled Receptacle with Recessed Cover and Strain Relief



Material and Finish:

Housing, Cover and Strain Relief – Black thermoplastic, 94V-0 rated

Contacts – Phosphor bronze, duplex plated .000050 gold on post/pin mating end, .000180 min. bright tin-lead on termination end, with entire contact underplated .000050 nickel

Related Product Data:

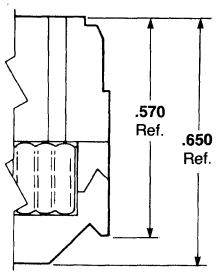
Electrical Characteristics - page 5003

Accessories:
Pull Tab - page 5030

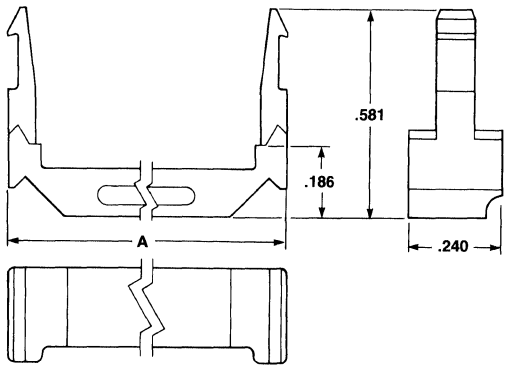
Application Tooling - page 5032

Technical Documents - page 5034

Contacts mate with .025 sq. or round pins with .245 max. and .195 min. lengths



Terminated with Recessed Cover and Strain Relief



Strain Relief

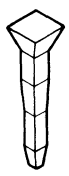
No. of Pos.	Dimension A	Preassembled Receptacle Military Part No. (M83503/)	Preassembled Receptacle AMP Part No.
10	.680	7-01	499485-1
14	.880	7-02	499485-2
16	.980	7-03	499485-3
20	1.180	7-04	499485-4
24	1.380	7-05	499485-5
26	1.480	7-06	499485-6
30	1.680	7-07	499485-7
34	1.880	7-08	499485-8
40	2.180	7-09	499485-9
50	2.680	7-10	1-499485-0
60	3.180	7-11	1-499485-1
64	3.380	7-12	1-499485-2

Note: These receptacles include a housing assembly, a recessed cover (preassembled) and a strain relief.

Keying Plug

Material: Black thermoplastic, 94V-0 rated

Part No. 499712-1



(Plugs into Contact)

Stackable Novo Receptacles with .190 Wide Covers .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

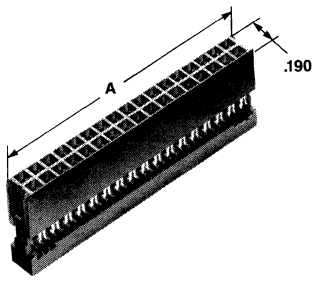
Preassembled Receptacle with Cover

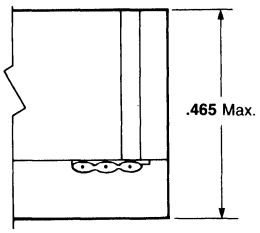
Material and Finish:
Housing and Cover – Black thermoplastic, 94V-0 rated
Contacts – Phosphor bronze, duplex plated (see chart)

Related Product Data:
Electrical Characteristics - page 5003
Mateable Connectors:
AMP-HDI Connectors - AMP Catalog 82079
Mateable Pin Headers:
Universal (Use without Latches) - pages 5016 through 5019
High Temperature - page 5021
Stacked - page 5022
Mateable Pinless Headers:
(Use without Latches) - page 5020
Ribbon Cable - page 5029
Application Tooling - page 5032
Technical Documents - page 5034

Contacts mate with .025 sq. or round pins with .245 max. and .195 min. lengths

*Mates with any AMP-HDI 4-Row Pin Assembly with post length of .533



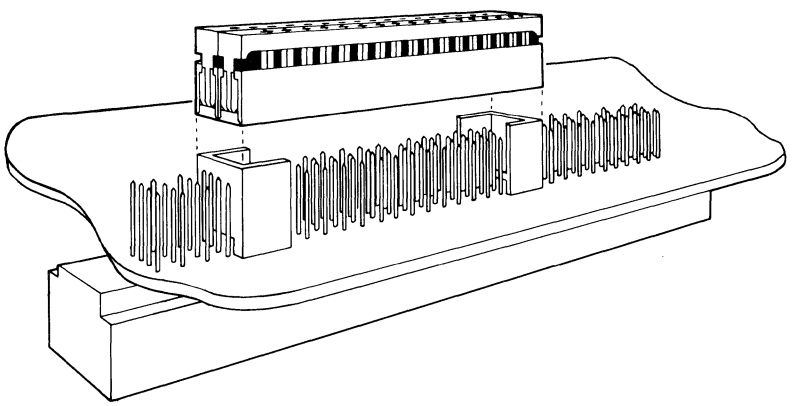


Terminated

No. of Pos	Dimension A	Contact Plating	Without Cable Stop	With Cable Stop
10	.600	Duplex[1]	746281-1	746279-1
		Duplex[2]	746436-1	746435-1
14	.800	Duplex[1]	746281-2	746279-2
		Duplex[2]	746436-2	746435-2
16	.900	Duplex[1]	746281-3	746279-3
		Duplex[2]	746436-3	746435-3
20	1.100	Duplex[1]	746281-4	746279-4
		Duplex[2]	746436-4	746435-4
24	1.300	Duplex[1]	746281-5	746279-5
		Duplex[2]	746436-5	746435-5
26	1.400	Duplex[1]	746281-6	746279-6
		Duplex[2]	746436-6	746435-6
30	1.600	Duplex[1]	746281-7	746279-7
		Duplex[2]	746436-7	746435-7
34	1.800	Duplex[1]	746281-8	746279-8
		Duplex[2]	746436-8	746435-8
40	2.100	Duplex[1]	746281-9	746279-9
		Duplex[2]	746436-9	746435-9
44	2.300	Duplex[1]	1-746281-0	1-746279-0
		Duplex[2]	1-746436-0	1-746435-0
50	2.600	Duplex[1]	1-746281-1	1-746279-1
		Duplex[2]	1-746436-1	1-746435-1
60	3.100	Duplex[1]	1-746281-2	1-746279-2
		Duplex[2]	1-746436-2	1-746435-2
64	3.300	Duplex[1]	1-746281-3	1-746279-3
		Duplex[2]	1-746436-3	1-746435-3

[1] .000015 gold on post/pin mating end, .000100-.000200 bright tin-lead on termination end, with entire contact underplated .000050 nickel.
[2] .000030 gold on post/pin mating end, .000100-.000200 bright tin-lead on termination end, with entire contact underplated .000050 nickel.

Note: 1. These receptacles include a housing assembly and cover (preassembled).
2. Receptacles listed include covers without a cable stop, and covers preassembled with left-hand cable stop (cable stop located on same side as Position 1 Index Slot).



Positioning Shroud, Part No. 111295-1*

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Preassembled Connectors with Cover

Material and Finish:

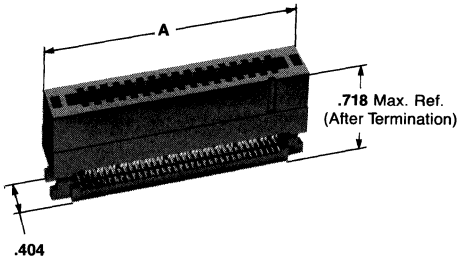
Housing and Cover – Black thermoplastic, 94V-0 rated

Contacts - Phosphor bronze, duplex plated (see chart, page 5009)

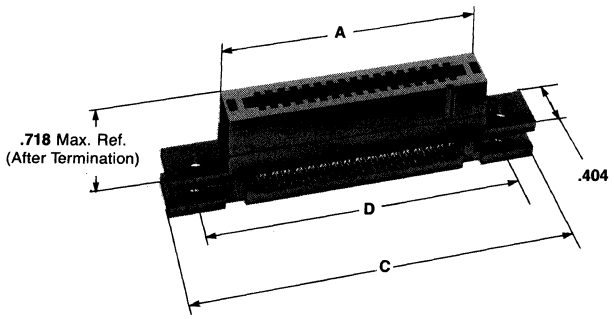
Related Product Data:

Electrical Characteristics - page 5003
Ribbon Cable - page 5029
Application Tooling - page 5032
Technical Documents - page 5034

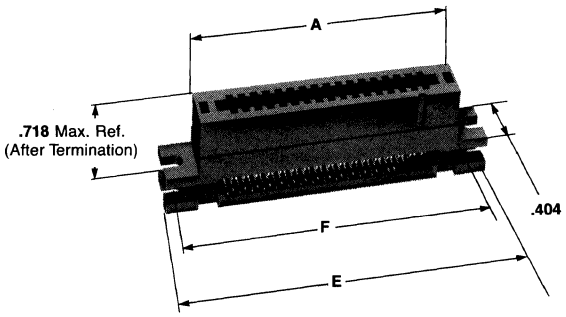
Without Mounting Ears

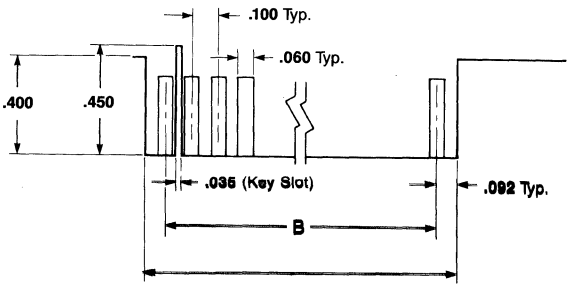


With Round Hole Mounting Ears

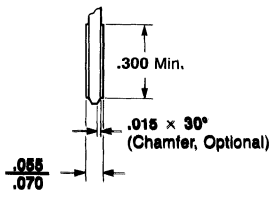


With Slotted Mounting Ears





Recommended Pc Board Layout



End View

5

Ribbon and Flat Cable Connectors

Ordering Information

When ordering a connector, use the top chart at right to determine the 6-digit base no. for the desired contact plating and mounting style. Then, complete the part no. by adding the proper suffix or prefix/suffix for the desired size. The prefix/suffix nos. for all available sizes (10 through 64 positions) are listed in the bottom chart at right.

Base Part Numbers

Plating	Without Mounting Ears	With Round Hole Mounting Ears	With Slotted Mounting Ears	Without Ears With Molded Key[1]
Duplex[2]	111109	111210	111212	111111
Duplex[3]	111110	111211	111213	111112

[1] Intercontact keying plug is molded between positions 3, 4, 5, and 6.

[2] .000030 gold on pc board mating end, .000100-.000200 bright tin-lead on termination end, with entire contact underplated .000050 nickel.

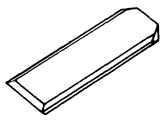
[3] .000015 gold on pc board mating end, .000100-.000200 bright tin-lead on termination end, with entire contact underplated .000050 nickel.

Prefixes and Suffixes

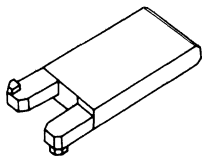
No. of Pos.	Dimensions						Add to Base Part No.	
	A	B	C	D	E	F	Prefix	Suffix
10	.960	.584	1.900	1.400	1.500	1.300		-8
14	1.160	.784	2.100	1.600	1.700	1.500		-9
16	1.260	.884	2.200	1.700	1.800	1.600	1-	-0
20	1.460	1.084	2.400	1.900	2.000	1.800		-6
26	1.760	1.384	2.700	2.200	2.300	2.100		-5
30	1.960	1.584	2.900	2.400	2.500	2.300		-4
34	2.160	1.784	3.100	2.600	2.700	2.500		-3
40	2.460	2.084	3.400	2.900	3.000	2.800		-2
44	2.660	2.284	3.600	3.100	3.200	3.000	1-	-2
50	2.960	2.584	3.900	3.400	3.500	3.300		-1
60	3.460	3.084	4.400	3.900	4.000	3.800		-7
64	3.660	3.284	4.600	4.100	4.200	4.000	1-	-1

Keying Plug

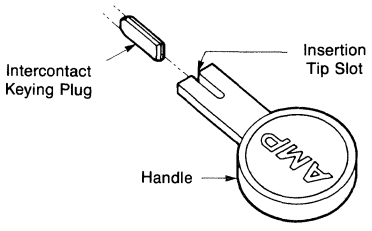
Material: Natural color thermoplastic, 94V-0 rated



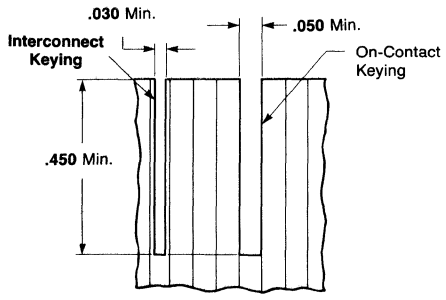
Intercontact Keying Plug, Part No. 88113-1
(Use insertion Tool No. 91233-1)



On-Contact Keying Plug, Part No. 88114-1



Insertion Tool No. 91233-1



Pc Board Slot Dimensions

DIP Plugs

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Preassembled Plug with Cover

Material and Finish:

Housing and Cover – Black thermoplastic, 94V-0 rated

Contacts - Phosphor bronze, tin or duplex plated (see chart, page 5011)

Related Product Data:

Electrical Characteristics - page 5003

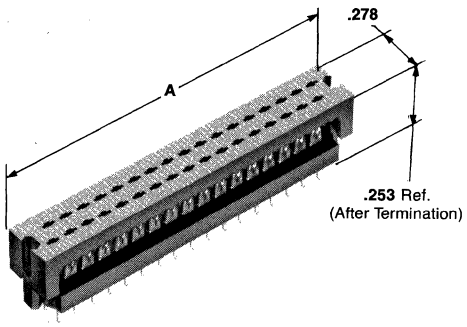
Mateable Sockets:
DIP Sockets (for .100 x .300 and .100 x .600 versions) - see AMP Catalog 82172

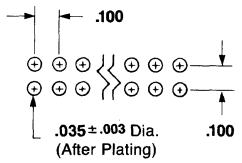
Ribbon Cable - page 5029

Application Tooling - page 5032

Technical Documents - page 5034

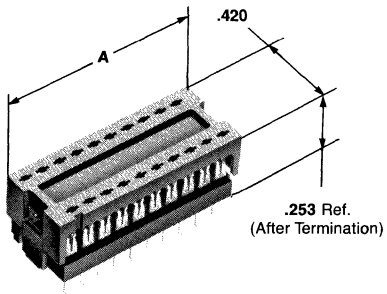
.100 x .100 Centers

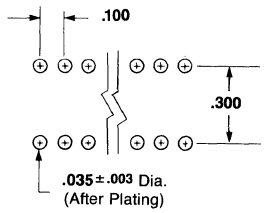




Recommended Mounting Hole Pattern
(for up to .125 thk. pc boards)

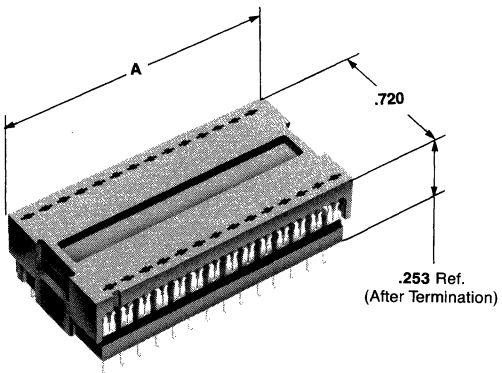
.100 x .300 Centers

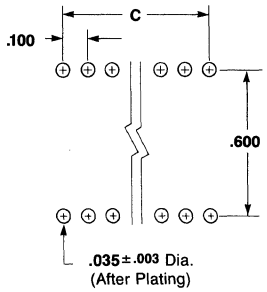




Recommended Mounting Hole Pattern
(for up to .125 thk. pc boards)

.100 x .600 Centers





Recommended Mounting Hole Pattern
(for up to .125 thk. pc boards)

.100 x .100 Centers

No. of Pos.	Dimension A	Preassembled Plug Part No.[1]
10	.680	746610-1
14	.880	746610-2
16	.980	746610-3
20	1.180	746610-4
24	1.380	746610-5
26	1.480	746610-6
30	1.680	746610-7
34	1.880	746610-8
40	2.180	746610-9
44	2.380	1-746610-3
50	2.680	1-746610-0
60	3.180	1-746610-1
64	3.380	1-746610-2

[1] Plating is .000100-.000200 bright tin-lead over .000050 nickel on entire contact.

.100 x .300 Centers

No. of Pos.	Dimension A	Contact Plating	Preassembled Plug Part No.
8	.488	Duplex[1]	746612-1
		Duplex[2]	746611-1
		Tin[3]	746613-1
14	.788	Duplex[1]	746612-2
		Duplex[2]	746611-2
		Tin[3]	746613-2
16	.888	Duplex[1]	746612-3
		Duplex[2]	746611-3
		Tin[3]	746613-3
18	.988	Duplex[1]	746612-4
		Duplex[2]	746611-4
		Tin[3]	746613-4
20	1.088	Duplex[1]	746612-5
		Duplex[2]	746611-5
		Tin[3]	746613-5

[1] .000015 gold on pin end; .000100-.000200 bright tin-lead on cable termination end; entire contact underplated with .000050 nickel.
[2] .000030 gold on pin end; .000100-.000200 bright tin-lead on cable termination end; entire contact underplated with .000050 nickel.
[3] .000100-.000200 bright tin-lead over .000050 nickel on entire contact.

.100 x .600 Centers

No. of Pos.	Dimension A	Contact Plating	Preassembled Plug Part No.
24	1.288	Duplex[1]	746615-1
		Duplex[2]	746614-1
		Tin[3]	746616-1
28	1.488	Duplex[1]	746615-2
		Duplex[2]	746614-2
		Tin[3]	746616-2
40	2.088	Duplex[1]	746615-3
		Duplex[2]	746614-3
		Tin[3]	746616-3

[1] .000015 gold on pin end; .000100-.000200 bright tin-lead on cable termination end; entire contact underplated with .000050 nickel.
[2] .000030 gold on pin end; .000100-.000200 bright tin-lead on cable termination end; entire contact underplated with .000050 nickel.
[3] .000100-.000200 bright tin-lead over .000050 nickel on entire contact.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Preassembled Connector with Cover

Material and Finish:

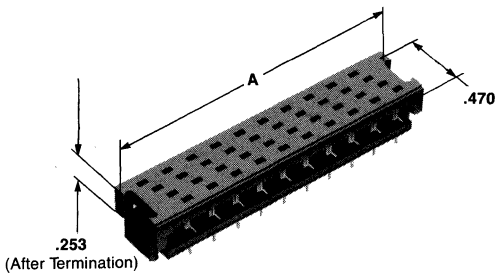
Housing and Cover – Black thermoplastic, 94V-0 rated

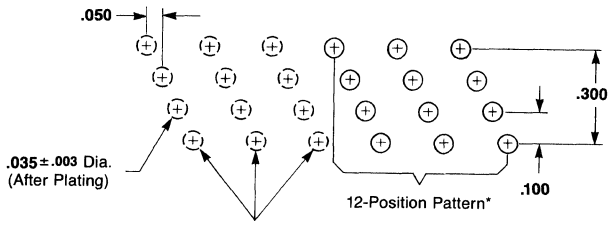
Contacts – Phosphor bronze plated .000100-.000200 bright tin-lead over .000050 nickel on entire contact

Related Product Data:

Electrical Characteristics - page 5003
Ribbon Cable - page 5029
Application Tooling - page 5032
Technical Documents - page 5034

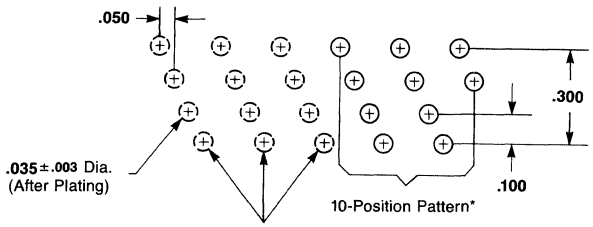
Note: For post length, see chart, page 5013.





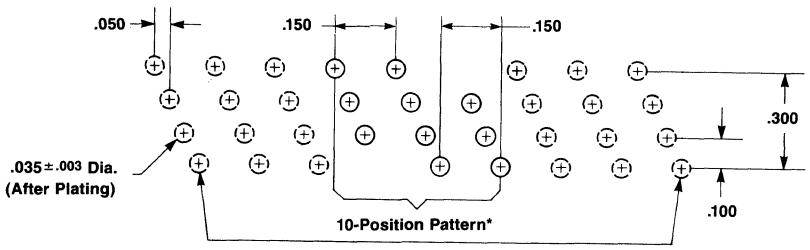
*For larger sizes, contacts are added to left side of 12-position pattern in increments of 4, as required.

Recommended "Full Row" Mounting Hole Pattern, Component Side (For .062 thk. Pc Boards)



*For larger sizes, contacts are added to left side of 10-position pattern in increments of 4, as required.

Recommended "Short End" Mounting Hole Pattern, Component Side (For .062 thk. Pc Boards)



*For larger sizes, equal no. of contact rows (4 contacts per row) are added to each end of 10-position pattern as required.

Recommended "Special Center" Mounting Hole Pattern, Component Side (For .062 thk. Pc Boards)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Ordering Information

When ordering a connector, use the top chart at the right to determine the 6-digit base no. for the desired post length and contact pattern. Then, complete the part no. by adding the proper suffix or prefix/suffix for the desired size. The prefix/suffix nos. for all available sizes are listed in the bottom chart at the right.

Base Number

Post Length	Pc Board Thickness	"Full Row" Contact Pattern	"Short End" Contact Pattern	"Special Center" Contact Pattern
.100	.062	111035	111037	111039
.156	.093-.125	111036	111038	111040

Prefixes and Suffixes

"Full Row" Contact Pattern		"Short End" Contact Pattern		"Special Center" Contact Pattern		Add to Base No.	
No. of Pos.	Dimension A	No. of Pos.	Dimension A	No. of Pos.	Dimension A	Prefix	Suffix
12	.874	10	.774	10	.774		-1
16	1.074	14	.974	26	1.574		-2
20	1.274	18	1.174	34	1.974		-3
24	1.474	22	1.374	50	2.774		-4
28	1.674	26	1.574				-5
32	1.874	30	1.774				-6
36	2.074	34	1.974				-7
40	2.274	38	2.174				-8
44	2.474	42	2.374				-9
48	2.674	46	2.574			1-	-0
52	2.874	50	2.774			1-	-1
56	3.074	54	2.974			1-	-2
60	3.274	58	3.174			1-	-3

Universal Ejection Style Pin Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Ordering Information

When ordering a header, use the top chart at the right to determine the 6-digit base no. for the desired housing style, post configuration, post length and contact plating. Then, complete the part no. by adding the proper suffix and, if necessary, prefix for the desired size. The prefix/suffix nos. for all available sizes are listed in the bottom chart at the right.

Base Part Numbers

Housing Style	Post Configuration	Post Length	Contact Plating	Pin Header Part No. (without Latches)	Pin Header Kit No. (with Latches)	
					Short Latch 102312-1	Strain Relief Latch 102320-1
4-Sided	Straight Posts	.110	Duplex[1]	102153	499910	499922
			Duplex[2]	102154	499160	499206
			Bright Tin[3]	499703	–	–
		.155	Duplex[1]	102155	499911	499923
			Duplex[2]	102156	499374	102321
		.610	Gold[4]	102158	–	–
	Right Angle Posts	.110	Duplex[1]	102159	499913	499786
			Duplex[2]	102160	499345	499141
			Bright Tin[3]	499705	–	–
		.155	Duplex[1]	102161	499914	499925
			Duplex[2]	102162	499376	102322
		.610	Duplex[2]	499439	–	–
3-Sided	Straight Posts	.110	Duplex[2]	746140	–	–
			Bright Tin[3]	746232	–	–
	Right Angle Posts	.110	Duplex[1]	746101	746125	–
			Duplex[2]	746143	746167	746179
			Bright Tin[3]	746235	–	–
		.155	Duplex[1]	746102	–	–
			Duplex[2]	746144	–	746180
3-Sided Low Profile	Right Angle Posts	.110	Duplex[1]	746451	**Note:** Latches not compatible with Low Profile style	
			Duplex[2]	746448		
		.155	Duplex[1]	746452		
			Duplex[2]	746449		
4-Sided	Straight ACTION PIN	.174	Duplex[1]	499984	–	–
			Duplex[2]	499582	–	–
		.610	Duplex[2]	499583	–	–

[1] .000015 gold on post/pin mating end, .000100-.000200 bright tin-lead on termination end, with entire contact underplated .000050 nickel.
[2] .000030 gold on post/pin mating end, .000100-.000200 bright tin-lead on termination end, with entire contact underplated .000050 nickel.
[3] .000100-.000200 bright tin-lead over .000050 nickel on entire contact.
[4] .000030 gold over .000050 nickel on entire contact.

Prefixes and Suffixes

No. of Pos.	Dimensions					Add to Base Part No.	
	A	B	C	D	E	Prefix	Suffix
10	1.260	.860	1.100	.950	.780		-1
14	1.460	1.060	1.300	1.150	.980		-2
16	1.560	1.160	1.400	1.250	1.080		-3
20	1.760	1.360	1.600	1.450	1.280		-4
24	1.960	1.560	1.800	1.650	1.480		-5
26	2.060	1.660	1.900	1.750	1.580		-6
30	2.260	1.860	2.100	1.950	1.780		-7
34	2.460	2.060	2.300	2.150	1.980		-8
40	2.760	2.360	2.600	2.450	2.280		-9
44	2.960	2.560	2.800	2.650	2.480	1-	-3
50	3.260	2.860	3.100	2.950	2.780	1-	-0
60	3.760	3.360	3.600	3.450	3.280	1-	-1
64	3.960	3.560	3.800	3.650	3.480	1-	-2

Notes: 1. 10- and 14- position pinless headers have only one slot for snap-in polarizer (military polarization).
2. 10- position pinless headers have only one slot for dual polarization.
3. For information regarding latch/pin header applications and for ordering latches separately, refer to page 5015.

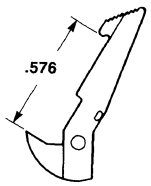
Latches for Ejection Style Pin Headers and Pinless Headers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

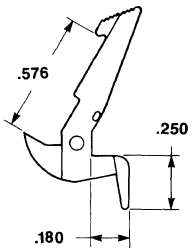
Dimensioning:
Dimensions are in inches

Latches

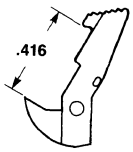
Material: Black thermoplastic, 94V-0 rated



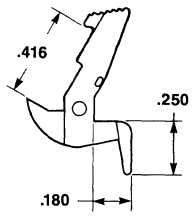
Latch Part No. 102320-1
(without Push Tabs, see Fig. 1)



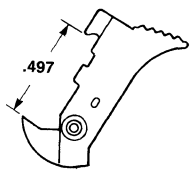
Latch Part No. 102186-1
(with Push Tabs, available in component only)



Latch Part No. 102312-1
(without Push Tabs, see Fig. 2)



Latch Part No. 102185-1
(with Push Tabs, available in component only)



Latch Part No. 746469-1
(without Push Tabs, see Fig. 3)

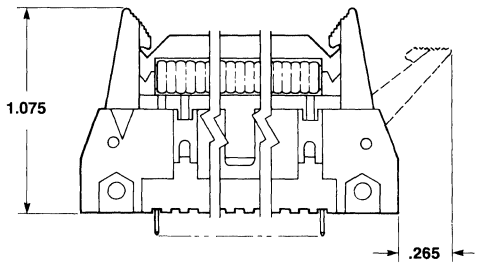


Fig. 1 – Use Latch Part No. 102320-1 for AMP Receptacles with Recessed Cover and Strain Relief.

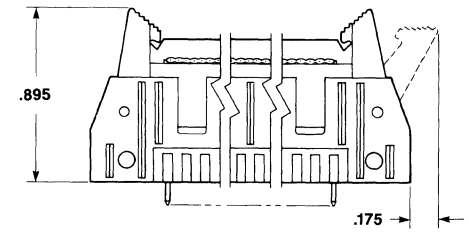


Fig. 2 – Use Latch Part No. 102312-1 for AMP Receptacles with Recessed Cover.

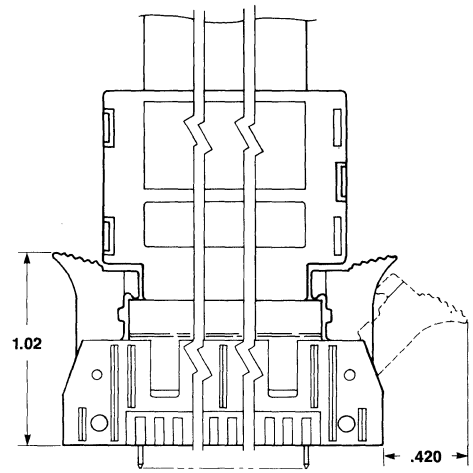


Fig. 3 – Use Latch Part No. 746469-1 for AMP Shielded Stackable Novo Receptacles with .240 Wide Cover.

Universal Ejection Style Pin Headers Military, Center and Dual Polarized .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Straight-Thru, 4 Sided .025 Sq. Posts, .240 Mating Post Length

Material and Finish:

Housing and Latches – Black thermoplastic, 94V-0 rated

Contacts - Brass or phosphor bronze (at AMP's option); tin, gold or duplex plated (see chart, page 5014)

Related Product Data:

Electrical Characteristics - page 5003

Mateable Receptacles:

Novo - pages 5004 and 5005

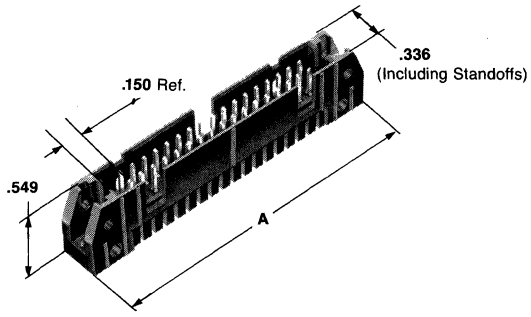
Shielded Novo - pages 5023 and 5024

Accessories:

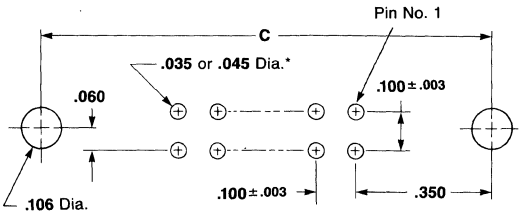
Snap-In Polarizer - page 5031

Technical Documents - page 5034

Note: Retrofit Shields are available for use with these pin headers, see page 5027.



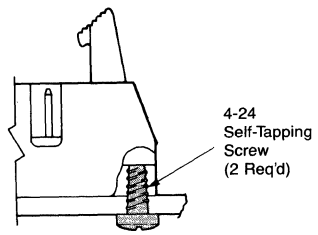
Note: Pin No. 1 designated by "V" notch on side of connector.



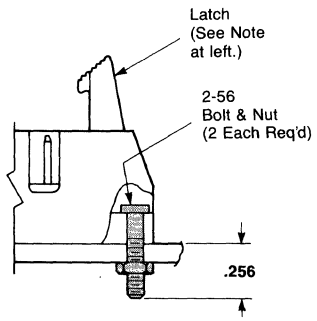
Recommended Mounting Hole Pattern
*.035 hole dia. for soldering of posts .110 and .155 long
.045 hole dia. for wrap-type termination of posts .610 long
Pc board thicknesses are .062 for .110 long posts, .125 for .155 long posts.

Mounting Information

4-24 self-tapping screws and 2-56 bolts and nuts can be used for mounting straight-thru pin headers to pc boards. Typical applications with hardware are presented at right.



Pin Header Mounting using 4-24 Self-Tapping Screws



Pin Header Mounting with 2-56 Bolts and Nuts:
Part No. 746383-1 (Bolt Only)
Kit No. 102198-1 (Bolt and Nut, 2 each per Kit)

Note: 2-56 bolts and nuts may be used to mount pin headers with and without latches. If latches are to be used, the bolts must be positioned in the pin header before the latches are installed.

Universal Ejection Style Pin Headers Military, Center and Dual Polarized .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Right-Angle, 4 Sided .025 Sq. Posts

Material and Finish:

Housing and Latches – Black thermoplastic, 94V-0 rated

Contacts - Phosphor bronze; tin, gold or duplex plated (see chart, page 5014)

Related Product Data:

Electrical Characteristics - page 5003

Mateable Receptacles:

Novo - pages 5004 and 5005

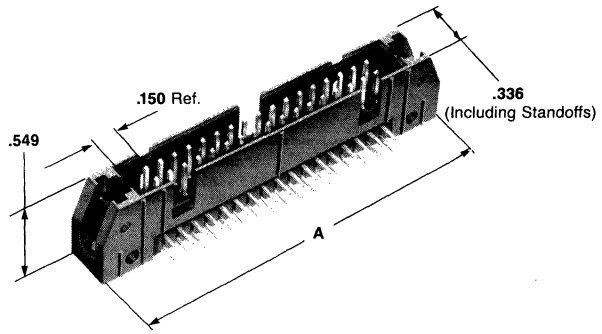
Stackable Novo - page 5007

Accessories:

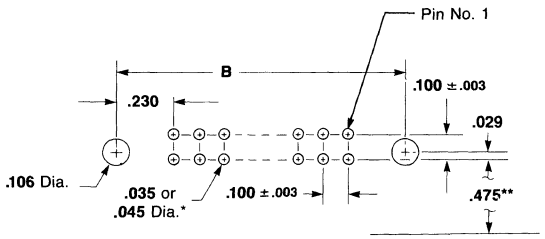
Snap-In Polarizer - page 5031

Technical Documents - page 5034

Note: Pc Board Mounted Shields and Retrofit Shields are available for use with these pin headers, see page 5026 and 5027.



Note: Pin No. 1 designated by "V" notch on side of connector.



Recommended Mounting Hole Pattern
*.035 hole dia. for soldering of posts .110 and .155 long
.045 hole dia. for wrap-type termination of posts .610 long
**Maximum distance from edge of pc board for daisy chain application.
Pc board thicknesses are .062 for .110 long posts, .125 for .155 long posts.

Mounting Information

No mounting hardware is supplied by AMP.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Universal Ejection Style Pin Headers Center and Military Polarized .100 x .100 Centers

Straight-Thru, 3 Sided .025 Sq. Posts

Material and Finish:

Housing and Latches – Black thermoplastic, 94V-0 rated

Contacts - Brass or phosphor bronze (at AMP's option); tin, gold or duplex plated (see chart, page 5014)

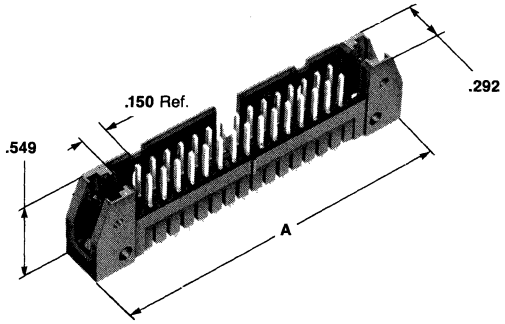
Related Product Data:

Electrical Characteristics - page 5003

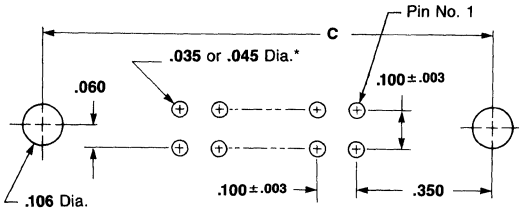
Mateable Receptacles:
Novo - pages 5004 and 5005
Stackable Novo - page 5007

Accessories:
Snap-In Polarizer - page 5031

Technical Documents - page 5034



Note: Pin No. 1 designated by "V" notch on side of connector.

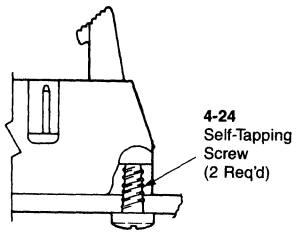


Recommended Mounting Hole Pattern
*.035 hole dia. for soldering of posts .110 and .155 long
.045 hole dia. for wrap-type termination of posts .610 long
Pc board thicknesses are .062 for .110 long posts, .125 for .155 long posts.

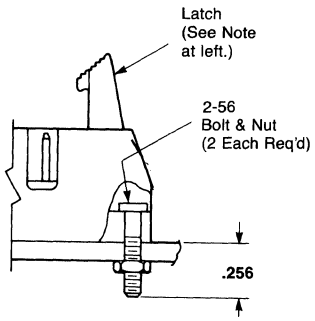
Mounting Information

4-24 self-tapping screws and 2-56 bolts and nuts can be used for mounting straight-thru pin headers to pc boards. Typical applications and hardware are presented at right.

Note: 2-56 bolts and nuts may be used to mount pin headers with and without latches. If latches are to be used, the bolts must be positioned in the pin header before the latches are installed.



Pin Header Mounting using 4-24 Self-Tapping Screws



Pin Header Mounting with 2-56 Bolts and Nuts:
Part No. 746383-1 (Bolt Only)
Kit No. 102198-1 (Bolt and Nut, 2 each per Kit)

5

Ribbon and Flat Cable Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Universal Ejection Style Pin Headers Center and Military Polarized .100 x .100 Centers

Right-Angle, 3 Sided .025 Sq. Posts

Material and Finish:

Housing and Latches – Black thermoplastic, 94V-0 rated

Contacts - Phosphor bronze; tin, gold or duplex plated (see chart, page 5014)

Related Product Data:

Electrical Characteristics - page 5003

Mateable Receptacles:

Novo - pages 5004 and 5005

Stackable Novo - page 5007

Accessories:

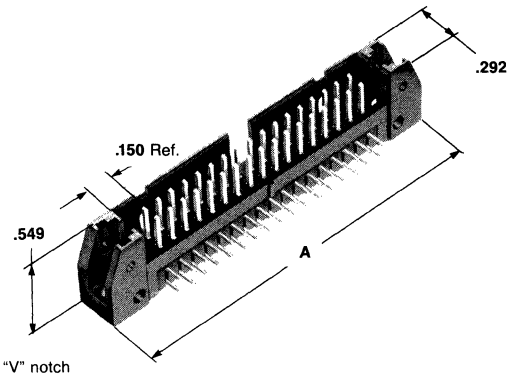
Snap-In Polarizer - page 5031

Technical Documents - page 5034

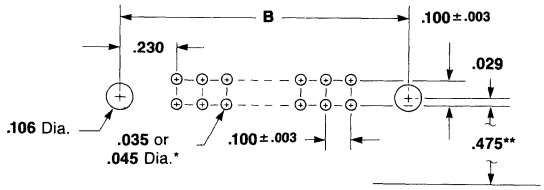
Note: Pc Board Mounted Shields and Retrofit Shields are available for use with these pin headers, see page 5026 and 5027.

Mounting Information

No mounting hardware is supplied by AMP.



Note: Pin No. 1 designated by "V" notch on side of connector.



Recommended Mounting Hole Pattern
*.035 hole dia. for soldering of posts .110 and .155 long
.045 hole dia. for wrap-type termination of posts .610 long
**Maximum distance from edge of pc board for daisy chain application.
Pc board thicknesses are .062 for .110 long posts, .125 for .155 long posts.

Universal Ejection Style Pin Headers with ACTION PIN Contacts, Military, Center and Dual Polarized .100 x .100 Centers

Straight-Thru, 4 Sided .025 Sq. Posts

Material and Finish:

Housing – Black thermoplastic, 94V-0 rated

Contacts - Copper alloy; tin or duplex plated (see chart, page 5014)

Related Product Data:

Electrical Characteristics - page 5003

Mateable Receptacles:

Novo - pages 5004 and 5005

Stackable Novo - page 5007

Shielded Novo - pages 5023 and 5024

Accessories:

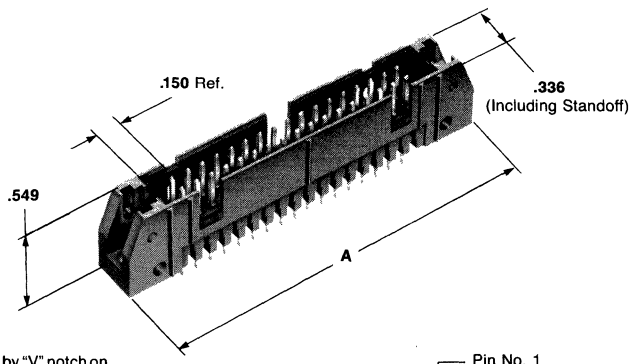
Snap-In Polarizer - page 5031

Technical Documents - page 5034

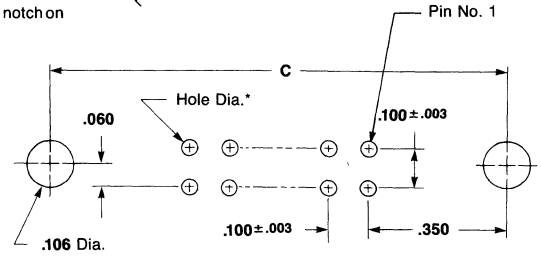
Note: Retrofit Shields are available for use with these pin headers, see page 5027.

Mounting Information

No mounting hardware is supplied by AMP.



Note: Pin No. 1 designated by "V" notch on side of connector.



Recommended Mounting Hole Pattern for .080 min.-.125 Thk. Pc Board
* .0453± 0010 hole dia. before plating
.043/.037 hole dia. after plating

5 Ribbon and Flat Cable Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

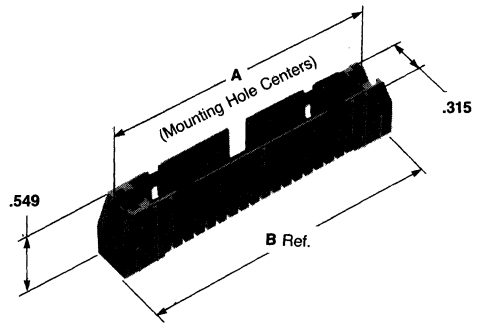
Universal Ejection Style Pinless Headers Military, Center and Dual Polarized .100 x .100 Centers

Straight-Thru, 4 Sided .025 Sq. Posts (without latches)

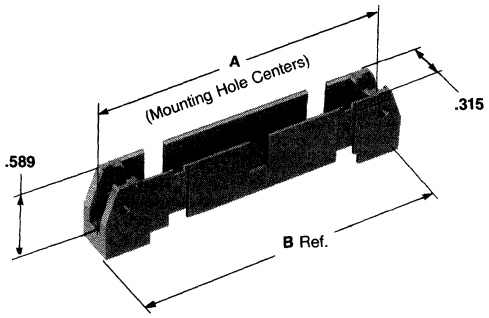
Material:
Black thermoplastic, 94V-0 rated

Related Product Data:
Electrical Characteristics - page 5003
Mateable Receptacles:
Novo - pages 5004 and 5005
Stackable Novo - page 5007
Accessories:
Snap-In Polarizer - page 5031
Technical Documents - page 5034

Note: Retrofit Shields are available for use with pinless headers, see page 5027.



Without Standoffs



With Standoffs

Insertion of Press-Fit Pinless Headers

Insertion Instructions:

1. Place pinless header over preinstalled posts so that post tips start into header cavities.
2. With bottom of pc board supported, place steel block over header. Steel block must be wider and longer than headers so that it covers all four sides of the header. However, for headers with latches preassembled, the steel block must not interfere with the latches.
3. Apply an even, centered force on steel block until header bottoms on pc board. If posts are longer than .545, they may be forced against the steel block before the header is fully seated. In this situation, extreme caution must be taken so that posts are not damaged or pushed out of the pc board.

No. of Pos.	Dimensions		Pinless Header Part Nos.		
			Press-Fit		Clearance-Fit
	A	B	Without Standoffs	With Standoffs	Without Standoffs
10	1.100	1.260	499726-1	746487-1	102142-6
14	1.300	1.460	499726-2	746487-2	102142-8
16	1.400	1.560	499726-3	746487-3	102142-9
20	1.600	1.760	499726-4	746487-4	102142-1
24	1.800	1.960	499726-5	746487-5	1-102142-0
26	1.900	2.060	499726-6	746487-6	102142-2
30	2.100	2.260	499726-7	746487-7	1-102142-1
34	2.300	2.460	499726-8	746487-8	102142-3
40	2.600	2.760	499726-9	746487-9	102142-4
44	2.800	2.960	1-499726-3	1-746487-3	1-102142-2
50	3.100	3.260	1-499726-0	1-746487-0	102142-5
60	3.600	3.760	1-499726-1	1-746487-1	102142-7
64	3.800	3.960	1-499726-2	1-746487-2	1-102142-3

Notes: 1. 10- and 14-position pinless headers have only one slot for snap-in polarizer (military polarization).
2. 10- position pinless headers have only one slot for dual polarization.
3. For information regarding latch/pin header applications and for ordering latches separately, refer to page 5015.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

High-Temperature, Thru-Hole (SMT Compatible) Universal Ejection Style Pin Header .100 x .100 Centers, .025 Sq. Posts

Material and Finish:

Housing – Red thermoplastic, 94V-0 rated

Contacts – Phosphor bronze or brass, duplex plated .000030 gold on mating end, .000150 min. matte tin lead on solder tail, with entire contact underplated .000050 nickel

Solder tails are .110

Related Product Data:

Electrical Characteristics - page 5003

Mateable Receptacles:

Novo - pages 5004 and 5005

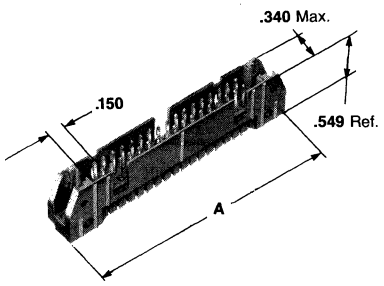
Shielded Novo - pages 5023 and 5024

Accessories:

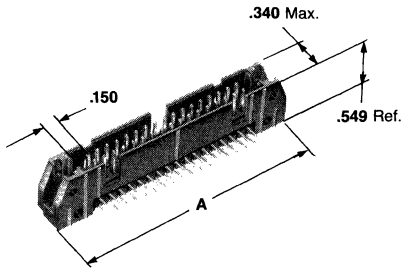
Snap-In Polarizer - page 5031

Technical Documents - page 5034

Straight-Thru, 4 Sided



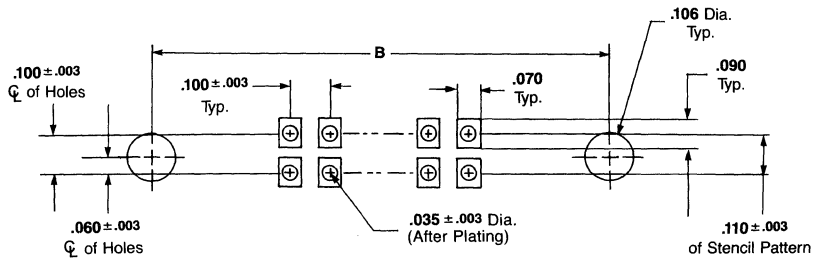
Right-Angle, 4 Sided



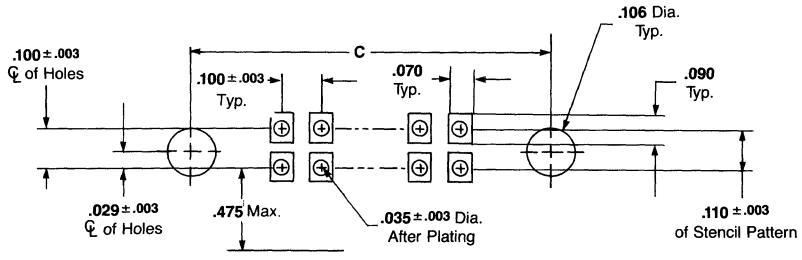
No. of Pos.	Dimensions			Part Nos.	
	A	B	C	Straight-Thru	Right-Angle
10	1.260	1.100	.860	111008-1	111105-1
14	1.460	1.300	1.060	111008-2	111105-2
16	1.560	1.400	1.160	111008-3	111105-3
20	1.760	1.600	1.360	111008-4	111105-4
24	1.960	1.800	1.560	111008-5	111105-5
26	2.060	1.900	1.660	111008-6	111105-6
30	2.260	2.100	1.860	111008-7	111105-7
34	2.460	2.300	2.060	111008-8	111105-8
40	2.760	2.600	2.360	111008-9	111105-9
44	2.960	2.800	2.560	1-111008-3	1-111105-3
50	3.260	3.100	2.860	1-111008-0	1-111105-0
60	3.760	3.600	3.360	1-111008-1	1-111105-1
64	3.960	3.800	3.560	1-111008-2	1-111105-2

Notes: 1. 10- and 14- position pinless headers have only one slot for snap-in polarizer (military polarization).

2. 10- position pinless headers have only one slot for dual polarization.



Recommended Pc Board Mounting Pattern for Straight-Thru Header

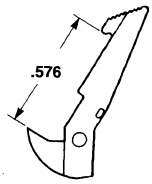


Recommended Pc Board Mounting Pattern for Right-Angle Header

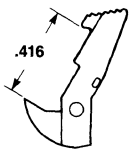
Latches

Material: Red thermoplastic, 94V-0 rated

Latch Part No. 111338-1 (for use with receptacles with recessed cover and strain relief.)



Latch Part No. 111293-1 (for use with receptacles with recessed cover.)



Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Stacked Pin Header, Right-Angle Ejection Style, Dual and Center Polarized .100 x .100 Centers, .025 Sq. Posts

Material and Finish:

Housing – Black glass-filled, polyester, 94V-0 rated

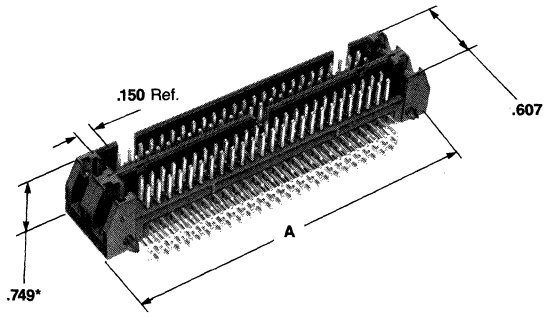
Contacts – Phosphor bronze, duplex plated .000030 gold on mating end, .000100-.000200 bright tin or bright tin lead on solder tail, with entire contact underplated .000050 nickel

Related Product Data:

Electrical Characteristics - page 5003

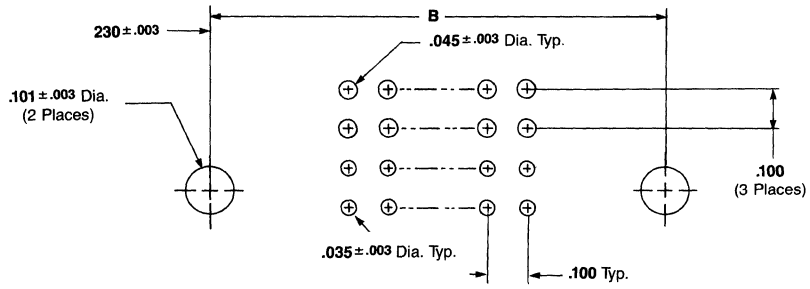
Mateable Receptacles - Novo - pages 5004 and 5005
Stackable Novo - page 5007

Technical Documents - page 5034



*Dimension from mating face to rear of pin protection feature.

No. of Pos.	Dimensions		Part Nos.
	A	B	
20	1.260	.860	111391-1
28	1.460	1.060	111391-2
32	1.560	1.160	111391-3
40	1.760	1.360	111391-4
48	1.960	1.560	111391-5
52	2.060	1.660	111391-6
60	2.260	1.860	111391-7
68	2.460	2.060	111391-8
80	2.760	2.360	111391-9
100	3.260	2.860	1-111391-0
120	3.760	3.360	1-111391-1
128	3.960	3.560	1-111391-2



Recommended Pc Board Mounting Pattern

5

Ribbon and Flat Cable Connectors

Shielded Novo Receptacles .100 x .100 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

AMP-LATCH Shielded Novo Receptacle kits provide shielding capabilities for stackable Novo receptacles with .240 wide cover (left-hand cable stop). These stackable Novo receptacles mate with AMP pin connectors, bulkhead pin connectors and Universal Ejection Style Pin headers.

A one-step TERMI-FOIL connector crimp is used for terminating all points around the cable shield. After termination, the strain relief cover halves are simply snapped into place.

Material and Finish:

Shields – Brass, .012 thick; pretinned

Receptacle Housing, Cover and Strain Relief Covers – Black thermoplastic, 94V-0 rated

Receptacle Contacts - Phosphor bronze, duplex plated (see chart, page 5024)

Related Product Data:

Electrical Characteristics - page 5003

Mateable Pin Connectors:

Shielded - page 5028

Ground Plane Shielded Option - page 5025

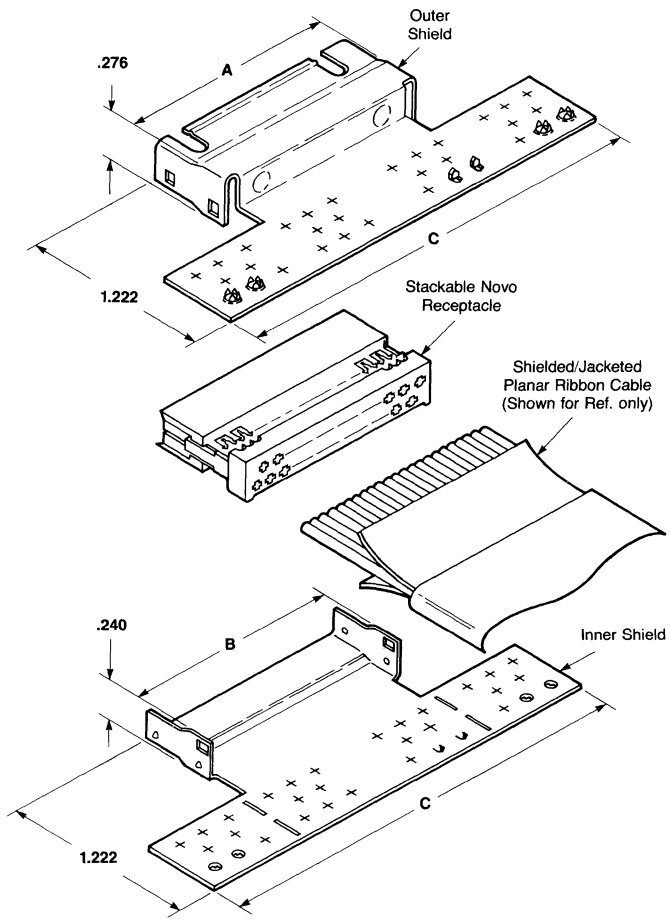
Mateable Universal Ejection Style Pin Headers:

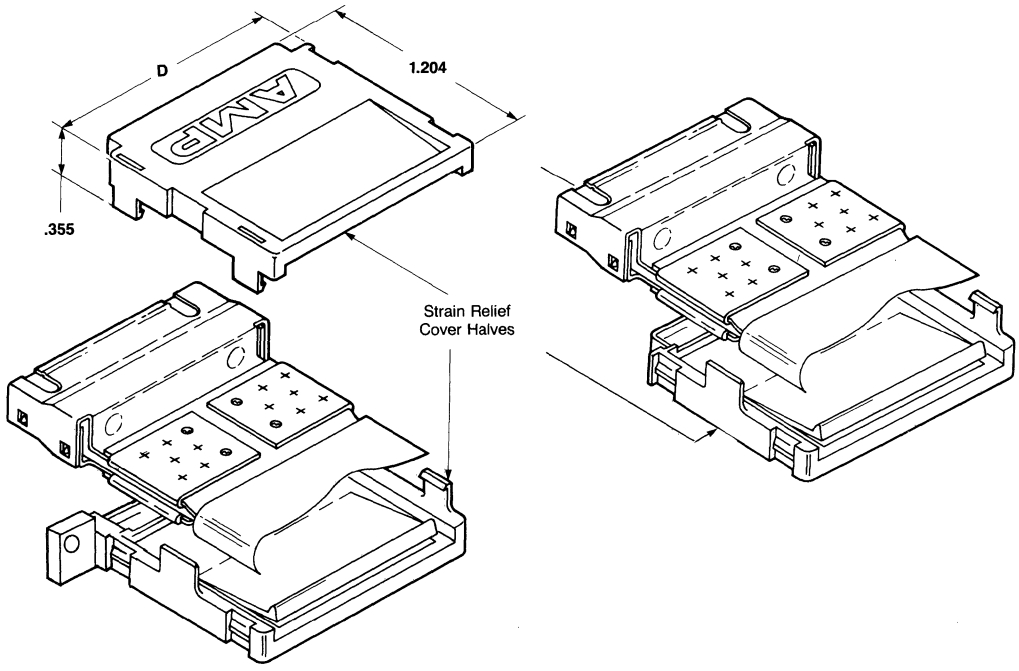
With Pc Board Mounted Shield - page 5026

With Retrofit Shield - page 5027

Application Tooling - page 5032

Technical Documents - page 5034





5

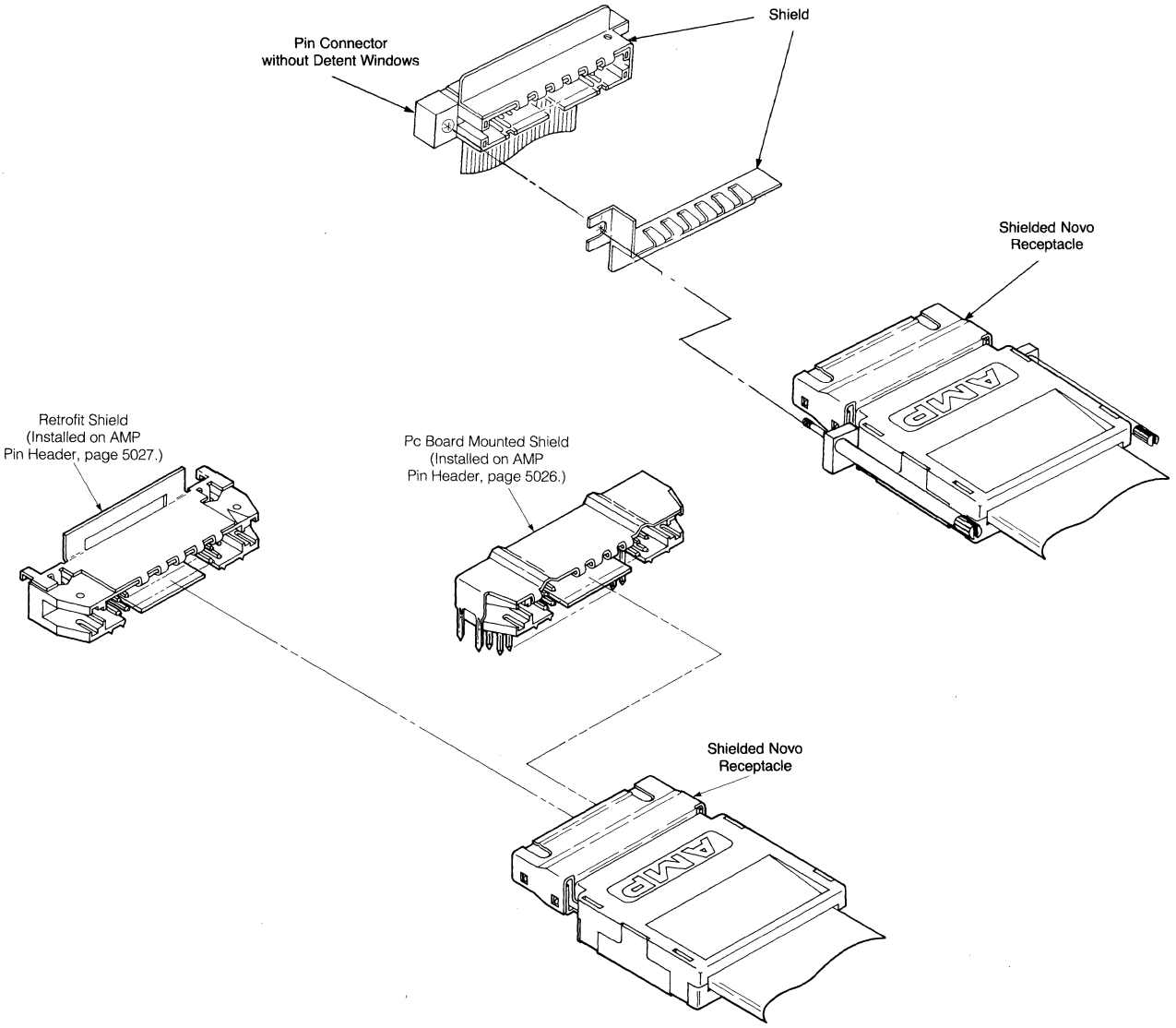
Ribbon and Flat Cable Connectors

No. of Pos. (Receptacle Size)	Dimensions				Receptacle Contact Plating	Shielded Without Ears Kit No.	Shielded With Jackscrews Kit No.
	A	B	C	D			
20	1.146	1.115	2.192	1.384	Duplex[1]	746447-8	111090-8
					Duplex[2]	746483-8	111091-8
26	1.446	1.415	2.792	1.684	Duplex[1]	1-746447-2	1-111090-2
					Duplex[2]	1-746483-2	1-111091-2
34	1.846	1.815	3.592	2.084	Duplex[1]	1-746447-6	1-111090-6
					Duplex[2]	1-746483-6	1-111091-6
40	2.146	2.115	4.192	2.384	Duplex[1]	1-746447-8	1-111090-8
					Duplex[2]	1-746483-8	1-111091-8
50	2.646	2.615	5.192	2.884	Duplex[1]	2-746447-2	2-111090-2
					Duplex[2]	2-746483-2	2-111091-2
60	3.146	3.115	6.192	3.384	Duplex[1]	2-746447-4	2-111090-4
					Duplex[2]	2-746483-4	2-111091-4

[1] .000015 gold onpost/pin mating end. .000100-.000200 bright tin-lead on termination end, with entire contact underplated .000050 nickel.

[2] .000030 gold on post/pin mating end. .000100-.000200 bright tin-lead on termination end, with entire contact underplated .000050 nickel.

Notes: 1. These shielded receptacle kits include a receptacle housing assembly and recessed cover (preassembled), two shields and two strain relief cover halves. Shields and cover halves are packaged unassembled.
2. Kit includes hardware.



Typical Mateable Shielding Hardware for Shielded Novo Receptacles

Specifications subject to change.
For latest design specifications...
1-800-522-6752

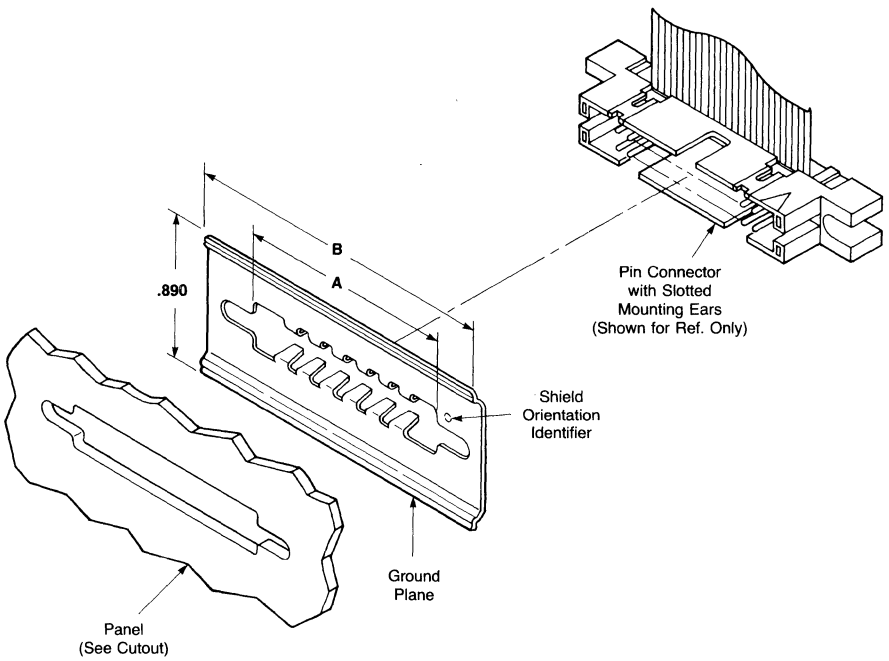
Dimensioning:
Dimensions are in inches

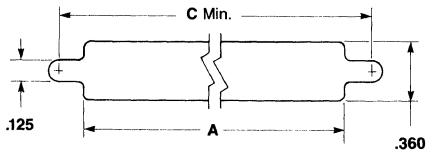
Ground Plane Shields for Pin Connectors with Slotted Mounting Ears (to Mate with Shielded Novo Receptacles)

The configuration of these Ground Plane Shields provides an easy means for grounding mated shielded Novo receptacles to a panel. No special mounting hardware is required.

Material and Finish:
Brass, .008 thick; pretinned

Related Product Data:
Mateable Shielded Novo Receptacles - pages 5023 and 5024
Technical Documents - page 5034





Recommended Panel Cutout

No. of Pos. (Connector Size)	Dimensions			Ground Plane Shield Part No.
	A	B	C	
20	1.300	1.900	1.600	746484-4
26	1.600	2.200	1.900	746484-6
34	2.000	2.600	2.300	746484-8
40	2.300	2.900	2.600	746484-9
50	2.800	3.400	3.100	1-746484-1
60	3.300	3.900	3.600	1-746484-2

Note: Bulkhead pin connectors and pin connectors with slotted mounting ears must be ordered separately.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Pc Board Mounted Shields for Universal Ejection Style Pin Headers, Right-Angle, 4-Sided

Pc Board Mounted Shields are designed to be wave-soldered to the pc board ground plane. They are installed over 4-sided, right-angle pin headers and provide the shielding interface of shielded Novo receptacles when mated with AMP Universal Ejection Style Pin Headers.

Material and Finish

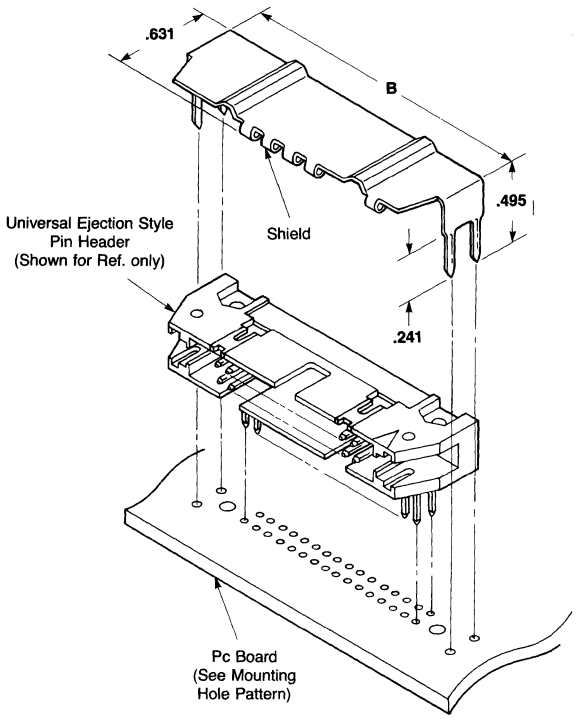
Brass, .008 thick; pretinned

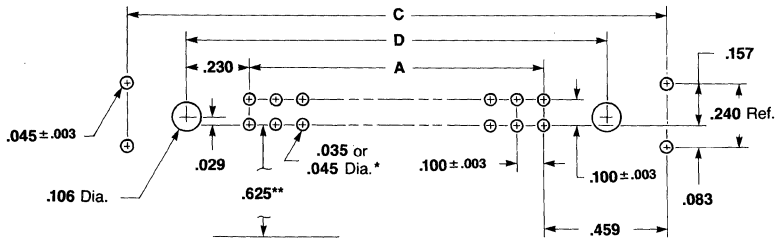
Related Product Data:

Universal Ejection Style Pin Headers used with (Use with Latch Part No. 746469-1 for shielding) - page 5017

Mateable Shielded Novo Receptacles - pages 5023 and 5024

Technical Documents - page 5034





Recommended Mounting Hole Pattern
*.035 hole dia. for soldering of posts .110 and .155 long.
.045 hole dia. for wrap-type termination of posts .610 long
**Maximum distance from edge of pc board.

No. of Pos. (Pin Header Size)	Dimensions				Pc Board Mounted Shield Part No.
	A	B	C	D	
20	.900	1.810	1.818	1.360	746684-4
26	1.200	2.110	2.118	1.660	746684-6
34	1.600	2.510	2.518	2.060	746684-8
40	1.900	2.810	2.818	2.360	746684-9
50	2.400	3.310	3.318	2.860	1-746684-1
60	2.900	3.810	3.818	3.360	1-746684-2

Note: Universal ejection style pin headers must be ordered separately.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

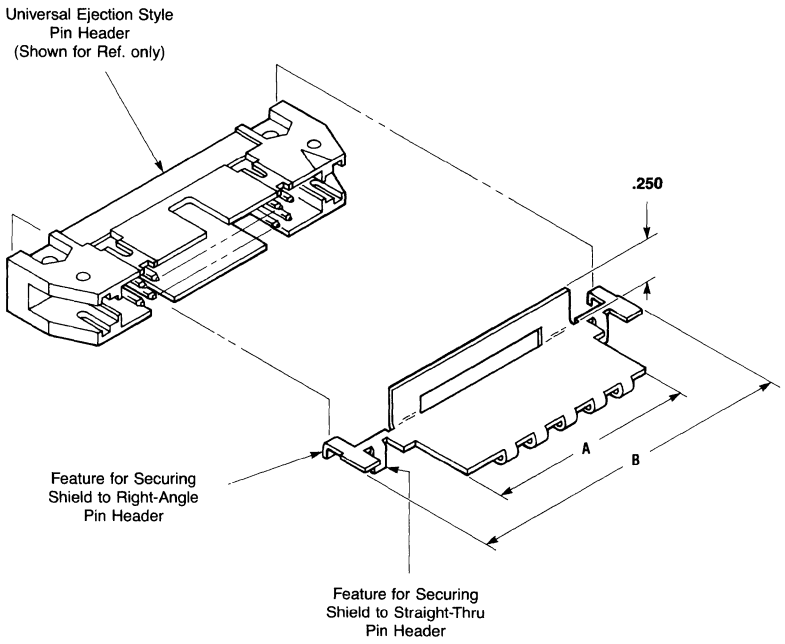
Dimensioning:
Dimensions are in inches

Retrofit Shields for Universal Ejection Style Pin or Pinless Headers, Straight-Thru and Right Angle, 4-Sided

Retrofit Shields are simply added to a pin or pinless header, allowing customers to quickly convert an existing unshielded header to a shielded header. They can be used on either AMP Universal Ejection Style Pin or Pinless Headers (Straight-Thru and Right-Angle, 4-Sided).

Material and Finish:
Brass, .008 thick; pretinned

Related Product Data:
Universal Ejection Style Pin Headers used with (Use with Latch Part No. 746469-1 for shielding):
Straight-Thru, 4-Sided - page 5016
Right-Angle, 4-Sided - page 5017
Universal Ejection Style Pinless Headers used with - page 5020
Mateable Shielded Novo Receptacles - pages 5023 and 5024
Technical Documents - page 5034



No. of Pos. (Pin Header Size)	Dimensions		Retrofit Shield Part No.
	A	B	
20	1.000	1.760	746431-4
26	1.300	2.060	746431-6
34	1.700	2.460	746431-8
40	2.000	2.760	746431-9
50	2.500	3.260	1-746431-1
60	3.000	3.760	1-746431-2

Note: Universal ejection style pin and pinless headers must be ordered separately.

Shielded Pin Connectors with Slotted Mounting Ears

AMP-LATCH Shielded Pin Connector kits provide shielding capabilities for AMP pin connectors with both slotted mounting ears and mounting ears with molded-in threaded inserts. These pin connectors mate with AMP shielded Novo receptacles. Shields can be quickly installed onto the pin connector, requiring no mounting hardware.

Material and Finish:

Shields – Brass, .008 thick; pretinned

Connector Housing and Cover – Black thermoplastic, 94V-0 rated

Connector Contacts - Phosphor bronze, duplex plated

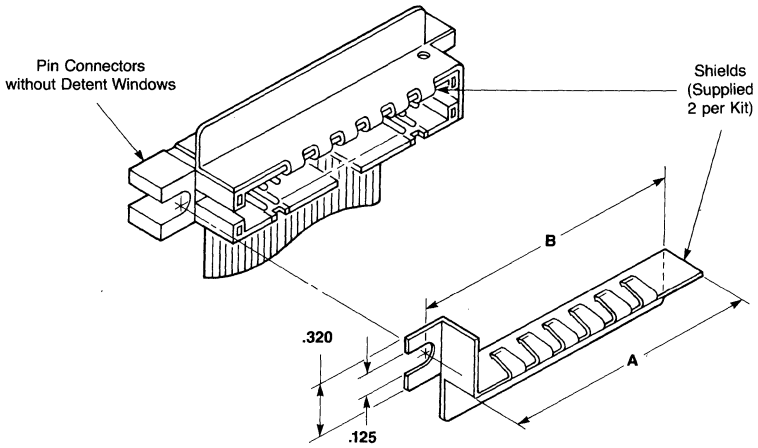
Related Product Data:

Electrical Characteristics - page 5003

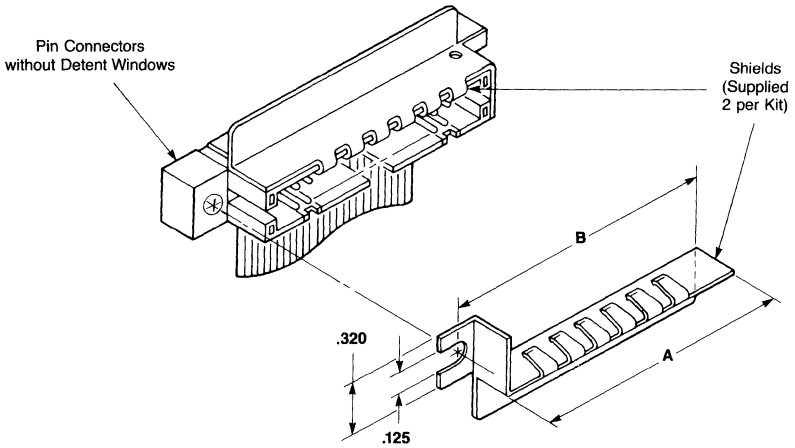
Mateable Shielded Novo Receptacles - pages 5023 and 5024

Technical Documents - page 5034

With Slotted Mounting Ears



With Mounting Ears with Molded-In Inserts

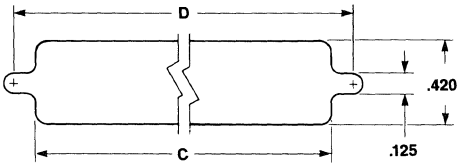


No. of Pos. (Connector Size)	Dimensions A	B	C	D	Connector Contact Plating	Shielded Kit Nos. with Slotted Mounting Ears	with Mounting Ears with Molded-In Inserts
20	1.377	1.461	1.462	1.782	Duplex[1]	746638-8	111297-8
					Duplex[2]	746637-8	111296-8
26	1.677	1.761	1.762	2.082	Duplex[1]	1-746638-2	1-111297-2
					Duplex[2]	1-746637-2	1-111296-2
34	2.077	2.161	2.162	2.482	Duplex[1]	1-746638-6	1-111297-6
					Duplex[2]	1-746637-6	1-111296-6
40	2.377	2.461	2.462	2.782	Duplex[1]	1-746638-8	1-111297-8
					Duplex[2]	1-746637-8	1-111296-8
50	2.877	2.961	2.962	3.282	Duplex[1]	2-746638-2	2-111297-2
					Duplex[2]	2-746637-2	2-111296-2
60	3.377	3.461	3.462	3.782	Duplex[1]	2-746638-4	2-111297-4
					Duplex[2]	2-746637-4	2-111296-4

[1] .000015 gold on pin end; .000100-.000200 bright tin-lead on cable termination end; entire contact underplated with .000050 nickel.

[2] .000030 gold on pin end; .000100-.000200 bright tin-lead on cable termination end; entire contact underplated with .000050 nickel.

Note: These shielded pin connectors include a connector and two shields and hardware where appropriate. Shields are packaged unassembled.



Recommended Panel Cutout

Planar Ribbon Cable .050 Centers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

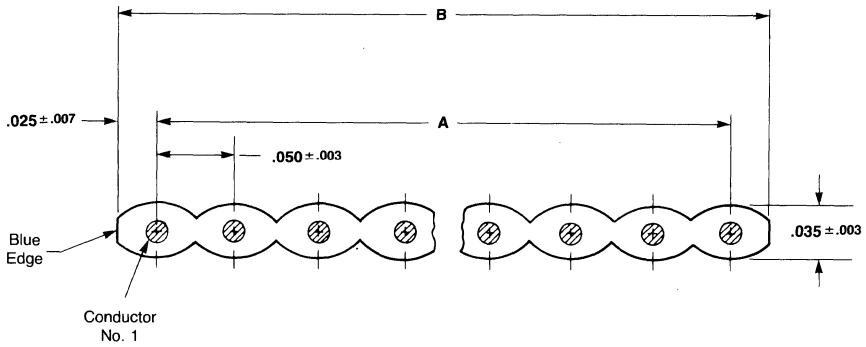
An integral part of AMP flat cable termination system is flat ribbon cable. The cable is furnished in a wide range of popular sizes and is stored on reels with a 100 ft. minimum capacity for easy handling. The cable also can be terminated to any pre-assembled AMP-LATCH connector using AMP application tools featuring one-step mass termination technology. The tooling is presented on pages 5032 and 5033.

Planar Ribbon Cable is constructed of standard gray polyvinylchloride (PVC) insulation and 28 AWG stranded conductors.

Recognized under the Component Program of Underwriters Laboratories Inc. File No. E53793, UL Style No. 2651 ®

In accordance with IPC-FC-222/19

Flammability Rating – VW-1



Conductors: 28 AWG tinned copper, 7/36 stranded
Insulation: standard gray PVC, flame retardant; with blue edge on Conductor No. 1 side.
Temperature Rating: -20°C to +105°C
Voltage Rating: 300 volts
Insulation Resistance: 10,000 megohms/10 ft

Typical Electrical Values:	**GND-SIG-GND**
Characteristic Impedance	104-106 ohms
Capacitance	13.5 pf/ft
Time Delay	1.44 ns/ft

Crosstalk (per 9.84 ft section):	**0.5 ns Rise Time**	**1 ns Rise Time**	**2 ns Rise Time**	**5 ns Rise Time**
Near End	2.8-3%	2.8-3%	2.8-3%	2.8-3%
Far End	19%	14.5%	9%	4%

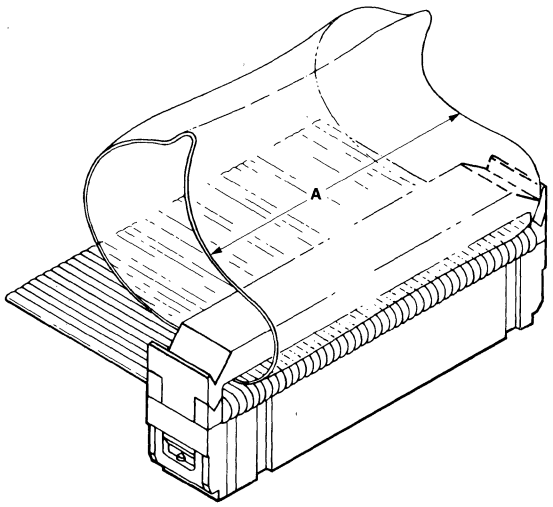
No. of Conductors	Dimensions A	Dimensions B	Reel Part No.*
9	.400	.450	2-499116-1
10	.450	.500	499116-7
14	.650	.700	499116-1
15	.700	.750	2-499116-0
16	.750	.800	499116-2
18	.850	.900	1-499116-7
20	.950	1.000	499116-3
24	1.150	1.200	1-499116-1
25	1.200	1.250	1-499116-8
26	1.250	1.300	499116-4
30	1.450	1.500	1-499116-2
34	1.650	1.700	499116-8
36	1.750	1.800	1-499116-6
37	1.800	1.850	1-499116-9
40	1.950	2.000	499116-5
44	2.150	2.200	1-499116-0
50	2.450	2.500	499116-6
60	2.950	3.000	499116-9

* 100-ft. continuous (splice-free) reel.

Pull Tabs, Permanent (for Receptacles and Pin Connectors)

Material: Natural color PVC
94-VTM-1 Rating (thin material)

Related Product Data:
Receptacles used with:
Novo - pages 5004 and 5005
Technical Documents - page 5034



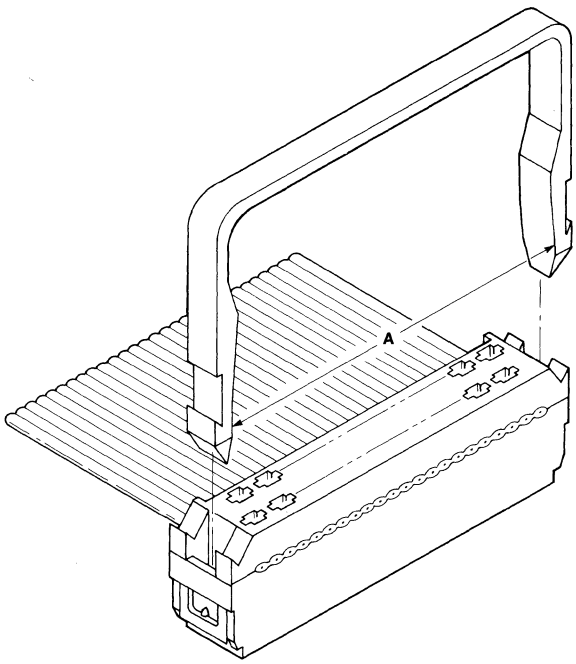
Note: This pull tab is installed manually between the cover and strain relief.

No. of Pos.	Dimension A	Pull Tab Part No.
—	120	88450-1
10	.44	88450-2
14	.64	88450-3
16	.74	88450-4
20	.88	88450-5
24	1.08	88450-6
26	1.18	88450-7
30	1.38	1-88450-2
34	1.58	88450-8
40	1.82	88450-9
50	2.32	1-88450-0
60	2.80	1-88450-1

Pull Tabs, Snap-In (for Receptacles without Strain Relief)

Material: Black thermoplastic, 94V-0 rated

Related Product Data:
Receptacles used with:
Novo - pages 5004 and 5005
Technical Documents - page 5034



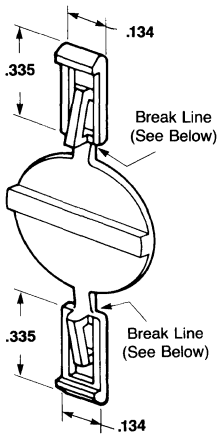
No. of Pos.	Dimension A	Pull Tab Part No.
10	.550	746601-1
14	.750	746601-2
16	.850	746601-3
20	1.050	746601-4
24	1.250	746601-5
26	1.350	746601-6
30	1.550	746601-7
34	1.750	746601-8
40	2.050	746601-9
44	2.250	1-746601-0
50	2.550	1-746601-1
60	3.050	1-746601-2
64	3.250	1-746601-3

Polarizer, Snap-In (for Pin Connectors, Universal Pin and Pinless Headers and Low Profile Pin Headers)

Material: Black thermoplastic, 94V-0 rated

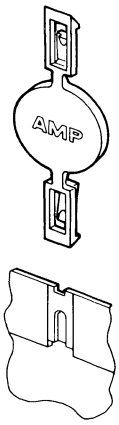
Part Nos.:
499991-2 (Packaged 50 per bag)
499991-3 (Packaged 1000 per box)

Related Product Data:
Pin Headers used with:
Universal - pages 5016 through 5019
Universal Pinless Headers used with - page 5020
Technical Documents - page 5034

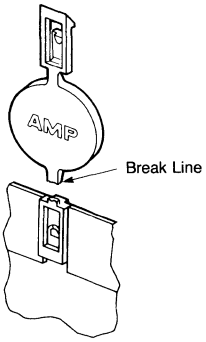


The snap-in polarizer provides military polarization for pin connectors (without detent windows), Universal pin and pinless headers and Low Profile pin headers. Installation of the polarizer is as follows:

Orient the polarizer so that the polarizer latch is on the same side as the inner wall (post side) of the connector/ header housing.



Slide the polarizer over the polarizing slot of the housing until the latch engages the hole. Snap off the tab at the break line next to the housing. Using the remaining polarizer, repeat the process for the other housing location.



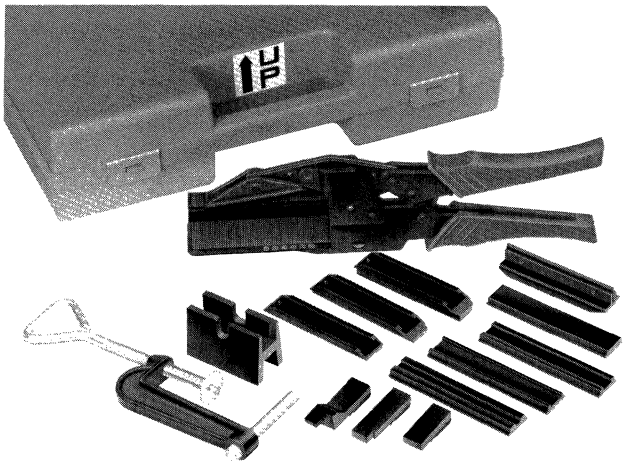
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Application Tooling for AMP-LATCH Connectors (One-Step Termination)

Hand Tool Kit

This hand tool kit is designed to terminate AMP-LATCH connectors up to and including 60 positions with contacts on .100 x .100 centers to flat ribbon cable. Cable conductor sizes may be 30 AWG solid, 28 AWG solid or stranded or 26 AWG solid or stranded.

Hand Tool Kit includes the Hand Tool, a Bench Mount Clamp, a Cable Cutter (No. 543263-1), locators for Receptacle, Card Edge and HDF connectors and the plastic case.

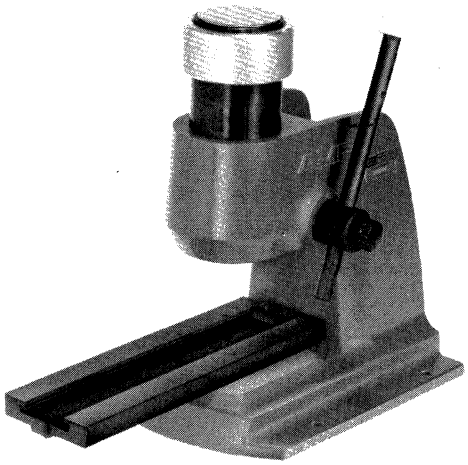


Hand Tool Kit No. 91271-1

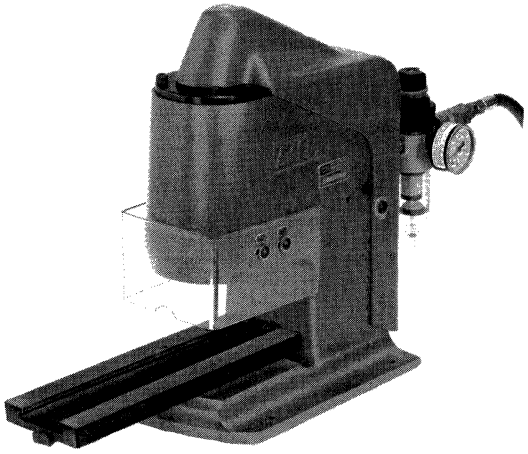
Manual Arbor Tool and Pneumatic Auto-Cycle Tool

These application tools are designed for one-step termination of AMP-LATCH connectors to planar, ground plane and shielded/jacketed ribbon cable on .050 centers. A complete set of tooling consists of a press (manual or pneumatic), a termination die set and a locator kit.

For additional information about tooling, call the AMP Customer Service Hotline 1-800-722-1111.

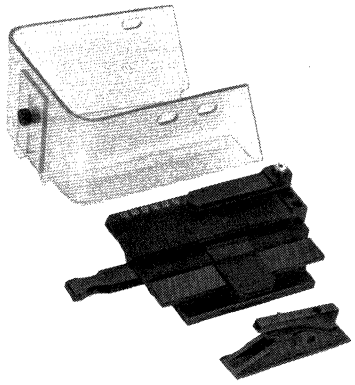


Manual Arbor Tool No. 91085-2



Pneumatic Auto-Cycle Tool No. 91112-3

Note: Tooling is available for other manufacturer's manual arbor tools. For information, call the AMP Product Information Center 1-800-522-6752



Pneumatic Auto-Cycle Tool Termination Die Set and Shield No. 543360-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

R-CAM 2A & R-CAM 3A Ribbon Cable Assembly Machines

R-CAM 2A
Machine No. 760700-6

The R-CAM 2A Machine, the industry's most complete production ribbon cable machine for .050 centerline cable, is capable of applying and testing up to 1,672 connectors per hour.

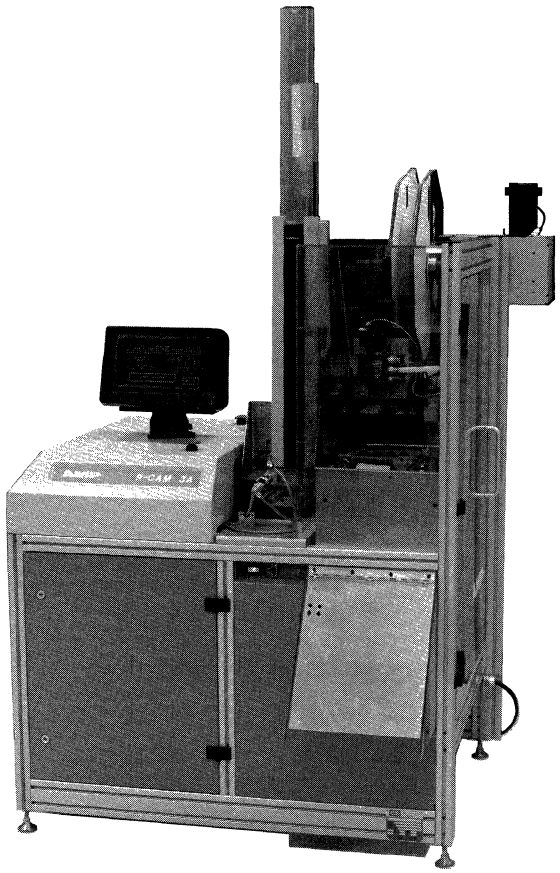
This versatile machine automatically feeds cable and connectors, terminates cable, then tests and ejects finished cable assembly. Cable assemblies, with cable length up to 48, may contain a total of four connectors in any orientation. The machine tests each assembly for shorts, opens and high-voltage breakdown, isolating any defective assemblies, and automatically stops after three consecutive defects as programmed by the operator.

The R-CAM 2A Machine is operated by a touch screen, making it easy to use. It can be programmed from the touch screen, and parameters for over 100 cable assemblies can be retained in memory. The unit checks the program against the machine set-up to prevent errors. The interactive display provides troubleshooting direction to pinpoint malfunctions. Changeover is toolless and rapid; the most extensive change requires only 25 minutes.

Currently, the machine applies AMP-LATCH receptacles and card edge connectors to cable meeting AMP Product Specification 108-40004. It accommodates 10 to 64 position card-edge connectors and 20- through 60-position receptacles without tooling changes. Tooling for other configurations is also available.

Length: 108
Width: 54
Height: 60
Air: 80 psi 8 SCFM
Electric Requirement: 115 VAC, 50 or 60 Hz, 15 amperes

R-CAM 3A
Machine No. 761900-1



Length: 48
Width: 48
Height: 62
Air: 80 psi @ 8 scfm
Electric Requirement: 120 VAC, 50-60 Hz, Single Phase, 15 amperes

Various technical documents are available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-40000	Novo Receptacles
108-40004	Ribbon Cable, PVC Insulated, AMP
108-40009	Receptacles
108-40013	Paddle Board and DIP Plug Connectors
108-40018	Pin Headers
108-40019	Pin Headers with ACTION PIN Contacts
108-40022	Pin Connectors
108-40024	Stackable Novo Receptacles
108-46000	Card Edge Connectors
108-46001	Shielded Receptacles

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-40005	Ribbon Cable Connectors
114-46000	Shielded Novo Receptacles

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

Instructional material covering operation, setup, maintenance, repair, etc. is included with each machine, tool or die set. If this material is required prior to receiving your tooling, call the AMP Customer Service Hotline 1-800-722-1111 for the applicable document.

Flexible Film Products

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

The AMP family of Flexible Film Products for FFC cable includes a wide variety of high density board-to-board, cable-to-board and cable-to-cable connectors designed for automated assembly. The family is composed of pin and receptacle housings on .050 [1.27] and .100 [2.54] centerline contact spacings for efficient use of printed circuit board area.

Receptacle housings not only mate with the pin housings called out in this catalog, but also mate with an array of pc board headers from other AMP connector lines, including AMPMODU MTE, AMPMODU .025 Square, AMPMODU System 50 and AMP-LATCH product families. These are available in vertical (straight) and right angle, and in both shrouded and unshrouded versions.

Flexible flat conductor cable and cable jumper assemblies can be supplied in both .050 [1.27] and .100 [2.54] centerline configurations. In addition, shielded FFC cable assemblies can be custom-made to meet the internal shielding requirements of today's complex electronic equipment.

Turn this page to see the broad range of versatility of AMP Flexible Film Products.

Connector Systems for:

- Flexible Flat Conductor (FFC) Cable
- Flexible Etched Circuitry
- Flexible Ink Screened Circuitry
- Discrete Wire (Round)

Flexible Flat Conductor (FFC) Cable

FFC cable is a planar parallel conductor cable. It can be used as a one-to-one connector or as a complex harness, allowing split-outs and special routing. In routing flexible flat conductor cable, attention should be given for using the natural contour of the cable. When required, folds or split-outs can be provided to meet packaging needs. For high cycle life applications, a rolling "C-shaped" installation gives maximum flexure. With proper layout, numerous advantages are realized:

Weight Savings—Considerably lighter than other conventional harness methods.

Space Savings—As much as 50% over round wire.

Flexibility—With optimum layout, multi-million cycles can be achieved.

Heat Dissipation—Dissipates heat more efficiently due to larger surface area-to-volume ratio.

Ruggedness—A flat plane provides a collective strength for tensile loads and contact retention.

Assembly Capabilities

Customed-designed cable assemblies can be supplied in a variety of configurations. All components listed in the catalog on pages 5038 thru 5071 may be used as part of an assembly. Some of the popular assemblies are shown on pages 5036, 5037 and 5072. Also, assemblies for special shielding applications are available.

Need more information?

Call the Product Information Center: 1-800-522-6752.

The Product Information Center is staffed with specialists well versed in all AMP Products. The Center can provide you with:

- Technical Support
- Catalogs
- Technical Documents
- Product Samples
- AMP Authorized Distributor Locations

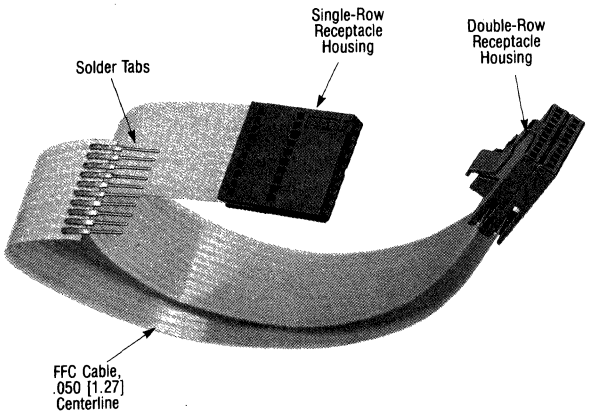
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

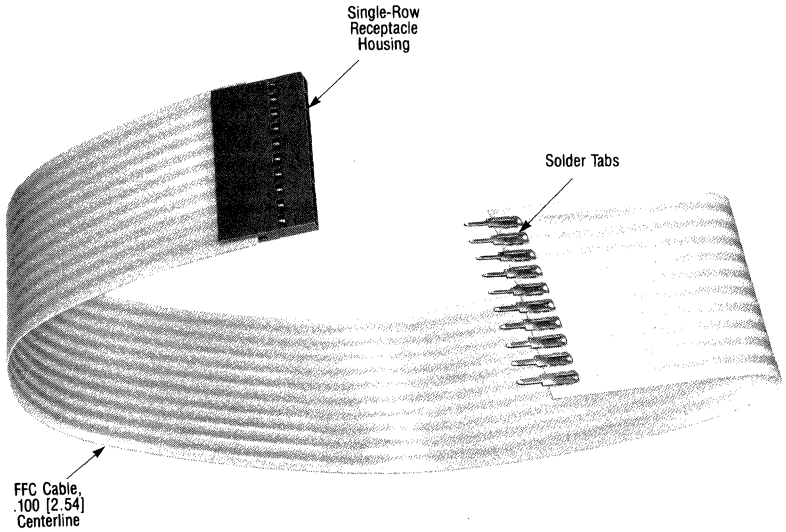
Custom Designed Flexible Flat Conductor Cable Assemblies, .050 [1.27] and .100 [2.54] Centerlines

AMP can supply customized flexible flat conductor cable assemblies using the components shown on pages 5038 thru 5045 and 5048 thru 5071.

Typical examples of custom-designed cable assemblies are shown here and on page 5037.



.050 [1.27] Centerline



Performance Characteristics:

Contact Current Rating—1.5 amperes†

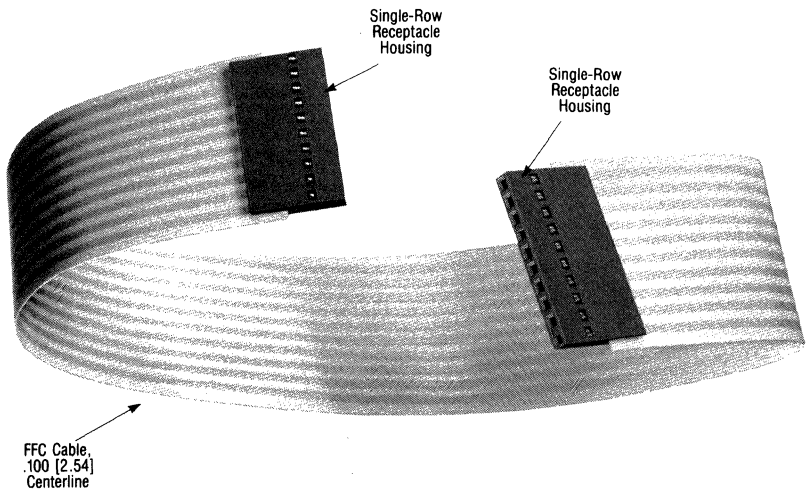
Operating Temperature—−55°C to +105°C

Voltage Rating—300 volts

Insulation Resistance—5000 megohms (min.) between contacts

†1.5 ampere rating is for single circuit. Multiple circuits, ambient temperature and conductor size affect current carrying capacity.

.100 [2.54] Centerline



Performance Characteristics:

Contact Current Rating—2 amperes†

Operating Temperature—−65°C to +105°C

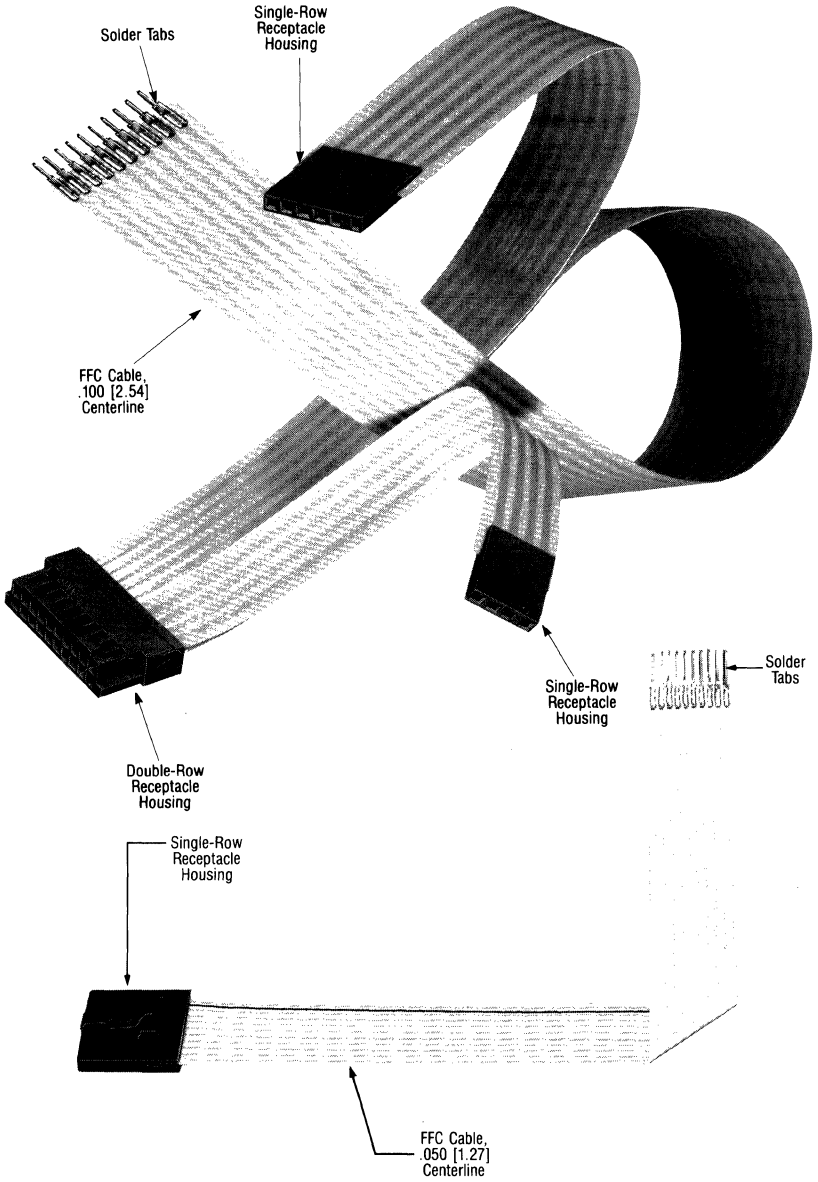
Voltage Rating—300 volts

Insulation Resistance—5000 megohms (min.) between contacts

†2 ampere rating is for single circuit. Multiple circuits, ambient temperature and conductor size affect current carrying capacity.

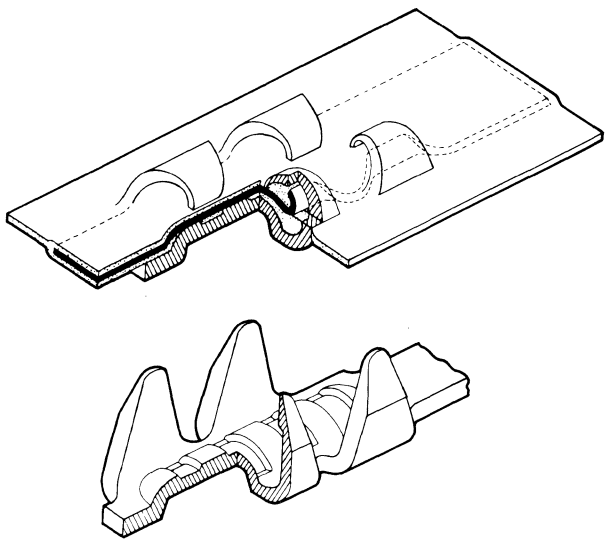
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



Multiple-Crimp Contact Design (.100 [2.54] Centerline Shown)

The multiple crimp design is featured on all .050 [1.27] and .100 [2.54] centerline flexible film contacts. Four crimping tines on each contact are used to penetrate the cable insulation and conductor, assuring optimum electrical and mechanical reliability. FFC contacts are supplied as combs for mass termination, and in strip form on reels for sequential termination.



Product Facts .050 [1.27] Centerline

- Connectors Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476
- Flexible Flat Conductor Cable Recognized under the Component Program of Underwriters Laboratories Inc., File No. E53793 per UL Styles 2690 and 2742 (300 volts).
- Choice of receptacle or solder tab contacts.
- See general features below.

Product Facts .100 [2.54] Centerline

- Connectors Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- FFC Cable Jumper Assemblies Recognized under the Component Program of Underwriters Laboratories Inc., File No. E53799
- Flexible Flat Conductor Cable Recognized under the Component Program of Underwriters Laboratories Inc., File No. E53793 per UL Style 2646 (300 volts)
- Choice of pin, receptacle, card edge or solder tab contacts.
- Capabilities of intermixing FFC cable and round wire contacts in same housing.
- See general features below.

General Features

- Eliminates cable stripping and plating requirements.
- Wide variety of housings available.
- Mass termination and high-speed sequential application of multiple-crimp contacts assure lowest applied cost.
- Custom-designed cable assemblies can be made available.

.050 [1.27] Centerline Flexible Flat Conductor Cable

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

.026 [0.66] Wide x .003 [0.08] Thick Conductors

Material:

Conductors—Unplated copper per QQ-C-502
Insulation—Flame retardant polyester film

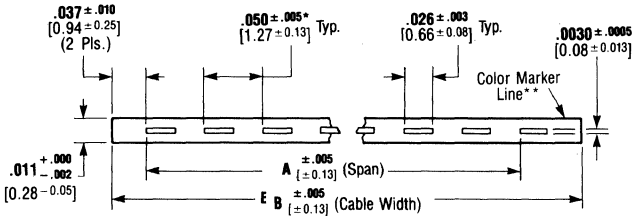
Performance Characteristics:

Current Rating—1.5 amperes† (30 AWG [0.05 mm²] equivalent)
Voltage Rating—300 volts (per UL Styles 2690 and 2742)
Temperature Rating—−20°C to +105°C
Insulation Resistance—5000 megohms (min.) per 10 feet

†1.5 ampere rating is for single circuit. Multiple circuits, ambient temperature and conductor size affect current carrying capacity.

Related Product Data:

Termination Capabilities:
MTF Contact Combs - page 5039
Preloaded Housings - pages 5040 & 5041
Technical Documents - page 5078



*±.005 [±0.13] tolerance not to accumulate within a conductor span.
**Color marker to appear in this margin only and not to extend beyond the third conductor on same side of cable.

Typical Electrical Values:

Resistance — 110 ohms/1000 ft max.
Capacitance — 13.8 pf/ft max.
Impedance — 113 ohms (GND-SIG-GND)

Recognized under the Component Program of Underwriters Laboratories Inc. File No. E53793

Cable Size (No. of Conductors)	Dimensions A Inch	A mm	B Inch	B mm	Part No.
4	.150	3.81	.250	6.35	3-499795-0
5	.200	5.08	.300	7.62	1-499795-9
6	.250	6.35	.350	8.89	2-499795-7
7	.300	7.62	.400	10.16	2-499795-5
8	.350	8.89	.450	11.43	2-499795-8
9	.400	10.16	.500	12.70	2-499795-9
10	.450	11.43	.550	13.97	499795-1
11	.500	12.7	.600	15.24	499795-2
12	.550	13.97	.650	16.51	499795-3
13	.600	15.24	.700	17.78	499795-4
14	.650	16.51	.750	19.05	499795-5
15	.700	17.78	.800	20.32	499795-6
17	.800	20.32	.900	22.86	499795-8
20	.950	24.13	1.050	26.67	1-499795-1
22	1.050	26.67	1.150	29.21	1-499795-3
24	1.150	29.21	1.250	31.75	1-499795-5
25	1.200	30.48	1.300	33.02	1-499795-6
26	1.250	31.75	1.350	34.29	2-499795-6
30	1.450	36.83	1.550	39.37	2-499795-0
35	1.700	43.18	1.800	45.72	2-499795-1
36	1.750	44.45	1.850	46.99	1-499795-8
40	1.950	49.53	2.050	52.07	2-499795-2
45	2.200	55.88	2.300	58.42	2-499795-3
50	2.450	62.23	2.550	64.77	2-499795-4
55	2.700	68.58	2.800	71.12	3-499795-1

Notes: 1. Cable is packaged 500 ft [152.4 m] per reel.
2. Other cable sizes can be made available. Also available are cable with tin-plated prepared ends. Consult AMP Incorporated.

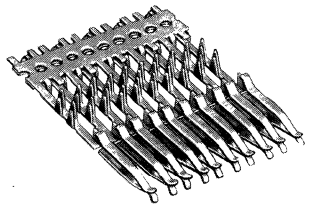
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

.050 [1.27] Centerline MTF Contact Combs (for Mass Termination)

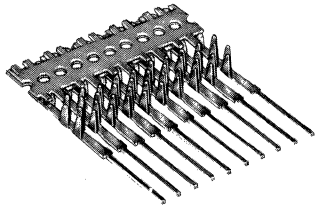
Material and Finish:

Phosphor bronze; plated gold duplex or bright tin-lead overall (See chart below.)



Related Product Data:

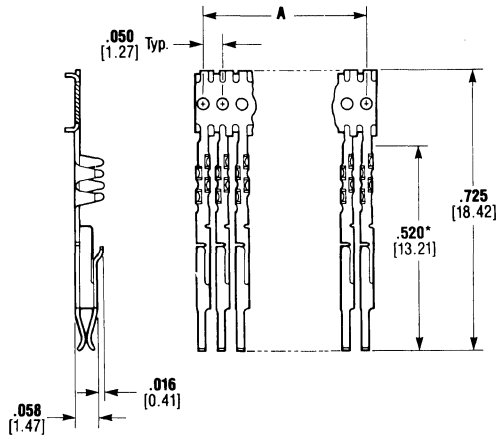
Performance Characteristics - page 5036
FFC Cable - page 5038
Preloaded & Unloaded Housings - pages 5040 thru 5043
Technical Documents - page 5078



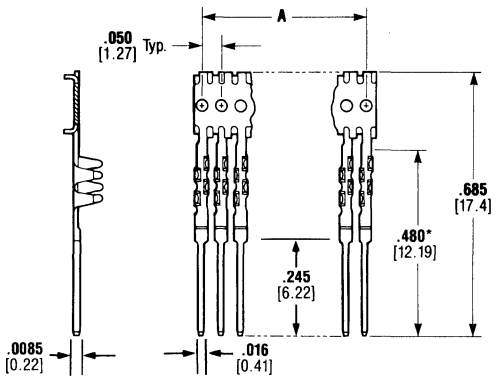
Related Product Data:

Performance Characteristics - page 5036
FFC Cable - page 5038
Technical Documents - page 5078

Receptacle Combs



Solder Tab Combs



*After cut-off from carrier strip.

No. of Contacts per Comb	Dimension A		Receptacle Comb Part No.	Solder Tab Comb Part No.
	Inch	mm	Duplex[1]	Tin-Lead[2]
4	.150	3.81	487558-1	487562-1
5	.200	5.08	487558-2	487562-2
6	.250	6.35	487558-3	487562-3
7	.300	7.62	487558-4	487562-4
8	.350	8.89	487558-5	487562-5
10	.450	11.43	487558-7	487562-7
12	.550	13.97	487558-9	487562-9
13	.600	15.24	1-487558-0	1-487562-0
15	.700	17.78	1-487558-2	1-487562-2
17	.800	20.32	1-487558-4	1-487562-4
20	.950	24.13	1-487558-7	1-487562-7
22	1.050	26.67	1-487558-9	1-487562-9
25	1.200	30.48	2-487558-2	2-487562-2
30	1.450	36.83	2-487558-7	2-487562-7
36	1.750	44.45	3-487558-3	3-487562-3
40	1.950	49.53	3-487558-7	3-487562-7
45	2.200	55.88	4-487558-2	4-487562-2
50	2.450	62.23	4-487558-7	4-487562-7

[1]Duplex plated .000030 [0.00076] gold on mating area, .000100 [0.00254] min. bright tin-lead in crimp area, with entire contact underplated .000050 [0.00127] min. nickel.
[2]Plated .000100 [0.00254] min. bright tin-lead over .000050 [0.00127] min. nickel on entire contact.

Note: Other contact comb sizes, up to 50 positions max., can be made available; consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

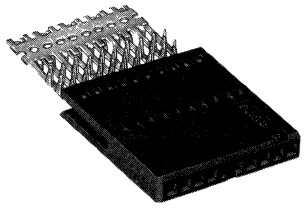
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

.050 [1.27] Centerline Single Row Receptacle Housings— Unloaded and Preloaded with MTF Contacts

Material and Finish:

Housing—Black thermoplastic, flame retardant, 94V-0 rated

Contacts—Phosphor bronze; plated gold duplex



Related Product Data:

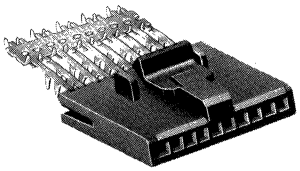
Performance Characteristics - page 5036

FFC Cable - page 5038

Receptacle Contact Combs - 487558 Series, page 5039

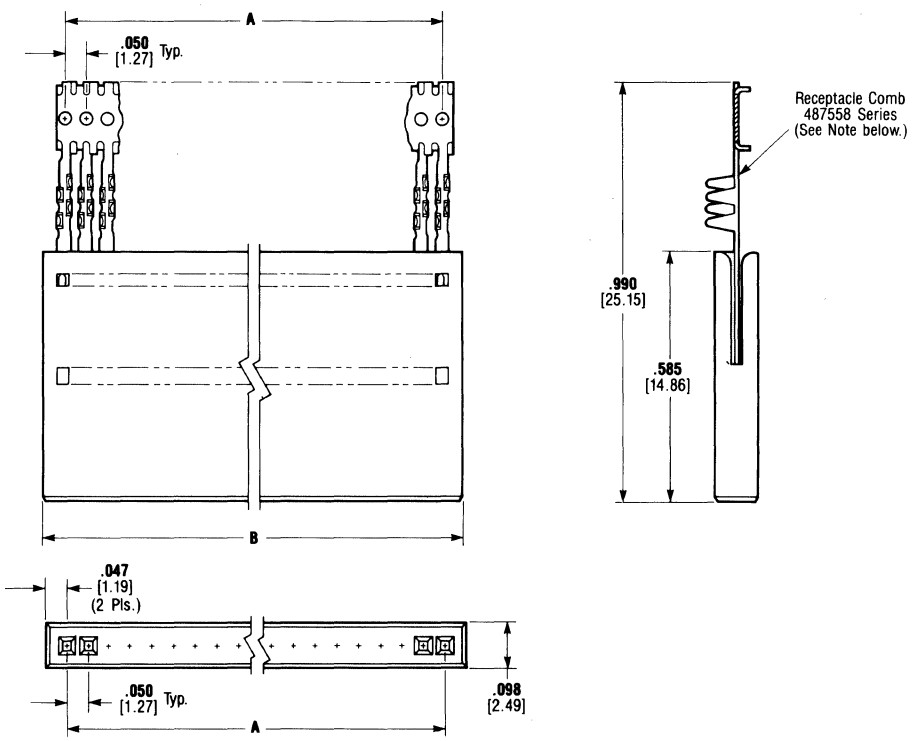
Mateable AMPMODU System 50 Headers - AMP Catalog 82178

Technical Documents - page 5078

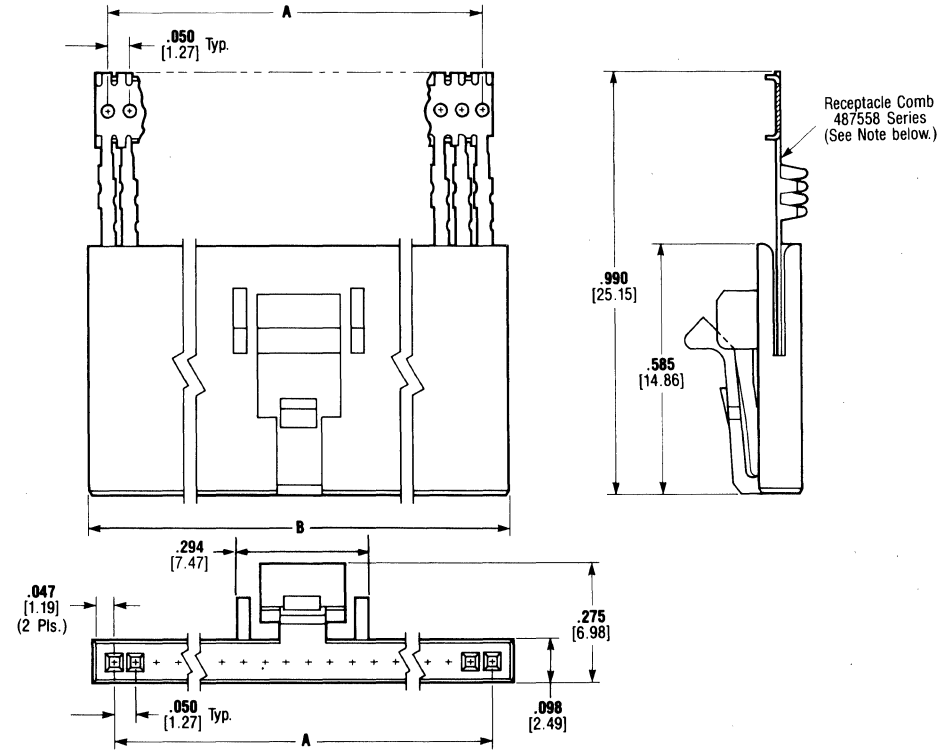


*Preloaded housings shown for purposes of illustration.

Plain Housings*



Latch Style Housings*



Note: Preloaded receptacle housings are furnished with contact combs partially inserted into the housings. Contacts can be fully inserted into the housings by hand or automatically when terminated with AMP mass termination tooling.

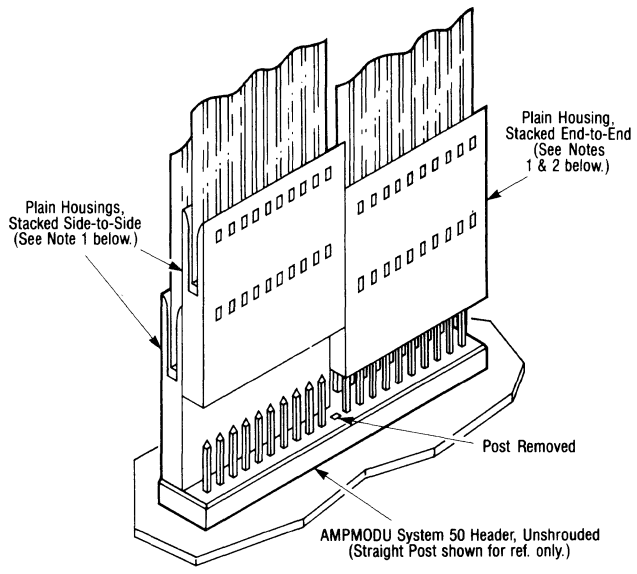
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Positions	Dimensions		Part Numbers			
			Plain Receptacle Housing		Latch Style Receptacle Housing	
	A	B	Unloaded	Preloaded-Duplex[1]	Unloaded	Preloaded-Duplex[1]
4	.150 3.18	.244 6.20	487544-1	487554-1	487545-1	487550-1
5	.200 5.08	.294 7.47	487544-2	487554-2	487545-2	487550-2
6	.250 6.35	.344 8.74	487544-3	487554-3	487545-3	487550-3
7	.300 7.62	.394 10.01	487544-4	487554-4	487545-4	487550-4
8	.350 8.89	.444 11.28	487544-5	487554-5	487545-5	487550-5
10	.450 11.43	.544 13.82	487544-7	487554-7	487545-7	487550-7
12	.550 13.97	.644 16.36	487544-9	487554-9	487545-9	487550-9
13	.600 15.24	.694 17.63	1-487544-0	1-487554-0	1-487545-0	1-487550-0
15	.700 17.78	.794 20.17	1-487544-2	1-487554-2	1-487545-2	1-487550-2
17	.800 20.32	.894 22.71	1-487544-4	1-487554-4	1-487545-4	1-487550-4
20	.950 24.13	1.044 26.52	1-487544-7	1-487554-7	1-487545-7	1-487550-7
22	1.050 26.67	1.144 29.06	1-487544-9	1-487554-9	1-487545-9	1-487550-9
25	1.200 30.48	1.294 32.87	2-487544-2	2-487554-2	2-487545-2	2-487550-2
30	1.450 36.83	1.544 39.22	2-487544-7	2-487554-7	2-487545-7	2-487550-7
36	1.750 44.45	1.844 46.84	3-487544-3	3-487554-3	3-487545-3	3-487550-3
40	1.950 49.53	2.044 51.92	3-487544-7	3-487554-7	3-487545-7	3-487550-7
45	2.200 55.88	2.294 58.27	4-487544-2	4-487554-2	4-487545-2	4-487550-2
50	2.450 62.23	2.544 64.62	4-487544-7	4-487554-7	4-487545-7	4-487550-7

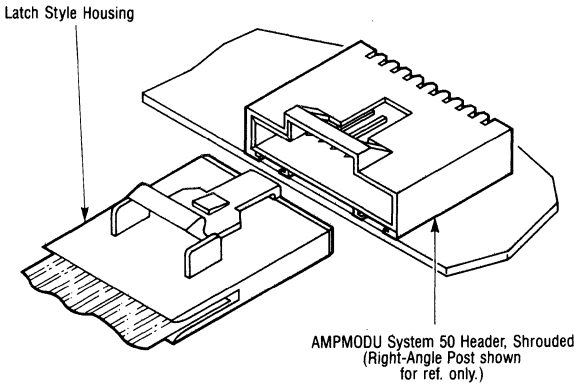
[1]Duplex plated .000030 [0.00076] gold on mating area, .000100 [0.00254] min. bright tin-lead in crimp area, with entire contact underplated .000050 [0.00127] min. nickel.

Note: Other sizes of unloaded and preloaded receptacle housings (plain and latch style) can be made available, consult AMP Incorporated.



Notes: 1. Plain housings are side-to-side stackable on either straight or right-angle posted, unshrouded AMPMODU System 50 headers.
2. For end-to-end stacking, the posts located between the adjoining housings must be removed to provide housing end clearance.

Typical Cable-to-Board Application of Plain Receptacle Housing



Typical Cable-to-Board Application of Latch Style Receptacle Housing

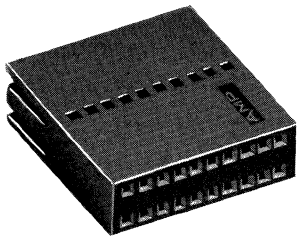
.050 [1.27] Centerline Double Row Receptacle Housings for MTF Contacts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material:

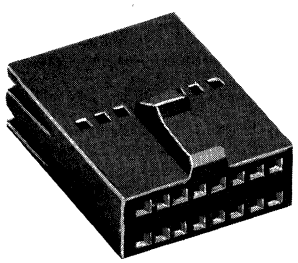
Black, thermoplastic; flame retardant, 94V-0 rated



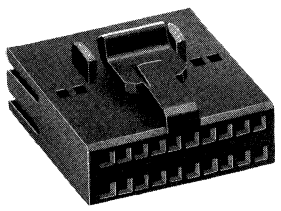
Plain Style Housings

Related Product Data:

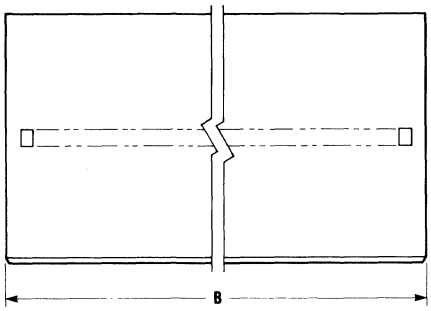
Performance Characteristics - page 5036
FFC Cable - page 5038
Receptacle Contact Combs - 487558 series, page 5039
Mateable AMPMODU System 50 Headers - AMP Catalog 82178
Technical Documents - page 5078

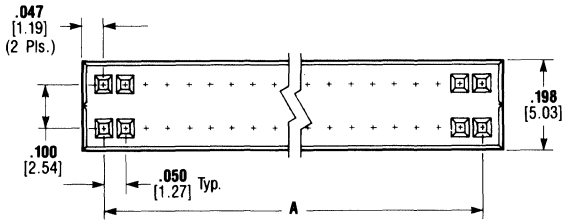


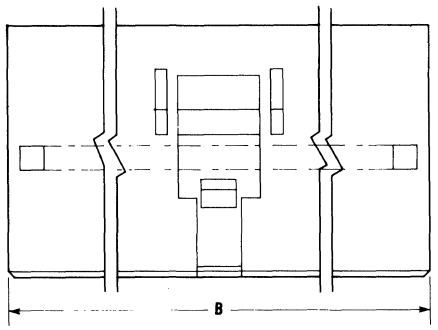
Detent Style Housings

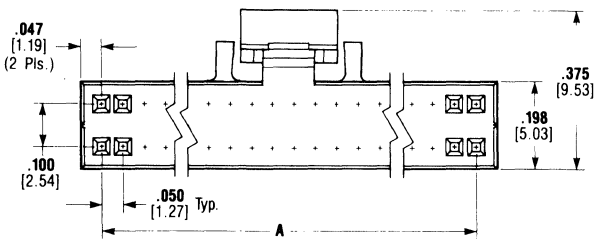


Latch Style Housings

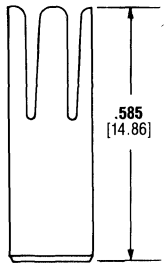




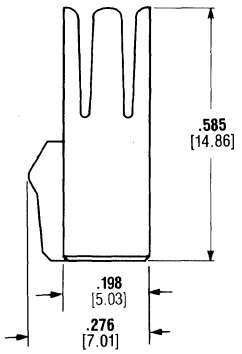




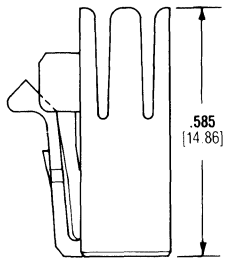
Latch Style Housing (Illustrated)



Plain



Detent



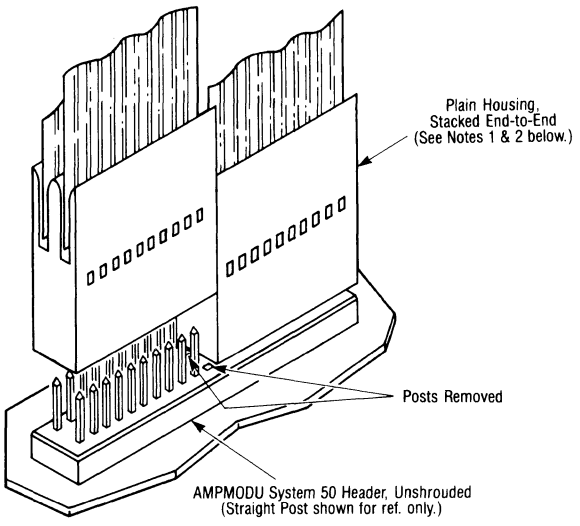
Latch

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

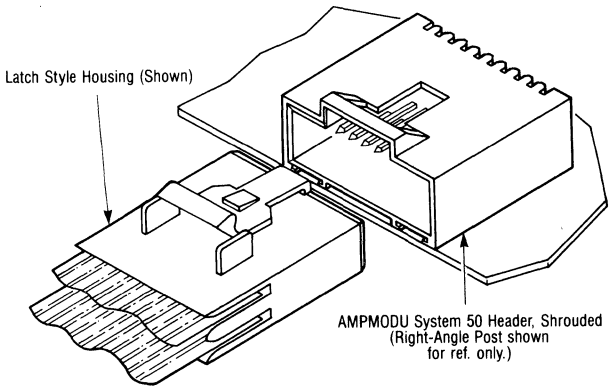
No. of Positions	Dimensions A	Dimensions B	Plain Housing Part No. (Unloaded)	Latch Style Housing Part No. (Unloaded)	Detent Style Housing Part No. (Unloaded)
8	**.150** 3.81	**.247** 6.27	487919-4	—	487924-4
10	**.200** 5.08	**.297** 7.54	487919-5	—	487924-5
12	**.250** 6.35	**.347** 8.81	487919-6	—	487924-6
14	**.300** 7.62	**.397** 10.08	487919-7	—	487924-7
16	**.350** 8.89	**.447** 11.35	487919-8	—	487924-8
20	**.450** 11.43	**.547** 13.89	487919-1	487914-1	—
24	**.550** 13.97	**.647** 16.43	487919-9	487914-4	—
26	**.600** 15.24	**.697** 17.7	1-487919-0	487914-5	—
30	**.700** 17.78	**.797** 20.24	487919-2	487914-2	—
34	**.800** 20.32	**.897** 22.78	1-487919-1	487914-6	—
40	**.950** 24.13	**1.047** 26.59	1-487919-2	487914-7	—
44	**1.050** 26.67	**1.147** 29.13	1-487919-3	487914-8	—
50	**1.200** 30.48	**1.297** 32.94	1-487919-4	487914-9	—
60	**1.450** 36.83	**1.547** 39.29	487919-3	487914-3	—
72	**1.750** 44.45	**1.847** 46.91	3-487620-3	3-487621-3	—
80	**1.950** 49.53	**2.047** 51.99	3-487620-7	3-487621-7	—
100	**2.450** 62.23	**2.547** 64.69	4-487620-7	4-487621-7	—

Note: Other sizes of unloaded receptacle housings (plain, latch and detent styles) can be made available, consult AMP Incorporated.



Notes: 1. Plain housings are end-to-end stackable on either straight or right-angle posted, unshrouded AMPMODU System 50 headers.
2. For end-to-end stacking, the two posts located between the adjoining housings must be removed to provide housing end clearance.

Typical Cable-to-Board Application of Plain Receptacle Housing



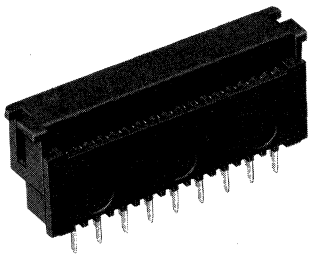
Typical Cable-to-Board Application of Latch Style Receptacle Housing

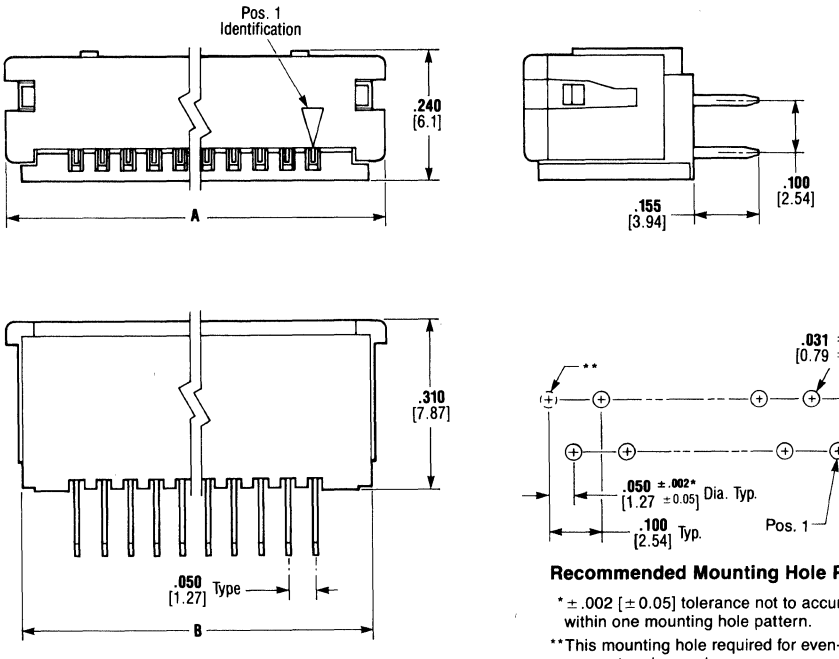
.050 [1.27] Centerline ZIF-Line Connectors

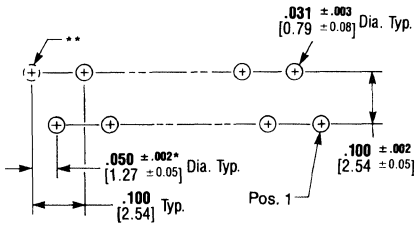
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Vertical Cable Entry







Recommended Mounting Hole Pattern

*±.002 [±0.05] tolerance not to accumulate within one mounting hole pattern.

**This mounting hole required for even-numbered connector sizes only.

Note: ZIF-Line connector illustrated above with cover in closed position.

Material and Finish:

Housing & Cover—Black thermoplastic, flame retardant, 94V-0 rated

Contacts—Phosphor bronze, plated .000150 [0.00381] min. bright tin-lead over .000050 [0.00127] min. nickel on entire contact

Performance Characteristic:

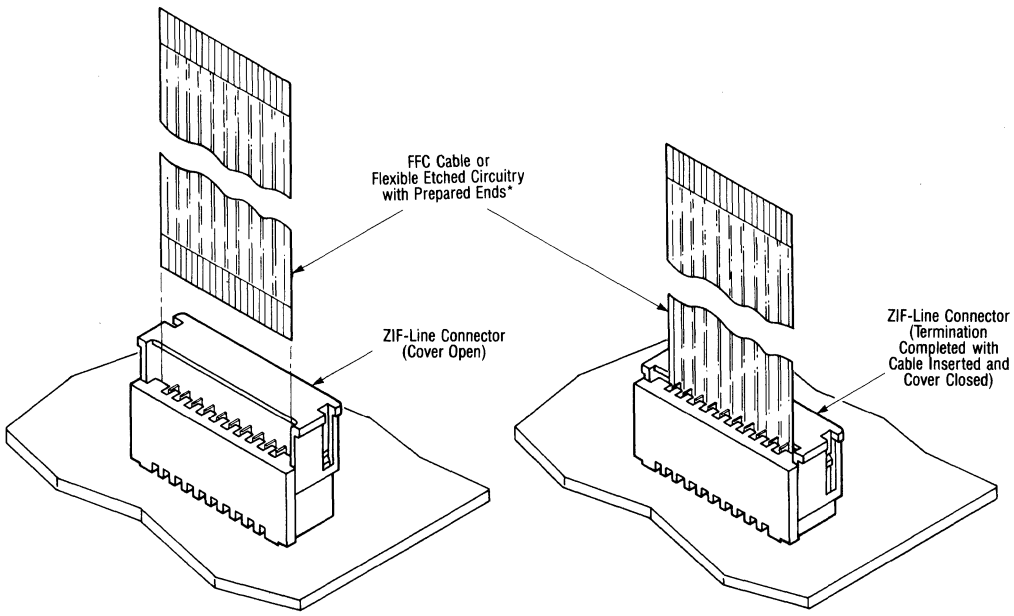
Contact Current Rating—1 ampere†

†1 ampere rating is for single circuit. Multiple circuits, ambient temperature and conductor size affect current carrying capacity.

Related Product Data:

FFC Cable (with Tin-Plated Prepared Ends) - Consult AMP Incorporated

Technical Documents - page 5078



*FFC cable with tin-plated prepared ends can be made available, consult AMP Incorporated.

Note: Special preparation of cable is required, refer to AMP Application Specification No. 114-16009.

Typical Flexible Flat Conductor Cable-to-Board Application

Specifications subject to change.
For latest design specifications...
1-800-522-6752

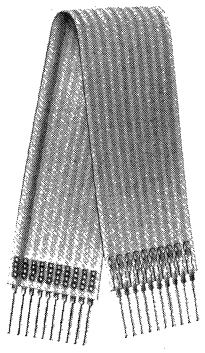
Dimensioning:
Dimensions are in inches and millimeters.

No. of Positions	Dimensions				Connector Part No.
	A		B		
	Inch	mm	Inch	mm	
5	.470	11.94	.410	10.41	5-487576-0
6	.520	13.21	.460	11.68	5-487576-1
7	.570	14.48	.510	12.95	4-487576-8
8	.620	15.75	.560	14.22	4-487576-9
9	.670	17.02	.610	15.49	487576-1
10	.720	18.29	.660	16.76	487576-2
11	.770	19.56	.710	18.03	487576-3
12	.820	20.83	.760	19.3	487576-4
13	.870	22.1	.810	20.57	487576-5
14	.920	23.37	.860	21.84	487576-6
15	.970	24.64	.910	23.11	487576-7
16	1.020	25.91	.960	24.38	487576-8
17	1.070	27.18	1.010	25.65	487576-9
18	1.120	28.45	1.060	26.92	1-487576-0
19	1.170	29.72	1.110	28.19	1-487586-1
20	1.220	30.99	1.160	29.46	1-487576-2
21	1.270	32.26	1.210	30.73	1-487576-3
22	1.320	33.53	1.260	32	1-487576-4
23	1.370	34.8	1.310	33.27	1-487576-5
24	1.420	36.07	1.360	34.54	1-487576-6
25	1.470	37.34	1.410	35.81	1-487576-7
26	1.520	38.61	1.460	37.08	1-487576-8
27	1.570	39.88	1.510	38.35	1-487576-9
28	1.620	41.15	1.560	39.62	2-487576-0
29	1.670	42.42	1.610	40.89	2-487576-1
30	1.720	43.69	1.660	42.16	2-487576-2
31	1.770	44.96	1.710	43.43	2-487576-3
32	1.820	46.23	1.760	44.7	2-487576-4
33	1.870	47.5	1.810	45.97	2-487576-5
34	1.920	48.77	1.860	47.24	2-487576-6
35	1.970	50.04	1.910	48.51	2-487576-7
36	2.020	51.31	1.960	49.78	2-487576-8
37	2.070	52.58	2.010	51.05	2-487576-9
38	2.120	53.85	2.060	52.32	3-487576-0
39	2.170	55.12	2.110	53.59	3-487576-1
40	2.220	56.39	2.160	54.86	3-487576-2
41	2.270	57.66	2.210	56.13	3-487576-3
42	2.320	58.93	2.260	57.4	3-487576-4
43	2.370	60.2	2.310	58.67	3-487576-5
44	2.420	61.47	2.360	59.94	3-487576-6
45	2.470	62.74	2.410	61.21	3-487576-7
46	2.520	64.01	2.460	62.48	3-487576-8
47	2.570	65.28	2.510	63.75	3-487576-9
48	2.620	66.55	2.560	65.02	4-487576-0
49	2.670	67.82	2.610	66.29	4-487576-1
50	2.720	69.09	2.660	67.56	4-487576-2
51	2.770	70.36	2.710	68.83	4-487576-3
52	2.820	71.63	2.760	70.10	4-487576-4
53	2.870	72.9	2.810	71.37	4-487576-5
54	2.920	74.17	2.860	72.64	4-487576-6
55	2.970	75.44	2.910	73.91	4-487576-7

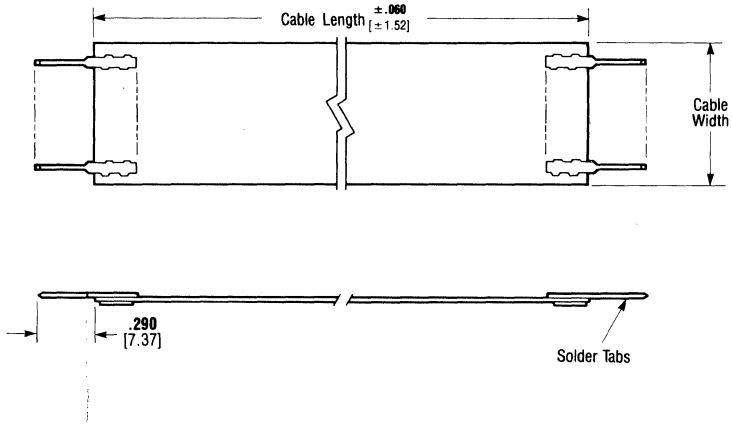
.050 [1.27] Centerline Flexible Flat Conductor Cable Jumper Assemblies, Loose Piece

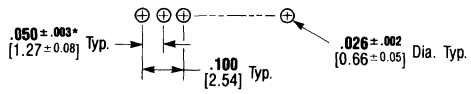
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



In-Line Straight Version





Recommended Mounting Hole Pattern

* ±.003 [±0.08] tolerance not to accumulate within one mounting hole pattern.

Material and Finish:

Conductors—Unplated copper per QQ-C-502, .023-.029 [0.58-0.74] wide

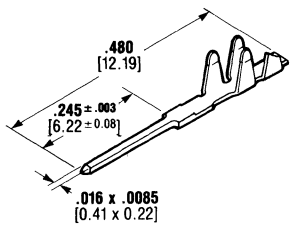
Insulation—Flame retardant polyester film

Solder Tab Contacts—Phosphor bronze, plated .000100 [0.00254] min. bright tin-lead over .000050 [0.00127] min. nickel on entire contact

Related Product Data:

Performance Characteristics - page 5036

Technical Documents - page 5078



Solder Tab Contact Part No. Series 487562, Page 5039.

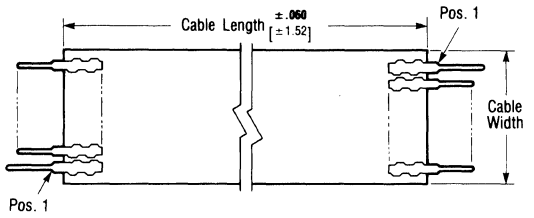
Cable Size (No. of Conductors)	Cable Width		In-Line Straight Cable Length/Part No.				
	Inch	mm	2 [50.8]	3 [76.2]	4 [101.6]	5 [127]	6 [152.4]
5	.300	7.62	487138-1	487138-2	487138-3	487138-4	487138-5
6	.350	8.89	487698-1	487698-2	487698-3	487698-4	487698-5
7	.400	10.16	487699-1	487699-2	487699-3	487699-4	487699-5
8	.450	11.43	487700-1	487700-2	487700-3	487700-4	487700-5
9	.500	12.70	487701-1	487701-2	487701-3	487701-4	487701-5
10	.550	13.97	487139-1	487139-2	487139-3	487139-4	487139-5
11	.600	15.24	487702-1	487702-2	487702-3	487702-4	487702-5
12	.650	16.51	487703-1	487703-2	487703-3	487703-4	487703-5
13	.700	17.78	487704-1	487704-2	487704-3	487704-4	487704-5
14	.750	19.05	487705-1	487705-2	487705-3	487705-4	487705-5
15	.800	20.32	487140-1	487140-2	487140-3	487140-4	487140-5
20	1.050	26.67	487141-1	487141-2	487141-3	487141-4	487141-5
25	1.300	33.02	487142-1	487142-2	487142-3	487142-4	487142-5
30	1.550	39.37	487143-1	487143-2	487143-3	487143-4	487143-5

Note: Other sizes of FFC cable jumper assemblies can be made available, consult AMP Incorporated.

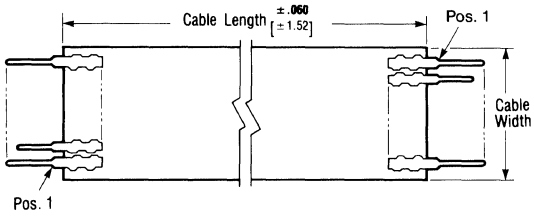
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

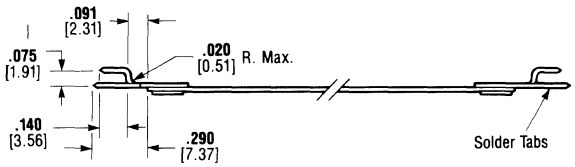
Staggered Straight Version



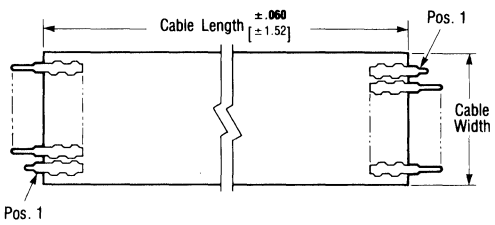
Configuration for Even Number of Conductors



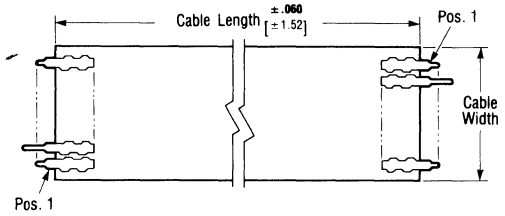
Configuration for Odd Number of Conductors



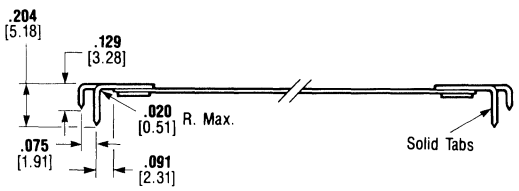
Staggered Right-Angle Version

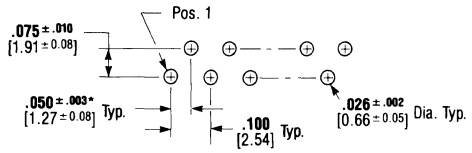


Configuration for Even Number of Conductors



Configuration for Odd Number of Conductors





Recommended Mounting Hole Pattern

* ±.003 [±0.08] tolerance not to accumulate within one mounting hole pattern.

Staggered Straight Cable Length/Part No.					Staggered Right-Angle Cable Length/Part No.					Cable Width		Cable Size (No. of Conductors)
2 [50.8]	3 [76.2]	4 [101.6]	5 [127]	6 [152.4]	2 [50.8]	3 [76.2]	4 [101.6]	5 [127]	6 [152.4]	Inch	mm	
487160-1	487160-2	487160-3	487160-4	487160-5	487148-1	487148-2	487148-3	487148-4	487148-5	.300	7.62	5
487706-1	487706-2	487706-3	487706-4	487706-5	487714-1	487714-2	487714-3	487714-4	487714-5	.350	8.89	6
487707-1	487707-2	487707-3	487707-4	487707-5	487715-1	487715-2	487715-3	487715-4	487715-5	.400	10.16	7
487708-1	487708-2	487708-3	487708-4	487708-5	487716-1	487716-2	487716-3	487716-4	487716-5	.450	11.43	8
487709-1	487709-2	487709-3	487709-4	487709-5	487717-1	487717-2	487717-3	487717-4	487717-5	.500	12.70	9
487161-1	487161-2	487161-3	487161-4	487161-5	487149-1	487149-2	487149-3	487149-4	487149-5	.550	13.97	10
487710-1	487710-2	487710-3	487710-4	487710-5	487718-1	487718-2	487718-3	487718-4	487718-5	.600	15.24	11
487711-1	487711-2	487711-3	487711-4	487711-5	487719-1	487719-2	487719-3	487719-4	487719-5	.650	16.51	12
487712-1	487712-2	487712-3	487712-4	487712-5	487720-1	487720-2	487720-3	487720-4	487720-5	.700	17.78	13
487713-1	487713-2	487713-3	487713-4	487713-5	487721-1	487721-2	487721-3	487721-4	487721-5	.750	19.05	14
487162-1	487162-2	487162-3	487162-4	487162-5	487150-1	487150-2	487150-3	487150-4	487150-5	.800	20.32	15
487163-1	487163-2	487163-3	487163-4	487163-5	487151-1	487151-2	487151-3	487151-4	487151-5	1.050	26.67	20
487164-1	487164-2	487164-3	487164-4	487164-5	487152-1	487152-2	487152-3	487152-4	487152-5	1.300	33.02	25
487165-1	487165-2	487165-3	487165-4	487165-5	487153-1	487153-2	487153-3	487153-4	487153-5	1.550	39.37	30

Note: Other sizes of FFC cable jumper assemblies can be made available, consult AMP Incorporated.

.100 [2.54] Centerline Flexible Flat Conductor Cable

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches and millimeters.

.050 [1.27] Wide x .003 [0.08] Thick Conductors

Material:

Conductors—Unplated copper per QQ-C-502
Insulation—Flame retardant polyester film

Performance Characteristics:

Current Rating—2 amperes† (28 AWG [0.10 mm²] equivalent)
Voltage Rating—300 volts (per UL Styles 2646)
Temperature Rating—−20°C to +105°C
Insulation Resistance—5000 megohms (min.)
Insulation Flammability—Polyester, self-extinguishing per UL Flame Test VW-1

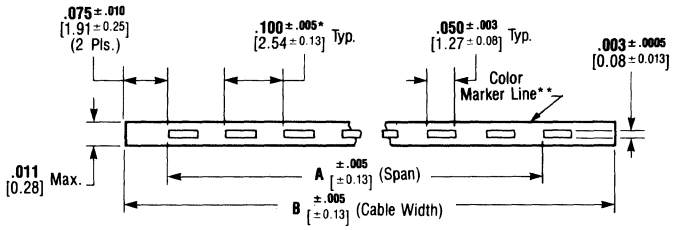
†2 ampere rating is for single circuit. Multiple circuits, ambient temperature and conductor size affect current carrying capacity.

Typical Electrical Values:

Resistance—55 ohms/1000 ft (max.)
Capacitance—10.8 pf/ft (max.)
Impedance—128 ohms (GND-SIG-GND) (nom.)

Related Product Data:

Termination Capabilities:
Contacts - page 5049
Application Tooling - page 5077
Technical Documents - page 5078



*±.005 [±0.13] tolerance not to accumulate within a conductor span.
**Color marker line to appear in this margin only and not to extend beyond the third conductor on same side of cable.

Recognized under the Component Program of Underwriters Laboratories Inc., File No. E53793 ®

Cable Size (No. of Conductors)	Dimensions A Inch	A mm	B Inch	B mm	Part No.
2	.100	2.54	.300	7.62	88586-1
3	.200	5.08	.400	10.16	88586-2
4	.300	7.62	.500	12.7	88586-3
5	.400	10.16	.600	15.24	88586-4
6	.500	12.7	.700	17.78	88586-5
7	.600	15.24	.800	20.32	88586-6
8	.700	17.78	.900	22.86	88586-7
9	.800	20.32	1.000	25.4	88586-8
10	.900	22.86	1.100	27.94	88586-9
11	1.000	25.4	1.200	30.48	1-88586-0
12	1.100	27.94	1.300	33.02	1-88586-1
13	1.200	30.48	1.400	35.56	1-88586-2
14	1.300	33.02	1.500	38.1	1-88586-3
15	1.400	35.56	1.600	40.64	1-88586-4
16	1.500	38.1	1.700	43.18	1-88586-5
17	1.600	40.64	1.800	45.72	1-88586-6
18	1.700	43.18	1.900	48.26	1-88586-7
19	1.800	45.72	2.000	50.8	1-88586-8
20	1.900	48.26	2.100	53.34	1-88586-9
21	2.000	50.8	2.200	55.88	2-88586-0
22	2.100	53.34	2.300	58.42	2-88586-1
23	2.200	55.88	2.400	60.96	2-88586-2
24	2.300	58.42	2.500	63.5	2-88586-3
25	2.400	60.96	2.600	66.04	2-88586-4
26	2.500	63.5	2.700	68.58	2-88586-5
27	2.600	66.04	2.800	71.12	2-88586-6
28	2.700	68.58	2.900	73.66	2-88586-7
29	2.800	71.12	3.000	76.2	2-88586-8
30	2.900	73.66	3.100	78.74	2-88586-9
31	3.000	76.2	3.200	81.28	3-88586-0
32	3.100	78.74	3.300	83.82	3-88586-1
33	3.200	81.28	3.400	86.36	3-88586-2
34	3.300	83.82	3.500	88.9	3-88586-3
35	3.400	86.36	3.600	91.44	3-88586-4

Notes: 1. Cable is packaged 500 ft. [152.4 m] per reel.
2. Other cable sizes can be made available. Consult AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Flexible Film Contacts, Continuous Strip (for Sequential Termination) Combs (for Mass Termination) Loose Piece (for Hand Termination)

Material and Finish:

Phosphor bronze; plated gold duplex or bright tin-lead overall (See chart below.)

Cable Thickness—.015 [0.38] Max. (Other cable thicknesses available, consult AMP Incorporated.)

Conductor Width—.047 [1.19] Min.

Related Product Data:

Performance Characteristics - page 5036

FFC Cable - page 5048

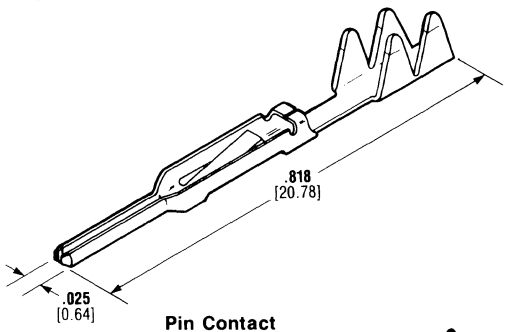
Unloaded Housings for:
Pin Contacts - pages 5052 & 5053, 5056-5059
Receptacle Contacts - pages 5050 & 5051, 5054 & 5055, 5060-5065
PCB Edge Connector Contacts - pages 5070 & 5071

Application Tooling - page 5077

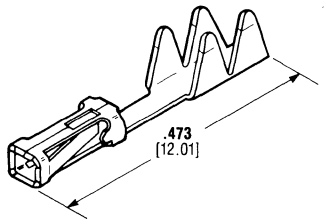
Technical Documents - page 5078

*** Comb Part Nos. Add suffix and prefix as indicated to Base Part Number shown in chart.

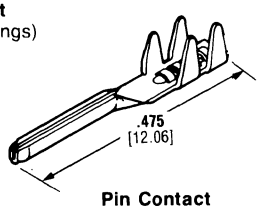
No. of Pos.	Add To Base Part No. Prefix	Suffix
3		-1
4		-2
5		-3
6		-4
7		-5
8		-6
9		-7
10		-8
11		-9
12	1-	-0
13	1-	-1
14	1-	-2
15	1-	-3
16	1-	-4
17	1-	-5
18	1-	-6
19	1-	-7
20	1-	-8
21	1-	-9
22	2-	-0
23	2-	-1
24	2-	-2
25	2-	-3
26	2-	-4
27	2-	-5
28	2-	-6
29	2-	-7
30	2-	-8
31	2-	-9
32	3-	-0
33	3-	-1
34	3-	-2
35	3-	-3



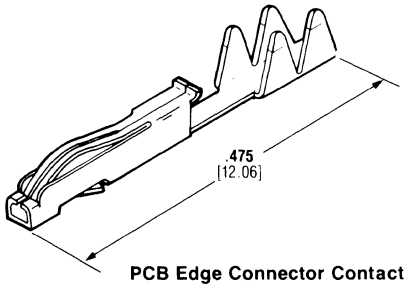
Pin Contact
(for use in housings)



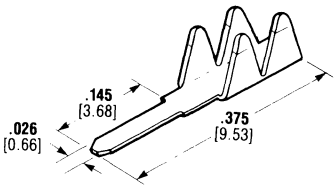
Receptacle Contact



Pin Contact
(for use without housings)



PCB Edge Connector Contact



Solder Tab

Contacts for Flexible Flat Conductor Cable

Type	Configuration	Part Numbers Duplex[1]	Duplex[2]	Tin-Lead[3]	Duplex[4]	Duplex[5]	Application Tooling
Pin (for use in housings)	Strip	88117-3	88117-4	88117-5	—	88117-2	682575-5
	Combs***	485939	485940	485938	—	—	813592-1
	Loose Piece	487886-2	487886-3	487886-1	—	487886-4	90273-5
Receptacle (standard pressure)	Strip	487406-1	487406-2	487406-4	—	487406-3	682575-5
	Combs***	487412	487413	487415	—	487414	813592-1
	Loose Piece	487885-2	487885-3	487885-1	—	487885-4	90273-5
Receptacle (high pressure)*	Strip	487117-4	487117-5	487117-8	—	487117-6	682575-5
PCB Edge Connector	Strip	485800-2	485800-3	—	—	—	682575-5
	Loose Piece	487888-1	487888-2	—	—	—	90273-5
Solder Tab**	Strip	88997-4	88997-5	88997-2	88997-3	—	682575-5
	Combs***	—	—	485887	485888	—	813592-1
	Loose Piece	487884-2	—	487884-1	—	—	90273-5
Pin (for use without housing)	Strip	88976-3	—	88976-2	—	—	682575-5
	Loose Piece	487887-2	—	487887-1	—	—	90273-5

*High pressure receptable contacts are recommended for a maximum connector size of 15 positions.
**Recommended hole size for solder tabs is .031-.035 [0.79-0.89] diameter.

[1]Duplex plated .000015 [0.00038] gold on mating area, .000100 [0.00254] min. bright tin-lead in crimp area, with entire contact underplated .000050 [0.00127] min. nickel.
[2]Duplex plated .000030 [0.00076] gold on mating area, .000100 [0.00254] min. bright tin-lead in crimp area, with entire contact underplated .000050 [0.00127] min. nickel.
[3]Plated .000100 [0.00254] min. bright tin-lead over .000050 [0.00127] min. nickel on entire contact.
[4]Duplex plated gold flash on mating area, .000100 [0.00254] min. bright tin-lead in crimp area, with entire contact underplated .000050 [0.00127] min. nickel.
[5]Duplex plated .000050 [0.00127] gold on mating area, .000100 [0.00254] min. bright tin-lead in crimp area, with entire contact underplated .000050 [0.00127] min. nickel.

Note: Round wire contacts – Page 5073

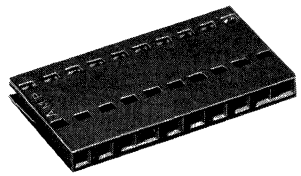
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

.100 [2.54] Centerline Single Row Slim-Line Receptacle Housings

Material:

Black thermoplastic, flame retardant, 94V-0 rated

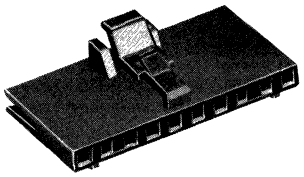


Plain Style Housing

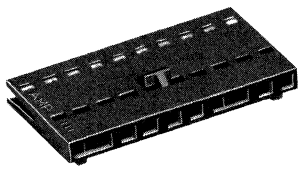
Related Product Data:

Performance Characteristics - page 5036
FFC Cable - page 5048
Receptacle Contacts - Strip, Combs and Loose Piece, page 5049
Mateable AMPMODU Headers - AMP Catalog 82187
Accessories (Keying Plug)* - page 5074
Application Tooling - pages 5049, 5077
Technical Documents - page 5078

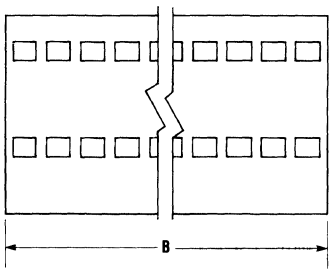
*Slim-line receptacle housings also can be supplied with filled cavities in the desired keying positions. Consult AMP Incorporated.

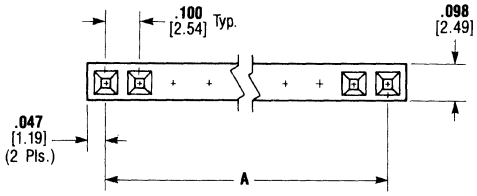


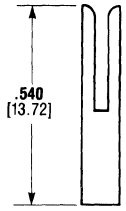
Latch Style Housing



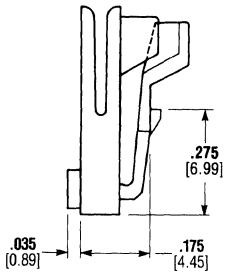
Housing with Detent





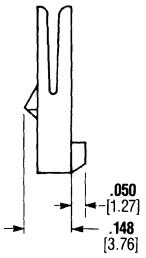


Plain

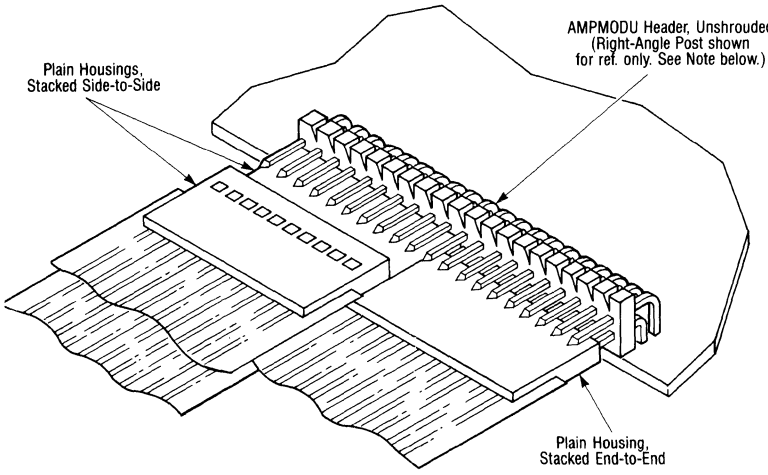


Latch

Note: Above dimensions are typical for all three styles shown on this page.



Detent



Note: Plain housings are side-to-side and end-to-end stackable on either straight or right-angle posted, unshrouded AMPMODU headers. Latch and detent styles are end-to-end stackable only.

Typical Cable-to-Board Application of Plain Receptacle Housing

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Positions	Dimensions		Receptacle Part Numbers (Unloaded)		
	A	B	Plain	Latch	Detent
2	.100 2.54	.194 4.93	487378-1	487526-1	487079-1
3	.200 5.08	.294 7.47	487378-2	487526-2	487769-1
4	.300 7.62	.394 10.01	487378-3	487526-3	487769-2
5	.400 10.16	.494 12.55	487378-4	487526-4	487769-3
6	.500 12.7	.594 15.09	487378-5	487526-5	487769-4
7	.600 15.24	.694 17.63	487378-6	487526-6	487769-5
8	.700 17.78	.794 20.17	487378-7	487526-7	487769-6
9	.800 20.32	.894 22.71	487378-8	487526-8	487769-7
10	.900 22.86	.994 25.25	487378-9	487526-9	487769-8
11	1.000 25.4	1.094 27.79	1-487378-0	1-487526-0	487769-9
12	1.100 27.94	1.194 30.33	1-487378-1	1-487526-1	1-487769-0
13	1.200 30.48	1.294 32.87	1-487378-2	1-487526-2	1-487769-1
14	1.300 33.02	1.394 35.41	1-487378-3	1-487526-3	1-487769-2
15	1.400 35.56	1.494 37.95	1-487378-4	1-487526-4	1-487769-3
16	1.500 38.1	1.594 40.49	1-487378-5	1-487526-5	1-487769-4
17	1.600 40.64	1.694 43.03	1-487378-6	1-487526-6	1-487769-5
18	1.700 43.18	1.794 45.57	1-487378-7	1-487526-7	1-487769-6
19	1.800 45.72	1.894 48.11	1-487378-8	1-487526-8	1-487769-7
20	1.900 48.26	1.994 50.65	1-487378-9	1-487526-9	1-487769-8
21	2.000 50.8	2.094 53.19	2-487378-0	2-487526-0	1-487769-9
22	2.100 53.34	2.194 55.73	2-487378-1	2-487526-1	2-487769-0
23	2.200 55.88	2.294 58.27	2-487378-2	2-487526-2	2-487769-1
24	2.300 58.42	2.394 60.88	2-487378-3	2-487526-3	2-487769-2
25	2.400 60.96	2.494 63.35	2-487378-4	2-487526-4	2-487769-3
34	3.300 83.82	3.394 86.21	2-487378-5	—	—

Note: Other sizes of unloaded receptacle housings can be made available, consult AMP Incorporated.

.100 [2.54] Centerline Single Row Pin Housings

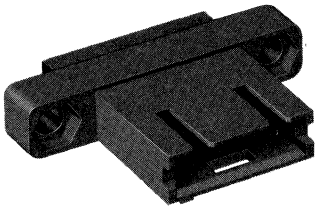
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Polarized Housings with Detent Window

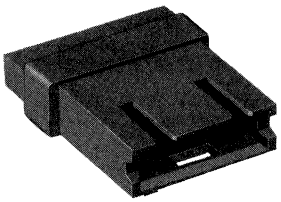
Material:

Black thermoplastic, flame retardant, 94V-0 rated

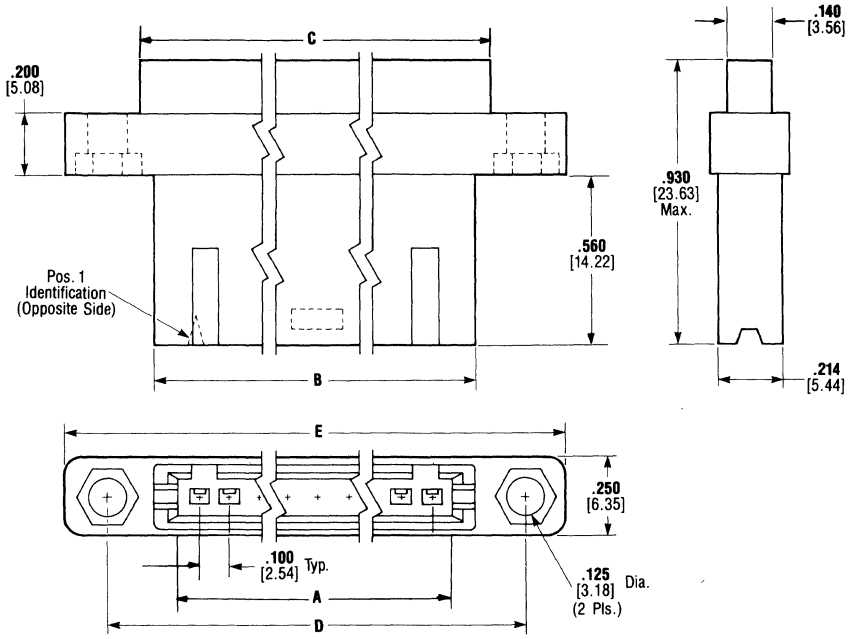


Related Product Data:

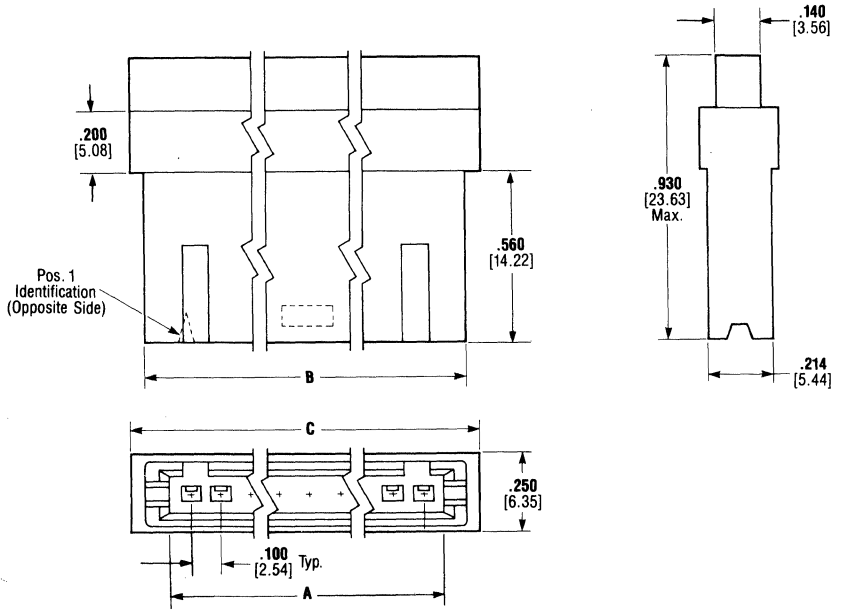
Performance Characteristics - page 5036
FFC Cable - page 5048
Pin Contacts:
Strip, Combs & Loose Piece - page 5049
Round Wire - page 5073
Mateable Receptacle Housings - pages 5054 & 5055, AMPMODU Receptacle Housings - AMP Catalog 82187
Accessories (Jackscrews) - pages 5075 & 5076
Application Tooling - pages 5049, 5077
Technical Documents - page 5078



With Mounting Ears



Without Mounting Ears



5

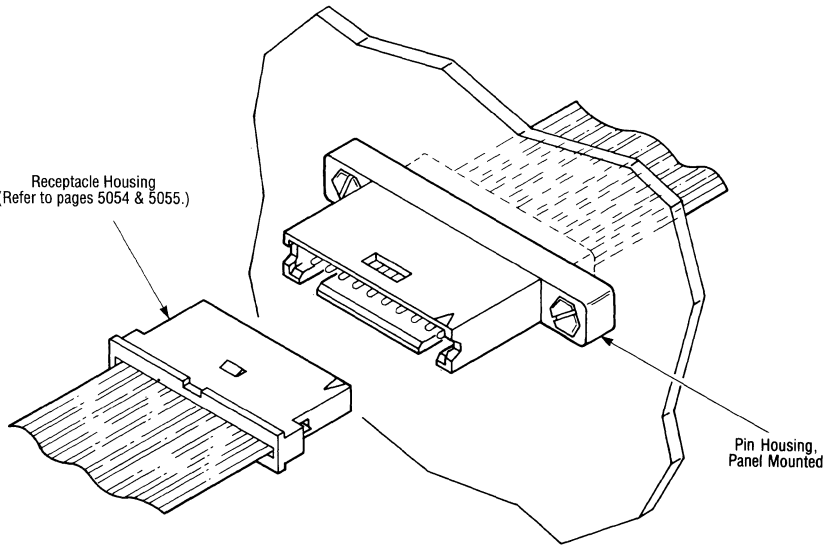
Ribbon and Flat Cable Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Positions	Dimensions					Pin Housing Part No. (Unloaded)		Extraction Tool No.
	A	B	C	D	E	With Mounting Ears (Dimensions A-E)	Without Mounting Ears (Dimensions A-C only)	
3	.340 8.64	.460 11.68	.550 13.97	.810 20.57	1.060 26.92	485897-1	494032-2	1-91047-9
4	.440 11.18	.560 14.22	.650 16.51	.910 23.11	1.160 29.46	485897-2	485893-2	2-91047-4
5	.540 13.71	.660 16.76	.750 19.05	—	—	—	485893-3	1-91047-8
6	.640 16.26	.760 19.3	.850 21.59	1.110 28.19	1.360 34.54	485897-4	485893-4	2-91047-0
7	.740 18.80	.860 21.84	.950 24.13	1.210 30.73	1.460 37.08	485897-5	485893-5	2-91047-5
8	.840 21.34	.960 24.38	1.050 26.67	1.310 33.27	1.560 39.62	485897-6	485893-6	2-91047-6
9	.940 23.88	1.060 26.92	1.150 29.21	1.410 35.81	1.660 42.16	485897-7	485893-7	91047-1
10	1.040 26.42	1.160 29.46	1.250 31.75	1.510 38.35	1.760 44.7	485897-8	485893-8	1-91047-0
11	1.140 28.96	1.260 32	1.350 34.29	1.610 40.89	1.860 47.24	485897-9	485893-9	2-91047-7
12	1.240 31.50	1.360 34.54	1.450 36.83	1.710 43.43	1.960 49.78	1-485897-0	1-485893-0	1-91047-4
13	1.340 34.04	1.460 37.08	1.550 39.37	—	—	—	1-485893-1	1-91047-3
14	1.440 36.58	1.560 39.62	1.650 41.91	—	—	—	1-485893-2	1-91047-5
15	1.540 39.12	1.660 42.16	1.750 44.45	2.010 51.05	2.260 57.4	1-485897-3	1-485893-3	1-91047-6
16	1.640 41.66	1.760 44.7	1.850 46.99	—	—	—	1-485893-4	2-91047-8
18	1.840 46.74	1.960 49.78	2.050 52.07	—	—	—	1-485893-6	2-91047-2
19	1.940 49.28	2.060 52.32	2.150 54.61	2.410 61.21	2.660 67.56	1-485897-7	1-485893-7	91047-3
20	2.040 51.82	2.160 54.86	2.250 57.15	—	—	—	1-485893-8	91047-5
25	2.540 64.52	2.660 67.56	2.750 69.85	—	—	—	2-485893-3	2-91047-3
28	2.840 72.14	2.960 75.18	3.050 77.47	3.310 84.07	3.560 90.42	2-485897-6	—	3-91047-4
32	3.240 82.40	3.360 85.34	3.450 87.63	—	—	—	3-485893-0	3-91047-6
33	3.340 84.84	3.460 87.88	3.550 90.17	3.810 96.77	4.060 103.12	3-485897-1	3-485893-1	91047-4

Notes: 1. Other sizes of unloaded pin housings can be made available, consult AMP Incorporated.
2. Use Extraction Tool No. **91092-1** for round wire contacts.



Typical Cable-to-Cable Application

.100 [2.54] Centerline
Single Row Receptacle Housings

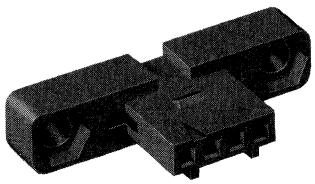
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Polarized Housings with Detent

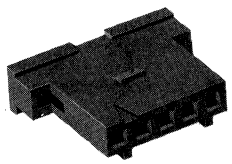
Material:

Black thermoplastic, flame retardant, 94V-0 rated

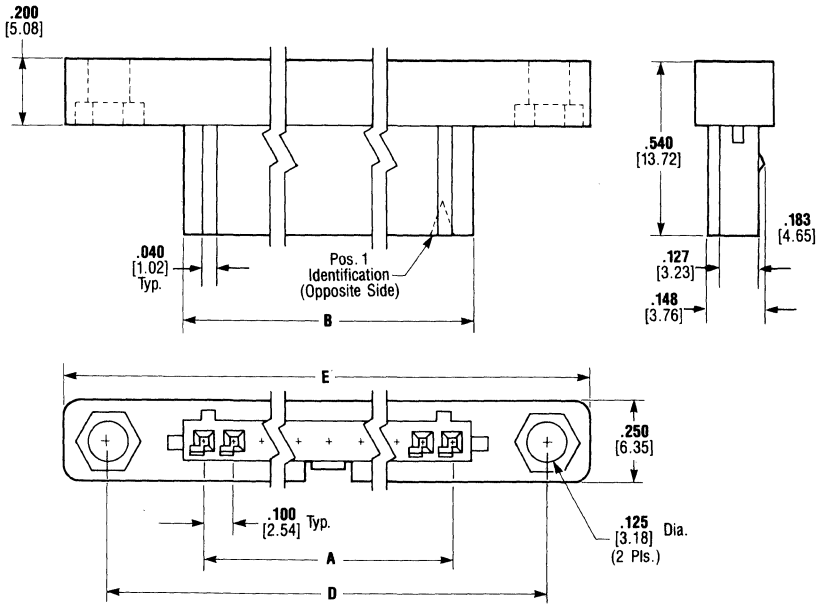


Related Product Data:

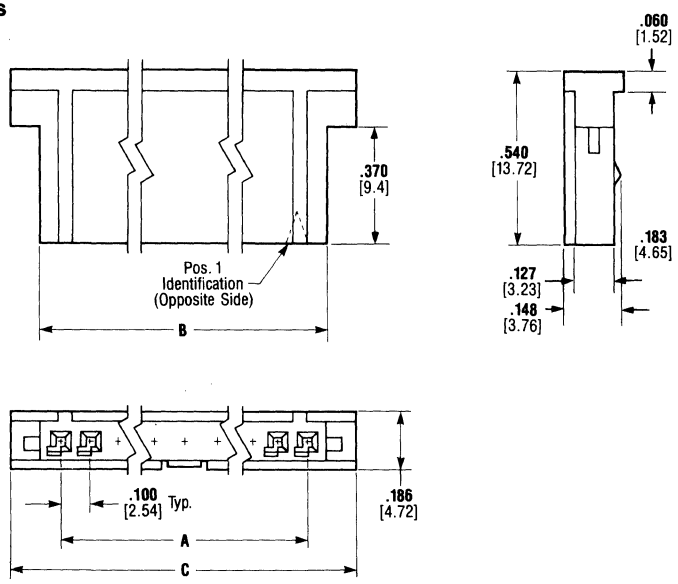
Performance Characteristics - page 5036
FFC Cable - page 5048
Receptacle Contacts:
Strip, Combs & Loose Piece - page 5049
Round Wire - page 5073
Mateable Pin Housings - pages 5052 and 5053
Mateable AMPMODU Headers - AMP Catalog 82187
Accessories:
Jackscrews - pages 5075 & 5076
Keying Plugs - page 5074
Application Tooling - page 5049, 5077
Technical Documents - page 5078



With Mounting Ears



Without Mounting Ears



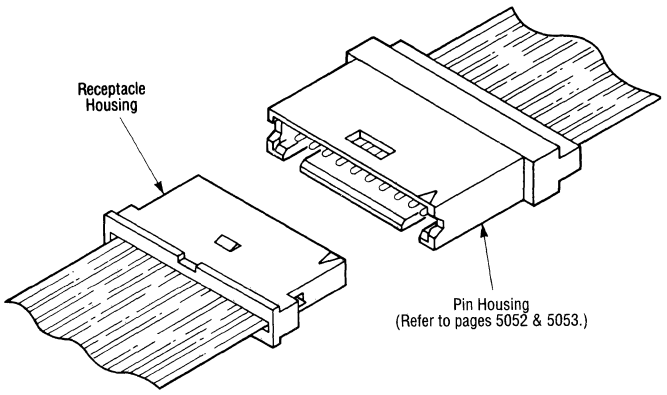
5 Ribbon and Flat Cable Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

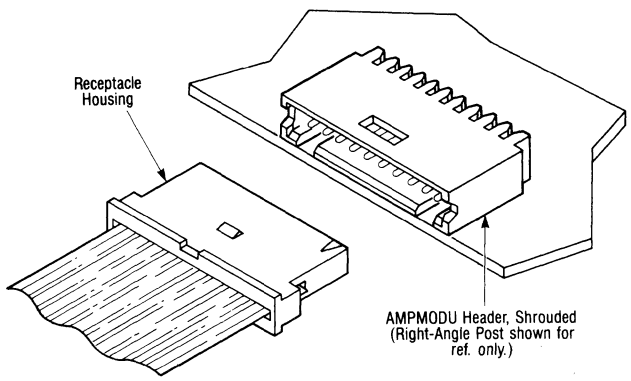
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

No. of Positions	Dimensions A Inch	A mm	B Inch	B mm	C Inch	C mm	D Inch	D mm	E Inch	E mm	Receptacle Housing Part No. (Unloaded) With Mounting Ears Dimensions A, B, D & E Only	Receptacle Housing Part No. (Unloaded) Without Mounting Ears Dimensions A, B & C Only	Extraction Tool No.
3	.200	5.08	.320	8.13	.490	12.45	.810	20.57	1.060	26.92	485913-1	88859-9	1-91047-9
4	.300	7.62	.420	10.67	.590	14.00	.910	23.11	1.160	29.46	485913-2	1-88859-0	2-91047-4
5	.400	10.16	.520	13.21	.690	17.58	1.010	25.65	1.260	32	485913-3	1-88859-1	1-91047-8
6	.500	12.7	.620	15.75	.790	20.07	1.110	28.19	1.360	34.54	485913-4	88859-1	2-91047-0
7	.600	15.24	.720	18.29	.890	22.61	1.210	30.73	1.460	37.08	485913-5	1-88859-2	2-91047-5
8	.700	17.78	.820	20.83	.990	25.15	1.310	33.27	1.560	39.62	485913-6	88859-2	2-91047-6
9	.800	20.32	.920	23.37	1.090	27.69	1.410	35.81	1.660	42.16	485913-7	1-88859-3	91047-1
10	.900	22.86	1.020	25.91	1.190	30.23	1.510	38.35	1.760	44.7	485913-8	88859-3	1-91047-0
11	1.000	25.4	1.120	28.45	1.290	32.77	1.610	40.89	1.860	47.24	485913-9	1-88859-4	2-91047-7
12	1.100	27.94	1.220	30.99	1.390	35.31	1.710	43.43	1.960	49.78	1-485913-0	88859-4	1-91047-4
13	1.200	30.48	1.320	33.53	1.490	37.85	1.810	45.97	2.060	52.32	1-485913-1	88859-5	1-91047-3
14	1.300	33.02	1.420	36.07	1.590	40.39	1.910	48.51	2.160	54.86	1-485913-2	88859-7	1-91047-5
15	1.400	35.56	1.520	38.61	1.690	42.93	2.010	51.05	2.260	57.4	1-485913-3	88859-6	1-91047-6
16	1.500	38.1	1.620	41.15	1.790	45.47	2.110	53.59	2.360	59.94	1-485913-4	1-88859-5	2-91047-8
17	1.600	40.64	1.720	43.69	1.890	48.01	2.210	56.13	2.460	62.48	1-485913-5	1-88859-6	2-91047-1
18	1.700	43.18	1.820	46.23	1.990	50.55	2.310	58.67	2.560	65.02	1-485913-6	1-88859-7	2-91047-2
19	1.800	45.72	1.920	48.77	2.090	53.09	2.410	61.21	2.660	67.56	1-485913-7	1-88859-8	91047-2
20	1.900	48.26	2.020	51.31	2.190	55.63	2.510	63.75	2.760	70.1	1-485913-8	88859-8	91047-5
21	2.000	50.8	2.120	53.85	2.290	58.17	2.610	66.29	2.860	72.64	1-485913-9	1-88859-9	2-91047-9
22	2.100	53.34	2.220	56.39	2.390	60.71	2.710	68.83	2.960	75.18	2-485913-0	2-88859-0	1-91047-1
23	2.200	55.88	2.320	58.93	2.490	63.25	2.810	71.37	3.060	77.72	2-485913-1	2-88859-1	3-91047-0
24	2.300	58.42	2.420	61.47	2.590	65.79	2.910	73.91	3.160	80.26	2-485913-2	2-88859-2	3-91047-1
25	2.400	60.96	2.520	64.01	2.690	68.33	3.010	76.45	3.260	82.8	2-485913-3	2-88859-3	2-91047-3
26	2.500	63.5	2.620	66.55	2.790	70.87	3.110	78.99	3.360	85.34	2-485913-4	2-88859-4	3-91047-2
27	2.600	66.04	2.720	69.09	2.890	73.41	3.210	81.53	3.460	87.88	2-485913-5	2-88859-5	3-91047-3
28	2.700	68.58	2.820	71.63	2.990	75.95	3.310	84.07	3.560	90.42	2-485913-6	2-88859-6	3-91047-4
29	2.800	71.12	2.920	74.17	3.090	78.49	3.410	86.61	3.660	92.96	2-485913-7	2-88859-7	91047-3
30	2.900	73.66	3.020	76.71	3.190	81.03	3.510	89.15	3.760	95.5	2-485913-8	2-88859-8	1-91047-7
31	3.000	76.2	3.120	79.25	3.290	83.57	3.610	91.69	3.860	98.04	2-485913-9	2-88859-9	3-91047-5
32	3.100	78.74	3.220	81.79	3.390	86.11	3.710	94.23	3.960	100.58	3-485913-0	3-88859-0	3-91047-6
33	3.200	81.28	3.320	84.58	3.490	88.65	3.810	96.77	4.060	103.12	3-485913-1	3-88859-1	91047-4
34	3.300	83.82	3.420	86.87	3.590	91.19	3.910	99.31	4.160	105.66	3-485913-2	3-88859-2	3-91047-7
35	3.400	86.36	3.520	89.41	3.690	93.73	4.010	101.85	4.260	108.2	3-485913-3	3-88859-3	1-91047-2

Note: Use Extraction Tool No. **91092-1** for round wire contacts.



Typical Cable-to-Cable Application



Typical Cable-to-Board Application

.100 [2.54] Centerline Double Row Pin Housings

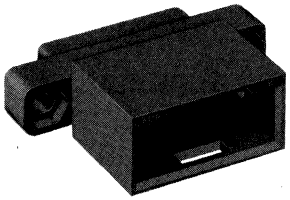
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Polarized Housings with Detent Windows, Shrouded 4 Sides

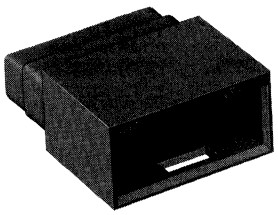
Material:

Black thermoplastic, flame retardant, 94V-0 rated

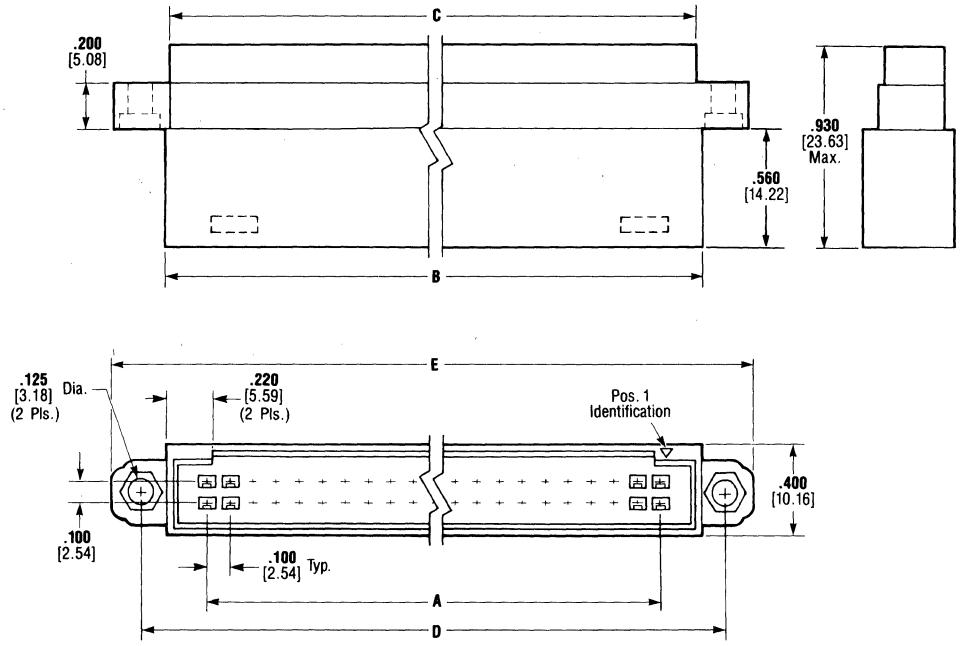


Related Product Data:

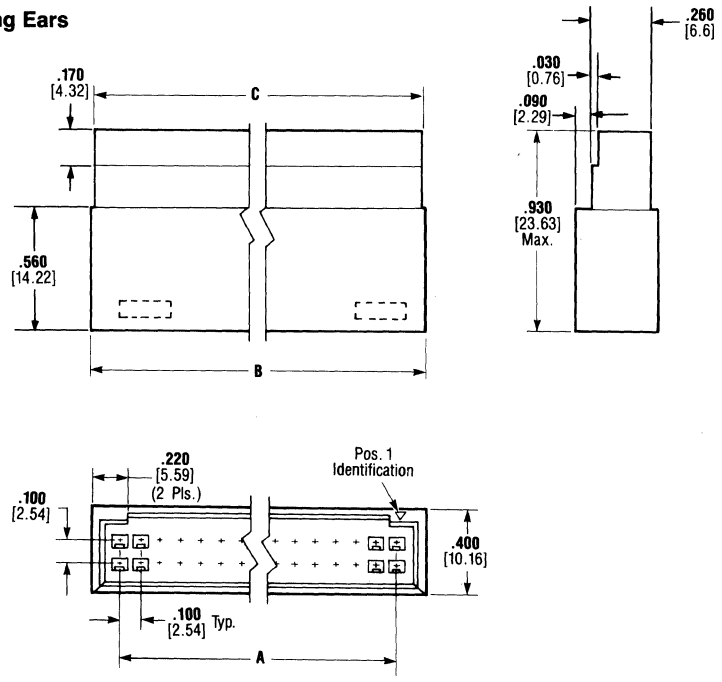
Performance Characteristics - page 5036
FFC Cable - page 5048
Pin Contacts:
Strip, Combs & Loose Piece - page 5049
Round Wire - page 5073
Mateable Receptacle:
Housings - pages 5060 & 5061
Accessories (Jackscrews) - pages 5075 & 5076
Application Tooling - pages 5049, 5077
Technical Documents - page 5078



With Mounting Ears



Without Mounting Ears



5

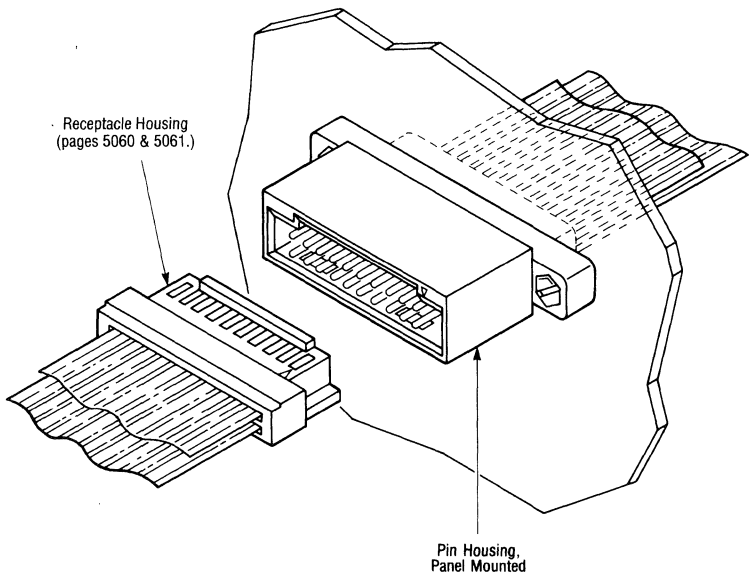
Ribbon and Flat Cable Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Positions	Dimensions					Pin Housing Part No. (Unloaded)		Extraction Tool No.
	A	B	C	D	E	With Mounting Ears	Without Mounting Ears	
6	.200 5.08	.580 14.73	.550 13.97	.810 20.57	1.060 26.92	3-88190-2	3-88189-2	1-91047-9
10	.400 10.16	.780 19.81	.750 19.05	1.010 25.65	1.260 32	3-88190-0	3-88189-0	1-91047-8
12	.500 12.7	.880 22.35	.850 21.59	1.110 28.19	1.360 34.54	3-88190-6	3-88189-4	2-91047-0
14	.600 15.24	.980 24.89	.950 24.13	1.210 30.73	1.460 37.08	—	3-88189-8	2-91047-5
16	.700 17.78	1.080 27.43	1.050 26.67	1.310 33.27	1.560 39.62	3-88190-4	—	2-91047-6
18	.800 20.32	1.180 29.97	1.150 29.21	1.410 35.81	1.660 42.16	88190-6	88189-4	91047-1
20	.900 22.86	1.280 32.51	1.250 31.75	1.510 38.35	1.760 44.7	88190-8	88189-6	1-91047-0
24	1.100 27.94	1.480 37.59	1.450 36.83	1.710 43.43	1.960 49.78	1-88190-0	88189-8	1-91047-4
26	1.200 30.48	1.580 40.13	1.550 39.37	1.810 45.97	2.060 52.32	1-88190-2	1-88189-0	1-91047-3
28	1.300 33.02	1.680 42.67	1.650 41.91	1.910 48.51	2.160 54.86	1-88190-4	1-88189-2	1-91047-5
34	1.600 40.64	1.980 50.29	1.950 49.53	2.210 56.13	2.460 62.48	3-88190-8	3-88189-6	2-91047-1
36	1.700 43.18	2.080 52.83	2.050 52.07	2.310 58.67	2.560 65.02	1-88190-6	1-88189-4	2-91047-2
38	1.800 45.72	2.180 55.37	2.150 54.61	2.410 61.21	2.660 67.56	88190-2	88189-2	91047-2
40	1.900 48.26	2.280 57.91	2.250 57.15	2.510 63.75	2.760 70.1	1-88190-8	1-88189-6	91047-5
44	2.100 53.34	2.480 62.99	2.450 62.23	2.710 68.83	2.960 75.18	2-88190-0	1-88189-8	1-91047-1
50	2.400 60.96	2.780 70.61	2.750 69.85	3.010 76.45	3.260 82.8	88190-4	2-88189-0	2-91047-3
58	2.800 71.12	3.180 80.77	3.150 80.01	3.410 86.61	3.660 92.96	2-88190-2	2-88189-2	91047-3
60	2.900 73.66	3.280 83.31	3.250 82.55	3.510 89.15	3.760 95.5	2-88190-4	2-88189-4	1-91047-7
66	3.200 81.28	3.580 90.93	3.550 90.17	3.810 96.77	4.060 103.12	2-88190-6	2-88189-6	91047-4
70	3.400 86.36	3.780 96.01	3.750 95.25	4.010 101.85	4.260 108.2	2-88190-8	2-88189-8	1-91047-2

Notes: 1. All housings listed above have no markings, except for AMP and Pos. 1 Identification, which are molded into the housing. Housings with special markings can be made available, consult AMP Incorporated.
2. Housing sizes smaller than 20-position have only one detent window.
3. Use Extraction Tool No. **91092-1** for round wire contacts.



Typical Cable-to-Cable Application

.100 [2.54] Centerline Double Row Pin Housings

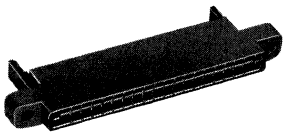
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Polarized Housings, Shrouded Three Sides

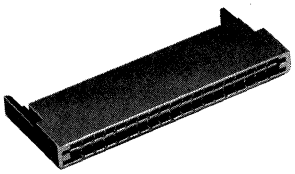
Material:

Black flame retardant thermoplastic

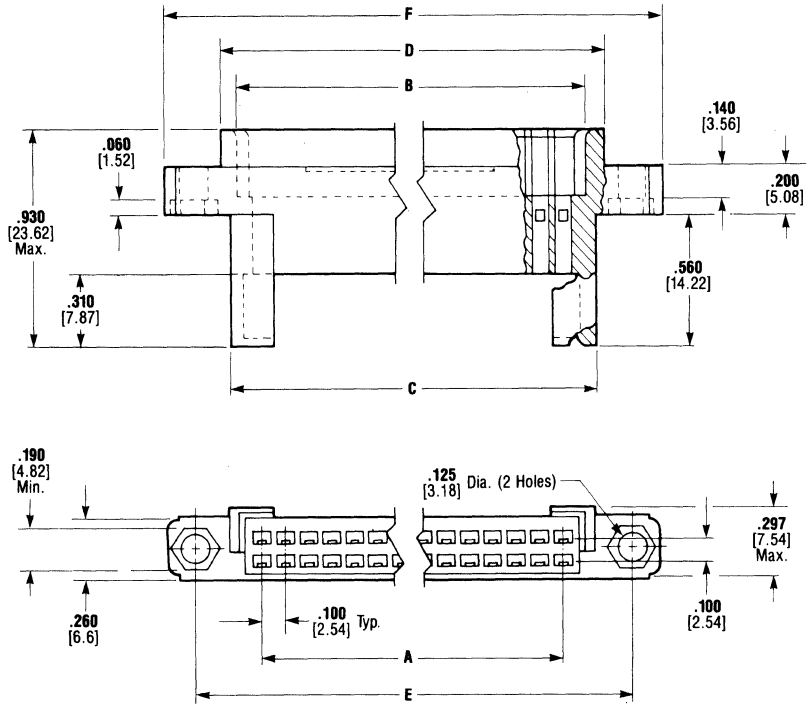


Related Product Data:

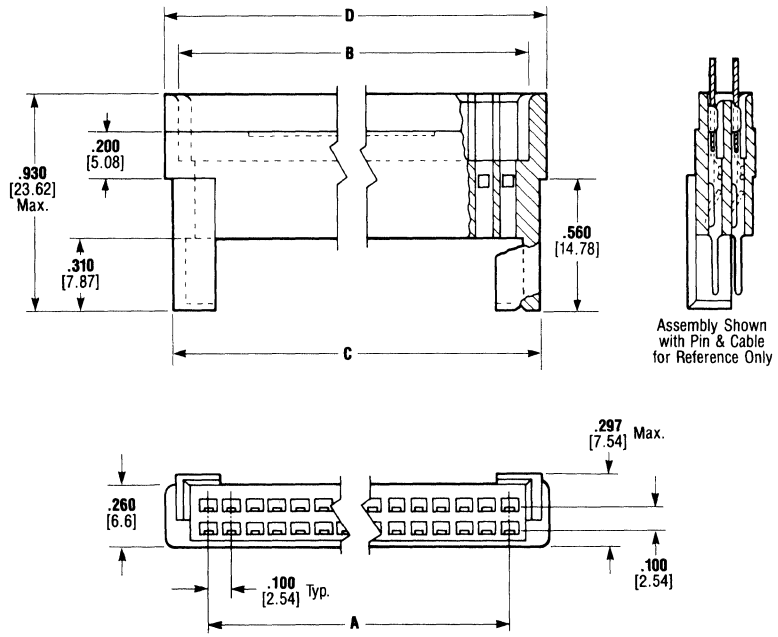
Performance Characteristics - page 5036
FFC Cable - page 5048
Pin Contacts:
Strip, Combs & Loose Piece - page 5049
Round Wire - page 5073
Mateable Receptacle Housings - pages 5060 & 5061
Accessories (Jackscrews) - pages 5075 & 5076
Application Tooling - pages 5049, 5077
Technical Documents - page 5078



With Mounting Ears



Without Mounting Ears



5

Ribbon and Flat Cable Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Positions	Dimensions						Part Numbers		
	A	B	C	D	E	F	Housing with Mounting Ears Dimensions A-F	Housing without Mounting Ears Dimensions A, B, C, D Only	Extraction Tool*
6	.200 5.08	.434 11.02	.480 12.19	.550 13.97	.810 20.57	1.060 26.92	3-86670-0	3-86671-0	1-91047-9
10	.400 10.16	.634 16.1	.680 17.27	.750 19.05	1.010 25.65	1.260 32	2-86670-4	2-86671-4	1-91047-8
12	.500 12.7	.734 18.64	.780 19.81	.850 21.59	1.110 28.19	1.360 35.54	2-86670-8	2-86671-8	2-91047-0
18	.800 20.32	1.034 26.26	1.080 27.43	1.150 29.21	1.410 35.81	1.660 42.16	1-86670-2	1-86671-2	91047-1
20	.900 22.86	1.134 28.8	1.180 29.97	1.250 31.75	1.510 38.35	1.760 44.7	86670-6	86671-6	1-91047-0
22	1.000 25.4	1.234 31.34	1.280 32.51	1.350 34.29	1.610 40.89	1.860 47.24	3-86670-8	3-86671-8	2-91047-7
24	1.100 27.94	1.334 33.88	1.380 35.05	1.450 36.83	1.710 43.43	1.960 59.78	1-86670-8	1-86671-8	1-91047-4
26	1.200 30.48	1.434 36.42	1.480 37.59	1.550 39.37	1.810 45.97	2.060 52.32	2-86670-0	2-86671-0	1-91047-3
28	1.300 33.02	1.534 38.96	1.580 40.13	1.650 41.91	1.910 48.51	2.160 54.86	2-86670-2	2-86671-2	1-91047-5
34	1.600 40.64	1.834 46.58	1.880 57.75	1.950 49.53	2.210 56.13	2.460 62.48	3-86670-6	3-86671-6	2-91047-1
36	1.700 43.18	1.934 49.12	1.980 50.29	2.050 52.07	2.310 58.67	2.560 65.02	2-86670-6	2-86671-6	2-91047-2
38	1.800 45.72	2.034 51.66	2.080 52.83	2.150 54.61	2.410 61.21	2.660 67.56	86670-4	86671-4	91047-2
40	1.900 48.26	2.134 54.2	2.180 55.37	2.250 57.15	2.510 63.75	2.760 70.1	86670-8	86671-8	91047-5
44	2.100 53.34	2.334 59.28	2.380 60.45	2.450 62.23	2.710 68.83	2.960 75.18	1-86670-6	1-86671-6	1-91047-1
50	2.400 60.96	2.634 66.9	2.680 68.07	2.750 69.85	3.010 76.45	3.260 82.8	3-86670-2	3-86671-2	2-91047-3
58	2.800 71.12	3.034 77.06	3.080 78.23	3.150 80.01	3.410 86.61	3.660 92.96	1-86670-4	1-86671-4	91047-3
60	2.900 73.66	3.134 79.6	3.180 80.77	3.250 82.55	3.510 89.15	3.760 95.5	3-86670-4	3-86671-4	1-91047-7
66	3.200 81.28	3.434 87.22	3.480 88.39	3.550 90.17	3.810 96.77	4.060 103.12	1-86670-0	1-86671-0	91047-4
70	3.400 86.36	3.634 92.3	3.680 93.47	3.750 95.25	4.010 101.85	4.260 108.2	86670-2	86671-2	1-91047-2

*Use Extraction Tool, **Part No. 91092-1**, for round wire contacts.

.100 [2.54] Centerline Double Row Receptacle Housings

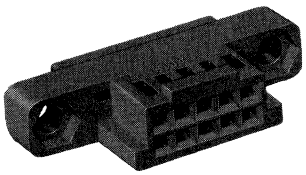
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Polarized Housings with Detents

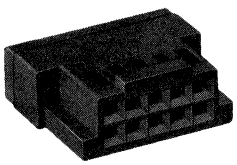
Material:

Black thermoplastic, flame retardant, 94V-0 rated

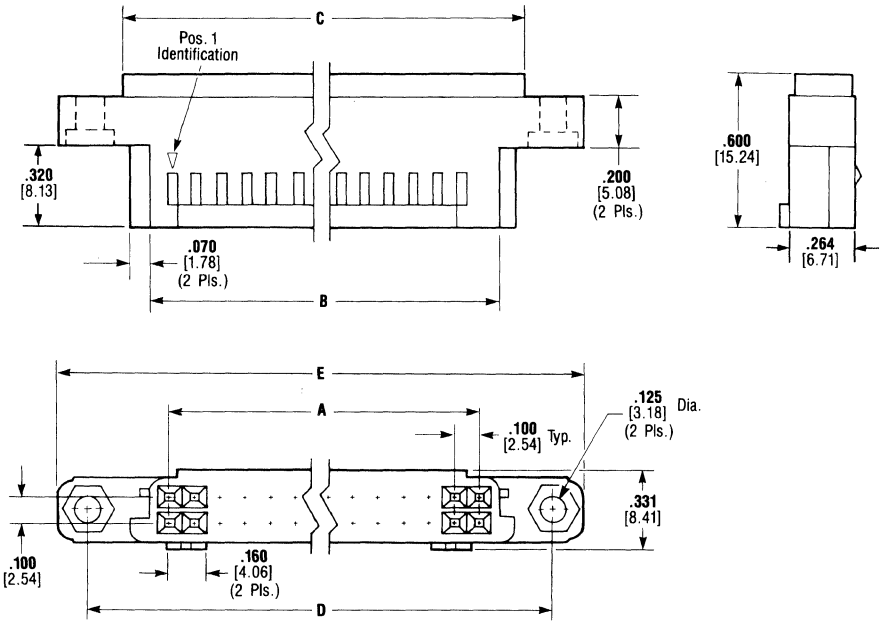


Related Product Data:

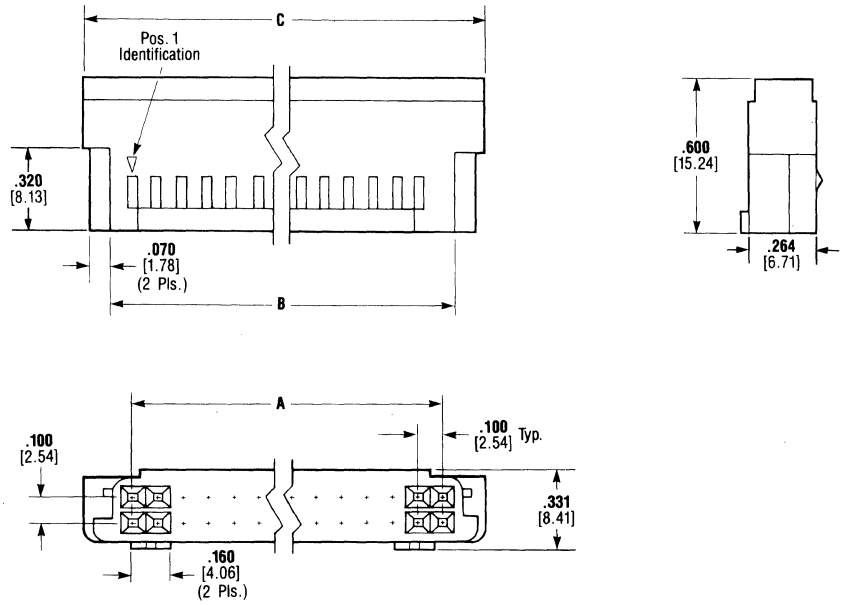
Performance Characteristics - page 5036
FFC Cable - page 5048
Receptacle Contacts:
Strip, Combs & Loose Piece - page 5049
Round Wire - page 5073
Mateable Pin Housings - pages 5056 & 5057
Mateable AMPMODU Headers - AMP Catalog 82187
Accessories:
Jackscrews - pages 5075 & 5076
Keying Plugs - page 5074
Application Tooling - pages 5049, 5077
Technical Documents - page 5078



With Mounting Ears



Without Mounting Ears



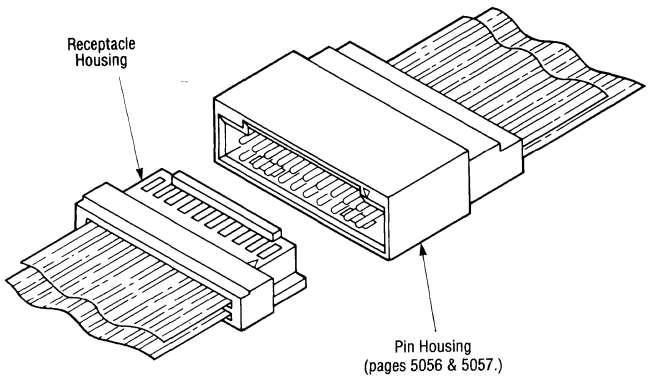
5 Ribbon and Flat Cable Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

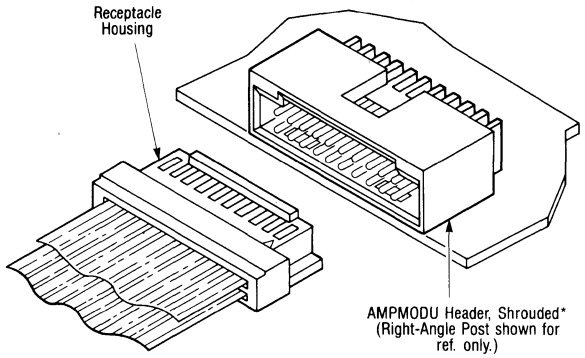
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Positions	Dimensions					Receptacle Housing Part No. (Unloaded)		Extraction Tool No.
	A	B	C	D	E	With Mounting Ears Dimensions A-E	Without Mounting Ears Dimensions A, B, C Only	
6	.200 5.08	.340 8.64	.550 13.97	.810 20.57	1.060 26.92	88637-5	3-88179-2	2-91200-1
8	.300 7.62	.440 11.18	.650 16.51	—	—	—	4-88179-0	2-91200-4
10	.400 10.16	.540 13.72	.750 19.05	1.010 25.65	1.260 32	88637-7	3-88179-0	1-91200-9
12	.500 12.7	.640 16.26	.850 21.59	1.110 28.19	1.360 34.54	88637-1	3-88179-4	2-91200-2
16	.700 17.78	.840 21.34	1.050 26.67	1.310 33.27	1.560 39.62	88637-3	—	—
18	.800 20.32	.940 23.88	1.150 29.21	1.410 35.81	1.660 42.16	88637-9	1-88179-0	91200-1
20	.900 22.86	1.040 26.42	1.250 31.75	1.510 38.35	1.760 44.7	1-88637-1	88179-5	91200-5
22	1.000 25.4	1.140 28.96	1.350 34.29	—	—	—	4-88179-2	1-91200-3
24	1.100 27.94	1.240 31.5	1.450 36.83	1.710 43.43	1.960 49.78	1-88637-3	1-88179-4	91200-8
26	1.200 30.48	1.340 34.04	1.550 39.37	1.810 45.97	2.060 52.32	1-88637-5	1-88179-6	91200-9
28	1.300 33.02	1.440 36.58	1.650 41.91	1.910 48.51	2.160 54.86	1-88637-7	1-88179-8	1-91200-0
30	1.400 35.56	1.540 39.12	1.750 44.45	—	—	—	3-88179-8	2-91200-3
34	1.600 40.64	1.740 44.2	1.950 49.53	2.210 56.13	2.460 62.48	3-88637-7	3-88179-6	1-91200-5
36	1.700 43.18	1.840 46.74	2.050 52.07	2.310 58.67	2.560 65.02	1-88637-9	2-88179-0	1-91200-4
38	1.800 45.72	1.940 49.28	2.150 54.61	2.410 61.21	2.660 67.56	2-88637-1	88179-6	91200-2
40	1.900 48.26	2.040 51.82	2.250 57.15	2.510 63.75	2.760 70.1	2-88637-3	2-88179-2	91200-6
44	2.100 53.34	2.240 56.9	2.450 62.23	2.710 68.83	2.960 75.18	2-88637-5	2-88179-4	1-91200-1
50	2.400 60.96	2.540 64.52	2.750 69.85	3.010 76.45	3.260 82.8	2-88637-7	1-88179-2	2-91200-0
58	2.800 71.12	2.940 74.68	3.150 80.01	3.410 86.61	3.660 92.96	2-88637-9	2-88179-6	91200-3
60	2.900 73.66	3.040 77.22	3.250 82.55	3.510 89.15	3.760 95.5	3-88637-1	88179-4	1-91200-8
66	3.200 81.28	3.340 84.84	3.550 90.17	3.810 96.77	4.060 103.12	3-88637-3	88179-8	91200-4
70	3.400 86.36	3.540 89.92	3.750 95.25	4.010 101.85	4.260 108.2	3-88637-5	2-88179-8	91200-7

Notes: 1. All housings listed above have no markings, except for AMP and Pos. 1 Identification, which are molded into the housing. Housings with special markings can be made available, consult AMP Incorporated.
2. Housing sizes smaller than 20-position have only one detent.
3. Use Extraction Tool No. **91093-1** for round wire contacts.



Typical Cable-to-Cable Application



*Mating AMPMODU shrouded headers have a .150 [3.81] end dimension (from inside shroud wall to centerline of first post.)

Typical Cable-to-Board Application

5 Ribbon and Flat Cable Connectors

.100 [2.54] Centerline
Double Row Receptacle Housings

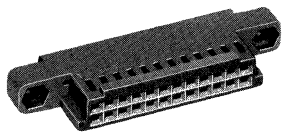
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Without Detents

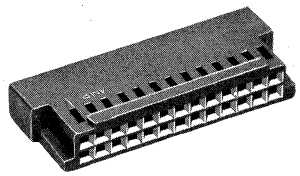
Material:

Black flame retardant thermoplastic

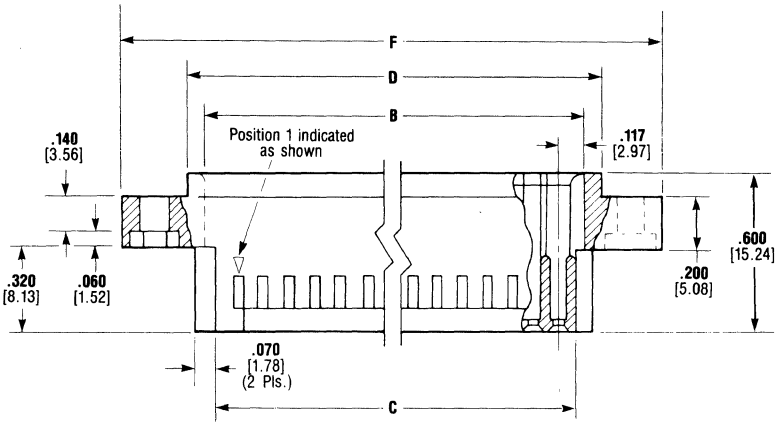


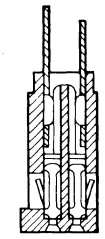
Related Product Data:

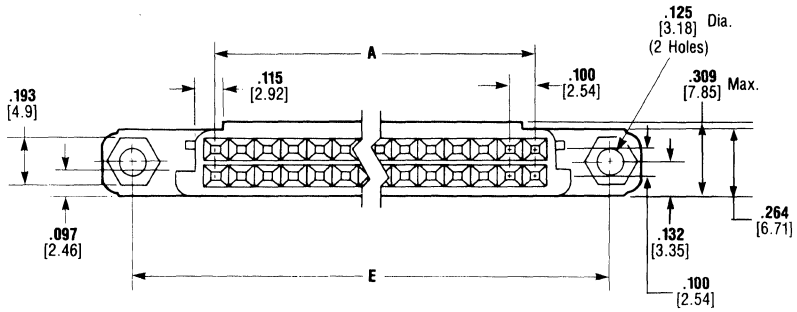
Performance Characteristics - page 5036
FFC Cable - page 5048
Receptacle Contacts:
Strip, Combs & Loose Piece - page 5049
Round Wire - page 5073
Mateable Pin Housings - pages 5056-5059
Mateable AMPMODU Headers - AMP Catalog 82187
Accessories:
Jackscrews - pages 5075 & 5076
Keying Plugs - page 5074
Application Tooling - pages 5049, 5077
Technical Documents - page 5078



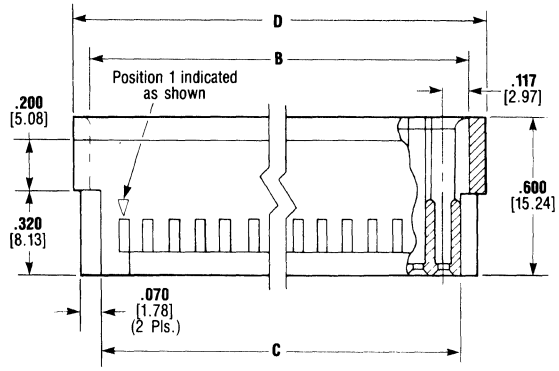
With Mounting Ears

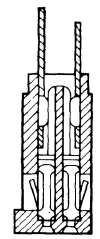


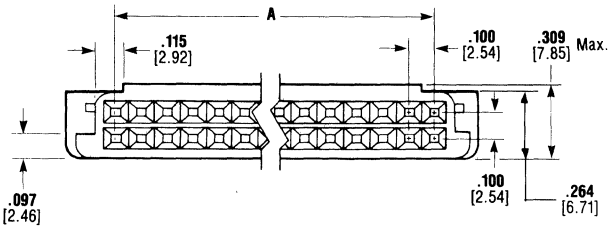

Assembly Shown with Receptacle & Cable for Reference Only



Without Mounting Ears




Assembly Shown with Receptacle & Cable for Reference Only



Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Positions	Dimensions						Part Numbers		
	A	B	C	D	E	F	Housing with Mounting Ears	Housing without Mounting Ears	Extraction Tool*
6	.200 5.08	.434 11.02	.340 8.64	.550 13.97	.810 20.57	1.060 26.92	3-86672-0	3-86673-0	2-91200-1
10	.400 10.16	.634 16.1	.540 13.72	.750 19.05	1.010 25.65	1.260 32	2-86672-4	2-86673-4	1-91200-9
12	.500 12.7	.734 18.64	.640 16.26	.850 21.59	1.110 28.19	1.360 35.54	3-86672-4	3-86673-4	2-91200-2
18	.800 20.32	1.034 26.26	.940 23.88	1.150 29.21	1.410 35.81	1.660 42.16	1-86672-2	1-86673-2	91200-1
20	.900 22.86	1.134 28.8	1.040 26.42	1.250 31.75	1.510 38.35	1.760 44.7	86672-6	86673-6	91200-5
22	1.000 25.4	1.234 31.34	1.140 28.96	1.350 34.29	1.610 40.89	1.860 47.24	3-86672-8	3-86673-8	1-91200-3
24	1.100 27.94	1.334 33.88	1.240 31.5	1.450 36.83	1.710 43.43	1.960 49.78	1-86672-8	1-86673-8	91200-8
26	1.200 30.48	1.434 36.42	1.340 34.04	1.550 39.37	1.810 45.97	2.060 52.32	2-86672-0	2-86673-0	91200-9
28	1.300 33.02	1.534 38.96	1.440 36.58	1.650 41.91	1.910 48.51	2.160 54.86	2-86672-2	2-86673-2	1-91200-0
34	1.600 40.64	1.834 46.58	1.740 44.2	1.950 49.53	2.210 56.13	2.460 62.48	3-86672-6	3-86673-6	1-91200-5
36	1.700 43.18	1.934 49.12	1.840 46.74	2.050 52.07	2.310 58.67	2.560 65.02	2-86672-6	2-86673-6	1-91200-4
38	1.800 45.72	2.034 51.66	1.940 49.28	2.150 54.61	2.410 61.21	2.660 67.56	86672-4	86673-4	91200-2
40	1.900 48.26	2.134 54.2	2.040 51.82	2.250 57.15	2.510 63.75	2.760 70.1	86672-8	86673-8	91200-6
44	2.100 53.34	2.334 59.28	2.240 56.9	2.450 62.23	2.710 68.83	2.960 75.18	1-86672-6	1-86673-6	1-91200-1
50	2.400 60.96	2.634 66.9	2.540 64.52	2.750 69.85	3.010 76.45	3.260 82.8	2-86672-8	2-86673-8	2-91200-0
58	2.800 71.12	3.034 77.06	2.940 74.68	3.150 80.01	3.410 86.61	3.660 92.96	1-86672-4	1-86673-4	91200-3
60	2.900 73.66	3.134 79.6	3.040 77.22	3.250 82.55	3.510 89.15	3.760 95.5	3-86672-2	3-86673-2	1-91200-8
66	3.200 81.28	3.434 87.22	3.340 84.84	3.550 90.17	3.810 96.77	4.060 103.12	1-86672-0	1-86673-0	91200-4
70	3.400 86.36	3.634 92.3	3.540 89.92	3.750 95.25	4.010 101.85	4.260 108.2	86672-2	86673-2	91200-7

Note: 1. All housings listed above are without marking, except for AMP and No. 1 circuit cavity identification which are molded into the housing. Housings with special marking available, consult AMP Incorporated.

*Use Extraction Tool **Part No. 91093-1** for round wire contacts.

.100 [2.54] Centerline
Double Row Receptacle Housings

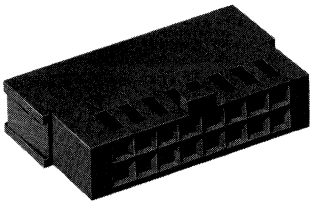
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

With Center Polarization

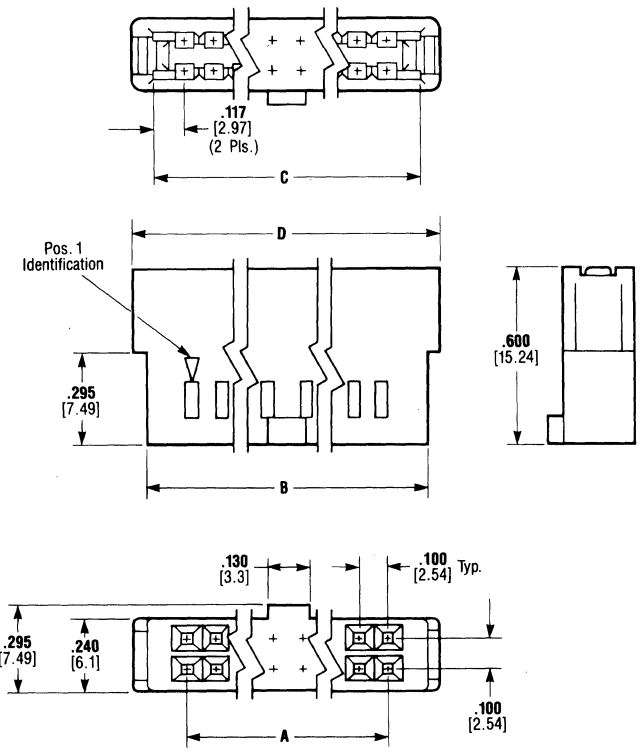
Material:

Black thermoplastic, flame retardant, 94V-0 rated



Related Product Data:

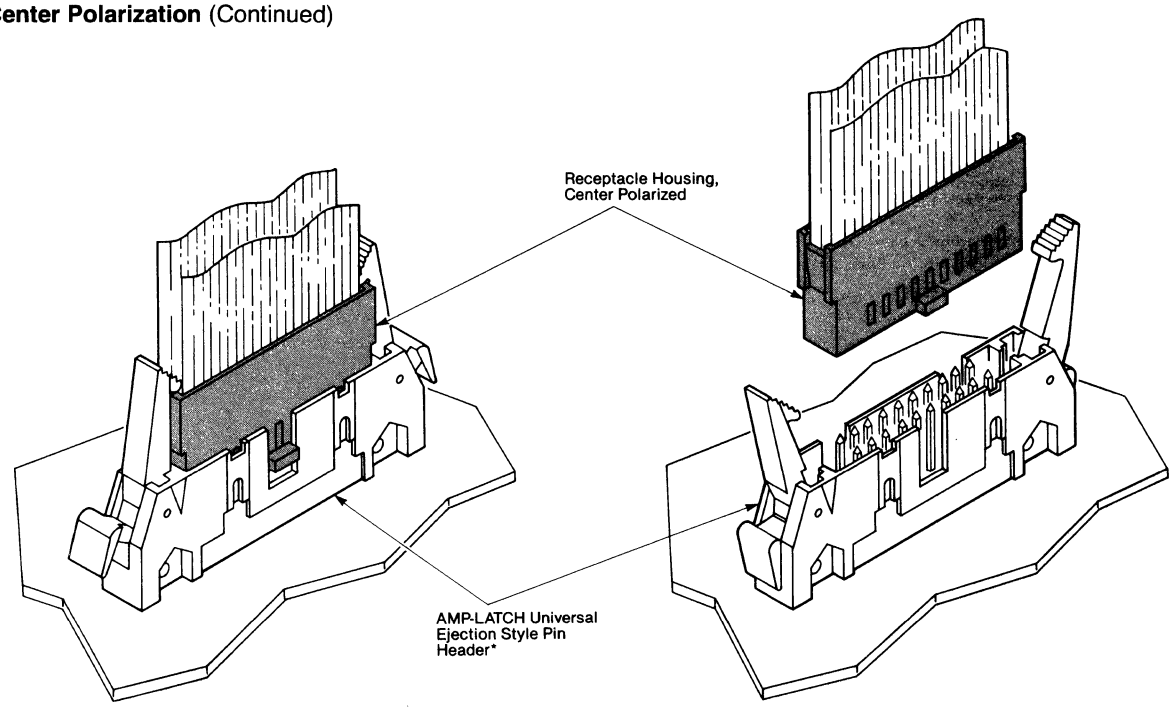
Performance Characteristics - page 5036
FFC Cable - page 5048
Receptacle Contacts used with:
Strip, Combs & Loose Piece - page 5049
Mateable Pin Headers:
AMP-LATCH Universal Ejection Style - AMP Catalog 82012
AMPMODU Low Profile - AMP Catalog 82187
Accessories (Keying Plug) - page 5074
Application Tooling - pages 5049, 5077
Technical Documents - page 5078



No. of Positions	Dimensions				Receptacle Housing Part No. (Unloaded)	Extraction Tool No.
	A	B	C	D		
10	**.400** 10.16	**.680** 17.27	**.634** 16.1	**.750** 19.05	487223-1	1-91200-9
14	**.600** 15.24	**.880** 22.35	**.834** 21.18	**.950** 24.13	487223-2	—
16	**.700** 17.78	**.980** 24.89	**.934** 23.72	**1.050** 26.67	487223-3	—
18	**.800** 20.32	**1.080** 27.43	**1.034** 26.26	**1.150** 29.21	487223-4	91200-1
20	**.900** 22.86	**1.180** 29.97	**1.134** 28.8	**1.250** 31.75	487223-5	91200-5
24	**1.100** 27.94	**1.380** 35.05	**1.334** 33.88	**1.450** 36.83	487223-6	91200-8
26	**1.200** 30.48	**1.480** 37.59	**1.434** 36.42	**1.550** 39.37	487223-7	91200-9
30	**1.400** 35.56	**1.680** 42.67	**1.634** 41.5	**1.750** 44.45	487223-8	2-91200-3
34	**1.600** 40.64	**1.880** 47.75	**1.834** 46.58	**1.950** 49.53	487223-9	1-91200-5
40	**1.900** 48.26	**2.180** 55.37	**2.134** 54.2	**2.250** 57.15	1-487223-0	91200-6
44	**2.100** 53.34	**2.380** 60.45	**2.334** 59.28	**2.450** 62.23	1-487223-1	1-91200-1
50	**2.400** 60.96	**2.680** 68.07	**2.634** 66.9	**2.750** 69.85	1-487223-2	2-91200-0
54	**2.600** 66.04	**2.880** 73.15	**2.834** 71.98	**2.950** 74.93	1-487223-3	—
56	**2.700** 68.58	**2.980** 75.69	**2.934** 74.52	**3.050** 77.47	1-487223-4	—
60	**2.900** 73.66	**3.180** 80.77	**3.134** 79.6	**3.250** 82.55	1-487223-5	1-91200-8
64	**3.100** 78.74	**3.380** 85.85	**3.334** 84.68	**3.450** 87.63	1-487223-6	—

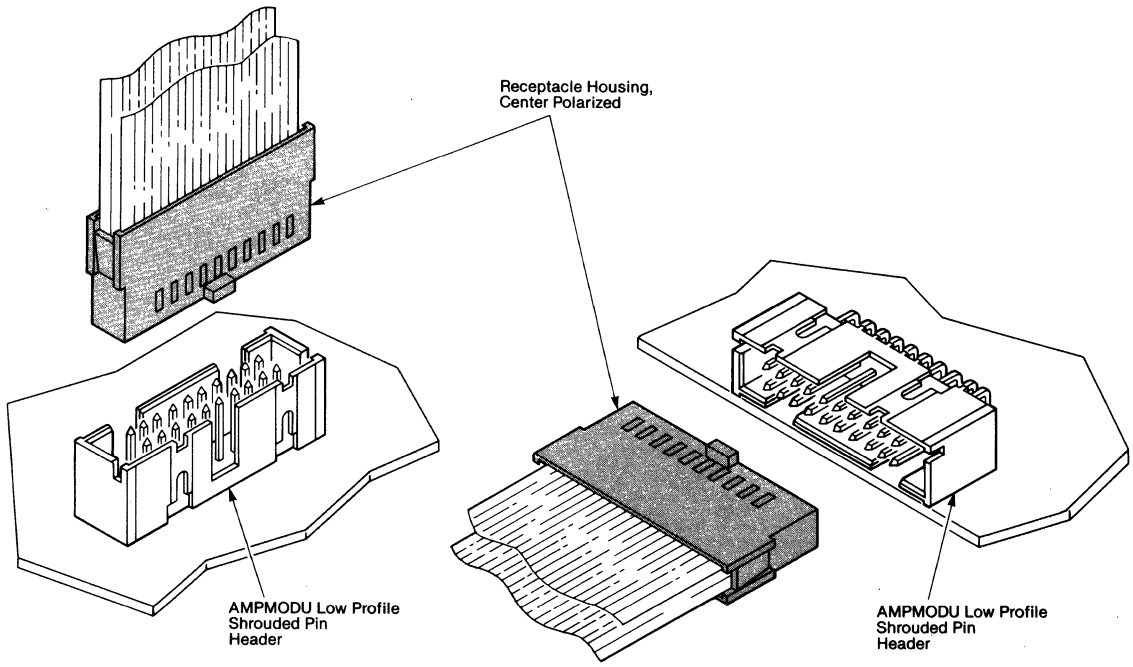
Notes: 1. Tin plated contacts are not recommended for use in receptacle housings larger than 40-position.
2. Other housing sizes can be made available, consult AMP Incorporated.
3. Use Extraction Tool, **Part No. 91093-1,** for round wire contacts.

With Center Polarization (Continued)



*Matching AMP-LATCH pin headers must have latches with a height dimension of .576 [14.63]. Headers may be 3- or 4-sided, straight-thru or right-angle.
Note: For information on AMP-LATCH universal ejection style pin headers, refer to AMP Catalog No. 82012.

Typical Cable-to-Board Application
(Mating with AMP-LATCH Universal Ejection Style Pin Header)



Typical Cable-to-Board Application
(Mating with AMPMODU Low Profile Shrouded Pin Header)

.100 [2.54] Centerline Trio-Mate Connectors

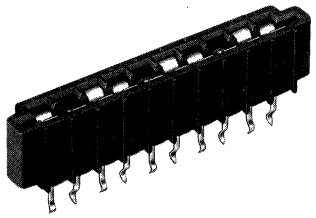
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

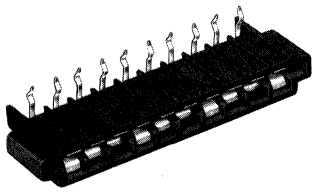
Material and Finish:

Housing—Black thermoplastic, glass reinforced, 94V-0 rated

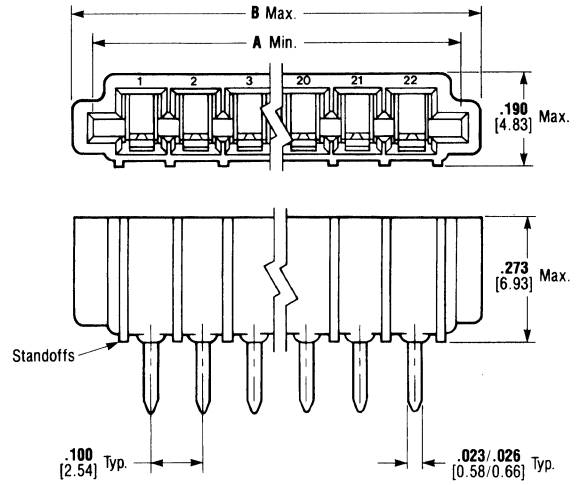
Contacts—Phosphor bronze, tin plated



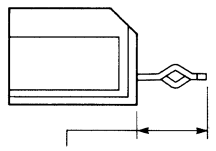
Related Product Data:
Technical Documents - page 5078



Vertical Cable Entry for .062 [1.57] and .093 [2.36] Thick PC Boards

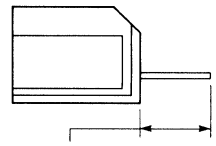


Z Bend Leg

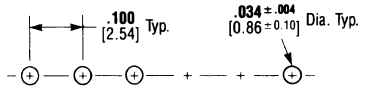


520315 .062 [1.57] **PCB** .140 ± .010 [3.56 ± 0.254]
520316 .093 [2.36] **PCB** .160 ± .010 [4.06 ± 0.254]

Straight Leg

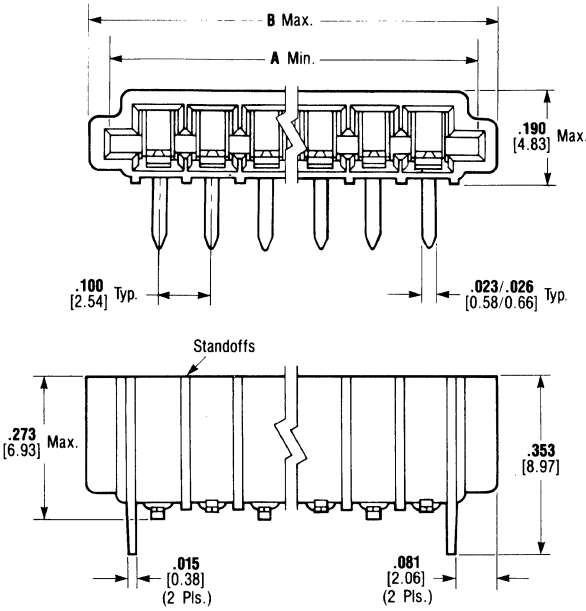


520415 .062 [1.57] **PCB** .110 ± .010 [2.79 ± 0.254]
520355 .093 [2.36] **PCB** .150 ± .010 [3.81 ± 0.254]

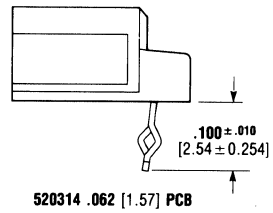


Recommended Mounting Hole Pattern

Horizontal Cable Entry for .062 [1.57] Thick PC Boards

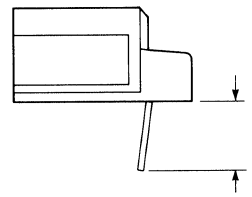


Z Bend Leg

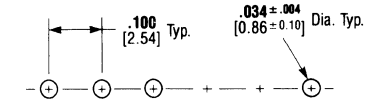


520314 .062 [1.57] **PCB**

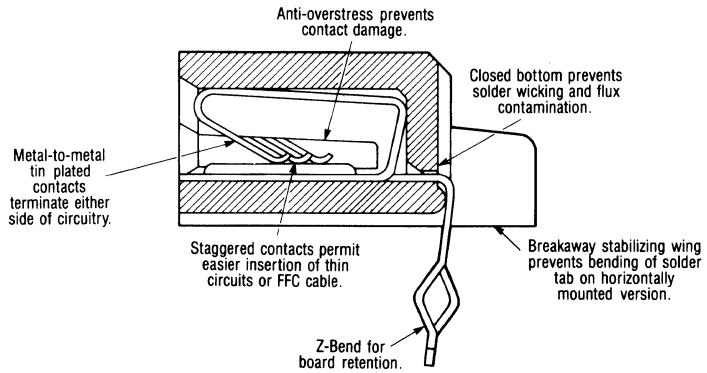
Straight Leg



520353 .062 [1.57] **PCB** .100 ± .010 [2.54 ± 0.254]
176982 .062 [1.57] **PCB** .120 +.005 −.004 [3.05 ± 0.254]



Recommended Mounting Hole Pattern



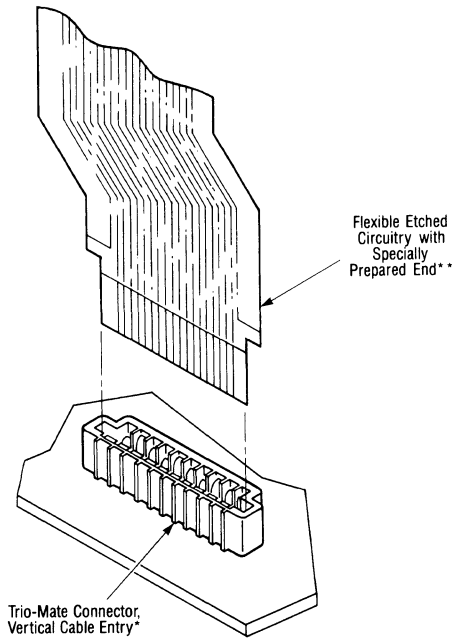
Product Facts

- Accepts FFC cable, flexible etched circuitry or membrane switch circuitry .005 to .015 [0.13 to 0.38] thick in contact area.
- High extraction force
- Reusable 25 times with same cable thickness
- Certified by Canadian Standards Association, File No. LR 53931-10

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

No. of Positions	Dimensions A Inch	A mm	B Inch	B mm	Connector Part No. Vertical Cable Entry For .062 [1.57] Thk. Pc Board Str.	Z Bend	For .093 [2.36] Thk. Pc Board Str.	Z Bend	Horizontal Cable Entry For .062 [1.57] Thk. Pc Board Str.	Str.	Z Bend
2	.306	7.77	.393	9.98	520415-2	520315-2	520355-2	520316-2	176982-2	520353-2	520314-2
3	.406	10.31	.493	12.52	520415-3	520315-3	520355-3	520316-3	176982-3	520353-3	520314-3
4	.506	12.85	.593	15.06	520415-4	520315-4	520355-4	520316-4	176982-4	520353-4	520314-4
5	.606	15.39	.693	17.6	520415-5	520315-5	520355-5	520316-5	176982-5	520353-5	520314-5
6	.706	17.93	.793	20.14	520415-6	520315-6	520355-6	520316-6	176982-6	520353-6	520314-6
7	.806	20.47	.893	22.68	520415-7	520315-7	520355-7	520316-7	176982-7	520353-7	520314-7
8	.906	23.01	.993	25.22	520415-8	520315-8	520355-8	520316-8	176982-8	520353-8	520314-8
9	1.006	25.55	1.093	27.76	520415-9	520315-9	520355-9	520316-9	176982-9	520353-9	520314-9
10	1.106	28.09	1.193	30.3	1-520415-0	1-520315-0	1-520355-0	1-520316-0	1-176982-0	1-520353-0	1-520314-0
11	1.206	30.63	1.293	32.84	1-520415-1	1-520315-1	1-520355-1	1-520316-1	1-176982-1	1-520353-1	1-520314-1
12	1.306	33.17	1.393	35.38	1-520415-2	1-520315-2	1-520355-2	1-520316-2	1-176982-2	1-520353-2	1-520314-2
13	1.406	35.71	1.493	37.92	1-520415-3	1-520315-3	1-520355-3	1-520316-3	1-176982-3	1-520353-3	1-520314-3
14	1.506	38.25	1.593	40.46	1-520415-4	1-520315-4	1-520355-4	1-520316-4	1-176982-4	1-520353-4	1-520314-4
15	1.606	40.79	1.693	43	1-520415-5	1-520315-5	1-520355-5	1-520316-5	1-176982-5	1-520353-5	1-520314-5
16	1.706	43.33	1.793	45.54	1-520415-6	1-520315-6	1-520355-6	1-520316-6	1-176982-6	1-520353-6	1-520314-6
17	1.806	45.87	1.893	48.08	1-520415-7	1-520315-7	1-520355-7	1-520316-7	1-176982-7	1-520353-7	1-520314-7
18	1.906	48.41	1.993	50.62	1-520415-8	1-520315-8	1-520355-8	1-520316-8	1-176982-8	1-520353-8	1-520314-8
19	2.006	50.95	2.093	53.16	1-520415-9	1-520315-9	1-520355-9	1-520316-9	1-176982-9	1-520353-9	1-520314-9
20	2.106	53.49	2.193	55.7	2-520415-0	2-520315-0	2-520355-0	2-520316-0	2-176982-0	2-520353-0	2-520314-0
21	2.206	56.03	2.293	58.24	2-520415-1	2-520315-1	2-520355-1	2-520316-1	2-176982-1	2-520353-1	2-520314-1
22	2.306	58.57	2.393	60.78	2-520415-2	2-520315-2	2-520355-2	2-520316-2	2-176982-2	2-520353-2	2-520314-2



*Vertical cable entry configuration shown for reference only. Termination of either configuration is completed by simply inserting flexible etched circuitry into housing (prepared end on either side).
**Contact AMP Incorporated for additional information.

Note: Special preparation of flexible etched circuitry is required, refer to AMP Application Specification No. 114-2062.

Typical Flexible Etched Circuitry-to-Board Application

Electrical Characteristics:

Dielectric Withstanding Voltage—1.4 KVAC, one minute hold (AMP Specification No. 109-29-1)

Insulation Resistance—5000 megohms (min.), initial (AMP Specification No. 109-28-4)

Capacitance—1.0 pf (max.) (AMP Specification No. 109-47, Condition C)

Current/Voltage—250 VAC @ 1 ampere max.

Mechanical Characteristics:

Vibration—10-55-10 Hz traversed in one minute at .06 [1.52] total excursion (AMP Specification No. 109-21-1, Condition A)

Physical Shock—100 G's sawtooth in 6 milliseconds (AMP Specification No. 109-26-9, Condition I)

Environmental Characteristics:

Thermal Shock—25 cycles between −55°C and +105°C for tin; between −55°C and +85°C for conductive ink (AMP Specification No. 109-22)

Temperature/Humidity Cycling—10 cycles between +25°C and +65°C at 95% RH (AMP Specification No. 109-23, Method III, Condition B, less Step 7a)

Industrial Gas—96 hours of 200 ppb each of nitrogen dioxide, sulfur dioxide and hydrogen sulfide

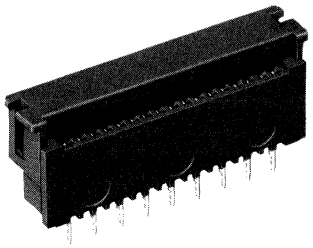
Operating Temperature—−55°C to 105°C for tin plated circuitry −55°C to 85°C for conductive ink

.100 [2.54] Centerline ZIF-Line Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Vertical Cable Entry



Material and Finish:

Housing & Cover—Black thermoplastic, flame retardant, 94V-0 rated

Contacts—Phosphor bronze, plated .000150 [0.00381] min. bright tin-lead over .000050 [0.00127] min. nickel on entire contact

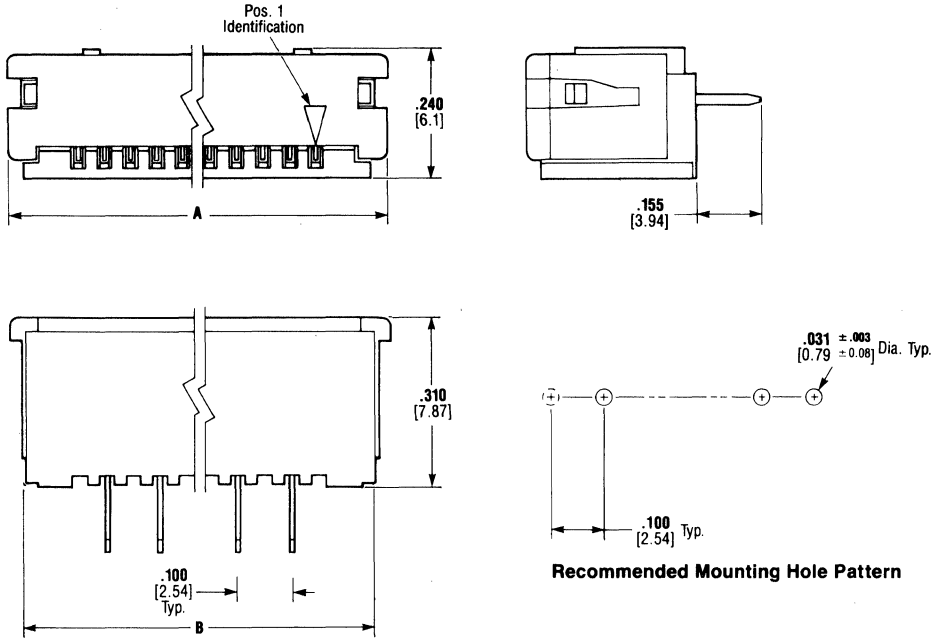
Performance Characteristic:

Contact Current Rating—1 ampere†

†1 ampere rating is for single circuit. Multiple circuits, ambient temperature and conductor size affect current carrying capacity.

Related Product Data:

Technical Documents - page 5078



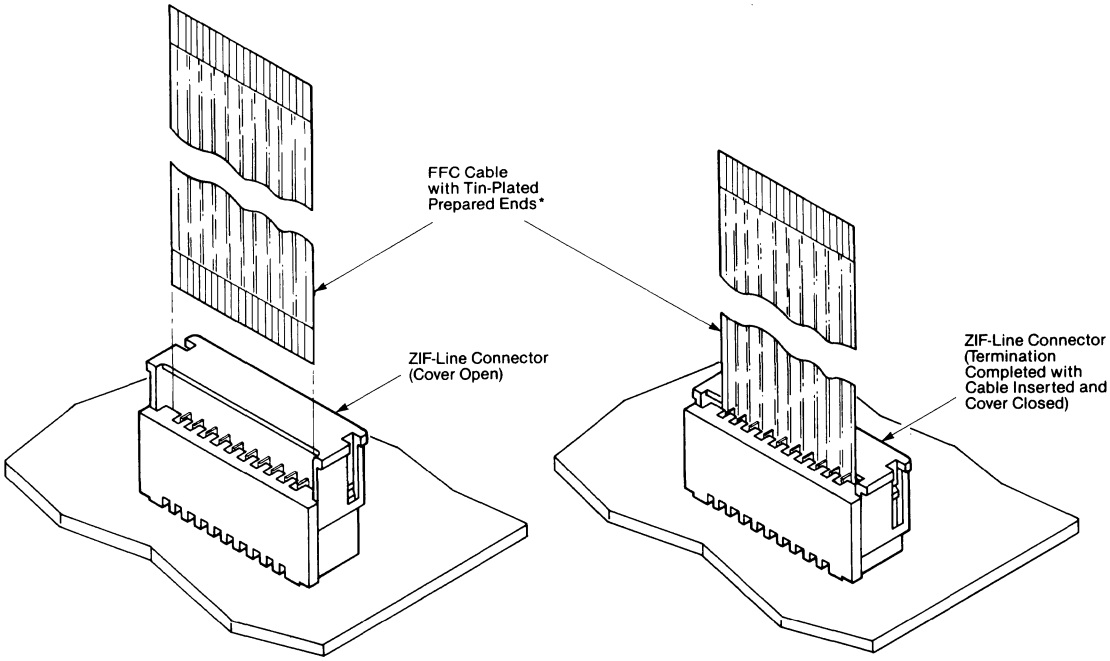
Recommended Mounting Hole Pattern

Note: ZIF-Line connector illustrated above with cover in closed position.

No. of Positions	Dimensions A Inch	A mm	B Inch	B mm	Connector Part No.
8	**1.070**	27.18	**1.010**	25.65	487925-1
9	**1.170**	29.72	**1.110**	28.19	487925-7
10	**1.270**	32.26	**1.210**	30.73	487925-6
11	**1.370**	34.8	**1.310**	33.27	487925-8
12	**1.470**	37.34	**1.410**	35.81	487925-9
13	**1.570**	39.88	**1.510**	38.35	1-487925-0
14	**1.670**	42.42	**1.610**	40.89	487925-2
15	**1.770**	44.96	**1.710**	43.43	1-487925-1
16	**1.870**	47.5	**1.810**	45.97	487925-3
20	**2.270**	57.66	**2.210**	56.13	487925-4
22	**2.470**	62.74	**2.410**	61.21	487925-5

Note: Other sizes of connectors can be made available, consult AMP Incorporated.

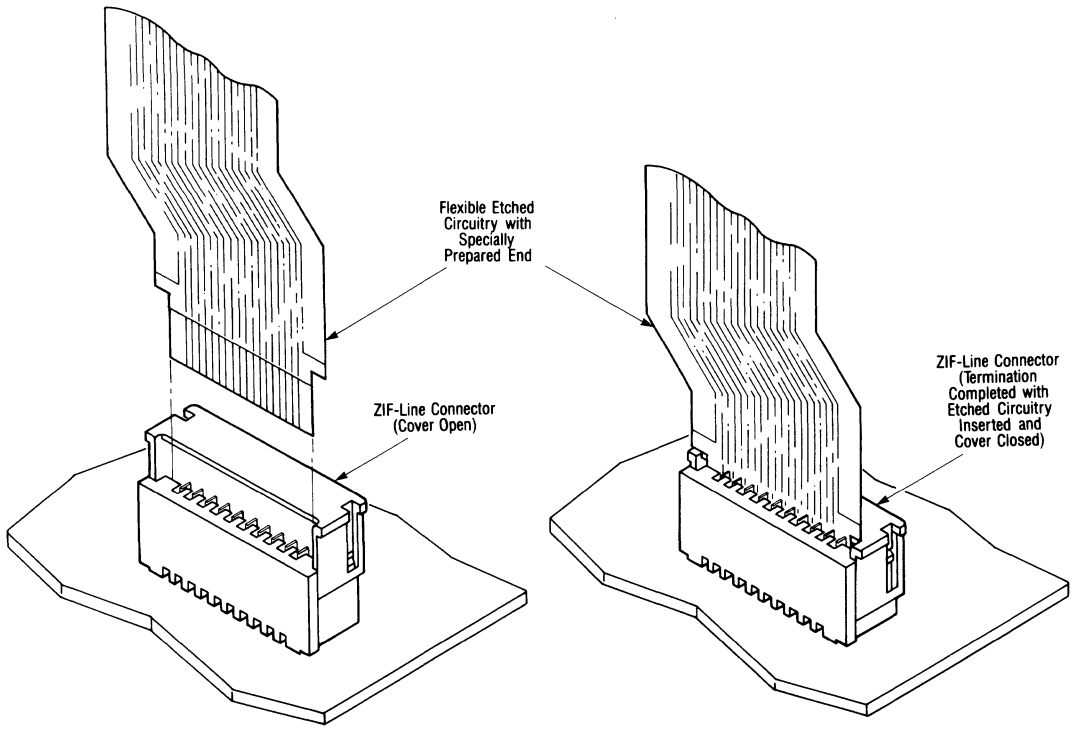
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



*FFC cable with tin-plated prepared ends can be made available, consult AMP Incorporated.

Note: Special preparation of cable with tin-plated prepared ends is required, refer to AMP Application Specification No. 114-16014.

Typical Flexible Flat Conductor Cable-to-Board Application



Note: Special preparation of flexible etched circuitry is required, refer to AMP Application Specification No. 114-16014.

Typical Flexible Etched Circuitry-to-Board Application

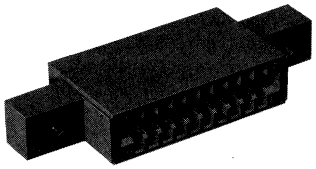
Specifications subject to change.
For latest design specifications...
1-800-522-6752

.100 [2.54] Centerline One-Piece PCB Edge Connector Housings

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

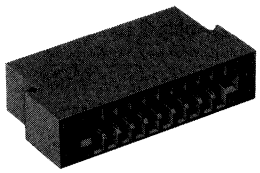
Material:

Black thermoplastic, flame retardant, 94V-0 rated

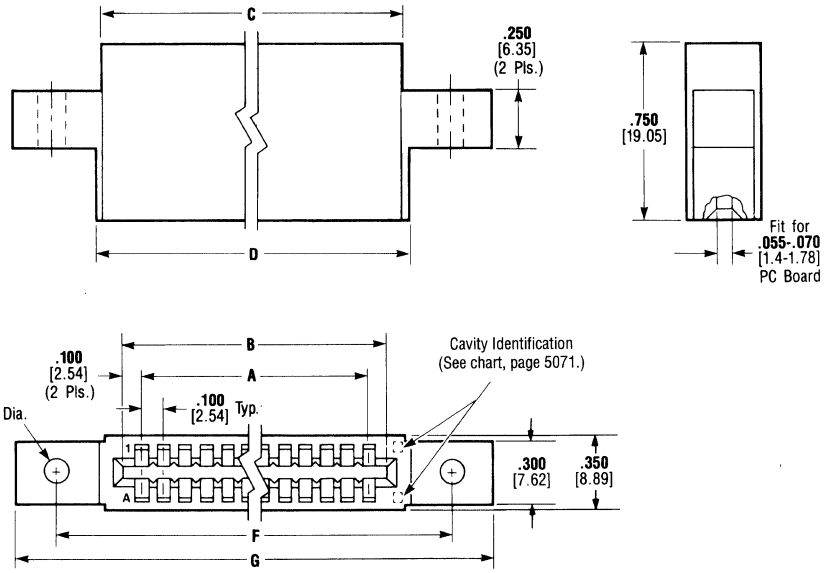


Related Product Data:

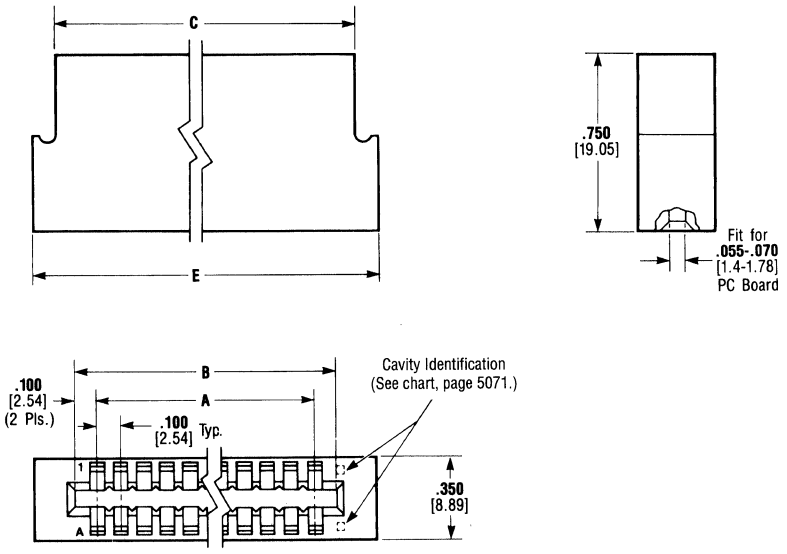
Performance Characteristics - page 5036
FFC Cable - page 5048
PCB Edge Connector Contacts, Strip & Loose Piece - page 5049
Accessories (Keying) - page 5074
Application Tooling - pages 5049, 5077
Technical Documents - page 5078



With Mounting Ears



Without Mounting Ears



Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Positions	Dimensions							PCB Edge Connector Housing Part No. (Unloaded)		End Cavity Identification	Extraction Tool No.
	A	B*	C	D	E	F	G	With Mounting Ears Dimensions A, B, C, D, F, G Only	Without Mounting Ears Dimensions A, B, C, E Only		
18	.800 20.32	1.000 25.4	1.154 29.31	1.200 30.48	—	1.600 40.64	2.000 50.8	1-86743-0	—	1, 9 and A, K	91047-1
20	.900 22.86	1.100 27.94	1.254 31.85	1.300 33.02	1.434 36.42	1.700 43.18	2.100 55.34	86743-2	86792-4	1, 10 and A, L	1-91047-0
26	1.200 30.48	1.400 35.56	1.554 39.47	—	1.734 44.04	—	—	—	2-86792-8	1, 13 and A, P	1-91047-3
30	1.400 35.56	1.600 40.64	1.754 44.55	1.800 45.72	1.934 49.12	2.200 55.88	2.600 66.04	86743-4	86792-6	1, 15 and A, S	1-91047-6
34	1.600 40.64	1.800 45.72	1.954 49.63	2.000 50.8	2.134 54.2	2.400 60.96	2.800 71.12	2-86743-0	2-86792-0	1, 17 and A, U	2-91047-1
38	1.800 45.72	2.000 50.8	2.154 54.71	2.200 55.88	2.334 59.28	2.600 66.04	3.000 76.2	86743-6	86792-8	1, 19 and A, W	91047-2
40	1.900 48.26	2.100 53.34	2.254 57.25	2.300 58.42	—	2.700 68.58	3.100 78.74	1-86743-6	—	1, 20 and A, X	91047-5
50	2.400 60.96	2.600 66.04	2.754 69.95	2.800 71.12	2.934 74.52	3.200 81.82	3.600 91.44	2-86743-4	2-86792-4	1, 25 and A, c	2-91047-3
58	2.800 71.12	3.000 76.2	3.154 80.11	—	3.334 84.68	—	—	—	1-86792-0	1, 29 and A, H	91047-3
60	2.900 73.66	3.100 78.74	3.254 82.65	—	3.434 87.22	—	—	—	3-86792-0	1, 30 and A, j	1-91047-7
66	3.200 81.28	3.400 86.36	3.554 90.27	3.600 91.44	3.734 94.89	4.000 101.6	4.400 111.76	86743-8	1-86792-2	1, 33 and A, M	91047-4
70	3.400 86.36	3.600 91.44	3.754 95.35	3.800 96.52	—	4.200 106.68	4.600 116.64	2-86743-6	—	1, 35 and A, p	1-91047-2

*Actual board width should be .013 [0.33] less than card slot dimension listed in table.

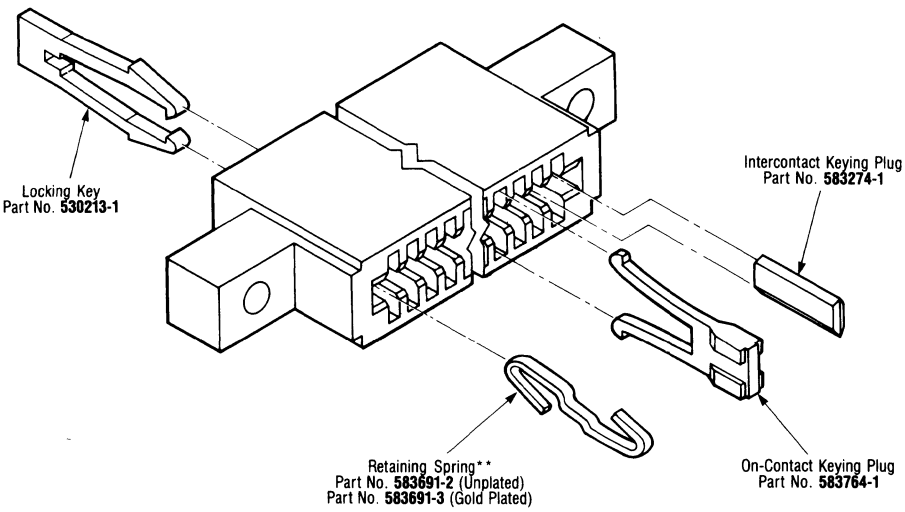
Notes: 1. All housings listed above have no markings, except for Cavity Identification, which is molded into the housing. Housings with special markings can be made available, consult AMP Incoporated.
2. Other sizes of unloaded pcb edge connector housings can be made available, consult AMP Incorporated.

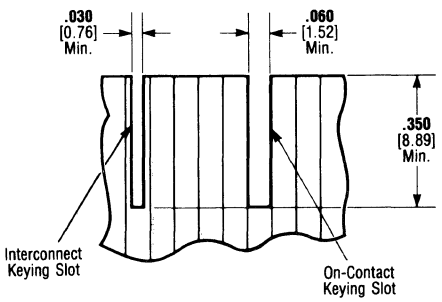
Keying Accessories for PCB Edge Connectors

Material and Finish:

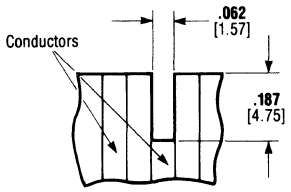
Retaining Spring—Beryllium copper, unplated or plated gold-over-nickel
Locking Key—Nylon
On-Contact Keying Plug—Nylon
Interconnect Keying Plug—Natural color nylon

Note: Refer to AMP Instruction Sheet IS 7665.

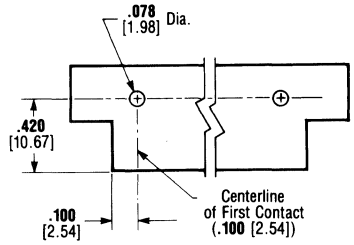




PCB Slot Dimensions for Intercontact and On-Contact Keying Plugs



Cable Cutout Dimensions for On-Contact Keying Plug



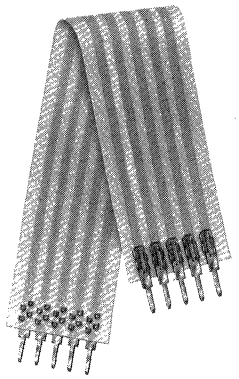
PCB Board Layout for Locking Key

5 Ribbon and Flat Cable Connectors

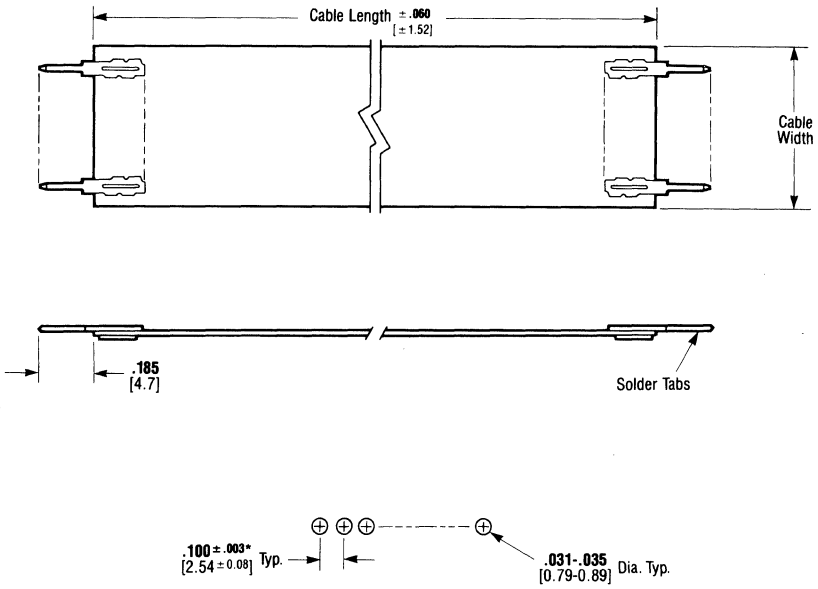
.100 [2.54] Centerline Flexible Flat Conductor Cable Jumper Assemblies

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



In-Line Straight Version



Recommended Mounting Hole Pattern

* ±.003 [±0.08] tolerance not to accumulate within one mounting hole pattern.

Material and Finish:

Conductors—Unplated copper per QQ-C-502, .050 [1.27] wide x .003 [0.08] thick

Insulation—Flame retardant polyester film

Solder Tab Contacts—Phosphor bronze, plated .000100 [0.00254] min. bright tin-lead over .000050 [0.00127] min. nickel on entire contact

Related Product Data:

Performance Characteristics - page 5036
Technical Documents - page 5078

Note: Sizes up to 35 positions can be made available in any length, starting at .750" [19.05 mm] min. Consult AMP Incorporated.

Standard Loose Piece Jumper Sizes

Cable Size (No. of Conductors)	Cable Width		Cable Length/Part No. (Loose Piece)									
	Inch	mm	1.5 [38.1]	2 [50.8]	2.5 [63.5]	3 [76.2]	3.5 [88.9]	4 [101.6]	4.5 [114.3]	5 [127]	5.5 [139.7]	6 [152.4]
2	.300	7.62	278100-1	88665-1	86942-1	86943-1	86944-1	86945-1	88684-1	86946-1	88685-1	86947-1
3	.400	10.16	278100-2	88665-2	86942-2	86943-2	86944-2	86945-2	88684-2	86946-2	88685-2	86947-2
4	.500	12.7	278100-3	88665-3	86942-3	86943-3	86944-3	86945-3	88684-3	86946-3	88685-3	86947-3
5	.600	15.24	278100-4	88665-4	86942-4	86943-4	86944-4	86945-4	88684-4	86946-4	88685-4	86947-4
6	.700	17.78	278100-5	88665-5	86942-5	86943-5	86944-5	86945-5	88684-5	86946-5	88685-5	86947-5
7	.800	20.32	278100-6	88665-6	86942-6	86943-6	86944-6	86945-6	88684-6	86946-6	88685-6	86947-6
8	.900	22.86	278100-7	88665-7	86942-7	86943-7	86944-7	86945-7	88684-7	86946-7	—	86947-7
9	1.000	25.4	278100-8	88665-8	86942-8	86943-8	86944-8	86945-8	88684-8	86946-8	88685-8	86947-8
10	1.100	27.94	278100-9	88665-9	86942-9	86943-9	86944-9	86945-9	88684-9	86946-9	88685-9	86947-9
11	1.200	30.48	1-278100-0	1-88665-0	1-86942-0	1-86943-0	1-86944-0	1-86945-0	1-88684-0	1-86946-0	1-88685-0	1-86947-0
12	1.300	33.02	1-278100-1	1-88665-1	1-86942-1	1-86943-1	1-86944-1	1-86945-1	1-88684-1	1-86946-1	1-88685-1	1-86947-1
13	1.400	35.56	1-278100-2	1-88665-2	1-86942-2	1-86943-2	1-86944-2	1-86945-2	1-88684-2	1-86946-2	1-88685-2	1-86947-2
14	1.500	38.1	1-278100-3	1-88665-3	1-86942-3	1-86943-3	1-86944-3	1-86945-3	1-88684-3	1-86946-3	1-88685-3	1-86947-3
15	1.600	40.64	1-278100-4	1-88665-4	1-86942-4	1-86943-4	1-86944-4	1-86945-4	1-88684-4	1-86946-4	1-88685-4	1-86947-4
16	1.700	43.18	1-278100-5	1-88665-5	1-86942-5	1-86943-5	1-86944-5	1-86945-5	1-88684-5	1-86946-5	1-88685-5	1-86947-5
18	1.900	48.26	1-278100-7	1-88665-7	1-86942-7	1-86943-7	1-86944-7	1-86945-7	1-88684-7	1-86946-7	1-88685-7	1-86947-7
20	2.100	53.34	1-278100-9	1-88665-9	1-86942-9	1-86943-9	1-86944-9	1-86945-9	1-88684-9	1-86946-9	1-88685-9	1-86947-9
22	2.300	58.42	2-278100-1	2-88665-1	2-86942-1	2-86943-1	2-86944-1	2-86945-1	2-88684-1	2-86946-1	2-88685-1	2-86947-1
25	2.600	66.04	2-278100-4	2-88665-4	2-86942-4	—	2-86944-4	2-86945-4	2-88684-4	2-86946-4	2-88685-4	2-86947-4

Specifications subject to change.
For latest design specifications...
1-800-522-6752

.100 [2.54] Centerline Round Wire Contacts, Continuous Strip and Loose Piece

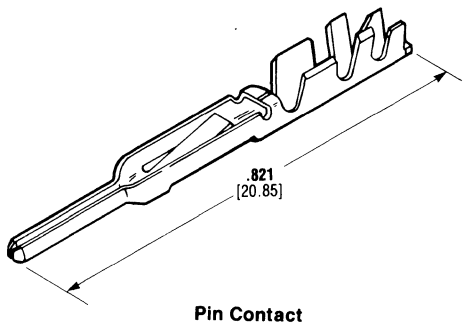
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Material and Finish:

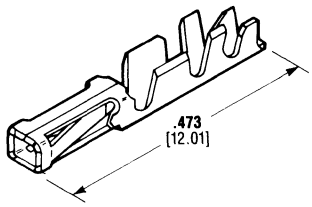
Phosphor bronze; selectively gold plated, or plated bright tin-lead on entire contact (See chart below.)

Related Product Data:

Performance Characteristics - page 5036
Pin Housing used with - pages 5052 & 5053, 5056-5059
Receptacle Housings used with - pages 5044 & 5045, 5060-5063
Application Tooling - Below and page 5077
Technical Documents - page 5078



Pin Contact



Receptacle Contact
(not for use in Slim-Line receptacle housings)

Contact Type	Wire Size Range AWG	Wire Size Range mm²	Ins. Dia. Range	Contact Finish	Strip Form Contact No.	Application Tooling: Applicator Numbers for AMP-O-LECTRIC Machine No. 565435-5	AMPOMATOR CLS II Machine No. 815800-1	AMP-O-MATIC* Machine No. 463345-2	Loose Piece Contact No.	Hand Tool No.	Instruction Sheet No. (IS)
Pin	32-26	0.03-0.15	**.025-.048** 0.64-1.22	Sel. Gold[1]	88048-4	466242-1		466933-1	88048-5	90313-2	
				Sel. Gold[1]	88048-6	466242-1	—	466933-1	—	90313-2	
				Sel. Gold[2]	88048-8	466242-1	—	466933-1	1-88048-0	90313-2	7973
				Tin-Lead	88048-2	466242-1	—	466933-1	88048-3	90313-2	
	26-22	0.12-0.4	**.040-.056** 1.02-1.42	Sel. Gold[1]	86557-6	466572-2	466572-1	466909-1	86561-6	90222-6	
				Sel. Gold[2]	86557-4	466572-2	466572-1	466909-1	86561-4	90222-6	7974
				Tin-Lead[3]	1-86557-4	466572-2	466572-1	466909-1	86561-9	90222-6	
	24-22		**.040-.056** 1.02-1.42	Sel. Gold[1]	86656-2	687620-2	687620-1	—	86658-2	90378-1	7953
	24-22		**.040-.056** 1.02-1.42	Sel. Gold[1]	494033-2	567308-2	567308-1	—	494034-1	90378-1	
Receptacle	32-26	0.03-0.15	**.025-.048** 0.64-1.22	Sel. Gold[1]	88017-2	466242-1	—	466933-1	88017-6	90313-2	
				Sel. Gold[2]	88017-3	466242-1	—	466933-1	88017-7	90313-2	
				Sel. Gold[4]	88017-4	466242-1	—	466933-1	—	90313-2	7973
				Tin-Lead[3]	1-88017-6	466242-1	—	466933-1	1-88017-7	90313-2	
	26-22	0.12-0.4	**.040-.056** 1.02-1.42	Sel. Gold[1]	86566-2	466572-2	466572-1	466909-1	86571-2	90222-6	
				Sel. Gold[2]	86566-4	466572-2	466572-1	466909-1	86571-4	90222-6	7974
				Tin-Lead[3]	86566-8	466572-2	466572-1	466909-1	86571-8	90222-6	
	24-22		**.040-.056** 1.02-1.42	Sel. Gold[1]	86655-2	567308-2	567308-1	—	86657-2	90378-1	7953

*Side Feed Stripper/Crimper Machine.

[1]Selectively plated .000015 [0.00038] gold on mating area, gold flash on remainder of contact, with entire contact underplated .00050 [0.00127] min. nickel.
[2]Selectively plated .000030 [0.00076] gold on mating area, gold flash on remainder of contact, with entire contact underplated .00050 [0.00127] min. nickel.
[3]Plated .000100 [0.00254] min. bright tin-lead over .00050 [0.00127] min. nickel on entire contact.
[4]Selectively plated .000050 [0.00127] gold on mating area, gold flash on remainder of contact, with entire contact underplated .00050 [0.00127] min. nickel.

Note: Use Extraction Tool No. **91092-1** for end locking lance slot and Extraction Tool No. **91093-1** for side locking lance slot.

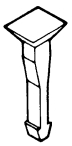
Note: Flexible film contacts – page 5049

Accessories, .100 [2.54] Centerline

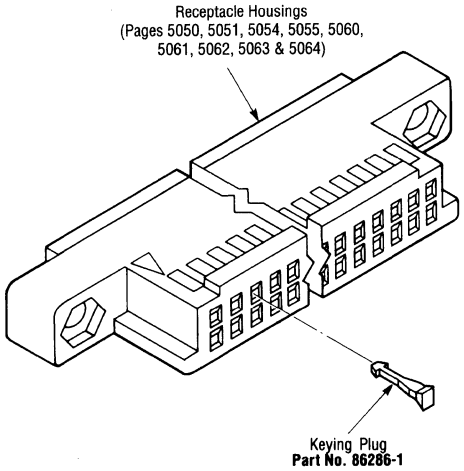
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Keying Plugs for Receptacle Housings

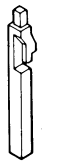
Material:
Nylon



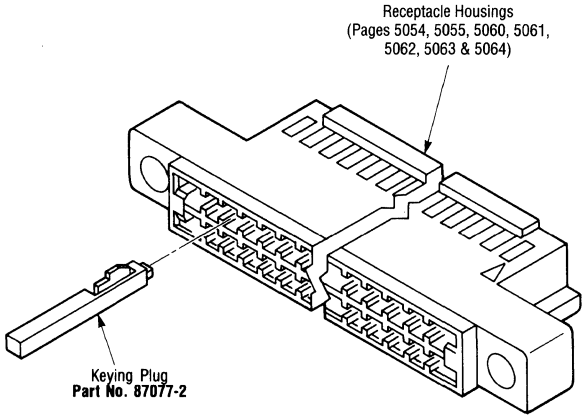
Keying Plug
Part No. 86286-1
(Used with contact; plugs into contact)



Note: Keying plug, Part No. **86286-1,** can be used in all .100 [2.54] centerline receptacle housings, except PCB edge connectors.



Keying Plug
Part No. 87077-2
(Used without contact; plugs directly into back-end of housing)



Note: Keying plug, Part No. **87077-2,** can be used in all .100 [2.54] centerline receptacle housings, except slim-line versions and PCB edge connectors.

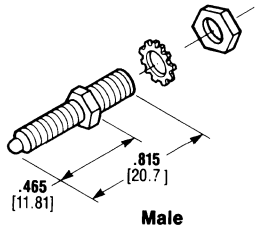
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Accessories, .100 [2.54] Centerline

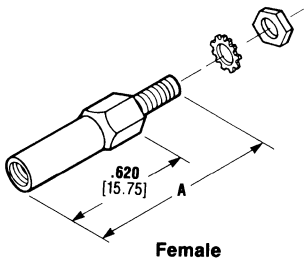
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Jackscrews for Cable-to-Cable Applications

Fixed Jackscrews

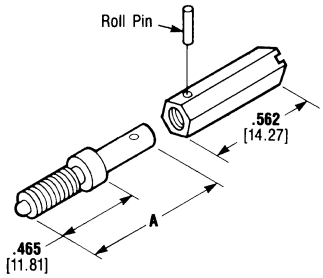


Male

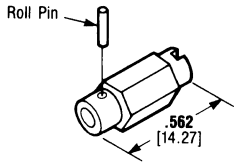


Female

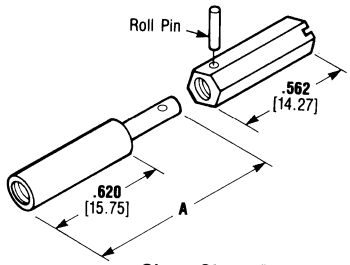
Turnable Jackscrews



Short-Short Male



Roll-Pin Body Style Supplied with Turnable Jackscrew Kit Nos. 86581-1* and 201388-1*

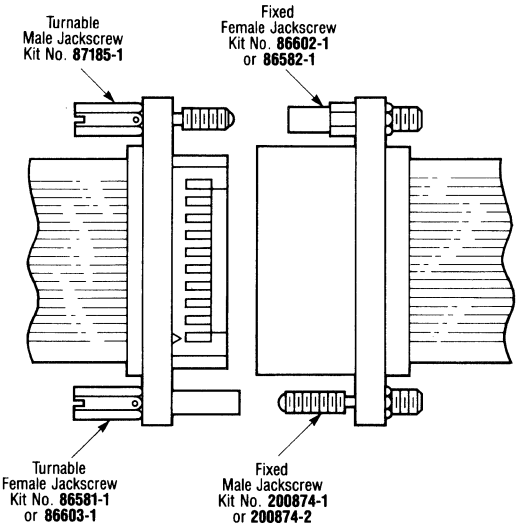


Short-Short Female

Type	Material	Fixed Jackscrew		Turnable Jackscrew	
		Dim. A	Kit No.	Dim. A	Kit No.
Male	Stainless Steel	**.815** 20.7	200874-1	**.812** 20.62	87185-1
	Zinc Plated Steel	**.815** 20.7	200874-2	**.812** 20.62	201388-1*
Female	Zinc Plated Steel	**.972** 24.69	86582-1	**.972** 24.69	86581-1*
	Stainless Steel	**1.095** 27.81	86602-1	**.972** 24.69	86603-1

Notes: 1. These jackscrews can be used with all housings having mounting ears, except pcb edge connector housings.
2. Refer to AMP Instruction Sheets No. IS 6557 and IS 7126 for installation instructions.
3. Other jackscrew kits are available, consult AMP Incorporated.

Typical Cable-to-Cable Application



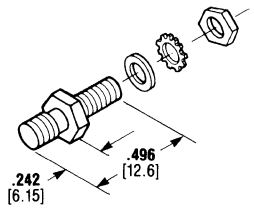
Accessories, .100 [2.54] Centerline

Specifications subject to change.
For latest design specifications...
1-800-522-6752

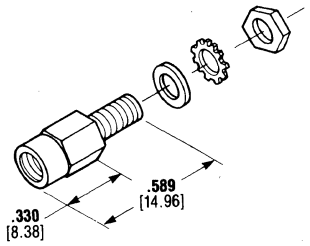
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Jackscrews for Cable-to-Board Applications

Fixed Jackscrews

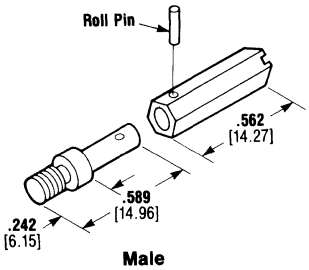


Male

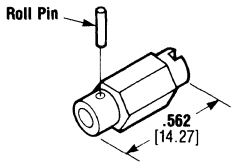


Female

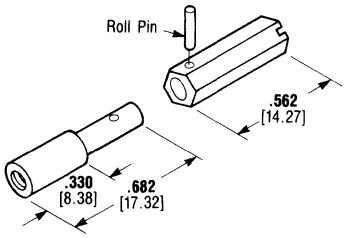
Turnable Jackscrews



Male



Roll Pin Body Style Supplied with Turnable Jackscrew Kit Nos. 86922-1 and 86924-1*

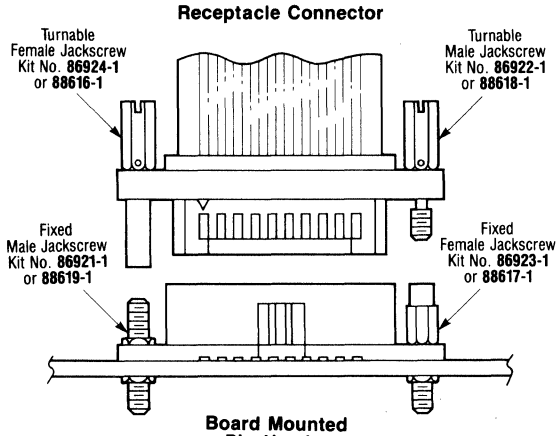


Female

Type	Material	Jackscrew Kit No.
Fixed Male	Zinc Plated Steel	86921-1
	Stainless Steel	88619-1
Turnable Male	Die Cast Zinc (Body) Zinc Plated Steel (Tip)	86922-1*
	Stainless Steel	88618-1
Fixed Female	Zinc Plated Steel	86923-1
	Stainless Steel	88617-1
Turnable Female	Die Cast Zinc (Body) Zinc Plated Steel (Tip)	86924-1*
	Stainless Steel	88616-1

Notes: 1. Refer to AMP Instruction Sheets No. IS 6557 and IS 7126 for installation instructions.
2. Other jackscrew kits are available, consult AMP Incorporated.

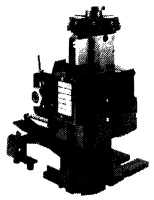
Typical Cable-to-Board Application



5 Ribbon and Flat Cable Connectors

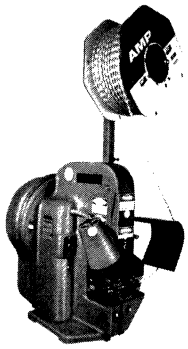
For Round Wire Contacts

Quick-Change Applicators



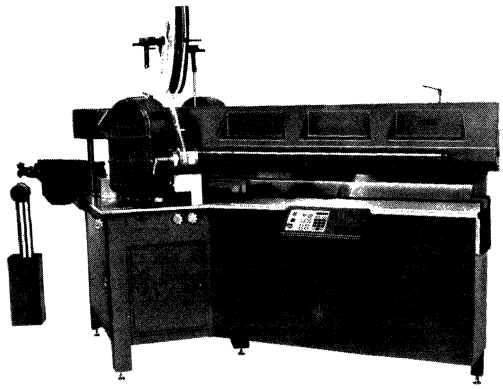
Quick-Change Applicators provide flexible operation for a variety of machines, including the AMP-O-LECTRIC and fully automatic AMPOMATOR CLS machines. These applicators can be changed in minutes, with the crimping height on both crimp barrel and insulation support simply "dialed in." Unique control circuits protect every machine part, and visual indicators aid in adjustment and operation.

AMP-O-LECTRIC Termination Machine



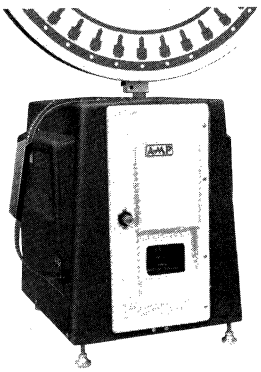
This semi-automatic terminating machine is an easily moved, bench-mounted unit designed to terminate reel-stored AMP contacts. It is readily adaptable to either mechanical or air-feed systems. The unit operates with a Quick-Change Applicator shown at left.

AMPOMATOR CLS II Machine



The AMPOMATOR CLS is an automatic lead making machine designed for low volume and/or short production runs, yet it provides flexibility and ease of conversion to handle many production requirements. The unit automatically feeds, measures and cuts wire, then strips and terminates one or both ends of the wire.

The machine uses AMP's Quick-Change Applicators shown at left. The "T"-style terminating units are "air glide" to facilitate applicator changeover.



AMP-O-MATIC Side Feed Stripper/Crimper Machine

This is a pneumatically operated bench-top machine capable of stripping wires and crimping side feed terminals. It is a compact machine and can be easily moved to other locations.

Unstripped wire is inserted and the foot valve depressed. The wire is automatically stripped and a terminal applied.

CERTI-CRIMP Hand Tools

Part No. 90313-2—for 32-36 AWG [0.03-0.15 mm²] Wire Sizes
IS 7973
Part No. 90222-6—for 26-22 AWG [0.12-0.4 mm²] Wire Sizes
IS 7974

Extraction Tools

Tool No. 91093-1—for Receptacle Housing with Side-Locking Lance Slot IS 7646

Tool No. 91092-1—for Receptacle, Pin & PCB Edge Connector Housings with End Locking Lance IS 7645

A variety of technical documents is available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

.050 [1.27] Centerline Products:

108-16022 Flexible Flat Conductor Cable Connectors
108-16025 Connector, ZIF-Line 50
108-16029 Shielded Flexible Flat Conductor Assemblies
108-40002 Flexible Flat Conductor Cable

.100 [2.54] Centerline Products:

108-2038 Trio-Mate Connectors
108-9024 Flexible Flat Conductor Cable Connectors
108-16025 Connector, ZIF-Line 100
108-16029 Shielded Flexible Flat Conductor Cable Assemblies
108-40002 Flexible Flat Conductor Cable

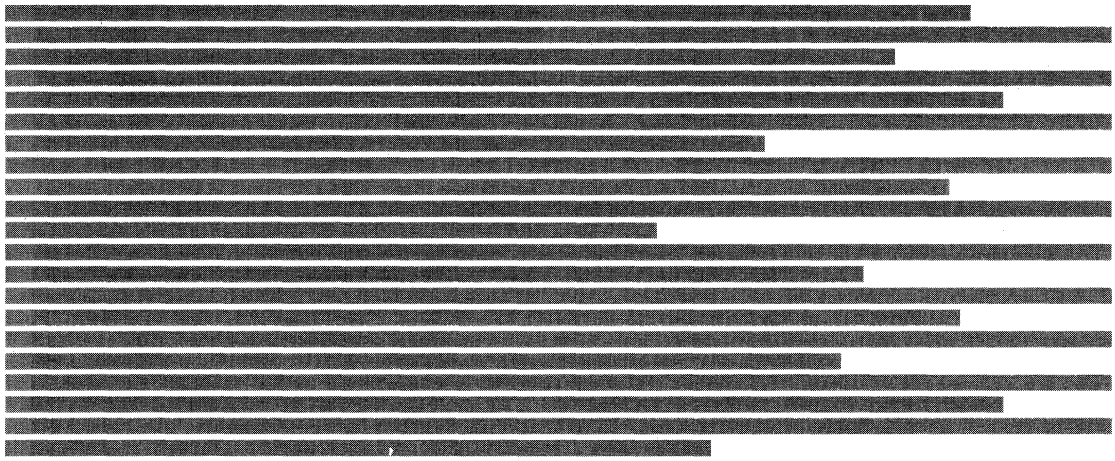
Application Specifications describe requirements for using the product in its intended application and/or crimping information.

114-2062 Trio-Mate Connectors
114-16002 Crimping .100 [2.54] C.L., Standard Crimp Contacts onto Flexible Flat Conductor Cable
114-16003 Crimping Round Wire Pin and Receptacle Contacts onto Discrete Round Wire .100 [2.54] C.L.
114-16008 Crimping Multiple Crimp Contacts onto FFC Cable .050 [1.27] C.L.
114-16014 AMP ZIF-Line 50 & 100 PCB Connectors
114-16015 FFC, Contacts and Housings for .100 [2.54] C.H. Cable

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the manufacturing Assembler or Operator.

IS 6557 Jackscrew Assemblies and Latch Type Hardware
IS 7665 Flexible Flat Conductor Cable PCB Edge Connectors
IS 7126 Assembly Tool for Turnable Jackscrews (Tool No. 91016 Series)
IS 7973 Hand Crimping Tool No. 90313-2
IS 7974 Hand Crimping Tool No. 90222-6
IS 7953 Hand Crimping Tool No. 90378-1

Instruction material covering operation, setup, maintenance, repair, etc. is included with each machine, tool or die set. If this material is required prior to receiving your tooling, call the AMP Customer Service hotline 1-800-722-1111 for the applicable document.



6

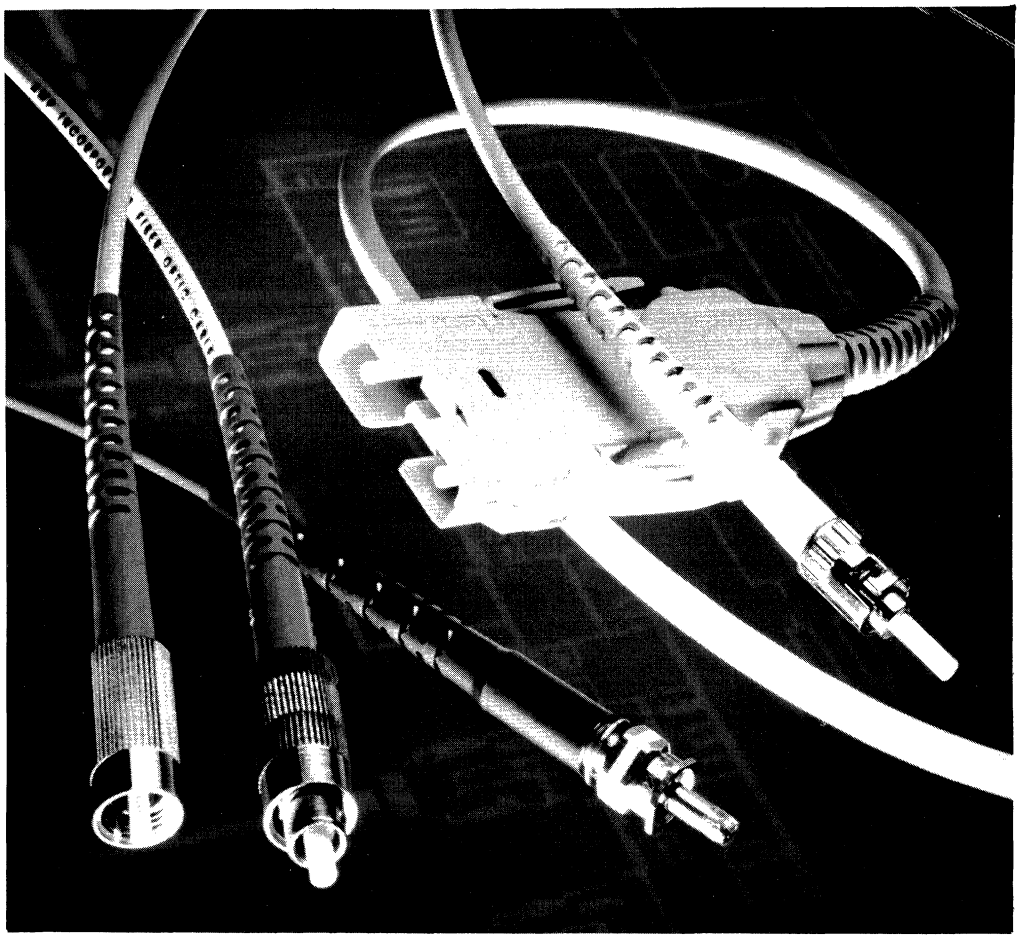
AMP

Fiber Optics

** Qualified AMP Products for Military Applications are summarized on page 2.*

Fiber Optic Interconnection System

Specifications subject to change.
For latest design specifications...
1-800-522-6752



To help transmit more information over longer distances, fiber optic technology offers many advantages over copper wire systems, including wide band width, EMI immunity, low signal loss, small size, light weight, security, safety and electrical isolation.

AMP has been committed to fiber optic interconnection technology since 1975. This commitment has evolved to a point where AMP can provide a total system which includes several different connector families, splices, data links, cable, cable assemblies, distribution hardware, associated tooling and accessories. The program allows optical systems to be tailored to installation requirements with components that are matched to industry standards.

A few of the many uses of the AMP Fiber Optic Interconnection System are:

- FDDI networks
- Local area networks
- Computer branch exchanges
- Private branch exchanges
- Transmission equipment
- Switching equipment
- Aerospace applications
- Military applications
- Industrial controls
- Test equipment
- Data communication equipment
- Computer peripherals
- Wiring centers
- Building entrances

AMP has the facilities and the skilled personnel to help you with fiber optic system interconnection design. Also, AMP will assist you with installation support in the form of product training and field engineering. AMP is a service oriented company with people prepared to lend constant support for your product and application requirements.

Numerical Values

Unless otherwise specified, all dimensions in this catalog are in millimetres.

To convert metric unit values in this catalog to their U.S. customary equivalents, use the following formulas.

To convert from	to	Multiply by
millimetre (mm)	inch	0.03937
centimetre (cm)	inch	0.3937
metre (m)	inch	39.37
metre (m)	foot	3.281
kilometre (km)	mile	0.6214
kilogram (kg)	pound	2.205
newton (N)	pound force	0.22481

Specifications subject to change.
For latest design specifications...
1-800-522-6752

FSD (Fixed Shroud Duplex) System

Product Facts

- Meets specifications of ANSI X3T9 (FDDI)
- Duplex plug can mate directly to data links
- Polarization to prevent improper mating
- Four keying options possible, per FDDI PMD specification
- Duplex-to-simplex and duplex-to-duplex couplings available
- Mechanically isolated, free floating alignment system
- Rigid shroud to protect precision ferrules
- Wall outlet for fixed building cabling

Applications

- Any duplex, fiber optic system
- Host-host and host-peripheral interfaces
- Wiring closet patch fields
- IEEE 802.4 token bus
- Building wiring - wall outlets

The AMP FSD Connector System is only part of a complete family of products that is gaining popularity for a wide range of applications requiring two fibers for full duplex communication.

FDDI, a 100 Mbit/sec. Token Ring network is becoming the network of choice as a backbone to connect lower speed LAN's as well as a high speed "back end" network to interconnect mainframes and peripherals.

The AMP FSD system provides flexibility for the OEM who is designing equipment which incorporates FDDI.

The 125 Mbit/sec. transceiver accepts a plastic or metal FSD adapter which conforms to the FDDI dimensional requirements. This configuration allows the cable plant to plug directly to the data link, without intervening pigtails. The transceivers are available in "raised ECL" to be compatible with commercial FDDI chipsets, as well as standard ECL. Board and bulkhead couplings allow remote connections between Media Interface Connectors (MIC) and the data links.

AMP offers a Dual Optical Bypass Switch module which can be interposed between the station and the fiber plant to maintain ring integrity when the station is powered down.

FSD patch panels and enclosures allow the use of fibers on a duplex circuit basis for premises installations rather than using single fiber connections, as was the practice in the past. Now the network can be configured with duplex jumpers. Polarization eliminates the possibility of reversing transmit and receive fibers. Star couplers for other networks, such as fiber ETHERNET or token bus, can also be produced with AMP FSD connectors. Thus the cable plant becomes a true utility, supporting both star-cabled ring and star topologies through simple cable rearrangement. See Figure 1 below.

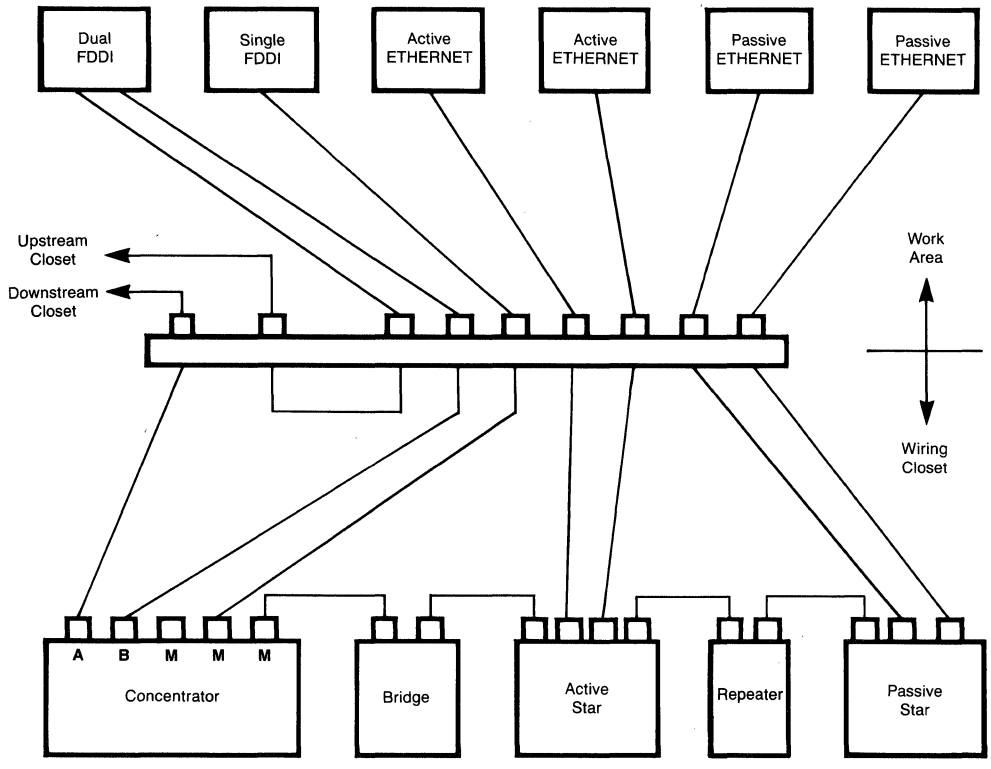


Figure 1

Keying for FDDI

All connectors and cable assemblies are shipped with color-coded keys to ensure proper connection. Key styles A and B are used with dual attach stations. Key styles M and S are used for the attachment of a single attach station to a concentrator, with M at the concentrator end, and S at the station end. Three keys are provided (A, B & M), to be installed by the customer/user. The connector without a key installed is a type S, and will mate to any receptacle, regardless of its key style. All receptacles, whether on transceiver adapters or connector couplings, have the keys molded in. For this reason, care should be taken when ordering receptacles to ensure that the part numbers reflecting the desired keys are specified.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

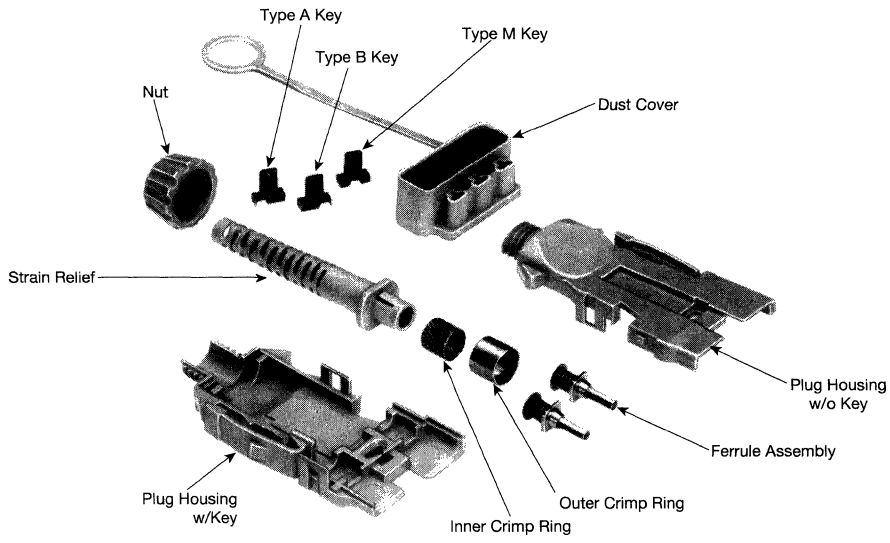
FSD (Fixed Shroud Duplex) System

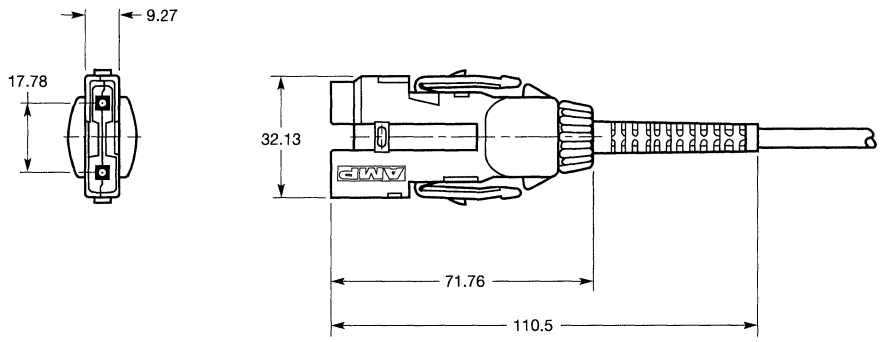
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Plugs

Product Facts

- FDDI Compatible
- Uses 2.5 mm ceramic free-floating ferrules for low loss—0.6 dB typical
- Positive side-latch mating
- Includes designed-in polarization and keying
- Bend-limiting strain relief boot





Fiber Diameter (µm)	Plug Part Numbers		
	Cable Type		Replacement Ferrules
	DUALAN	Light Duty Dual	
125	501780-1	502015-1	501779-1*
140	501780-2	502015-2	501779-2*

*Part number is for individual ferrule.

Performance Characteristics

Insertion Loss (Typ): 0.6 dB
Mating Cycles (0.1 dB Change): 500 (Test Results)
Cable Retention: 150 N
Operating Temperature: –20°C to +65°C

Materials:

Housing and Nut—PBT plastic
Strain Relief—Polypropylene
Dust Cover—Thermoplastic rubber
Ferrule Assembly—Stainless steel and ceramic
Inner Crimp Ring—Brass
Outer Crimp Ring—Copper

Specifications subject to change.
For latest design specifications...
1-800-522-6752

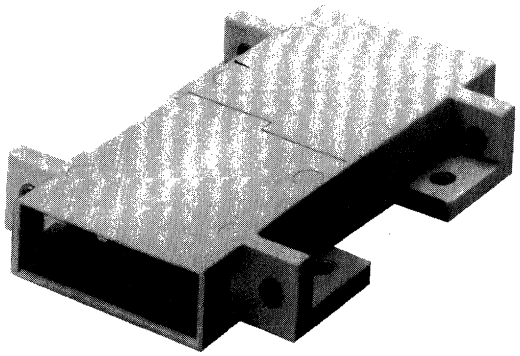
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

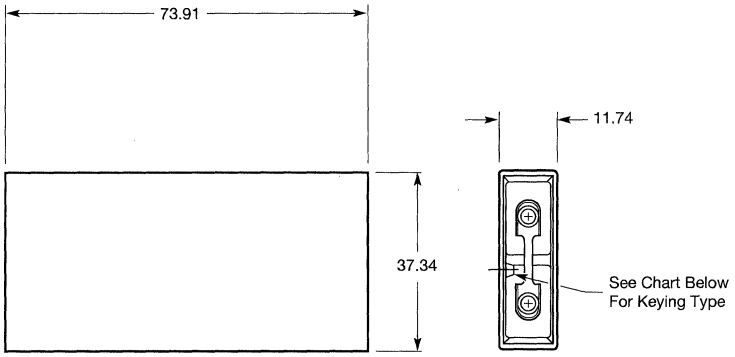
FSD (Fixed Shroud Duplex) System

Receptacles— Duplex-to-Duplex Couplings

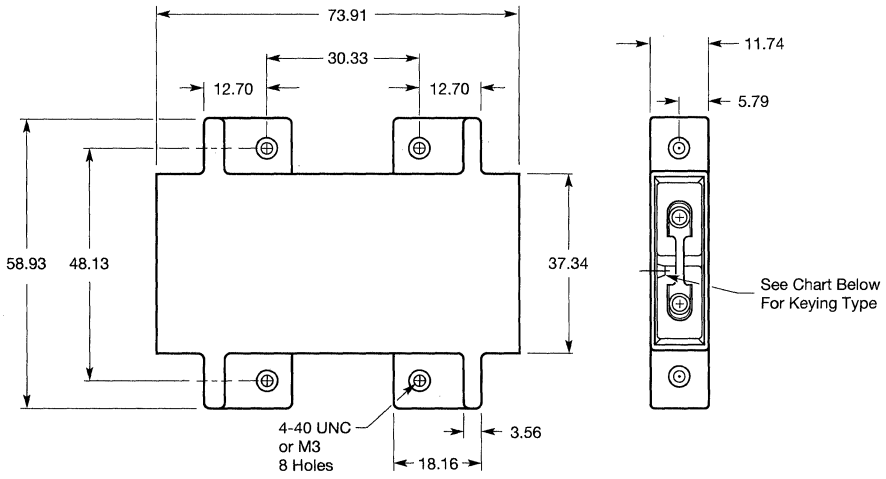
Product Facts

- Self-aligning, free-floating interface for constant low-loss mating
- Allows mating of two duplex plugs
- Conforms to the requirements of the FDDI PMD Specification
- Available with and without mounting ears

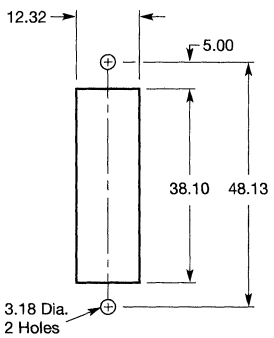




Without Mounting Ears



With Mounting Ears



Recommended Panel Cutout

Style	Threaded Insert Size	Part Numbers	
		Keying Type	
		A to B	M to S
With Mounting Ears	4-40	501926-1	501926-2
	M3	501931-1	501931-2
Without Mounting Ears	—	501805-1	501805-2

Material:
PBT plastic

6 Fiber Optics

AMP INCORPORATED, HARRISBURG, PA 17105; PHONE: 717-564-0100 TWX: 510-657-4110 • PRODUCT INFORMATION CENTER; PHONE: 1-800-522-6752

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

FSD (Fixed Shroud Duplex) System

Wall Outlets

1 Port FSD to ST-Style with AMP Communications Outlet
Part No. 502571-1
(All AMP Communications Outlet components are sold separately.)

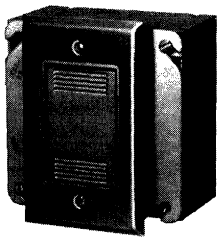
- Promotes one time wall wiring by incorporating fiber with AMP Communications Outlet
- Fiber, Twisted Pair, and Coax in a single outlet
- Fiber Port variety:
  1 or 2 Port FSD to ST-Style
  1 Port FSD with Nickel Finish
  2 or 4 Port ST-Style
  (See the following for Fiber Port Details.)

1 Port FSD Nickel Finish Wall Outlet
Part No. 502199-2

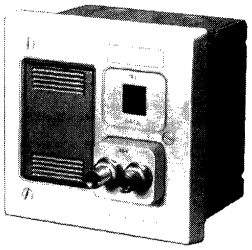
- Low loss—typically 0.6 dB
- Provides interconnection of FSD connector with cable plant
- Two position outlet pops out for use and fits flush when not in use
- Also available in a 2 Port configuration and with AMP Communications Outlet (see Part No. 502571-1)

4 Port FSD to ST-Style Wall Outlet
Part No. 502487-2

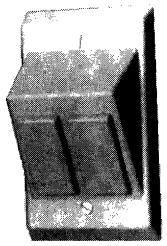
- Low loss—typically 0.6 dB
- Provides for interconnection of FSD connectors with ST-Style connectors
- Spring loaded door automatically closes when connector is removed
- Available in 1, 2, or 4 Ports—FSD to ST-Style
- Also available with 2 or 4 Ports—ST-Style feedthroughs (no doors)
- May be used with AMP Communications Outlet (see Part No. 502571-1)



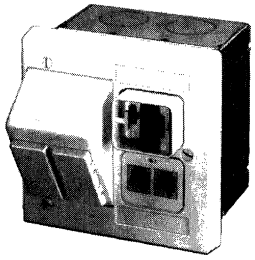
FSD Wall Outlet



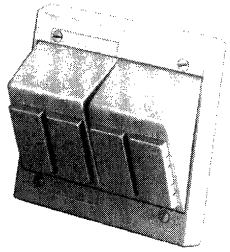
FSD/AMP Communications Outlet Wall Outlet



2 Port FSD to 2.5 mm Bayonet Wall Outlet



2 Port FSD to 2.5 mm Bayonet/AMP Communications Outlet Wall Outlet



4 Port FSD to 2.5 mm Bayonet Wall Outlet

Description	Keying	With Receptacle Box	Without Receptacle Box
FSD Wall Outlet	A	501810-1	502199-1
	B	501810-2	502199-2
	M	501810-3	502199-3
	S	501810-4	502199-4
FSD/AMP Communications Outlet Wall Outlet	A		502334-1
	B		502334-2
	M		502334-3
	S		502334-4
Dual FSD Wall Outlet	A-B	502377-1	502376-1
	M-S	502377-2	502376-2
1 Port FSD to 2.5 mm Bayonet Wall Outlet	A		502572-1
	B		502572-2
	M		502572-3
	S		502572-4
1 Port FSD to 2.5 mm Bayonet/AMP Communications Outlet Wall Outlet	A		502571-1
	B		502571-2
	M		502571-3
	S		502571-4
2 Port FSD to 2.5 mm Bayonet Wall Outlet	A-B	502484-1	502486-1
	M-S	502484-2	502486-2
	A		502486-3
	B		502486-4
	M		502486-5
	A-M		502486-6
2 Port FSD to 2.5 mm Bayonet Wall Outlet with two 2.5 mm Bayonet Connector Kits (501380-3)	A-B		502507-1
	M-S		502507-2
	A		502507-3
	B		502507-4
	M		502507-5
	A-M		502507-6
2 Port FSD to 2.5 mm Bayonet/AMP Communications Outlet Wall Outlet	A-B	502502-1	502503-1
	M-S	502502-2	502503-2
4 Port FSD to 2.5 mm Bayonet Wall Outlet	A-B	502485-1	502487-1
	M-S	502485-2	502487-2

Note: AMP Communications Outlet Components purchased separately.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

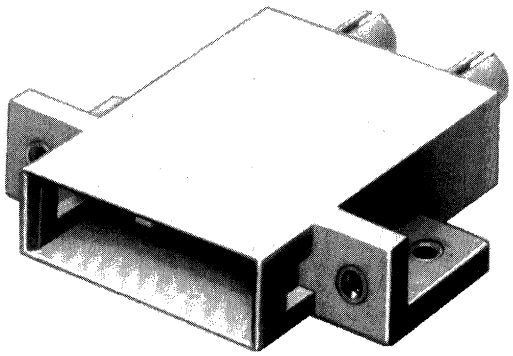
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

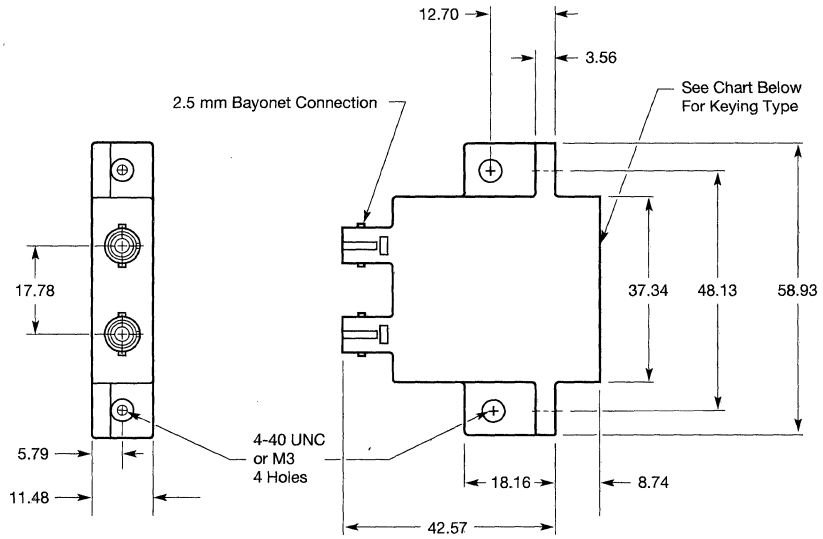
FSD (Fixed Shroud Duplex) System

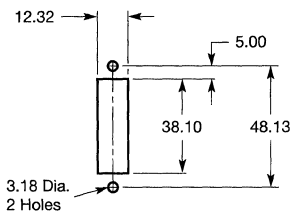
Receptacles— Bulkhead Adapters

Product Facts

- Self-aligning, free-floating interface for constant, low-loss mating
- Connects FSD plug to two 2.5 mm bayonet plug connectors (see page 6013)
- Conforms to the requirements of the FDDI PMD Specification
- Choice of plastic or metal housings







Recommended Panel Cutout

Housing Material	Threaded Insert Size	Part Numbers Keying Type A	B	M	S
Plastic	4-40	501798-1	501798-2	501798-3	501798-4
Plastic	M3	501933-1	501933-2	501933-3	501933-4
Zinc	4-40	501799-1	501799-2	501799-3	501799-4
Zinc	M3	501932-1	501932-2	501932-3	501932-4

Materials:

Housing—Plastic or die cast zinc with nickel plating.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

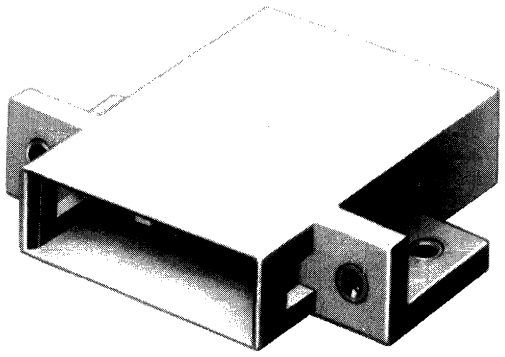
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

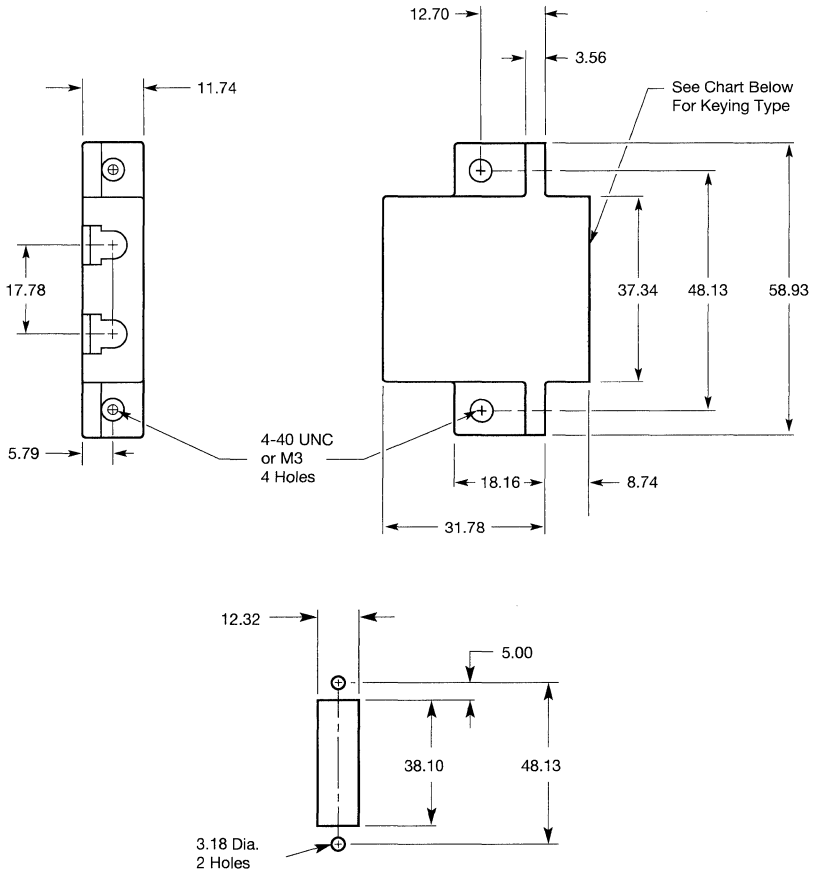
FSD (Fixed Shroud Duplex) System

Transceiver Adapters

Product Facts

- Accepts AMP transceivers
- Choice of plastic or metal housings
- Conforms to the requirements of the FDDI PMD Specification





Recommended Panel Cutout

Housing Material	Threaded Insert Size	Part Numbers			
		Keying Type			
		A	B	M	S
Plastic	4-40	501801-1	501801-2	501801-3	501801-4
Plastic	M3	501930-1	501930-2	501930-3	501930-4
Zinc	4-40	501802-1	501802-2	501802-3	501802-4
Zinc	M3	501929-1	501929-2	501929-3	501929-4

Materials:

Housing—PBT plastic or die cast zinc with nickel plating

FSD (Fixed Shroud Duplex) System

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

4-Pack Panel Assemblies

Product Facts

- Self-aligning, free-floating interface for constant low-loss mating
- Two versions available: FSD to 2.5 mm bayonet (see page 6008) and FSD to FSD (see page 6006)
- Allows two duplex connections in AMP enclosures and patch panels

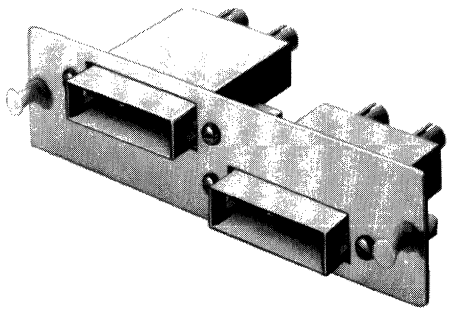
Materials:

Panel—Steel
Bulkhead and Coupling—PBT plastic

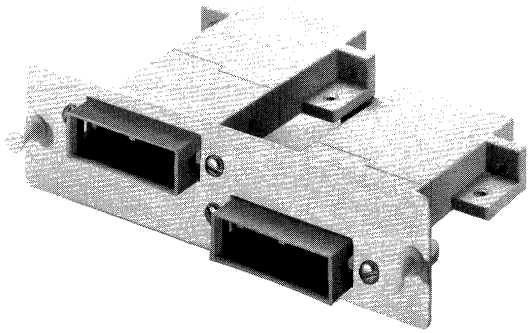
Finish:

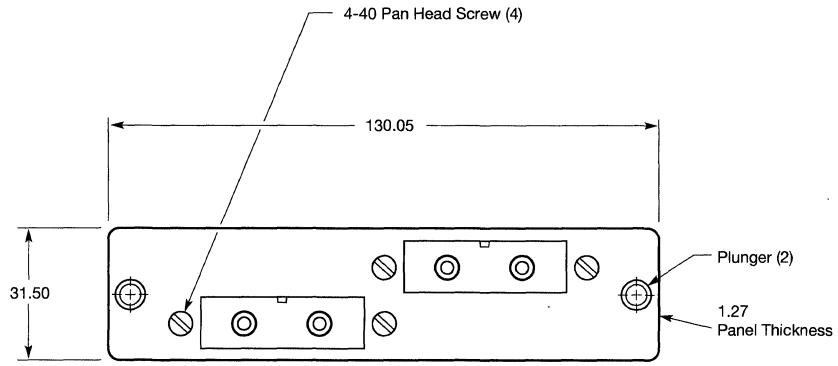
Panel—White enamel

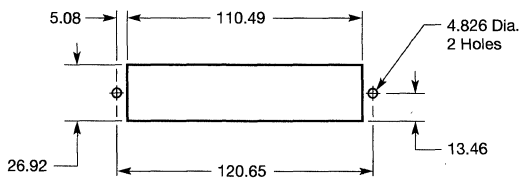
FSD to 2.5 mm Bayonet Connectors
Part No. 502046-1 (S Key)
Part No. 502046-2 (A-B Key)



Coupling—FSD to FSD Connectors
Part No. 502047-1 (M-S Key)
Part No. 502047-2 (A-B Key)







Panel Thickness: 0.533–2.946

Recommended Panel Cutout

Blank Panel Assembly
Part No. 502048-1[1]

[1]Includes blank panel and plungers only.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

FSD (Fixed Shroud Duplex) System

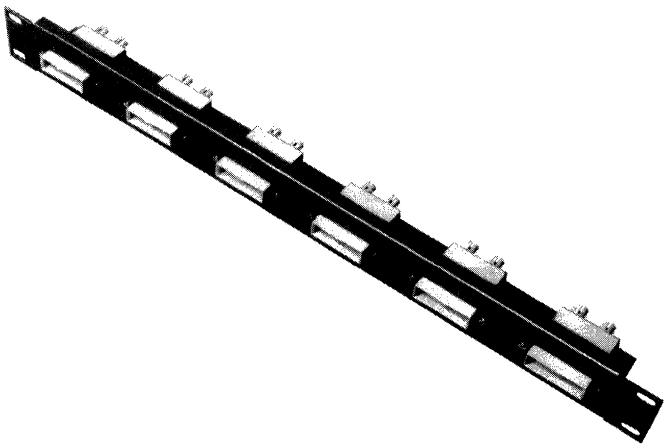
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Patch Panels

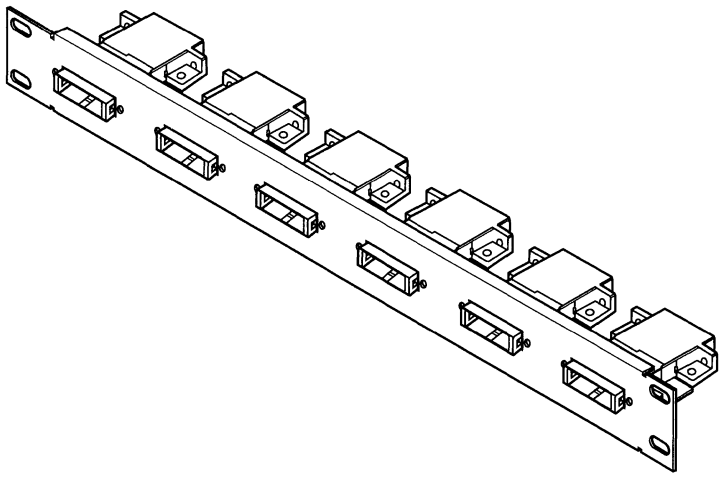
Product Facts

- Self-aligning, free-floating interface for constant low-loss mating
- Two versions available: FSD to 2.5 mm bayonet (see page 6008) and FSD to FSD (see page 6006)
- Allows six duplex connections

Type 1 - FSD to 2.5 mm Bayonet Connectors



Type 2 - FSD to FSD Connectors



Type	Keying	Panel Color	Part Number
1	S	Blue Beige	502043-1 502043-2
2	M & S (3 ea.)	Blue Beige	502044-1 502044-2
2	A & B (3 ea.)	Blue Beige	502044-4 502044-3
1	A & B (3 ea.)	Blue Beige	502043-3 502043-4

Note: Keying designations are defined on page 6004.

Materials:

Panel—Steel
Bulkhead—Thermoplastic

Finish:

Panel—Acrylic enamel, blue or beige

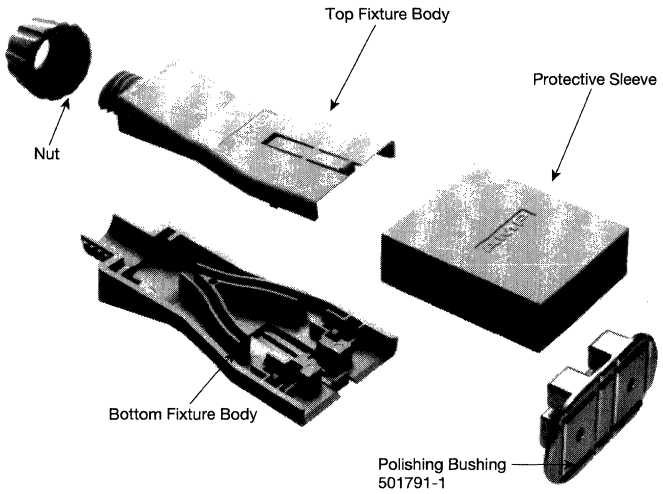
Specifications subject to change.
For latest design specifications...
1-800-522-6752

FSD (Fixed Shroud Duplex) System

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Duplex Assembly Fixture Kit[1]

Part No. 501795-1 (With Polishing Bushing)
Part No. 502023-1 (Without Polishing Bushing)



[1]Used to hold ferrules during assembly, epoxy curing and polishing. Allows simultaneous polishing of both ferrules.

Tool Kits and Accessories

Description	Part Number
Universal Installers Kit	501258-7,-8,-9
Termination Kit[2]	501800-1
Epoxy (25) 2-Gram Packs	501195-4
Epoxy Applicator	501473-3
Polishing Film (10) 8 × 10 Sheets:	
Step 1 (5 µm)	228433-8
Step 2 (1 µm)	228433-7
Step 3 (0.3 µm)	228433-5
Polish Pad	501523-1

[2]See page 6055 for details.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

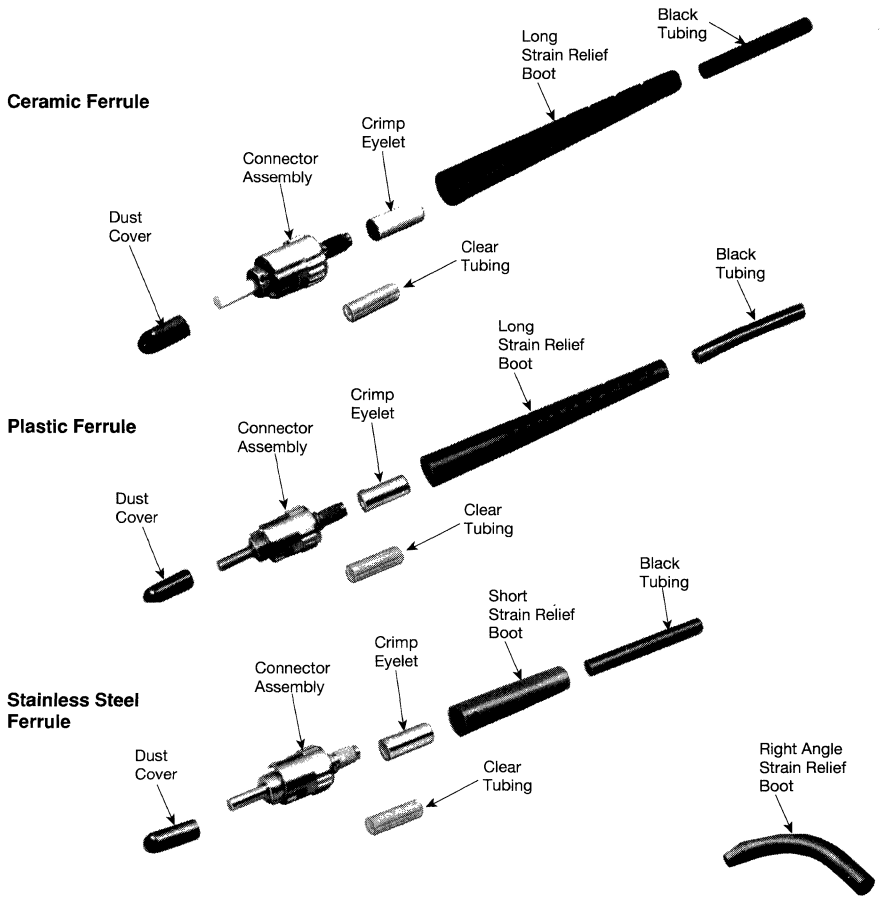
2.5 mm Bayonet Connectors

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Plugs

Product Facts

- Multimode and single-mode versions available.
- Choice of ceramic, plastic or stainless steel ferrule.
- Single crimp termination for cables up to 3 mm in diameter.
- Clear tubing allows termination of 900 micron buffered fiber with no strength members (Kevlar).
- Strain relief boots available in long, short, and right angle versions and in various colors.
- Low loss—0.6 dB typical (ceramic), 1.0 dB typical (plastic), 0.7 dB typical (stainless steel).



Ferrule Type	Strain Relief	Fiber Diameter (μm)	Part Number
Multimode			
Ceramic-Zirconium Oxide	Long Boot (Black)	125	501380-5
	Long Boot (Black)	140	501380-6
Ceramic-Aluminum Oxide	Long Boot (Black)	125	501380-1
	Long Boot (Black)	140	501380-2
	Short Boot (Blue)	125	1-501380-1
	Short Boot (Beige)	140	1-501380-2
Plastic	Long Boot (Black)	125	502160-1
	Long Boot (Black)	140	502160-2
	Long Boot (Black)	230	502160-3
	Long Boot (Black)	500	502160-4
	Long Boot (Black)	1000	502160-5
Stainless Steel	Short Boot (Blue)	125	502575-1
	Short Boot (Blue)	140	502575-2
Ceramic-Aluminum Oxide	Right Angle Boot (Black)	125	502674-1
	Right Angle Boot (Black)	140	502674-2
Stainless Steel	Right Angle Boot (Blue)	125	502675-1
	Right Angle Boot (Blue)	140	502675-2
Plastic	Right Angle Boot (Black)	125	502668-1
	Right Angle Boot (Black)	140	502668-2
Singlemode			
Ceramic	Long Boot (Yellow)	125	502579-1
	Long Boot (Yellow)	126	502579-2
	Long Boot (Yellow)	127	502579-3
	Short Boot (Yellow)	125	502580-1
	Short Boot (Yellow)	126	502580-2
	Short Boot (Yellow)	127	502580-3

2.5 mm Bayonet Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

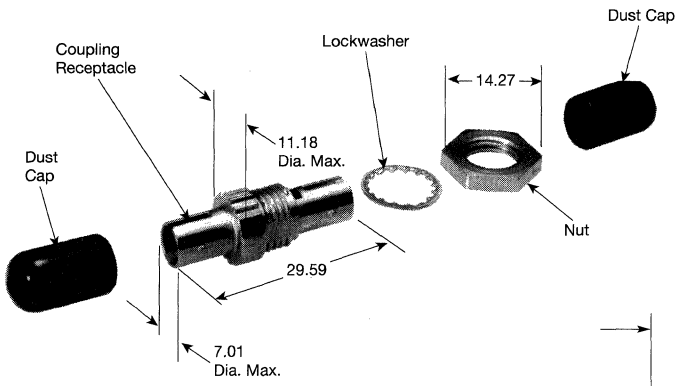
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

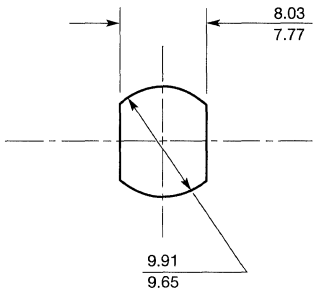
Receptacles—Coupling Part No. 501381-1

Product Facts

- Use with two plugs to make a free-hanging splice or panel feed-through connection
- Simple bayonet latch for ease of engagement
- Durable construction
- Low loss

Material:
Zinc, nickel plated





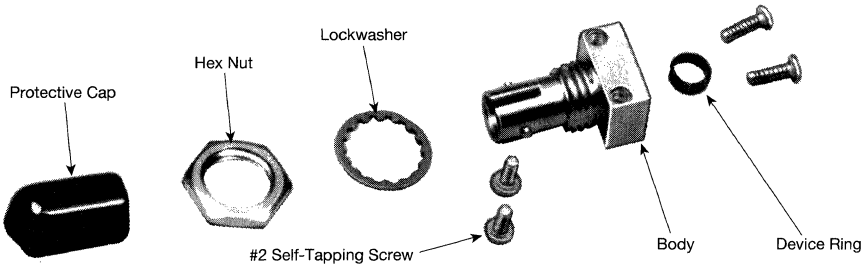
Recommended Panel Cutout

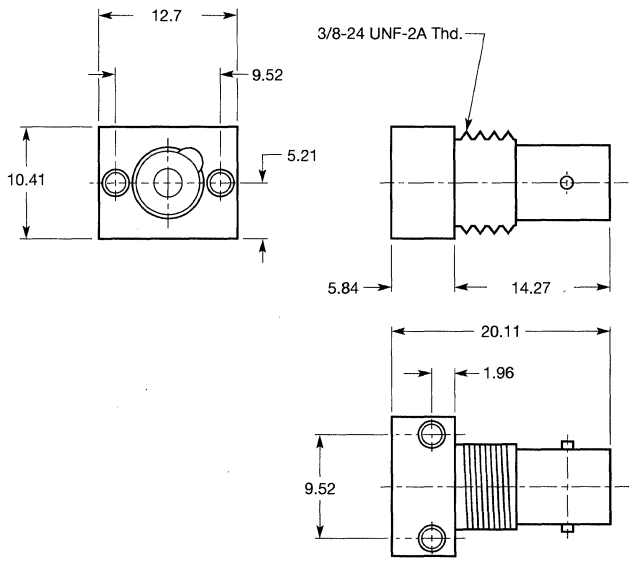
Active Device Mount Part No. 501474-1

Product Facts

- Use to mate a 2.5 mm Bayonet Connector (ST-Style) active device
- Simple bayonet latch for ease of engagement
- Durable construction
- Low loss

Material:
Zinc, nickel plated





AMP INCORPORATED, HARRISBURG, PA 17105; PHONE: 717-564-0100 TWX: 510-657-4110 • PRODUCT INFORMATION CENTER; PHONE: 1-800-522-6752

Specifications subject to change.
For latest design specifications...
1-800-522-6752

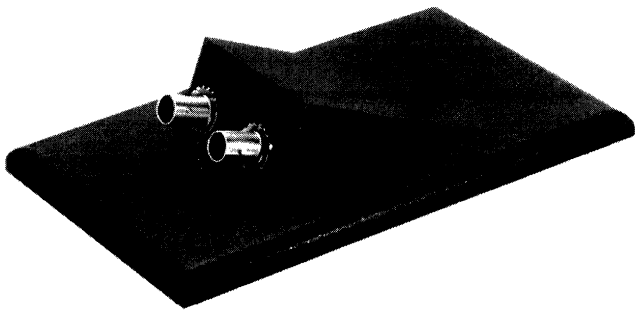
2.5 mm Bayonet Connectors

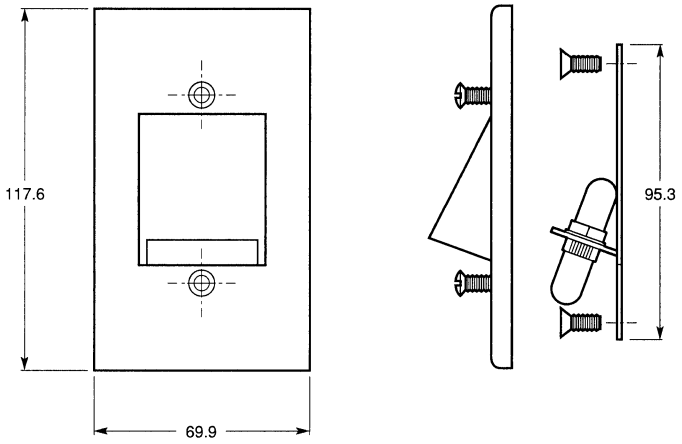
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Wall Outlets

Product Facts

- Use with four plugs (see page 6013) for feed-through connection to in-wall wiring
- Low loss
- Attaches to standard outlet box
- Choice of three cover plate colors

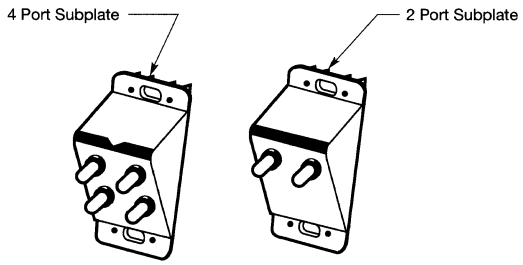




Materials:

Cover Plate—Thermoplastic
Bracket—Cold-rolled steel, enamel paint

Wall Plate Color	Part Numbers
Black	501734-1
Ivory	501734-2
Gray	501734-3



Description	Without Receptacle Box
4 Port 2.5 mm Bayonet Wall Outlet	502603-1
2 Port 2.5 mm Bayonet Wall Outlet	502603-2
4 Port 2.5 mm Bayonet/ AMP Communications Outlet Wall Outlet	502604-1
2 Port 2.5 mm Bayonet/ AMP Communications Outlet Wall Outlet	502604-2

Note: AMP Communications Outlet Components purchased separately.

2.5 mm Bayonet Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

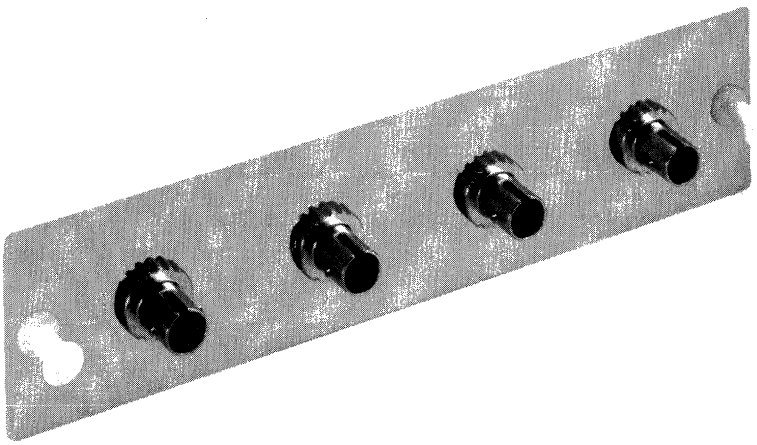
4-Pack Panel Assembly Part No. 501664-1

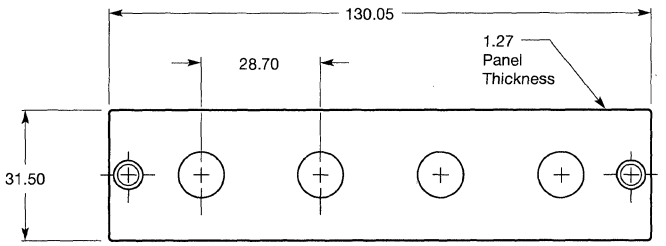
Product Facts

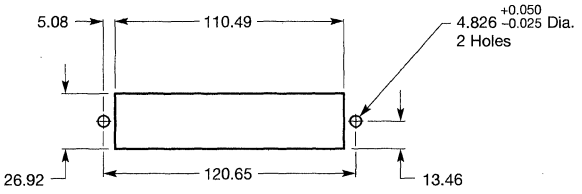
- Allows feedthrough panel coupling for four plug connections in AMP enclosures (see page 6013)
- Low loss
- Simple bayonet latch for ease of attachment
- Sturdy construction

Material:

Panel—Steel, white enamel
Coupling—Zinc, nickel plated







Panel Thickness: 0.533–2.946

Recommended Panel Cutout

Tools and Accessories

Description	Part Number
Termination Kit w/Economy Hand Tool	501282-9
Termination Kit w/OPTIMATE Hand Tool	501282-7
Installers Kit, All Connectors	501285-7,-8,-9
Hand Tool—OPTIMATE, No Dies	58190-6
Dies for OPTIMATE Tool, Eyelet Crimp	58289-1
Hand Tool—Economy, No Dies	220190-1
Dies for Economy Tool	58299-1
Epoxy, (25) 2-g Packs	501195-4
Epoxy, Oven Cure, (25) 4-g Packs	502270-1
Epoxy Applicator	501473-3
Polishing Bushing for 502160	502169-1
Polishing Bushing for 501380	501467-1
Polishing Film: Step 1 (5 µm) Step 2 (1 µm) Step 3 (0.3 µm)	 228433-8 228433-7 228433-5
Polishing Pad Cushion	501523-1
Curing Sleeve[1]	502259-1

[1]Protects fiber end during curing.

2.5 mm Threaded Connectors

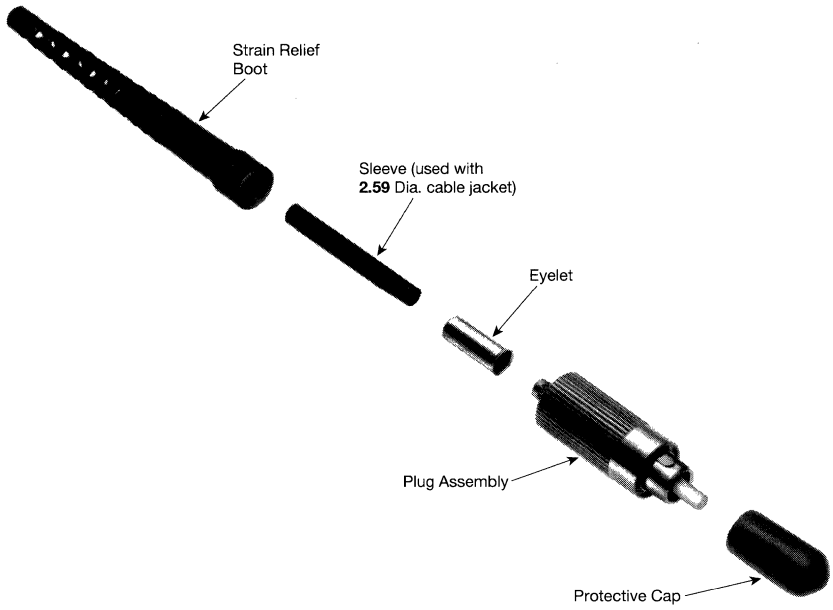
Specifications subject to change.
For latest design specifications...
1-800-522-6752

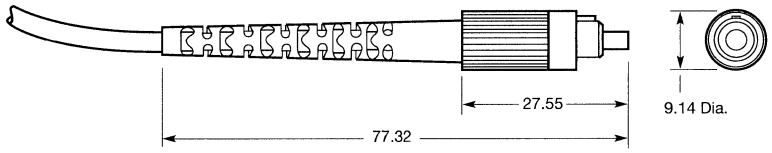
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Plugs

Product Facts

- Low loss—less than .40 dB typical
- PC style for superior performance
- Return loss >30 dB typical
- Terminates fiber in up to 3.00 dia. cable jacket
- Compatible with NTT-FC and NEC-D3 connectors
- Multimode and single-mode versions available
- Keyed for repeatable performance
- May be tuned for minimum loss
- Bend-limiting, high precision strain relief
- Corrosion resistant construction
- Easily applied in the field
- Single crimp design permits use of universal OPTIMATE hand tools (see page 6019)





Typical Assembled View

Fiber Diameter[1] (µm)	Part Numbers[2]		
	With Strain Relief		With Rubber Boot
	Multimode	Singlemode	Singlemode
125	502156-1	501505-2	502494-2
126	—	501505-3	502494-3
127	—	501505-4	502494-4
140	502156-2	—	—

[1]Nominal cable jacket O.D. (over cladding) is 3.00.
[2]Each connector kit includes a strain relief, sleeve, eyelet, plug assembly and protective cap.

Performance Characteristics

Insertion Loss: .40 dB typical
Temperature Range: –40°C to +85°C
Durability: 1000 mating cycles, <0.2 dB change typical (Test Results)
Cable Retention: 267 N tensile load

Materials:

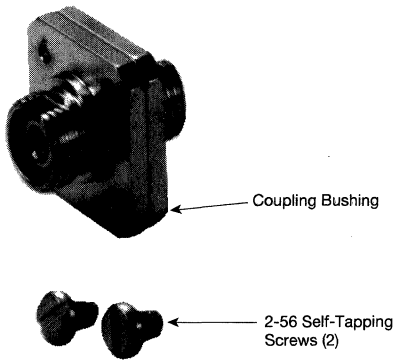
Plug Assembly—Nickel plated brass
Ferrule—Ceramic
Eyelet—Tin plated copper
Sleeve—Vinyl
Strain Relief—Thermoplastic

2.5 mm Threaded Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Receptacle—Coupling Bushing
Part No. 501506-1 (Ceramic Sleeve)
Part No. 501506-2 (Metal Sleeve)

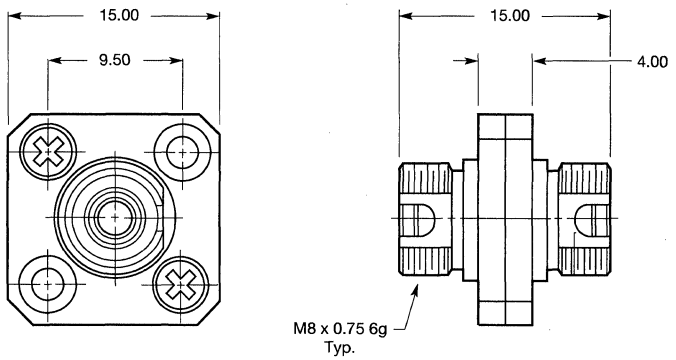


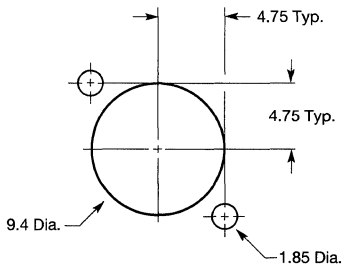
Product Facts

- Split sleeve for precision alignment
- Corrosion resistant construction
- Excellent performance and reliability
- Fits bulkheads up to 3.5 mm thick
- NTT-FC and NEC-D3 compatible
- Also available pre-mounted on 4-pack panel assemblies (see page 6019) and in various enclosures

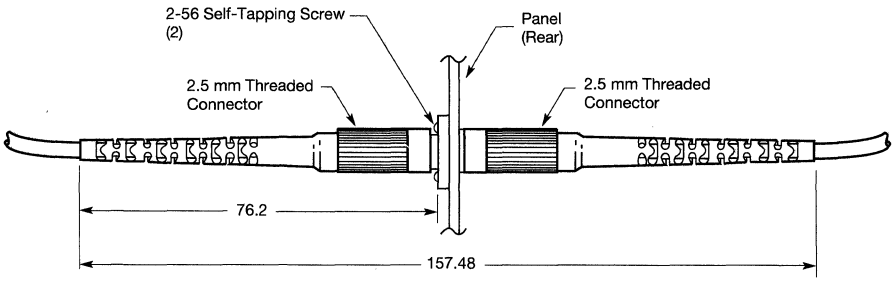
Materials:

Coupling Bushing—Nickel plated brass
Self-Tapping Screws—Stainless steel
Alignment Sleeve—Ceramic or metal





Recommended Panel Cutout



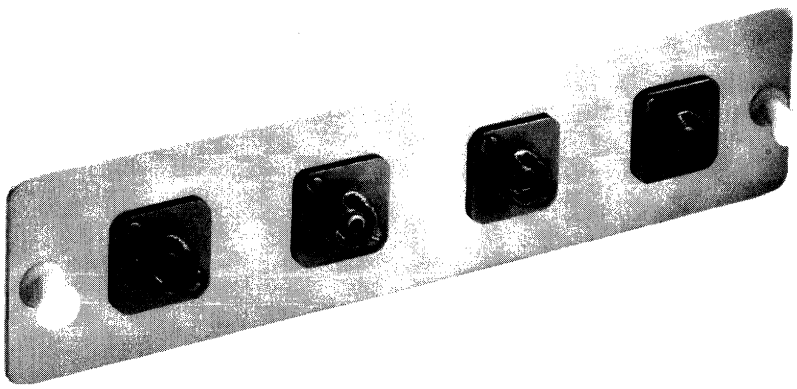
Typical Mated View

Specifications subject to change.
For latest design specifications...
1-800-522-6752

2.5 mm Threaded Connectors

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

4-Pack Panel Assembly Part No. 501515-1

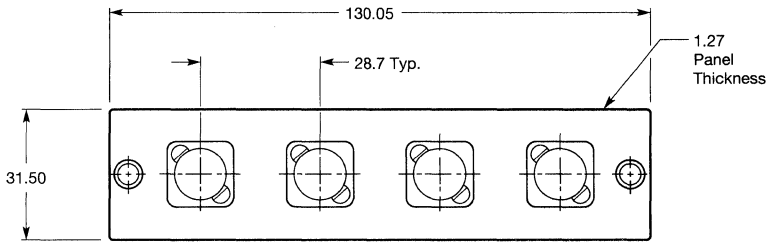


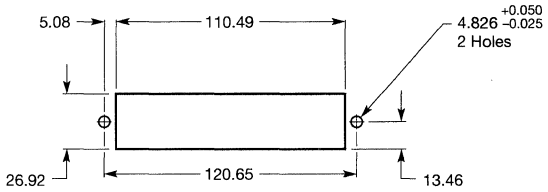
Product Facts

- Fits in AMP distribution hardware (see pages 6046-6048)
- Allows feed-through panel coupling for four connections (see page 6017)
- Low loss
- Standard mounting dimensions maximize design flexibility

Material:

Panel—Steel, white enamel
Coupling—Brass, nickel plated





Panel Thickness: 0.533–2.946

Recommended Panel Cutout

Tools and Accessories

Description	Part Number
Termination Kit w/Economy Hand Tool	501282-8
Termination Kit w/OPTIMATE Hand Tool	501282-6
Installer Kit, All Connectors	501258-7,8,9
Hand Tool—OPTIMATE, No Dies	58190-6
Dies for OPTIMATE Tool, Eyelet Crimp	58289-1
Hand Tool—Economy, No Dies	220190-1
Dies for Economy Tool	58299-1
Epoxy, (25) 2-g Packs	501195-4 or 502418-1
Epoxy Applicator	501473-3
Polishing Bushing	501861-1
Polishing Film: Step 1 (5 µm) Step 2 (1 µm) Step 3 (0.3 µm)	 228433-8 228433-7 228433-5
Step 4 Cloth	501859-1
Polishing Compound	501860-1
Polishing Pad Cushion	501858-1
Curing Sleeve[1]	501579-1
Tuning Tool	501568-1

[1]Protects fiber end during curing.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

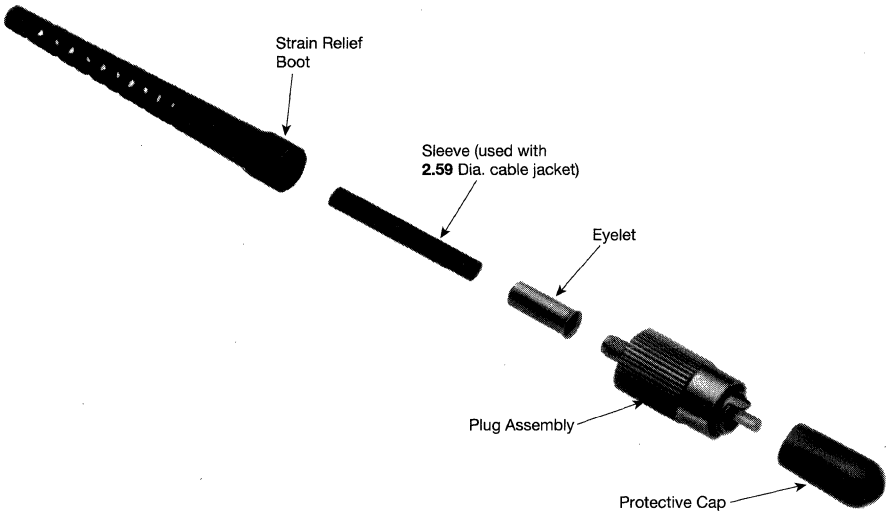
2.0 mm Threaded Connectors

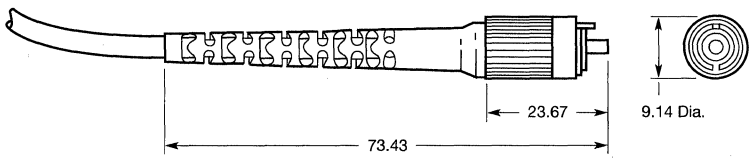
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Plugs

Product Facts

- Low loss, less than .40 dB typical
- PC style for superior performance
- Return loss >30 dB typical
- Terminates up to 3.00 dia. cable jacket
- Compatible with NEC-D4 connectors
- Keyed for repeatable performance
- Multimode and single-mode versions available
- May be tuned for minimum loss
- Bend-limiting strain relief
- High precision ceramic ferrule
- Corrosion resistant construction
- Easily applied in the field
- Single-crimp design permits use of universal OPTIMATE hand tool





Fiber Diameter[1] (µm)	Part Numbers[2] With Strain Relief Singlemode
125	501508-2
126	501508-3
127	501508-4

[1]Nominal cable jacket O.D. (over cladding) is 3.00.
[2]Each connector kit includes a strain relief, sleeve, eyelet, plug assembly and protective cap.

Performance Characteristics

Insertion Loss: <0.4 dB typical
Temperature Range: –40°C to +85°C
Durability: 1000 mating cycles, <0.2 dB change typical (Test Results)
Cable Retention: 267 N tensile load

Materials:

Plug Assembly—Nickel plated brass
Ferrule—Ceramic
Eyelet—Tin plated copper
Sleeve—Vinyl
Strain Relief—Thermoplastic

Specifications subject to change.
For latest design specifications...
1-800-522-6752

2.0 mm Threaded Connectors

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Receptacle—
Coupling Bushing
Part No. 501509-1
Ceramic Sleeve
Part No. 501509-2
Metal Sleeve

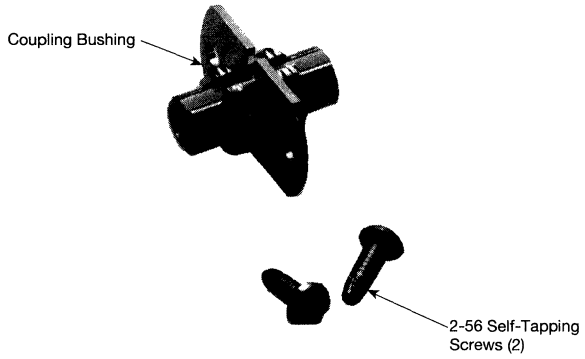
Product Facts

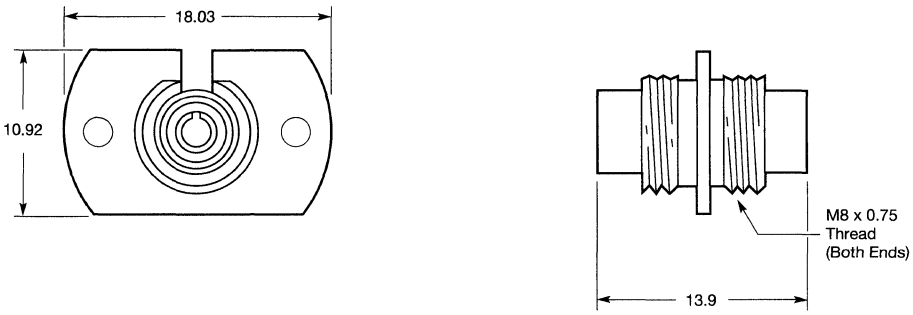
- Split sleeve for precision alignment
- Corrosion resistant construction
- Excellent performance and reliability
- NEC-D4 compatible
- Also available pre-mounted on 4-pack panels

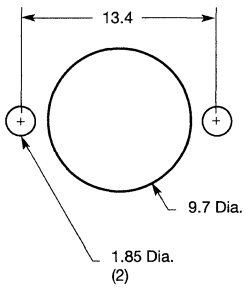
Materials:

Coupling Bushing—Nickel plated brass

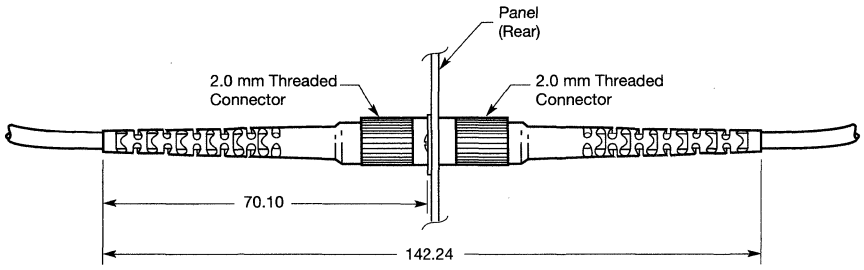
Self-Tapping Screws—Stainless steel







Recommended Panel Cutout



Typical Mated View

2.0 mm Threaded Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

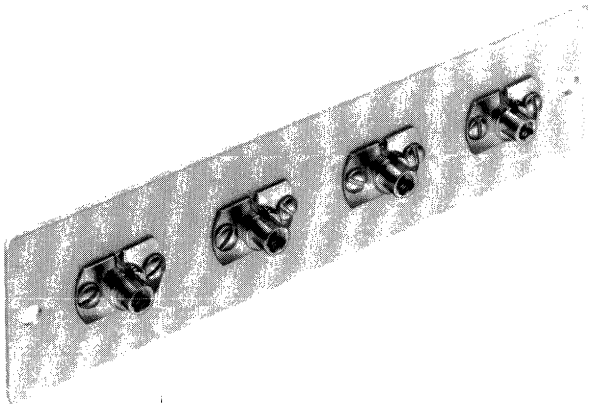
4-Pack Panel Assembly Part No. 501516-1

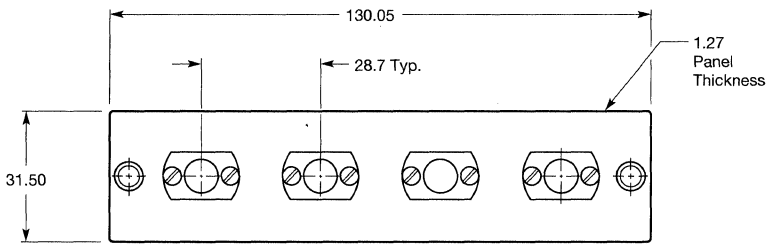
Product Facts

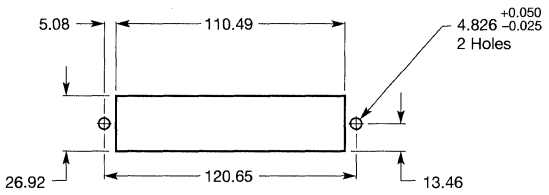
- Fits in AMP distribution enclosures (see pages 6046-6048)
- Allows feedthrough panel coupling for four connections (see page 6020)
- Low loss
- Standard mounting dimensions maximize design flexibility

Material:

Panel—Steel, white enamel
Coupling—Brass, nickel plated







Panel Thickness: 0.533–2.946

Recommended Panel Cutout

Tools and Accessories

Description	Part Number
Termination Kit w/Economy Hand Tool	501282-8
Termination Kit w/OPTIMATE Hand Tool	501282-6
Installer Kit, All Connectors	501258-7,-8,-9
Hand Tool—OPTIMATE, No Dies	58190-6
Dies for OPTIMATE Tool, Eyelet Crimp	58289-1
Hand Tool—Economy, No Dies	220190-1
Dies for Economy Tool	58299-1
Epoxy, (25) 2-g Packs	501195-4
Epoxy, Oven-Cure, (25) 4-g Packs	502270-1
Polishing Film:	
Step 1 (5 µm)	228433-8
Step 2 (1 µm)	228433-7
Step 3 (0.3 µm)	228433-5
Step 4 Cloth	501859-1
Polishing Compound	501860-1
Polishing Pad Cushion	501858-1
Curing Sleeve[1]	501866-1
Tuning Tool	501865-1

[1]Protects fiber end during curing.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

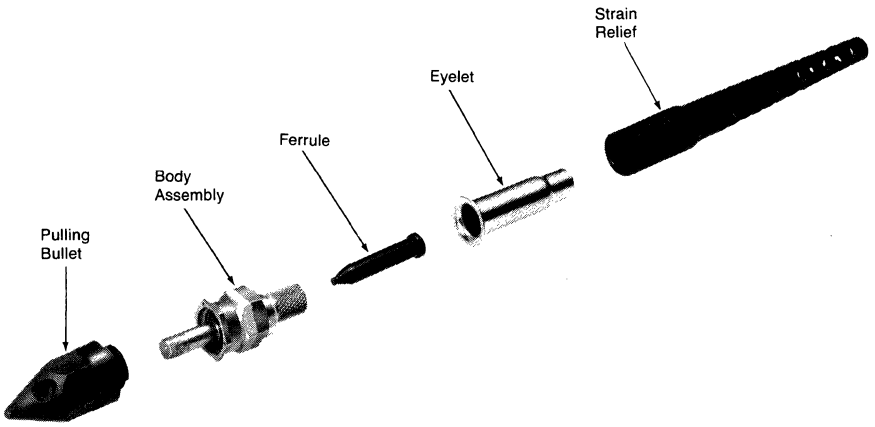
FSMA Connectors, MIL-C-83522 Version

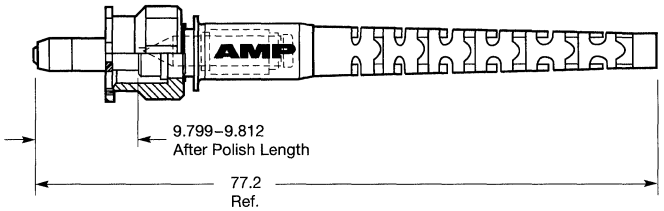
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Plugs

Product Facts

- Qualified to MIL-C-83522
- AMP FSMA Type I connector style (resilient tip)
- For 125 and 140 µm fibers
- For 3.0 mm cable diameter
- Simple termination procedure
- Corrosion resistant stainless steel construction
- Environmentally sealed against moisture and industrial fluids
- Safety wire holes
- Ribbed strain relief protects from vibration and flexing





Typical Assembled View

Fiber Diameter (µm)	Part Numbers	
	AMP	MIL-C-835221/
125	501348-1	2-03
140	501348-2	2-04

Performance Characteristics

Insertion Loss: 1.5 dB typical
Durability: 200 mating cycles (Test Results)
Cable Retention: 176.5 N minimum (depending on cable construction)

Materials:

Body—Stainless steel, passivated
Eyelet—Copper, tin plated
Ferrule, Connector Tip, Strain Relief Boot—Thermoplastic

FSMA Connectors, MIL-C-83522 Version

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

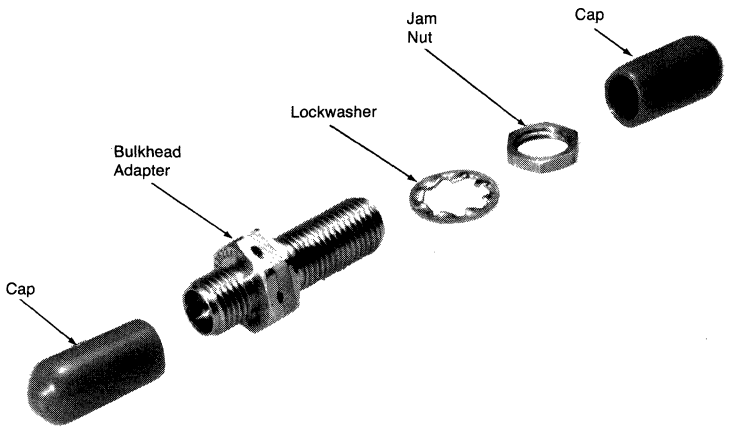
Receptacle—Coupling Bushing
AMP Part No.
501432-1
Military No.
MIL-C-83522/3-02

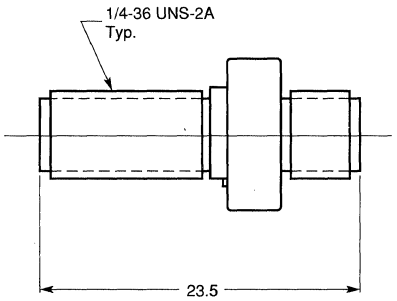
Product Facts

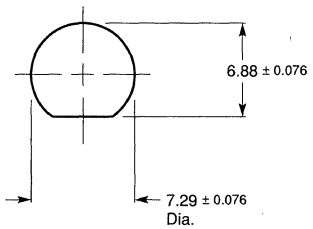
- Qualified to MIL-C-83522
- Use with two FSMA MIL-C-83522 plugs (see page 6023)
- Corrosion resistant stainless steel construction
- Performance and reliability at low cost
- Metal body ensures EMI/RFI shielding for sensitive electro-optic circuitry
- Safety wire holes

Material:

Stainless steel, passivated







Recommended Panel Cutout

FSMA Connectors, MIL-C-83522 Version

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Active Device Mounts

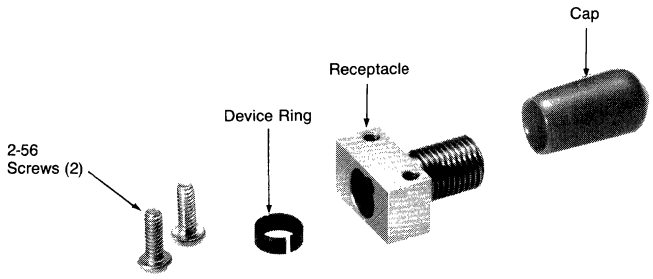
Product Facts

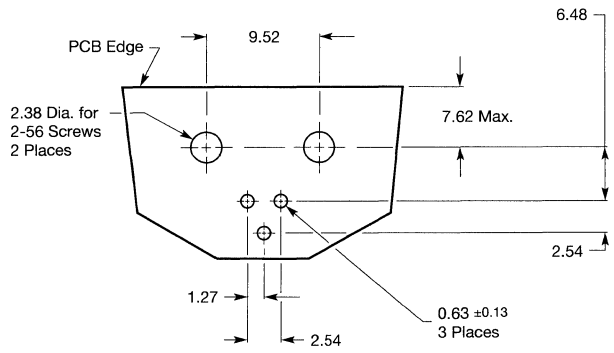
- Qualified to MIL-C-83522
- Accepts TO-18, TO-46 and TO-52 type active devices
- Use with one FSMA MIL-C-83522 plug (see page 6023)
- Corrosion resistant stainless steel construction

Material:

Stainless steel, passivated

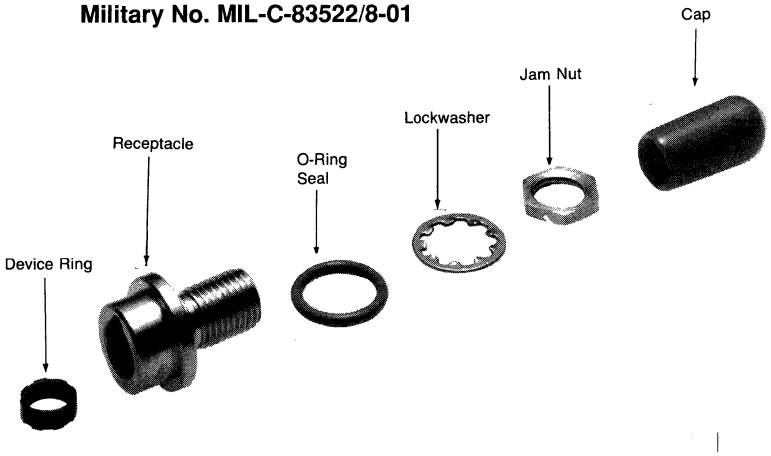
PC Board Mount— AMP Part No. 501433-1
Military No. MIL-C-83522/4-01

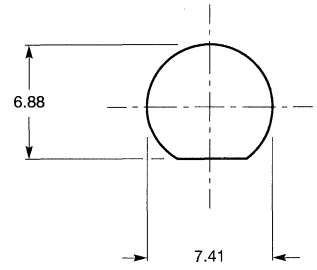




Recommended PC Board Layout

Panel Mount— AMP Part No. 501434-1
Military No. MIL-C-83522/8-01





Recommended Panel Cutout

FSMA Connectors, Standard Version

Specifications subject to change.
For latest design specifications...
1-800-522-6752

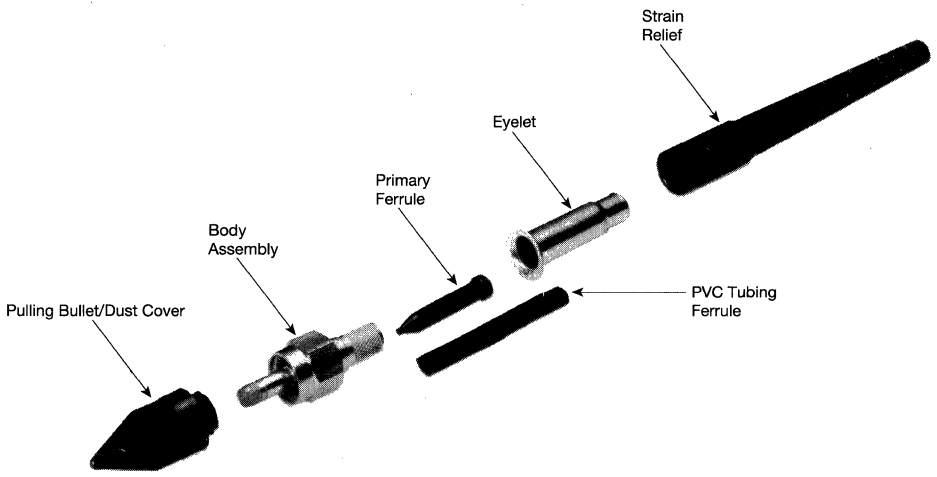
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Plugs

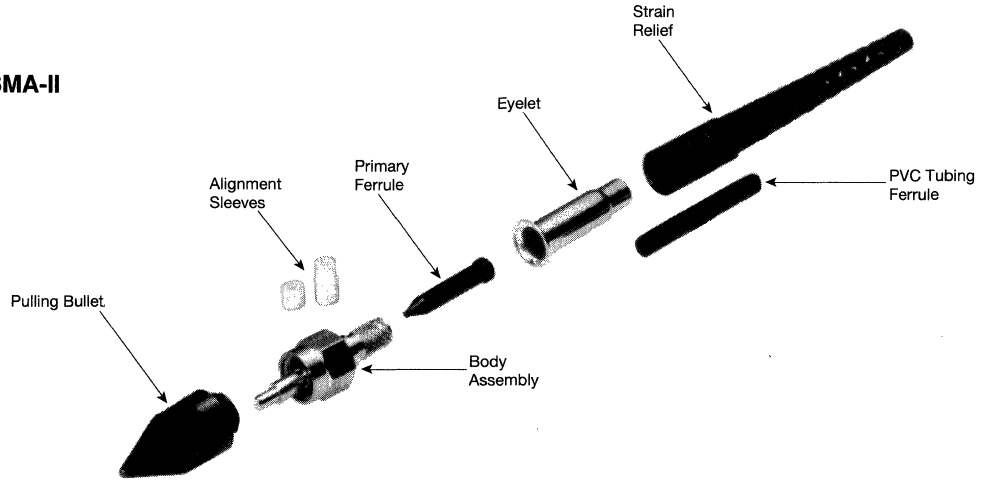
Product Facts

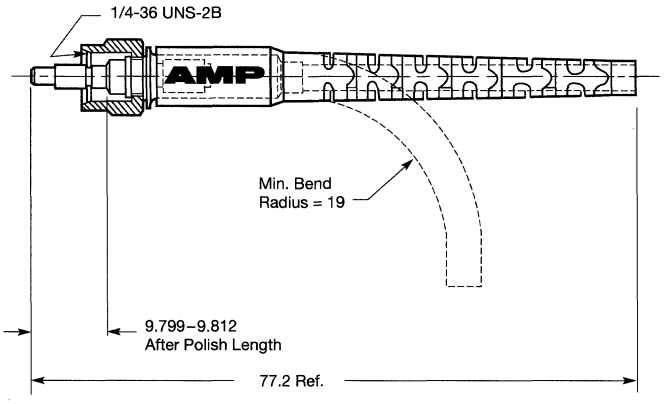
- Industry compatible with 905 (FSMA-I) and 906 (FSMA-II) style connectors
- Terminates fiber sizes from 125 through 1000 microns in diameter
- Design parameters conform to the proposed NATO and IEC interface standards for military and instrument applications
- Resilient tip design of FSMA-I connectors minimizes mating tolerance problems
- Environmental sealing available[3]
- Single crimp design allows all crimps to be made simultaneously with one tool
- Corrosion resistant construction
- Performance and reliability at low cost

FSMA-I



FSMA-II





Typical Assembled View

Performance Characteristics

Insertion Loss: 1.5 dB typical
Temperature Range: Nickel plated brass and stainless steel— –55°C to +105°C
Durability: 200 mating cycles (Test Results)
Cable Retention: 266.9 N min. depending on cable construction

Materials:

Connector Body—Stainless steel or nickel plated brass
Coupling Nut—Stainless steel or nickel plated brass
Alignment Sleeves—Thermoplastic
FSMA-I Connector Tip—Thermoplastic
Eyelet—Tin plated copper
Tubing—PVC
Primary Ferrule—Thermoplastic
Strain Relief—Thermoplastic

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Connector Body Material	Fiber Diameter (μm)	Part Numbers					
		Nominal Jacket O.D.[1] Less Than 3.0 w/o Strength Members		Nominal Jacket O.D. 3.0 w/ Strength Members[2]		Nominal Jacket O.D. 3.8 w/ Strength Members	
		FSMA-I	FSMA-II	FSMA-I	FSMA-II	FSMA-I	FSMA-II
Nickel Plated Brass	125	501002-1	—	501003-1	—	501004-1	—
	140	501002-2	—	501003-2	—	501004-2	—
	230	501002-4	—	501003-4	—	501004-4	—
	500	501002-8	—	501003-8	—	501004-8	—
	1000	1-501002-1	—	1-501003-1	—	1-501004-1	—
Stainless Steel	125	—	501029-1	—	501030-1	—	501031-1
	140	—	501029-2	—	501030-2	—	501031-2
	230	—	501029-4	—	501030-4	—	501031-4
	1000	—	501029-8	—	501030-8	—	501031-8

[1]Nominal cable jacket O.D.
[2]Spacer tube included with these kits.
[3]For environmental sealing, order optional O-ring **No. 19195-2.**

FSMA Connectors, Standard Version

Specifications subject to change.
For latest design specifications...
1-800-522-6752

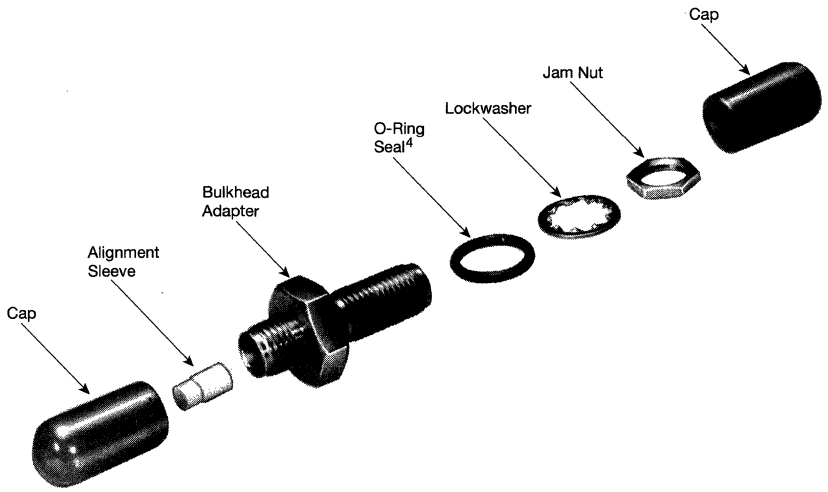
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

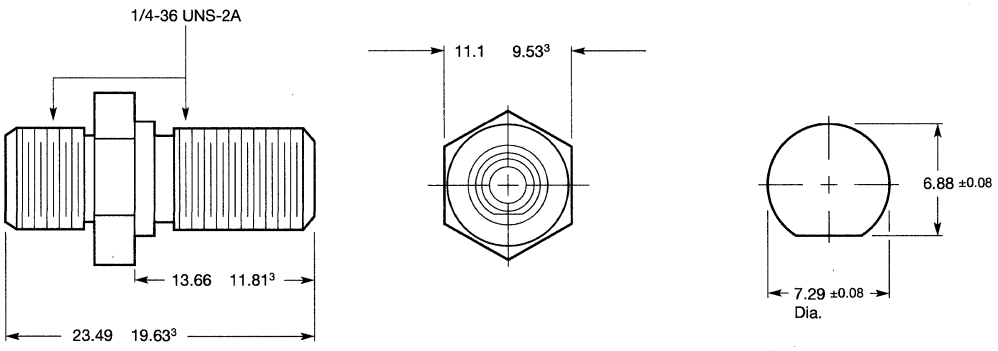
Receptacle—Coupling Bushing
Unsealed—Part No. 501049-1[1]
Sealed—Part No. 501050-1[1,2]

Product Facts

- Use with two standard FSMA-I or FSMA-II plugs (see pages 6026 and 6027)
- Design parameters conform to the proposed NATO and IEC interface standards for military and instrument applications
- Corrosion resistant construction
- Performance and reliability at low cost
- Environmentally sealed and unsealed versions available
- Metal bodies ensure EMI/RFI shielding for sensitive electro-optic circuitry
- D-cut shoulder on coupling bushing provides orientation and aids in installation

Material:
Stainless steel, passivated





Recommended Panel Cutout

[1]Includes lockwasher, jam nut and protective cap.
[2]Includes O-ring seal.
[3]Indicates length of unsealed version.
[4]O-ring seal included with 501050-1 only.

FSMA Connectors, Standard Version

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Active Device Mounts

Product Facts

- Accepts TO-18, TO-46, TO-52 and Honeywell Low-Cost Plastic Sweetspot[6] active devices
- PC Board and Panel Mount designs available
- Corrosion resistant construction
- Use with FSMA-I or FSMA-II plugs (see pages 6026 and 6027)
- Environmentally sealed and unsealed versions available

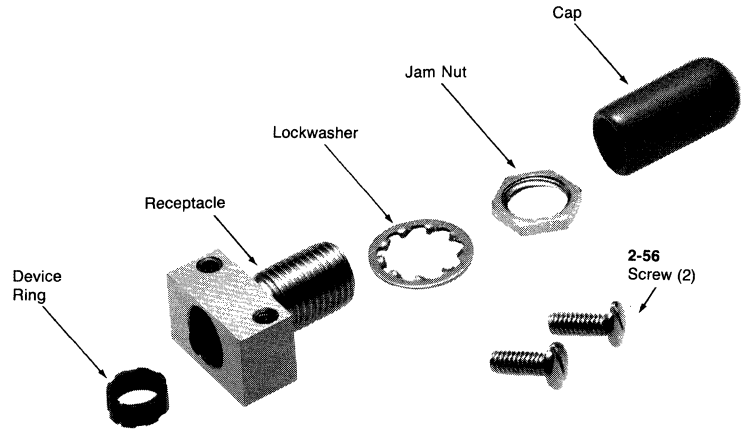
Material:

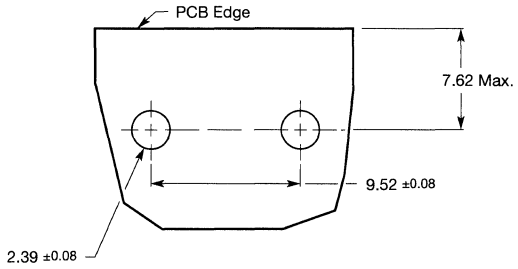
Stainless steel, passivated or zinc die cast, nickel plated

Recommended Panel Cutout

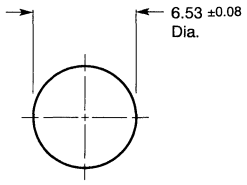
[1]Includes lockwasher and jam nut.
[2]Includes device ring.
[3]Includes (2) 2-56 mounting screws.
[4]Includes protective cap.
[5]Includes panel O-ring seal.
[6]Trademark of Honeywell Inc.

PC Board Mount—Part No. 501054-1[2,3,4]
PC Board/Panel Mount— Part No. 501055-1[1,2,3,4] (Stainless Steel)
Part No. 502136-1[1,2,3,4] (Nickel Plated, Zinc Die Cast)



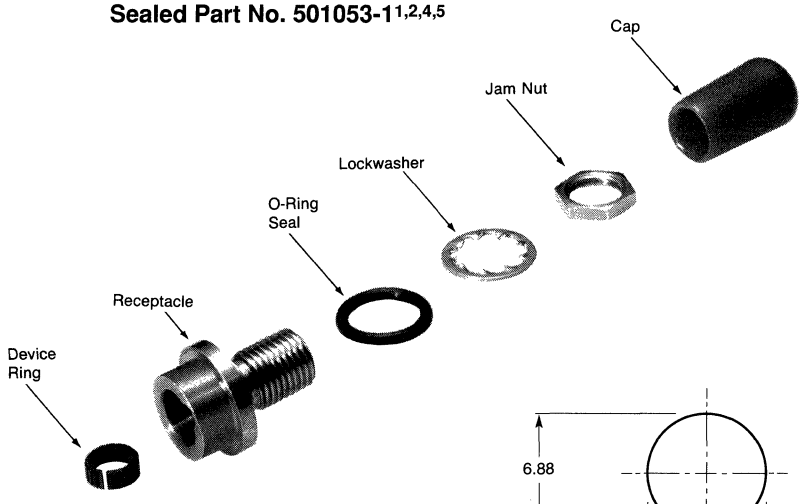


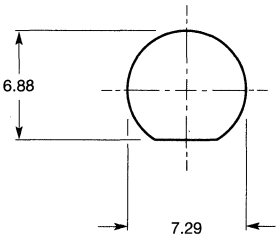
Recommended PC Board Layout



Recommended Panel Cutout

Panel Mount—Unsealed Part No. 501052-1[1,2,4]
Sealed Part No. 501053-1[1,2,4,5]





Recommended Panel Cutout

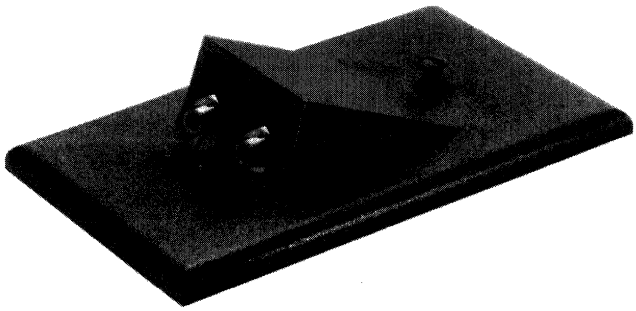
Specifications subject to change.
For latest design specifications...
1-800-522-6752

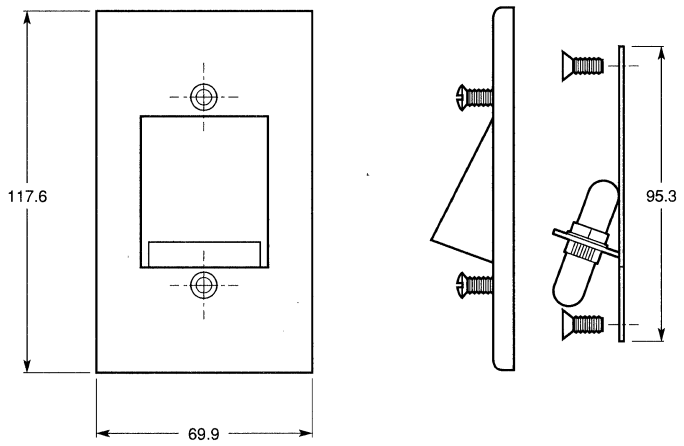
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Wall Outlets

Product Facts

- Use with four FSMA plugs (see pages 6026 and 6027) for feed-through connection to wall wiring
- Low loss
- Choice of three cover plate colors
- Attaches to standard outlet box





Wall Plate Color	Part Number
Black	501428-1
Ivory	501428-2
Gray	501428-3

Materials:

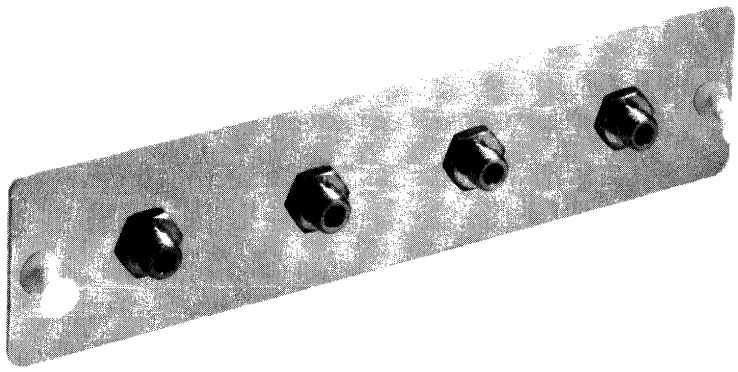
Cover Plate—Thermoplastic

Bracket—Cold rolled steel, enamel paint

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

4-Pack Panel Assembly[1] Part No. 501662-1

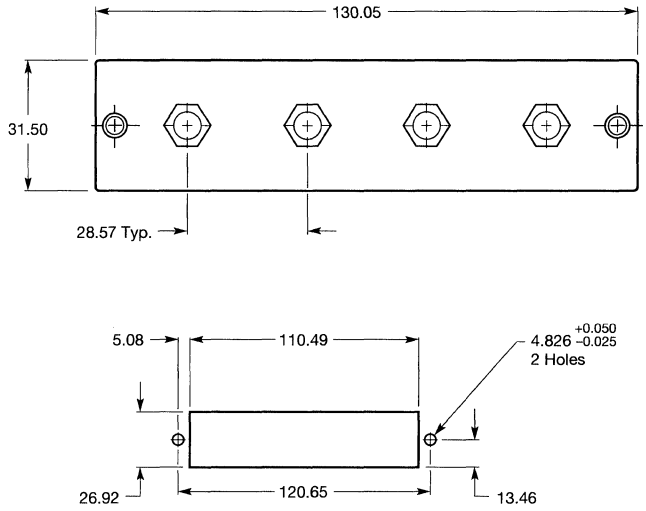


Product Facts

- Allows feed-through panel coupling of four FSMA connections (see pages 6026 and 6027)
- Low loss
- Standard mounting dimensions maximize design flexibility

Materials:

Panel—Steel, white enamel
Coupling—Stainless steel, passivated



Panel Thickness: 0.533–2.946

Recommended Panel Cutout

Tools and Accessories

Description	Part Number
Termination Kit w/Economy Hand Tool	501282-1
Termination Kit w/OPTIMATE Hand Tool	501282-4
Installer's Kit for all AMP Connectors	501258-7,-8,-9
Hand Tool—OPTIMATE, No Dies	58190-6
Dies for OPTIMATE Tool, Eyelet Crimp	58291-5
OPTIMATE Tool w/Eyelet Die	58190-1
Dies for OPTIMATE Tool, Insul. Crimp:	
<3.0 mm	312831-1
3.8 mm	312831-2
4.4 mm	312831-3
Hand Tool—Economy, No Dies	220190-1
Dies for Economy Tool <3.0 mm Jacket	501295-1
Economy Tools w/Dies <3.0 mm Jacket	501257-1
Epoxy, (25) 2-Gram Packs:	
Quick Cure (1/2 Hour)	501195-6
Standard Cure (24 Hours @ Ambient)	501195-4
Polishing Film:	
Step 1 (5 µm)	228433-8
Step 2 (1 µm)	228433-7
Step 3 (0.3 µm)	228433-5
Polish Bushing	228025-1
Polish Length Gauge	501301-1
Curing Sleeve Kit (12)[2]	502249-1

[1]Use 4-Pack Assemblies with enclosures on pages 6048-6050.

[2]Protects fiber end during curing.

Simplex Connectors

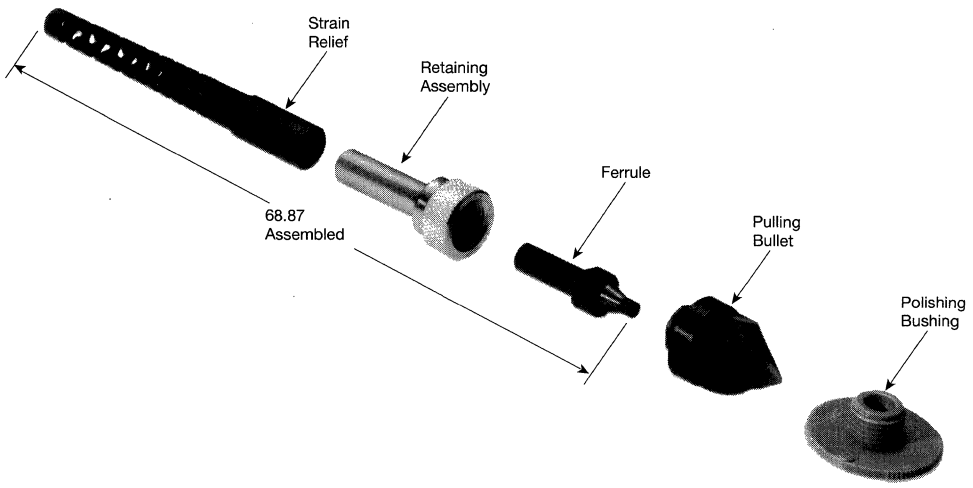
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Plugs

Product Facts

- Low cost
- Loss—less than 1.5 dB typical
- Multiple fiber sizes (125–1000 microns)
- Repeatable coupling efficiency
- Corrosion resistant construction
- Performance and reliability at low cost



Performance Characteristics

Insertion Loss: <1.5 dB FOTP 34
Cable Retention: 155 N min.
Durability: 250 mating cycles (Test Results)
Temperature Range: –40°C to +60°C

Materials:

Ferrule and Polishing Bushing—Thermoplastic
Retainer Assembly—Copper alloy, plated

Fiber Diameter (µm)	Part Numbers			
	Cable O.D. (Over Jacket) (µm)			
	Plastic Fibers		Glass Fibers	
	2.2[1]	2.5[1]	3.0	3.8
125	—	501067-1	501067-2	501067-3
140	—	501068-1	501068-2	501068-3
230[2]	—	501070-1	501070-2	501070-3
500	501074-1	—	—	—
1000	501076-1	—	—	—

[1]Spacer tube included with these kits.
[2]Or plastic-clad silica.

Tools and Accessories

Description	Part Number
Termination Kit w/Economy Hand Tool	501282-3
Termination Kit w/OPTIMATE Hand Tool	501282-5
Installer's Kit, All Connectors	501258-7,-8,-9
Hand Tool—OPTIMATE, No Dies	58190-6
Dies for OPTIMATE Tool, Eyelet Crimp	58291-1
Hand Tool—OPTIMATE, w/Eyelet Crimp Dies	58190-5
Dies for OPTIMATE Tool, Insulation Crimp—up to 3.0 mm	312831-1
Dies for OPTIMATE Tool, Insulation Crimp—3.8 mm	312831-2
Dies for OPTIMATE Tool, Insulation Crimp—4.4 mm	312831-3
Hand Tool—Economy, w/Dies up to 3 mm Jacket	501257-1
Hand Tool—Economy, No Dies	220190-1
Dies for Economy Tool, up to 3 mm Jacket	501295-1
Curing Sleeve Kit (12)[1]	502253-1
Epoxy, (25) 2-Gram Packets:	
Quick Cure (45 min.)	501195-6
Standard Cure (24 Hour)	501195-4
Polishing Film:	
Step 1 (5 µm)	228433-8
Step 2 (1 µm)	228433-7
Polish Length Gauge	501301-2

[1]Protects fiber end during curing.

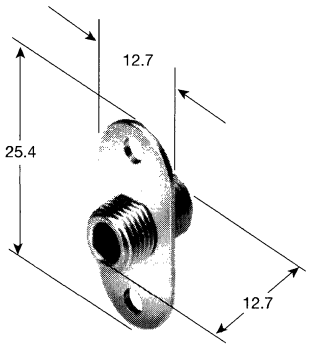
Receptacle—Coupling Bushing Part No. 501185-1

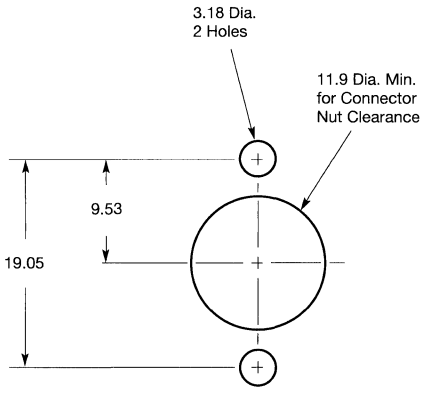
Product Facts

- Use with two Simplex plugs (see page 6032)
- Corrosion resistant construction
- Performance and reliability at low cost
- D-cut shoulder provides orientation and aids in installation

Material:

Zinc, nickel plated





Recommended Mounting Pattern

Active Device Mount Part No. 501184-1

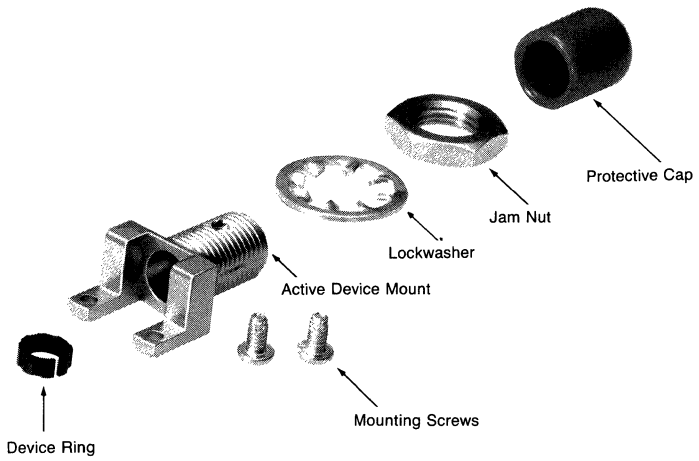
Product Facts

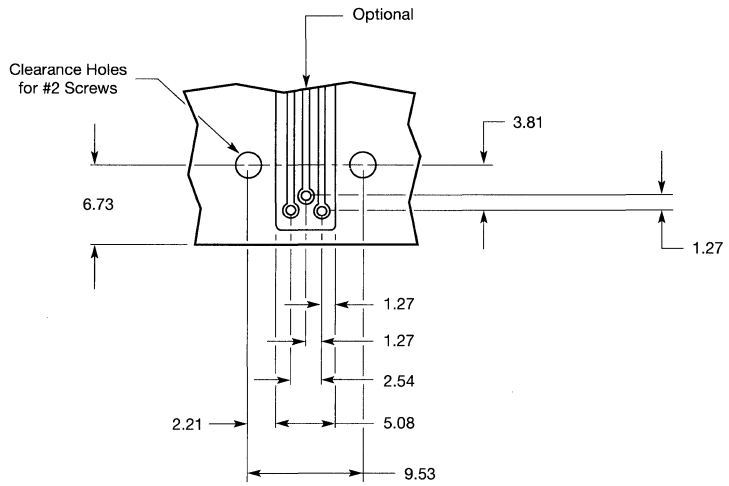
- Active device mounts designed for use with TO-18, TO-46, TO-52 and Honeywell Plastic Sweetspot[1] (or equivalent)
- Can be used with LED or detector
- Corrosion resistant construction
- Performance and reliability at low cost
- Metal bodies help provide EMI/RFI shielding for sensitive electro-optic circuitry
- Thermoplastic device ring provides optical and mechanical alignment of active devices
- D-cut shoulder provides orientation and aids in installation

Material:

Zinc, nickel plated

[1]Trademark of Honeywell Inc.





Recommended PC Board Layout

6 Fiber Optics

Dry Non-Polish (DNP) Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

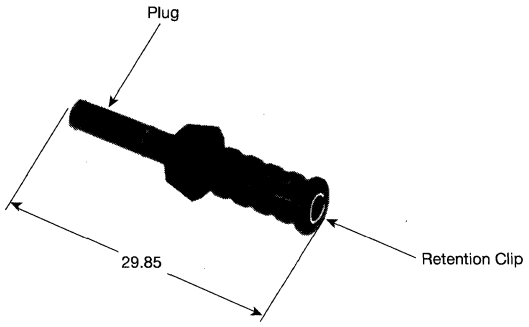
Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Plugs and Splices

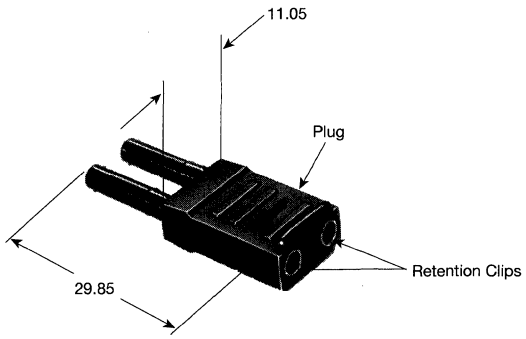
Product Facts

- For use with 1000 µm plastic fiber
- Performance and reliability at low cost
- No adhesive
- No polishing
- Simple field assembly
- Quick connect/disconnect with audible snap action
- Low loss—Less than 2 dB
- Repeatable coupling efficiency
- Semi-automatic application

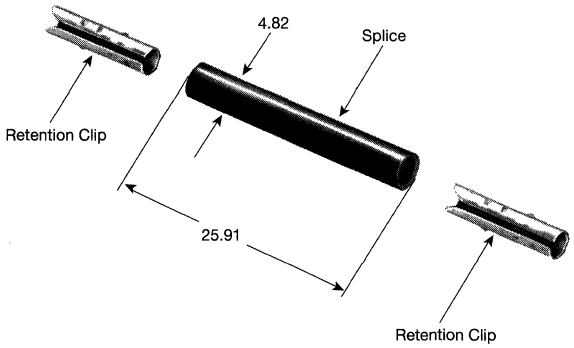
Single Position Plug Assembly Part No. 228087-1[1]



Dual Position Plug Assembly Part No. 228088-1[2]



Splice and Retention Clip Splice—Part No. 228051-1 Retention Clip—Part No. 228046-1



[1]Cutting Tool Fixture **228837-1** required for proper termination.
[2]Cutting Tool Fixture **228836-1** required for proper termination.

Performance Characteristics

Insertion Loss: 2 dB, Ref: FOTP 34 Method C
Temperature Range: –40°C to +60°C
Insertion Force: 13.34 N (Plug to Receptacle)
Cable Retention in Plug: 8.89 N

Materials:

Retention Clip—Copper alloy, plated
Splice—Copper alloy, plated
Connectors—Thermoplastic

DNP Designer Kit Part No. 501218-1

The DNP Designer Kit contains 5 meters of 1000 micron plastic fiber, simplex and duplex connectors, active device mounts and all tooling that is required to construct terminated cable assemblies. When coupled with the appropriate active devices, the kit is useful in constructing low cost, point-to-point simplex and duplex fiber optic systems.

Termination Tools

Description	Part Number
Hot Knife	228085-1
Insertion Tool	501215-1
Cutting Fixtures:	
Single Position	228837-1
Dual Position	228836-1

AMP INCORPORATED, HARRISBURG, PA 17105; PHONE: 717-564-0100 TWX: 510-657-4110 • PRODUCT INFORMATION CENTER; PHONE: 1-800-522-6752

Dry Non-Polish (DNP) Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

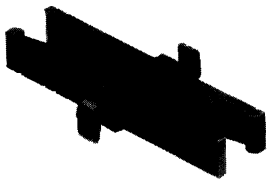
Receptacles—Bulkhead

Product Facts

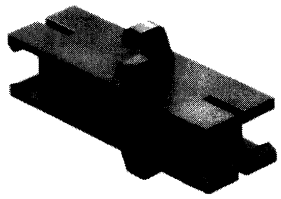
- Performance and reliability at low cost
- Designed for low cost plastic fibers
- Quick connect/disconnect with audible snap action
- Low loss—less than 2 dB
- Repeatable coupling efficiency
- Polarized coupling ability

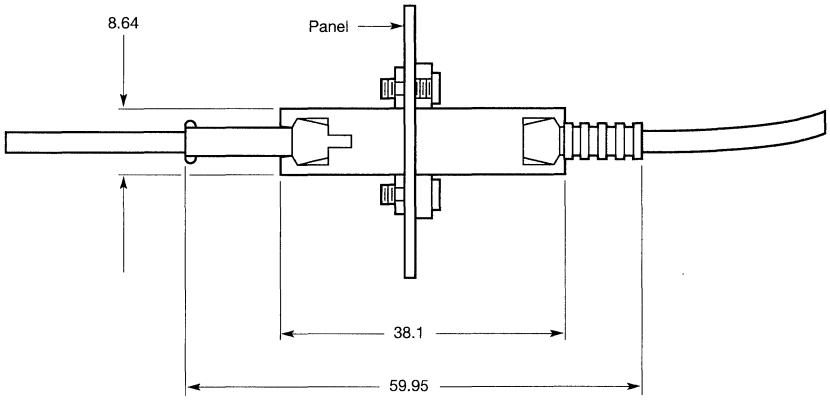
Material:
Thermoplastic

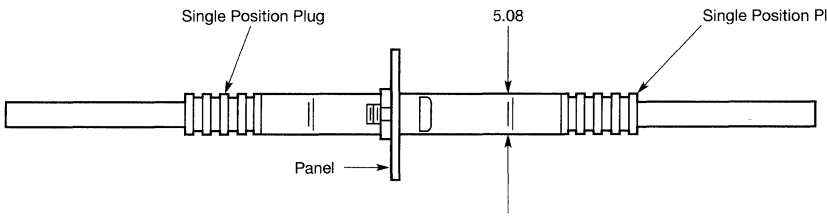
Single Position
Part No. 228042-1



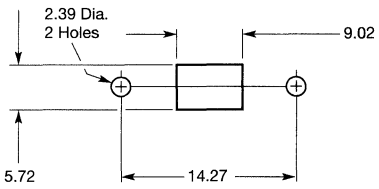
Dual Position
Part No. 228045-1



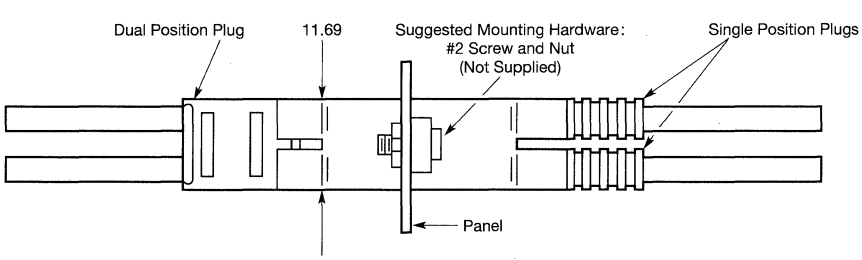




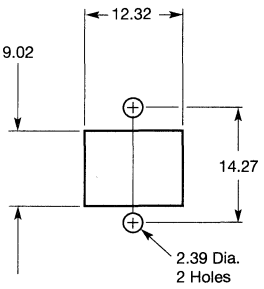
Typical Assembled View—Single Position



Recommended Mounting Pattern



Typical Assembled View—Dual Position



Recommended Mounting Pattern

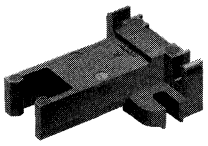
PC Board Active Device Mounts

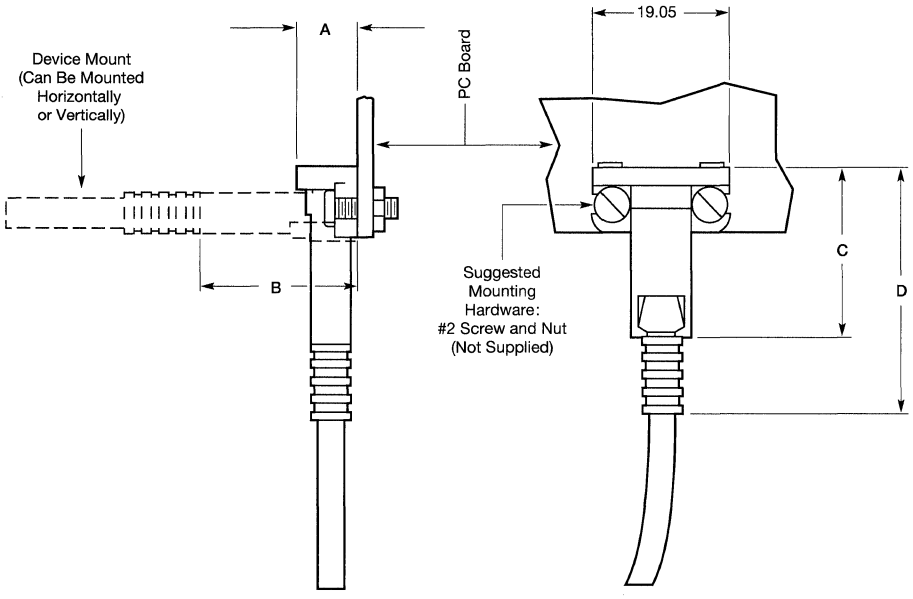
Product Facts

- Performance and reliability at low cost
- Designed for low cost plastic fibers
- Quick connect/disconnect with audible snap action
- Low loss—less than 2 dB
- Repeatable coupling efficiency
- Semi-automatic application

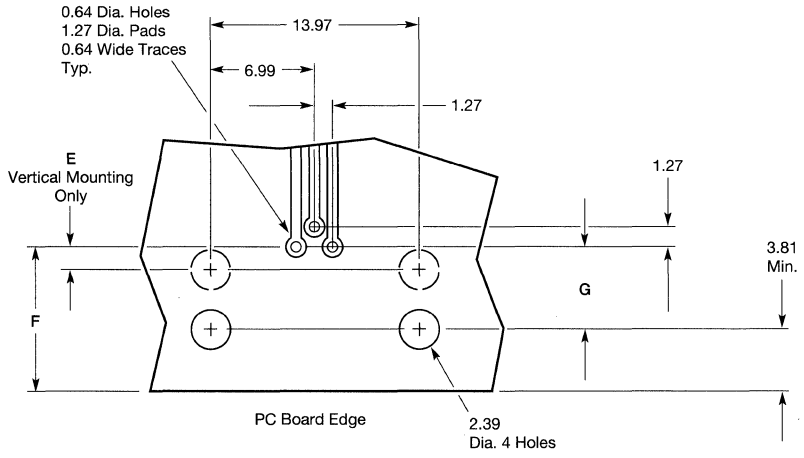
Material:

Thermoplastic





Typical Assembled View



Recommended PC Board Layout

For Active Device	Dimensions							Part Number
	A	B	C	D	E	F	G	
TO-92	7.62	23.58	23.58	34.62	5.72	6.99	1.78	228040-1
.085 in. × .180 in. w/o lens	7.62	23.58	23.58	34.62	5.72	6.99	1.78	228709-1
.085 in. × .180 in. w/lens	9.66	23.58	23.58	34.62	5.72	6.99	1.78	501359-1
Honeywell Low-Cost Plastic Sweetspot[1]/TO-18	8.13	24.64	24.64	35.74	1.65	10.16	6.35	228043-1

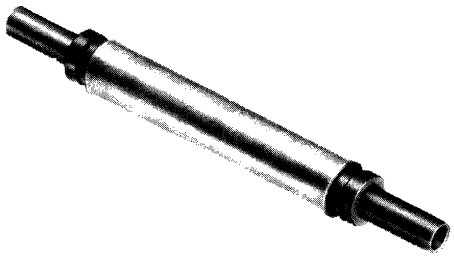
[1]Trademark of Honeywell Inc.
Note: Part No. 501084-1 Device Ring adapts to TO-46 and TO-18 devices.

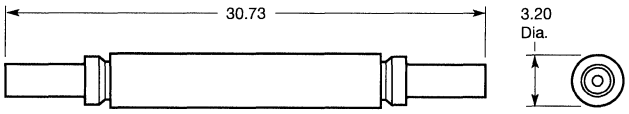
Splices

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Mechanical Splice Part No. 501519-1





Temperature Range:
–40°C to +70°C

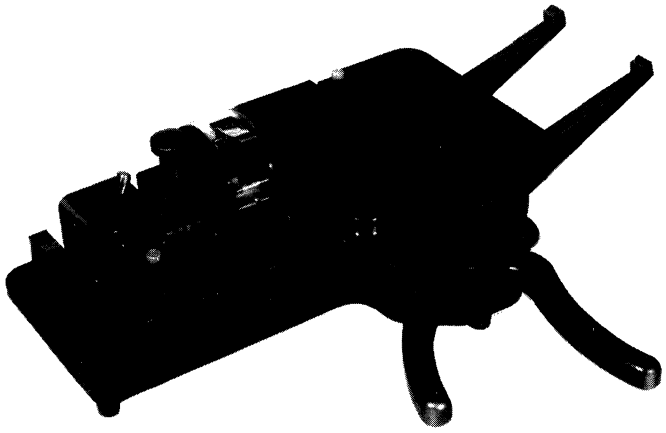
Product Facts

- Low loss—less than 0.25 dB (avg.)
- Terminates 125 µm fibers—both singlemode and multimode
- Permanent splice
- Alternative to fusion splice
- No adhesive or polishing required
- Low cost
- Portable tooling
- Easily applied in the field

Work Station Kit Part No. 501520-1

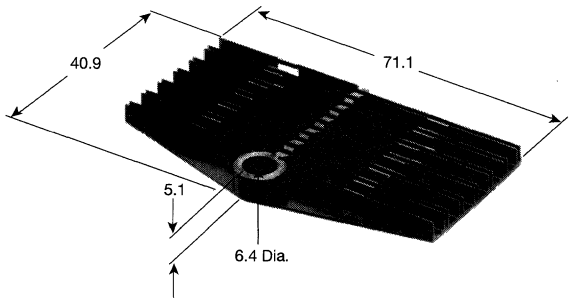
The Work Station Kit is a portable, self-contained unit designed to perform all fiber preparation, alignment and crimping operations for application of the mechanical splice.

Easy to use, this totally mechanical unit ensures precision scribing and breaking of buffered fiber. Used with the mechanical splice, the work station kit will consistently provide a permanent in-line splice in the field or in the lab, at less cost than a fusion splice.



Accessories for Mechanical Splice

Splice Holder Assembly—Part No. 501540-1



Description	Part Number
250 µm Fiber Holder—Left[1]	313492-1
250 µm Fiber Holder—Right[1]	313493-1
500 µm Fiber Holder—Left	313492-2
500 µm Fiber Holder—Right	313493-2
750 µm Fiber Holder—Left	313492-3
750 µm Fiber Holder—Right	313493-3
900 µm Fiber Holder—Left	313492-4
900 µm Fiber Holder—Right	313493-4
Index Matching Gel	501555-1
Splice Organizer Tray (Holds 12)	501518-1
Plastic Splice Holder[2]	501540-1

[1]One of each is included with Work Station **501520-1.**
[2]Included with Splice Organizer Tray **501518-1.**

Material:
Thermoplastic

Optical Cables

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

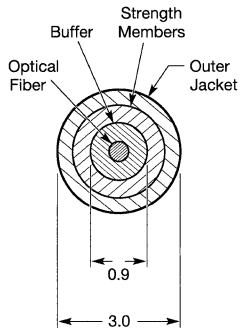
Light Duty Cables

Light duty cables consist of fibers in tight 900 µm buffers surrounded by strength members and a protective jacket. The strength members are an aramid yarn (such as Kevlar) and the jackets are a thermoplastic elastomer (TPE) or PVC. They are available with one or two (single or dual) fibers per cable. The PVC cable is OFN rated. Contact AMP Incorporated for OFNR rated cables.

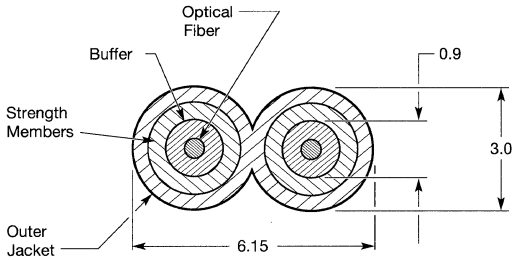
Applications:

- Connections within equipment
- Equipment interconnections within a room
- Connect work stations to wall or floor outlets
- Short distance, intrabuilding cabling
- Interconnections on patch panels and distribution boxes

Single Fiber



Dual Fiber



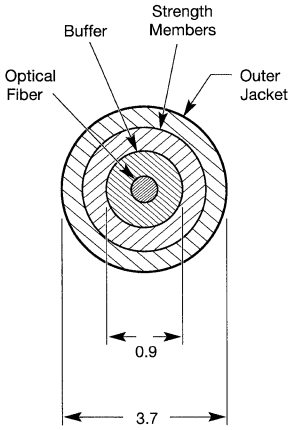
Heavy Duty Cables

Heavy duty cables are identical in construction to light duty cables, except the jackets are thicker and there are more strength members. The result is a cable with greater tensile strength which can be pulled for longer distances through conduit, over ceilings and under floors. Single and dual fiber cables are available. OFN ratings apply.

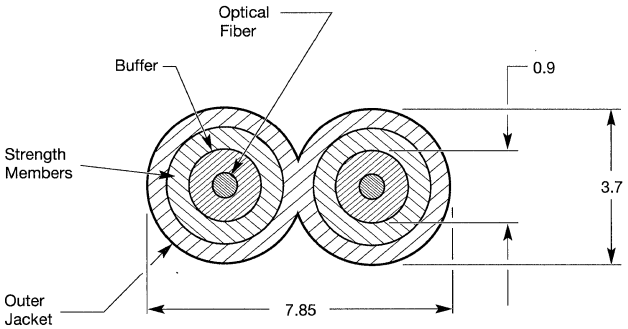
Applications:

- Equipment interconnections within a room
- Outdoor use under certain conditions
- Intrabuilding cabling

Single Fiber



Dual Fiber



Optical Cables

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

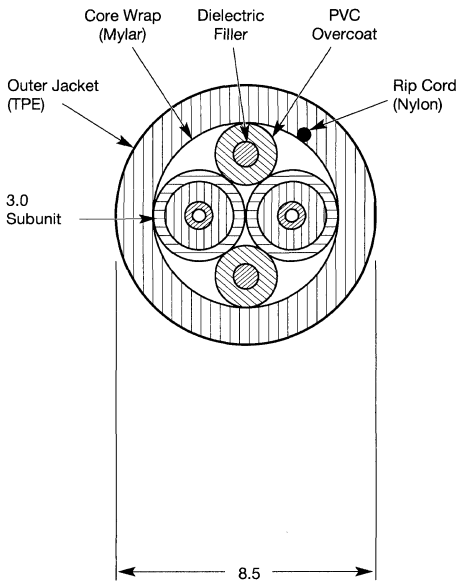
Breakout Cables

Breakout cables have two fibers, each with its own tight-900 µm buffer, strength members and 3 mm jacket. It is essentially two light duty cables packaged in a single TPE jacket. This construction allows simple distribution of two fibers to a common point and makes connectors easy to apply. Breakout cables feature high tensile strength to allow pulling over long distances.

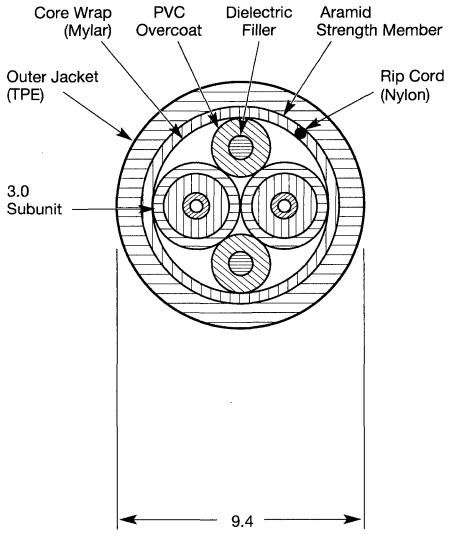
Applications:

- Vertical and horizontal fiber distribution; between floors and wiring centers
- Outdoor use under certain conditions
- Useful where terminations are made directly to equipment or patch panels

Standard Dual Fiber



Heavy Duty Dual Fiber



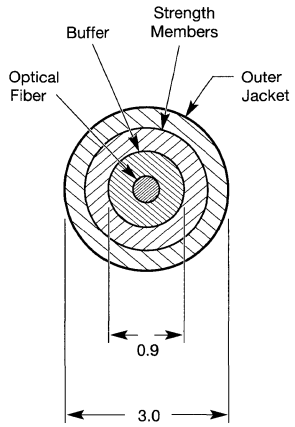
Plenum Cables

Plenum cables are rated OFNP for use in an air handling space (plenum) without using conduit. There are single and dual fiber versions. Resistant to the spread of fire, plenum cables also have low smoke producing properties and they meet the requirements of the National Electrical Code, Article 770-6. The overall construction of the single and dual cables is similar to standard light duty cables. Buffers for all cables are 900 µm tight buffered.

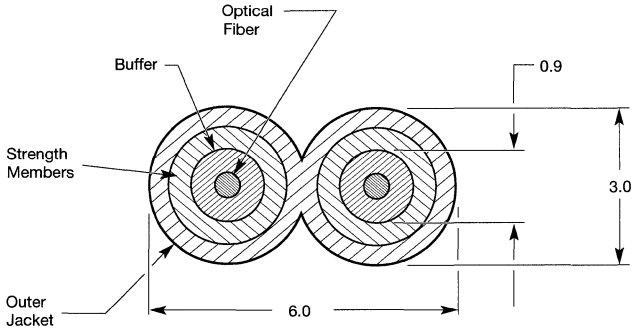
Applications:

- Use under suspended ceilings and under raised floors
- Intrabuilding cabling between rooms, floors and wiring centers
- Cabling within building air handling spaces

Single Fiber



Dual Fiber



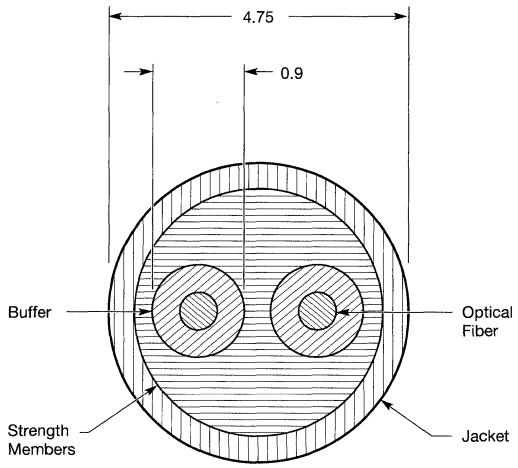
DUALAN Cable

This is a heavy duty, dual cable in a round, beige colored jacket. It is suitable for use in office applications where its appearance matches that of typical computer equipment and office furniture. Two fibers (multimode or singlemode) in tight-900 µm buffers are cabled with Kevlar and a PVC jacket. Standard DUALAN cable is OFN rated. A plenum grade, OFNP rated cable is also available.

Applications:

- Offices and equipment rooms
- Fiber-to-desk connections
- Recommended for use with OPTIMATE FSD (Fixed Shroud Duplex) connectors

Standard and Plenum Grade



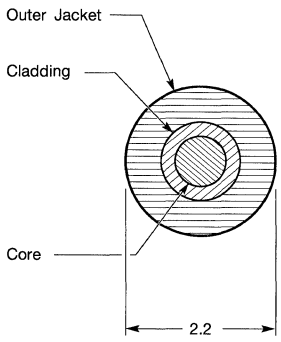
Plastic Fiber Cable

Plastic fiber cable is available in single and dual configurations. The fiber is 980/1000 µm in diameter and is protected by a 2.2 mm jacket.

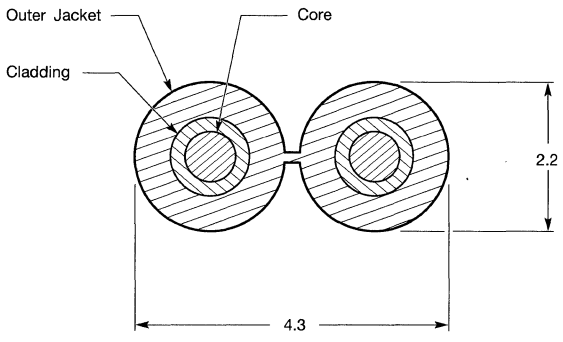
Applications:

- Optical sensing
- Low cost fiber links
- Internal equipment links
- Industrial controls

Single Fiber



Dual Fiber



Optical Cables

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Cable Specifications, Glass Fiber

Fiber Size (µm)	Description	Atten. Max. 850 nm (dB/km)	Atten. Max. 1300 nm (dB/km)	Bandwidth Min. 850 nm (MHz-km)	Bandwidth Min. 1300 nm (MHz-km)	Dim. Nom. (mm)	Cable Weight (kg/km)	Operating Temp. (°C)	Tensile Load Install. (N)	Bend Radius Min. @ Install. (cm)	Crush Resistance (N/cm)	Flame Rating[1]	Part Number
50/125	Light Duty Single, PVC	4.0	2.5	400	400	3.0	9.0	–20/+80	420	4.0	550	OFNR	502082-1
	Heavy Duty Single	4.0	2.5	400	400	3.7	13.0	–20/+70	560	8.0	550	OFNR	501740-1
	Light Duty Dual, PVC	4.0	2.5	400	400	3.0x6.0	18.0	–20/+80	840	4.5	550	OFNR	502085-1
	Heavy Duty Dual	4.0	2.5	400	400	3.7x7.8	26.5	–20/+70	1120	8.0	550	OFNR	501116-5
	Plenum Grade Single	4.0	2.5	400	400	3.0	6.5	–20/+80	420	5.0	450	OFNP	501819-1
	Plenum Grade Dual	4.0	2.5	400	400	3.0x6.0	13.1	–20/+80	840	5.0	450	OFNP	501693-1
	Breakout - 2 Fiber	3.5	2.5	500	500	8.5	55.0	–30/+70	1800	17.0	700	—	501438-2
	HD Breakout - 2 Fiber	3.5	2.5	500	500	9.4	70.0	–30/+70	4300	19.0	700	—	501498-2
62.5/125	Light Duty Single, PVC	3.5	1.5	160	500	3.0	9.0	–20/+80	420	4.0	550	OFNR	502083-1
	Heavy Duty Single	3.5	1.5	160	500	3.7	13.0	–20/+70	560	8.0	550	OFNR	501739-1
	Light Duty Dual, PVC	3.5	1.5	160	500	3.0x6.0	18.0	–20/+80	840	4.5	550	OFNR	502086-1
	Heavy Duty Dual	3.5	1.5	160	500	3.7x7.8	26.5	–20/+70	1120	5.0	550	OFNR	501738-1
	Plenum Grade Single	3.5	1.5	160	500	3.0	6.5	–20/+80	420	5.0	450	OFNP	501820-1
	Plenum Grade Dual	3.5	1.5	160	500	3.0x6.0	13.1	–20/+80	840	5.0	450	OFNP	501754-1
	DUALAN	3.5	1.5	160	500	4.75	20.0	–20/+80	1000	10.0	700	OFNR	501749-1
	DUALAN Plenum	3.5	1.5	160	500	4.75	20.0	–20/+80	1250	10.0	700	OFNP	502024-1
	QUADLAN	4.0	2.0	160	500	4.75	20.0	–20/+80	1200	12.5	700	OFNR	502541-1
	Breakout - 2 Fiber	3.5	1.5	160	500	8.5	55.0	–30/+70	1800	17.0	700	—	501438-4
	HD Breakout - 2 Fiber	3.5	1.5	160	500	9.4	70.0	–30/+70	4300	19.0	700	—	501498-4
100/140	Light Duty Single, PVC	5.0	4.0	100	200	3.0	9.0	–20/+80	420	4.0	550	OFNR	502084-1
	Heavy Duty Single	5.0	4.0	100	200	3.7	13.0	–20/+70	560	8.0	550	OFNR	501741-1
	Light Duty Dual, PVC	5.0	4.0	100	200	3.0x6.0	18.0	–20/+80	840	4.5	550	OFNR	502087-1
	Heavy Duty Dual	5.0	4.0	100	200	3.7x7.8	26.5	–20/+70	1120	8.0	550	OFNR	501118-5
	Plenum Grade Single	5.0	4.0	100	200	3.0	6.5	–20/+80	420	5.0	450	OFNP	501821-1
	Plenum Grade Dual	5.0	4.0	100	200	3.0x6.0	13.1	–20/+80	840	5.0	450	OFNP	501755-1
	Breakout - 2 Fiber	4.0	3.0	200	300	8.5	55.0	–30/+70	1800	17.0	700	—	501438-6
	HD Breakout - 2 Fiber	4.0	3.0	200	300	9.4	70.0	–30/+70	4300	19.0	700	—	501498-6
Single-Mode	Light Duty Single, PVC	—	1.0	—	—	3.0	9.0	–20/+80	250	4.0	550	OFNR	501530-1
	Breakout - 2 Fiber	—	1.0	—	—	8.5	55.0	–30/+70	1050	17.0	700	—	501556-1
	DUALAN	—	1.0	—	—	4.75	20.0	–20/+80	1250	10.0	700	OFNR	502119-1
	DUALAN Plenum	—	1.0	—	—	4.75	20.0	–20/+80	1250	10.0	700	OFNP	502120-1

[1](—) indicates not rated.

50/125 Cables:
NA: .20±.02

62.5/125 Cables:
NA: .275±0.15

100/140 Cables:
NA: .29±.02

Ordering Information:
Standard Lengths of 1.0 and 2.0 km
Non-Standard Lengths are available

Cable Specifications, Plastic Fiber

Description	Fiber Grade	Attenuation Max. 650 nm (dB/km)	NA ±.03	Dim. Nom. (mm)	Cable Weight (kg/km)	Operating Temp. (°C)	Tensile Load Install. (N)	Bend Radius, Min. @ Install. (cm)	Part Number
Simplex	Prem.	230.0	0.47	2.2	3.8	–40/+85	108	2.5	501232-5
Dual	Prem.	230.0	0.47	2.2x4.3	8.0	–40/+85	245	2.5	501336-1

Flame Ratings

Flame ratings for cables used within buildings are specified by the National Electrical Code (NEC). Underwriters Laboratories (UL), through their listing process, defines procedures to assure that products meet specific requirements.

General Use (OFN)—
These cables pass the UL 1581 Vertical Tray Flame Test. They may be used for general installation in building wiring. They may not be used in risers or plenums unless installed in suitable conduits.

Riser Cable (OFNR)—
Riser cables must meet requirements of UL 1666, and may be used in vertical passages connecting one floor to another.

Plenum Cable (OFNP)—
Plenum cable must pass the Steiner Tunnel Test, UL 910. The cable may be installed in air plenums without the use of conduit.

Note: In all cases, cables meeting the more stringent requirements may be used in place of a particular cable.

DUALAN Breakout Kit Part No. 502020-1

Product Facts

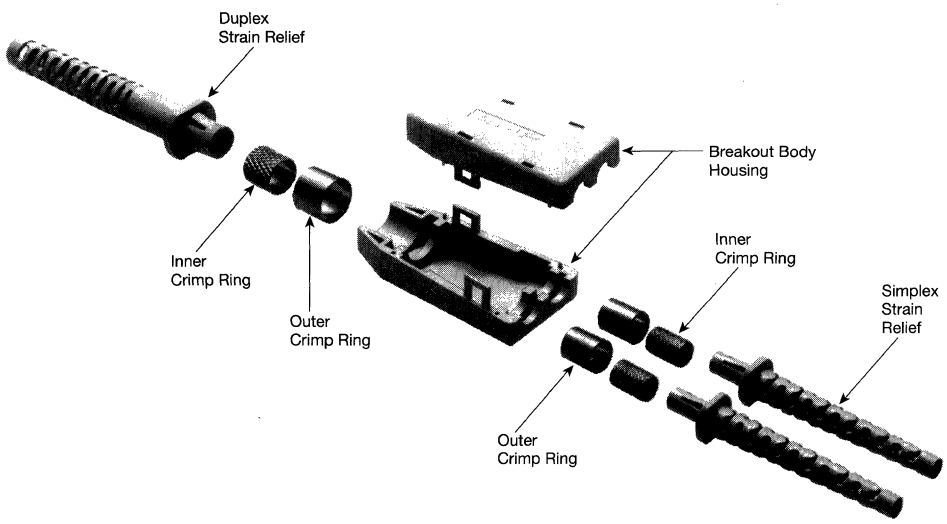
- Use with AMP DUALAN cable (see page 6040)
- Provides rugged protection for fibers at transition between duplex and simplex cables
- Each cable entry point provides a bend-limiting cable guard and strain relieving crimps for the Kevlar strength material

Materials:

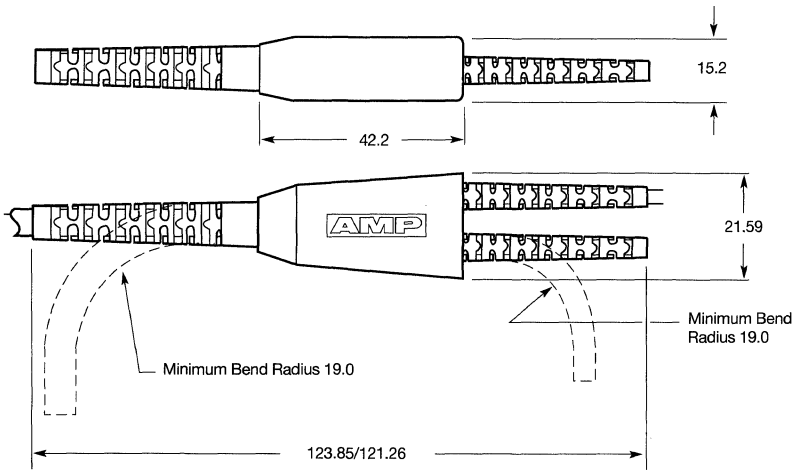
Housings—PBT molded
Inner Crimp Rings—Brass
Outer Crimp Rings—Copper
Strain Reliefs—Polypropylene

Tooling:

Hand Tool	Type	Dies
58190-6	OPTIMATE	58393-1 58404-1
220190-1	Economy	58397-1 58409-1



Note: Kit also includes 1 meter length of breakout tubing and 1 each receive and transmit labels.

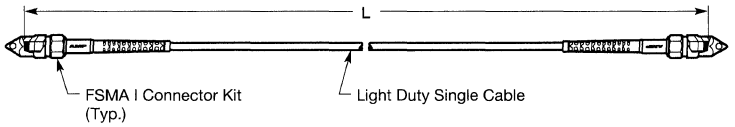


Typical Assembled View

AMP INCORPORATED, HARRISBURG, PA 17105; PHONE: 717-564-0100 TWX: 510-657-4110 • PRODUCT INFORMATION CENTER; PHONE: 1-800-522-6752

Multimode Cable Assemblies

A



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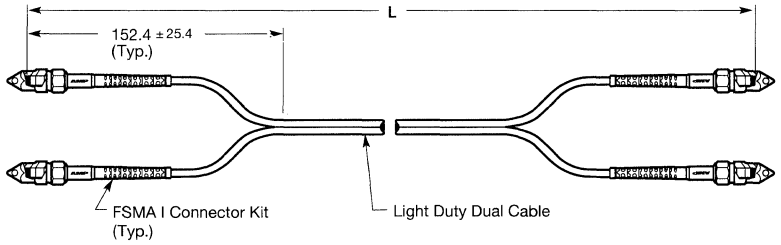
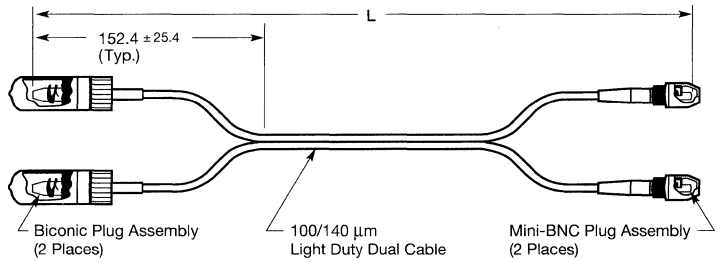


C



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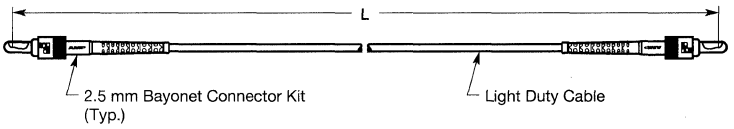
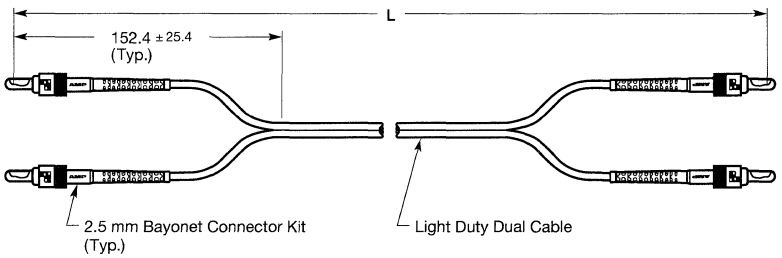


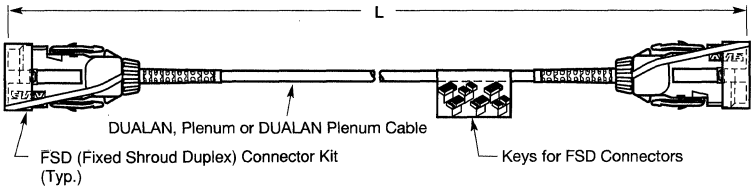
E



Note: See pages 6046 and 6047 for part numbers.

Multimode Cable Assemblies

F



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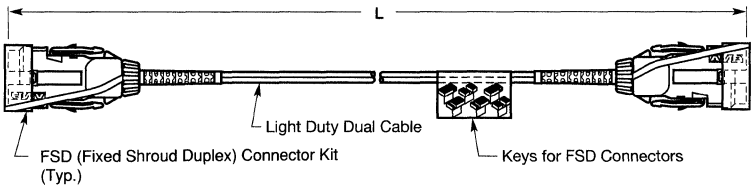

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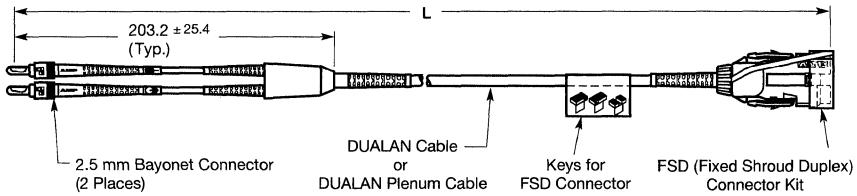

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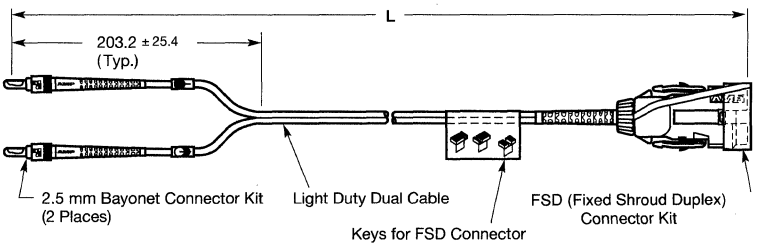

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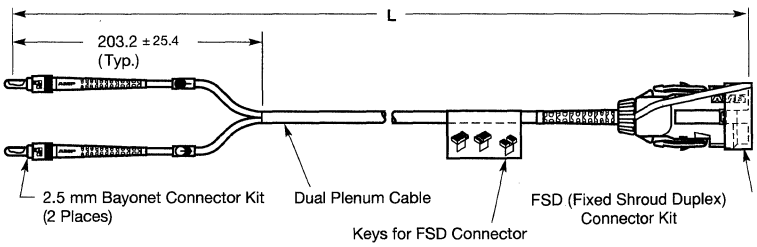
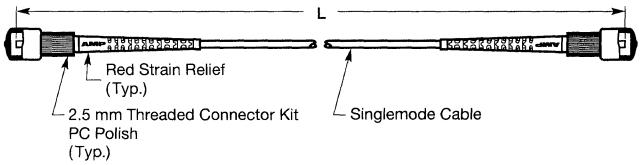


Note: See pages 6046 and 6047 for part numbers.

Singlemode Cable Assemblies

K



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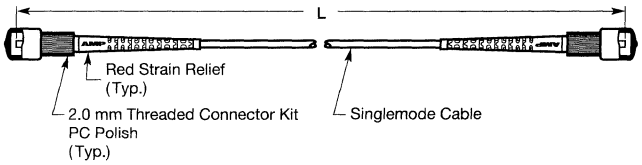
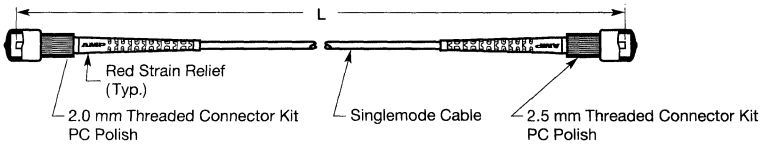
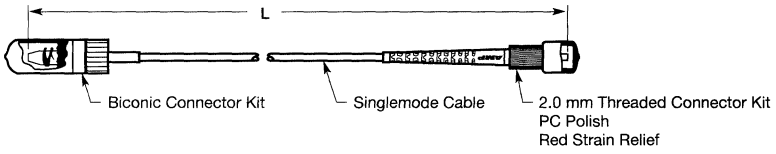


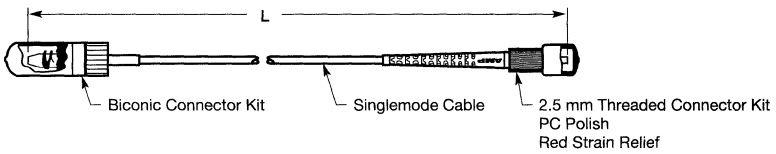
M



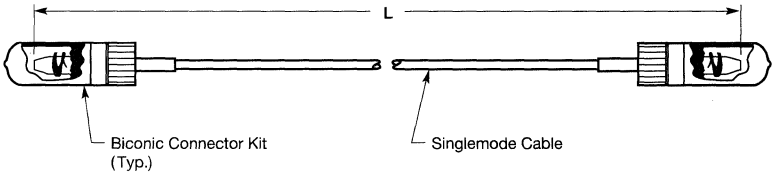
N



O



P



Note: See pages 6046 and 6047 for part numbers.

Part Numbers—Multimode Cable Assemblies (See pages 6043 and 6044)

Description Code	Cable Type Code[1]	Cable Size (µm)	Part Numbers Length L (m) 1	2	2.44
A	LDS	50/125	502148-1	—	—
		62.5/125	502149-1	—	—
		100/140	502150-1	—	—
B	LDD	50/125	502151-1	—	—
		62.5/125	502152-1	—	—
		100/140	502153-1	—	—
C	LDD	100/140	—	—	502154-1
D	LDS	50/125	502143-1	—	—
		62.5/125	502144-1	—	—
		100/140	502145-1	—	—
E	LDD	50/125	502146-1	—	—
		62.5/125	501833-2	—	—
		100/140	502147-1	—	—
F	DU	62.5/125	502121-1	502121-2	—
	DUP	62.5/125	502123-1	502123-2	—
	PLDD	62.5/125	502124-1	502124-2	—
G	LDD	62.5/125	502122-1	502122-2	—
H	DU	62.5/125	501955-3	501955-4	—
	DUP	62.5/125	502126-1	502126-2	—
I	LDD	62.5/125	502125-1	502125-2	—
J	PLDD	62.5/125	502127-1	502127-2	—

[1]Cable Type Code:
LDS = Light Duty Single
LDD = Light Duty Dual
DU = DUALAN
DUP = DUALAN Plenum
PLDD = Plenum Light Duty Dual

Part Numbers—Singlemode Cable Assemblies (See page 6045)

Description Code	Part Numbers Length L (m) 1	2	3	4	5	6	7
A	501868-5	501868-6	501868-4	501868-3	501868-7	501868-2	501868-8
B	502009-1	502009-2	502009-3	502009-4	502009-5	502009-6	502009-7
C	502142-1	502142-2	502142-3	502142-4	502142-5	502142-6	502142-7
D	502140-1	502140-2	502140-3	502140-4	502140-5	502140-6	502140-7
E	502141-1	502141-2	502141-3	502141-4	502141-5	502141-6	502141-7
F	2-501870-3	501870-2	501870-8	2-501870-4	1-501870-1	1-501870-2	1-501870-8
Pigtail (Single Ended Cable Assembly)							
A	502453-1	502453-2	502453-3	502453-4	502453-5	502453-6	502453-7
B	502452-1	502452-2	502452-3	502452-4	502452-5	502452-6	502452-7
F	502454-1	502454-2	502454-3	502454-4	502454-5	502454-6	502454-7

Note: Other lengths available; contact AMP Incorporated.

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Part Numbers					
Length L (m)					
3	5	6	8	10	15
502148-2	502148-3	502148-4	—	501148-5	—
502149-2	502149-3	502149-4	—	502149-5	—
502150-2	502150-3	502150-4	—	502150-5	—
502151-2	502151-3	502151-4	—	502151-5	—
502152-2	502152-3	502152-4	—	502152-5	—
502153-2	502153-3	502153-4	—	502153-5	—
—	—	—	—	—	—
502143-2	502143-3	502143-4	—	502143-5	—
502144-2	502144-3	502144-4	—	502144-5	—
502145-2	502145-3	502145-4	—	502145-5	—
502146-2	502146-3	502146-4	—	502146-5	—
501833-3	501833-4	501833-5	—	501833-6	—
502147-2	502147-3	502147-4	—	502147-5	—
502121-3	502121-4	—	502121-5	502121-6	502121-7
502123-3	502123-4	—	502123-5	502123-6	502123-7
502124-3	502124-4	—	502124-5	502124-6	502124-7
502122-3	502122-4	—	502122-5	502122-6	502122-7
501955-5	501955-2	—	—	501955-6	—
502126-3	502126-4	—	502126-5	502126-6	502126-7
502125-3	502125-4	—	502125-5	502125-6	502125-7
502127-3	502127-4	—	502127-5	502127-6	502127-7

Part Numbers							
Length L (m)							
8	9	10	15	20	25	30	40
501868-9	1-501868-0	1-501868-1	1-501868-5	1-501868-2	1-501868-6	1-501868-3	1-501868-4
502009-8	502009-9	1-502009-0	1-502009-4	1-502009-1	1-502009-5	1-502009-2	1-502009-3
502142-8	502142-9	1-502142-0	1-502142-4	1-502142-1	1-502142-5	1-502142-2	1-502142-3
502140-8	502140-9	1-502140-0	1-502140-4	1-502140-1	1-502140-5	1-502140-2	1-502140-3
502141-8	502141-9	1-502141-0	1-502141-4	1-502141-1	1-502141-5	1-502141-2	1-502141-3
2-501870-5	2-501870-9	1-501870-5	2-501870-8	1-501870-9	501870-5	2-501870-6	2-501870-7
502453-8	502453-9	1-502453-0	1-502453-4	1-502453-1	1-502453-5	1-502453-2	1-502453-3
502452-8	502452-9	1-502452-0	1-502452-4	1-502452-1	1-502452-5	1-502452-2	1-502452-3
502454-8	502454-9	1-502454-0	1-502454-4	1-502454-1	1-502454-5	1-502454-2	1-502454-3

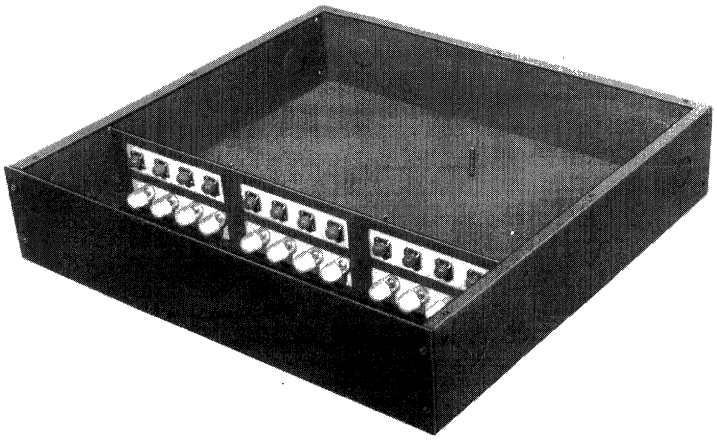
Low Profile Rack/Wall-Mounted Distribution Enclosures

Product Facts

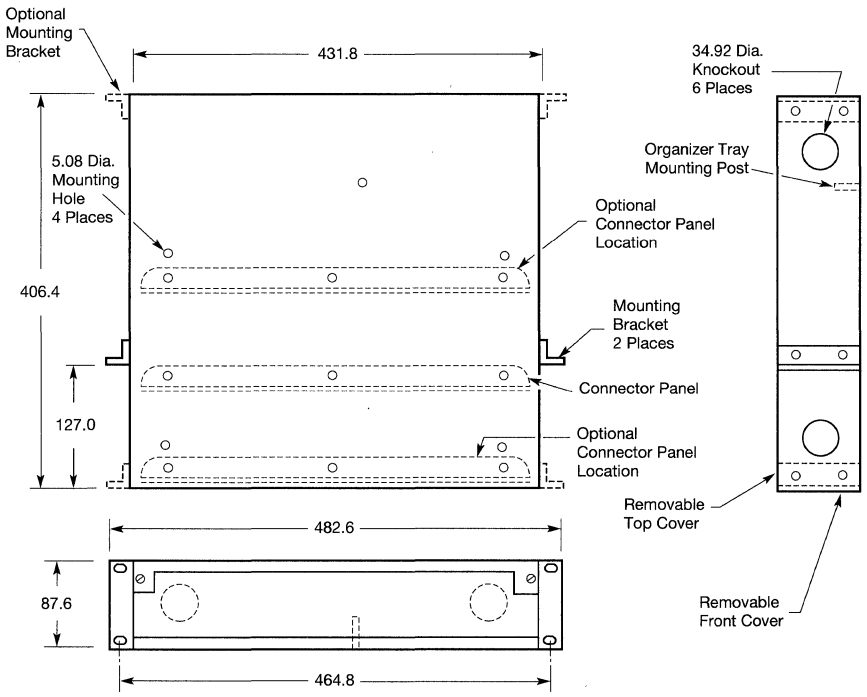
- Suitable for rack or wall mounting
- Brackets mount to box in one of three locations
- 3.5 in. height requires minimum vertical mounting space
- High-density version holds up to 48 FSMA or bayonet coupling bushings
- Regular version holds up to 6 4-pack panels with mix-and-match capabilities
- Fits 19.0 in. rack; bracket extenders available to fit 23.0 in. telephone equipment rack
- Accommodates up to 4 mechanical splice or fusion splice organizer trays, or 2 distribution connector organizer trays
- Fiber routing clamps and 2 cable clamps provided
- Choice of blue or office beige finish

Material:

Steel with enamel finish—blue or office beige



Shown with top cover removed; preloaded with mix-and-match 4-pack panels



Standard Density Enclosures (Holds up to 6 4-Pack Panels)

Enclosure Part Numbers	
Blue	**Office Beige**
501454-1	501454-9

High Density Enclosures (Holds up to 48 Coupling Bushings)

Panel Type	Enclosure Part Numbers[1]	
	Blue	**Office Beige**
FSMA	501453-1	—
2.5 mm Bayonet	501453-2	—

[1]Panels have cutouts only; no coupling bushings are installed.

Notes:
1. 482.6 mounting brackets are packaged unassembled.
2. Two extender brackets are required for mounting standard and high density enclosures in a 584.2 rack. Order **Part No. 501517-1** blue) or **Part No. 501517-2** (office beige).

AMP INCORPORATED, HARRISBURG, PA 17105; PHONE: 717-564-0100 TWX: 510-657-4110 • PRODUCT INFORMATION CENTER; PHONE: 1-800-522-6752

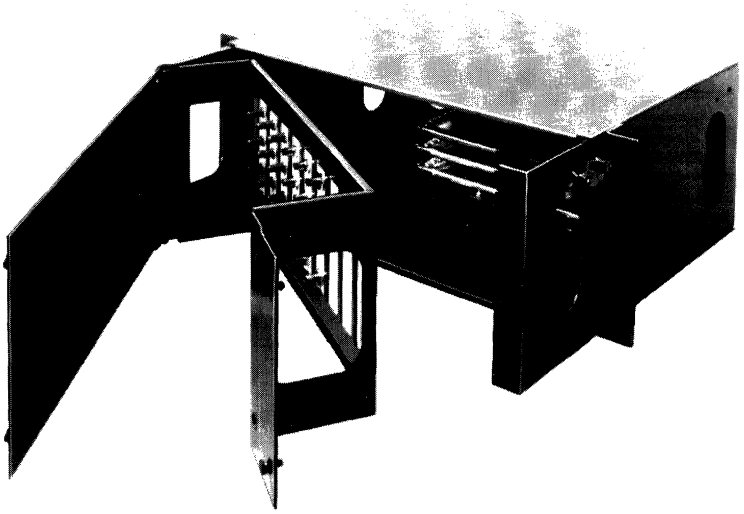
Modular Rack-Mounted Distribution Enclosures

Product Facts

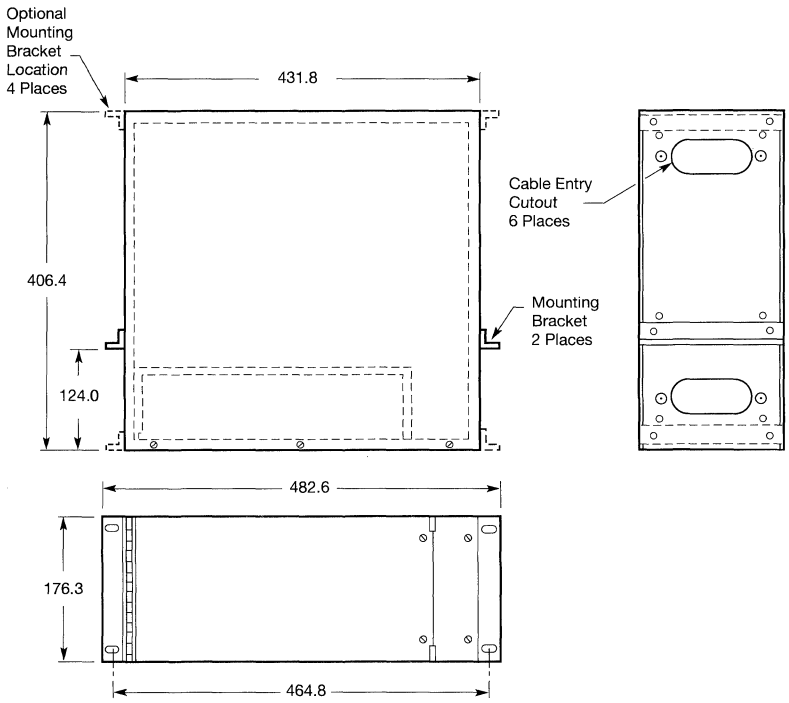
- Holds up to 9, 4-pack panels with mix-and-match capability
- Mounting brackets attach at one of these locations
- Accommodates up to 6 mechanical splice or fusion splice organizer trays
- Fits 19.0 in. rack; bracket extenders available to fit 23.0 in. telephone equipment rack
- Dual-hinge door with easy-open latch permits quick access to both sides of optical connections
- Six large oval cutouts provide choice of cable entry locations
- Fiber routing clamps provided
- Choice of blue or office beige finish

Material:

Steel with enamel finish—blue or office beige



Shown preloaded with mix-and-match 4-pack panels and splice organizer trays



Enclosure Part Numbers	
Blue	**Office Beige**
501486-1	501486-9

Notes:
1. 19.0 in. mounting brackets are packaged unassembled.
2. Two extender brackets are required for mounting standard and high density enclosures in a 23.0 in. rack. Order **Part No. 501569-1** (blue) or **Part No. 501569-2** (office beige).
3. Splice organizer trays must be purchased separately. See page 6052 for ordering appropriate splice organizer trays.

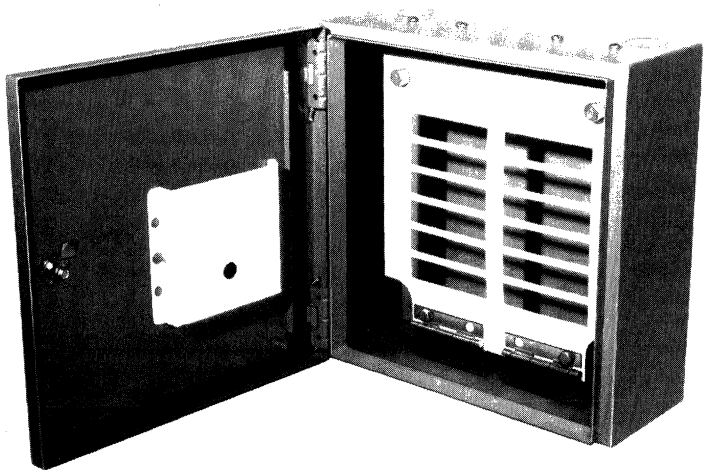
Wall-Mounted Distribution Enclosure Part No. 501448-1

Product Facts

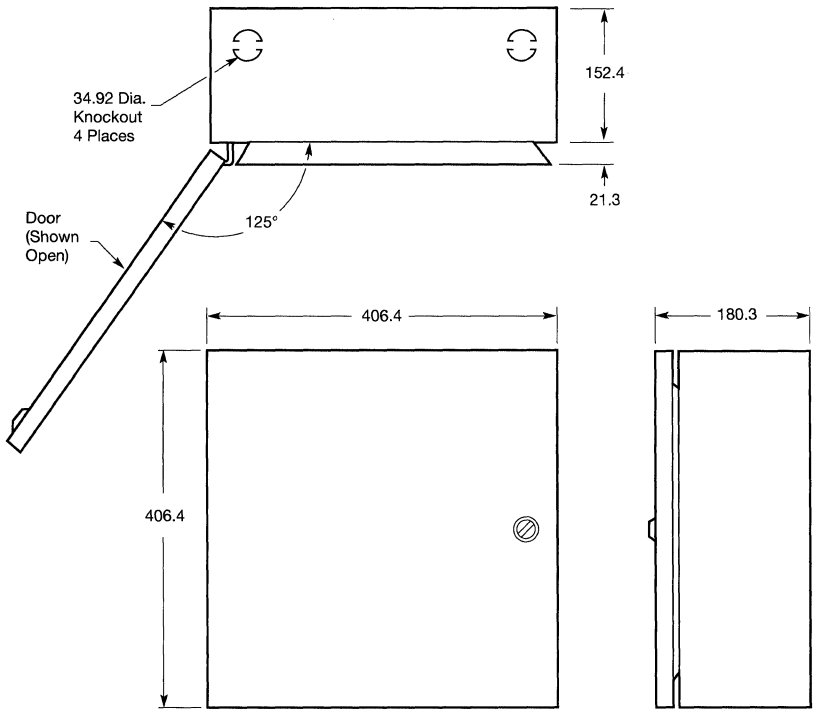
- Holds up to 12, 4-pack panels with mix-and-match capability
- Provides pocket storage for prints and test data documents
- Screwdriver-operated latch
- Four 34.92 dia. knockout locations
- Fiber routing clamps and two cable clamps (25.4 dia.) provided
- Blue finish

Materials:

Steel with enamel finish—blue



Shown without 4-pack panels



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Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

4-Pack Panels

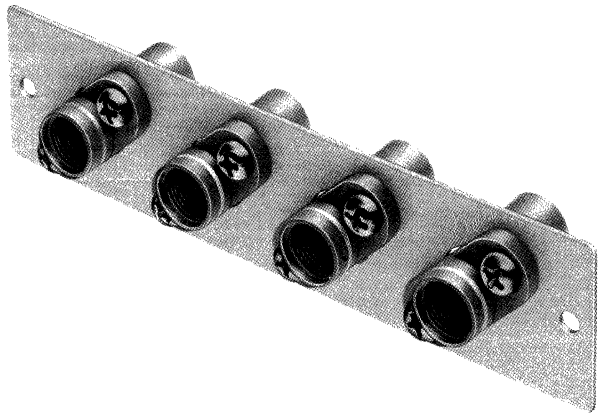
Product Facts

- Available for most AMP OPTIMATE connectors
- Standard mounting dimensions maximize design flexibility

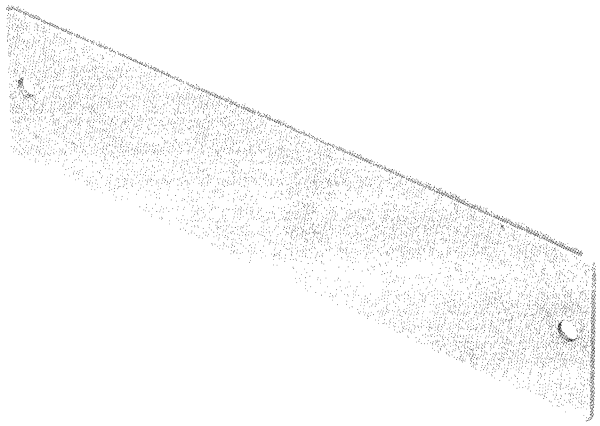
Material:

Steel with enamel finish—white

Biconic Coupling Bushing 4-Pack Panel
Part No. 501514-1



Blank 4-Pack Panel
Part No. 501513-1



4-Pack Panel Description	Refer to Page	Part Number
FSD Duplex to 2.5 mm Bayonet (S Key)	6010	502046-1
FSD Duplex to 2.5 mm Bayonet (A-B Key)	6010	502046-2
FSD Duplex to Duplex (M-S Key)	6010	502047-1
FSD Duplex to Duplex (A-B Key)	6010	502047-2
2.5 mm Bayonet (ST-Style)	6016	501664-1
2.5 mm Threaded	6019	501515-1
2.0 mm Threaded	6022	501516-1
FSMA	6031	501662-1
Biconic Singlemode	6051	501514-1
Biconic Multimode	6051	501663-1
Blank	6051	501513-1

Splice Organizer Trays

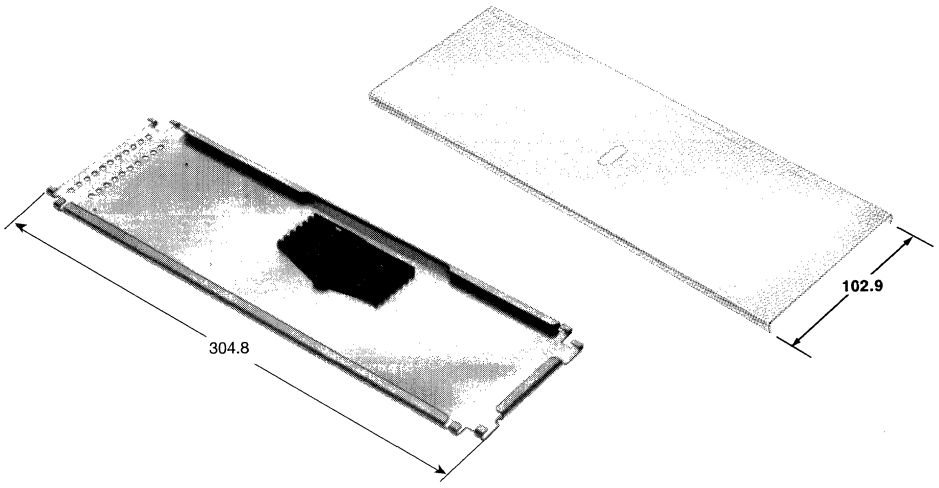
Product Facts (All Organizer Trays)

- Organize and protect fiber optic splices
- Available for mechanical splices, distribution connectors and fusion splices
- Each tray holds up to 12 individual splices or connectors
- Transparent cover permits visual check of fiber routing scheme
- Easy removal of cover provides quick access to splices and connectors
- Can be used in universal closure and various rack and wall mounted enclosures

Product Facts (Fusion Splice Organizer Tray Only)

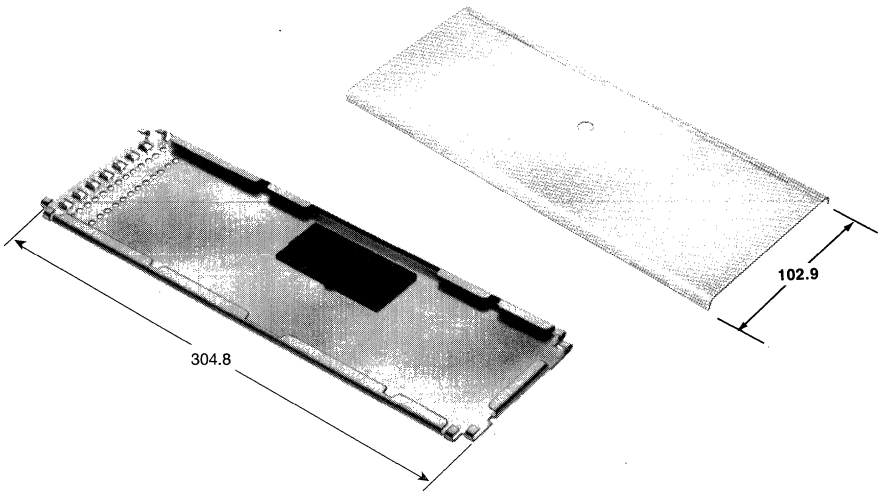
- Accommodates 250 µm, 500 µm and 900 µm buffered fibers
- Ramp and entry point aids in eliminating micro bending
- Convenient holes at entry end for strain relief attachment with tie-wraps

Organizer Tray
(For Mechanical Splices)
Part No. 501518-1



Organizer Tray
For Fusion Splices
Part No. 501321-1

For Elastomeric and
Fusion Splice Sleeves
Part No. 501321-2



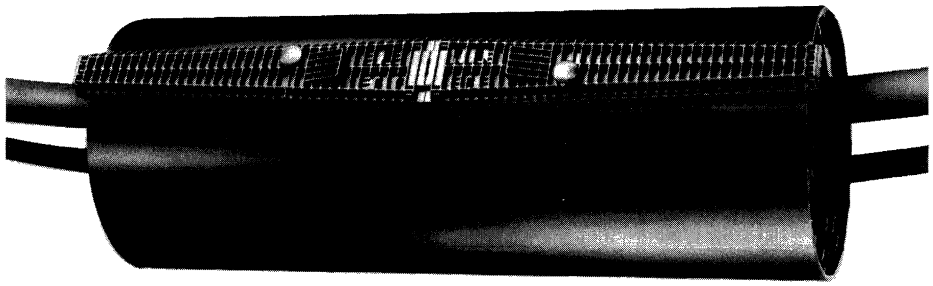
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

New Universal Closures (UCN)

Product Facts

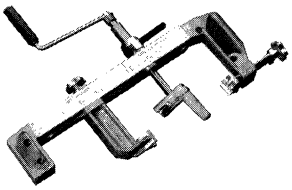
- Complete protection for fiber optic cable splices
- Accommodates organizer trays for distribution connectors, mechanical splices and fusion splices
- Splices readily accessible by simply removing closure cover
- Ideal for outdoor applications where direct burial, underground and aerial installation is required
- Hardware provided to anchor ground cable strength members and hold organizer trays

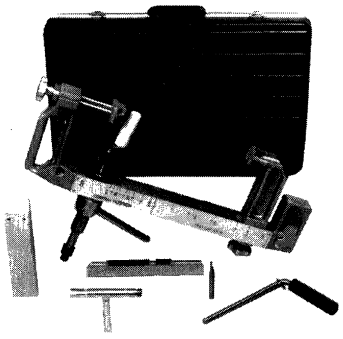


UCN Closure Type	Inner Closure Part Number	Type Splice	Qty. of Trays	Number of Splices	UCN Closure Type	Over Closure Part Number (Optional)
UCN 6-20	608102-2	Fusion or Mechanical	8	96	8-30*	608101-3
UCN 8-20	608101-1	Fusion or Mechanical	12	144	10-30	608100-2
UCN 8-24	608101-2	Fusion or Mechanical	12	144	10-40	608100-3

Organizer Trays	Part Number	Number of Splices per Tray	Holding Brackets Part Number	Number of Trays	UCN Size
Mechanical Splice	501518-1	12	501973-1	8	6-20
Fusion Splice	501321-1	12	501973-2	12	8-20 or 8-24
Elastomeric and Fusion Splice Sleeves	501321-1	12			

UCN Cutting Tool Part No. 604049-3

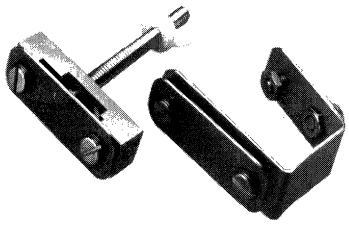




UCN Tool Kit Part No. 604041-5

INCLUDES
- Cutting Tool
- Extra Blade
- T-Head Wrench
- Installation Block
- Tool Mounting Bracket
- Carrying Case

Organizer Tray Holder and Grounding Clamp Kits



Use with Closure Type	No. of Trays	Organizer Tray Holder Part Number
UCN 6-20	8	501973-1
UCN 8-20	12	501973-2
UCN 8-24	12	501973-2

Summary of OPTIMATE Installation Tools and Accessories

Description	Part Numbers						
	FSMA	Simplex	2.5 mm Bayonet (ST-Style)	2.5 mm Threaded	2.0 mm Threaded	FSD Connector	AMP SC
Termination Kits:							
W/Economy Tool	501282-1	501282-3	501282-9	501282-8	501282-8	501800-1	502696-1
W/OPTIMATE Tool	501282-4	501282-5	501282-7	501282-6	501282-6	—	—
Installers Kits	501258-7 -8,-9	501258-7 -8,-9	501258-7 -8,-9	501258-7 -8,-9	501258-7 -8,-9	501258-7 -8,-9	—
Hand Tool—OPTIMATE:							
Tool Only	58190-6[1]	58190-6[1]	58190-6[2]	58190-6[2]	58190-6[2]	58190-6[2]	58190-6[2]
Eyelet Crimp Die Only	58291-1	58291-1	58289-1	58289-1	58289-1	58393-1	58289-1
Tool w/Eyelet Die	58190-5	58190-5	—	—	—	—	—
Insulation Die Sets:							
<3.0 mm	312831-1	312831-1	—	—	—	—	—
3.0 mm	312831-1	312831-1	—	—	—	—	—
3.8 mm	312831-2	312831-2	—	—	—	—	—
4.4 mm	312831-3	312831-3	—	—	—	—	—
Hand Tool—Economy:							
Tool Only	220190-2[2]	220190-1[2]	220190-1[2]	220190-1[2]	220190-1[2]	220190-1[2]	220190-1
Eyelet & Insulation Crimp Die Only	501295-1[3]	501295-1[3]	58299-1[3]	58299-1	58299-1	58397-1	58299-1
Tool w/Eyelet & Insulation Die	501257-1[3]	501257-1[3]	—	—	—	—	—
Epoxy:							
Quick Ambient Cure	501195-6	501195-6	—	—	—	—	—
Standard—24 Hour	501195-4	501195-4	501195-4	501195-4	501195-4	501195-4	501195-4
Oven Cure	502418-1	502418-1	502418-1	502418-1	502418-1	502418-1	502418-1
Epoxy Applicator	501473-3	501473-3	501473-3	501473-3	501473-3	501473-3	501473-3
Curing Sleeves	502249-1	502253-1	502259-1	501579-1	501866-1	501792-1	502656-1
Hand Polishing Film:							
5 µm	228433-8	228433-8	228433-8	228433-8	228433-8	228433-8	228433-8
1 µm	228433-7	228433-7	228433-7	228433-7	228433-7	228433-7	228433-7
0.3 µm	228433-5	228433-5	228433-5	228433-5	228433-5	228433-5	228433-5
Hand Polishing Bushing	228025-1	—	501467-1	501861-1	501867-1	501791-1	502631-2
Polishing Pad[6]	—	—	501523-1	501858-1	501858-1	501523-1	501858-1
PC Polish Cloth[7]	—	—	—	501859-1	501859-1	—	501859-1
PC Polish Compound[8]	—	—	—	501860-1	501860-1	—	501909-1
Polish Machine Disks:							
1	501188-2	501188-2	501188-7	—	—	501188-7	—
2	501188-4	501188-4	501188-8	—	—	501188-8	—
3 (optional)	501188-5	501188-5	501188-5	—	—	501188-5	—
Polish Machine Adaptor	501276-1	501277-1	501776-1	—	—	502530-1	—
Polish Length Gage	501301-1	501301-2	—	—	—	—	—

[1]Use with eyelet crimp die and Insulation Die.
[2]Use with crimp die.
[3]Economy tool for use with 3 mm dia. cables only.
[4]Multimode
[5]Singlemode
[6]Use as cushion between polish plate and polishing film.
[7]Use as final polish step.
[8]Use with polish cloth.

Termination Kits

For: Simplex
FSMA
2.0/2.5 mm Threaded
2.5 mm Bayonet
FSD (Fixed Shroud Duplex) Connector

Termination kits provide all the materials and tools (except epoxy, see page 6057) required to terminate a particular type of fiber optic connector. Conveniently packaged in a handy carrying case, each termination kit is available with either an economy hand tool or a standard hand tool. Economy tools will only terminate cables up to 3 mm in diameter. The standard tool accepts different crimp dies for use with different connector types and cable diameters. The kits contain enough consumable materials to terminate approximately 60 connectors. The consumable items in the kit can be purchased separately.

Connector Type	w/OPTIMATE Hand Tool	w/Economy Hand Tool
2.5 mm Bayonet (ST-Style)	501282-7	501282-9
FSMA-I & FSMA-II	501282-4	501282-1
2.0 mm Threaded 2.5 mm Threaded	501282-6	501282-8
FSD	—	501800-1
Simplex	501282-5	501282-3
AMP SC	—	502696-1

Professional Installer Kits

For:
FSD Connectors
2.5 mm Bayonet (ST-Style)
2.0 mm Threaded
2.5 mm Threaded
FSMA
Simplex
AMP SC

The OPTIMATE Professional Installer Kits from AMP provide the professional installer with all the necessary tools required to perform terminations on the complete line of OPTIMATE products. Included in the kit is the OPTIMATE Hand Tool which, with its set of interchangeable dies, will crimp all OPTIMATE connectors that require crimping. In addition, an Inspection Microscope and Epoxy Curing Oven are included with specific kits.

Part No. 501258-7

Includes all tools necessary to terminate the connectors listed above. This is a complete kit which includes:
- Hand tool and crimping dies
- Polishing bushings
- Polishing film
- Cable and fiber strippers
- Microscope with tripod and power source (see page 6059 for details)
- Epoxy curing oven (110 VAC) (see page 6057 for details)

Part No. 501258-8

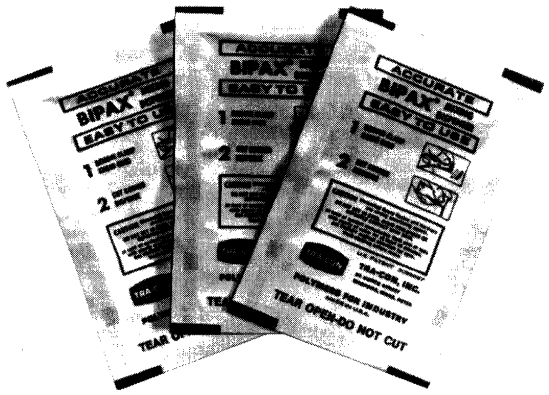
The same as 501258-7 except the epoxy oven operates at 220 VAC.

Part No. 501258-9

The same as 501258-7 except kit does not contain microscope or epoxy curing oven.

Note: Epoxy not included in kit. It must be purchased separately. See page 6057.

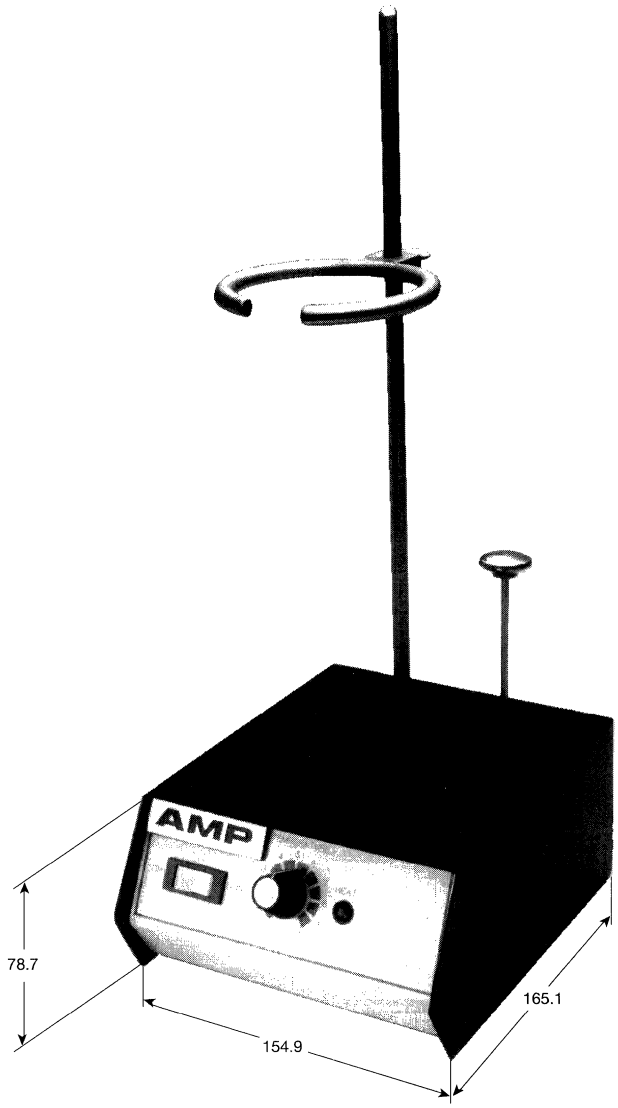
Epoxy



The recommended epoxies for the OPTIMATE product line are available in economical and convenient packages. The premeasured components are contained in a flexible plastic pouch that has two compartments separated by a leak-proof clamp. To blend the components, all that is necessary is to remove the clamp and knead the pouch. After blending, cut one end to dispense. There are three epoxies available, each intended for a particular product or field application.

Properties	Use With	Qty/Wt (g)	Part Number
General Purpose Use: Low Viscosity High Impact Blue Color 30 min. Pot Life Slow Cure: 24 hr @ 25°C Quick Cure: 2 hr @ 65°C Operating Temperature: –60°C to +100°C	FSD Connector FSMA Simplex 2.5 mm Bayonet 2.5 mm Threaded 2.0 mm Threaded AMP SC	25/7 25/2	501195-1 501195-4
High Temperature Use: Low Viscosity Amber Color 40 min. Pot Life Oven Cure Only: 15 min. @ 100°C Operating Temperature: –60°C to +175°C	MIL-SPEC FSMA FSMA	25/7 25/2	501195-2 501195-5
Fast Ambient Cure Use: Medium Viscosity Low Temperature Straw Color 2 Minute Pot Life Fast Cure: 45 min. Operating Temperature: –50°C to +125°C	FSMA Simplex	10/2 25/2	501195-3 501195-6
General Purpose Use (Quick Cure in Curing Oven): Medium Viscosity Blue Color 30 min. Pot Life 30 min. @ 100°C in Epoxy Curing Oven	FSD Connector FSMA Simplex 2.5 mm Bayonet 2.5 mm Threaded 2.0 mm Threaded AMP SC	25/4	502418-1

Epoxy Curing Oven



The Epoxy Curing Oven reduces the time required to cure epoxy in fiber optic connectors. The oven provides a uniform, controlled curing environment which increases productivity and consistency of terminations. The unit accepts all AMP connectors. The unit is equipped to cure up to four FSD connectors and twelve single connectors at once. Optional adapter blocks are available to cure eight FSD Connectors or 24 single connectors. It features a variable temperature control from 60°C to 125°C and includes a thermometer and cable support bracket. 110 and 220 VAC units are available.

Description	Part Number
110 VAC	502134-1
220 VAC	502134-2
Adapter Block for FSD Connectors	502222-1
Adapter Block for 24 Single Connectors	502129-1

Polishing (Lapping) Film Packets

Polishing film sheets are used with polishing bushings for hand polishing of fiber optic connectors. Each part number consists of a packet of (10) 215.9 mm × 279.4 mm [8.5 in. × 11.0 in.] sheets. Each packet will polish between 60 and 80 connectors.

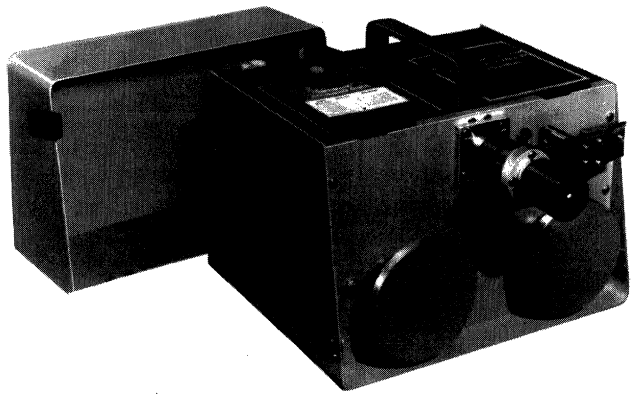
Use With Connector	Description/ Polish Sequence	Part Number
FSMA, Simplex, FSD, 2.0 & 2.5 mm Threaded and 2.5 mm Bayonet	5 µm/First	228433-8
	1 µm/Second	228433-7
	0.3 µm/Third	228433-5

Consumables Kits

Contains all consumable supplies for at least 100 connectors. Epoxy (general purpose), polish film, epoxy applicators and polish pad.

Use With	Part Number
FSMA FSD Connector 2.5 mm Bayonet	502306-1
PC Polished Products: 2.0 mm Threaded 2.5 mm Threaded	502306-2

Polishing Machine Part No. 501186-1



The AMP Polishing Machine provides an easy means for polishing optical fiber ends. This lightweight, portable machine is designed with a two-step operation to produce a precise fiber termination in less than two minutes. A unique sweep-arm mechanism moves the fiber at 12 sweeps per minute, while the self-contained adjustable pneumatic pressure control assures a soft start and firm finish. The unit operates on 115 VAC, 60 Hz power.

Precision Adapters (for Polishing Machine)

Application	Part Number
FSMA Connectors	501276-1
Simplex Connectors	501277-1
2.5 mm Bayonet Connector	501776-1

Polishing Disks (for Polishing Machine)

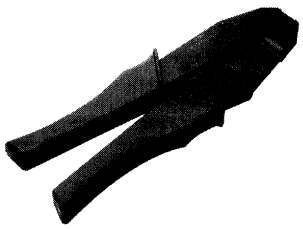
Use With Connector	No. of Conn. Polished/ Box	Description/ Polish No.	No. of Sheets/ Box	Part Number
FSMA	50	9 µm/1	50	501188-2
Simplex	200	1 µm/2	50	501188-4
(Optional)	200	0.3 µm/3	50	501188-5
Assortment Pack[1]	—	—	—	501188-6
2.5 mm Bayonet	50	5 µm/1	50	501188-7
(ST-Style)		1 µm/2	50	501188-8
(Optional)		0.3 µm/3	50	501188-5

[1]Assortment Pack contains 17 sheets of each of **Part Numbers 501188-2,-4,-5**

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Unless otherwise specified, all dimensions are in millimeters.

Hand Tools

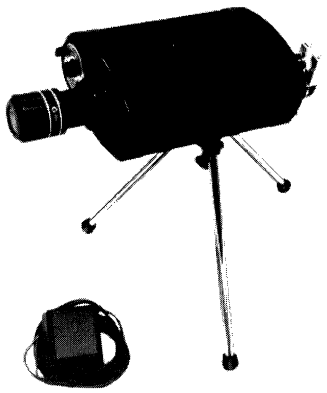


Economy Tool

OPTIMATE Tool

Use With Connectors	Cable Jacket Diameter	OPTIMATE Hand Tool Part Numbers			Economy Hand Tool Part Numbers	
		Tool	Front Die Set	Rear Die Set	Tool	Die Set
FSMA I FSMA II Simplex	3.0 mm	58190-5	Included with Tool	312831-1	501257-1	Included with Tool
		58190-6	58291-1	312831-1	220190-1	501295-1
FSMA I FSMA II Simplex	3.8 mm	58190-5	Included with Tool	312831-2	—	—
		58190-6	58291-1	312831-2	—	—
FSMA I FSMA II Simplex	4.4 mm	58190-5	Included with Tool	312831-3	—	—
		58190-6	58291-1	312831-3	—	—
2.5 mm Bayonet 2.0 mm Threaded 2.5 mm Threaded AMP SC	3.0 mm	58190-6	58289-1	—	220190-1	58299-1
FSD	DUALAN and Light Duty Dual	58190-6	58393-1	—	220190-1	58397-1
FSD Breakout Kit	DUALAN and Protection Kit	58190-6	58393-1 58404-1	— —	220190-1	58397-1 58409-1

Inspection Microscope Kit
Part No. 501196-5 (110 V)
Part No. 501196-7 (220 V)

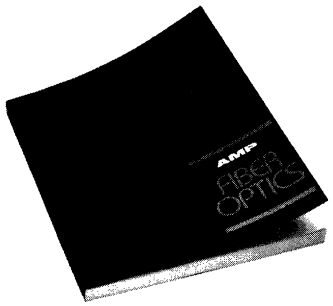


The Inspection Microscope is designed specifically for visual examination of terminated or cleaved ends of singlemode and multimode fibers in both field and laboratory applications. This portable, hand-held unit provides 100-power magnification for optimum detection of flaws. It operates on 120 VAC or battery power (AC adapter is included).

The complete microscope kit includes a handy carrying case, tripod stand, AC adapter and all adapters needed to inspect the following connectors:

- FSMA
- 2.5 mm Bayonet (ST-Style)
- 2.5 mm Threaded
- 2.0 mm Threaded
- FSD Connector
- Simplex
- Biconic

Technician's Guide to Fiber Optics by Donald J. Sterling, Jr. Publication 82118[1]



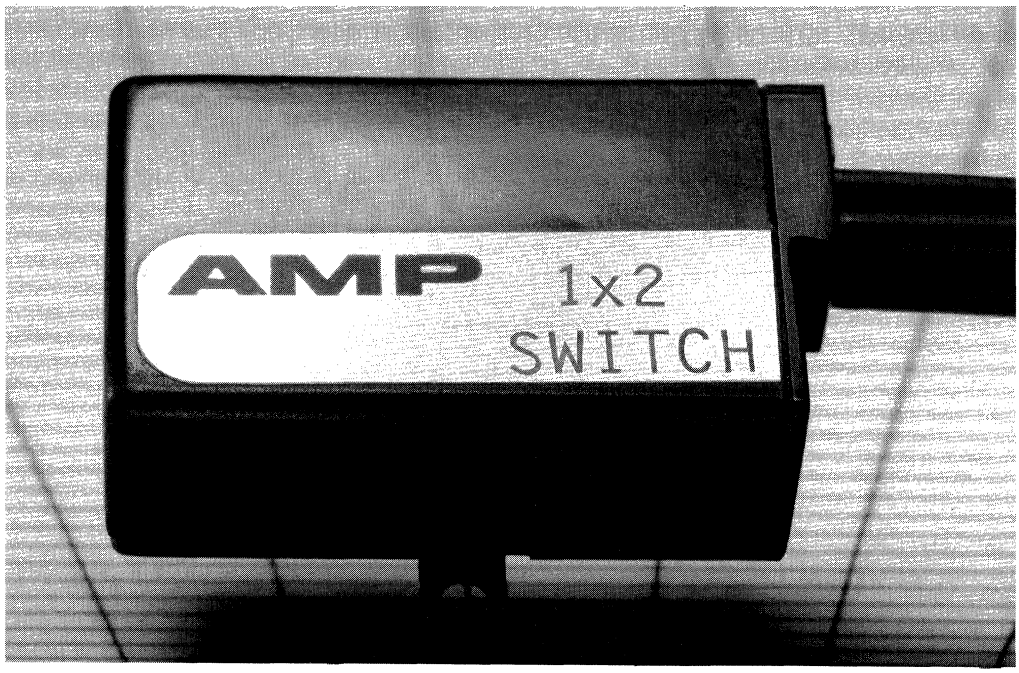
An excellent introductory and intermediate level fiber optic text, this informative book covers the fundamentals of data transmission, fiber theory, fiber characteristics, sources and detectors, connectors and splice products, and other fiber optic components.

[1]Call AMP Product Information Center 1-800-522-6752.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Fiber-Optic Switches, 1 x 2, SPDT, Low Profile Latching and Nonlatching



Applications

- Redundant circuitry
- Multiple sources
- Multiple users
- Bench testing

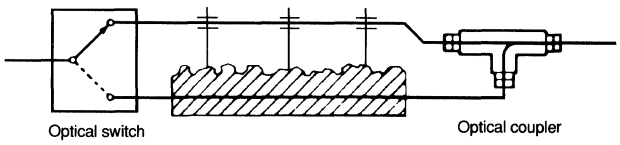
Single-pole, double-throw (SPDT) switches are ideal for fiber-optic communication links with back-up lines. The switches permit the transfer of optic signals from an input fiber to either of two output fibers without significant loss. Switching typically occurs within 5 milliseconds of actuation, 10 milliseconds, maximum.

These miniature switches are well suited to printed circuit board mounting. Each port of a standard switch has a 1-meter pigtail of graded-index fiber. A 3-millimeter jacket or a light-duty loose tube buffer is available. All switches can be terminated with any of the broad line of OPTIMATE fiber optic connectors.

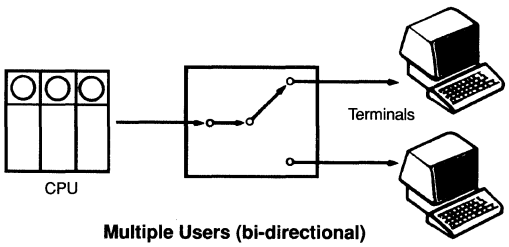
Non-latching switches are activated when a 5 Vdc signal is applied to the positive terminal. The switch reverts to its original state when power is removed. Latching switches have a latching relay that holds the switch in either selected position as shown at right.

A dual 1 x 2 switch is also available.

System Applications

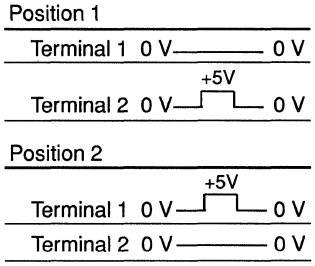


Redundant Circuit



Multiple Users (bi-directional)

Typical Switch Pulse (Latching Switch)



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- AMP Authorized Distribution Locations

or call the AMP Product Information Center: **1-800-522-6752.**

KAPTRON
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Fiber-Optic Switches, 1 x 2, SPDT, Low Profile Latching and Nonlatching

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part Numbers

To determine a part number select a base part number that describes the desired switch style. Add dash-number prefix and/or suffix from the dash number table to specify fiber size.

Specifications:

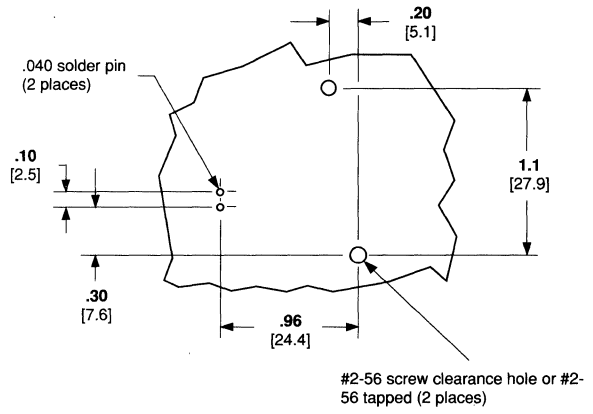
Configuration:	Single-pole, double-throw (1 x 2)
Switching speed:	5 milliseconds typical 10 milliseconds maximum
Minimum Pulse Duration (Latching):	10 milliseconds minimum
Operating wavelength:	750-1400 nanometers
Insertion loss at 1300 nm:	.5 dB typical, .8 dB max. per FOTP-34 Method B (long launch) .8 dB typical, 1.1 dB max. per FOTP-34 Method A (short launch)
Crosstalk:	55 dB min.
Switch Driver:	5 V at 80 mA max. 12 V option available
Fiber types:	Graded index 50/125, 62.5/125, 100/140 (others available upon request)
Lead length:	1 meter
Temperature range:	-10°C to +65°C
Vibration tolerance:	15 Gs on 3 axes
Physical Shock:	30 Gs on 3 axes
Connector styles:	FSMA (905,906 style), 2.5 mm Bayonet (ST-Style), 2.5 mm threaded (others available upon request)
Electrical interface:	Bent pins for PCB soldering, straight pins for soldering or AMP modular connector

Base Part Numbers

Style	Electrical Interface	Connector	1.2 mm Loose Tube	3 mm Jacket
Latching	Bent Pin	None	99400	99401
		2.5 mm Bayonet	99412	99413
	Straight Pin	None	99418	99419
		2.5 mm Bayonet	99424	99425
Non-Latching	Bent Pin	None	99402	99403
		2.5 mm Bayonet	99414	99415
	Straight Pin	None	99420	99421
		2.5 mm Bayonet	99426	99427

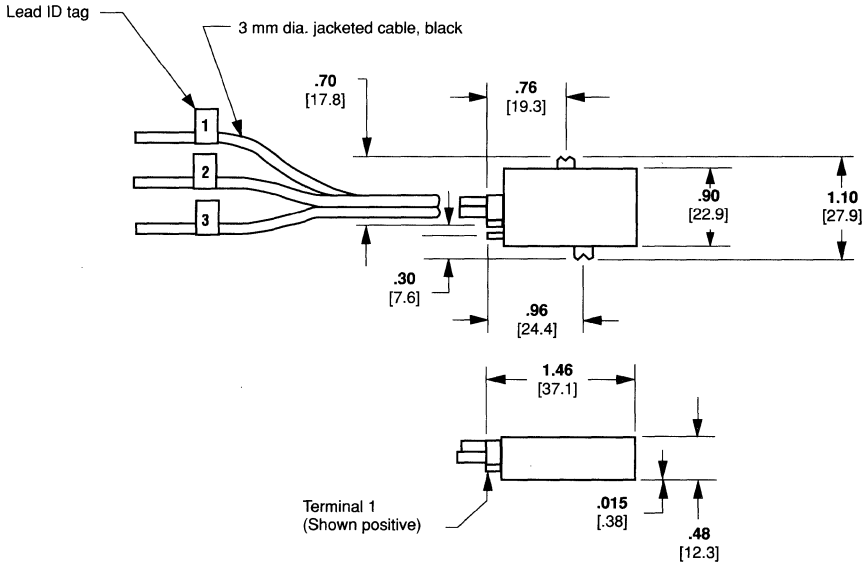
Dash Numbers

Fiber Size (µm)		
50/125	62.5/125	100/140
-1	-2	-3



Mounting Specifications

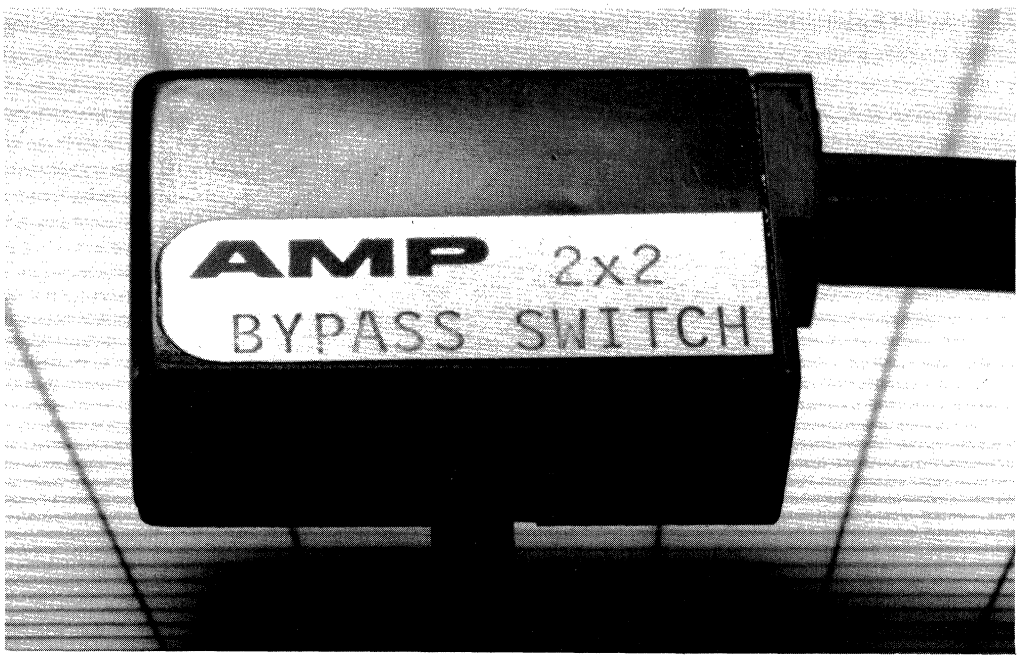
Dimensions



FDDI, Low Profile, 2 x 2 Fully Reversing Bypass Switches

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



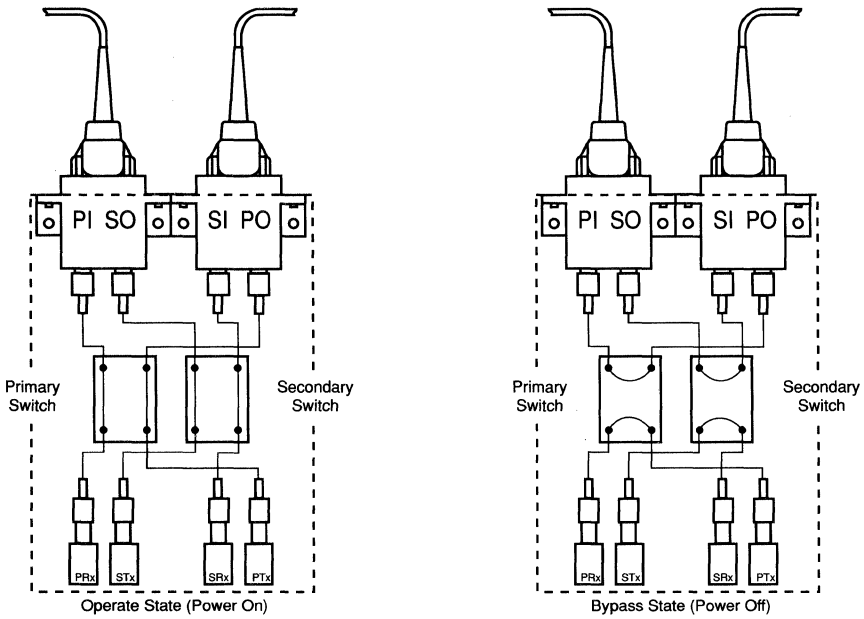
Applications

- Logical Ring Networks
- FDDI Installations

Fully reversing FDDI bypass switches provide bypass protection for token-passing, fiber-optic ring networks per IEEE 802.5 and ANSI FDDI standards. The switches permit bypassing of faults in the LAN ring. A "self-test path" permits testing the node's transmitter against its receiver when the switch is in the bypass mode. It is attenuated to prevent saturation of the receiver while maintaining minimal light loss in the bypass state.

These miniature switches are well suited to printed circuit board mounting. Each port of a standard switch has a 1-meter pigtail of graded-index fiber. A 3-millimeter jacketing and a light-duty loose tube buffer are available. All switches can be terminated with any of the broad line of OPTIMATE fiber optic connectors.

Switching is accomplished by a slight pivoting of a spherical mirror, which reflects the optical signal to the appropriate output port. This patented imaging technology achieves the lowest optical losses possible.



FDDI Application Schematic

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- Catalogs
- Technical Documents
- AMP Authorized Distribution Locations

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KAPTRON
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FDDI, Low Profile, 2 x 2 Fully Reversing Bypass Switches

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part Numbers

To determine a part number select a base part number that describes the desired switch style. Add dash-number prefix and/or suffix from the dash number table to specify fiber size.

Specifications:

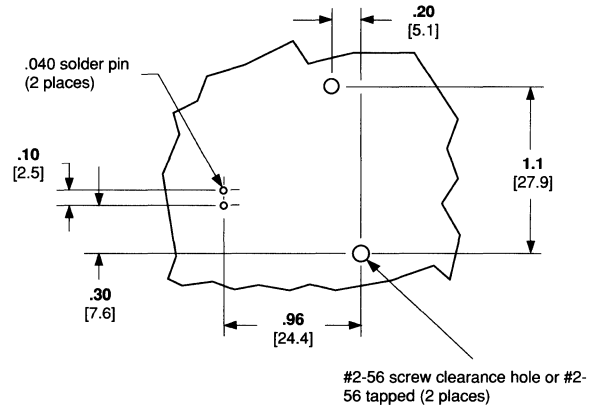
Configuration:	Fully reversing bypass (2 x 2)
Switching speed:	5 milliseconds typical 10 milliseconds max.
Operating wavelength:	750-1400 nm
Insertion loss at 1300 nm:	.5 dB typical, .8 dB max. per FOTP-34 Method B (long launch) .8 dB typical, 1.1 dB max. per FOTP-34 Method A (short launch) 1- 5 dB on loopback path. (other ranges available upon request)
Crosstalk:	55 dB min.
Switch Driver:	5 V at 80 mA max.
Fiber types:	Graded index 50/125, 62.5/125, 100/140 (others available upon request)
Lead length:	1 meter
Temperature range:	-10°C to +65°C
Vibration tolerance:	15 Gs on 3 axes
Physical Shock:	30 Gs on 3 axes
Connector styles:	FSMA (905,906 style), 2.5 mm Bayonet (ST-Style), 2.5 mm threaded (others available upon request)
Electrical interface:	Bent pins for PCB soldering, straight pins for soldering or AMP modular connector

Base Part Numbers

Electrical Interface	Connector	1.2 mm Loose Tube	3 mm Jacket
Bent Pin	None	99404	99405
	2.5 mm Bayonet	99416	99417
Straight Pin	None	99422	99423
	2.5 mm Bayonet	99428	99429

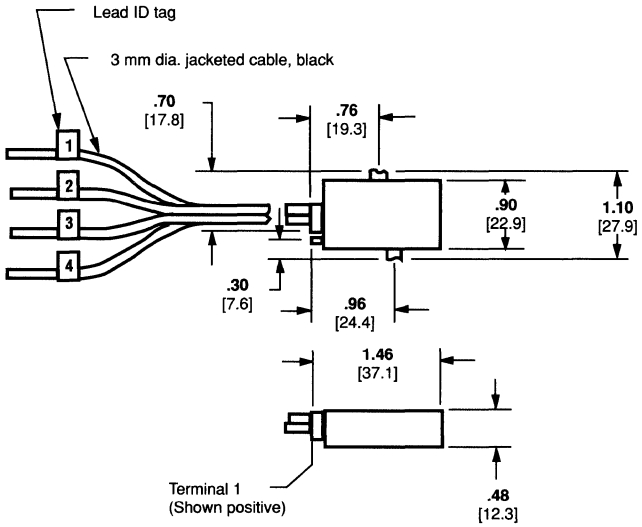
Dash Numbers

Fiber Size (µm)		
50/125	62.5/125	100/140
-1	-2	-3



Mounting Specifications

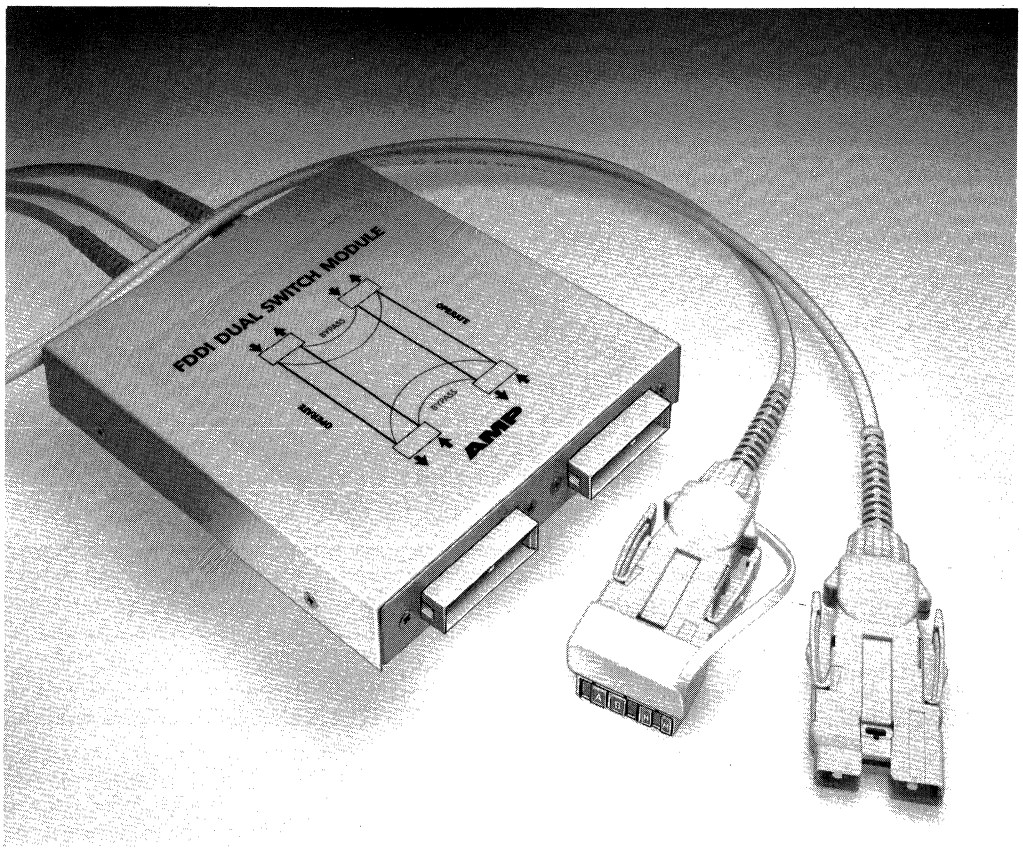
Dimensions



FDDI Dual Bypass Switch Module

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



Application

- FDDI Fiber Optic Network

The FDDI switch module makes it convenient to bypass a station on a dual ring Fiber Distributed Data Interface network without losing the integrity of either ring of the network. Two fully reversing bypass switches, terminated with FDDI connectors (other optical connectors are available), are incorporated in the module's 5[127] x 5.5[139.7] x .93[23.62] metal case.

Optical switching is accomplished by a slight, high speed motion of a spherical mirror that minimizes optical losses. Holding the switches in the operational state requires 4 to 5.5 Vdc. 160 mA., max. When power is removed, both switches return to the bypass position. Switching occurs in less than 10 ms.

The bypass path between the transmitter and receiver is attenuated to prevent saturation of the receiver.

The module is easy for the user to install between a dual attach station and an FDDI ring. FDDI fixed-shroud duplex connectors on the module plug into the network ports; connectors from the station plug into the module; power is supplied through one of five standard electrical connectors. In place, the module becomes part of the network cabling and allows removal of the station without disrupting operation of the ring network.

Part Numbers

501916-2 (with shielded 6-pin DIN connector)

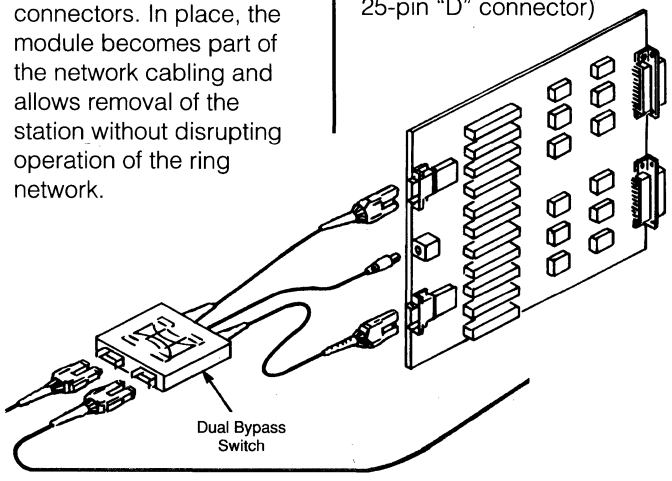
501916-1 (with 6-pin MTE receptacle connector)

501916-3 (with shielded 6-pin modular plug)

501916-6 (with shielded 6-pin Mini-DIN connector)

502238-1 (with shielded 25-pin "D" and EMI filter)

502238-3 (with shielded 25-pin "D" connector)



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- AMP Authorized Distribution Locations

or call the AMP Product Information Center: **1-800-522-6752.**

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FDDI Dual Bypass Switch Module

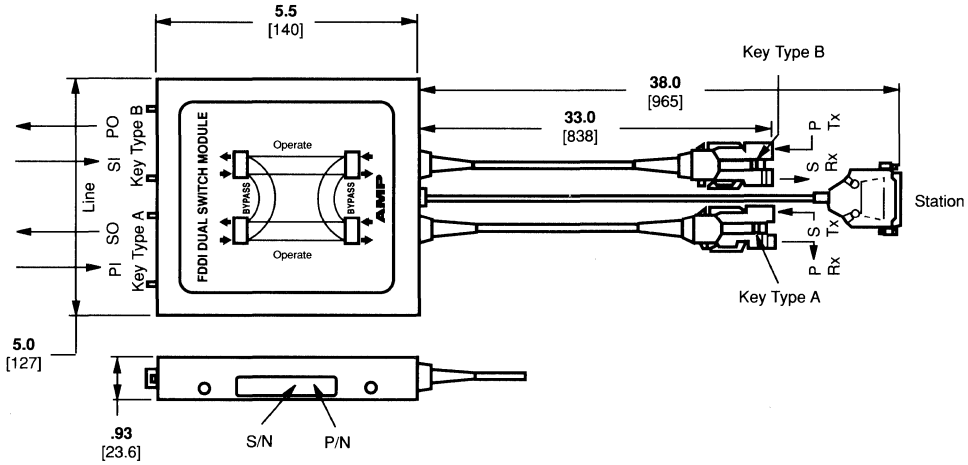
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

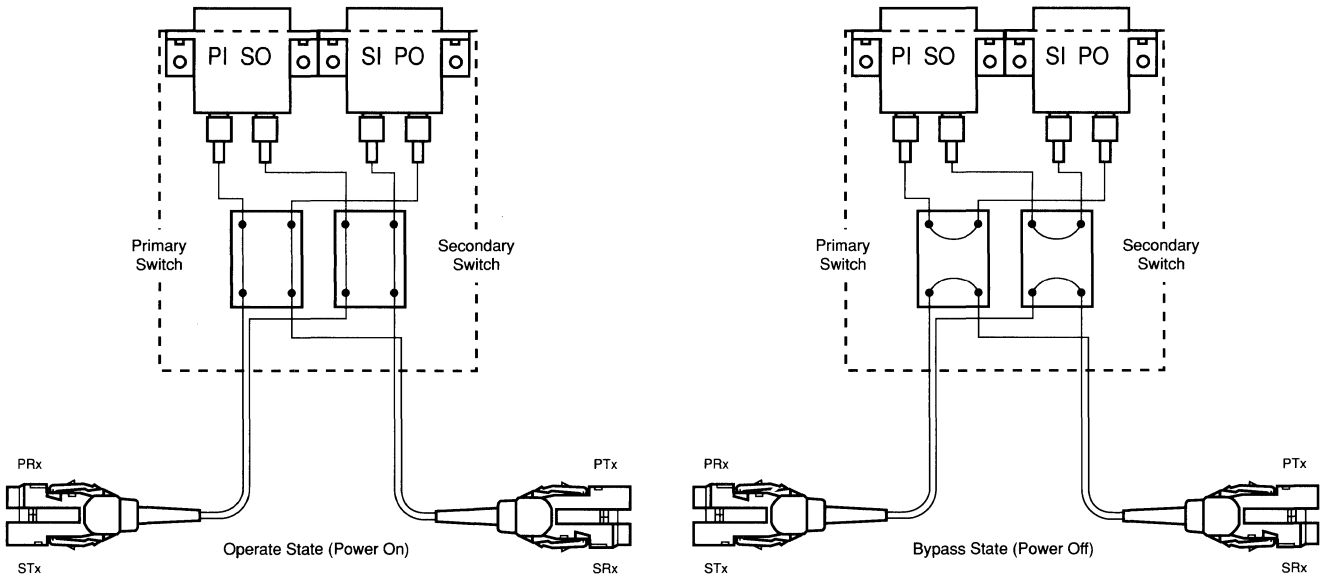
Specifications:

Switching speed:	5 milliseconds typical 10 milliseconds max.
Operating wavelength:	750-1400 nm
Insertion loss at 1300 nm including 1 connector pair:	1.1 dB typical, 1.8 dB max. per FOTP-34 Method B (long launch) 1.4 dB typical, 2.1 dB max. per FOTP-34 Method A (short launch) 1- 5 dB on loopback path. (other ranges available upon request)
Crosstalk:	55 dB min.
Switch Driver:	5 V at 80 mA max.
Fiber types:	Graded index 50/125, 62.5/125
Temperature range:	-10°C to +65°C
Vibration tolerance:	15 Gs on 3 axes
Physical shock:	30 Gs on 3 axes

Dimensions



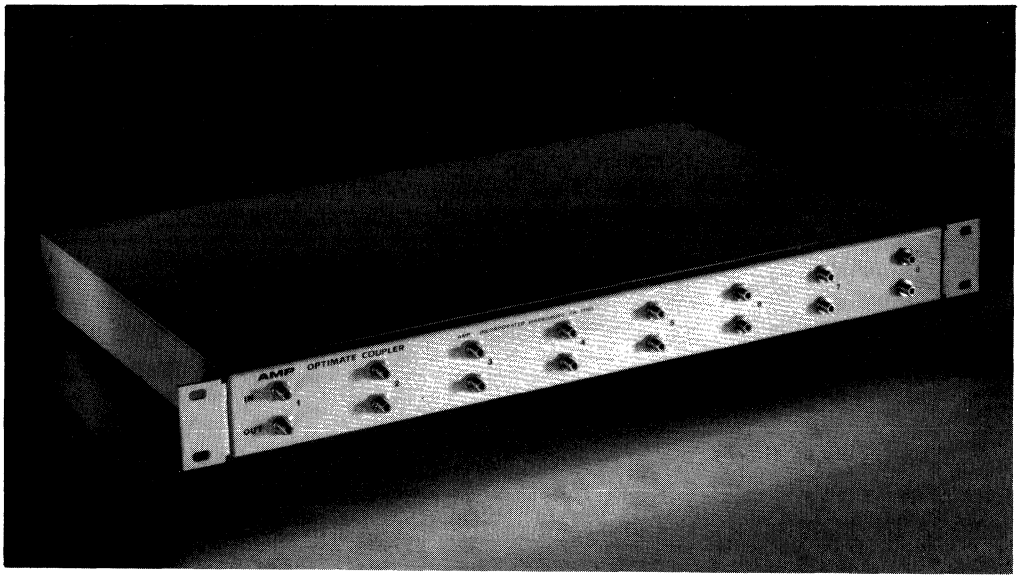
FDDI Schematic



Multimode Couplers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



Multimode, bi-directional couplers split and combine light from fibers without significant loss. These branching devices are used in applications of optical busses, communication and local area networks, and test/sensor systems.

Miniature couplers are available for configurations from 1 x 2 to 8 x 8. Heavy duty packages are available for 1 x 2 and 2 x 2 couplers. Larger, heavy-duty packages are available for larger configurations. Couplers can be supplied with any of a broad range of fiber pigtails, connectors and chassis types.

Consult KAPTRON for part numbers for mini metal enclosure couplers, compact enclosure couplers and other versions not specified.

Fiber Pigtail Options

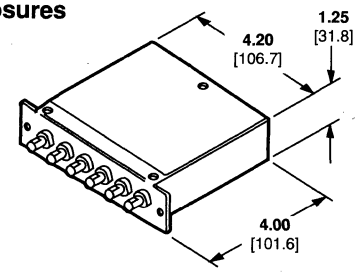
Medium duty—500 µm buffered fiber or .05[1.2] loose tube buffers.

Heavy duty—.12[3] OD cable, 16 x 16 max.

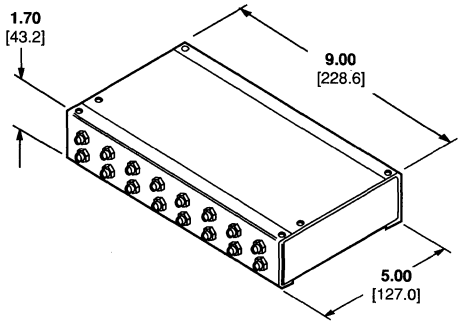
Fibers—50/125; 62.5/125; 85/125; 100/140; other types available

Metal Enclosures

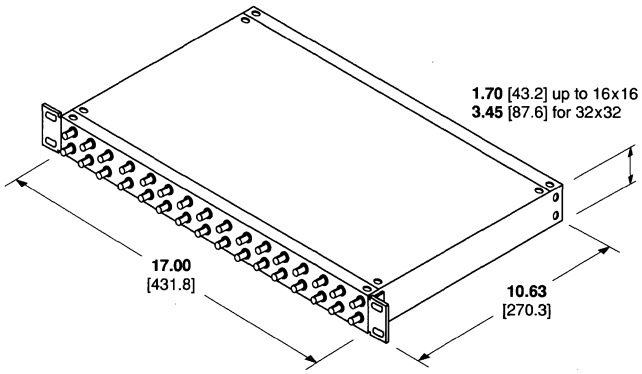
Mini Metal



Compact Star Coupler Metal



19-Inch Rack Mount Star Coupler



Packaging/Enclosure Options

- Miniature—for N x M configurations up to 8 x 8
- Heavy duty—2-port package for 1 x 2 and 2 x 2; star package for larger than 2 x 2
- Miniature metal enclosure—up to 6 total ports. Fits AMP distribution enclosures
- Compact metal enclosure—up to 16 x 16
- 19-inch metal rack-mounted enclosure—up to 32 x 32

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Multimode Couplers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part Numbers

To determine a part number, select a base part number that describes the desired coupler style. Add dash-number prefix and/or suffix from the dash number table to specify connectors and/or fiber size.

Coupler with Connectors

Base Part Numbers

Size	Heavy Duty Package: Medium Duty Pigtail 19.7[.5 m] length	Heavy Duty Package: Heavy Duty Pigtail 39.4[1 m] length	19-inch Rack-Mount
1 x 2	—	502324	—
2 x 2	—	502325	—
1 x 4	502424	95013	—
4 x 4	502420	95010	502402
1 x 8	502425	95014	—
8 x 8	502421	95011	502403
1 x 16	502426	95015	—
16 x 16	502422	95012	502404
1 x 32	502427	Not Available	—
32 x 32	502423	Not Available	502405

Dash Numbers

Connector	Fiber Size (µm): 50/125	62.5/125	85/125	100/140
2.5 mm Bayonet (ST-Style)	-8	-3	-9	-4
FSMA I (905-Style)	-13	-11	-14	-12
FSMA II (906-Style)	-5	-1	-6	-2

Other connectors available.

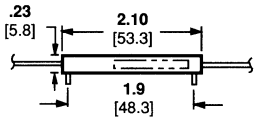
Couplers Without Connectors

Base Part Numbers

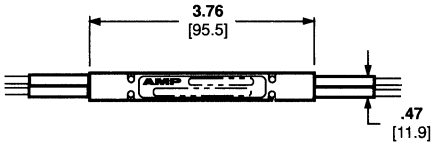
Size	Miniature Package 250 µm buffer 39.4[1 m] length	Heavy Duty Package: Medium Duty Pigtail 19.7[.5 m] length	Heavy Duty Package: Heavy Duty Pigtail 39.4[1 m] length
1 x 2	99432	—	99372
2 x 2	501893	—	99373
1 x 4	99433	501901	501902
4 x 4	99430	501894	501895
1 x 8	99434	501903	501904
8 x 8	99431	501896	501897
1 x 16	Not Available	501905	501906
16 x 16	Not Available	501898	501899
1 x 20	Not Available	501907	Not Available
1 x 32	Not Available	502381	Not Available
32 x 32	Not Available	501900	Not Available

Dash Numbers

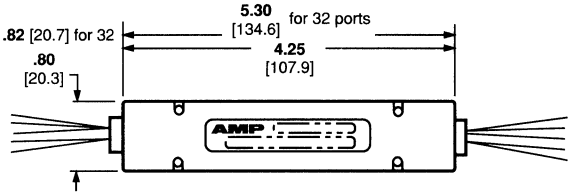
Fiber Size (µm): 50/125	62.5/125	85/125	100/140
-1	-2	-5	-3



Miniature Coupler Package



2-Port Coupler Heavy Duty Package



Star Coupler Heavy Duty Package

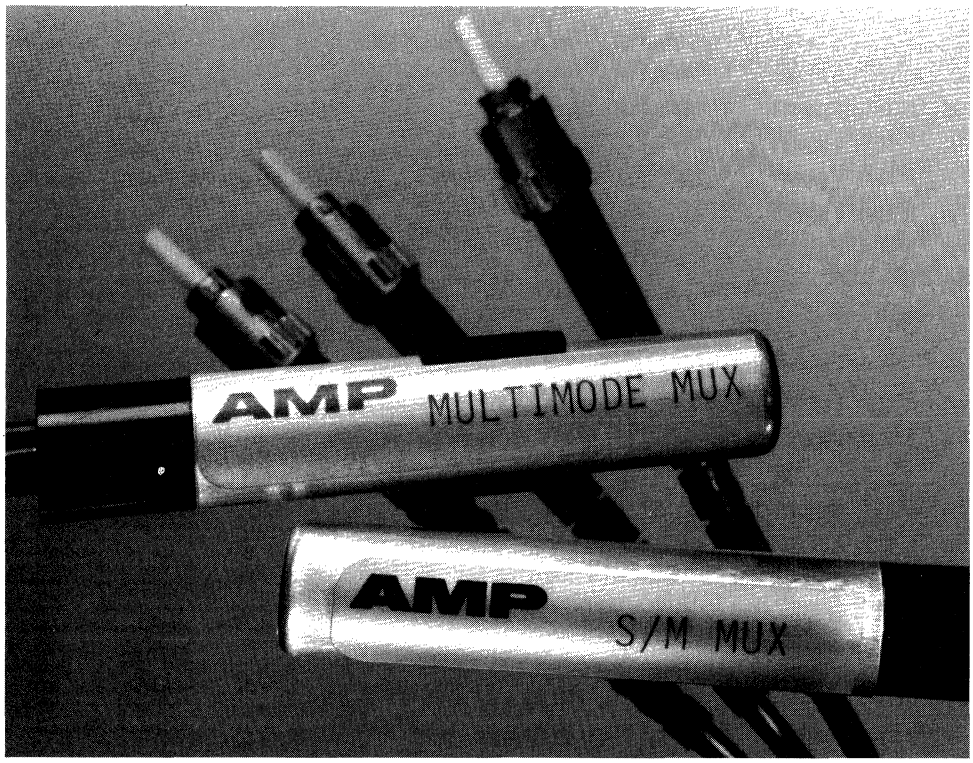
Multimode Coupler Loss and Uniformity

Number of Ports	Maximum Insertion Loss (dB)	Maximum Uniformity (dB)
2 x 2	4.0	0.75
3 x 3	6.5	1.0
4 x 4	8.0	1.0
5 x 5	9.0	1.0
6 x 6	10.0	1.5
7 x 7	11.0	1.5
8 x 8	11.5	1.5
10 x 10	13.0	2.0
12 x 12	14.0	2.0
16 x 16	15.5	2.5
20 x 20	16.5	3.0
24 x 24	17.5	3.0
32 x 32	19.0	3.0
1 x 2	4.0	0.5
1 x 3	6.0	0.75
1 x 4	7.5	1.0
1 x 5	8.0	1.0
1 x 6	9.0	1.0
1 x 7	10.0	1.0
1 x 8	11.0	1.0
1 x 10	12.0	2.0
1 x 12	13.0	2.0
1 x 16	15.0	2.0
1 x 20	15.5	2.5
1 x 24	16.5	2.5
1 x 32	18.0	2.5

Wavelength Division Multiplexers

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



Multiplexers allow use of a single fiber for simultaneous transmission of two signals of different wavelengths (colors). They combine two signals for output onto a single fiber.

Through the use of high-quality dichroic coatings, which act as bandpass filters, numerous wavelength combinations from 400-1600 nm can be accommodated. Unlike fused devices, the pass-band around the central wavelength is ±50 nm which makes these multiplexers ideal for use in broadband communications applications.

The 7/16-inch [11.9] thick encapsulated devices with monolithic lens structures tolerate vibration and shock; their low profile permits easy printed circuit board mounting.

Specifications		Multimode	Singlemode
Isolation:		40dB	40dB
Insertion loss:		1.2 dB max.	1.2 dB max.
Directivity:		-45 dB	-45 dB
Fiber types:		50/125, 62.5/125, 85/125, 100/140 and others	8-10/125
Temperature:	Operating	-40° C to +65° C	-20° C to +60° C
	Storage	-50° C to +75° C	-40° C to +70° C
Weight:		1.5 oz. [42 grams]	1.5 oz. [42 grams]
Wavelengths:		820/1300 nm; 780/890 nm; 1300/1550 nm; 3 and 4 wavelengths available	820/1300 nm; 780/890 nm 1300/1550 nm
Wavelength Passband tolerance:		±50 nm	± 50 nm, typical
Pigtail:		0.5 meter, .12[3] OD cable, tight or loose buffer (others available) Terminations and connectors available on request	0.5 meter, .12[3] OD cable

Applications

- ISDN subscriber loop
- Long-haul telecommunication
- Multichannel video
- Broadband multi-channel communication
- Terminal and telephone communication
- High speed, computer-to-peripheral links
- Two-way, single-fiber CATV links
- CCTV

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Wavelength Division Multiplexers

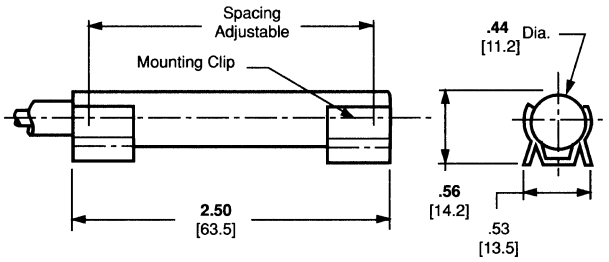
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

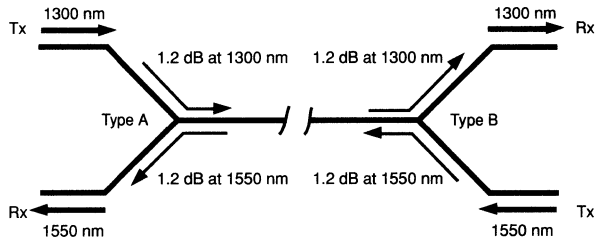
Part Numbers

Fiber	Connector	820/1300 Type A	820/1300 Type B	1300/1550 Type A	1300/1550 Type B
50/125 Multimode	2.5 mm Bayonet (ST-Style)	99100-2	99101-2	99103-2	99104-2
	FSMA I (905 style)	99100-6	99101-6	99103-6	99104-6
	FSMA II (906 style)	1-99100-0	1-99101-0	1-99103-0	1-99104-0
	None	99106-1	99107-1	99109-1	99110-1
62.5/125 Multimode	2.5 mm Bayonet (ST-Style)	99100-3	99101-3	99103-3	99104-3
	FSMA I (905 style)	99100-7	99101-7	99103-7	99104-7
	FSMA II (906 style)	1-99100-1	1-99101-1	1-99103-1	1-99104-1
	None	99106-2	99107-2	99109-2	99110-2
100/140 Multimode	2.5 mm Bayonet (ST-Style)	99100-5	99101-5	99103-5	99104-5
	FSMA I (905 style)	99100-9	99101-9	99103-9	99104-9
	FSMA II (906 style)	1-99100-3	1-99101-3	1-99103-3	1-99104-3
	None	99106-4	99107-4	99109-4	99110-4
9/125 Singlemode	2.5 mm Threaded	99120-2	99121-2	99123-2	99124-2
	2.0 mm Threaded	99120-4	99121-4	99123-4	99124-4
	Biconic	99120-3	99121-3	99123-3	99124-3
	None	99120-1	99121-1	99123-1	99124-1
	AMP SC	99120-5	99121-5	99123-5	99124-5

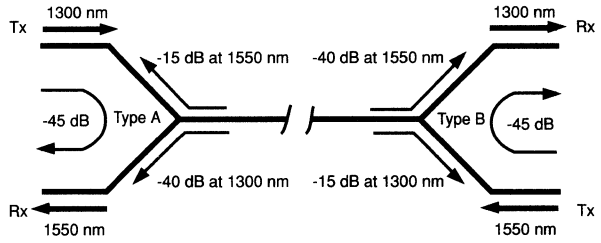
Note: Type A and Type B are used in pairs in bidirectional applications.



Insertion Loss Performance



Crosstalk (Isolation) Performance



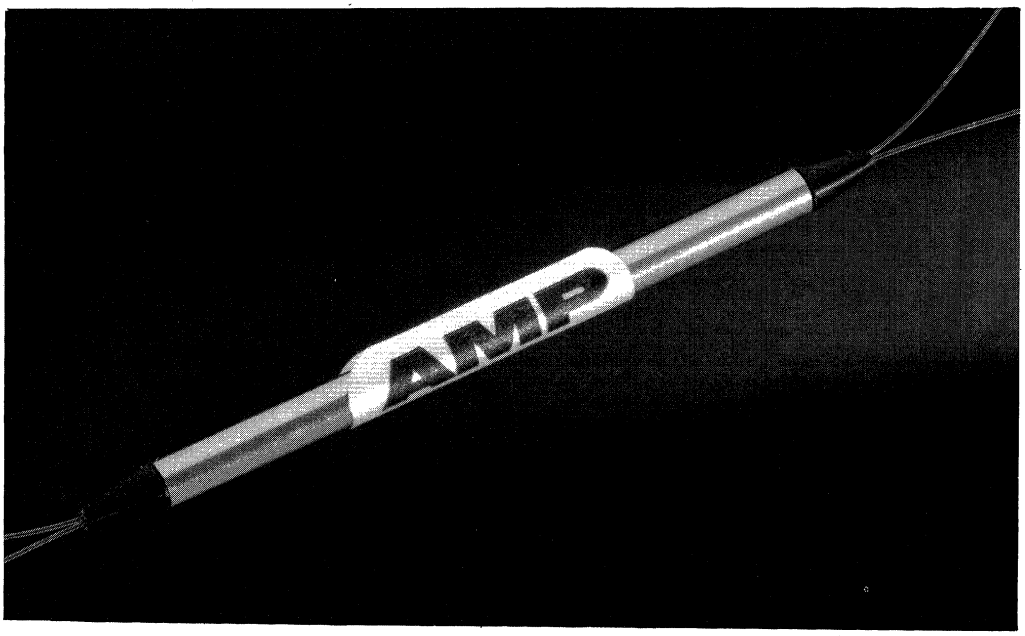
Specifications - Singlemode and Multimode

Performance Characteristics	Type A Measured in Shorter Wavelength Band	Type A Measured in Longer Wavelength Band	Type B Measured in Shorter Wavelength Band	Type B Measured in Longer Wavelength Band
Insertion Loss	-1.2 dB	-1.2 dB	-1.2 dB	-1.2 dB
Far-end Isolation	-40 dB	-15 dB*	-15 dB*	-40 dB
Directivity (near-end crosstalk)	-45 dB	-45 dB	-45 dB	-45 dB
Backreflection	-35 dB	-35 dB	-35 dB	-35 dB

*Crosstalk to opposite wavelength transmitter (negligible optical effect)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Singlemode Wideband Couplers 1310 nm and 1550 nm ± 40 nm 1310/1550 nm ± 40 nm Dual Window



Couplers are available in a wide range of styles and sizes to split and combine light without significant loss. These branching devices are used in applications of subscriber loop, broadband communication networks and test/sensor systems.

1 x 2 and 2 x 2 single-mode couplers are fabricated under full computer control, using fused, biconic taper technology. Available in light duty and rugged packages, couplers can be supplied with a broad range of fiber pigtails, with or without connectors.

Wideband couplers are ideal for broadband communication networks because more services can be accommodated in fibers-to-the-home (FTTH) applications.

The wavelength insensitivity allows for wide tolerance optical sources for lower cost networks. A wide variety of performance grades allows flexibility in choosing the most cost effective coupler for the intended application.

Specifications

Standard coupling ratios: See chart

Optional coupling ratios (±2% max.) 90:10, 70:30

Temperature range:
Operating— -40°C to +85°C
Storage— -50°C to +95°C

Pigtail: Cabled or buffered fiber, 1 meter standard length

Heat age test per EIA-455-4, 85°C
Humidity test per EIA-455-5, 90-95% at +40°C
Thermal shock test per EIA 455-71, -40°C to +85°C
Vibration test per EIA 455-11, 10 to 2000 Hz., 15Gs
Physical shock test per EIA 455-14, 30 Gs

Polarization tolerance: .1 dB max. for Grade A
.15 dB max. for Grades B and C

Directivity: -60 dB

Coupler Grades 1310/1550 ± 40 nm Dual Window

Grade Levels	Coupling Ratio	Typical Excess Loss
A	50 ± 6%	.1 dB loss
B	50 ± 8%	.3 dB loss
C	50 ± 10%	.7 dB loss

Coupler Grades 1310 or 1550 ± 40 nm Single Window

Grade Levels	Coupling Ratio	Typical Excess Loss
A	50 ± 3%	.1 dB loss
B	50 ± 5%	.3 dB loss
C	50 ± 7%	.7 dB loss

Maximum Insertion loss

Wavelength	Grade A	Grade B	Grade C
1310 ± 40 nm	3.4 dB	3.8 dB	4.3 dB
1550 ± 40 nm	3.4 dB	3.8 dB	4.3 dB
1310/1550 ± 40 nm	3.8 dB	4.3 dB	4.8 dB

Applications

- Communication system branching and duplexing (video and sensors)
- CATV
- Subscriber loop
- Taps for signal monitoring
- Test Equipment

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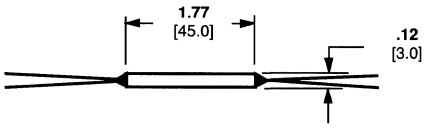
Singlemode Wideband Couplers
1310 nm and 1550 nm ± 40 nm
1310/1550 nm ± 40 nm Dual Window

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

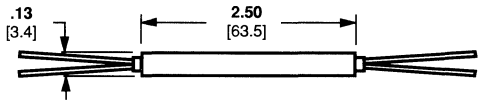
Part Numbers

To determine a part number select a base part number that describes the desired coupler style. Add dash-number prefix and/or suffix from the dash number table to specify connectors.



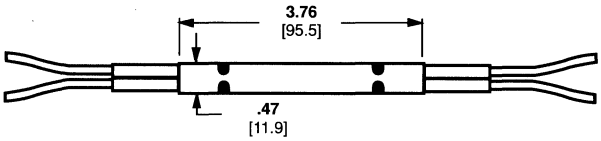
3 mm Package, 250 µm Buffer

Configuration	Band	Grade A	Grade B	Grade C
1x2	1310/1550	99300	99301	99302
	1310	99312	99313	99314
	1550	99324	99325	99326
2x2	1310/1550	99336	99337	99338
	1310	99348	99349	99350
	1550	99360	99361	99362



5 mm Package, 900 µm Loose Tube

Configuration	Band	Grade A	Grade B	Grade C
1x2	1310/1550	99306	99307	99308
	1310	99318	99319	99320
	1550	99330	99331	99332
2x2	1310/1550	99342	99343	99344
	1310	99354	99355	99356
	1550	99366	99367	99368



Heavy Duty Package, 3 mm Cable

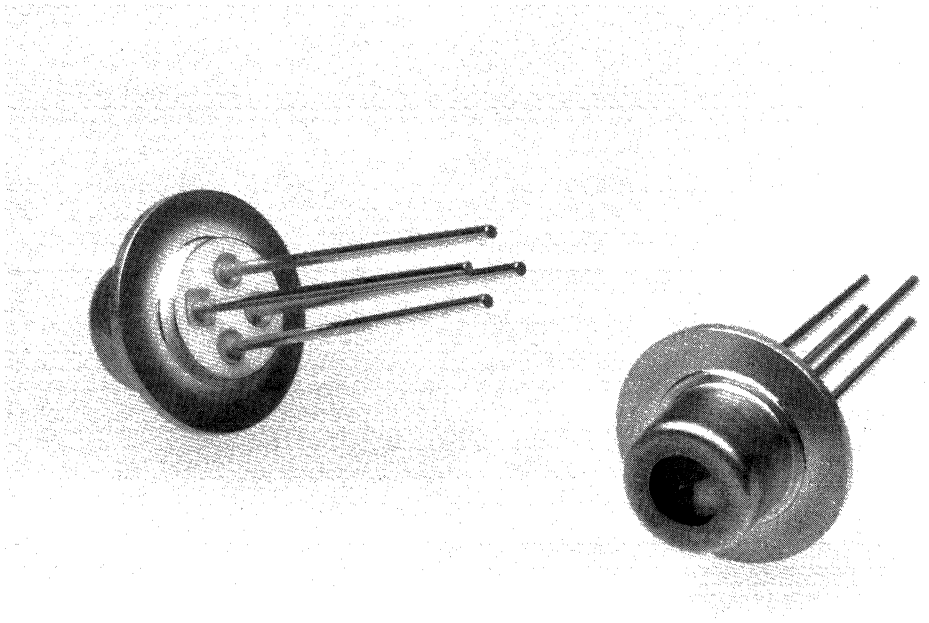
Configuration	Band	Grade A	Grade B	Grade C
1x2	1310/1550	99309	99310	99311
	1310	99321	99322	99323
	1550	99333	99334	99335
2x2	1310/1550	99345	99346	99347
	1310	99357	99358	99359
	1550	99369	99370	99371

Dash Numbers for Connector Option

None	-1
2.5 mm Threaded	-2
2.0 mm Threaded	-3
Biconic	-4
AMP SC	-5

Specifications subject to change.
For latest design specifications...
1-800-522-6752

TO Laser Component



Features

- 1300 nm Wavelength
- Hermetically sealed
- High Speed (565 MB/s)
- InGaAs Monitor Detector
- Four Lead Package

Lytel's TO Laser components incorporate an InGaAsP buried heterostructure laser diode for operation in the long wavelength region of 1300 nm. These components also include an InGaAs monitor photodetector for stable tracking over extended temperatures. The active optical devices are mounted on a ceramic TO-46 4 lead header assembly for increased frequency and reduced noise performance. These elements are hermetically sealed with a TO-18 style large apperature flat window cap. Every device is biased, aged and stressed to ensure the highest degree of reliability and stability.

These laser components are ideal for most single-mode fiber-optic system and test instrument applications.

Specifications at 25°C

Parameter	Symbol	Test Conditions	Units	Min.	Typ.	Max.
OPTICAL						
Output Light Power	P_o	—	mW	—	3	5
Center Wavelength	λ_c	3 mW	nm	1280	1310	1330
Spectral Width with FWHM	$\Delta\lambda$	3 mW	nm	—	—	5
Spectral Shift with Temperature	$\Delta\lambda/\Delta T$	—	nm/°C	—	.4	—
Rise/Fall Times	$T_{R1}T_F$	—	ns	—	.3	—
ELECTRICAL						
Threshold Current	I_{TH}	—	mA	15	20	30
Threshold Dependence with Temperature	—	—	mA/°C	—	.3	—
Differential Efficiency	—	—	mW/mA	.18	—	—
Forward Voltage	V_F	—	V	—	1.3	1.5
Dynamic Resistance	R_{dyn}	—	ohms	—	6	10
Monitor Current with −5V Bias	I_{MON}	3 mW	µA	100	—	750
Monitor Dark Current	Id	−5V	µA	—	—	1
Monitor Capacitance	C_{MON}	−5V	pf	—	15	25

LYTEL
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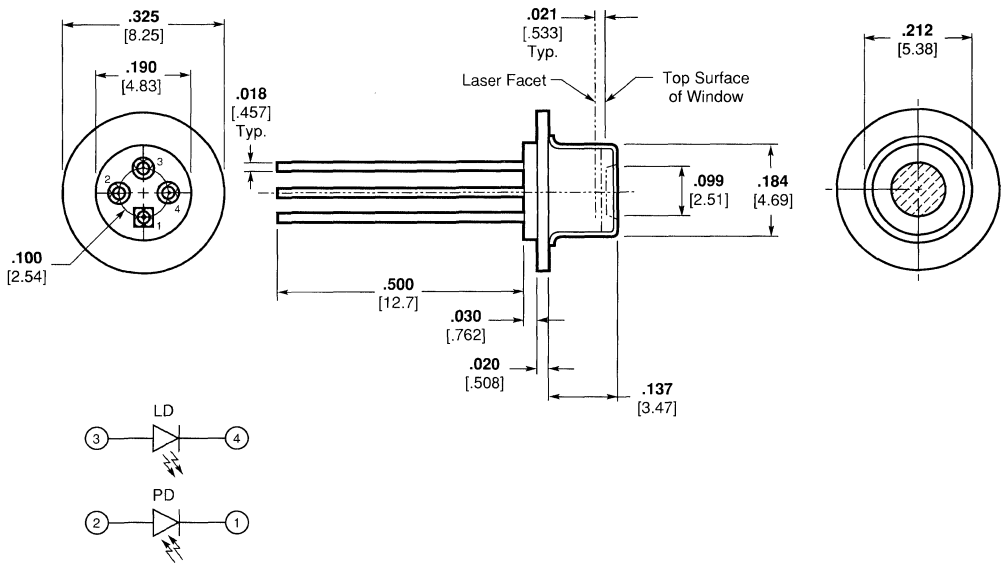
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)

TO Laser Component

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part Numbers
259031–1



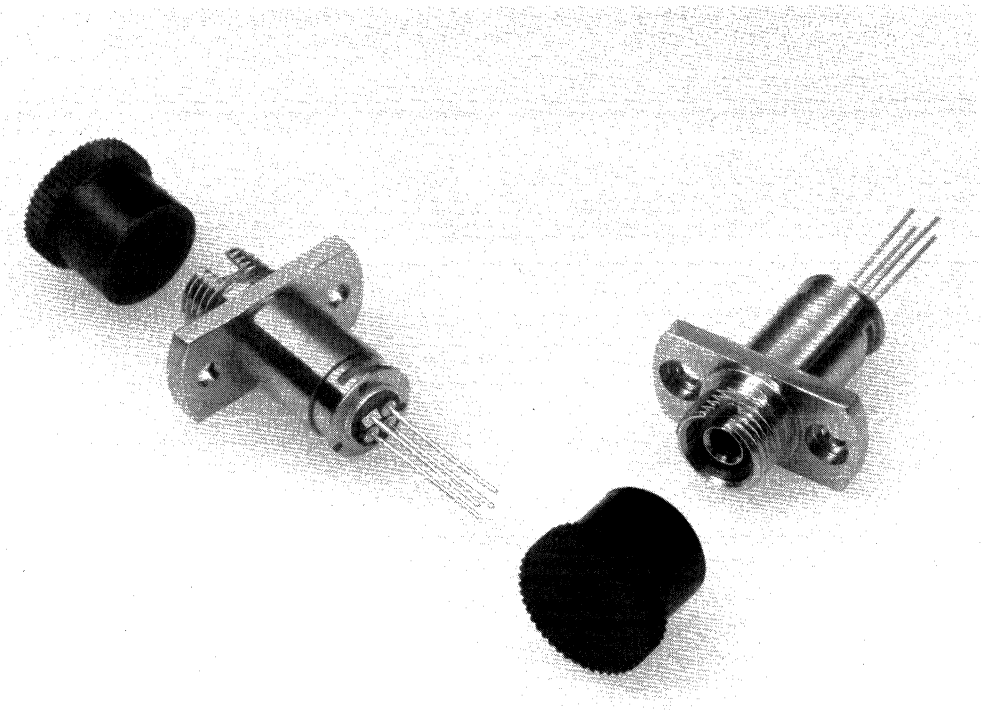
Absolute Maximum Rating

	Symbol	Test Conditions	Units	Min.	Max.
Forward Voltage	V_F	—	V	—	2
Total Drive Current	I_F	—	mA	—	100
Reverse Voltage	V_R	—	V	—	2
Operating Temperature	T_{OPER}	—	°C	−20°	60°
Storage Temperature	T_{STOR}	—	°C	−40°	85°

Other LYTEL products include a full line of Active Device Mounted 1300nm LEDs, InGaAs PIN Photodetectors and 1300nm Connectorized Lasers for Fiber Optic Communications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Minicom Laser Module



Features

- 1300 nm Wavelength
- Hermetically sealed
- FC Connector Interface
- High Speed (565 MB/s)
- InGaAs Monitor Detector
- Four Lead Package

The Minicom Laser module is a connectorized component with a standard FC interface for singlemode fiber applications. The Lytel 259032-1 incorporates a 1300nm InGaAs P buried heterostructure laser diode. The module also includes a InGaAs monitor photodetector for stable tracking over temperature. The electro optical components are hermetically sealed in a TO 46 can and coupled to an advanced optical assembly. Every device is biased aged to ensure the highest degree of reliability and stability.

The Minicom Laser is ideal for most short and medium distance digital loop transmission applications over single mode fiber.

Specifications: 25°C Unless Otherwise Stated

Parameter	Symbol	Test Conditions	Units	Min.	Typ.	Max.
Threshold Current	I_{th}	—	mA	—	20	35
Forward Voltage	V_F	P_o=0.1mW	V	—	1.2	1.5
Forward Current	I_F	P_o=0.1 mW	mA	—	30	50
Optical Output Power	P_o	CW	mW	0.1	0.2	—
Center Wavelength	λ	P_o=0.1mW 0 to 65°C	nm	1280	1310	1340
Rise/Fall Times	T_R,T_F	10–90%	ns	—	0.4	—
Differential Efficiency	ξ	P_o=0.1mW	mW/mA	—	0.015	—
Tracking Error	E_r	0 to 65°C	dB	0.1	0.3	—
Monitor Photocurrent	I_{mon}	P_o=0.1mW	mA	0.1	0.3	—
Photodiode Cap.	C_t	—	pF	—	15	—

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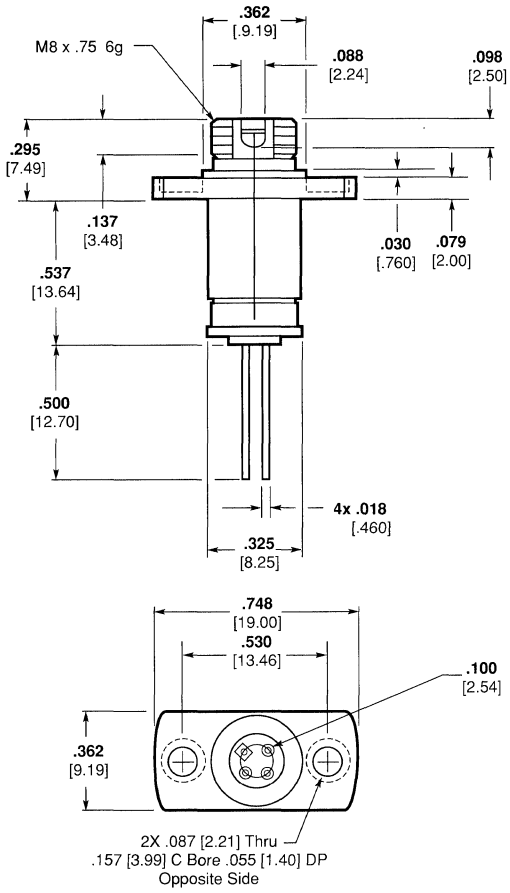
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)

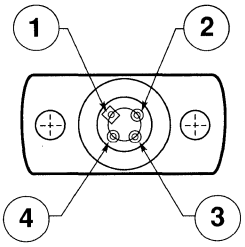
Minicom Laser Module

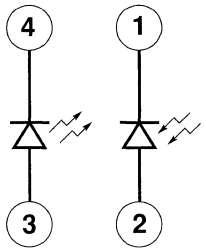
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part Numbers
259032-1







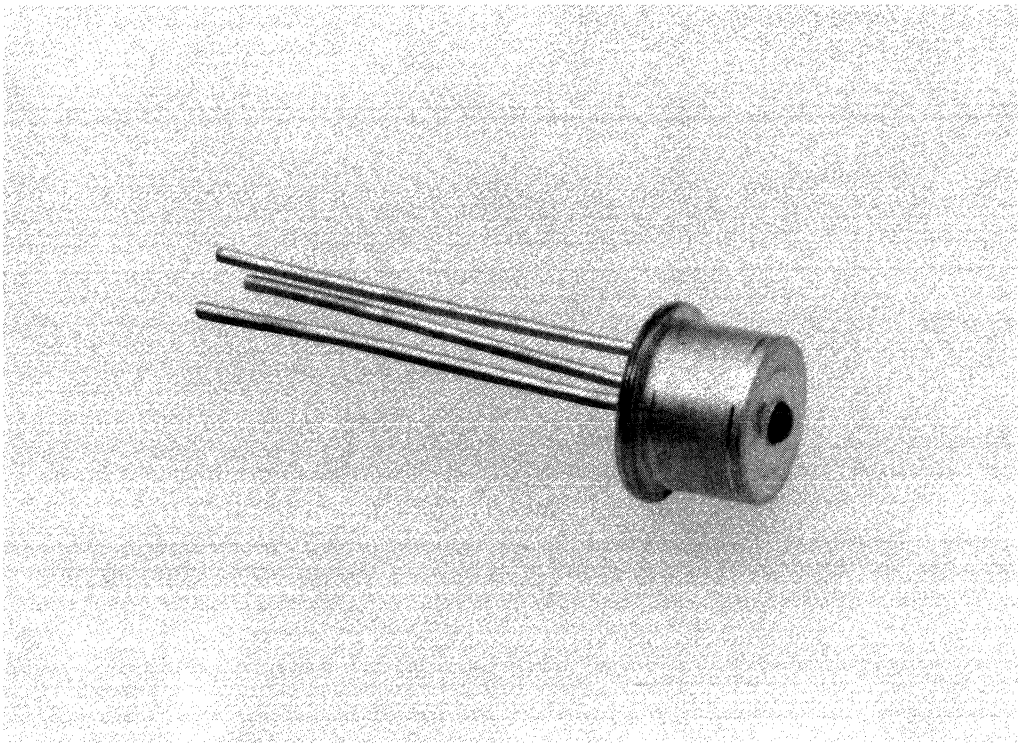
Absolute Maximum Rating

Parameter	Symbol	Test Conditions	Min.	Max.	Units
Optical Output	P_o	CW	—	.4	mW
Forward Current	I_F	—	—	80	mA
Reverse Voltage	V_R	—	—	2	V
Operating Temp.	T_C	—	−20	65	°C
Storage Temp.	T_{STG}	—	−40	85	°C

Other LYTEL products include a full line of Active Device Mounted 1300nm LEDs, InGaAs PIN Photodetectors and 1300nm Connectorized Lasers for Fiber Optic Communications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

TO Package LED



Lytel's InGaAsP SLED products offer high coupled powers for most fiber optic transmission applications. Lytel uses high reliability SLEDs emitting in the long wavelength region of 1300 nm.

Lytel's TO-18 style SLED is hermetically sealed and has been actively aligned and tested for maximum coupled power. Every component delivered has passed extensive high temperature screening to ensure long term reliability.

Specifications: 100mA Forward Current, 25°C

Parameter	Part No. Suffix	Test Conditions	Units	Min.	Typ.	Max.
Coupled power 50 µm fiber	−1	—	µW dBm	15 −18	25 −16	—
62.5 µm fiber	−1	—	µW dBm	30 −15	45 −13	—
50 µm fiber	−2	—	µW dBm	25 −16	35 −14	—
62.5 µm fiber	−2	—	µW dBm	50 −13	75 −11	—
Wavelength Spectral FWHM	—	—	nm nm	1290	— —	1350* 170*
Forward voltage Capacitance Leakage current	—	f=1Mhz, 0V −2V	V pF uA	—	1.4 15	1.7 2
Rise/fall	—	100mA 50% duty cycle 12.5 MHz	ns	—	2.5	4
$\Delta\lambda/\Delta T$ $\Delta P_{out}/\Delta T$	—	−40 to 85°C	nm/°C dB/°C	—	.38 −.03	—
Reliability MTTW	—	−1dB EOL	hrs	—	2.3 x 10_8	—

Note: dBm is rounded to nearest integer value.
*With proper heat sinking applied.

Features

- High coupled power, typically 75 uW into 62.5 um fiber
- High reliability MTTW 2.3 x 10^8 hours
- Wavelength centered at 1320 nm
- −40° to 85°C operating temperature
- Hermetically sealed TO-18 style package installed in industry standard ADMs

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Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)

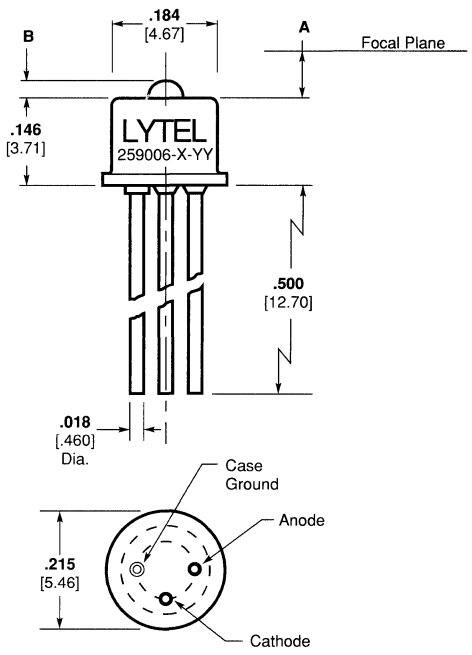
TO Package LED

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Part Numbers

259006–1 — Standard
259006–2 — Premium



Part No. Suffix	A	B
–1	**.081** 2.05	**.026** .660
–2	**.043** 1.09	**.020** .510

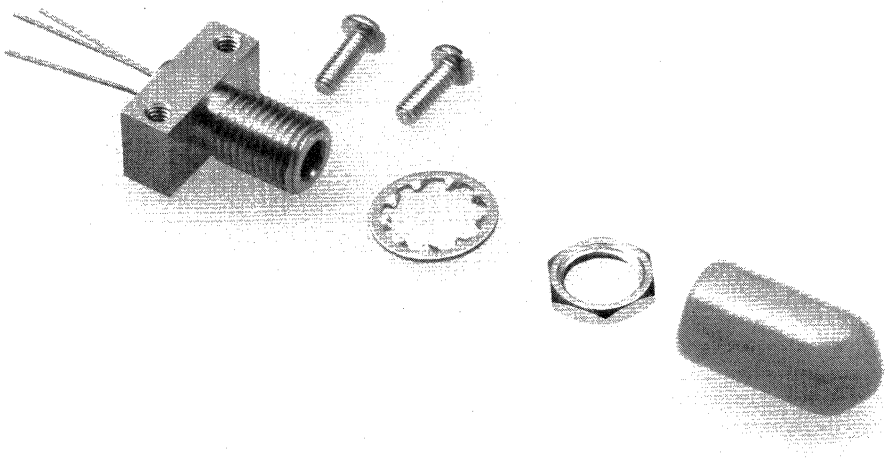
Absolute Maximum Rating

	Units	Min.	Max.
Operating temperature	C	–40	85
Storage temperature	C	–40	125
Reverse voltage	V	—	2
Drive current	mA	—	150

Other LYTEL products include a full line of Active Device Mounted 1300nm LEDs, InGaAs PIN Photodetectors and 1300nm Connectorized Lasers for Fiber Optic Communications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

FSMA
Board Mount LED



Features

- High coupled power, typically 75 uW into 62.5 um fiber
- High reliability MTTW 2.3 x 10^8 hours
- Wavelength centered at 1320 nm
- −40° to 85°C operating temperature
- Hermetically sealed TO-18 style package installed in industry standard ADMs

Lytel's InGaAsP SLED FSMA ADM products offer high coupled powers for digital fiber optic transmission applications. Lytel ADMs use high reliability SLEDs emitting in the long wavelength region of 1300 nm.

Compatible with industry standards, Lytel LED ADMs consist of hermetically sealed TO-18 style SLEDs which have been actively aligned for maximum coupled power. The devices are permanently fixed in place to assure stable performance over all operating conditions.

The FSMA is suitable for both panel/bulkhead and PC board mounting.

Specifications: 100mA Forward Current, 25°C

Parameter	Part No. Suffix	Test Conditions	Units	Min.	Typ.	Max.
Coupled power 50 µm fiber	−1	—	µW dBm	15 −18	25 −16	—
62.5 µm fiber	−1	—	µW dBm	30 −15	45 −13	—
50 µm fiber	−2	—	µW dBm	25 −16	35 −14	—
62.5 µm fiber	−2	—	µW dBm	50 −13	75 −11	—
Wavelength Spectral FWHM	—	—	nm nm	1290	—	1350 170
Forward voltage Capacitance Leakage current	—	f=1Mhz, 0V −2V	V pF uA	—	1.4 15	1.7 2
Rise/fall	—	100mA 50% duty cycle 12.5 MHz	ns	—	2.5	4
$\Delta\lambda/\Delta T$ $\Delta P_{out}/\Delta T$	—	−40 to 85°C	nm/°C dB/°C	—	.38 −.03	—
Reliability MTTW	—	−1dB EOL	hrs	—	2.3 x 10^8	—

Note: dBm is rounded to nearest integer value.

LYTEL
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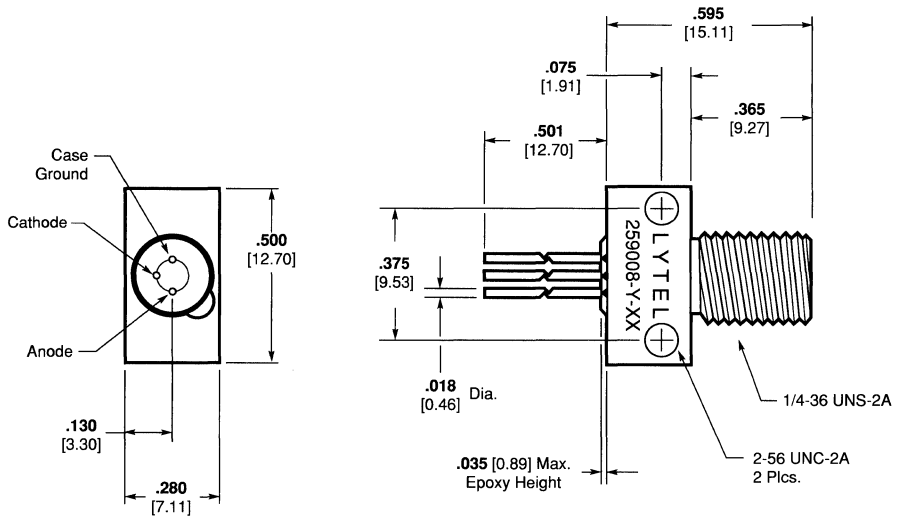
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)

FSMA
Board Mount LED

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part Numbers
259008–1 — Standard
259008–2 — Premium



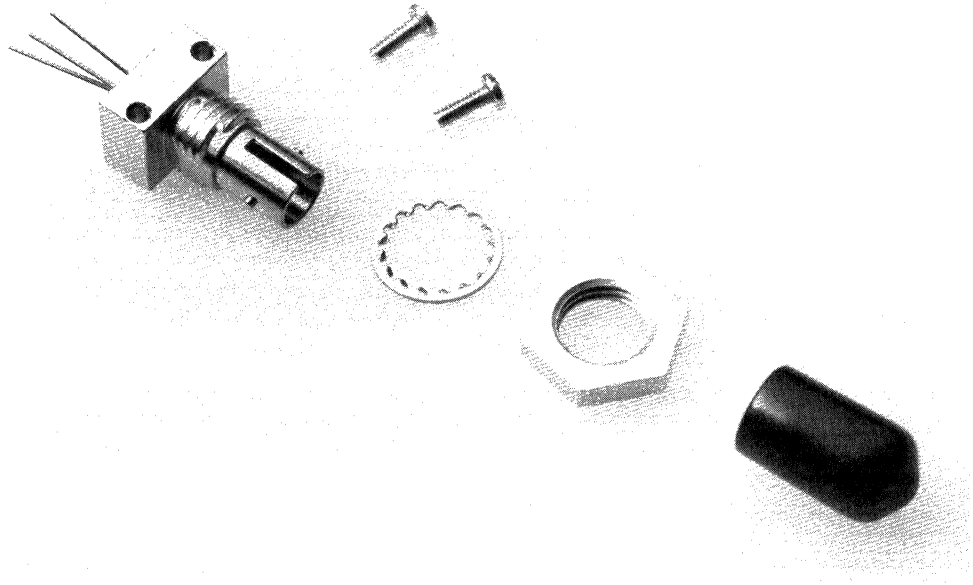
Absolute Maximum Rating

	Units	Min.	Max.
Operating temperature	C	−40	85
Storage temperature	C	−40	125
Reverse voltage	V	—	2
Drive current	mA	—	150

Other LYTEL products include a full line of Active Device Mounted 1300nm LEDs, InGaAs PIN Photodetectors and 1300nm Connectorized Lasers for Fiber Optic Communications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

2.5 mm Bayonet Board Mount LED



Features

- High coupled power, typically 75 uW into 62.5 um fiber
- High reliability MTTW 2.3 x 10^8 hours
- Wavelength centered at 1320 nm
- −40° to 85°C operating temperature
- Hermetically sealed TO-18 style package installed in industry standard ADMs

Lytel's InGaAsP SLED 2.5 mm Bayonet ADM products offer high coupled powers for digital fiber optic transmission applications. Lytel ADMs use high reliability SLEDs emitting in the long wavelength region of 1300 nm.

Compatible with industry standards, Lytel LED ADMs consist of hermetically sealed TO-18 style SLEDs which have been actively aligned for maximum coupled power. The devices are permanently fixed in place to assure stable performance over all operating conditions.

The 2.5 mm Bayonet is suitable for both panel/bulkhead and PC board mounting.

Specifications: 100mA Forward Current, 25°C

Parameter	Part No. Suffix	Test Conditions	Units	Min.	Typ.	Max.
Coupled power 50 µm fiber	−1	—	µW dBm	15 −18	25 −16	—
62.5 µm fiber	−1	—	µW dBm	30 −15	45 −13	—
50 µm fiber	−2	—	µW dBm	25 −16	35 −14	—
62.5 µm fiber	−2	—	µW dBm	50 −13	75 −11	—
Wavelength Spectral FWHM	—	—	nm nm	1290	—	1350 170
Forward voltage Capacitance Leakage current	—	f=1Mhz, 0V −2V	V pF uA	—	1.4 15	1.7 2
Rise/fall	—	100mA 50% duty cycle 12.5 MHz	ns	—	2.5	4
$\Delta\lambda/\Delta T$ $\Delta P_{out}/\Delta T$	—	−40 to 85°C	nm/°C dB/°C	—	.38 −.03	—
Reliability MTTW	—	−1dB EOL	hrs	—	2.3 x 10^8	—

Note: dBm is rounded to nearest integer value.

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Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)

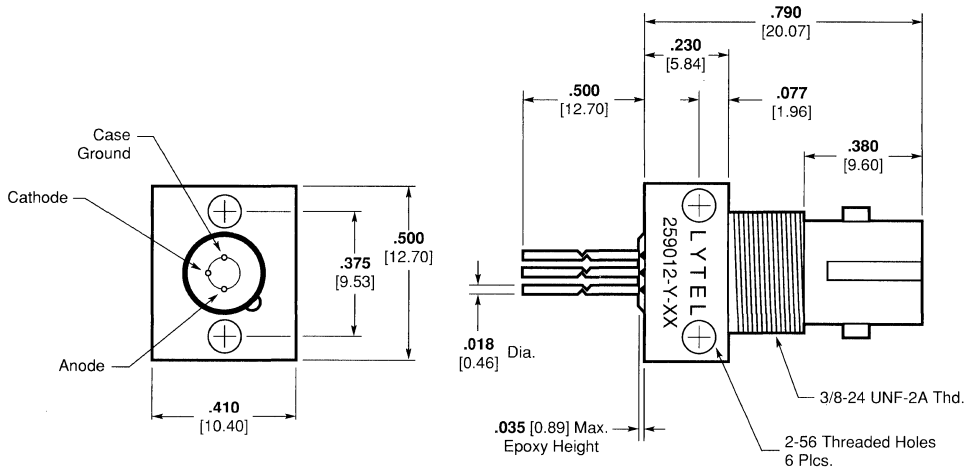
2.5 mm Bayonet Board Mount LED

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part Numbers

259012–1 — Standard
259012–2 — Premium



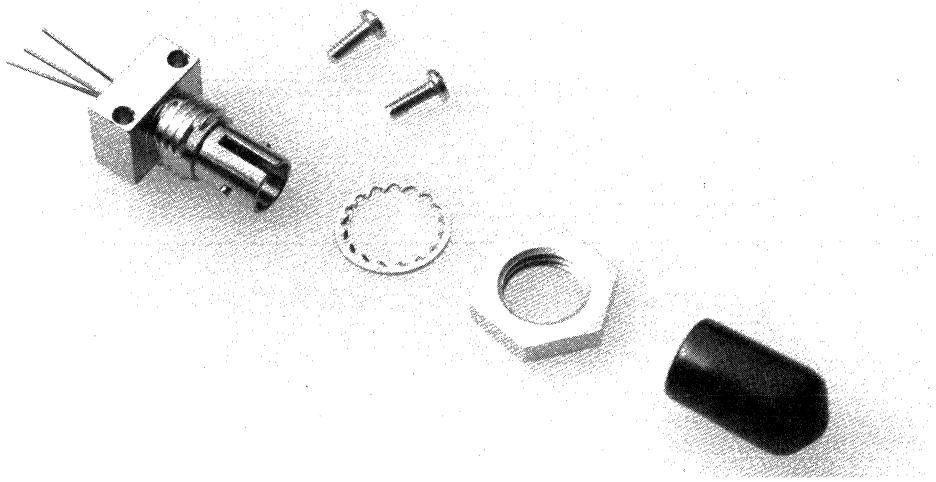
Absolute Maximum Rating

	Units	Min.	Max.
Operating temperature	C	−40	85
Storage temperature	C	−40	125
Reverse voltage	V	—	2
Drive current	mA	—	150

Other LYTEL products include a full line of Active Device Mounted 1300nm LEDs, InGaAs PIN Photodetectors and 1300nm Connectorized Lasers for Fiber Optic Communications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

FDDI
2.5 mm Bayonet
Board Mount LED



Features

- High reliability MTTW 2.3 x 10^8 hours
- Hermetically sealed TO-18 style package installed in industry standard ADMs
- Performance to PMD document

Lytel ADMs incorporate high reliability SLEDs emitting in the long wave length region of 1300nm.

FDDI LED performance is governed by the ANSI X3.166-1990 Physical Layer Medium Dependent (PMD) document. The chart shown below represents Figure 9 from the PMD document. From this chart the required relationships between the rise time/fall time, the center wavelength and the FWHM are indicated. FDDI operating conditions call for a modulated square wave at 12.5 MHz, 50% duty cycle. The coupled power is measured using 62.5 um core fiber.

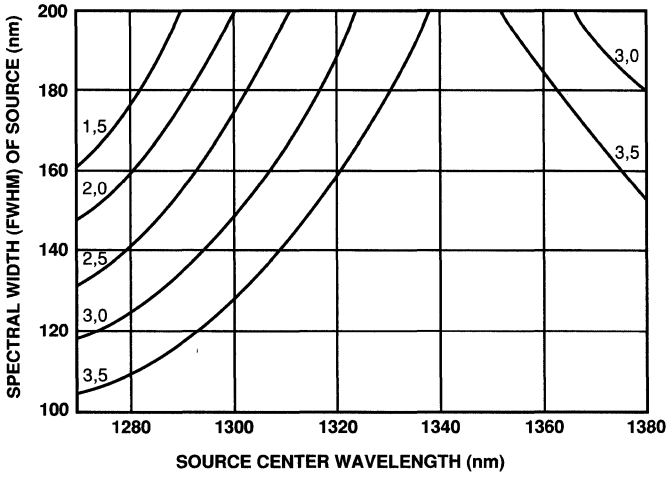
Compatible with industry standards, Lytel's InGaAsP SLED 2.5 mm Bayonet ADM products consist of hermetically sealed TO-18 style SLEDs which have been actively aligned for maximum performance. The devices are permanently fixed in place to assure stable performance over all operating conditions.

The 2.5 mm Bayonet is suitable for both panel/bulkhead and PC board mounting.

Specifications: 12.5 MHz, 50% duty cycle, 0–70°C

Parameter	Part No. Suffix	Test Conditions	Units	Min.	Typ.	Max.
Coupled power 62.5 μm fiber	–3	—	μW dBm	10 –20	—	40 –14
Wavelength	—	See chart below	nm	1270	—	1380
Spectral FWHM	—	See chart below	nm	—		200
Forward voltage	—	—	V	—	1.4	1.7
Capacitance	—	f=1Mhz, 0V	pF	—	15	—
Leakage current	—	–2V	uA	—	—	2
Rise/fall	—	See chart below	ns	.6	—	3.5
$\Delta\lambda/\Delta T$	—	0–70°C	nm/°C	—	.5	—
$\Delta P_{out}/\Delta T$			dB/°C		–.04	
Reliability MTTW	—	–1dB EOL	hrs	—	2.3×10^8	—

Note: dBm is rounded to nearest integer value.



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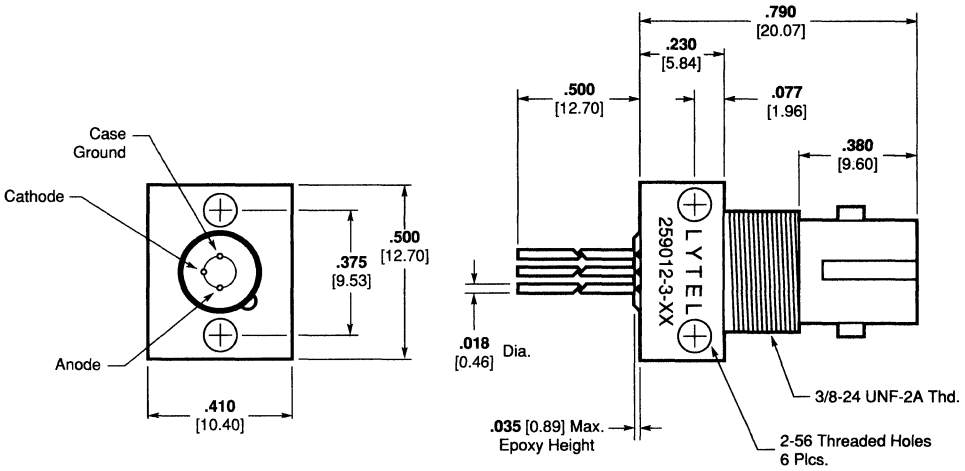
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)

2.5 mm Bayonet Board Mount LED

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part Numbers
259012–3— FDDI



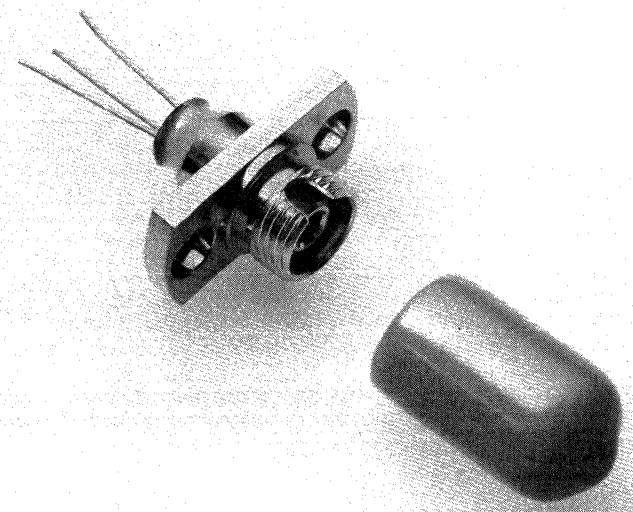
Absolute Maximum Rating

	Units	Min.	Max.
Operating temperature	C	0	70
Storage temperature	C	−40	125
Reverse voltage	V	—	2
Drive current	mA	—	150

Other LYTEL products include a full line of Active Device Mounted 1300nm LEDs, InGaAs PIN Photodetectors and 1300nm Connectorized Lasers for Fiber Optic Communications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

FC/PC
Board Mount LED



Features

- High coupled power, typically 75 uW into 62.5 um fiber
- High reliability MTTW 2.3 x 10^8 hours
- Wavelength centered at 1320 nm
- −40° to 85°C operating temperature
- Hermetically sealed TO-18 style package installed in industry standard ADMs

Lytel's InGaAsP SLED FC/PC ADM products offer high coupled powers for digital fiber optic transmission applications. Lytel ADMs use high reliability SLEDs emitting in the long wavelength region of 1300 nm.

Compatible with industry standards, Lytel LED ADMs consist of hermetically sealed TO-18 style SLEDs which have been actively aligned for maximum coupled power. The devices are permanently fixed in place to assure stable performance over all operating conditions.

The FC/PC is suitable for both panel/bulkhead and PC board mounting.

Specifications: 100mA Forward Current, 25°C

Parameter	Part No. Suffix	Test Conditions	Units	Min.	Typ.	Max.
Coupled power 50 µm fiber	−1	—	µW dBm	15 −18	25 −16	—
62.5 µm fiber	−1	—	µW dBm	30 −15	45 −13	—
50 µm fiber	−2	—	µW dBm	25 −16	35 −14	—
62.5 µm fiber	−2	—	µW dBm	50 −13	75 −11	—
Wavelength Spectral FWHM	—	—	nm nm	1290	—	1350 170
Forward voltage Capacitance Leakage current	—	f=1Mhz, 0V −2V	V pF uA	—	1.4 15	1.7 2
Rise/fall	—	100mA 50% duty cycle 12.5 MHz	ns	—	2.5	4
$\Delta\lambda/\Delta T$ $\Delta P_{out}/\Delta T$	—	−40 to 85°C	nm/°C dB/°C	—	.38 −.03	—
Reliability MTTW	—	−1dB EOL	hrs	—	2.3 x 10^8	—

Note: dBm is rounded to nearest integer value.

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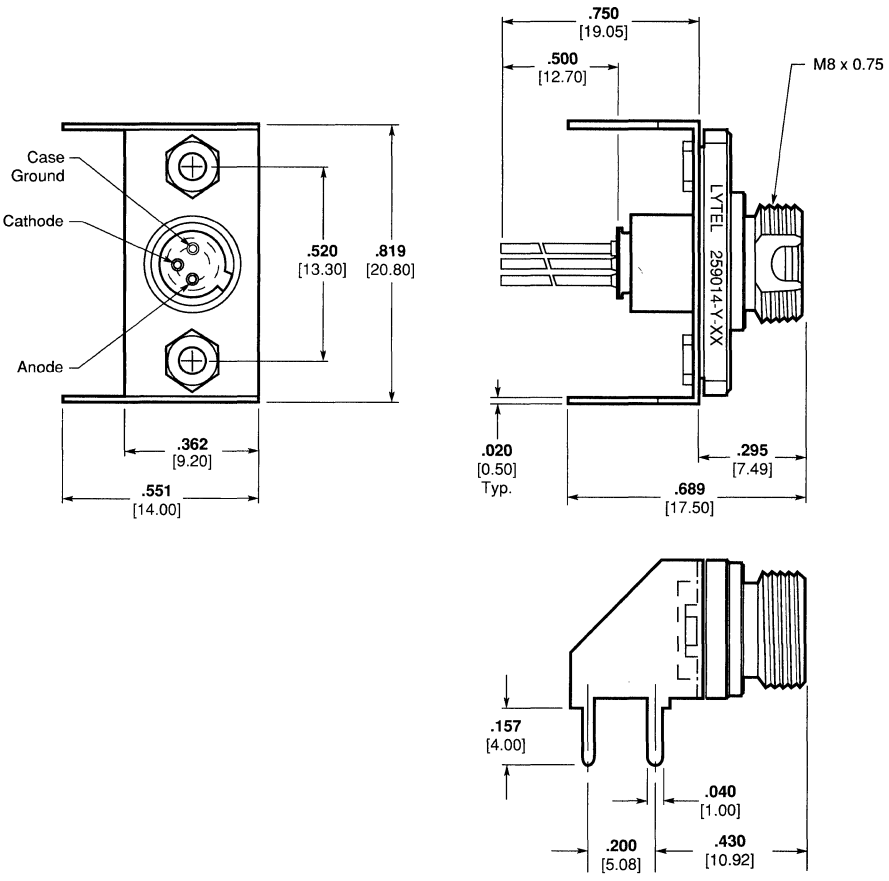
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)

FC/PC
Board Mount LED

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part Numbers
259014–1 — Standard
259014–2 — Premium



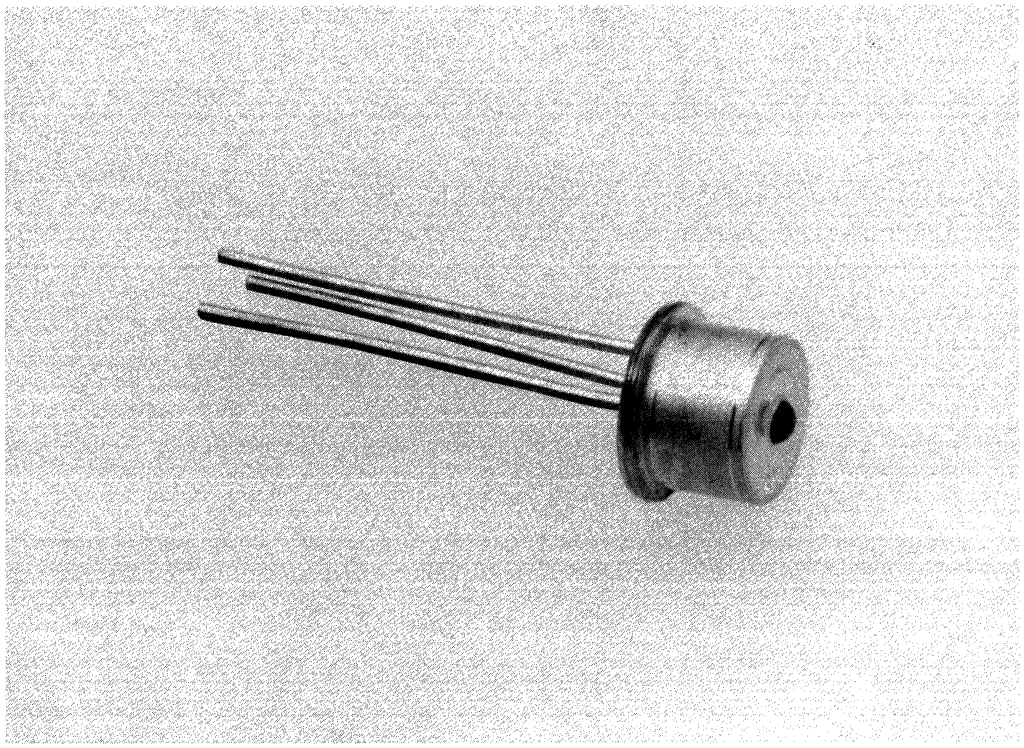
Absolute Maximum Rating

	Units	Min.	Max.
Operating temperature	C	−40	85
Storage temperature	C	−40	125
Reverse voltage	V	—	2
Drive current	mA	—	150

Other LYTEL products include a full line of Active Device Mounted 1300nm LEDs, InGaAs PIN Photodetectors and 1300nm Connectorized Lasers for Fiber Optic Communications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

TO Package PIN



Lytel's InGaAs PIN photodetectors offer high responsivity for nearly all digital and analog fiber optic applications. Lytel's unique design balances high speed performance with noise free linear output. Spectral response has been optimized for the long wavelength region of 1150 nm to 1600 nm. Every component delivered has passed extensive high temperature screening to ensure long term reliability.

Lytel's TO-18 style PIN is hermetically sealed and has been actively aligned and tested to assure maximum responsivity in your application.

Specifications: 25°C, −5 Volts

Parameter	P/N Suffix	Test Conditions	Units	Min.	Typ.	Max.
Responsivity						
50 µm	−1	LED source	A/W	.60	.71	—
62.5 µm	−1	of 10 µW	A/W	.50	.61	
50 µm fiber	−2	LED source	A/W	.75	.83	—
62.5 µm fiber	−2	of 10 µW	A/W	.65	.80	
9 µm fiber	−3	Laser source of 10 µW	A/W	.75	.86	—
Spectral Response	—	—	nm	1150	—	1600
Capacitance	−1	f=1 MHz	pF		1.5	1.7
	−2	f=1 MHz	pF	—	1.5	1.7
	−3	f=1 MHz	pF		.9	1.1
Dark current	−1		nA		2	5
	−2	—	nA	—	2	5
	−3		nA		1	5
Rise/fall	−1		ns			1
	−2	—	ns	—	—	1
	−3		ns			.5
Reliability	—	I_D>5nA	hrs	—	2.0×10^8	—

Features

- High reliability passivasted planar structure
- High responsivity
- Low dark current
- Low capacitance
- Hermetically sealed TO-18 style package installed in industry standard ADMs
- −40° to 85°C operating temperature

LYTEL
A Subsidiary Of AMP

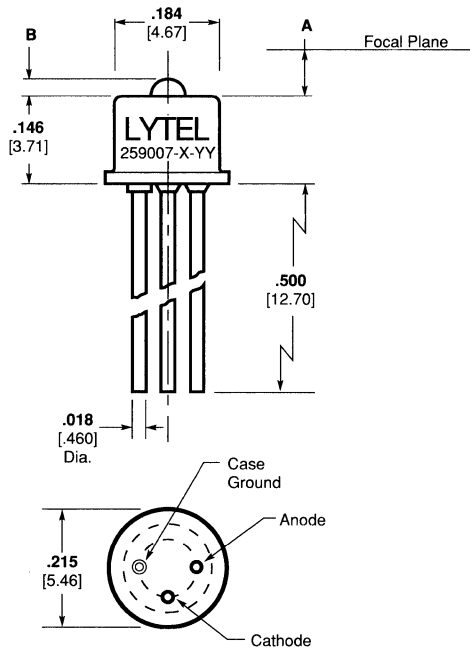
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)

TO Package PIN

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Part Numbers
259007–1 — Standard
259007–2 — Premium
259007–3 — Elite



Part No. Suffix	A	B
–1	**.081** 2.05	**.026** .660
–2	**.043** 1.09	**.020** .510
–3	**.043** 1.09	**.020** .510

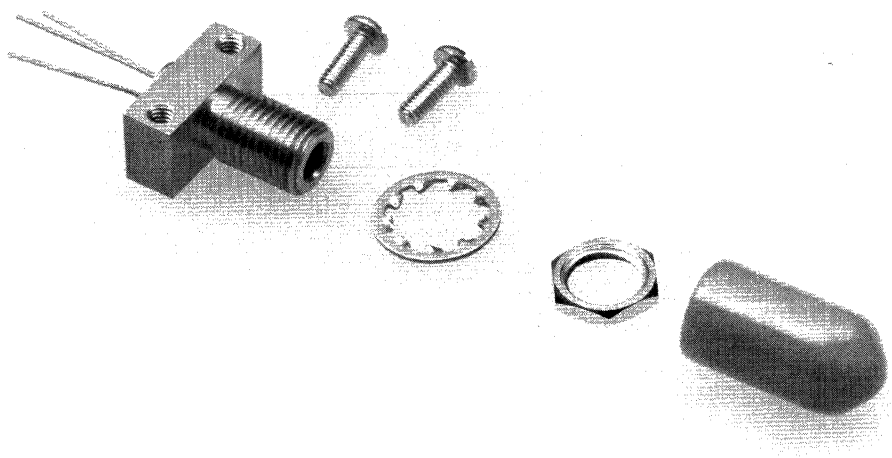
Absolute Maximum Rating

	Units	Min.	Max.
Operating temperature	C	–40	85
Storage temperature	C	–40	125
Reverse voltage	V	—	20
Forward current	mA	—	1

Other LYTEL products include a full line of Active Device Mounted 1300nm LEDs, InGaAs PIN Photodetectors and 1300nm Connectorized Lasers for Fiber Optic Communications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

FSMA
Board Mount PIN



Features

- High reliability passivasted planar structure
- High responsivity
- Low dark current
- Low capacitance
- Hermetically sealed TO-18 style package installed in industry standard ADMs
- −40° to 85°C operating temperature

Lytel's InGaAs PIN photodetectors offer high responsivity for nearly all digital and analog fiber optic applications. Lytel's unique design balances high speed performance with noise free linear output. Spectral response has been optimized for the long wavelength region of 1150 nm to 1600 nm. Every component delivered has passed extensive high temperature screening to ensure long term reliability.

Compatible with industry standards, Lytel's Active Device Mount components incorporate hermetically sealed TO-18 style PIN packages which have been actively aligned for optimal performance. The FSMA is suitable for both panel/bulkhead and PC board mounting.

Specifications: 25°C, −5 Volts

Parameter	P/N Suffix	Test Conditions	Units	Min.	Typ.	Max.
Responsivity						
50 µm	−1	LED source	A/W	.60	.71	—
62.5 µm	−1	of 10 µW	A/W	.50	.61	
50 µm fiber	−2	LED source	A/W	.75	.83	—
62.5 µm fiber	−2	of 10 µW	A/W	.65	.80	
9 µm fiber	−3	Laser source of 10 µW	A/W	.75	.86	—
Spectral Response	—	—	nm	1150	—	1600
Capacitance	−1	f=1 MHz	pF		1.5	1.7
	−2	f=1 MHz	pF	—	1.5	1.7
	−3	f=1 MHz	pF		.9	1.1
Dark current	−1		nA		2	5
	−2	—	nA	—	2	5
	−3		nA		1	5
Rise/fall	−1		ns			1
	−2	—	ns	—	—	1
	−3		ns			.5
Reliability	—	I_D>5nA	hrs	—	2.0 x 10^8	—

LYTEL
A Subsidiary Of AMP

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)

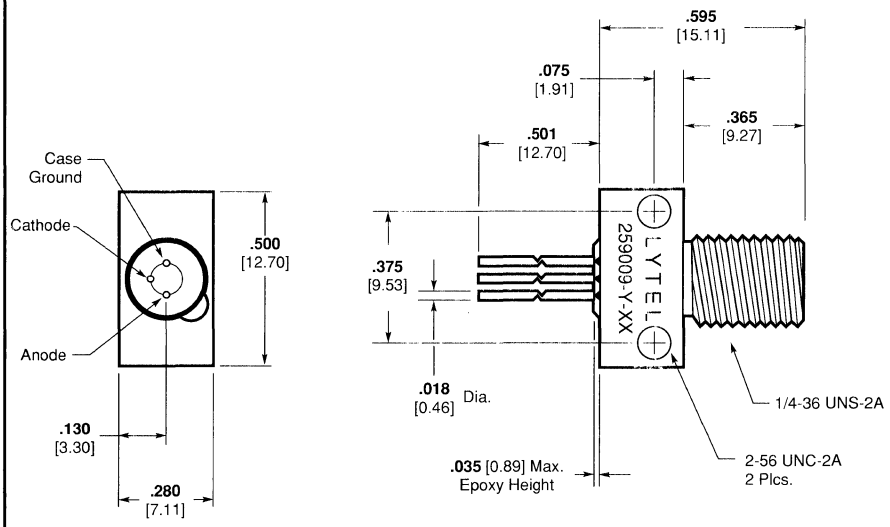
FSMA
Board Mount PIN

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part Numbers

259009–1 — Standard
259009–2 — Premium
259009–3 — Elite



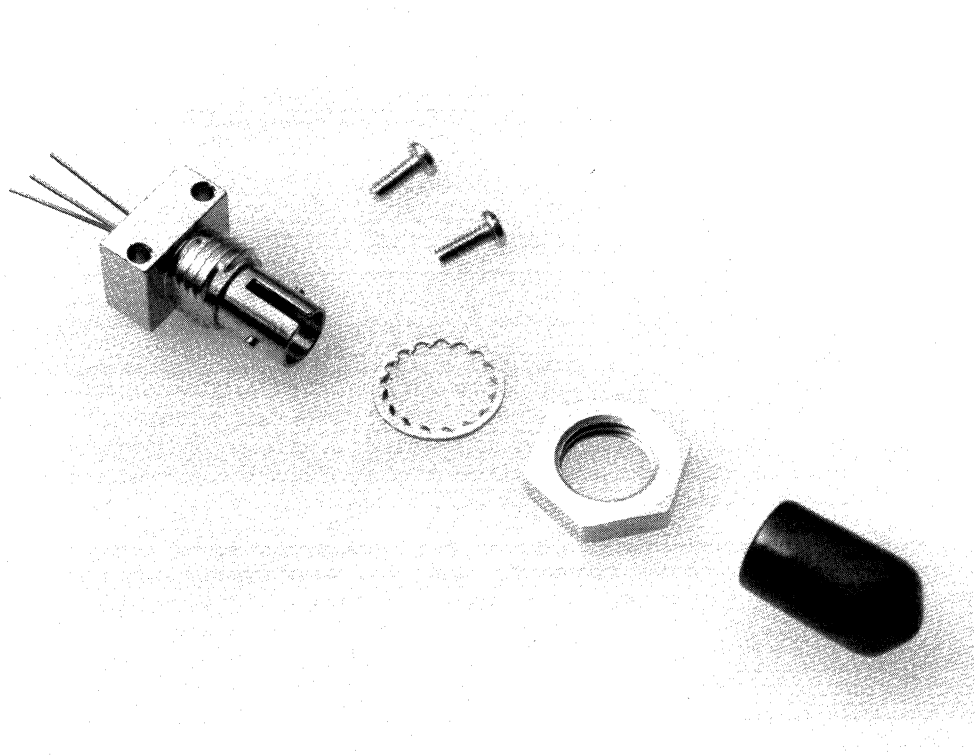
Absolute Maximum Rating

	Units	Min.	Max.
Operating temperature	C	–40	85
Storage temperature	C	–40	125
Reverse voltage	V	—	20
Forward current	mA	—	1

Other LYTEL products include a full line of Active Device Mounted 1300nm LEDs, InGaAs PIN Photodetectors and 1300nm Connectorized Lasers for Fiber Optic Communications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

2.5 mm Bayonet Board Mount PIN



Features

- High reliability passivasted planar structure
- High responsivity
- Low dark current
- Low capacitance
- Hermetically sealed TO-18 style package installed in industry standard ADMs
- −40° to 85°C operating temperature

Lytel's InGaAs PIN photodetectors offer high responsivity for nearly all digital and analog fiber optic applications. Lytel's unique design balances high speed performance with noise free linear output. Spectral response has been optimized for the long wavelength region of 1150 nm to 1600 nm. Every component delivered has passed extensive high temperature screening to ensure long term reliability.

Compatible with industry standards, Lytel's Active Device Mount components incorporate hermetically sealed TO-18 style PIN packages which have been actively aligned for optimal performance. The 2.5 mm Bayonet is suitable for both panel/bulkhead and PC board mounting.

Specifications: 25°C, −5 Volts

Parameter	P/N Suffix	Test Conditions	Units	Min.	Typ.	Max.
Responsivity						
50 µm	−1	LED source	A/W	.60	.71	—
62.5 µm	−1	of 10 µW	A/W	.50	.61	
50 µm fiber	−2	LED source	A/W	.75	.83	—
62.5 µm fiber	−2	of 10 µW	A/W	.65	.80	
9 µm fiber	−3	Laser source of 10 µW	A/W	.75	.86	—
Spectral Response	—	—	nm	1150	—	1600
Capacitance	−1	f=1 MHz	pF		1.5	1.7
	−2	f=1 MHz	pF	—	1.5	1.7
	−3	f=1 MHz	pF		.9	1.1
Dark current	−1		nA		2	5
	−2	—	nA	—	2	5
	−3		nA		1	5
Rise/fall	−1		ns			1
	−2	—	ns	—	—	1
	−3		ns			.5
Reliability	—	I_D>5nA	hrs	—	2.0 x 10^8	—

LYTEL
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Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)

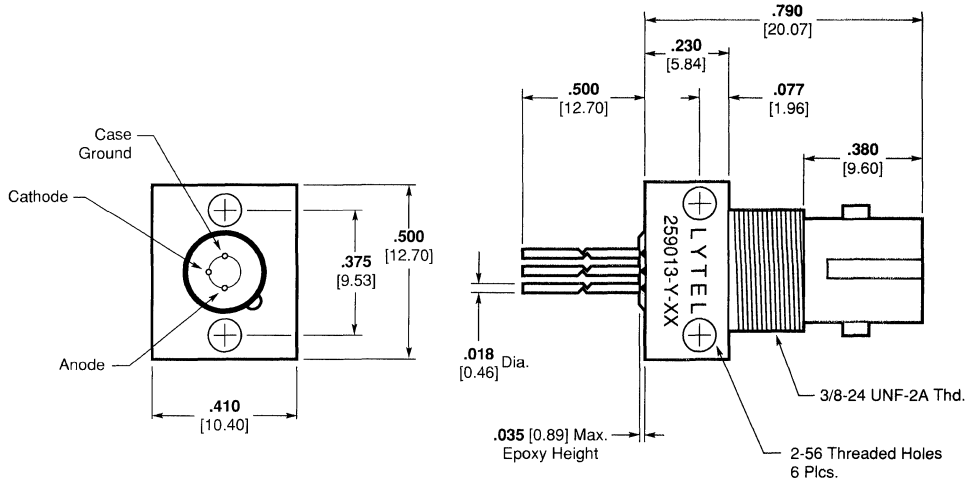
2.5 mm Bayonet Board Mount PIN

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part Numbers

259013–1 — Standard
259013–2 — Premium
259013–3 — Elite



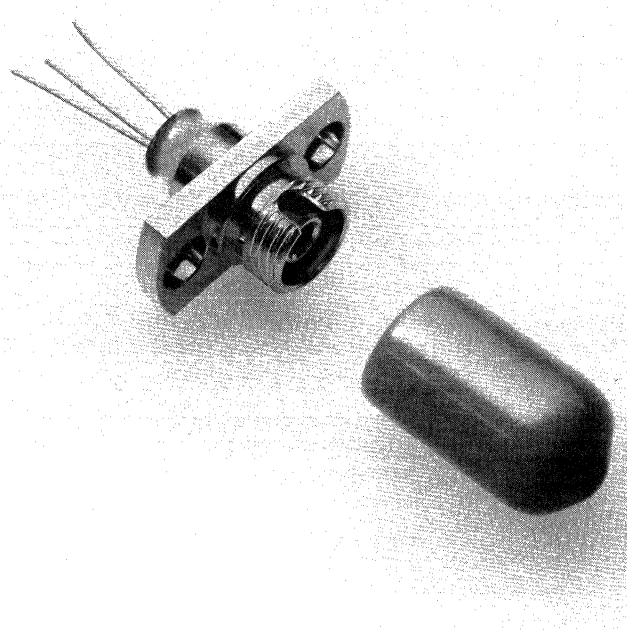
Absolute Maximum Rating

	Units	Min.	Max.
Operating temperature	C	−40	85
Storage temperature	C	−40	125
Reverse voltage	V	—	20
Forward current	mA	—	1

Other LYTEL products include a full line of Active Device Mounted 1300nm LEDs, InGaAs PIN Photodetectors and 1300nm Connectorized Lasers for Fiber Optic Communications.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

FC/PC
Board Mount PIN



Features

- High reliability passivasted planar structure
- High responsivity
- Low dark current
- Low capacitance
- Hermetically sealed TO-18 style package installed in industry standard ADMs
- −40° to 85°C operating temperature

Lytel's InGaAs PIN photodetectors offer high responsivity for nearly all digital and analog fiber optic applications. Lytel's unique design balances high speed performance with noise free linear output. Spectral response has been optimized for the long wavelength region of 1150 nm to 1600 nm. Every component delivered has passed extensive high temperature screening to ensure long term reliability.

Compatible with industry standards, Lytel's Active Device Mount components incorporate hermetically sealed TO-18 style PIN packages which have been actively aligned for optimal performance. The FC/PC is suitable for both panel/bulkhead and PC board mounting.

Specifications: 25°C, −5 Volts

Parameter	P/N Suffix	Test Conditions	Units	Min.	Typ.	Max.
Responsivity						
50 µm	−1	LED source	A/W	.60	.71	—
62.5 µm	−1	of 10 µW	A/W	.50	.61	
50 µm fiber	−2	LED source	A/W	.75	.83	—
62.5 µm fiber	−2	of 10 µW	A/W	.65	.80	
9 µm fiber	−3	Laser source of 10 µW	A/W	.75	.86	—
Spectral Response	—	—	nm	1150	—	1600
Capacitance	−1	f=1 MHz	pF		1.5	1.7
	−2	f=1 MHz	pF	—	1.5	1.7
	−3	f=1 MHz	pF		.9	1.1
Dark current	−1		nA		2	5
	−2	—	nA	—	2	5
	−3		nA		1	5
Rise/fall	−1		ns			1
	−2	—	ns	—	—	1
	−3		ns			.5
Reliability	—	I_D>5nA	hrs	—	2.0 x 10^8	—

LYTEL
A Subsidiary Of AMP

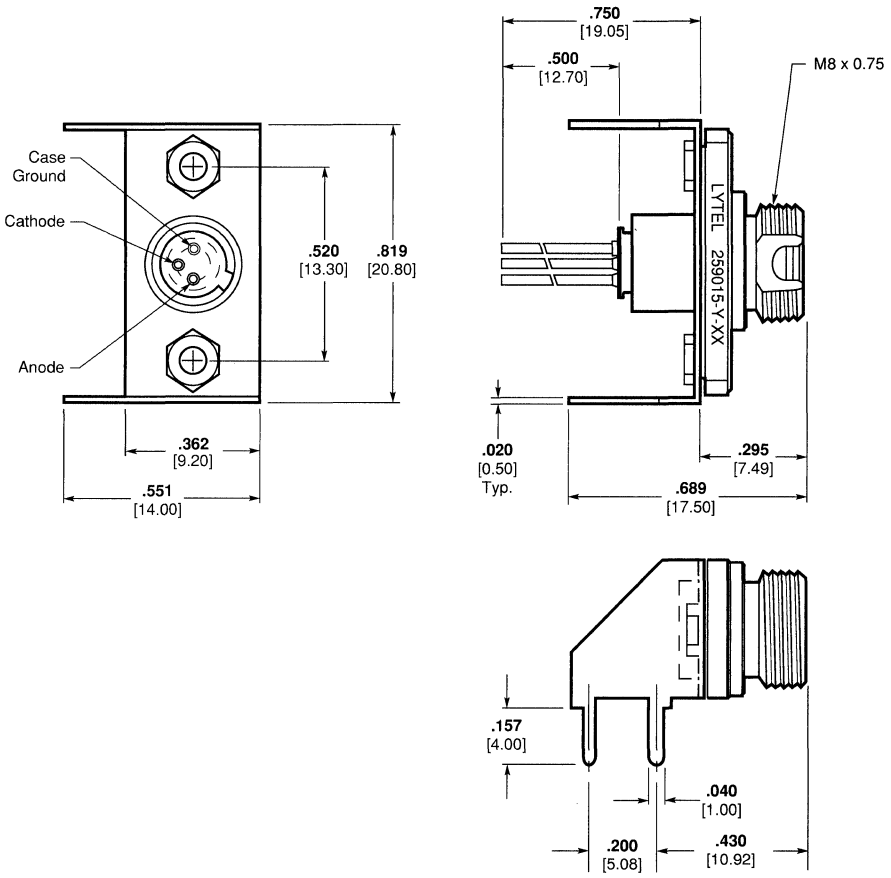
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)

FC/PC
Board Mount PIN

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Part Numbers
259015–1 — Standard
259015–2 — Premium
259015–3 — Elite



Absolute Maximum Rating

	Units	Min.	Max.
Operating temperature	C	−40	85
Storage temperature	C	−40	125
Reverse voltage	V	—	20
Forward current	mA	—	1

Other LYTEL products include a full line of Active Device Mounted 1300nm LEDs, InGaAs PIN Photodetectors and 1300nm Connectorized Lasers for Fiber Optic Communications.

7

AMP

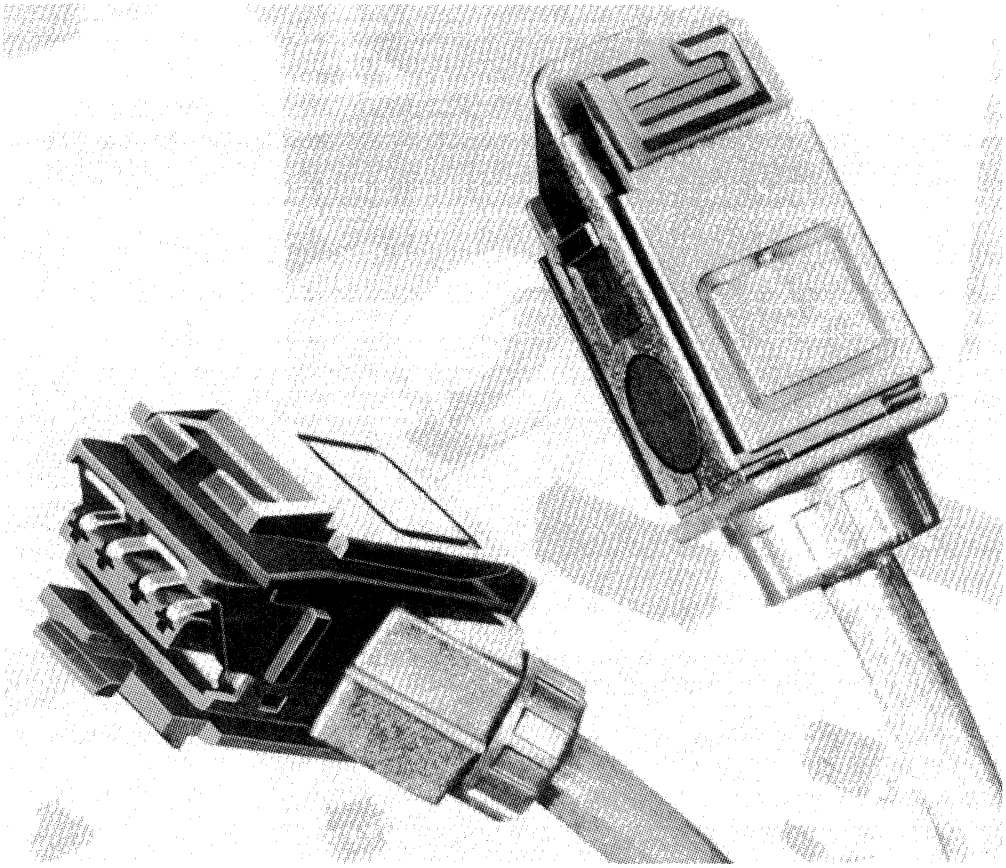
Miscellaneous Connectors

For information on Custom High Performance Cable Assemblies see page 3.
Note: See sections 3, 5 and 9 for additional PC Board Connectors.

AMP Four-Position Data Connector

and Related Products for the IBM Token Ring Network and the IEEE 802.5 Local Area Network

Specifications subject to change.
For latest design specifications...
1-800-522-6752



The AMP Four Position Data Connector product line is designed to meet the mechanical interface requirements of the IEEE 802.5 specification for local area networks. This connector is easily terminated without special tools.

The standard data connector, or cable ended connector, is used to terminate two twisted pairs of copper data conductors. It contains an integral grounding shield and mates with another identical connector. This hermaphroditic design eliminates the typical problems of dual part number ordering and inventory typically associated with conventional plug/jack connector systems. Self-shorting contacts built into the connector assist with diagnostic checkout of the installed connectors and cabling.

A modular, four position, color-coded stuffer box and four AMP-BARREL terminals provide simple, reliable termination by insulation displacement. The cable braid is held between a ferrule and the connector's integral grounding shield. Termination of the connector to shielded cable requires just a pair of simple slip joint pliers.

The connector can be assembled with either 45°, 90° or 180° cable strain reliefs. Completed connectors can be snapped into a panel cutout or used as free-hanging connectors. Cable exit directions are chosen by removing the appropriate ports in the connector housing and then simply snapping the plastic strain relief in place.

An undercarpet cabling system is offered that mates with the standard four position data connectors. This system, which also meets the mechanical interface requirements of the IEEE 802.5 specification for local area networks, includes: type 8 undercarpet shielded cable, a four position data connector, a floor monument, a low-profile floor fitting and wall boxes. The floor monument along with accepting the four position data connector has an opening with a spring-loaded, sliding door for the installation of a modular telephone jack. A three and a four pair jack are offered to complete the system.

Features

- Insulation displacement contacts
- Multi-wire/multi-cable range — 22-26 AWG solid or stranded
- Toolless assembly
- Hermaphroditic
- Multi-cable exits/dual cable capability
- Shielding (redundant interface)
- Shunted (in unmated form)
- May be reterminated
- Color-coded stuffer box
- Self-latching/lockable
- Snap-in panel mounting
- Selective gold plating
- Date coded
- Compact designs

Technical Documents

Product Specifications:
108-6054 Four Position Data Connector
108-6071 Type 8 Cable

Application Specification:
114-6033 Four Position Data Connector

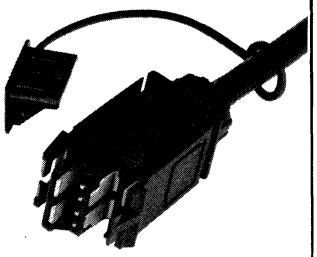
Instruction Sheets:
IS 3110 Four Position Data Connector, Standard Cable Applications
IS 3142 Modular Keystone Jacks
IS 3162 Flush Mount Wall Box
IS 3163 Surface Mount Wall Box
IS 3166 Undercarpet Data Cable
IS 3174 Four Position Data Connector, Undercarpet Applications
IS 3177 Floor Monument
IS 3204 Balun Kit
IS 3205 Panel Mount Connector Kit

Dimensioning:
Dimensions are in inches.

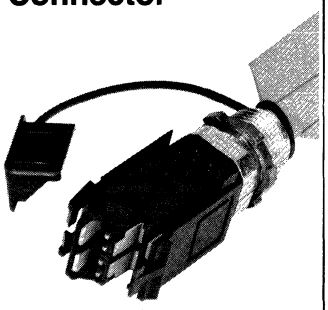
Four Position Data Connector Kits

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

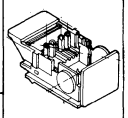
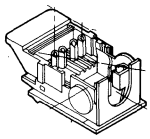
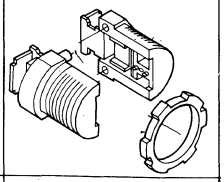


Standard Connector



Undercarpet Connector

CONNECTOR KITS

PART NO.	CABLE TYPE	CABLE EXIT	PACKAGING	STANDARD CONNECTOR	UNDERCARPET CONNECTOR	UNDERCARPET CONNECTOR ADAPTOR & JAM NUT
						
554000-1 (Equivalent to IBM 8310574) TYPE A	1,2,6	45°, 90° 180°	Individual Kit 25 Poly Bags Per Box	1		
554000-2	6	45°	Bulk — 100 Each Component Per Poly Bag/Box	1		
554000-3	1,2,6	90° 180°	Individual Kit 25 Poly Bags Per Box	1		
554000-4	6	45°	Individual Kit 25 Poly Bags Per Box	1		
554000-5	1,2,6,7,9	*	Bulk — 50 Each Component Per Poly Bag/Box	1		
554000-6	9	90° 180°	Individual Kit 25 Poly Bag/Box	1		
554733-1 (Equivalent to IBM 6339123)	8	180°	Individual Kit 25 Poly Bags Per Box One Stripping Tool Per Box		1	1

STRAIN RELIEF KITS

PART NO.	CABLE TYPE	CABLE EXIT	PACKAGING
555002-1	1,2,6	90°	Bulk — 50 Each Component Per Poly Bag/Box
555002-2	7,9	45°	Bulk — 50 Each Component Per Poly Bag/Box
555002-3	1†	180°	Bulk — 50 Each Component Per Poly Bag/Box
555002-4	6	45°	Bulk — 50 Each Component Per Poly Bag/Box
555002-5	1††,2,6	180°	Bulk — 50 Each Component Per Poly Bag/Box
555002-6	7,9	180°	Bulk — 50 Each Component Per Poly Bag/Box
555002-7	7,9	90°	Bulk — 50 Each Component Per Poly Bag/Box

Material:

Body — Black, glass filled polyester
Covers — Black polyester
Strain Reliefs, Collars, Hole Plug and Dust Cover — Black thermoplastic
Stuffer Box — Clear polycarbonate
Latch Lock — Pebble gray ABS molding compound
Shorting Bar and Terminals — Gold over nickel plated copper alloy
Ground Planes and Ferrule — Tin-lead over nickel plated brass
Grounding Tower (Type 9 cable) Clip — Tin plated brass
Adaptor — Tin over nickel over copper plated zinc
Jam Nut — Chromate coated zinc

Performance Characteristics

Current/Voltage Rating — 30 VAC at 1 amp max.
Impact — Excellent
Human Factors — Excellent
Shielded — To 16 MHz
Crosstalk — -62 dB at 4 MHz

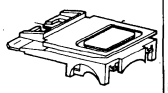
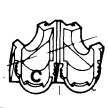
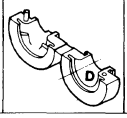
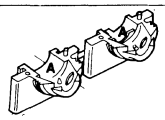
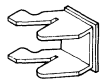
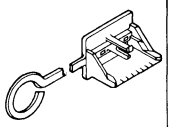
Listed File No. E81956
Certified by Canadian Standards Association
File No. LR16455

* Strain Relief Kits, 555002 Series Used In Conjunction With This Connector Kit

NOTE: Letter Designations Below Strain Reliefs Define Application & Are Molded Into Part.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches.

TOP COVER ASSEMBLY	STUFFER BOXES		FERRULE	45° STRAIN RELIEF		90° STRAIN RELIEF	180° STRAIN RELIEF			COLLAR		LATCH LOCK	DUST COVER	GROUNDING TOWER CLIP (TYPE 9 CABLE)
										 LARGE	 SMALL			
				Cable Diameter Range										
				.315 — .374	.210 — .280	.388 MAX.	.315 — .374	.370 — .433	.210 — .280					
				C	F	D	A	B	G					
1	1		1	1		1	1	1		1	1	1	1	
1	1		1	1							1	1	1	
1	1		1			1	1	1		1		1	1	
1	1		1	1							1	1	1	
1													1	
1		1	1			1			1		1	1	1	1
1		1	1									1	1	
	1		1			1								
		1	1		1						1			
	1		1					1		1				
	1		1	1							1			
	1		1				1			1				
		1	1						1		1			
		1	1			1								

† Accepts Type 1 Cable With Jacket In Strain Relief.

†† Accepts Type 1 Cable Without Jacket In Strain Relief.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

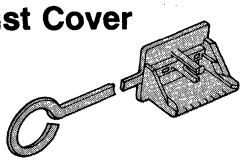
Four Position Data Connector Kit Components

For Standard and Undercarpet Connectors

Ferrule

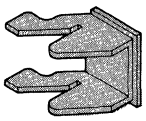
Part Number 554389-5
100 per poly bag/box

Dust Cover



Part Number 554439-1
100 Covers per poly bag/box

Latch Lock

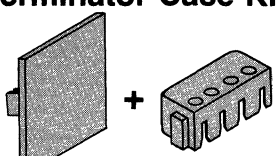


Part Number 554035-2
100 Locks per poly bag/box

Grounding Tower (Type 9 Cable) Clip

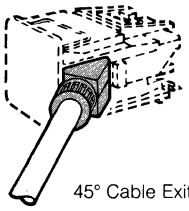
Part Number 555428-1
50 per poly bag/box

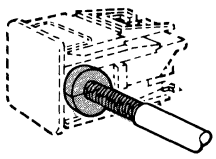
Terminator Case Kit

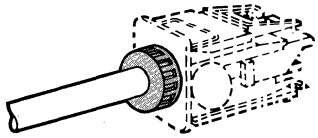


Plug Color	Part Number
Green	554789-3
Yellow	554789-4

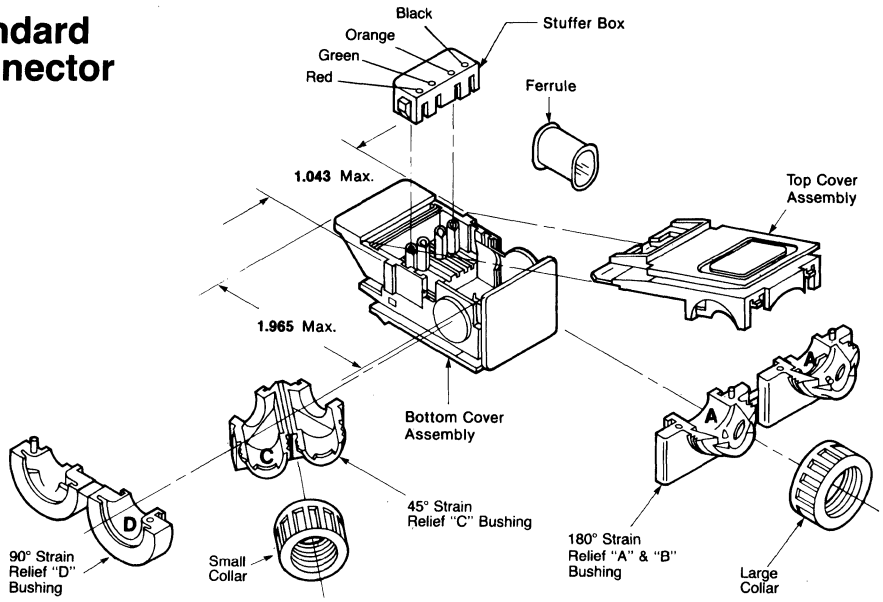
50 per poly bag/box


45° Cable Exit

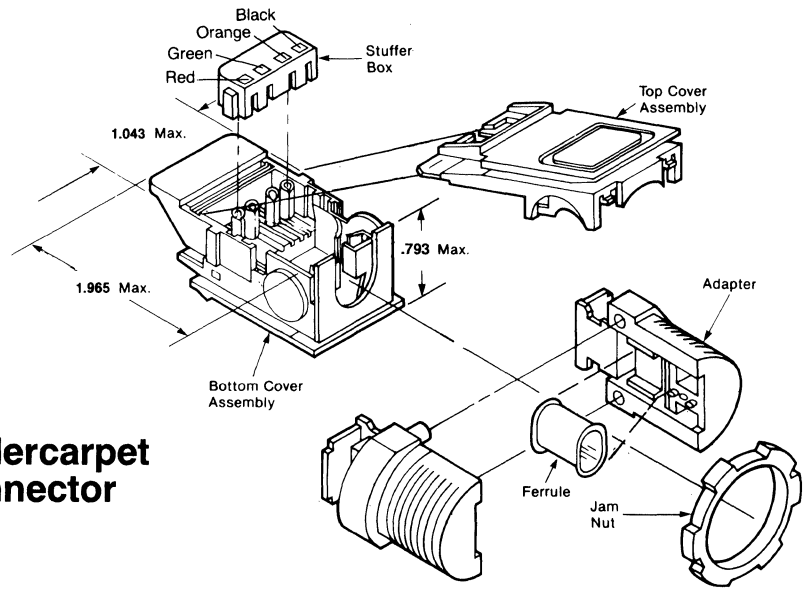

90° Cable Exit


180° Cable Exit

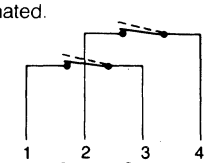
Standard Connector



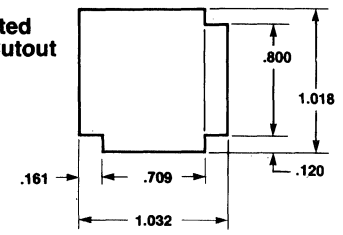
Undercarpet Connector



Shunting
Circuits 1-3 and 2-4 are shunted when connectors are unmated.



Suggested Panel Cutout



Maximum Panel Thickness — .064 in clearance latch area of 1.00 x 1.30

Four Position Data Connector

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Panel Mount Connector Kit

This connector is fully intermateable with the standard cable data connector (page 7004). It features self-shorting contacts as in the standard connector and mounting flanges which permit direct attachment to equipment panels. Board interconnection is accomplished through wire leads terminated to the insulation displacement terminals of the connector.

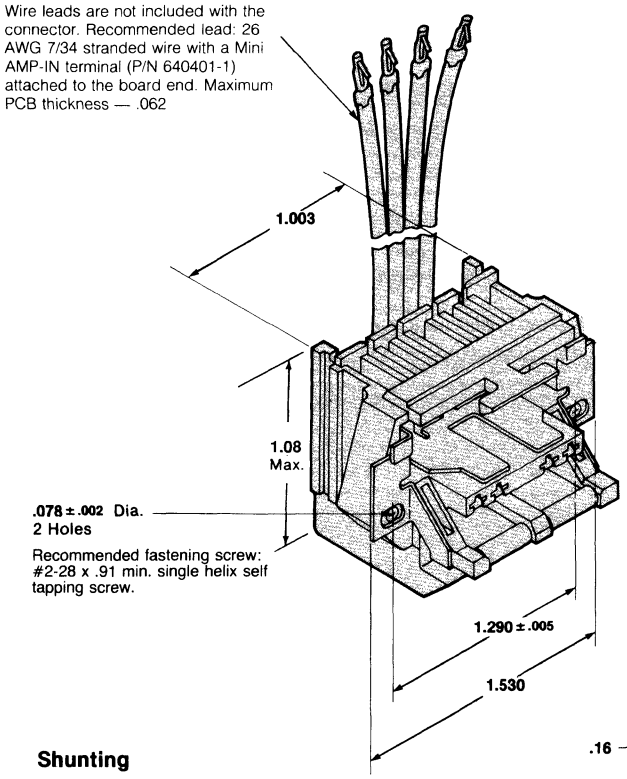
Part Number 554922-1
100 Connectors
Individually poly bagged per box
(Equivalent to IBM P/N 4760554)
Components bulk packaged 100 per poly bag per box

Kit Description:

Connector, Cover, Stuffer Box

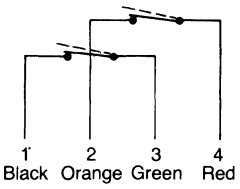
Material:

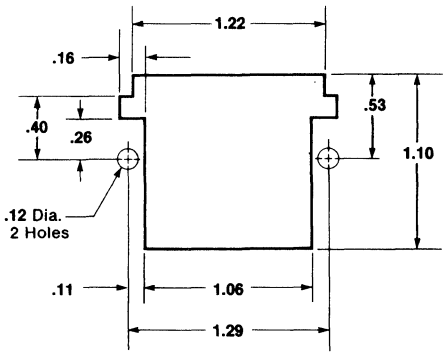
Body — Black, glass-filled polyester
Cover — Black polyester
Stuffer Box — Clear polycarbonate
Shorting Bar and Terminals — Gold over nickel plated copper alloy
Ground Plane — Tin-lead over nickel plated brass



Shunting

Circuits 1-3 and 2-4 are shunted when connectors are unmated.





Maximum Panel Thickness .039 in clearance latch area of 1.06 x 1.30

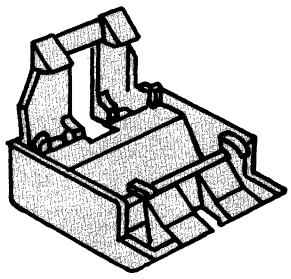
Suggested Panel Mounting Dimensions

Accessories

Top Cover

Material:
Black polyester

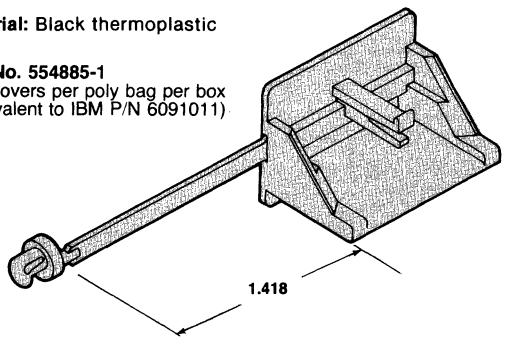
Part No. 554026-3
100 Covers per poly bag per box

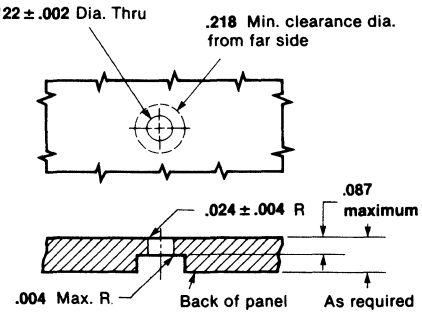


Dust Cover

Material: Black thermoplastic

Part No. 554885-1
100 Covers per poly bag per box
(Equivalent to IBM P/N 6091011)





Recommended Anchor Mounting Hole Dimensions

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches

Modular Telephone Keystone Jacks

for Wallplates, Panels, and Undercarpet Fittings

These jacks are specially designed to snap into Wallplates, Panels, and Undercarpet fittings. Insulation-displacement AMP-BARREL terminals allow toolless termination of discrete wire pairs.

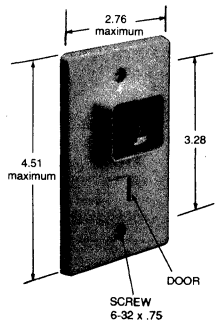
Conductor Type: Solid or stranded having .065 max. insulation O.D.

No special tools required for assembly.

Wall Outlet Faceplate Kit

Material: Polystyrene

Note: All Keystone Jacks are wired one-to-one.

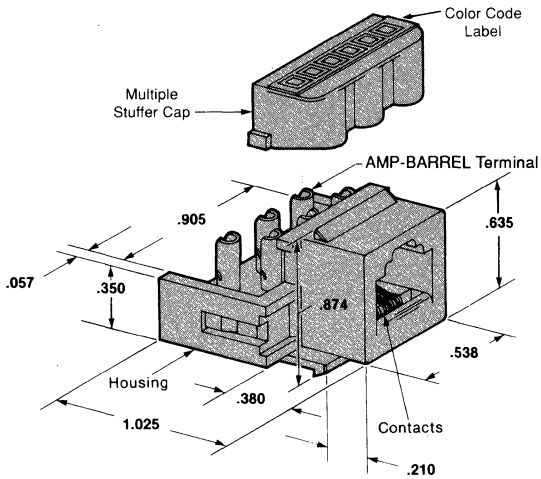


Part Number 555772-1
Individual poly bags
10 Kits per box
With Jack Opening

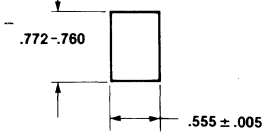
Equivalent IBM No.
6091025
Type 2 Faceplate

Part Number 555354-1
Individual poly bags
10 Kits per box
Without Jack Opening

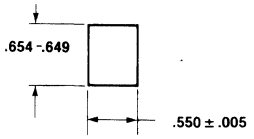
Equivalent IBM No.
8310572
Type 1 Faceplate



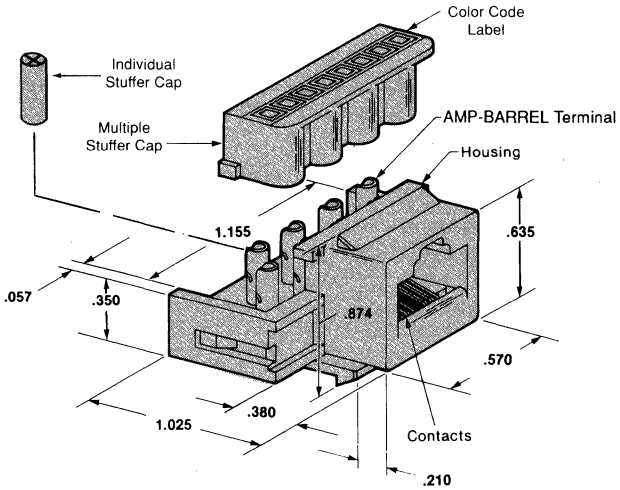
Suggested Panel Cutouts



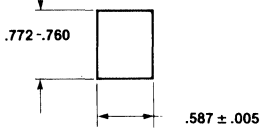
Single Panel — Latch clearance Panel Thickness .062 Nom.



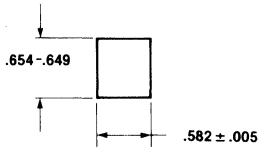
Front Panel Jack only clearance w/o Latch feature



Suggested Panel Cutouts



Single Panel — Latch clearance Panel Thickness .062 Nom.



Front Panel Jack only clearance w/o Latch feature

IBM APPROVED STYLE KITS (BLACK)

No. of Pairs	Wire Size	Color Code	Equivalent IBM Part No.	AMP Part No.
3	22 AWG	AT&T	8310575	553983-1
4	22 AWG	AT&T	6091030	554546-1

COMMERCIAL STYLE KITS (BLACK)

No. of Pairs	Wire Range	Color Code	Stuffer Cap Type	AMP Part No.
3	22-26	None	Multiple	554171-1
	24-28	None	Individual	554171-2
	19-22	None	Individual	554171-3
4	22-26	None	Multiple	554578-1
	24-28	None	Individual	554578-2
	19-22	None	Individual	554578-3
	22-26	AT&T	Multiple	556151-1
	22-26	EIA	Multiple	556166-1
	22-26	USOC	Multiple	556671-1
4 Keyed	22-26	None	Multiple	555322-1
	24-28	None	Individual	555322-2
	19-22	None	Individual	555322-3
	22-26	AT&T	Multiple	556152-1
	22-26	EIA	Multiple	556167-1
	22-26	USOC	Multiple	556672-1

COMMERCIAL STYLE KITS (IVORY)

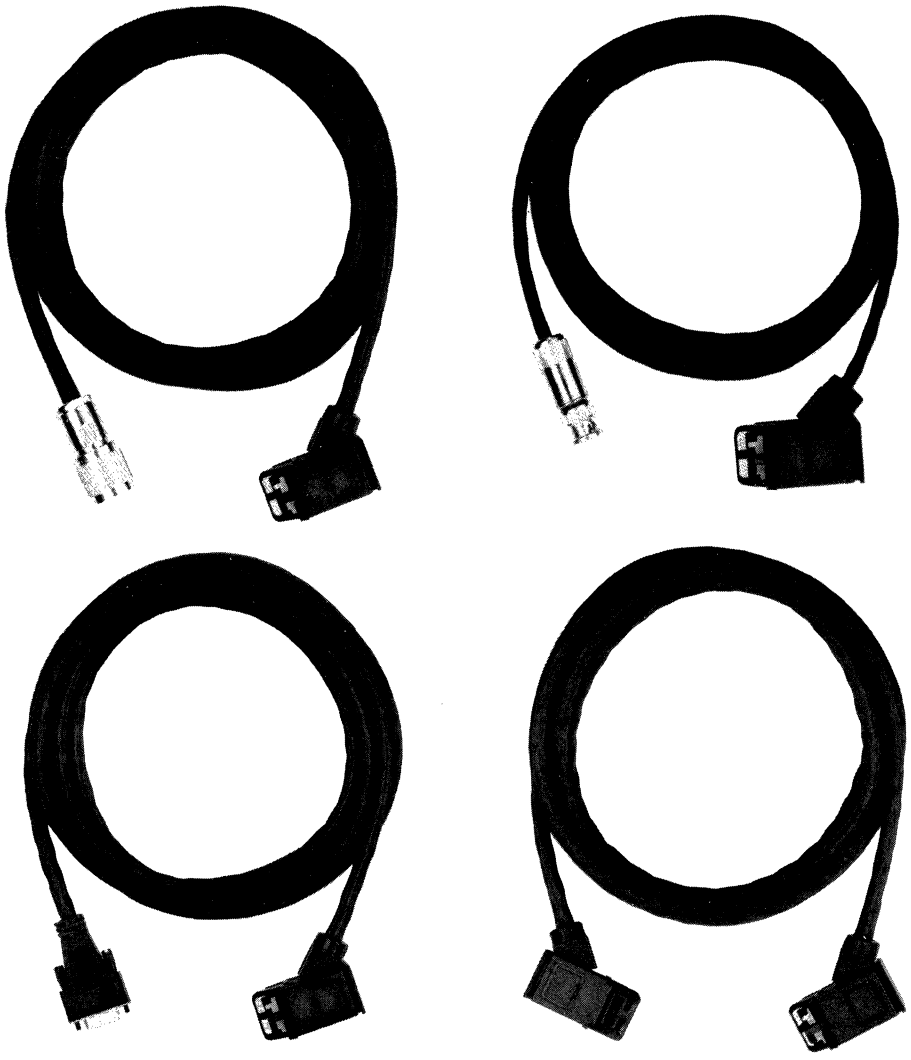
3	22-26	None	Multiple	554171-4
4	22-26	None	Multiple	554578-4
4 Keyed	22-26	None	Multiple	555322-4

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Cable Assemblies

(Equivalent to IBM Cable Assemblies)

Packaging:
Individual poly bags
one per box



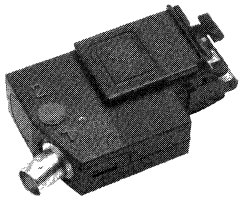
IBM Part Number	AMP Part Number	Length (ft.)	Description	Pictured Above
8642551	555210-1	8	Patch Cable Assembly	Bottom Right
8642552	555210-2	30	Patch Cable Assembly	Bottom Right
6339134	555210-3	75	Patch Cable Assembly	Bottom Right
6339135	555210-4	150	Patch Cable Assembly	Bottom Right
6339073	555211-1	8	Dual Purpose Connector Attachment Cable Assembly	Top Right
6339074	555211-2	30	Dual Purpose Connector Attachment Cable Assembly	Top Right
6339075	555212-1	8	Double DPC Attachment Cable Assembly	—
6339137	555213-1	8	Crossover Cable Assembly	—
6339098	555214-1	8	PC Adapter Cable Assembly	Bottom Left
—	555214-2	12	PC Adapter Cable Assembly	Bottom Left
—	555214-3	20	PC Adapter Cable Assembly	Bottom Left
8310553	555216-1	8	MFA/422 Attachment Cable Assembly	—
8642549	555219-1	4	Y Patch Cable Assembly	—
8642550	555220-1	9	Twinaxial, Y Cable Assembly	—
6091075	555221-1	8	Twinaxial Attachment Cable Assembly	Top Left

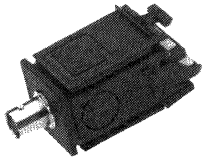
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Four Position Data Connector Baluns

These connectors plug directly into the IBM Cabling System Faceplates or Distribution Panel.

Material:
Housing Plug and Covers — Black polyester
Body Assembly — Black glass-filled polyester
Contacts — Gold over nickel plated copper alloy
Ground Planes — Tin-lead over nickel plated brass
BNC Receptacle Assembly
Shell — Nickel over brass
Contact — Gold over nickel plated copper alloy

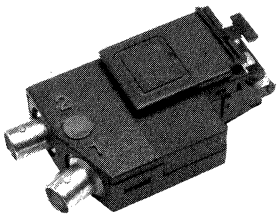


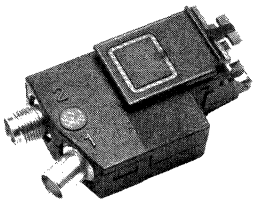


Four Position Data Connector to Single BNC Jack

93 Ohm Coax to 150 Ohm shielded twisted-pair
Standard Style
Part Number 555013-1
(Equivalent IBM P/N 633908-2)

93 Ohm Coax to 150 Ohm shielded twisted-pair
Compact Style
Part Number 556505-1



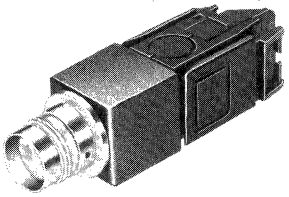


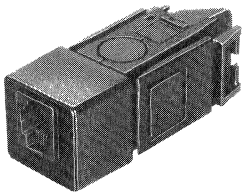
Four Position Data Connector to Dual BNC Jacks

93 Ohm Coax to 150 Ohm shielded twisted-pair
Part Number 555014-1
(Equivalent IBM P/N 633908-3)

Wang Balun

Dual 75 Ohm Coax to 150 Ohm shielded twisted-pair
Part Number 555591-1





Four Position Data Connector to Twin-Ax Receptacle Impedance Matching Adapter

100 Ohm Twin-Ax to 150 Ohm shielded twisted-pair
Part Number 556645-1
(Functionally Equivalent IBM P/N 6091070)

All above connectors packed:
10 Connectors per box in individual poly bags

Four Position Data Connector to Modular Jack Impedance Matching Adapters

105 Ohm unshielded twisted-pair to 150 Ohm shielded twisted-pair
Part Number 556417-1 6-Position

105 Ohm to 150 Ohm
Part Number 556418-1 8-Position

Four Position Cableless Balun Kit

Part Number 554560-1
Kit Description:
Connector Body, Top & Bottom Covers, Top, Center & Bottom Ground Planes, Stuffer Box and Single BNC Jack.

BNC Receptacle Assembly Kit

Part Number 554878-1
Kit Description:
BNC Receptacles, Insulating Bushings, Ground Lug and Nut

TNC Receptacle Assembly Kit

Part Number 555331-1
Kit Description:
TNC Receptacles, Insulating Bushings, Ground Lug and Nut

Body Assembly Kit Only

Part Number 554833-1
Kit Description:
Body Assembly and Stuffer box

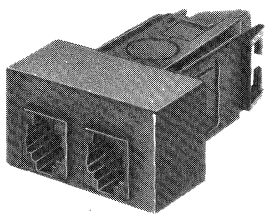
Cableless Balun Kits

A four position cableless balun kit is available which allows the customer to assemble certain electronic components which are required to convert the balanced twisted-pair cable to unbalanced coaxial cables. This kit contains a single BNC jack receptacle, but will accept a second BNC or TNC receptacle which can be ordered separately to provide the dual port version.

Adapters

Four Position Data Connector to Modular Jack Adapters

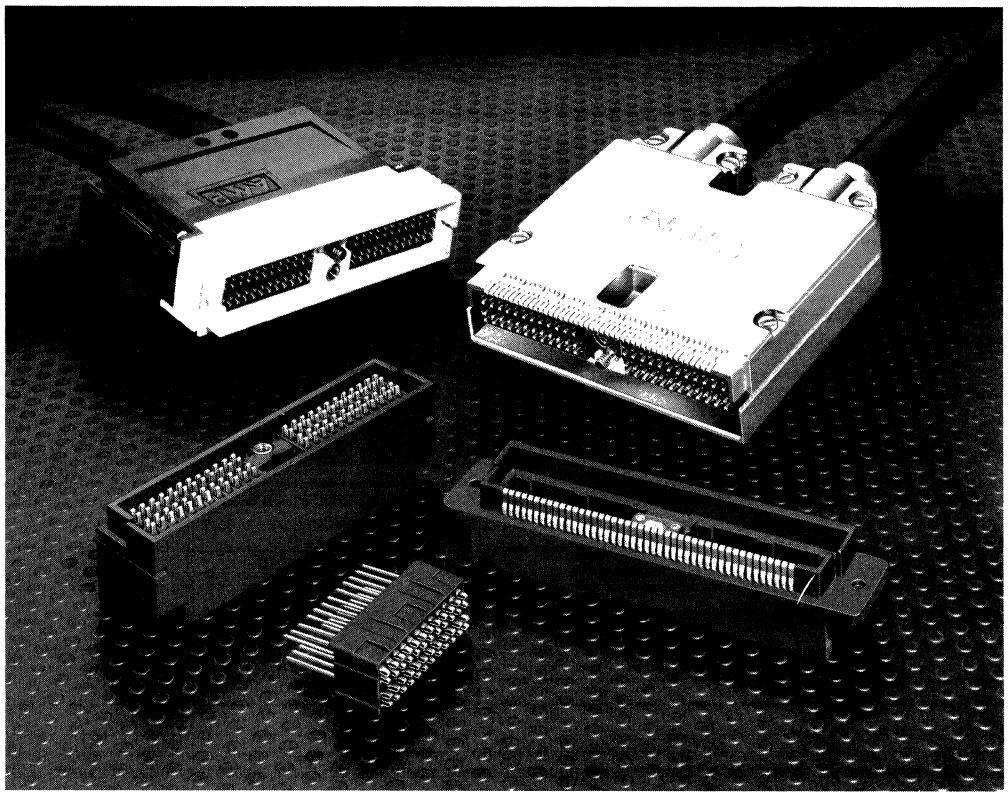
for IEEE 802.5 applications



Connector Type	Interface Type	Part Number
Four Position Data Connector	6	555413-1
	8	555414-1
	Dual 6	556439-1
	Dual 8	556440-1

AMPLIMATE Connectors (Serpent Intermateable)

Specifications subject to change.
For latest design specifications...
1-800-522-6752



AMPLIMATE Connectors are 48-position hermaphroditic I/O Connectors which intermate with Serpent Connectors and other compatible AMPLIMATE products. The modular style offers advanced technological features which give them significant advantages over similar connectors.

Each modular AMPLIMATE Connector can accept one or two contact modules, which are available in three styles. Unloaded modules accept crimp, snap-in contacts for discrete wire. Posted modules accept a variety of standard receptacle connectors or wire wrapping. Right angle posted modules terminate to pc boards or terminal cards.

A complete selection of accessories makes AMPLIMATE Connectors highly adaptable. A variety of housing depths; a choice of all-plastic strain relief or shielding strain reliefs of metalized plastic or all-metal; and various jackscrews, contact styles and termination equipment are among the options. In addition, AMP can provide numerous connectors to terminate cables to the rear of AMPLIMATE posted modules, including 24-position SLT connectors in pre-programmed assemblies, custom-made to user's specifications.

Shown with modular AMPLIMATE connectors in this data sheet are integral style AMPLIMATE Connectors. All are intermateable with each other and with similar products from other manufacturers.

Features

- Modular construction available
- Crimp contacts snap in for easy loading of conventional wire, shielded wire and coaxial cable
- Posted connectors are available in modular and integral AMPLIMATE styles
- Posted contacts available for 1-, 2- and 3-high wrap-type termination
- Long or short jackscrews snap-in to modular style with no snap-ring needed
- Contacts have two tynes for retention
- All housings are glass-filled, 94V-0 rated thermoplastic

Technical Documents

Instruction Sheets:
IS 7827
IS 6895—Metal Shield

Product Specification:
108-9034

Application Specification:
114-10009

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

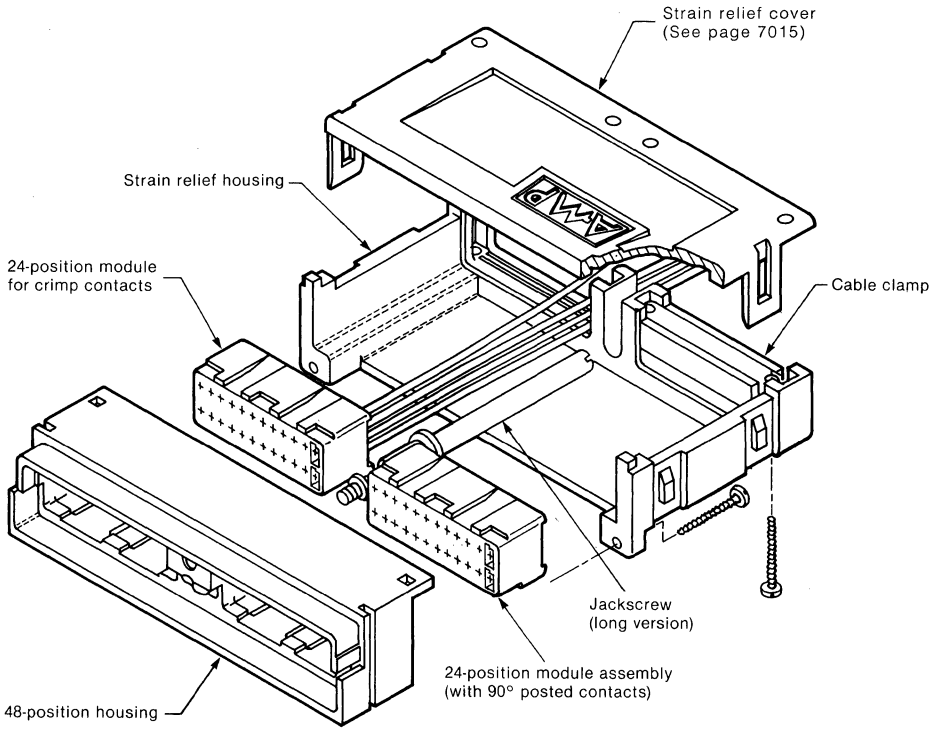
Specifications subject to change.
For latest design specifications...
1-800-522-6752

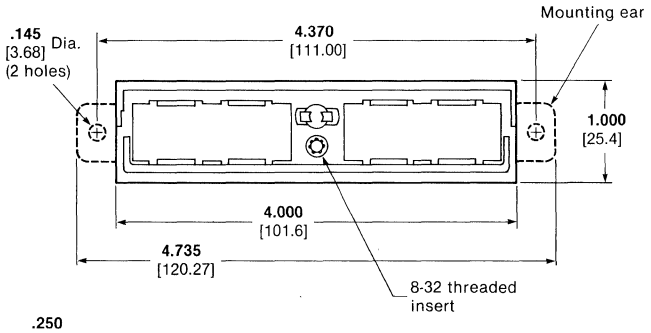
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Housings

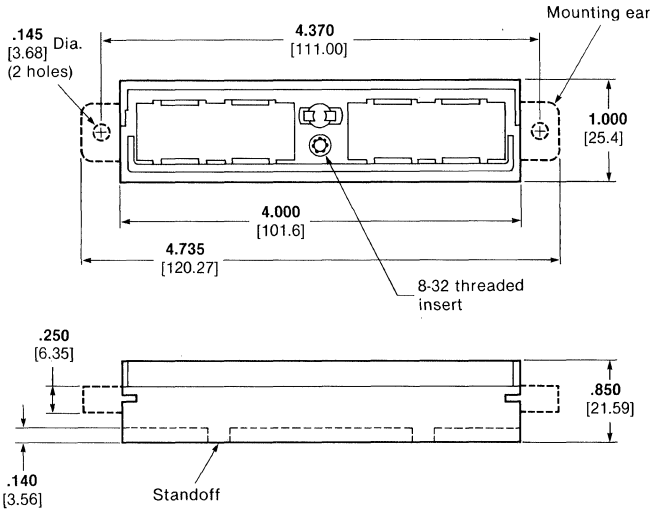
Materials

Housings—Glass-filled polycarbonate, 94V-0 rated
Threaded inserts—Brass





Standard Profile



Low Profile

Style/ Color	Housing Configuration	Standard Profile		Low Profile	
		Plastic	Metalized	With Standoffs	Without Standoffs
Style B Black	With Ears	207222-1	207222-7	—	207223-1
	Without Ears	207222-3	207222-5	212750-1	207223-3
Style A White	With Ears	207222-2	207222-8	—	207223-2
	Without Ears	207222-4	207222-6	212750-2	207223-4

AMPLIMATE Contact Modules

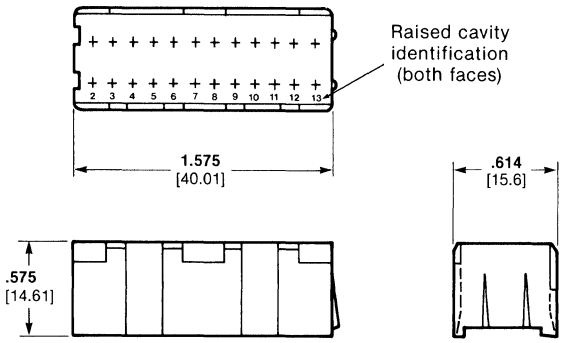
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Module for Crimp, Snap-in Contacts

Part Number 207219-6
Contacts are shown on page 7016.

Material—Black thermoplastic, 94V-0 rated

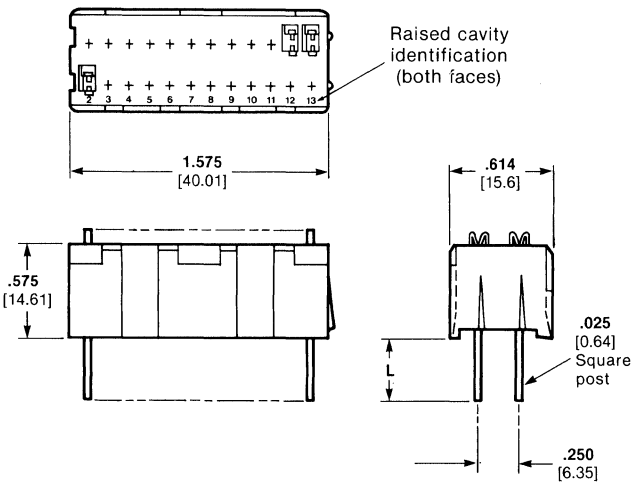


Modules with Straight Posts

Length L	Part Number
.250 6.35	207221-5
.358 9.09	207221-3
.458 11.63	207221-2
.628 15.95	207221-1
.733 18.62	207221-4

Materials

Module housing—Black thermoplastic, 94V-0 rated
Posted contact—Copper alloy, gold over nickel-plated

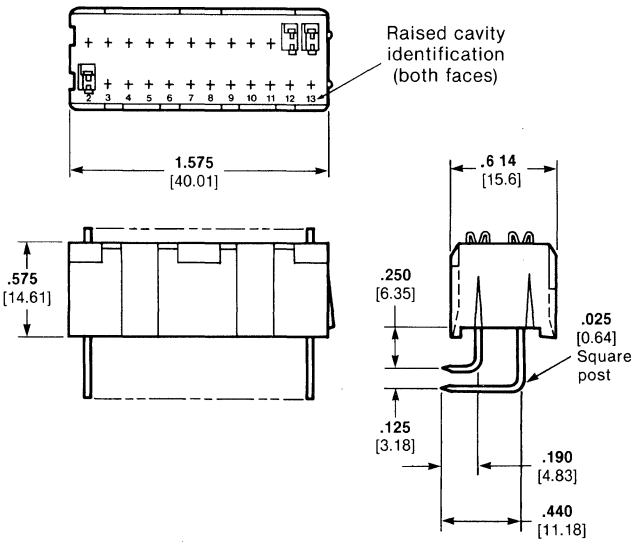


Module with 90° Posts

Part Number 207220-1

Materials

Module housing—Black thermoplastic, 94V-0 rated
Posted contact—Copper alloy, gold over nickel-plated



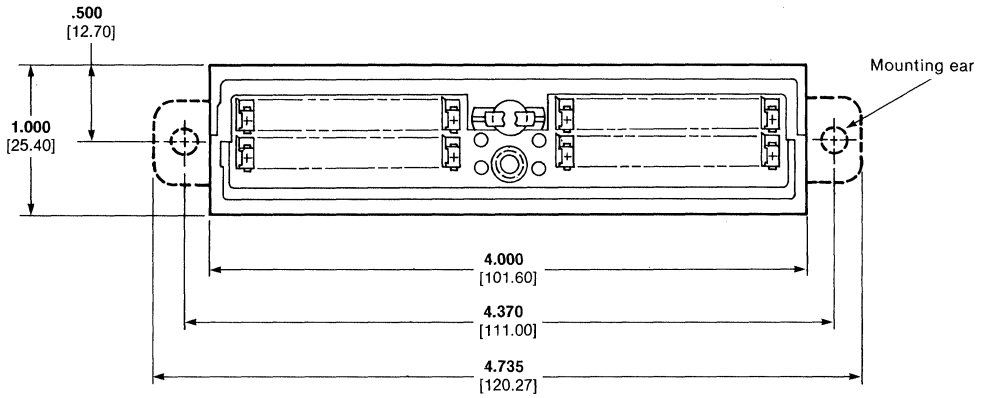
Module Extraction Tool Part Number 91137-1

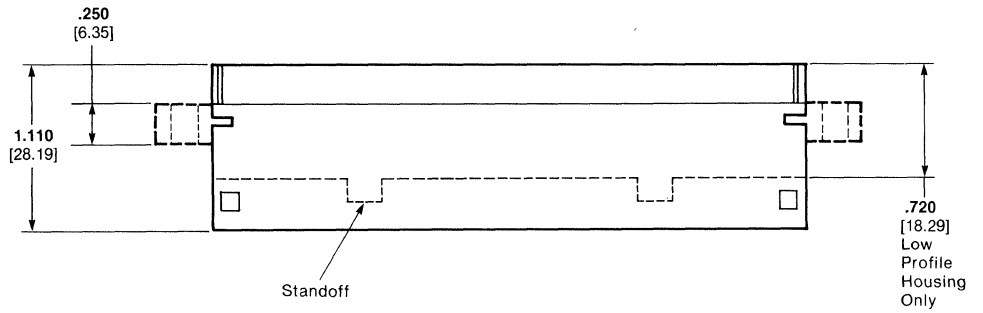
Integral AMPLIMATE Connectors

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Standard and Low Profile Housings

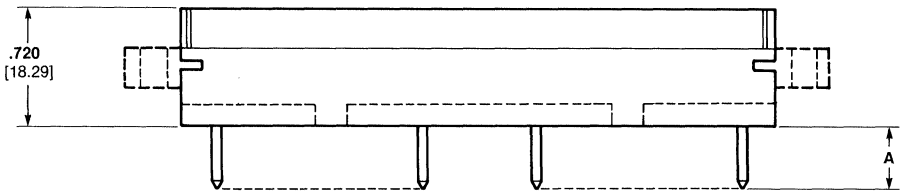
Integral AMPLIMATE connectors are the predecessor of the new modular style. Integral connector housings have molded-in contact cavities for crimp, snap-in contacts or posted contacts shown on page 7016.





Posted Connector Assemblies

Contacts, jackscrews and covers must be ordered separately. See page 7016 for contacts, page 7015 for jackscrews and cover kits. Metalized connectors for SLT-style applications also are available. Consult AMP Incorporated for information.



Color	Configuration	Housings			Connector Assemblies		
		Standard Profile	Low Profile		Dimension A		
			With Standoffs	Without Standoffs	.205 [5.21]	.305 [7.75]	.485 [12.32]
Black	With ears	208104-1	212748-1	212749-1	208686-7	208686-8	208686-9
	Without ears	208104-3	212748-3	212749-3	208686-1	208686-2	208686-3
White	With ears	208104-2	212748-2	212749-2	1-208686-0	1-208686-1	1-208686-2
	Without ears	208104-4	212748-4	212749-4	208686-4	208686-5	208686-6

Strain Relief Covers for Modular and Integral AMPLIMATE Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Deep Kits

Standard Kit
Part number 207224-1

Kit includes strain relief housing 207281-1, strain relief cover 207284-1, jackscrew 207257-1 and spring 207274-1, two cable clamps 207276-1, and screws.

Long Jackscrew Kit
Part number 207257-1

Kit with Serrated Wire Exit
Part number 208227-1

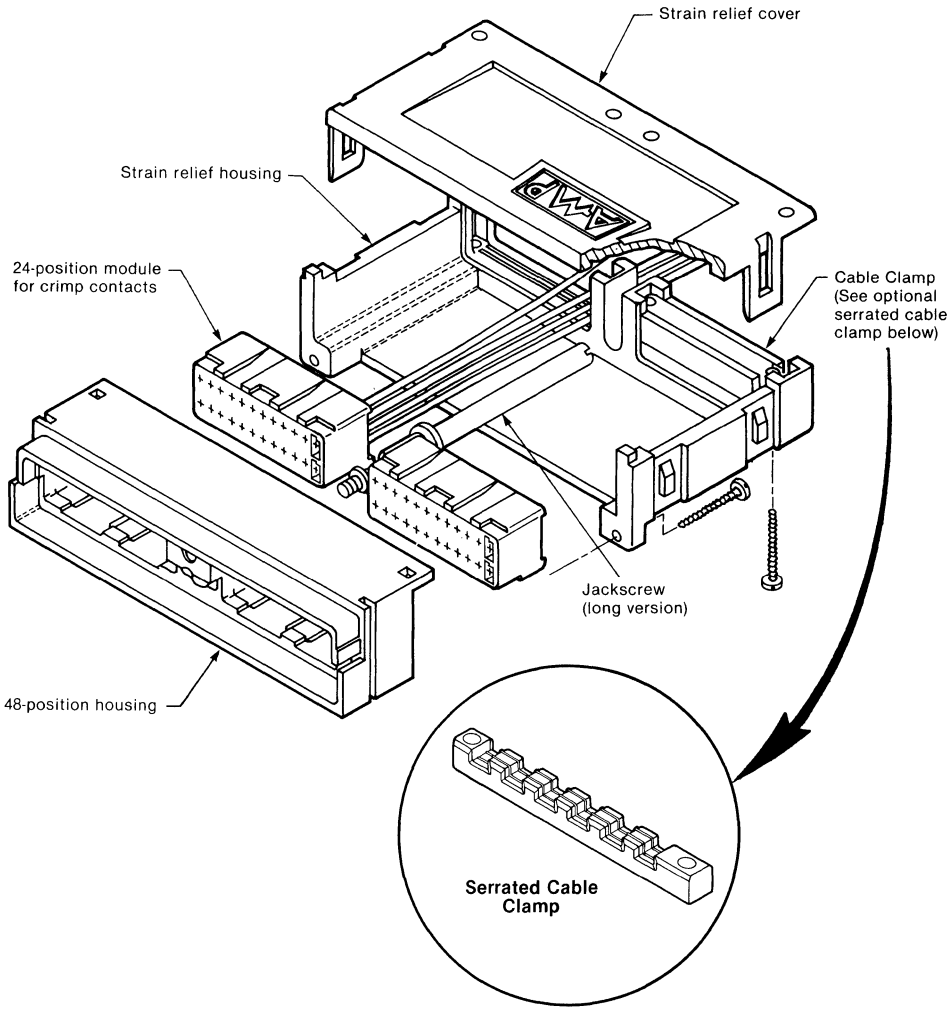
Kit includes strain relief housing 208225-1, strain relief cover 208276-1, jackscrew 207257-1 and spring 207274-1, two serrated plastic cable clamps 208162-1 with steel clamp supports 207273-1, and screws.

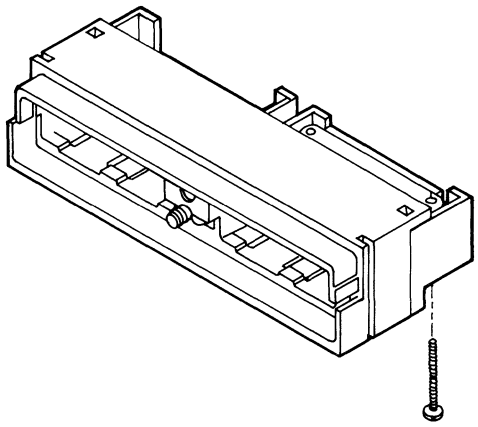
Kit with Filler Blocks
Part number 208689-1

Kit includes strain relief housing 207281-1, strain relief cover 207284-1, jackscrew 207257-1 and spring 207274-1, two cable clamps 207276-1, two plastic filler blocks 207491-1, and screws.

Metalized Plastic Kit
Part number 211787-1

Kit contains the same components as standard (deep) kit 207224-1, except the strain relief and cover are metalized.





Shallow Kits

Standard Kit
Part number 207225-1

Kit includes strain relief housing 207282-1, jackscrew 207257-2 and spring 207274-1, two cable clamps 207276-1, and screws.

Short Jackscrew Kit
Part number 207257-2

Contacts for AMPLIMATE Connectors

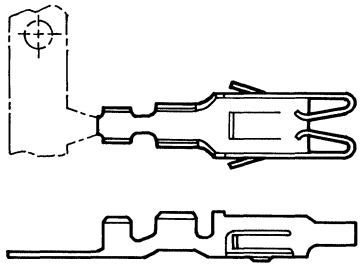
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Crimp, Snap-In Contacts

Material—Copper alloy

Plating—.000030 [0.00076] min. gold per Mil-G-45204 over .000050 [0.00127] nickel per QQ-N-290 extending .150 [3.81] min. from mating end of contact; remainder of contact is gold flash over nickel plate.



Wire Size AWG/mm²	Insulation Diameter Range	Universal Contacts		Hand Tool	Mini-Appl. for Auto Machines	Applicators for Stripper/Crimper Machine
		Reeled Strip	Loose Piece			
30-26 0.05-0.15 coax cable	**.060-.105** 1.52-2.66	66622-2	66622-1	90269-2	567304-2	466949-1
30-26 0.05-0.15	**.048** 1.22 Max.	66621-2	66621-1	90267-2	567305-2	—
24-22 0.2-0.4	**.040-.056** 1.02-1.42	66620-2	66620-1	90267-2	567184-2	466949-1
20-18 0.5-0.9	**.060-.090** 1.52-2.28	66619-2	66619-1	90269-2	687492-2	—

Use extraction tool 91126-1 for universal contacts.

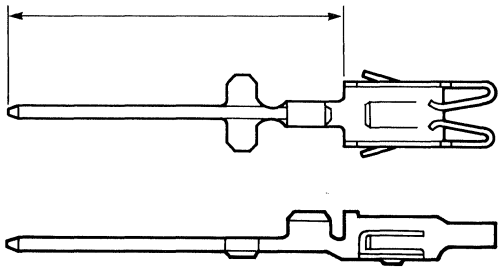
Universal contacts are suitable for use in all styles of AMPLIMATE Connectors.

Posted Contacts

Material—Copper alloy

Plating—.000030 [0.00076] min. gold per Mil-G-45204 over .000050 [0.00127] nickel per QQ-N-290 extending .150 [3.81] min. from mating end of contact; remainder of contact is gold flash over nickel plate.

Posts on contacts 66623-4 and 66623-5 have .000100-.000200 [0.00254-0.00508] bright tin over .000030 [0.00076] min. nickel plate.



Contact Extraction Tool Number 91126-1

Dimension L	Contact Part Number
.551 14.00	66623-7
.601 15.26	66623-6
.689 17.50	66623-5
.709 18.01	66623-3
.809 20.55	66623-2
.979 24.87	66623-1
1.084 27.53	66623-4

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Metal Shield Assemblies

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

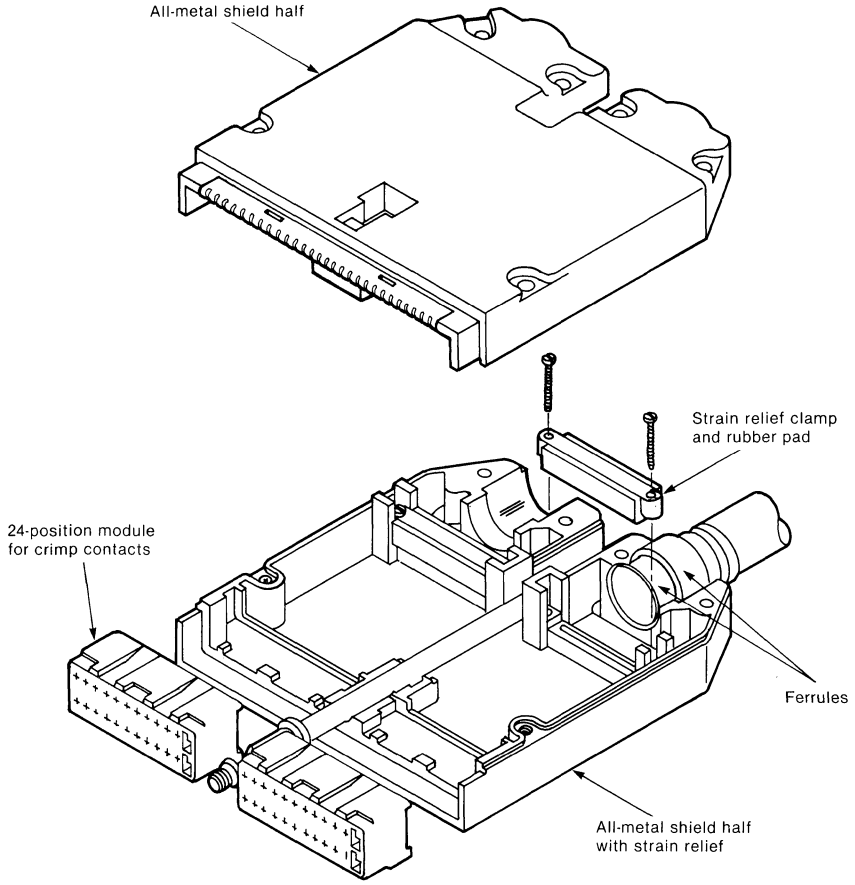
Metal shield assemblies use modules for crimp, snap-in contacts, 207219-6, shown on page 7013.

Cable-Half Assemblies

Black Finish
Part Number 208802-1

Clear Finish
Part Number 208802-2

Each kit includes strain relief housing (two all-metal halves), jackscrew assembly, cable clamps, rubber pads, required screws and inner and outer ferrules for cable with OD .670-.700 [17.02-17.78]. All parts are unassembled.



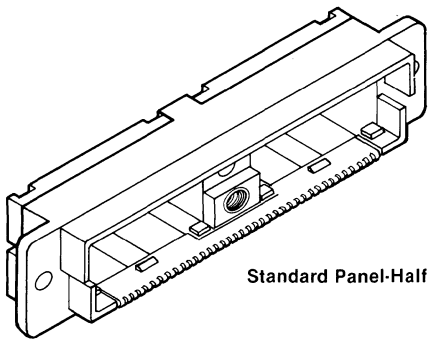
Panel-Half Assemblies

Black Finish, Standard
Part Number 208801-1

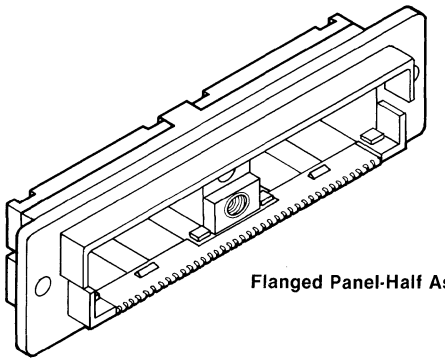
Black Finish, With Flange
Part Number 208801-5

Clear Finish, Standard
Part Number 208801-2

Clear Finish, With Flange
Part Number 208801-6



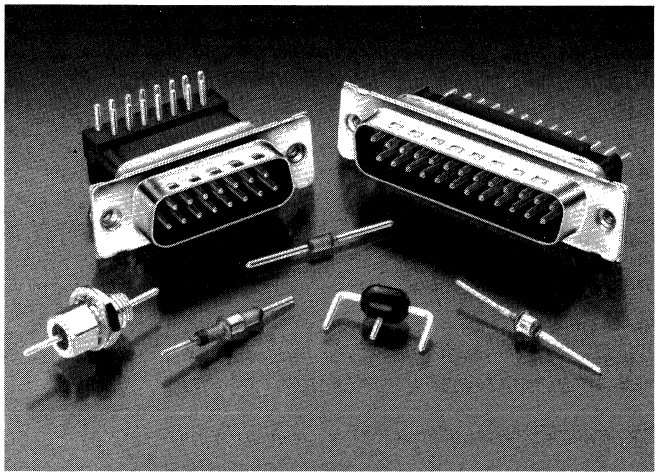
Standard Panel-Half Assembly



Flanged Panel-Half Assembly

Filters for Commercial Application

Specifications subject to change.
For latest design specifications...
1-800-522-6752

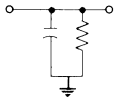


Filtering electro-magnetic interference and unwanted noise

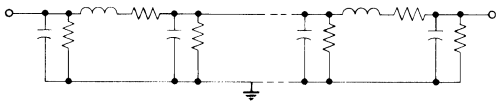
AMP Quiet Line Filters provide proven, inexpensive filtering of conducted electromagnetic interference (EMI) and general system noise. Available as components of preassembled connectors and brackets; and as individual, loose-piece components. AMP Quiet Line Fiters are offered in three types—Distributed Element, Pi and Capacitive.

Distributed Element Filters

Distributed Element Filters are of one piece construction (no beads), having distributed low Q elements which cause no noticeable resonances within the filters. These filters are particularly suited to applications where source and load impedance are not matched. This is because of the lossy transmission line effect. Filters for Commercial Application may be found on pages 7019 thru 7047.



Below 1 MHz



Above 20 MHz

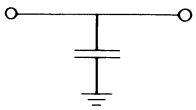
Pi Filters

Pi Filters have two capacitors and an inductor. As noise is conducted along the filtered line some is filtered by the first capacitor, some is reflected to the source by the inductor and the remaining noise is filtered by the second capacitor.

Equivalent Circuit

Capacitive Filters

Capacitive Filters provide excellent noise removal economically. Systems that transmit strong signals and can tolerate moderate loss are well suited for capacitive filtering. Filters for Commercial Application may be found on pages 7019 thru 7047.



Equivalent Circuit

Voltage Suppression Connectors—Available in all configurations, consult AMP Incorporated for information and specifications.

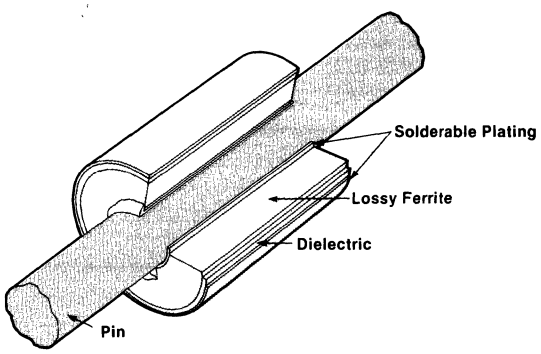
Selecting A Filter

1. Based on intended application, determine the highest frequency to be preserved. Higher frequencies will be filtered.
2. Consult the graphs on pages 7019 thru 7022 to find a filter type which begins filtering above the highest frequency to be preserved. Select this type.
   Filter Type designation example:
   DA — D = Distributed Element Filter
   A = 3000 pf Min. Capacitance
3. Consult the specifications tables to see that the type selected has adequate working voltage for the application, that the current rating is 1 to 3 times the application load and that other parameters of the filter type are suitable for the application.

Distributed Element Filters

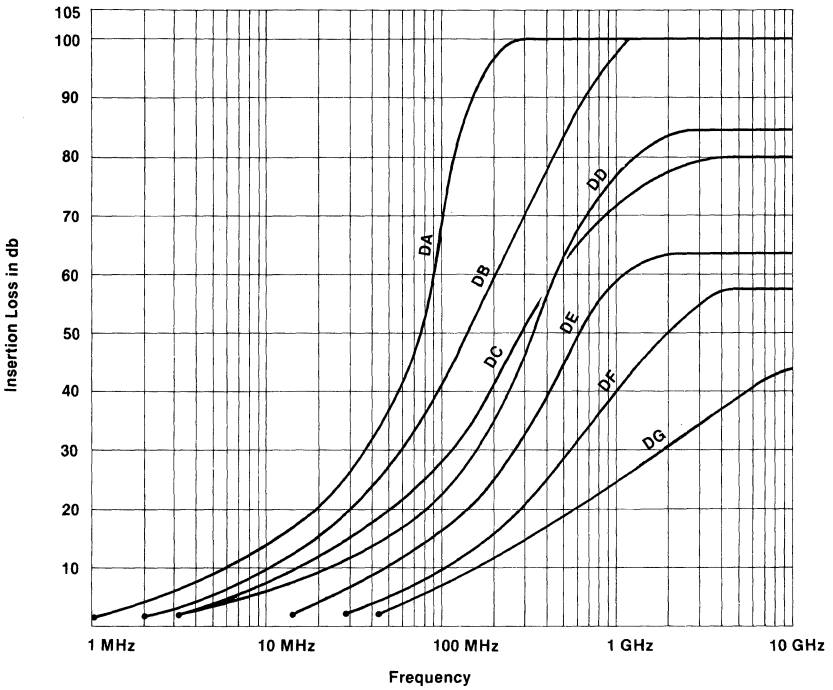
One-piece construction of AMP's distributed element filters results in a distributed capacitance and inductance network which can be approximated by a distributed transmission line circuit. Such a circuit is a series of inductance and resistance elements with shunt elements of capacitance and conductance.

Quiet Line Filters provide an inherent insertion loss per unit length. At frequencies above about 20 MHz, the low pass filter provides 80 percent of its insertion loss from its lossy ferrite component.



Distributed Element Filters
(Continued)

Calculated Insertion Loss vs. Frequency Comparison (No Load @ 25°C)



Electrical Specifications

Current Rating (Max.): Load Current (in connector)
#20 Contact—7.5 amps
(Loose-piece filters—15 amps)
RF Current—0.3 amps

Operating Voltage (Max.): 100 VDC at −25°C to +85°C

Dissipation Factor: 0.1 Max

Dielectric Withstanding Voltage: 250 VDC for 5 seconds

***Insulation Resistance (Min.):** 500 Megohms, minimum at 100 VDC, 2 minutes and +25°C

Direct Current Resistance: .002 ohms max.

***DF and DG Types**—1 Gigaohm min.

Minimum No Load Insertion Loss

Filter Type	AMP Electrical Specification Number	Capacitance Range	3 db Point	Min. No Load Insertion Loss in db (Per MIL-STD-220 at +25°C)							
				25 MHz	50 MHz	100 MHz	300 MHz	500 MHz	1 GHz	5 GHz	10 GHz
DA	108-1116	3000 pf to 8000 pf	2 MHz	20	30	50	90	100	100	100	100
DB	108-1117	2000 pf to 5000 pf	3 MHz	15	20	30	65	80	90	90	90
DC	108-1118	1000 pf to 3000 pf	7 MHz	10	15	20	40	50	55	55	55
DD	108-1128	600 pf to 1000 pf	20 MHz	—	10	20	40	50	60	60	60
DE	108-1131	300 pf to 600 pf	30 MHz	—	8	12	25	35	45	45	45
DF	108-1124	130 pf to 400 pf	50 MHz	—	—	—	—	25	35	55	55
DG	108-1122	50 pf to 175 pf	150 MHz	—	—	—	—	—	16	35	42

Note: The above filters were previously designated as follows:
DA—50 Series, DB—30 Series, DC—20 Series, DD—100 Series, DE—90 Series, DF—70 Series and DG—60 Series.

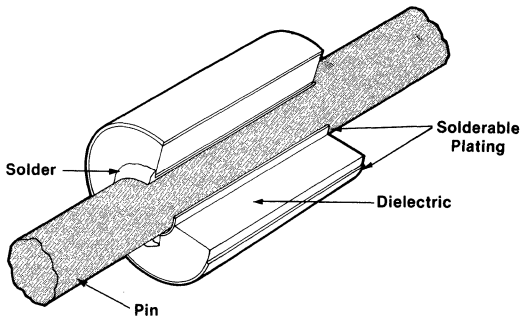
Capacitive Filters

Filtering is the simplest method of removing unwanted noise from within a circuit. And capacitive filtering provides excellent noise removal, even in the face of extreme EMI, and does so at reasonable cost.

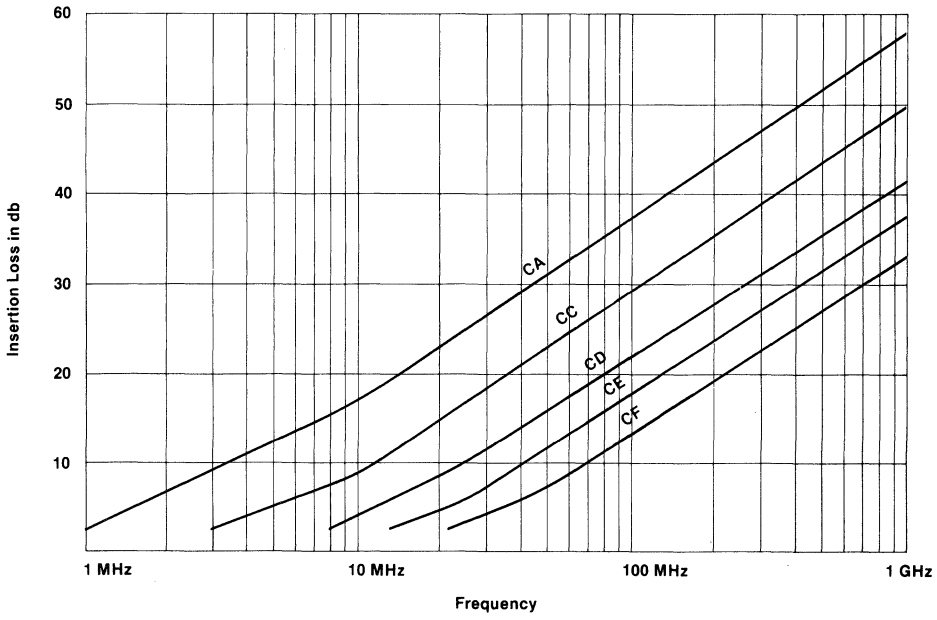
But the price extracted by capacitors is signal degradation. Systems transmitting relatively low power CMOS signals, for example, can ill afford any loss. More typical systems that transmit stronger signals and can tolerate moderate loss are well suited for capacitive filtering.

Traditionally, a filtering capacitor was used on printed circuit boards, bridging from an input or output line to ground. The proliferation of filtering capacitors in complex circuits had potential for detrimental effects, such as ground loop interference. AMP designers chose to collect the filters in a central connector where adequate grounding and control can be assured.

AMP initially developed the filtered connector concept with its premium distributed-element filter assemblies (which convert unwanted signal energy into heat) and has extended that technology to include capacitive assemblies for less demanding applications.



Calculated Insertion Loss vs. Frequency Comparison
(No Load @ 25°C)



Capacitive Filters
(Continued)

Electrical Specifications

Current Rating (Max.): Load Current—
#20 Contact—5 amps
RF Current—0.3 amps

Operating Voltage (Max.): 100 VDC at −25°C to +85°C*

Dissipation Factor: 0.1 Max.

Dielectric Withstanding Voltage: 250 VDC for 5 seconds*

Insulation Resistance (Min.): 1 gigaohms at 100 VDC, 2 minutes and +25°C

Direct Current Resistance: .002 ohms Max.

*Higher voltage available, consult AMP Incorporated. Harrisburg, PA 17105.

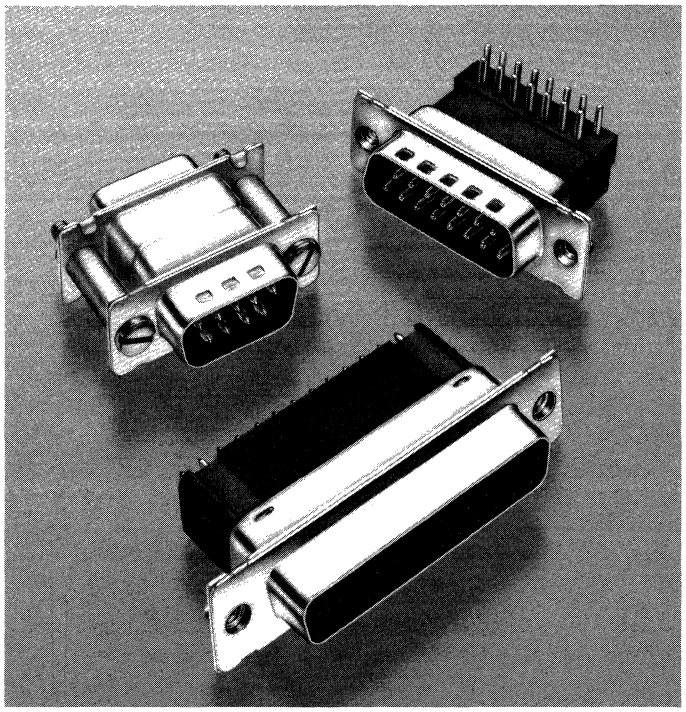
Minimum No Load Insertion Loss

Filter Type	AMP Electrical Specification Number	Capacitance Range	3 db Point	Min. No Load Insertion Loss in db (Per MIL-STD-220 at +25°C)					
				25 MHz	50 MHz	100 MHz	300 MHz	500 MHz	1 GHz
CA	108–1139	4000 pf to 10,000 pf	1.6 MHz	23	29	35	45	49	55
CC	108–1132	1300 pf to 2500 pf	5 MHz	—	14	25	35	40	45
CD	108–1135	600 pf to 1000 pf	10 MHz	8	13	19	25 @ 200 MHz	33	39
CE	108–1134	400 pf to 600 pf	16 MHz	5	10	16	22 @ 200 MHz	29	35
CF	108–1133	240 pf to 360 pf	27 MHz	3	6	11	17 @ 200 MHz	25	31
Feed-thru	108–1155	10 pf Max.	NA						

Note: The above filters were previously designated as follows:
CA—50C Series, CC—20C Series, CD—100C Series, CE—90C Series and CF—70C Series.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Filtered AMPLIMITE Subminiature D Connectors for Commercial Application



AMPLIMITE Subminiature D Connectors are versatile and widely used connectors. AMP has designed and built into these connectors a proven, rugged and inexpensive filter that eliminates the problem of conducted electromagnetic interference (EMI). These connectors also conform to FCC regulations which may require the use of filtering to limit EMI in computing devices.

Subminiature D connectors are offered with two types of filters—distributed element and capacitive. They are provided with a variety of termination choices such as solder cup, straight post and right angle post. Various types of accessories are available to meet the needs of many applications.

AMP also produces an extensive line of AMPLIMITE Subminiature D Connectors that mate with the Quiet Line filtered Connectors. These connectors are available with a choice of termination styles such as crimp snap-in contacts, posted contacts, insulation displacement contacts and contacts to terminate round conductor flat ribbon cable. For more information on these connectors request Catalog No. 82068.

Subminiature D Connectors with Distributed Element Filters 9 Position

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material and Finish:

Shell—Steel, tin plated

Insert—UL rated 94V2 Thermoplastic

Contact—Pin-brass, Socket-phosphor bronze, plated .000015[0.00038] min. gold in contact area, plated tin/lead on termination end

Filter Sleeve—Ferrite and Ceramic

Related Product Data:

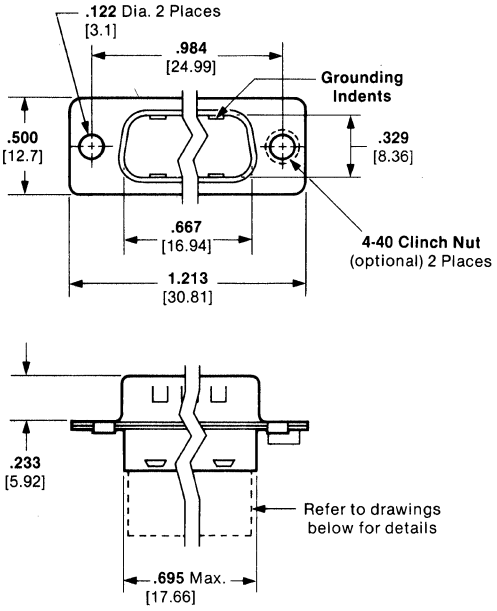
Panel Mounting/Mating - page 7037

PC Board Mounting - page 7038

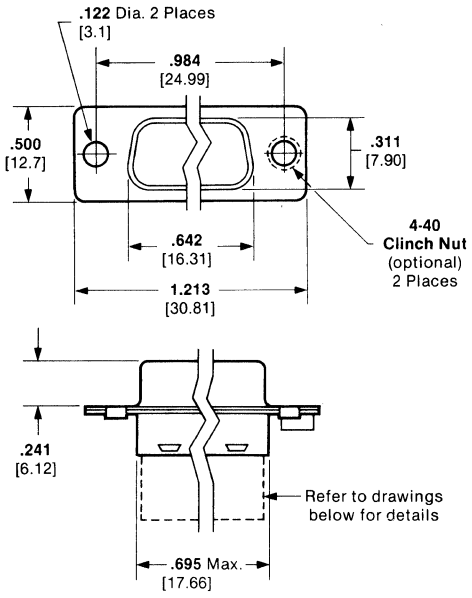
Accessories - pages 7038-7040

Electrical Specifications - pages 7019-7022

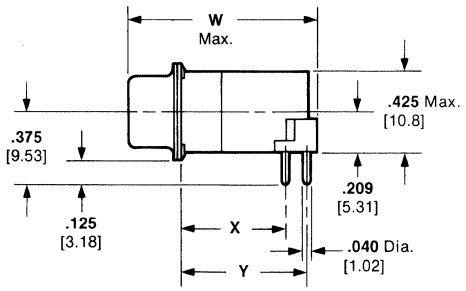
Plug Assemblies (Pin Contacts)



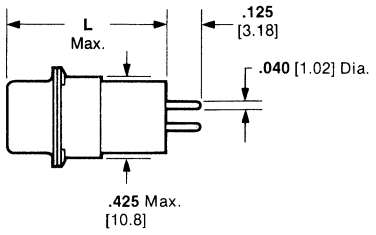
Receptacle Assemblies (Socket Contacts)



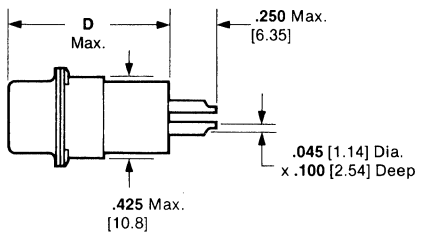
Termination Type



.040 [1.02] **Dia.**
Right Angle Post



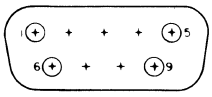
.040 [1.02] **Dia.**
Straight Post



Solder Cup

Insert Arrangement

Note:
Mating face of plug assembly is shown, receptacle assembly is mirror image.



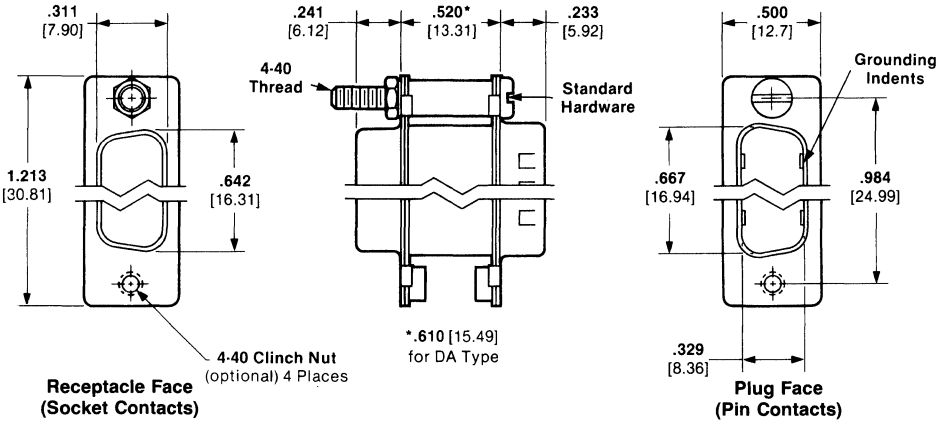
9 Position

Subminiature D Connectors with Distributed Element Filters 9 Position

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Plug-Receptacle Adapter



Shell Dimensions

Filter Type	Connector	Dimensions				
		Right-Angle			Straight	Solder
		W Max.	X	Y	L Max.	D Max.
DC, DG, DE	Plug	**1.015** 25.78	**.545** 13.84	**.657** 16.69	**.640** 16.26	**.680** 17.27
	Receptacle	**1.020** 25.91	**.545** 13.84	**.657** 16.69	**.645** 16.38	**.685** 17.40
DB, DF, DD	Plug	**1.015** 25.78	**.545** 13.84	**.657** 16.69	**.790** 19.94	**.825** 20.96
	Receptacle	**1.020** 25.91	**.545** 13.84	**.657** 16.69	**.790** 20.07	**.830** 21.08
DA	Plug	**1.132** 28.75	**.657** 16.69	**.769** 19.53	**.950** 24.13	**.990** 25.15
	Receptacle	**1.137** 28.88	**.657** 16.69	**.769** 19.53	**.955** 24.26	**.995** 25.27

Part Numbers

Filter Type	Mounting Style	Plug Assemblies with Pin Contacts			Receptacle Assemblies with Socket Contacts			Plug-Receptacle Adapters
		Termination Type			Termination Type			
		Right-Angle Posted .040 [1.02] Dia.	Straight Posted .040 [1.02] Dia.	Solder Cup	Right-Angle Posted .040 [1.02] Dia.	Straight Posted .040 [1.02] Dia.	Solder	
DC	**.120** [3.05] Mounting Hole	842900-1	842910-1	842920-1	842905-1	842915-1	842925-1	842930-1[1]
	4-40 Clinch Nut	—	842910-8	842920-8	—	—	842925-8	842930-8
DB	**.120** [3.05] Mounting Hole	842900-2	842910-2	842920-2	842905-2	842915-2	—	842930-2[1]
	4-40 Clinch Nut	—	—	842920-9	842905-9	—	842925-9	842930-9
DA	**.120** [3.05] Mounting Hole	842900-3	842910-3	842920-3	842905-3	842915-3	842925-3	842930-3[1]
	4-40 Clinch Nut	1-842900-0	1-842910-0	1-842920-0	1-842905-0	1-842915-0	1-842925-0	1-842930-0
DG	**.120** [3.05] Mounting Hole	—	—	842920-4	—	—	842825-4	—
	4-40 Clinch Nut	—	—	—	1-842905-1	—	—	—
DF	**.120** [3.05] Mounting Hole	—	—	842920-5	—	842915-5	—	842930-5[1]
	4-40 Clinch Nut	1-842900-2	—	1-842920-2	—	—	1-842925-2	1-842930-2
DE	**.120** [3.05] Mounting Hole	—	—	842920-6	—	842915-6	842925-6	842930-6[1]
	4-40 Clinch Nut	—	—	1-842920-3	—	1-842915-3	1-842925-3	1-842930-3
DD	**.120** [3.05] Mounting Hole	—	—	842920-7	842905-7	—	—	842930-7[1]
	4-40 Clinch Nut	—	—	1-842920-4	—	—	—	—

[1]This Adapter has Standard Hardware.

Subminiature D Connectors with Distributed Element Filters 15 Position

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material and Finish:

Shell—Steel, tin plated

Insert—Thermoplastic, UL rated 94V2

Contact:—Pin-brass, Socket-phosphor bronze, plated .000015 [0.00038] min. gold in contact area, plated tin/lead on termination end

Filter Sleeve—Ferrite and Ceramic

Related Product Data:

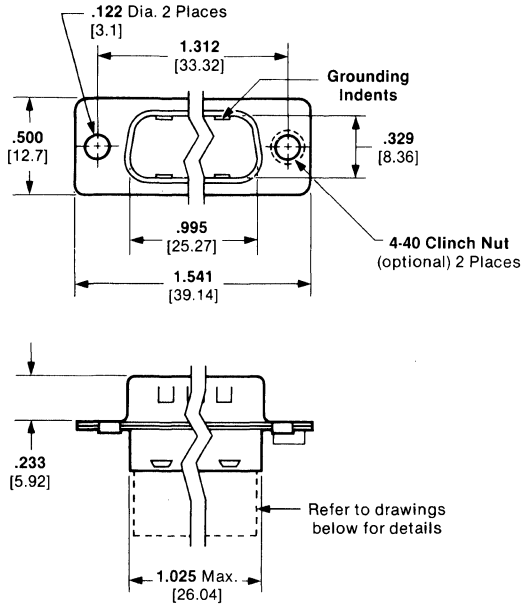
Panel Mounting/Mating - page 7037

PC Board Mounting - page 7038

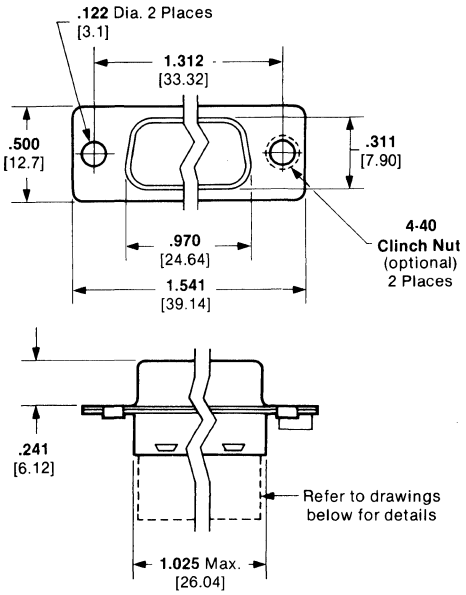
Accessories - pages 7038-7040

Electrical Specifications - pages 7019-7022

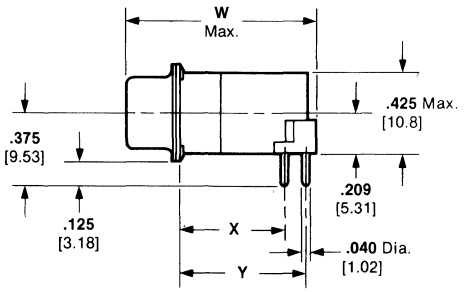
Plug Assemblies (Pin Contacts)



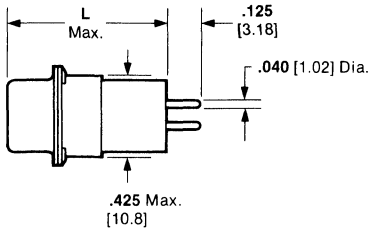
Receptacle Assemblies (Socket Contacts)



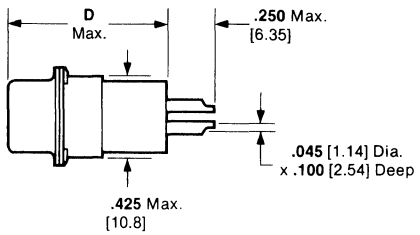
Termination Type



.040 [1.02] Dia.
Right Angle Post



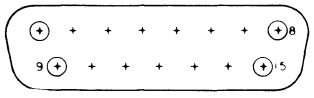
.040 [1.02] Dia.
Straight Post



Solder Cup

Insert Arrangement

Note:
Mating face of plug assembly is shown, receptacle assembly is mirror image.



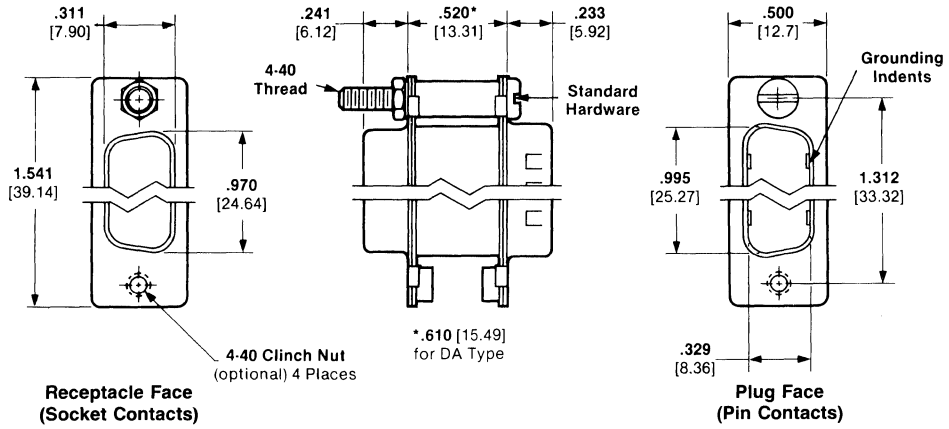
15 Position

Subminiature D Connectors with Distributed Element Filters 15 Position

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Plug-Receptacle Adapter



Shell Dimensions

Filter Type	Connector	Dimensions				
		Right-Angle			Straight	Solder
		W Max.	X	Y	L Max.	D Max.
DC, DG, DE	Plug	**1.015** 25.78	**.545** 13.84	**.657** 16.69	**.640** 16.26	**.680** 17.27
	Receptacle	**1.020** 25.91	**.545** 13.84	**.657** 16.69	**.645** 16.38	**.685** 17.40
DB, DF, DD	Plug	**1.015** 25.78	**.545** 13.84	**.657** 16.69	**.785** 19.94	**.825** 20.96
	Receptacle	**1.020** 25.91	**.545** 13.84	**.657** 16.69	**.790** 20.07	**.830** 21.08
DA	Plug	**1.132** 28.75	**.657** 16.69	**.769** 19.53	**.950** 24.13	**.990** 25.15
	Receptacle	**1.137** 28.88	**.657** 16.69	**.769** 19.53	**.955** 24.26	**.995** 25.27

Part Numbers

Filter Type	Mounting Style	Plug Assemblies with Pin Contacts			Receptacle Assemblies with Socket Contacts			Plug-Receptacle Adapters
		Termination Type			Termination Type			
		Right-Angle Posted .040 [1.02] Dia.	Straight Posted .040 [1.02] Dia.	Solder Cup	Right-Angle Posted .040 [1.02] Dia.	Straight Posted .040 [1.02] Dia.	Solder Cup	
DC	**.120** [3.05] Mounting Hole	842901-1	842911-1	842921-1	842906-1	842916-1	842926-1	842931-1[1]
	4-40 Clinch Nut	842901-8	—	—	—	—	—	—
DB	**.120** [3.05] Mounting Hole	842901-2	—	842921-2	842906-2	—	842926-2	842931-2[1]
	4-40 Clinch Nut	—	—	—	—	—	—	842931-9
DA	**.120** [3.05] Mounting Hole	842901-3	842911-3	842921-3	842906-3	842916-3	842926-3	842931-3[1]
	4-40 Clinch Nut	1-842901-0	1-842911-0	1-842921-0	—	—	1-842926-0	1-842931-0
DG	**.120** [3.05] Mounting Hole	—	842911-4	842921-4	842906-4	842916-4	—	842931-4[1]
	4-40 Clinch Nut	1-842901-1	—	—	—	—	—	—
DF	**.120** [3.05] Mounting Hole	—	—	842921-5	842906-5	—	842926-5	—
	4-40 Clinch Nut	1-842901-2	—	1-842921-2	1-842906-2	—	—	1-842931-2
DE	**.120** [3.05] Mounting Hole	842901-6	—	842921-6	842906-6	—	842926-6	—
	4-40 Clinch Nut	—		—	—	—	1-842926-3	1-842931-3
DD	**.120** [3.05] Mounting Hole	—	—	—	842906-7	—	842926-7	—
	4-40 Clinch Nut	—	—	1-842921-4	—	—	—	1-842931-4

[1]This Adapter has Standard Hardware.

Subminiature D Connectors with Distributed Element Filters 25 Position

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material and Finish:

Shell—Steel, tin plated

Insert—Thermoplastic, UL rated 94V2

Contact—Pin-brass, Socket-phospher bronze, plated .000015 [0.00038] min. gold in contact area, plated tin/lead on termination end

Filter Sleeve—Ferrite and Ceramic

Related Product Data:

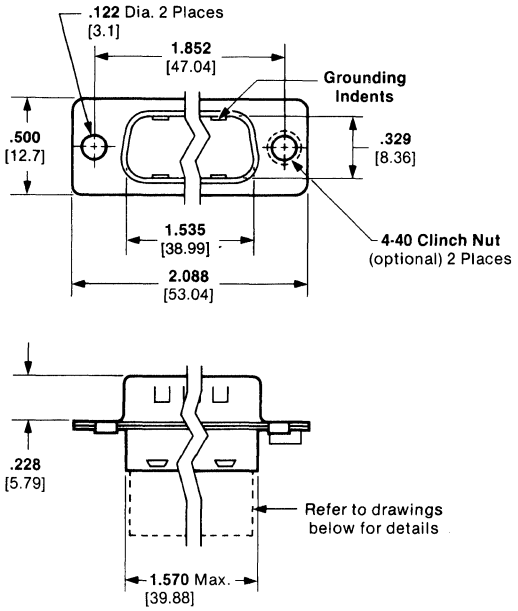
Panel Mounting/Mating - page 7037

PC Board Mounting - page 7038

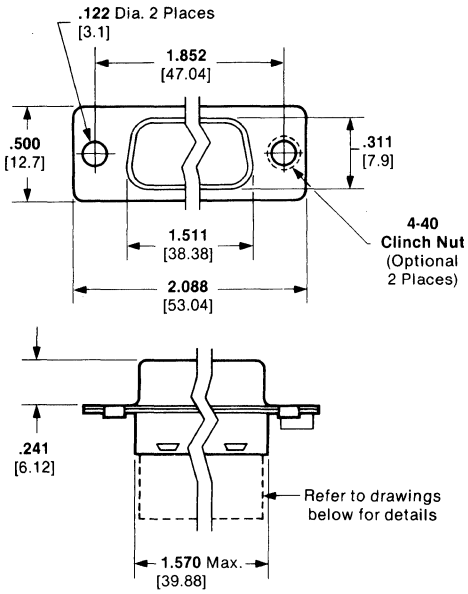
Accessories - pages 7038-7040

Electrical Specifications - pages 7019-7022

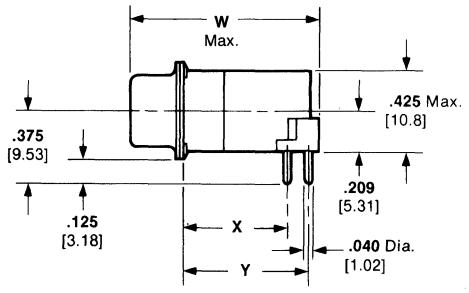
Plug Assemblies (Pin Contacts)



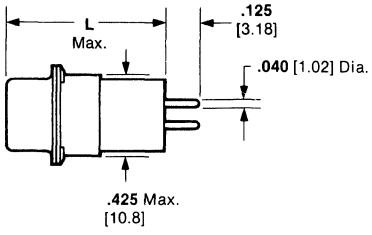
Receptacle Assemblies (Socket Contacts)



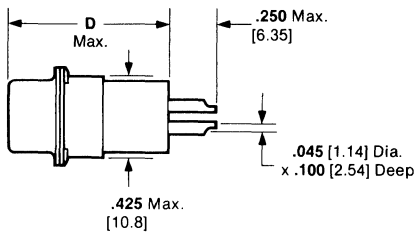
Termination Type



.040 [1.02] **Dia.**
Right Angle Post



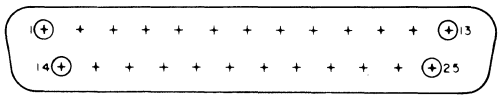
.040 [1.02] **Dia.**
Straight Post



Solder Cup

Insert Arrangement

Note:
Mating face of plug assembly is shown, receptacle assembly is mirror image.



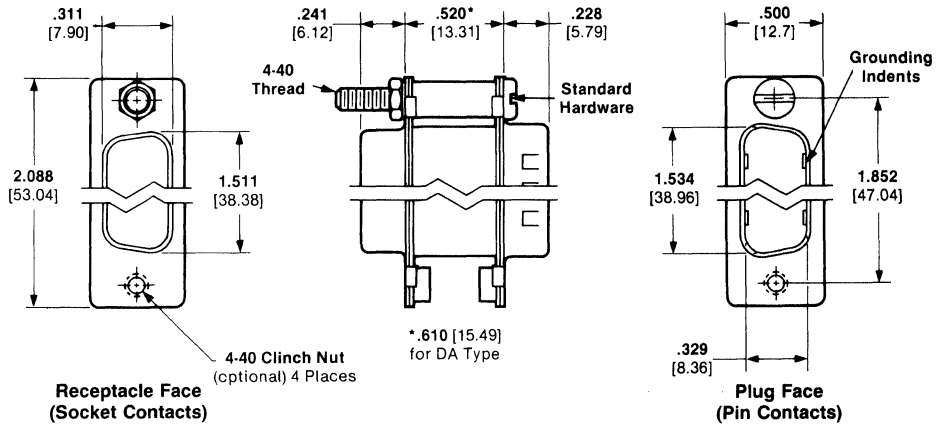
25 Position

Subminiature D Connectors with Distributed Element Filters 25 Position

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Plug-Receptacle Adapter



Shell Dimensions

Filter Type	Connector	Dimensions				
		Right-Angle			Straight	Solder
		W Max.	X	Y	L Max.	D Max.
DC, DG, DE	Plug	**1.015** 25.78	**.545** 13.84	**.657** 16.69	**.640** 16.26	**.680** 17.27
	Receptacle	**1.020** 25.91	**.545** 13.84	**.657** 16.69	**.645** 16.38	**.685** 17.40
DB, DF, DD	Plug	**1.015** 25.78	**.545** 13.84	**.657** 16.69	**.785** 19.94	**.825** 20.96
	Receptacle	**1.020** 25.91	**.545** 13.84	**.657** 16.69	**.790** 20.07	**.830** 21.08
DA	Plug	**1.132** 28.75	**.657** 16.69	**.769** 19.53	**.950** 24.13	**.990** 25.15
	Receptacle	**1.137** 28.88	**.657** 16.69	**.769** 19.53	**.955** 24.26	**.995** 25.27

Part Numbers

Filter Type	Mounting Style	Plug Assemblies with Pin Contacts			Receptacle Assemblies with Socket Contacts			Plug-Receptacle Adapters
		Termination Type			Termination Type			
		Right-Angle Posted .040 [1.02] Dia.	Straight Posted .040 [1.02] Dia.	Solder Cup	Right-Angle Posted .040 [1.02] Dia.	Straight Posted .040 [1.02] Dia.	Solder Cup	
DC	**.120** [3.05] Mounting Hole	842902-1	842912-1	842922-1	842907-1	842917-1	842927-1	842932-1[1]
	4-40 Clinch Nut	842902-8	842912-8	—	842907-8	842917-8	—	842932-8
DB	**.120** [3.05] Mounting Hole	842902-2	842912-2	842922-2	842907-2	842917-2	842927-2	842932-2[1]
	4-40 Clinch Nut	842902-9	842912-9	842922-9	—	842917-9	—	842932-9
DA	**.120** [3.05] Mounting Hole	842902-3	842912-3	842922-3	842907-3	842917-3	842927-3	842932-3[1]
	4-40 Clinch Nut	1-842902-0	1-842912-0	1-842922-0	1-842907-0	1-842917-0	1-842927-0	1-842932-0
DG	**.120** [3.05] Mounting Hole	—	—	—	—	—	842927-4	842932-4[1]
	4-40 Clinch Nut	—	—	—	1-842907-1	—	—	—
DF	**.120** [3.05] Mounting Hole	—	—	842922-5	842907-5	—	842927-5	842932-5[1]
	4-40 Clinch Nut	—	—	—	1-842907-2	—	—	1-842932-2
DE	**.120** [3.05] Mounting Hole	—	842912-6	842922-6	842907-6	—	842927-6	842932-6[1]
	4-40 Clinch Nut	1-842902-3	—	—	—	1-842917-3	1-842927-3	1-842932-3
DD	**.120** [3.05] Mounting Hole	842902-7	—	—	842907-7	842917-7	842927-7	842932-7[1]
	4-40 Clinch Nut	—	—	—	—	1-842917-4	—	1-842932-4

[1]This Adapter has Standard Hardware.

Subminiature D Connectors with Distributed Element Filters 37 Position

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material and Finish:

Shell—Steel, tin plated

Insert—Thermoplastic, UL rated 94V2

Contact—Pin-brass, Socket-phospher bronze, plated .000015 [0.00038] min. gold in contact area, plated tin/lead on termination end

Filter Sleeve—Ferrite and Ceramic

Related Product Data:

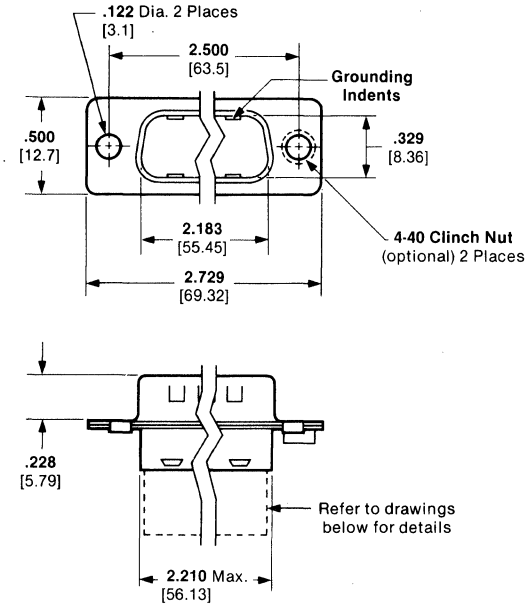
Panel Mounting/Mating - page 7037

PC Board Mounting - page 7038

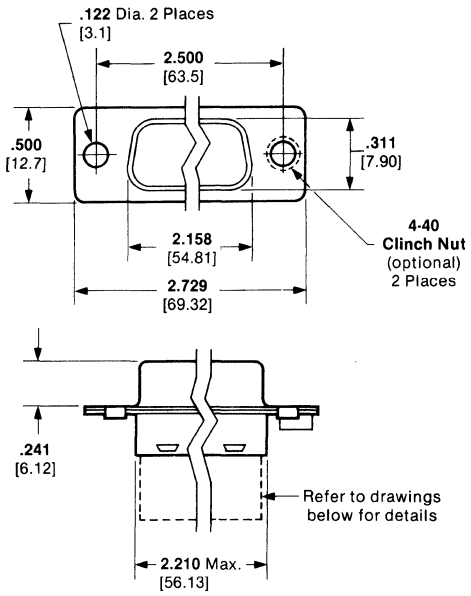
Accessories - pages 7038-7040

Electrical Specifications - pages 7019-7022

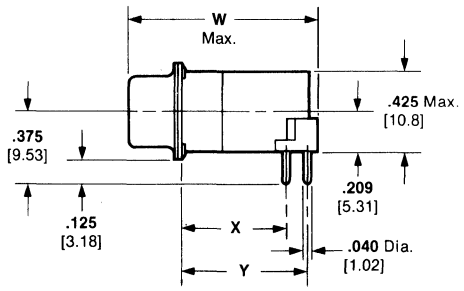
Plug Assemblies (Pin Contacts)



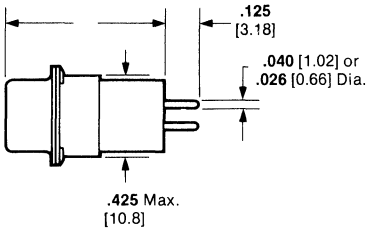
Receptacle Assemblies (Socket Contacts)



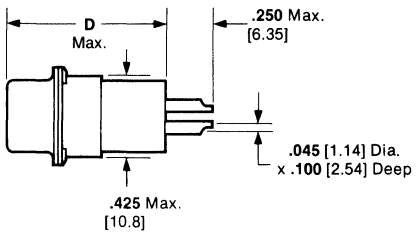
Termination Type



.040 [1.02] **Dia.**
Right Angle Post



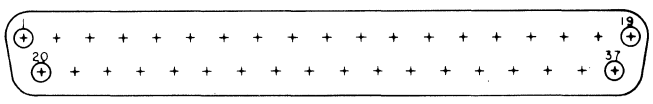
.040 [1.02] **Dia.**
Straight Post



Solder Cup

Insert Arrangement

Note:
Mating face of plug assembly is shown, receptacle assembly is mirror image.



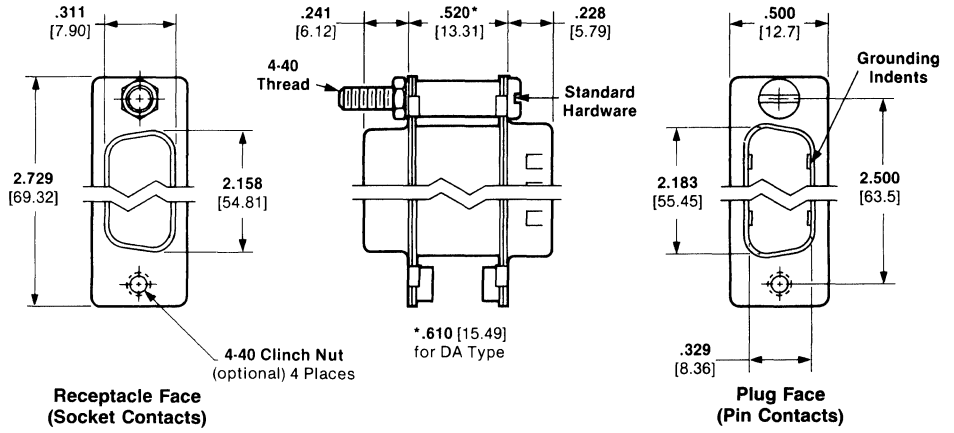
37 Position

Subminiature D Connectors with Distributed Element Filters 37 Position

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Plug-Receptacle Adapter



Shell Dimensions

Filter Type	Connector	Dimensions				
		Right-Angle			Straight	Solder
		W Max.	X	Y	L Max.	D Max.
DC, DG, DE	Plug	**1.015** 25.78	**.545** 13.84	**.657** 16.69	**.640** 16.26	**.680** 17.27
	Receptacle	**1.020** 25.91	**.545** 13.84	**.657** 16.69	**.645** 16.38	**.685** 17.40
DB, DF, DD	Plug	**1.015** 25.78	**.545** 13.84	**.657** 16.69	**.785** 19.94	**.825** 20.96
	Receptacle	**1.020** 25.91	**.545** 13.84	**.657** 16.69	**.790** 20.07	**.830** 21.08
DA	Plug	**1.132** 28.75	**.657** 16.69	**.769** 19.53	**.950** 24.13	**.990** 25.15
	Receptacle	**1.137** 28.88	**.657** 16.69	**.769** 19.53	**.955** 24.26	**.995** 25.27

Part Numbers

Filter Type	Mounting Style	Plug Assemblies with Pin Contacts			Receptacle Assemblies with Socket Contacts			Plug-Receptacle Adapters
		Termination Type			Termination Type			
		Right-Angle Posted .040 [1.02] Dia.	Straight Posted .040 [1.02] Dia.	Solder Cup	Right-Angle Posted .040 [1.02] Dia.	Straight Posted .040 [1.02] Dia.	Solder Cup	
DC	**.120** [3.05] Mounting Hole	842903-1	842913-1	842923-1	842908-1	842918-1	842928-1	842933-1[1]
	4-40 Clinch Nut	—	842913-8	—	—	—	—	842933-8
DB	**.120** [3.05] Mounting Hole	—	—	842923-2	—	—	—	842933-2[1]
	4-40 Clinch Nut	—	—	—	—	—	—	842933-9
DA	**.120** [3.05] Mounting Hole	842903-3	842913-3	842923-3	842908-3	842918-3	842928-3	842933-3[1]
	4-40 Clinch Nut	—	—	—	—	—	1-842928-0	1-842933-0
DG	**1.20** [3.05] Mounting Hole	—	—	—	—	—	842928-4	—
	4.40 Clinch Nut	—	—	—	1-842908-1	1-842918-1	—	1-842933-1
DF	**1.20** [3.05] Mounting Hole	—	—	—	—	—	842928-5	842933-5[1]
	4-40 Clinch Nut	—	—	—	—	1-842918-2	—	1-842933-2
DE	**.120** [3.05] Mounting Hole	842903-6	—	842923-6	—	—	842928-6	—
	4-40 Clinch Nut	—	—	—	—	—	—	1-842933-3
DD	**.120** [3.05] Mounting Hole	1-842903-3	—	—	842908-7	—	—	—
	4.40 Clinch Nut	—	—	—	—	—	—	1-842933-4

[1]This Adapter has Standard Hardware.

Subminiature D Connectors with Distributed Element Filters 50 Position

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material and Finish:

Shell—Steel, tin plated

Insert—Thermoplastic, UL rated 94V2

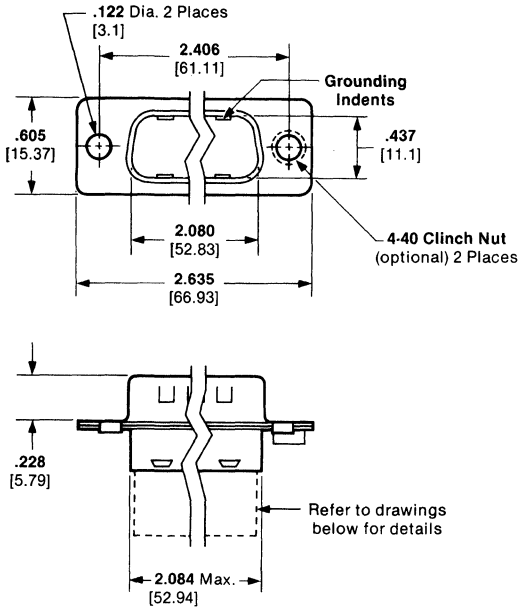
Contact—Pin-brass, Socket-phosphor bronze, plated .000015 [0.00038] min. gold in contact area, plated tin/lead on termination end

Filter Sleeve—Ferrite and Ceramic

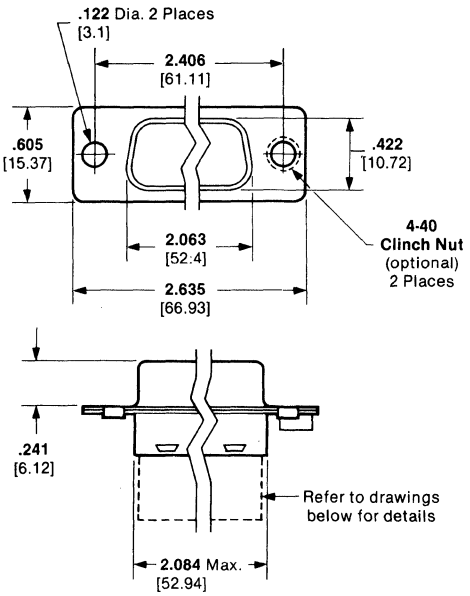
Related Product Data:

Panel Mounting/Mating - page 7037
PC Board Mounting - page 7038
Accessories - pages 7038-7040
Electrical Specifications - pages 7019-7022

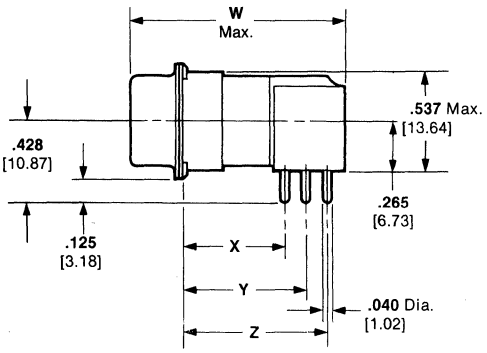
Plug Assemblies (Pin Contacts)



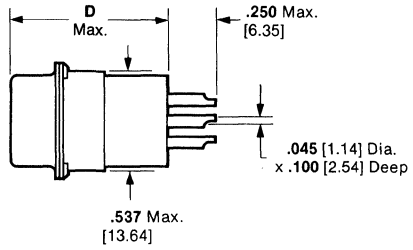
Receptacle Assemblies (Socket Contacts)



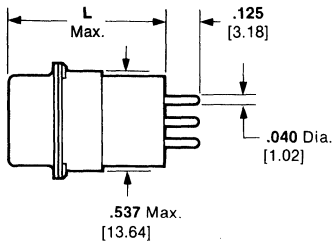
Termination Type



.040 [1.02] **Dia. Right Angle Post**



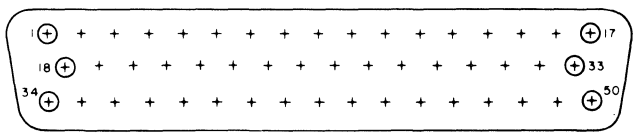
Solder Cup



.040 [1.02] **Dia. Straight Post**

Insert Arrangement

Note:
Mating face of plug assembly is shown, receptacle assembly is mirror image.



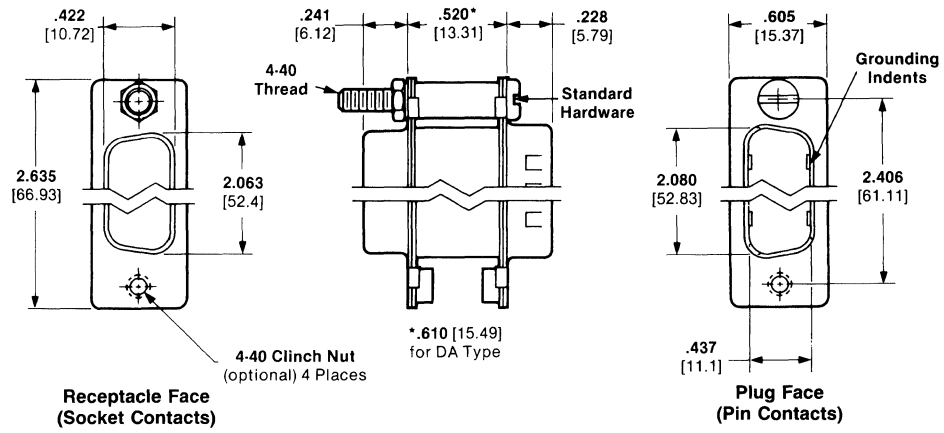
50 Position

Subminiature D Connectors with Distributed Element Filters 50 Position

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Plug-Receptacle Adapter



Shell Dimensions

Filter Type	Connector	Dimensions					
		Right-Angle				Straight	Solder
		W Max.	X	Y	Z	L Max.	D Max.
DC, DG, DE	Plug	**1.135** 28.82	**.545** 13.84	**.657** 16.69	**.769** 19.53	**.640** 16.26	**.680** 17.27
	Receptacle	**1.140** 28.96	**.545** 13.84	**.657** 16.69	**.769** 19.53	**.645** 16.38	**.685** 17.40
DB, DF, DD	Plug	**1.135** 28.82	**.545** 13.84	**.657** 16.69	**.769** 19.53	**.785** 19.94	**.825** 20.96
	Receptacle	**1.140** 28.96	**.545** 13.84	**.657** 16.69	**.769** 19.53	**.790** 20.07	**.830** 21.08
DA	Plug	**1.252** 31.80	**.657** 16.69	**.769** 19.53	**.881** 22.38	**.950** 24.13	**.990** 25.15
	Receptacle	**1.257** 31.93	**.657** 16.69	**.769** 19.53	**.881** 22.38	**.955** 24.26	**.995** 25.27

Part Numbers

Filter Type	Mounting Style	Plug Assemblies with Pin Contacts			Receptacle Assemblies with Socket Contacts			Plug-Receptacle Adapters
		Termination Type			Termination Type			
		Right-Angle Posted .040 [1.02] Dia.	Straight Posted .040 [1.02] Dia.	Solder Cup	Right-Angle Posted .040 [1.02] Dia.	Straight Posted .040 [1.02] Dia.	Solder Cup	
DC	**.120** [3.05] Mounting Hole	842904-1	—	842924-1	—	842919-1	842929-1	842934-1[1]
	4-40 Clinch Nut	—	—	—	—	—	—	—
DB	**.120** [3.05] Mounting Hole	842904-2	842914-2	842924-2	—	842919-2	—	842934-2[1]
	4-40 Clinch Nut	842904-9	—	842924-9	—	—	—	842934-9
DA	**.120** [3.05] Mounting Hole	—	842914-3	842924-3	—	842919-3	842929-3	842934-3[1]
	4-40 Clinch Nut	—	—	—	—	—	—	1-842934-0
DG	**.120** [3.05] Mounting Hole	—	—	—	—	—	—	842934-4[1]
DF	**.120** [3.05] Mounting Hole	—	—	—	—	842919-5	842929-5	842934-5[1]
	4-40 Clinch Nut	—	—	—	—	1-842919-2	—	1-842934-2
DE	**.120** [3.05] Mounting Hole	842904-6	—	—	—	842919-6	—	—
	4-40 Clinch Nut	—	—	—	—	—	—	1-842934-3
DD	**.120** [3.05] Mounting Hole	842904-7	—	—	—	—	—	842934-7[1]
	4-40 Clinch Nut	—	—	—	—	—	—	1-842934-4

[1]This Adapter has Standard Hardware.

Subminiature D Connectors with Capacitive Filters

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Material and Finish:

Shell—Steel, tin plated

Insert—Thermoplastic, UL rated 94V2

Contact—Pin-brass, Socket-phospher bronze, plated .000015 [0.00038] min. gold in contact area, plated tin/lead on termination end

Filter Sleeve—Ceramic

Related Product Data:

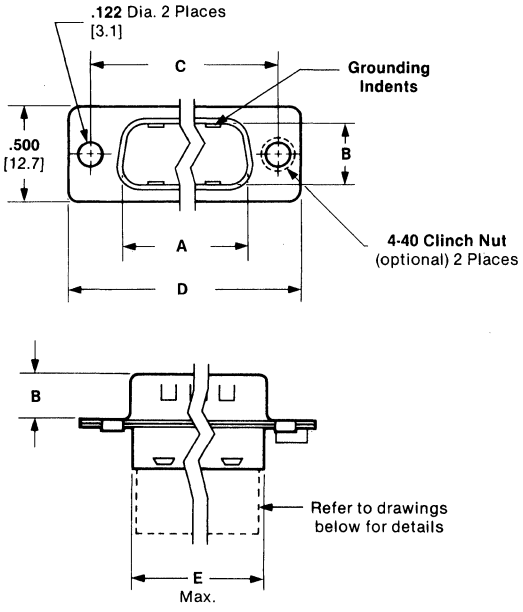
Panel Mounting/Mating - page 7037

PC Board Mounting - page 7038

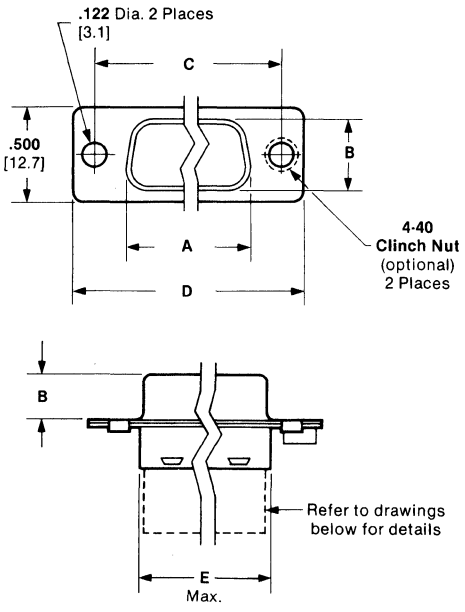
Accessories - pages 7038-7040

Electrical Specifications - pages 7019-7022

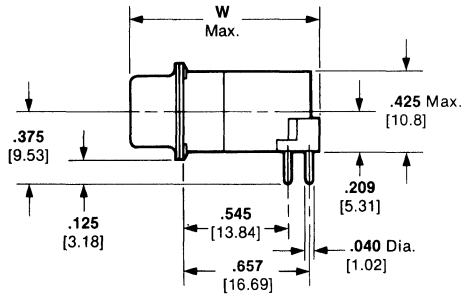
Plug Assemblies (Pin Contacts)



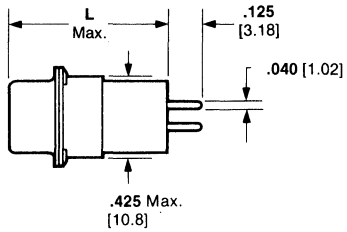
Receptacle Assemblies (Socket Contacts)



Termination Type



.040 [1.02] **Dia.**
Right Angle Post



.040 [1.02] **Dia.**
Straight Post

Subminiature D Connectors with Capacitive Filters

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Connector Dimensions

Number of Positions (Shell Size)	Connector Config.	Dimensions A	B	C	D	E Max.	L Max. (Straight pins) CC & CE Types	CA, CF & CD Types	W Max. (Right Angle)
9 (1)	Plug	.667 16.94	.233 5.92	.984 24.99	1.213 30.81	.695 17.65	.640 16.26	.785 19.94	1.015 25.78
	Receptacle	.642 16.31	.241 6.12	.984 24.99	1.213 30.81	.695 17.65	.645 16.38	.790 20.07	1.020 25.91
15 (2)	Plug	.995 25.27	.233 5.92	1.312 33.32	1.541 39.14	10.25 26.04	.640 16.26	.785 19.94	1.015 25.78
	Receptacle	.970 24.64	.241 6.12	1.312 33.32	1.541 39.14	10.25 26.04	.645 16.38	.790 20.07	1.020 25.91
25 (3)	Plug	1.534 38.96	.228 5.79	1.852 47.04	2.088 53.04	1.570 39.88	.640 16.26	.785 19.94	1.015 25.78
	Receptacle	1.511 38.38	.241 6.12	1.852 47.04	2.088 53.04	1.570 39.88	.645 16.38	.790 20.07	1.020 25.91
37 (4)	Plug	2.183 55.45	.228 5.79	2.500 63.50	2.729 69.32	2.210 56.13	.640 16.26	.785 19.94	1.015 25.78
	Receptacle	2.158 54.81	.241 6.12	2.500 63.50	2.729 69.32	2.210 56.13	.645 16.38	.790 20.07	1.020 25.91

Plug Assemblies with Pin Contacts

No. of Positions	Filter Type	Straight Posted Connectors .122 [3.1] Dia. Mounting Hole	Straight Posted Connectors 4-40 Clinch Nut	Right Angle Posted Connectors .122 [3.1] Dia. Mounting Hole	Right Angle Posted Connectors 4-40 Clinch Nut
9	CA	—	—	842946-1	842946-2
	CC	842666-3	842666-4	—	842674-4
	CE	—	—	—	—
	CD	—	—	—	842646-4
	CF	—	—	—	—
15	CA	—	842939-2	842947-1	842947-2
	CC	842667-3	—	842675-3	842675-4
	CE	—	—	—	842619-4
	CD	—	842639-4	—	842647-4
	CF	—	—	—	—
25	CA	—	842940-2	842948-1	842948-2
	CC	—	842668-4	—	842676-4
	CE	842612-3	—	—	842620-4
	CD	—	842640-4	842648-3	842648-4
	CF	842584-3	—	—	—
37	CA	—	—	—	—
	CC	—	—	—	—
	CE	—	—	—	—
	CD	—	—	—	—
	CF	—	—	—	—

Receptacle Assemblies with Socket Contacts

No. of Positions	Filter Type	Straight Posted Connectors .122 [3.1] Dia. Mounting Hole	Straight Posted Connectors 4-40 Clinch Nut	Right Angle Posted Connectors .122 [3.1] Dia. Mounting Hole	Right Angle Posted Connectors 4-40 Clinch Nut
9	CA	842942-1	842942-2	—	—
	CC	842670-3	—	—	842678-4
	CE	842614-3	—	—	—
	CD	842642-3	842642-4	—	842650-4
15	CA	842943-1	842943-2	—	—
	CC	842671-3	—	—	842679-4
	CE	842615-3	—	—	—
	CD	842643-3	—	—	842651-4
	CF	842587-3	—	—	—
25	CA	842944-1	—	—	842952-2
	CC	842672-3	842672-4	842680-3	—
	CE	842616-3	842616-4	—	842624-4
	CD	842644-3	842644-4	842652-3	842652-4
	CF	842588-3	—	—	—
37	CA	—	—	—	—
	CC	—	—	—	842681-4
	CE	—	—	—	—
	CD	—	842645-4	—	—

Subminiature D Connectors with Capacitive Filters

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Material and Finish

Shell—Steel, tin plated

Insert—Thermoplastic, UL rated 94V2

Contact—One piece phosphor bronze, plated .000015 [0.00038] min. gold in contact area, plated tin/lead on termination end

Filter Sleeve—Ceramic

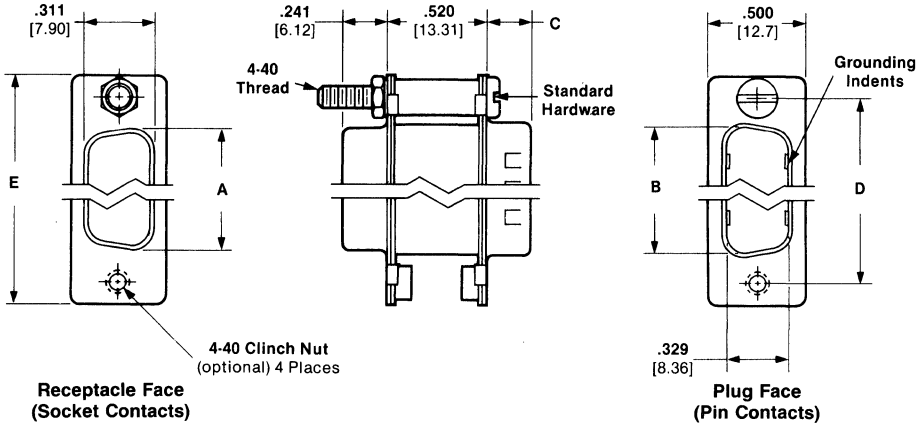
Related Product Data:

Panel Mounting/Mating - page 7037

Accessories - pages 7038-7040

Electrical Specifications - pages 7019-7022

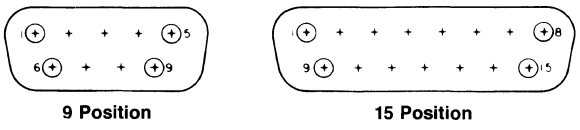
Plug-Receptacle Adapter



Number of Positions (Shell size)	Dimensions A	B	C	D	E	Filter Type	Standard Hardware	4-40 Clinch Nut
9 (1)	**.642** 16.31	**.667** 16.94	**.233** 5.92	**.984** 24.99	**1.213** 30.81	CA	842954-1	842954-2
						CC	842737-3	842737-4
						CE	—	—
						CD	842697-3	842697-4
						CF	—	—
15 (2)	**.970** 24.64	**.995** 25.27	**.233** 5.92	**1.312** 33.32	**1.541** 39.14	CC	842740-3	—
						CD	—	842698-4
						CF	—	—
25 (3)	**1.511** 38.38	**1.534** 38.96	**.228** 5.79	**1.852** 47.04	**2.088** 53.04	CA	842956-1	—
						CC	842743-3	842743-4
						CE	842745-3	842745-4
						CD	842699-3	842699-4
						CF	842744-3	842744-4
37 (4)	**2.158** 54.81	**2.183** 55.45	**.228** 5.79	**2.500** 63.50	**2.729** 69.32	CA	842957-1	842957-2
						CC	842746-3	—
						CE	—	—
						CD	842700-3	842700-4
						CF	842747-3	—

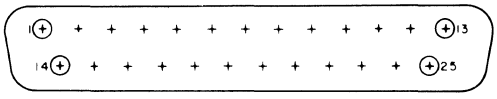
Insert Arrangements

Note: Making faces of plug assemblies are shown, receptacle assemblies are mirror images.

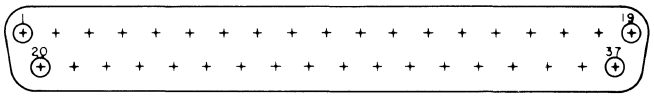


9 Position

15 Position



25 Position



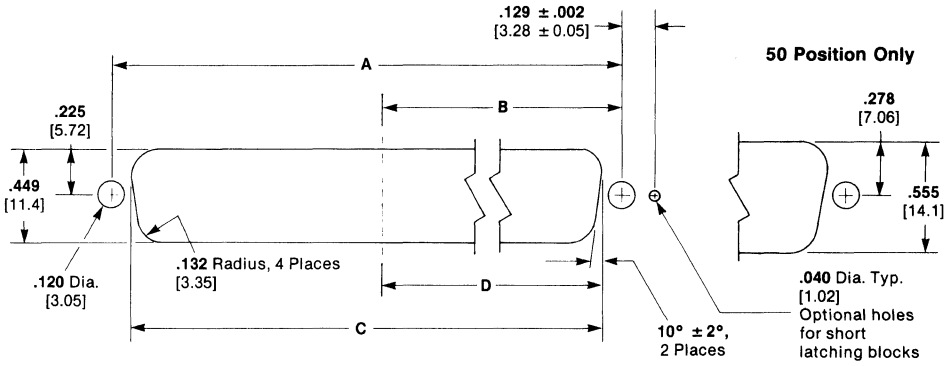
37 Position

Subminiature D Connector Mounting and Mating Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

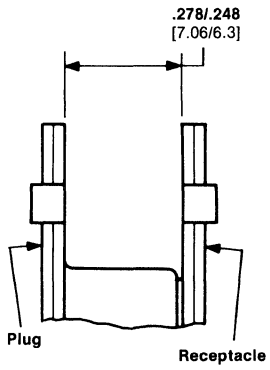
Panel Cutout for mounting behind panel



No. of Pos.	Dimensions			
	A	B	C	D
9	**.984** 24.99	**.492** 12.5	**.806** 20.47	**.403** 10.24
15	**1.312** 33.32	**.656** 16.66	**1.134** 28.8	**.567** 14.4
25	**1.852** 47.04	**.926** 23.52	**1.674** 42.52	**.837** 21.26
37	**2.500** 63.5	**1.250** 31.75	**2.326** 59.08	**1.163** 29.54
50	**2.406** 61.11	**1.203** 30.56	**2.218** 56.34	**1.109** 28.17

Plug/Receptacle Mating

The .278/.248 [7.06/6.3] dimensions is required to assure full mating of connector halves. This dimension must be taken into consideration when determining the method of mounting, panel thickness, etc.



Subminiature D Connector Accessories
PC Board Mounting Specifications

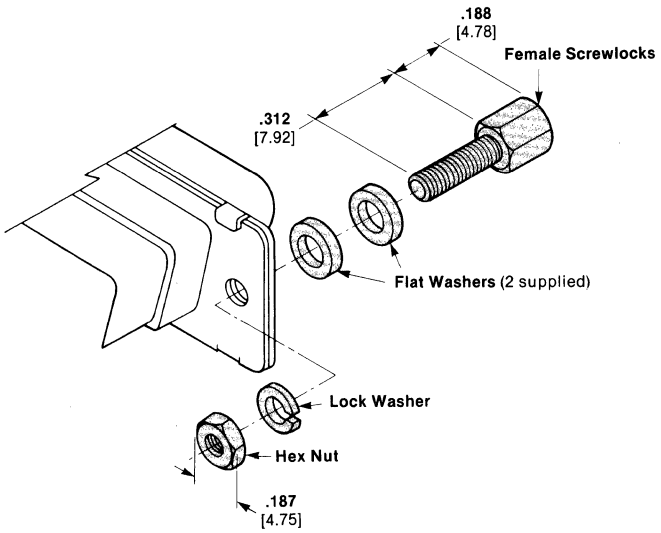
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Female Screwlocks

Material and Finish:

All Parts—Cold rolled steel; zinc plated (Clear or yellow chromate)



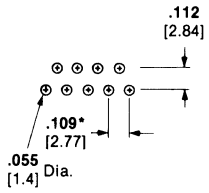
Thread Size	Finish	Kit Number	
		Standard Female Screwlock	
		Individual	Bulk Packed[1]
4-40	Yellow Chromate	205817-1	205817-2
	Clear Chromate	205817-3	205817-4
M3 (Metric)	Yellow Chromate	207872-1	207872-2
	Clear Chromate	207872-3	207872-4

[1]Each part is individually bulk packed for multiple kit orders.

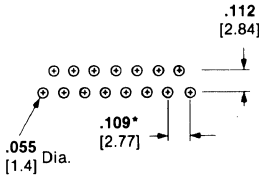
Note: Female Screwlocks mate with Male Screw Retainers used on mating connectors. For specifications and more information refer to AMP Catalog 82068.

PC Board Mounting for the following type connectors:

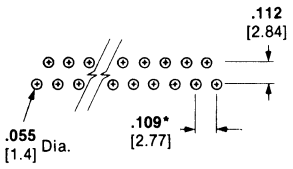
.040 [1.02] Dia. Right Angle Posted
.040 [1.02] Dia. Straight Posted



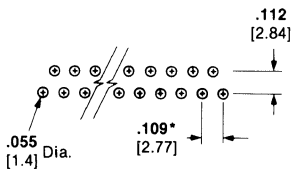
9 Positions (Shell Size 1)



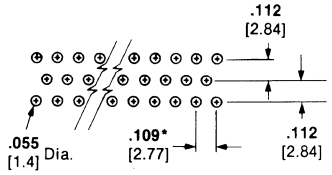
15 Positions (Shell Size 2)



25 Positions (Shell Size 3)



37 Positions (Shell Size 4)



50 Positions (Shell Size 5)

*This dimension is non-cumulative.

Subminiature D Connector Accessories

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Locking Post Assembly for Filtered Half

Material and Finish:

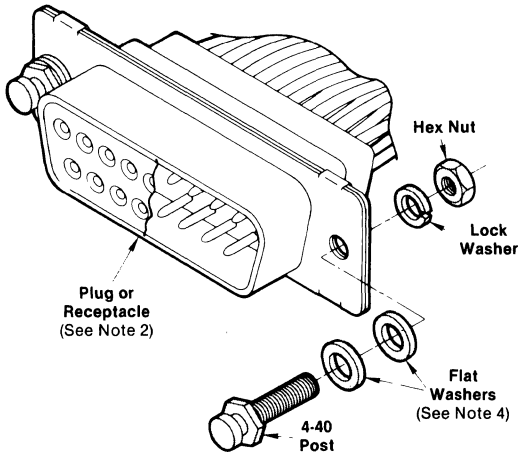
4-40 Post—Steel, zinc plated per QQ-Z-325

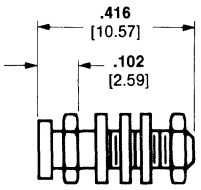
Washers and Hex Nut—Stainless steel

Kit Part Numbers:

206514-1 (two assemblies per package)
206514-3 (bulk packed)*

*Each part is individually bulk packed for multiple kit orders.





Notes:
1. All parts are packaged unassembled
2. Locking Post Assemblies can be used on any Subminiature D AMPLIMITE HD-20 metal-shell plug or receptacle.
3. Locking Post Assemblies mate with Slide Latch Clip Assemblies shown below.
4. Remove one washer for each .030 [0.76] of panel thickness; maximum panel thickness is .060 [1.52].

Slide Latch Clip Assembly for Unfiltered Mating Half

Material and Finish:

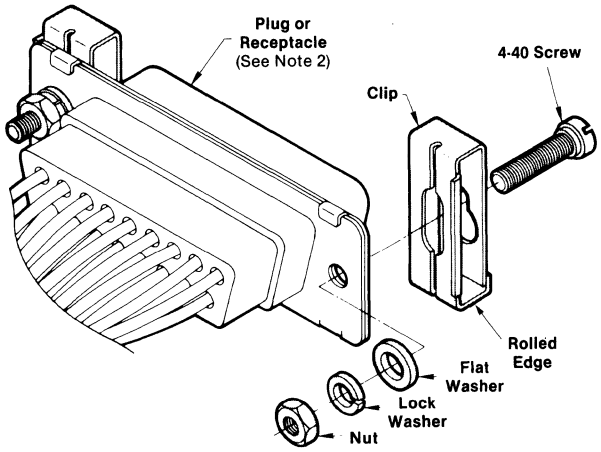
4-40 Screw, Washers and Hex Nut—Cold rolled steel, zinc plated per QQ-Z-325

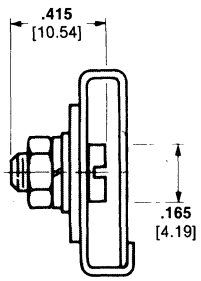
Clip—Stainless Steel

Kit Part Numbers:

206942-1 (two assemblies per package)
206942-2 (bulk packed)*

*Each part is individually bulk packed for multiple kit orders.





Notes:
1. All parts are packaged unassembled.
2. Slide Latch Clip Assemblies can be used on any Subminiature D AMPLIMITE HD-20 metal-shell plug or receptacle.
3. Slide Latch Clip Assemblies mate with Locking Post Assemblies shown above.

For more information, see AMP catalog 82068

Subminiature D Connector Accessories

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

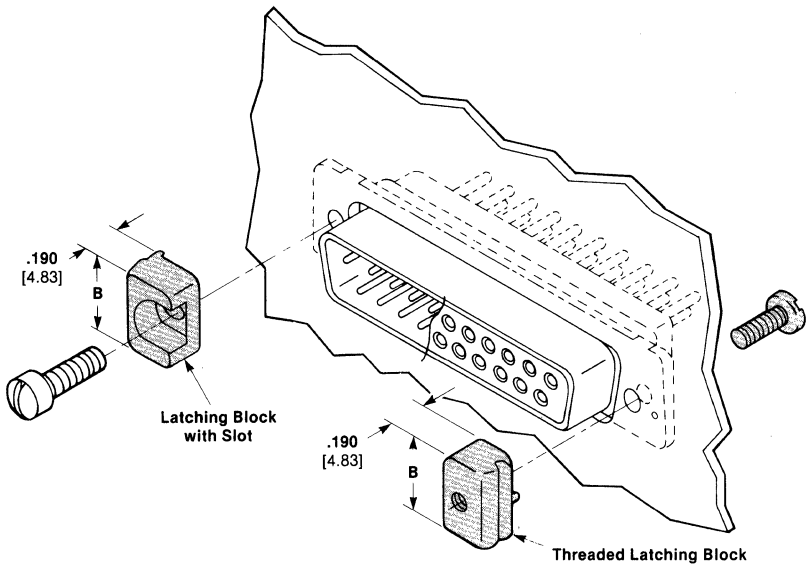
Latching Blocks

Material and Finish:

Latching Blocks—Zinc

Pan Head Screws—Steel; Zinc plated (Available for Standard Latching Blocks only)

Each kit includes two blocks per package. Threaded block kits include pan head screws. Slotted blocks require customer supplied screws and nuts. All parts are packaged unassemblied.



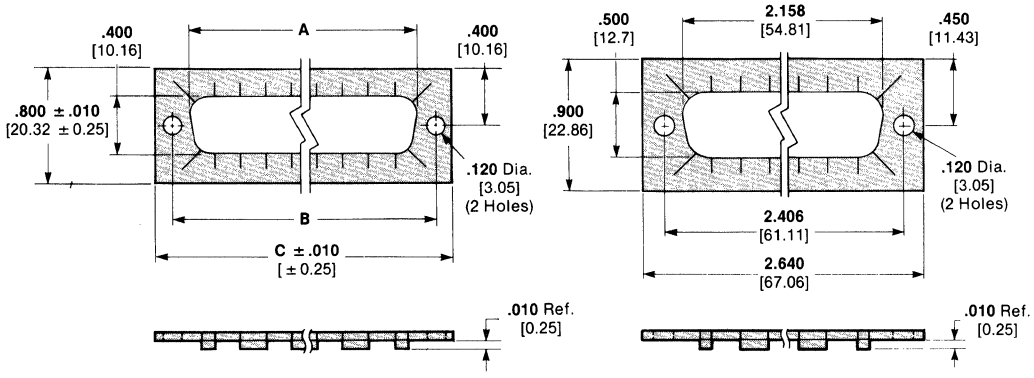
Shell Size (No. of Contact Pos.)	Dimension B	Threaded Latching Blocks			Slotted Latching Blocks	
		Thread Size	Individual	Bulk Packed[1]	Individual	Bulk Packed[1]
1 thru 4 (9 thru 37)	.400 10.16	M3 (Metric)	745403-1	745403-2	745245-2	745245-3
		4-40	745403-8	745403-9		
5 (50)	.530 13.46	M3 (Metric)	745403-5	745403-6	745245-5	745245-6
		4-40	1-745403-1	1-745403-2		

[1]Each part is individually bulk packed for multiple kit orders.

EMI/RFI Gaskets

Material and Finish:

Brass, .006 [0.15] thick; bright tin plated



9, 15, 25 and 37 Position **50 Position**

Shell Size (No. of Contact Pos.)	Dimensions			Gasket Part No.
	A	B	C	
1 (9)	.746 18.95	.984 24.99	1.220 30.99	747024-3
2 (15)	1.074 27.28	1.312 33.32	1.555 39.50	747025-3
3 (25)	1.614 41	1.852 47.04	2.100 53.34	745776-3
4 (37)	2.266 57.56	2.500 63.5	2.730 69.34	745777-3
5 (50)	2.158 54.81	2.406 61.11	2.640 67.06	747412-3

Feed-thru Pin Headers with Distributed Element Filters

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

AMP-LATCH Pin Header Assemblies with Latch and Eject Levers

Product Facts

- Accepts most existing receptacles with 2-row, .100 [2.54] centerline configuration
- Polarized housing
- Complete pin protection
- All-plastic system—no shorting to latch hardware.

Material and Finish:

Contact—Copper alloy, gold plated

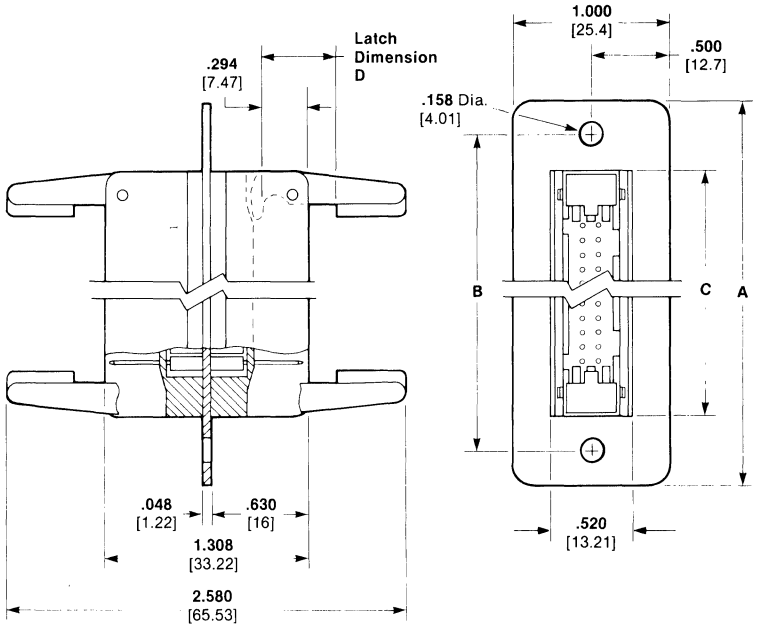
Ferrite and Filter—Ceramic

Ground Plate—Carbon steel, tin plated

Housing—Thermoplastic, UL Rated 94V-2

Related Product Data:

Electrical Specifications - pages 7019 thru 7022



Filtered Pin Header Assembly Part Numbers

No. of Pos.	Dimensions A	B	C	Filter Type	Latch Dimension D* .475[12.06]	.577[14.66]	.615[15.62]	.655[16.64]
10	**2.000** 50.8	**1.580** 40.13	**1.100** 27.94	DB	—	—	842381-7	—
				DA	842381-9	1-842381-0	—	—
				DG	—	1-842381-4	—	—
26	**2.800** 71.12	**2.380** 60.45	**1.900** 48.26	DC	—	842386-2	—	—
				DA	842386-9	1-842386-0	—	1-842386-2
				DF	—	—	—	—
				DE	2-842386-5	—	—	—
				DD	—	3-842386-0	—	—
34	**3.200** 81.28	**2.780** 70.61	**2.300** 58.42	DC	842387-1	—	842387-3	—
				DB	—	—	842387-7	—
				DA	842387-9	—	—	1-842387-2
				DG	—	—	—	—
				DE	2-842387-5	—	—	—
40	**3.500** 68.9	**3.080** 78.23	**2.600** 66.04	DC	842388-1	842388-2	—	—
				DA	842388-9	1-842388-0	—	1-842388-2
				DG	1-842388-3	1-842388-4	—	1-842388-6
				DF	—	1-842388-8	—	—
				DE	—	—	—	—
				DD	2-842388-9	—	—	—
50	**4.000** 101.6	**3.580** 90.93	**3.100** 78.74	DC	842389-1	842389-2	842389-3	—
				DB	—	—	842389-7	—
				DA	842389-9	1-842389-0	1-842389-1	1-842389-2
				DG	1-842389-3	—	—	1-842389-6
				DG	—	1-842389-8	—	—
				DD	3-842389-0	—	—	—
60	**4.500** 114.3	**4.080** 103.63	**3.600** 91.44	DB	—	—	—	—

.475 [12.06] and .577 [14.66] latches fit AMP receptacles without and with strain reliefs, respectively. See AMP catalog 82012.

Quiet Line
Standard Loose-Piece Filters

Specifications subject to change.
For latest design specifications...
1-800-522-6752

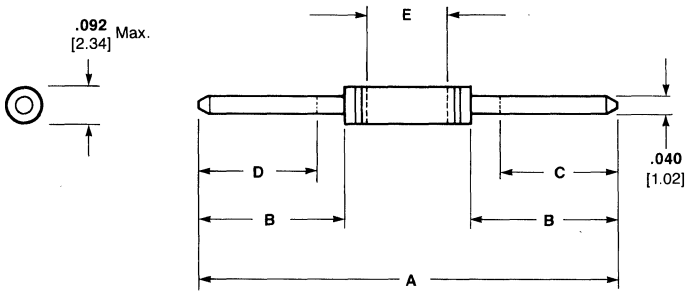
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Pin-Sleeve Style

Recommended mounting hole: .095 ± .002 [2.41 ± 0.05] (#41 drill)

Material and Finish:
Contact—Copper alloy 260, plated .000015 [0.00038] min. gold per MIL-G-45204, Type I, Grade C over .000070 [0.00178] min. nickel per QQ-N-290
Solder—SN10 per QQ-S-571
Filter—Ferrite and ceramic

Related Product Data:
Electrical Specifications - pages 7019 thru 7022



Filter Type	Part Numbers	Weight (Grams)	Dimensions			
			A	B	C*-D*	E*
DA	859611-1	.36	**1.000** 25.4	**.268** 6.81	**.200** 5.08	**.360** 9.14
DB	859612-1	.33	**1.000** 25.4	**.350** 8.89	**.280** 7.11	**.195** 4.95
DF	859652-1					
DC	859613-1	.29	**1.000** 25.4	**.415** 10.54	**.355** 9.02	**.050** 1.27
DE	842486-1					
DG	859653-1					

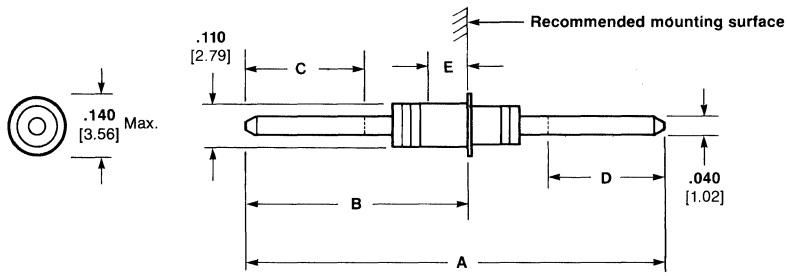
*Minimum solderable areas.

Eyelet Style

Recommended mounting hole: .117 ± .002 [2.97 ± 0.05] (#32 drill)

Material and Finish:
Contact—Copper alloy 260, plated .000015 [0.00038] min. gold per MIL-G-45204, Type I, Grade C over .000070 [0.00178] min. nickel per QQ-N-290
Eyelet—Copper alloy per QQ-B-626, plated .000015 [0.00038] min. gold per MIL-G-45204, Type I, Grade C over .000070 [0.00178] min. nickel per QQ-N-290
Solder—SN10 per QQ-S-571
Filter—Ferrite and ceramic

Related Product Data:
Electrical Specifications - pages 7019 thru 7022



Filter Type	Part Number	Weight (Grams)	Dimensions			
			A	B	C*-D*	E*
DA	859614-1	.41	**1.000** 25.4	**.530** 13.46	**.200** 5.08	**.115** 2.92
DB	859615-1	.41	**1.000** 25.4	**.530** 13.46	**.280** 7.11	**.095** 2.41
DD	842494-1					
DF	859655-1					
DC	859616-1	.34	**1.000** 25.4	**.530** 13.46	**.355** 9.02	**.045** 1.15
DE	842493-1					
DG	859656-1					

*Minimum solderable areas.

Quiet Line
Standard Loose-Piece Filters

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimeters.

8-32 Bolt Style

Supplied with lock-washer and nut except as noted.

Recommended hole sizes:

DA, DB, DD and DF Types—.177 ± .002 [4.5 ± 0.05] Dia. (#16 drill) DC, DE and DG Types—8-32 UNC-2B

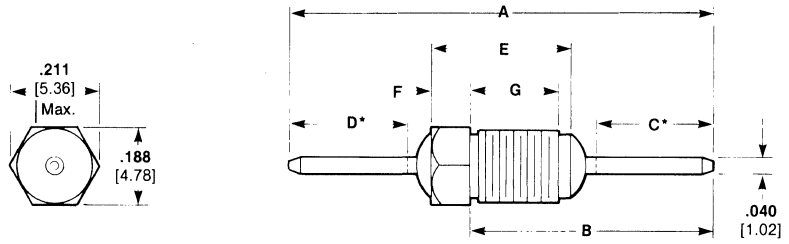
Material and Finish:

Contact and Bolt Body—Copper alloy 260, plated .000100 [0.00254] min. silver per QQ-S-365 over .000050 [0.00127] min. nickel per QQ-N-290

Filter—Ferrite and ceramic

Related Product Data:

Electrical Specifications - pages 7019 thru 7022



*Minimum solderable areas

Filter Type	Part Number	Color Code	Weight (Grams)	Dimensions						Torque	
				A	B	C*-D*	E	F	G	Inch-Pounds	Newton-Meter
DA	859617-1	Black Epoxy	1.50	**1.000** 25.4	**.590** 14.99	**.185** 4.7	**.473** 12.01	**.150** 3.81	**.273** 6.93	7-8	0.791-0.904
DB	859618-1	Black Epoxy	1.28	**1.000** 25.4	**.574** 13.67	**.255** 6.48	**.336** 8.53	**.094** 2.39	**.207** 5.26	5-6	0.565-0.678
DF	859658-1	Black Epoxy									
DC[1]	859619-1	Black Epoxy	.52	**1.000** 25.4	**.538** 13.67	**.325** 8.26	**.200** 5.08	**.062** 1.57	**.128** 3.25	4-5	0.452-0.565
DG[1]	859659-1	Black Epoxy									

[1]Lockwasher and nut are not included.

12-32 Bolt Style

Supplied with lock-washer and nut.

Recommended hole size: .228 ± .002 [5.79 ± 0.05] Dia. (#1 drill)

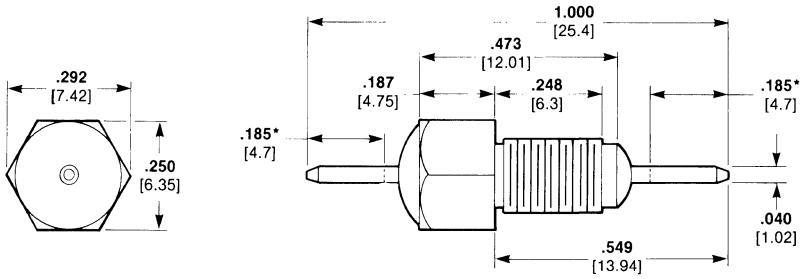
Material and Finish:

Contact and Bolt Body—Copper alloy 260, plated .000100 [0.00254] min. silver per QQ-S-365 over .000050 [0.00127] min. nickel per QQ-N-290

Filter—Ferrite and ceramic

Related Product Data:

Electrical Specifications - pages 7019 thru 7022



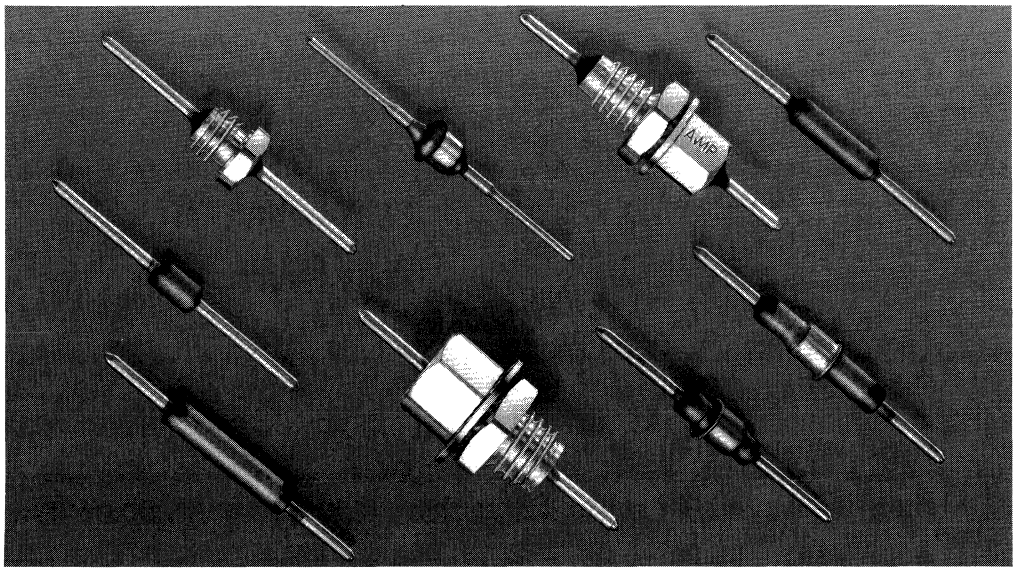
*Minimum solderable areas

Filter Type	Part Numbers	Color Code
DA	859646-1	Black Epoxy
DB	859645-1	Black Epoxy
DF	859681-1	Black Epoxy

Torque: 7-8 inch-pounds [0.791-0.904 newton-meter]

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Quiet Line
Premium Loose-Piece Filters



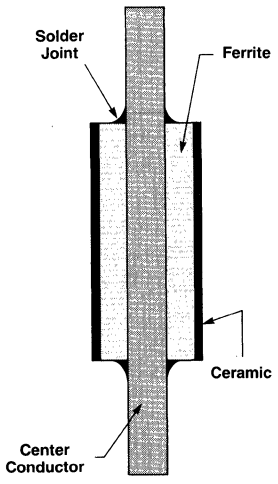
Quiet Line Distributed Element Filters are constructed to meet the demands of military type applications. Some common types of applications include mobile radios, transducers, microprocessors, computer peripheral equipment and communication equipment.

All loose-piece Quiet Line filters employ a composite ferrite-titanate material in integrated assemblies which have no lumped elements to cause internal resonances. This design provides inherent ruggedness and reliability not found in other types of filters.

Quiet Line loose-piece filters are supplied in regular and low capacitance versions including a variety of styles and configurations to provide mounting and termination flexibility. Loose-piece style filters are assembled with high temperature solder that will not reflow at temperatures below 260°C. Bolt type filters are particularly suited to physically demanding applications.

Loose-piece Capacitive Filters can also be made available upon request. For details contact AMP Incorporated, Harrisburg, PA 17105.

Filter Construction



Electrical Specifications

Current Rating (Max.): Load Current
#20 Contact—15 amps
RF Current—0.3 amps

Operating Voltage (Max.): 125 VDC at −55°C to +125°C

Dissipation Factor: 0.1 Max.

Dielectric Withstanding Voltage: 375 VDC for 5 seconds

Insulation Resistance (Min.): *1 Gigaohm min. at 100 VDC, 2 minutes and +25°C

Direct Current Resistance: .002 ohms max.

*10 Gigaohms min. for DF-M and DG-M types.

Minimum No Load Insertion Loss

Filter Type	AMP Electrical Specification Number	Capacitance at 1 KHz and +25°C	3 db Point	Min. No Load Insertion Loss in db (Per MIL-STD-220 at +25°C)							
				25 MHz	50 MHz	100 MHz	300 MHz	500 MHz	1 GHz	5 GHz	10 GHz
DA-M	108-1119	4000 to 8000 pf	2 MHz	20	35	55	100	100	100	100	100
DB-M	108-1120	3000 to 5000 pf	3 MHz	15	25	35	70	90	100	100	100
DC-M	108-1121	1500 to 3000 pf	5 MHz	10	15	20	45	55	60	60	60
DF-M	108-1125	160 to 250 pf	50 MHz	—	—	—	—	25	35	55	55
DG-M	108-1123	80 to 125 pf	150 MHz	—	—	—	—	—	16	35	42

Note: The above filters were previously designated as follows:
DA-M-50P Series. DB-M-30P Series, DC-M-20P Series, DF-M-70P Series and DG-M-60P Series.

Quiet Line
Premium Loose-Piece Filters

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Pin-Sleeve Style

Recommended mounting hole: .095 ± .002 [2.41 ± 0.05] Dia. (#41 drill)

Material and Finish:

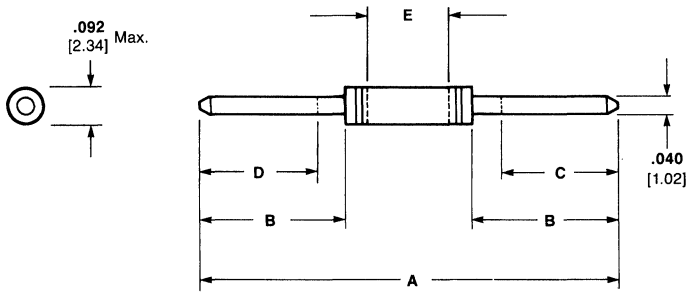
Contact—Copper alloy 260, plated .000015 [0.00038] min. gold per MIL-G-45204, Type I, Grade C over .000070 [0.00178] min. nickel per QQ-N-290

Solder—SN10 per QQ-S-571

Filter—Ferrite and ceramic

Related Product Data:

Electrical Specifications - page 7044



Filter Type	Part Numbers	Color Code	Weight (Grams)	Dimensions A	B	C*-D*	E*
DA-M	859623-1	Red Dot	.36	**1.000** 25.4	**.268** 6.81	**.200** 5.08	**.360** 9.14
DB-M	859624-1	Red Dot	.33	**1.000** 25.4	**.350** 8.89	**.280** 7.11	**.195** 4.95
DB-M	859635-1	Red Dot	.26	**.600** 15.24	**.150** 3.81	**.080** 2.03	
DC-M	859625-1	Red Dot	.29	**1.000** 25.4	**.415** 10.54	**.355** 9.02	**.050** 1.27
DC-M	859636-1	Red Dot	.18	**.400** 10.16	**.115** 2.92	**.050** 1.27	
DG-M	859665-1	Black Dot	.29	**1.000** 25.4	**.415** 10.54	**.355** 9.02	**.050** 1.27

* Minimum solderable areas

Eyelet Style

Recommended mounting hole: .117 ± .002 [2.97 ± 0.05] Dia. (#32 drill)

Material and Finish:

Contact—Copper alloy 260, plated .000015 [0.00038] min. gold per MIL-G-45204, Type I, Grade C over .000070 [0.00178] min. nickel per QQ-N-290

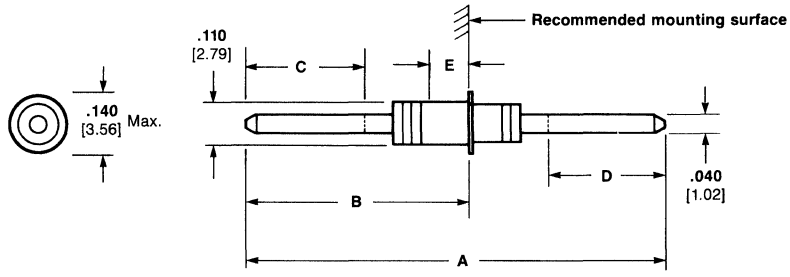
Eyelet—Copper alloy per QQ-B-626, plated .000015 [0.00038] min. gold per MIL-G-45204, Type I, Grade C over .000070 [0.00178] min. nickel per QQ-N-290

Solder—SN10 per QQ-S-571

Filter—Ferrite and ceramic

Related Product Data:

Electrical Specifications - page 7044



Filter Type	Part Numbers	Color Code	Weight (Grams)	Dimensions A	B	C*-D*	E*
DA-M	859626-1	Red Dot	.41	**1.000** 25.4	**.530** 13.46	**.200** 5.08	**.115** 2.92
DB-M	859627-1	Red Dot	.41	**1.000** 25.4	**.530** 13.46	**.280** 7.11	**.095** 2.41
DB-M	859637-1	Red Dot	.34	**.600** 15.24	**.330** 8.38	**.080** 2.03	
DC-M	859628-1	Red Dot	.34	**1.000** 25.4	**.530** 13.46	**.355** 9.02	**.045** 1.15
DC-M	859638-1	Red Dot	.23	**.400** 10.16	**.230** 5.84	**.050** 1.27	
DG-M	859668-1	Black Dot	.34	**1.000** 25.4	**.530** 13.46	**.355** 9.02	**.045** 1.15

* Minimum solderable areas

Quiet Line
Premium Loose-Piece Filters

Specifications subject to change.
For latest design specifications...
1-800-522-6752

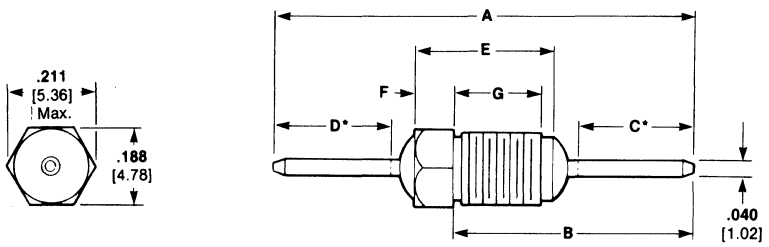
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

8-32 Bolt Style

Supplied with lock-washer and nut except as noted.

Recommended hole sizes:
DA-M, DB-M and DF-M Types—.177 ± .002 [4.5 ± 0.05] Dia. (#16 drill)
DC-M and DG-M Types—8-32 UNC-2B

Material and Finish:
Contact and Bolt Body—Copper alloy 260, plated .000100 [0.00254] min. silver per QQ-S-365 over .000050 [0.00127] min. nickel per QQ-N-290
Filter—Ferrite and ceramic



*Minimum solderable areas

Filter Type	Part Numbers	Color Code	Weight (Grams)	Dimensions A	B	C*-F*	E	F	G	Torque Inch-Pounds	Newton-Meter
DA-M	859629-1	Black Epoxy Red Dot	1.50	**1.000** 25.4	**.590** 14.99	**.185** 4.7	**.473** 12.01	**.150** 3.81	**.273** 3.81	7-8	0.791-0.904
DB-M	859630-1	Black Epoxy Red Dot	1.28	**1.000** 25.4	**.574** 14.58	**.255** 6.48	**.336** 8.53	**.094** 2.39	**.207** 5.26	5-6	0.565-0.678
DB-M	859639-1	Black Epoxy Red Dot	1.21	**.600** 15.24	**.374** 9.49	**.080** 2.03					
DC-M[1]	859631-1	Black Epoxy Red Dot	0.52	**1.000** 25.4	**.538** 13.67	**.325** 8.26	**.200** 5.08	**.062** 1.57	**.128** 3.25	4-5	0.452-0.565
DC-M[1]	859640-1	Black Epoxy Red Dot	0.43	**.500** 12.7	**.288** 7.32	**.100** 2.54					
DF-M	859670-1	Black Epoxy Red Dot	1.28	**1.000** 25.4	**.574** 14.58	**.255** 6.48	**.336** 8.53	**.094** 2.39	**.207** 5.26	5-6	0.565-0.678
DG-M[1]	859671-1	Black Epoxy Red Dot	0.52	**1.000** 25.4	**.538** 13.67	**.325** 8.26	**.200** 5.08	**.062** 1.57	**.128** 3.25	4-5	0.452-0.565

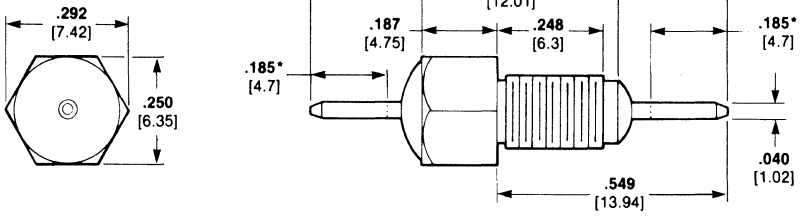
[1]Lockwasher and nut are not included.

12-32 Bolt Style

Supplied with lock-washer and nut.

Recommended hole size:
.228 ± .002 [5.79 ± 0.05] Dia. (1# drill)

Material and Finish:
Contact and Bolt Body—Copper alloy 260, plated .000100 [0.00254] min. silver per QQ-S-365 over .000050 [0.00127] min. nickel per QQ-N-290
Filter—Ferrite and ceramic



*Minimum solderable areas

Filter Type	Part Numbers	Color Code
DA-M	859648-1	Black Epoxy Red Dot
DB-M	859647-1	Black Epoxy Red Dot
DF-M	859683-1	Black Epoxy Red Dot

Torque: 7–8 inch-pounds [0.791-0.904 newton-meter]

High Frequency PCB Filter

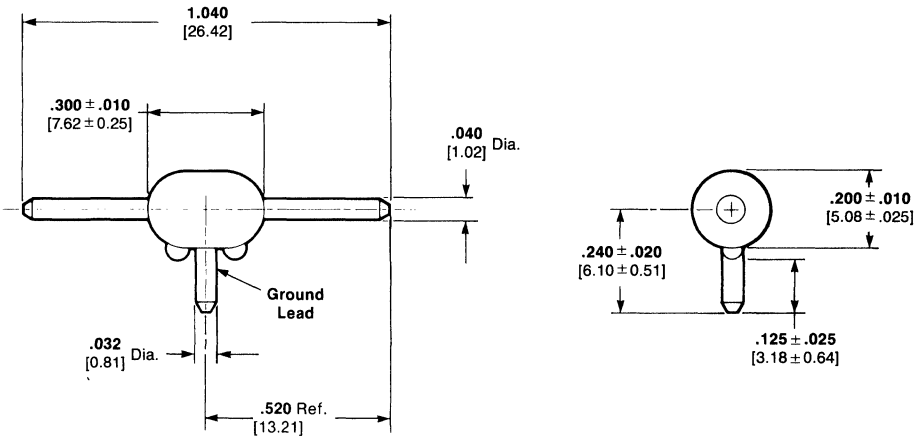
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Plating—.0001000 [0.00254] min. silver over .000050 [0.00127] min. nickel

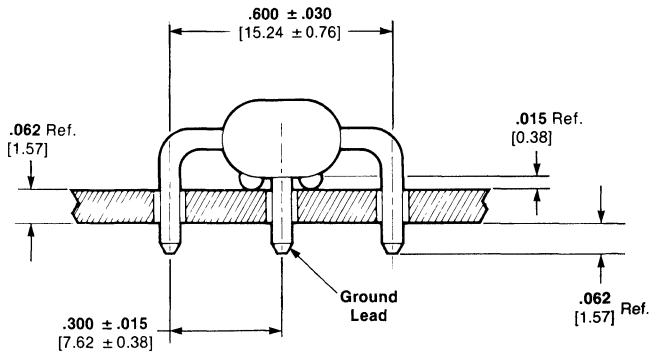
Standard Configuration

Part Number 842448-1

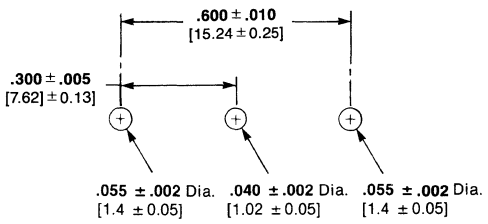


Preformed to Recommended Mounting Configuration

Part Number 842448-2



Recommended Mounting Configuration



Recommended PCB Hole Layout

Various technical documents are available for your use:

Product Specifications describe technical performance, characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-36009 Filter, Low Pass, EMI/RFI, Loose Piece, Standard, Quiet Line
108-36019 Assembly, Adaptor, Male-to-Male, Multi-Pin Header, Filtered
108-36022 Connector, MIL-C-38999 Type Quiet Line, Premium Series, Filtered
108-36025 Connector, AMPLIMITE Filtered, High Density 20
108-36036 Filter, EMI/RFI Low Pass P.C.B. Mounted, Quiet Line

Electrical Specifications

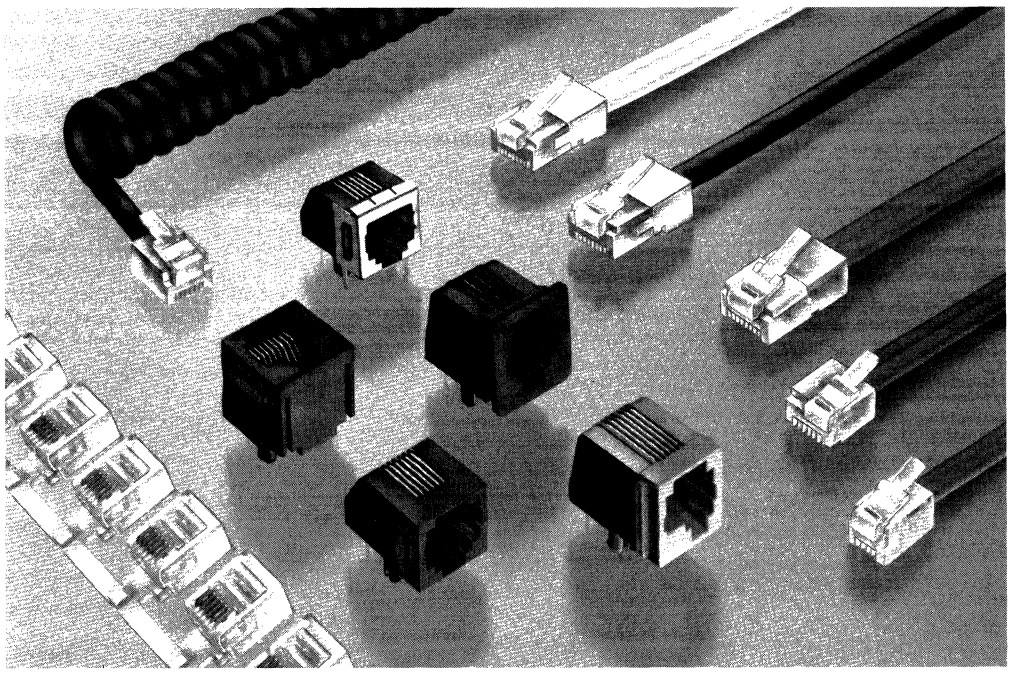
Filter Type	Specification No.	Previous Designation
DA	108-1116	Filter, EMI, 50 Series
DB	108-1117	Filter, EMI, 30 Series
DC	108-1118	Filter, EMI, 20 Series
DD	108-1128	Filter, EMI, 100 Series
DE	108-1131	Filter, EMI, 90 Series
DF	108-1124	Filter, EMI, 70 Series
DG	108-1122	Filter, EMI, 60 Series
CA	108-1139	Filter, EMI, 50C Series
CC	108-1132	Filter, EMI, 20C Series
CD	108-1135	Filter, EMI, 100C Series
CE	108-1134	Filter, EMI, 90C Series
CF	108-1133	Filter, EMI, 70C Series
DA-M Loose Piece	108-1119	Filter, EMI, 50P Series
DB-M Loose Piece	108-1120	Filter, EMI, 30P Series
DC-M Loose Piece	108-1121	Filter, EMI, 20P Series
DF-M Loose Piece	108-1125	Filter, EMI, 70P Series
DG-M Loose Piece	108-1123	Filter, EMI, 60P Series
DA-M Connector	868262	Filter, EMI, 50P Series
DB-M Connector	868274	Filter, EMI, 30P Series
DC-M Connector	868275	Filter, EMI, 20P Series
CA-M	868169	Filter, EMI, 50C Series
CB-M	868568	Filter, EMI, 30C Series
CC-M	868664	Filter, EMI, 20C Series
CD-M	868288	Filter, EMI, 100C Series
PA-M	868533	Filter, EMI, Freq. Band G
PB-M	868575	Filter, EMI, Freq. Band E
PC-M	868532	Filter, EMI, Freq. Band C
PD-M	868581	Filter, EMI, Freq. Band B

Modular Interconnection System

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimeters.



The Modular Interconnection System consists of unshielded and shielded modular plugs and printed circuit board modular jacks.

This plug and jack system offers compact size, high reliability and will meet FCC Rules and Regulations, Part 68. Mass termination of the plugs provide a low applied cost. A variety of application tooling is available.

PCB Modular Jacks (pp. 7050-7055)—designed for direct mounting onto a printed circuit board, modular jacks are available in two profile heights—low and standard for thru-hole, low only for surface mount and shielded thru-hole applications. The housing material for thru-hole jacks, flame retardant polyester thermoplastic, is compatible with wave solder environment. The surface mount jack housings are made from a vapor phase compatible material. Both employ duplex plated contacts with solder tails.

Shielded Modular Jacks and Plugs (pp. 7056-7057)—offer a minimum of 20-dB shielding effectiveness from 30 MHz to 400 MHz, with the benefits of low cost and space conservation. Redundant shielding tabs ensure that a low-impedance ground path is maintained across the interface. Shielded jack and plugs are fully intermateable with unshielded versions.

Shielded PCB jacks are available in board-ground or panel-ground versions, with panel-ground jacks also incorporating board-ground legs. Their low .500-inch [12.7 mm] profile and compact .040-inch [1.02 mm] contact centerline spacing make efficient use of board real estate. The 6- and 8-position housings are available fully and partially loaded.

Shielded modular plugs are available in fully loaded 6- and 8-position versions, and feature insulation-piercing terminals for fast, accurate termination.

Modular Plugs (pp. 7058-7059)—accommodate both single or multicore tinsel, solid and stranded wire for telephone or non-telephone applications. Modular plugs are produced and sold under license from Western Electric and mate with FCC accepted jacks, shielded or unshielded.

Plugs are supplied in loose piece or strip form on reels for easy, one-step application to cable. Housings, molded of polycarbonate thermoplastic, are preloaded with selectively gold plated contact, thereby allowing mass termination of the conductors.

Plug testing can be done through the use of a module which may be attached to the semiautomatic machine.

Technical Documents

Product Specifications:
108-1163

Application Specifications:

114-02048—Jack (includes pc board layout and panel cutout information)

114-06016—Plug (includes shielded cable preparation)

114-06040—Surface Mount Jack (includes pc board layout and panel cutout information)

Instruction Sheets:

IS 3156—Modular Plug Termination Tools

IS 3169—Pneumatic Applicator

IS 3151—AMP Modular Plug Connector Chordal Hand Tool 231648-1

IS 3172—AMP Modular Plug Connector Chordal Hand Tool 231649-1

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
m (meter)
mm^2 (square millimeter)
cm (centimeter)
N (newton)
kg (kilogram)
C (Celsius)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Printed Circuit Board Modular Jacks Low Profile

Product Facts

- Meets or exceeds FCC Part 68 rules and regulations; REA PE-76; and UL 1863, Communication Circuit Accessories
- Meets 1000 volt dielectric requirement
- Designed for direct mounting on pc boards
- Designed for ease of soldering and board cleaning
- Selectively gold plated contacts for lower cost
- Surface mount jacks compatible with vapor phase environment
- All jacks are flame retardant polyester, standard color black, unless specified otherwise
- Listed by Underwriters Laboratories Inc., File No. E81956
- Certified by Canadian Standards Association File No. LR82669

Specifications

Electrical:

Current Rating—1.5 amp max. @ 25°C, derated to 0.2 amp max. @ 70°C ambient

Voltage Rating—150 volts ac max.

Dielectric Withstanding Voltage—1000 VAC, RMS, 60 Hz, 1 min.

Insulation Resistance—500 megohms min.

Surge Test—to 1000 volts

Mechanical:

Pc Board Retention—will not dislodge from pc board when subjected to 1 lb [4.4 N] pull before soldering and 10 lbs [44 N] pull after soldering

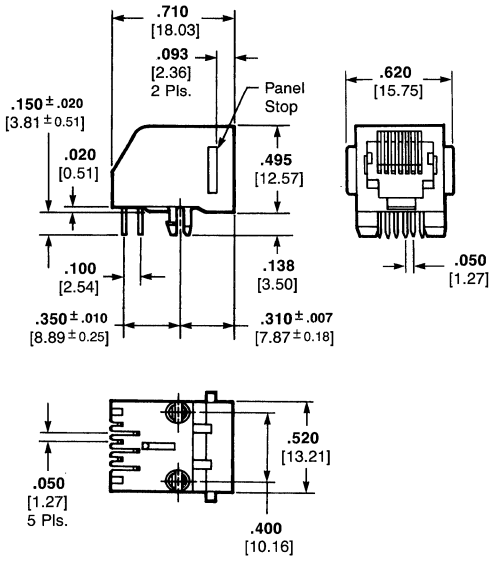
Material and Finish:

Housing—Thru-Hole: Polyester, UL 94V-0 rated
Surface Mount: Polyphenylene Sulfide, UL 94V-0 rated

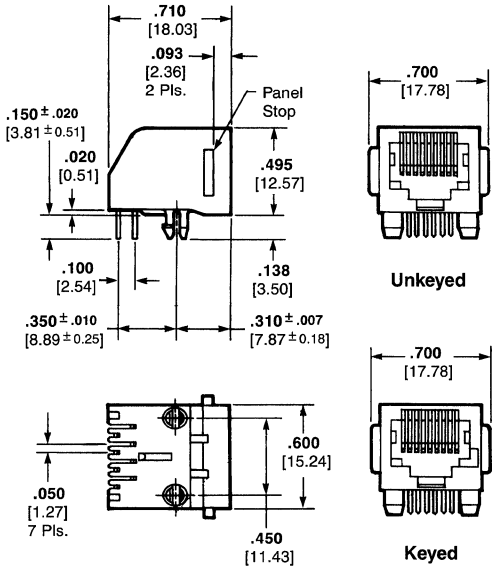
Contact—.014 [0.36] thk. phosphor bronze; plated .000050 [0.00127] gold in contact area and .000150 [0.00381] tin-lead on solder tails, over .000050 [0.00127] nickel underplate

Note: For additional dimensions request the appropriate customer drawing, AMP Specification 114-02048, thru-hole and AMP Specification 114-06040, surface mount.

Thru-Hole, Side Entry



6-Position Jack
(Shown with Panel Stops)



8-Position Jack
(Shown with Panel Stops)

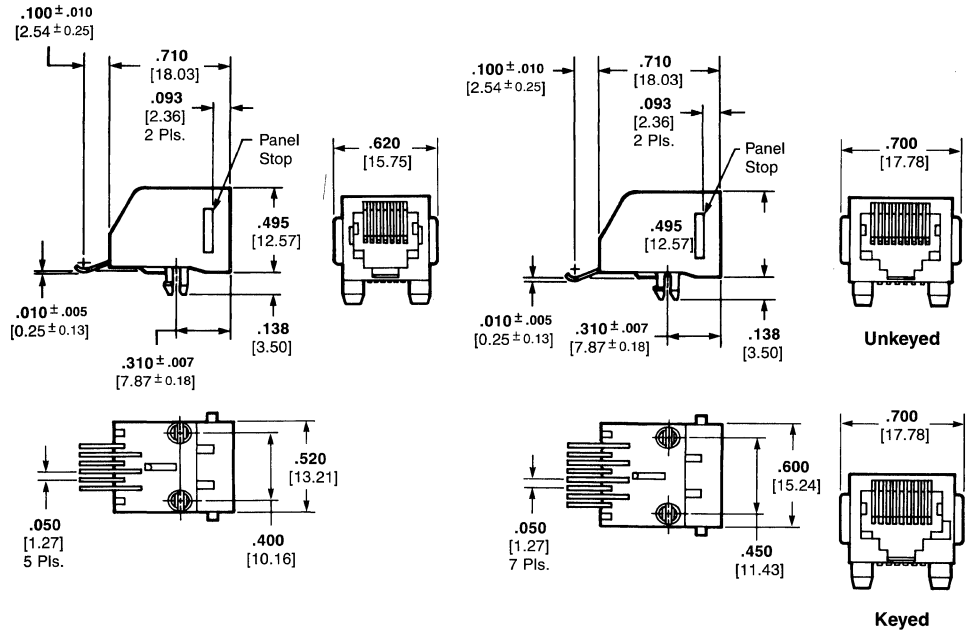
Note: On any modular jack, Terminal No. 1 is the terminal to the extreme left as you face the jack opening, tab notch down as shown.

Description	Style	Contacts Loaded	Part No.
6-Position Jack	With Panel Stops	6	555163-1
		4	555163-2
	Without Panel Stops	6	555165-1
		4	555165-2
8-Position Jack	With Panel Stops	8	555162-1
	Without Panel Stops	8	555164-1
8-Position Jack Keyed	With Panel Stops	8	555166-1
	Without Panel Stops	8	555167-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
All dimensions are nominal unless otherwise specified.

Surface Mount, Side Entry



6-Position Jack
(Shown with Panel Stops)

8-Position Jack
(Shown with Panel Stops)

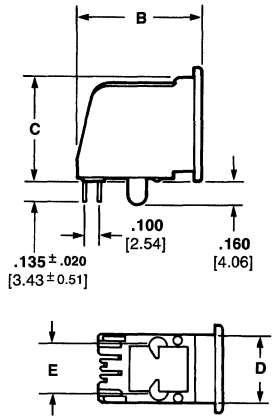
Note: On any modular jack, Terminal No. 1 is the terminal to the extreme left as you face the jack opening, tab notch down as shown.

Description	Style	Contacts Loaded	Part No.
6-Position Jack	With Panel Stops	6	555077-1
		4	555077-2
8-Position Jack Keyed	With Panel Stops	8	555078-1
8-Position Jack	With Panel Stops	8	555248-1
8-Position Jack	Without Panel Stops	8	555764-1

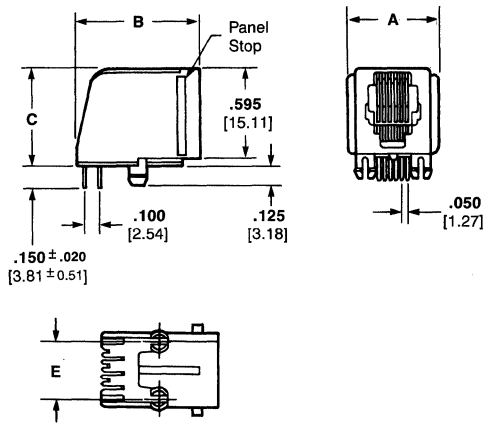
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Printed Circuit Board Modular Jacks Standard Height

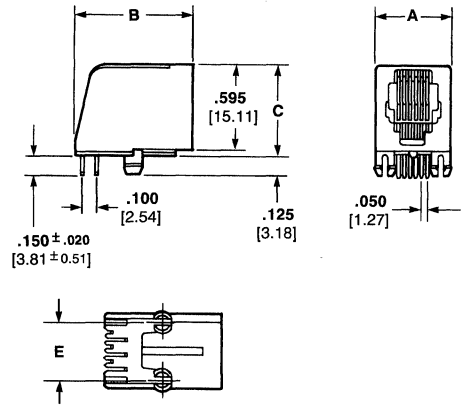
Side Entry With Center Latch



Flanged



With Panel Stops



Without Panel Stops

Note: On any modular jack, Terminal No. 1 is the terminal to the extreme left as you face the jack opening, tab notch down as shown.

Material and Finish:

Housing—Polyester (wave solder compatible), UL 94V-0 rated

Contact—.014 [0.36] thk. phosphor bronze; plated .000050 [0.00127] gold in contact area and .000150 [0.00381] tin-lead on solder tails, over .000050 [0.00127] nickel underplate

Notes:
1. For additional dimensions, request the appropriate customer drawings.
2. For pc board layout and panel cutout information, refer to AMP Specification 114-02048.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

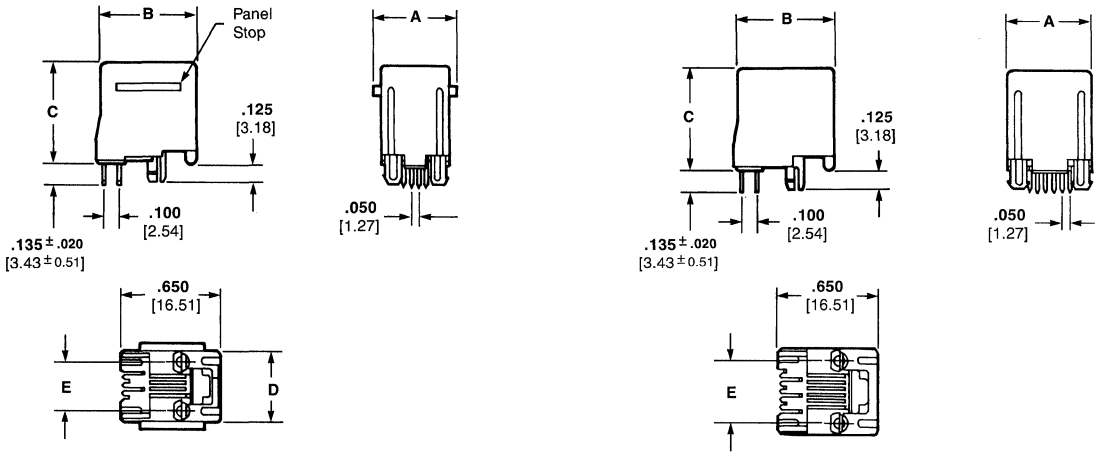
All dimensions are nominal unless otherwise specified.

Description	No. of Pos.	No. of Contacts	Dimensions A	B	C	D	E	Jack Part No.	Mating Plugs	USOC—Designation Application
Side Entry Flanged	4	4	.570 14.48	.810 20.57	.680 17.27	.440 11.18	.300 7.62	520241-2	4-Pos. Handset	—
	6	4	.650 16.51	.810 20.57	.680 17.27	.520 13.21	.400 10.16	520242-2	4 Pos.	RJ11C, RJ11W, RK14C, RK14W, RJ1DC
	6	6	.650 16.51	.810 20.57	.680 17.27	.520 13.21	.400 10.16	520242-3	6 Pos.	RJ12C, RJ12W, RJ13C, RJ13W, RJ14C, RJ14W, RJ16X, RJ17C, RJ18C, RJ19C, RJ25C
	8	8	.730 18.54	.810 20.57	.680 17.27	.600 15.24	.450 11.43	520243-4	8 Pos.	RJ48C
Side Entry with Panel Stops	4	4	.540 13.72	.810 20.57	.630 16.0	.440 11.18	.300 7.62	520249-2	4 Pos. Handset	—
	6	2	.620 15.75	.815 20.70	.630 16.0	.520 13.21	.400 10.16	520250-1	6 Pos.	RJ12C, RJ12W
	6	4	.620 15.75	.815 20.70	.630 16.0	.520 13.21	.400 10.16	520250-2	4 Pos.	RJ11C, RJ11W, RJ14C, RJ14W, RJ1DC
	6	6	.620 15.75	.815 20.70	.630 16.0	.520 13.21	.400 10.16	520250-3	6 Pos.	RJ12C, RJ12W, RJ13C, RJ13W, RJ14C, RJ14W, RJ16X
	8	8	.700 17.78	.810 20.57	.630 16.0	.600 15.24	.450 11.43	520251-4	8 Pos.	RJ48C
	8 Keyed	8	.700 17.78	.810 20.57	.630 16.0	.600 15.24	.450 11.43	520252-4	8 Pos. Keyed	RJ48S, RJ45S
Side Entry without Panel Stops	4	4	.440 11.18	.810 20.57	.630 16.0	—	.300 7.62	555980-1	4 Pos. Handset	—
	6	4	.520 13.21	.810 20.57	.630 16.0	—	.400 10.16	555979-1	4 Pos.	RJ11C, RJ11W, RJ14C, RJ14W, RJ1DC
	6	6	.520 13.21	.815 20.70	.630 16.0	—	.400 10.16	520470-3	6 Pos.	RJ12C, RJ12W, RJ14C, RJ14W, RJ16X, RJ17C, RJ18C, RJ25C
	8	8	.600 15.24	.810 20.57	.630 16.0	—	.450 11.43	520426-4	8 Pos.	RJ48C
	8 Keyed	8	.600 15.24	.810 20.57	.630 16.0	—	.450 11.43	554517-1	8 Pos. Keyed	RJ48S, RJ45S
Side Entry w/Panel Stops Special Color–Gray	4	4	.540 13.72	.810 20.57	.630 16.0	.440 11.18	.300 7.62	520249-3	4 Pos. Handset	—
	6	4	.620 15.75	.815 20.70	.630 16.0	.520 13.21	.400 10.16	520250-4	6 Pos.	RJ12C, RJ12W, RJ13C, RJ13W, RJ14C, RJ14W, RJ16X, RJ17C, RJ18C, RJ19C, RJ25C

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Printed Circuit Board Modular Jacks Standard Height
(Continued)

Top Entry With Center Latch



With Panel Stops

Without Panel Stops

Note: On any modular jack, Terminal No. 1 is the terminal to the extreme left as you face the jack opening, tab notch down.

Description	No. of Pos.	No. of Contacts	Dimensions A	B	C	D	E	Jack Part No.	Mating Plugs	USOC—Designation Application
Top Entry with Panel Stops	4	4	**.550** 13.97	**.625** 15.88	**.645** 16.38	**.450** 11.43	**.300** 7.62	520257-2	4 Pos. Handset	—
	6	4	**.630** 16.0	**.625** 15.88	**.645** 16.38	**.530** 13.46	**.400** 10.16	520258-2	4 Pos.	RJ11C, RJ11W, RJ14C, RJ14W, RJ1DC
	6	6	**.630** 16.0	**.625** 15.88	**.645** 16.38	**.530** 13.46	**.400** 10.16	520258-3	6 Pos.	RJ12C, RJ12W, RJ13C, RJ13W, RJ14C, RJ14W, RJ16X, RJ17C, RJ18C, RJ19C, RJ25C
	8	8	**.710** 18.03	**.625** 15.88	**.645** 16.38	**.610** 15.49	**.450** 11.43	520259-4	8 Pos.	RJ48C
	8 Keyed	8	**.710** 18.03	**.625** 15.88	**.645** 16.38	**.610** 15.49	**.450** 11.43	520260-4	8 Pos. Keyed	RJ48S, RJ45S
Top Entry without Panel Stops	6	4	**.530** 13.46	**.625** 15.88	**.645** 16.38	—	**.400** 10.16	520425-2	4 Pos.	RJ11C, RJ11W, RJ14C, RJ14W, RJ1DC
	6	6	**.530** 13.46	**.625** 15.88	**.645** 16.38	—	**.400** 10.16	520425-3	6 Pos.	RJ12C, RJ12W, RJ13C, RJ13W, RJ14C, RJ14W, RJ16X, RJ17C, RJ18C, RJ19C, RJ25C
	8	8	**.615** 15.62	**.630** 16.0	**.645** 16.38	—	**.450** 11.43	556416-1	8 Pos.	RJ48C
	8 Keyed	8	**.615** 15.62	**.630** 16.0	**.645** 16.38	—	**.450** 11.43	555799-1	8 Pos. Keyed	RJ48S, RJ45S

Material and Finish:

Housing—Polyester (wave solder compatible), UL94V-0 rated

Contact—.014 [0.36] thk. phos-phor bronze; plated .000050 [0.00127] gold in contact area and .000150 [0.00381] tin-lead on solder tails, over .000050 [0.00127] nickel underplate

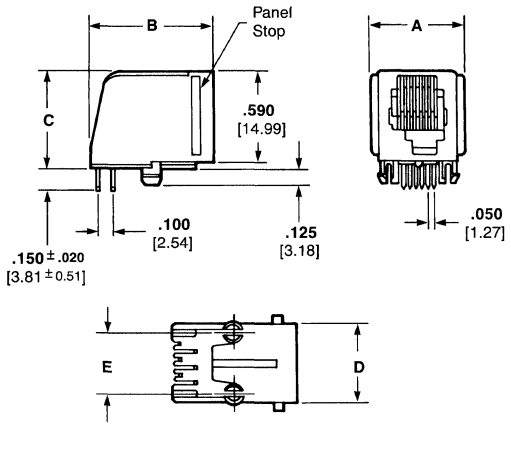
Notes:
1. For additional dimensions, request the appropriate customer drawings.
2. For pc board layout and panel cutout information, refer to AMP Specification 114-02048.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

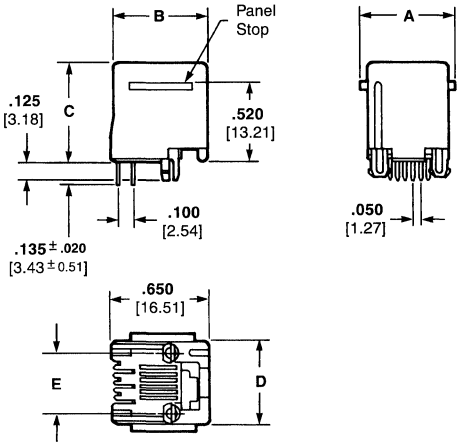
Chart contains dimensions in inches over millimeters.

All dimensions are nominal unless otherwise specified.

With Offset Latch (6-Position Jack Only)



Side Entry with Panel Stops



Top Entry with Panel Stops

Note: On any modular jack, Terminal No. 1 is the terminal to the extreme left as you face the jack opening, tab notch down.

Description	No. of Pos.	No. of Contacts	Dimensions					Jack Part No.	Mating Plugs
			A	B	C	D	E		
Side Entry w/Panel Stops Special Color–Gray	6	6	.620 15.75	.815 20.70	.630 16.0	.520 13.21	.400 10.16	555003-1	6 Pos.
Top Entry w/Panel Stops Special Color–Gray	6	6	.630 16.0	.625 15.88	.645 16.38	.530 13.46	.400 10.16	554990-1	6 Pos.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Printed Circuit Board Shielded Modular Jacks and Shielded Plugs

Product Facts

- Both jacks and plugs have tin-lead plated shields
- Modular jacks are available with two grounding options—pc or panel
- The mating interfaces meet FCC rules and regulations
- Shielded plugs can be inserted into shielded or unshielded jacks
- Jack and plug system offer 20-dB shielding effectiveness from 30 MHz to 400 MHz
- Plugs can be terminated on both round and flat oval, metalized polyester shielded cable using standard tooling for unshielded 8-position or 6-position long body plugs
- Listed by Underwriters Laboratories Inc., File No. E81956
- Certified by Canadian Standards Association File No. LR82669

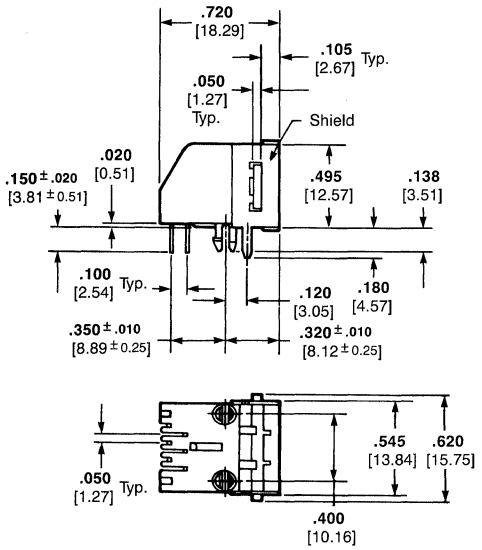
Material and Finish:

Housing—Polyester (wave solder compatible), UL 94V-0 rated

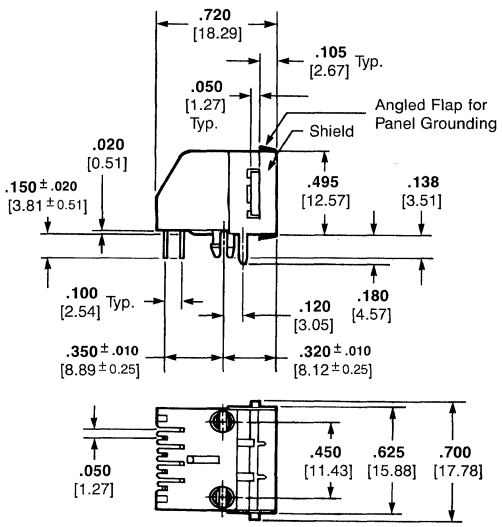
Shield—Tin-lead plated copper alloy

Contact—.014 [0.36] thk. phosphor bronze; plated .000050 [0.00127] gold in contact area and .000150 [0.00381] tin-lead on solder tails, over .000050 [0.00127] nickel underplate

Shielded Side Entry Jacks



6-Position Jack
(Shown with Pc Board Ground Shield)



8-Position Jack
(Shown with Panel Ground Shield)

Note: On any modular jack, Terminal No. 1 is the terminal to the extreme left as you face the jack opening.

Description	Style	Contacts Loaded	Jack Part No.
6-Position Shielded Jack	Pc Board Ground	6	555154-1
	Panel Ground	6	555140-1
		4	555140-2
8-Position Shielded Jack	PC Board Ground	8	555153-1
	Panel Ground	8	555141-1

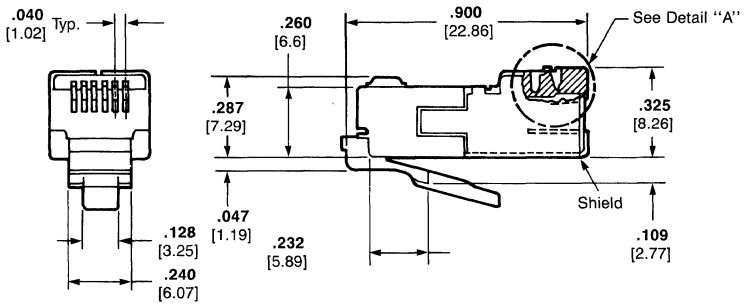
Specifications subject to change.
For latest design specifications...
1-800-522-6752

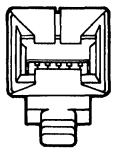
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

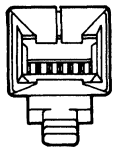
All dimensions are nominal unless otherwise specified.

6-Position Long Body Plug Assemblies



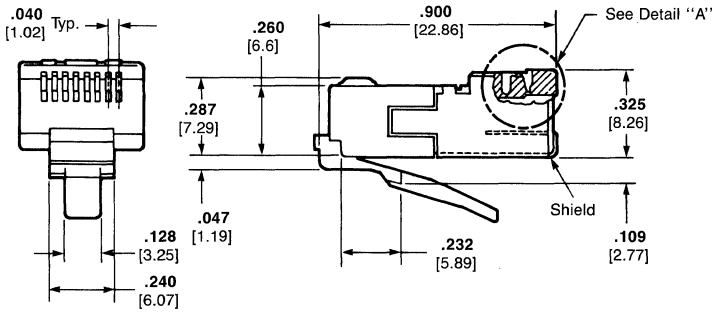


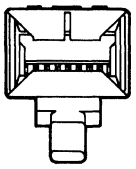
Flat Oval Cable



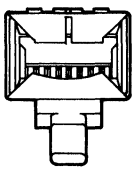
Round Cable

8-Position Plug Assemblies





Flat Oval Cable

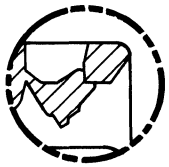


Round Cable

Note: On any modular plug, Terminal No. 1 is the terminal to the extreme left as you face the cable opening, tab down.

Description	Style	Plug Part No.	
		1000 Pcs/Box	100 Pcs/Box 10 Boxes/Carton
6-Position Long Body	Flat-Oval Cable	5-555174-2	—
8-Position		5-555178-2	5-555178-3
6-Position Long Body	Round Cable	5-555175-2	5-555175-3
8-Position		5-555179-2	5-555179-3

Latch must be in position as shown after terminating



Detail "A"

Materials and Finish:

Housing—Polycarbonate, UL 94V-0 rated

Shield—Tin-lead plated copper alloy

Terminal—.014 [0.36] thk. phosphor bronze; plated .000050 [0.00127] thk. gold in localized gold plate area and gold flash over remainder, over .000100 [0.00254] nickel underplate

Shielded Cable Specification (Metalized Polyester Shield Only)

Description	Style	Maximum Cable Size	Conductor Size and Type	Drain Wire Size and Type
5 Cond. + Drain or 6 Cond.	Flat-Oval Cable	**.110 × .270** 2.79 × .6.86	**28-26 AWG** 0.12-0.2 mm²	
7 Cond. + Drain or 8 Cond.		**.110 × .355** 2.79 × 9.02	7-Strand, **.029/.039** 0.74/0.99 Outside Diameter	**24-22 AWG** 0.2-0.4 mm² 7-Strand
5 Cond. + Drain or 6 Cond.	Round Cable	**.180** Diameter 4.57		
7 Cond. + Drain or 8 Cond.		**.200** Diameter 5.08		

AMP Modular Plugs

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

- True mass termination of jacketed cable with tinsel, solid or stranded conductors
- Available for round and flat-oval cable
- One-piece construction with preloaded contacts
- FCC and telephone industry standard size and performance
- Selectively gold plated contacts
- Plugs supplied in strip form on reels or loose piece
- Various positions and styles available
- Semiautomatic and automatic termination capabilities
- Listed by Underwriters Laboratories Inc., File No. E81956
- Certified by Canadian Standards Association File No. LR82669

Specifications

Electrical:

UL Applications—150 volts ac max., at 1.5 amps

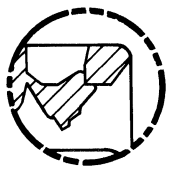
Dielectric Withstanding Voltage—1000 volts ac

Insulation Resistance—500 megohms

Mechanical:

Cable-to-Plug Tensile Strength—17 lbs [76 N] min.

Latch must be in position as shown after terminating.



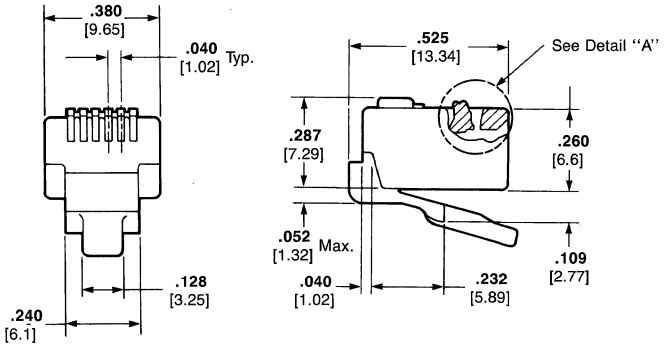
Detail "A"

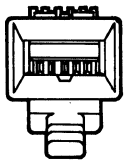
Material and Finish:

Housing—Polycarbonate, UL 94V-0 rated

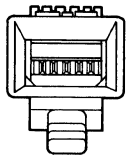
Contact—.014 [0.36] thk. phosphor bronze; plated .000050 [0.00127] gold in contact area and gold flash on remainder of contact, over .000100 [0.00254] nickel underplate

2-, 4-, 6-Position Plug Assemblies



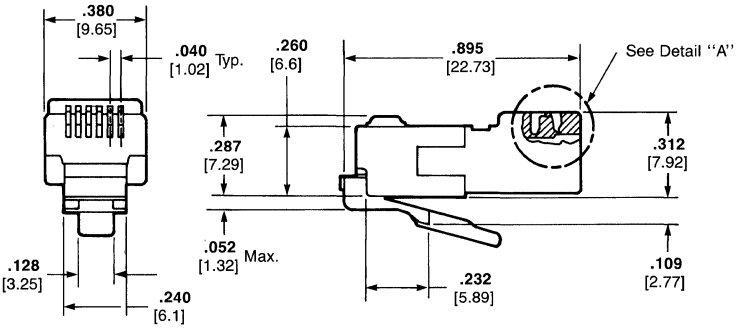


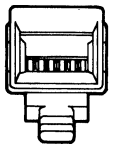
Flat Oval Cable



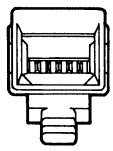
Round Cable
(6-Position Only)

6-Position Plug Assemblies (Long Body)



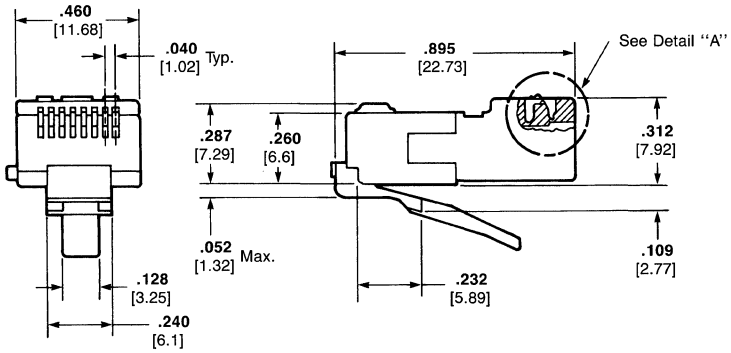


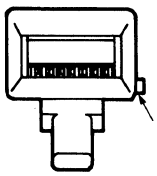
Flat Oval Cable



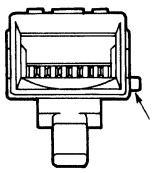
Round Cable

8-Position Plug Assemblies





Flat Oval Cable



Round Cable

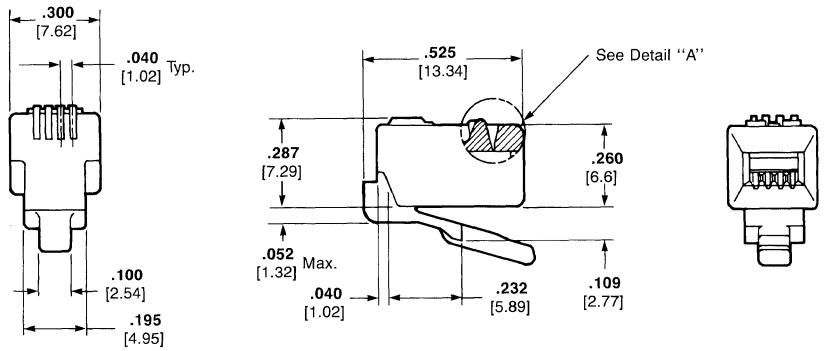
Note: On any modular plug, Terminal No. 1 is the terminal to the extreme left as you face the cable opening, tab down.

7 Miscellaneous Connectors

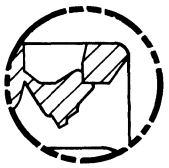
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
All dimensions are nominal unless otherwise specified.

4-Position Handset Plug Assembly



Latch must be in position as shown after terminating



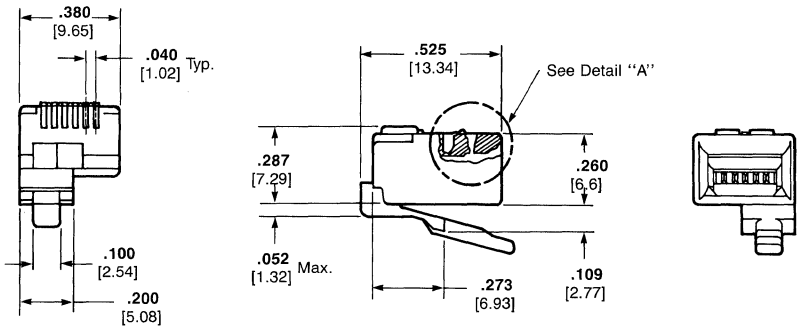
Detail "A"

Note: On any modular plug, Terminal No. 1 is the terminal to the left as you face the cable opening, tab down.

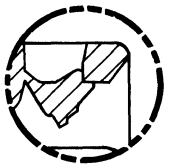
Description	Plug Part Nos.				
	Strip	10,000/box	1,000/box	100/box 10 boxes/carton	25/bag 40 bags/carton
4-Position Handset	641334-1	5-641334-1	5-641334-2	5-641334-3	5-641334-7
2-Position Line	641333-1	5-641333-1	5-641333-2	5-641333-3	—
4-Position Line	641335-1	5-641335-1	5-641335-2	5-641335-3	5-641335-7
4-Position Solid Wire*	—	—	5-556384-2	5-556384-3	5-556384-4
6-Position Line	641337-1	5-641337-1	5-641337-2	5-641337-3	5-641337-4
6-Position Round Cable	554710-1	5-554710-1	5-554710-2	5-554710-3	5-554710-4
6-Position Solid Wire*	555042-1	—	5-555042-2	5-555042-3	5-555042-4
6-Position Line Long Body	555176-1	—	5-555176-2	5-555176-3	—
6-Position Round Cable Long Body	555177-1	—	5-555177-2	5-555177-3	—
6-Position Long Body Solid Wire*	555426-1	—	5-555426-2	5-555426-3	—
8-Position Line	554739-1	5-554739-1	5-554739-2	5-554739-3	5-554739-4
8-Position Round Cable	554169-1	5-554169-1	5-554169-2	5-554169-3	5-554169-4
8-Position Line, Keyed	554743-1	5-554743-1	5-554743-2	5-554743-3	5-554743-4
8-Position Round Cable, Keyed	554170-1	5-554170-1	5-554170-2	5-554170-3	5-554170-4
8-Position Solid Wire*	554720-1	5-554720-1	5-554720-2	5-554720-3	5-554720-4
8-Position Solid Wire, Keyed*	555417-1	—	5-555417-2	—	5-555417-4

*Modular plugs which terminate loose jacketed, solid conductor cable will accommodate 26-24 AWG [0.12-0.2 mm2] wire.

Plug with Offset Latch (6-Position Plug Style Only)



Latch must be in position as shown after terminating



Detail "A"

Note: On any modular plug, Terminal No. 1 is the terminal to the extreme left as you face the cable opening.

Description	Plug Part Nos.				
	Strip	10,000/box	1,000/box	100/box 10 boxes/carton	25/bag 40 bags/carton
6-Position Round Cable Solid Wire	555236-1	—	5-555236-1	5-555236-2	5-555236-3
6-Position Line	555237-1	—	5-555237-1	5-555237-2	5-555237-3
6-Position Round Cable	555238-1	—	5-555238-1	5-555238-2	5-555238-3

Note: Offset latch product conforms to FCC requirements except for latch location.

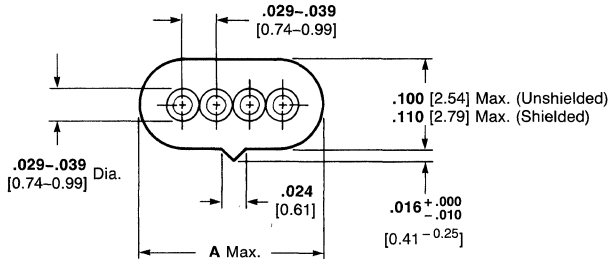
Cable Specifications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

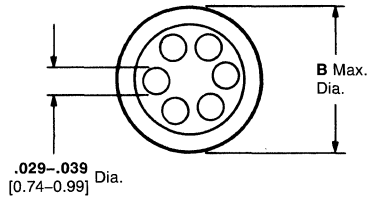
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

All dimensions are nominal unless otherwise specified.



Flat Oval



Round

No. of Conductors	Dimensions		Conductor Size		Conductor Strand Size	
	A	B	AWG	mm²	AWG	mm²
4 Handset*	.190 4.83	—	28-26	0.08-0.15	36	0.013
2	.150 3.81	—	28-26	0.08-0.15	36	0.013
4	.190 4.83	—	28-26	0.08-0.15	36	0.013
6	.260 6.6	.180 4.57	28-26	0.08-0.15	36	0.013
8	.350 8.89	.195 4.95	28-26	0.08-0.15	36	0.013

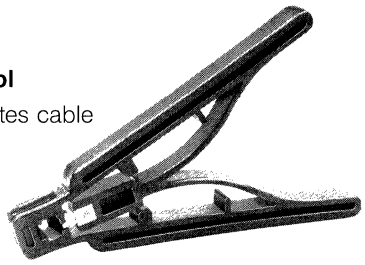
*For tinsel cable applications, the conductor size shall be such that the resistance of the tinsel conductors shall not exceed 1.48 ohms per linear meter (45 ohms per linear foot) at 20° per REA specification PE-75.

Application Tooling for Modular Plugs

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Economy Hand Tool

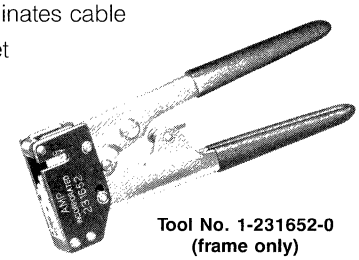
- Strips and terminates cable
- Light weight
- Low cost



Terminates	Hand Tool No.
2-, 4- and 6-Position Plugs	231648-1
4-Position Handset Plugs	231649-1

Production Hand Tool

- Cuts, strips and terminates cable
- CERTI-CRIMP ratchet feature assures proper termination
- All plug sizes are accommodated using replaceable die sets



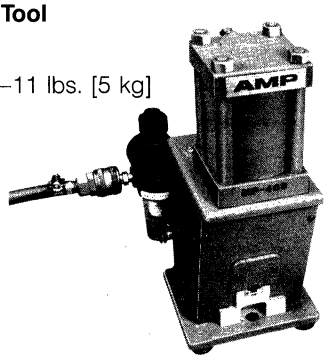
Tool No. 1-231652-0
(frame only)

Complete Production Hand Tool Including Die Set

Complete Hand Tool Assy. No.	Terminates
1-231652-1	8-Position Plugs
1-231652-3	4-Position (Handset) Plugs
1-231652-6	6-Position (Offset) Plugs
1-231652-7	6-Position (Long Body) Plugs
1-231652-8	4- and 6-Position Plugs

MP468 Pneumatic Bench Tool

- Small size
- Portable and light weight—11 lbs. [5 kg]
- Powered by standard 80 p.s.i. air supply
- Air line filter/regulator and lubricant furnished
- Economical, long life, color-coded adapters for all size plugs—easily and quickly installed



Tool No. 231691-5
(Die Sets ordered separately; see Die Set chart)

Die Sets for Production Hand Tool and MP468 Pneumatic Bench Tool

Tool No.	Terminates
853400-1	8-Position Plugs
853400-3	4-Position (Handset) Plugs
853400-6	6-Position (Offset) Plugs
853400-7	6-Position (Long Body) Plugs
853400-8	4- and 6-Position Plugs

Production Hand Tool Kits

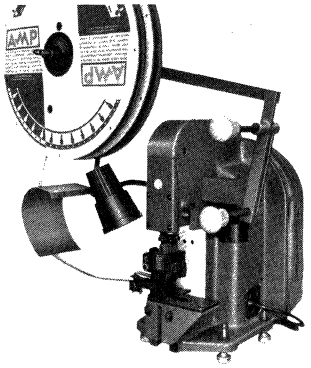
Description	Kit Number
8-Position Plug Hand Tool 4- and 6-Position Plug Die Set	1-231666-0*
8-Position Plug Hand Tool 4- and 6-Position Plug Die Set 4-Position Hand Set Plug Die Set	1-231666-1*
Carry Case with Blade Replacement Kit and Small Screwdriver	231666-9
Blade Replacement Kit	231662-2

Note: Kits include a small screwdriver, a blade replacement kit and an instruction sheet.

Application Tooling for Modular Plugs

AMP-O-LECTRIC Model "K" Terminating Machine

- Bench mounted
- Electrically operated at 120 VAC 60 Hz
- Actuated by foot pedal
- Up to 400 leads per hour
- Air pressure requirements less than 1 CFM at 90 p.s.i.



Machine No. 565435-5

For high volume requirements, contact AMP Incorporated.

Quick-Change Applicators

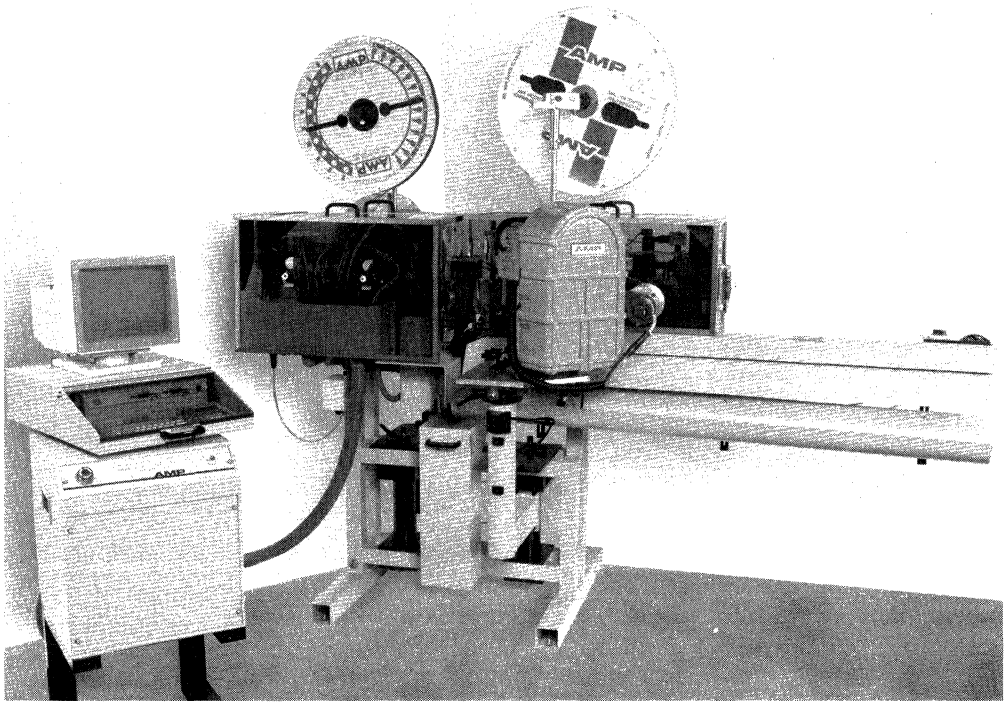
(for use with Machine No. 565435-5)

Terminates	Applicator Part No.
2-Position Plugs	469268-4
4-Position Handset Plugs	469268-1
4-Position Plugs	469268-2
6-Position Plugs	469268-5
8-Position Plugs	469268-6
6-Position Long Body Plugs	1-469268-0
6-Position Offset Latch Plugs	469268-9

LM 40 FPC Flat Ribbon Cable Machine*

This contemporary, ergonomically enhanced, lead-making machine addresses today's production needs. Its flexibility, adaptability, speed, and simplicity enables it to meet "just in time" requirements.

- Quick changeover
- Short run effective
- Uses existing applicators
- Terminates one or both ends
- Microprocessor controlled
- Complete wire stripping kit
- Self diagnostics
- Includes AMP "T" terminating units
- 6-foot motorized stacking tray
- Flat ribbon cables to .80 in. wide
- Insulation displacement
- Ideal for modular telephone plug cord
- Dual floppy disk drives
- Lead configuration storage
- Color graphics dialog program
- Remote programming capability
- Job storage (100 different numbers)
- Production reporting
- Fault diagnostics on machine functions



* For ordering information, call the AMP Customer Service Hotline 1-800-722-1111.

Specifications

Lead Length: 1.6 in. to 213 ft.
Strip Length: 0.100-0.400 (1.6 optional)
Partial Strip: to 1.4 (either end)
Length Change: 10-20 secs. (typical)
Strip Length Change: 45 secs. (typical)
Weight: 1800 lbs. with presses
Height: 63 in.
Width: 60 in.
Length: 75 in.
Air: 80-90 p.s.i., 10-12 SCFM
Electric Requirement: 110/220 VAC, single phase, 5 amperes

Operating Rate

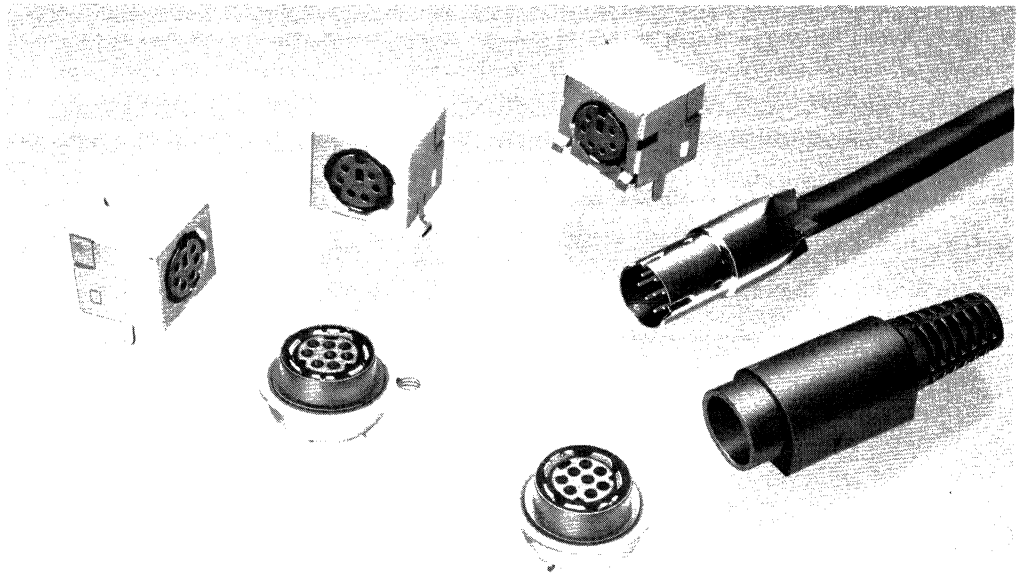
Lead Length		Leads/Hr. (approx.)
Inches	cm	
2	5.08	4000
4	10.18	4000
20	50.18	3300
40	101.60	2900
118	299.72	2000

Production Rates

Net production rates for fully loaded connectors depend on cable type, connector style and connector size. The machine cycle rate is one pair per second.

Shielded Miniature Circular DIN Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Miniature Circular DIN Connectors form a compact system for production needs where space is at a premium. They have built in keying and polarization features. Gold plated contacts provide a high degree of durability as well as excellent contact true position, all on an industry standard interface. All connectors are available in three through eight positions.

PCB Connectors are available in a choice of right angle or vertical mount designs. The right angle pcb connector features a compact design, only one-half inch square. Designed for automated assembly, right angle mount connectors feature registration notch controlled datum surfaces and contact locations needed for robotic pickup and placement. The housings, made of 94V-0 rated material, are designed to withstand the rigors of reflow soldering. The right angle design incorporates a one-piece copper alloy shield, with front panel grounding fingers (optional), and ensures direct grounding via the front panel. The internal grounding fingers provide consistent mating forces for a low-impedance ground connection across the mating interface. Tin-lead plating means easy soldering, while the connector's stand-off design prevents shield damage to the pc board traces and enhances cleaning after soldering.

Cable Mount Plugs mate with other cable and pcb receptacle connectors. Cable mount plug connectors feature insulation displacement (IDC) contacts. One-piece shells are designed for superior shielding and low resistance, plus they are compatible with post molding requirements. The gold plated contacts accept wire range 28 to 24 AWG [0.088 to 0.2 mm^2] with an insulation diameter of .042 [1.02] max.

Product Facts

General Features

- Compact size, same envelope dimensions for all sizes — 3 through 8
- Right angle and plug connectors incorporate an integral one-piece shield for excellent shielding effectiveness
- Polarized and keyed to prevent mismating
- Housing material, 94V-0 rated thermoplastic

PCB Connectors

- Right angle connectors compatible with robotic pick and place assembly
- Right angle connectors available with optional connector hold-down or grounding fingers
- 94V-0 housing materials withstand rigors of vapor-phase and infra-red reflow soldering
- Fully formed socket contacts with proven retention system
- Accept plug connectors with or without latches

Cable Mount Connectors

- Insulation displacement wire termination (IDC)
- Post-mold Compatibility
- Slide-on boot available
- Manual and semi-automatic bench mounted presses offer easy terminations

Commercial Approvals

- Recognized under the Component Program of Underwriters Laboratories, Inc., File No. E28476
- Certified by Canadian Standards Association, No. LR 51928

Note: UL and CSA approvals on right-angle pcb connector only. Cable mount plug and vertical pcb connector pending.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents. Charts contain dimensions in inches over millimeters.
Metric symbols used are:
C (Celsius)
N (newton)
mm^2 (square millimeters)

Shielded Miniature Circular DIN Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

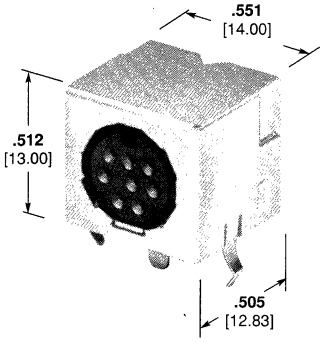
Material and Finish:

Housing — Thermoplastic, 94V-0 rated, black

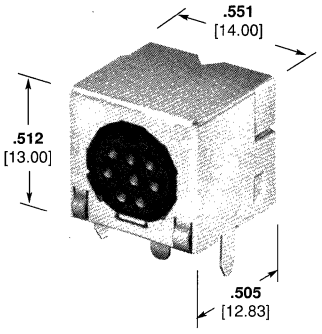
Contacts — Phosphor bronze, duplex plated as follows:
A — Gold Flash in mating area, .000120 [0.00305] min. tin-lead on solder tail, all over .000050 [0.00127] min. nickel underplating
B — .000030 [0.00076] gold min. in mating area, .000120 [0.00305] min. tin-lead on solder tail, all over .000050 [0.00127] min. nickel underplating

Shield — Copper alloy, plated .000100 [0.00254] min. tin-lead over .000030 [0.00076] min. nickel

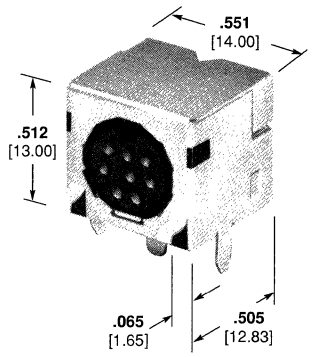
Notes: 1. Recommended pc board thickness is.062 [1.57].
2. This connector ensures grounding to the front panel when the gap between the pc board edge and the panel is no greater than .060 [1.52].



With Hold-Down



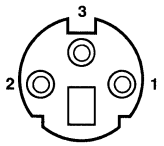
Without Hold-Down



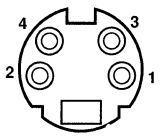
Without Hold-Down with Front Panel Grounding Finger Option (See Note 2)

No. of Positions	Duplex Plating Code	Part Numbers		
		With Hold-Down	Without Hold-Down	With Front Panel Grounding Fingers
3	A	749282-1	749283-1	—
	B	749279-1	749280-1	750068-1
4	A	749230-1	749263-1	—
	B	749181-1	749264-1	750069-1
5	A	749277-1	749278-1	—
	B	749274-1	749275-1	750070-1
6	A	749231-1	749265-1	—
	B	749180-1	749266-1	750071-1
7	A	749272-1	749273-1	—
	B	749269-1	749270-1	750072-1
8	A	749232-1	749268-1	—
	B	749179-1	749267-1	750073-1

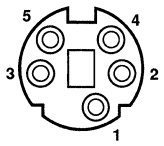
PCB Receptacles Mating Faces Right-Angle and Vertical



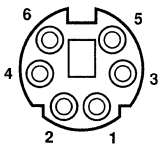
3-Position



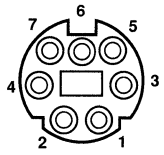
4-Position



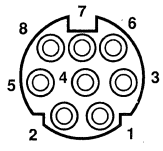
5-Position



6-Position



7-Position



8-Position

Shielded Miniature Circular DIN Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Vertical Board Mount Receptacles

Material and Finish:

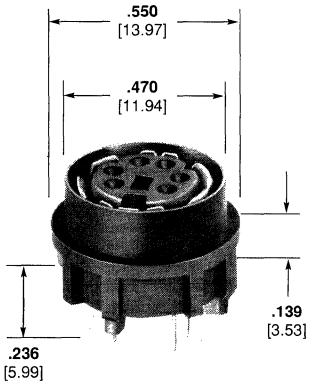
Housing — Thermoplastic, 94V-0 rated, black

Outer Shield — Copper alloy, plated .000100 [0.00254] min. tin-lead over .000100 [0.00254] min. copper

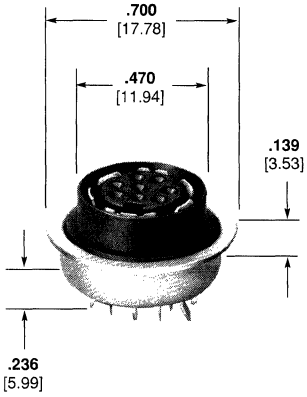
Inner Shield — Copper alloy, plated .000100 [0.00254] min. tin-lead over .000050 [0.00127] min. nickel

Contacts — Phosphor bronze, duplex plated as follows:
B — .000030 [0.00076] gold min. in mating area, .000050 [0.00127] min. nickel underplating
C — .000015 [0.00038] gold min. in mating area, .000120 [0.00305] min. tin-lead on solder tail, all over .000050 [0.00127] min. nickel underplating

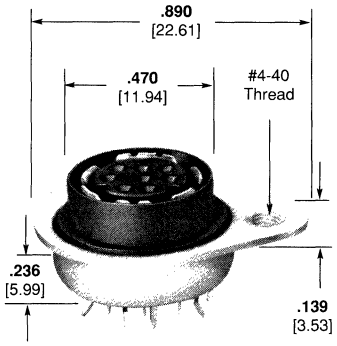
Notes: 1. Recommended pc board thickness is .062 [1.57].



Unshielded



Shielded



Shielded With Front Panel Screw-Down

No. of Positions	Duplex Plating Code	Part Numbers		
		Unshielded	Shielded	Shielded With Front Panel Screw-Down
3	C	750309-1	750311-1	750313-1
	B	750309-2	750311-2	750313-2
4	C	750315-1	750317-1	750319-1
	B	750315-2	750317-2	750319-2
5	C	750321-1	750323-1	750325-1
	B	750321-2	750323-2	750325-2
6	C	750327-1	750329-1	750131-1
	B	750327-2	750329-2	750131-2
7	C	750332-1	750334-1	750132-1
	B	750332-2	750334-2	750132-2
8	C	750337-1	750338-1	750340-1
	B	750337-2	750338-2	750340-2

Shielded Miniature Circular DIN Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

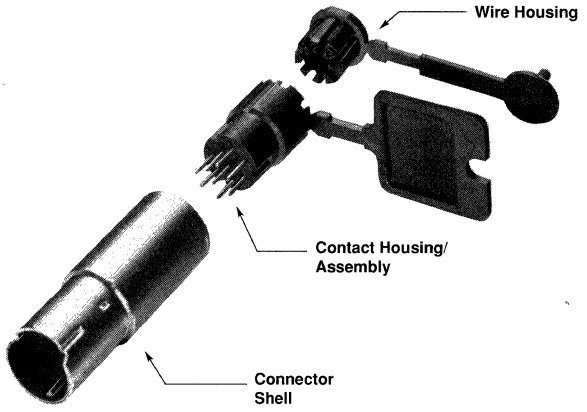
Cable Mount Plug

Material and Finish:

Housing — Thermoplastic, 94V-0 rated, black

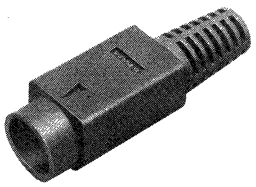
Shell — Steel, plated .000050 [0.00127] min. bright nickel over .000100 [0.00254] min., copper

Contacts — Phosphor bronze, plated as follows:
A — .000015 [0.00038] min. gold on mating end, .000120 [0.00305] min. tin on termination end, all over .000050 [0.00127] min. nickel underplating
B — .000030 [0.00076] min. gold on mating end, .000120 [0.00305] min. tin on termination end, all over .000050 [0.00127] min. nickel underplating



No. of Positions	Wire Size Range		Part Numbers	
	AWG	mm²	Duplex Plating Code	
			A	B
3	28–26	0.08–0.15	750203-4	750203-3
	24	0.2	750203-2	750203-1
4	28–26	0.08–0.15	750204-4	750204-3
	24	0.2	750204-2	750204-1
5	28–26	0.08–0.15	750205-4	750205-3
	24	0.2	750205-2	750205-1
6	28–26	0.08–0.15	750206-4	750206-3
	24	0.2	750206-2	750206-1
7	28–26	0.08–0.15	750207-4	750207-3
	24	0.2	750207-2	750207-1
8	28–26	0.08–0.15	750208-4	750208-3
	24	0.2	750208-2	750208-1

Accessories



Slide-On Boot

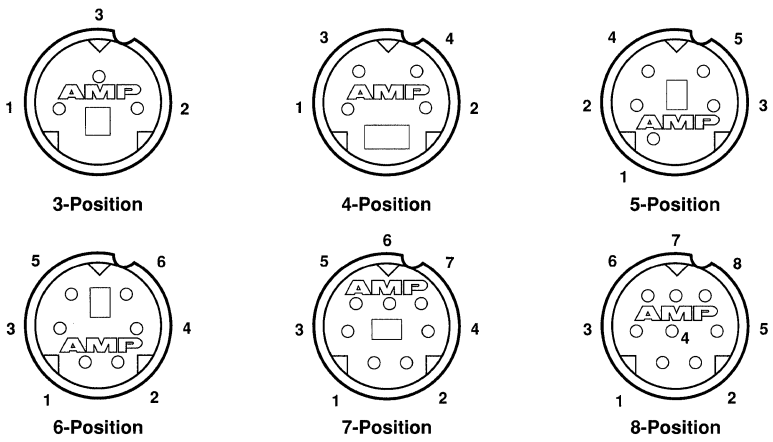
Material — PVC

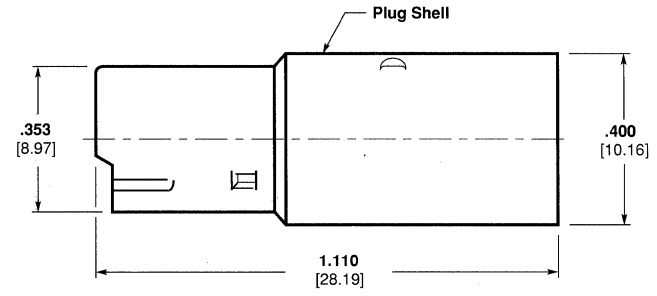
Color — Black

Note: Boot accommodates 3 through 8 position plug assemblies on cable diameter of .140–.220 [3.56–5.59] O.D.

Part Number	Description
750344-1	With AMP Logo
750344-2	Without AMP Logo

Plug Mating Faces



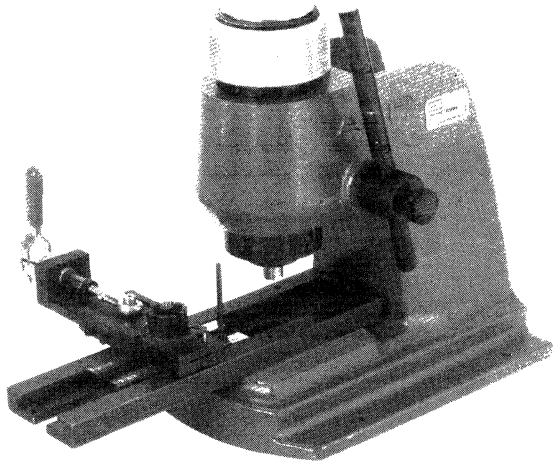


7 Miscellaneous Connectors

Arbor Frame Assembly
Part No. 58024-1

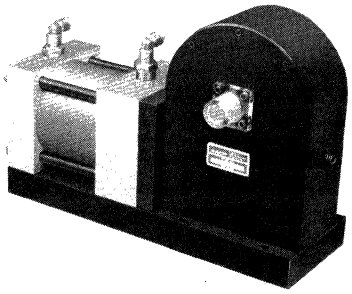
Pneumatic Auto-Cycle Unit
Part No. 91112-6

AMP IDC Applicator
For Wire Size 28–24 AWG
[0.08–0.2 mm²]
Part No. 314409-1



Arbor Frame Assembly
with IDC Applicator

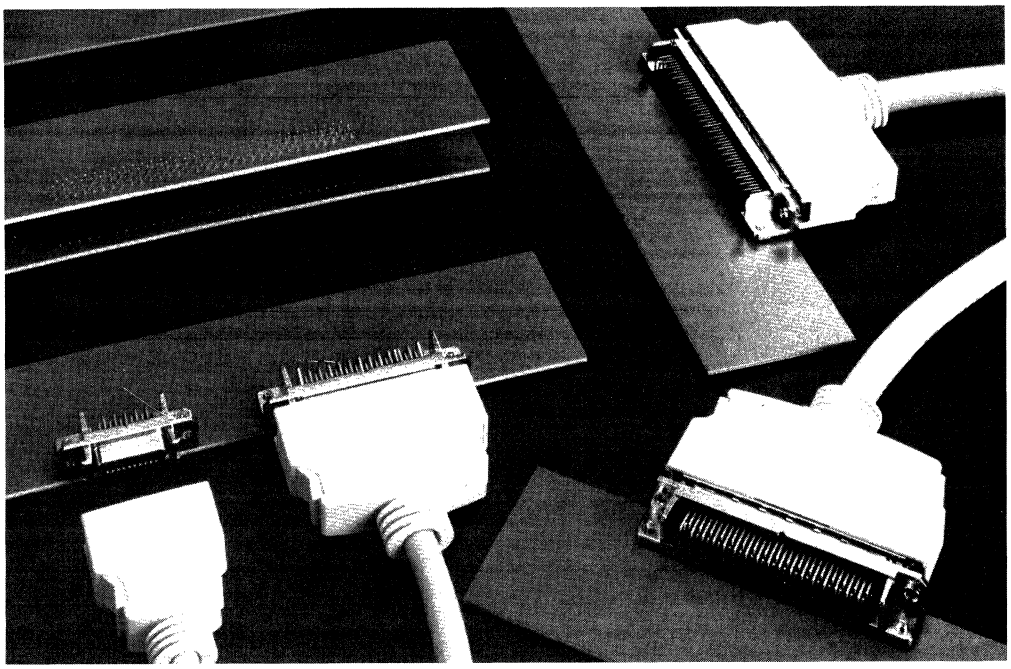
AMP 4-Indent Shell Crimp Applicator, Bench Mount
Part No. 764662-1



This application tooling is designed specifically to terminate AMP Shielded Miniature Circular DIN Connectors. A complete set of tooling consists of a Press - Manual, Part No. 58024-1 or Pneumatic, Part No. 91112-6 with an Insulation Displacement Contact (IDC) Applicator, 4-Indent Shell Crimper, Part No. 764662-1. For complete information on these tools, various technical documents are available and are listed on page 6. For immediate information on this tooling, call the AMP Customer Assistance Hotline **1-800-722-1111.**

CHAMP .050 Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



CHAMP .050 connectors meet the emerging needs for high-density connectors having an .050 [1.27] contact centerline. The connectors are available in two series for both internal and external interconnections, to provide maximum flexibility in packaging and efficient use of space.

The products use a ribbon (or leaf) contact design and D-shaped polarized mating face similar to that used in standard CHAMP connectors. The phosphor bronze contacts are duplex plated.

Series I—Board-to-Board

These all-plastic connectors are used for internal board-to-board interconnections. The choice of right-angle and vertical plugs and receptacles permits parallel, perpendicular and in-line interconnection geometries. Receptacle connectors also serve as card-edge connectors.

Series I connectors use a single-spring system—fixed plug and compliant receptacle contact—that is tolerant of variations in mating depth. This allows the connectors to accommodate the pc board warpage.

Mounting variations include a through-hole for screws or a retention leg for flow soldering applications.

Series II—Wire-to-Board

These shielded connectors offer EMI protection in I/O applications. The line includes right-angle and vertical pc board mount receptacles and cable plug connectors.

To create a reliable, low-impedance ground-to-panel connection, receptacles use a sturdy die-cast zinc body and plugs use a stamped metal backshell. The two-piece backshells are available in 180° (straight) exit. A plastic enclosure fits over the backshell to provide an aesthetically pleasing appearance and ESD protection.

Cable connectors use insulation displacement contacts for fast, accurate termination of 28 AWG [0.08-0.09 mm^2] stranded discrete wire jacketed cable.

Series II connectors use a double-spring system that conforms to the intermateability requirements of evolving worldwide standards.

Dimensioning:
Dimensions are in inches and millimeters unless otherwise specified.
Values in brackets are metric equivalents.
Metric symbols used are:
cm (centimeter)
kg (kilogram)
mm (millimeter)
C (Celsius)
mm^2 (square millimeter)

Product Facts

- High-density .050 [1.27] contact centerlines
- Series I connectors for internal applications
  - All-plastic pc board mounting
  - Vertical and right-angle plugs and receptacles
  - Parallel, perpendicular and in-line interconnections
  - Single-spring contact design for high tolerance to mating depth variations
  - .062 [1.58] contact row spacing on receptacle connectors allows them to serve as card-edge connectors
  - 30 through 130 selected positions
- Series II connectors for shielded I/O applications
  - Cable plug connectors terminate 28 AWG [0.08-0.09 mm^2] wire
  - Post-Molded Plug Cable Assemblies 50 – 100 Positions
  - 180° cable exit
  - Pc board mounting receptacle connectors with rugged zinc die cast body
  - Double-spring contact design to ensure intermateability and conformance to standards
  - 14 through 100 selected positions
- D-shaped polarized mating face
- Ribbon contact design
- Variety of application tooling available to meet all production volumes

Series I—Board-to-Board Right-Angle Plug Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

All dimensions are nominal unless otherwise specified.

Materials and Finish:

Housing – Glass-filled nylon, 94V-0 rated, black

Contacts – Phosphor bronze, duplex plated .000008 [0.0002] or .000030 [0.00076] gold on mating end and .000040 [0.001] tin-lead on the solder leg, with entire contact underplated .000050 [0.00127] nickel

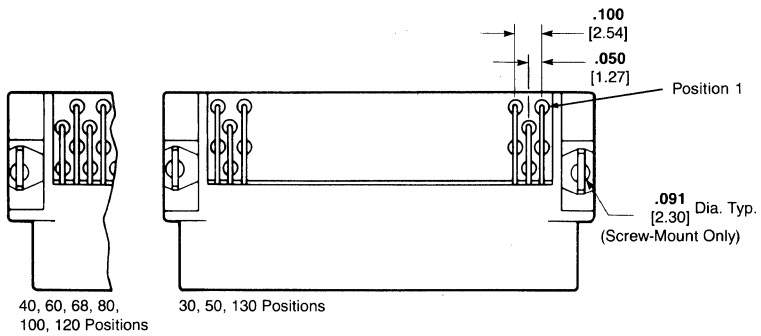
Retention Leg – Brass, tin-lead plated

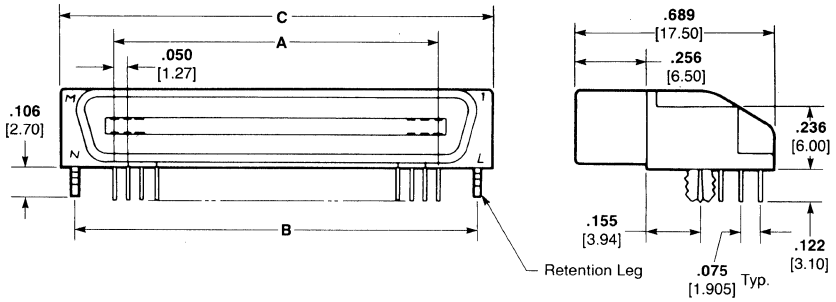
Related Product Data:

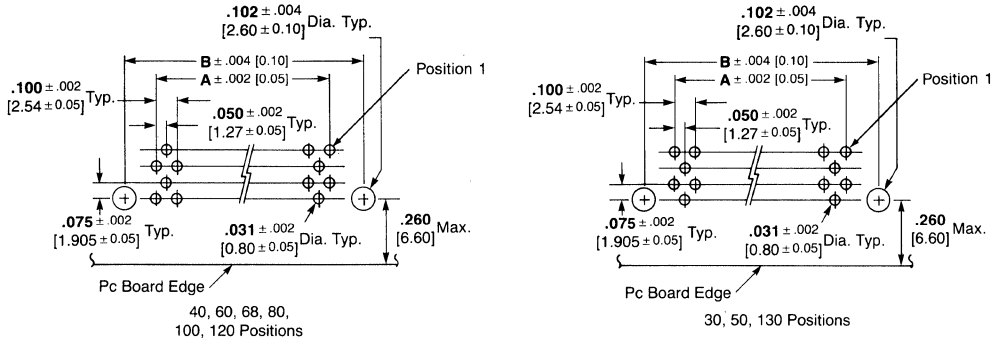
Mating Receptacle Connectors
Right Angle - page 7072
Vertical - page 7073
Mating Configurations - page 7074
Performance Specifications - page 7081
Technical Documents - page 7081

Accommodates pc boards .031 [0.79] to .062 [1.58] thick.

Note: High Temperature Assemblies also available. Contact AMP Product Engineering







Recommended Pc Board Layout
(Connector Side Shown)

No. of Pos.	Dimensions A	B	C	Part Numbers: With Retention Leg .000008 [0.0002] Plating	With Retention Leg .000030 [0.00076] Plating	With Mounting Holes .000008 [0.0002] Plating	With Mounting Holes .000030 [0.00076] Plating
30	**.700** 17.78	**.991** 25.18	**1.141** 28.98	175472-3	5-175472-3	175610-3	5-175610-3
40	**.950** 24.13	**1.241** 31.53	**1.391** 35.33	175472-5	5-175472-5	175610-5	5-175610-5
50	**1.200** 30.48	**1.491** 37.88	**1.641** 41.68	175472-6	5-175472-6	175610-6	5-175610-6
60	**1.450** 36.83	**1.741** 44.23	**1.891** 48.03	175472-7	5-175472-7	175610-7	5-175610-7
68	**1.650** 41.91	**1.941** 49.31	**2.091** 53.11	175472-8	5-175472-8	175610-8	5-175610-8
80	**1.950** 49.53	**2.241** 56.93	**2.391** 60.73	175472-9	5-175472-9	175610-9	5-175610-9
100	**2.450** 62.23	**2.741** 69.63	**2.891** 73.43	1-175472-0	6-175472-0	1-175610-0	6-175610-0
120	**2.950** 74.93	**3.241** 82.33	**3.391** 86.13	1-175472-1	6-175472-1	1-175610-1	6-175610-1
130	**3.200** 81.28	**3.491** 88.68	**3.641** 92.48	1-175472-2	6-175472-2	1-175610-2	6-175610-2

Series I—Board-to-Board Vertical Plug Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

All dimensions are nominal unless otherwise specified.

Materials and Finish:

Housing – Glass-filled nylon, 94V-0 rated, black

Contacts – Phosphor bronze, duplex plated .000008 [0.0002] or .000030 [0.00076] gold on mating end and .000040 [0.001] tin-lead on the solder leg, with entire contact underplated .000050 [0.00127] nickel

Retention Leg – Brass, tin-lead plated

Related Product Data:

Mating Receptacle Connectors
Right Angle - page 7072
Vertical - page 7073

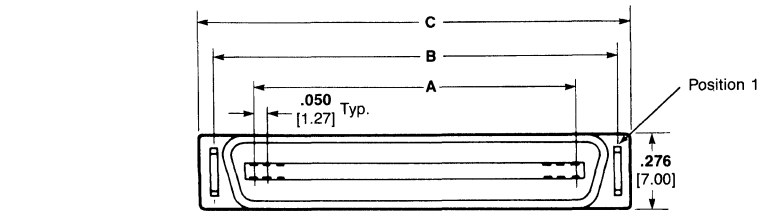
Mating Configurations - page 7074

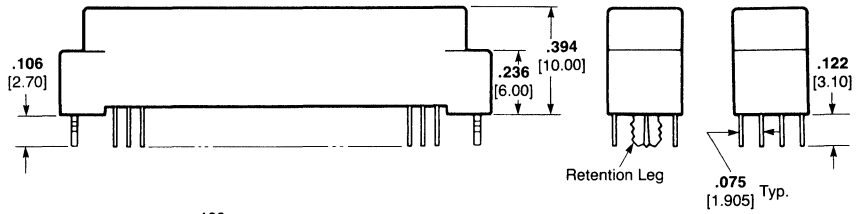
Performance Specifications - page 7081

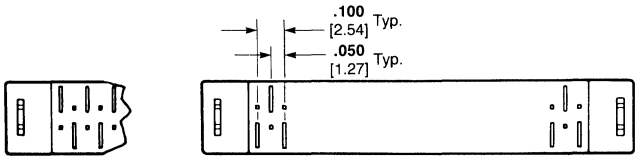
Technical Documents - page 7081

Accommodates pc boards .031 [0.79] to .062 [1.58] thick.

Note: High Temperature Assemblies also available. Contact AMP Product Engineering

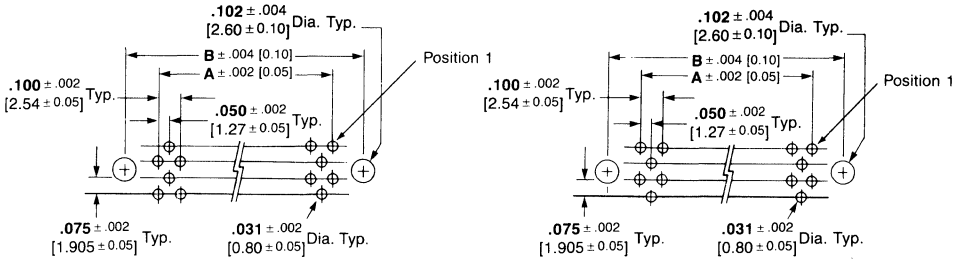






40, 60, 68, 80, 100, 120 Positions

30, 50, 130 Positions



40, 60, 68, 80, 100, 120 Positions

30, 50, 130 Positions

Recommended Pc Board Layout
(Connector Side Shown)

No. of Pos.	Dimensions			Part Numbers			
				With Retention Leg		Without Retention Leg	
	A	B	C	.000008 [0.0002] Plating	.000030 [0.00076] Plating	.000008 [0.0002] Plating	.000030 [0.00076] Plating
30	.700 17.78	1.093 27.75	1.197 30.40	175473-3	5-175473-3	175611-3	5-175611-3
40	.950 24.13	1.343 34.10	1.447 36.75	175473-5	5-175473-5	175611-5	5-175611-5
50	1.200 30.48	1.593 40.45	1.697 43.10	175473-6	5-175473-6	175611-6	5-175611-6
60	1.450 36.83	1.843 46.80	1.947 49.45	175473-7	5-175473-7	175611-7	5-175611-7
68	1.650 41.91	2.043 51.88	2.147 54.53	175473-8	5-175473-8	175611-8	5-175611-8
80	1.950 49.53	2.343 59.50	2.447 62.15	175473-9	5-175473-9	175611-9	5-175611-9
100	2.450 62.23	2.843 72.20	2.947 74.85	1-175473-0	6-175473-0	1-175611-0	6-175611-0
120	2.950 74.93	3.343 84.90	3.447 87.55	1-175473-1	6-175473-1	1-175611-1	6-175611-1
130	3.200 81.28	3.593 91.25	3.697 93.90	1-175473-2	6-175473-2	1-175611-2	6-175611-2

Series I—Board-to-Board Right-Angle Receptacle Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

All dimensions are nominal unless otherwise specified.

Materials and Finish:

Housing – Glass-filled nylon, 94V-0 rated, black

Contacts – Phosphor bronze, duplex plated .000008 [0.0002] or .000030 [0.00076] gold on mating end and .000040 [0.001] tin-lead on the solder leg, with entire contact underplated .000050 [0.00127] nickel

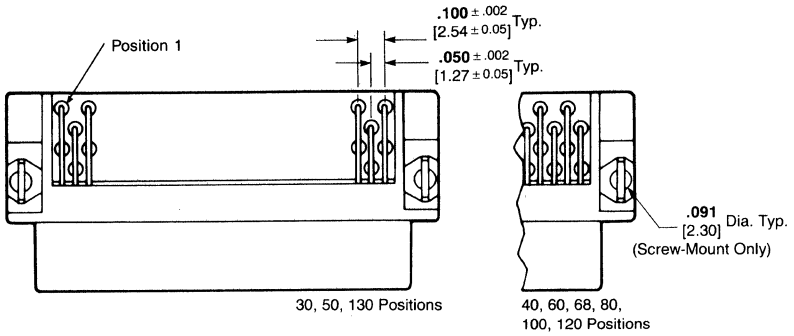
Retention Leg – Brass, tin-lead plated

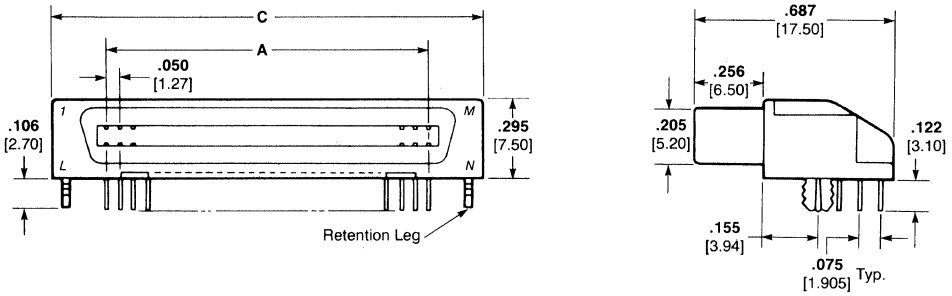
Related Product Data:

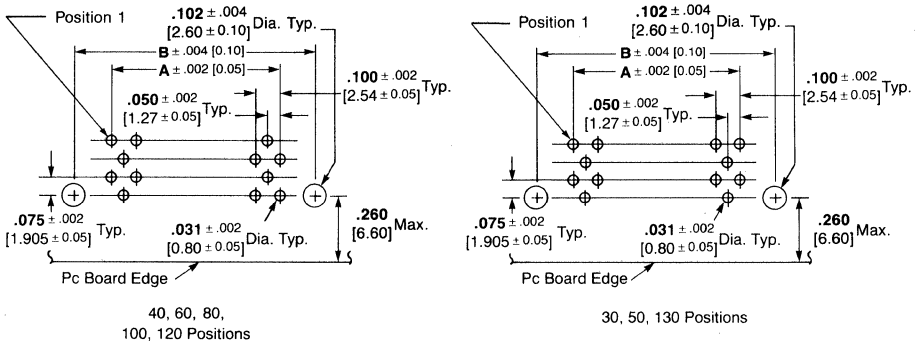
Mating Plug Connectors
Right Angle - page 7070
Vertical - page 7071
Mating Configurations - page 7074
Performance Specifications - page 7081
Technical Documents - page 7081

Accommodates pc boards .031 [0.79] to .062 [1.58] thick.

Note: High Temperature Assemblies also available. Contact AMP Product Engineering







Recommended Pc Board Layout
(Connector Side Shown)

No. of Pos..	Dimensions			Part Numbers			
				With Retention Leg		With Mounting Holes	
	A	B	C	.000008 [0.0002] Plating	.000030 [0.00076] Plating	.000008 [0.0002] Plating	.000030 [0.00076] Plating
30	**.700** 17.78	**.991** 25.18	**1.141** 28.98	175474-3	5-175474-3	175612-3	5-175612-3
40	**.950** 24.13	**1.241** 31.53	**1.391** 35.33	175474-5	5-175474-5	175612-5	5-175612-5
50	**1.200** 30.48	**1.491** 37.88	**1.641** 41.68	175474-6	5-175474-6	175612-6	5-175612-6
60	**1.450** 36.83	**1.741** 44.23	**1.891** 48.03	175474-7	5-175474-7	175612-7	5-175612-7
68	**1.650** 41.91	**1.941** 49.31	**2.091** 53.11	175474-8	5-175474-8	175612-8	5-175612-8
80	**1.950** 49.53	**2.241** 56.93	**2.391** 60.73	175474-9	5-175474-9	175612-9	5-175612-9
100	**2.450** 62.23	**2.741** 69.63	**2.891** 73.43	1-175474-0	6-175474-0	1-175612-0	6-175612-0
120	**2.950** 74.93	**3.241** 82.33	**3.391** 86.13	1-175474-1	6-175474-1	1-175612-1	6-175612-1
130	**3.200** 81.28	**3.491** 88.68	**3.641** 92.48	1-175474-2	6-175474-2	1-175612-2	6-175612-2

Series I—Board-to-Board Vertical Receptacle Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

All dimensions are nominal unless otherwise specified.

Materials and Finish:

Housing – Glass-filled nylon, 94V-0 rated, black

Contacts – Phosphor bronze, duplex plated .000008 [0.0002] or .000030 [0.00076] gold on mating end and .000040 [0.001] tin-lead on the solder leg, with entire contact underplated .000050 [0.00127] nickel

Retention Leg – Brass, tin-lead plated

Related Product Data:

Mating Plug Connectors
Right Angle - page 7070
Vertical - page 7071

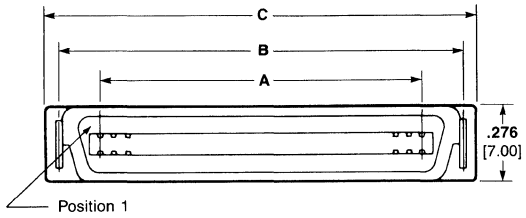
Mating Configurations - page 7074

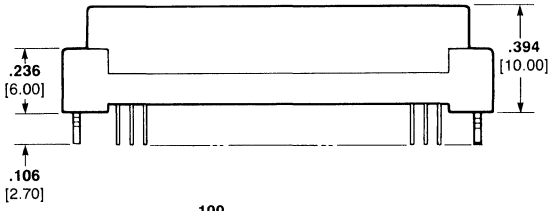
Performance Specifications - page 7081

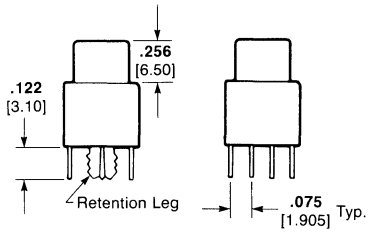
Technical Documents - page 7081

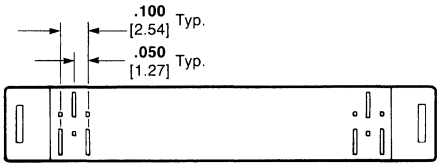
Accommodates pc boards .031 [0.79] to .062 [1.58] thick.

Note: High Temperature Assemblies also available. Contact AMP Product Engineering

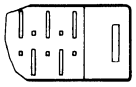




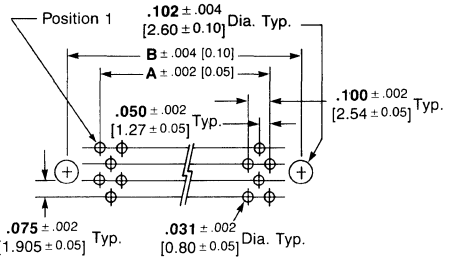




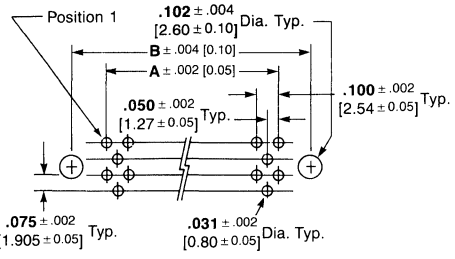
30, 50, 130 Positions



40, 60, 68, 80, 100, 120 Positions



40, 60, 68, 80, 100, 120 Positions



30, 50, 130 Positions

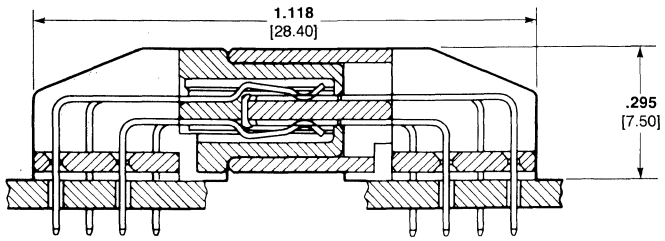
Recommended Pc Board Layout
(Connector Side Shown)

No. of Pos.	Dimensions A	B	C	Part Numbers: With Retention Leg .000008 [0.0002] Plating	With Retention Leg .000030 [0.00076] Plating	Without Retention Leg .000008 [0.0002] Plating	Without Retention Leg .000030 [0.00076] Plating
30	**.700** 17.78	**1.093** 27.75	**1.197** 30.40	175475-3	5-175475-3	175613-3	5-175613-3
40	**.950** 24.13	**1.343** 34.10	**1.447** 36.75	175475-5	5-175475-5	175613-5	5-175613-5
50	**1.200** 30.48	**1.593** 40.45	**1.697** 43.10	175475-6	5-175475-6	175613-6	5-175613-6
60	**1.450** 36.83	**1.843** 46.80	**1.947** 49.45	175475-7	5-175475-7	175613-7	5-175613-7
68	**1.650** 41.91	**2.043** 51.88	**2.147** 54.53	175475-8	5-175475-8	175613-8	5-175613-8
80	**1.950** 49.53	**2.343** 59.50	**2.447** 62.15	175475-9	5-175475-9	175613-9	5-175613-9
100	**2.450** 62.23	**2.843** 72.20	**2.947** 74.85	1-175475-0	6-175475-0	1-175613-0	6-175613-0
120	**2.950** 74.93	**3.343** 84.90	**3.447** 87.55	1-175475-1	6-175475-1	1-175613-1	6-175613-1
130	**3.200** 81.28	**3.593** 91.25	**3.697** 93.90	1-175475-2	6-175475-2	1-175613-2	6-175613-2

Series I—Board-to-Board Typical Mating Sections

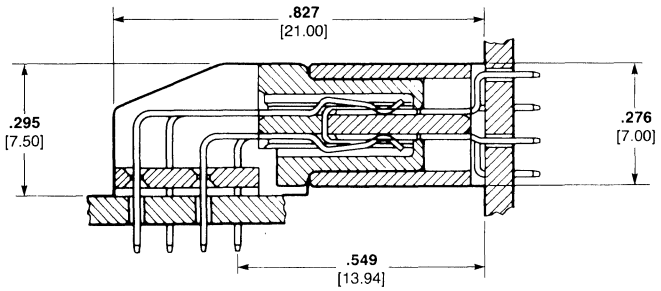
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
All values are nominal unless otherwise specified.

In-Line Mating



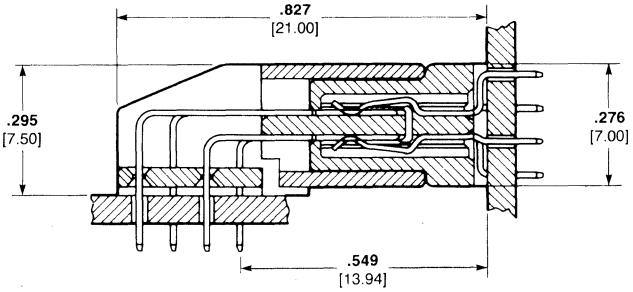
Right-Angle Receptacle — Right-Angle Plug

Perpendicular Mating



Right-Angle Receptacle — Vertical Plug

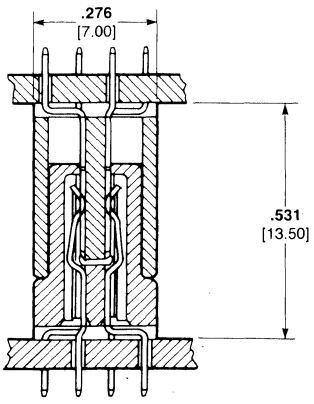
Perpendicular Mating



Right-Angle Plug — Vertical Receptacle

Parallel Mating

Vertical Plug



Vertical Receptacle

Series II—Wire-to-Board Cable Plug Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

All dimensions are nominal unless otherwise specified.

Materials and Finish:

Housing, Face, Cover – Glass-filled thermoplastic, 94V-0 rated, black

Front Shell – Steel, nickel plated

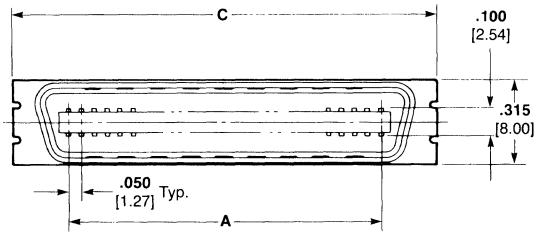
Contacts – Phosphor bronze, duplex plated .000030 [0.00076] gold on mating end, tin-lead on the wire-termination area, with entire contact underplated .000050 [0.00127] nickel

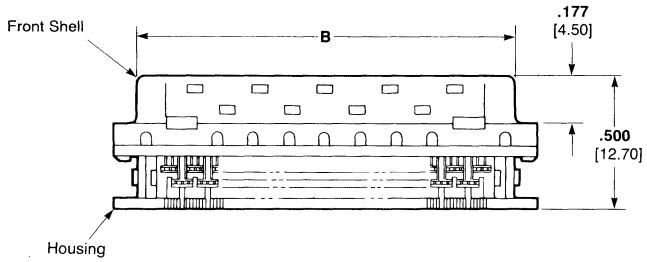
Wire Range

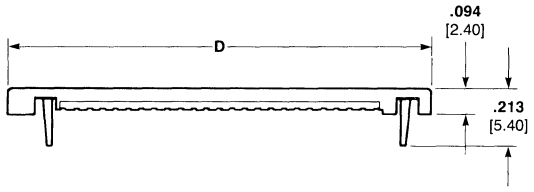
28 AWG [0.08-0.09 mm^2] 7-strand wire with a .020-.028 [0.5-0.7] insulation diameter

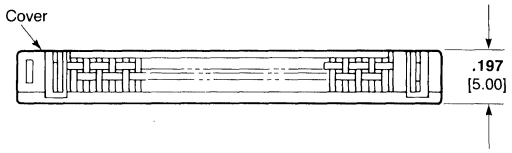
Related Product Data:

Mating Receptacle Connectors
Right Angle - page 7078
Vertical - page 7079
Backshells/Enclosures - page 7076
Performance Specifications - page 7081
Application Tooling - page 7080
Technical Documents - page 7081









No. of Pos.	Dimensions				Part Numbers
	A	B	C	D	
14	**.300** 7.62	**.539** 13.70	**.724** 18.40	**.720** 18.30	2-175677-1
20	**.450** 11.43	**.693** 17.60	**.874** 22.20	**.870** 22.10	2-175677-2
26	**.600** 15.24	**.843** 21.40	**1.024** 26.00	**1.020** 25.90	2-175677-4
36	**.850** 21.59	**1.091** 27.70	**1.276** 32.40	**1.272** 32.30	2-175677-5
50	—	—	—	—	*
68	—	—	—	—	*
80	—	—	—	—	*
100	—	—	—	—	*

* 50-100 Position in Post Molded Cable Assembly form only—See Page 7077.

Shields and Enclosures

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimeters.

All dimensions are nominal unless otherwise specified.

180° Exit

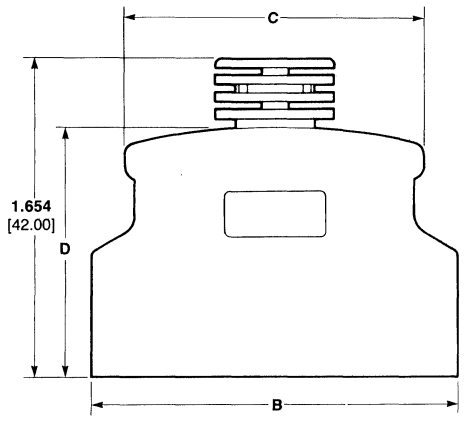
Materials and Finish:

Enclosure – Thermoplastic, 94V-0 rated, beige

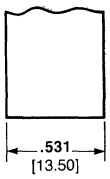
Shell – Brass, nickel plated

Locking Spring – Stainless steel

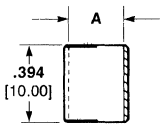
Ferrule – Copper, tin plated



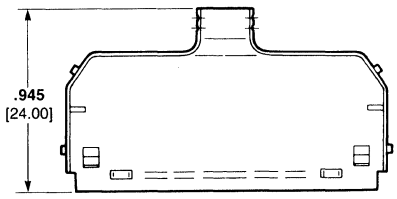
Enclosure



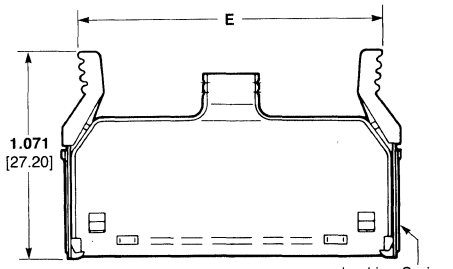
Max. Assembled



Ferrule



Backshell (Bottom)



Backshell (Top)

Locking Spring

No. of Pos.	Cable Diameter	Dimensions A	B	C	D	E	Part Numbers Without Logo
14	.211–.230 5.35–5.85	.240 6.10	1.016 25.80	.673 17.10	1.300 33.00	.740 18.79	175753-1
20	.226–.246 5.75–6.25	.256 6.50	1.169 29.70	.827 21.00	1.300 33.00	.890 22.60	175753-2
26	.242–.262 6.15–6.65	.276 7.00	1.319 33.50	.976 24.80	1.300 33.00	1.040 26.41	175753-4
36	.274–.293 6.95–7.45	.315 8.00	1.567 39.80	1.224 31.10	1.260 32.00	1.290 32.76	175753-5

Series II—Plug to Plug Post-Molded Cable Assemblies

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensions:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in feet over meters.
All dimensions are nominal unless otherwise specified.

Materials and Finish:

Housing & Strain Relief Covers – Glass-filled thermoplastic, 94V-0 rated, black

Front Shell – Steel nickel plated

Contacts – Phosphor bronze duplex plated .000030 [0.00076] gold on mating end, tin-lead on wire termination area, with entire contact underplated .000050 [0.00127] nickel

Cable – Shielded, 28 [0.08–0.09 mm²] AWG stranded wire

Shield – Die cast zinc

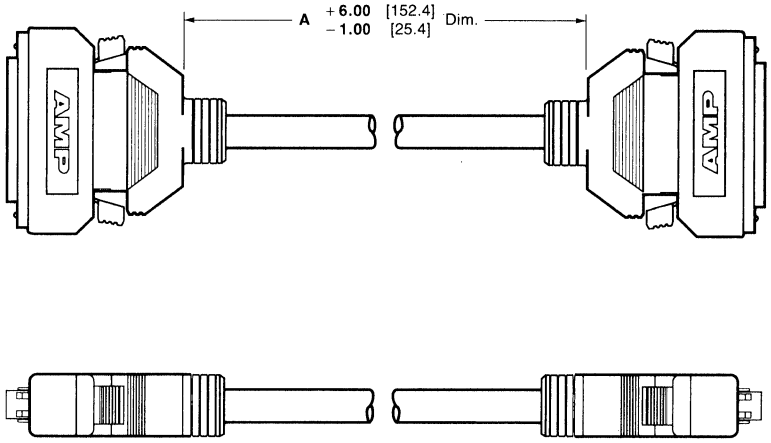
Post Mold Compound – Semi-rigid polyvinyl chloride, beige

Related Product Data:

Mating Receptacle Connectors
Right Angle - page 7078
Vertical - page 7079

Performance Specifications - page 7081

Technical Documents - page 7081



No. of Positions	Dimension A	Part Numbers
50	**5** 1.52	557105-1
50	**10** 3.05	557105-2
50	**15** 4.57	557105-3
50	**20** 6.10	557105-4
50	**25** 7.62	557105-5
68	**5** 1.52	557106-1
68	**10** 3.05	557106-2
68	**15** 4.57	557106-3
68	**20** 6.10	557106-4
68	**25** 7.62	557106-5
80	**5** 1.52	557107-1
80	**10** 3.05	557107-2
80	**15** 4.57	557107-3
80	**20** 6.10	557107-4
80	**25** 7.62	557107-5
100	**5** 1.52	557108-1
100	**10** 3.05	557108-2
100	**15** 4.57	557108-3
100	**20** 6.10	557108-4
100	**25** 7.62	557108-5

Series II—Wire-to-Board Right-Angle Pc Board Mount Receptacle Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

All dimensions are nominal unless otherwise specified.

Materials and Finish:

Housing – Glass-filled thermoplastic, 94V-0 rated, black

Shell – Die-cast zinc, nickel plated

Contacts – Phosphor bronze, duplex plated .000030 [0.00076] gold on mating end, tin-lead on the solder leg, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

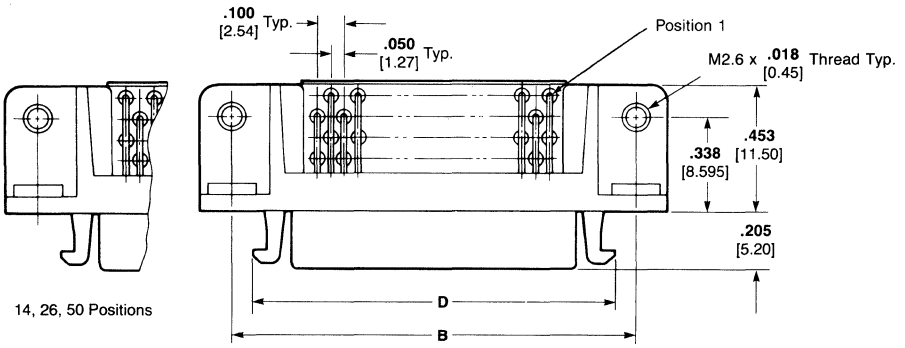
Mating Plug Connectors - page 7075

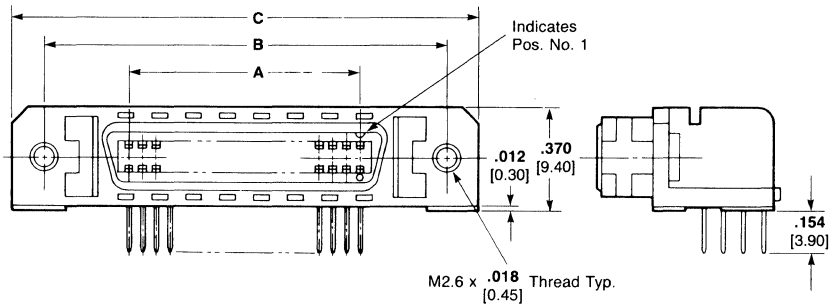
Mating Cable Assemblies - page 7077

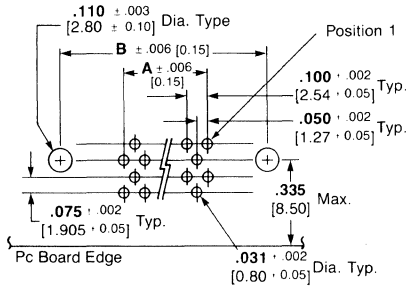
Performance Specification - page 7081

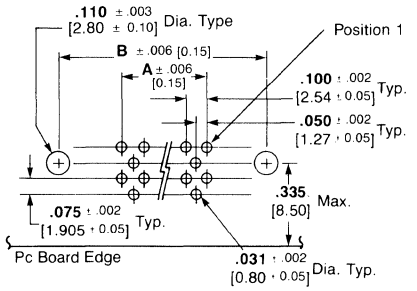
Technical Documents - page 7081

Accommodates pc boards .031 [0.79] to .062 [1.58] thick.





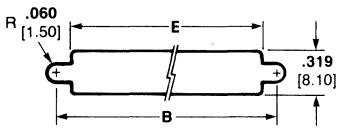




Recommended Pc Board Layout (Connector Side Shown)

Recommended Panel Cutout

.079 [2.00] max. panel thickness



No. of Pos.	Dimensions					Part Numbers
	A	B	C	D	E	
14	**.300** 7.62	**.931** 23.64	**1.163** 29.54	**.773** 19.64	**.783** 19.90	2-175674-1
20	**.450** 11.43	**1.081** 27.45	**1.313** 33.35	**.923** 23.45	**.937** 23.80	2-175674-2
26	**.600** 15.24	**1.231** 31.26	**1.463** 37.16	**1.073** 27.26	**1.087** 27.60	2-175674-4
36	**.850** 21.59	**1.481** 37.61	**1.713** 43.51	**1.323** 33.61	**1.335** 33.90	2-175674-5
50	**1.200** 30.48	**1.831** 46.50	**2.063** 52.40	**1.673** 42.50	**1.685** 42.80	2-175674-7
68	**1.650** 41.91	**2.281** 57.93	**2.513** 63.83	**2.123** 53.93	**2.134** 54.20	2-175674-8
80	**1.950** 49.53	**2.581** 65.55	**2.813** 71.45	**2.423** 61.55	**2.437** 61.90	3-175674-0
100	**2.450** 62.23	**3.081** 78.25	**3.313** 84.15	**2.923** 74.25	**2.937** 74.60	2-175674-9

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Series II—Wire-to-Board Vertical Pc Board Mount Receptacle Connectors

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

All dimensions are nominal unless otherwise specified.

Materials and Finish:

Housing – Glass-filled thermoplastic, 94V-0 rated, black

Shell – Die-cast zinc, nickel plated

Contacts – Phosphor bronze, duplex plated .000030 [0.00076] gold on mating end, tin-lead on the solder leg, with entire contact underplated .000050 [0.00127] nickel

Related Product Data:

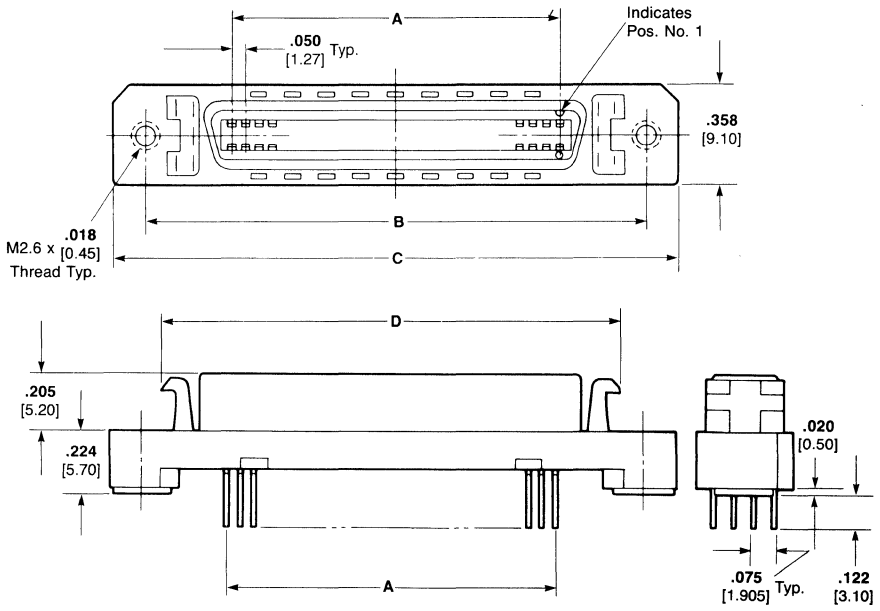
Mating Plug Connectors - page 7075

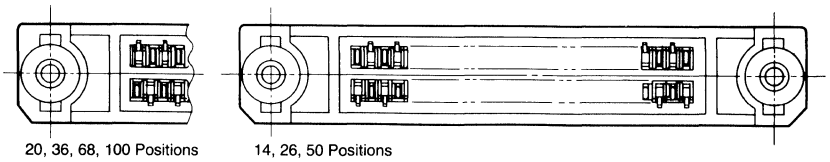
Mating Cable Assemblies - page 7077

Performance Specification - page 7081

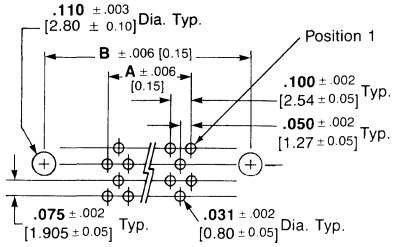
Technical Documents - page 7081

Accommodates pc boards .031 [0.79] to .062 [1.58] thick.

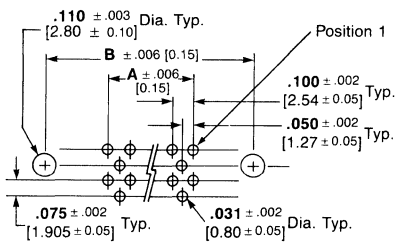




20, 36, 68, 100 Positions — 14, 26, 50 Positions



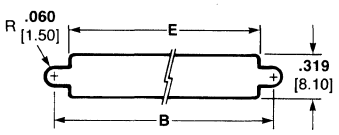
20, 36, 68, 100 Positions



14, 26, 50 Positions

Recommended Panel Cutout

.079 [2.00] max. panel thickness



Recommended Pc Board Layout (Connector Side Shown)

No. of Pos.	Dimensions					Part Numbers
	A	B	C	D	E	
14	**.300** 7.62	**.931** 23.64	**1.163** 29.54	**.773** 19.64	**.783** 19.90	2-175925-1
20	**.450** 11.43	**1.081** 27.45	**1.313** 33.35	**.923** 23.45	**.937** 23.80	2-175925-2
26	**.600** 15.24	**1.231** 31.26	**1.463** 37.16	**1.073** 27.26	**1.087** 27.60	2-175925-4
36	**.850** 21.59	**1.481** 37.61	**1.713** 43.51	**1.323** 33.61	**1.335** 33.90	2-175925-5
50	**1.200** 30.48	**1.831** 46.50	**2.063** 52.40	**1.673** 42.50	**1.685** 42.80	2-175925-7
68	**1.650** 41.91	**2.281** 57.93	**2.513** 63.83	**2.123** 53.93	**2.134** 54.20	2-175925-8
80	**1.950** 49.53	**2.581** 65.55	**2.813** 71.45	**2.423** 61.55	**2.437** 61.90	3-175925-0
100	**2.450** 62.23	**3.081** 78.25	**3.313** 84.15	**2.923** 74.25	**2.937** 74.60	2-175925-9

Application Tooling

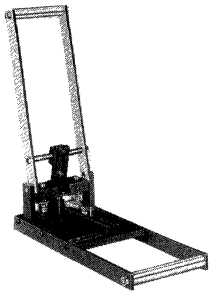
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters unless otherwise specified.
Values in brackets are metric equivalents.
All values are nominal unless otherwise specified.

For Terminating Cable to Series II Plug Connectors

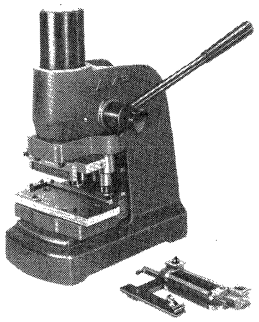
Hand Applicator Number 911123-1

Connector Sizes: 14 through 36 positions
Insulation Diameter: .020 [0.5] to .035 [0.88]
Width: 5.7 [14.5 cm]
Depth: 13.8 [35.0 cm]
Height: 4.5-16.5 [12.0-42.0 cm]
Weight: 15.4 lb [7 kg]



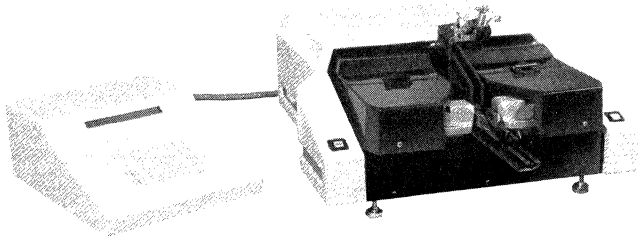
Manual Arbor Tool

Numbers: 911149-4 (press and tooling)
911432-4 (comb only)
Connector Sizes: 14 through 36 positions
Insulation Diameter: .020 [0.5] to .035 [0.88]
Width: 6.3 [16.0 cm]
Depth: 9.1 [23.0 cm]
Height: 13.4 [34.0 cm]
Weight: 22 lb. [10 kg]



CHAMPOMATOR 2.5

Terminating Machine
Base Machine: 762734-1
Controller: 852423-1 required.
Complete AMP form 4670 to identify tooling package part numbers for specific applications.
Connector Size: 14–36 positions
Length: 25 [63.5 cm]
Width: 23 [58.4 cm]
Height: 10 [25.4 cm]
Weight: 95 lb [43 kg] approx.
Electrical Requirements:
117 VAC, 50/60 Hz,
single phase, 1 A
Air Requirements:
80 psi [5.52 bars*] at .75 scfm
*One bar = 100 kPa



Production Rates

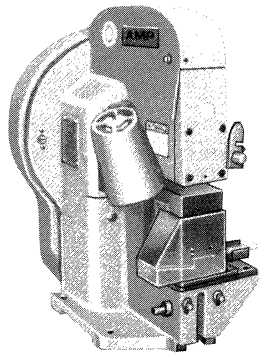
Net production rates for fully loaded connectors depend on cable type, connector style and connector size. The machine cycle rate is one pair per second.

For Crimping Ferrules

AMP-O-LECTRIC Terminating Machine Number 910800-7

Connector Size No. of Pos.	Applicator Number
14	913119-1
20	913119-1
26	913120-1
36	913121-1

Width: 22.0 [56 cm]
Depth: 22.0 [56 cm]
Height: 28.0 [71 cm]
Weight: 275 lb [125 kg]



Performance Specifications and Technical Documents

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Performance Specifications

Voltage Rating – 250 VAC max.

Current Rating – 1.0 ampere max.

Termination Resistance:
Both Series – 35 milliohms initial
Series I – 50 milliohms final
Series II – 60 milliohms final

Insulation Resistance:
Series I – 1000 megohms initial, 100 megohms final
Series II – 500 megohms

Dielectric Withstanding Voltage – 500 VAC

Operating Temperature Range – – 55 °C to + 85 °C

Technical Documents

Various technical documents are available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

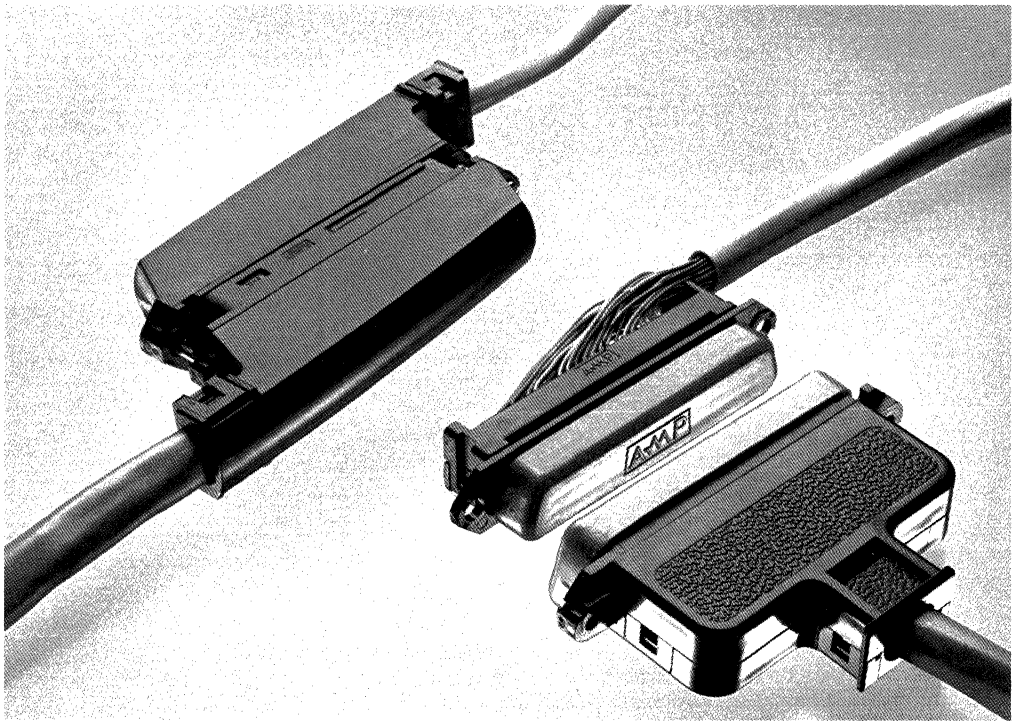
108-5290 CHAMP .050 Series I Connectors
108-5288 CHAMP .050 Series II Connectors

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are designed for the packaging and design engineer and the machine setup person.

114-5136 CHAMP .050 Series II Connectors

CHAMP IDC Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



CHAMP Insulation Displacement Concept (IDC) Connectors provide a low cost method of terminating unstripped solid or stranded copper wires and cables to connectors. Application for the CHAMP IDC Connectors are widely diversified and are designed for specific field and industrial applications.

Connectors and Housing

Plug and receptacle connectors are furnished pre-loaded with contacts on .085 [2.16] centers. Connectors are available in 14, 24, 36, 50 and 64 positions, in standard black housings and molded from self-extinguishing plastic material for high impact and dielectric strength. Housing material is rated at an Oxygen Index Rating of 28%.

Terminals

The terminal is precision formed of high conductivity, high strength copper alloy with 30 micro inch gold over nickel plating in contact area. The wire terminating area (rear of terminal) is stamped like a slotted reversed "U" and each leg contains a wire slot and strain relief slot with precisely controlled dimensions.

Wire Range and Types

The terminal is designed to accept 26-22 AWG [0.4-0.64 mm] solid wire and 28-22 AWG [0.08-0.4 mm^2] stranded wire (7 strands). The terminal is designed to accommodate most types of insulation – PVC, polyethylene, irradiated polyethylene and polypropylene.

Covers and Strain Relief

Several types of accessories are available to complete the connector assembly and to provide strain relief and protection. Made of high impact strength thermoplastic materials, all covers and strain relief have inner ribs that confine each wire in the wire termination slots.

Testing

Extensive testing, both laboratory and actual application have been conducted on this entire product line. These tests included heat aging, temperature cycling as well as shock and vibration. Both electrical and mechanical test results have met or exceeded performance objectives and copies of these test results are available from AMP Incorporated.

Applicator Tooling

Since your specific application will determine the degree of tooling required, consult pages 7133 thru 7139 in the application tooling section.

Product Facts

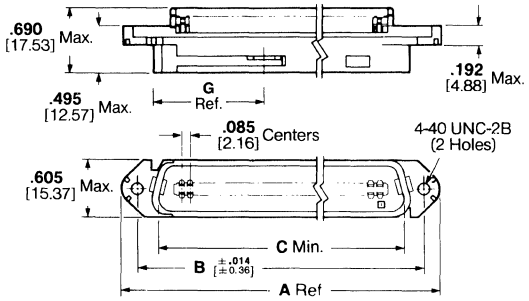
- Wide wire range
- Connectors available in 14, 24, 36, 50 and 64 positions with a choice of mounting methods screw lock type, bail lock type and locking latch type
- Self-extinguishing thermoplastic housings and accessories
- Contacts on .085 [2.16] centers in dual position arrangements
- Optional dust covers and snap-on strain relief covers

Connector Specifications

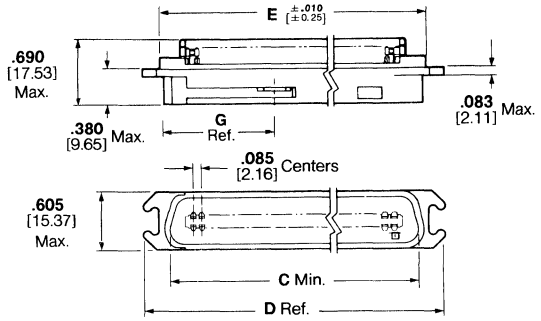
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

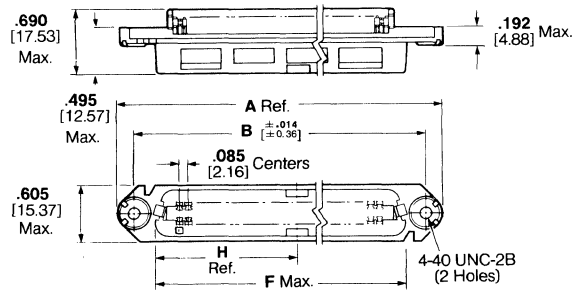
Plug
Style PS–Plug, Screw Lock (Thick Flange)[1]



Style PB–Plug, Bail Lock

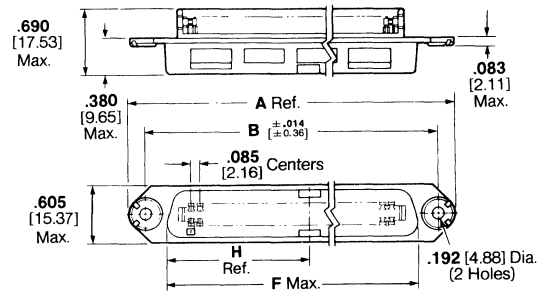


Receptacle
Style RS–Receptacle, Screw or Bail Lock (Thick Flange)[1]



[1]Thick flange connectors are typically for cable-to-cable screw lock applications.

Style RP–Receptacle, Panel Mount, Screw or Bail Lock (Thin Flange)[2]



[2]Thin flange connectors are typically for panel mount applications.

No. of Positions	Dimensions							
	A	B	C	D	E	F	G	H
14	**1.750** 44.45	**1.416** 35.97	**1.001** 25.43	**1.526** 38.76	**1.196** 30.38	**1.000** 25.40	**.644** 16.36	**.401** 10.19
24	**2.175** 55.25	**1.842** 46.79	**1.426** 36.22	**1.951** 49.56	**1.621** 41.17	**1.425** 36.20	**.646** 16.41	**.825** 20.96
36	**2.685** 68.20	**2.352** 59.74	**1.936** 49.17	**2.462** 62.53	**2.132** 54.15	**1.935** 49.15	**1.118** 28.40	**.854** 21.69
50	**3.280** 83.31	**2.946** 74.83	**2.531** 64.29	**3.056** 77.62	**2.726** 69.24	**2.530** 64.26	**1.123** 28.52	**1.461** 37.11
64	**3.875** 98.43	**3.542** 89.97	**3.126** 79.40	**3.651** 92.74	**3.321** 84.35	**3.125** 79.38	**1.608** 40.84	**1.562** 39.67

Note: These dimensions apply to all mating faces of all types of CHAMP Connectors.

No. of Positions	Wire Size				Housing Color Dot Des.	Contact Letter Des.	Part Numbers			
	Solid		7 Strand				Plug		Receptacle	
	AWG	mm	AWG	mm²			Style PS	Style PB	Style RS	Style RP
14	22	0.65	22	0.40	Green	C	*552300-1*	—	—	—
24							*552301-1*	*552317-1*	*552305-1*	*2-552322-1*
36							*552302-1*	*552318-1*	*552306-1*	—
50							*552173-1*	*552319-1*	*552064-1*	*2-552324-1*
64							*552303-1*	—	*552307-1*	—
14	24-26	0.51-0.40	24	0.20	Blue	B	*552282-1*	*552270-1*	*552312-1*	*2-552271-1*
24							*552283-1*	*552272-1*	*552313-1*	*2-552273-1*
36							*552284-1*	*552274-1*	*552314-1*	*2-552275-1*
50							*229974-1*	*552032-1*	*229975-1*	*2-552001-1*
64							*552285-1*	*552276-1*	*552315-1*	*2-552277-1*
14	—	—	26-27-28	0.14, 0.10, 0.09	Yellow	E	*552442-1*	—	—	*2-552473-1*
24							*552443-1*	*552469-1*	*552464-1*	*2-552474-1*
36							*552444-1*	*552470-1*	—	*2-552475-1*
50							*552390-1*	*552471-1*	*552391-1*	*2-552476-1*
64							*552488-1*	—	—	—

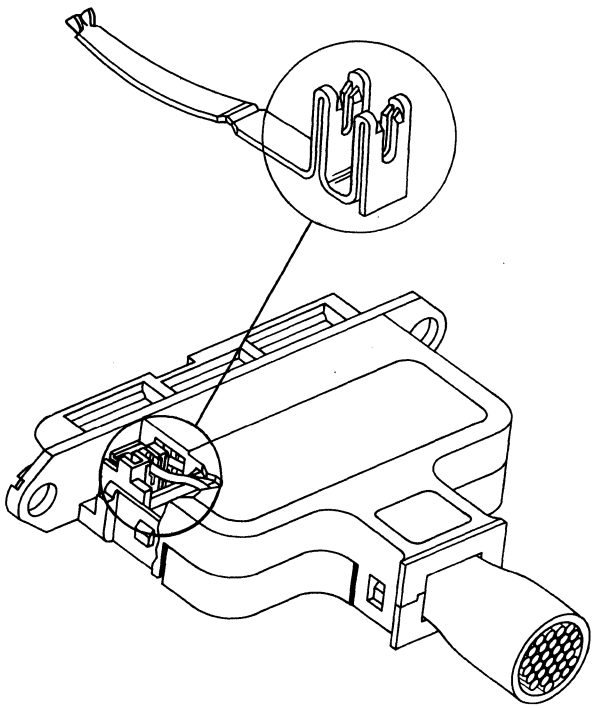
Notes: 1. A panel mount 50 position plug connector is available in thin flange with .187 diameter mounting hole. Part Number *552686-1*, which has B slot contacts.
2. For thin flange panel mount plug connectors all standard mounting hardware may be utilized with the exception of bail lock mounting hardware.
3. Acceptable conductor insulations are polyvinyl chloride (PVC), polyethylene, irradiated polyethylene, polypropylene and TEFLON. **Maximum insulation diameter .045 [1.14] for tools that mass terminate conductors on one side at a time. For tools that insert one conductor per side at a time, .043 [1.09] insulation diameter is the maximum.** As a rule, harder insulations require smaller conductor insulation diameters.

Connector Specifications
(Continued)

Large Insulation Wire Connectors

Miniature Ribbon IDC Connectors that can accommodate 22 AWG wire with insulation diameters up to 0.056 [1.42] inches. The F slot contacts handle large insulation diameter conductors using a folded beam contact design.

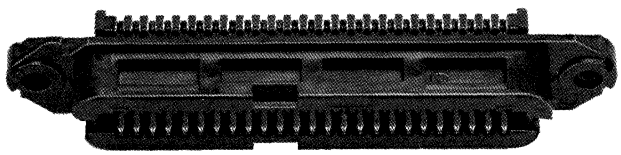
Only connector supplied. 180° Cover and Cable for reference



No. of Positions	Wire Size				Housing Color Dot Description	Part Numbers			
	Solid		7 Strand			Plug		Receptacle	
	AWG	mm	AWG	mm²		Style PS	Style PB	Style RS	Style RP
24	22	0.64	22	0.40	Brown	—	—	*555229-1*	*555228-1*
36						*556040-1*	—	*5-555037-1*	*5-555066-1*
50						*556039-1*	—	*555227-1*	*555226-1*
64						*556409-1*	*555753-1*	—	*555151-1*

Integral Locking Latch Receptacle

These special CHAMP connectors are designed with an integral latching system that eliminates the need for additional locking hardware. Receptacle assemblies are preassembled with two plated steel spring catches (one at each end) that latch into cutout slots in mating plug connectors. To release a mated pair, simply depress catches into recessed areas and disengage. Note, however, that integral latches are not repairable nor replaceable. Integral-latch connectors are presently available in 50 and 64 position sizes.



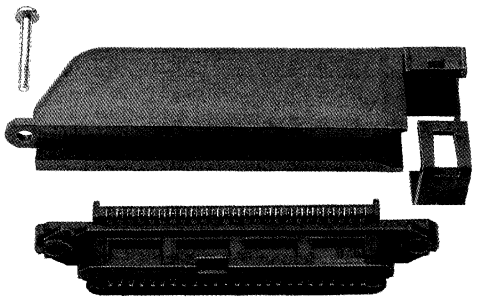
Position	Part Number	Housing Color Dot	Contact Letter
50	*553921-1*	Blue	B
50	*553922-1*	Green	C
64	*554381-2*	Blue	B
64	*554381-7*	Green	C

Cable-to-Cable Applications for 50 Position Connector Kits

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Cable-to-Cable Plug and Receptacle with Tapered Cover and Screw

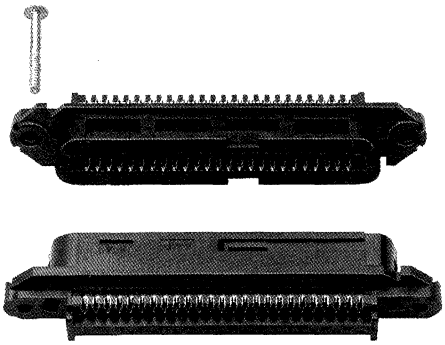


Wire Size				Housing Color Dot Des.	Contact Letter Des.	Cable Diameter Range	Dust Cover	Kit Part Numbers			
Solid		7 Strand						Plug		Receptacles	
AWG	mm	AWG	mm²					Black	Gray	Black	Gray
22	0.64	22	0.4	Green	C	Up to **.550** 13.97	NO	*552382-1*	—	*552383-1*	—
24-26	0.51-0.40	24	0.20	Blue	B	**.350 -.425** 8.89 -10.80	NO	*229912-1*	*229912-4*	*229913-1*	*229913-4*
							NO	**6-229912-1*	**6-229912-2*	**6-229913-1*	**6-229913-2*
							YES	*1-229912-1*	*1-229912-4*	*1-229913-1*	*1-229913-4*
							YES	**6-229912-3*	**6-229912-4*	**6-229913-3*	**6-229913-4*
						.425 -.500 10.80-12.70	NO	*2-229912-1*	—	*2-229913-1*	—
							YES	*3-229912-1*	—	*3-229913-1*	—
—	—	26, 27, 28	0.14-0.10 0.09	Yellow	E	**.350-.425** 8.26-10.80	NO	*552402-1*	*552402-4*	*552403-1*	—

***Note:** Part numbers with prefix of "6" are bulk packed in quantities of 500.

Cable-to-Cable Hardware Kits

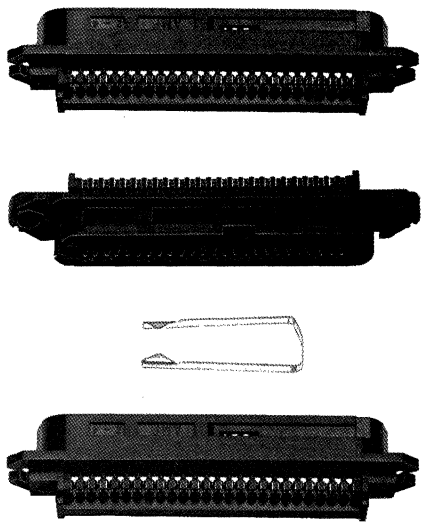
Only fastening hardware supplied, other items shown for reference purposes.



Screw Lock Hardware Kit
Part No. 229911-1
(Two required per assembly)

Bail Lock Hardware Kit
Part No. 552561-3
(One kit required per assembly)

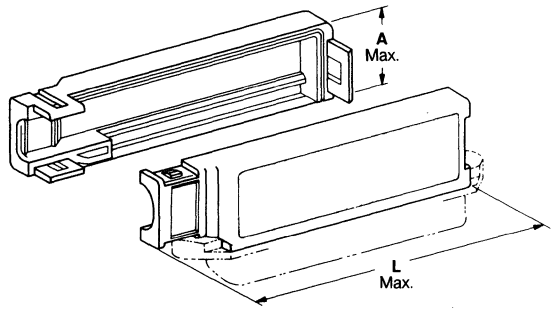
Bent Bail Lock Hardware Kit
Part No. 552561-4
(For use with 90° Strain Relief Cover – One kit required per assembly)



CHAMP-LOK Hardware Kit
(One locking latch required per assembly)
Part No. 552723-1 (36 or 50 Pos. Locking Latch)
Part No. 552723-2 (14 or 24 Pos. Locking Latch)
Part No. 552723-3 (64 Pos. Locking Latch)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

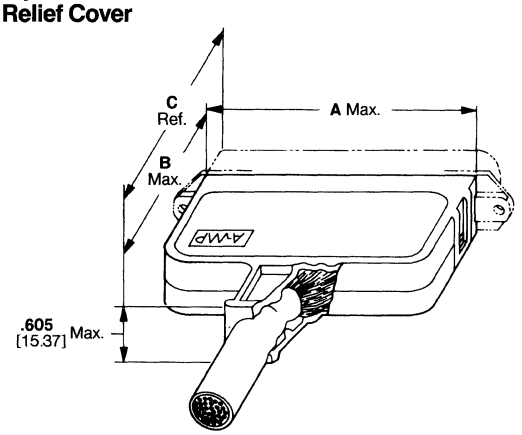
90° Snap-On Strain Relief Cover



No. of Pos.	Dimensions A	Dimensions L	Cable Range Diameter*	Part Number
14	.684 17.37	1.863 47.32	.185 -.230 4.70 -5.84	552412-1
			.250 -.300 6.35 -7.62	1-552412-1
24	.684 17.37	2.288 58.12	.250 -.300 6.35 -7.62	552413-1
			.305 -.360 7.75 -9.14	1-552413-1
36	.684 17.37	2.798 71.07	.305 -.360 7.75 -9.14	552414-1
			.330 -.380 8.38 -9.65	3-552414-1
50	.684 17.37	3.388 86.06	.340 -.400 8.64 -10.16	552014-1
	.922 23.42	3.388 86.06	.315 -.415 8.00 -10.54	1-552011-1
			.415 .465 10.54-11.81	552011-1
	1.127 28.63	3.590 91.19	.475 -.540 12.07-13.72	552731-1
64	1.127 28.63	4.183 106.25	.410 -.475 10.41-12.07	552496-1
			.475 -.540 12.07-13.72	1-552496-1
			.540 -.605 13.72-15.37	2-552496-1

*Strain relief cover cable diameter range is a guideline. The appropriate strain relief cover depends on cable stiffness, cable packing and fillers.

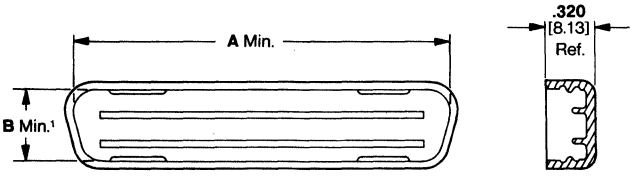
180° Snap-On Strain Relief Cover



No. of Pos.	Dimensions A	Dimensions B	Dimensions C	Cable Range Diameter*	Part Number
14	.994 25.25	1.455 36.96	1.824 46.33	.175 -.220 4.45 -5.59	552079-1
				.220 -.265 5.59 -6.73	1-552079-1
				.265 -.310 6.73 -7.87	2-552079-1
24	1.419 36.04	1.455 36.96	1.824 46.33	.230 -.280 5.84 -7.11	552076-1
				.280 -.320 7.11 -8.13	1-552076-1
				.320 -.380 8.13 -9.65	2-552076-1
36	1.934 49.12	1.455 36.96	1.824 46.33	.290 -.360 7.37 -9.14	552073-1
				.360 -.430 9.14 -10.92	552073-5
				.430 -.500 10.92-12.70	552073-6
50	2.520 64.01	1.555 39.50	1.924 48.87	.330 -.380 8.38 -9.65	3-552008-1
				.380 -.430 9.65 -10.92	2-552008-1
				.430 -.490 10.92-12.45	552008-1
				.480 -.550 12.19-13.97	4-552008-1
				.430 -.500 10.92-12.70	552003-1[1]
64	3.119 79.22	1.655 42.04	2.024 51.41	.480 .540 12.19-13.72	552082-1

[1]With probe holes.

Dust Cover



[1]B Dimension—.610 [15.49]
Plug and .478 [12.14] Receptacles

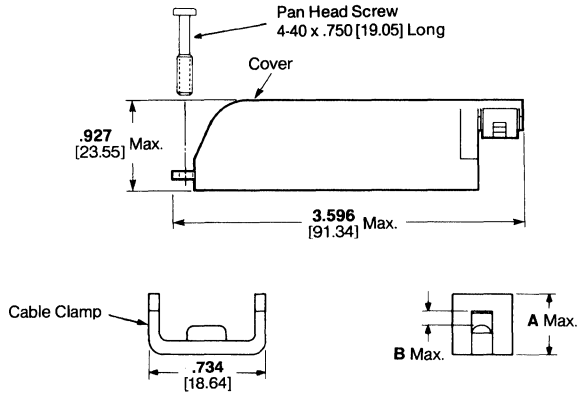
No. of Pos.	Plug Cover (Blue) A	Plug Cover (Blue) Part No.	Receptacle Cover (Red) A	Receptacle Cover (Red) Part No.
14	1.150 29.21	229968-5	.996 25.30	229969-5
24	1.575 40.01	229968-4	1.421 36.09	229969-4
36	2.085 52.96	229968-3	1.931 49.05	229969-3
50	2.700 68.58	229968-1	2.526 64.16	229969-1
64	3.275 83.19	229968-2	3.121 79.27	229969-2

Cable-to-Cable Accessories
(Continued)

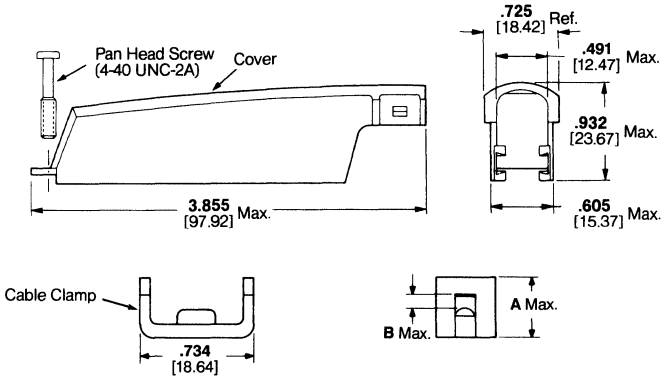
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

90° Standard Slide-On Strain Relief Cover Kit (for 50 Position Only)



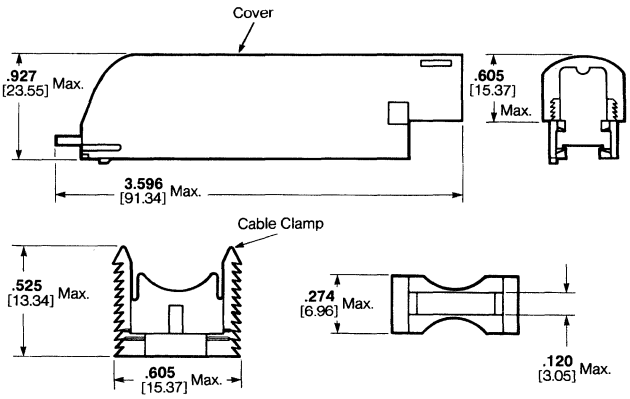
90° Tapered Slide-On Strain Relief Cover Kit (for 50 Position Only)



Cable Range Diameter	Dimensions A	Dimensions B	Kit Part Numbers: Standard Cover	Kit Part Numbers: Tapered Cover	Component Part Numbers: Cable Clamp	Component Part Numbers: Screw	Component Part Numbers: 90° Tapered Cover	Component Part Numbers: 90° Slide-On Cover
.425 -.500 10.80-12.70	**.475** 12.07	**.202** 5.13	*552960-1*	*552560-5*	*1-229910-1*	*229911-1*	*229909-1*	*552617-1*
.350 -.425 8.89 -10.80	**.380** 9.65	**.107** 2.72	*552960-2*	*552560-1*	*229910-1*	*229911-1*	*229909-1*	*552617-1*
.325 -.370 8.26 -9.40	**.380** 9.65	**.057** 1.45	—	—	*2-229910-1*	*229911-1*	*229909-1*	*552617-1*
.300 -.325 7.62 -8.26	**.380** 9.65	**.022** 0.56	—	—	*3-229910-1*	*229911-1*	*229909-1*	*552617-1*
.500 -.550 12.70-13.97	**.540** 13.72	**.267** 6.78	*552960-5*	—	*4-229910-1*	*229911-1*	*229909-1*	*552617-1*

90° Standard Slide-On Strain Relief Cover and Adjustable Cable Clamp (for 50 Position Only) (recommended for use with CHAMP-LOK or Screw Lock hardware)

Cable Dia.: .425 [10.80] Max.
Cover: Black – *552760-1*, Gray – *552760-2*
Cable Clamp – Black *552763-1*, Gray *552763-2*

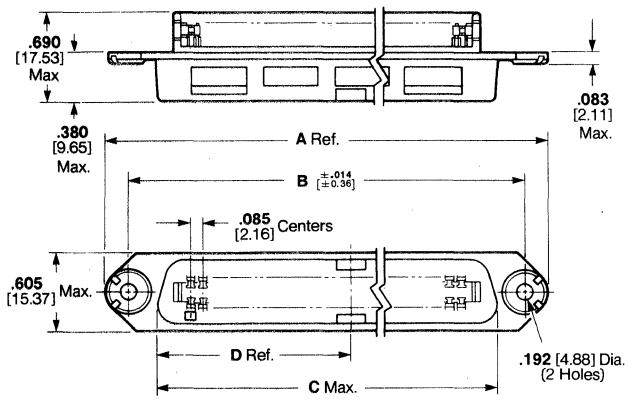


7 Miscellaneous Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

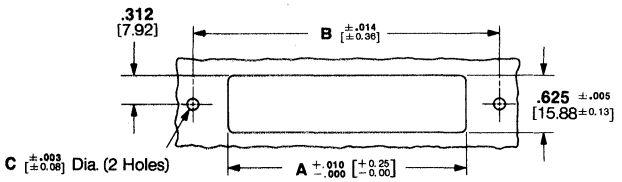
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Style RP—Receptacle, Panel Mount, Screw or Bail Lock (Thin Flange)



No. of Positions	Dimensions			
	A	B	C	D
14	**1.750** 44.45	**1.416** 35.97	**1.000** 25.40	**.401** 10.19
24	**2.175** 55.25	**1.842** 46.79	**1.425** 36.20	**.825** 20.96
36	**2.685** 68.20	**2.352** 59.74	**1.935** 49.15	**.854** 21.69
50	**3.280** 83.31	**2.946** 74.83	**2.530** 64.26	**1.461** 37.11
64	**3.875** 98.43	**3.542** 89.97	**3.125** 79.38	**1.562** 39.67

Panel Cutout Dimensions



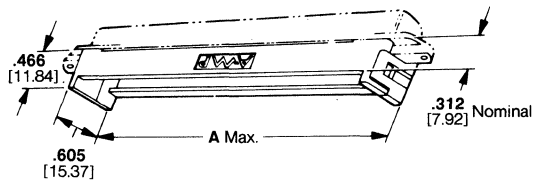
Note: Panel thickness range—.062-.125 [1.57-3.18] for front panel mount—Panel range .062-.093 [1.57-2.36] for rear panel mount with metric hardware per IEEE-488 and .062 [1.57] max. with standard hardware.

No. of Positions	Front Panel Mount			Rear Panel Mount[1]		
	A	B	C	A	B	C
14	**1.063** 27.00	**1.416** 35.97	**.126** 3.20	**1.151** 29.24	**1.416** 35.97	**.149** 3.78
24	**1.488** 37.80	**1.842** 46.79	**.126** 3.20	**1.575** 40.01	**1.842** 46.79	**.149**[2] 3.78
36	**1.998** 50.75	**2.352** 59.74	**.126** 3.20	**2.085** 52.96	**2.352** 59.74	**.149** 3.78
50	**2.593** 65.86	**2.946** 74.83	**.126** 3.20	**2.700** 68.58	**2.946** 74.83	**.149** 3.78
64	**3.188** 80.98	**3.542** 89.97	**.126** 3.20	**3.275** 83.19	**3.542** 89.97	**.149** 3.78

[1]For screw lock hardware version only.
[2].192 [4.88] for IEEE-488 metric applications.

Panel Mount Accessories

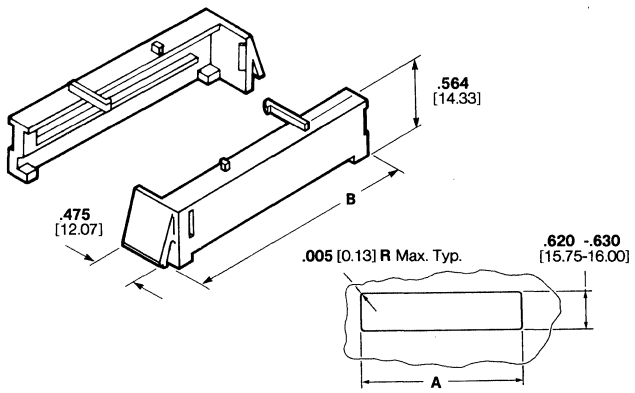
Snap-On Strain Relief



Note: Two required per connector assembly.

No. of Positions	Dimension A	Low Profile Part Number
14	**1.042** 26.47	*1-552299-1*
24	**1.467** 37.26	*1-552298-1*
36	**1.977** 50.22	*1-552297-1*
50	**2.572** 65.33	*1-552027-1*
64	**3.167** 80.44	*1-552296-1*

Snap-In Panel Mount Strain Relief
No additional panel mounting hardware required.



Note: Two required per assembly.

No. of Pos.	Dimensions		Panel Thickness	Color	Part Number
	A	B			
50	**2.695-2.700** 68.45-68.58	**2.514** 63.86	**.090** 2.29	Black	*552962-3*

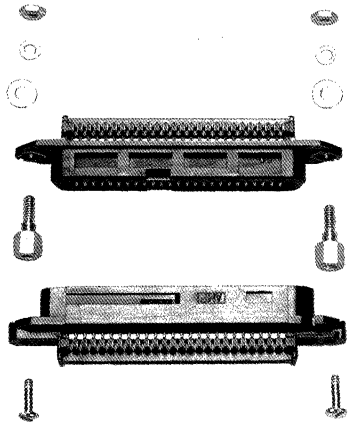
Note: Recommended for use with CHAMP-LOK Assembly Hardware. No panel mounting hardware necessary when utilized.

Note: Strain Relief commended for installation of Panel Mount Connectors to prevent inadvertent contact or conductor damage.

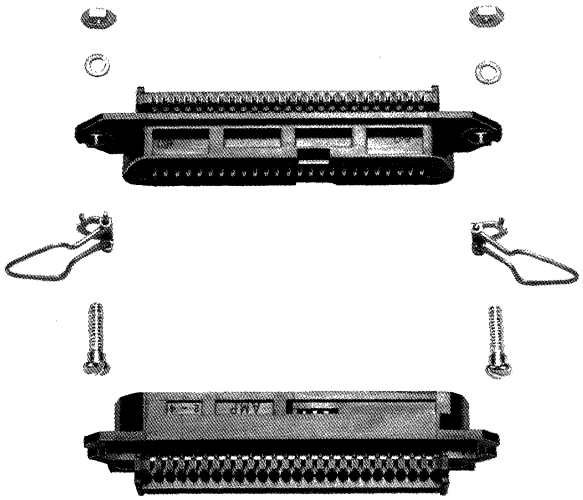
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Cable-to-Panel Hardware Kits

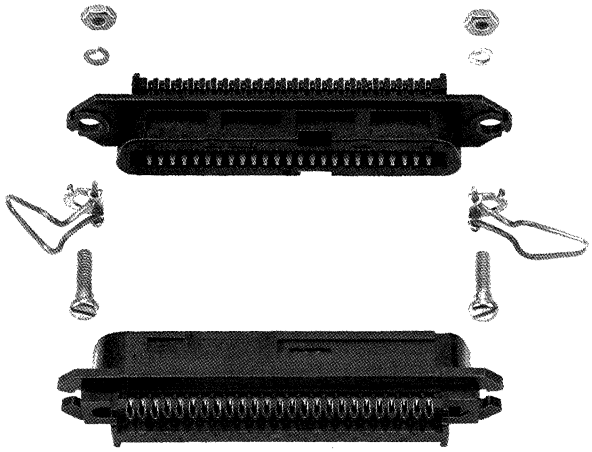
Only fastening hardware supplied, other items shown for reference purposes.



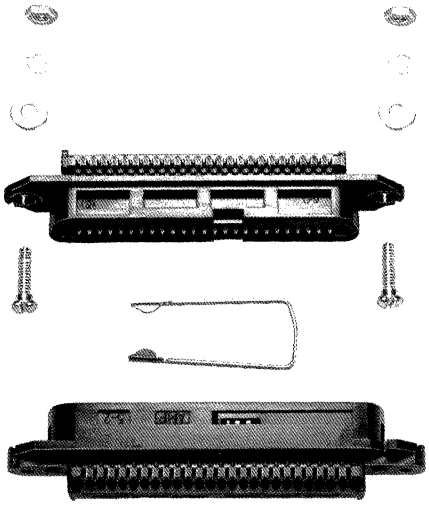
Screw Lock Hardware Kit
Part No. *552568-1*
(For rear panel mount applications max. panel thickness shall be .062 [1.57].)
(One kit required per assembly)



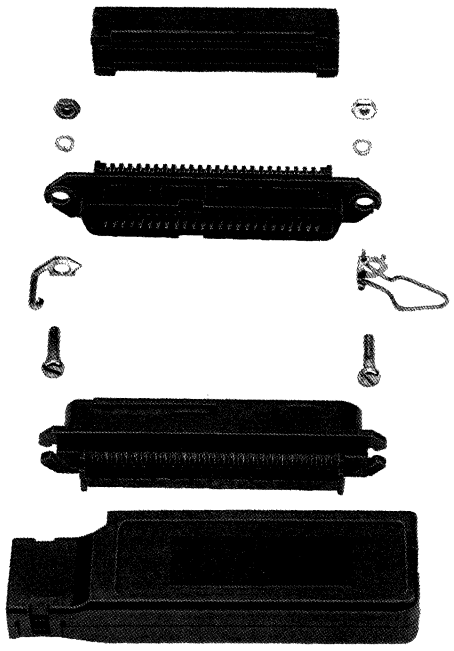
Bail Lock Hardware Kit
Part No. *552567-1*
(One kit required per assembly)



Bent Bail Lock Hardware Kit
Part No. *552567-2*
(For use with 90° strain relief cover – One kit required per assembly)



CHAMP-LOK Hardware Kit for Thin Flange Panel Mount Connector
Part No. *553359-1* (36 and 50 Pos.)
Part No. *553359-2* (14 and 24 Pos.)
(For rear panel mount applications, holes in the panel shall be .149 [3.78].)
Recommended panel thickness for rear panel mounting applications to be .062 [1.57] max.



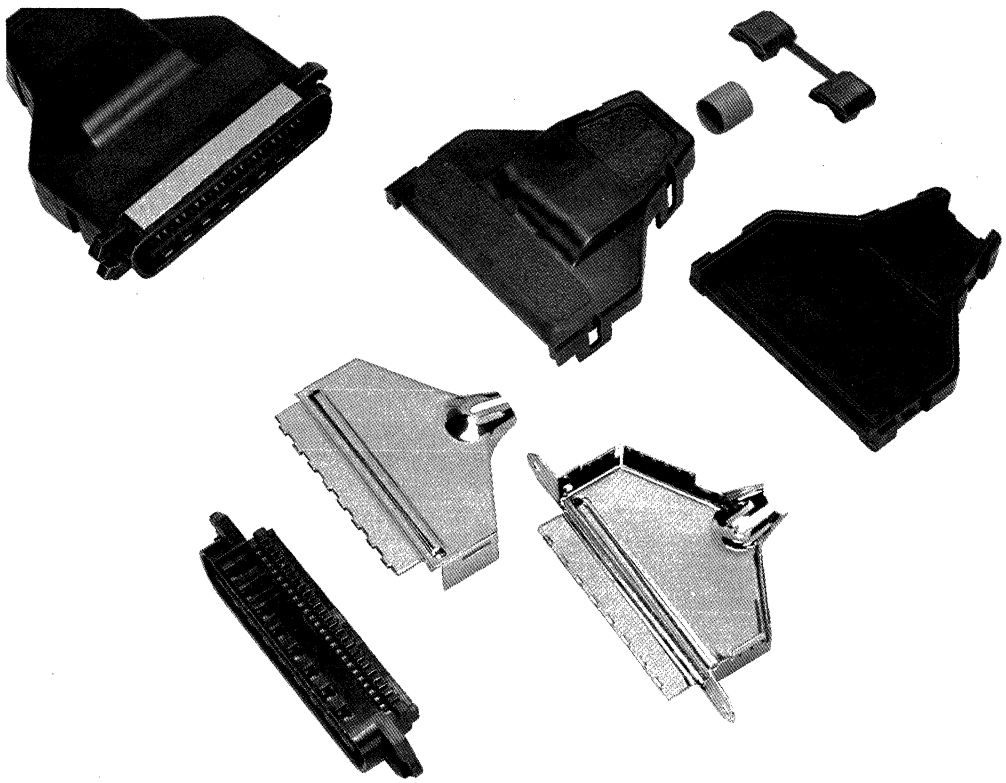
Bail Lock Hardware Kit Part No. *552698-2*
(Bail lock cable connector mated with thin flange panel connector)

Note: J-Hook Latch Part No. *552655-1* may be purchased separately.

Shielded Cable Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



Product Facts

- Designed for shielding, NOT just as metal shell connector
- Available in 24-, 36- and 50-position plugs and receptacles
- Available in bail and screw lock plug and thru-hole receptacle styles with pre-loaded insulation displacement contacts in a choice of two wire slot sizes
- Capable of using any standard CHAMP applicator tooling
- Unique, high tensile strain relief with adjustable ratchet
- Conducive to post molding simply by deleting 180° cover kit
- No outer crimp ferrule required
- Fully compatible with all die cast, metal shelled panel mount CHAMP connectors in a variety of termination styles, and intermateable with all those of a similar design

The CHAMP Connector Product Line continues to expand, fulfilling the needs of the various industries.The Shielded CHAMP Cable Connectors have been specifically designed to produce the optimum in shielding effectiveness while still offering low initial cost and ease of assembly with the applied-cost-savings of a proven insulation displacement system.

Shielded CHAMP Cable Connectors are available in 24, 36 and 50 position plugs and receptacles with either bail lock or screw lock plug and thru-hole receptacle styles. Connectors are shipped with contacts preloaded and are ready for termination in all standard CHAMP Connector applicator tooling. Two different contact sizes are available—B-slot 24 AWG [0.51 mm] and 26 AWG [0.04 mm] (solid) or 24 AWG [0.20 mm^2] (7-strand) and E-slot 26-27-28 AWG [0.14-0.10-0.09 mm^2] (7 strand) wire.

Superior shielding performance is achieved due to minimal leakage from a specially designed two-piece, precision formed shield. Positive contact with the panel mounted connector is obtained by the interface of metal "spring fingers" which protrude through small openings around the perimeter of the plug and contact plate on receptacle. Highly effective braid termination is achieved with an outstanding stored energy design incorporated into the two-piece shield.

In addition to the superior shielding effectiveness, another important feature of the connector is the design of the outer plastic strain relief cover, which uses a ratcheting wedge that provides greater strain relief as more tension is applied to the cable. Should post molding be desired, the 180° cover kit may be deleted.

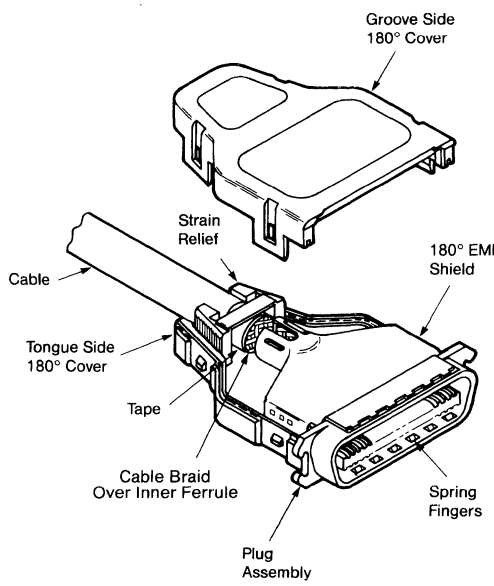
Shielded Cable Connector Kits

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Plug Connectors and Kits

How to determine proper kit part number:

1) Select 24-, 36- or 50-Position plug connector
2) Select bail or screw lock connector
3) Select B or E slot for wire to be terminated
4) Measure cable jacket outside diameter and wire bundle diameter for correct size ferrule selection
5) See chart for ordering information on page 7093



Material and Finish:

Housing and Cover—thermoplastic, black
Terminals—gold over nickel plated high strength copper alloy
Shield—bright nickel plated carbon steel
Strain Relief—flame retardant NYLON, black
Ferrule—copper alloy
Hardware—zinc plated steel
Metric Shoulder Screw—black oxide plated, carbon steel

Specifications:

Insulation diameter—.045 [1.14] max.
Terminal center-to-center spacing—.085 [2.16]

Slot Designation stamped on contacts which are preloaded in housing.

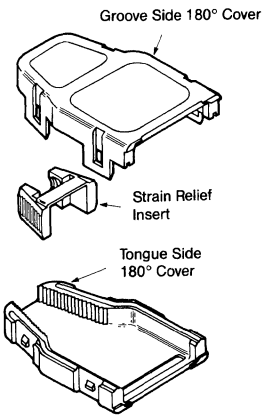
B-Slot—24 AWG [0.51 mm] and 26 AWG [0.40 mm] (solid) or 24 AWG [0.20 mm²] (7-strand)

E-Slot—26-27-28 AWG [0.12-0.10-0.09 mm²] (7 strand) wire

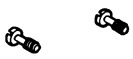
Note:
Connector kits shipped unassembled.

Accessories

Cover Kit
(Sold Separately)



Captive Pan Head Screw
Part No. *554726-1*

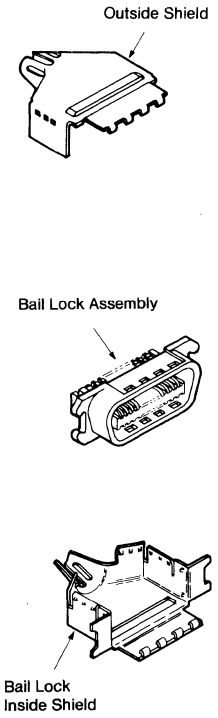


4-40 X .265 [6.73] long (2 required)
(Sold Separately—Bulk packed in quantities of 500)

Inner Ferrule
(Sold Separately)

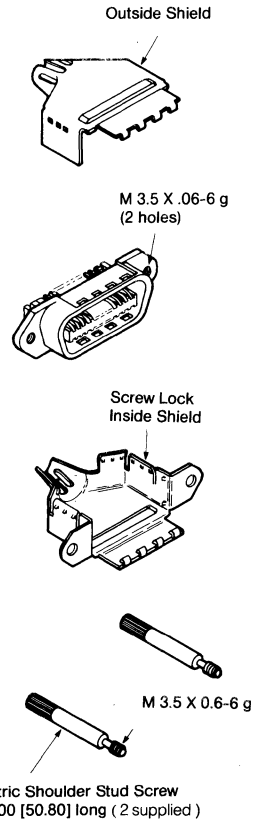
Bail Lock

Connector Kit

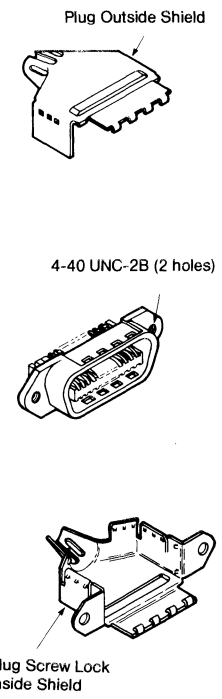


Screw Lock

Connector Kit (Metric)



Standard Connector Kit



Shielded Cable Connector Kits (Continued)

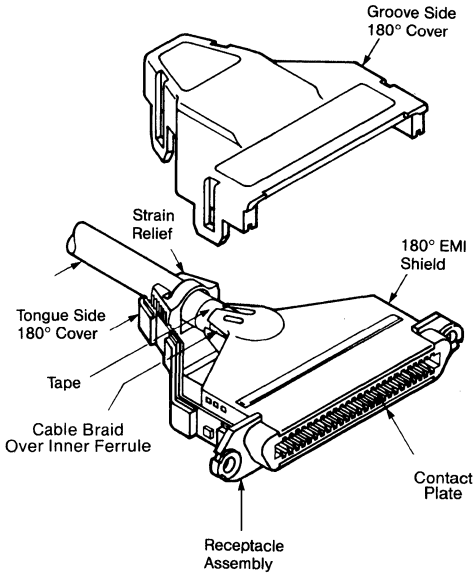
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Receptacle Connectors and Kits

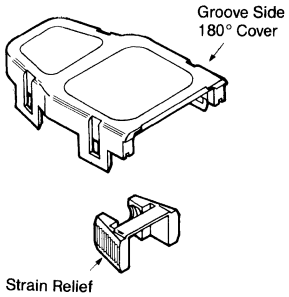
How to determine proper kit part number:

1) Select 36- or 50-Position receptacle connector
2) Select B or E slot for wire to be terminated
3) Measure cable jacket outside diameter and wire bundle diameter for correct size ferrule selection
4) See chart for ordering information on page 7093



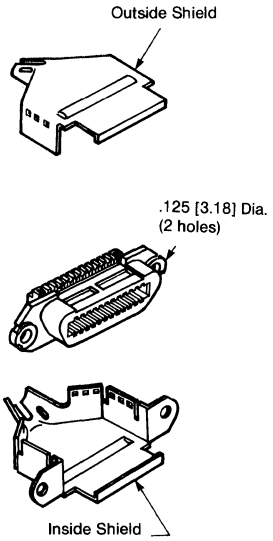
Screw or Bail Lock Connector Assemblies

Cover Kit
(Sold Separately)



Inner Ferrule
(Sold Separately)

Connector Kit[1] – Supplied



[1]Bail Lock Hardware Kit Part No. *552561-6*, attaches to receptacle for mating with bail lock plug connectors.

Ferrule Part Numbers[1]

Inside Diameter	Part Number
.250 6.35	*554725-1*
.300 7.62	*554725-2*
.350 8.89	*554725-3*

[1]Bulk packed in quantities of 100 per bag.

Ferrule Part Numbers[1]

Inside Diameter	Part Number
.400 10.16	*554725-4*
.450 11.43	*554725-5*
.500 12.7	*554725-6*

Material and Finish:

Housing and Cover – thermoplastic, black
Terminals – gold over nickel plated high strength copper alloy
Shield – bright nickel plated carbon steel
Strain Relief – flame retardant NYLON, black
Ferrule – copper alloy
Hardware – zinc plated steel

Specifications:

Insulation diameter – .045 [1.14] max.
Terminal center-to-center spacing – .085 [2.16]

Slot Designation stamped on contacts which are preloaded in housing.

B-Slot – 24 AWG [0.51 mm] and 26 AWG [0.40 mm] (solid) or 24 AWG [0.20 mm²] (7-strand)

E-Slot – 26-27-28 AWG [0.12-0.10-0.09 mm²] (7 strand) wire

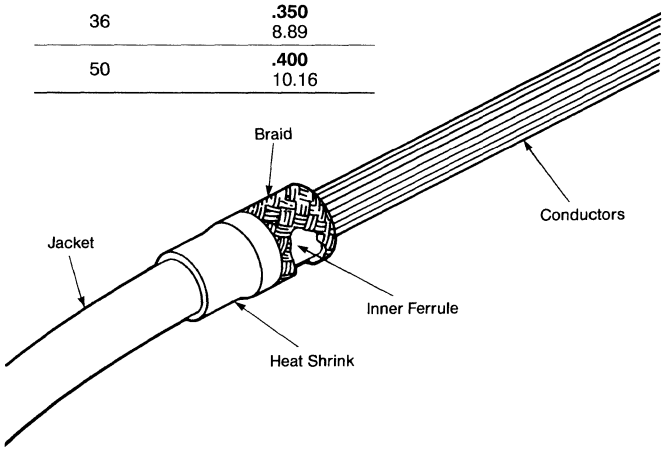
Note:
Connector kits shipped unassembled.

Shielded Cable Connector Kits (Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

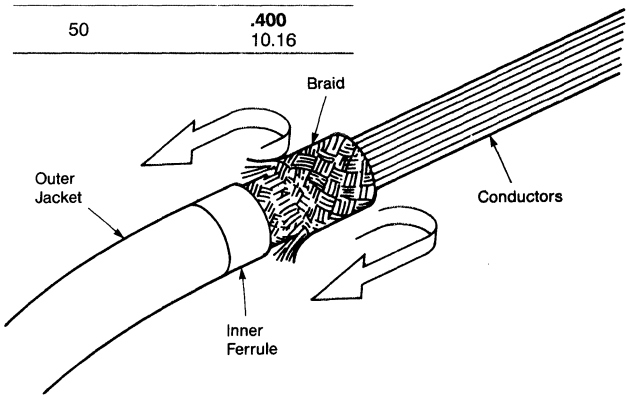
Inner Ferrule on Jacket

No. of Positions	Cable Diameter (Less Than)
24	.300 7.62
36	.350 8.89
50	.400 10.16



Inner Ferrule on Braid

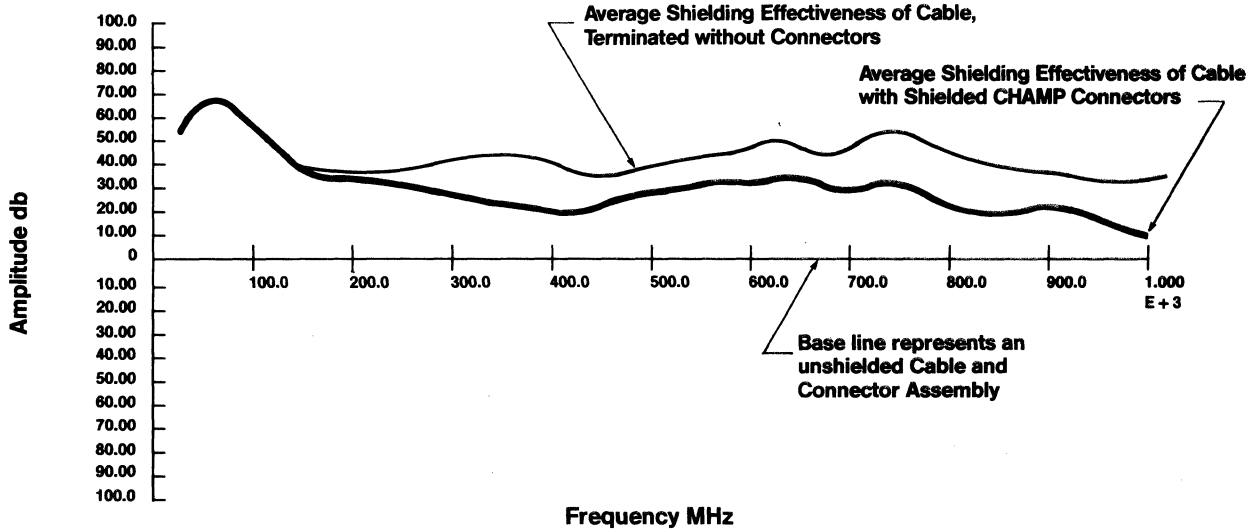
No. of Positions	Cable Diameter (Greater Than)
24	.300 7.62
36	.350 8.89
50	.400 10.16



No. of Positions	Cable Range	Part Numbers						
		Shielded Plug Kit				Shielded Receptacle Kit		Cover Kits
		Screw Lock		Bail Lock		Screw or Ball Lock		
		B Slot	E Slot	B Slot	E Slot	B Slot	E Slot	
24	.250-.500 6.35-12.70	*554948-2* *554948-4*[4]	*554948-3*[4]	*554947-2*	*554947-1*	—	—	*554944-1*
36	.250-.500 6.35-12.70	*554951-2*	*554951-1*	*554950-2*	*554950-1*	—	*5-554952-1*[5]	*554945-1*
50	.350-.625 8.89-15.88	*554954-2*	*554954-1*	*554953-2*[1]	*554953-1*[1]	*554955-2*[2]	*554955-1*[2]	*554946-1*[3] *554946-2*

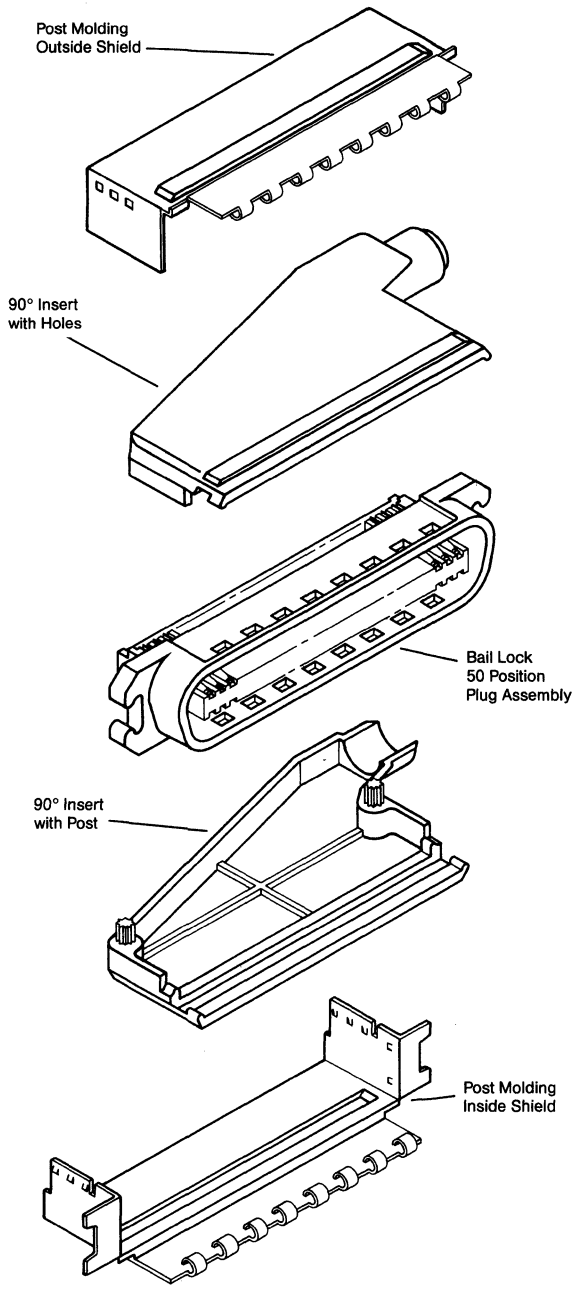
[1]SCSI applicable.
[2]SCSI applicable with Hardware Kit Part Number *552561-6.*
[3]For cable diameter of .500 [12.70] or less use -1 kit. For cable diameter greater than .500 [12.70] use -2 kit.
[4]Connector with M3.5 threads kits includes M3.5 X 2.00 [50.80] standoff stud.
[5]This kit available in bulk only.

Typical Cable Assembly (Shielding Effectiveness)



Shielded Cable Connector Kits (Continued)

50 Position Plug Kit 90° Cable Exit for Post Molding Operation



Wire Size				Housing Color Dot Description	Connector Color	Kit Part Number
Solid		7 Strand				
AWG	mm	AWG	mm²			
24-26	0.51-0.40	24	0.20	Blue	Gray	*5-555012-1*
—	—	26-27-28	0.14, 0.10, 0.09	Yellow	Gray	*5-555012-2*

Notes: Kit components only supplied (500 pcs bulk packaged).
Copper foil wrap, Solder operation and post molding is completed by customer.
For post mold application contact AMP Incorporated.

Shielded Panel Mount Connectors

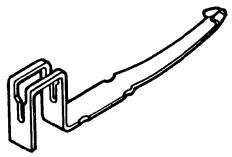
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches and millimeters.

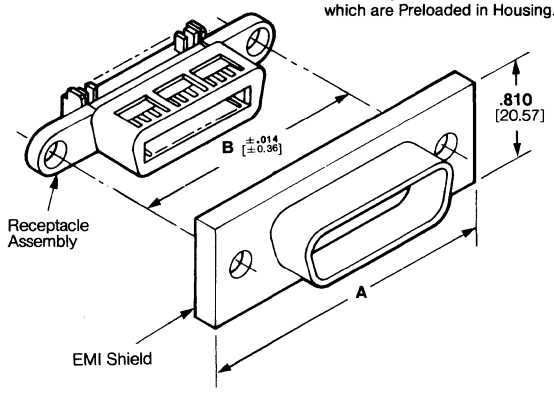
Standard CHAMP Panel Mount Connectors for Jacketed Cable or Discrete Wire

Material:

Housing—thermoplastic (black)
Terminals—gold over nickel plated high strength copper alloy
EMI Shield—nickel plated die casting
Ins. Dia.—.045 [1.14] max.



Slot Designation Stamped on Contacts which are Preloaded in Housing.

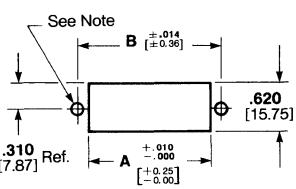


No. of Positions	Dimensions		Part Numbers	
	A	B	B Slot	E Slot
24	**2.380** 60.45	**1.842** 46.79	—	*553034-1*[1]
36	**2.875** 73.03	**2.352** 59.74	*553643-1*	—

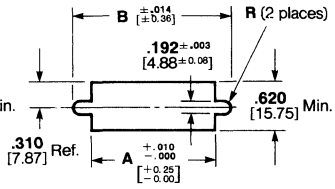
[1]Can be used with Interface Bus Applications per IEEE-488.

Slot Designation: B-24 AWG [0.51 mm] and 26 AWG [0.40 mm] (solid) or 24 AWG [0.20 mm²] (7-strand) wire.
E-26-27-28 AWG [0.14-0.10-0.09 mm²] (7-strand) wire.

Recommended Panel Cutout for Front and Rear Panel Mounting



Standard Hardware Application



Metric Hardware per IEEE-488 Application

Note: .126 ± .003 [3.2 ± 0.08] for front panel mount and .149 ± .003 [3.78 ± 0.08] for rear panel mount.

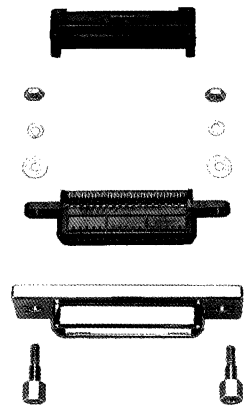
No. of Positions	Standard Hardware				Metric Hardware	
	Front Panel Mount		Rear Panel Mount		Front or Rear Panel Mount	
	A	B	A	B	A	B
24	**1.488** 37.80	**1.842** 46.79	**1.575** 40.01	**2.036** 51.71	**1.575** 40.01	**2.036** 51.71
36	**2.000** 50.80	**2.352** 59.74	**2.085** 52.96	**2.352** 59.74	–	–

Panel Thickness Range: .125 [3.18] max. for front panel mount; .062 [1.57] max. for standard rear panel mount. .062-.093 [1.57-2.36] for metric rear panel mount.
Note: For application tooling, see pages 7133 thru 7139.

Screwlock Hardware Components (Order separately) (Only fastening hardware supplied, other items shown for reference purposes)

Material and Finish:

Strain Relief—thermoplastic (black)
Nut and Washers—zinc plated carbon steel
Screw Lock—zinc plate with yellow chromate over carbon steel
Metric Screw Lock—black oxide coated carbon steel



Screw Lock Hardware

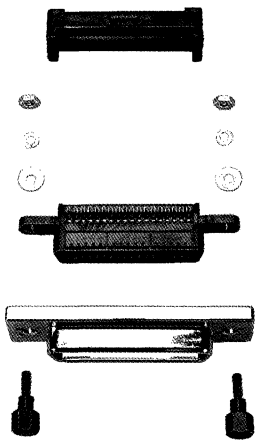
Snap-on Strain Relief
Part No. *1-552297-1*
(2 required)

Nut Part No. *21068-4**
(2 required)

Washer Part No. *21074-2**
(2 required)

Flat Washer Part No. *21108-4*
(2 required)
Connector and Shield not included

Standoff Mounting Stud
Part No. *229995-1*
(2 required)



Metric Screw Lock Hardware

Snap-on Strain Relief
Part No. *1-552298-1*
(2 required)

Connector and Shield not included

For Front Panel Mount Metric Screw Lock Hardware Kit *553636-2*

For Rear Panel Mount Metric Screw Lock Hardware Kit *553636-3*

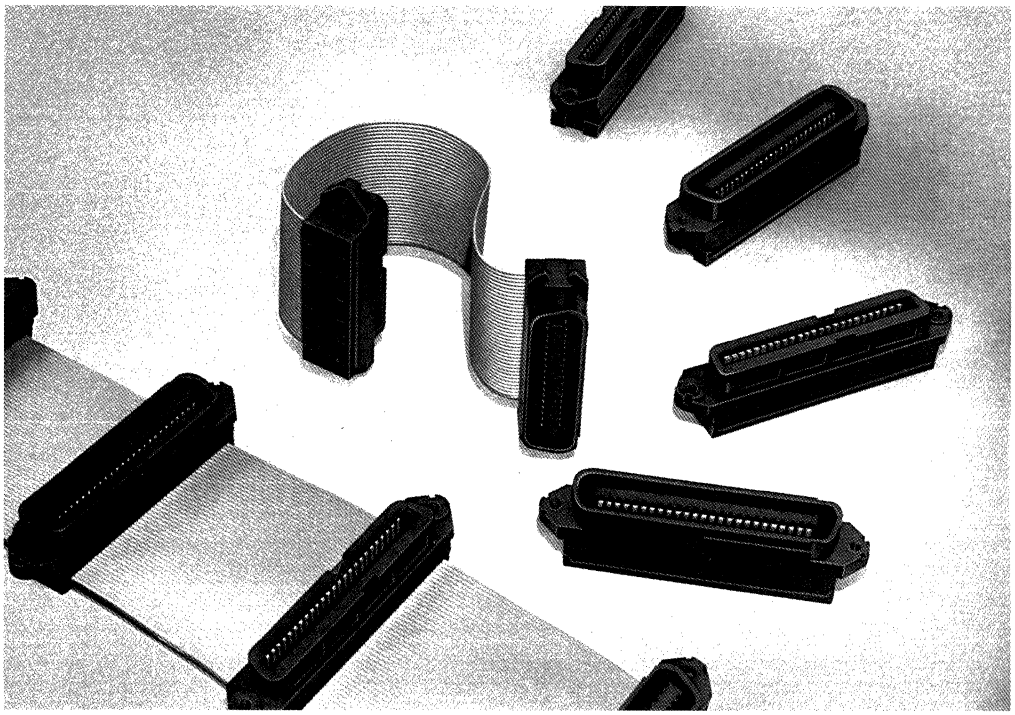
*Commercial item.

7 Miscellaneous Connectors

CHAMP Latch
Low Profile Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



Product Facts

- Ready to use connectors—strain relief covers preassembled to connector bodies
- Overall assembled dimension of .820 [20.83]
- Simple one-step termination operation
- May be used in "dead-end" or "daisy-chain" applications
- Hardware kits available for Cable-to-Cable or Cable-to-Panel applications
- Available in 24, 36 and 50 Positions
- Capable of mass termination without time consuming soldering and prestripping of wire
- Terminates .050 [1.27] centerline 26 AWG [0.40 mm] (solid); 28 AWG [0.08-0.09 mm^2] (stranded); 28 AWG [0.32 mm] (solid) or 30 AWG [0.25 mm] (solid) copper ribbon cable, including certain twisted pair types from .032-.045 [0.81-1.14] thick
- Available in standard connectors, preassembled and loose-piece shielded

The CHAMP Latch Low Profile Connector comes ready to use—just slide the cable in and squeeze. The underside of the strain relief cover is fluted to assist in proper cable orientation. Plastic "barbs" sticking up from the connector body acts as guides for proper cable alignment during insertion. When terminated, these "barbs" pierce the cable insulation between the conductors and lock on to the strain relief cover.

Another advantage to this connector is its overall assembled dimension (.820 [20.83]), which takes up less space inside or outside of the equipment.

Standard connectors are available in 14, 24, 36 and 50 position plugs or receptacles. Shielded receptacles are available in 24, 36 and 50 positions. Loose piece and preassembled CHAMP Latch Connector versions. A 64 position plug or receptacle can be supplied with an assembled height of 1.130 [28.70]. For 64 position plug and receptacle part numbers and specifications, contact AMP Incorporated. CHAMP Latch Connectors provide a fast, reliable means of mass terminating .050 [1.27] centerline ribbon cable without time-consuming soldering and prestripping of wire. They are capable of terminating 26 AWG [0.40 mm] (solid); 28 AWG [0.08-0.09 mm^2] (stranded) 28 AWG [0.32 mm] (solid) or 30 AWG [0.25 mm] (solid) copper ribbon cable.

Termination of CHAMP Latch Low Profile Connectors is accomplished in a simple one-step operation using the appropriate CHAMP Latch tooling. See page 7139. The ability to make "daisy chain" terminations requires nothing more than depressing the stop bar on the hand tool or repositioning the stop bar provided on the base plate for the manual applicator.

The housings and covers are constructed of black thermoplastic. The terminals are gold over nickel plated high strength copper alloy on the mating face and gold flash over nickel plate on the terminating side. The mating face consists of 2 rows of terminals on .085 [2.16] centers. Terminating side consists of terminals on .100 [2.54] centers for an effective .050 [1.27] staggered termination. EMI Shield, for Shielded Connectors, are die cast zinc with nickel plating.

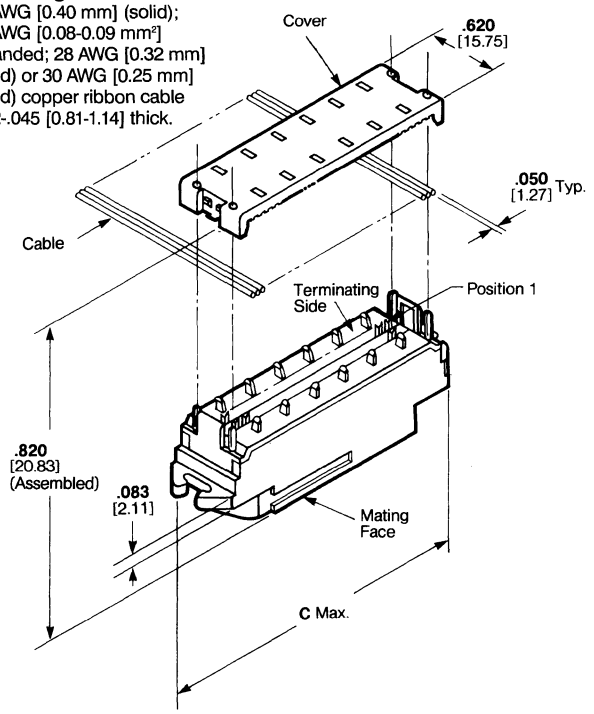
Connector hardware kits are available for Cable-to-Cable (Screw Lock, Bail Lock and CHAMP-LOK connectors) applications, and Cable-to-Panel (Screw Lock, Bail Lock, Metric Screw Lock for IEEE-488 Applications and CHAMP-LOK connector) applications.

Note: CHAMP Latch connectors have been tested on a wide variety of .050 [1.27] centerline cables conforming to AMP drawings 746395, 746396 and 86901. If cables other than those specified are used, forward sample of cable for approval to AMP Engineering, Harrisburg, PA 17105.

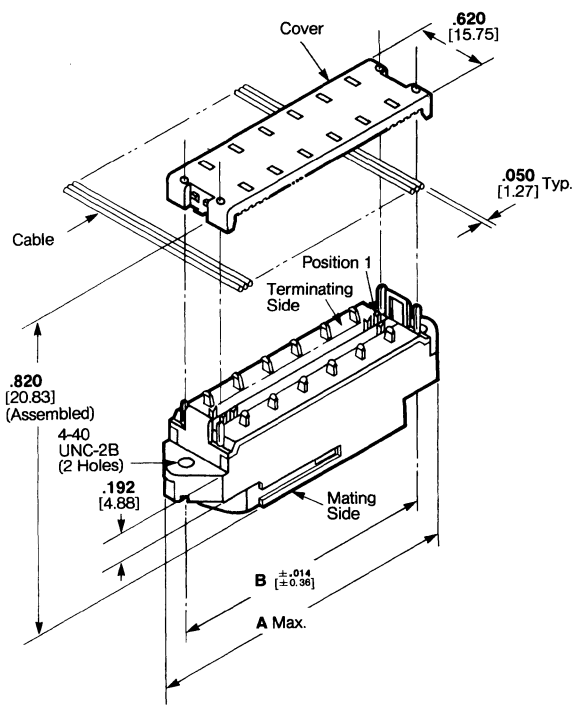
CHAMP Latch
Low Profile Connectors—Standard

Specifications subject to change.
For latest design specifications...
1-800-522-6752

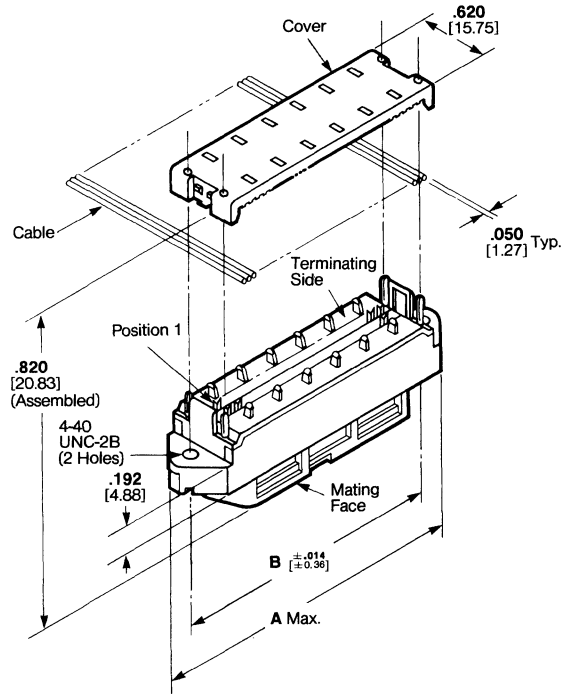
Wire Range:
26 AWG [0.40 mm] (solid);
28 AWG [0.08-0.09 mm²]
(stranded; 28 AWG [0.32 mm]
(solid) or 30 AWG [0.25 mm]
(solid) copper ribbon cable
.032-.045 [0.81-1.14] thick.



Bail Lock Assembly



Screw Lock Plug Assembly



Screw Lock Receptacle Assembly

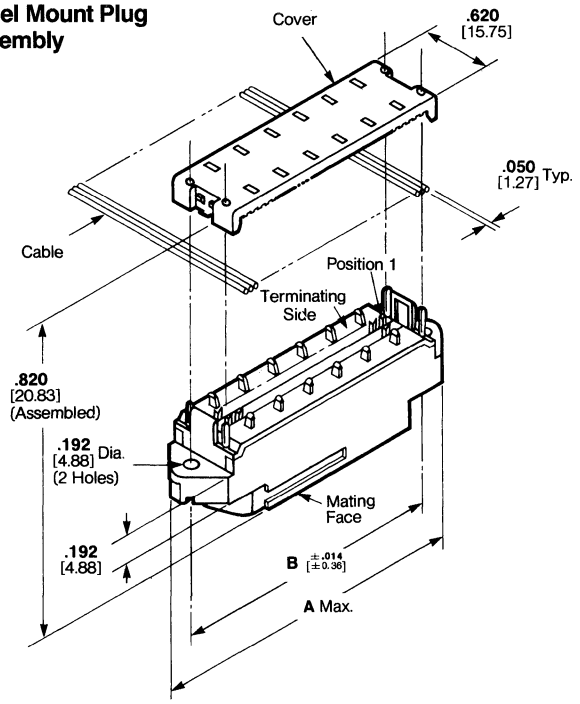
Notes:
1. Cover shown loose but shipped ready to terminate.
2. Cable conforming to AMP specifications to be furnished by customer.
3. Mating face consists of 2 rows of terminals on .085 [2.16] centers. Terminating side consists of terminals on .100 [2.54] centers for an effective .050 [1.27] termination.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

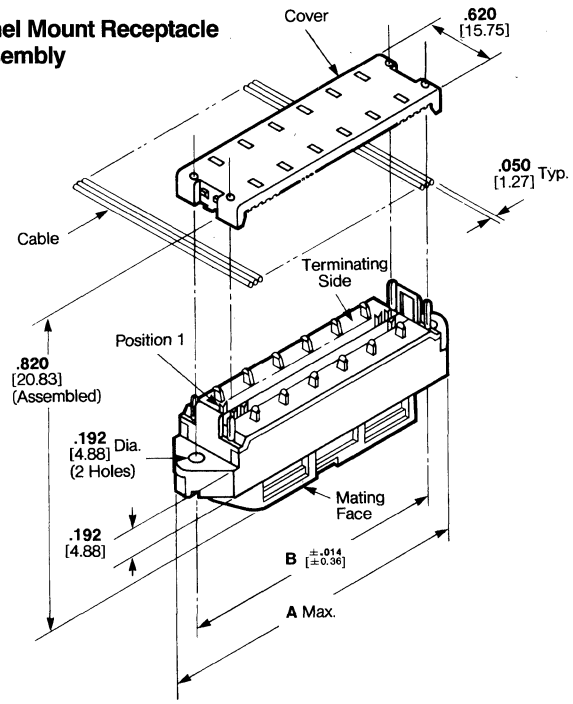
CHAMP Latch Low Profile Connectors—Standard
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Panel Mount Plug Assembly

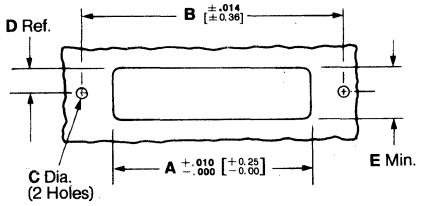


Panel Mount Receptacle Assembly



No. of Positions	Dimensions A	B	C	Part Numbers: Bail Lock Plug Assembly	Screw Lock Plug Assembly	Screw Lock Receptacle Assembly	Panel Mount Plug Assembly	Panel Mount Receptacle Assembly
14	**1.750** 44.45	**1.416** 35.97	**1.526** 38.76	—	*553596-1*	*553597-1*	—	—
24	**2.175** 55.25	**1.842** 46.79	**1.951** 49.56	—	*553598-1*	*553599-1*	*554103-1*	*554088-1*
36	**2.685** 68.20	**2.352** 59.74	**2.462** 62.53	*554084-1*	*553600-1*	*553601-1*	*554104-1*	*554089-1*
50	**3.280** 83.31	**2.946** 74.83	**3.056** 77.62	*554085-1*	*553602-1*	*553603-1*	*554105-1*	*554090-1*

Recommended Panel Cutout



No. of Pos.	Front Panel Mount[1] A	B	C	D	E	Rear Panel Mount[2] A	B	C	D	E
14	**1.063** 27.00	**1.416** 35.97	**.126** 3.20	**.320** 8.13	**.640** 16.26	**1.151** 29.24	**1.416** 35.97	**.149** 3.78	**.310** 7.87	**.620** 15.75
24	**1.488** 37.80	**1.842** 46.79	**.126** 3.20	**.320** 8.13	**.640** 16.26	**1.575** 40.01	**1.842** 46.79	**.149**[3] 3.78	**.310** 7.87	**.620** 15.75
36	**2.000** 50.80	**2.352** 59.74	**.126** 3.20	**.320** 8.13	**.640** 16.26	**2.085** 52.96	**2.352** 59.74	**.149** 3.78	**.310** 7.87	**.620** 15.75
50	**2.700** 68.58	**2.946** 74.83	**.126** 3.20	**.320** 8.13	**.640** 16.26	**2.700** 68.58	**2.946** 74.83	**.149** 3.78	**.310** 7.87	**.620** 15.75

Front Panel Mount Panel Thickness Range: .062-.125 [1.57-3.18].
Rear Panel Mount Panel Thickness Range: .062 [1.57] Max. Standard Hardware—.062-.093 [1.57-2.36] Metric Hardware.

[1]For front panel mount application, install from the front of the panel to avoid excessive bending of the cable. Bending of the cable will occur if cable assembly is mounted from the rear of the panel.
[2]Screw Lock version only.
For IEEE-488 applications, refer to preassembled shielded panel cutouts page 7102.

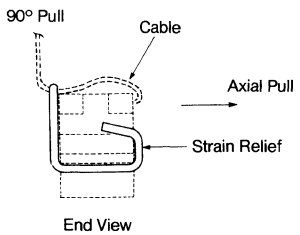
CHAMP Latch Cable Strain Relief Clip

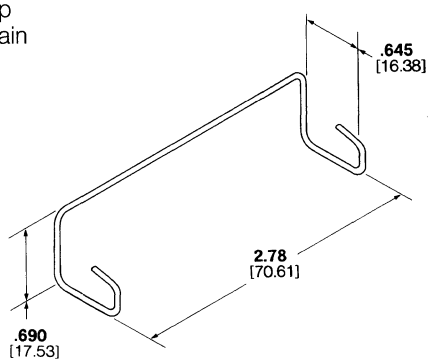
The CHAMP Latch Cable Strain Relief Clip, 50 position, is used only with a Low Profile Standard CHAMP Latch Connector.

The strain relief clip snaps on the connector and over the cable. The clip provides a positive strain relief for cable in axial and 90° directions.

Material:

Stainless steel wire, .050 [1.27] diameter



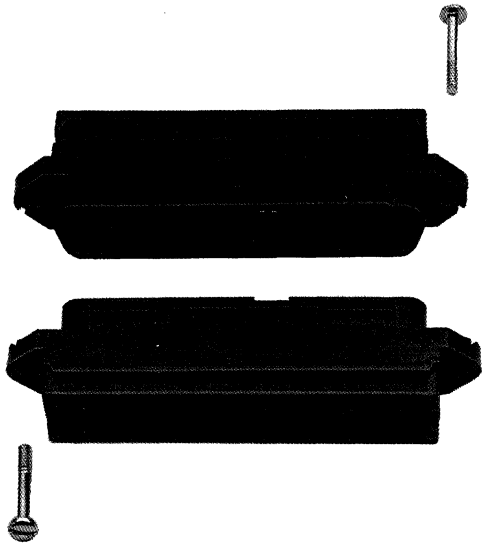


CHAMP Latch Cable Strain Relief Clip Part Number *554099-1*

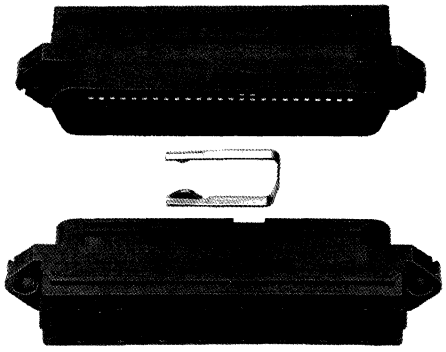
Specifications subject to change.
For latest design specifications...
1-800-522-6752

CHAMP Latch
Low Profile Connectors
Cable-to-Cable Hardware Kits

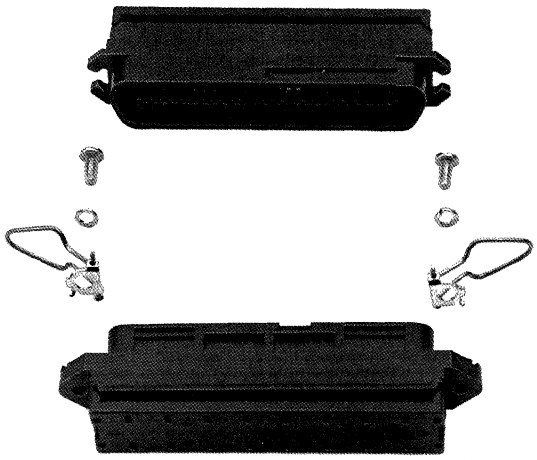
Only fastening hardware supplied, other items shown for reference purposes.



Screw Lock Hardware Kit
Part Number *229911-1*
(two required per assembly)



CHAMP-LOK Hardware Kit
Part Number *552723-1* (36 and 50 Pos.)
Part Number *552723-2* (14 and 24 Pos.)
(one locking latch required per assembly)



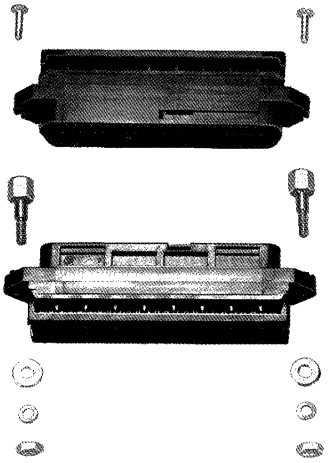
Bail Lock Hardware Kit
Part Number *552561-3*
(one kit required per assembly)

CHAMP Latch
Low Profile Connectors
Cable-to-Panel Hardware Kits

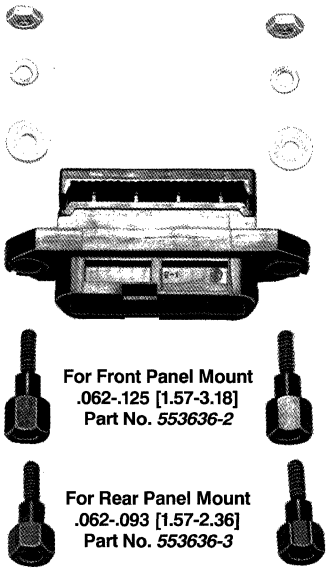
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Only fastening hardware supplied, other items shown for reference purposes.



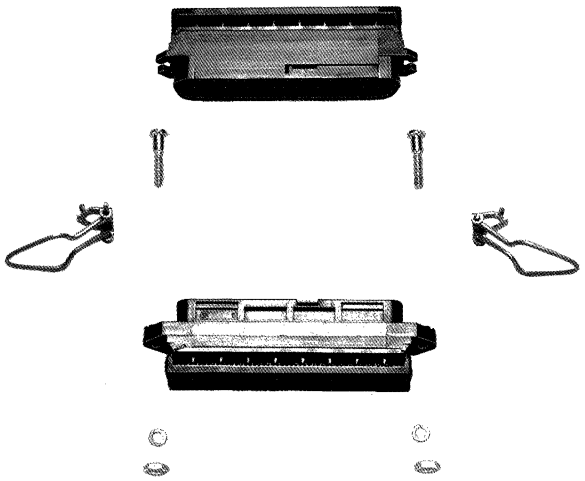
Screw Lock Hardware Kit
Part Number *552568-2*
(Rear Panel Mount Application – .062 [1.57] max. panel thickness – one kit required per assembly)



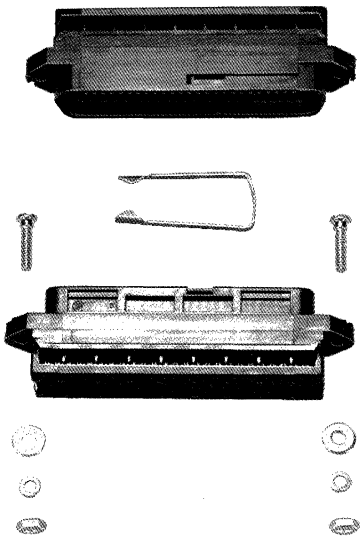
For Front Panel Mount
.062-.125 [1.57-3.18]
Part No. *553636-2*

For Rear Panel Mount
.062-.093 [1.57-2.36]
Part No. *553636-3*

Metric Screw Lock Hardware Kit for IEEE-488 Application
(one kit required per assembly)



Bail Lock Hardware Kit
Part Number *552567-3*
(one kit required per assembly)



CHAMP-LOK Hardware Kit
(one kit required per assembly)

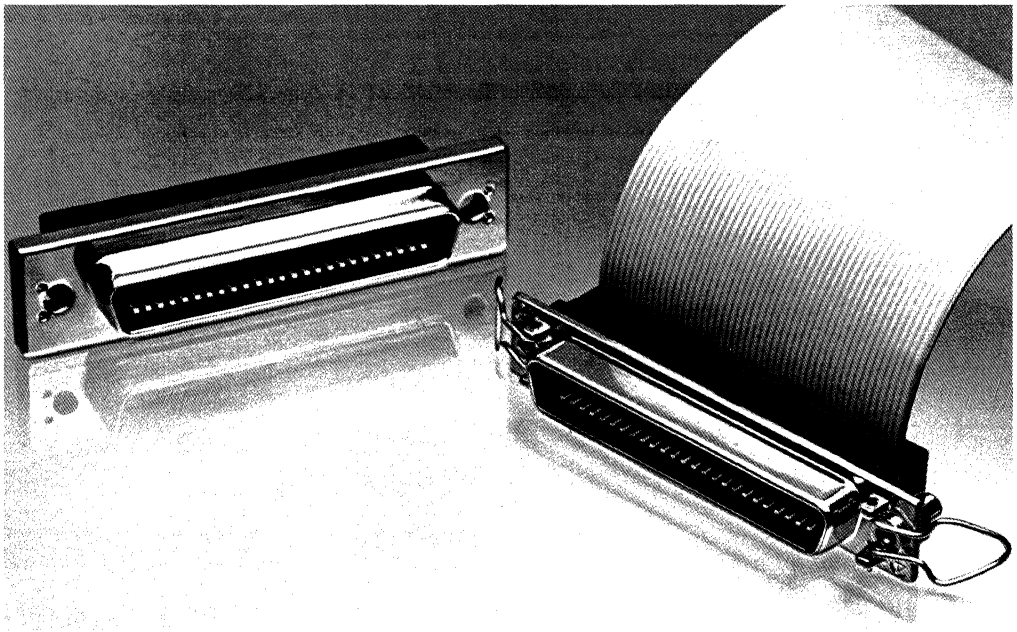
Part Number *553359-1* (for 36 and 50 Pos.)
Part Number *553359-2* (for 24 Pos.)

Part Number *552768-1* (without locking latch)
Use for Front Panel Mount Only

Note: For use with conventional 90° strain relief covers and standard CHAMP Connectors, use bent bail lock hardware kit, Part No. *552561-4*.

Shielded CHAMP Latch Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Product Facts

- Ready to use strain relief covers preassembled to connectors
- Simple one step termination
- Dead end or daisy-chain applications
- Hardware kits available for panel mounting
- Terminates conductors without time consuming soldering
- Terminates .050 [1.27] centerline 26 AWG [0.40 mm], 28 AWG [0.32 mm] and 30 AWG [0.25 mm] (solid) or 28 AWG [0.08-0.09 mm^2] (stranded) wire

Shielded CHAMP Latch panel mount connectors are designed to provide the optimum in EMI protection at the chassis and still permit mating with CHAMP and other compatible connectors in 24, 36 and 50 position sizes.

The housing and covers are constructed of black thermoplastic. The terminals are gold over nickel plated high strength copper alloy on the mating face and gold flash over nickel plate on the terminal side. The mating face consists of 2 rows of terminals on .085 [2.16] centers. Terminating side consists of terminals on .100 [2.54] centers for an effective .050 [1.27] staggered termination. Die cast shields are die cast zinc with nickel plating. Hardware kits are available for panel mount in standard or IEEE metric screw lock.

Shielded CHAMP Latch Panel Mount Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

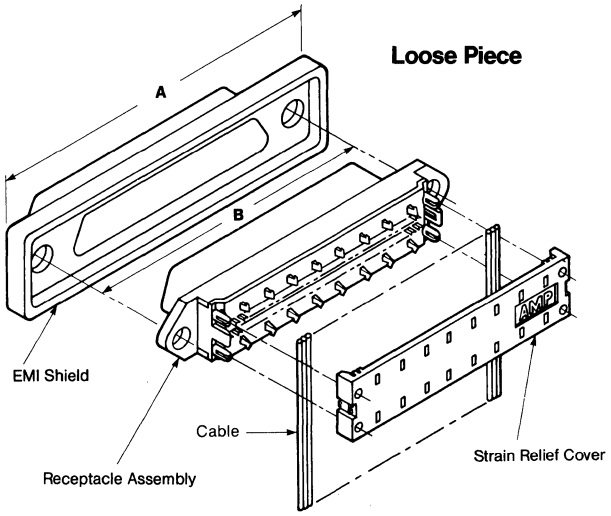
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

CHAMP Latch Connectors for .050 [1.27] Ribbon Cable

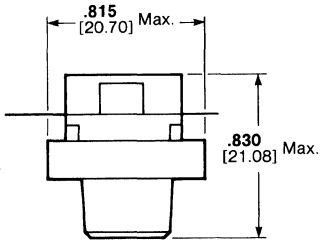
Material:

Housing and Strain Relief Clip—thermoplastic (black)
Terminals—gold over nickel plated high strength copper alloy on mating face and gold flash over nickel plate on terminating side
EMI Shield—nickel plated die casting

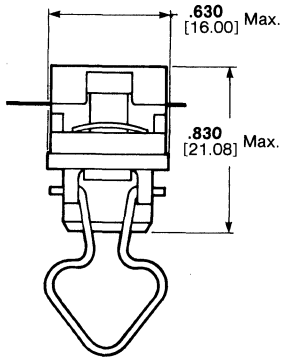
Loose Piece



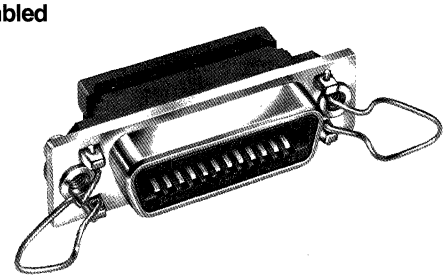
Loose Piece End View



Preassembled Bail Lock End View



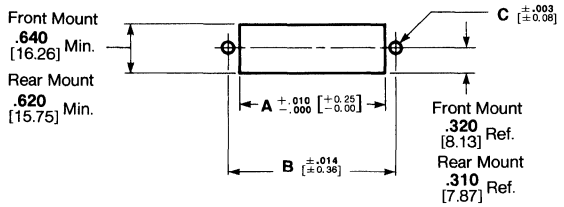
Preassembled



No. of Positions	Loose Piece			Preassembled				
	Dimension		Part Number	Bail Lock			Screw Lock	
				Dimension		Part Number	Part Number	
	A	B		A	B	4-40 Hole	6-32 Hole	4-40 Hole
24	**2.380** 60.45	**1.842** 46.79	*554349-1*[4]	**2.205** 56.01	**1.842** 46.79	—	*554434-1*[4]	—
36	**2.880** 73.15	**2.352** 59.74	*554348-1*	**2.715** 68.96	**2.352** 59.74	*554346-2* *555983-1*[1]	—	—
50	**3.475** 88.27	**2.946** 74.83	*554350-1*	**3.310** 84.07	**2.947** 74.85	*554902-1*[1,3]	—	*554436-2*[2,3]

[1]Does not have boss feature. Boss is a .040 [1.02] shoulder on front of shield.
[2]SCSI applicable with Bail Lock Hardware Kit Number *554818-2*.
[3]SCSI applicable.
[4]Can be used with Interface Bus Applications per IEEE-488.

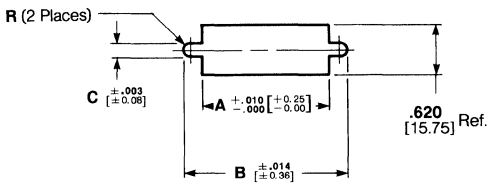
Recommended Panel Cutouts for Front and Rear Panel Mounting



Loose Piece Standard Hardware Application

No. of Positions	Loose Piece					
	Front Panel Mount			Rear Panel Mount		
	A	B	C	A	B	C
24	**1.488** 37.80	**1.842** 46.79	**.126** 3.20	**1.575** 40.01	**1.842** 46.79	**.149** 3.78
36	**2.000** 50.80	**2.352** 59.74	**.126** 3.20	**2.085** 52.96	**2.352** 59.74	**.149** 3.78
50	**2.700** 68.58	**2.946** 74.83	**.126** 3.20	**2.700** 68.58	**2.946** 74.83	**.149** 3.78

Recommended Panel Cutouts for Rear Panel Mount only



Preassembled and Metric Application for IEEE-488

No. of Positions	Preassembled					
	Bail Lock			Screw Lock		
	A	B	C	A	B	C
24	**1.806** 45.87	**1.968** 49.99	**.152** 3.86	**1.575** 40.01	**1.994** 50.65	**.152**[1] 3.86
36	**2.316** 58.83	**2.478** 62.94	**.126** 3.20	**2.085** 52.96	**2.478** 62.94	**.126** 3.20
50	**2.910** 73.91	**3.072** 78.03	**.126** 3.20	**2.700** 68.58	**3.072** 78.03	**.126** 3.20

[1]For IEEE-488 Metric Applications Dimension.
C=.192 [4.88] B=2.036 [51.71].

Specifications subject to change.
For latest design specifications...
1-800-522-6752

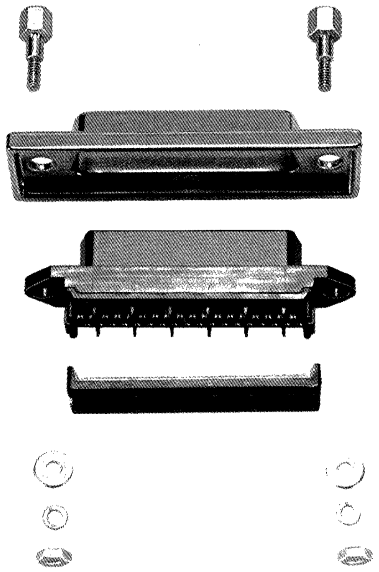
Shielded CHAMP Latch Panel Mount Connectors
(Continued)

Material and Finish:
Mounting Stud—Bright zinc plated carbon steel
Pan Head Screw—Passivated stainless steel
Metric Standoff Stud—Black oxide coated carbon steel

CHAMP Latch Hardware Kits

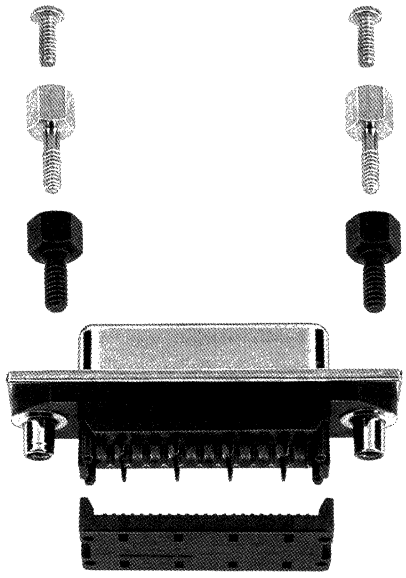
Only fastening hardware supplied, other items shown for reference purposes.

Loose Piece Shield



Screw Lock Hardware Kit
Part No. *553636-1* (shown)
Metric Screw Lock Hardware Kit per IEEE-488 Application
For Front Panel Mount Part No. *553636-2*
For Rear Panel Mount Part No. *553636-3*

Preassembled Shield

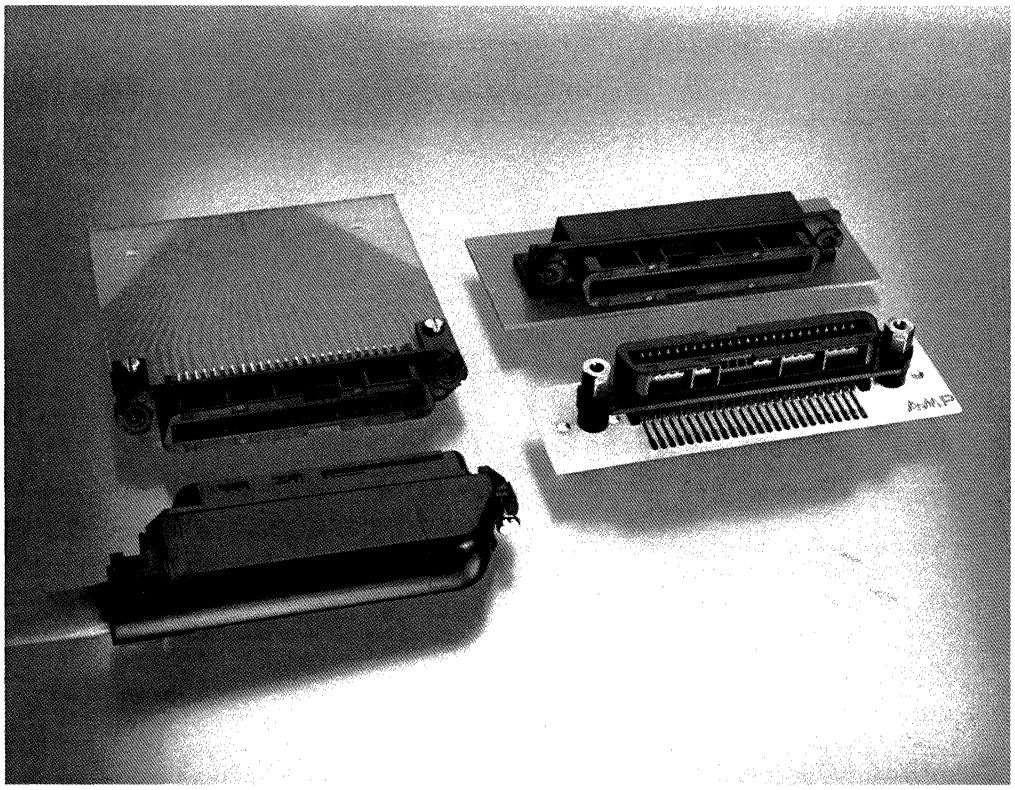


[1]Part No. *554272-1*
(for use with 4-40 Screw Lock, rear panel only)
[2]Metric Screw Lock Hardware Kit for 24-Position IEEE-488, Preassembled, Part No. *554808-1* Rear Panel Mount Only

CHAMP Pc Board Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



CHAMP Printed Circuit Board Connectors are fully intermateable with existing connectors of a similar design. They are capable of accommodating printed circuit board thicknesses from .062-.125 [1.57-3.18].

Applications for this type of connector are widely diversified and are used in the following markets:
- Medical Equipment
- Data Control Systems
- Telephone Interconnect Systems
- Electronic Instrumentation (Commercial & Industrial)

The connector is designed for high density wave solderable applications, eliminating the need for hand soldering, except for Edge Mount Connectors and can be applied to either single or double sided boards. The surface mounting area is minimal and allows full usage of available printed circuit land area.

These connectors are available in 14, 24, 36, 50 and 64 positions with a choice of mounting methods for your specific needs, i.e. screw, bail mount or locking latch types. Board mounting for Right Angle Connectors is accomplished by nut and bolt, pop riveting or an optional self-tapping screw arrangement. Edge and Vertical Mount Connectors are board mounted by a wide choice of hardware applicable to your specific applications.

The connector requires minimum hardware and installation time and is compatible with conventional printed circuit mass production soldering processes, thereby providing cost savings.

For additional information concerning the CHAMP printed Circuit Board Connectors, contact your AMP Sales Engineer or AMP Incorporated, Harrisburg, PA 17105.

Product Facts

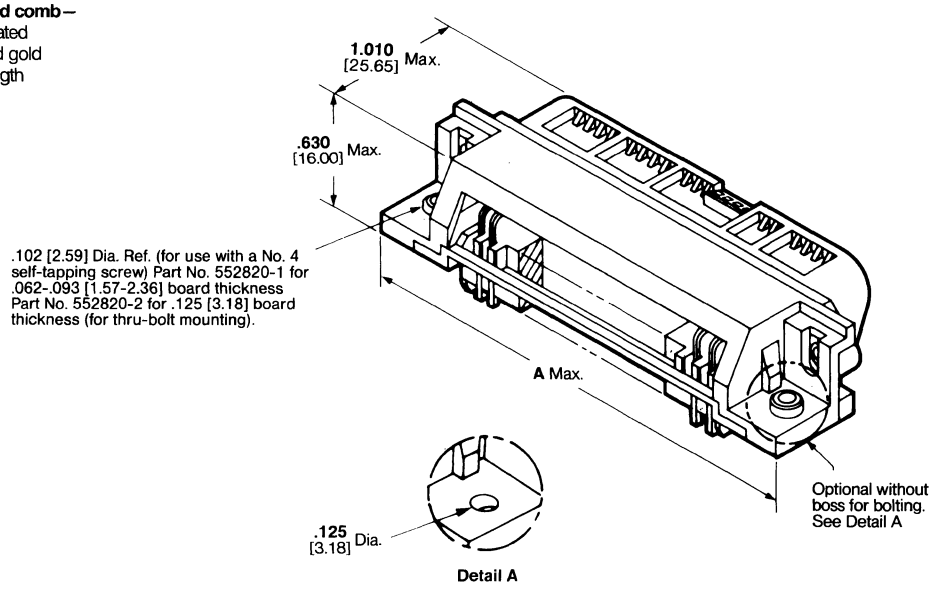
- Capable of being used with single or double sided printed circuit boards
- Eliminates the need to hand solder, except for Edge Mount Connectors
- Connectors fully intermateable with others of similar design
- UL 94V-O self-extinguishing thermoplastic housings and accessories
- Connectors available in 14, 24, 36, 50 and 64 positions with a choice of mounting methods: screw, bail mount, or locking latch types
- Capable of accommodating printed circuit board thicknesses of .062 [1.57], .093 [2.36] or .125 [3.18]
- Diversifed applications throughout the following markets—medical equipment, data control systems, telephone interconnect systems and electronic instrumentation (commercial & industrial)
- Operating temperature range of –40°C to +105°C

Right Angle Connector Specifications

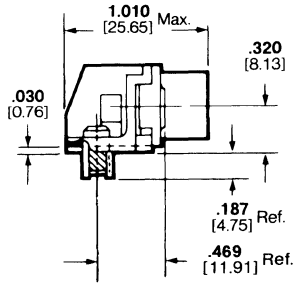
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Material:

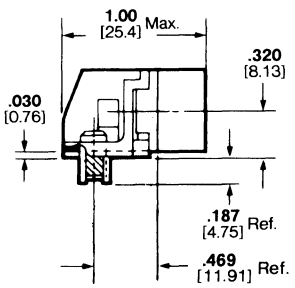
Housing, bracket, plate and comb– black thermoplastic, 94V-0 rated
Terminal–selectively plated gold over nickel plated high strength copper alloy, tin plated tails



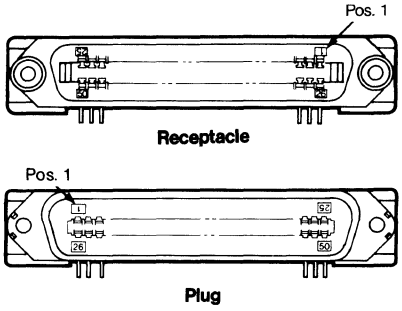
Receptacle–Side View



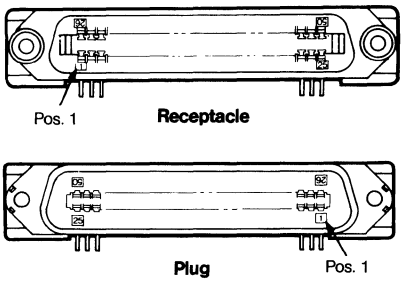
Plug-Side View



Standard Orientation



Reverse Orientation



Self-Tapping

No. of Pos.	Dim. A	Part Numbers			
		Standard Orientation		Reverse Orientation	
		Receptacle	Plug	Receptacle	Plug
14	**1.750** 44.45	*552738-1*	—	*552738-2*	—
24	**2.175** 55.25	*552740-1* *552791-1*[1]	*552741-1*	*552740-2* *552791-2*[1]	—
36	**2.685** 68.20	*552742-1*	*552743-1*	*552742-2*	—
50	**3.280** 83.31	*552725-1*	*552726-1*	*552725-3*	*552726-3*
64	**3.875** 98.43	*552744-1*	*552745-1*	*552744-2*	—

[1]For IEEE-488 applications.

Thru-Bolt Mounting (See Detail A)

No. of Pos.	Dim. A	Part Numbers		
		Standard Orientation		Reverse Orientation
		Receptacle	Plug	Receptacle
24	**2.175** 55.25	—	—	*552791-4*[1]
36	**2.685** 68.20	*552742-3*	—	—
50	**3.280** 83.31	*552725-2*	—	—

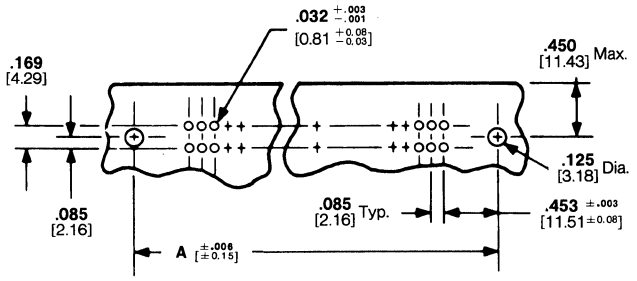
[1]For IEEE-488 applications.

Right Angle Connector Specifications (Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

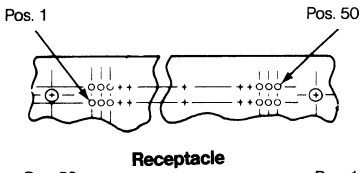
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Recommended Pc Board Mounting Dimensions

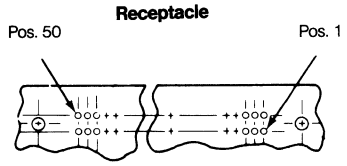


No. of Positions	Dimension A
14	**1.416** 35.97
24	**1.842** 46.79
36	**2.352** 59.74
50	**2.946** 74.83
64	**3.542** 89.97

Standard Orientation

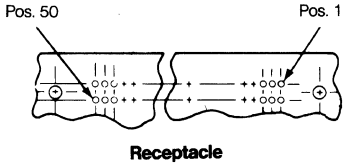


Receptacle

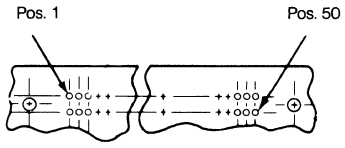


Plug

Reverse Orientation

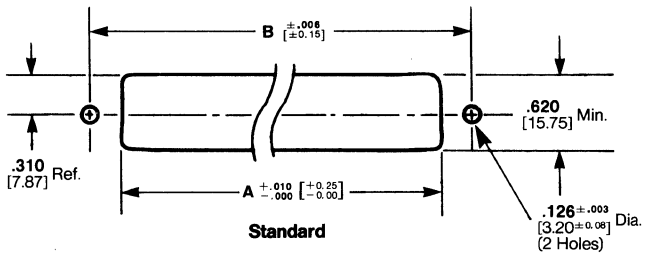


Receptacle



Plug

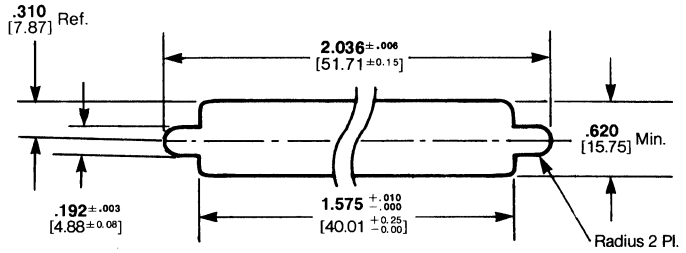
Panel Mount Cutout Dimensions (Rear Panel Mount Only)



Standard

No. of Positions	Dimensions A	Dimensions B
14	**1.152** 29.26	**1.416** 35.97
24	**1.575** 40.01	**1.842** 46.79
36	**2.085** 52.96	**2.352** 59.74
50	**2.700** 68.58	**2.946** 74.83
64	**3.275** 83.19	**3.542** 89.97

Panel thickness range: .062 [1.57] for rear panel mount applications. For 24 position IEEE-488 metric version .062-.093 [1.57-2.36] may be used.

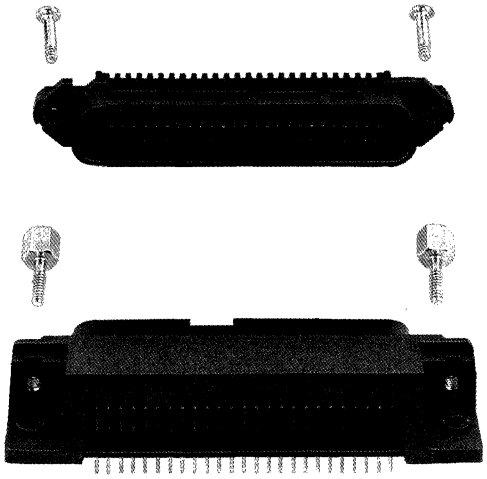


IEEE-488 Metric

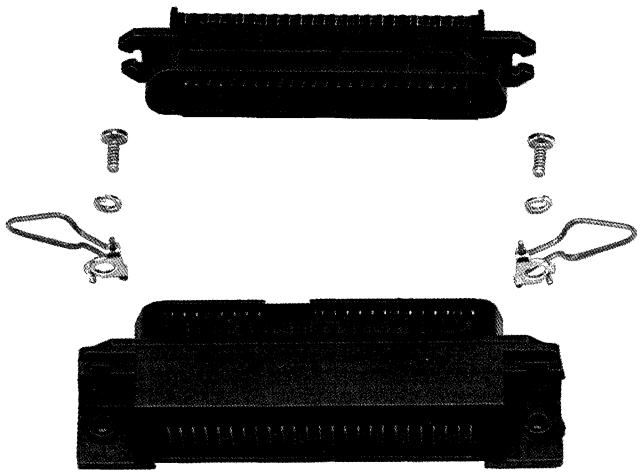
Right Angle Connector Hardware Kits

Specifications subject to change.
For latest design specifications...
1-800-522-6752

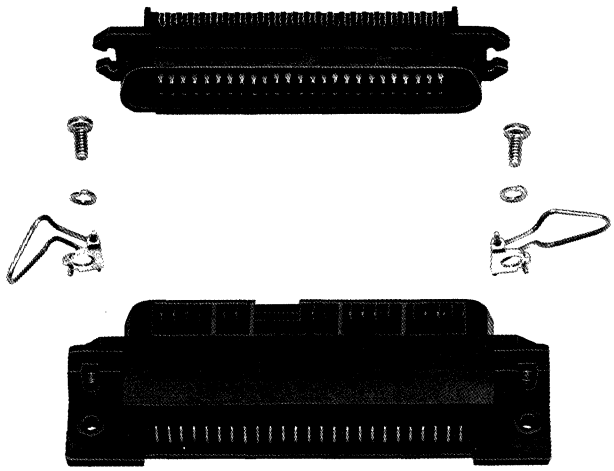
Only fastening hardware supplied, other items shown for reference purposes



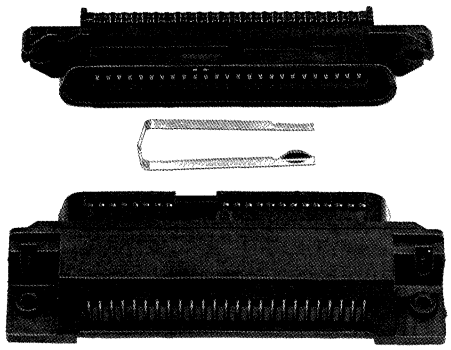
Screw Lock Hardware Kit
Part No. *552631-1*
Rear panel mount only
(One kit required per assembly)
For pc board-to-panel applications
(Panel thickness .062 [1.57] max.)



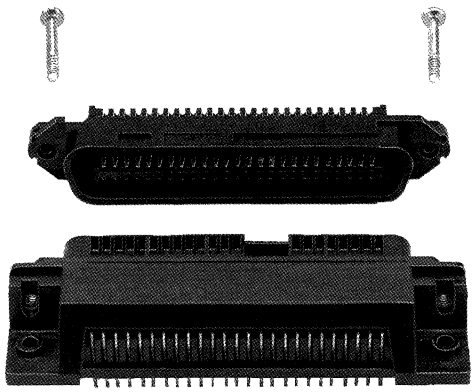
Bail Lock Hardware Kit
Part No. *552561-3*
(For use with 180° Strain Relief Cover)
(One kit required per assembly)
For pc board-to-cable applications



Bent Bail Lock Hardware Kit
Part No. *552561-4*
(For use with 90° Strain Relief Cover)
(One kit required per assembly)
For pc board-to-cable applications



CHAMP-LOK Kit
Part Nos. *552723-1* (36 and 50 Position)
***552723-2* (14 and 24 Position)**
and *552723-3* (64 Position Only)
(One latch required per assembly)
For pc board-to-cable applications



Screw Lock Hardware Kit
Part No. *229911-1*
(two required per assembly)
For pc board-to-cable applications

Notes: 1. Recommended right angle connector pc board mounting hardware to be a No. 4 self-tapping screw. Part No. *552820-1* for .062-0.93 [1.57-2.36] and Part No. *552820-2* for .125 [3.18] board thickness.

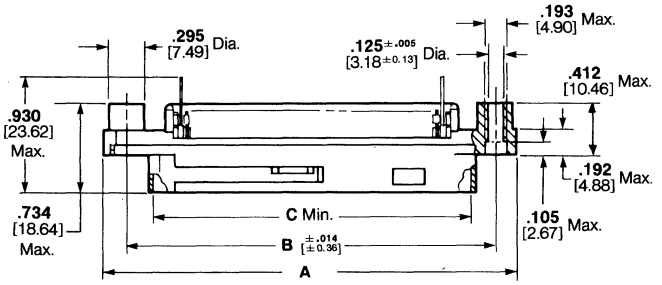
2. Metric hardware is also available for use with the 24 Position Right Angle Receptacle per IEEE-488 Part No. 552791-1 or -2.
   - For Standard Mount—Part No. *552633-3*
   - For Rear Panel Mount—Part No. *552633-4*

Vertical and Edge Mount Connector Specifications

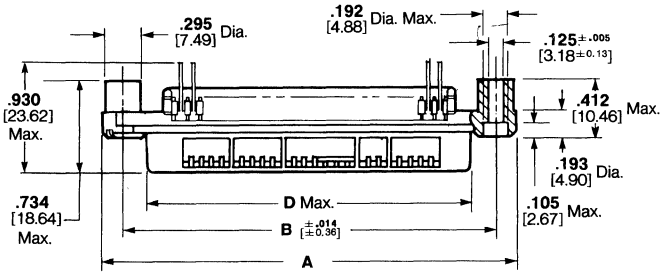
Specifications subject to change.
For latest design specifications...
1-800-522-6752

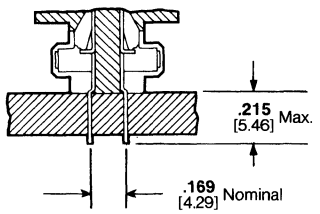
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Vertical Mount
Style PV—Plug, Screw Lock



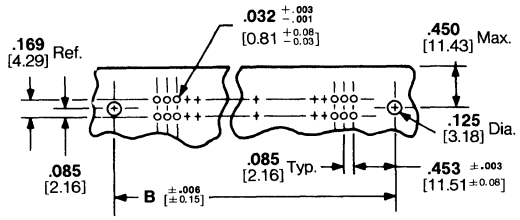
Style RV—Receptacle, Screw or Bail Lock





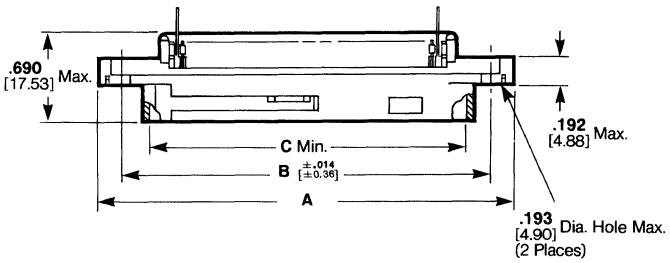
End View
Vertical Mount

PC Board Thickness Range: .062-.125 [1.57-3.18]

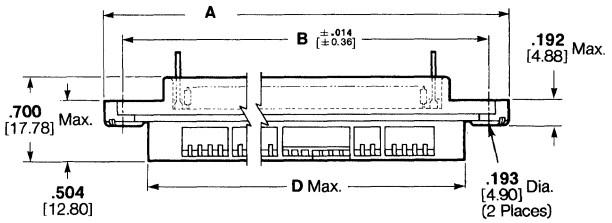


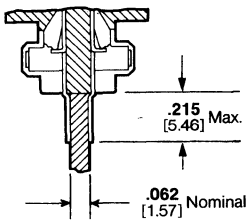
Recommended Pc Board
Mounting Dimensions

Edge Mount
Style PE—Plug, Screw Lock



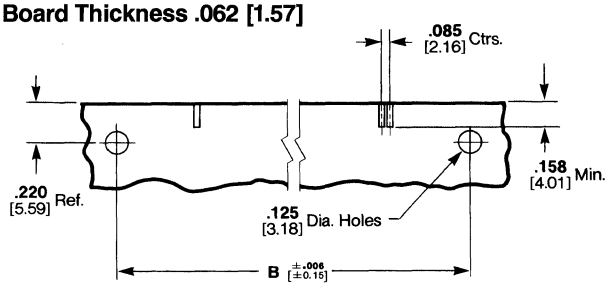
Style RE—Receptacle, Screw or Bail Lock





End View
Edge Mount

PC Board Thickness .062 [1.57]



Recommended Pc Board
Mounting Dimensions

No. of Positions	Dimensions				Part Numbers			
					Plug		Receptacle	
	A	B	C	D	Style PV Vertical Mount	Style PE Edge Mount	Style RV Vertical Mount	Style RE Edge Mount
14	**1.750** 44.45	**1.416** 35.97	**1.001** 25.43	**1.000** 25.40	*552209-1*	—	*552212-1*	*552218-1*
24	**2.175** 55.25	**1.842** 46.79	**1.426** 36.22	**1.425** 36.20	*552221-1*	—	*552224-1*[1]	*552230-1*
36	**2.685** 68.20	**2.352** 59.74	**1.936** 49.17	**1.935** 49.15	*552232-1*	*552238-1*	*552235-1*	*552241-1*
50	**3.280** 83.31	**2.946** 74.83	**2.531** 64.29	**2.530** 64.26	*552116-1*	*552126-1*	*552118-1*	*552130-1*
64	**3.875** 98.43	**3.542** 89.97	**3.126** 79.40	**3.125** 79.38	*552243-1*	*552249-1*	*552246-1*	*552252-1*

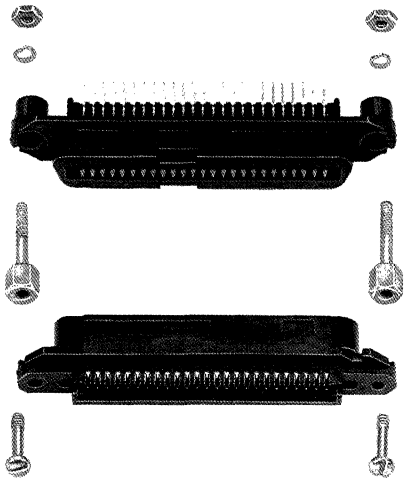
[1].189 [4.80] Diameter Mounting Hole, for IEEE Application.

Notes: 1. Printed circuit board material—glass filled polyester 94V-0 rated.
2. Order all hardware required separately.

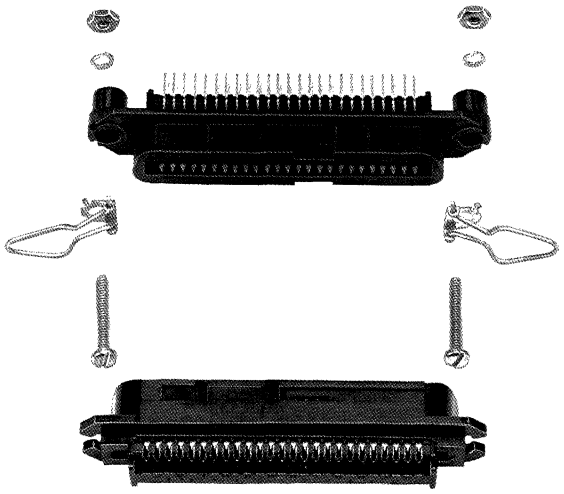
Vertical Mount Connector Hardware Kits

Specifications subject to change.
For latest design specifications...
1-800-522-6752

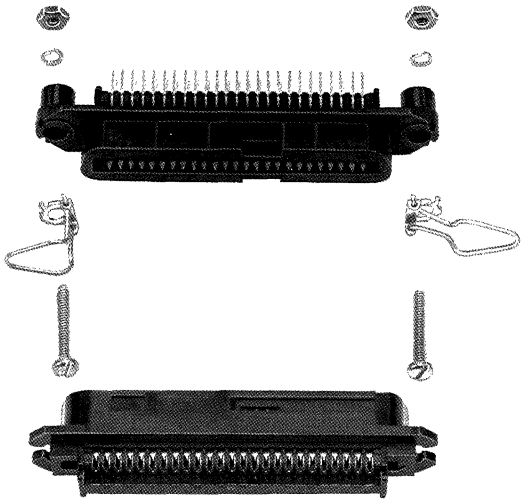
Only fastening hardware supplied, other items shown for reference purposes



Screw Lock Hardware Kit—Part No. *552563-1*
(One kit required per assembly)

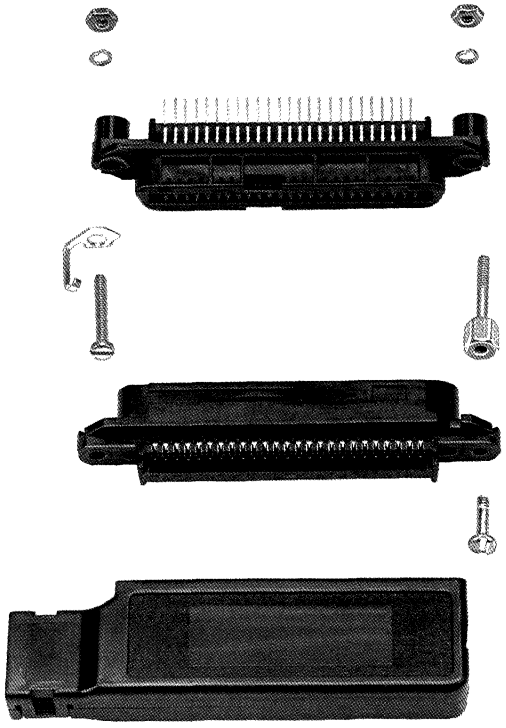


Bail Lock Hardware Kit—Part No. *552562-1*
(One kit required per assembly)



Bent Bail Lock Hardware Kit—Part No. *552562-2*
(One kit required per assembly)

CHAMP-LOK Hardware Kit
Part No. *553357-1* (36 and 50 Pos. Hardware Kit)
Part No. *553357-2* (14 and 24 Pos. Hardware Kit)
(One kit required per assembly)

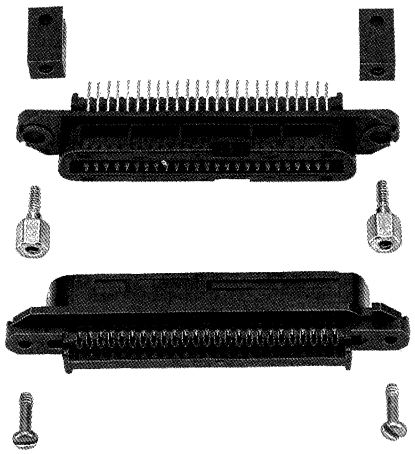


J-Hook Screw Lock Hardware Kit—Part No. *552690-1*
(One kit required per assembly)

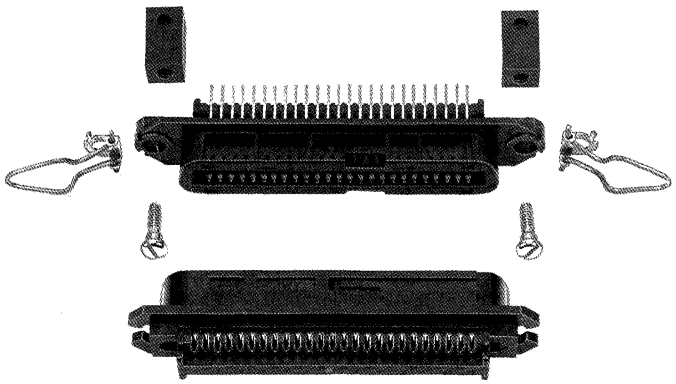
Edge Mount Connector Hardware Kits

Specifications subject to change.
For latest design specifications...
1-800-522-6752

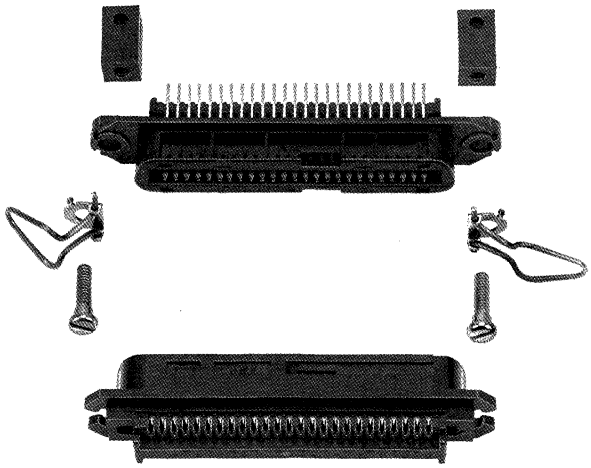
Only fastening hardware supplied, other items shown for reference purposes



Screw Lock Hardware Kit
Part No. *552675-1*
(One kit required per assembly)



Straight Bail Lock Hardware Kit Part No. *552676-1*
(One kit required per assembly)

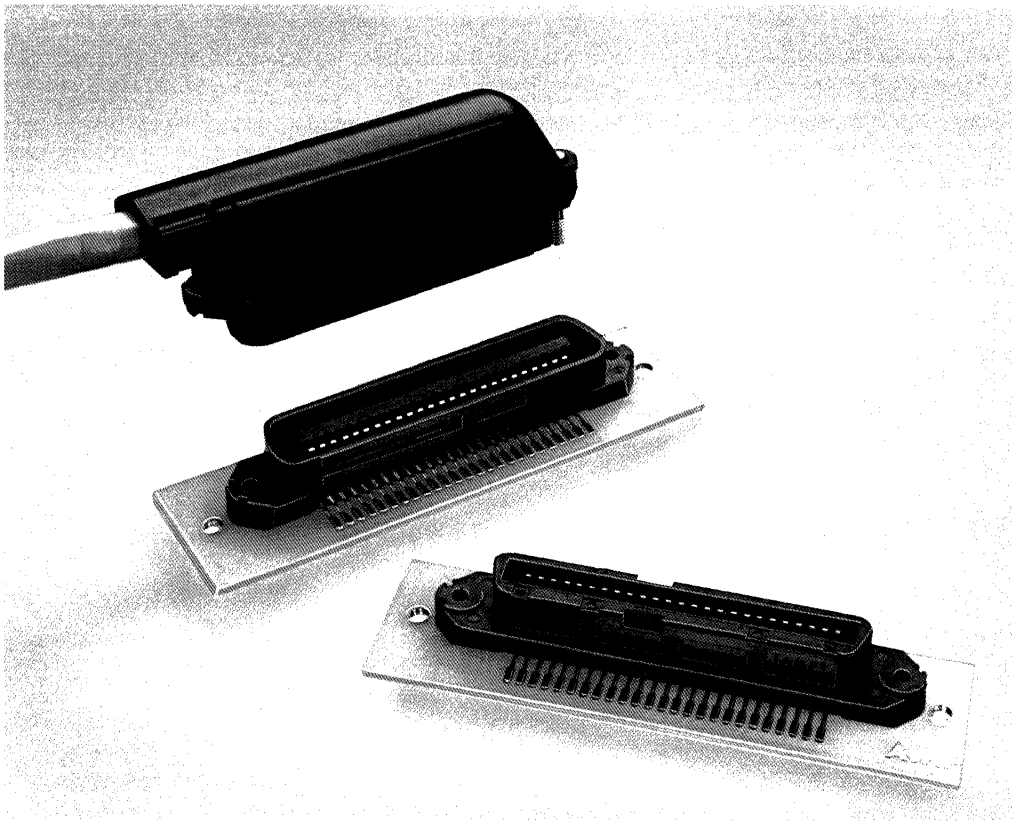


Bent Bail Lock Hardware Kit
Part No. *552676-2*
(One kit required per assembly)

ACTION PIN Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



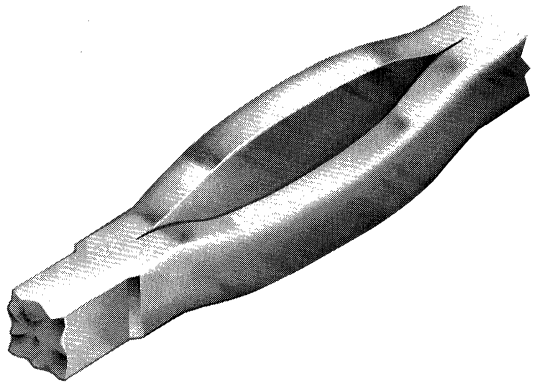
ACTION PIN connectors for printed circuit board applications combine the high reliability of the CHAMP Insulation Displacement connector interface with the utilization and cost savings of ACTION PIN terminals. They are available in both plug and receptacles in 14, 24, 36, 50 and 64 position sizes.

The connectors are supplied preloaded with contacts and a plastic cover which serves as the bearing surface to press the connector into the board. Rapid assembly is made possible by use of a simple arbor tool. The plastic cover also serves as a dust cover which may be left in place until ready to use.

The connectors may be mounted on pc boards with a thickness of .062 [1.57] to .125 [3.18]. They are designed for interface with standard CHAMP IDC cable-to-panel plugs or receptacles and are available for use with screw lock, bail lock or unique CHAMP-LOK connector locking clip hardware.

The design of the ACTION PIN terminal permits insertion into printed circuit boards having either plated-thru or unplated holes. In plated-thru holes, completely reliable termination may be accomplished either by press fit of the pins or by both press fitting and subsequent conventional soldering. In unplated holes, the pins must be soldered in place.

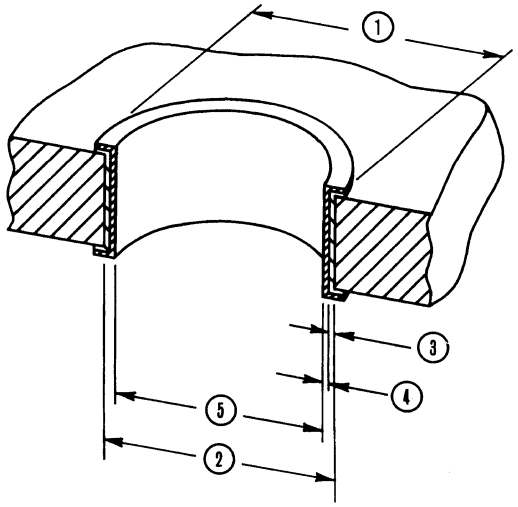
For the connectors with self retained contacts, hardware to secure connector to the pc board may not be required if unmating force of mating connectors does not exceed 1 lb. [4.45 N] per terminal (50 lbs. [222.4 N] for 50 positions.)



ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area ensures oxide breakthrough and prevents corrosion in the harshest environments to provide a reliable connection virtually every time. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

PC Board Thickness

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. To ensure optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



① Annular Ring (See Note)
② Drilled Hole
③ Copper Thickness
④ Tin-Lead Thickness
⑤ Plated-Through Hole

ACTION PIN Contact/PC Board Applications

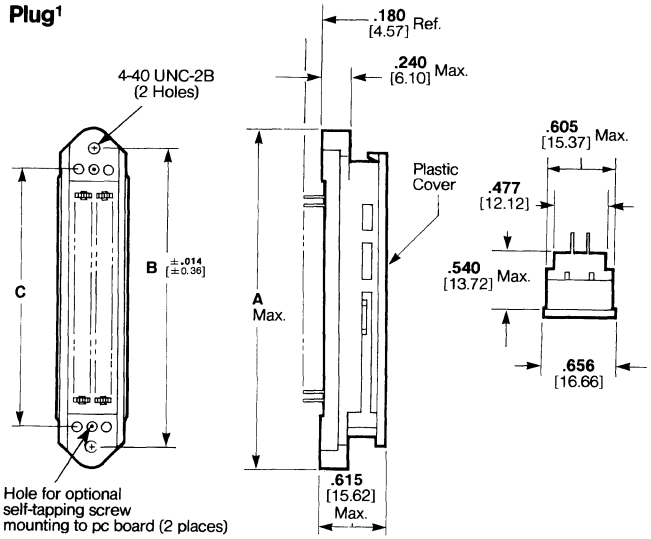
Connector (Contact) Type	ACTION PIN Contact Material Thickness	Drilled Hole Diameter ②	Plating Thicknesses Copper ③*	Plating Thicknesses Tin-Lead ④	Plated-Through Hole Diameter ⑤	Distortion Specification** Average	Distortion Specification** Maximum
Miniature Ribbon Connector (CHAMP)	.020 0.51	.038±.001 0.97±0.03	.001 - .002 0.03 - 0.05	.0003 0.008 Min.	.030 - .035 0.76 - 0.89	Not Specified	Not Specified

* Maximum hardness of copper layer is 150 Knoop
** Radial hole distortion
Note: Recommended annular ring diameter is hole diameter plus **0.51** [.020]

ACTION PIN Connector Specifications

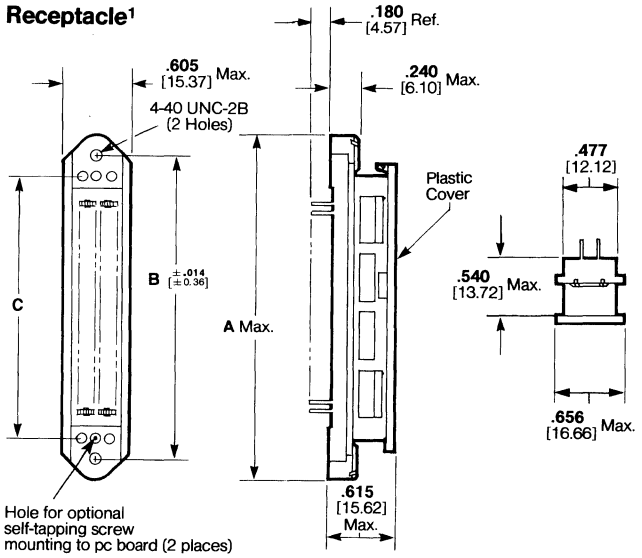
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Plug[1]



[1]Pos. 1 identification on mating side of housing flange.

Receptacle[1]

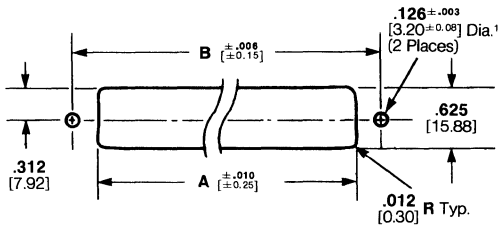


No. of Positions	Dimensions			Part Numbers	
	A	B	C	Plug	Receptacle
14	**1.750** 44.45	**1.416** 35.97	**1.016** 25.81	*553444-1* *554755-1*[1]	*553443-1*
24*	**2.175** 55.25	**1.842** 46.79	**1.442** 36.63	*553444-2*	*553443-2*
36	**2.685** 68.20	**2.352** 59.74	**1.952** 49.58	*553444-3*	*553443-3*
50	**3.280** 83.31	**2.946** 74.83	**2.546** 64.67	*553444-4* *554758-1*[1]	*553443-4* *554753-1*[1]
64	**3.875** 98.43	**3.542** 89.97	**3.142** 79.81	*553444-5* *554759-1*[1]	*553443-5*

*For IEEE-488 Applications use **Part No. *553609-1.***

[1]Connector contains self retained terminals.

Panel Cutout Dimensions (Rear Panel Mount)

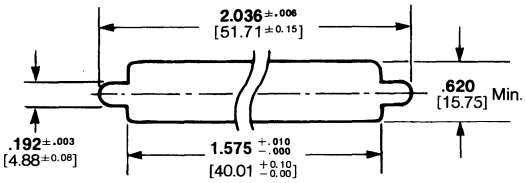


No. of Positions	Dimensions	
	A	B
14	**1.151** 29.24	**1.416** 35.97
24	**1.575**[1] 40.01	**1.842** 46.79
36	**2.085** 52.96	**2.352** 59.74
50	**2.700** 68.58	**2.946** 74.83
64	**3.275** 83.19	**3.542** 89.97

[1]See Panel Cutout for IEEE-488.

Note: Panel thickness range .062-.093 [1.57-2.36] for metric applications; .062 [1.57] for standard 4-40 hardware applications.

Panel Cutout for 24 Position IEEE-488 Metric

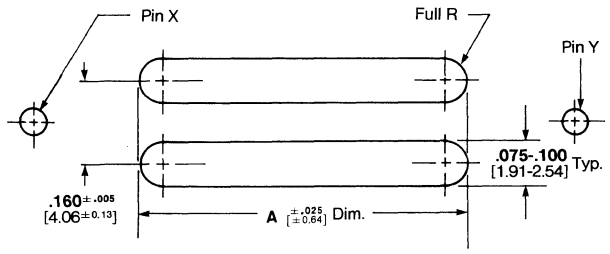


ACTION PIN Connector Pc Board Nesting Fixture Requirements

Preferred Material: G-10 or FR-4 glass filled epoxy, aluminum is acceptable.

Note: Pc board slot pattern shall be true positioned on fixture within .010 [0.25] by pin X and pin Y. Pin location and size to be determined by customer.

Minimum of .275 [6.99] slot depth minus customer board thickness.

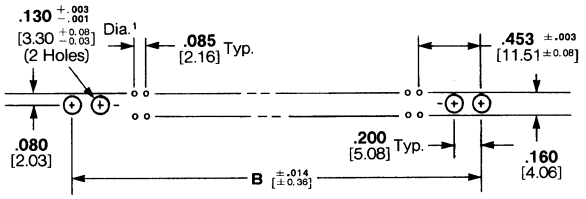


No. of Positions	Dimension
	A
14	**.625** 15.88
24	**1.050** 26.67
36	**1.560** 39.62
50	**2.155** 54.74
64	**2.750** 69.85

ACTION PIN Connector Specifications (Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

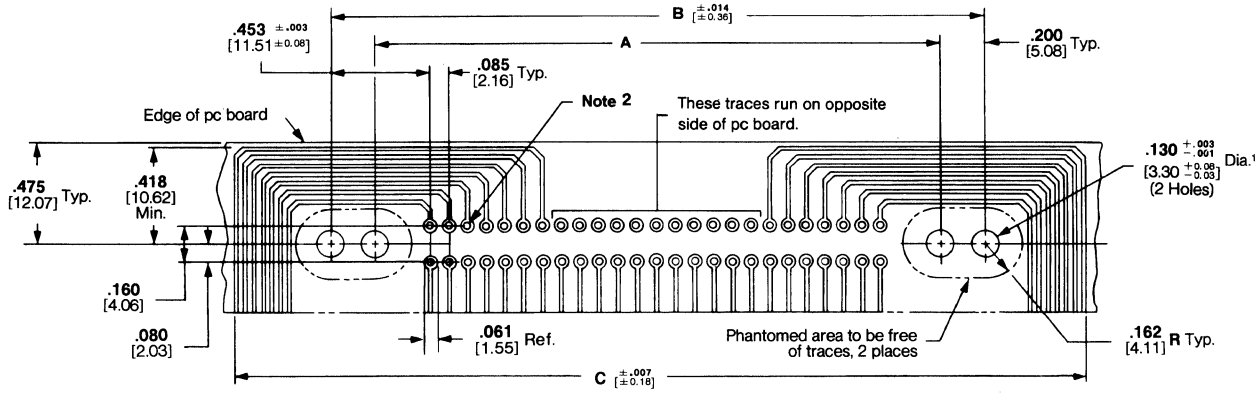
Recommended Pc Board Mounting Dimensions



[1]For IEEE-488 applications hole in pc board to be .171 [4.34] to accommodate standoff.

Notes:
1. Recommended Pc Board Hole Information:
   A. Before thru-hole plating—.037-.039 [0.94-0.99] Dia.
   B. Copper thru-hole plating thickness—.001-.002 [0.03-0.05]
   C. Tin-Lead thru-hole plating thickness—.0003-.0012 [.008-0.030] pore free
   D. Finished hole after reflow—.030-.035 [0.76-0.89] Dia.
   E. Non-plated thru-hole—.032-.034 [0.81-0.86] Diameter
   F. Terminal holes located within true position of .008 [0.20]
2. Optional .125 [3.18] Dia. hole for mounting with self-tapping screw for .062 [1.57] and .093 [2.36] pc board thk. use ¼" [6.35 mm] screw length; for .125 [3.18] pc board thk. use .312 [7.93] length.

ACTION PIN Connector Double Sided Pc Board Dimensions



[1]For IEEE-488 applications hole in pc board to be .171 [4.34] to accommodate standoff.

No. of Positions	Dimensions		
	A	B	C
14	**1.016** 25.81	**1.416** 35.97	**1.852** 47.04
24	**1.442** 36.63	**1.842** 46.79	**2.358** 59.89
36	**1.952** 49.58	**2.352** 59.74	**3.028** 76.91
50	**2.546** 64.67	**2.946** 74.83	**3.782** 96.06
64	**3.142** 79.81	**3.542** 89.97	**4.458** 113.23

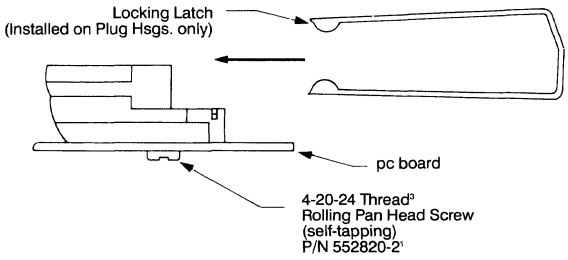
Notes: 1. Optional hole for mounting with self-tapping screw—.125 [3.18] Dia. (2 Places).
2. Suggested printed circuit board hole information.
   A. Before thru-hole plating—.037-.039 [0.94-0.99] Dia.
   B. Copper thru-hole plating thickness—.001-.002 [0.03-0.05]
   C. Tin-Lead thru-hole plating thickness—.0003-.0012 [.008-0.030] pore free
   D. Finished hole after reflow—.030-.035 [0.76-0.89] Dia.
   E. Non-plated thru-hole—.032-.034 [0.81-0.86] Diameter

ACTION PIN Connector Hardware

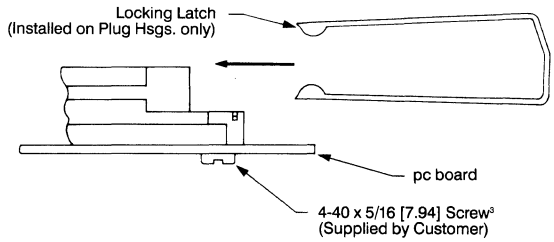
Only fastening hardware supplied, other items shown for reference purposes.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

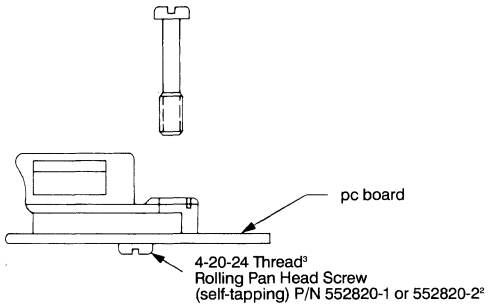
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



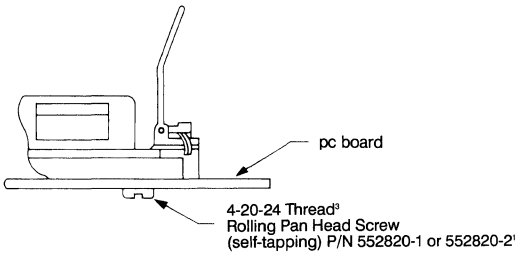
CHAMP-LOK Hardware
Part No. *552723-1* (36 or 50 Pos. Locking Latch)
Part No. *552723-2* (14 or 24 Pos. Locking Latch)
Part No. *552723-3* (64 Pos. Locking Latch)
(one latch required per assembly)
For Pc Board-to-Cable applications



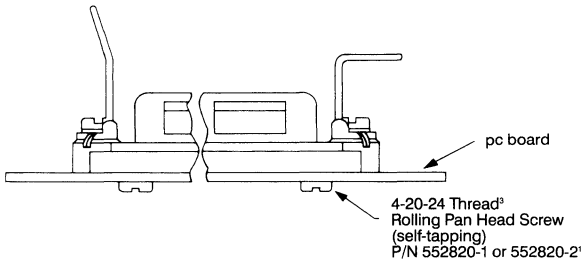
CHAMP-LOK Hardware
Part No. *552723-1* (36 or 50 Pos. Locking Latch)
Part No. *552723-2* (14 or 24 Pos. Locking Latch)
Part No. *552723-3* (64 Pos. Locking Latch)
(one latch required per assembly)
for Pc Board-to-Cable applications



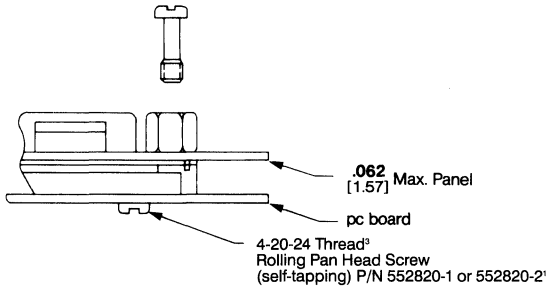
Screw Lock Hardware
Part No. *229911-1*
(two screws required per assembly)
For Pc Board-to-Cable applications



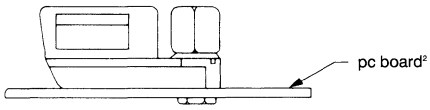
Bail Lock Hardware Kit
Part No. *552561-3*
(one kit required per assembly)
For Pc Board-to-Cable with 180° cover applications



Bent Bail Lock Hardware Kit
Part No. *552561-4*
(one kit required per assembly)
For Pc Board-to-Cable with 90° cover applications



Screw Lock Hardware Kit
Part No. *552631-1*
(Rear panel mount applications)
(one kit required per assembly)
For Pc Board-to-Panel-to-Cable applications

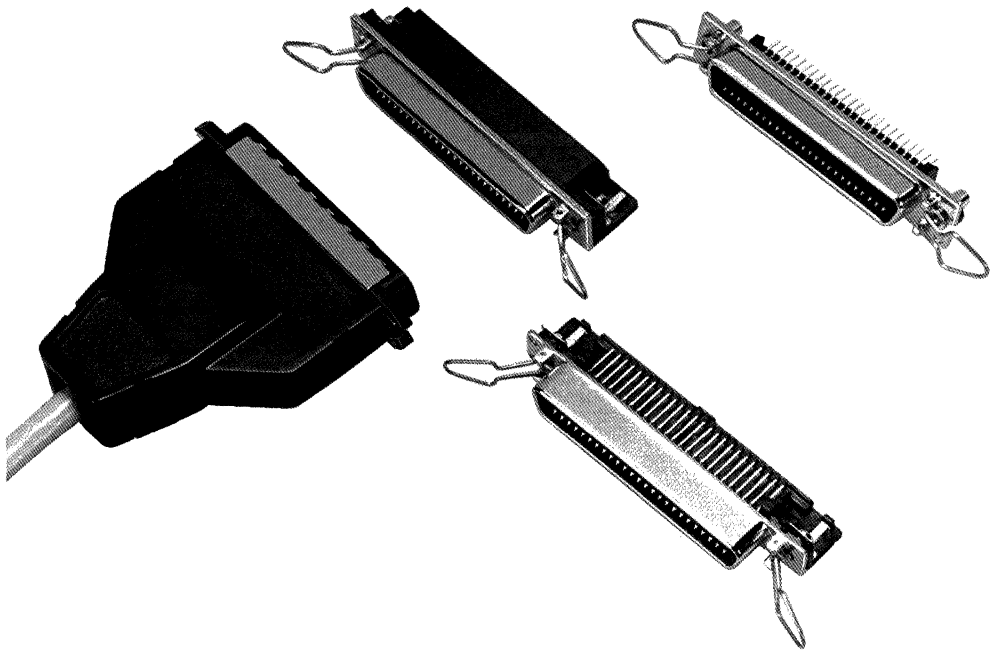


Screw Lock Metric Hardware Kit
per IEEE-488, 1978
Part No. *552862-1*
(one kit required per assembly)
For Pc Board-to-Cable applications
(for use with Connector Part No. *553609-1*
with .187 [4.75] dia. mounting holes)

[1]Part No. *552820-1* used for board thickness .062-.093 [1.57-2.36] Part No. *552820-2* used for board thickness .125 [3.18].
[2]Hole in pc board .171 [4.34] to accommodate standoff.
[3]If unmated force of mating connector does not exceed 1 lb. per terminal 4-40 rolling pan head screw may not be required (for self retained terminals only).

Shielded Pc Board Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752



Shielded CHAMP Connectors afford excellent protection from electromagnetic interference or electrostatic discharge to sensitive circuitry. These connectors are completely compatible and intermateable with all others of a similar design, yet they are unique because of their superior construction.

They are available in three different panel-mount styles. Each style consists of an appropriate CHAMP connector and a rugged die-cast metal shell. The shielded right angle, edge mount and vertical mount CHAMP connector versions for pc board applications must be rear panel-mounted.

A choice of fastening hardware is available in each of the styles noted above. They include standard screw lock, bail lock or metric screw lock as required by IEEE-488.

Each connector is shipped in bulk or individual kit form and consists of the die cast metal shell and appropriate style connector. After pc board mounting, it is easily installed to the panel with the appropriate hardware kit, which is ordered separately.

The thick die-cast metal shell offers superior shielding over a wider frequency range than drawn sheet metal or plated/filled plastics. This shell also protects the equipment from inadvertent electrostatic discharge because the die-casting, together with the fastening hardware, assures a reliable chassis ground connection.

Due to its inherent rigidity, the die-cast housing may be stacked without distortion or bending of connector flanges and panel. This advantage contributes to the overall effectiveness of the system.

The Shielded CHAMP right angle pc board connector offers a low-cost transition to or from double-sided circuitry, the Shielded CHAMP edge-mount and vertical-mount connectors also allow accessibility to both sides of double-sided boards. All three of these styles are available in 24, 36 and 50 position sizes.

Product Facts

- Excellent protection from electromagnetic interference or electrostatic discharge to sensitive circuitry
- Connectors compatible and intermateable with all others of similar design
- Available in three different panel-mount styles
- The Shielded right angle, edge-mount and vertical-mount CHAMP connectors for pc board application are rear panel-mounted
- Choice of fastening hardware—standard screw lock, bail lock, metric screw locks per IEEE-488 applications
- Connectors available in kit form or preassembled versions
- Thick die-cast metal shell offers superior shielding over a wide frequency range
- Shell protects equipment from inadvertent electrostatic discharge
- Housings are stackable
- Applied cost savings
- Available in 24, 36 and 50 positions

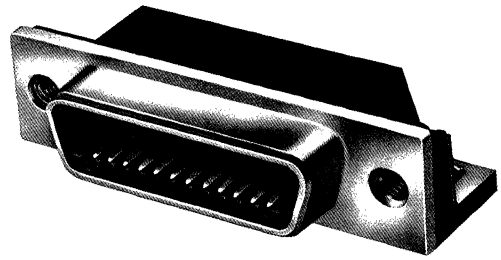
Shielded Right Angle Connectors

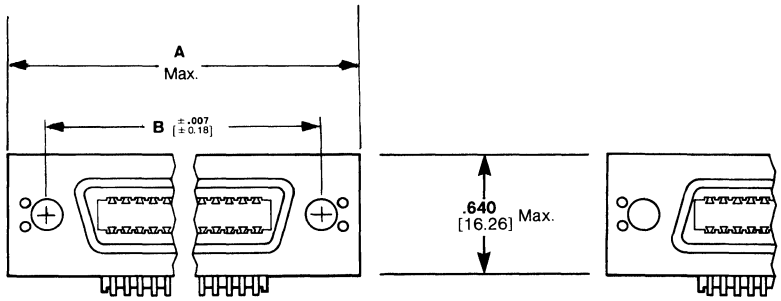
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Preassembled Screw-Lock

Material and Finish:
Housing, bracket, connector comb and terminal support plate—thermoplastic (black)
Terminals—selectively plated gold over nickel plated high strength copper alloy, tin plated tails
EMI Shield—Nickel plated die casting



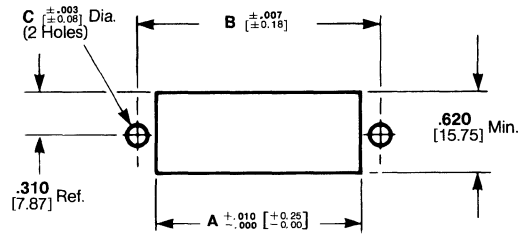


Standard Orientation **Reverse Orientation**

No. of Postions	Preassembled Screw Lock				
	Dimensions		Screw Size	Part Numbers	
	A	B		Standard	Reverse
24	**2.205** 56.01	**1.842** 46.79	6-32	*553811-1*[2]	*553811-2*[2]
50	**3.305** 83.95	**2.946** 74.83	4-40	*553813-3*[1]	*553813-4*[1]

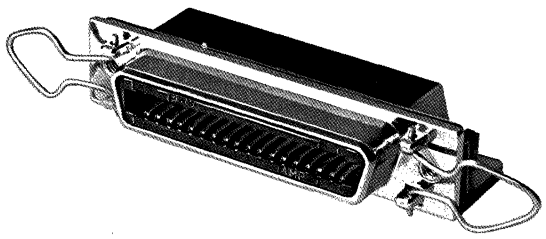
[1]SCSI applicable with use of bail lock hardware kit Part No. *554818-2*.
[2]Can be used with Interface Bus Application per IEEE-488.

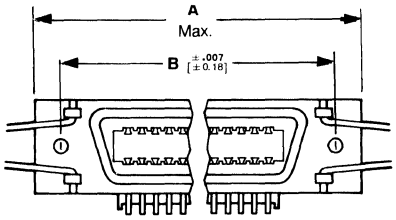
Recommended Panel Cutout (Rear Panel Mounting Only)



No. of Positions	Preassembled Screw Lock		
	Dimensions		
	A	B	C
24	**1.575** 40.01	**1.842** 46.79	**.152** 3.86
50	**2.700** 68.58	**2.946** 74.83	**.126** 3.20

Panel thickness range: .062 [1.57] max. Loose Piece and Preassembled Connectors, .062-.093 [1.57-2.36] for metric per IEEE-488 on loose piece connectors.
[1]Dimensions C = .192 ± .003 [4.88 ± 0.08] for metric hardware per IEEE-488 applications.



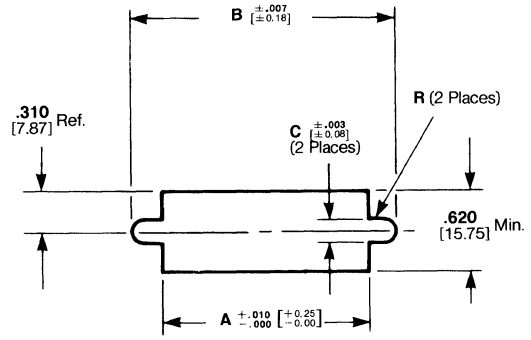


Standard Orientation

No. of Postions	Preassembled Shielded Bail Lock			
	Dimensions		Screw Size	Part Numbers
	A	B		Standard
36	**2.710** 68.83	**2.352** 59.74	4-40	*555233-1*
50	**3.305** 83.95	**2.946** 74.83	4-40	*554901-1*[1]

[1]SCSI applicable.

Recommended Panel Mount Cutout (Rear Panel Mounting Only)



No. of Positions	Preassembled Shielded Bail Lock		
	Dimensions		
	A	B	C
36	**2.316** 58.83	**2.478** 62.94	**.126** 3.20
50	**2.910** 73.91	**3.072** 78.03	**.126** 3.20

Panel Thickness Range: .062 [1.57] Max., Preassembled Connectors.

Shielded Right Angle Connectors (Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

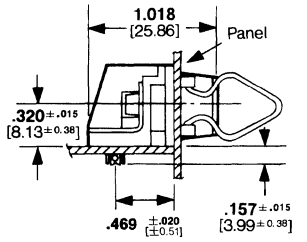
Board Lock Grounding

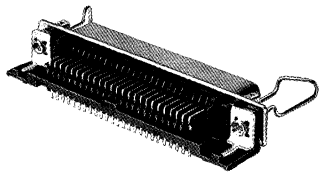
Material and Finish:
Housing, Bracket Adapter Comb and Terminal Support Plate—polyester, black
Bail-Clip—passivated stainless steel
Receptacle Shield—bright nickel over copper plated die casting
Terminals—selectively plated gold over nickel plated high strength copper alloy, tin plated tails
Ground Bracket—tin-lead plated carbon steel

Note: See page 7118 for Suggested Panel Cutout, Rear Panel Mounting Dimensions.

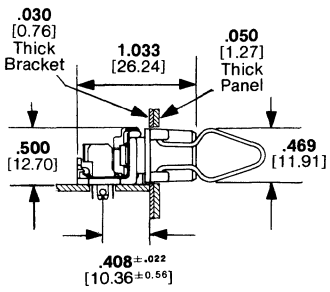
Rear Panel Mounting Detail (Shown for reference only)

Standard Profile Connector

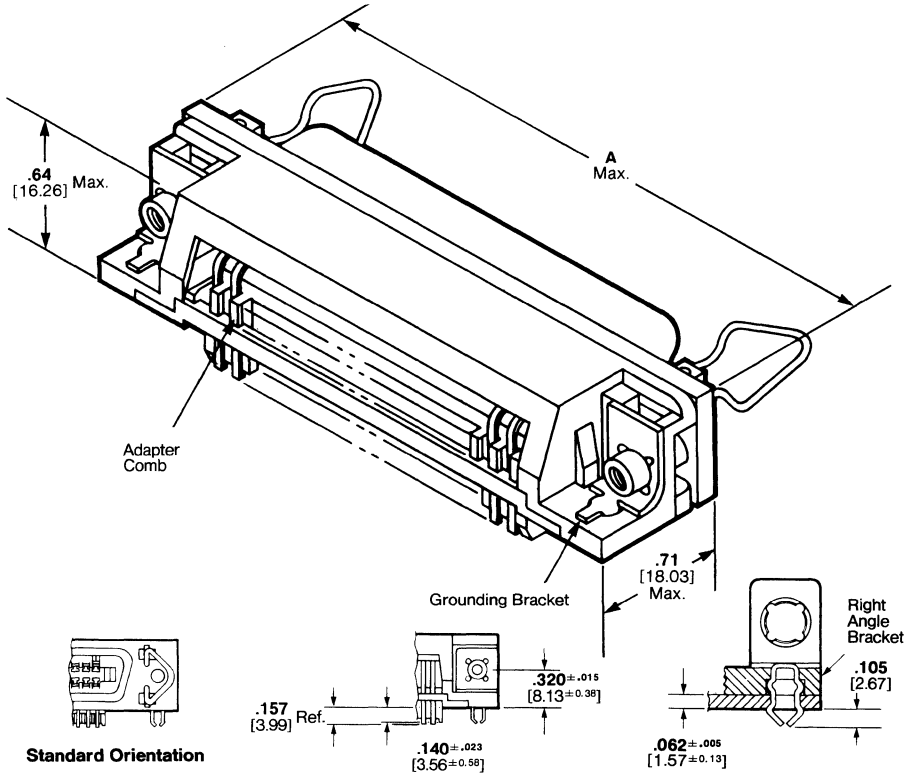




Low Profile Conector



(See chart footnotes)



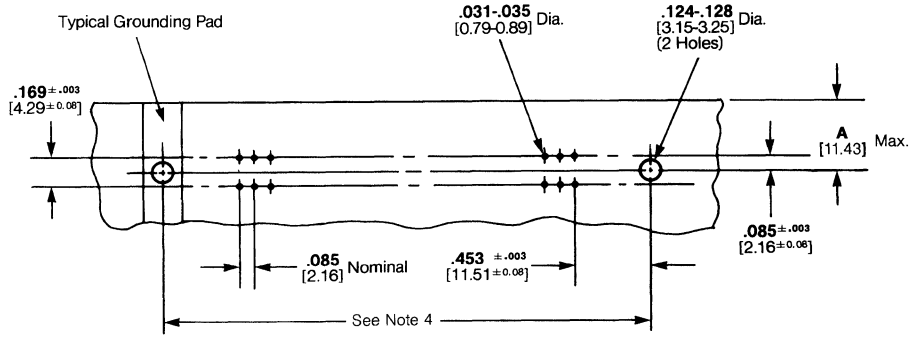
Standard Orientation

No. of Positions	Dimension A	Hardware Type	Screw Size	Part Numbers	
				Standard	Reverse
24	**2.205** 56.01	Screw Lock	6-32	*554923-2*[1]	*554923-1*[1]
36	**2.715** 68.96	Bail Lock	4-40	*555119-1*[1]	—
50	**3.320** 84.33	Bail Lock	4-40	*555057-1*[1,2]	—

Special Low Profile Connectors—Compatible with IBM PC AT and PC XT

No. of Positions	Dimension A	Hardware Type	Screw Size	Part Numbers	
				Standard	Reverse
50	**3.310** 84.07	Bail Lock	4-40	*555149-1*[2, 3]	*555149-3*[3]

Recommended Pc Board Mounting Dimensions



1. Maximum PC board thickness is .062 [1.57], A = .450
2. SCSI applicable
3. Maximum PC board thickness is .062 [1.57], A = .386
4. 1.842 ± .006 [46.79 ± 0.15] 24 Pos., 2.352 ± .006 [59.74 ± 0.15] 36 Pos. and 2.946 ± .006 [74.83 ± 0.15] 50 Pos.

Shielded Right Angle Connector Hardware Kits

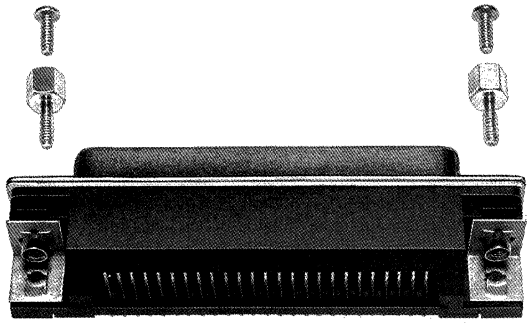
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

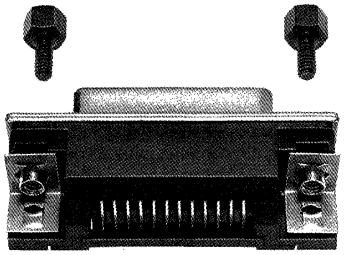
(Only fastening hardware supplied; other items shown for reference purposes.)

Material and Finish:

Bracket—Zinc plated carbon steel
Pan Head Screw—passivated stainless steel
Screw Lock—zinc plated with yellow chromate over steel
Metric Screw Lock—black oxide coated carbon steel

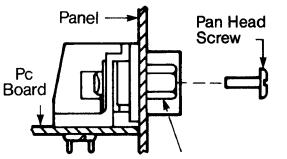


Screw Lock Hardware Kit
Part Number *554272-1*
(one kit required per assembly)



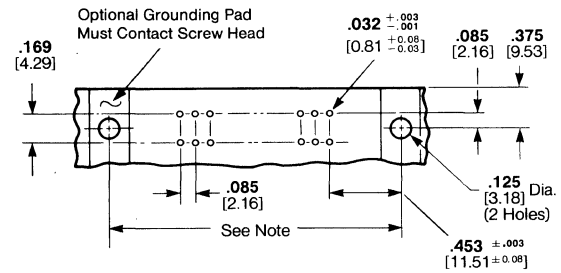
Metric Screw Lock Hardware Kit
for 24-Pos. IEEE-488 Application Only
Part Number *554808-1*
(one kit required per assembly)

Preassembled Shield Hardware Mounted View



[1]Contains two 4-40 X .65 [16.51] long standoff screws, plus two 4-40 X .312 [7.92] long pan head screws.
[2]Contains two metric standoff screws with M 3.5 X 0.6-6H (internal threads) and 6-32 UNC-2A (external threads), for IEEE-488 applications.

Recommended Pc Board Mounting Dimensions



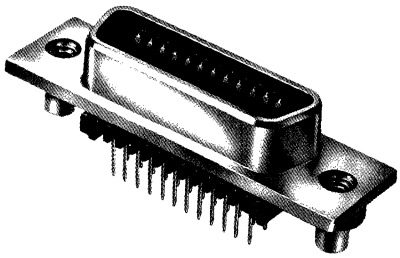
Note: 1.842 ± .006 [46.79 ± 0.15] 24 Pos., 2.352 ± .006 [59.74 ± 0.15] 36 Pos. and 2.946 ± .006 [74.83 ± 0.15] 50 Pos.

Shielded Vertical Mount Connectors

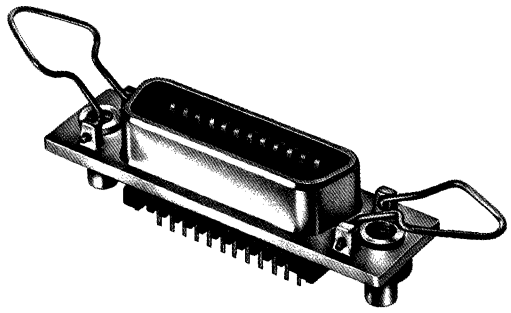
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

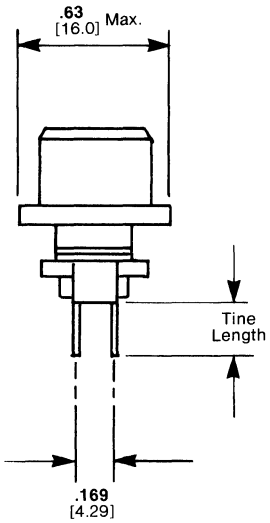
Material and Finish:
Housing—thermoplastic (black)
Terminals—selectively plated gold over nickel plated high strength copper alloy, tin plated tails
EMI Shield—nickel plated die casting



Screw Lock



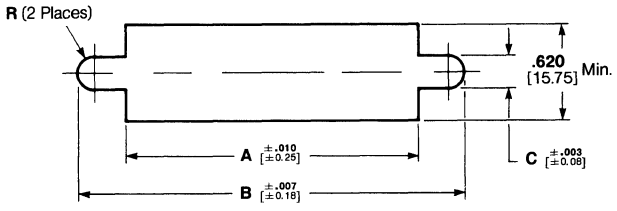
Bail Lock



No. of Positions	Tine Length	Screw Lock 6-32 Hole	Screw Lock 4-40 Hole	Bail Lock 4-40 Hole
24	**.115** 2.92	*554501-1*[3]	—	—
36	**.215** 5.46	—	—	*554145-4*
50	**.115** 2.92	—	—	*554216-3*[2]
	.215 5.46	—	*554217-4*[1]	—

[1]SCSI applicable with use of Bail Lock Hardware Kit Part No. *554818-2.*
[2]SCSI applicable.
[3]Can be used with Interface Bus Applications per IEEE-488.

Recommended Panel Cutout for Preassembled and Metric Application per IEEE-488 (Rear Panel Mount Only)



No. of Positions	Screw Lock A	Screw Lock B	Screw Lock C	Bail Lock A	Bail Lock B	Bail Lock C
24	**1.575** 40.01	**1.994**[1] 50.65	**.152**[1] 3.86	**1.806** 45.87	**1.968** 49.99	**.126** 3.20
36	**2.085** 52.96	**2.478** 62.94	**.126** 3.20	**2.316** 58.83	**2.478** 62.94	**.126** 3.20
50	**2.700** 68.58	**3.072** 78.03	**.126** 3.20	**2.910** 73.91	**3.072** 78.03	**.126** 3.20

[1]For IEEE-488 Metric Applications Dimension—B = 2.036 [51.71] (Screw Lock Only), C = .192 [4.88].

Shielded Vertical Mount Connector Hardware Kits

Specifications subject to change.
For latest design specifications...
1-800-522-6752

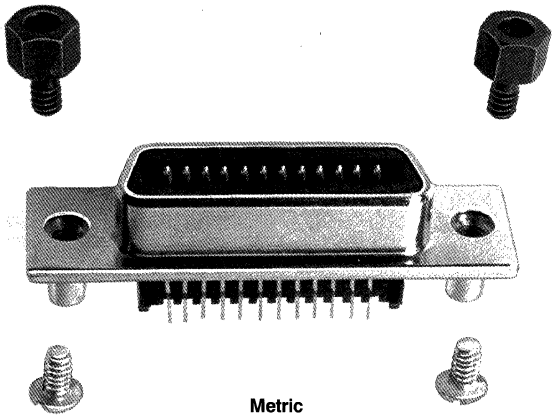
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Only fastening hardware supplied, other items shown for reference purposes

Material and Finish:
Pan Head Screw—zinc plated steel
Metric Standoff Screw—black oxide coated steel

Screw Lock

Part No. 554043-2

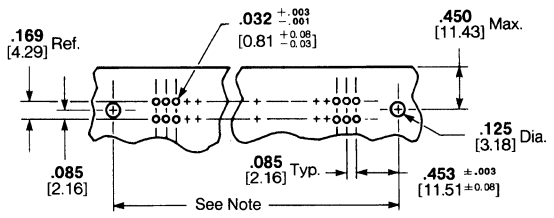


Metric
Part No. *554858-1*

Recommended Pc Board Mounting Hardware Screw Length for Pc Board Thickness:

Screw Length (Maximum)	Pc Board Thickness
.260 6.60	**.062** 1.57
.290 7.37	**.093** 2.36

Recommended Pc Board Mounting Dimensions



Pc Board Thickness Range: .062-.125 [1.57-3.18]

Note: 1.842 ± .006 [46.79 ± 0.15] 24 Pos., 2.352 ± .006 [59.74 ± 0.15] 36 Pos. and 2.946 ± .006 [74.83 ± 0.15] 50 Pos.

Connectors for Interface Bus Applications per IEEE Std 488

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Product Facts

- Preassembled and pretested CHAMP Interface Bus Cable assemblies ready to use
- Interface Bus Connector Kits and associated applicator tooling
- Interfaces with CHAMP Panel Mount IDC Receptacle Connectors
- Interfaces with CHAMP Edge Mount, Vertical Mount and Right Angle Printed Circuit Board Receptacle Connectors
- Metric hardware available to meet your specific assembly needs
- Insulation displacement technique eliminates costly wire preparation
- Terminates unstripped solid or stranded wire multi-conductor cables and certain types of laminated cable reliably.

The CHAMP Interface Bus Cable Assembly is designed for the instrumentation industry and conforms to the applicable standard IEEE-488. The assembly includes two preassembled "back-to-back" 24 Position CHAMP connectors in a plug-to-receptacle configuration.

AMP offers the advantage of either ordering these cable assemblies complete and pretested or in kit form for assembly by the customer.

In addition to cable assemblies, and kits, a comprehensive line of compatible 24 position receptacles and associated metric hardware is available for the instrumentation side.

CHAMP Cable-to-Panel IDC Connectors eliminate costly wire preparation by terminating unstripped solid or stranded wire, multiconductor cable and certain types of laminated cable. Positive electrical interconnection is assured as a result of redundant contact points. A wide variety of application tooling is available to suit production needs. Cable-to-Printed Circuit Board connectors are available in three styles. Each can be mounted directly to the board, thereby eliminating the need for additional hand wiring. Metric hardware, readily identified by their black finish, is available for all versions to comply with IEEE-488.

For additional information, contact AMP Incorporated, Harrisburg, PA 17105.

Connectors for Interface Bus Applications per IEEE Std 488 (Continued)

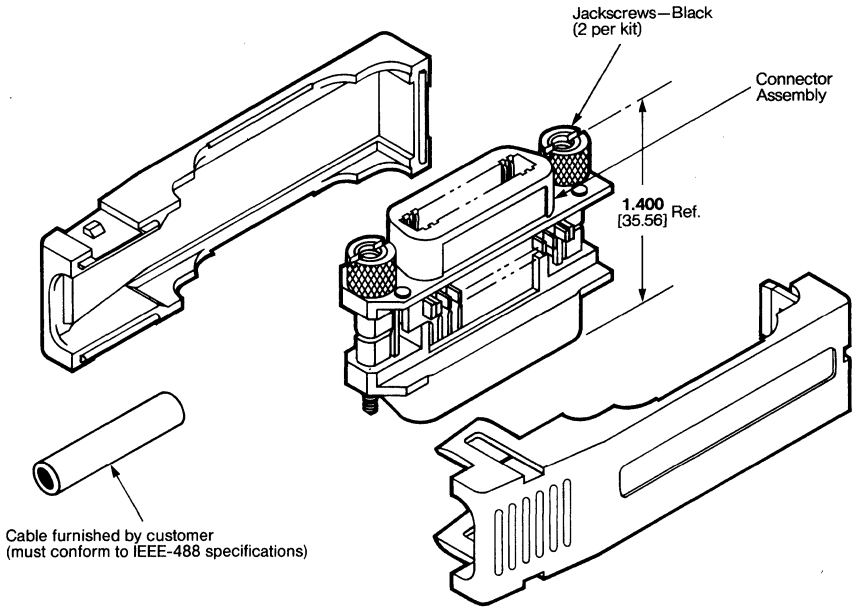
Dimensioning:
Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

CHAMP 24 Position Interface Bus Connector Part No. *554815-1*

Snap-on Covers – Part No. *554831-1*

Material:

Housing and Covers—black, thermoplastic
Jackscrews—black oxide plated carbon steel
Terminals—high strength copper alloy with gold over nickel plating in contact area

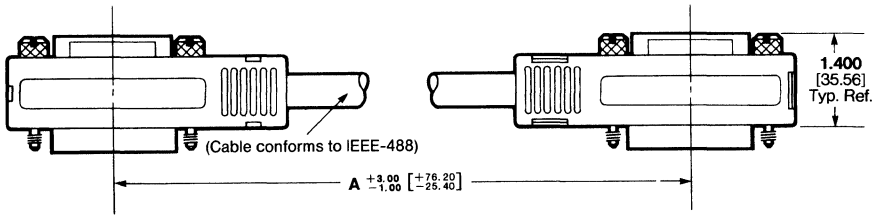


CHAMP 24 Position Interface Bus Cable Assemblies

Material:

Housings and Covers—black thermoplastic
Contacts—selectively plated gold over nickel plated on high strength copper alloy
Hardware—black oxide coated

Note: Cable assemblies are available in special lengths. For further information contact AMP Incorporated, Harrisburg, PA 17105.



Dimension A		Part Number
Ft.	m	
3	.914	*552700-1*

7 Miscellaneous Connectors

Shielded Cable Assemblies per IEEE Std 488

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Product Facts

- Conforms to IEEE-488 specifications
- Optimum shielding effectiveness
- Extremely reliable strain relief design
- Dual braid/dual foil cable
- Fully intermateable and compatible with all other IEEE-488 interfaces
- Cable assemblies available in double-ended version in a variety of popular lengths
- Connector kits and applicator tooling also available for assembly fabrication
- Consists of two rack and panel type connectors designed to comply with IEEE-488 specifications
- Design includes a two-piece, die-cast metal RF shield enclosing the 24-position back-to-back CHAMP connectors
- Includes integral ground bus, where required and a shield termination and strain relief

AMP Shielded CHAMP IEEE-488 Cable Assemblies consist of two rack and panel type connectors that are designed to comply with IEEE-488 specifications. The design includes a two-piece, die-cast metal RF shield enclosing the precommoned 24-position back-to-back CHAMP connectors, an integral ground bus, where required, a shield termination and strain relief plus twenty-four (24) 26 AWG [0.12-0.15 mm²] stranded conductors and two (2) 24 AWG [0.2 mm²] stranded shield drain wires. Preassembled and pretested double-ended cable assemblies are available ready to use.

For high volume users or cable assembly fabricators, connector kits with everything necessary (except the cable) to produce Shielded IEEE-488 cables assemblies are available. The basic AMP-O-LECTRIC Model "K" Terminating Machine and appropriate die set applies the ferrule to the prepped cable prior to connector termination. Upon termination, a special CHAMPOMATOR applicator module and control module is employed to terminate the cable to the preassembled, precommoned back-to-back connector inserts. This type of equipment is conducive to high volume applications. See pages 7136-7139 for applicator tooling.

Shielded Cable Assemblies and Back-to-Back Connector Kits per IEEE Std 488

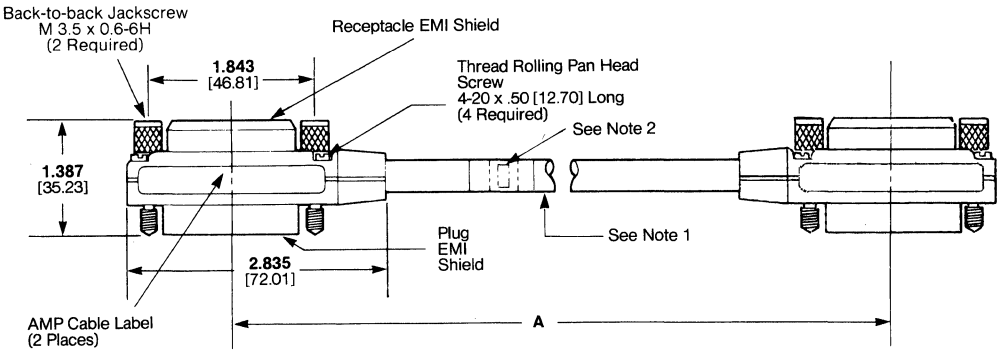
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

24 Position Shielded CHAMP IEEE-488 Cable Assemblies

Material:

Housing—thermoplastic, black
Terminals—selectively plated gold over nickel plated high strength copper alloy
Metric Jackscrew—black oxide plated, carbon steel
EMI Shield—nickel plated non-ferrous die casting



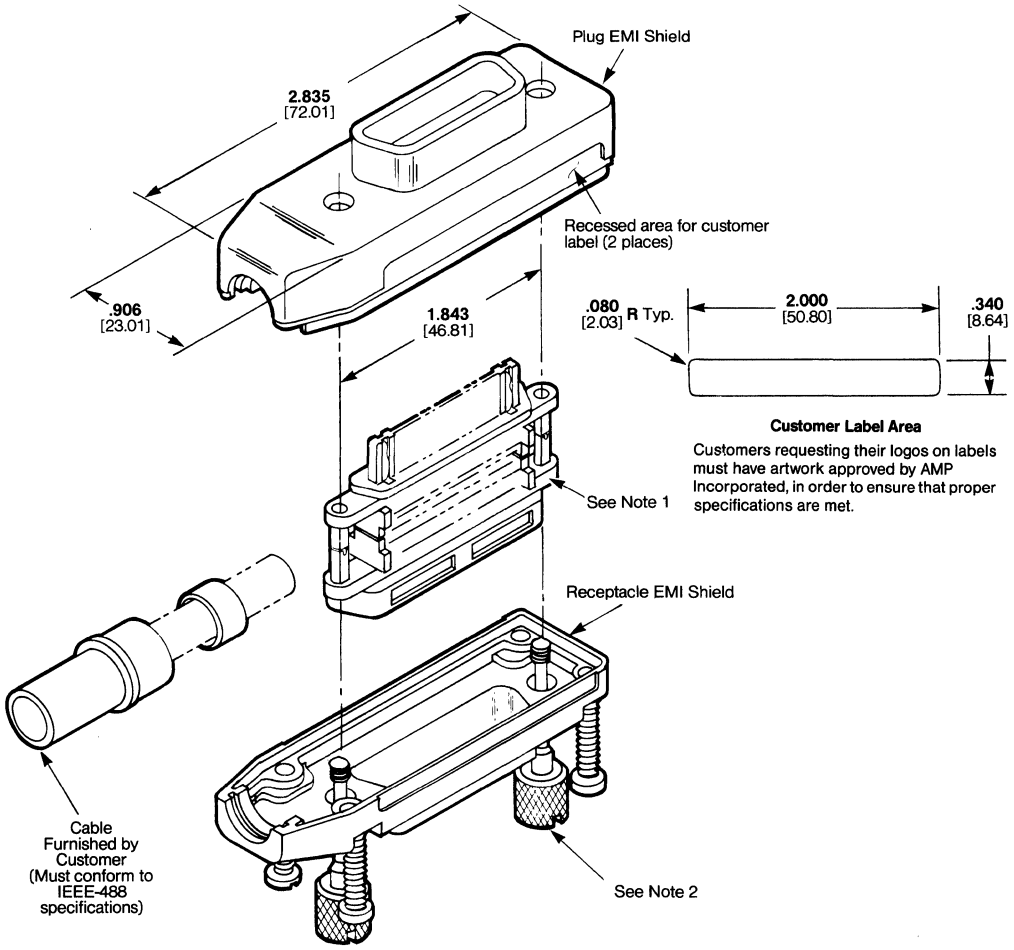
Dimension A		Part Numbers
In.	m	
19.68	0.5	*553577-1*
39.37	1	*553577-2*
78.74	2	*553577-3*
118.11	3	*553577-4*
157.48	4	*553577-5*
236.22	6	*553577-6*
314.96	8	*553577-7*

Notes:
1. Cable (24) conductors 26 AWG [0.12-0.15 mm²] (2) 24 AWG [0.20 mm²] drain wires with double foil and braided shields.
2. Manufacturers data code.
3. Cable assemblies are available in special lengths. For further information contact AMP Incorporated, Harrisburg, PA 17105.

Shielded CHAMP 24 Position Back-to-Back Connector Kit Part No. 553576-1

Material:

Housing—black thermoplastic
Terminals—selectively plated gold over nickel plated high strength copper alloy
EMI Shield—nickel plated non-ferrous die casting
Ferrule—passivated stainless steel
Jackscrew—black oxide coated carbon steel
Crimp Ring—clear chromate coated aluminum alloy
Forming Screw—chrome plated alloy steel



Customer Label Area

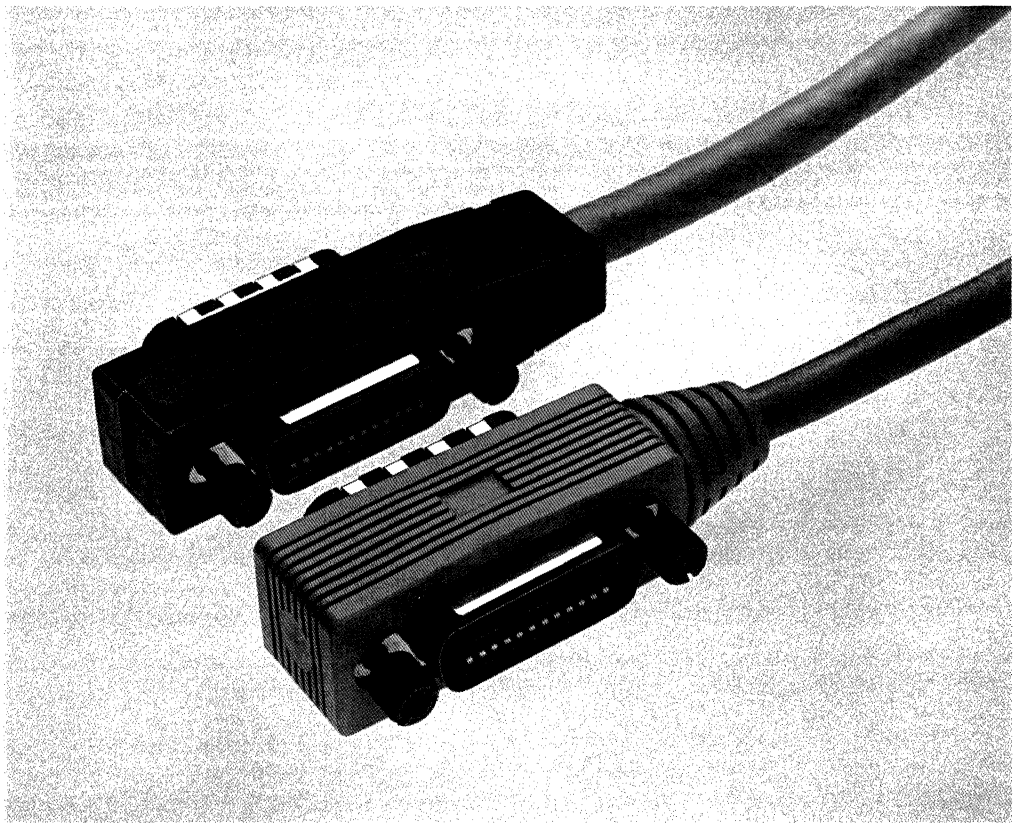
Customers requesting their logos on labels must have artwork approved by AMP Incorporated, in order to ensure that proper specifications are met.

Notes:
1. Like numbered contacts on both connectors are electrically common (1-1, 2-2, etc.).
2. Jackscrew shall be assembled from receptacle side of shield, as shown.
3. Jackscrews and EMI Shield to be assembled after cable is terminated to back-to-back assembly.

Shielded Back-to-Back Cable Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



Product Facts

- Conforms to IEEE-488 specifications
- Superior shielding effectiveness
- Fully intermateable and compatible with all other IEEE-488 interfaces
- Conducive to post molding techniques
- Available in Back-to-Back configuration
- Design includes a two-piece, precision stamped metal shell that encloses the 24 position back-to-back connector
- Connector design allows shields to accept a cable range of .300 to .450 [7.62 to 11.43] diameter
- Acceptable wire sizes of 26, 27 and 28 AWG [0.12, 0.10 and 0.09 mm^2] 7 strand

The Shielded CHAMP Back-to-Back Cable Connector Kit is currently available in a true 24 position IEEE-488 configuration.

The IEEE-488 Kit consists of a 24 position back-to-back connector assembly, a plug shield, a receptacle shield and two jackscrews. By ordering different dash numbers of the ferrule, you may obtain the appropriate diameter inner ferrule to accommodate the particular size cable to be terminated.

A two-piece, snap-on strain relief cover kit is also available for those who do not wish to post mold the terminated assembly.

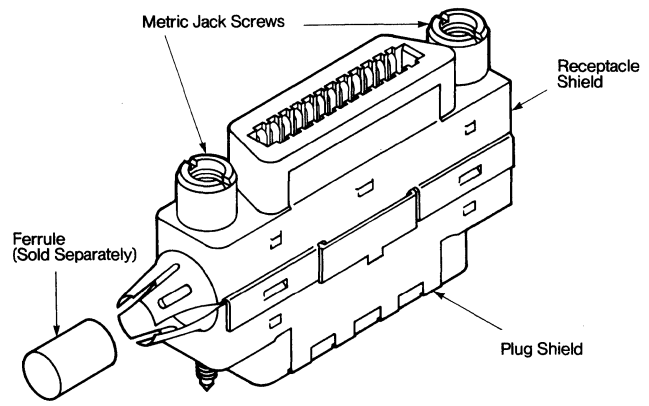
Wire termination of the back-to-back (plug-to-receptacle) connector assembly is facilitated by the unique, one-piece insulation displacement contact design. Applicator tooling is specifically designed to mass terminate unstripped wires into their respective slotted beams. Each wire is cut to length simultaneously as termination occurs, and 24 wires are terminated at the same time. See pages 7133 thru 7136 for applicator tooling.

The two precision-stamped shields are then assembled over the terminated connector assembly. The spring fingers of these shield halves captivate and reliably maintain contact with the braid of the cable, previously positioned over the inner ferrule prior to connector assembly termination.

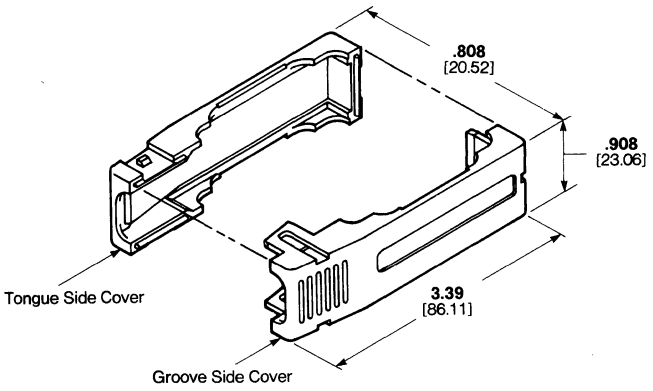
The spring fingers allow the shields to accept a cable range of .300 to .450 [7.62 to 11.43] in diameter, and due to their stored energy design, assure continuity of shield to braid regardless of temperature, shock, vibration and other external influence. Installation of the black, plated metric jackscrews in accordance with IEEE-488 specifications finalize the assembly.

Shielded Back-to-Back Cable Connectors
(Continued)

24-Position Back-to-Back Kit



24-Position Back-to-Back Cover Kit



Cable Connectors

Connector Styles	Cable Diameter Range	Post Moldable	Part Number	Snap-on Cover Part Number
Back-to-Back	**.300-.375** 7.62-9.53	Yes	*555182-1*	*554831-1*

Inner Ferrules

Ferrule I.D.	Part Number
.300 7.62	*554725-2*
.350 8.89	*554725-3*
.400 10.16	*554725-4*

Interface Bus IDC Connector Panel Mount Applications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

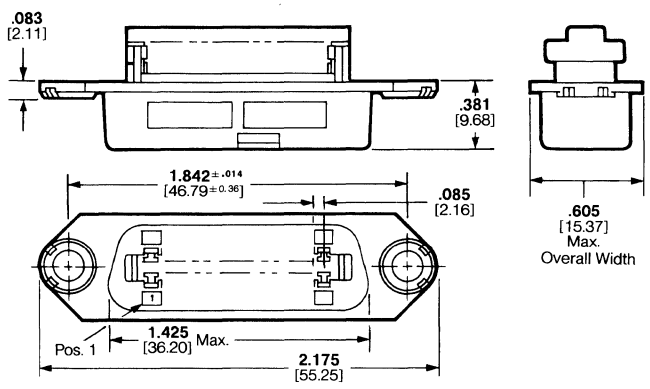
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Panel Mount Receptacle (24 Position)

Material:

Housing—black thermoplastic
Contacts—selectively plated gold over nickel plated on high strength copper alloy

Note: For tooling, see pages 7133 thru 7139.

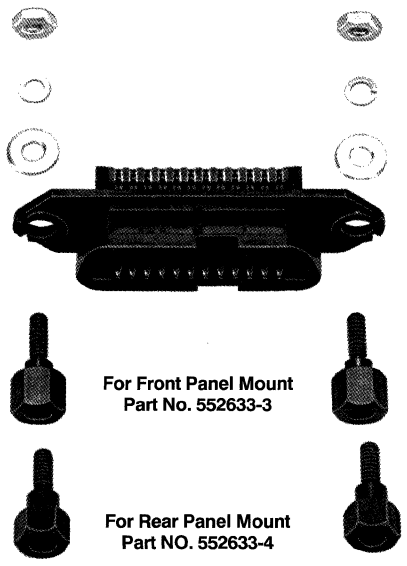


Wire Size				Housing Color Dot Designation	Contact Letter Designation	Part Number (thin flange)
Solid		7-Strand				
AWG	mm	AWG	mm²			
22	0.64	22	0.40	Green	C	*2-552322-1*
24-26	0.51-0.40	24	0.20	Blue	B	*2-552273-1*
—	—	26-27-28	0.14-0.10-0.09	Yellow	E	*2-552474-1*

Panel Mount Metric Screw Lock Hardware Kits (one kit required per each assembly)

Material:

Nut and Lock Washer—zinc plated carbon steel
Metric Mounting Screw—black oxide plated carbon steel

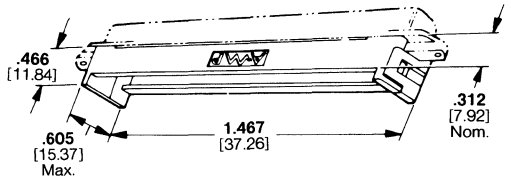


For Front Panel Mount
Part No. 552633-3

For Rear Panel Mount
Part NO. 552633-4

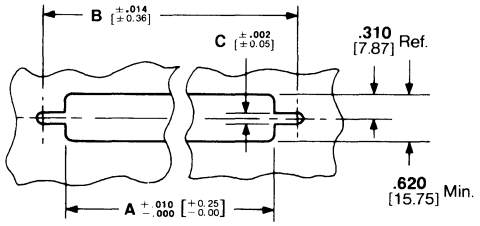
Snap-On Strain Relief, 24 Position (2 parts required per each assembly)

Material: Black thermoplastic



Low Profile
Part No. *1-552298-1*

Panel Cutout Dimensions



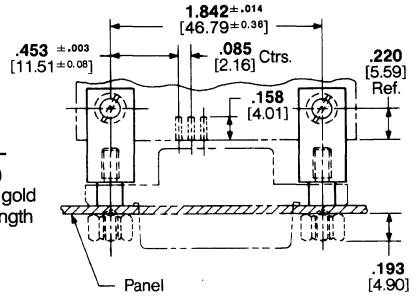
Description	Dimensions		
	A	B	C
Front Panel Mount	**1.488** 37.80	**2.036** 51.71	**.126** 3.20
Rear Panel Mount	**1.575** 40.01	**2.036** 51.71	**.192** 4.88

Note: Panel Thickness Range .062-.125 [1.57-3.18] for front panel mount applications.
Panel Thickness Range .062-.093 [1.57-2.36] for rear panel mount applications.

Interface Bus Pc Board Connector Applications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

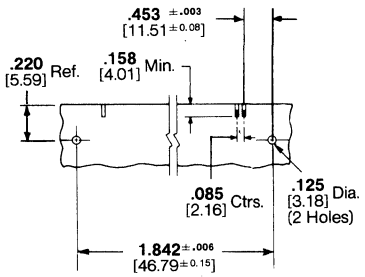
Edge Mount Receptacle (24 Position)
Part No. *552230-1*



Style RE

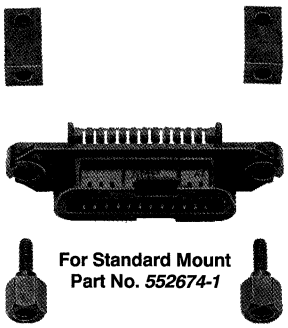
Material:
Housing, Bracket and Plate—polyester thermoplastic (black)
Terminals—selectively plated gold over nickel plated on high strength copper alloy, tin plated tails

Recommended Printed Circuit Board Mounting Dimensions (24 Position Only)



Printed Circuit Board Material—glass-filled polyester 94V-0 rated
Pc board thickness—.062 [1.57] maximum

Edge Mount Screw Lock Hardware Kits (one kit required per assembly)

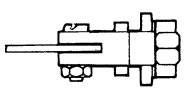


Metric Standoff Stud
Part No. *552634-3*

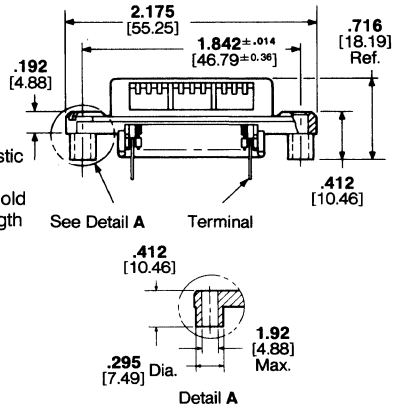
Metric Standoff Stud for Rear Panel Mount
Part No. *552634-4*

Note: 4.40 x ⅜ [9.53] screws and nuts for mounting brackets are customer supplied items.

Standard Mount



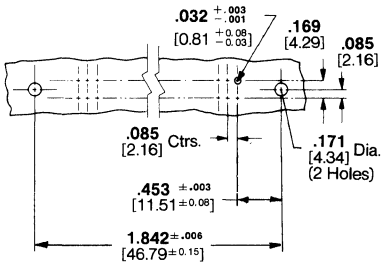
Vertical Mount Receptacle (24 Position)
Part No. *552224-1*



Style RV

Material:
Housing—polyester thermoplastic (black)
Terminals—selectively plated gold over nickel plated on high strength copper alloy, tin plated tails

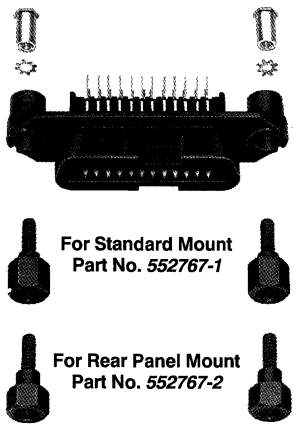
Recommended Printed Circuit Board Mounting Dimensions (24 Position only)



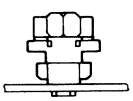
Note: Pc board thickness .125 [3.18] maximum

Vertical Mount Screw Lock Hardware Kits (one kit required per assembly)

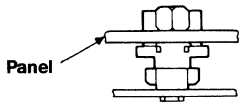
Order all hardware separately



Standard Mount



Rear Panel Mount[1]



[1]Panel Thickness Range: .062-.093 [1.57-2.36] for rear panel mount metric applications.

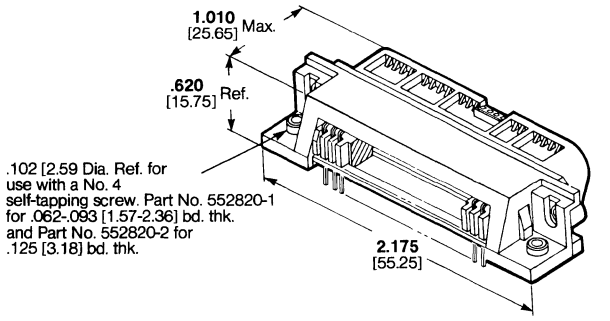
Interface Bus Pc Board Connector Applications
(Continued)

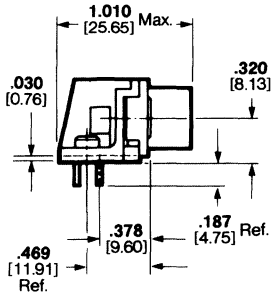
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

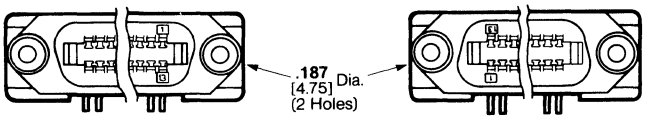
Right Angle Mount Receptacles (24 Position)

Material:

Housing, Bracket and Plate—polyester, thermoplastic (black)
Terminals—selectively plated gold over nickel plated high strength copper alloy, tin plated tails



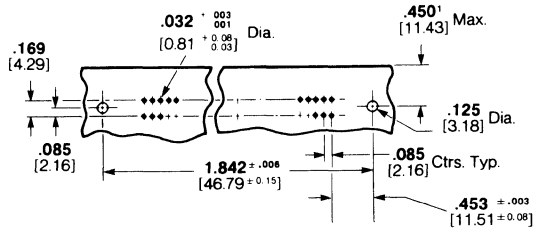




Part No. *552791-1*
(Standard Orientation)

Part No. *552791-2*
(Reversed Orientation)

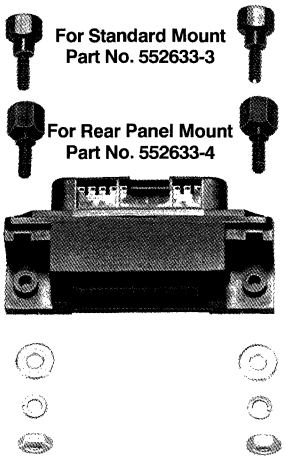
Recommended Pc Board Mounting Dimensions (24 Position only)



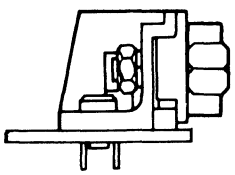
[1]For rear panel mounting applications.

Right Angle Mount Hardware Kit

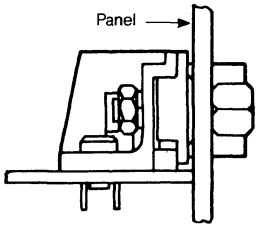
Only fastening hardware supplied, other items shown for reference purposes



Standard Mount



Rear Panel Mount[1]



[1]Panel Thickness Range: .062-.093 [1.57-2.36] for rear panel mount metric applications.

Shielded CHAMP Connectors

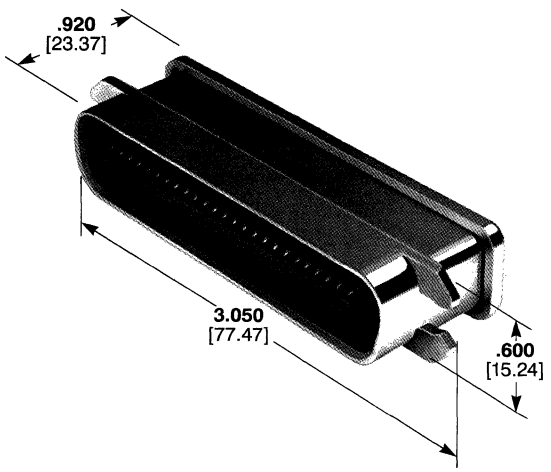
Connectors to be used with 24 Position Interface Bus Applications per IEEE-488

Type of Connector	For Part Numbers and Specifications, See Pages:
Discrete Wire	7095
CHAMP Latch	7101
Right Angle	7116-7120
Vertical Mount	7122

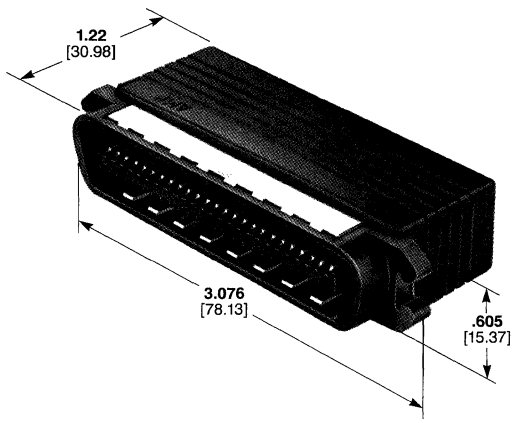
CHAMP SCSI Terminator Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

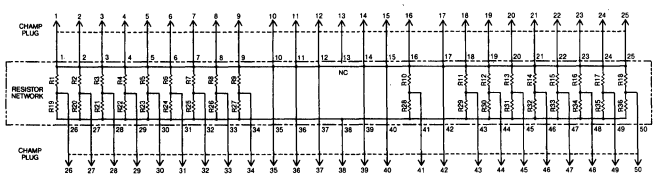
Die-Cast Connector



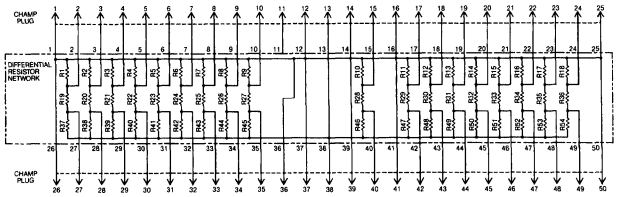
Post Molded Connector



Single-Ended Schematic



Differential Schematic



CHAMP SCSI Terminator connectors provide a deadend impedance-matching termination of the Small Computer System Interface (SCSI). The connectors conform to all applicable requirements of ANSI X3.131-1986. Versions are available for either single-ended or differential transmission modes.

These 50-position plug connectors use an integral screened thick-film resistor network on an alumina substrate. The network is laser trimmed to provide a tight tolerance of ±5% on resistance values. The result is excellent stability over the entire SCSI operating range.

The rugged die-cast zinc body or post molded assembly combines durability, shielding effectiveness and handy gripping surfaces for easy use. The nickel plating provides an attractive tarnish-resistant finish. The connectors use a tough, thermoplastic insert and gold over nickel plated phosphor bronze contacts.

The connector's slots are compatible with SCSI-specified bail lock hardware.

Product Facts

- Dead-end configuration for terminating an open port
- Compatible with SCSI Specification ANSI X3.131-1986
- Single-ended and differential versions
- Laser-trimmed screened resistor network for close resistance tolerances of ±5%
- Soldered connection points for reliability
- Bail lock plug connector for SCSI mating compatibility

Configuration	Part No.
Die Cast Single-Ended	*868875-1*
Die Cast Differential	*868875-2*
Post Molded Single-Ended	*556578-1*
Post Molded Differential	*555867-1*

Die-Cast Connector Material:

Shell and Cap—Zinc alloy, nickel plated
Insulator—Thermoplastic, flame retardant

Post Molded Connector Material:

Housing—Polyphenylene, black
Shield—Bright nickel plated carbon steel
Post Molding Compound—PVC, Black

Contacts—Phosphor bronze, plated .000030 [0.000762] gold in mating area and underplated .000050 [0.00127] nickel
Resistors—Thick-film resistor composition on alumina substrate

Specifications:

Mating Force: 35 lb. [15.9 kg] max.
Unmating Force: 5 lb. [2.3 kg] min.
Resistance Tolerance: ±5%

Portable Hand Operated Tool (MI-1)

Lacing Fixture

The standard portable hand-operated tool (MI-1) is designed for field applications and medium volume production and is capable of terminating all connectors up to 50 positions with 90° wire dress. Order:

Standard Tool	**Part No. 229378-1**

90° or 180° wire dress can be obtained with the MI-1 tool by using the removable lacing combs and placing them in the lacing fixture (shown above and ordered separately). Order:

Lacing Fixture	**Part No. 230328-1**

For greater productivity, additional operators can use additional comb sets and lacing fixtures with a single tool.

Comb Kit* (6 per kit)	**Part No. 230327-1**

*Comb Kit No. 231619-1 for small conductor diameter insulation (less than .035 [0.89]. Two required per MI-1 Tool.
Note: Best results obtained with conductor diameter to .045 [1.14] Max. with PVC insulation.

For half-tap (daisy chain), 90° wire dress applications, order:

Half-Tap Tool	**Part No. 229378-3**

If required, the standard tool may be converted to multiple wire termination capability by use of separate multiple wire tools or a simple conversion kit. Order either:

Multiple Wire Tool (90° wire dress) or Multiple Wire Conversion Kit	**Part No. 2-229378-0** **Part No. 230596-1**

For termination of 50-position F Slot Cable Connectors order:

50-Position Tool	**Part No. 231925-1**

For termination of 64-position, 90° wire dress connectors, order:

64-Position Tool	**Part No. 231880-1**

For termination of IEEE-488 back-to-back cable connectors, Part Nos. 554815, 555182 and 555183 order:

Back-to-Back Connector Tool	**Part No. 2-229378-3**

Palm Grip Hand Tool Kit Part No. 229764-2

The Palm Grip Hand Tool Kit is recommended for field applications and low volume production. The kit includes the items listed in the chart below.

Item	Part Number
Palm Grip Tool	*229451-1*
Index Slides for:	
14 Positions	*229706-1*
24 Positions	*229707-1*
36 Positions	*229708-1*
50 Positions	*229621-1*
64 Positions	*229709-1*
Cable Clamp	*229622-1*
Ratchet Release	*229765-1*
Insertion/Extraction Tool	*230238-1*
Tool Carrying Case	*229710-1*

T-Handle Wire Insertion Tool Part No. 229384-1

The T-Handle Wire Insertion Tool is designed for minor repair work on all CHAMP connectors. It does not have the capability of shearing the wire in the termination process.

Terminal Insertion/ Extraction Tool Part No. 230238-1

The Insertion/Extraction tool is designed to replace damaged contacts in the CHAMP plug and receptacle connectors.

CHAMP Miniature Applicator System

The CHAMP Arbor Tool System is capable of terminating approved laminated cables on .085 [2.16] centers without cable preparation and discrete wires in 14, 24, 36, 50 and 64 position CHAMP insulation displacement connectors.

The system consists of a manual or pneumatic Arbor Tool and applicator.

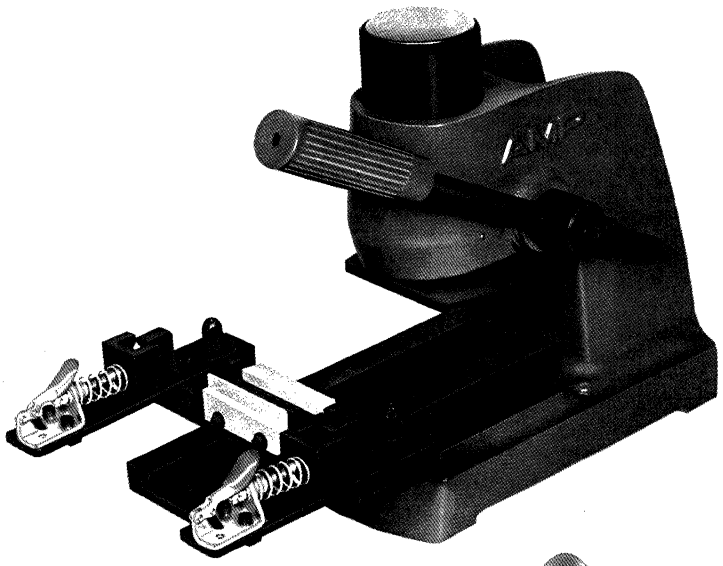
Applicators are compatible with Arbor Tooling currently applying other AMP products.

The Arbor Tool offers speed gained by true mass termination and a production oriented system offering maximum flexibility and efficiency. Connector and cable size conversions can be accomplished with a minimum of downtime.

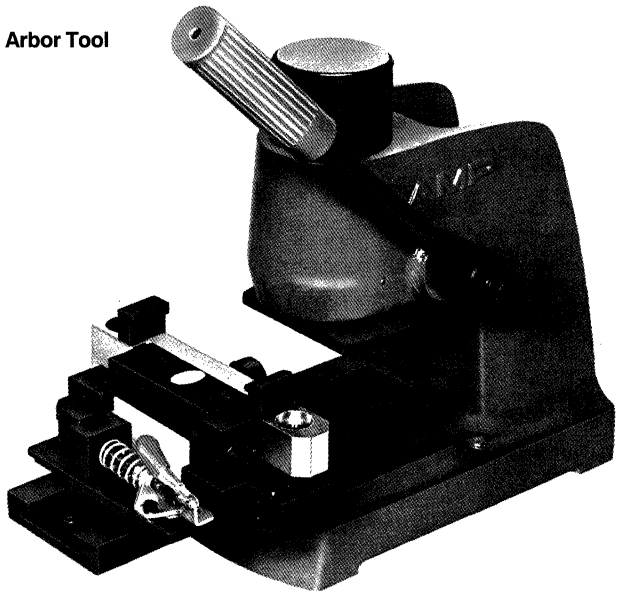
Features

- Terminates discrete wire and laminated cable using the insulation displacement termination technique
- Accepts 14, 24, 36, 50 or 64 Position CHAMP Connectors
- Contains tooling assembly and conversion kits for each position
- Designed to terminate laminated cable with 28-24 AWG [0.08-0.2 mm²] (stranded) or 28-24 AWG [0.32-0.51 mm] (solid) conductors on .085 [2.16] centerline spacing
- Produces reliable electrical path between conductor and contact
- Able to terminate most conductors up to .045 [1.14] insulation diameter

Arbor Tooling



90° CHAMP Arbor Tool



180° CHAMP Arbor Tool

Description	Position	Part Numbers	
		Laminated Cable on .085 [2.16] ℄	Discrete Wire Cable 90°/180° Dress
CHAMP Applicator	14 thru 64	*231592-2*[1]	*231593-2*[1]
CHAMP Applicator Assembly with Pneumatic Arbor Tool	14 thru 64	—	*231626-1*
CHAMP Applicator with Arbor Tool for large wire (.058 [1.47] Max.)	24 thru 64	—	*820805-1*[2]

[1]Use with Arbor Tool Part No. *91085-2*.
[2]Refer to Instruction Sheet 3133.

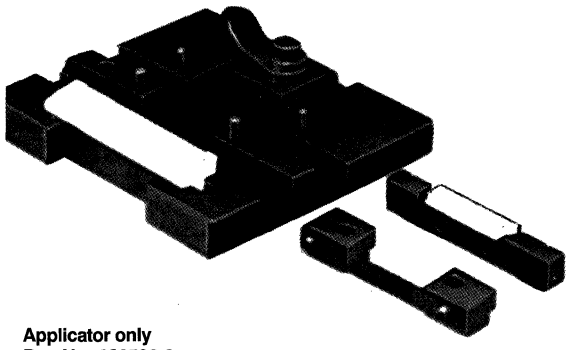
Wire/Cable Setup Change
To convert any miniature Applicator wire/cable setup to:
Discrete Wire/Cable, 90° Dress—Order Kit No. 230491-1.

Application Tooling
(Continued)

Tooling for 50 Position Back-to-Back Connectors Only

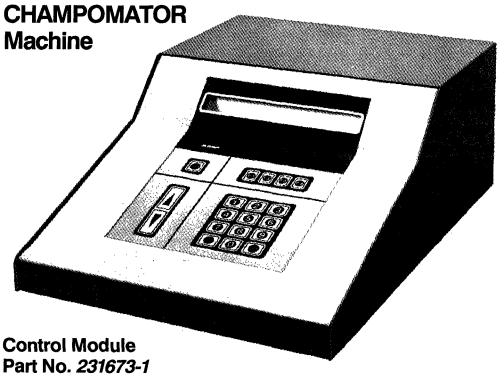
Tooling consists of the manual arbor tool and applicator which accepts the preassembled "back-to-back" connectors. The operator positions the connector and laces wires of the cable through the combs across the connector and by actuating the handle, terminates one side of the connector. This process is repeated on the other side of the connector. The terminated connector assembly is removed from the tool and the strain relief cover and jackscrews are installed to complete the connector assembly.

Arbor Tool and Applicator
Part No. 230506-1

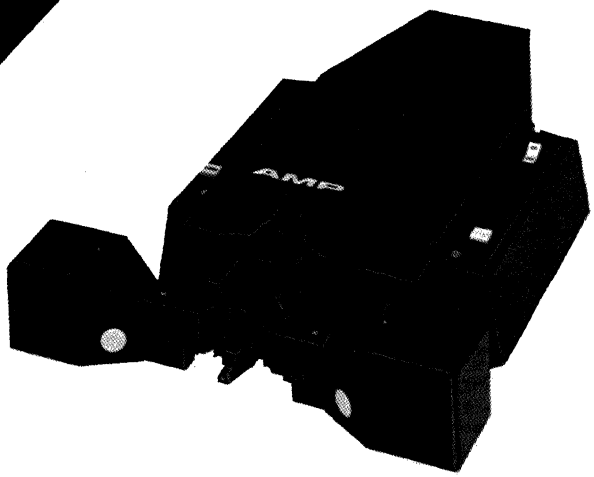


Applicator only
Part No. *230506-3*

CHAMPOMATOR Machine



Control Module
Part No. *231673-1*



Applicator Module
Part No. *230770*[1]
Part No. *231690-2*[2]
Part No. *231754-1*[3]
Part No. *231249-1*[4]

This machine is designed to shear and insert wires into 14, 24, 36, 50 and 64 position plug and receptacle CHAMP Insulation Displacement Connectors without using a conversion kit. It is modular and consists of two components: the Applicator Module and the Control Module. It is compact and designed for bench type operation. This compactness is enhanced by a low profile, flat work surface requiring only a small work station. The applicator module performs four basic operations: Cable/Connector Holding, Connector Positioning, Wire Insertion and Shearing Excess Wire. The frame is constructed of cast aluminum and houses a stepping motor, precision lead screw, inserters and electrical components.

Programming is done electrically. The Control Module allows one standard machine to be utilized for all the customer's particular production needs. Any size CHAMP plug or receptacle can be terminated, skipping any desired number of contacts, by programming accordingly.

The modular concept is used throughout the machine to reduce the number of parts and make components interchangeable, thereby increasing accuracy and minimizing maintenance.

Specifications
Weight and Dimensions:

Applicator Module—38 lbs. [17.2 kg] 14 x 24 x 5 [355 x 610 x 127]

Control Module—21 lbs. [9.5 kg] 17.25 x 6.0 x 11.25 [438 x 152 x 286]

Power Requirements—120 vac., 60 Hz

[1]Applicator module dash number is dependent upon the cable to be terminated. Customer must supply 15 ft. [4.57 m] of cable with order.

[2]For use with Shielded Discrete Wire Panel Mount Connector.

[3]For use with IEEE-488 Shielded Cable Assemblies and Back-to-Back Shielded Connector Kits.

[4]For use with CHAMP Crimp Cable Clamp Connectors/Kit.
Note: CHAMPOMATOR Machine also available for CHAMP crimp cable clamp connector version.
Consists of:
Applicator Module—Part No. *231249-1*
Control Module—Part No. *230591-1*

Features

- Terminates all sizes of CHAMP connectors without conversion kits
- Consists of Applicator Module and Control Module
- Lightweight, compact and designed for bench type operation
- Requires only a small work station
- Performs 4 basic operations:
  - Cable/Connector Holding
  - Connector Positioning
  - Wire Insertion
  - Shears Excess Wire
- Increases accuracy and minimizes maintenance
- Single power source—120 vac., 60 Hz
- Back-up capability
- Visual connector position readout on control module
- Programmable insertion sequence
- Capable of terminating most soft conductor insulations with a maximum insulation diameter of .043 [1.09]

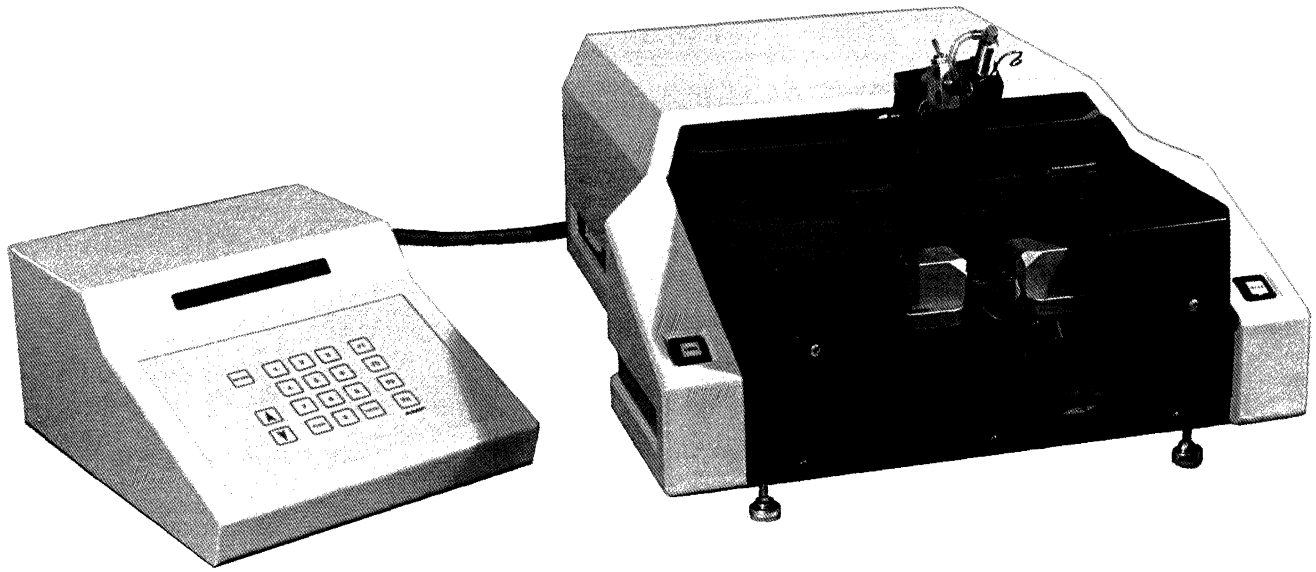
CHAMPOMATOR 2.5 Terminating Machine

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters unless specified otherwise.
Values in brackets are metric equivalents.

CHAMPOMATOR 2.5 Terminating Machine

Note: Consult AMP Incorporated for appropriate part numbers.
Controller 852423-1 required.
Accessories available separately.



The CHAMPOMATOR 2.5 terminating machine is the compact, high-productivity way to terminate a variety of AMP connectors using insulation-displacement contacts. The machine efficiently terminates wires manually sorted from multiconductor cables. The user-determined termination sequence may include full termination of all contacts or selective termination of some, such as for various RS-232 wiring patterns.

The machine is microprocessor controlled and programmed by a membrane switch keyboard. The easy programming simplifies the process and reduces training requirements. The machine's internal storage capability can retain up to 350 cable assemblies, which can be easily retrieved by number or name. Production data and diagnostics can also be accessed through the controller. Off-line programming is also possible with a host or personal computer.

The machine can accommodate a variety of connectors through a simple change in tooling. Changeover between connector families takes only 10 minutes and requires no special tools. Tooling is currently available for CHAMP, CHAMP .050, AMPLIMITE .050 Series, AMPLIMITE HDE and AMPMODU MT connectors. Consult AMP for other connector families.

Connectors can be terminated with straight or right-angle wire dress.

Accessories include a commercially available cable jacket stripper and wire detwister.

Product Facts

- Low applied costs
- Automatic termination of jacketed cable
- Single- or double-ended assemblies
- Microprocessor controlled
- Stored program capability
- Selective termination of connector positions
- Rapid tooling changeover for different connector types
- Handles a variety of AMP insulation-displacement connectors
- Terminates most jacketed cable
- Remote programming and data retrieval
- Straight or right-angle wire dress

Specifications

Length: 25 [63.5 cm]
Width: 23 [58.4 cm]
Height: 10 [25.4 cm]
Weight: 95 lb [43 kg] approx.
Electrical Requirements:
117 VAC, 50/60 Hz, single phase, 1 A
Air Requirements: 80 psi [5.52 bars*] at .75 scfm
*One bar = 100 kPa

Production Rates

Net production rates for fully loaded connectors depend on cable type, connector style and connector size. The machine cycle rate is one pair per second.

CHAMPOMATOR 3A Terminating Machine

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

CHAMPOMATOR 3A Terminating Machine

Note: Consult AMP Incorporated for appropriate part numbers.

The CHAMPOMATOR 3A terminating machine is the high-productivity way to terminate a variety of AMP connectors using insulation-displacement contacts. The machine automatically sorts wires from multiconductor jacketed cables and terminates them in a user-determined sequence. The sequence may include full termination of all contacts or selective termination of some, such as for various RS-232 wiring patterns.

All cable assemblies are tested for continuity and shorts.

The machine is microprocessor controlled and programmed by a touch input screen. The easy programming simplifies the process and reduces training requirements. The machine's internal storage capability can retain up to 50 cable assemblies, which can be easily retrieved by number or name. Production and diagnostics can also be accessed through the touch screen. Off-line programming is also possible with a host or personal computer.

The machine can accommodate a variety of connectors through a simple tooling change. Changeover between connector families takes only 10 minutes and requires no special tools. Tooling is currently available for AMP CHAMP, AMPLIMITE HDE, and AMPMODU MT connectors. Consult AMP for other connector families.

Connectors can be terminated with straight or right-angle wire dress.

Accessories include a commercially available cable jacket straightener, a wire detwister, and a decoupler for the cable reel core.

Product Facts

- Low applied costs
- Automatic termination of jacketed cable
- Automatic continuity check and shorts test
- Single- or double-ended assemblies
- Microprocessor controlled with touch input screen
- Stored program capability
- Selective termination of connector positions
- Rapid tooling changeover for different connector types
- Handles a variety of AMP insulation-displacement connectors
- Terminates both multicolor and single-color wires
- Remote programming capability
- Straight or right-angle wire dress

Specifications

Length: 58 [147.3 cm]
Width: 21 [53.3 cm]
Height: 53 [134.6 cm]
Weight: 300 lb [136 kg] approx.
Electrical Requirements:
117 VAC, 50/60 Hz, single phase, 1 A
Air Requirements: 80 psi [5.52 bars]* at 4 scfm
*One bar = 100 kPa

Production Rates

Net production rates for fully loaded connectors, including load and unload of connectors:

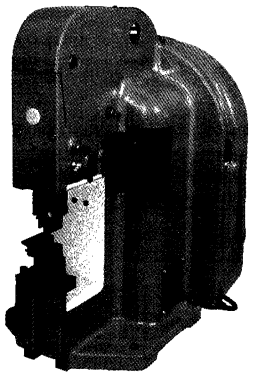
Number of Connector Positions	Connectors/ Hour
25	76
50	55
100	36

Each machine includes

- Free-standing base machine
- Wire sorting system
- Microprocessor controls with touch screen
- One set of tooling for one product family

Application Tooling
(Continued)

Basic AMP-O-LECTRIC Model "K" Terminating Machine Part No. 220152-1 Die Set Part No. 806948-1



The basic AMP-O-LECTRIC Model "K" machine is used for crimping of the cable crimp ring on Shielded CHAMP Back-to-Back IEEE-488 Connector Kit, Part Number 553576-1.

This device is used for bench-top operation as a power source for operating standard and quick-change applicators because it is easily adapted to either mechanical or air feed systems.

Specifications

Weight: Approximately 230 lbs. [104.3 kg]

Height: 24 [61 cm]

Width: 21 [53.3 cm]

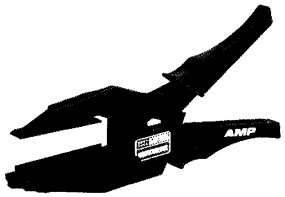
Depth: 20 [50.8 cm]

Air Supply: 80-120 psi [5.52-8.27 bars]* when necessary

Power Requirement: 115 vac, 60 Hz, 6.0 amp (¼ hp motor)

*One bar = 100 kPa

CHAMP Latch Hand Tool Part No. 231561-1

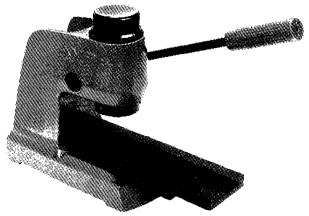


This tool is capable of terminating ribbon cable with 26 AWG [0.46 mm] (solid); 28 AWG [0.32 mm] (solid) and 28 AWG [0.08-0.09 mm^2] (stranded) or 30 AWG [0.25 mm] (solid) conductors to 24, 36 and 50 position low profile connectors.

If using other AMP-LATCH Ribbon Cable Connectors, use Hand Tool Kit Part No. 91271-1 and Locator Kit Part No. 543262-1. Tool Kit includes bench mount for increased productivity. This provides the most versatile and economical tooling.

CHAMP Latch Applicator (only) Part No. 231576-1

Shown installed in Arbor Tool Part No. 91085-2.



This tooling is capable of terminating the same solid or stranded conductors as the hand tool. The tooling is a two-piece kit that includes a locator and a cable stop insert.

The locator features a connector track to support the connector, a connector stop to position the connector and a cable guide to align the cable with the connector.

The reversible cable stop insert accommodates dead-end (flush) or daisy-chain (feed-thru) terminations with .200 [5.08] minimum spacing between connectors.

If using other AMP-LATCH Ribbon Cable Connectors use Arbor Tool Part No. 91085-2 with appropriate Applicator Part No.

Refer to AMP-LATCH Catalog No. 82012.

Various technical documents are available for your use:

Product Specifications describes technical performance characteristics and verification tests. Intended for the design engineer, the component engineer and the quality engineer.

108-6005 CHAMP Connectors
108-6019 CHAMP ACTION PIN Connectors
108-6040 CHAMP Interface Bus, EMI/RFI Shielded Cable Assembly
108-6076 CHAMP Latch Low-Profile Connectors
108-6078 CHAMP Printed Circuit Board Connectors

Application Specifications.
114 6027 CHAMP ACTION PIN Connectors
114 6030 CHAMP Latch Low Profile Connectors
114 6036 CHAMP Printed Circuit Board Connectors
108-6041 CHAMP Cable Connectors

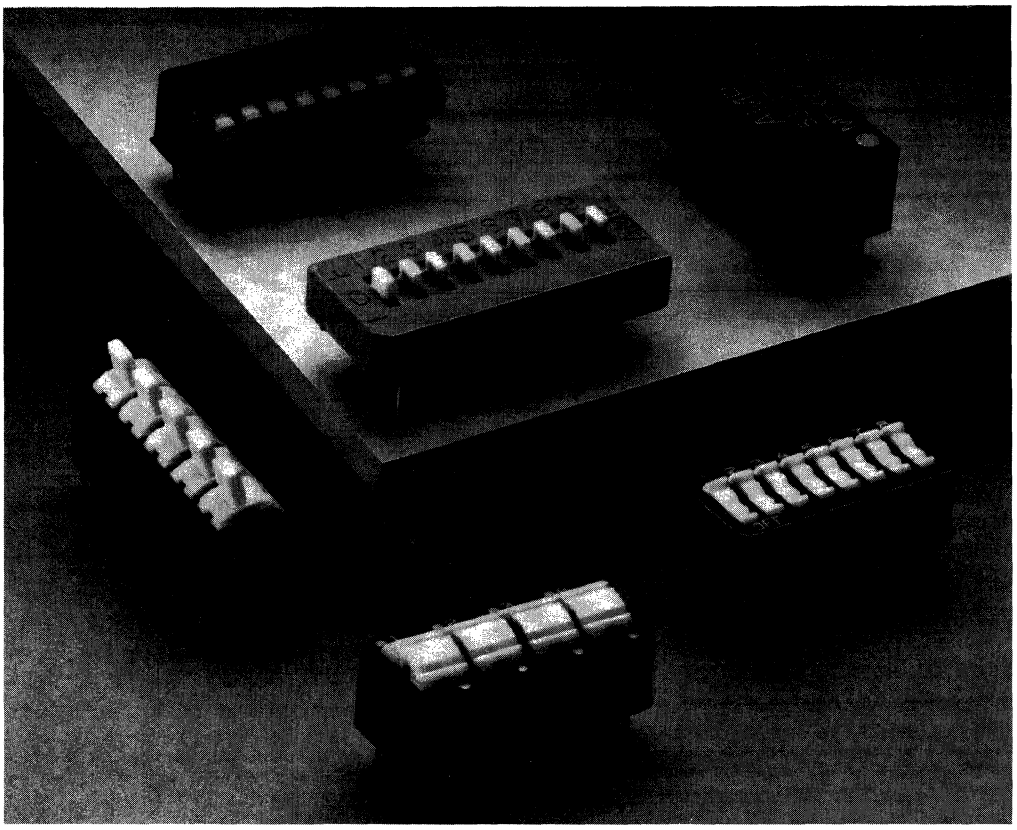
Instruction Sheets provide instructions for assembling or applying the product. Intended for the manufacturing assembler or operator.

IS 3116 CHAMP Shielded IEEE-488 Connector Kit Part No. 553576-1
IS 3117 CHAMP ACTION PIN Connectors
IS 3133 CHAMP Discrete Wire Tooling Assembly Part No. 231593-2 and 820805-1
IS 3134 CHAMP Latch Tooling Kit Part No. 231576-1
IS 3135 CHAMP Hand Tool Part No. 231561-1. For CHAMP Latch Low-Profile Connector
IS 3137 CHAMP Connector Applicator 231592-2 for Laminated Cable
IS 3158 CHAMP Latch Low Profile Connectors
IS 3159 Strain Relief Hardware for CHAMP Connectors
IS 3160 Mounting Hardware for CHAMP Connectors
IS 3170 CHAMP Shielded Connectors 90° IEEE-488 Kit
IS 3171 CHAMP Shielded Connectors Back-to-Back IEEE-488 Kit
IS 3182 CHAMP Self Retained ACTION PIN Connectors
IS 3188 CHAMP Shielded Connectors
IS 3201 CHAMP Edge Mount Printed Circuit Board Connectors
IS 6503 CHAMP Back-to-Back Tooling Assemblies
IS 7558 CHAMP T-Handle Wire Insertion Tool Part No. 229384-1
IS 7559 Application and Maintenance of CHAMP Multi-Insertion (MI-1) Hand Tool 14, 24, 36 and 50 Pos.
IS 7564 CHAMP Cable-to-Cable and Cable-to-Panel Connectors
IS 7642 CHAMP Palm Grip Insertion Tool
IS 7672 CHAMP Printed Circuit Board Connectors
IS 7787 CHAMP Insertion/Extraction Tool Part No. 230238-1
IS 9412 Application and Maintenance of CHAMP Multi-Insertion (MI-1) Hand Tool, 64 Position
IS 9465 CHAMP Palm Grip Insertion Kit

8

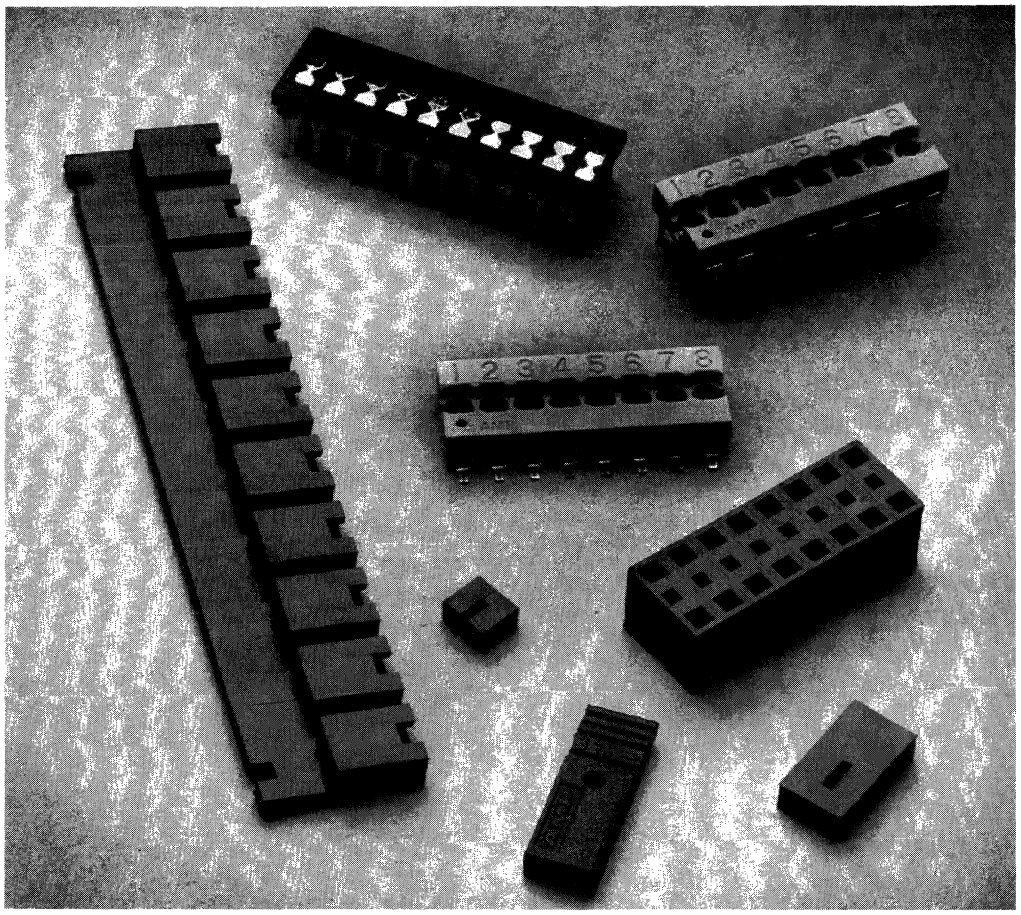
AMP Switches and Programming Systems

Specifications subject to change.
For latest design specifications...
1-800-522-6752



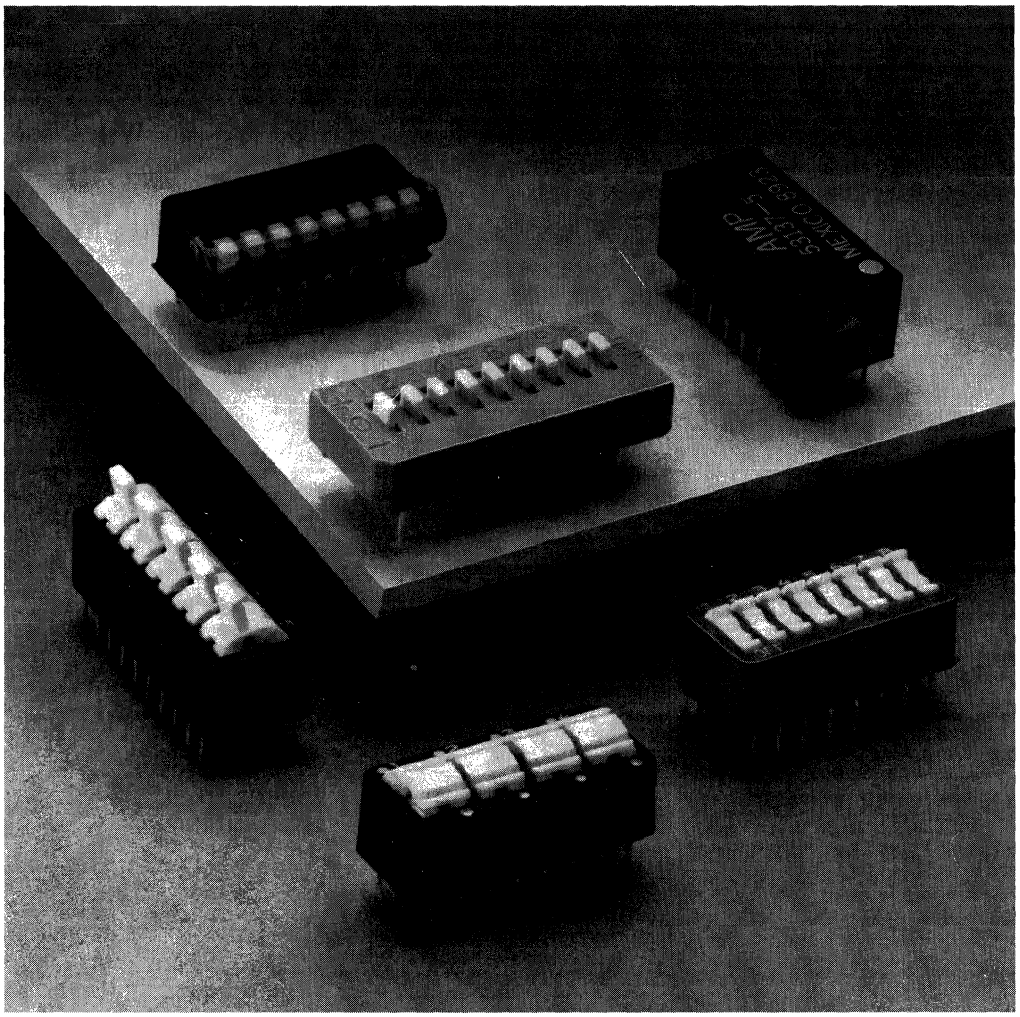
AMP printed circuit board switches cover a broad range of types including dual in-line package (DIP) switches, shunts (DIP and post) rotary switches, Mini-Matrix and pcb slide switches.

All switches mount directly to the pc board for performance and economy. Expensive interconnect wiring is eliminated, reducing the probability of line failure. Once inserted in the pc board, the switches can be easily flow, wave or dip soldered.



Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dual In-Line Package (DIP) Switches



Today's electronic packaging engineer automatically thinks .100 x .300 [2.54 x 7.62] centerline when designing printed circuit board layouts. This standardization led to the development of the dual in-line package (DIP) switch. DIP switches are usually suited for a multiplicity of programming functions in such diversified applications as computers, test equipment, communications epuipment, process controls, ground support and instrumentation.

AMP DIP switches can mount directly to the pc board. They are available in a fully sealed version to provide protection against flux contamination through automated solder processing. When mounted to the pc board, these unique devices present a very low profile, completely compatible with other packaging components. Since they mount directly to the board, no mounting hardware is required. However, DIP switches can also be mounted to the pc board through a variety of AMP DIP sockets (see AMP Catalog 82172). The fully enclosed design of AMP DIP switches protects the contact surfaces from contaminants.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

- **7000 Series Switches** are available in side rocker-actuated, single pole, single throw, multiple pole, single throw and multiple pole, double throw versions.
- **7100 Series Switches** are single pole, single throw, standard and low profile.
- **Preprogrammed PCB Switches** feature four Form "C" switches operated by encoded cams and packaged in a DIP configuration.
- **7800 Series Trinary Slide Switches** are double pole devices primarily designed for logic-level switching applications.

DIP Switches—7000 Series

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMP 7000 Series DIP switches are available in standard single pole, single throw, side actuated, single pole, single throw and multiple series versions. Contacts are made of high strength copper alloy with .000030 [0.00076] gold over .000050 [0.00127] nickel plating in contact area and legs plated to meet AMP Solderability Specifications 109-11-3.

The multiple series switches offer the unique feature of single pole switches coupled mechanically to provide switching of various poles simultaneously. This allows flexibility in programming.

Multipole switches are also available with or without lever-actuated rockers and in a variety of configurations in addition to those listed. The maximum number of poles that can be ganged is six.

Performance Characteristics

Electrical

Current and Voltage Rating:	Nonswitching: 1.5 amperes max. at 50 VDC Switching: 100 milliamperes max. at 5 VDC (resistive load)
Contact Resistance, Dry Circuit:	100 milliohms max. (end of life) and 50 milliohms (initial) at 50 mV open circuit, 10 milliamperes
Insulation Resistance:	1×10^{11} ohms min. at 100 VDC (initial)
Dielectric Withstanding Voltage:	500 VDC min. at standard atmospheric conditions
Capacitance:	5 picofarads max.

Physical and Environmental

Temperature Rating:	Nonoperating: −73.3°C to +105°C Operating: +17.8°C to +105°C
Vibration:	Discontinuities shall not exceed 10 microseconds when subjected to 10-2000-10 Hz traversing for 20 minutes at .060 [1.52] inches total excursion
Shock:	No physical damage or discontinuities greater than 10 microseconds when tested with .10 ampere current applied per AMP Spec. 109-26, Cond. A
Humidity:	Withstands an environment of +40°C and 95% RH for 96 hours
Durability:	No physical damage or contact resistance greater than 100 milliohms after 2000 cycles of actuation with a resistive load of 24 VDC and 25 milliamperes max. current applied
Terminal Strength (Bend Test):	Two 45° bend cycles per MIL-STD-202, Method 211, Cond. B

Materials

Housing: Glass-filled polyester, 94V-0 rated, black

Rocker: Thermoplastic, 94V-0 rated, white

Spring Contacts and Leads: Copper alloy with .000030 [0.00076] gold over .000050 [0.00127] nickel in contact area and .000150 [0.00381] tin-lead over .000050 [0.00127] nickel on solder legs, plated to meet AMP Solderability Specification 109-11-3

Technical Documents

Product Specification: 108-7519

Instruction Sheet: IS 7779

DIP Switches — 7000 Series
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

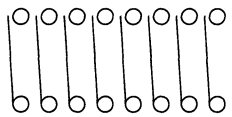
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Single Pole Single Throw Side Actuated Low Profile

Contact Lead Spacing — .100 x .300 [2.54 x 7.62]

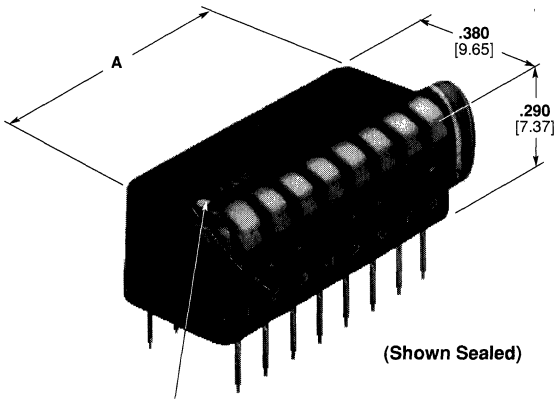
Lead Length — .140 [3.56] below mounting surface

Contact Arrangement



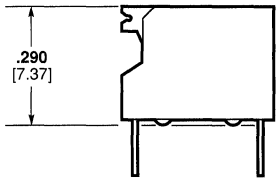
Pin 1

(Switches shown in open position)

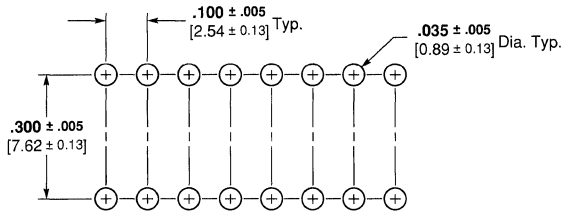


(Shown Sealed)

White Dot Identifies Pin 1



Shown With Lever Actuator



Recommended PC Board Hole Pattern

No. of Switches	Dim. A		SPST Side Actuated Part No.		
	inch	mm	Unsealed[1]	Sealed	UV Sealed
2	.280	7.11	1-435802-0	1-435802-3	—
3	.380	9.65	435802-2	1-435802-4	—
4	.480	12.19	435802-3	1-435802-5	1-382394-5
5	.580	14.73	435802-4	1-435802-6	—
6	.680	17.27	435802-5	1-435802-7	1-382394-7
7	.780	19.81	435802-6	1-435802-8	—
8	.880	22.35	435802-1	1-435802-9	382394-9
9	.980	24.89	435802-7	435802-9	—
10	1.080	27.43	435802-8	2-435802-0	2-382394-0
12	1.280	32.51	—	2-435802-2	2-382394-2

[1]All switches are bottom sealed.

DIP Switches — 7000 Series
(Continued)

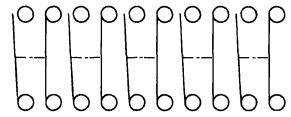
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Multiple Single Pole Double Throw

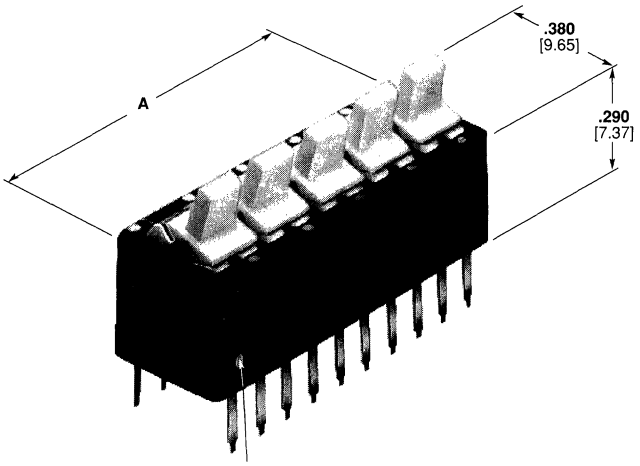
Contact Lead Spacing — .100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56] below mounting surface

Contact Arrangement

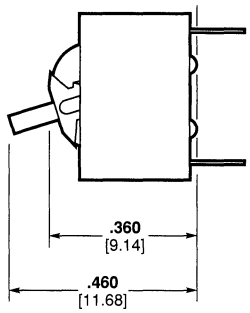


Pin 1

(Switch positions are closed when rockers are down toward white dots)



White Dot Identifies Pin 1



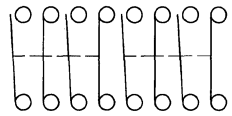
Shown With Lever Actuator

No. of Switches	Dim. A		SPDT Part No.	
	inch	mm	Without Lever Actuator	With Lever Actuator
1	.280	7.11	435470-7	2-435470-1
2	.480	12.19	435470-1	2-435470-2
3	.680	17.27	435470-2	—
4	.880	22.35	435470-3	2-435470-4
5	1.080	27.43	—	2-435470-5
6	1.280	32.51	435470-8	2-435470-6

Double Pole Double Throw

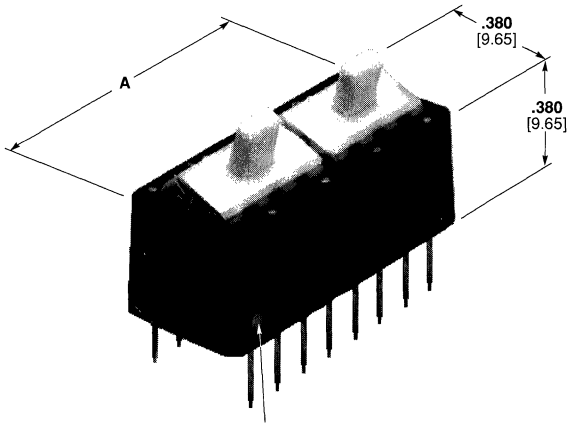
Contact Lead Spacing — .100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56] below mounting surface

Contact Arrangement

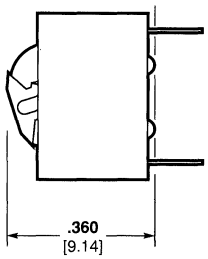


Pin 1

(Switch positions are closed when rockers are down toward white dots)

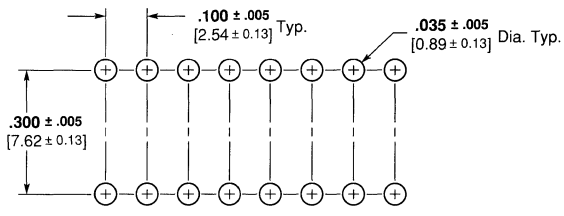


White Dot Identifies Pin 1



Shown Without Lever Actuator

No. of Switches	Dim. A		DPDT Part No.	
	inch	mm	Without Lever Actuator	With Lever Actuator
1	.480	12.19	435470-5	3-435470-1
2	.880	22.35	435470-9	3-435470-2
3	1.280	32.51	—	3-435470-3



Recommended PC Board Hole Pattern

Specifications subject to change.
For latest design specifications...
1-800-522-6752

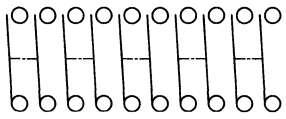
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

DIP Switches — 7000 Series
(Continued)

Multiple Double Pole Single Throw

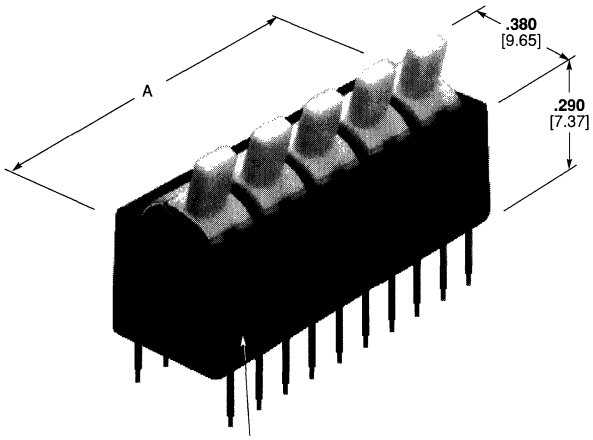
Contact Lead Spacing — .100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56] below mounting surface

Contact Arrangement

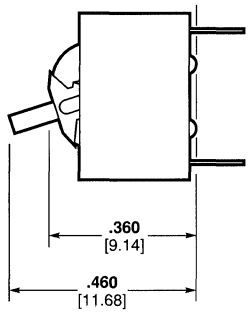


Pin 1

(Switches shown in open position)



White Dot Identifies Pin 1



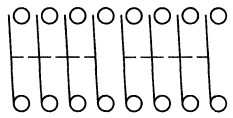
Shown With Lever Actuator

No. of Switches	Dim. A		DPST Part No.	
	inch	mm	Without Lever Actuator	With Lever Actuator
1	.280	7.11	435469-9	2-435469-1
2	.480	12.19	—	2-435469-2
4	.880	22.35	435469-3	2-435469-4
5	1.080	27.43	—	2-435469-5
6	1.280	32.51	1-435469-0	2-435469-6

4-Pole Single Throw

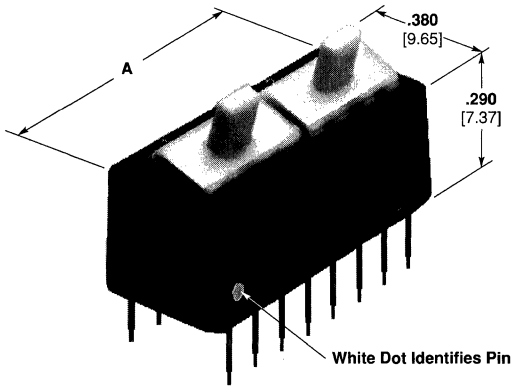
Contact Lead Spacing — .100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56] below mounting surface

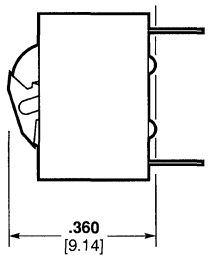
Contact Arrangement



Pin 1

(Switches shown in open position)

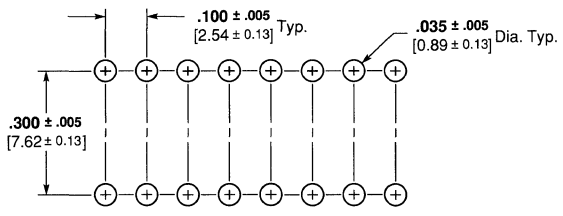




Shown Without Lever Actuator

No. of Switches	Dim. A		4PST Part No.	
	inch	mm	Without Lever Actuator	With Lever Actuator
1	.480	12.19	435469-7	3-435469-1
2	.880	22.35	—	3-435469-2

Note: For other switching combinations, consult AMP Incorporated.



Recommended PC Board Hole Pattern

DIP Switches — 7100 Series

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMP 7100 Series DIP Switches are recommended for programming applications where the number of cycles per pole is limited. These single pole, single throw switches have been designed for a life of 2000 cycles per pole and feature contacts of copper alloy with .000030 [0.00076] gold over nickel plating in the contact area and legs plated to meet AMP Solderability Specification 109-11-3. In addition, the SPST standard and low profile switches are also available with a top seal to provide protection during soldering and cleaning processes.

Performance Characteristics

Electrical

Current and Voltage Rating:	Nonswitching: 1.0 amperes max. at 40 VDC Switching: 60 milliamperes max. at 5 VDC (resistive load) 15 milliamperes max. at 24 VDC (resistive load)
Contact Resistance, Dry Circuit:	100 milliohms max. (end of life) and 50 milliohms (initial) at 50 mV open circuit, 10 milliamperes
Insulation Resistance:	1 x 10^9 ohms min. at 100 VDC (initial)
Dielectric Withstanding Voltage:	500 VDC min. at standard atomspheric conditions
Capacitance:	5 picofarads max.

Physical and Environmental

Temperature Rating:	Nonoperating: −55°C to +105°C Operating: −17.8°C to +105°C
Vibration:	Discontinuities shall not exceed 10 microseconds when subjected to 10-2000-10 Hz traversing for 20 minutes at .060 [1.52] inches total excursion
Shock:	No physical damage or discontinuiteis greater than 10 microseconds when tested with .10 ampere current applied per AMP Spec. 109-26, Cond. A
Humidity:	Withstands an environment of +40°C and 95% RH for 96 hours
Durability:	No physical damage or contact resistance greater than 100 milliohms after 2000 cycles of actuation with a resistive load of 24 VDC and 25 milliamperes max. current applied
Terminal Strength (Bend Test):	Two 45° bend cycles per MIL-STD-202, Methos 211, Cond. B

Materials

Housing: Glass-filled polyester, 94V-0 rated, black

Rocker: Thermoplastic, 94V-0 rated, white

Spring Contacts and Leads: Copper alloy with .000030 [0.00076] gold over .000050 [0.00127] nickel in contact area and .000150 [0.00381] tin-lead over .000050 [0.00127] nickel on solder legs, plated to meet AMP solderability Specification 109-11-3

Technical Documents

Product Specification: 108-7532

Instruction Sheet: IS 7779

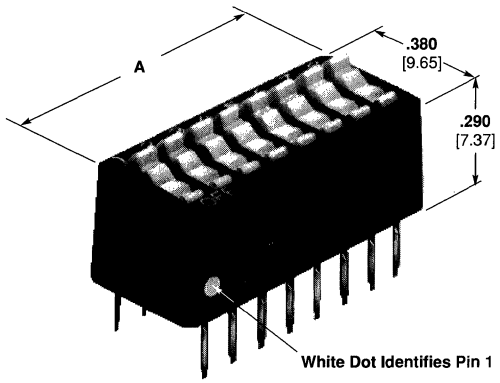
DIP Switches—
7100 Series
(Continued)

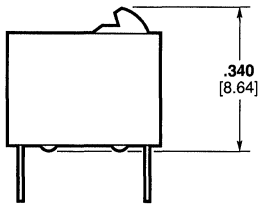
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Single Pole Single Throw

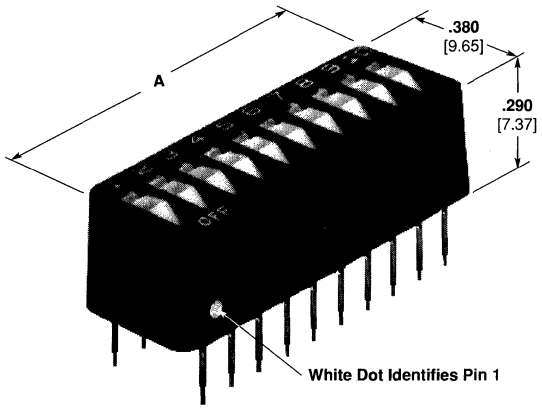
Contact Lead Spacing—.100 x .300 [2.54 x 7.62]
Lead Length—.140 [3.56] below mounting surface

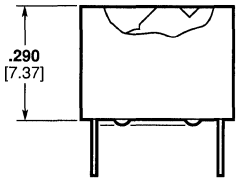




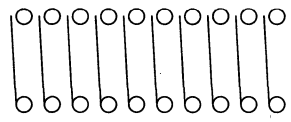
Single Pole Single Throw Low Profile

Contact Lead Spacing—.100 x .300 [2.54 x 7.62]
Lead Length—.140 [3.56] below mounting surface

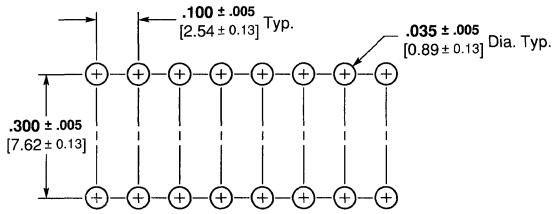




Contact Arrangement



Pin 1
(Switches shown in open position)



Recommended PC Board Hole Pattern

No. of Switches	Dim. A		SPST Standard Profile			SPST Low Profile		
	inch	mm	Unsealed[1] Part No.	Sealed Part No.	UV Sealed Part No.	Unsealed[1] Part No.	Sealed Part No.	UV Sealed Part No.
2	.280	7.11	2-435640-9	3-435640-3	—	435668-1	2-435668-6	2-382434-6
3	.380	9.65	3-435640-0	3-435640-4	—	435668-2	3-435668-3	3-382434-3
4	.480	12.19	435640-2	3-435640-5	3-382396-5	435668-3	3-435668-4	3-382434-4
5	.580	14.73	435640-3	3-435640-6	3-382396-6	435668-4	3-435668-5	3-382434-5
6	.680	17.27	435640-4	3-435640-7	3-382396-7	435668-5	2-435668-5	2-382434-5
7	.780	19.81	435640-1	3-435640-8	—	435668-6	2-435668-7	2-382434-7
8	.880	22.35	435640-5	3-435640-9	3-382396-9	435668-7	2-435668-8	2-382434-8
9	.980	24.89	435640-6	4-435640-0	—	435668-8	2-435668-9	2-382434-9
10	1.080	27.43	435640-7	4-435640-1	4-382396-1	435668-9	3-435668-0	3-382434-0
11	1.180	29.97	—	—	—	—	3-438668-1	—
12	1.280	32.51	3-435640-2	4-435640-3	—	1-435668-1	3-435668-2	3-382434-2

[1]All switches are bottom sealed.

Preprogrammed Printed Circuit Board Switches

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

The Preprogrammed Printed Circuit Board Switches feature four Form "C" Switches operated by encoded cams and packaged in one DIP Configuration. Three actuating methods are offered to suit your application — lever, screwdriver slot and extended D shaft. Regardless of actuating method, the cams are bidirectional and have positive detent setting. These versatile switches are available in 2-, 10- and 16-position configurations.

Performance Characteristics

Electrical

Voltage Rating:	120 V ms max.
Current Rating:	1 ampere max.
Volt-Ampere Rating:	2.8 max.
Contact Resistance:	100 milliohms max.
Dielectric Strength:	300 VAC, 60 Hz
DC Insulation Resistance:	1000 megohms

Mechanical

Detent Release Torque:	1 oz. in. min.
Life Expectancy:	500 revolutions

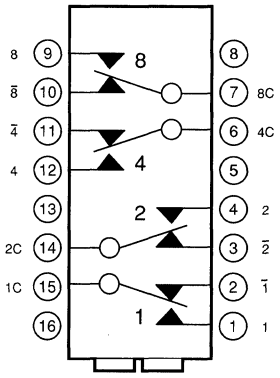
Materials

Contact: Copper alloy with gold over nickel plating
Housing: Glass-filled polyester

Technical Documents

Product Specification: 108-7066
Instruction Sheet: IS 6811
Application Specification: 114-1058

Pin Configuration Schematic (Position 0)



Truth Table (BCD and BCD Complement)

Switch Position	8	4	2	1	$\overline{8}$	$\overline{4}$	$\overline{2}$	$\overline{1}$
0					•	•	•	•
1				•	•	•	•	
2			•		•	•		•
3			•	•	•	•		
4		•			•		•	•
5		•		•	•		•	
6		•	•		•			•
7		•	•	•	•			
8	•					•	•	•
9	•			•		•	•	
10 or A	•		•			•		•
11 or B	•		•	•		•		
12 or C	•	•					•	•
13 or D	•	•		•			•	
14 or E	•	•	•					•
15 or F	•	•	•	•				

• = Connection

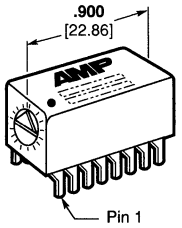
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

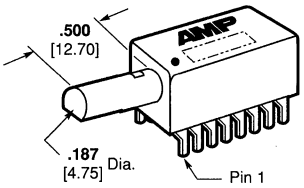
Preprogrammed Printed Circuit Board Switches
(Continued)

The dimensioning for the Screwdriver Slot Style Switch is typical to all switches.

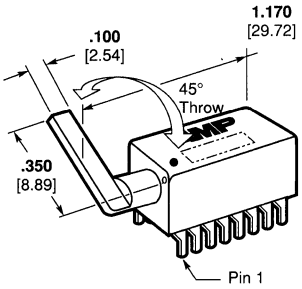
Screwdriver Slot Style



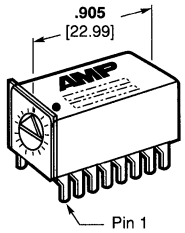
Extended Shaft Style



Lever Style

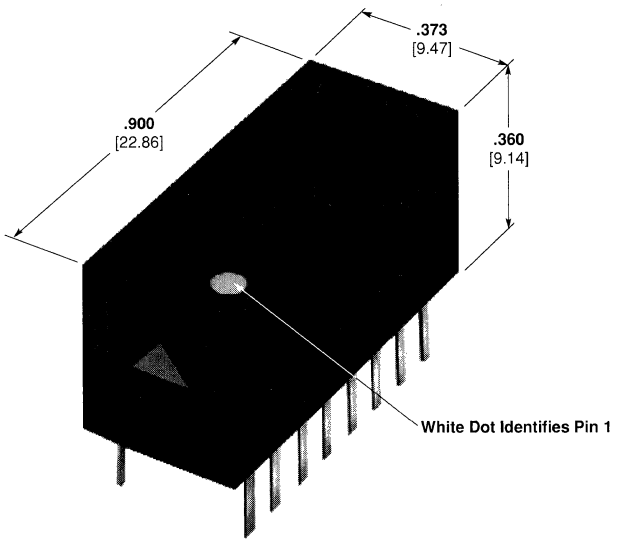


Taped Screwdriver Slot Style

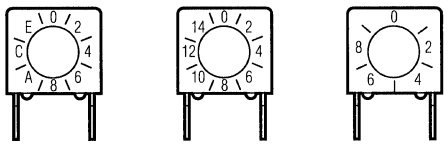


Contact Lead Spacing—
.100 x .300 [2.54 x 7.62]
Lead Length—.140 [3.05] below mounting surface

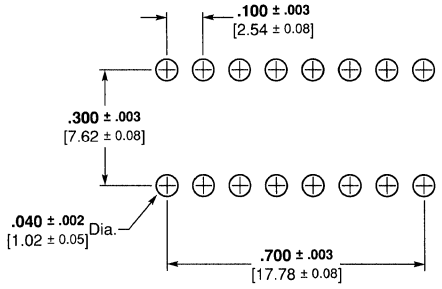
Typical Body Dimensions



Stamping Legend



Style I Style II Style III



Recommended PC Board Hole Pattern

Switch Type	Actuator	Stamping Legend[1]	Bottom Sealed	Removable Tape Seal	Switch Part No.
Hexadecimal w/Complement (16 Position)	Screwdriver Slot	I	Yes	No	53137-5
Hexadecimal w/Complement (16 Position)	Screwdriver Slot	II	Yes	No	53137-6
Hexadecimal w/Complement (16 Position)	Screwdriver Slot	III	Yes	Yes	54792-1
Hexadecimal w/Complement (16 Position)	Screwdriver Slot	II	Yes	Yes	54792-2
BCD w/Complement (10 Position)	Screwdriver Slot	III	Yes	No	53919-2
BCD w/Complement (10 Position)	Screwdriver Slot	III	Yes	Yes	54778-1
Hexadecimal w/Complement (16 Position)	Extended Shaft	None	No	No	54359-1
BCD w/Complement (10 Position)	Extended Shaft	None	No	No	54308-1
Input/Output (2 Position)	Lever	As Illustrated[2]	No	No	53921-1

[1]All switches marked with epoxy ink unless otherwise noted.
[2]Switch positions 0 and 1 correspond to 0 and F respectively in the truth table on page 8011.

Trinary Slide Switch, 7800 Series

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

The AMP 7800 Series Trinary Slide Switch is a double throw, dual in-line package (DIP) switch primarily designed for logic level switching applications. This versatile switch is also capable of controlling alternating and direct current electrical circuits: 5 volts at 100 milliamperes or 24 volts at 25 milliamperes in the switching mode, and 50 volts at 1.5 amperes in the nonswitching mode.

The switch may be used with 2 inputs and up to 9 outputs or vice-versa. It is composed of eight or nine separate, three-position slide switches—hence the name Trinary Slide Switch.

The .100 x .300 [2.54 x 7.62] centerline spacing makes these switches compatible with standard DIP headers, or they may be soldered directly to the printed circuit board.

Performance Characteristics

Electrical

Current Rating:	Non-switching—1.5 amperes max. at 50 VDC (resistive load) Switching—100 milliamperes max. at 5 VDC (resistive load); 25 milliamperes max. at 24 VDC (resistive load)
Contact Resistance, Dry Circuit:	25 milliohms max. initial, 50 milliohms max. final
Insulation Resistance:	1×10^{11} ohms min. initial
Dielectric Withstanding Voltage:	500 VAC min. at standard atmospheric conditions
Capacitance:	5 picofarads max.

Mechanical/Environmental

Actuation Force:	7–30 ounces
Solderability:	AMP Spec. 109-11-5
Vibration:	10-2000-10 Hz traversed in 20 minutes at .060 [1.52] total excursion; AMP Spec. 109-21, Cond. E with .1 ampere applied
Shock:	50 G's at 11 milliseconds; AMP Spec. 109-26, Cond. A
Durability:	100 cycles
Terminal Strength:	Pull—2 lb. [8.89 N] axial; (2) 45° bend cycles
Thermal Shock:	5 nonoperating cycles at −55°C to +108°C
Humidity:	40°C and 95% RH for 96 hr.
Operating Temperature:	−40°C to +88°C
Contact Lead Spacing:	.100 x .300 [2.54 x 7.62]
Lead Length:	.140 [3.56] below mounting surface

Materials

Case and Base: Glass-filled thermoplastic, 94V-0 rated

Slide: Polyester, 94V-0 rated

Spring Contacts and Leads: Copper alloy, plating in accordance with AMP Product Specification 108-7047

Technical Documents

Product Specification: 108-7047

Instruction Sheet: IS 6511

Application Specification: 114-1062

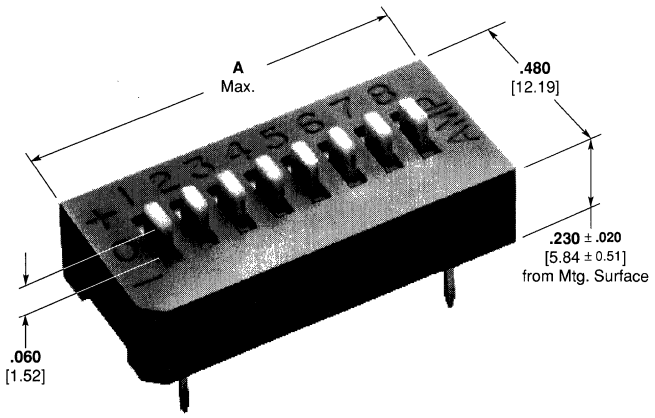
Product Facts

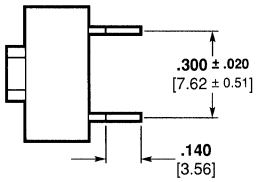
- Switches are available in 8- or 9-pole, double throw configurations (3 switching positions)
- 9-pole switch yields 19,638 code combinations; 8-pole switch yields 6,561 code combinations
- Used for logic level applications for controlling AC/DC circuits
- Fits .100 x .300 [2.54 x 7.62] centerline standard DIP headers
- Can be soldered directly to pc board
- May be used with National Semiconductor encoder-decoder MM 53200

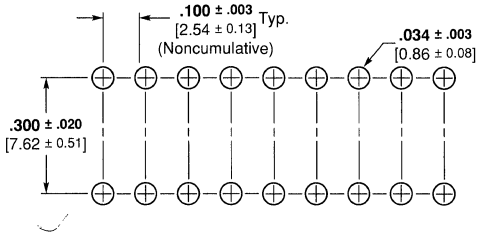
Trinary Slide Switch
7800 Series
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

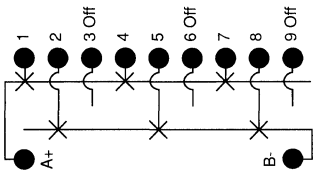
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.





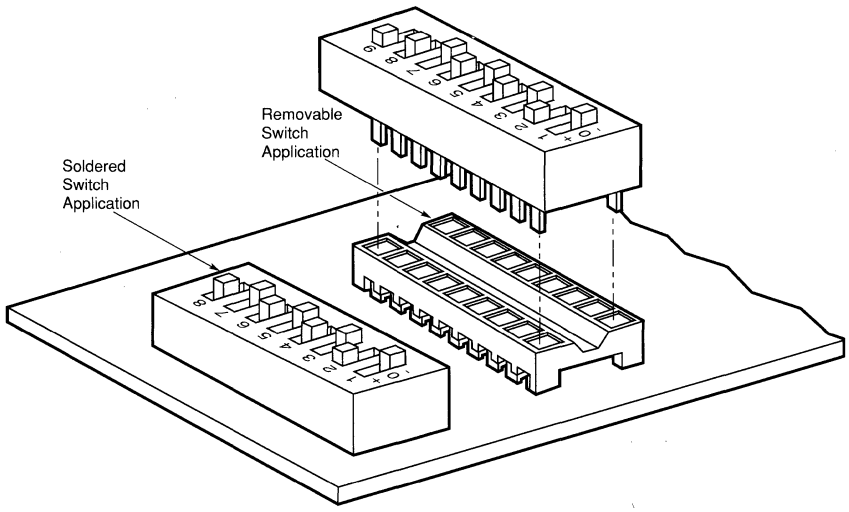


Recommended PC Board Hole Pattern
(shown for 9-position switch)



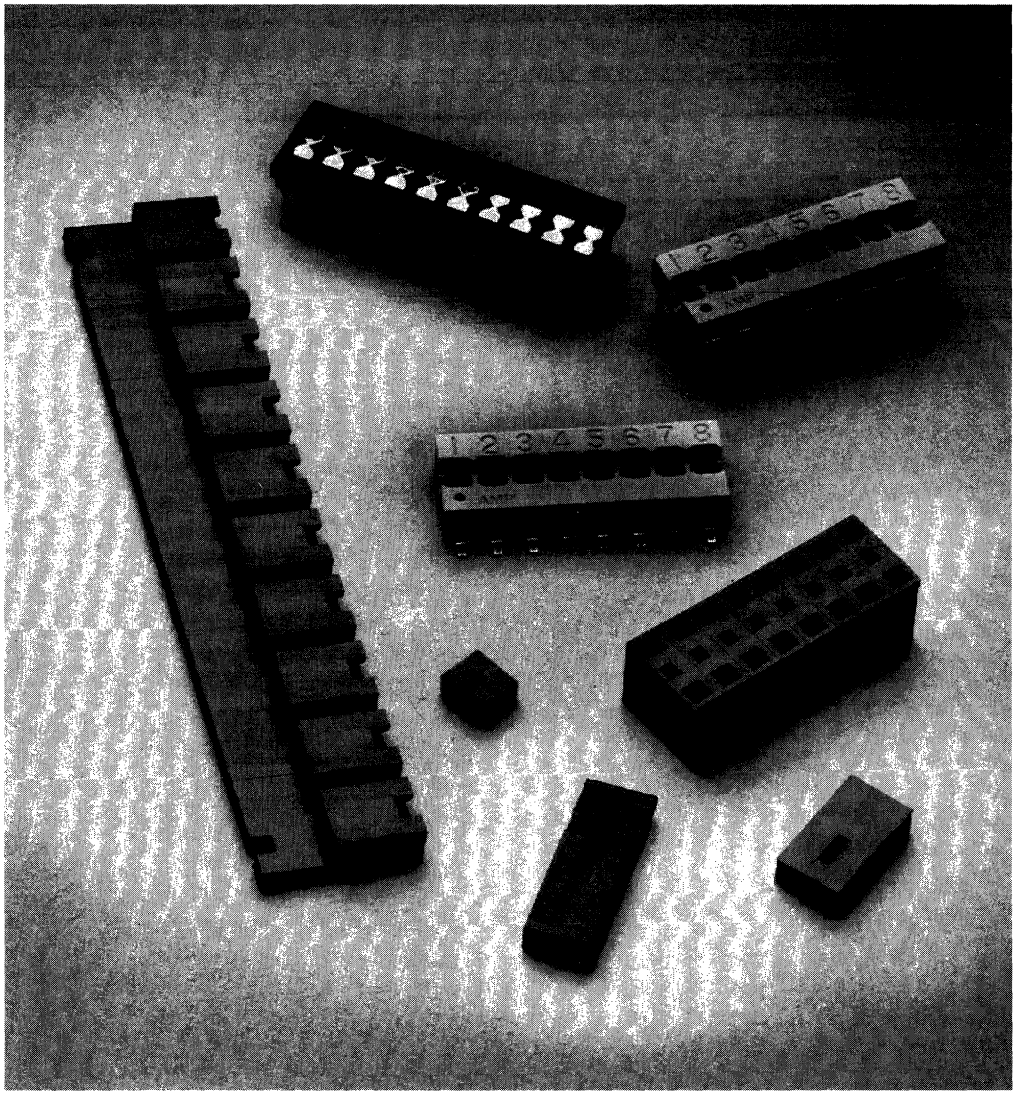
Schematic
(9-position switch shown)

No. of Switches	Dim. A		Part No.
	inch	mm	
8	1.000	25.40	436172-3
9	1.100	27.94	436172-2



Shunts

Specifications subject to change.
For latest design specifications...
1-800-522-6752



AMP offers a variety of high quality shunts for low-cost, manual programming. AMP 7600 Series Programmable Shunts are designed on the standard .100 x .300 [2.45 x 7.62] DIP spacing and can be supplied either unprogrammed or preprogrammed. AMP Post Shunts mate with any common pairs of square, rectangular and round posts. Post shunts come in low profile, tandem spring and multi-position versions.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

- **7600 Series Programmable Shunts** use conventional .100 x .300 [2.45 x 7.62] DIP leg spacing.
- **Post Shunts** are used to common pairs of .025 [0.64] square posts, .025 [0.64] diameter round posts and .022 x .026 [0.56 x 0.66] formed posts.

Dual In-Line Package (DIP) Shunts, 7600 Series

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMP DIP Shunts are a highly reliable, low cost means of manually programming various types of electrical/electronic equipment. The shunt consists of a series of conductive straps packaged in a DIP configuration. The straps can be retained intact for a closed circuit or broken with a hand tool to produce an open circuit. DIP shunts are available in 2 through 10- and 12-position configurations. All shunts can be supplied either unprogrammed or preprogrammed.

Performance Characteristics

Electrical

Current Rating:	Standard Pressure—2 amperes for +20°C rise above ambient (one conductor per shunt) Machine Insertable—1 ampere for +20°C rise above ambient (one conductor per shunt)
Insulation Resistance:	1 x 10^{10} ohms min. at 100 VDC
Dielectric Withstanding Voltage:	1000 VDC min.
Capacitance:	Between adjacent straps—2 picofarads max. Across cut strap—5 picofarads max.

Physical and Environmental

Temperature:	−55°C to +105°C
Humidity:	Withstands an environment of +40°C and 95% RH for 96 hours
Terminal Strength (Bend Test):	Two 45° bend cycles per MIL-STD-202, Method 211, Cond. B
Resistance to Soldering Heat:	Cut straps can be reconnected by soldering bridging. Solder bridging recommendations are: • Use low temperature solder • Use solder tip approximately 1/32 [0.79] in diameter • Do not let solder tip come in contact with plastic material

Materials

Housing: UL Recognized, 94V-0 rated, glass-filled thermoplastic

Metal Parts: Copper alloy with electroplated tin finish (gold plated I/O legs are optional)

Technical Documents

Product Specification:
108-7533

Instruction Sheet:
IS 7768

Specifications subject to change.
For latest design specifications...
1-800-522-6752

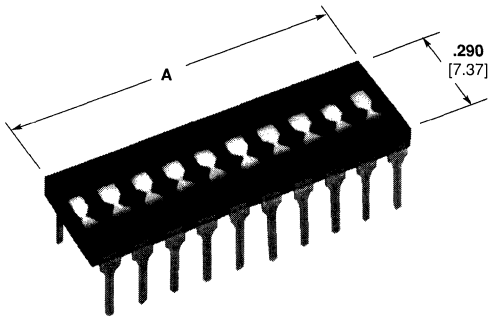
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

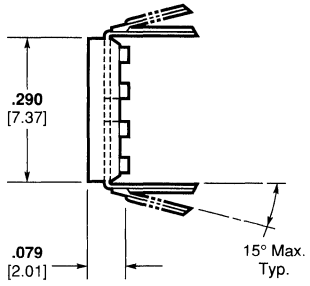
DIP Shunts, 7600 Series
(Continued)

Standard Shunt Standard Pressure

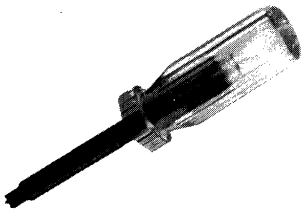
Contact Lead Spacing — .100 x .300 [2.54 x 7.62]
Lead Length — .140 [3.56] below mounting surface

- Black housing
- Use programming tool shown below

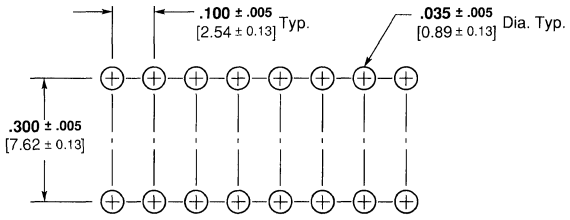




Hand Tool Part No. 435862-1



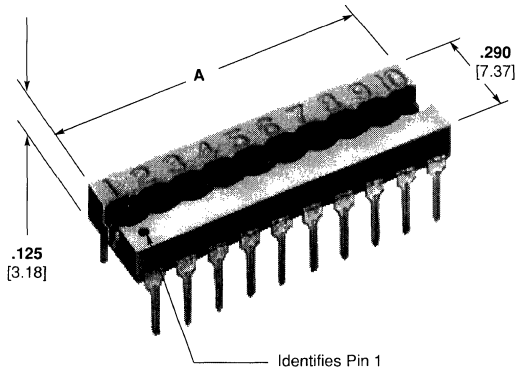
This tool provides a reliable means of programming DIP shunts. It is rugged, lightweight and dependable. No special skills are required to use this tool.

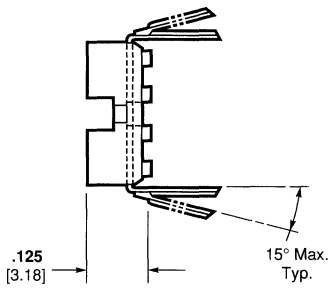


Recommended PC Board Hole Pattern

Machine Insertable Shunt

- Gray housing
- 5 to 10 lb. [22.2 to 44.4 N] required to program each shunt position
- Compatible with commercially available IC Insertion equipment
- No special programming tool required





No. of Positions	Dim. A inch	Dim. A mm	Standard Shunt Standard Pressure	Machine Insertable Shunt
2	.200	5.08	435704-2	—
3	.300	7.62	435704-3	—
4	.400	10.16	435704-4	436860-3
5	.500	12.70	435704-5	—
6	.600	15.24	435704-6	436860-5
7	.700	17.78	435704-7	436860-6
8	.800	20.32	435704-8	436860-7
9	.900	22.86	435704-9	—
10	1.000	25.40	1-435704-0	436860-9
12	1.200	30.48	1-435704-2	1-436860-1

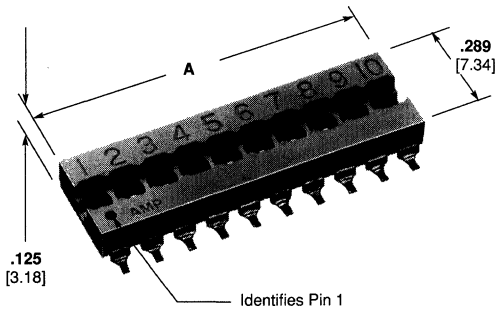
DIP Shunts,
7600 Series
(Continued)

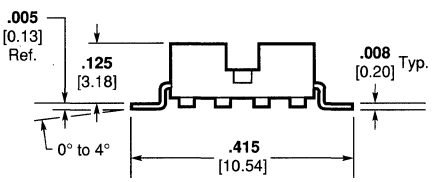
Specifications subject to change.
For latest design specifications...
1-800-522-6752

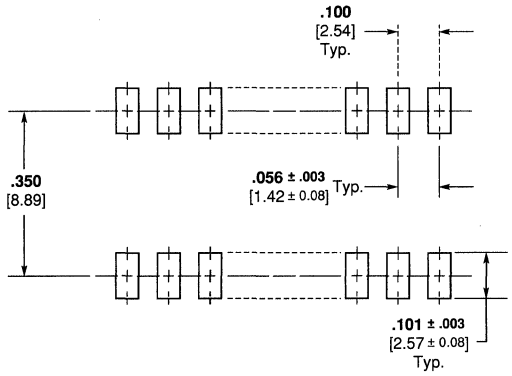
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Surface Mount Shunt, Machine Insertable

- Housing is gray, high temperature thermoplastic
- 5 to 10 lb. [22.2 to 44.4 N] required to program each shunt position
- Compatible with commercially available IC insertion equipment
- Compatible with SMT assembly processes, including vapor-phase reflow and infrared reflow soldering techniques
- No special programming tool required







Recommended
PC Board Pad Pattern

No. of Positions	Dim. A		Part No.
	inch	mm	
2	.200	5.08	382341-2
3	.300	7.62	382341-3
4	.400	10.16	382341-4
5	.500	12.70	382341-5
6	.600	15.24	382341-6
7	.700	17.78	382341-7
8	.800	20.32	382341-8
9	.900	22.86	382341-9
10	1.000	25.40	1-382341-0
12	1.200	30.48	1-382341-2

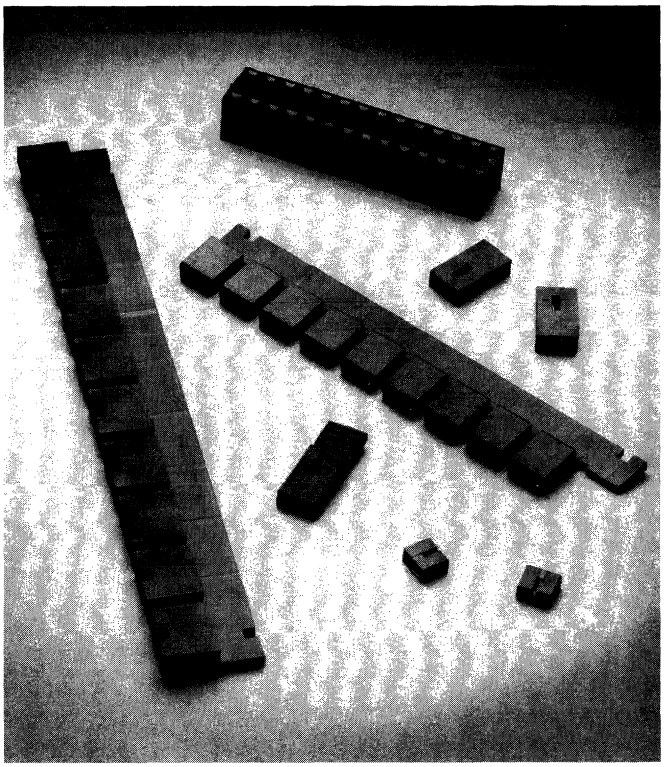
Post Shunts

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMP offers a variety of high quality shunts which mate with any common pairs of .025 [0.64] square posts, .025 [0.64] diameter round posts and .022 x .026 [0.56 x 0.66] formed posts. Among the options available are choices of gold or tin plating, beryllium copper or phosphor bronze contact material, shunts with 94V-0 rated housing spaces on .100 [2.54] and .200 [5.08] centers. AMP shunts are stackable on .100 [2.54] centers and Low Profile Shunts require just .250 [6.35] clearance from the pc board.

All AMP shunts feature one-piece construction for high reliability. All have high normal forces for excellent electrical continuity. For added reliability, Tandem Spring Shunts have two points of contact in each receptacle.



Performance Characteristics

Electrical

Current Rating:	3 amperes max.
Dielectric Withstanding Voltage:	1000 VAC min.

Physical and Environmental

Temperature:	−65° to +105°C (Gold) −40° to +85°C (Tin)
Humidity:	Withstands an environment of +40°C and 95% RH for 96 hours

Materials

Low Profile and Multiposition Shunts

Housing: Glass-filled thermoplastic 94V-0 rated, black

Contact: Beryllium Copper

Finish: .000050 [0.00127] nickel with gold plate in contact area or tin plate overall

Tandem Spring Shunts

Housing: Nylon, 94V-0 rated

Contact: Phosphor bronze

Finish: .000030 [0.00076] nickel with gold inlay in the contact area or tin plate overall

Technical Documents

2-Position Low Profile Shunts	Tandem Spring Shunts
Product Specification: 108-9057	**Product Specification:** 108-9062
Instruction Sheet: IS 3230	**Instruction Sheet:** IS 3208
Application Specification: 114-1059	**Application Specification:** 114-1045

Product Facts

- One-piece contact construction
- High normal forces
- 94V-0 rated housings
- Gold inlay, gold plate or tin plate over nickel
- Stackable on .100 [2.54] centers
- All post shunts are recognized under the component program of Underwriters Laboratories Inc., File No. E28476 and certified by the Canadian Standards Association File No. LR 16455

Low Profile Shunts

- Economical
- Stands just .250 [6.35] above pc board
- Packaged in strips of 10 for ease of handling
- Accepts posts as short as .200 [5.08]

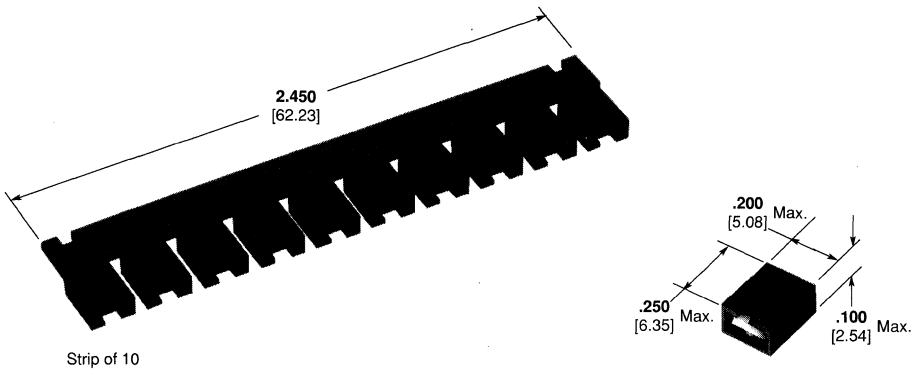
Tandem Spring Shunts

- Two points of contact provide extra reliability
- Five housing colors available
- Shunts accept posts as short as .175 [4.45]: posts bottom at .330 [8.38]

2-Position, Low Profile Shunts

.100 [2.54] Centerline with Slot

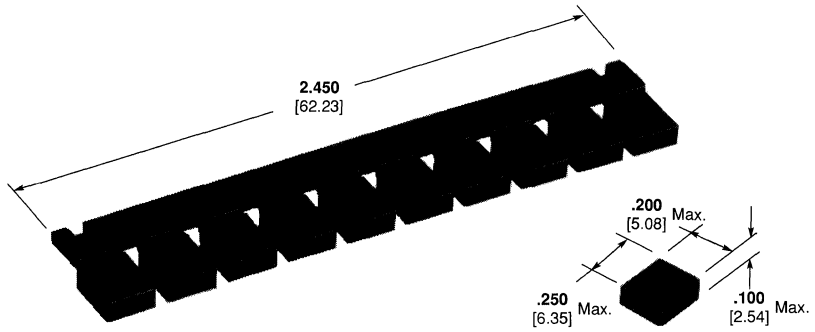
Part No. 531220-2
.000015 [0.00038] Gold Plate[1]
Part No. 531220-3
.000030 [0.00076] Gold Plate[1]
Part No. 531220-1
.000100 [0.00254] Tin Plate



Strip of 10

.100 [2.54] Centerline without Slot

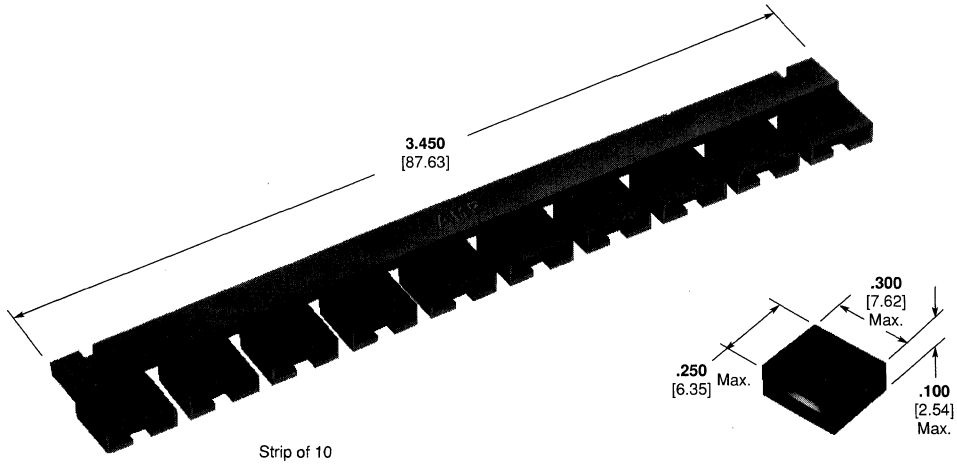
Part No. 850102-1
.000030 [0.00076] Gold Plate[1]



Strip of 10

.200 [5.08] Centerline with Slot

Part No. 531230-2
.000015 [0.00038] Gold Plate[1]
Part No. 531230-3
.000030 [0.00076] Gold Plate[1]
Part No. 531230-1
.000100 [0.00254] Tin Plate



Strip of 10

[1]In contact area.

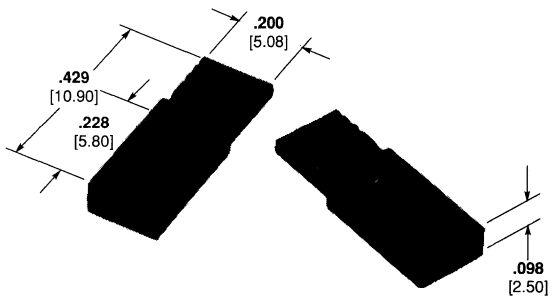
Post Shunts
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

2-Position, Low Profile Shunts with Handle

.100 [2.54] Centerline

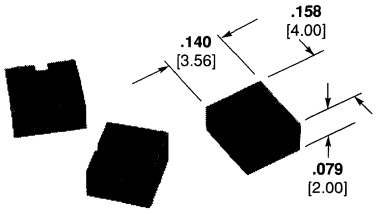


Housing Color	Part Numbers			
	.000015 [0.00038] Gold Plate	.000030 [0.00076] Gold Plate	.000050 [0.00127] Gold Plate	Tin Plate
Black	881545-1	881545-2	881545-3	881545-4

2 mm Mini-Shunt

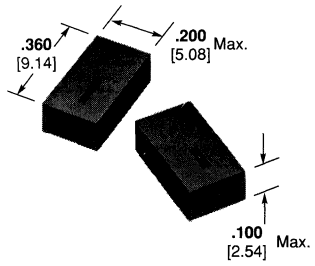
.079 [2.00] Centerline

Contact AMP Incorporated for Information and part numbers



Tandem Spring Shunts

.100 [2.54] Centerline



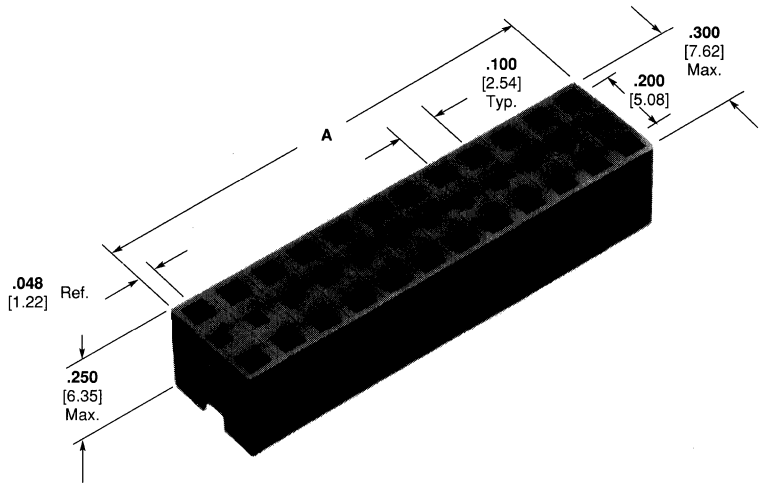
Housing Color	Part Numbers			
	.000015 [0.00038] Gold Inlay[1]	.000030 [0.00076] Gold Inlay[1]	.000050 [0.00127] Gold Inlay[1]	.000100 [0.00254] Tin Plate
Natural	—	530153-1	—	2-530153-1
Black	3-530153-2	530153-2	1-530153-2	2-530153-2
Yellow	—	530153-4	—	—
Blue	—	530153-6	—	—
Red	—	1-530153-0	—	—

[1]In contact area.

Post Shunts
(Continued)

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

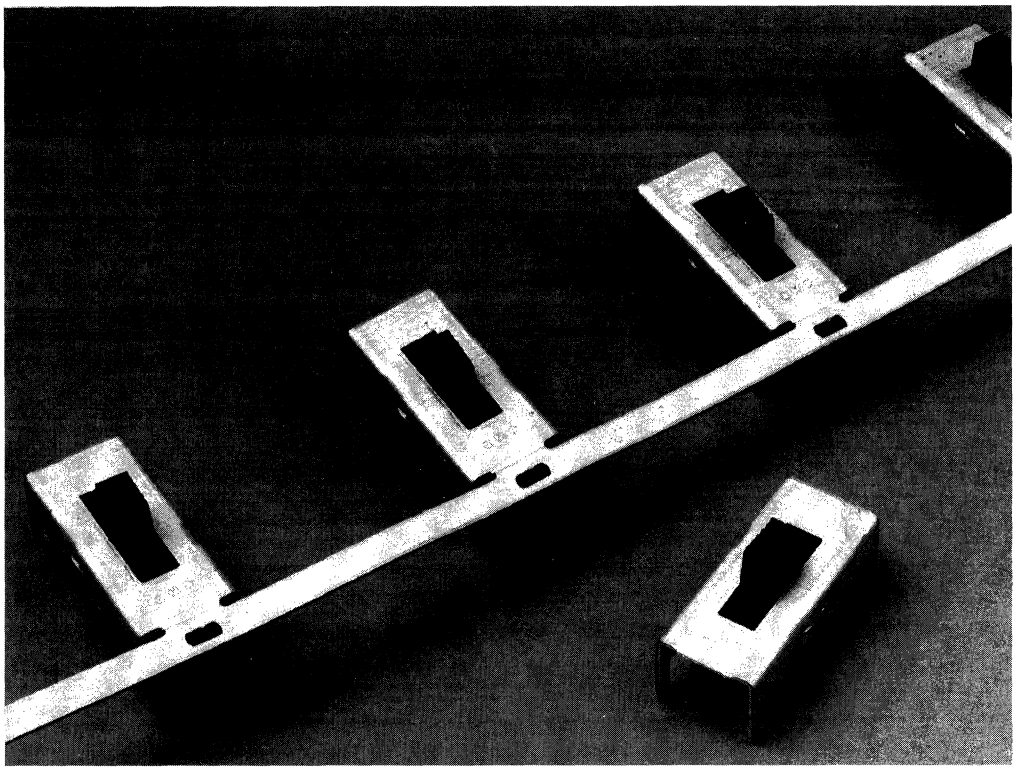
Multiposition Shunts for .025 [0.64] Square Posts



Size	Dimension A		Part Number
	inch	mm	
2 x 2	.196	4.98	645517-1
2 x 4	.396	10.06	645517-2
2 x 5	.496	12.60	645517-3
2 x 6	.596	15.14	645517-4
2 x 7	.696	17.68	645517-5
2 x 8	.796	20.22	645517-6
2 x 9	.896	22.76	1-645517-0
2 x 11	1.096	27.84	645517-7
2 x 12	1.196	30.38	645517-8
2 x 14	1.396	35.46	645517-9

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Slide Switch for Printed Circuit Boards



AMP Slide Switches for Printed Circuit Boards provide a reliable, low-cost means of switching pc board traces. The open bottom design of the switch permits the contacts to act directly on the traces. The mounting of the switch on the circuit side of the board increases the flexibility of the packaging. Various switching functions can be obtained by changing the trace layout of the board, thereby limiting inventories of required switches.

Mounting of this switch is accomplished by using a manual applicator. The applicator clinches the mounting legs to the opposite side of the board from the switching function. The switch is intended to be installed after flow soldering and cleaning operations have been completed.

This procedure keeps the internal parts of the switch lubricated and free of contaminants.

For special applications, contact AMP Incorporated.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Product Facts

- Open bottom design permits contacts to act directly on pc board traces when mounted on circuit side
- Available in 2-, 3- and 4-position switch configurations
- Provides high reliability and eliminates hand soldering
- Mounting accomplished by hand insertion applicator
- Supplied in strip form
- Capable of being installed after flow soldering and cleaning operations

Applications

- Electronic games
- Computers
- Business machines
- Radios and TV's
- Thermostats
- Telephone equipment

Performance Characteristics

Electrical

Current/Voltage:
24 VDC at .5 ampere max.

Contact Resistance:
100 milliohms max. with 50 mV open circuit at 10 amperes max.

Insulation Resistance:
100 megohms min.

Mechanical

Actuation Force:
5–40 ounces [1.39–11.12 N] per detent position

Operating Temperature:
–30°C to 75°C

Nonoperating Temperature:
–30°C to 75°C

Technical Documents

Product Specification:
108-2037

Application Specification:
114-2059

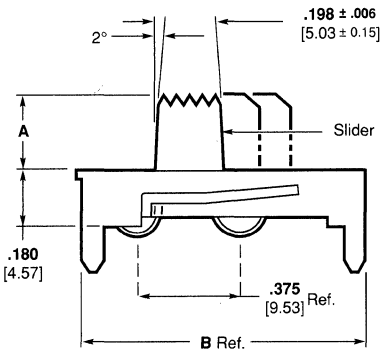
Slide Switch for Printed Circuit Boards
(Continued)

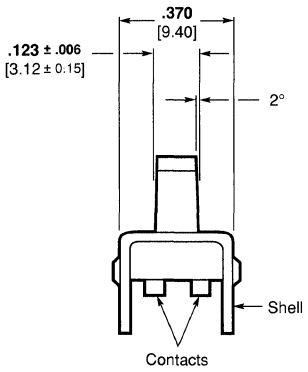
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

2 Pole Slide Switch

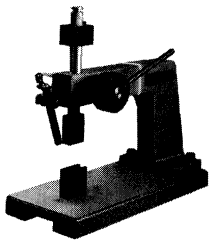
Material and Finish

Slider: 6/6 nylon, black
Contact: Phosphor bronze, tin plated
Shell: Cold rolled steel, zinc plated
Note: Switch interface lubricant, AMP Part No. **520378-1** can be supplied by AMP Incorporated.





Application Tooling

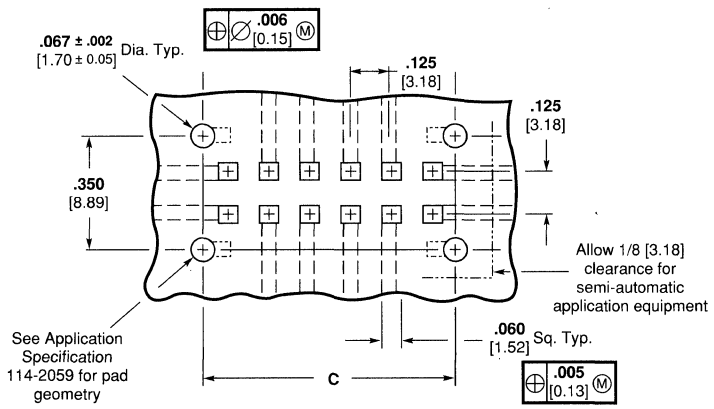


Frame

Part No. 58072-1
(Without locating light)

Applicators

Part Nos:
58068-1 (2-Position Switch)
58068-2 (3-Position Switch)
58068-3 (4-Position Switch)

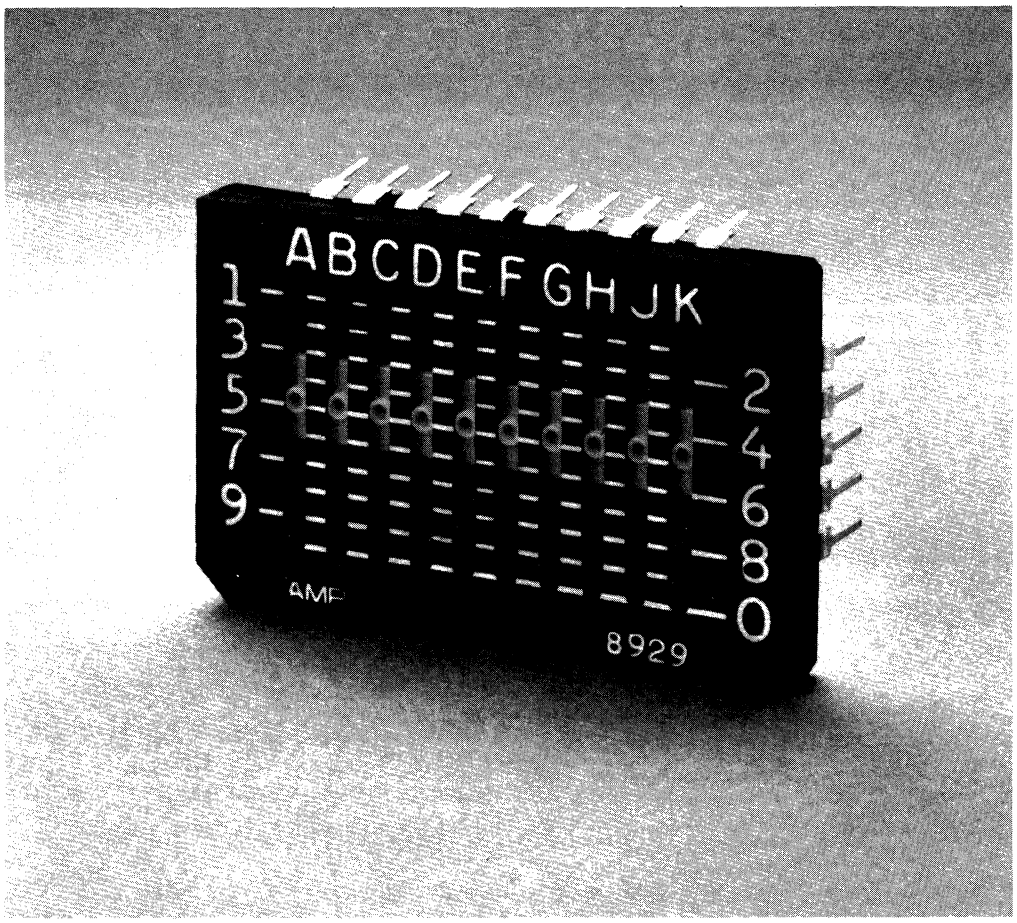


Typical PC Board Layout

No. of Pos.	Dimensions						Part Nos.
	A		B		C		
	inch	mm	inch	mm	inch	mm	
2	.250	6.35	.712	18.08	.650	16.51	520287-1
3	.250	6.35	.837	21.26	.775	19.69	520288-1
	.200	5.08	.837	21.26	.775	19.69	1-520288-1
4	.200	5.08	.962	24.43	.900	22.86	1-520289-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Mini-Matrix Slide Switch



AMP Mini-Matrix Slide Switch provides a reliable, low-cost means for manually programming electrical and electronic equipment. It consists of a group of manually operated slide switches which connect circuits at crosspoints of a matrix. Compact design and very low profile make this switch compatible with modern miniaturization standards. The switch is ruggedly constructed to increase electrical and mechanical integrity. It is ideal for logic-level matrix switching. AMP Mini-Matrix Slide Switch has I/O legs on .100 [2.54] centers and can be wave soldered to printed circuit boards along with other components. Five of the ten row circuits are terminated on each side of a switch, with the legs of the two sides offset .062 [1.57] from each other. Column circuits are terminated at the top and bottom of the switch; only one end of each column axis circuit requires electrical connection. Switch arrangement is 10x10.

Product Facts

- Provides ten, 10-position slide switches in a very small space — requires only .900 x 1.400 [22.86 x 35.56] on pc board
- Very low profile extends only .193 [4.90] above pc board
- Can be wave soldered to pc board with other components

Performance Characteristics

Electrical

Contact Current Rating:
Switching — 100 mA at 28 VDC max.; 0.5 mA at 50 mVDC min.
Nonswitching — 500 mA at 28 VDC max.

Contact Resistance (Dry Circuit):
Less than 100 milliohms

Insulation Resistance:
1×10^4 megohms min. at 100 VDC

Dielectric Withstanding Voltage:
300 VDC min.

Mechanical

Cycle Life:
5000 detents/slide

Technical Documents

Product Specification:
108-7057

Instruction Sheet:
IS 6644

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Mini-Matrix Slide Switch
(Continued)

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

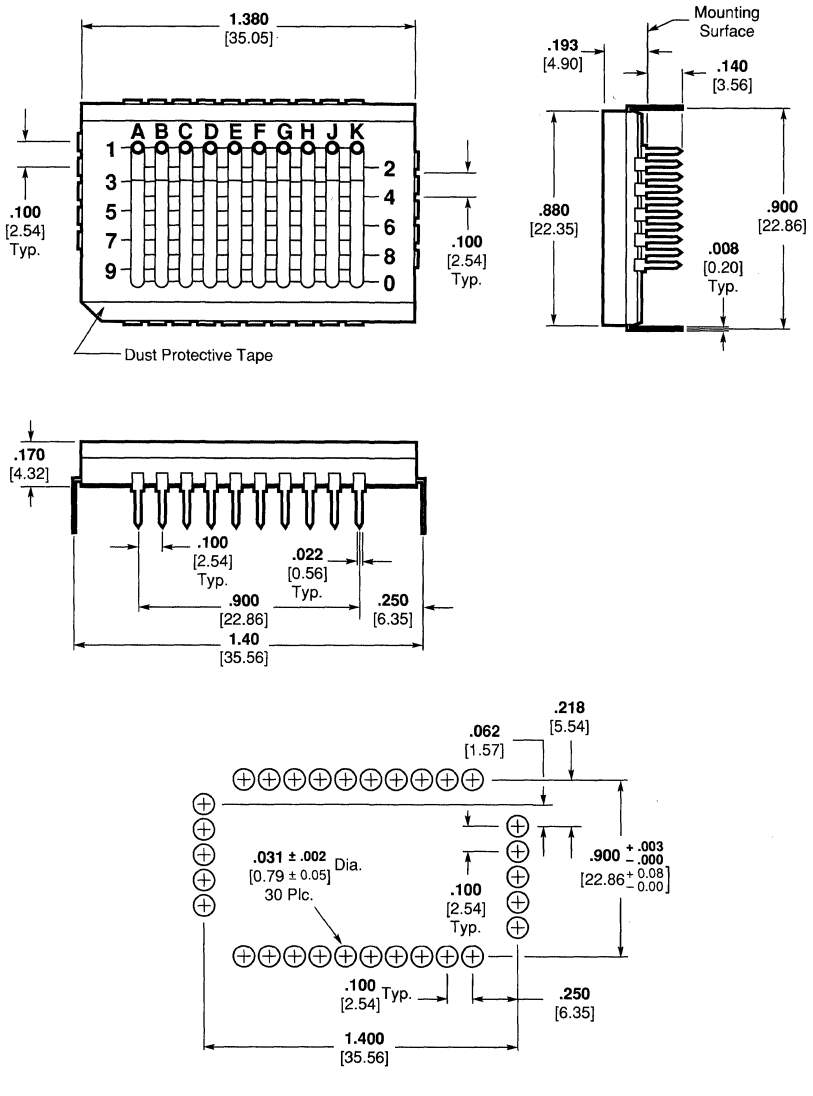
10x10 Switch
Part No. 436270-1

Materials and Finish

Structural Plastic:
UL recognized, 94V-0 rated, glass-filled thermoplastic

Column and Row Busses:
Copper alloy with gold plating in contact areas

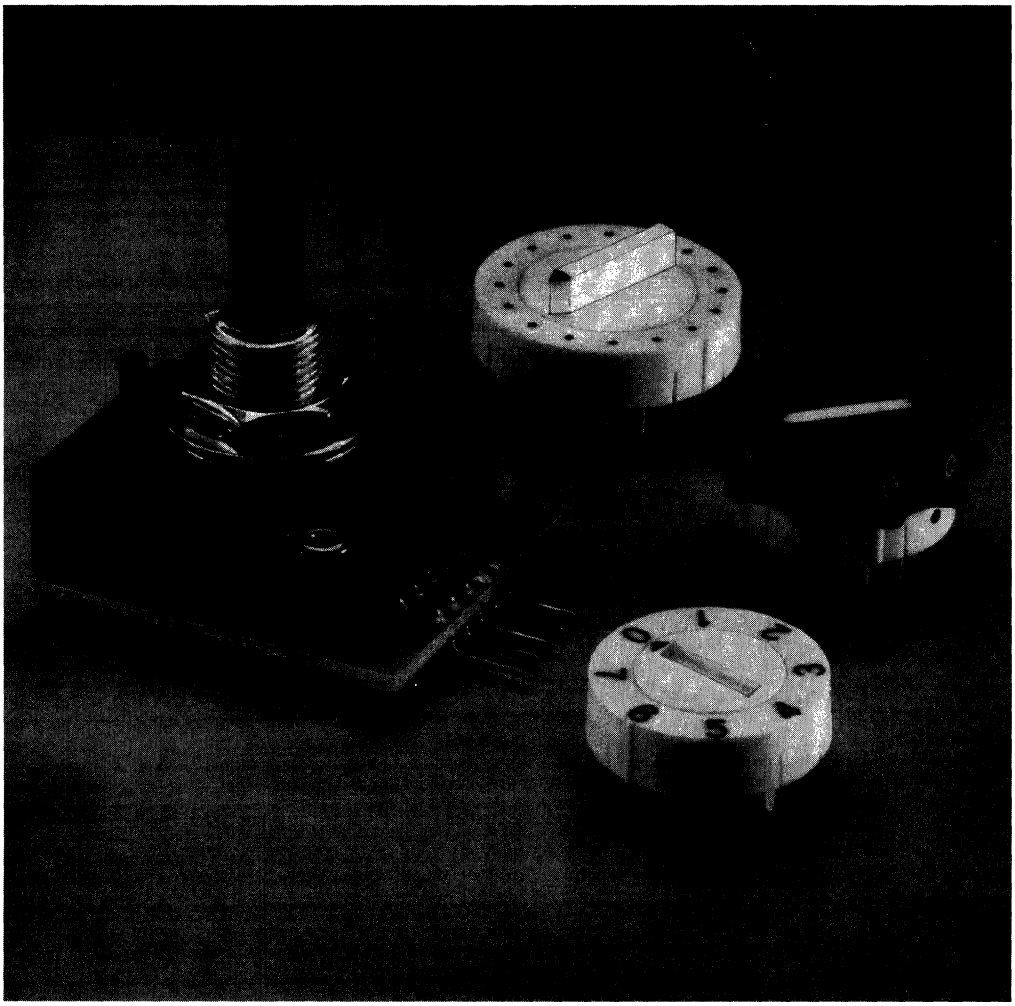
Slide Springs and Contacts:
Beryllium copper with gold plating



Recommended PC Board Hole Pattern

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Printed Circuit Board Rotary Switches



AMP Printed Circuit Board Rotary Switches provide a simple, reliable and low-cost means of manually programming various types of electronic equipment. They are specially designed to be mounted directly on a pc board. This eliminates the need for input/output wiring to perform switching functions.

Rugged construction and positive detent action contacts establish optimum switching reliability. A fully enclosed design protects contact surfaces from dirt, dust and other contaminants.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

- 6000 Series Rotary Switches are low in profile and feature single pole binary and hexadecimal coding.
- 3100 Series Rotary Switches come in decimal, BCD and BCD complement codes.

6000 Series Rotary Switches

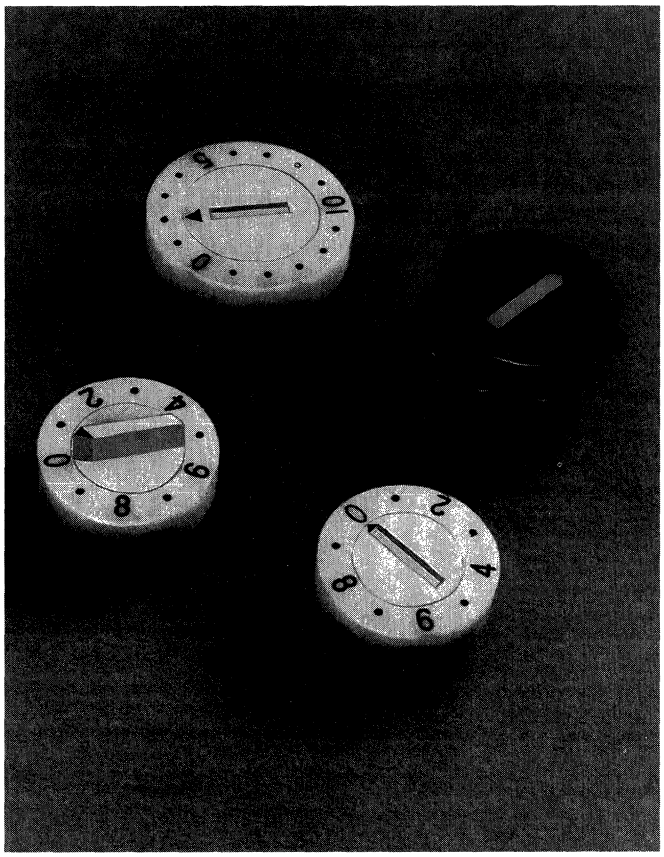
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMP 6000 Series Rotary Switches are used in programming electrical and mechanical circuits in machine tools, test equipment, computers and input data terminals. These manually operated switches are specifically designed to be mounted on a pc board and offer output capabilities which include: 8-position binary coded octal (BCO), 10-position binary coded decimal (BCD), 16-position hexadecimal plus 10- and 16-position single pole decimal. All switches feature a small diameter and very low profile making them highly compatible with the miniaturization standards of today's packaging techniques.

In addition to varied output capabilities, these versatile AMP switches can also be supplied in three different styles allowing you to select the operation method best suited to your specific application. One version incorporates a slot which accepts a screwdriver, coin or other similar device. This particular style permits operation of the switch without sacrificing overall height. Its height of .220 [5.59] above the board is no greater than the usual board-mounted discrete component. The other two versions have either a bar-type knob or thumbwheel for their operation. All three styles can be rotated bidirectionally.

Use of these switches also offers distinct economical advantages. They can be mounted on the same board with other circuit components, eliminating the need for input-output wiring to perform switching functions. Also, boards can be punched or drilled for switch and component mounting at the same time. Switch tabs or pins are then simply inserted into the mounting holes and either flow or hand soldered to the etched circuitry, as is done with other components.



Rugged construction, positive detent action contacts plus large, readable characters are additional features of the AMP 6000 Series PC Board Rotary Switches. All these features, coupled with a fully enclosed design for environmental protection, assure excellent electrical and mechanical performance.

Performance Characteristics

Electrical

Current/Voltage Rating:	Switching—115 VAC or 28 VDC at 125 milliamperes max. Nonswitching—115 VAC or 28 VDC and 250 milliamperes max.
Durability:	1000 cycles
Initial Contact Resistance:	50 milliohms (at 50 millivolts, 20 milliamperes)
Insulation Resistance:	1 x 10^8 ohms
Dielectric Breakdown Voltage:	500 VDC
Circuit Capacitance:	5 picofarads (at 100 KHz)

Mechanical and Environmental

Operating Torque:	2–12 inch-ounces initial and after durability
Operating Temperature:	−18°C to +88°C
Storage Temperature:	−45°C to +88°C

Materials

Contacts: Phosphor bronze, gold over nickel plated
Solder Tabs and Pins:
Coded Switches—Beryllium Copper, tin plated
Single Pole Switches—Brass, tin plated
Structural Parts: Thermoplastic

Product Facts

- Compact design—small diameter, low profile switches are ideal for pc board mounting
- Wide choice of outputs: 8-position binary coded octal, 10-position binary coded decimal, 16-position hexadecimal and 10- or 16-position single pole
- Versatile application—styles include slotted, bar-type and thumbwheel versions for hand rotation
- Economical—board mounting eliminates need for input-output wiring to perform switching functions
- Positive switching—contacts have positive detent action
- All switch positions easily identified by large readable characters or dots
- Optimum reliability—fully enclosed design protects contacts against contamination

Technical Documents

Product Specification:
108-7514
Instruction Sheet:
IS 7523
Application Specification:
114-7005

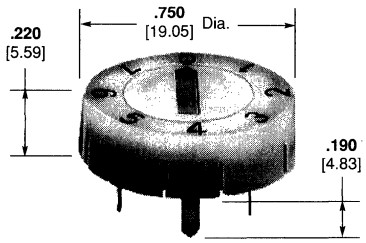
6000 Series Rotary Switches
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

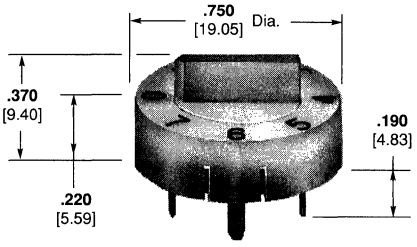
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

8-Position (Binary Coded Octal)

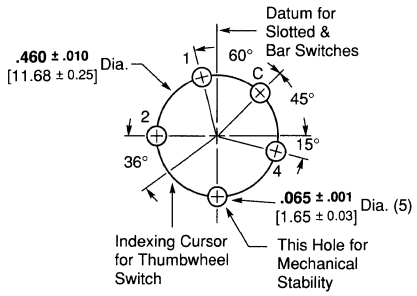
Switch Position	Common to: 1	2	4
0			
1	•		
2		•	
3	•	•	
4			•
5	•		•
6		•	•
7	•	•	•



Screwdriver/Coin-Actuated BCO Switch
Part No. 435174-1



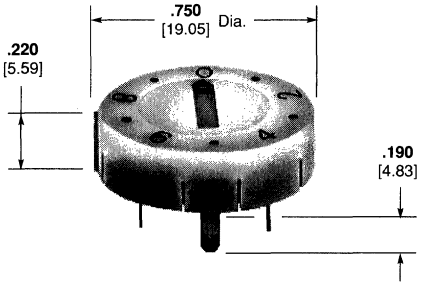
Bar-Type Knob BCO Switch
Part Nos. 1-435174-1 (Shown)
1-435174-3 (With Dots)



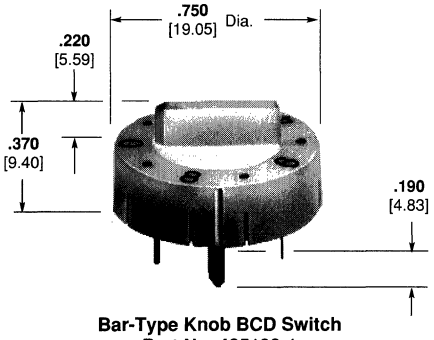
Recommended PC Board Hole Pattern (Switch Side)

10-Position (Binary Coded Decimal)

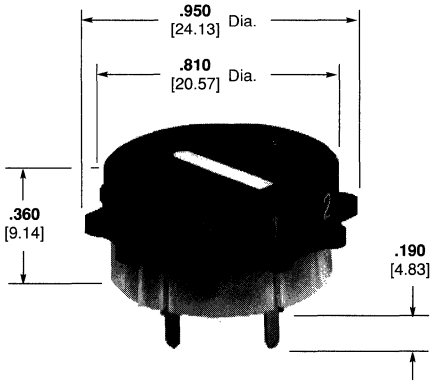
Switch Position	Common to: 1	2	4	8
0				
1	•			
2		•		
3	•	•		
4			•	
5	•		•	
6		•	•	
7	•	•	•	
8				•
9	•			•



Screwdriver/Coin-Actuated BCD Switch
Part No. 435005-1



Bar-Type Knob BCD Switch
Part No. 435123-1



Thumbwheel BCD Switch
Part No. 435128-1

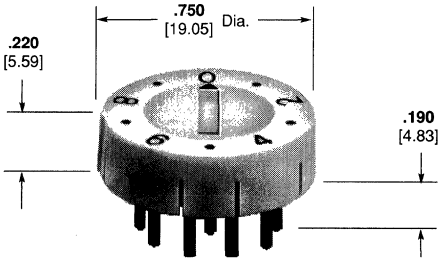
Specifications subject to change.
For latest design specifications...
1-800-522-6752

6000 Series Rotary Switches
(Continued)

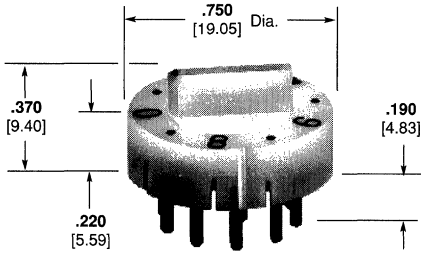
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

10-Position (Single Pole)

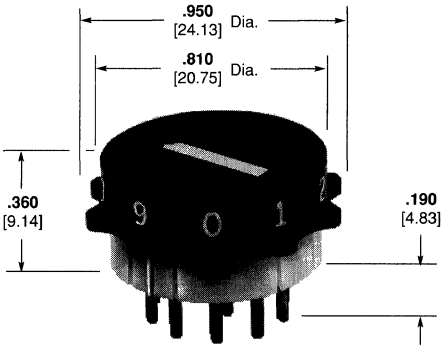
Switch Position	Common to: 0 1 2 3 4 5 6 7 8 9
0	•
1	•
2	•
3	•
4	•
5	•
6	•
7	•
8	•
9	•



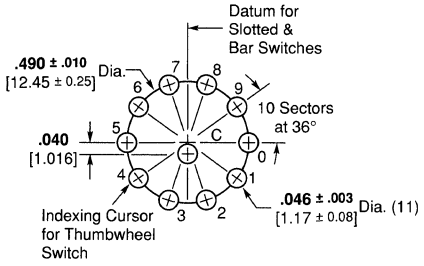
Screwdriver/Coin-Actuated Single Pole Switch
Part No. 1-435097-1



Bar-Type Knob Single Pole Switch
Part No. 2-435097-1



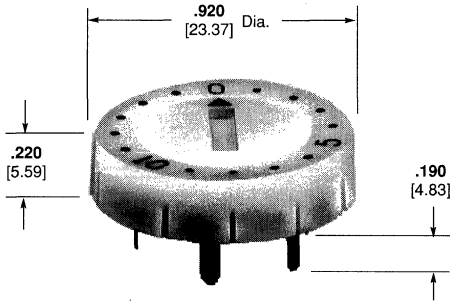
Thumbwheel Single Pole Switch
Part Nos. 435097-1 Shown
435097-2 (With Letters)



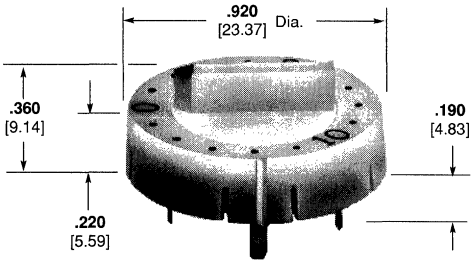
Recommended PC Board Hole Pattern (Switch Side)

16-Position (Hexadecimal)

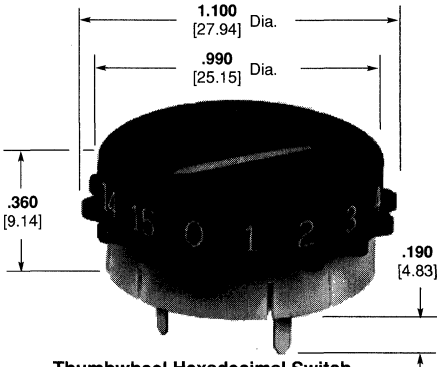
Switch Position	Common to: 1 2 4 8
0	
1	•
2	•
3	• •
4	•
5	• •
6	• •
7	• • •
8	•
9	• •
10	• •
11	• • •
12	• •
13	• • •
14	• • •
15	• • • •



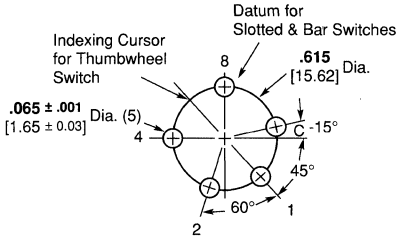
Screwdriver/Coin-Actuated Hexadecimal Switch
Part No. 435167-1



Bar-Type Knob Hexadecimal Switch
Part No. 1-435167-1



Thumbwheel Hexadecimal Switch
Part Nos. 2-435167-1 (Shown)
3-435167-1 (Numbers & Letters)



Recommended PC Board Hole Pattern (Switch Side)

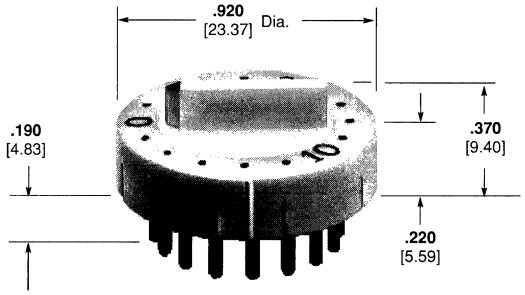
6000 Series
Rotary Switches
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

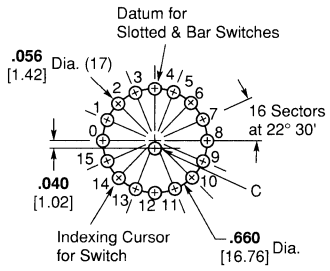
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

16-Position (Single Pole)

Switch Position	Common to:															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	•															
1		•														
2			•													
3				•												
4					•											
5						•										
6							•									
7								•								
8									•							
9										•						
10											•					
11												•				
12													•			
13														•		
14															•	
15																•



Bar-Type Knob Single Pole Switch
Part Nos. 1-435304-1 (Shown)
1-435304-3 (With Dots)



Recommended PC Board
Hole Pattern (Switch Side)

3100 Series Rotary Switches

Specifications subject to change.
For latest design specifications...
1-800-522-6752

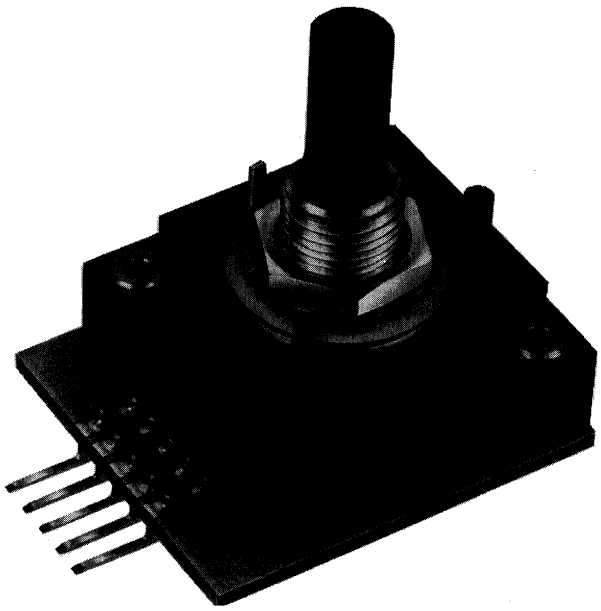
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMP Rotary Switches provide a highly reliable, low cost means of manually programming various types of electronic equipment. They are specifically designed for logic level circuitry, but are capable of controlling electrical circuits that operate at current ratings of 2 amperes, 115 VAC (nonswitching) and up to 125 milliamperes, 115 VAC (switching). In addition, they also offer many distinct advantages, including: simplicity of design to increase switching reliability, an extremely compact design that requires only a minimum of front-panel or behind-panel mounting space.

Positive detent action with a quick make/break operation is provided by durable stainless steel balls and springs as well as the detents which form an integral part of the housing. All contact surfaces are fully enclosed within the housing, thus greatly reducing operational failures due to dirty contacts. The contacts are made of phosphor bronze with gold-over-nickel plating.

AMP Rotary Switches can be supplied with a variety of options to afford complete application versatility and adaptability. Output codes include decimal, BCD and BCD complement with 10, 12, 16, 24 and 32 switching positions—all standard.

Interconnection of switches may be achieved by the use of AMP Commercial Interconnection System (CIS) "F" posts, AMPMODU receptacles and posts, pc board edge connectors and AMP EDGE terminals, as well as soldered wire terminations. Stops supplied with the switches may be customer installed when it is desired to limit rotation to less than 360°.



Performance Characteristics

Electrical

Circuit Current Rating:	Nonswitching—2.0 amperes at 115 VAC max. Switching (Restrictive Load)—125 milliamperes at 115 VAC max.
Initial Contact Resistance:	150 milliohms max. (input terminal to output terminal)
Insulation Resistance:	1×10^8 ohms min. at 100 VDC
Dielectric Withstanding Voltage:	500 VDC

Mechanical and Environmental

Contact Life Expectancy:	25,000 rotations at rated load
Initial Operating Force:	½ to 2 in.-lbs.
Operating Temperature:	−18°C to +88°C

Materials

Housing: Polyester, black
Detent Ball and Spring: Stainless steel
Operating Shaft and Detent: Thermoplastic, 94V-0 rated, black
Printed Circuit Board: Flame retardant, glass epoxy laminate, copper clad
Contacts: Phosphor bronze, gold over nickel plated
Hardware: Brass or corrosion resistant steel

Technical Documents

Product Specification: 108-7518
Instruction Sheet: IS 7936

Product Facts

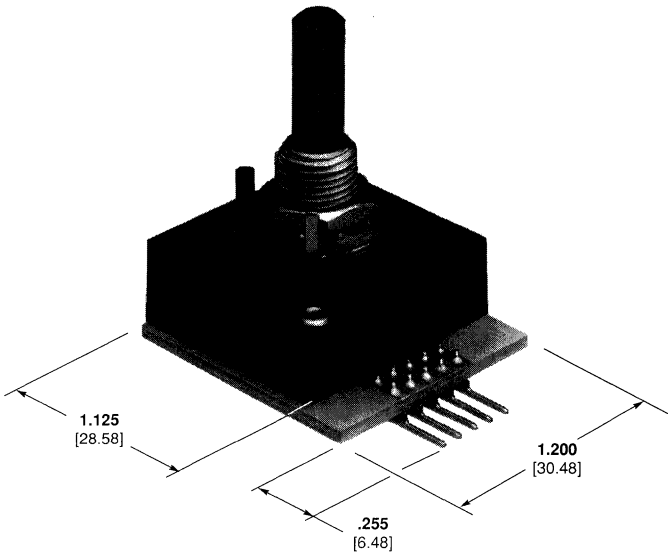
- Code flexibility—switch output capabilities include decimal, BCD and BCD complement, plus various other codes
- Positive switching—positive detent action of stainless steel detent balls and springs assure error-free operation
- Compact design—switches require only a minimum of front- or behind-panel mounting space
- Enclosed contacts—contact surfaces are fully protected against dirt, dust and other environmental hazards

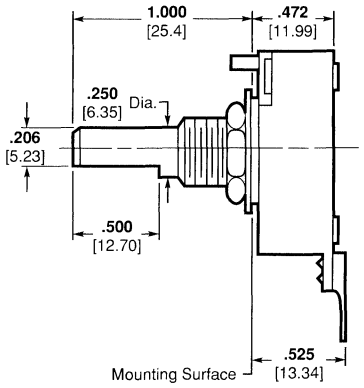
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

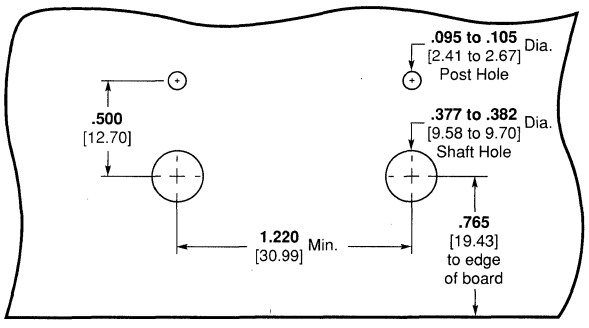
3100 Series Rotary Switches
(Continued)

10-, 12- and 16-Position Switches





Note: Knobs for operating switches are to be supplied by the customer.

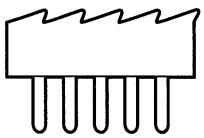


Recommended PC Board Hole Pattern

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Coding



					Part No.
2	1	C	8	4	435984-1,-7
8	2	4	1	C	436037-1
1	2	C	8	4	435986-1
$\overline{2}$	C	$\overline{1}$	$\overline{8}$	$\overline{4}$	436022-1
C	$\overline{4}$	$\overline{8}$	$\overline{1}$	$\overline{2}$	436024-1
$\overline{8}$	$\overline{2}$	$\overline{4}$	C	$\overline{1}$	435987-1

10-Position 36° Throw BCD

Part No. 435984-1 (Shown)
435984-7 (Right Angle)

Dial Position	Common to: 1 2 4 8
0	
1	•
2	•
3	• •
4	•
5	• •
6	• •
7	• • •
8	•
9	• •

12-Position 30° Throw BCD

Part No. 436037-1

Dial Position	Common to: 1 2 4 8
0	
1	•
2	•
3	• •
4	•
5	• •
6	• •
7	• • •
8	•
9	• •
10	• •
11	• • •

16-Position 22½° Throw BCD Hexadecimal

Part No. 435986-1

Dial Position	Common to: 1 2 4 8
0	
1	•
2	•
3	• •
4	•
5	• •
6	• •
7	• • •
8	•
9	• •
10	• •
11	• • •
12	• •
13	• • •
14	• • •
15	• • • •

10-Position 36° Throw BCD Complement

Part No. 436022-1

Dial Position	Common to: $\overline{1}$ $\overline{2}$ $\overline{4}$ $\overline{8}$
0	• • • •
1	• • •
2	• • •
3	• •
4	• • •
5	• •
6	• •
7	•
8	• • •
9	• •

12-Position 30° Throw BCD Complement

Part No. 436024-1

Dial Position	Common to: $\overline{1}$ $\overline{2}$ $\overline{4}$ $\overline{8}$
0	• • • •
1	• • •
2	• • •
3	• •
4	• • •
5	• •
6	• •
7	•
8	• • •
9	• •
10	• •
11	•

16-Position 22½° Throw BCD Complement

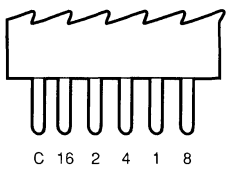
Part No. 435987-1

Dial Position	Common to: $\overline{1}$ $\overline{2}$ $\overline{4}$ $\overline{8}$
0	• • • •
1	• • •
2	• • •
3	• •
4	• • •
5	• •
6	• •
7	•
8	• • •
9	• •
10	• •
11	•
12	• •
13	•
14	•
15	

24-Position 15° Throw BCD

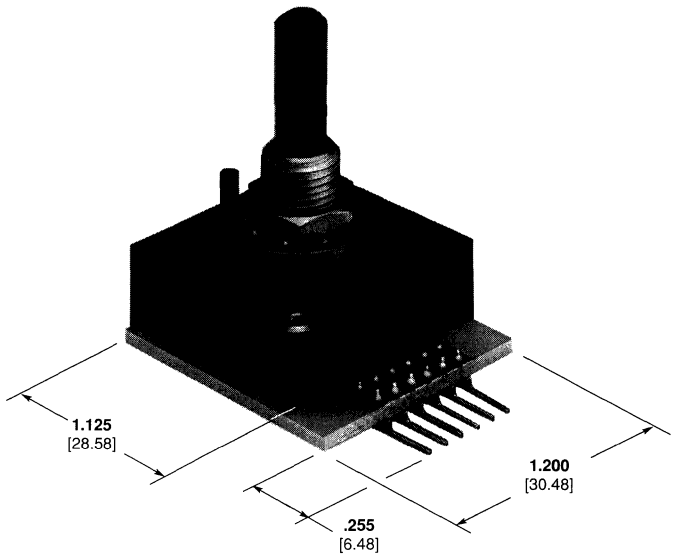
Part No. 436028-1

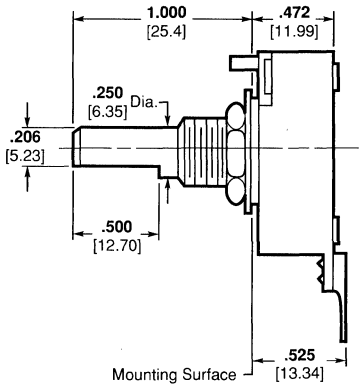
Coding

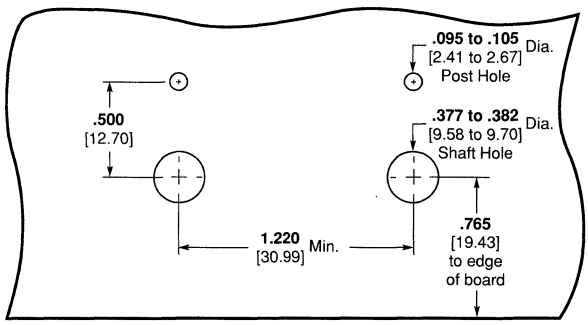


Dial Position	Common to: 1 2 4 8 16
0	
1	•
2	•
3	• •
4	•
5	• •
6	• •
7	• • •
8	•
9	• •
10	• •
11	• • •
12	• •
13	• • •
14	• • •
15	• • • •
16	•
17	• •
18	• •
19	• • •
20	• •
21	• • •
22	• • •
23	• • • •

Note: Knobs for operating switches are to be supplied by the customer.







Recommended PC Board Hole Pattern

Specifications subject to change.
For latest design specifications...
1-800-522-6752

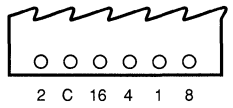
3100 Series Rotary Switches
(Continued)

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

32-Position 11¼° Throw BCD

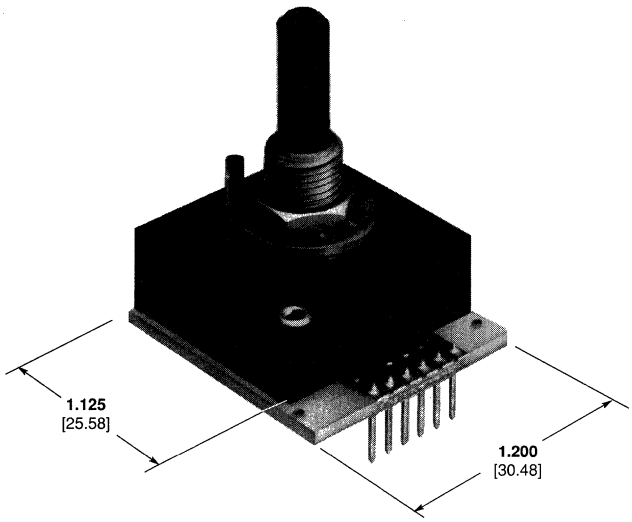
Part No. 436287-1

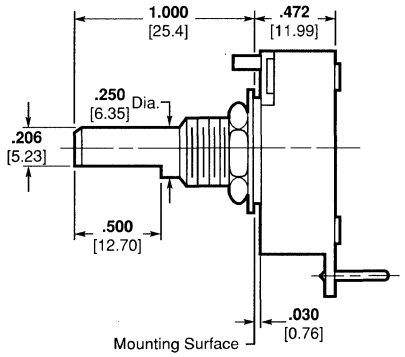
Coding

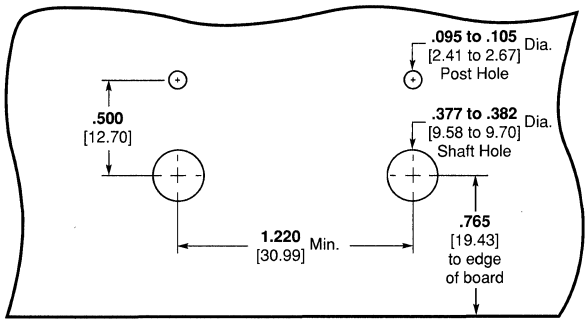


Dial Position	Common to: 1 2 4 8 16
0	
1	•
2	•
3	• •
4	•
5	• •
6	• •
7	• • •
8	•
9	• •
10	• •
11	• • •
12	• •
13	• • •
14	• • •
15	• • • •
16	•
17	• •
18	• •
19	• • •
20	• •
21	• • •
22	• • •
23	• • • •
24	• •
25	• • •
26	• • •
27	• • • •
28	• • •
29	• • • •
30	• • • •
31	• • • • •

Note: Knobs for operating switches are to be supplied by the customer.







Recommended PC Board Hole Pattern

9

AMP

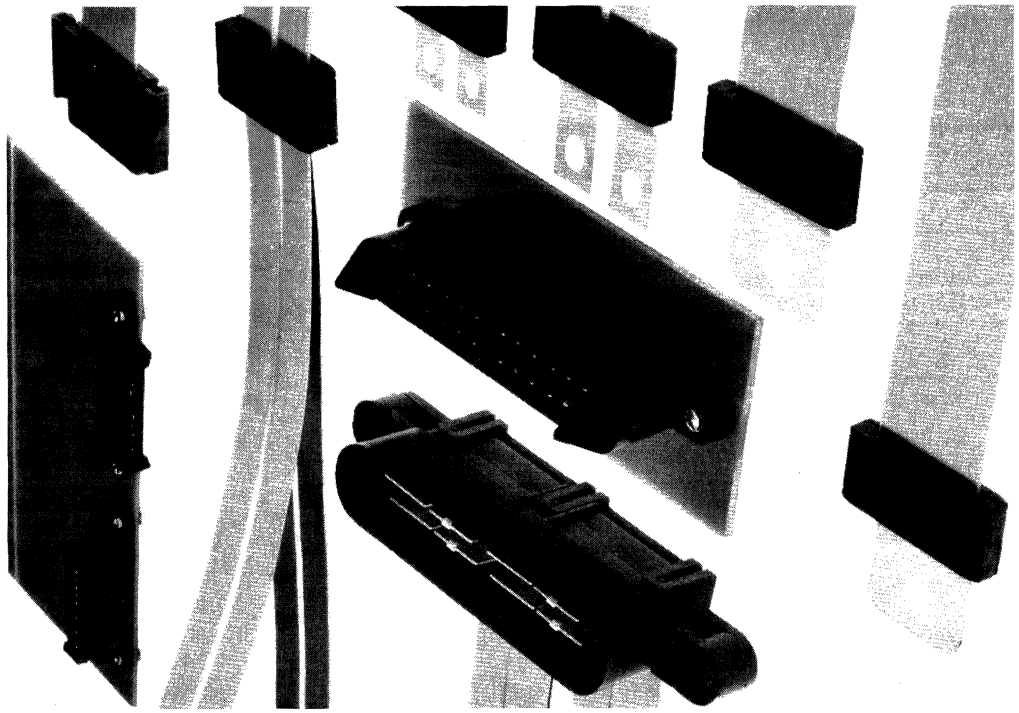
Miscellaneous Products

Qualified AMP Products for Military Applications are summarized on page 2.
Note: See sections 3, 5 and 7 for additional PC Board Connectors.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

AMPOWER Wave Crimp System



Today's intelligent systems require more sophisticated power distribution solutions than ever before. Even the conductor geometry can make a significant impact on systems performance. Flat conductors offer desirable packaging advantages:

- Improved heat dissipation resulting in higher current capacity or reduced operating temperature.
- Low inductance, high capacitance power distribution.
- Reduced noise.
- Packaging flexibility.

The AMPOWER Wave Crimp System is the first power distribution system to offer a cost effective, totally mechanical termination method for insulated flat copper cable.

Assemblies provide:
A fully shrouded and polarized separable interface with right angle and vertical board mount headers.

The first flat cable tap that allows branching from primary trunk lines.

Blind mate drawer connectors feature sequential mating.

AMPOWER flat cable assemblies provide a unique and effective means of distributing power from source to load in today's high speed, high density systems.

Performance Data

Voltage Rating — 250 V AC/DC max.
Dielectric Withstanding Voltage — 1200 vac
Insulation Resistance — 5000 megohms initial
1000 megohms final
Temperature Range — -55° to +105° C
Current Rating — Refer to Product and/or Application Specifications

Need More Information?

Call The AMP Product Information Center:
1-800-522-6752.

The Product Information Center is staffed with specialists well versed in all AMP products. The Center can provide you with:

- Engineering Support
- Catalogs
- Technical Documents
- AMP Authorized Distribution Locations

Product Facts

- Wave Crimp termination of flat cable requires no stripping, does not reduce cable cross section and provides a reliable, low resistance, gas tight interface
- Separable interfaces have positive locking, polarization and contact shrouding
- Right-angle and vertical headers on .100 [2.54] and .125 [3.17] centers, accommodate standard .040 [1.02] PCB hole diameters
- Four cable drawer connector can pickup .080 [2.03] misalignment off a common axis and measures 80 amps per cable (at 30°C temperature rise) depending upon the application
- Unique tap permits branching of trunk lines to serve multiple distribution points
- Assemblies are measured at 70–110 amps (with 30°C temperature rise) depending upon mounting interface
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476, No. E13288, and No. E53793
- Certified by Canadian Standards Association, File No. LR7189A-149

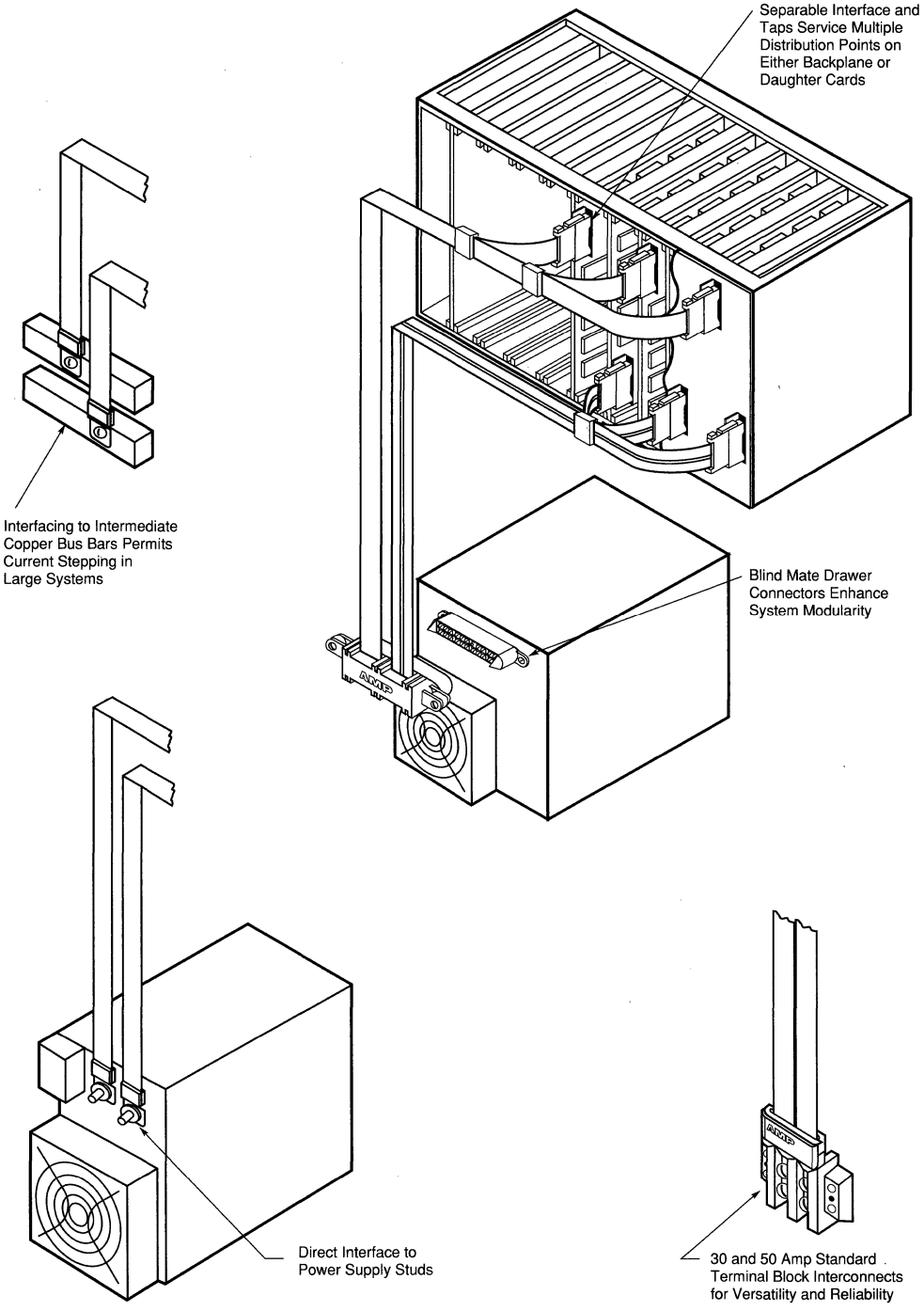
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)

Specifications subject to change. Consult AMP Incorporated for latest design changes.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

AMPOWER Wave Crimp System

The variety of AMPOWER interfaces available from AMP Incorporated make flat copper cable a versatile and innovative systems solution to power distribution.



AMPOWER Wave Crimp System

Specifications subject to change.
For latest design specifications...
1-800-522-6752

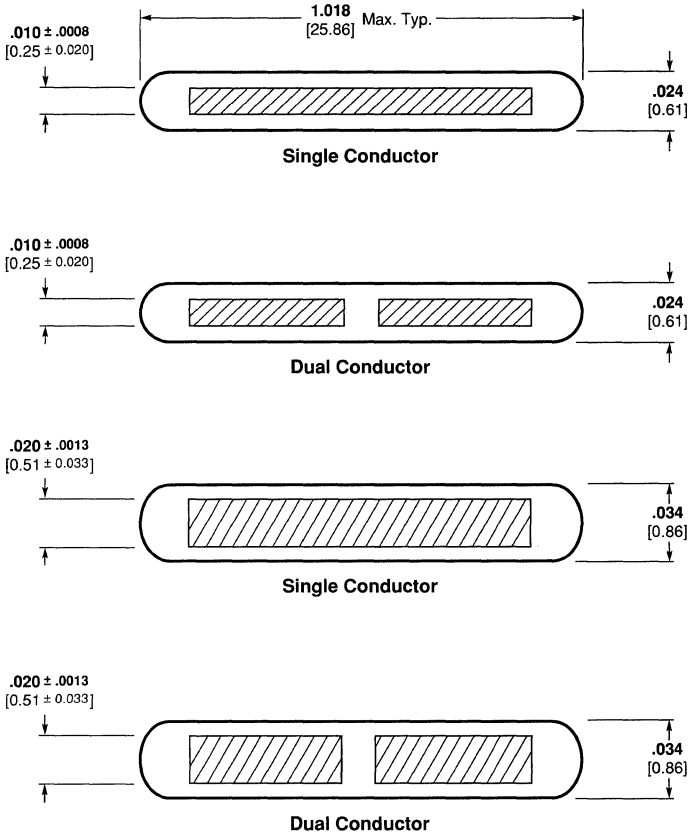
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Copper cable used in AMPOWER Wave Crimp System assemblies is available in dual or single conductor in .010 [0.25] or .020 [0.51] thick copper.

Conductor Thickness	Resistance	
	Single	Dual
.010 0.25	.912	2.030
.020 0.51	.456	.996

Note: The D.C. resistance of a 12.00 in. [304.80] length of conductor, when measured at 25°C and 10 amps, shall be < this figure (in milliohms).

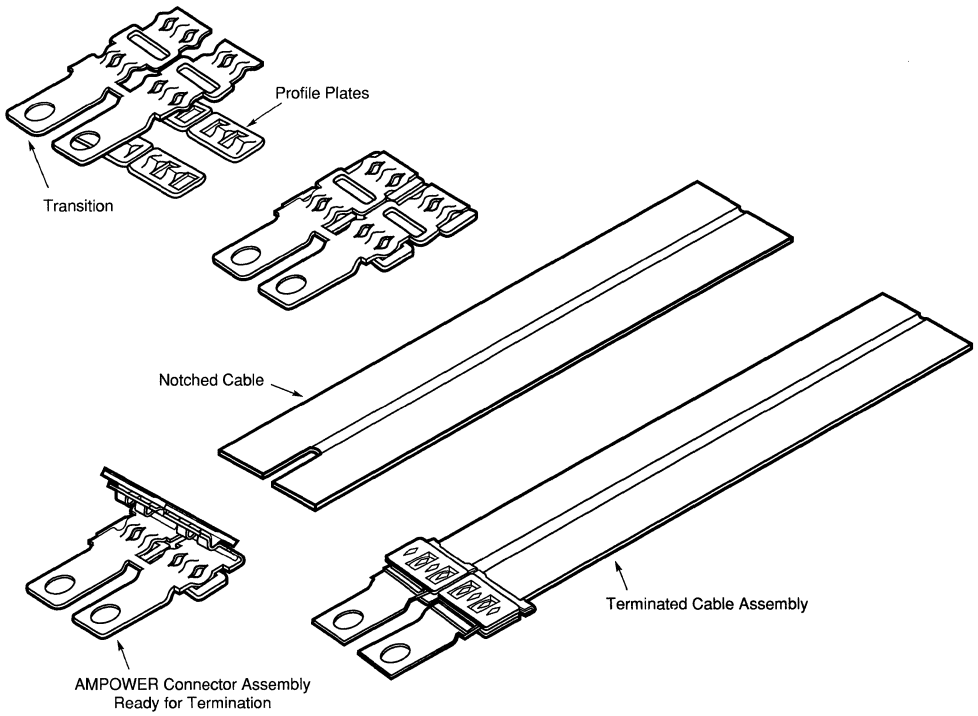
Copper Cable Variations



Circular MILS Per Conductor	Approx AWG Per Conductor
11,460	10
5,730	13
25,130	6
12,570	9

Wave Crimp

The most unique feature of the AMPOWER system is the wave crimp itself. Comprised of a hard copper transition sandwiched between soft copper profile plates, it is forced closed on the prepared cable end. The resultant sheared edges of the cable make a termination interface larger in area than the cable cross section itself. For assured reliability, diamond shaped indents spread each wave, creating a stored energy crimp that is a mechanically sound, low resistance gas tight interface without cable stripping.



AMPOWER Wave Crimp System

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Terminal Block Interface

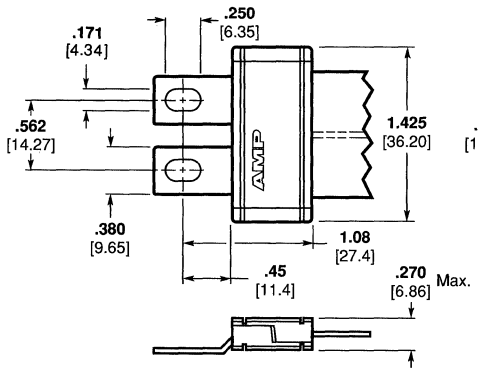
Material:

Cover—Black thermoplastic, UL 94V-0 rated
Contacts—Copper alloy

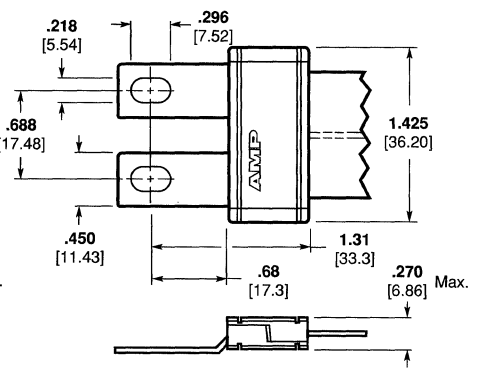
Finish:

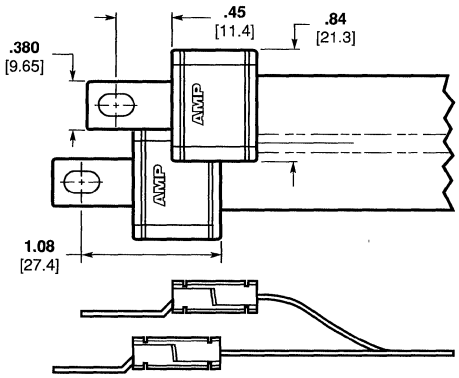
Silver on termination and mating interface
All over nickel base plate

765192-1

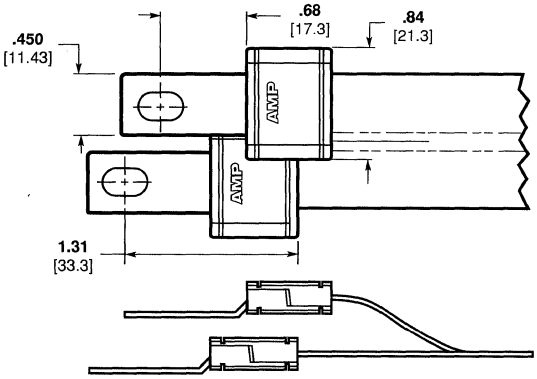


765234-1





765193-1



765233-1

Centerline Spacing	Termination Assembly	Cover	Standard Kit[1] P/N	Staggered Kit[2] P/N
.562 14.24	765216-1	765228-1	765192-1	—
—	765216-1	765229-1	—	765193-1
.688 17.48	765225-1	765228-1	765234-1	—
—	765225-1	765229-1	—	765233-1

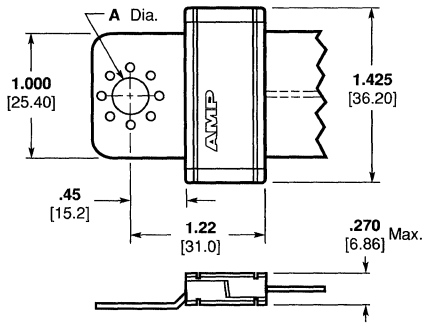
Stud Interface

Material:

Cover—Black thermoplastic, UL 94V-0 rated
Contacts—Copper alloy

Finish:

Silver on termination and mating interface
All over nickel base plate



Stud Size	Hole Size "A"	Termination Assembly	Cover	Kit[1] Part Numbers
1/4"	.266 6.76	765226-1	765228-1	765232-2
5/16"	.328 8.33	765227-1	765228-1	765232-1

[1]A kit consists of 1 termination assembly and 2 covers.
[2]A kit consists of 1 termination assembly and 4 covers.

AMPOWER Wave Crimp System

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

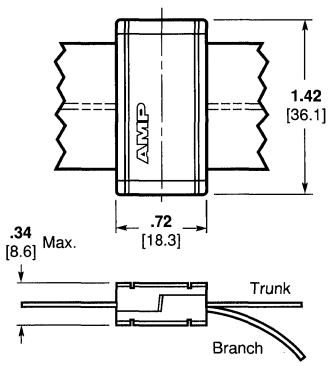
Tap Termination

Material:

Protective Housings—Black thermoplastic, UL 94V-0 rated
Contacts—Copper alloy

Finish:

Silver on termination
All over nickel base plate



Tap 765237

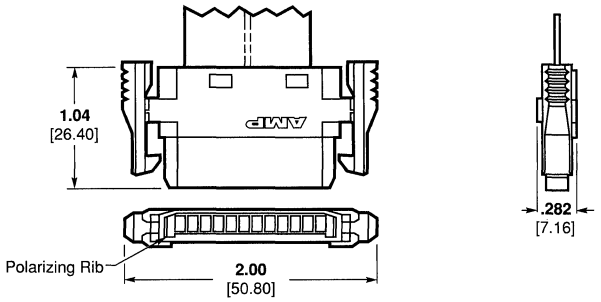
Cable to Board Interface

Material:

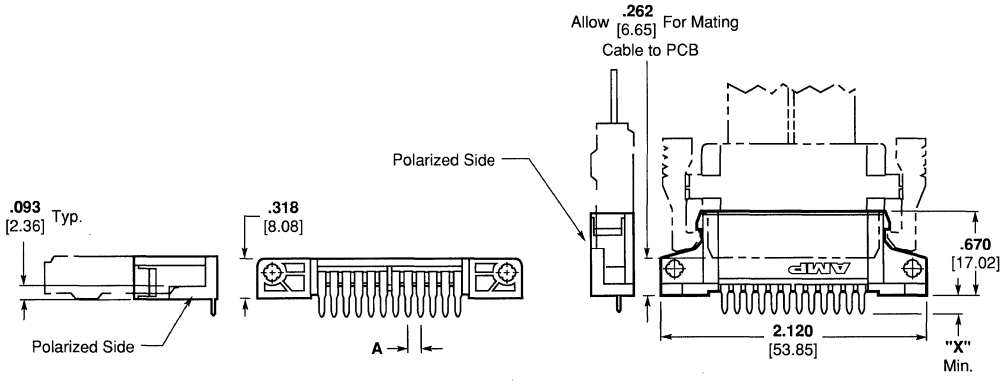
Protective Housings—Black thermoplastic, UL 94V-0 rated
Contacts—Copper alloy

Finish:

Silver on termination and mating interface
Tin-lead on header solder tails
All over nickel base plate



Plug 765191-1



Horizontal Header **Vertical Header**

Header Pin Pitch "A"	"X"	Header Assembly Part Number	
		Horizontal	Vertical
.100 2.54	.124 3.15	765204-1	765206-1
	.165 4.19	—	765206-2
.125 3.18	.124 3.15	765205-1	765207-1
	.165 4.19	—	765207-2

AMPOWER Wave Crimp System

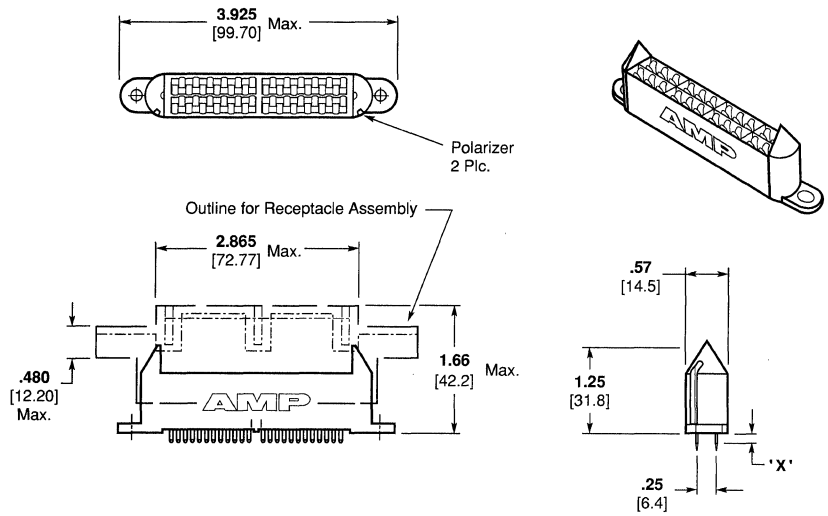
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Four Cable Drawer Connector .100 x .250 Grid Header

Material:

Housing—Black thermoplastic, UL 94V-0 rated
Contacts—Copper alloy, silver plated



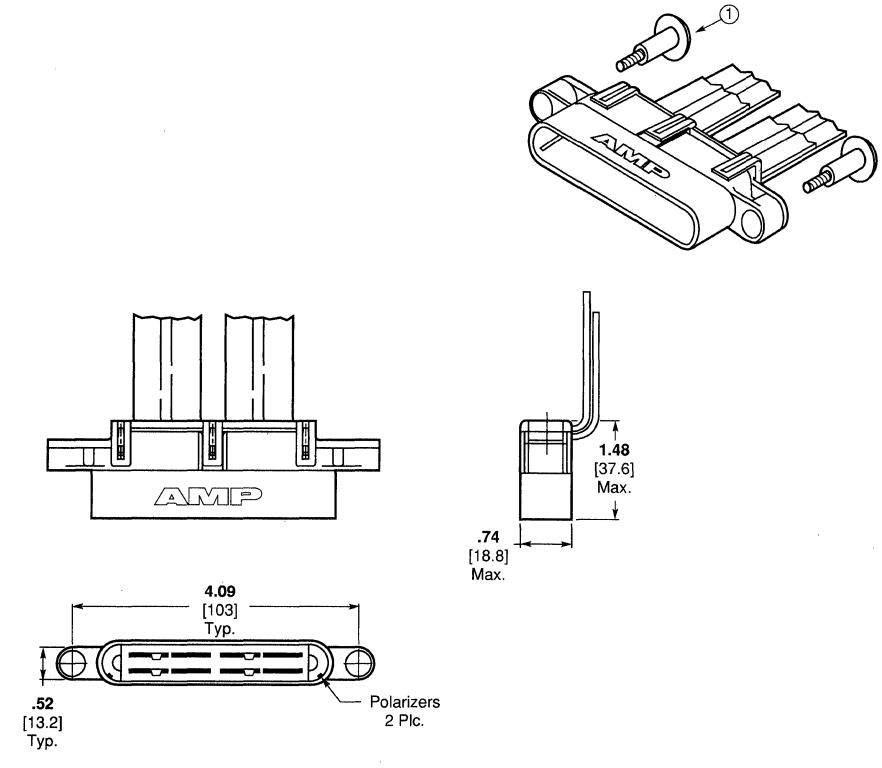
"X"	Header Assembly
.131 3.33	765208-1
.165 4.19	765208-2

[1]Mounting hardware: 2 #4-40, screws and nuts or 2 eyelets, AMP P/N 748572-2

Four Cable Drawer Connector Receptacle

Material:

Housing—Black thermoplastic, UL 94V-0 rated
Contacts—Copper alloy, silver plated



Receptacle	Strain Relief	Contacts	
		Power	Ground[2]
765201-1	765202-1	765209-4	765209-3

[1]Recommended mounting hardware, AMP P/N 208211-4, 2 required per kit and 2 #6-32 nuts (customer supplied)
[2]Ground contacts are longer and mate before power contacts.

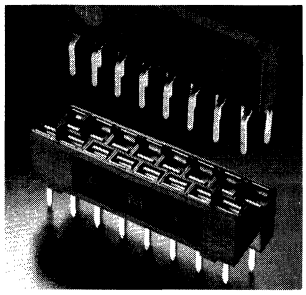
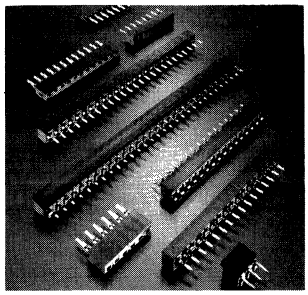
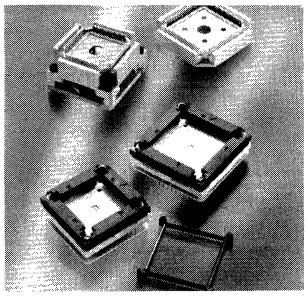
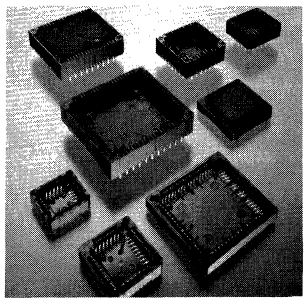
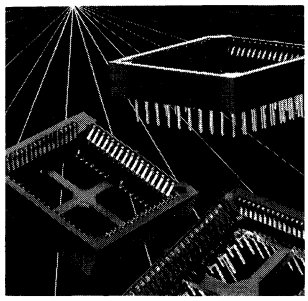
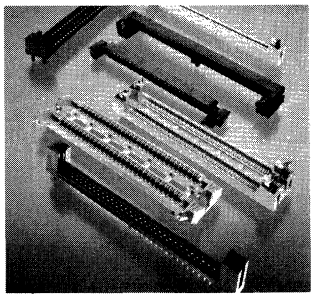
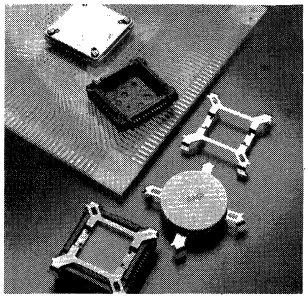
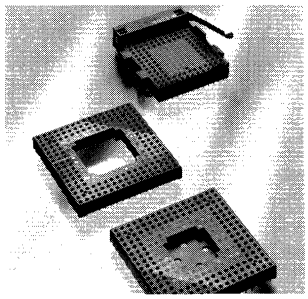
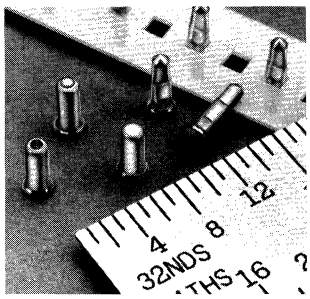
10

AMP

IC Sockets

Qualified AMP Products for Military Applications are summarized on page 2.

IC Sockets

Complex printed circuits are too valuable to risk direct soldering to expensive integrated circuits (IC's). Socketing is the answer, and while the use of sockets obviously involves additional costs, it offers advantages that not only prove cost effective in the long run, but also simplify board design and manufacture. Some of these advantages are:

Repairability. The ability to remove socketed chip carriers easily aids trouble-shooting and repair.

Lower service costs. Substituting a good chip for a bad one is less costly than substituting a good board for a bad one.

Reprogramming. Simple exchange of chips, such as ROM's or EPROM's, allow circuits to be reprogrammed. Again, the pluggability by socketing simplifies the task.

Future expansion. Sockets can be provided in advance for future expansion of function.

Factory testing and burn-in. Testing a bare, unmounted chip is not acceptable, therefore socketing is a must.

Replacement of early-life failures. Advanced state-of-the-art chips, whose life cycle is still in the beginning of the learning curve, can have a high failure rate. Such failures often occur during burn-in of assembled equipment before shipment. The ability to plug a new chip into a socket is a boon.

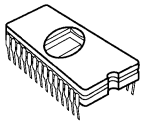
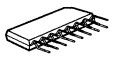
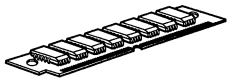
Manufacturing ease. During the setup of equipment, new IC packages are often not available in full quantity. Socketing allows assembly to proceed through testing by reusing on-hand chips. When late deliveries arrive, new chips can be plugged in, and the equipment shipped.

AMP has kept pace with IC technology by designing sockets to handle all popular forms of IC's including DIP's, SIP's ZIP's as well as sockets for PLCC, LCCC, PQFP, CQFP, SIMM and PGA packages.

On pages 10004 and 10005 is a Product Selection Guide which lists important facts about AMP sockets available for most device types.

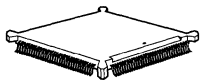
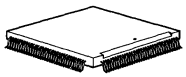
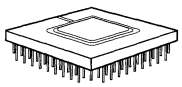
IC Sockets — Product Selection Guide

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Device	AMP Socket	Page No.	Mounting Styles	Row-to-Row Spacing	Socket Contact Spacing	No. of Pos.	Contact Material	Contact Plating(s)	Height Above PCB	Type of Socket
DIP	DIPLOMATE DL	10006 10013	Thru-hole Surface Mt.	**.300** 7.62 **.400** 10.16 **.600** 15.24 **.900** 10.16	**.100** 2.54	6–64	Beryllium Copper Phosphor Bronze	Tin Gold	**.210** 5.33 **.240** 6.10	Production
	DIPLOMATE SL	10009 10014	Thru-Hole Surface Mt.	**.300** 7.62 **.400** 10.16 **.600** 15.24	**.100** 2.54	8–40	Beryllium Copper Phosphor Bronze	Tin	**.185** 4.70 **.211** 5.36	Production
	DIPLOMATE OTC	10016 10017	Thru-Hole Surface Mt.	**.300** 7.62 **.600** 15.24	**.100** 2.54	16–40	Beryllium Copper Copper Alloy Phosphor Bronze	Tin Gold	**.210** 5.33 **.211** 5.36 **.240** 6.10	Production
	Miniature Spring	10115	Thru-Hole	—	—	—	Beryllium Copper	Tin Gold	**.022** 0.56	Production
	Film Carrier	10143	Thru-Hole Surface Mt.	**.300** 7.62 **.600** 15.24 **.900** 22.86	**.100** 2.54	16–64	Beryllium Copper	Tin Gold	**.031** 0.79	Production
	ZIF-Lock (Zero Ins. Force)	10126	Thru-Hole	**.300** 7.62 **.600** 15.24	**.100** 2.54	14–40	Beryllium Copper	Tin Gold	**.500** 12.7	Burn-In
	Reusable Receptacles	10139	Thru-Hole	—	—	—	Beryllium Copper	Tin Gold	**.035** 0.89	Test
SIP	DIPLOMATE DL	10019	Thru-Hole	—	**.100** 2.54	8–30	Beryllium Copper Phosphor Bronze	Tin Gold	**.210** 5.33	Production
	DIPLOMATE SL	10021	Thru-Hole	—	**.100** 2.54	3–25	Beryllium Copper Phosphor Bronze	Tin	**.160** 4.06	Production
	Compliant Pin	10023	Thru-Hole	—	**.100** 2.54	6–12	Phosphor Bronze	Tin	**.213** 5.41	Production
	Miniature Spring	10115	Thru-Hole	—	—	—	Beryllium Copper	Tin Gold	**.022** 0.56	Production
	Film Carrier	10143	Thru-Hole Surface Mt.	—	**.100** 2.54	8–100	Beryllium Copper	Tin Gold	**.031** 0.79	Production
	Reusable Receptacles	10139	Thru-Hole	—	—	—	Beryllium Copper	Tin Gold	**.035** 0.89	Test
ZIP	DIPLOMATE ZP	10025	Thru-Hole	**.100** 2.54	**.050** 1.27	16–28	Phosphor Bronze	Tin	**.255** 6.48	Production
	Film Carrier	10143	Thru-Hole Surface Mt.	**.100** 2.54	**.050** 1.27	20, 28	Beryllium Copper	Tin Gold	**.031** 0.79	Production
SIMM	DIPLOMATE SIMM	10027	Thru-Hole	**.300** 7.62 **.400** 10.16 **.500** 12.7	**.100** 2.54	22–42	Beryllium Copper	Tin Gold	**.510** 12.95	Production
	MICRO-EDGE SIMM	10031	Thru-Hole	**.100** 2.54 **.300** 7.62 **.400** 10.16 **.500** 12.7	**.100** 2.54 **.050** 1.27	22–100	Phosphor Bronze	Tin Gold	**.500** 12.7	Production
	SIMM II	10047	Thru-Hole	**.100** 2.54	**.100** 2.54 **.050** 1.27	30–84	Phosphor Bronze	Tin Gold	**.289** 7.34 to **.414** 10.52	Production
PLCC	HPT	10050	Thru-Hole	—	**.100** 2.54	20–84	Phosphor Bronze	Tin	**.360** 9.14 Max.	Production
	Low Profile PLCC	10056	Surface Mt.	—	**.050** 1.27	20–68	Phosphor Bronze	Tin	**.185** 4.70 Max.	Production

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Chart contains dimensions in inches over millimeters.

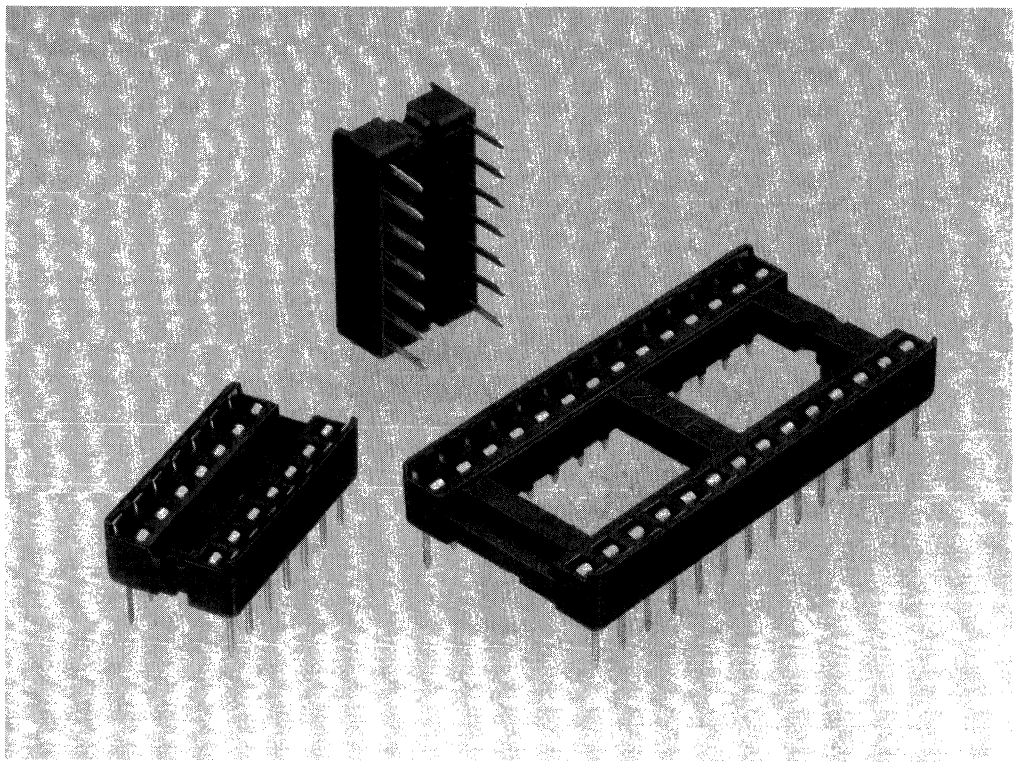
Device	AMP Socket	Page No.	Mounting Styles	Row-to-Row Spacing	Socket Contact Spacing	No. of Pos.	Contact Material	Contact Plating(s)	Height Above PCB	Type of Socket
PQFP										
	MICRO-PITCH	10061	Thru-Hole	—	**.075** 1.91	100,132, 164	Phosphor Bronze	Tin	**.375** 9.53	Production
	MICRO-PITCH Emulator Adapter	10065	—	—	**.025** 0.64	100, 132	Phosphor Bronze	Tin	**.375** 9.53	Production
CQFP										
	MICRO-PITCH with Converter	10069	Thru-Hole	—	**.075** 1.91	100, 132	Phosphor Bronze	Tin	**.375** 9.53	Production
JEDEC Type A										
	Gold-Gold System	10070	Thru-Hole Surface Mt.	—	**.100** 2.54 **.050** 1.27	2–84	Beryllium Copper	Hard Gold	**.320** 8.13 Max.	Production
LCCC										
	Low Height	10079	Thru-Hole Surface Mt.	—	**.100** 2.54 **.050** 1.27	44–100	Beryllium Copper	Gold	**.350** 8.89 Max.	Production
	Universal High Speed	10085	Surface Mt.	—	**.020** 0.51 to **.050** 1.27	68–164	Phosphor Bronze	Gold	**.230** 8.13	Production
	164/220-Position INTERPOSER Test Socket	10141	—	—	**.050** 1.27 **.025** 0.64	68–220	Phosphor Bronze Beryllium Copper	Gold	—	Test
PGA										
	LIF	10087	Thru-Board	—	**.100** 2.54	65–289	Beryllium Copper	Gold	**.280** 7.11	Production
	ZIF	10089	Thru-Board	—	**.100** 2.54	68–400	Beryllium Copper	Gold	**.336** 8.56	Production
	Film Carrier	10143	Thru-Board Surface Mt.	—	**.100** 2.54	68–168	Beryllium Copper	Gold	**.031** 0.79	Production
	ZIF B.I.	10131	Thru-Board	—	**.100** 2.54	64–625	Beryllium Copper	Gold	**.451** 11.46 to **.572** 14.53	Burn-In

Legend: DIP—Dual In-Line Package
SIP—Single In-Line Package
ZIP—ZIG-ZAG Package
SIMM—Single In-Line Memory Module
PLCC—Plastic Leaded Chip Carrier
PQFP—Plastic Quad Flat Pack
CQFP—Ceramic Quad Flat Pack
LCCC—Leadless Ceramic Chip Carrier
PGA—Pin Grid Array
LIF—Low Insertion Force
ZIF—Zero Insertion Force

Solder Tail Dual Leaf (DL) Contact Sockets, (Economy and Standard Open Frame)

Product Facts

- Low Profile — .210 [5.33] above pc board
- Dual wiping contacts
- Face wipe contacts for high reliability and constant, low resistance
- Anti-overstress on standard versions prevents contact damage
- Large target area, with tapered lead-in ramps, for easy DIP insertion
- "True Closed Bottom" * design totally prevents solder and contamination from entering contact cavity
- Stackable end-to-end and side-to-side ("brickwalling") for high board density
- Housing standoffs and slots facilitate board cleaning
- Family of 6 through 64 positions
- Retention style tails or straight solder tails
- Visual polarization
- Designed for automatic machine insertion — DIP-to-socket or socket-to-board (tube loaded)
- Tin or gold plated phosphor bronze, beryllium copper or copper alloy contacts
- Designed to meet EIA RS-415, MIL-S-83734 and stringent computer specifications
- Meets the material requirements of Table 23.1 of UL 1410 Standard for Television Receivers and Video Products
- Recognized under the Component Program of Underwriters Laboratories Inc., File E28476
- Certified by Canadian Standards Association, File No. LR 16455

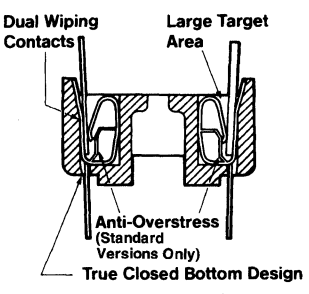


The DIPLOMATE Dual Leaf (DL) DIP socket family provides high quality at low cost with superior handling characterstics. It is available in 6 through 64 position sizes with dual wiping contacts in tin or gold plating over beryllium copper, economical phosphor bronze or copper alloy. The large target rea of the contacts and tapered side ramps in the housing insure easy entry of a DIP package. Internal anti-overstress walls on the standard versions prevent contact damage. The housings are compatible with commercially available automatic insertion equipment for socket-to-board or DIP-to-socket applications. These stackable housings feature a "True Closed Bottom" * design which prevents solder or flux wicking at class 1 conditions of EIA 486.

Standoffs provide board clearance for proper cleaning after soldering. Sockets are available with straight solder tails for clinching and are "true positioned" for automatic insertion into the pc board. Solder tails with retention feature, for self-retention in the pc board during handling and flow soldering, are available for hand insertion.

Housings are constructed from self-extinguishing glass-filled polyester, 94 V-0 rated material and meet the material requirements of Table 23.1 of UL 1410 Standard for Television Receivers and Video Products.

The DIPLOMATE (DL) DIP socket family meets the requirements of EIA RS415, MIL-S-83734 and the most stringent specifications of main-frame computer manufacturers.



Performance Characteristics

Rating:
250 VAC

Contact Resistance:
20 milliohms max. (initial)
30 milliohms max. (after test)

Dielectric Withstanding Voltage:
1000 VRMS min.

Insulation Resistance:
5000 megohms min.

Capacitance:
0.5 picofarad max.

Operating Temperature:
−55°C to +105°C (tin), −55°C to +125°C (gold), −40°C to +85°C (copper alloy)

Vibration:
10−2000−10 Hz in 20 minutes at .06 [1.52] or 15 G's for 3 sweeps in each of 3 axes

Shock:
100 G's sawtooth 6 shocks

Engaging Force:
340 grams [3.33 N] max. (.013 [0.33] pin)

Separating Force:
25 grams [.24 N] (.008 [0.2] pin)

Technical Document

Product Specification:
108-1066 Standard
108-1199 Economy

Application Specification:
114-1049

* All sockets except 6 and 8 positions.

DIP Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

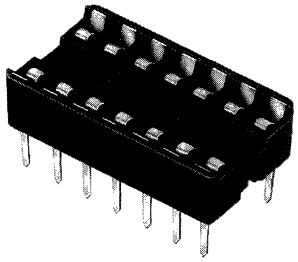
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Dual Leaf (DL) Contact Sockets, Economy

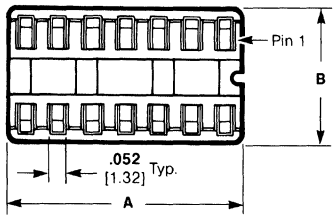
Sockets accept .008 – .014 [0.2 – 0.36] thick IC leads

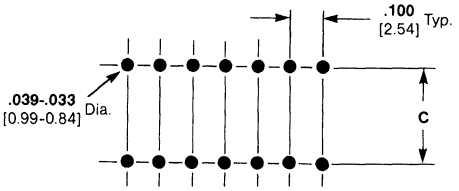
Material and Finish:

Housings — Glass-filled thermoplastic, 94 V-0 rated, black
Contacts — Copper alloy, tinned

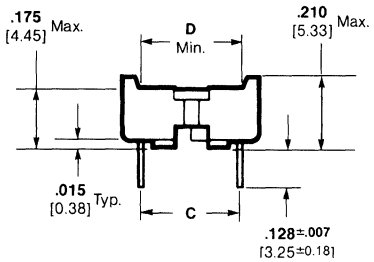


Note: All socket positions have "True Closed Bottom" design which allows no solder or flux wicking at class 1 conditions of EIA 486.





Recommended Mounting Dimensions



Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

No. of Pos.	Dimensions				Part Number[1]
	A	B	C	D	
14	**.695** 17.65	**.394** 10.01	**.300** 7.62	**.320** 8.13	2-641599-5
16	**.795** 20.19	**.394** 10.01	**.300** 7.62	**.320** 8.13	2-641600-5
18	**.895** 22.73	**.394** 10.01	**.300** 7.62	**.320** 8.13	2-641601-5
20	**.995** 25.27	**.394** 10.01	**.300** 7.62	**.320** 8.13	2-641602-5
22	**1.095** 30.35	**.494** 12.55	**.400** 10.16	**.420** 10.67	2-641603-5
24	**1.195** 30.35	**.394** 10.01	**.300** 7.62	**.320** 8.13	2-641932-5
24	**1.195** 30.35	**.494** 10.01	**.400** 10.16	**.421** 10.69	2-371471-5
24	**1.195** 30.35	**.694** 17.63	**.600** 15.24	**.620** 15.75	2-641604-5
28	**1.395** 35.43	**.694** 17.63	**.600** 15.24	**.620** 15.75	2-641605-5
40	**1.995** 50.67	**.694** 17.63	**.600** 15.24	**.620** 15.75	2-641606-5
48	**2.395** 60.83	**.694** 17.63	**.600** 15.24	**.620** 15.75	2-643574-5
64	**3.215** 81.66	**1.024** 26.01	**.900** 22.86	**.920** 23.37	643575-5

[1]All parts except 64 position are packaged in plastic tubes.
Note: 64-position socket is not side-to-side or end-to-end stackable.

DIP Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

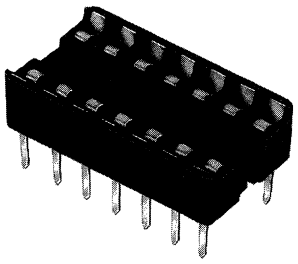
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Dual Leaf (DL) Contact Sockets, Standard

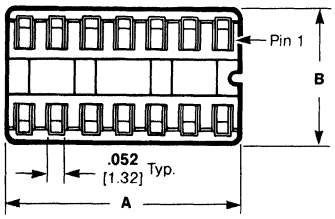
Sockets accept .008 – .014 [0.2 – 0.36] thick IC leads

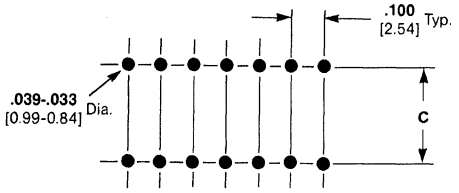
Material and Finish:

Housings — Glass-filled thermoplastic, 94V-0 rated, black



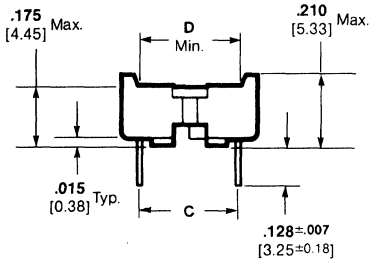
Note: All socket positions have "True Closed Bottom" design which allows no solder or flux wicking at class 1 conditions of EIA 486.



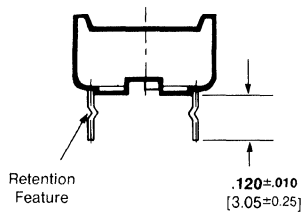


Recommended Mounting Dimensions

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.



Sockets with Straight Solder Tails



Sockets with Retention Feature Solder Tails

No. of Pos.	Dimensions A	B	C	D	Part Numbers[1] Sockets with Straight Solder Tails — Beryllium Copper Tinned	Beryllium Copper .000030 [0.00076][2] Gold Plate	Phosphor Bronze Tinned	Phosphor Bronze .000015 [0.00038][2] Gold Plate	Sockets with Retention Feature — Beryllium Copper Tinned	Beryllium Copper .000030 [0.00076][2] Gold Plate	Phosphor Bronze Tinned	Phosphor Bronze .000015 [0.00038][2] Gold Plate
6[3]	.295 7.49	.394 10.01	.300 7.62	.320 8.13	2-641296-1	2-641296-2	2-641296-3	2-641296-4	2-641259-1	2-641259-2	2-641259-3	2-641259-4
8[3]	.395 10.03	.394 10.01	.300 7.62	.320 8.13	2-640463-1	2-640463-2	2-640463-3	2-640463-4	2-641260-1	2-641260-2	2-641260-3	2-641260-4
14	.695 17.65	.394 10.01	.300 7.62	.320 8.13	2-641599-1	2-641599-2	2-641599-3	2-641599-4	2-641609-1	2-641609-2	2-641609-3	2-641609-4
16	.795 20.19	.394 10.01	.300 7.62	.320 8.13	2-641600-1	2-641600-2	2-641600-3	2-641600-4	2-641610-1	2-641610-2	2-641610-3	2-641610-4
18	.895 22.73	.394 10.01	.300 7.62	.320 8.13	2-641601-1	2-641601-2	2-641601-3	2-641601-4	2-641611-1	2-641611-2	2-641611-3	—
20	.995 25.27	.394 10.01	.300 7.62	.320 8.13	2-641602-1	2-641602-2	2-641602-3	2-641602-4	2-641612-1	2-641612-2	2-641612-3	2-641612-4
22	1.095 30.35	.394 10.01	.300 7.62	.320 8.13	—	—	2-644105-3	—	—	—	—	—
22	1.095 30.35	.494 12.55	.400 10.16	.420 10.67	2-641603-1	—	2-641603-3	—	—	—	2-641613-3	—
24	1.195 30.35	.394 10.01	.300 7.62	.320 8.13	2-641932-1	2-641932-2	2-641932-3	2-641932-4	2-641933-1	2-641933-2	2-641933-3	2-641933-4
24	1.195 30.35	.494 10.01	.400 10.16	.421 10.69	2-382471-1	2-382471-2	2-382471-3	2-382471-4	—	—	—	—
24	1.195 30.35	.694 17.63	.600 15.24	.620 15.75	2-641604-1	2-641604-2	2-641604-3	2-641604-4	—	2-641614-2	2-641614-3	2-641614-4
28	1.395 35.43	.694 17.63	.600 15.24	.620 15.75	2-641605-1	2-641605-2	2-641605-3	2-641605-4	—	2-641615-2	2-641615-3	2-641615-4
32	See Page 10016											
40	1.995 50.67	.694 17.63	.600 15.24	.620 15.75	2-641606-1	2-641606-2	2-641606-3	2-641606-4	2-641616-1	2-641616-2	2-641616-3	2-641616-4
48	2.395 60.83	.694 17.63	.600 15.24	.620 15.75	2-643574-1	2-643574-2	2-643574-3	2-643574-4	2-643576-1	2-643576-2	2-643576-3	2-643576-4
64	3.215 81.66	1.024 26.01	.900 22.86	.920 23.37	643575-1	643575-2	643575-3	643575-4	643577-1	643577-2	643577-3	643577-4

[1]ONLY sockets with straight solder tails are recommended for automatic insertion. All parts except 64 position are packaged in plastic tubes. Sockets with retention feature are packaged in plastic tubes for handling and storage convenience only.

[2]Gold thickness in contact area; tin-lead plate on solder tails. [3]Closed frame design. **Note:** 64-position socket is not side-to-side or end-to-end stackable.

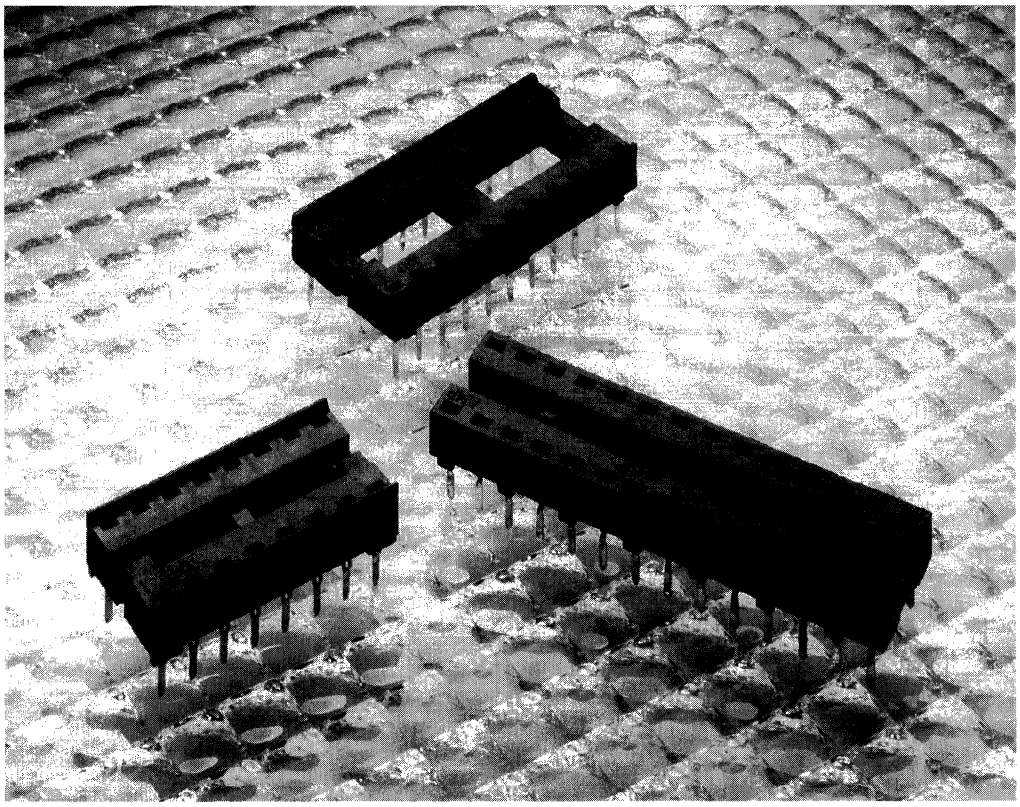
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Solder Tail Single Leaf (SL) Contact Sockets (Open Frame)

Product Facts

- Low Profile — .185 [4.7] above pc board
- Low cost
- Housings are made of self-extinguishing glass-filled polyester, 94V-0 rated
- IC sockets accept rectangular leads up to .015 x .030 [0.38 x 0.76]
- Housings have wide chamfered lead cavities for easy IC insertion
- DIP sockets accept 8- through 40-position IC's
- One-piece housings
- One-piece contacts
- Standoffs at the board interface provide clearance for proper cleaning after soldering
- Standard and military versions available
- Styles available for socketing "Skinny DIP" packages
- Face wipe contacts for high reliability and constant, low resistance
- Anti-overstress prevents contact damage
- Stackable end-to-end and side-to-side ("brickwalling") for high board density
- Visual polarization
- Designed to meet EIA RS415 and stringent computer specifications
- Meets the material requirements of Table 23.1 of UL 1410 Standard of Television Receivers and Video Products
- Recognized under the Component Program of Underwriters Laboratories Inc., File E28476
- Certified by Canadian Standards Association, File No. LR 16455

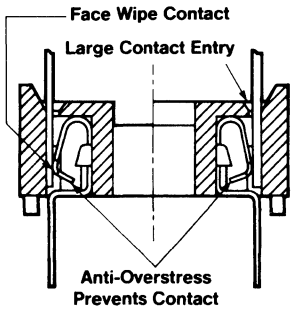


Low cost DIPLOMATE Single Leaf (SL) DIP sockets come in Standard, and Military styles. Versions in 22, 24 and 28 positions are available to socket "Skinny DIP" packages.

Available in 8 through 40 positions, these low profile sockets are provided with contacts made from tin plated beryllium copper, phosphor bronze or copper alloy materials. By design, the contacts are anti-wicking and anti-bridging. Built-in contact stops provide anti-over-stress to prevent contact damage.

One-Piece housings are made of UL 94V-0 self-extinguishing glass-filled polyester and feature wide chamfered lead cavities for easy IC insertion.

Military sockets are qualified to MIL-S-83734.



Technical Document

Product Specification:
108-1074

Performance Characteristics

Rating:
250 VAC

Contact Resistance:
20 milliohms max. (initial),
30 milliohms max. (after test)

Dielectric Withstanding Voltage:
1000 VRMS min.

Insulation Resistance:
10,000 megohms min.

Capacitance:
1.0 picofarad max.

Operating Temperature:
−55°C to +105°C (tin) (BeCu or PhBz), −55°C to +85°C (tin) (copper alloy)

Vibration:
10−2000−10 Hz in 20 minutes at .06 [1.52] or 15 G's for 3 sweeps in each of 3 axes

Shock:
100 G's sawtooth, 6 shocks

Engaging Force:
340 grams [3.33 N] max. (.013 [0.33] pin)

Separating Force:
15 grams [.15 N] (.008 [0.2] pin)

DIP Sockets
(Continued)

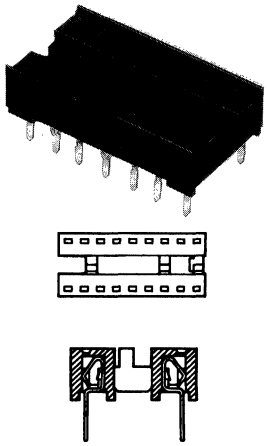
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Single Leaf (SL) Contact Sockets — Standard (Open Frame)

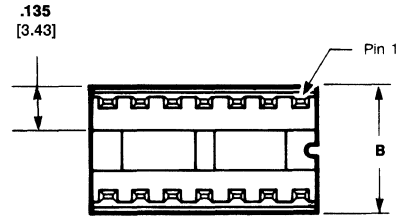
Sockets accept .008 – .015 [0.2 – 0.38] thick x .030 [0.76] max. wide rectangular leads

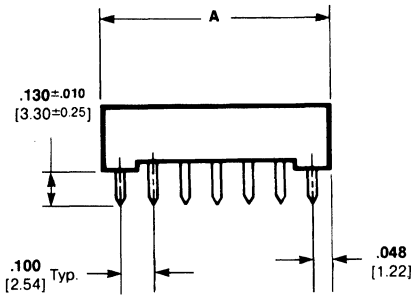
Material and Finish:

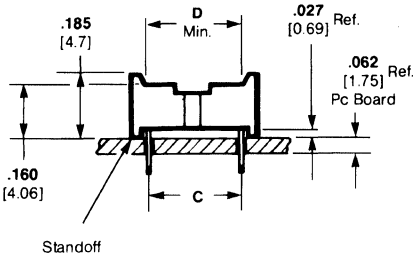
Housing — Glass-filled thermoplastic, 94V-0 rated, black



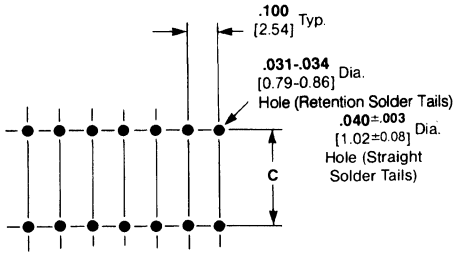
Flat Top Style
10, 22, 24, and 28 Positions[2]



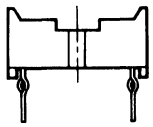




Sockets with Straight Solder Tails



Recommended Mounting Dimensions



Sockets with Retention Solder Tails

No. of Pos.	Dimensions A	B	C	D	Part Numbers[1] Sockets with Straight Solder Tails: Beryllium Copper Tinned	Phosphor Bronze Tinned	Copper Alloy Tinned	Sockets with Retention Feature: Beryllium Copper Tinned	Phosphor Bronze Tinned	Copper Alloy Tinned
8	.397 10.08	.390 9.91	.300 7.62	.320 8.13	2-643290-1	2-643290-3	2-643290-5	2-641866-1	—	2-641866-5
10	.497 12.62	.390 9.91	.300 7.62	—	—	—	—	643534-1	—	—
14	.697 17.70	.390 9.91	.300 7.62	.320 8.13	2-643291-1	2-643291-3	2-643291-5	2-641867-1	2-641867-3	2-641867-5
16	.797 20.24	.390 9.91	.300 7.62	.320 8.13	2-643292-1	2-643292-3	2-643292-5	2-641868-1	2-641868-3	2-641868-5
18	.897 22.78	.390 9.91	.300 7.62	.320 8.13	2-643293-1	2-643293-3	2-643293-5	2-641869-1	2-641869-3	—
20	.997 25.32	.390 9.91	.300 7.62	.320 8.13	2-643294-1	2-643294-3	2-643294-5	2-641870-1	2-641870-3	2-641870-5
22	1.097 27.86	.490 12.45	.400 10.16	.420 10.67	2-643295-1	2-643295-3	2-643295-5	—	—	—
22[2]	1.097 27.86	.390 9.91	.300 7.67	.320 8.13	2-382105-1	2-382105-3	2-382105-5	2-643540-1	2-643540-3	2-643540-5
24	1.197 30.4	.690 17.53	.600 15.24	.620 15.75	2-643296-1	2-643296-3	2-643296-5	2-641872-1	2-641872-3	2-641872-5
24[2]	1.197 30.4	.390 9.91	.300 7.62	.320 8.13	2-382104-1	2-382104-3	2-382104-5	2-643541-1	2-643541-3	2-643541-5
28	1.397 35.48	.690 17.53	.600 15.24	.620 15.75	2-643297-1	2-643297-3	2-643297-5	2-641873-1	2-641873-3	2-641873-5
28[2]	1.397 35.48	.390 9.91	.300 7.62	.320 8.13	2-382103-1	2-382103-3	2-382103-5	2-643543-1	2-643543-3	2-643543-5
40	1.997 50.72	.690 17.53	.600 15.24	.620 15.75	2-643298-1	2-643298-3	2-643298-5	2-641874-1	2-641874-3	2-641874-5

[1]Only part numbers without detents are recommended for automatic insertion. All parts are packaged in plastic tubes. Part numbers with detents are packaged in plastic tubes for handling and storage convenience ONLY.

[2]Allows socketing of "Skinny DIP" packages.

DIP Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

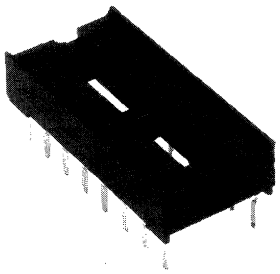
Single Leaf (SL) Contact Sockets — Military (Open Frame)

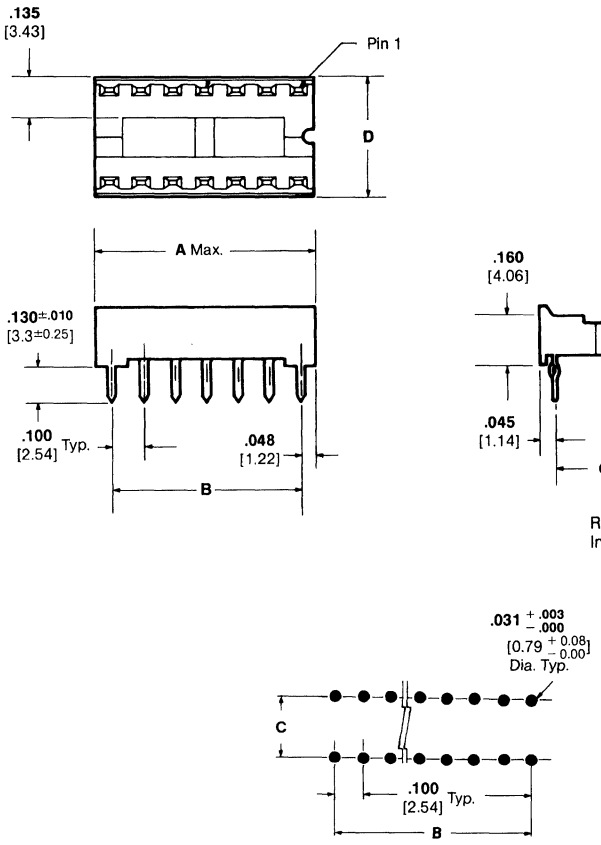
Sockets accept .008 – .015 [0.2 – 0.38] thick x .030 [0.76] max. wide rectangular leads

Material and Finish:

Contacts — Beryllium copper, .000030 [0.00076] gold over .000040 [0.00102] nickel

Housing — Glass-filled thermoplastic, 94V-0 rated, black





Recommended Mounting Dimensions

No. of Pos.	Dimensions A	B	C	D	Military Part No. M83734/	AMP Part No.
8	**.400** 10.16	**.300** 7.62	**.300** 7.62	**.390** 9.91	2-013	643474-2
14	**.700** 17.78	**.600** 15.24	**.300** 7.62	**.390** 9.91	3-013	643475-2
16	**.800** 20.32	**.700** 17.78	**.300** 7.62	**.390** 9.91	4-013	643476-2
18	**.900** 22.86	**.800** 20.32	**.300** 7.62	**.390** 9.91	5-013	643477-2
20	**1.000** 25.4	**.900** 22.86	**.300** 7.62	**.390** 9.91	13-013	643478-2
22	**1.100** 27.94	**1.000** 25.4	**.400** 10.16	**.490** 12.45	6-013	643479-2
24	**1.200** 30.48	**1.100** 27.94	**.600** 15.24	**.690** 17.53	8-013	643480-2
28	**1.400** 35.56	**1.300** 33.02	**.600** 15.24	**.690** 17.53	7-013	643481-2
40	**2.000** 50.8	**1.900** 48.26	**.600** 15.24	**.690** 17.53	10-013	643482-2

Surface Mount and Surface Mount Compatible DL and SL Sockets

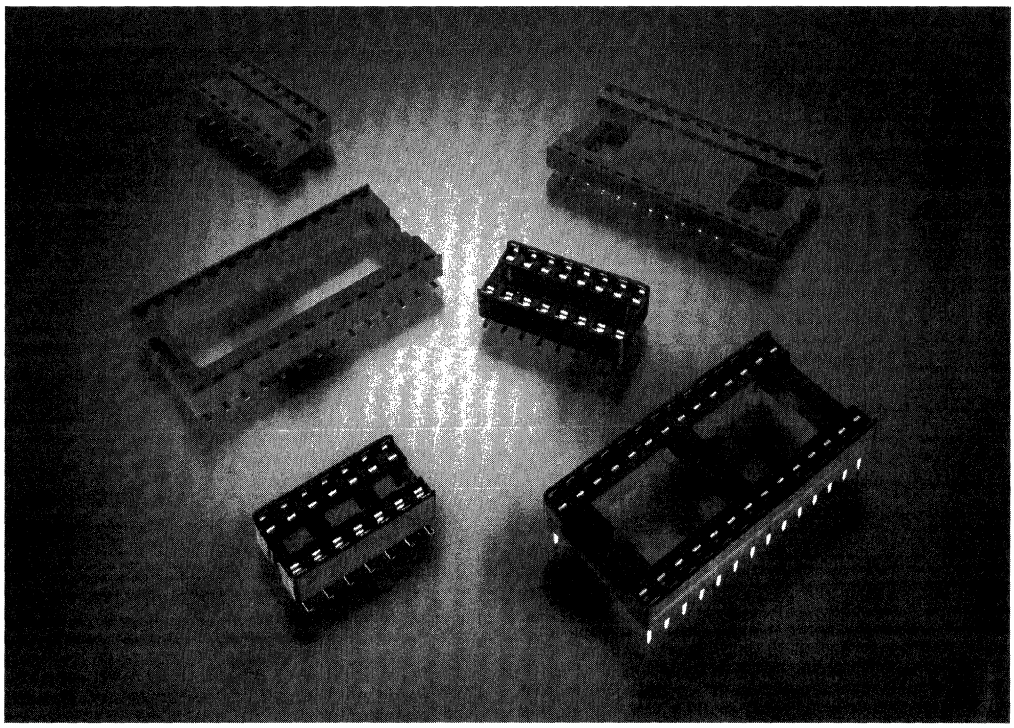
Product Facts:

DIPLOMATE DL Sockets:

- Dual wiping, dual leaf contact design for high reliability and constant low resistance
- Anti-overstress prevents contact damage
- Sealed "true closed bottom" inhibits solder wicking and flux contamination
- Robotic compatibility facilitates automatic assembly
- Choice of tin or gold plated contacts for wider versatility
- Stable and co-planar solder tails yield reliable surface mounting to pc board
- High temperature plastic and contact material are compatible with VPR and IR soldering

DIPLOMATE SL Sockets:

- Bottom loading affords good drainage of cleaning fluids
- Closed top for contact protection
- Stable and co-planar solder tails provide reliable surface mounting to pc board
- High temperature plastic and contact material are compatible with VPR and IR soldering



The AMP DIPLOMATE family of DIP sockets has recently been expanded to include products designed for surface mounting.

Available in both dual leaf (DL) and single leaf (SL) versions, these surface mount sockets combine the proven features of AMP's standard DIPLOMATE products with those specifically designed for vapor phase reflow (VPR) and infrared (IR) soldering, such as gull wing solder tails and high temperature housing and contact materials. All AMP surface mount DIPLOMATE sockets are co-planar for reliable mounting and feature an anti-overstress contact design to prevent contact damage.

DL sockets feature reliable dual face wiping contacts with tin or gold plating over economical phosphor bronze base material. Housings are compatible with commercially available automatic insertion equipment and feature a "true closed bottom" design which prevents solder and flux wicking.

The low cost SL sockets have a closed top housing to prevent contact damage. Contacts are provided in a choice of beryllium copper or phosphor bronze base materials plated with tin. By design, SL sockets are anti-wicking and anti-bridging.

Over-the-component (OTC) designs are available in16- and 32-position DL and 28-position SL versions which allow the socket to be mounted directly over a board mounted capacitor or other component. See pages 10017 and 10018. Also available are through-hole DL sockets that are solder process compatible with existing surface mount components.

Performance Characteristics

Rating:
250 VAC at 1 ampere max.

Termination Resistance:
20 milliohms max. initial
30 milliohms max. after test

Dielectric Withstanding Voltage:
1000 VAC

Insulation Resistance:
10,000 megohms min. initial

Operating Temperature:
−25° to 105°C

Vibration:
15 G's, 10–2000–10 Hz

Physical Shock:
100 G's

Mating Force:
340 grams max. initial

Contact Retention:
340 grams per contact

Contact Separating Force:
25 grams min. (DL) and 15 grams min. (SL)

Durability:
25 cycles

Technical Documents

Product Specifications:
108-1212 DL Sockets
108-1087 SL Sockets

Application Specifications:
114-1044 DL Sockets
114-1037 SL Sockets

DIP Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

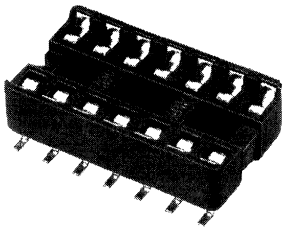
Dual Leaf (DL) Contact Sockets

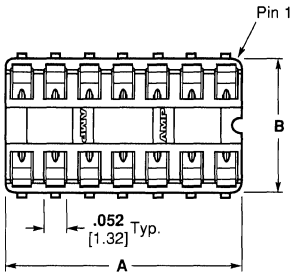
Sockets accept .008–.014 [0.2–0.36] thick IC leads

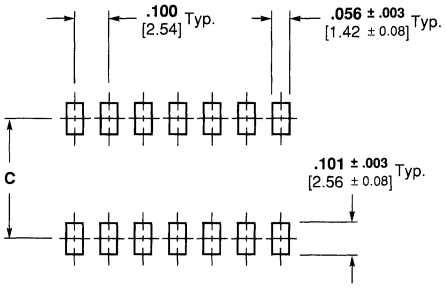
Material and Finish:

Housings — PCT, glass reinforced, 94V-0 rated, black

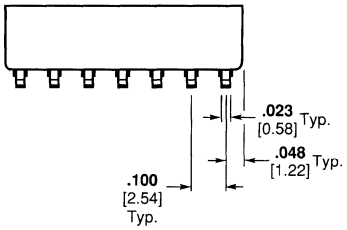
Contacts — Phosphor bronze with tin or gold plating (see table)

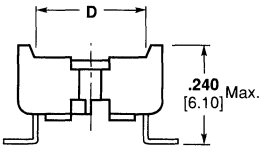




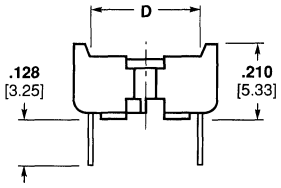


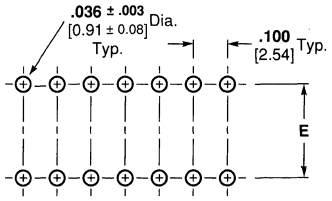
Recommended Mounting Dimensions





Optional Surface Mount Compatible Though-Hole Sockets[1]





Recommended Mounting Dimensions

No. of Pos.	Dimensions A	B	D	Part Numbers: Surface Mount Dim. C	Surface Mount Tinned	Surface Mount Gold Plate[2]	Through-Hole[1] Dim. E	Through-Hole[1] Tinned	Through-Hole[1] Gold Plate[2]
8	**.395** 10.03	**.394** 10.01	**.321** 8.15	**.350** 8.89	2-382401-3	2-382401-4	**.300** 7.62	2-382462-3	2-382462-4
14	**.695** 17.65	**.394** 10.01	**.321** 8.15	**.350** 8.89	2-382402-3	2-382402-4	**.300** 7.62	2-382463-3	2-382463-4
16	**.795** 20.19	**.394** 10.01	**.321** 8.15	**.350** 8.89	2-382403-3	2-382403-4	**.300** 7.62	2-382464-3	2-382464-4
20	**.995** 25.27	**.394** 10.01	**.321** 8.15	**.350** 8.89	2-382405-3	2-382405-4	**.300** 7.62	2-382465-3	2-382465-4
24	**1.195** 30.35	**.694** 17.63	**.621** 15.77	**.650** 16.51	2-382408-3	2-382408-4	**.600** 15.24	2-382466-3	2-382466-4
28	**1.395** 35.43	**.694** 17.63	**.621** 15.77	**.650** 16.51	2-382409-3	2-382409-4	**.600** 15.24	2-382467-3	2-382467-4
40	**1.995** 50.67	**.694** 17.63	**.621** 15.77	**.650** 16.51	2-382411-3	2-382411-4	**.600** 15.24	2-382468-3	2-382468-4

[1]Through-hole sockets are compatible with surface mount soldering practices.
[2]Two .000015 [0.00038] min. thick gold stripes in contact area with tin/lead (93/7) on solder legs and nickel on balance of contact.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

DIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

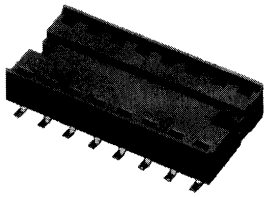
Single Leaf (SL) Contact Sockets

Sockets accept .008–.014 [0.2–0.36] thick IC leads

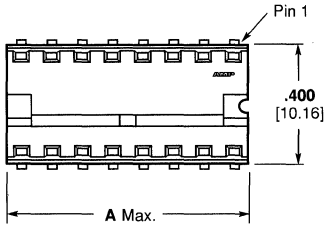
Material and Finish:

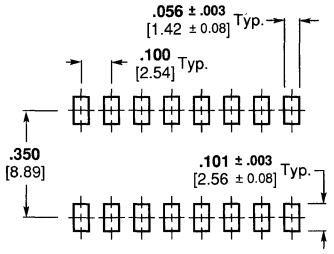
Housings — PCT, glass reinforced, 94V-0 rated, black

Contacts — Phosphor bronze or beryllium copper with matte tin over nickel plating

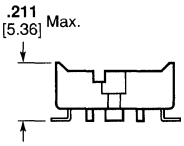


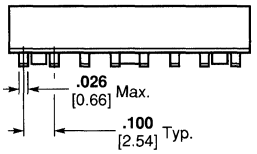
14, 16,18 & 20 Positions

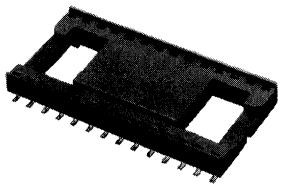




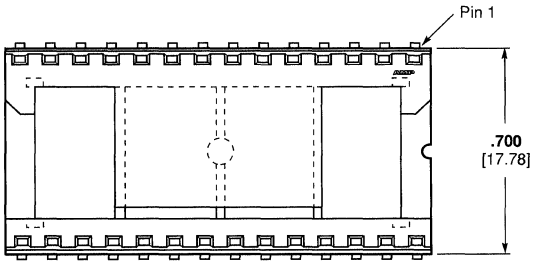
Recommended Mounting Dimensions

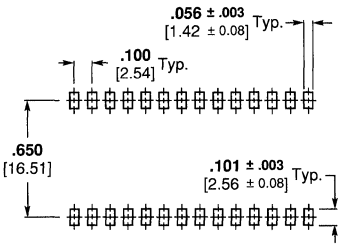




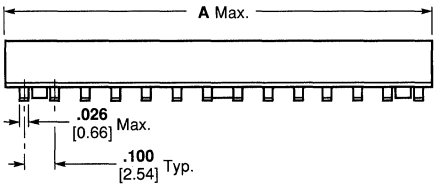


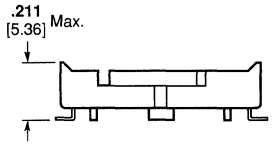
24, 28 & 40 Positions





Recommended Mounting Dimensions





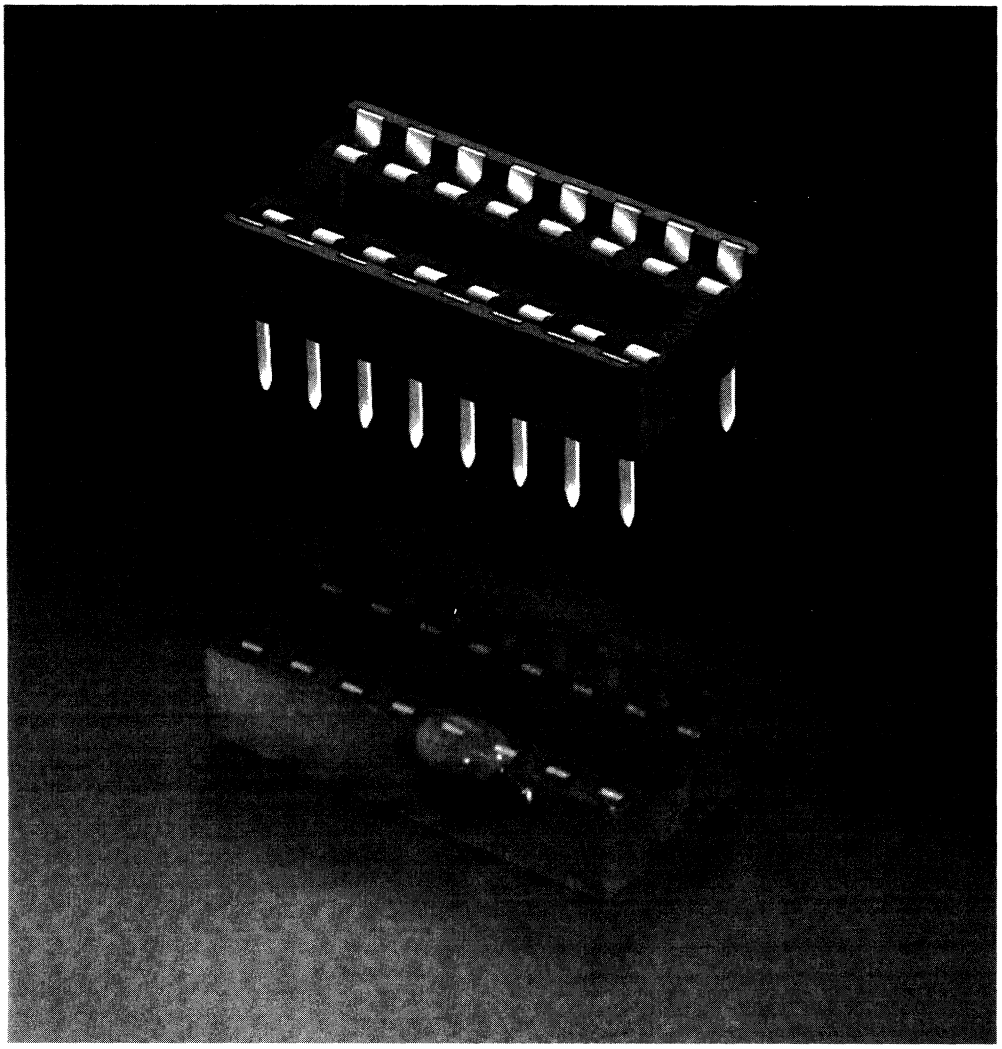
No. of Pos.	Dimension A	Part Numbers	
		Phosphor Bronze	Beryllium Copper
14	**.700** 17.78	2-382245-3	2-382245-1
16	**.800** 20.32	2-382246-3	2-382246-1
18	**.900** 22.86	2-382247-3	2-382247-1
20	**1.000** 25.40	2-382248-3	2-382248-1
24	**1.200** 30.48	2-382251-3	2-382251-1
28	**1.400** 35.56	2-382252-3	2-382252-1
40	**2.000** 50.80	2-382253-3	2-382253-1

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Over-The-Component (OTC) Sockets

Product facts

- Through-hole and surface mount sockets available to meet varying assembly requirements
- Inserted manually or automatically directly over the capacitor
- Packaged in tubes for standard automatic or X/Y axis stacking (brickwall) which affords greater packaging density
- Large target area with lead-in ramp for easy insertion
- Anti-overstress prevents contact damage
- Dual wiping contacts
- Low profile
- Windowed seating plane facilitates heat dissipation and allows visual inspection of traces, solder joints and ease of component repair or replacement
- Custom design possible for special pin-in, pin-out of decoupling capacitor (or other component), depending on board layout
- "True" closed bottom design (Sealed Type) meets the most severe conditions of EIA 486 Class 1 Specifications (antiflux/solder wicking of pluggable electric components)
- Glass filled thermoplastic housing with 94V-0 rating



The DIPLOMATE Over-The-Component (OTC) Socket is designed to meet the needs of OEM manufacturers of memory boards for computer hardware equipment or enhancement (add-on) printed circuit board fabricators.

Available in through-hole, surface mount and surface mount compatible versions, the OTC socket does not house an integral capacitor, but fits over the board mounted capacitor. This allows design flexibility, custom decoupling for the IC device mounted in the OTC socket. The OTC Socket is inserted, manually or automatically, directly over the capacitor which is manually or automatically inserted into the printed circuit board. The ported or windowed seating plane facilitates heat dissipation and allows the user to visually inspect solder joints and access the capacitor for repairs.

The OTC Socket is available in 22 inch tubes which are convenient for manual insertion and are compatible with all major automatic insertion equipment for standard and "brickwall" (X/Y Axis) type insertion for maximum board density. The socket housing material is glass filled thermoplastic with 94V-0 rating.

AMP's DIPLOMATE OTC socket is designed to make effective and economical use of available pc board area. For additional information concerning your particular design requirements, please consult AMP Incorporated.

DIP Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

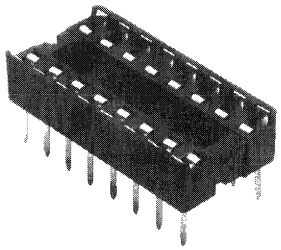
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Solder Tail Over-The-Component (OTC) Dual Leaf (DL) Contact Socket

Receptacle accepts .008–.014 [0.2–0.36] thick IC Lead

Material and Finish:

Glass-filled thermoplastic, 94V-0 rated, black

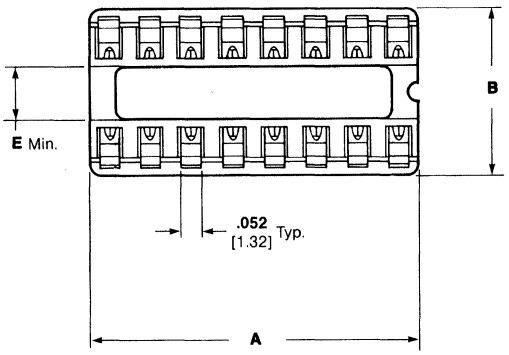


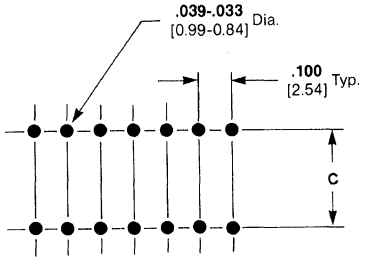
Recommended IC Leg Length:

1) .100 [2.54] min. for a reliable contact surface.
2) .120 [3.05] max. to allow IC body to seat on socket.
3) Longer legs may be used, but IC cannot be fully seated on seating plane.

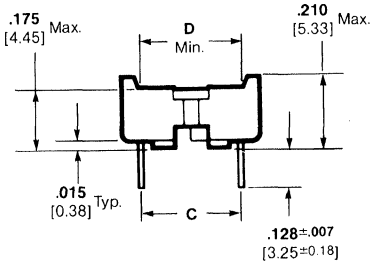
Note: All socket positions have "True Closed Bottom" design which allows no solder or flux wicking at class 1 conditions of EIA 486.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

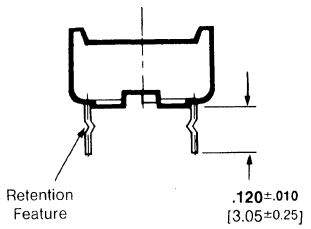




Recommended Mounting Dimensions



Sockets with Straight Solder Tails



Sockets with Retention Feature Solder Tails

No. of Pos.	Dimensions A	B	C	D	E	Part Numbers: Sockets with Straight Solder Tails — Beryllium Copper: Tinned	Beryllium Copper: .000030 [0.00076][1] Gold Plate	Phosphor Bronze: Tinned	Phosphor Bronze: .000015 [0.00038][1] Gold Plate	Copper Alloy: Tinned	Sockets with Retention — Beryllium Copper: Tinned	Beryllium Copper: .000030 [0.00076][1] Gold Plate
16	**.795** 20.19	**.394** 10.01	**.300** 7.62	**.320** 8.13	**.120** 3.05	2-644100-1	—	2-644100-3	—	—	—	—
18	**.895** 22.73	**.394** 10.01	**.300** 7.62	**.320** 8.13	**.120** 3.05	2-382060-1	—	2-382060-3	—	—	—	—
20	**.995** 25.27	**.394** 10.01	**.300** 7.62	**.321** 8.15	**.122** 3.10	2-382515-1	—	2-382515-3	—	2-382515-5	—	—
28	**1.395** 35.43	**.694** 17.63	**.600** 15.24	**.620** 15.75	**.380** 9.65	2-382415-1	—	2-382415-3	—	—	—	—
32	**1.595** 40.51	**.694** 17.63	**.600** 15.24	**.620** 15.75	**.380** 9.65	2-644018-1	2-644018-2	2-644018-3	2-644018-4	2-644018-5	2-382189-1	2-382189-2
40	**1.995** 50.67	**.694** 17.63	**.600** 15.24	**.620** 15.75	**.380** 9.65	2-382153-1	—	2-382153-3	—	2-382153-5	—	—

[1]Gold thickness in contact area with tin-lead plate on solder tails.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

DIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

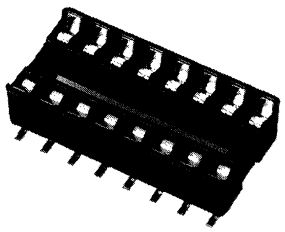
Surface Mount and Surface Mount Compatible Over-the-Component (OTC) Dual Leaf (DL) Contact Sockets

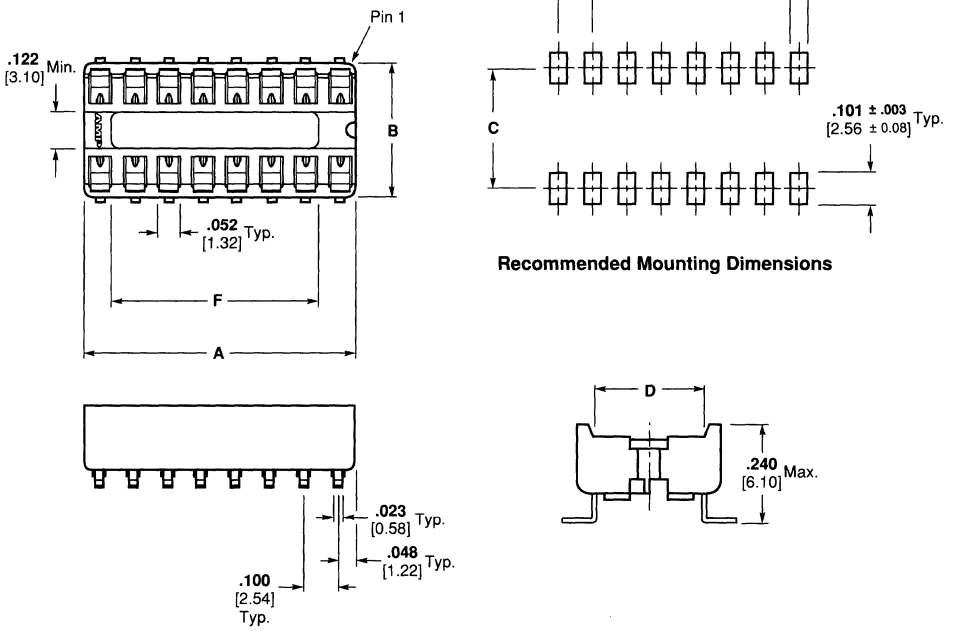
Sockets accept .008 – .014 [0.2 – 0.36] thick IC leads

Material and Finish:

Housings — PCT, glass reinforced, 94V-0 rated, black

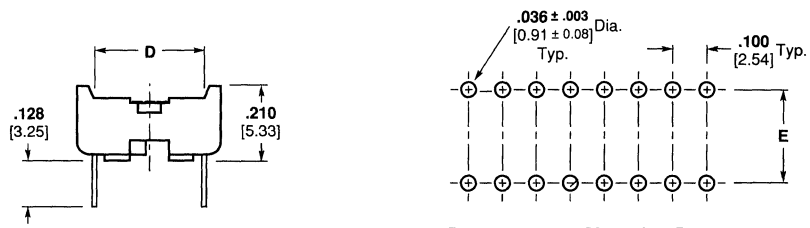
Contacts — Phosphor bronze with tin or gold plating (see table)





Recommended Mounting Dimensions

Optional Surface Mount Compatible Through-Hole Sockets[1]



Recommended Mounting Dimensions

No. of Pos.	Dimensions				Part Numbers					
					Surface Mount			Through-Hole[1]		
	A	B	D	F	Dim. C	Tinned	Gold Plate[2]	Dim. E	Tinned	Gold Plate[2]
16	**.795** 20.19	**.394** 10.01	**.321** 8.15	**.668** 16.97	**.350** 8.89	2-382414-3	2-382414-4	**.300** 7.62	2-382469-3	2-382469-4
32	**1.595** 40.51	**.694** 17.63	**.621** 15.77	—	**.650** 16.51	2-382424-3	2-382424-4	**.600** 15.24	2-382470-3	2-382470-4

[1]Through-hole sockets are compatible with surface mount soldering practices.
[2]Two .000015 [0.00038] min. thick gold stripes in contact area with tin/lead (93/7) on solder legs and nickel on balance of contact.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

DIP Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

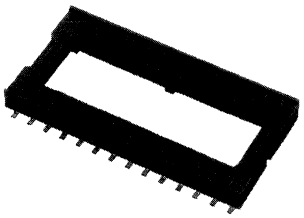
Surface Mount Over-the-Component (OTC) Single Leaf (SL) Contact Sockets

Sockets accept .008–.014 [0.2–0.36] thick IC leads

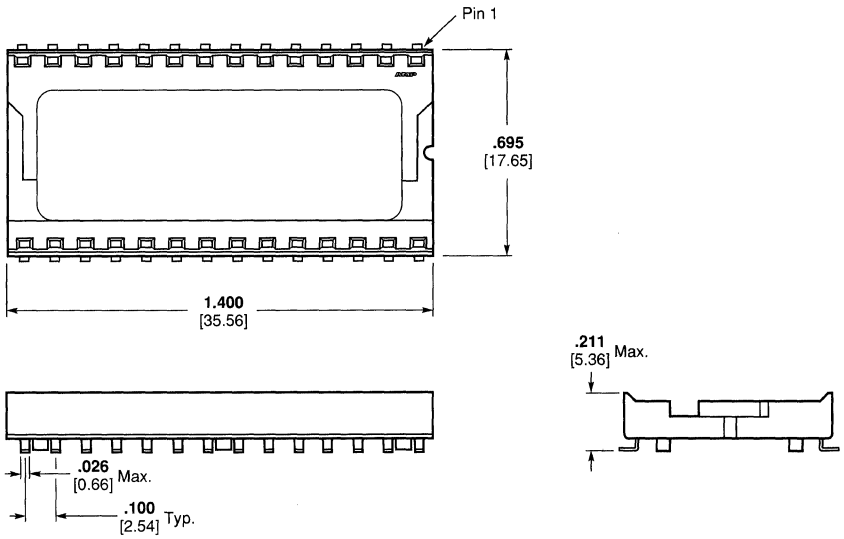
Material and Finish:

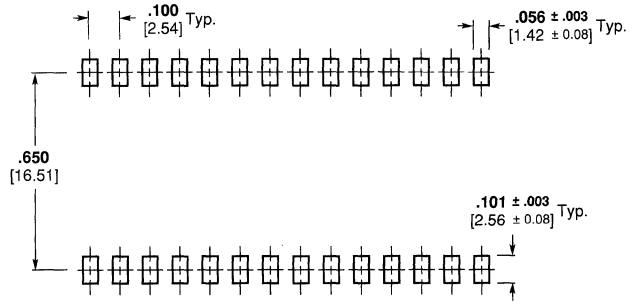
Housings—PCT, glass reinforced, 94V-0 rated, black

Contacts—Beryllium copper with tin plating



28 Positions
Part No. 2-382195-1





Recommended Mounting Dimensions

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

SIP Sockets (DIPLOMATE)

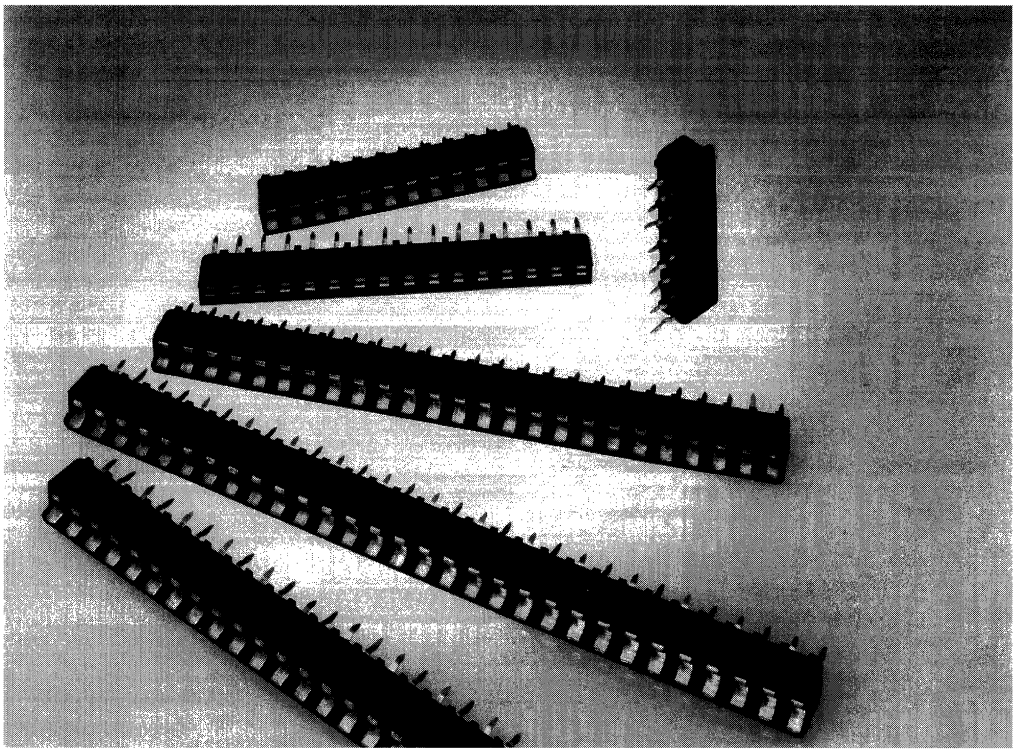
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Dual Leaf (DL) Contact Sockets

Product Facts

- Low Profile — .210 [5.33] above pc board
- Dual wiping contacts
- Face wipe contacts for high reliability and constant, low resistance
- Anti-overstress prevents contact damage
- Large target area, with tapered lead-in ramps, for easy SIP insertion
- "True Closed Bottom" inhibits solder wicking and flux contamination
- Stackable end-to-end and side-to-side ("brick-walling") for high board density
- Housing standoffs and slots facilitate board cleaning
- Family of 3 through 30 positions
- Retention style tails
- Visual polarization
- Tin or gold plated beryllium copper or tin plated phosphor bronze contacts
- Designed to meet EIA RS-415, MIL-S-83734 and stringent computer specifications
- Meets the material requirements of Table 23.1 of UL 1410 Standard for Television Receivers and Video Products
- Recognized under the Component Program of Underwriters Laboratories Inc., File E28476
- Certified by Canadian Standards Association, File No. LR 16455



The DIPLOMATE Dual Leaf (DL) SIP socket family provides high quality at low cost with superior handling characteristics. It is available in 3 through 30 position sizes with dual wiping contacts in tin or gold plating over beryllium copper or economical tin plated phosphor bronze. The large target area of the contacts and tapered side ramps in the housing insure easy entry of a SIP package. Internal anti-overstress walls prevent contact damage. Stackable housings feature a "True Closed Bottom" design which prevents solder or flux wicking at class 1 conditions of EIA 486.

Standoffs provide board clearance for proper cleaning after soldering. Sockets are available with retention feature solder tails for self-retention in the pc board during handling and flow soldering.

Housings are constructed from self-extinguishing glass-filled polyester, 94V-0 rated material and meet the material requirements of Table 23.1 of UL 1410 Standard for Television Receivers and Video Products.

The DIPLOMATE (DL) SIP socket family meets the requirements of EIA RS415, MIL-S-83734 and the most stringent specifications of main-frame computer manufacturers.

Performance Characteristics

Rating:
250 VAC

Contact Resistance:
20 milliohms max. (initial),
30 milliohms max. (after test)

Dielectric Withstanding Voltage:
1000 VRMS min.

Insulation Resistance:
5000 megohms min.

Capacitance:
0.5 picofarad max.

Operating Temparature:
−55°C to +105°C (tin), −55°C to +125°C (gold)

Vibration:
10–2000–10 Hz in 20 minutes at .06 [1.52] or 15G's for 3 sweeps in each of 3 axes

Shock:
100G's sawtooth, 6 shocks

Engaging Force:
340 grams [3.33 N] max. (.013 [0.33] pin)

Separating Force:
25 grams [.24 N] (.008 [0.2] pin)

Technical Documents

Product Specifications:
108-1066

Application Specification:
114-1049

SIP Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

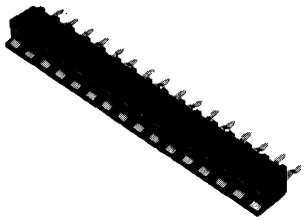
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

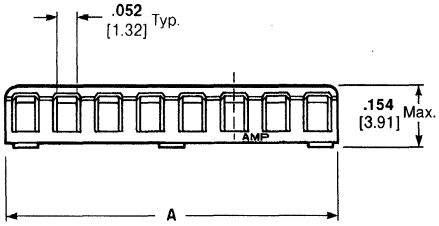
Dual Leaf (DL) Contact Sockets

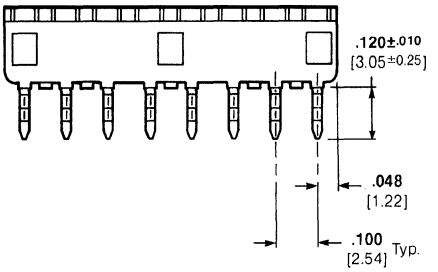
Accepts .008 – .015 [0.2 – 0.38] thick x .030 [0.76] max. wide rectangular leads

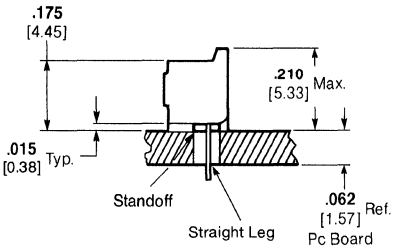
Material and Finish:

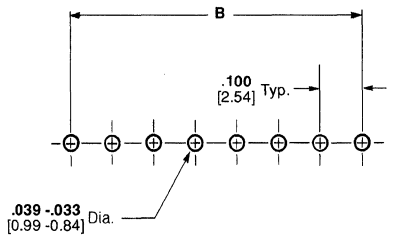
Housing — Glass-filled thermoplastic, 94V-0 rated, black











Recommended Mounting Dimensions

No. of Pos.	Dimensions A	Dimensions B	Part Numbers: Beryllium Copper, Tinned	Part Numbers: Beryllium Copper, .000030 [0.00076] Gold Plate	Part Numbers: Phosphor Bronze, Tinned
3	.295 7.49	.200 5.08	382437-1	—	382437-3
4	.395 10.03	.300 7.62	382438-1	—	382438-3
5	.495 12.57	.400 10.16	382439-1	—	382439-3
6	.595 15.11	.500 12.7	382440-1	—	382440-3
7	.695 17.65	.600 15.24	382441-1	—	382441-3
8	.795 20.19	.700 17.78	643640-1	643640-2	643640-3
9	.895 22.73	.800 20.32	643641-1	643641-2	643641-3
10	.995 25.27	.900 22.86	643642-1	643642-2	643642-3
11	1.095 27.81	1.000 25.4	643643-1	643643-2	643643-3
12	1.195 30.35	1.100 27.94	643644-1	643644-2	643644-3
13	1.295 32.89	1.200 30.48	643645-1	643645-2	643645-3
14	1.395 35.43	1.300 33.02	643646-1	643646-2	643646-3
15	1.495 37.97	1.400 35.56	643647-1	643647-2	643647-3
16	1.595 40.51	1.500 38.1	643648-1	643648-2	643648-3
17	1.695 43.05	1.600 40.64	643649-1	643649-2	643649-3
18	1.795 45.59	1.700 43.18	643650-1	643650-2	643650-3
19	1.895 48.13	1.800 45.72	—	643651-2	643651-3
20	1.995 50.57	1.900 48.26	643652-1	643652-2	643652-3
21	2.095 53.21	2.000 50.8	—	643653-2	643653-3
22	2.195 55.75	2.100 53.34	643654-1	643654-2	643654-3
23	2.295 58.29	2.200 55.88	—	643655-2	643655-3
24	2.395 60.83	2.300 58.42	—	643656-2	643656-3
25	2.495 63.37	2.400 60.96	643657-1	643657-2	643657-3
26	2.595 65.91	2.500 63.5	—	643658-2	643658-3
27	2.695 68.45	2.600 66.04	—	643659-2	643569-3
28	2.795 70.99	2.700 68.58	—	643660-2	643660-3
29	2.895 73.53	2.800 71.12	—	643661-2	643661-3
30	2.995 76.07	2.900 73.66	643662-1	643662-2	643662-3

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Note: Retention leg sockets can be made available. Contact AMP Incorporated.

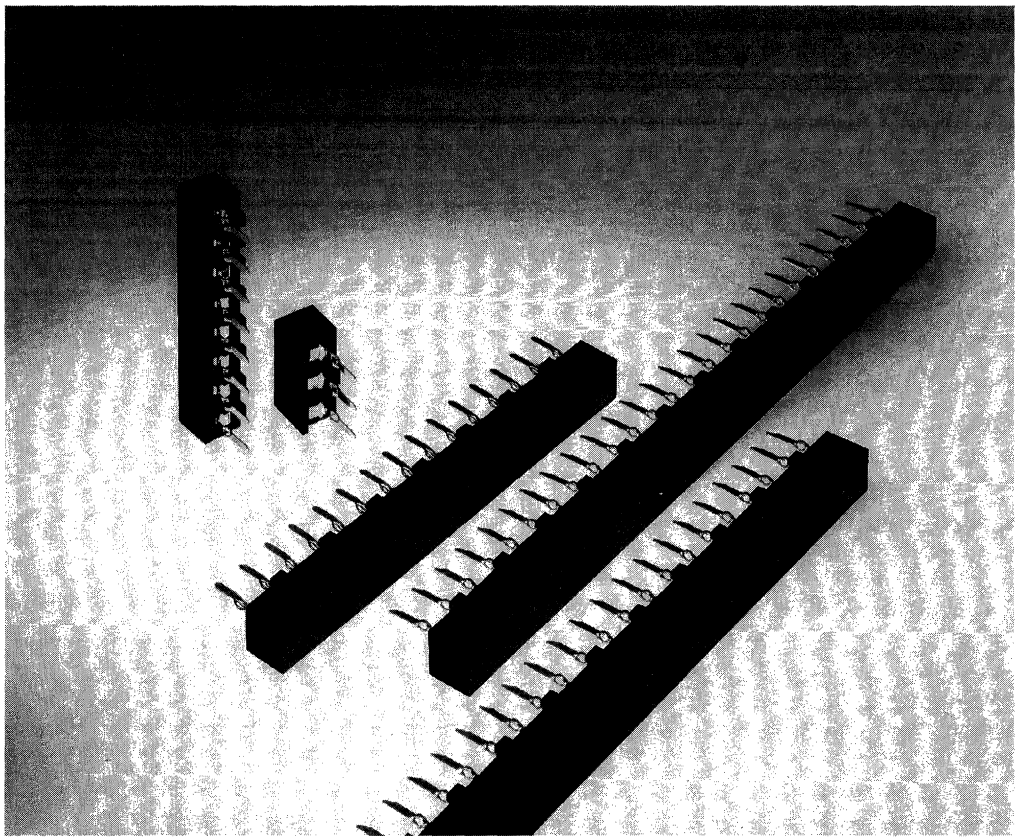
SIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Single Leaf (SL) Contact Sockets

Product Facts

- Low Profile — .160 [4.06] above pc board
- Low cost
- Housings are made of self-extinguishing glass-filled polyester, 94V-0 rated
- IC sockets accept rectangular leads up to .015 x .030 [0.38 x 0.76]
- Housings have wide chamfered lead cavities for easy IC insertion
- SIP sockets accept 3- through 25-position IC's
- One-piece housings
- One-piece contacts
- Standoffs at the board interface provide clearance for proper cleaning after soldering
- Standard and military versions available
- Allows custom patterns
- Face wipe contacts for high reliability and constant, low resistance
- Anti-overstress prevents contact damage
- Stackable end-to-end and side-to-side ("brick-walling") for high board density
- Visual polarization
- Designed to meet EIA RS415 and stringent computer specifications
- Meets the material requirements of Table 23.1 of UL 1410 Standard of Television Receivers and Video Products
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455



Low cost DIPLOMATE Single Leaf (SL) SIP sockets come in 3 through 25 positions. These low profile sockets are provided with contacts made from beryllium copper, or phosphor bronze materials.

By design, the contacts are anti-wicking and anti-bridging. Built-in contact stops provide anti-overstress to prevent contact damage.

One-Piece housings are made of UL 94V-0 self-extinguishing glass-filled polyester and feature wide chamfered lead cavities for easy IC insertion.

Performance Characteristics

Rating:
250 VAC

Contact Resistance:
20 milliohms max. (initial),
30 milliohms max. (after test)

Dielectric Withstanding Voltage:
1000 VRMS min.

Insulation Resistance:
10,000 megohms min.

Capacitance:
1.0 picofarad max.

Operating Temperature:
−55°C to +105°C (tin) (BeCu or PhBz)

Vibration:
10–2000–10Hz in 20 minutes at .06 [1.52] or 15G's for 3 sweeps in each of 3 axes

Shock:
100G's sawtooth, 6 shocks

Engaging Force:
340 grams [3.33 N] max. (.013 [0.33] pin)

Separating Force:
15 grams [.15 N] (.008 [0.2] pin)

Technical Documents

Product Specification:
108-1070

SIP Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

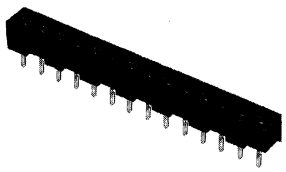
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

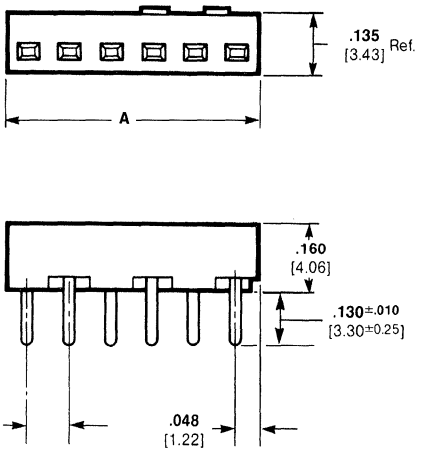
Single Leaf (SL) Contact Sockets

Accepts .008–.015 [0.2–0.38] thick x .030 [0.76] wide rectangular leads

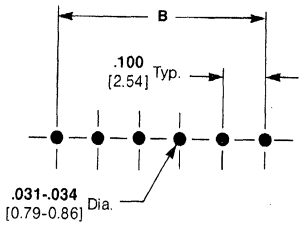
Material and Finish:

Housing — Glass-filled thermoplastic, 94V-0 rated, black

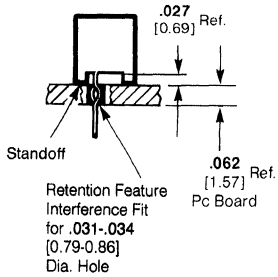




Note: End-to-end stackable



Recommended Mounting Dimensions



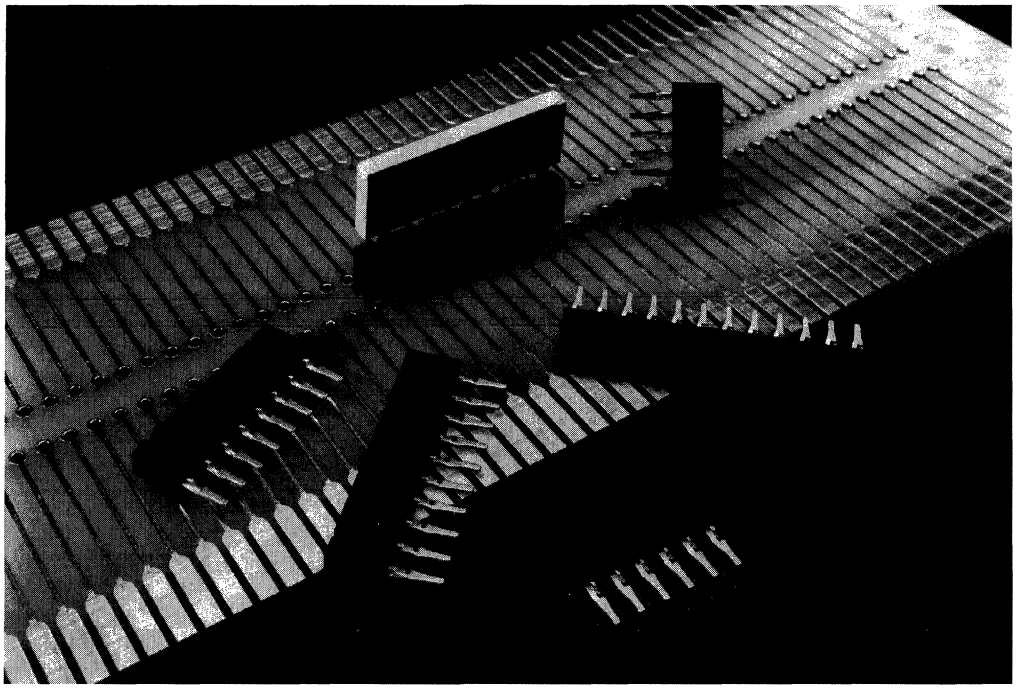
No. of Pos.	Dimensions A	Dimensions B	Part Numbers Beryllium Copper Tinned	Part Numbers Phosphor Bronze Tinned
3	.297 7.54	.200 5.08	643103-1	643103-3
4	.397 10.08	.300 7.62	643104-1	643104-3
5	.497 12.62	.400 10.16	643105-1	643105-3
6	.597 15.16	.500 12.7	643106-1	643106-3
7	.697 17.7	.600 15.24	643107-1	643107-3
8	.797 20.24	.700 17.78	643108-1	643108-3
9	.897 22.78	.800 20.32	643109-1	643109-3
10	.997 25.32	.900 22.86	643110-1	643110-3
11	1.097 27.86	1.000 25.4	643111-1	643111-3
12	1.197 30.4	1.100 27.94	643112-1	643112-3
13	1.297 32.94	1.200 30.48	643113-1	643113-3
14	1.397 35.48	1.300 33.02	643114-1	643114-3
15	1.497 38.02	1.400 35.56	643115-1	643115-3
16	1.597 40.56	1.500 38.1	643116-1	643116-3
17	1.697 43.1	1.600 40.64	643117-1	643117-3
18	1.797 45.64	1.700 43.18	643118-1	643118-3
19	1.897 48.18	1.800 45.72	644001-1	644001-3
20	1.997 50.72	1.900 48.26	643119-1	643119-3
21	2.097 53.26	2.000 50.8	643120-1	643120-3
22	2.197 55.8	2.100 53.34	643121-1	643121-3
23	2.297 58.34	2.200 55.88	643122-1	643122-3
24	2.397 60.88	2.300 58.42	643123-1	643123-3
25	2.497 63.42	2.400 60.96	643124-1	643124-3

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Compliant Pin Sockets

Product Facts

- Accommodates .040±.003 [1.02±0.08] diameter pc board holes allowing economical pc board processing
- Accepts .062 [1.57] thick and greater pc boards for versatile and low cost socketing
- .100 [2.54] "brickwall" capability for full utilization of pc board real estate
- Compatible with robotic equipment to provide lower assembly costs
- Tin plated single leaf contacts provide high reliability at low cost
- High temperature housing material accepts a wide range of applications
- Low profile housing allows higher density packaging



A new SIP socket from AMP features a true "compliant pin" design to allow application of SIP components to backplanes and printed circuit boards without soldering. The socket incorporates AMP's highly successful tin-plated, single-leaf ACTION PIN contacts that require only the standard plated-through hole tolerance of .040±.003 [1.02±0.08] compared to more tightly toleranced holes needed for other press-fit sockets.

AMP sockets are versatile in that they can be applied to various thicknesses of pc boards from .062 [1.57] and up, as well as accepting both rectangular and round component leads.

The high temperature plastic housing presents a nominal low profile of .213 [5.41] total height above the pc board. A .025–.030 [0.64–0.76] standoff from the pc board is designed-in to facilitate cleaning.

Technical Documents

Product Specification:
108-1251

Performance Characteristics

Voltage Rating:
250 VAC

Current Rating:
1 ampere

Dielectric Withstanding Voltage:
1 KVAC min.

Temperature Rise:
10°C rise at 1 ampere (single contact only)

Insulation Resistance:
10,000 megohms min.

Termination Resistance:
15 milliohms max. initial
25 milliohms max. after test

Capacitance:
1.0 picofarad max.

Durability:
10 cycles

Insertion Force (Contact):
250 gms. max./contact (.010 thk. lead)

Contact Retention:
340 gms. min./contact

Compliant Pin Contact Retention in PC Board:
4 lbs. min.

Temperature Range:
–55°C to 105°C

Vibration:
10–2000–10 Hz, 20 G's

Thermal Cycling:
–55°C to 105°C, 5 cycles

Physical Shock:
100 G's half-sine pulses of 6 milliseconds

Humidity/Temperature Cycling:
25°C–65°C @ 95% RH, 10 24 hr. cycles

Temperature Life:
300 hrs. @ 118°C

SIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

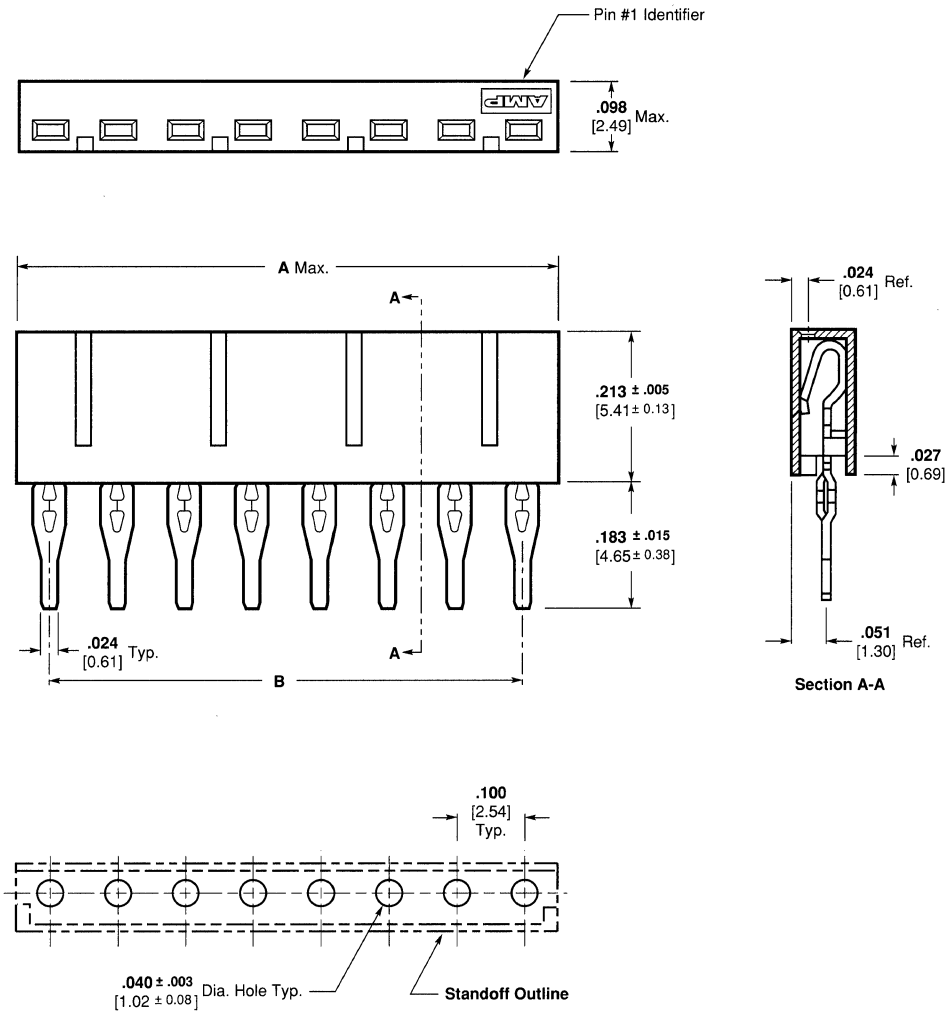
Compliant Pin Sockets

Accepts .008 – .015 [0.2 – 0.38] thick x .030 [0.76] wide rectangular leads

Materials and Finish:

Contact — Phosphor bronze, tin-lead plated all over

Housing — Liquid Crystal Polymer



Recommended Mounting Dimensions

No of Pos.	Dimensions A	Dimensions B	Part Numbers
6	**.600** 15.24	**.500** 12.7	382444-1
8	**.800** 20.32	**.700** 17.78	382444-2
10	**1.000** 25.4	**.900** 22.86	382444-3
12	**1.200** 30.48	**1.100** 27.94	382444-4

Application Tooling:

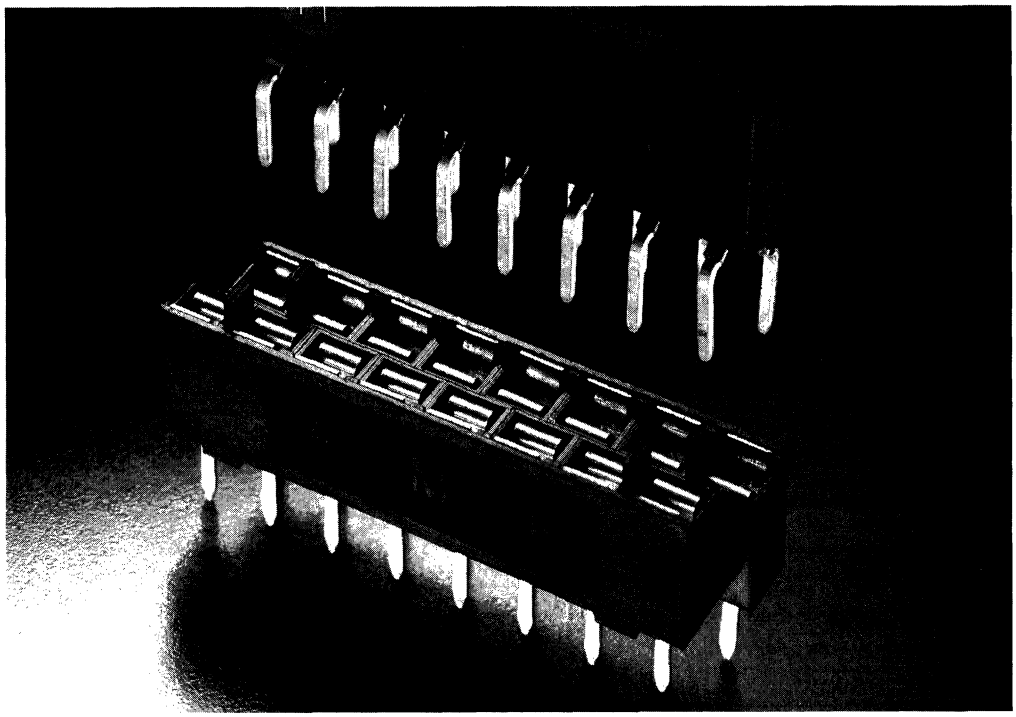
"Flat Rock" insertion/extraction tooling is required

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

ZIP Sockets (DIPLOMATE ZP)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



AMP DIPLOMATE ZP Sockets are a reliable and low-cost means for socketing popular ZIP IC packages used in microprocessor and add-on pc boards. ZP sockets have "true position" solder tails to assure across-the-board capability with all major producers of automatic insertion equipment. The anti-flux and anti-solder wicking "true closed bottom" design meets the requirements of EIA 486, Class 1.

Sockets are end-to-end and side-to-side stackable on .050 [1.27] and .200 [5.08] centers respectively, allowing for high-density packaging. A large target area allows easy IC insertion while the designed-in package insertion stop prevents damage to the IC leads. Electrical contact is excellent due to the redundant design of the dual leaf contacts.

Performance Characteristics

Rating:
250 VAC at 1 ampere, max.

Contact Resistance:
20 milliohms max. (initial), 10 milliohms max. change (after test)

Dielectric Withstanding Voltage:
1.0 KVAC

Insulation Resistance:
10,000 megohms min., initial

Capacitance:
0.5 picofarad max.

Operating Temperature:
−55°C to +105°C

Vibration:
10–55–10 Hz in 1 minute at .06 [1.52] total excursion

Shock:
100G's sawtooth 3 shocks in each direction

Engaging Force:
340 grams [3.33 N] max.

Separating Force:
25 grams [24 N] min.

Contact Retention:
340 grams min.

Product Facts

- Proven Dual Leaf (DL) contact design
- Large lead-in for easy insertion
- Dual wiping contacts
- Anti-overstress prevents contact damage
- End-to-end and side-to-side stackable (brickwalling) for high board density
- Solder tails are "true positioned" for automatic insertion into the pc board
- "True Closed Bottom" design inhibits solder wicking and flux contamination
- IC package insertion stop prevents package overinsertion
- .015 [0.38] pc board standoffs for undersocket cleaning clearance
- Recognized under the Component Program of Underwriters Laboratories Inc., File E28476
- Certified by Canadian Standards Association, File No. LR16455

Technical Documents

Product Specification:
108-1089

Application Specification:
114-01041

Instruction Sheet:
IS 3222 (Extraction Tool)

ZIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

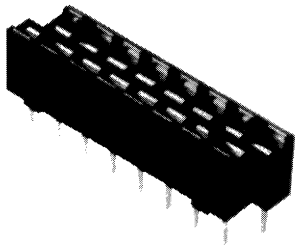
Zig-Zag Package (ZP) Sockets

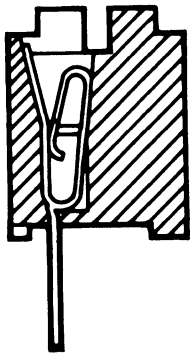
Accepts .008 – .015 [0.2 – 0.38] thick x .030 [0.76] max. wide rectangular leads

Material and Finish:

Housing — Glass-filled thermoplastic

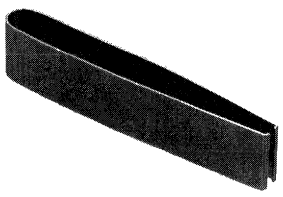
Contacts — Phosphor bronze





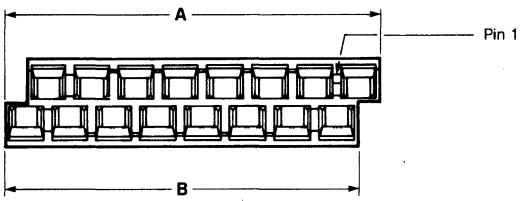
Section X-X

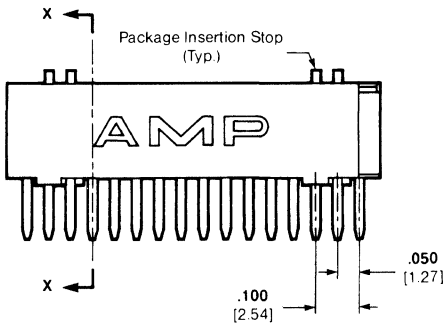
ZIP Device Extraction Tool

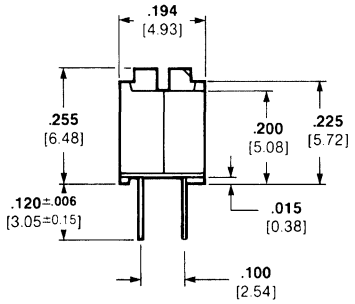


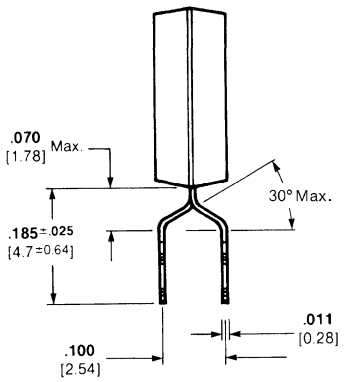
Part No. 382428-1

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

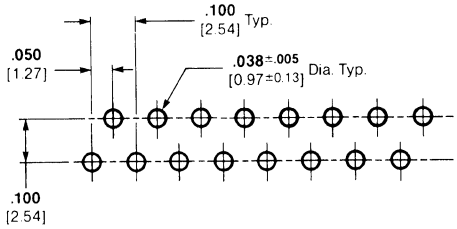








Recommended Leg Configuration



Recommended Mounting Dimensions

No. of Pos.	Dimensions A	Dimensions B	Part Number Tinned	Part Number .000015 [.000038][1] Gold Plate
16	**.845** 21.46	**.795** 20.19	2-382006-3	2-382006-4
20	**1.045** 26.54	**.995** 25.27	2-382007-3	2-382007-4
24	**1.245** 31.62	**1.195** 30.45	2-382008-3	2-382008-4
28	**1.445** 36.7	**1.395** 35.43	2-382009-3	2-382009-4
40	**2.045** 51.94	**1.995** 50.67	2-382040-3	—

[1]Gold thickness in contact area with tin plating on solder tails.

SIMM Sockets (DIPLOMATE)

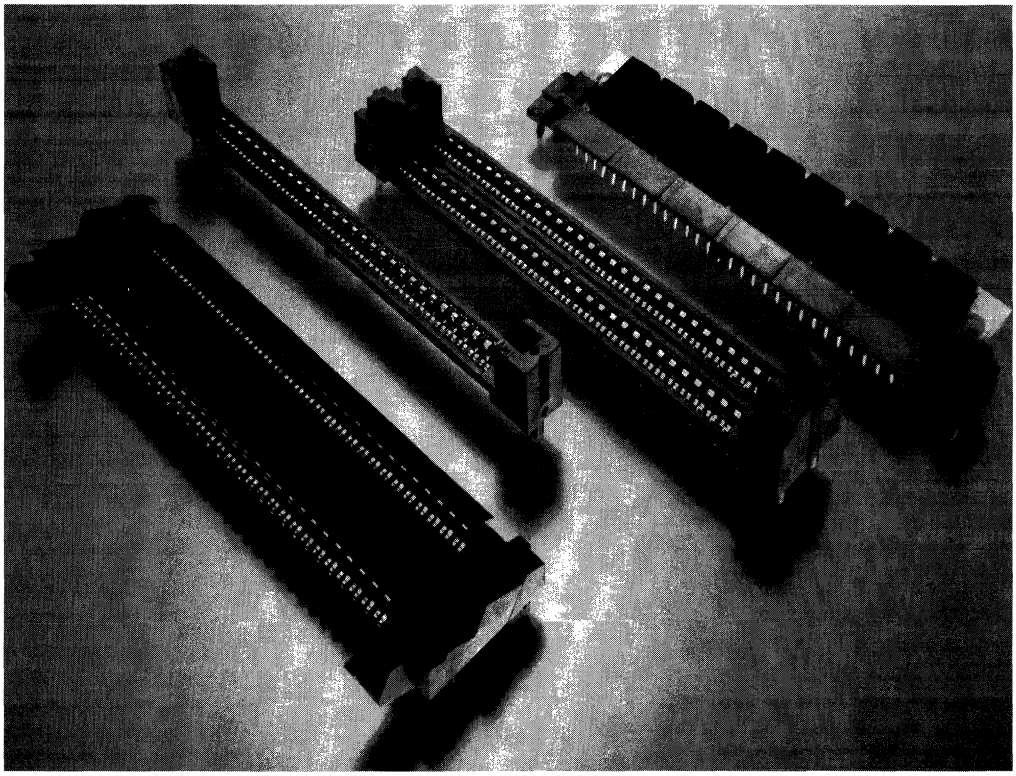
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

DIPLOMATE SIMM Sockets for Leadless Single, In-Line Memory Modules

Product Facts

- Various circuit sizes available
- Low overall and mated height profiles
- Redundant contact system
- High normal force interface
- Contact anti-overstress design
- Closed bottom design
- Standoffs for flux removal
- Accepts .050±.003 [1.27±0.08] module thicknesses
- Heat resistant housing material
- Simple insertion/extraction of board
- Designed for robotic assembly methods
- Gold plating option
- Provides high density packaging
- Allows for module upgrading
- Permits simple repair and maintenance
- Low applied cost
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 16455



The new line of AMP DIPLOMATE SIMM Sockets provides the interface between printed circuit boards and single in-line memory modules (SIMM) that represent state-of-the-art high density packaging in electronic systems. The modules may be of the JEDEC standard type or may be custom hybrid units as required by the application. The package method can increase density by a factor of three or more and allows versatility in the utilization of board space. Socketing of the modules protects the sensitive IC chips during solder process operations and allows future upgrades of the system as well as providing ease of maintenance and repair.

The AMP DIPLOMATE SIMM Socket product line is comprised of two basic styles — Standard Vertical and Low Profile (Angled). Each style is offered in various circuit sizes and has unique advantages for the intended applications.

All the AMP DIPLOMATE SIMM sockets utilize a high force, computer-designed dual cantilever beam contact. This contact features redundant electrical interfaces, a broad module thickness tolerance, controlled wiping action and an anti-overstress retaining wall. Selective gold plating is an option if required by the application.

The socket housings are molded of a high temperature thermoplastic material and feature robotic locator details, board standoffs and a closed bottom design to inhibit solder and flux wicking.

Other product sizes and variations of AMP DIPLOMATE SIMM sockets, including .050 [1.27] centerline product, can be made available. Contact AMP Incorporated for details.

Performance Characteristics

Voltage/Current:
250 VAC at 1 ampere max.

Operating Temperature:
−55° to 105°C (85°C continuous)

Termination Resistance (Dry Circuit):
20 milliohms max. initial

Dielectric Withstanding Voltage:
1.0 KVAC

Insulation Resistance:
10,000 megohms min. initial

Capacitance:
1.0 picofarads max.

Technical Documents

Product Specification:
108-1085

Application Specification:
114-1036

Instruction Sheet:
IS 3197 (Extraction Tool)

SIMM Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

DIPLOMATE SIMM Standard Vertical Sockets

Materials and Finish:

Housing — Liquid Crystal Polymer (LCP), glass filled, UL 94V-0

Contact — Beryllium copper, bright tin-lead or gold plating

Product Facts

- Accepts standard JEDEC modules
- Single and double row styles available
- 22, 30, 35 and 42 positions available in single row versions; 30 and 42 positions available in double row version[1]
- Card guides for mechanical stability
- Positive latch retention
- Polarization of socket to board
- Polarization of module to socket
- Robotic pick-up detail
- Versions for mounting on .300 [7.62] or .400 [10.16] row-to-row centers

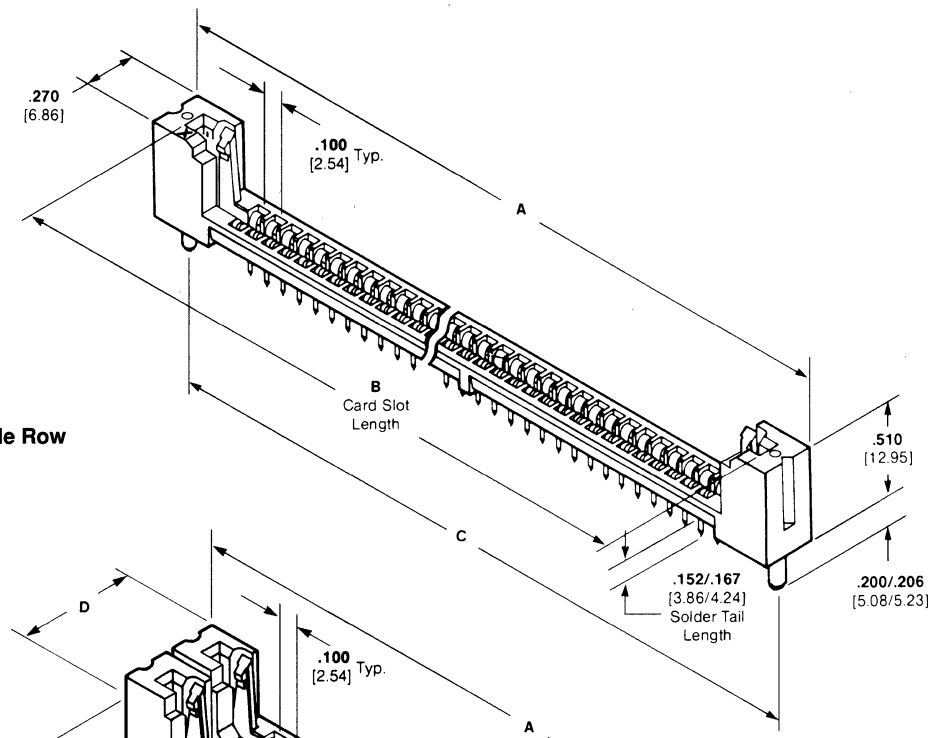
Benefits

- Provides maximum packaging density for standard JEDEC modules
- Vertical design simplifies assembly and board design

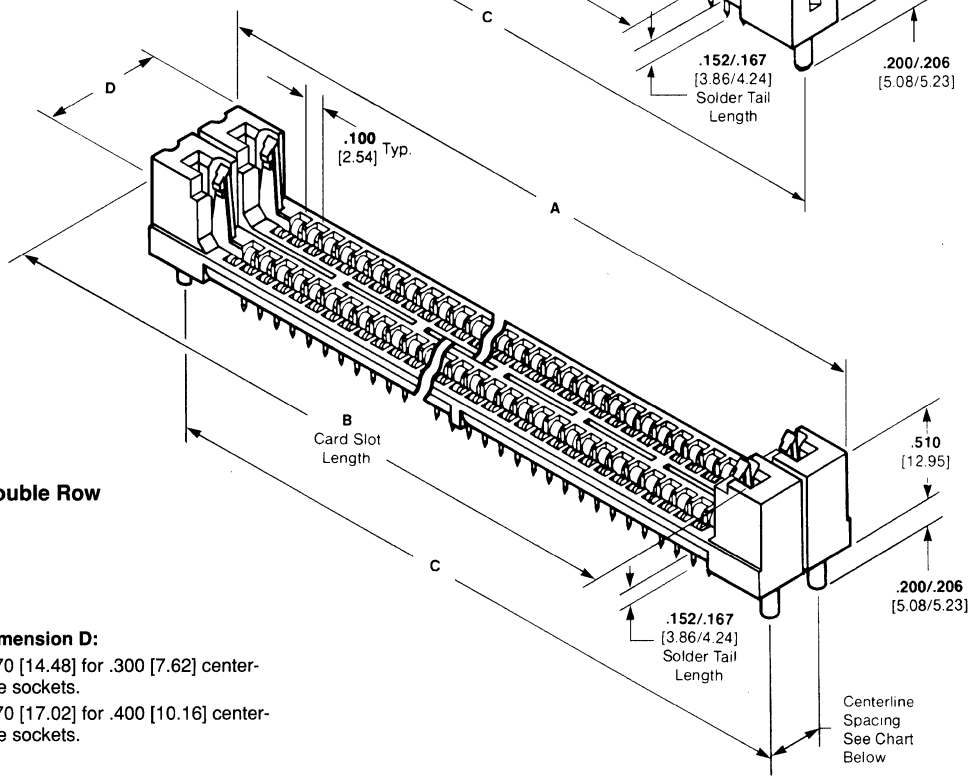
Memory Module Extraction Tool:

Part No. 382264-1

Single Row



Double Row



Dimension D:
.570 [14.48] for .300 [7.62] centerline sockets.
.670 [17.02] for .400 [10.16] centerline sockets.

No. of Pos.[1]	Dimensions A	B	C	Part Numbers: Single Row, Loose Piece Tin[2]	Single Row, Loose Piece Gold[3]	Double Row, .300 [7.72] Centerline Tin[2]	Double Row, .300 [7.72] Centerline Gold[3]	Double Row, .400 [10.16] Centerline Tin[2]	Double Row, .400 [10.16] Centerline Gold[3]
22	**3.000** 76.2	**2.714** 68.94	**2.850** 72.39	643922-1	643922-2	—	—	—	—
30	**3.800** 96.52	**3.514** 89.26	**3.650** 92.71	643930-1	643930-2	2-382230-1[4]	2-382230-2[4]	2-382330-1[4]	2-382330-2[4]
35	**4.300** 109.22	**4.014** 101.96	**4.150** 105.41	643935-1	—	—	—	—	—
42	**5.000** 127	**4.714** 119.74	**4.850** 123.19	643942-1	—	—	382242-2	—	—

[1]Other sizes and variations can be made available upon request. **Note:** See page 10030 for module layout and pc board patterns.
[2]Bright tin-lead plate.
[3].000030 [0.00076] thick gold plate on the contact area and tin-lead plate on the solder tails.
[4]Packaged in slide tube for robotic assembly.

SIMM Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

DIPLOMATE SIMM Low Profile 27° (Angled) Sockets

Materials and Finish:

Housing — Liquid Crystal Polymer (LCP), glass filled, UL 94V-0
Contact — Beryllium copper, bright tin-lead or gold plating

Product Facts

- Accepts standard JEDEC modules
- Card guides for mechanical stability
- Positive retention
- Polarization of socket to board
- Polarization of module to socket
- Slanted module mounting for low height
- Single and double row styles available
- Grip areas provided for robotic interface
- Mounts on .400 [10.16]* (single row versions) or .500 [12.7] (double row versions) row-to-row centers

Benefits

- Provides optimum efficiency of height versus board space
- Allows retrofit of SIMM packaging into applications using .750 [19.05] board-to-board spacing

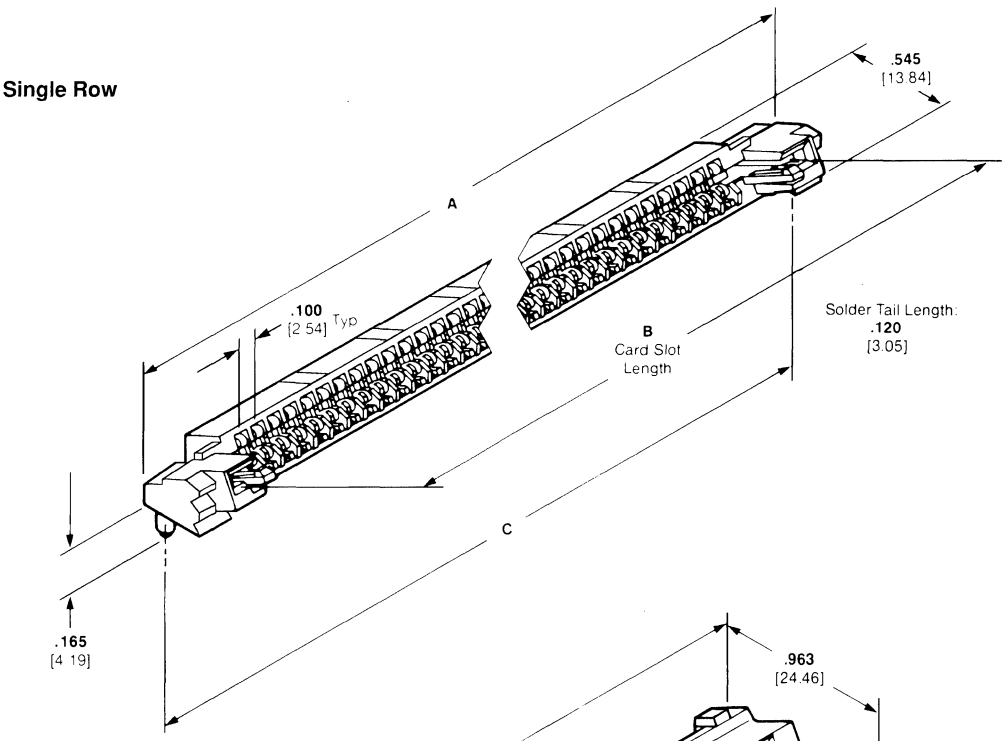
*When mounted on .400 [10.16] centerlines, all modules in front of the one to be removed, must be removed first.

Memory Module Extraction Tool:

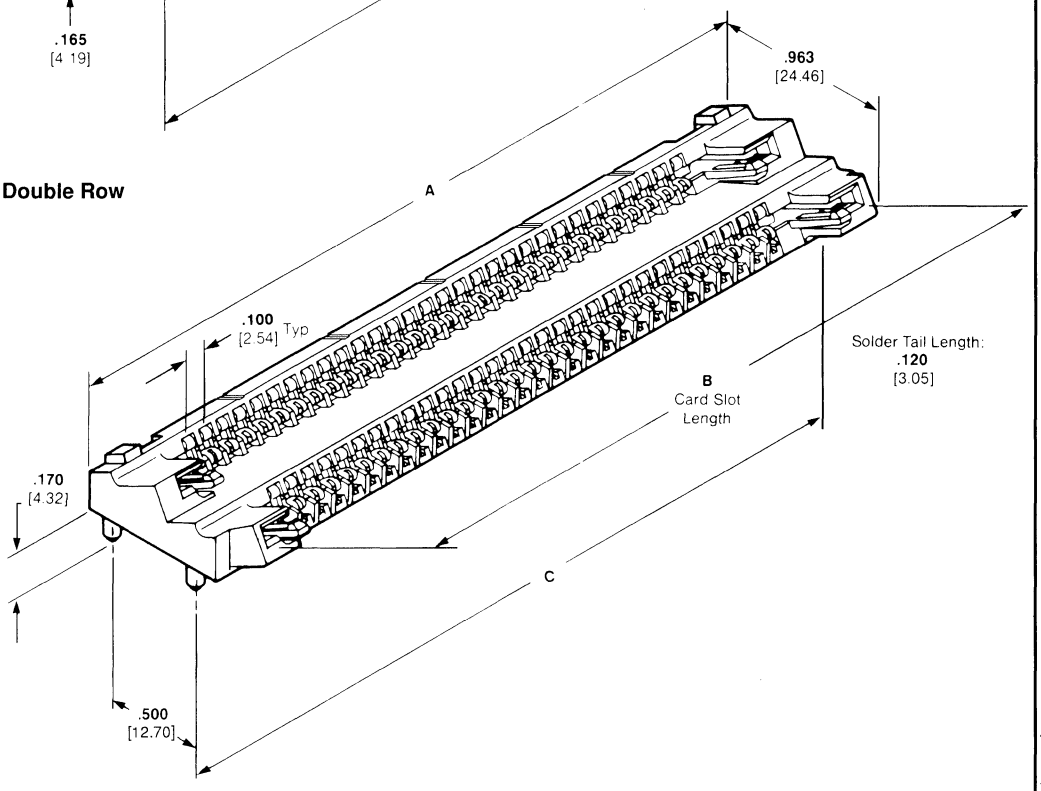
Part No. 382264-1

Note: See page 10030 for module layout and pc board patterns.

Single Row



Double Row



No. of Pos.[1]	Dimensions A	B	C	Part Numbers Single Row Tin[2]	Single Row Gold[3]	Double Row Tin[2]	Double Row Gold[3]
30	**3.800** 96.52	**3.514** 82.26	**3.650** 92.71	2-382030-1	2-382030-2	2-382130-1	2-382130-2
35	**4.300** 109.22	**4.014** 101.96	**4.150** 105.41	382035-1	—	—	—
42	**5.000** 127	**4.714** 119.74	**4.850** 123.19	382042-1	382042-2	—	—

[1]Other sizes and variations can be made available upon request.
[2]Bright tin-lead plate.
[3].000030 [0.00076] thick gold plate on the contact area and tin-lead plate on the solder tails.

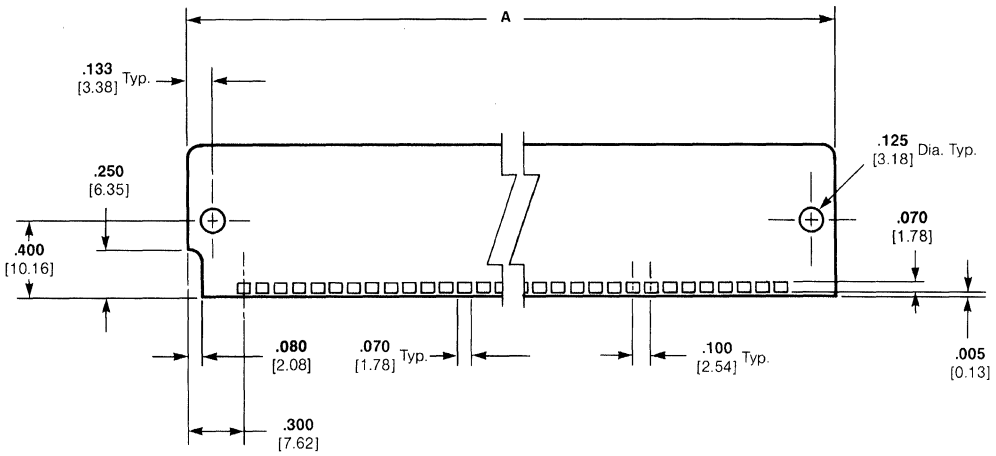
SIMM Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

DIPLOMATE SIMM Sockets

Recommended Module Layout Per JEDEC JC-11.11

No of Pos.	Dimension A
22	**2.700** 68.58
30	**3.500** 88.9
35	**4.000** 101.6
42	**4.700** 119.38



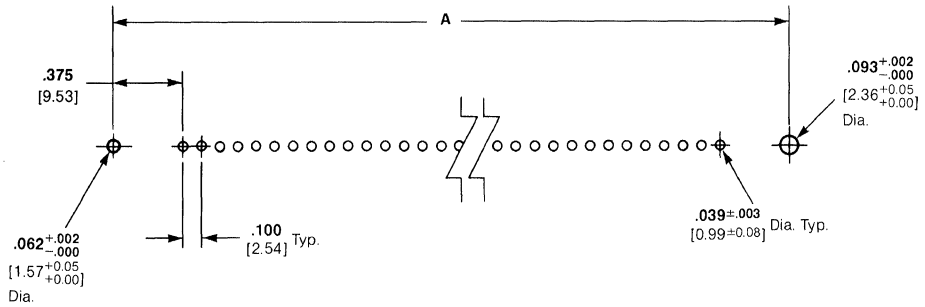
Module Thickness: .050±.030 [1.27±0.08] across pads.

Recommended PC Board Hole Patterns

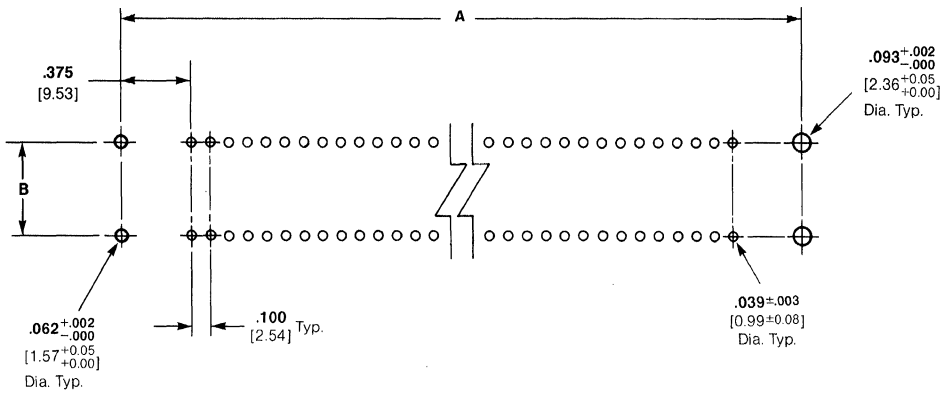
No of Pos.	Dimension A Standard Vertical and Low Profile Sockets
22	**2.850** 72.39
30	**3.650** 92.71
35	**4.150** 101.41
42	**4.850** 123.19

Note: See Application Specification 114-01036 for more information.

Single Row Sockets



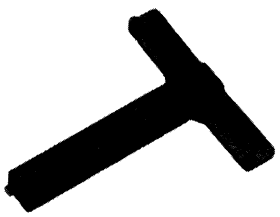
Double Row Sockets



Style	Dimension B
Standard Vertical Double Row	**.300** 7.62
Standard Vertical Double Row	**.400** 10.16
Low Profile Double Row	**.500** 12.7

Memory Module Extraction Tool:

Part No. 382264-1



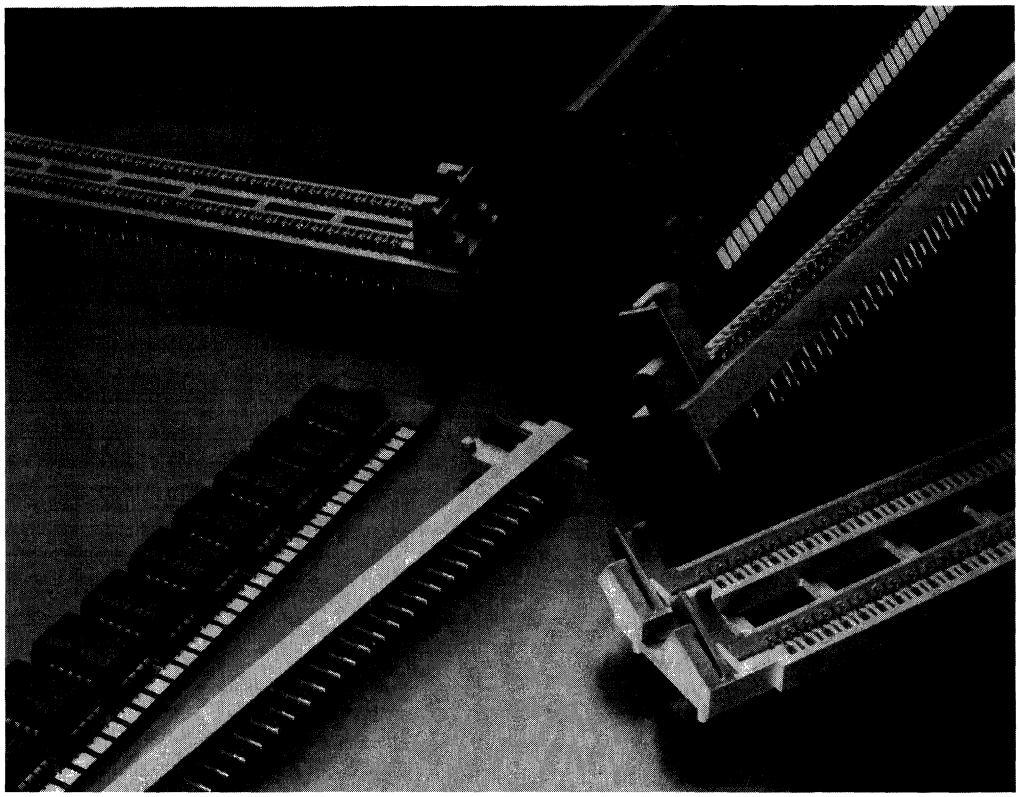
Note: See Instruction Sheet IS 3197.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

MICRO-EDGE SIMM Connectors for Leadless Single, In-line Memory Modules

Product Facts

- Provides 200 grams min. contact normal force on industry standard modules (.047 [1.19] to .054 [1.37] thick)
- Positive wipe occurs on each pad during insertion of module
- Redundant contacts
- Contact anti-overstress design
- Very low insertion force
- Free lateral movement of contacts in the housing
- Heat resistant housing materials rated at 200°C
- Designed for robotic assembly methods (min. 2 lbs. [8.9 N])
- Positive polarization of module
- Anti-overstress of latches helps to prevent breakage
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 68458



Custom-made memory and logic modules are growing in popularity because they provide high functional density in economical, space-efficient packages. Following the example of the SIMM (Single, In-Line Memory Module), manufacturers are surface-mounting memory or logic IC's on small printed circuit boards. To preserve the integrity of the IC's and to facilitate field replacement of damaged modules, most manufacturers choose to socket their modules; MICRO-EDGE SIMM connectors meet that need.

MICRO-EDGE SIMM Connectors are offered in versions with .100 [2.54] and .050 [1.27] contact centerline spacing, in both single and dual row configurations. All are available in vertical and low profile designs for single and double sided SIMM or Logic modules.

All versions share the unique, low profile, high pressure tin-plated contact that accepts standard module board thickness, wipes the board pad during card installation, and provides a minimum or 200 grams normal force when cammed into position. Contacts float within the housings to maintain a motion-free interface with board pads, even during uneven thermal expansion.

The housing is made from liquid crystal polymer, assuring strong, durable ramps and anti-stress latching features. Polarizing posts coincide with cut-outs on the board to prevent misinsertion. To install a module board, the card edge fingers are angled into the connector's contacts, then the card is pivoted into position, where locking latches secure it.

Performance Characteristics

Current:
1 ampere max.

Operating Temperature:
−55°C to +105°C

Termination Resistance (Dry Circuit):
30 milliohms max. initial

Dielectric Withstanding Voltage:
1.5 KVAC (.100 [2.54] centerline product)
1.0 KVAC (.050 [1.27] centerline product)

Insulation Resistance:
10,000 megohms min. initial

Capacitance:
1.0 picofarads max.

Normal Force:
200 grams min. on tin/tin and gold interface

Durability:
25 cycles min.

Technical Documents

Product Specification:
108-1095

Instruction Sheet:
IS 9413

Application Specification:
114-1061

MICRO-EDGE SIMM .050 [1.27] Centerline Vertical Single Row Connectors

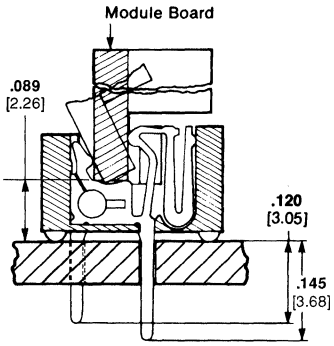
Materials:

Housings — Liquid crystal polymer, UL 94V-0 rated

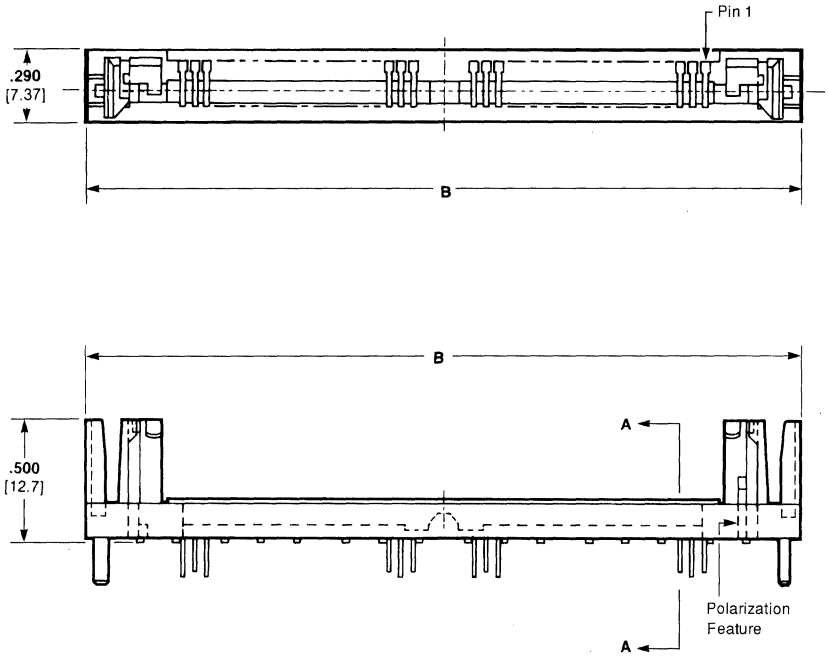
Contact — Phosphor bronze

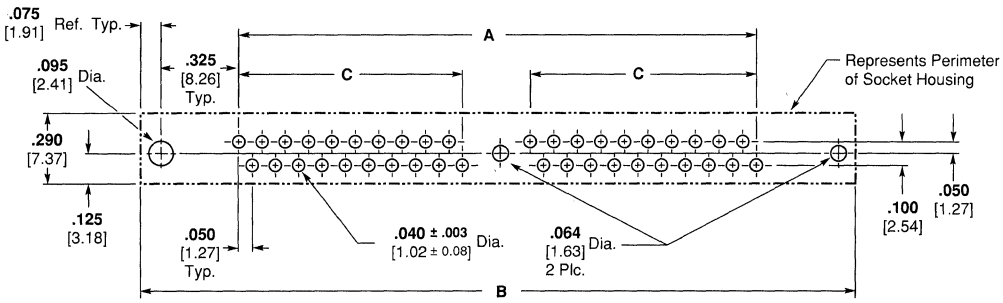
Finish:

Contact — .000200 [0.00508] min. thick tin/lead over .000050 [0.00127] min. thick nickel, or .000030 [0.00076] min. thick gold on contact area and .000150 [0.0038] min. thick tin/lead on solder tails, all over .000050 [0.00127] thick nickel.



Section A—A





Recommended PC Board Hole Pattern

No. of Pos.	Dimensions			Part Numbers	
	A	B	C	Tin Plate	Gold Plate
40	**2.150** 54.61	**2.950** 74.93	**.950** 24.13	821918-2	821919-2
64	**3.350** 85.09	**4.150** 105.41	**1.550** 39.37	821824-6	821825-6
68	**3.550** 90.17	**4.350** 110.49	**1.650** 41.91	821824-7	821825-7
72	**3.750** 95.25	**4.550** 115.57	**1.750** 44.45	821824-8	821825-8
80	**4.150** 105.41	**4.950** 125.73	**1.950** 49.53	821824-9	821825-9

Note: See page 10039 for module layout.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

SIMM Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

MICRO-EDGE SIMM .050 [1.27] Centerline Low Profile Connectors (Standard Footprint)

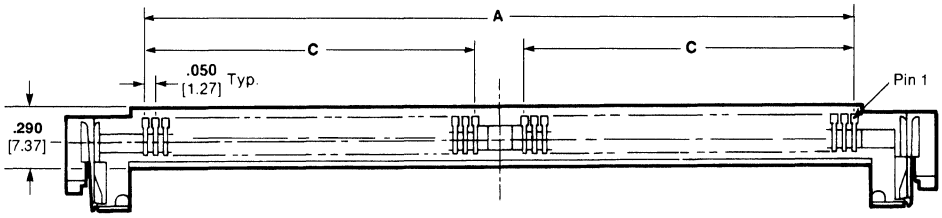
Materials:

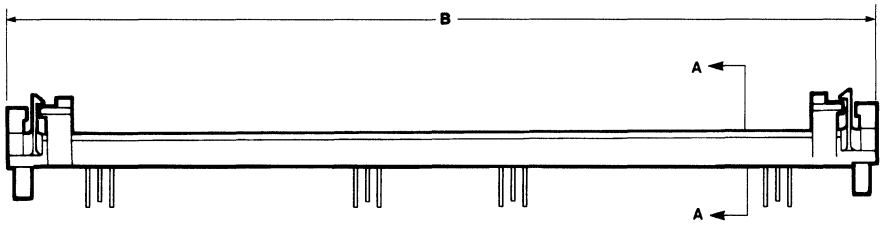
Housings — Liquid crystal polymer, UL 94V-0 rated

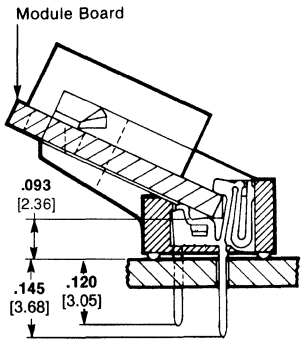
Contact — Phosphor bronze

Finish:

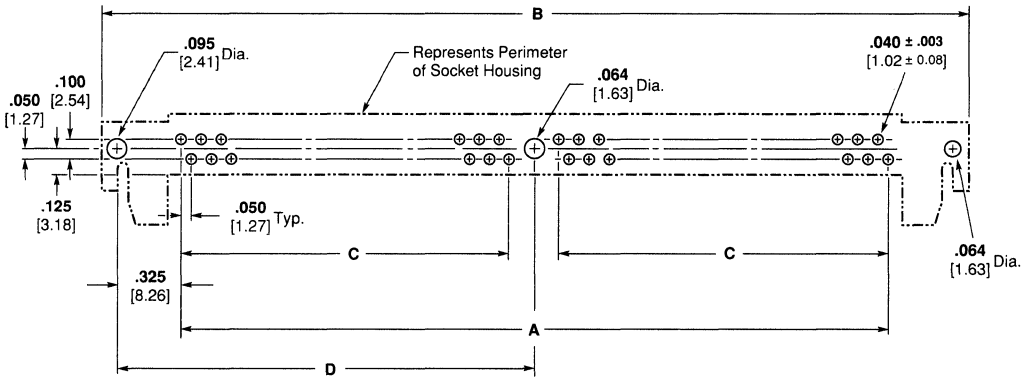
Contact — .000200 [0.00508] min. thick tin/lead over .000050 [0.00127] min. thick nickel, or .000030 [0.00076] min. thick gold on contact area and .000150 [0.0038] min. thick tin/lead on solder tails, all over .000050 [0.00127] thick nickel.







Section A—A



Recommended PC Board Hole Pattern

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

No. of Pos.	Dimensions A	B	C	D	Part Numbers Tin Plate	Gold Plate
64	**3.350** 85.09	**4.150** 105.41	**1.550** 39.37	**2.000** 50.8	821947-5	821950-5
68	**3.550** 90.17	**4.350** 110.49	**1.650** 41.91	**2.100** 53.34	821947-6	821950-6
72	**3.750** 95.25	**4.550** 115.57	**1.750** 44.45	**2.200** 55.88	821947-7	821950-7
80	**4.150** 105.41	**4.950** 125.73	**1.950** 49.53	**2.400** 60.96	821947-8	821950-8

Note: See page 10039 for module layout.

SIMM Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

MICRO-EDGE SIMM .100 [2.54] Centerline Verticle Single Row Connectors

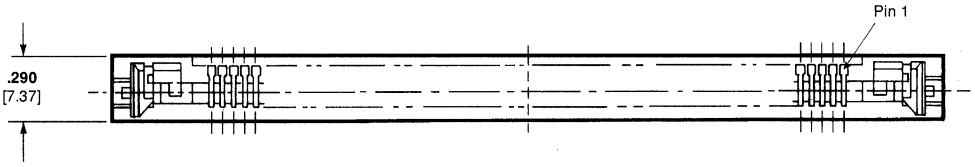
Materials:

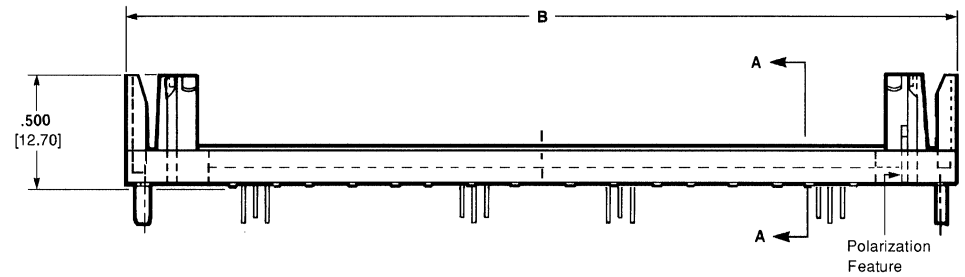
Housings — Liquid crystal polymer, UL 94V-0 rated

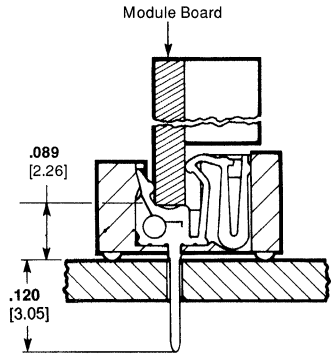
Contact — Phosphor bronze

Finish:

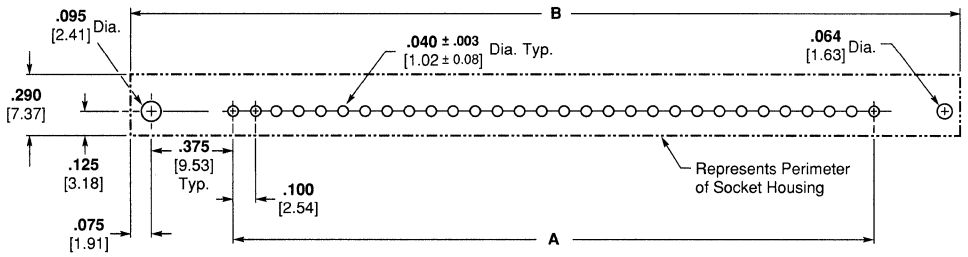
Contact — .000200 [0.00508] min. thick tin/lead over .000050 [0.00127] min. thick nickel, or .000030 [0.00076] min. thick gold on contact area and .000150 [0.0038] min. thick tin/lead on solder tails, all over .000050 [0.00127] thick nickel.







Section A—A



Recommended PC Board Hole Pattern

No. of Pos.	Dimensions		Part Numbers	
	A	B	Tin Plate	Gold Plate
22	**2.100** 53.34	**3.000** 76.20	821828-1	821829-1
30	**2.900** 73.66	**3.800** 96.52	821828-2	821829-2
35	**3.400** 86.36	**4.300** 109.22	821828-3	821829-3
40	**3.900** 99.06	**4.800** 121.92	821828-4	821829-4
42	**4.100** 104.14	**5.000** 127.00	821825-5	821829-5

Notes: See page 10039 for module layout.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

MICRO-EDGE SIMM .100 [2.54] Centerline Vertical Single Row Connectors (.100 x .300 [2.54 x 7.62] Spacing)

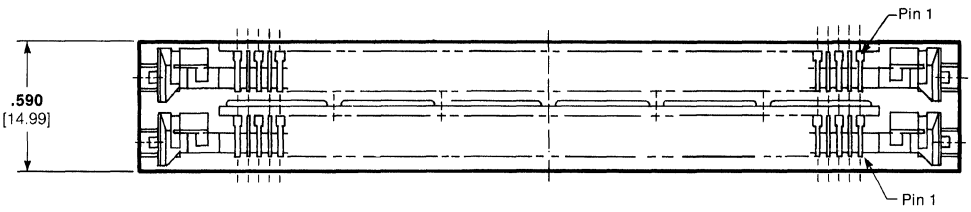
Materials:

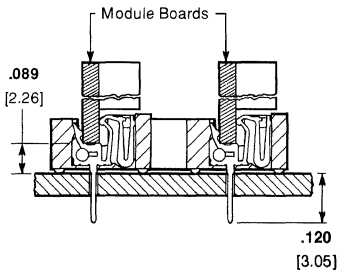
Housings — Liquid crystal polymer, UL 94V-0 rated

Contact — Phosphor bronze

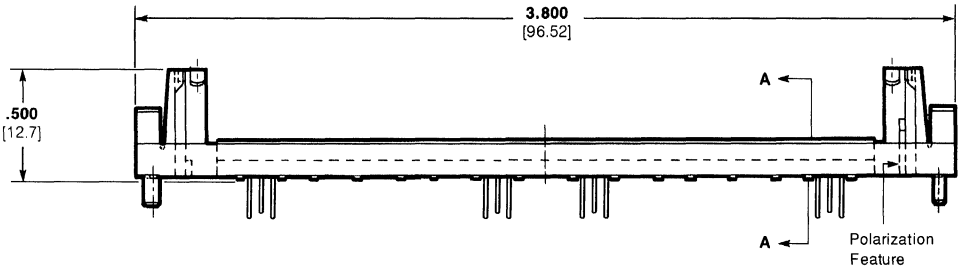
Finish:

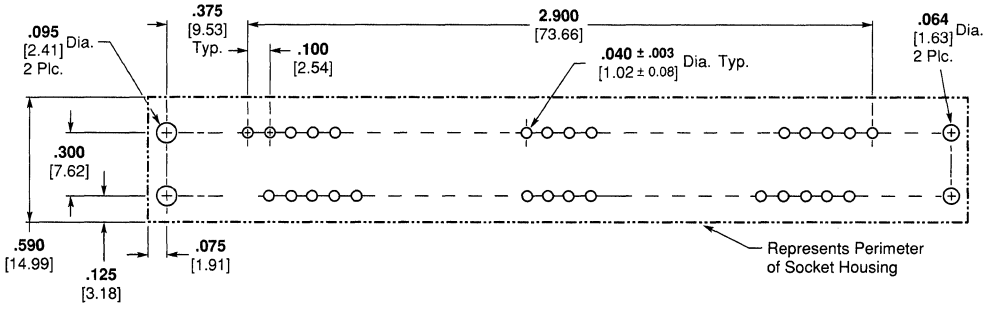
Contact — .000200 [0.00508] min. thick tin/lead over .000050 [0.00127] min. thick nickel, or .000030 [0.00076] min. thick gold on contact area and .000150 [0.0038] min. thick tin/lead on solder tails, all over .000050 [0.00127] thick nickel.





Section A—A





Recommended PC Board Hole Pattern

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

No. of Pos.	Part Numbers	
	Tin Plate	Gold Plate
30	821885-2	821893-2

Notes: 1. See page 10039 for module layout.
2. Other sizes can be made available. Contact AMP Incorporated.

MICRO-EDGE SIMM .100 [2.54] Centerline Vertical Single Row Connectors (.100 x .400 [2.54 x 10.16] Spacing)

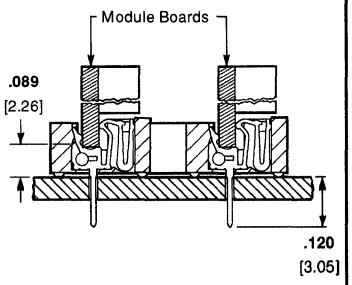
Materials:

Housings—Liquid crystal polymer, UL 94V-0 rated

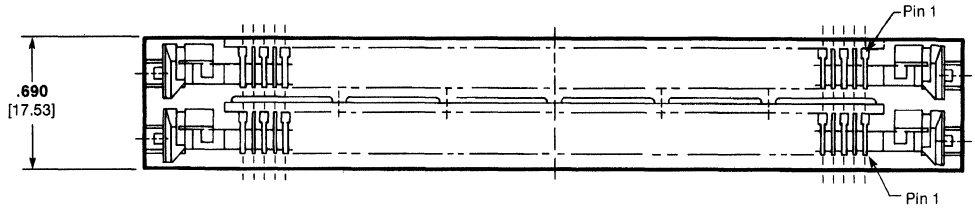
Contact—Phosphor bronze

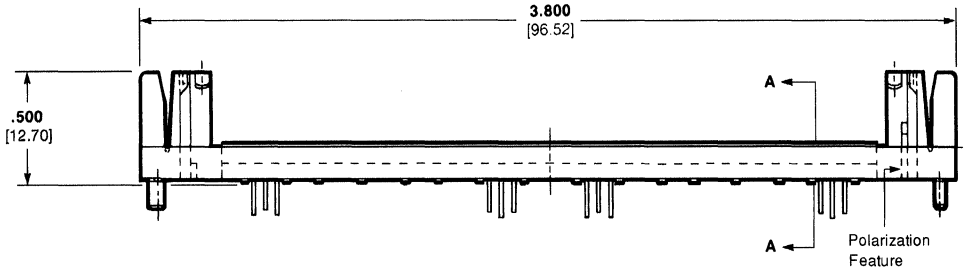
Finish:

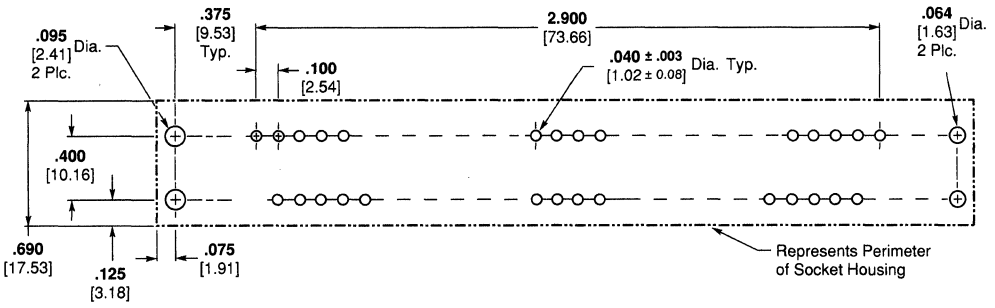
Contact—.000200 [0.00508] min. thick tin/lead over .000050 [0.00127] min. thick nickel, or .000030 [0.00076] min. thick gold on contact area and .000150 [0.0038] min. thick tin/lead on solder tails, all over .000050 [0.00127] thick nickel.



Section A—A







Recommended PC Board Hole Pattern

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

No. of Pos.	Part Numbers	
	Tin Plate	Gold Plate
30	821830-2	821831-2

Notes: 1 See page 10039 for module layout.
2. Other sizes can be made available. Contact AMP Incorporated.

SIMM Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

MICRO-EDGE SIMM .100 [2.54] Centerline Low Profile Single Row Connectors

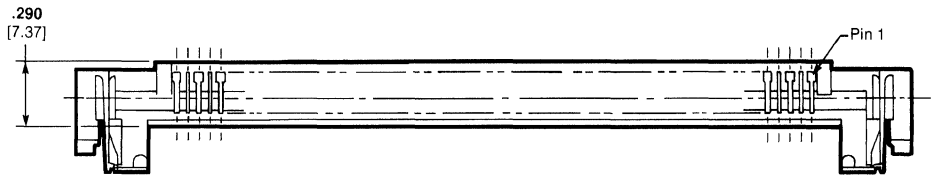
Materials:

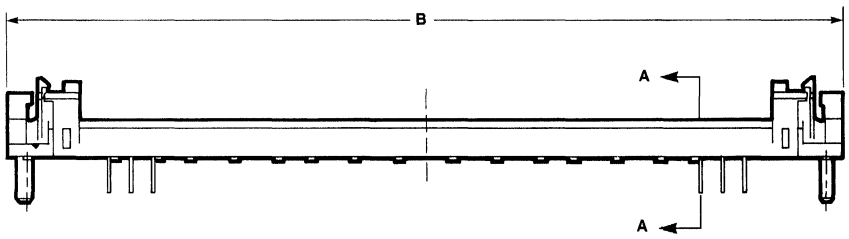
Housings — Liquid crystal polymer, UL 94V-0 rated

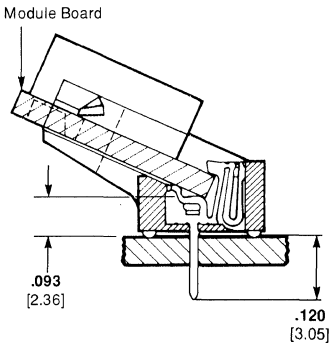
Contact — Phosphor bronze

Finish:

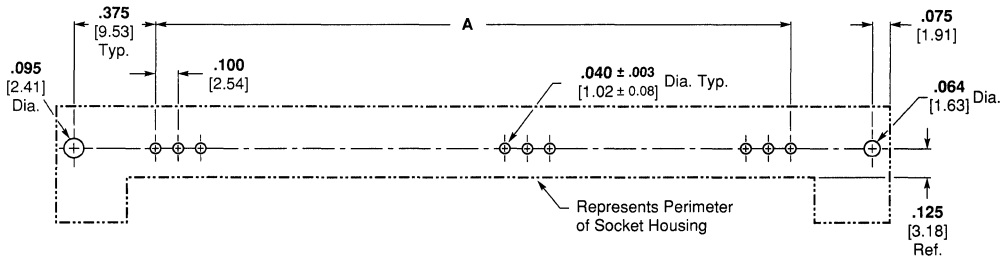
Contact — .000200 [0.00508] min. thick tin/lead over .000050 [0.00127] min. thick nickel, or .000030 [0.00076] min. thick gold on contact area and .000150 [0.0038] min. thick tin/lead on solder tails, all over .000050 [0.00127] thick nickel.







Section A — A



Recommended PC Board Hole Pattern

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

No. of Pos.	Dimensions		Part Numbers	
	A	B	Tin Plate	Gold Plate
30	**2.900** 73.66	**3.800** 96.52	821876-2	821877-2
40	**3.900** 99.06	**4.800** 121.92	821876-4	821877-4
42	**4.100** 104.14	**5.000** 127.00	821876-5	821877-5

Notes: 1. See page 10039 for module layout.
2. Other sizes can be made available. Contact AMP Incorporated.

MICRO-EDGE SIMM .100 [2.54] Centerline Low Profile Dual Row Connectors

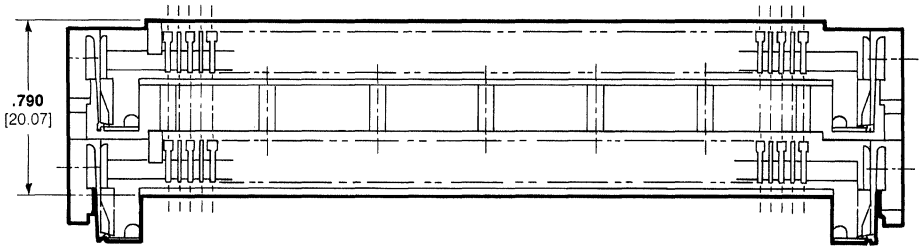
Materials:

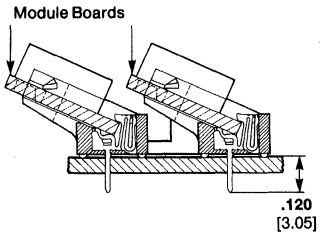
Housing — Liquid crystal polymer, UL 94V-0

Contact — Phosphor bronze

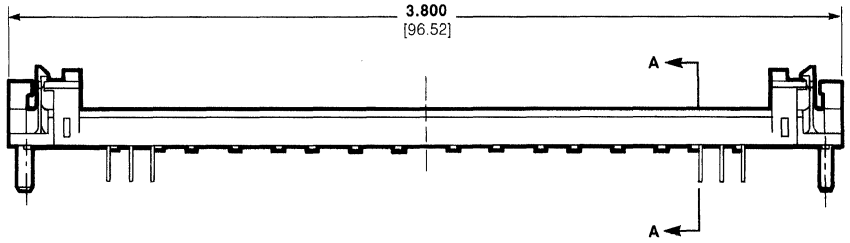
Finish:

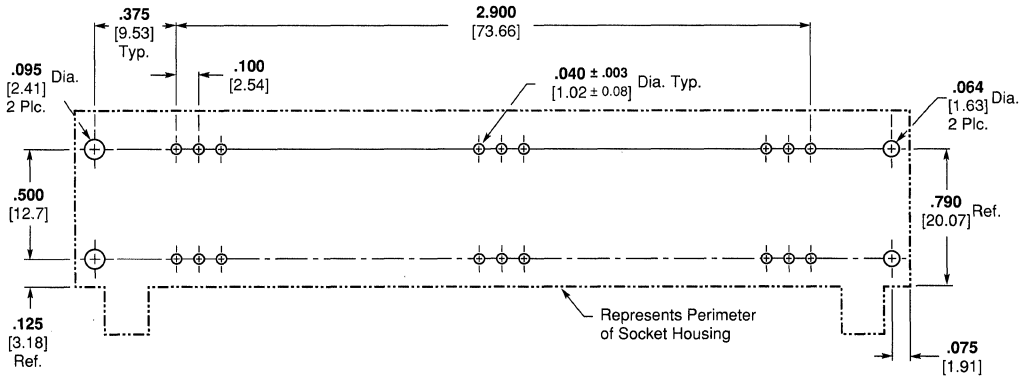
Contact — .000200 [0.00508] min. thick tin/lead over .000050 [0.00127] min. thick nickel, or .000030 [0.00076] min. thick gold on contact area and .000150 [0.0038] min. thick tin/lead on solder tails, all over .000050 [0.00127] thick nickel.





Section A – A





Recommended PC Board Hole Pattern

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

No. Pos.	Part Numbers	
	Tin Plate	Gold Plate
30	821832-2	821850-2

Notes: 1. See page 10039 for module layout
2. Other sizes can be made available. Contact AMP Incorporated.

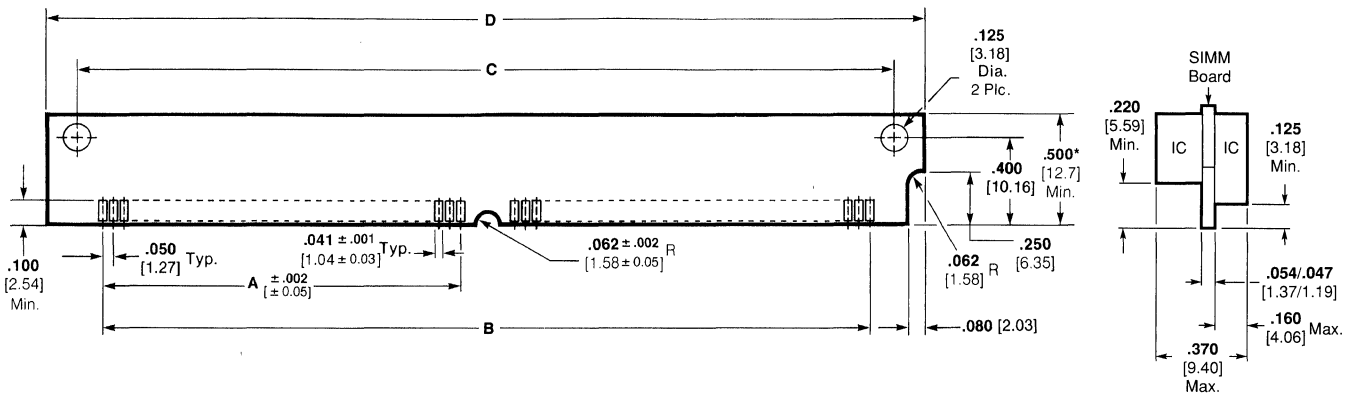
SIMM Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

MICRO-EDGE SIMM Connectors

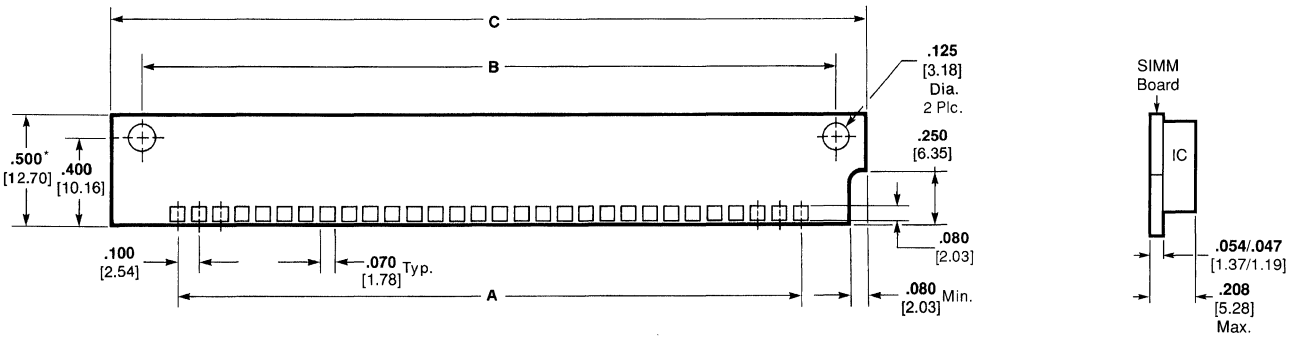
Recommended .050 [1.27] Centerline Module Layout



No. of Pos.	Dimensions			
	A	B	C	D
64	**1.550** 39.37	**3.350** 85.09	**3.584** 91.03	**3.850** 97.79
68	**1.650** 41.91	**3.550** 90.17	**3.784** 96.11	**4.050** 102.87
72	**1.750** 44.45	**3.750** 95.25	**3.984** 101.19	**4.250** 107.95
80	**1.950** 49.53	**4.150** 105.41	**4.384** 111.35	**4.650** 118.11

Notes: 1. .100 x .041 [2.54 x 1.04] pad area to be free of via holes.
2. Tabs to be electrically connected on both sides of card.
*Heights in excess of 1.000 [25.4], consult AMP Incorporated.

Recommended .100 [2.54] Centerline Module Layout



No. of Pos.	Dimensions		
	A	B	C
22	**2.100** 53.34	**2.434** 61.82	**2.700** 68.58
30	**2.900** 73.66	**3.234** 82.14	**3.500** 88.90
35	**3.400** 86.36	**3.734** 94.84	**4.000** 101.60
40	**3.900** 99.06	**4.234** 107.54	**4.500** 114.30
42	**4.100** 104.14	**4.434** 112.62	**4.700** 119.38

Notes: 1. .080 x .070 [2.03 x 1.78] pad area to be free of via holes.
2. Tabs to be electrically connected on both sides of card.
*Heights in excess of 1.000 [25.4], consult AMP Incorporated.

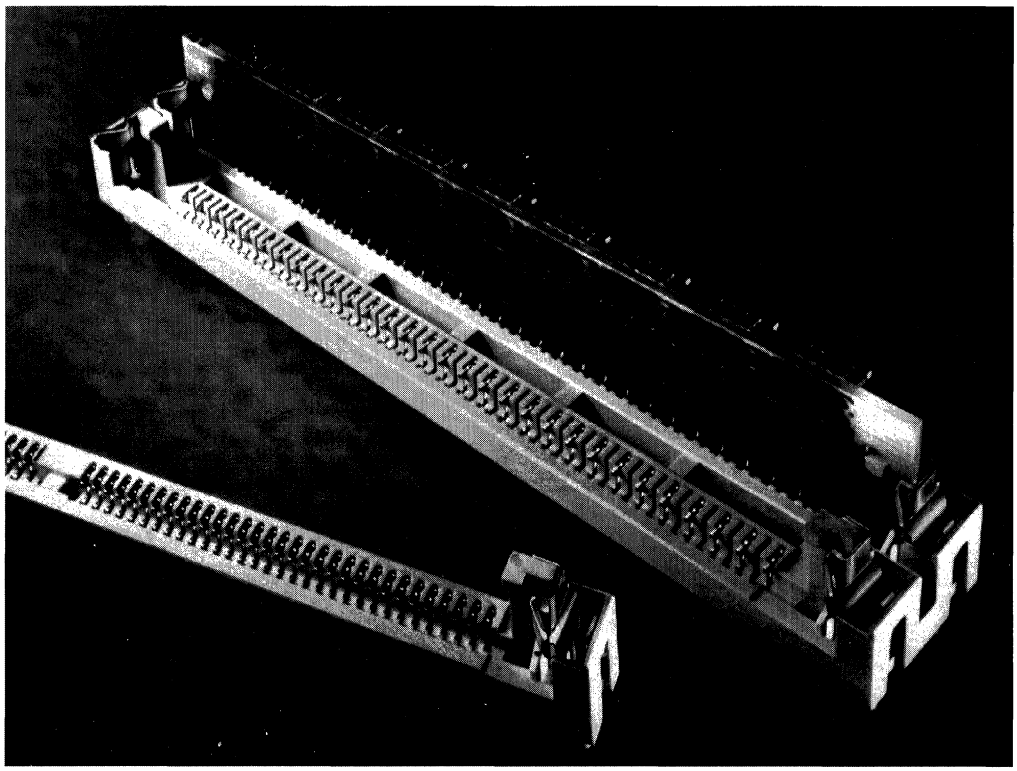
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

MICRO-EDGE SIMM Connectors with Metal Latches for Leadless Single In-Line Memory Modules

Product Facts

- Metal latches eliminate breakage
- Reliable contact design for durability
- Heat resistant housings withstand hostile environments
- Designed for robotic assembly to facilitate automatic manufacturing operations
- Positive polarization prevents mis-insertion
- Low insertion force for easy module insertion
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certification by Canadian Standards Association pending.



Plastic latches on sockets for Single In-Line Memory Modules (SIMM) and logic modules are causing great concern in the marketplace. These all-plastic connectors are often subject to rough use during module insertion/extraction and handling causing subsequent breakage to the plastic latches designed to hold the modules in place.

To alleviate this problem, AMP is introducing a metal-latch version of its MICRO-EDGE SIMM Connectors. This new feature eliminates the breakage associated with the misuse of SIMM connectors. In addition, the metal latches will prevent shaving and/or skiving, as happens with plastic latches, due to inconsistent manufacturing methods of the board edges.

The new metal-latch MICRO-EDGE Connectors are available in .050 [1.27] and .100 [2.54] centerline configurations and they retain all the previously accepted features. Vertical styles are now ready for purchase, with angled/low profile designs to be released later this year.

Performance Characteristics

Current Rating:
1 ampere max.

Operating Temperature:
−40°C to +105°C

Termination Resistance (Dry Circuit):
30 miliohms max. initial

Dielectric Withstanding Voltage:
1.5 KVAC

Insulation Resistance:
10,000 megohms min. initial

Capacitance:
2.0 picofarads max.

Normal Force:
200 grams min. tin/tin interface

Durability:
25 cycles min.

Technical Documents

Product Specification:
108-1095

Instruction Sheet:
IS 9413

Application Specification:
114-1061

SIMM Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

MICRO-EDGE SIMM Connectors with Metal Latches, .050 [1.27] Centerline Vertical Single Row Connectors

Materials:

Housing — Liquid crystal polymer, UL 94V-0

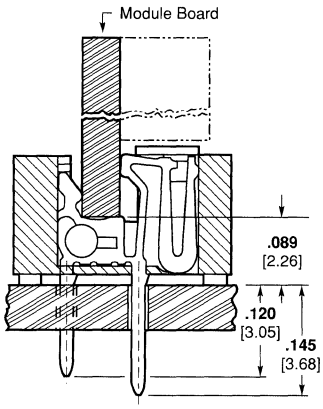
Contact — Phosphor bronze

Latch — Brass

Finishes:

Contact — .000200 [0.00508] min. thick tin/lead over .000050 [0.00127] min. thick nickel or .000030 [0.00076] min. thick gold on contact area and .000150 [0.0038] min. thick tin/lead on solder tails, all over .000050 [0.00127] thick nickel.

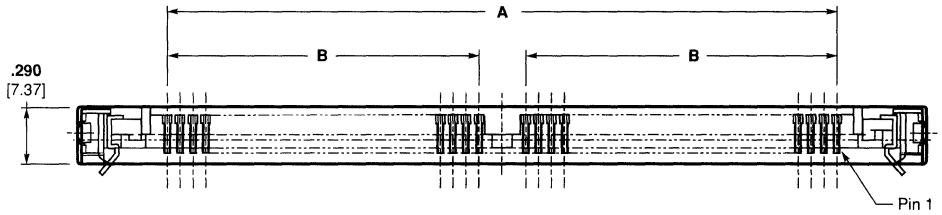
Latch — Nickel plated

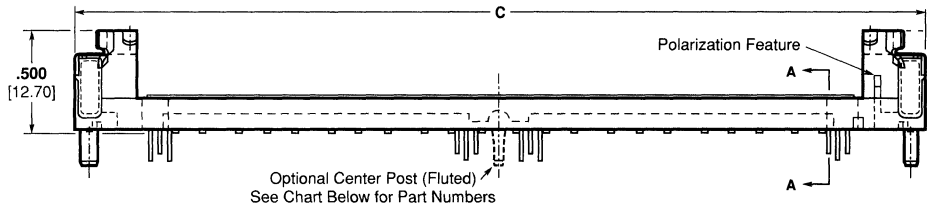


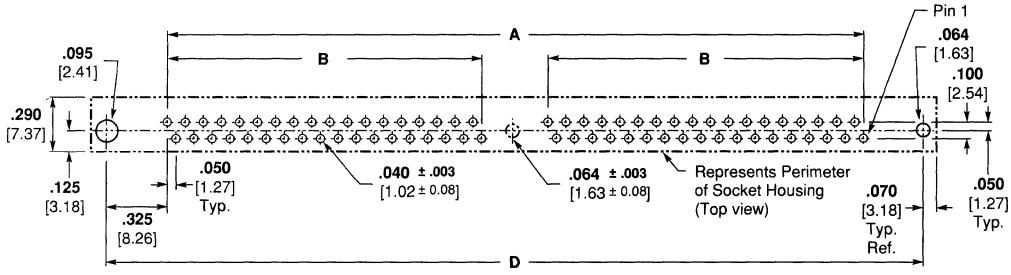
Section A – A

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Standard Polarization







Recommended PC Board Hole Pattern

No. of Pos.	Dimensions A	B	C	D	Part Numbers: Tin Plate With Center Post	Tin Plate Without Center Post	Gold Plate With Center Post	Gold Plate Without Center Post
40	**2.150** 54.61	**.950** 24.13	**2.940** 74.68	**2.800** 71.12	822021-1	822019-1	822032-1	822031-1
64	**3.350** 85.09	**1.550** 39.37	**4.140** 105.16	**4.000** 101.6	822021-2	822019-2	822032-2	822031-2
68	**3.550** 90.17	**1.650** 41.90	**4.340** 110.24	**4.200** 106.68	822021-3	822019-3	822032-3	822031-3
72	**3.750** 95.25	**1.750** 44.45	**4.540** 115.32	**4.400** 111.76	822021-4	822019-4	822032-4	822031-4
80	**4.150** 105.41	**1.950** 49.53	**4.940** 125.48	**4.800** 121.92	822021-5	822019-5	822032-5	822031-5

MICRO-EDGE SIMM Connectors with Metal Latches, .050 [1.27] Centerline Vertical Single Row Connectors

Materials:

Housing — Liquid crystal polymer, UL 94V-0

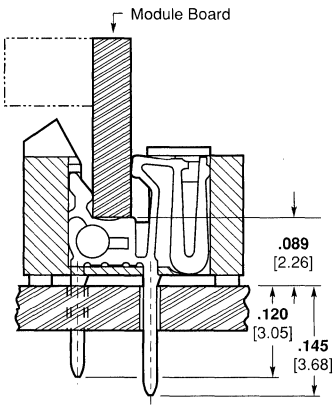
Contact — Phosphor bronze

Latch — Brass

Finishes:

Contact — .000200 [0.00508] min. thick tin/lead over .000050 [0.00127] min. thick nickel or .000030 [0.00076] min. thick gold on contact area and .000150 [0.0038] min. thick tin/lead on solder tails, all over .000050 [0.00127] thick nickel.

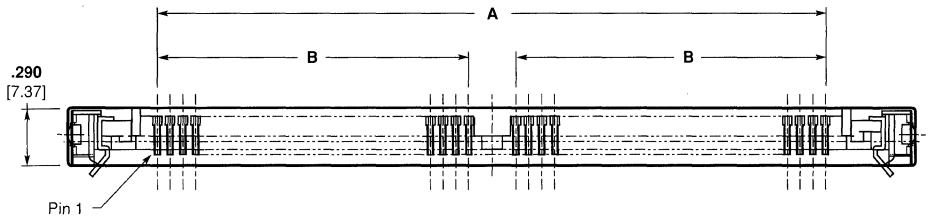
Latch — Nickel plated

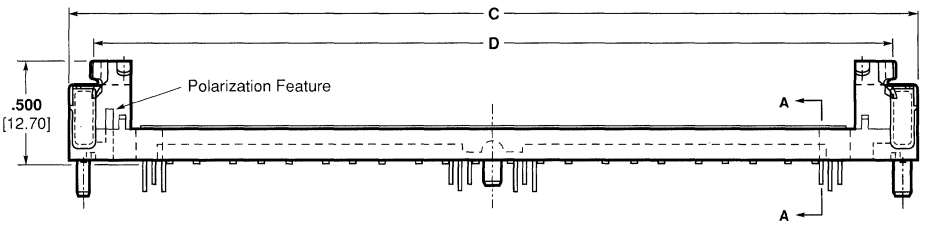


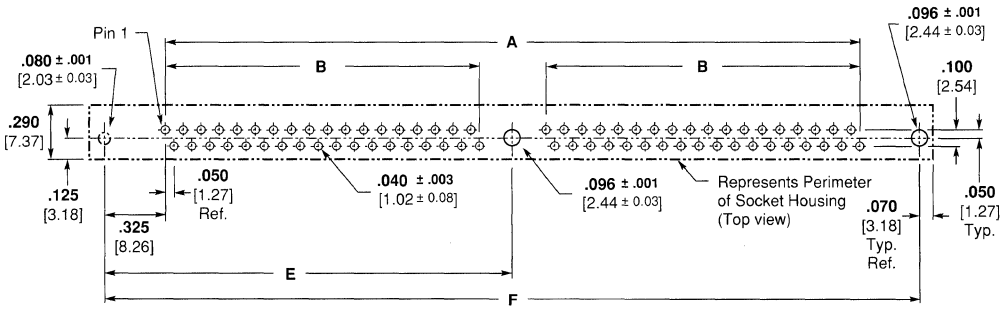
Section A – A

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Reverse Polarization







Recommended PC Board Hole Pattern

No. of Pos.	Dimensions						Part Numbers	
	A	B	C	D	E	F	Tin Plate	Gold Plate
72	**3.750** 95.25	**1.750** 44.45	**4.540** 115.32	**4.288** 108.92	**2.200** 55.88	**4.400** 111.76	822030-3	821997-3

SIMM Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimeters.

MICRO-EDGE SIMM Connectors with Metal Latches, .050 [1.27] Centerline Vertical Dual Row Connectors

Materials:

Housing — Liquid crystal polymer, UL 94V-0

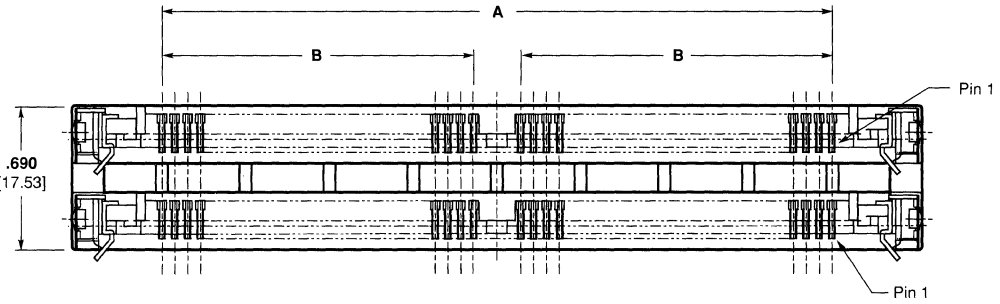
Contact — Phosphor bronze

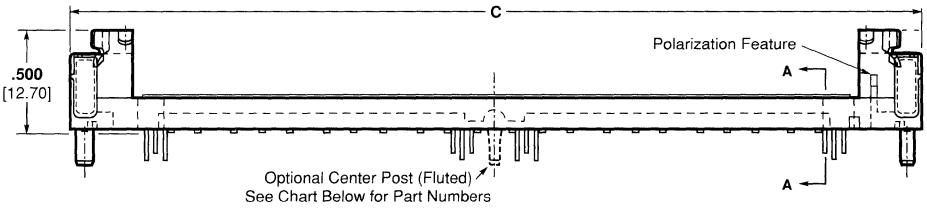
Latch — Brass

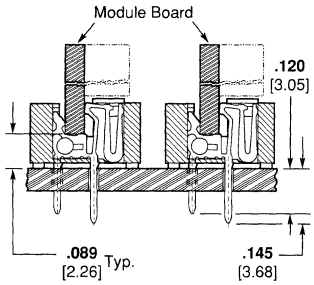
Finishes:

Contact — .000200 [0.00508] min. thick tin/lead over .000050 [0.00127] min. thick nickel or .000030 [0.00076] min. thick gold on contact area and .000150 [0.0038] min. thick tin/lead on solder tails, all over .000050 [0.00127] thick nickel.

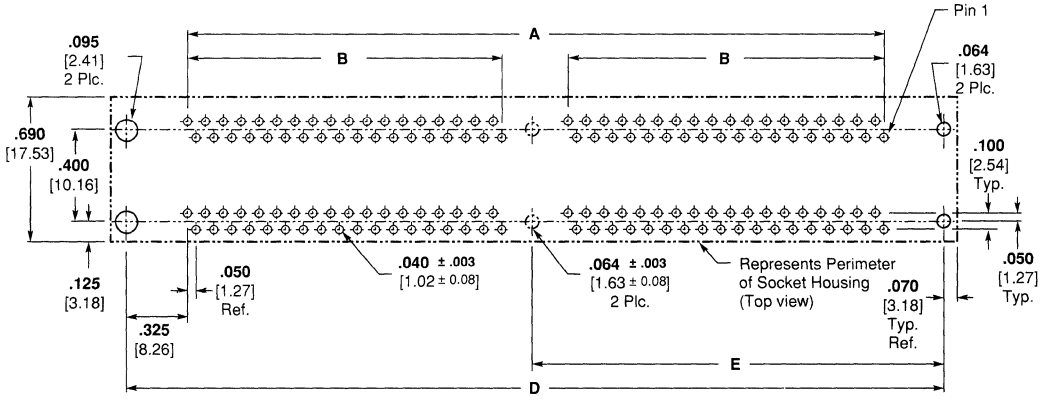
Latch — Nickel plated







Section A – A



Recommended PC Board Hole Pattern

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

No. of Pos.	Dimensions					Part Numbers			
						Tin Plate		Gold Plate	
	A	B	C	D	E	With Center Post	Without Center Post	With Center Post	Without Center Post
64	**3.350** 85.09	**1.550** 39.37	**4.140** 105.16	**4.000** 101.60	**2.000** 50.80	822090-2	822023-2	—	822033-2
68	**3.550** 90.17	**1.650** 41.91	**4.340** 110.24	**4.200** 106.68	**2.100** 53.34	822090-3	822023-3	—	822033-3
72	**3.750** 95.25	**1.750** 44.45	**4.540** 115.32	**4.400** 111.76	**2.200** 55.88	822090-4	822023-4	—	822033-4

SIMM Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

MICRO-EDGE SIMM Connectors with Metal Latches, .100 [2.54] Centerline Vertical Single Row Connectors

Materials:

Housing — Liquid crystal polymer, UL 94V-0

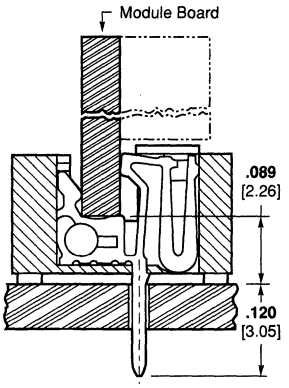
Contact — Phosphor bronze

Latch — Brass

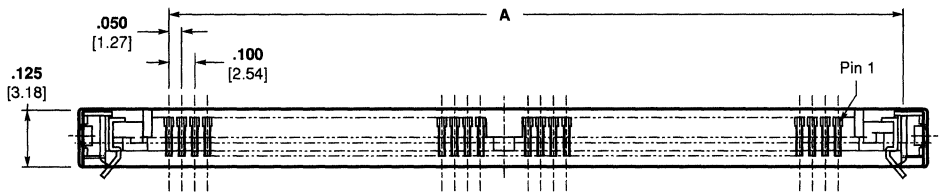
Finishes:

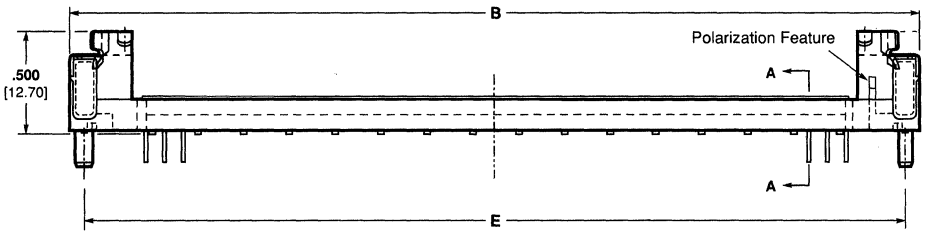
Contact — .000200 [0.00508] min. thick tin/lead over .000050 [0.00127] min. thick nickel or .000030 [0.00076] min. thick gold on contact area and .000150 [0.0038] min. thick tin/lead on solder tails, all over .000050 [0.00127] thick nickel.

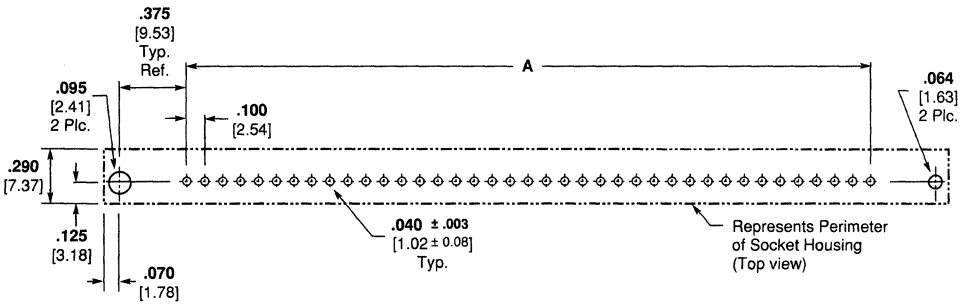
Latch — Nickel plated



Section A – A







Recommended PC Board Hole Pattern

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

No. of Pos.	Dimensions			Part Numbers	
	A	B	E	Tin Plate	Gold Plate
22	**2.100** 53.34	**2.990** 75.95	**2.850** 72.39	822056-1	—
30	**2.900** 73.66	**3.790** 96.27	**3.650** 92.71	822056-2	822061-2
35	**3.400** 86.36	**4.290** 108.97	**4.150** 105.41	822056-3	—
40	**3.900** 99.06	**4.790** 121.67	**4.650** 118.11	822056-4	—
42	**4.100** 104.14	**4.990** 126.75	**4.850** 123.19	822056-5	—

MICRO-EDGE SIMM Connectors with Metal Latches, .100 [2.54] Centerline Vertical Dual Row Connectors

Materials:

Housing — Liquid crystal polymer, UL 94V-0

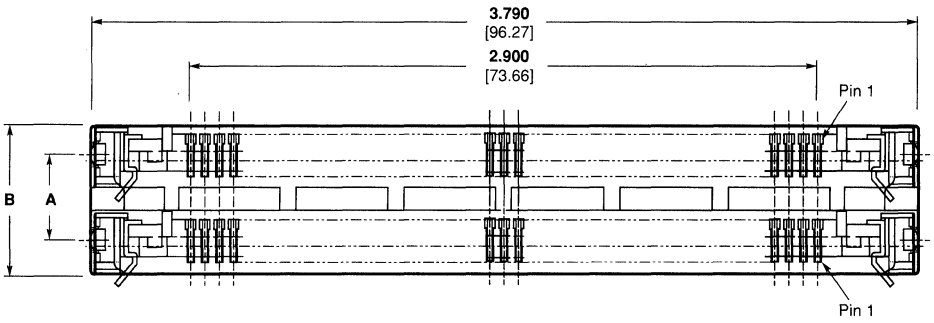
Contact — Phosphor bronze

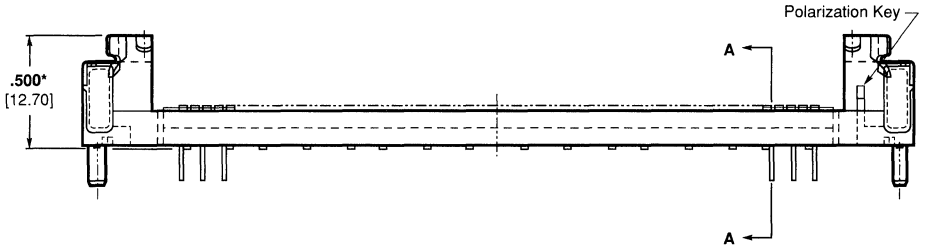
Latch — Brass

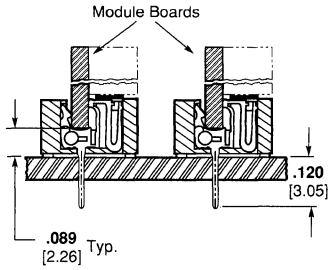
Finishes:

Contact — .000200 [0.00508] min. thick tin/lead over .000050 [0.00127] min. thick nickel or .000030 [0.00076] min. thick gold on contact area and .000150 [0.0038] min. thick tin/lead on solder tails, all over .000050 [0.00127] thick nickel.

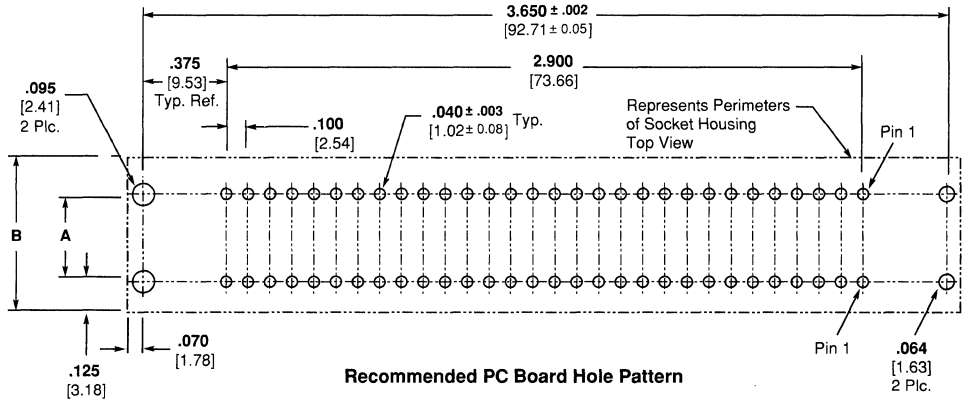
Latch — Nickel plated







Section A – A



Recommended PC Board Hole Pattern

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

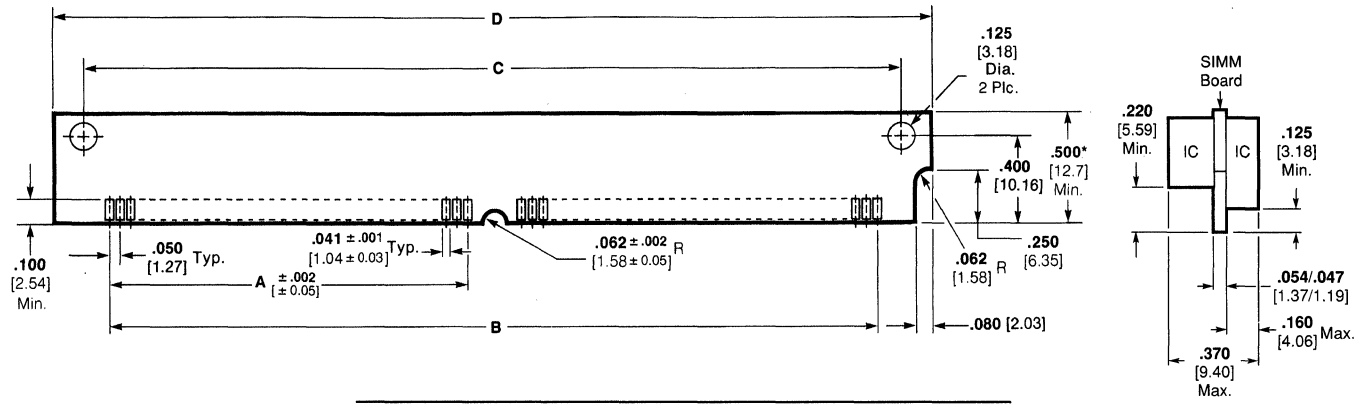
No. of Pos.	Dimensions		Part Numbers	
	A	B	Tin	Gold
30	.300 7.62	.590 14.99	822058-2 822116-2*	—
	.400 10.16	.690 17.53	822060-2	822062-2

*With extended latch releases overall height increases to **.575** [14.61].

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

MICRO-EDGE SIMM Connectors with Metal Latches

Recommended .050 [1.27] Centerline Module Layout

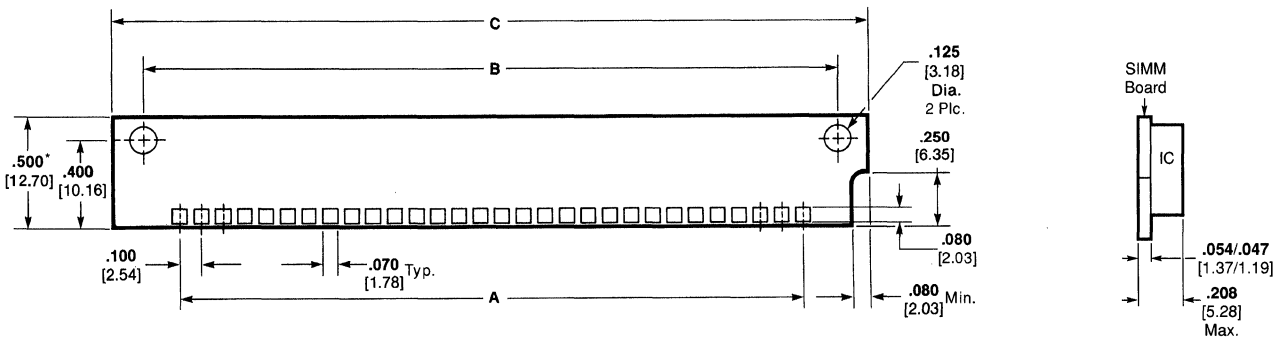


No. of Pos.	Dimensions			
	A	B	C	D
64	**1.550** 39.37	**3.350** 85.09	**3.584** 91.03	**3.850** 97.79
68	**1.650** 41.91	**3.550** 90.17	**3.784** 96.11	**4.050** 102.87
72	**1.750** 44.45	**3.750** 95.25	**3.984** 101.19	**4.250** 107.95
80	**1.950** 49.53	**4.150** 105.41	**4.384** 111.35	**4.650** 118.11

Notes: 1. .100 x .041 [2.54 x 1.04] pad area to be free of via holes.
2. Tabs to be electrically connected on both sides of card.

*Heights in excess of 1.000 [25.4], consult AMP Incorporated.

Recommended .100 [2.54] Centerline Module Layout



No. of Pos.	Dimensions		
	A	B	C
22	**2.100** 53.34	**2.434** 61.82	**2.700** 68.58
30	**2.900** 73.66	**3.234** 82.14	**3.500** 88.90
35	**3.400** 86.36	**3.734** 94.84	**4.000** 101.60
40	**3.900** 99.06	**4.234** 107.54	**4.500** 114.30
42	**4.100** 104.14	**4.434** 112.62	**4.700** 119.38

Notes: 1. .080 x .070 [2.03 x 1.78] pad area to be free of via holes.
2. Tabs to be electrically connected on both sides of card.

*Heights in excess of 1.000 [25.4], consult AMP Incorporated.

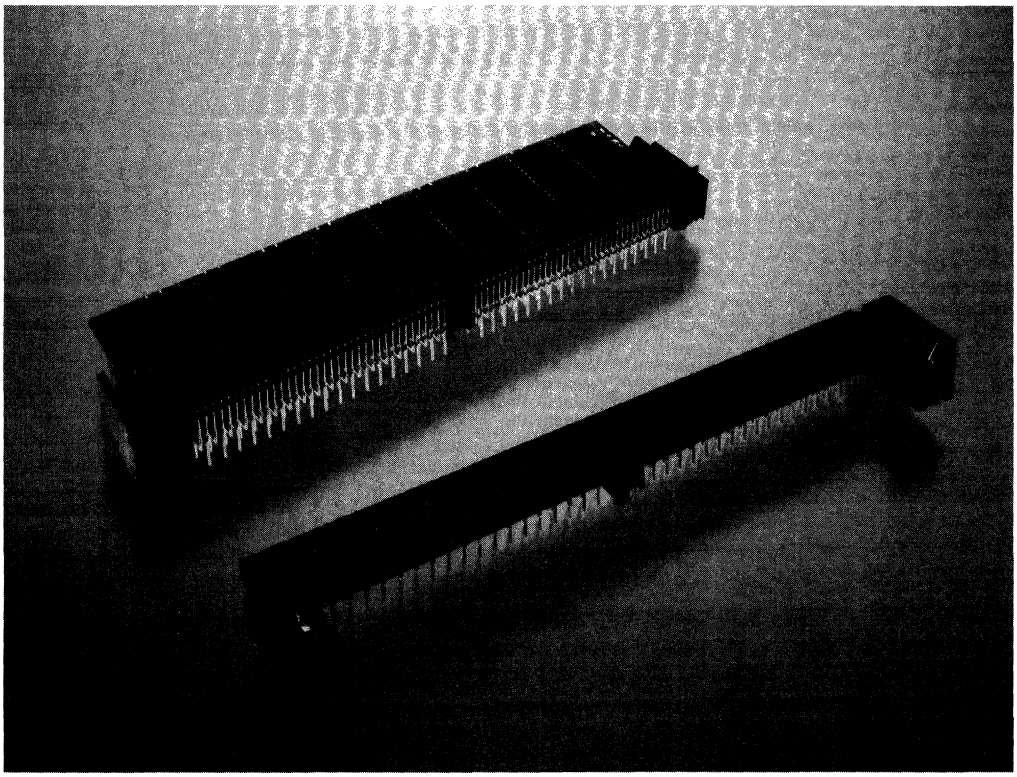
SIMM II Right Angle Connectors

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

- Accepts module boards in a thickness range of .047 – .054 [1.19 – 1.37] to allow the use of JEDEC standard boards
- Very low insertion force for easy installation of the module board
- Polarized posts on connector provide a means of properly orienting the connector on the pc board
- Pin 1 indicator in the connector orients the module board to the connector
- .050 [1.27] centerline connectors offer three profile heights — .125 [3.18], .160 [4.06] and .250 [6.35] to allow the use of single- and dual-sided boards, and the placement of components beneath the module board if required
- Anti-overstress latches prevent breakage from improper use
- Center post on .050 [1.27] product provides retention in pc board through the soldering process
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR7189



AMP developed the SIMM II Right Angle Connectors for interfacing Single In-Line Memory Module (SIMM) boards horizontally to the pc board while using a traditional cam-in approach. Available in both .050 [1.27] and .100 [2.54] centerline configurations with gold and tin plating options, the connectors are designed to accept the JEDEC standard pc board thickness range of .047 – .054 [1.19 – 1.37].

In order to allow for many different customer designs, the .050 [1.27] centerline connectors are available in three card slot heights — .125 [3.18], .160 [4.06] and .250 [6.35]. This three-height capability allows customers to use single- or dual-sided module boards while providing the lowest overall height for packaging. The .125 [3.18] height version provides an extremely low-profile interface while maintaining easy insertion and extraction within restricted packaging specifications.

A very low insertion force is required to install the module board. To install, simply angle the module board into the connector card slot, then pivot the module board into position where it is secured by the locking latches.

The housing is made from liquid crystal polymer, assuring strong durable ramps. All connectors have durable anti-overstress latches. The latches for the .125 [3.18] height versions are made from liquid crystal polymer while all other versions have metal latches. Polarizing posts coincide with mounting holes in the pc board to prevent mis-insertion.

Performance Characteristics

Current: 1 ampere max.

Operating Temperature:
−55°C to +105°C

Termination Resistance (Dry Circuit):
30 milliohms max.

Dielectric Withstanding Voltage:
1.0 KVAC

Insulation Resistance:
10,000 megohms min. initial

Durability:
25 cycles min.

Contact Retention:
2 lb. [8.9 N]

Technical Documents

Product Specification:
108-1297

Application Specification:
114-1060

SIMM II Right Angle Connectors
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

.050 [1.27] Centerline

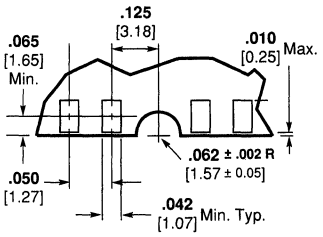
Materials and Finishes:

Housing—Liquid crystal polymer, glass filled, UL 94V-0

Latch—Brass with nickel plate on .160 [4.06] and .250 [6.35] height versions and liquid crystal polymer on .125 [3.18] height version

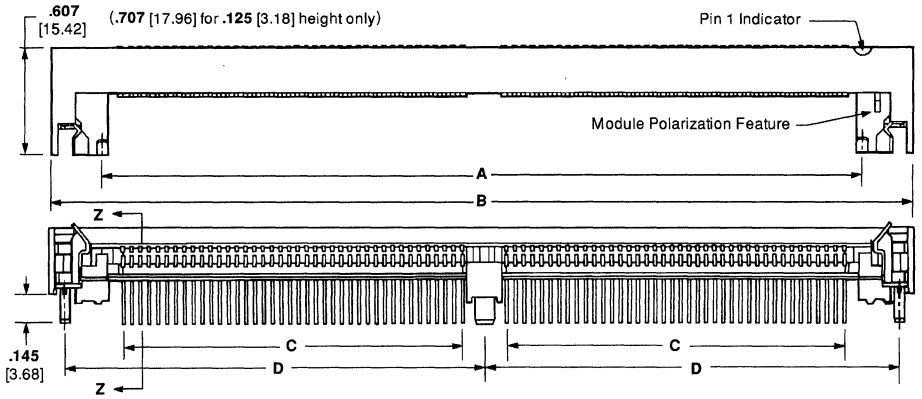
Contact—Phosphor bronze plated with .000150 [0.0038] min. tin lead or Duplex .000030 [.00076] min. gold in contact area and .000150 [0.0038] min. tin-lead in solder tail area all over .000050 [0.00127] min. nickel

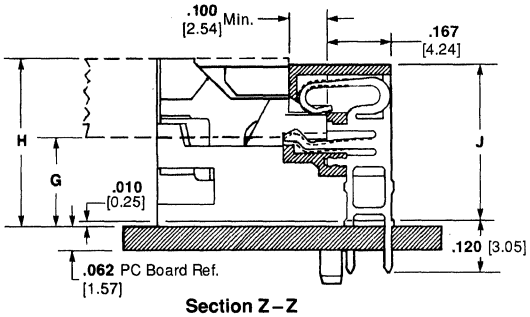
Card Slot Height G	Dimensions H	J
.125 3.18	.325 8.26	.304 7.72
.160 4.06	.360 9.14	.339 8.61
.250 6.35	.450 11.43	.429 10.90



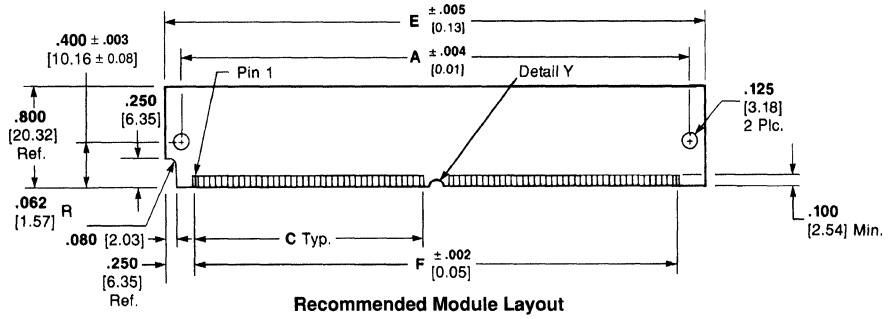
Detail Y

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

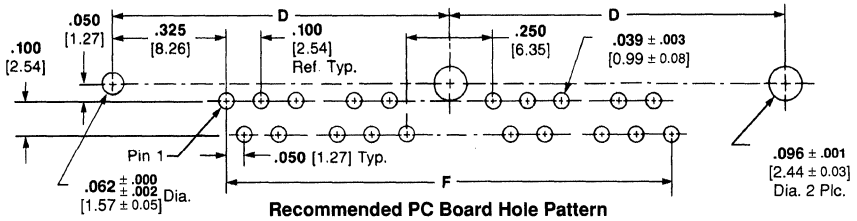




Section Z–Z



Recommended Module Layout



Recommended PC Board Hole Pattern

No. of Pos.	Dimensions A	B	C	D	E	F	Part Numbers .125 [3.18] Height[1] Tin Plate	Gold Plate	.160 [4.06] Height[2] Tin Plate	Gold Plate	.250 [6.35] Height[2] Tin Plate	Gold Plate
40	2.384 60.55	2.950 74.93	.950 24.13	1.400 35.56	2.650 67.31	2.150 54.61	4-382480-0	4-382481-0	4-382482-0	4-382483-0	4-382486-0	4-382487-0
68	3.784 96.11	4.350 110.49	1.650 41.91	2.100 53.34	4.050 102.87	3.550 90.17	6-382480-8	6-382481-8	6-382482-8	6-382483-8	6-382486-8	6-382487-8
72	3.984 101.19	4.550 115.57	1.750 44.45	2.200 55.88	4.250 107.95	3.750 95.25	7-382480-2	7-382481-2	7-382482-2	7-382483-2	7-382486-2	7-382487-2
80	4.384 111.35	4.950 125.73	1.950 49.53	2.400 60.96	4.650 118.11	4.150 105.41	8-382480-0	8-382481-0	8-382482-0	8-382483-0	8-382486-0	8-382487-0
84	4.584 116.43	5.150 130.81	2.050 52.07	2.500 63.50	4.850 123.19	4.350 110.49	8-382480-4	8-382481-4	8-382482-4	8-382483-4	8-382486-4	8-382487-4

[1]Has plastic latches (plastic latches extend .707 [17.96] from back of housing).
[2]Has metal latches.
Note: Metal latch versions shown for purposes of illustration.

SIMM II Right Angle Connectors
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

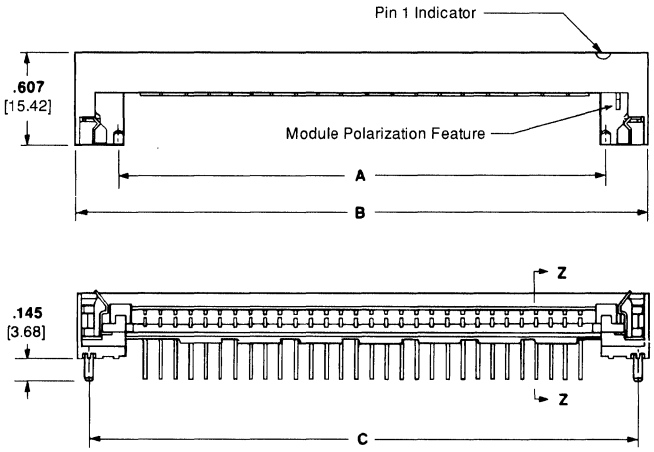
.100 [2.54] Centerline

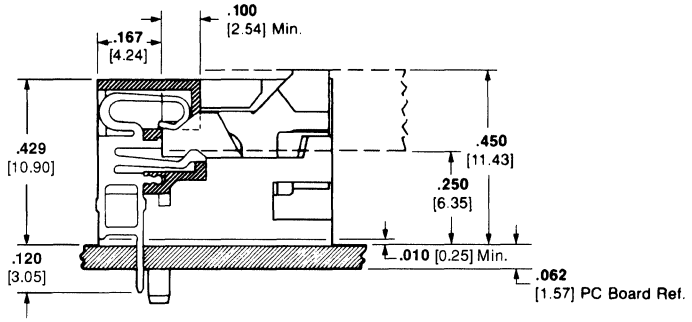
Materials and Finishes:

Housing — Liquid crystal polymer, glass filled, UL 94V-0

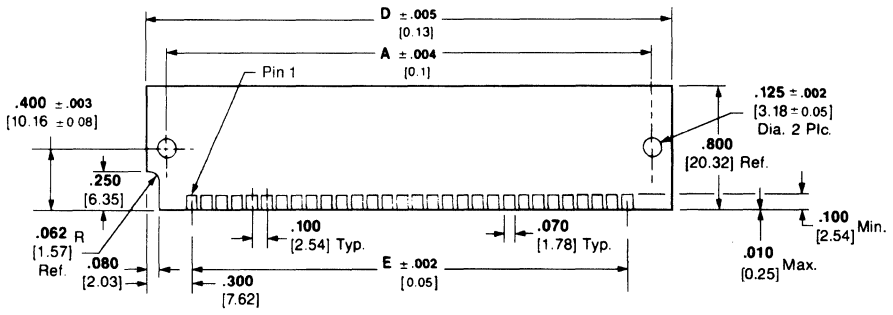
Latch — Brass with nickel plate

Contact — Phosphor bronze plated with .000150 [0.0038] min. tin lead or Duplex .000030 [.00076] min. gold in contact area and .000150 [0.0038] min. tin-lead in solder tail area all over .000050 [0.000127] min. nickel

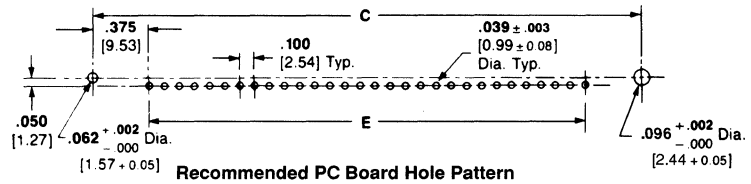




Section Z–Z



Recommended Module Layout



Recommended PC Board Hole Pattern

No. of Pos.	Dimensions					Part Numbers	
	A	B	C	D	E	Tin Plate	Gold Plate
30	3.234 82.14	3.800 96.52	3.650 92.71	3.500 88.9	2.900 73.66	3-382488-0	3-382489-0
35	3.734 94.84	4.300 109.22	4.150 105.41	4.000 101.6	3.400 86.36	3-382488-5	3-382489-5

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

PLCC Sockets

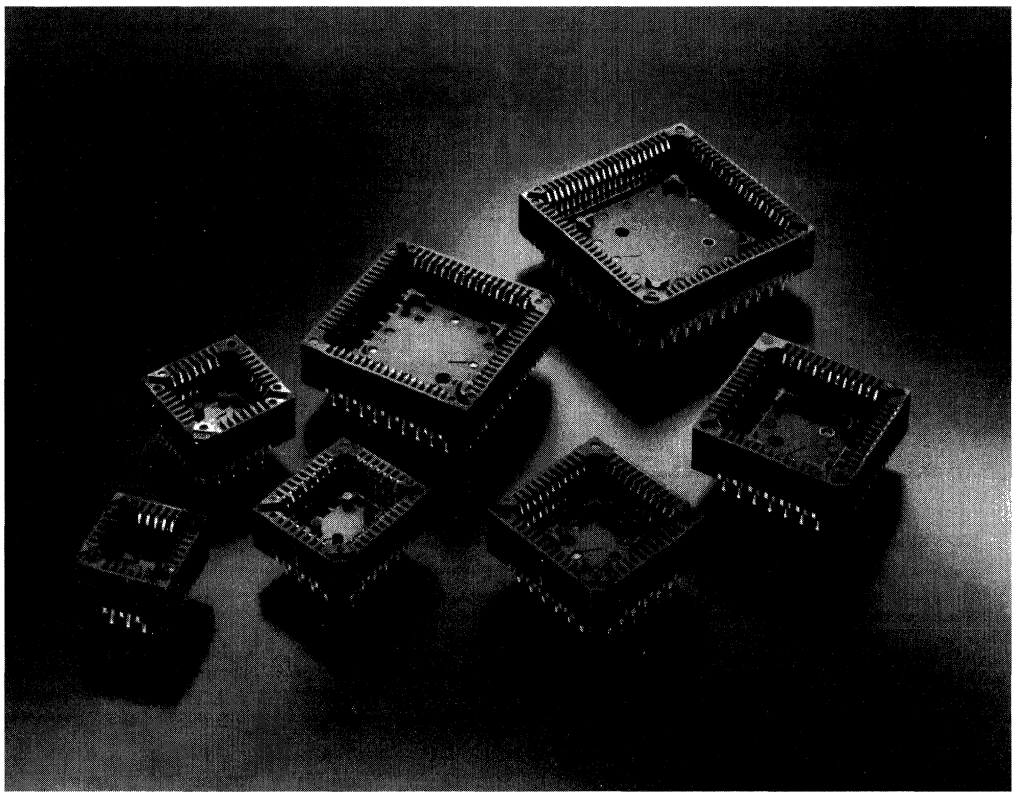
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

High Pressure Tin (HPT) Sockets with Solder Tails

Product Facts

- Positive locking contact design prevents package "popout"
- High normal force contacts — above 200 grams to provide optimum mating and retention of PLCC's and maintain reliable interconnection
- Post-plated contacts
- Staggered solder tail heights permit easy insertion into pc board
- Rigid solder tails protect against damage in handling and insertion
- Single-piece housing for easy removal
- Visual aids for registration
- Orientation holes for insertion and drainage
- Standoffs provide clearance for heat dissipation and cleaning
- Bottom loaded contacts for inspection and repair
- Accepts JEDEC PLCC's — MO-047AA-AH
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR16455



Various styles of AMP High Pressure Tin (HPT) Chip Carrier Sockets accept JEDEC PLCC packages in square and 32-position rectangular EPROM configurations with tin plated leads on .050 [1.27] centers. The solder tail design allows through-hole board mounting on .100 [2.54] centers. Surface mount design sockets are available. See pages 10056 through 10060.

The high normal forces created by the unique contact design allows reliable mating of tin plated leads on plastic chip carriers. The contact design also provides a very short electrical path between the chip carrier lead and the pc board.

The sockets have visual indicators for locating pin 1 and polarizing features to control the insertion of chip carriers.

AMP HPT Chip Carrier Sockets are designed to make effective and economical use of available pc board area for plastic chip carriers with high pin counts. Consult AMP Incorporated for additional information concerning your particular design requirements.

Technical Documents

Product Specification:
108-38000

Instruction Sheets:

IS 9081	Extraction Tools
IS 6956	Housing Removal Tool
IS 6987	Replacement Contact Procedures
IS 6957	Rectangular Sockets Extraction Tool

Performance Characteristics

Contact Resistance:
3.0 milliohms max. change after any test sequence with a 15 milliohm max. final resistance

Capacitance (Adjacent Contact):
1.0 picofarad max.

Inductance (Self):
10 nh max. at 500 KHz

Insulation Resistance:
1×10^4 megohms min.

Dielectric Withstanding Voltage:
600 VAC for 1.0 minute

Thermal Shock:
AMP Spec. 109-22, −55°C to +125°C

Vibration:
AMP Spec. 109-21-3, Cond. C, 15 G's max., 10-2000-10 Hz (solder tail sockets)

Shock:
AMP Specification 109-26-9, Cond. 1, 100 G's

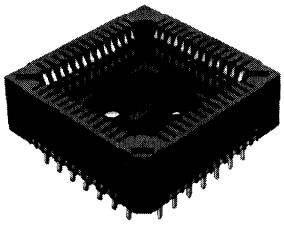
Temperature/Humidity (Method III):
AMP Spec. 109-23, Cond. B, 10 cycles (+25°C to +65°C) at 95% RH

PLCC Sockets
(Continued)

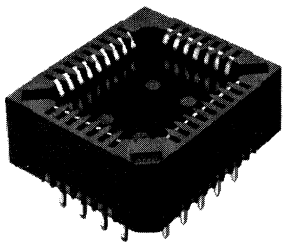
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

High Pressure Tin (HPT) Sockets with Solder Tails



Square



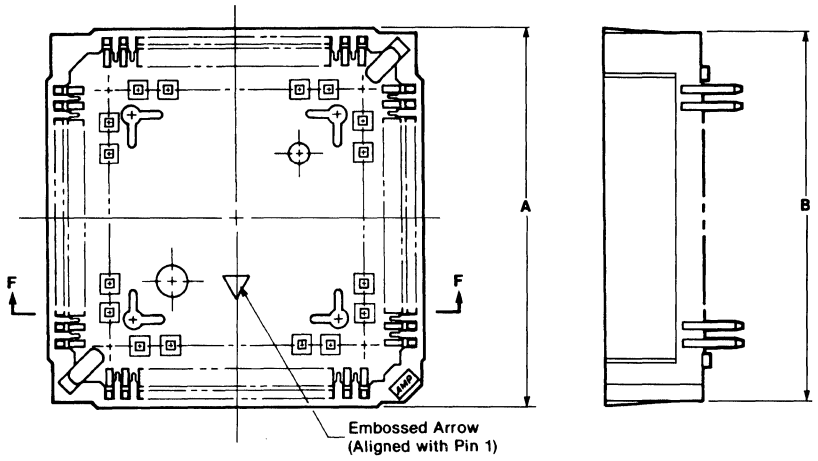
Rectangular

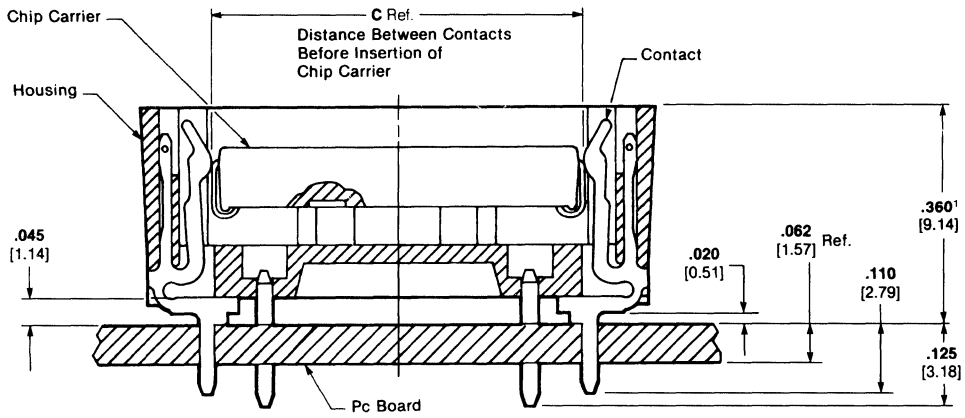
Materials and Finish:

Housing Material — Polyphenylene sulfide, 40% glass-filled, UL 94V-0 rated, 220°C

Contacts — Phosphor bronze

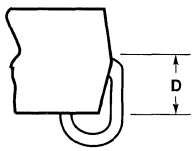
Plating — .000150 [0.00381] min. tin-lead (93-7) over .000040 [0.00102] min. nickel





Cross-Section F–F

PLCC



No. of Pos.	Package Configuration	Dimensions A	Dimensions B	Dimensions C	Part Numbers PLCC Dim. D .055–.075 [1.40–1.91]	Part Numbers PLCC Dim. D .070–.090 [1.78–2.29]
20	Square	**.585** 14.86	**.570** 14.48	**.354** 8.99	821815-1	—
28	Square	**.685** 17.40	**.670** 17.02	**.454** 11.53	821581-1	—
32	Rectangular*	See Below			821665-1	—
44	Square	**.885** 22.44	**.870** 22.10	**.654** 16.61	821575-1	—
52	Square	**.985** 25.02	**.970** 24.64	**.754** 19.15	821551-1	—
68	Square	**1.185** 30.10	**1.170** 29.72	**.954** 24.23	821574-1	821574-3
84	Square	**1.385** 35.18	**1.370** 34.80	**1.154** 29.31	821573-1	821573-3

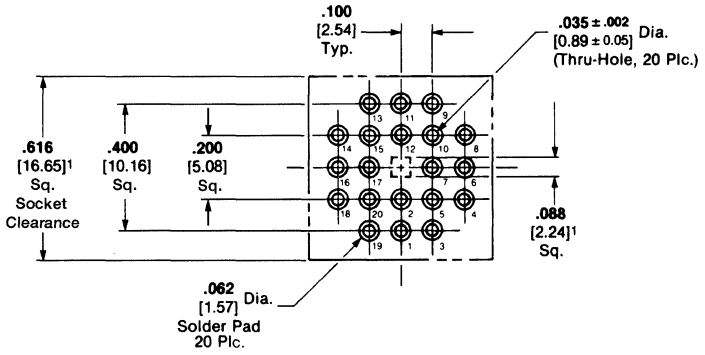
*32-Position Rectangular Dimensions:

A Long Side	A Short Side	B Long Side	B Short Side	C Long Side	C Short Side
.785 19.94	**.685** 17.40	**.770** 19.56	**.670** 17.02	**.554** 14.07	**.454** 11.53

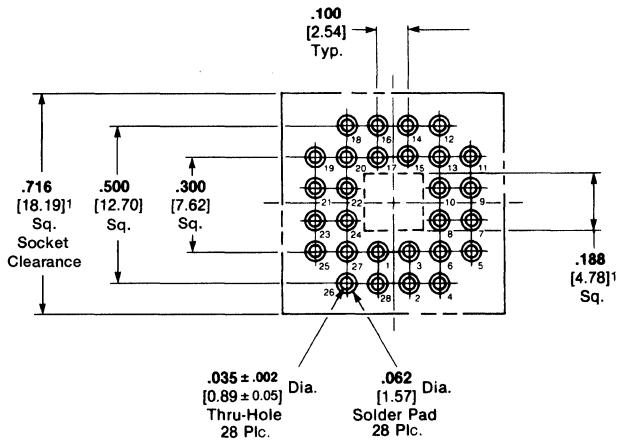
[1].330 [8.38] for 32-position rectangular socket.

High Pressure Tin (HPT) Sockets with Solder Tails

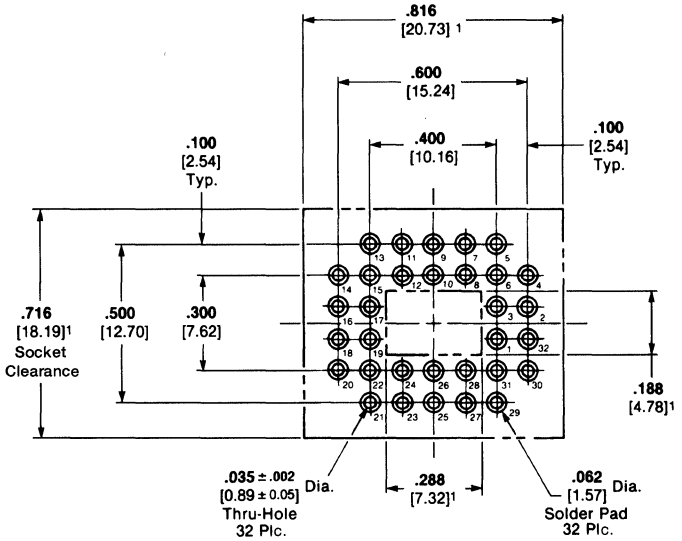
Recommended PC Board Patterns



20 Position



28 Position



32 Position

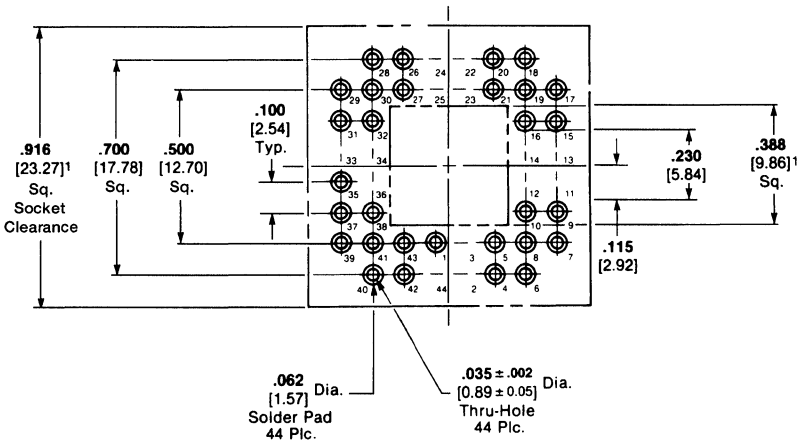
[1]No additional via. holes recommended between indicated dimensions.

Notes: 1. Pc board patterns are shown from top (socket side) of pc board.
2. These JEDEC pc board hole patterns are for .100 [2.54] grid thru-holes.
3. These pc board hole patterns are not to be used for manufacturing layouts. For more detailed layout specifications order AMP customer drawings using the base (series) no. of the socket nos. listed on page 10051.

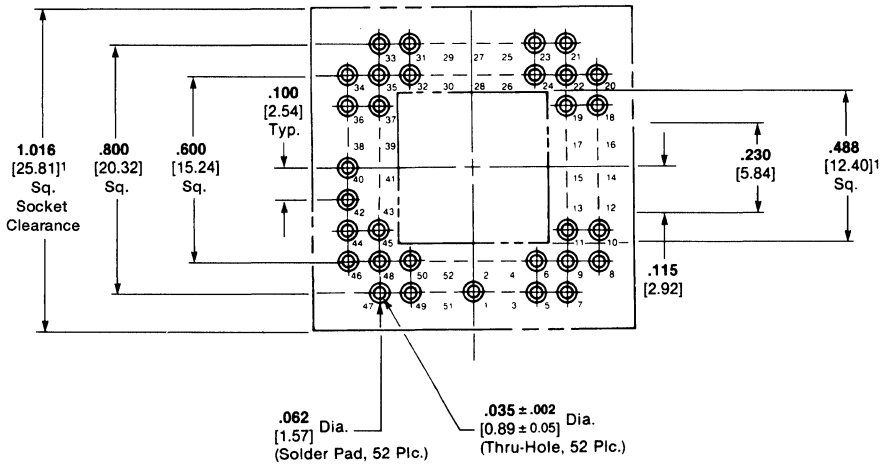
Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

High Pressure Tin (HPT) Sockets with Solder Tails

Recommended PC Board Patterns
(Continued)



44 Position



52 Position

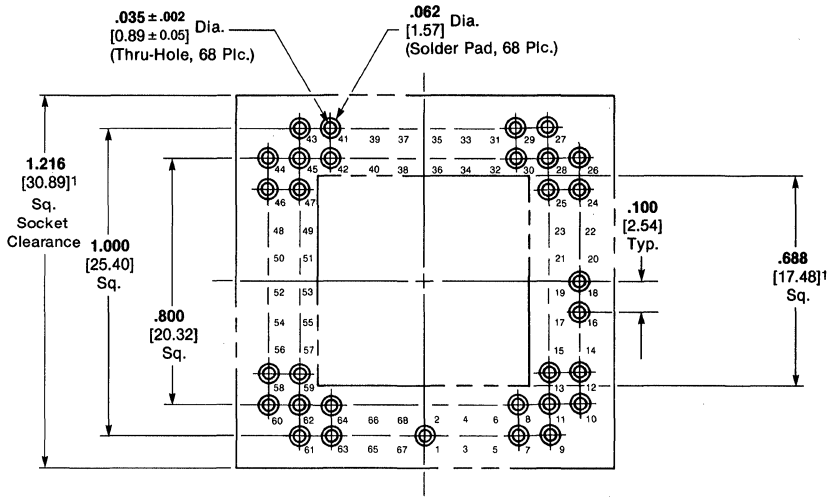
Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

[1]No additional via. holes recommended between indicated dimensions.

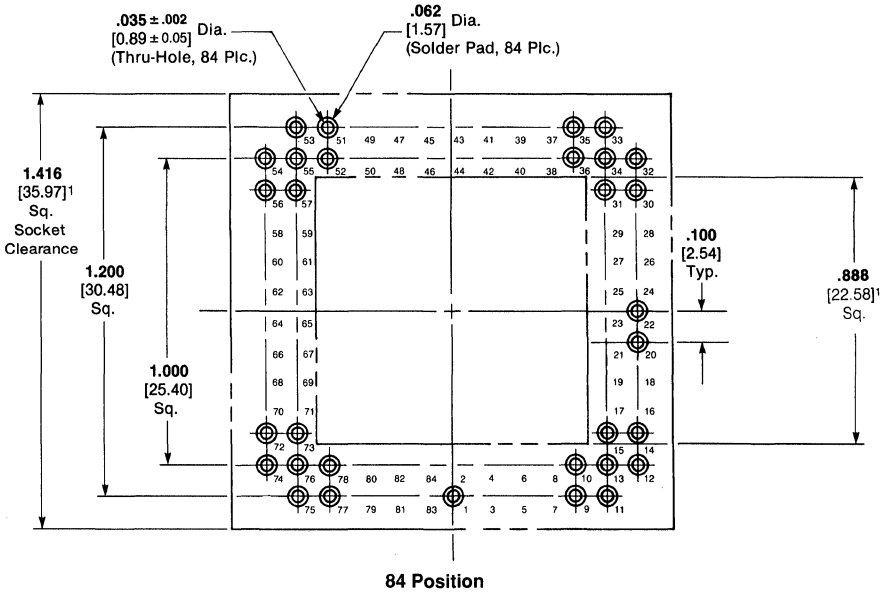
Notes: 1. Pc board patterns are shown from top (socket side) of pc board.
2. These JEDEC pc board hole patterns are for .100 [2.54] grid thru-holes.
3. These pc board hole patterns are not to be used for manufacturing layouts. For more detailed layout specifications order AMP customer drawings using the base (series) no. of the socket nos. listed on page 10051.

High Pressure Tin (HPT) Sockets with Solder Tails

Recommended PC Board Patterns
(Continued)



68 Position



84 Position

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

[1]No additional via. holes recommended between indicated dimensions.

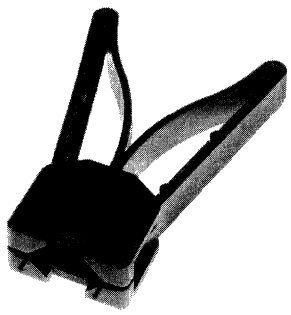
Notes: 1. Pc board patterns are shown from top (socket side) of pc board.
2. These JEDEC pc board hole patterns are for .100 [2.54] grid thru-holes.
3. These pc board hole patterns are not to be used for manufacturing layouts. For more detailed layout specifications order AMP customer drawings using the base (series) no. of the socket nos. listed on page 10051.

PLCC Sockets
(Continued)

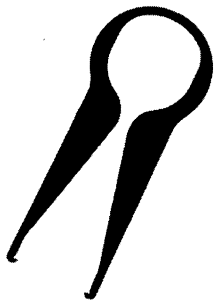
High Pressure Tin (HPT) Sockets with Solder Tails

AMP alignment tools are used for installing solder tail sockets onto pc boards. The extraction tools provide a quick and easy method of removing the chip carriers from solder tail and surface mount sockets. Housing removal tools remove plastic housing for easy inspection of surface mount solder joints.

Extraction Tools



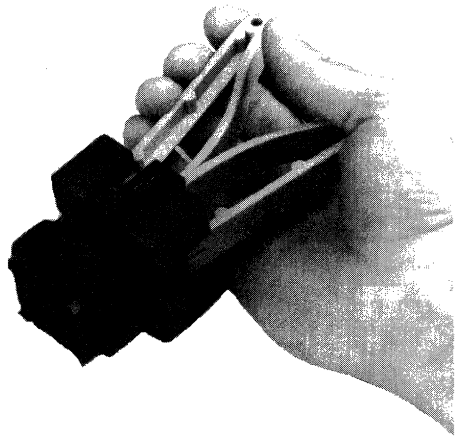
A



B

Socket Type	No. of Pos.	Tool Style	Tool Part No.
Square	20	B	821903-6
Square	28	B	821903-5
Rectangular	32	B	821903-1
Square	44	A	821591-1
Square	52	A	821648-1
Square	68	A	821566-1
Square	84	A	821590-1
Square	28	A	821900-1
Rectangular	32	A	821980-1

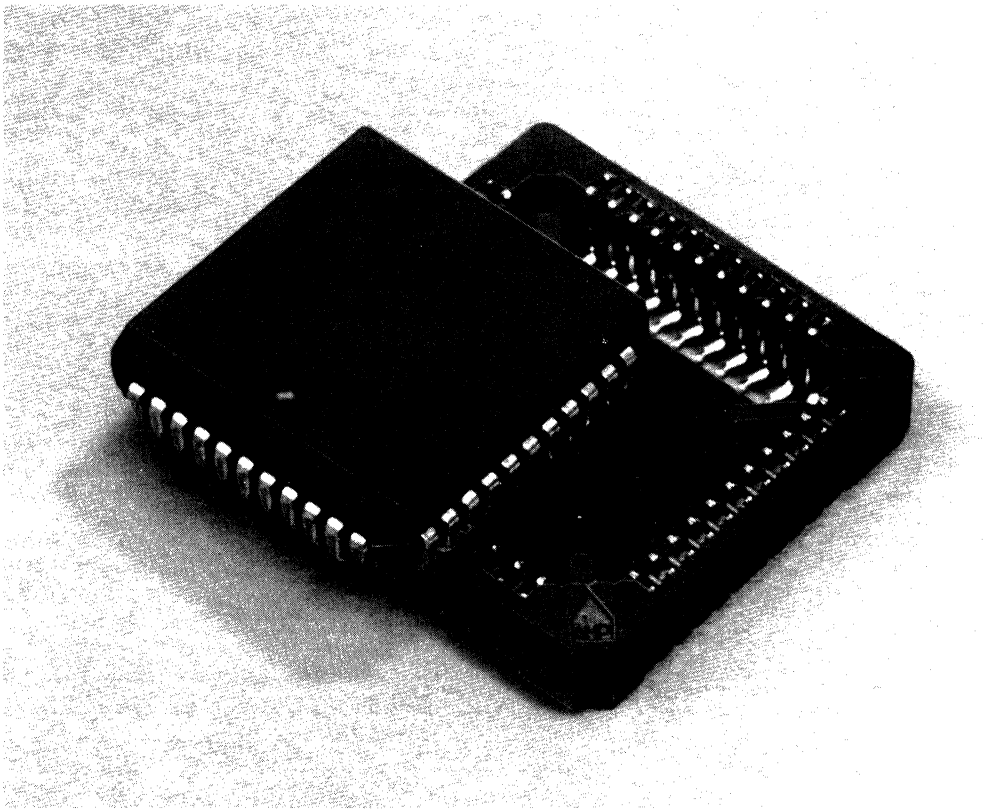
Housing Removal Tools



No. of Pos.	Removal Tool No.
44	821731-1
68	821730-1
84	821733-1

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Low Profile PLCC Sockets, Surface Mount



The AMP family of Low Profile Plastic Leaded Chip Carrier (PLCC) Sockets for surface mounting is designed to accommodate plastic "J" leaded, tin plated devices made to JEDEC Specifications MO-047AA-AH (square packages) and MO-052-AE (rectangular packages).

Available in 20, 28, 32, 44, 52, and 68 positions, with or without locating posts, these sockets feature high normal force contacts made from phosphor bronze material with tin-lead over nickel plating. Sockets feature a one-piece polyphenylene sulfide housing that will withstand vapor-phase or I.R. soldering temperatures up to 220°C and prevent flux and solvent entrapment.

The low profile housing is only .185 [4.7] high, maximum allowing high density printed circuit board stacking. The open bottom design enables easy socket placement on the pc board footprint pattern and facilitates solder joint repair and inspection as well as permitting the heat source to penetrate to the solder pad and surface mount contact. The socket uses the same footprint pattern as the chip carrier.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)
N (Newton)

Technical Documents

Product Specification: 108-1267

Qualification Test Report: 501-98

Product Facts

- Low profile—only .185 [4.7] max. for high density pc board stacking
- Compatible footprint allows for socket or direct mounting
- Housing slots accept extraction tool for easy PLCC removal
- Pin 1 indicator and corner chamfer for PLCC orientation
- High normal force contacts prevent fretting corrosion
- Plastic standoffs provide clearance for heat dissipation and cleaning operations
- Polyphenylene sulfide housings will withstand high temperature soldering up to 220° C
- Open bottom housing for convenient placement of socket on pattern, 100% inspection of solder joint, solder joint repair without housing removal, and penetration of heat source to the solder pad and surface mount contact
- Top contact slots allow test probing with PLCC device in place
- Available with or without locating posts to meet assembly requirements
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189

Low Profile PLCC Sockets, Surface Mount

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Square Sockets—20, 28, 44, 52 and 68 Positions

Materials and Finish:

Housing—Polyphenylene sulfide, 40% glass filled, UL 94V-0 rated, 220C

Contacts—Phosphor bronze with .000200 [0.00508] 93/7 tin-lead per MIL-T-10727 Type I over .000050 [0.00127] nickel per QQ-N-290

Packaging Quantities

20 Positions:
39 Pcs./Tube*, 96 Tubes/Box
Total = 3744 Pcs./Box

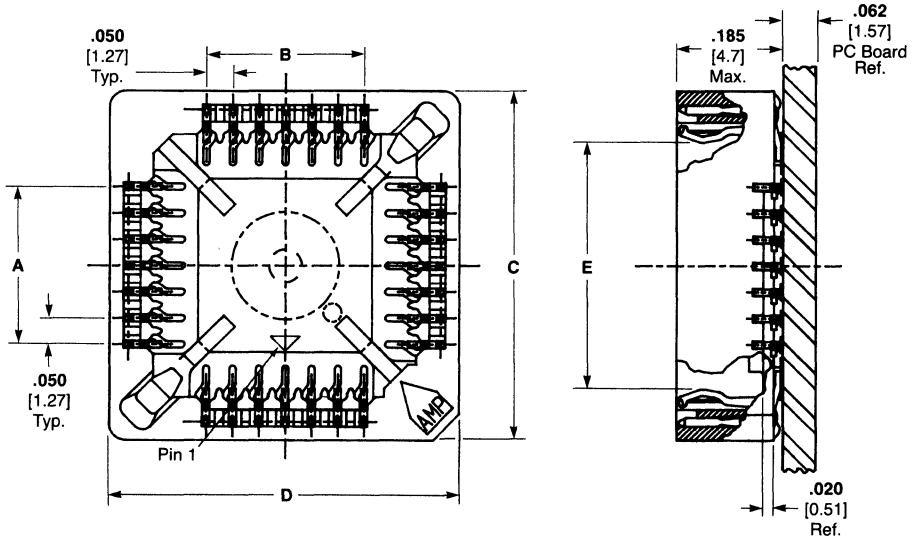
28 Positions:
33 Pcs./Tube*, 80 Tubes/Box
Total = 2640 Pcs./Box

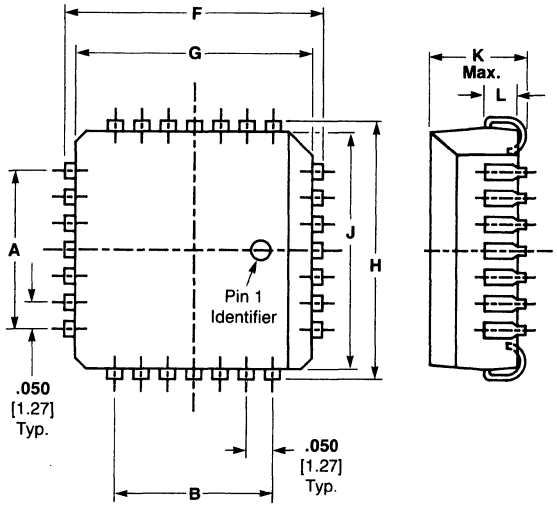
44 Positions:
25 Pcs./Tube*, 64 Tubes/Box
Total = 1600 Pcs./Box

52 Positions:
22 Pcs./Tube*, 56 Tubes/Box
Total = 1232 Pcs./Box

68 Positions:
18 Pcs./Tube*, 48 Tubes/Box
Total = 864 Pcs./Box

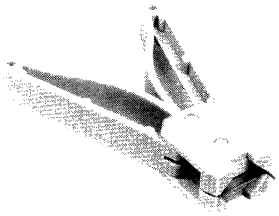
*Minimum order quantity.





Recommended Chip Carrier

Extraction Tools



No. of Positions	Part Number
20	822011-1
28	822045-1
44	821981-1
52	822049-1
68	822026-1

No. of Positions	Dimensions											Part Numbers	
	A	B	C	D	E	F	G	H	J	K	L	Without Locating Posts	With Locating Posts
20	.200 5.08	.200 5.08	.565 14.35	.565 14.35	.364 9.25	.390 9.91	.353 8.97	.390 9.91	.353 8.97	.180 4.37	.058-.088 1.47-2.24	822014-3	822065-4
28	.300 7.62	.300 7.62	.665 16.89	.665 16.89	.464 11.79	.490 12.45	.453 11.51	.490 12.45	.453 11.51	.180 4.57	.058-.088 1.47-2.24	822039-3	822066-4
44	.500 12.7	.500 12.7	.865 21.97	.865 21.97	.664 16.87	.690 17.53	.653 16.59	.690 17.53	.653 16.59	.180 4.57	.058-.088 1.47-2.24	821979-3	822068-4
52	.600 15.24	.600 15.24	1.000 25.4	1.000 25.4	.764 19.41	.790 20.07	.753 19.13	.790 20.07	.753 19.03	.200 5.08	.054-.084 1.37-2.13	822041-3	822069-4
68	.800 20.32	.800 20.32	1.200 30.48	1.200 30.48	.964 24.48	.990 25.15	.954 24.23	.990 25.15	.954 24.23	.200 5.08	.054-.084 1.37-2.13	822029-3	822070-4

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Low Profile PLCC Sockets, Surface Mount

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Rectangular Socket—32 Positions

Materials and Finish:

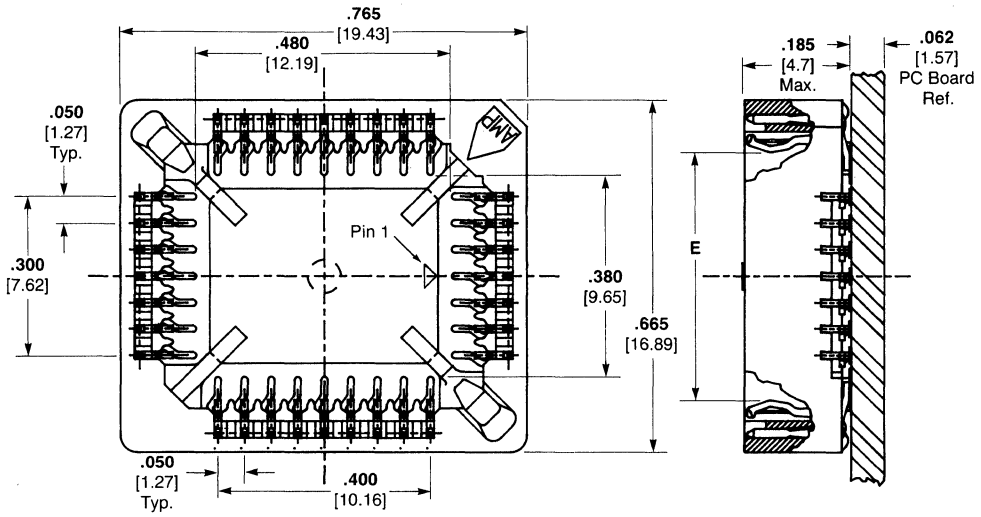
Housing—Polyphenylene sulfide, 40% glass filled, UL 94V-0 rated, 220C

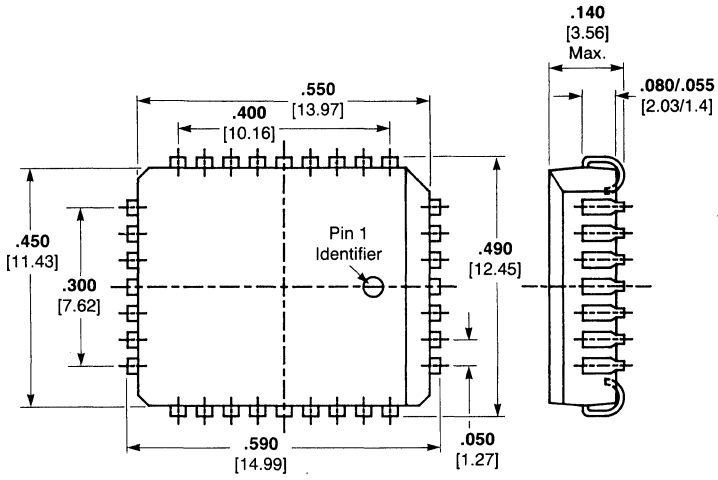
Contacts—Phosphor bronze with .000200 [0.00508] 93/7 tin-lead per MIL-T-10727 Type I over .000050 [0.00127] nickel per QQ-N-290

Packaging Quantities

28 Pcs./Tube*, 80 Tubes/Box
Total = 2240 Pcs. Box

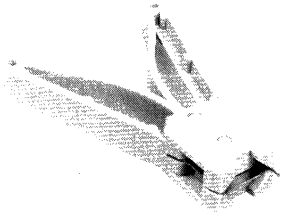
*Minimum order quantity.





Recommended Chip Carrier

Extraction Tool



Part No. 821980-1

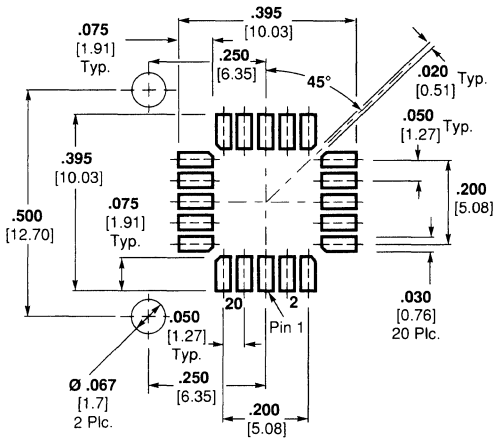
No. of Positions	Dimension E	Dimension Description	Part Numbers Without Locating Posts	Part Numbers With Locating Posts
32	.564 14.44	Long Side (9 Contacts)	821977-1	822067-2
	.464 11.79	Short Side (7 Contacts)		

Low Profile PLCC Sockets, Surface Mount

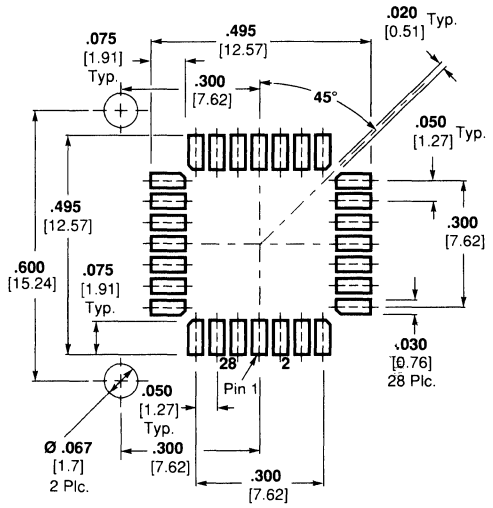
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

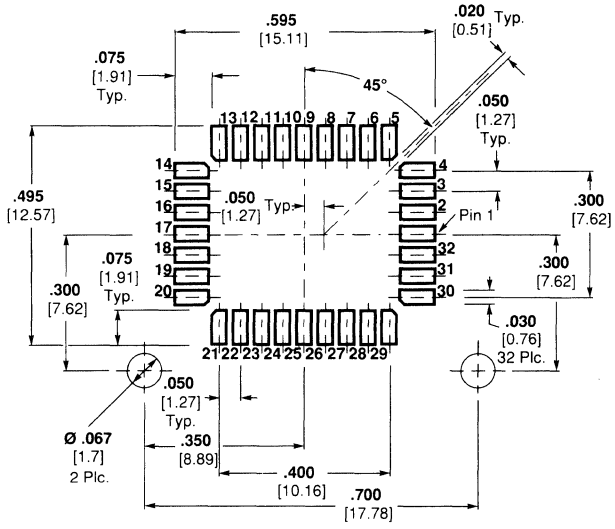
Recommended Printed Circuit Board Patterns



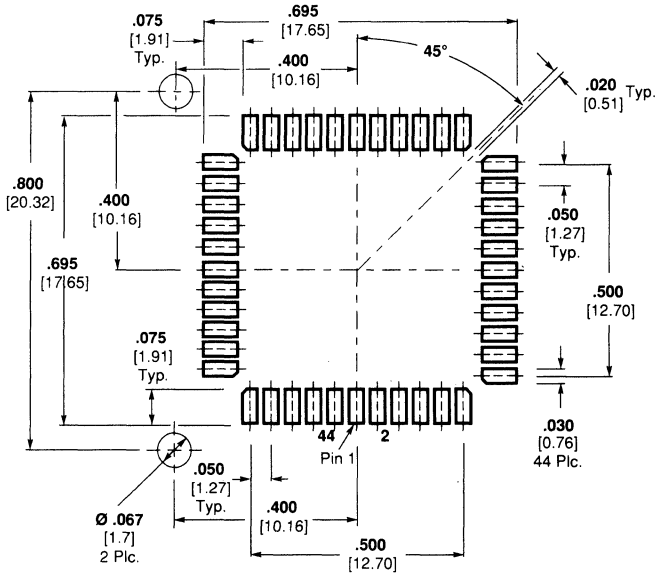
20 Positions



28 Positions



32 Positions



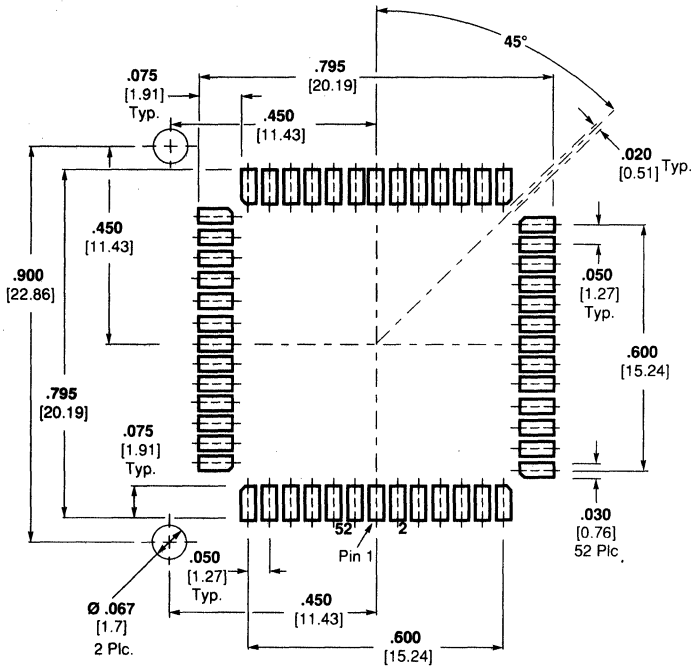
44 Positions

Low Profile PLCC Sockets, Surface Mount

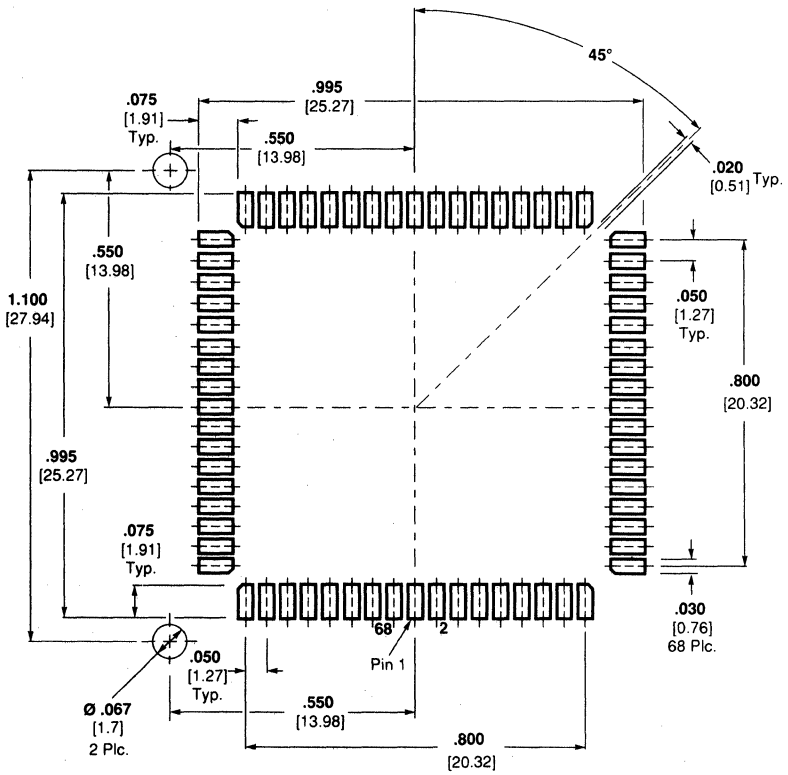
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Recommended Printed Circuit Board Patterns (Continued)



52 Positions



68 Positions

Performance Specifications

Electrical Characteristics

Current Rating: 1 ampere DC or AC rms, 60 Hz

Termination Resistance: 20 milliohms max. initial; Δ R = 10 milliohms max. final

Dielectric Withstanding Voltage: 600 VAC

Insulation Resistance: 10,000 megohms min. initial; 1000 megohms min. final

Capacitance: 1 picofarad max.

Mechanical Characteristics

Vibration: 10 G's, 10-500 Hz at 100 ma current

Physical Shock: 100 G's

Contact Retention: 10 ounces [2.78 N] min.

Contact Engaging Force: 15 ounces [4.17 N] max.

Contact Separating Force: 0.3 ounces [0.083 N] min.

Durability: 25 cycles

Environmental Characteristics

Operating Temperature: −55° to 105°C

Thermal Shock: 25 cycles at −55° and 105°C

Humidity-Temperature Cycling: 10 cycles at 25° and 65°C at 95% RH

PQFP Sockets

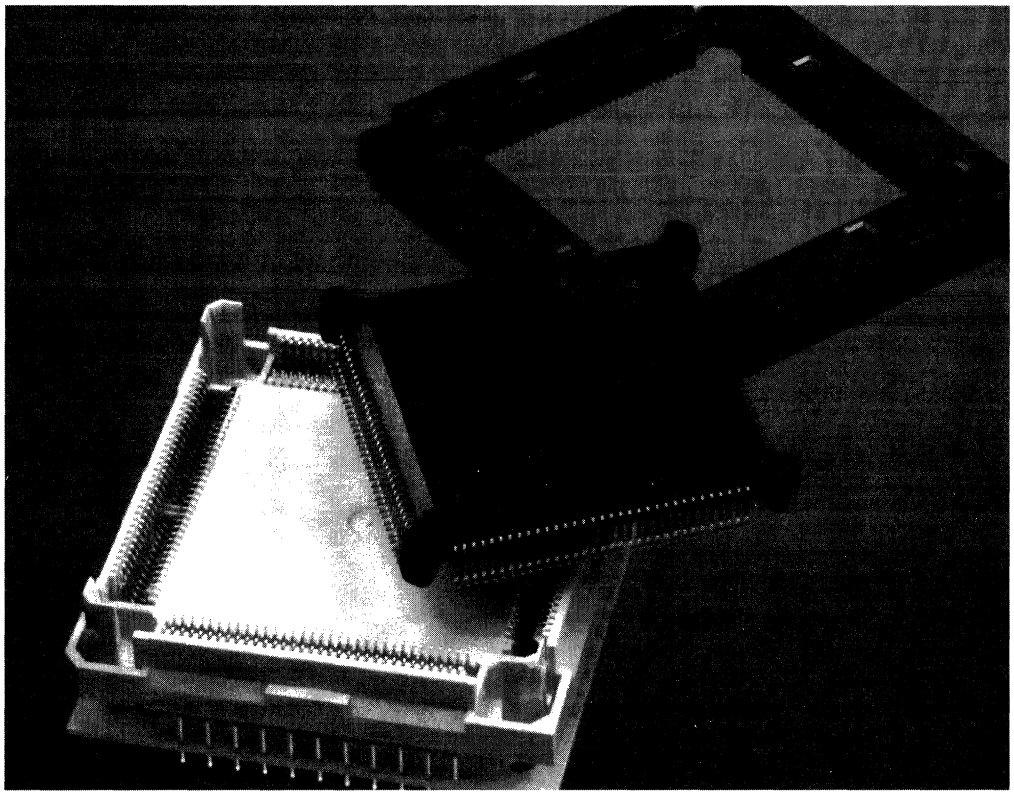
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

MICRO-PITCH Sockets

Product Facts

- .025 [0.64] centerline for high density, low cost packaging
- Low profile permits even higher density packaging with only .375 [9.53] maximum height pc boards
- High normal force and positive engagement increases reliability to minimize field failures
- Protective cover separates and safeguards IC leads during handling and insertion
- Closed-bottom housing aids in prevention of solder bridging between contacts
- Contacts absorb mating and reaction forces for board and housing protection
- Economical design makes socketing of semiconductor devices more attractive
- .020 [0.51] minimum wipe contact insures reliability of tin-to-tin interface
- High temperature materials
- Sockets can be spaced a minimum of .150 [3.81] from each other



To simplify the handling and insertion of standard JEDEC plastic quad flat pack (PQFP) IC s, AMP has developed the MICRO-PITCH Socket.

The socket's two-piece design eases the problems of handling the gullwing-leaded PQFP packages. The IC is first inserted into the plastic cover and then the cover is snapped over the socket housing to insert the chip into the socket. The completed assembly presents a low .375 [9.53] profile to permit close stacking of pc boards.

The cover, which is separately available, contains slots that not only protect and separate the leads, but also increase proper lead-to-contact registration between chip and socket. In addition, the cover provides a rugged cost-effective method of protecting the PQFP IC during shipping, handling and assembly. Visual and mechanical polarization ensures proper orientation of cover and housing during mating, while spring latches in the four corners secure the cover to the housing.

Tin plated socket contacts provide a minimum .020 [0.51] wipe and exert a high normal force to the IC leads. The solder legs are arranged on a .075 x .100 [1.91 x 2.54] three-row grid to permit easy trace routing.

High-temperature housing materials and a sealed bottom allow the socket to withstand the rigors of flow soldering lines and other automated assembly. Standoffs ease flux cleaning.

Available in 100-, 132- and 164-position sizes, the socket features short leads and low capacitance, making it highly compatible with high-speed circuits.

Performance Characteristics

Current Rating:
1 ampere max.
Operating Temperature:
−55°C to +105°C
Dielectric Withstanding Voltage:
750 VAC min.
Capacitance (Adjacent Contacts):
1 picofarad max.
Durability:
15 insertion/withdrawal cycles

Technical Documents

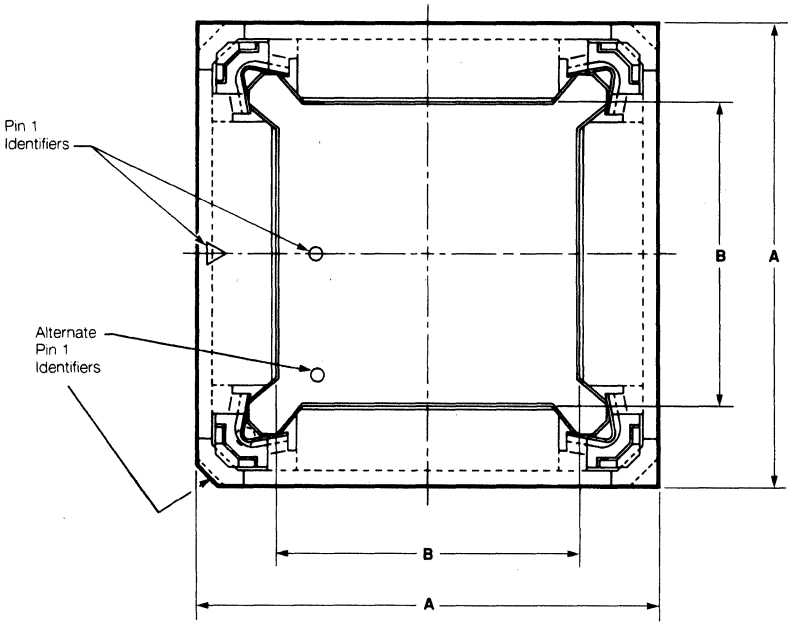
Product Specifications:
108-1223
Test Report:
501-90
Instruction Sheet:
IS 9516

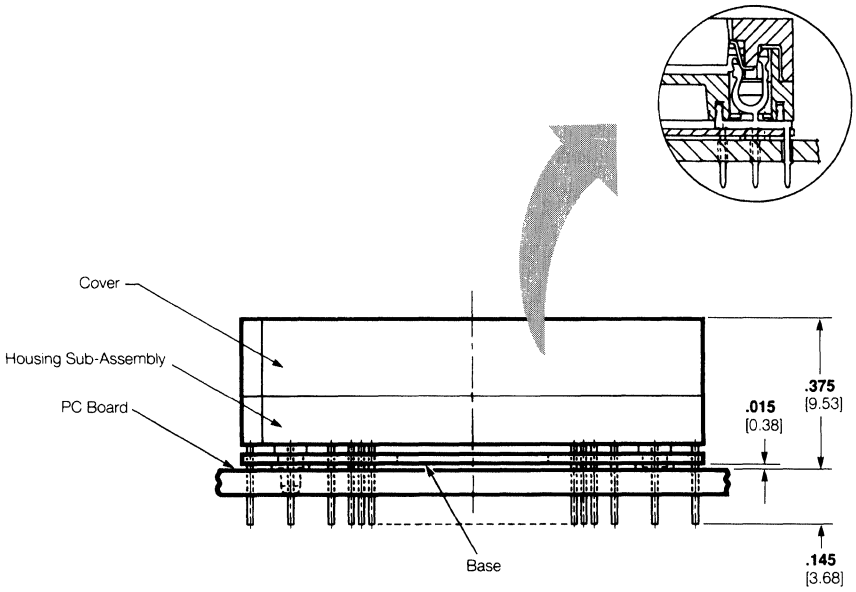
PQFP Sockets
(Continued)

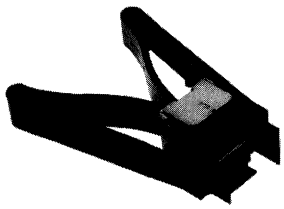
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Materials and Finish:

Housing—High temperature thermoplastic, 94V-0 rated
Cover—Polyphenylene sulfide (PPS), 94V-0 rated
Contacts—Phosphor bronze with .000200 [0.00508] tin over .000050 [0.00127] nickel







Insertion/Extraction Tools:
100 Pos. 821958-1
132 Pos. 821958-2
164 Pos. 821958-3

No. of Pos.	Dimensions A	Dimensions B	Conventional AMP Sockets Housing Sub-Assembly	Conventional AMP Sockets Cover	Replacement for 3M TEXTOOL Sockets Housing Sub-Assembly	Replacement for 3M TEXTOOL Sockets Cover
100	**1.140** 28.96	**.750** 19.05	821949-4[1]	821939-1	822064-4[2]	821939-1
132	**1.340** 34.04	**.950** 24.13	821949-5[1]	821942-1	822064-5[2]	821942-1
164	**1.540** 39.12	**1.150** 29.21	822064-6[2]	822111-1	—	—

[1]Conventional footprint; see page 10063
[2]Reverse footprint; see page 10064

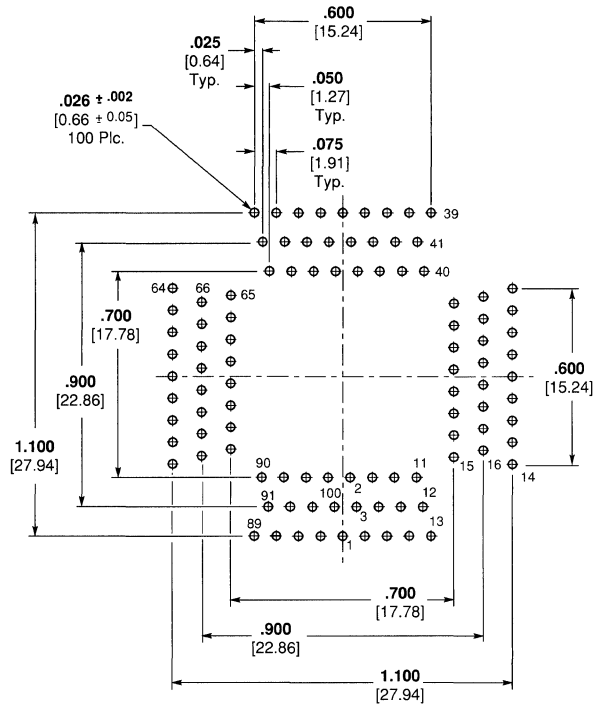
Packaging Quantities:
100 Position—19 Pcs./Tube, 54 Tubes/Box, Total = 1026 Pcs./Box
132 Position—16 Pcs./Tube, 45 Tubes/Box, Total = 720 Pcs./Box
164 Position—14 Pcs./Tube, 45 Tubes/Box, Total = 630 Pcs./Box

PQFP Sockets
(Continued)

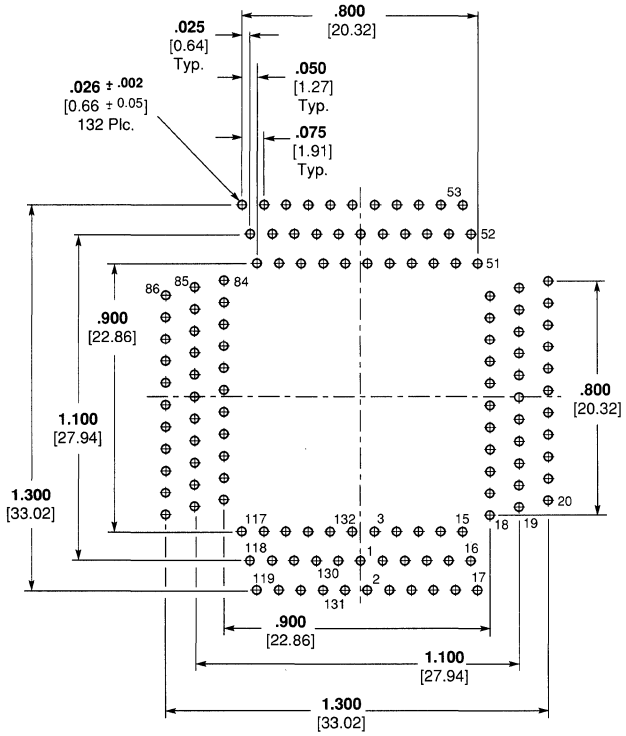
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Footprints—Conventional

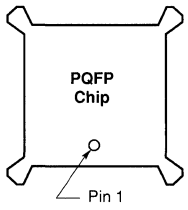


Recommended PC Board Pattern, 100 Position For Socket Part No. 821949-4

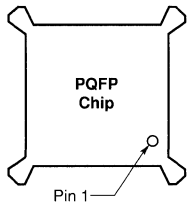


Recommended PC Board Pattern, 132 Position For Socket Part No. 821949-5

Standard Pin Identification



Alternate Pin Identification



Pin Identification			
100 Position		132 Position	
Standard	Alternate	Standard	Alternate
1	88	1	116
2	89	2	117
3	90	3	118
11	98	15	130
12	99	16	131
13	100	17	132
14	1	18	1
15	2	19	2
16	3	20	3
39	26	51	34
40	27	52	35
41	28	53	36
64	51	84	67
65	52	85	68
66	53	86	69
89	76	117	100
90	77	118	101
91	78	119	102
98	85	130	113
99	86	131	114
100	87	132	115

Note: Component side shown.

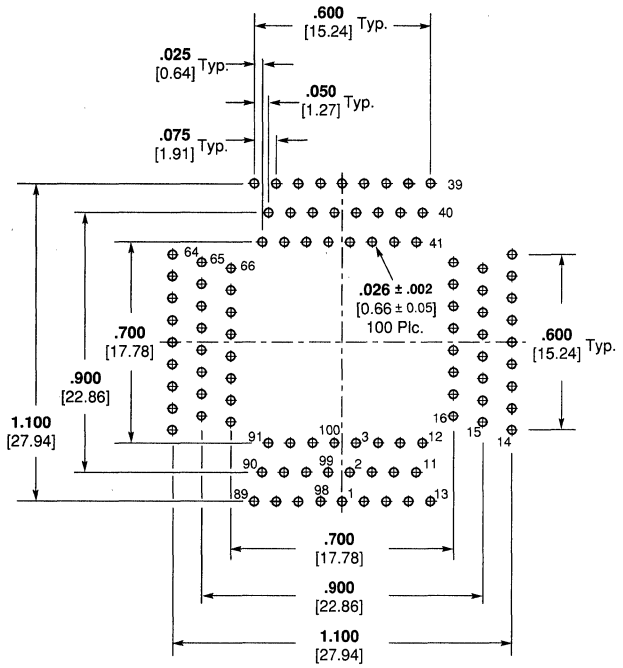
Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

PQFP Sockets
(Continued)

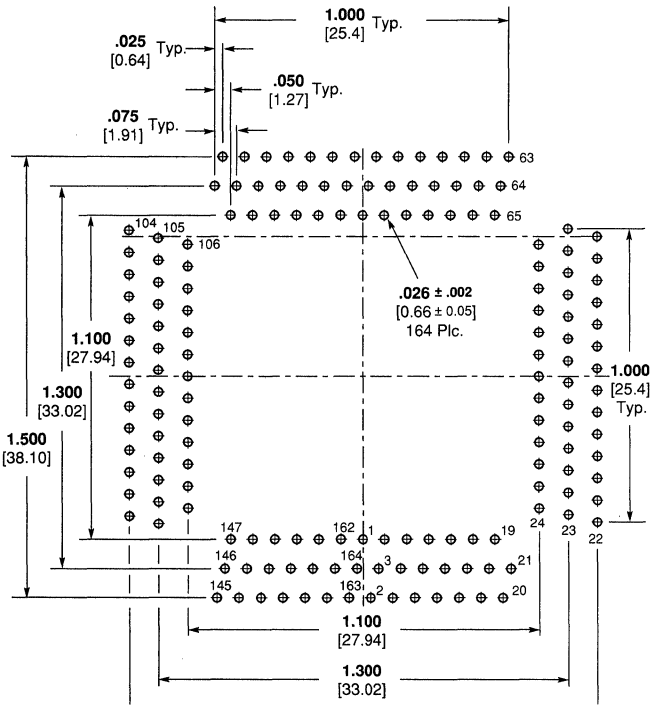
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Footprints—Reverse

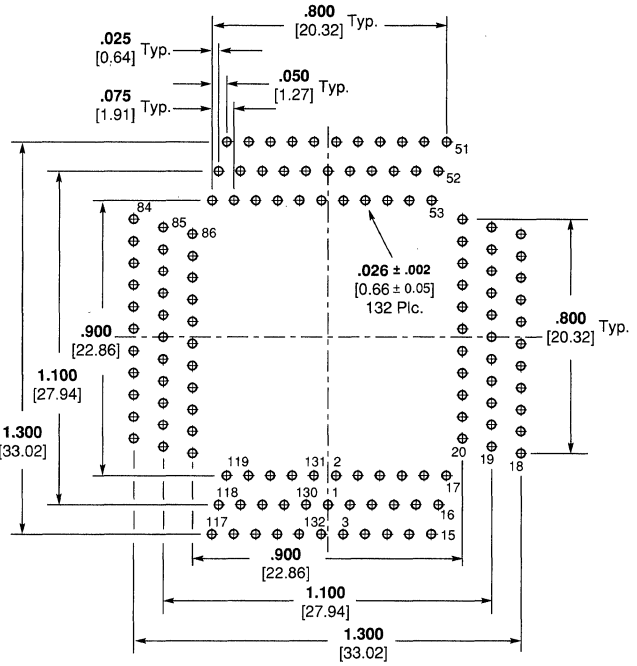


Recommended PC Board Pattern,
100 Position For Socket
Part No. 822064-4



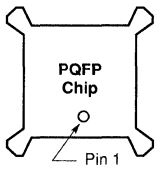
Recommended PC Board Pattern,
164 Position For Socket
Part No. 822064-6

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

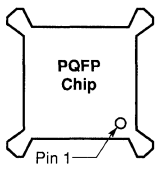


Recommended PC Board Pattern,
132 Position For Socket
Part No. 822064-5

Standard Pin Identification



Alternate Pin Identification



Pin Identification

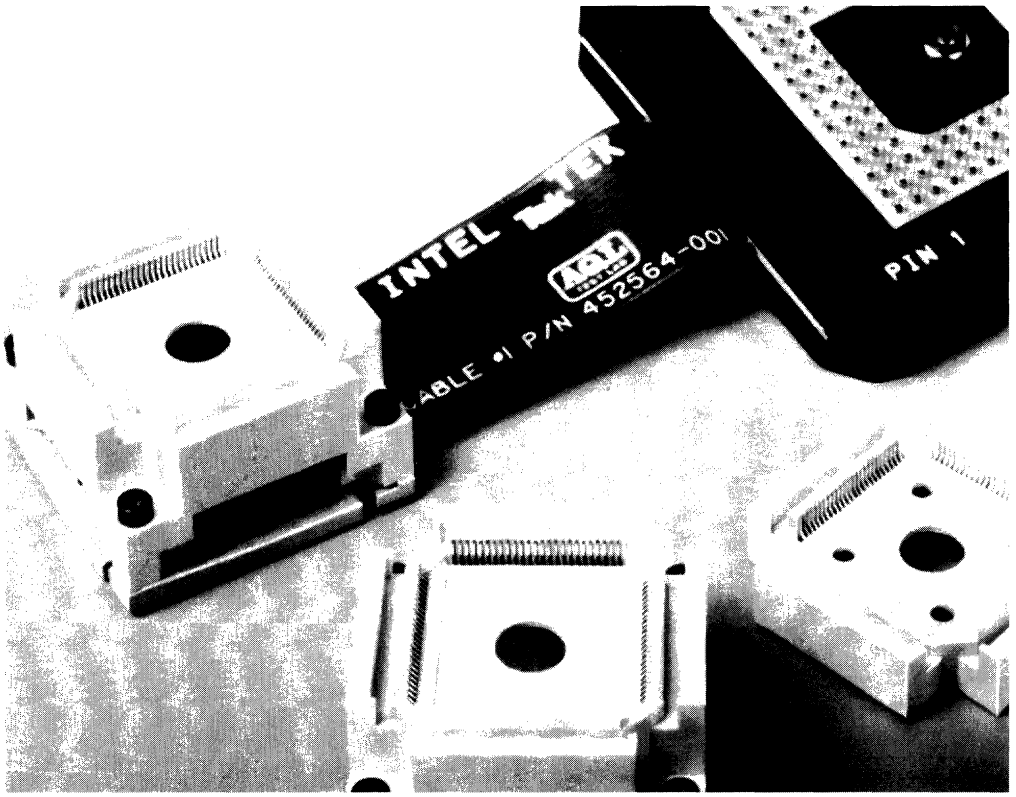
100 Position		132 Position		164 Position	
Standard	**Alternate**	**Standard**	**Alternate**	**Standard**	**Alternate**
1	88	1	116	1	144
2	89	2	117	2	145
3	90	15	118	3	146
11	98	15	130	19	162
12	99	16	131	20	163
13	100	17	132	21	164
14	1	18	1	22	1
15	2	19	2	23	2
16	3	20	3	24	3
39	26	51	34	63	42
40	27	52	35	64	43
41	28	53	36	65	44
64	51	84	67	104	83
65	52	85	68	105	84
66	53	86	69	106	85
89	76	117	100	145	124
90	77	118	101	146	125
91	78	119	102	147	126
98	85	130	113	162	141
99	86	131	114	163	142
100	87	132	115	164	143

Note: Component side shown.

MICRO-PITCH Emulator Adapter and Plug Assembly

Product Facts

- Provides transition interface to AMP MICRO-PITCH sockets
- Compatible with Intel In-Circuit Emulators with PQFP target-adapter cable
- 100- and 132-position adapters
- .025 [0.64] contact centerline
- .020 [0.51] contact wipe ensures clean contact interface
- Internal keying and polarization to ensure proper mating
- 100- and 132-position plug assemblies available for custom application needs.



The AMP MICRO-PITCH Emulator Adapter provides a transition between emulators such as the Intel ICE-376 emulator and MICRO-PITCH sockets. It accepts a PQFP target-adapter cable (TAC), which can be plugged into a MICRO-PITCH socket through the emulator adapter.

The emulator adapter is a 100-position device with contacts on .025 [0.64] centers. A cover secures the TAC in the adapter housing. The TAC is polarized to the Emulator Adapter housing and in turn the housing is polarized to the MICRO-PITCH Socket.

The tin-plated contacts provide a minimum .020 [0.51] wipe with high normal force. The liquid crystal polymer housing provides the excellent molding and environmental performance properties essential for a fine-pitch-centerline system.

Also available is an emulator plug assembly for customers with custom applications that must be mated to a MICRO-PITCH socket. This assembly, available in 100 and 132 positions, is essentially a housing and contacts around which a custom package can be designed.

Performance Characteristics

Current Rating:
1 ampere max.

Operating Temperature:
−55°C to +105°C

Dielectric Withstanding Voltage:
750 VAC min.

Capacitance (Adjacent Contacts):
1 picofarad max.

Technical Document

Product Specification:
108-1293

PQFP Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

MICRO-PITCH Emulator Adapter Kit[1]

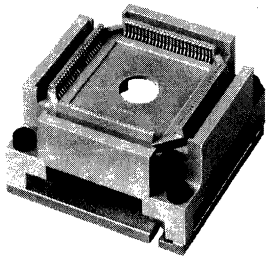
Material:

Housing — Liquid crystal polymer, 94V-0 rated

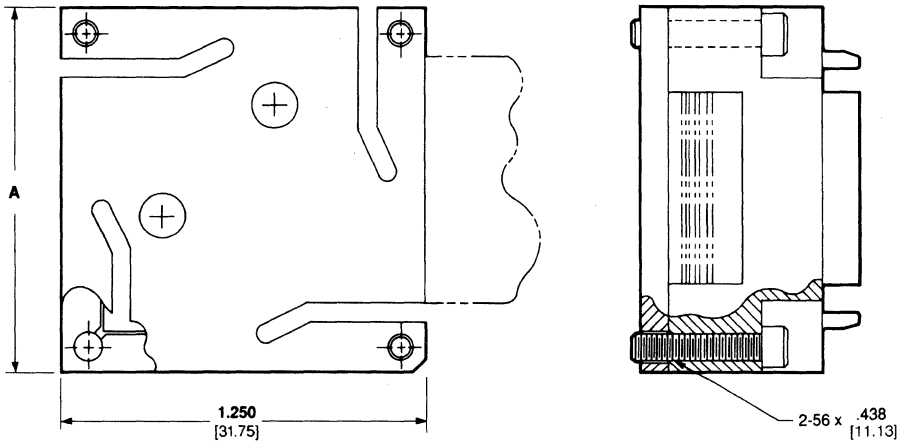
Cover — Aluminum

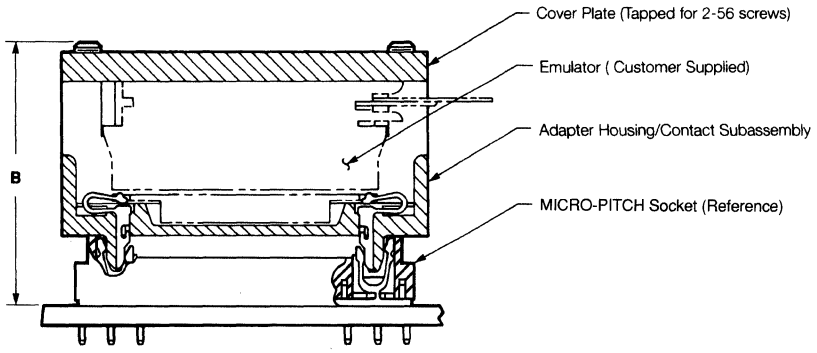
Contacts — Phosphor bronze with .000200 [0.00508] tin over .000050 [0.00127] nickel

Screws — Steel, black oxide



Note: Emulator adapter is shown mated with MICRO-PITCH socket for reference purposes.





No. of Pos.	Dimensions		Part Number
	A	B	
100	**1.235** 31.37	**.950** 24.13	821959-1
132	**1.435** 39.45	**1.010** 25.65	821959-2

Notes: 1. Insertion/extraction tools are not required for assembly or disassembly.
2. The latching system of the MICRO-PITCH socket is not functional when adapters are used. The adapter housing is self-locking to the socket contacts.

[1]Kit includes:
1 Housing Assembly
1 Cover Plate
4 Screws

PQFP Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

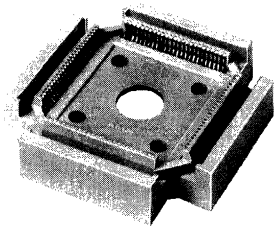
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

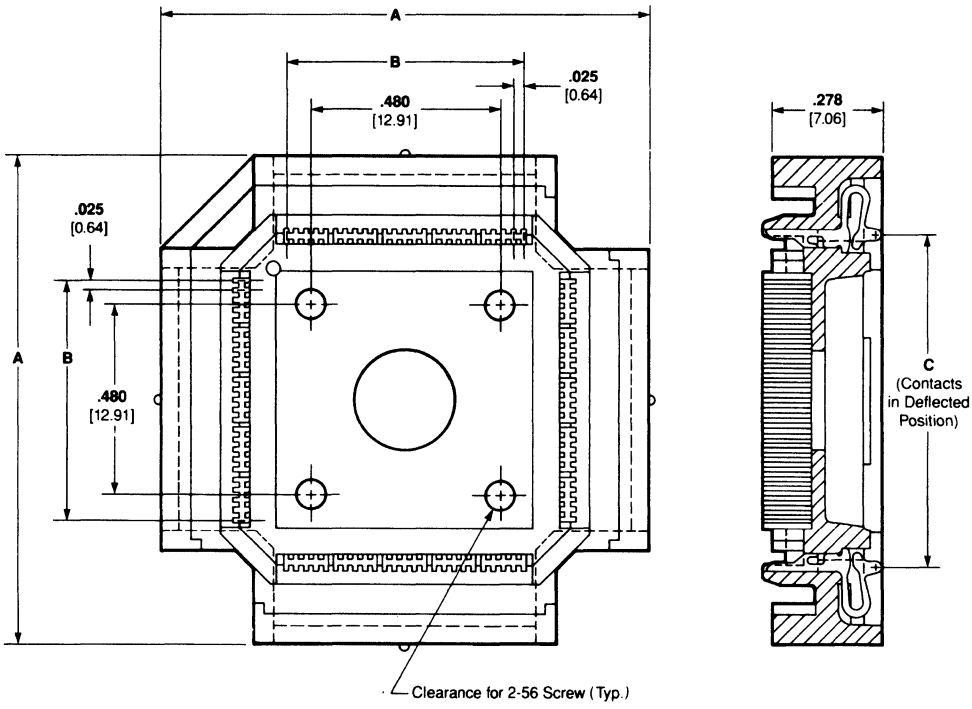
Emulator Plug Assembly

Material:

Housing — Liquid crystal polymer, 94V-0 rated

Contacts — Phosphor bronze, tin plated



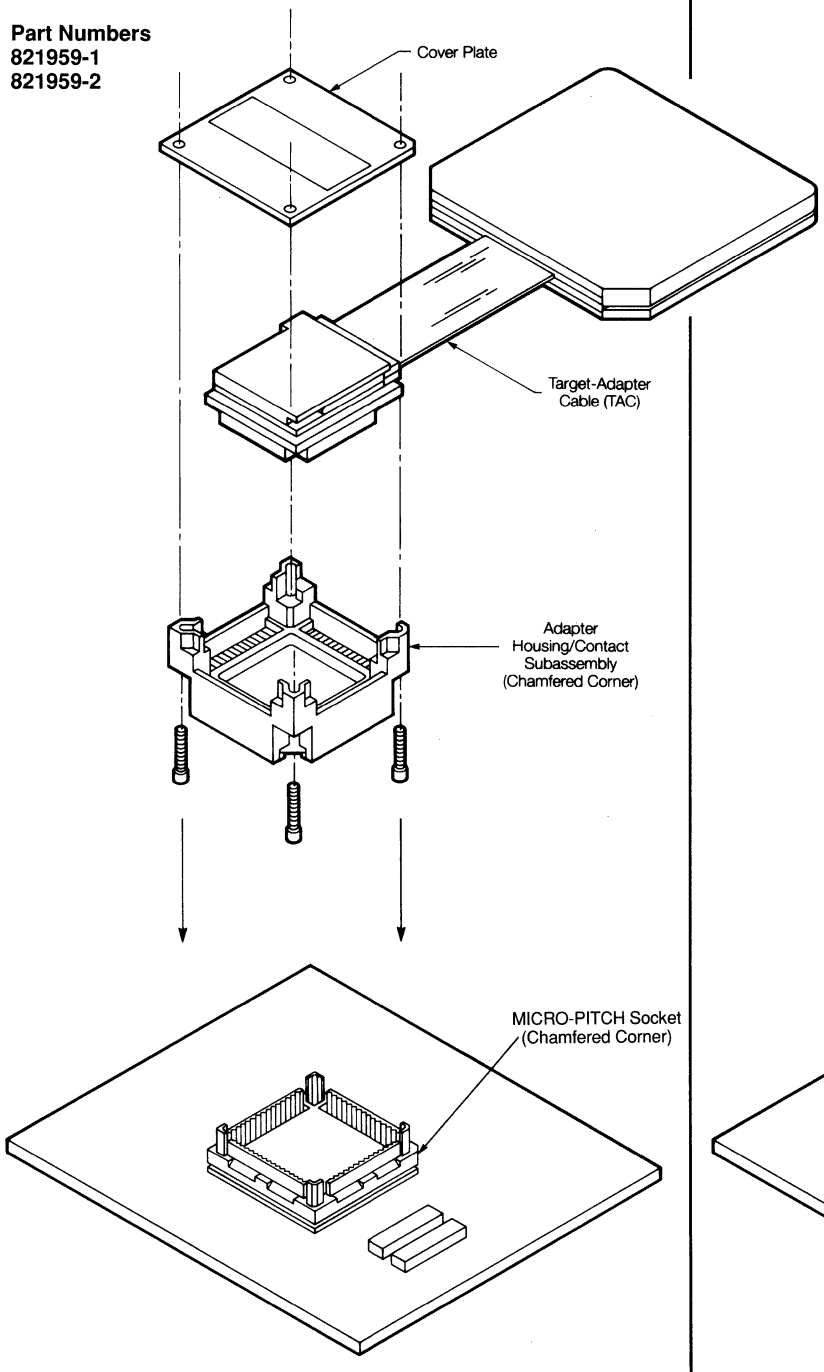


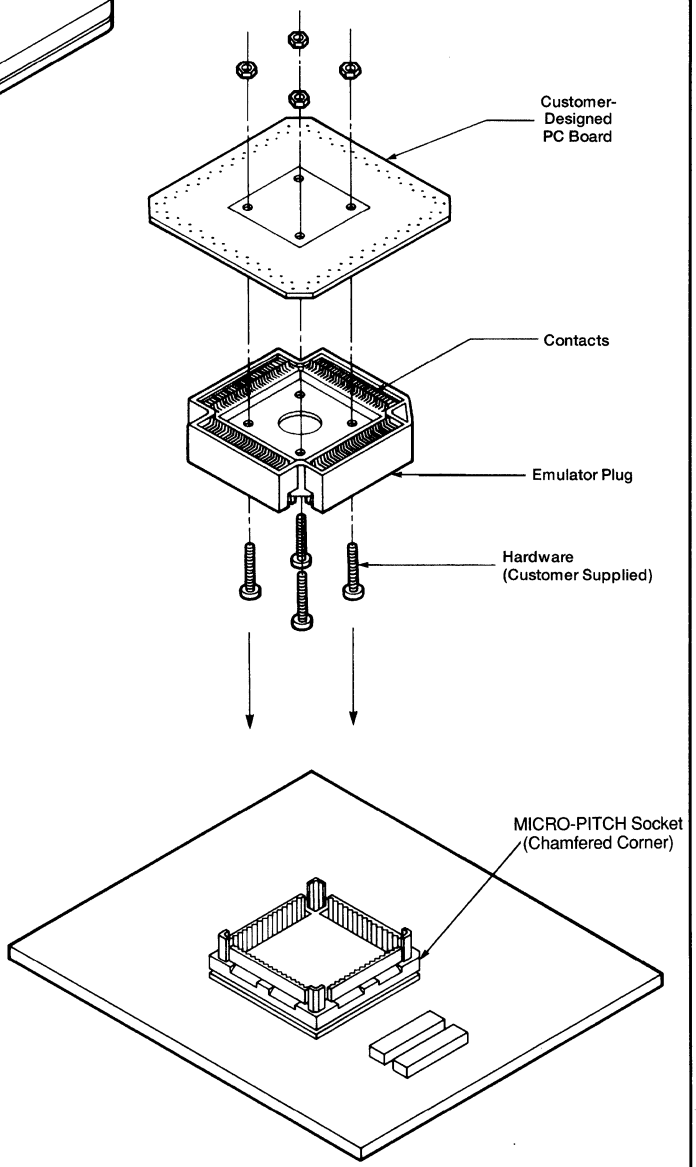
No. of Pos.	Dimensions			Part Number
	A	B	C	
100	**1.235** 31.67	**.600** 15.24	**.842** 21.39	821960-1
132	**1.435** 36.45	**.800** 20.32	**1.042** 26.47	821960-2

PQFP Sockets
(Continued)

Typical Application of MICRO-PITCH Emulator Adapter Kit

Part Numbers
821959-1
821959-2





PQFP Sockets
(Continued)

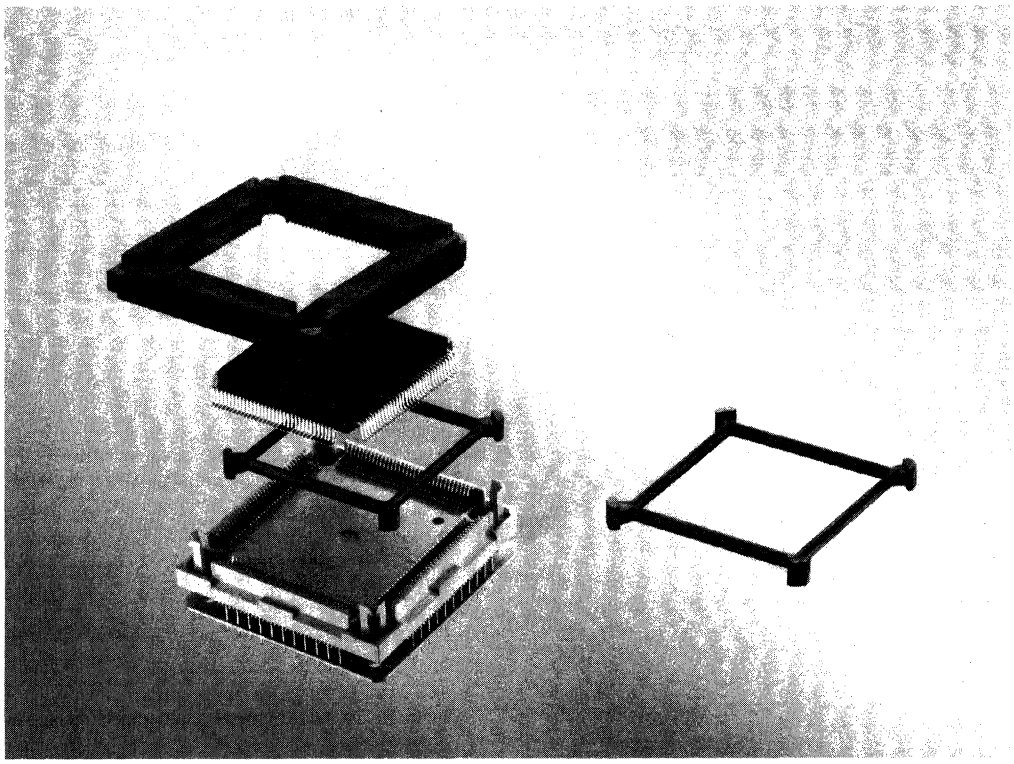
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

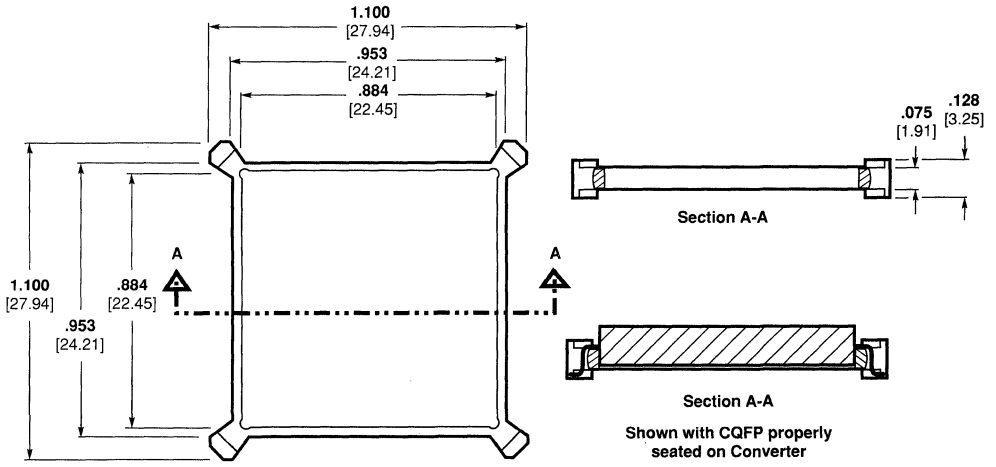
MICRO-PITCH Converter for Ceramic Quad Flat Packs (CQFP)

Product Facts

- Converts ceramic package to outline configuration of a Plastic Quad Flat Pack
- Firmly holds and protects CQFP in MICRO-PITCH cover for ease of handling and testing



New from AMP is a handy converter that allows Ceramic Quad Flat Packs (CQFP) to be used in AMP's standard production 132-position Plastic Quad Flat Pack (PQFP) MICRO-PITCH Sockets. The converter is molded from polyphenylene sulfide, the same high temperature composition as the mating AMP MICRO-PITCH protective cover. Low cost and simple assembly (detailed below) make this product highly attractive to customers using 132-Position CQFP's such as Motorola's MC68020, XC68030, XC68302, MC68332 and DSP56001FE.



Simple Assembly:

1. Lay the Converter on a flat surface (it is symmetrical).
2. Position the CQFP over the Converter with the legs on the outside of the plastic bars.
3. Snap the MICRO-PITCH cover over the Converter and CQFP.
4. The CQFP is now captured and protected in the cover for ease of handling and testing.
5. The CQFP can then be plugged into the MICRO-PITCH socket and snapped into position.

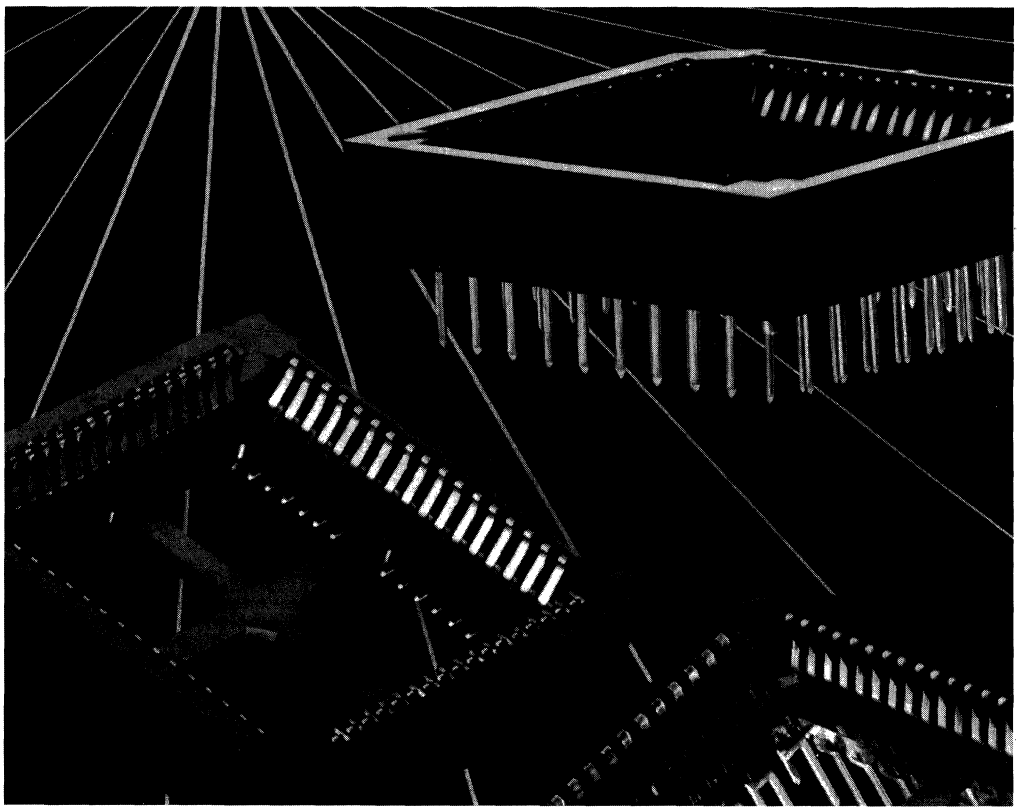
No. of Pos.	CQFP MICRO-PITCH Converter Part No.	Use with MICRO-PITCH Socket	
		Housing Sub-Assembly Part No.	Cover Part No.
132	822054-2	821949-5	821942-1

Material:
Polyphenylene Sulfide

JEDEC Type A Leaded Ceramic Chip Carrier Sockets (Gold-Gold System)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



AMP Chip Carrier Sockets are designed to accept JEDEC, Type A leaded ceramic carriers with gold plated leads on 0.50 [1.27] centerlines and AMP Premolded Plastic Chip Carriers with gold plated "J" leads (see page10123). They are available in either solder tail or surface mount versions, and can be supplied in 20 through 84 contact positions.

The solder tail sockets are designed for through-hole pc board mounting on .100 [2.54] centers, while the surface mount versions allow state-of-the-art vapor reflow or infrared soldering onto the surface of the pc board on .050 [1.27] centers. Both of these socket styles present a low profile when mounted with a plastic chip carrier installed, permitting dense mounting of pc boards.

Normal forces created by the sockets' unique contact design establish reliable mating of the gold-plated leads on the chip carrier. The sockets have polarizing features which allow rapid and reliable insertion of the chip carriers. Extraction tools are available for smooth and easy removal of the chip carrier from the socket.

These AMP chip carrier sockets are designed to make effective use of existing pc board area for high count packages. Contact AMP Incorporated for additional information concerning particular design requirements.

Performance Characteristics

Contact Resistance:
7.5 milliohms maximum change after any test sequence with a 20 milliohm maximum final resistance

Capacitance (Adjacent Contact):
0.5 picofarad max.

Inductance (Self):
5.0 nH max. at 500 KHz

Inductance (Mutual):
1.0 nH max. at 500 KHz

Insulation Resistance:
Initial — 1×10^4 megohms min.

Dielectric Withstanding Voltage:
500 VAC for 1 minute

Test Conditions

Thermal Shock:
AMP Spec. 109-22, −55°C to +125°C

Temperature/Humidity:
AMP Spec. 109-23, Cond. B, 10 cycles (−25°C to +65°C) at 95% RH

Product Facts

- Accepts JEDEC, Type A, leaded ceramic chip carriers
- Two versions available — solder tail on .100 [2.54] centers and surface mount on .050 [1.27] centers
- Overall height above pc board with ceramic chip carrier installed is .320 [8.13] max.
- Polarized for easy registration
- Easy access probing with chip carrier installed
- Hard gold on surface engages chip carrier with tin-lead plating on solder legs
- Slots accept chip carrier extractor
- Standoffs for cleaning and heat dissipation
- Inner and outer rows of solder tails on different levels to facilitate installation to the pc board
- 100 grams minimum normal force per contact
- Operating temperature of −40°C to +85°C

Technical Document

Product Specification:
108-38001

JEDEC Type A Leaded Ceramic Chip Carrier Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

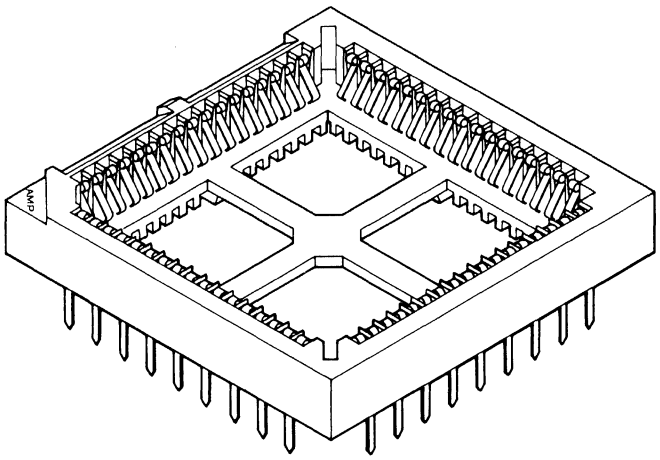
Gold-Gold System Sockets — Solder Tail

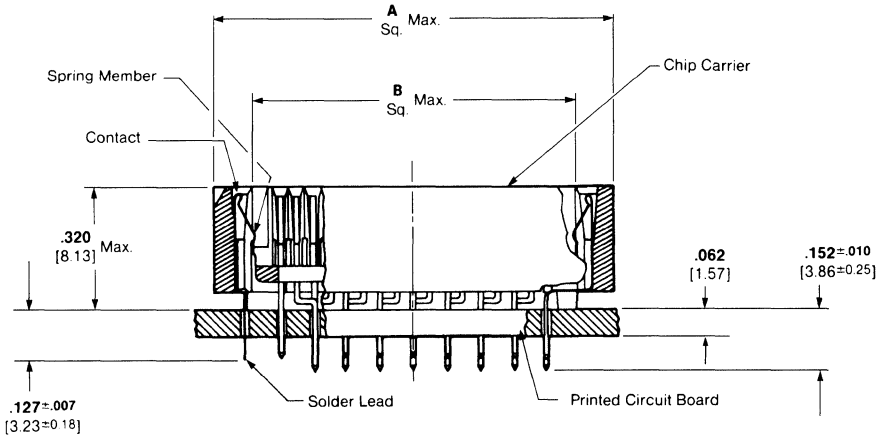
Materials:

Housing — Polyphenylene Sulfide, 40% glass-filled, 94V-0, 220°C

Contacts — Beryllium copper

Plating — .000030 [0.00076] hard gold over nickel on contact area and .000150 [0.0038] min. tin-lead (93-7) over .000030 [0.00076] min. nickel on solder area





Assembly Detail

No. of Pos.	Dimensions A	Dimensions B	Part Number
20	**.570** 14.48	**.357** 9.07	641745-2
28	**.670** 17.02	**.457** 11.61	641746-2
44	**.870** 22.1	**.657** 16.69	641747-2
52	**.970** 24.64	**.757** 19.23	641748-2
68	**1.170** 29.72	**.959** 24.36	641749-2
84	**1.380** 35.05	**1.159** 29.44	643066-2

Note: Other sizes can be made available. Contact AMP Incorporated for information.

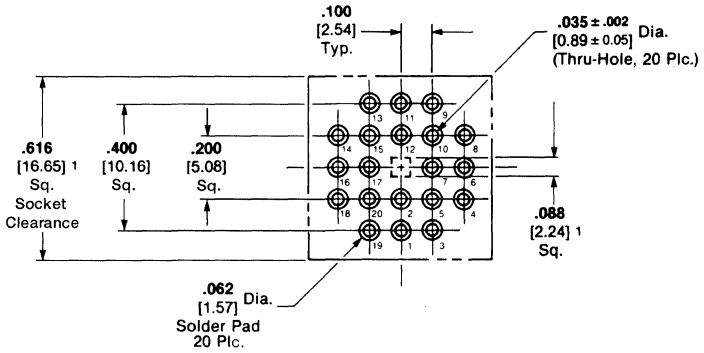
JEDEC Type A Leaded Ceramic Chip Carrier Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

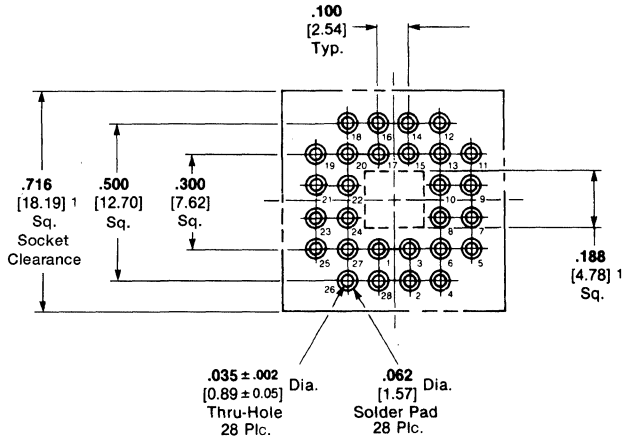
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Gold-Gold System Sockets — Solder Tail

Recommended PC Board Patterns



20 Position



28 Position

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

[1]No additional via. holes recommended between indicated dimensions.

Notes: 1. Pc board hole patterns are shown from top (socket side) of pc board.
2. These JEDEC pc board hole patterns are for .100 [2.54] grid thru-holes.
3. These pc board hole patterns are not to be used for manufacturing layouts. For more detailed layout specifications, order AMP customer drawings using the base (series) no. of the socket nos. listed on page 10071.

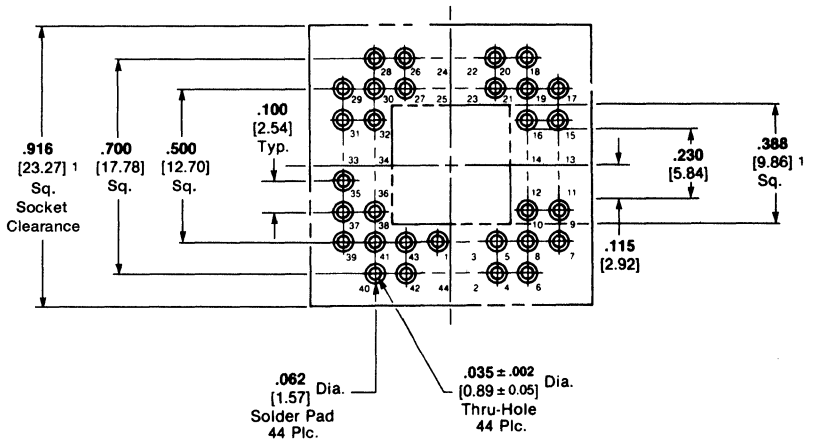
JEDEC Type A Leaded Ceramic Chip Carrier Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

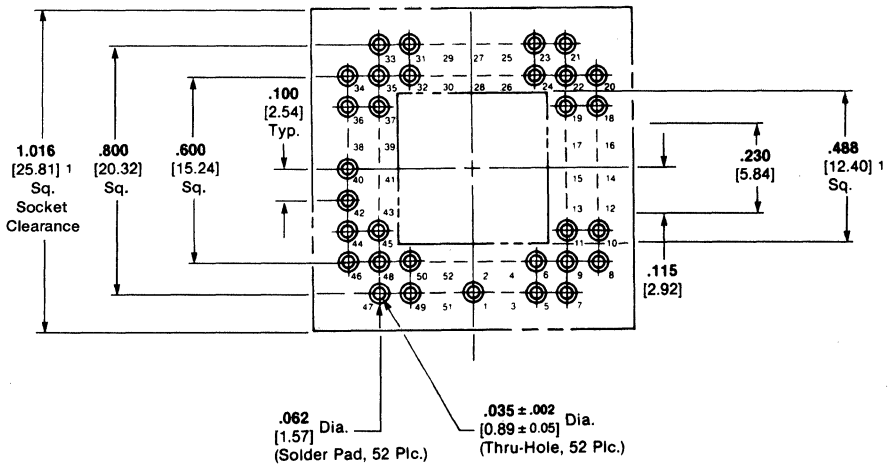
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Gold-Gold System Sockets — Solder Tail

Recommended PC Board Patterns



44 Position



52 Position

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

[1]No additional via. holes recommended between indicated dimensions.

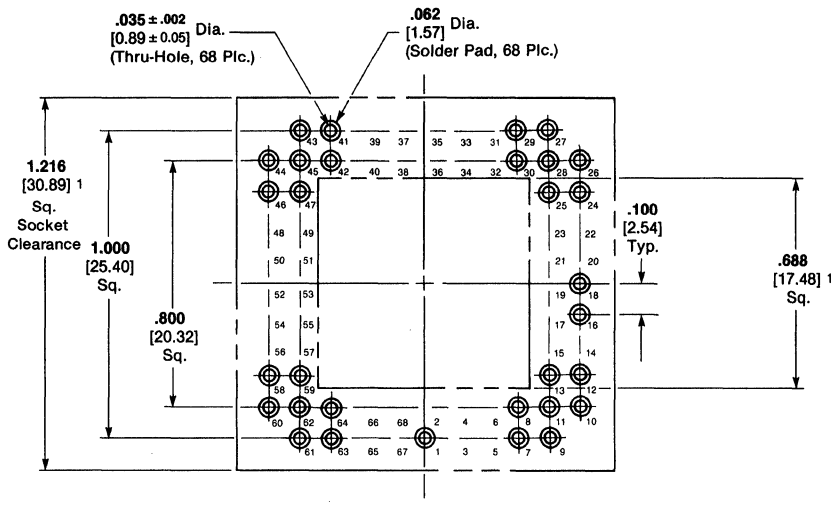
Notes: 1. Pc board hole patterns are shown from top (socket side) of pc board.
2. These JEDEC pc board hole patterns are for .100 [2.54] grid thru-holes.
3. These pc board hole patterns are not to be used for manufacturing layouts. For more detailed layout specifications, order AMP customer drawings using the base (series) no. of the socket nos. listed on page 10071.

JEDEC Type A Leaded Ceramic Chip Carrier Sockets
(Continued)

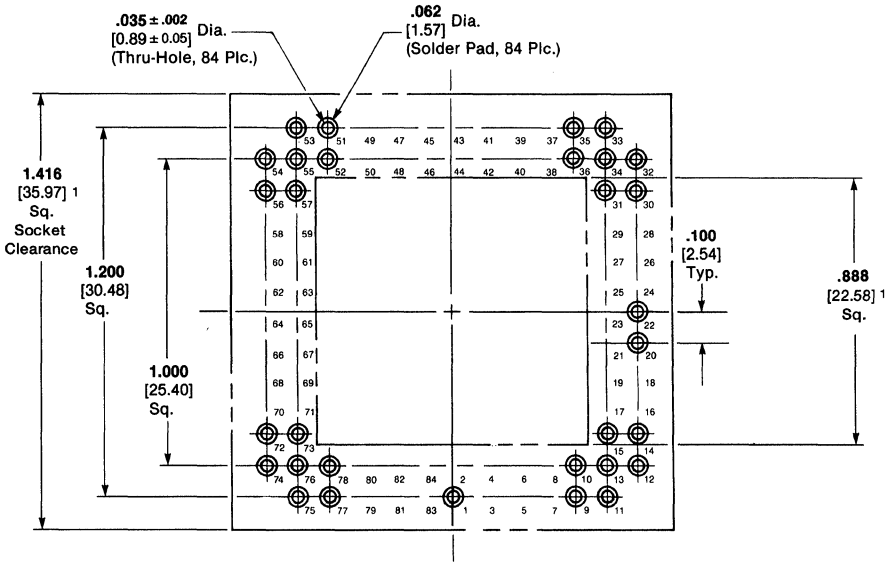
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Gold-Gold System Sockets — Solder Tail

Recommended PC Board Patterns



68 Position



84 Position

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

[1]No additional via. holes recommended between indicated dimensions.

Notes: 1. Pc board hole patterns are shown from top (socket side) of pc board.
2. These JEDEC pc board hole patterns are for .100 [2.54] grid thru-holes.
3. These pc board hole patterns are not to be used for manufacturing layouts. For more detailed layout specifications, order AMP customer drawings using the base (series) no. of the socket nos. listed on page 10071.

JEDEC Type A Leaded Ceramic Chip Carrier Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

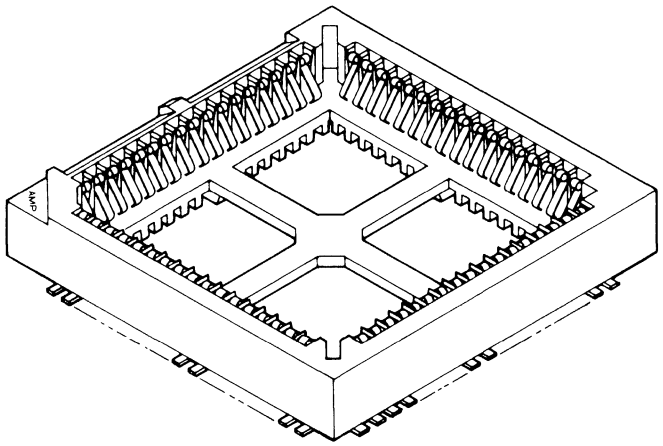
Gold-Gold System Sockets — Surface Mount

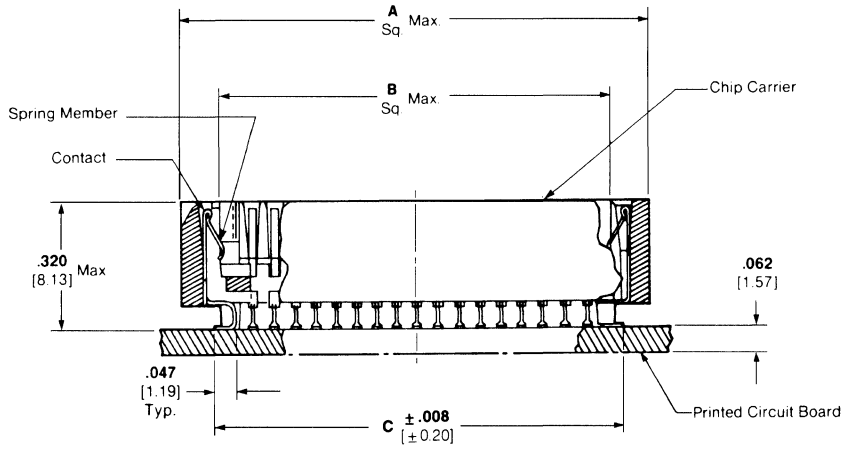
Materials:

Housing — Polyphenylene Sulfide, 40% glass-filled, 94V-0, 220°C

Contacts — Beryllium copper

Plating — .000030 [0.00076] hard gold over nickel on contact area and .000150 [0.0038] min. tin-lead (93-7) over .000030 [0.00076] min. nickel on solder area

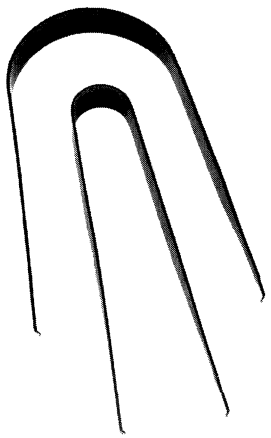




Assembly Detail

Extraction Tools

Part Numbers:
274321-1 (20 through 52 Positions)
821509-1 (68 and 84 Positions)



No. of Pos.	Dimensions A	B	C	Part Number
20	**.570** 14.48	**.357** 9.07	**.389** 9.88	643057-2
28	**.670** 17.02	**.457** 11.61	**.478** 12.14	641444-2
44	**.870** 22.1	**.657** 16.69	**.678** 17.22	641343-2
52	**.970** 24.64	**.757** 19.23	**.789** 20.04	643058-2
68	**1.170** 29.72	**.959** 24.36	**.978** 24.84	641345-2
84	**1.380** 35.05	**1.159** 29.44	**1.192** 30.28	643151-2

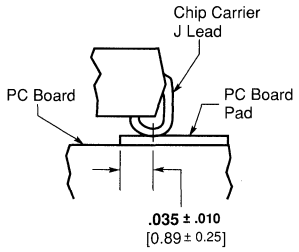
Note: Other sizes can be made available. Contact AMP Incorporated for information.

JEDEC Type A Leaded Ceramic Chip Carrier Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

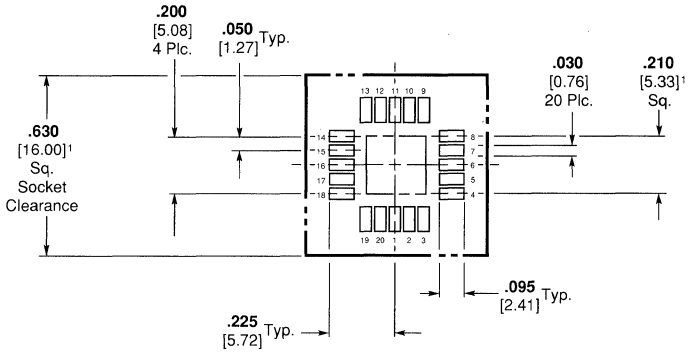
Gold-Gold System Sockets — Surface Mount



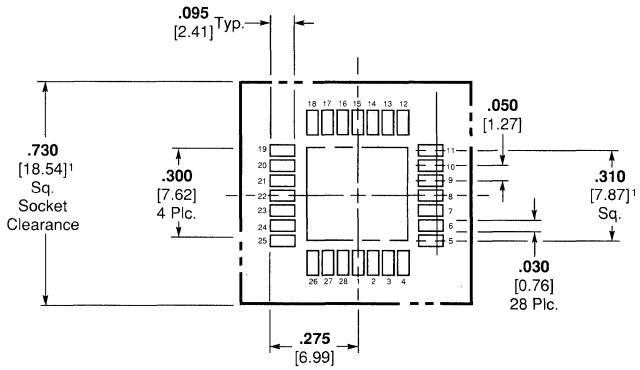
These pc board patterns are common for mounting both chip carriers and chip carrier sockets. For a mounted chip carrier, the centerline of the J leads is located on the pc board pads at the dimension shown above.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Recommended PC Board Patterns



20 Position



28 Position

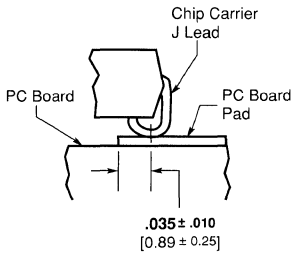
[1]No additional via. holes recommended between indicated dimensions.

Notes: 1. These JEDEC pc board patterns are for surface mount pads on .050 [1.27] centers.
2. These pc board hole patterns are not to be used for manufacturing layouts. For more detailed layout specifications, order AMP customer drawings using the base (series) no. of the socket nos. listed on page 10075.

JEDEC Type A Leaded Ceramic Chip Carrier Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

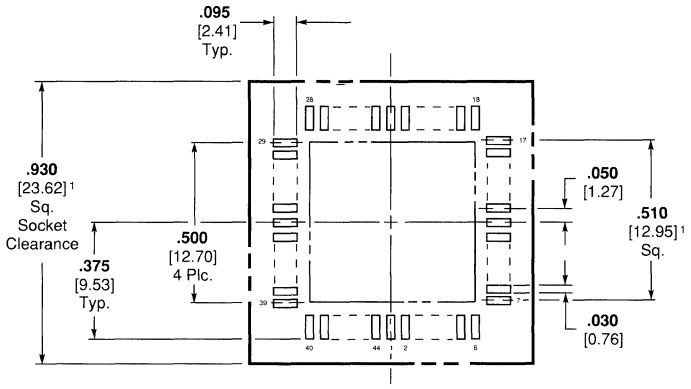
Gold-Gold System Sockets—Surface Mount



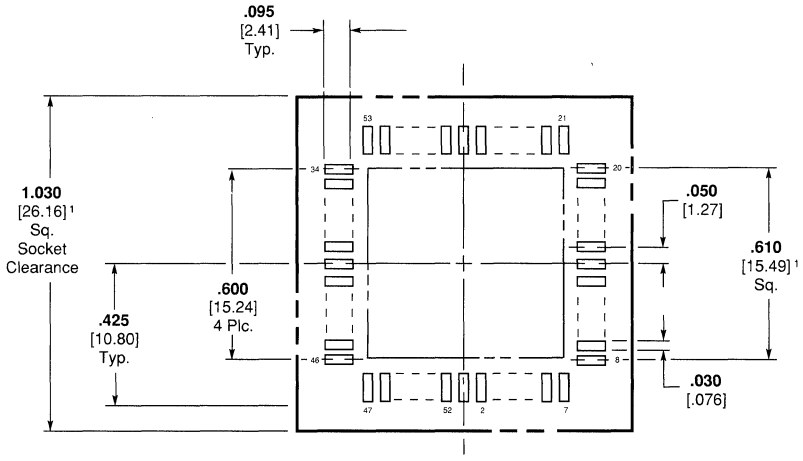
These pc board patterns are common for mounting both chip carriers and chip carrier sockets. For a mounted chip carrier, the centerline of the J leads is located on the pc board pads at the dimension shown above.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Recommended PC Board Patterns



44 Position



52 Position

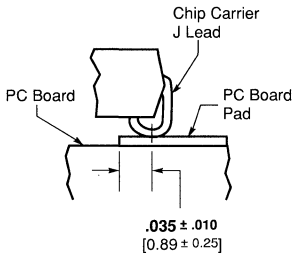
[1]No additional via. holes recommended between indicated dimensions.

Notes: 1. These JEDEC pc board patterns are for surface mount pads on .050 [1.27] centers.
2. These pc board hole patterns are not to be used for manufacturing layouts. For more detailed layout specifications, order AMP customer drawings using the base (series) no. of the socket nos. listed on page 10075.

JEDEC Type A Leaded Ceramic Chip Carrier Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

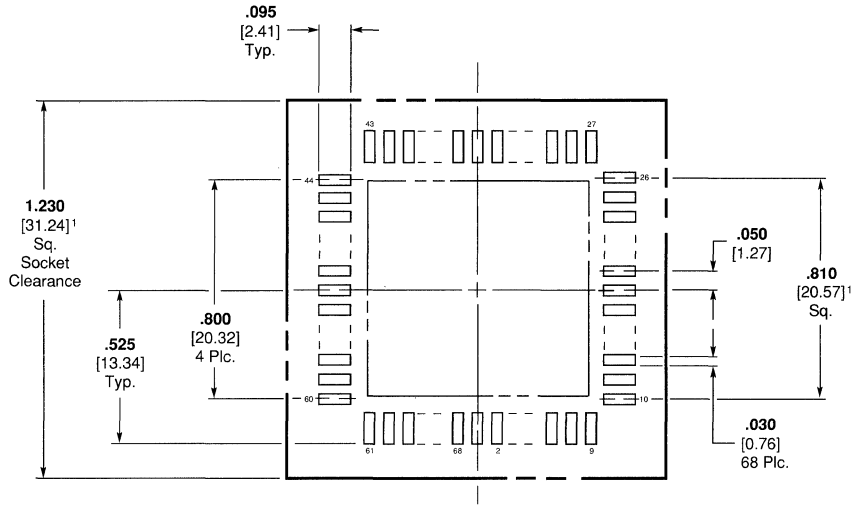
Gold-Gold System Sockets — Surface Mount



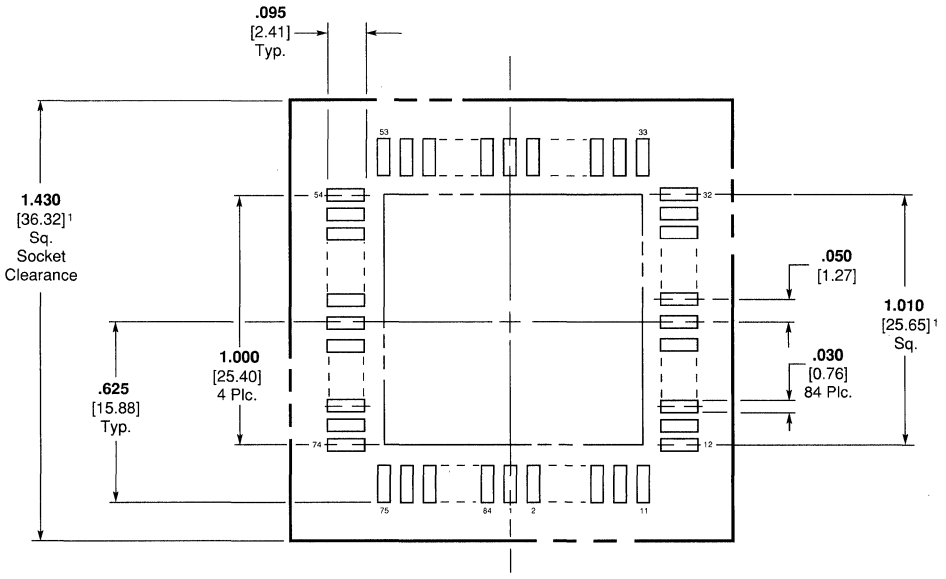
These pc board patterns are common for mounting both chip carriers and chip carrier sockets. For a mounted chip carrier, the centerline of the J leads is located on the pc board pads at the dimension shown above.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Recommended PC Board Patterns



68 Position



84 Position

[1]No additional via. holes recommended between indicated dimensions.

Notes: 1. These JEDEC pc board patterns are for surface mount pads on .050 [1.27] centers.
2. These pc board hole patterns are not to be used for manufacturing layouts. For more detailed layout specifications, order AMP customer drawings using the base (series) no. of the socket nos. listed on page 10075.

LCCC Sockets

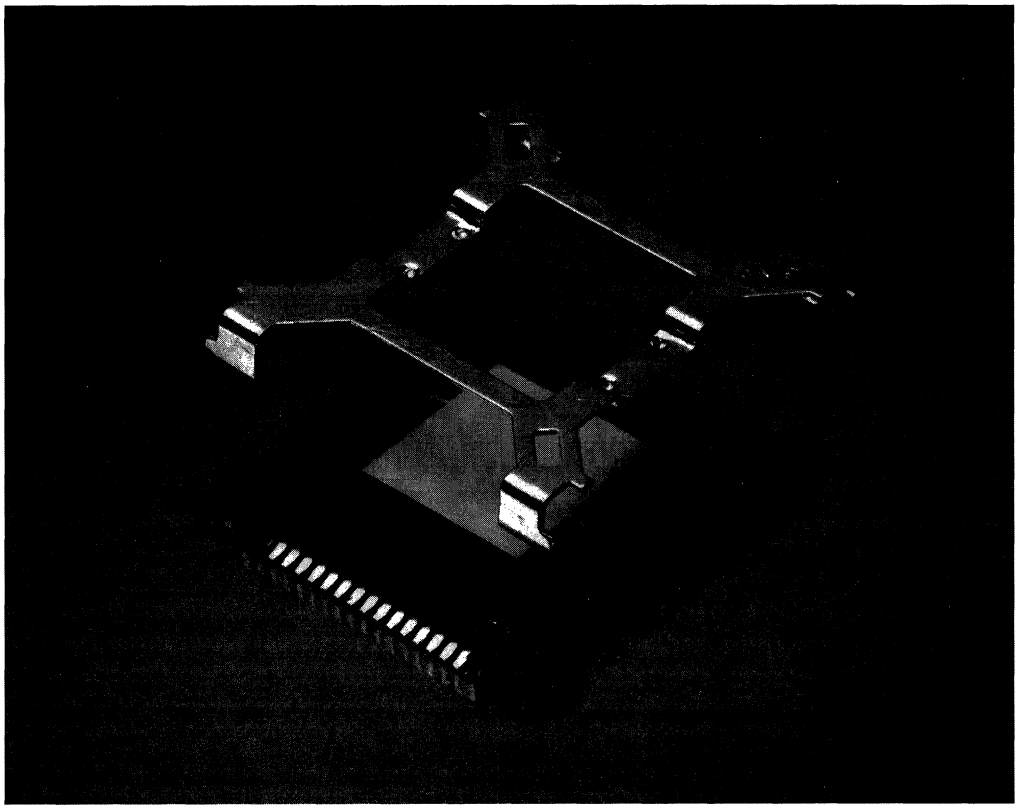
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Low Height Chip Carrier Sockets

Product Facts

- Accepts JEDEC Type A, Type B and Type D leadless ceramic substrates
- Overall height above pc board with substrate installed — .275 [6.99] max. (44 through 84 positions); .350 [8.89] max. (100 positions)
- Substrate cover is profiled to accommodate heat sinks
- Heat sinks and heat sink/cover assemblies are available for 68-position socket
- Substrate registered by three corner notches
- Contact solder tails on .100 [2.54] square grid
- Solder tail lengths available in .110 [2.79] or .140 [3.56]
- Connector and substrate polarizing features
- Duplex plated contacts
- Easy access probing with substrate installed
- Cover attached with no tools and removed with screw driver
- Simple hand tool available to speed installation to pc board



AMP Low Height Chip Carrier Sockets accept the JEDEC Type A, Type B and Type D leadless ceramic substrates and contain important features required in today's high density electronic systems.

These dependable sockets are available in several solder tail versions and require only a minimum of installation height, with the substrate installed. Socket design permits mounting printed circuit boards on .500 [12.7] centers.

The snap-on cover exposes maximum substrate area for cooling and provides clearance for heat sinks that may be attached to the substrate. The cover is easily installed and removed with no tools needed for installation and only a screw driver required for removal.

For additional heat dissipation, snap-on heat sinks and preassembled heat sink/cover assemblies are available from AMP for the 68-position socket.

The substrate is registered in the connector by means of three inward molded projections with a thruster clip contacting the one beveled corner. The socket is registered to the pc board by means of a molded polarizing post in one corner.

The Low Height Chip Carrier Socket is designed to make effective use of existing pc board area for high pin count packages. Contact AMP Incorporated for additional information concerning particular design requirements.

Technical Documents

Product Specification:
108-11031

Instruction Sheets:

IS 6875	Insertion Tool 44 & 52 Positions
IS 6779	Insertion Tool 68 & 100 Positions

Low Height Chip Carrier Sockets with Solder Tails

Performance Characteristics

Contact Resistance:
10 milliohms maximum change after any test sequence with a 25 milliohm maximum final resistance

Insulation Resistance:
5000 megohms

Dielectric Withstanding Voltage:
1.0 Kv

Test Conditions

Heat Age:
1000 hours @ 150°C

Thermal Shock:
MIL-STD-1344, Method 1003, Cond. A, −65°C to +85°C

Moisture Resistance:
MIL-STD-1344, Method 1002, Type II

Vibration:
MIL-STD-1344, Method 2005, Cond. IV, 20 G's max.

Shock:
MIL-STD-1344, Method 2004, Cond. C, 100 G's

Temperature/Humidity:
85°C, 85% RH

Materials

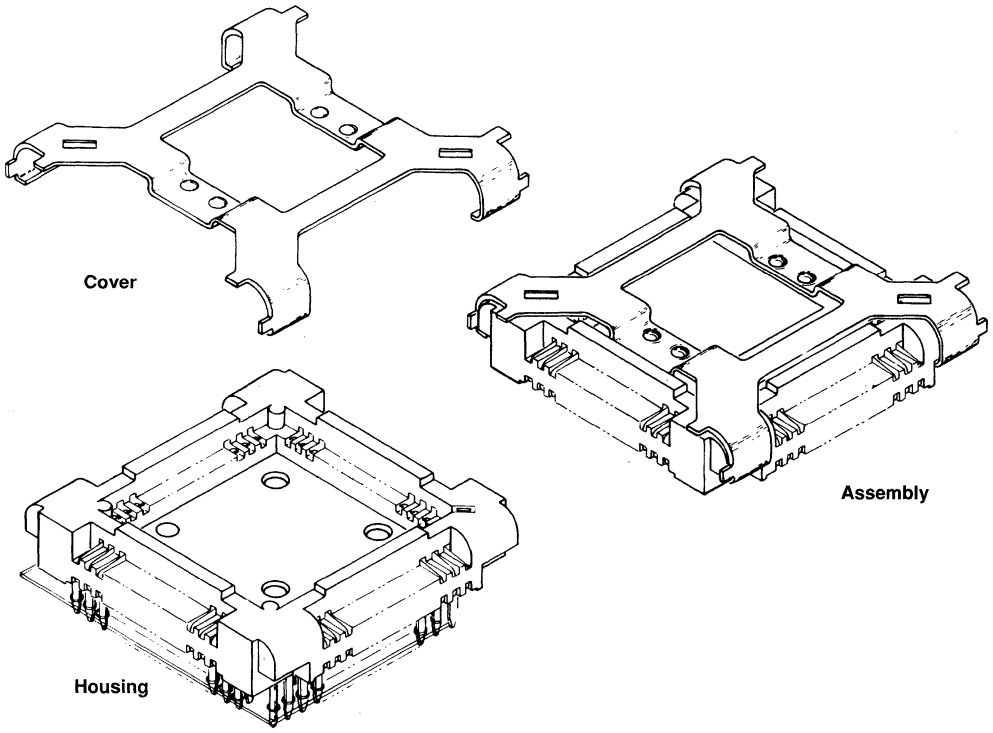
Housing — Polyester, glass-filled

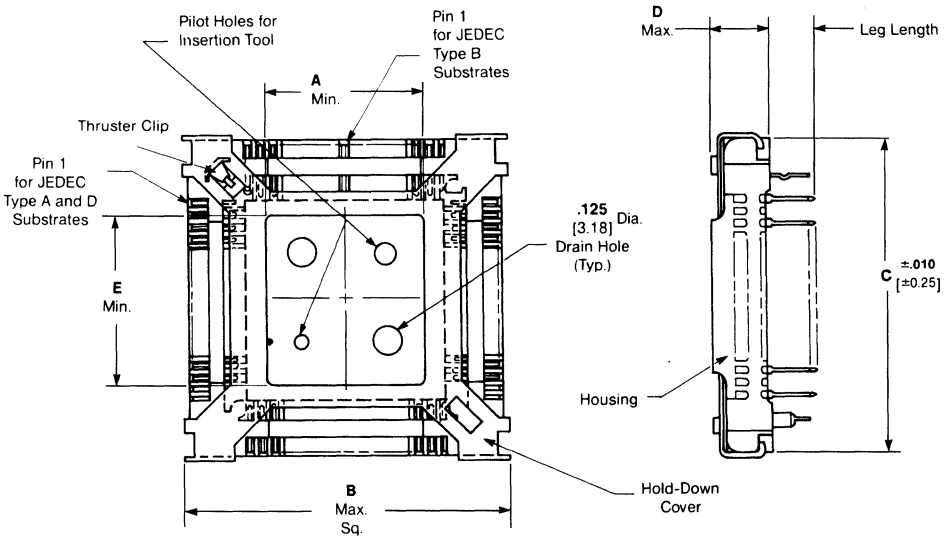
Contacts — Beryllium copper with gold over nickel plating in substrate area and tin-lead over nickel in solder tail area

Cover — Steel with nickel plating

Thruster Clip — Stainless steel

44-, 52-, 68-, 84- and 100-Position Socket Assemblies (Shipped without cover installed)





No. of Pos.	Dimensions					Leg Length	
	A	B	C	D	E	.140 [3.65] Assembly With Cover[1]	.110 [2.79] Assembly With Cover[1]
44	.470 11.94	1.050 26.67	.995 25.25	.275 6.99	.425 10.8	55232-1	55232-2
52	.530 13.46	1.150 29.21	1.095 27.81	.275 6.99	.425 13.34	55227-1	55227-2
68	.675 17.15	1.365 34.67	1.295 32.89	.275 6.99	.685 17.4	55159-1	55159-2
84	.855 21.72	1.560 39.62	1.495 37.97	.275 6.99	.890 22.61	55225-1	55225-2
100	.950 24.13	1.775 45.09	1.695 43.05	.350 8.89	1.045 26.54	55219-1	55219-2

[1]Cover and assembly available separately.

LCCC Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Low Height Chip Carrier Sockets For Surface Mounting

Performance Characteristics

Contact Resistance:
10 milliohms maximum change after any test sequence with a 25 milliohm maximum final resistance

Insulation Resistance:
5000 megohms

Dielectric Breakdown Voltage:
1.0 Kv

Test Conditions

Heat Age:
1000 hrs. at 150°C

Thermal Shock:
MIL-STD-1344, Method 1003, Cond. A, −65°C to +85°C

Moisture Resistance:
MIL-STD-1344, Method 1002, Type II

Vibration:
MIL-STD-1344, Method 2005, Cond. IV, 20 G's

Shock:
MIL-STD-1344, Method 2004, Cond. C. 100 G's

Temperature/Humidity:
85°C, 85% RH

Materials

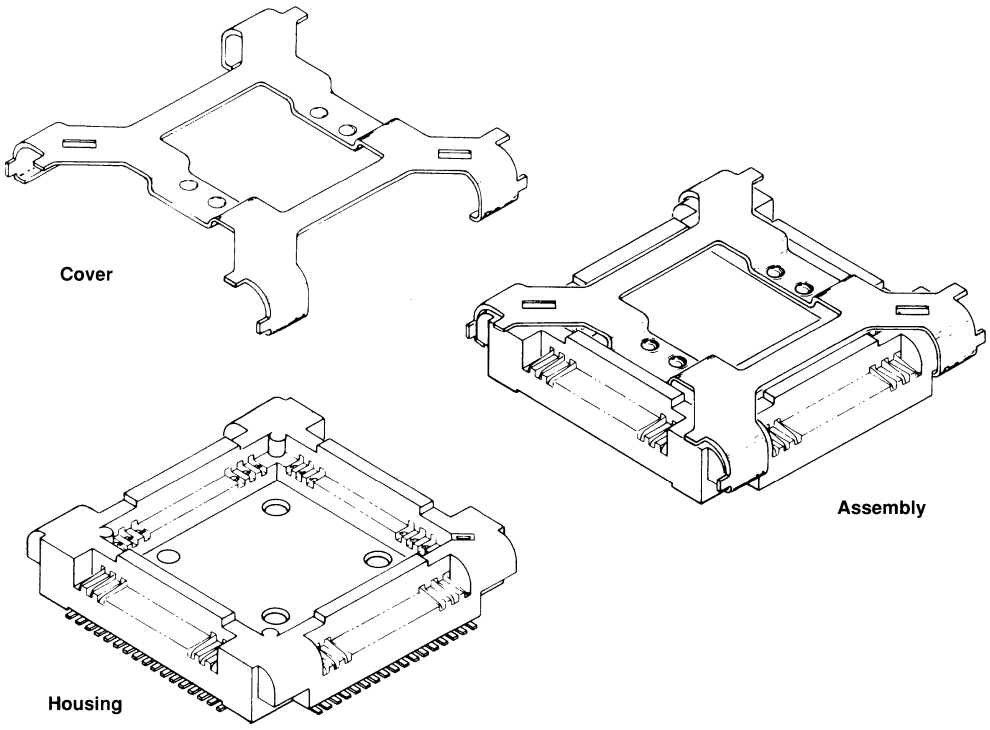
Housing:
Polyester, glass-filled

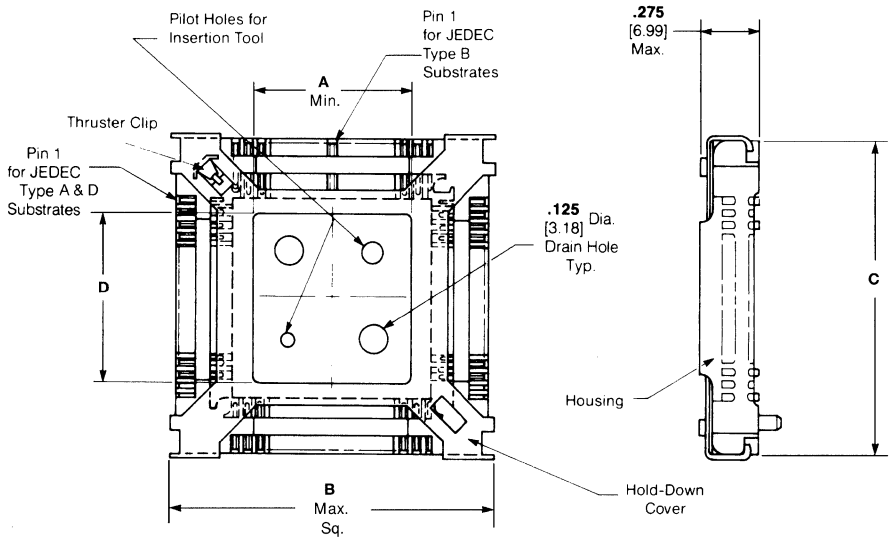
Contacts:
Beryllium copper with gold over nickel plating in substrate area and tin-lead over nickel on contact pads

Cover:
Steel with nickel plating

Thruster Clip:
Stainless steel

68-Position Socket Assembly (Shipped without cover installed)





No. of Pos.	Dimensions				Part Number Assembly with Cover
	A	B	C	D	
68	.675 17.15	1.365 34.67	1.295 32.89	.685 17.40	55588-1

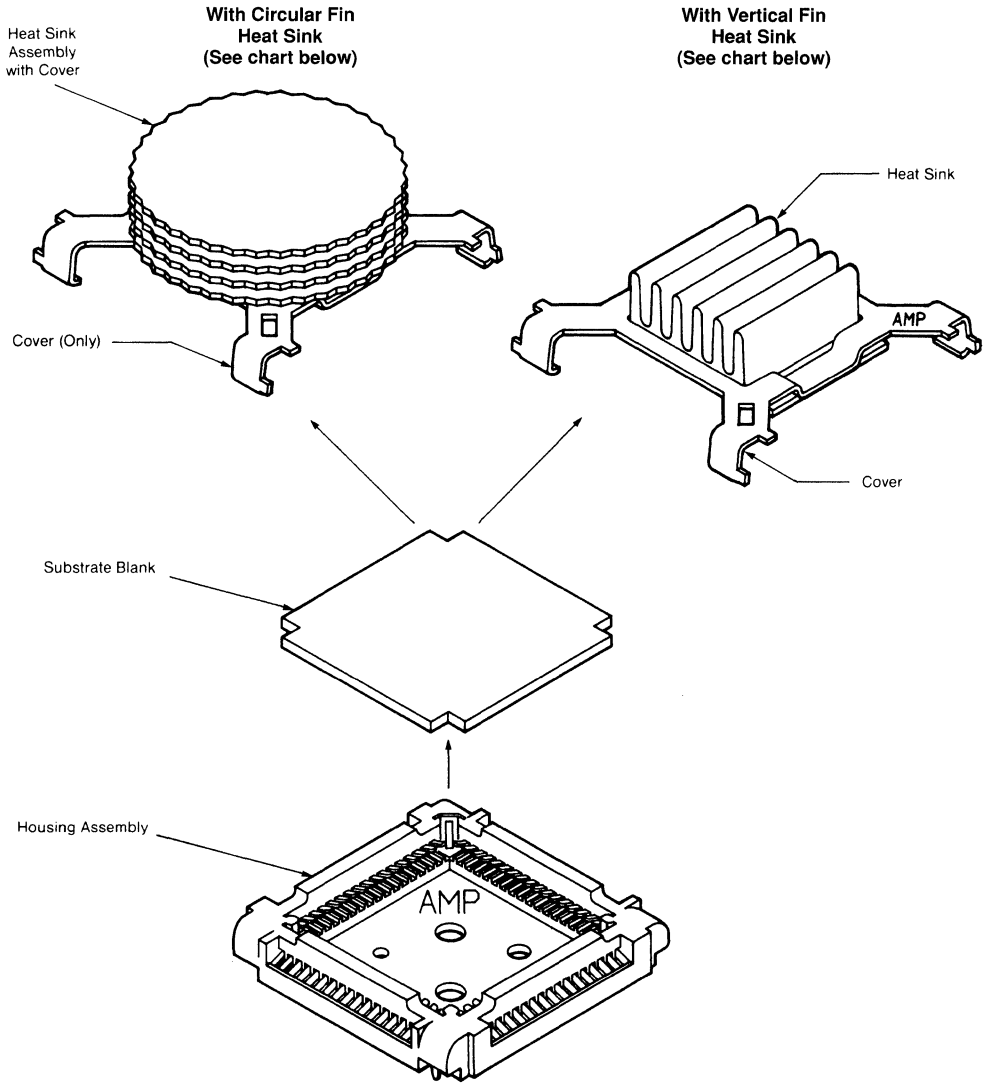
LCCC Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Low Height Chip Carrier Sockets with Heat Sinks

68-Position Socket Assemblies
Shipped fully assembled with cover and heat sink



Socket Assemblies with Circular Fin Heat Sinks

No. of Circular Heat Sink Fins	Max. Assembled Height Above Pc Board	Part Numbers Leg Length .110 [2.79]
2	**.455** 11.56	55540-2
3	**.535** 13.59	55668-2
4	**.615** 15.62	55523-2

Circular Heat Sink Assemblies Only

No. of Fins	Without Cover
2	55357-2
3	55357-3

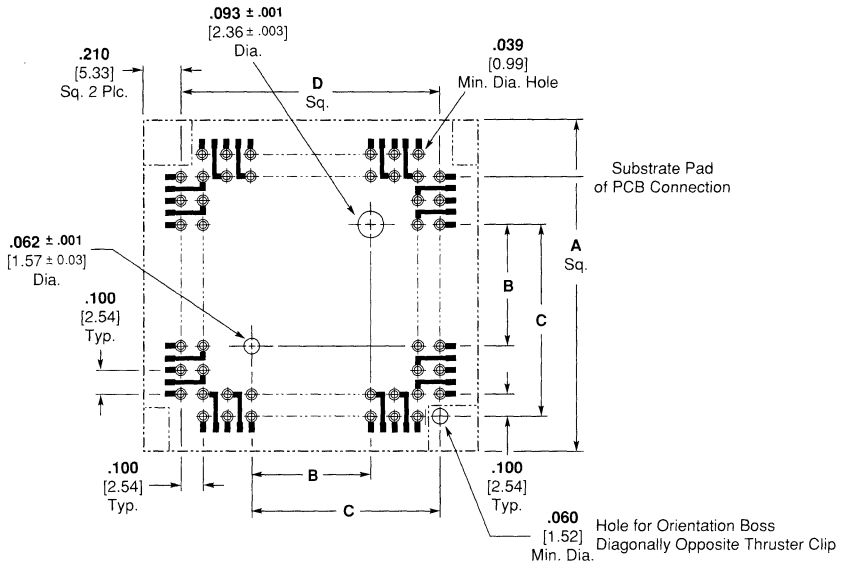
Socket Assemblies with Vertical Fin Heat Sinks

Max. Assembled Height Above Pc Board	Part No. Leg Length .110[2.79]
.520 13.21	55531-2

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

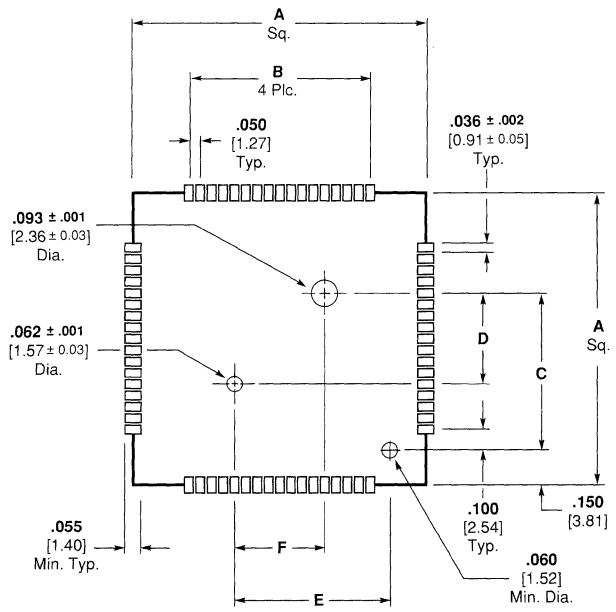
Low Height Chip Carrier Sockets

Printed Circuit Board Layout for Solder Tail Sockets (Connector Side)



No. of Pos.	A	B	C	D
44	**.995** 25.27	**.300** 7.62	**.500** 12.7	**.700** 17.78
52	**1.095** 27.81	**.300** 7.62	**.500** 12.7	**.800** 20.32
68	**1.295** 32.89	**.400** 10.16	**.700** 17.78	**1.000** 25.4
84	**1.495** 37.97	**.400** 10.16	**.800** 20.32	**1.200** 30.48
100	**1.695** 43.06	**.400** 10.16	**.950** 24.13	**1.400** 35.56

Printed Circuit Board Layout for 68-Position Surface Mount (Connector Side)



No. of Pos.	A	B	C	D	E	F
68	**1.295** 32.89	**.800** 20.32	**.700** 17.78	**.400** 10.16	**.700** 17.78	**.400** 10.16

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

LCCC Sockets
(Continued)

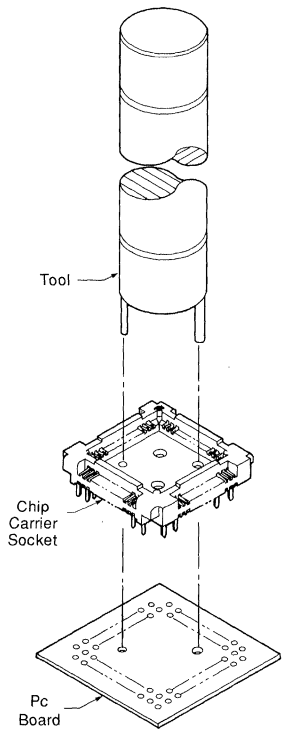
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

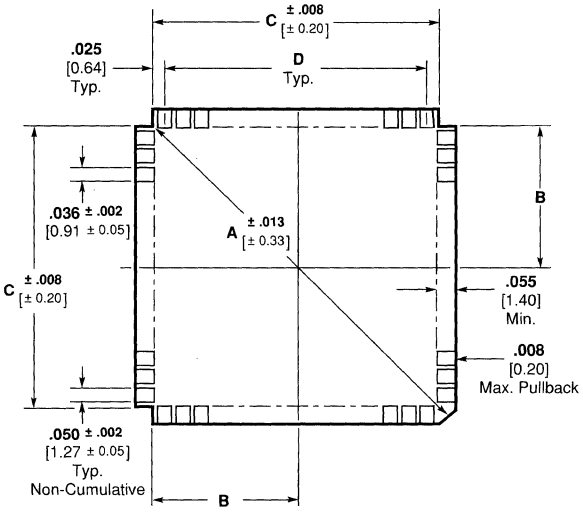
Low Height Chip Carrier Sockets

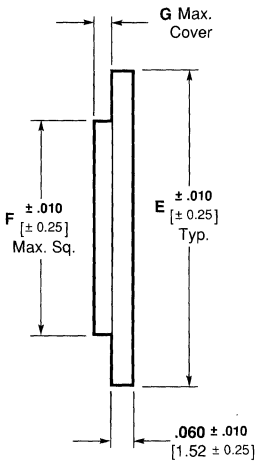
Insertion Tools

44 and 52 Positions:
Part No. 68382-1

68 and 100 Positions:
Part No. 68381-1







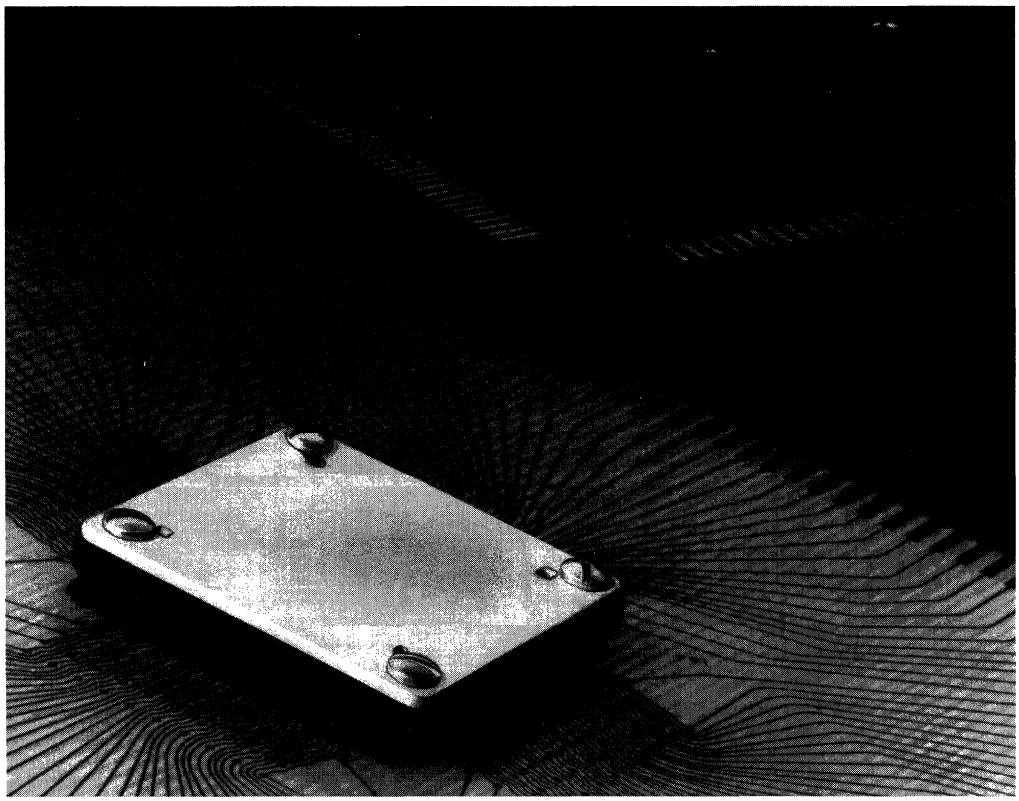
No. of Pos.	A	B	C	D	E	F JEDEC Type A	F JEDEC Type B	G
44	**.832** 21.13	**.275** 6.99	**.550** 13.97	**.500** 12.7	**.650** 16.51	**.480** 12.19	**.330** 8.38	**.060** 1.52
52	**.963** 24.46	**.325** 8.26	**.650** 16.51	**.600** 15.24	**.750** 19.05	**.550** 13.97	**.440** 11.18	**.060** 1.52
68	**1.247** 31.67	**.425** 10.08	**.850** 21.59	**.800** 20.32	**.950** 24.13	**.750** 19.05	**.650** 16.51	**.060** 1.52
84	**1.530** 38.86	**.525** 13.34	**1.050** 26.67	**1.000** 25.4	**1.150** 29.21	**.950** 24.13	**.830** 21.08	**.060** 1.52
100	**1.812** 46.02	**.625** 15.88	**1.250** 31.75	**1.200** 30.48	**1.350** 34.29	**1.150** 29.21	**.920** 23.36	**.120** 3.05

Note: Substrate pad plating to be .00008 [0.002] min. thk. pore-free gold over .00010 [0.0025] min. thk. nickel or equivalent.

Universal Ceramic High Speed Chip Carrier Sockets

Product Facts

- Accepts JEDEC leadless type A ceramic chip carriers with nominal .950 [24.13] square outside dimension
- Overall height above pc board — .230 [5.84]
- Surface mounted on .020 [0.51], .025 [0.64], .040 [1.02] or .050 [1.27] centerlines
- Four projections on housing orient socket to pc board footprint
- Optional copper-clad invar cover designed to accept a finned heat sink
- Contact exerts a force of 200 grams minimum on the chip carrier contact face
- Designed for very low inductance to shunt current directly to pc board



AMP High Speed Chip Carrier Sockets accept the JEDEC leadless type A ceramic chip carriers having a nominal .950 [24.13] square outside dimension. Housings are available for 68, 84, 132, 156 and 164 position chip carriers.

The socket is designed to be surface mounted to a printed circuit board. The housing, molded of 40% glass-filled, polyphenylene sulfide material, has slots which loosely retain the individual flat contacts in position for soldering. The printed circuit board must be manufactured with a .003 [0.08] solder resist with windows to match the footprint of the socket contacts. This .003 [0.08] deep pocket at each contact point is filled with solder paste for soldering the contact by vapor phase reflow techniques.

The housing is secured to the pc board by four screws, inserted from the reverse side of the board. The back-up plate and associated insulator serve to stiffen the pc board. To insure correct orientation of the housing to the socket footprint, the bottom of the housing has four projections which engage the four windows in the solder resist coating of the printed circuit board.

The installed chip carrier is retained in the socket by a cover and four screws. A bias spring inserted into the housing bears against the index corner of the ceramic chip carrier and locates the carrier against three steel pins in the housing to ensure proper registration of the carrier with the socket contacts. An optional copper-clad invar cover, designed to accept a finned heat sink, can be made available, or one of many commercially available heat sinks can be soldered or glued to the standard cover plate.

Each individual flat contact exerts a force of 200 grams (nominal) on the chip carrier contact face, resulting in a low resistance interconnection. The contact adds very low inductance to the circuit path (about 1.4 nH), hence the name "high speed" contact. The low inductance value makes the socket especially suitable for very high speed circuitry in state-of-the art digital equipment.

Technical Document

Product Specification:
108-38002

LCCC Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Universal Ceramic High Speed Chip Carrier Sockets

Materials and Finish:

Housing — Polyphenylene sulfide, 40% glass-filled[1]

Chip Carrier Nest — Polyphenylene sulfide, 40% glass-filled[1] or LCP[1]

Chip Carrier Orientation Pins — Stainless steel

Contacts — Phosphor bronze with standard .000030 [0.00076] gold plating over nickel underplate. Other plating available

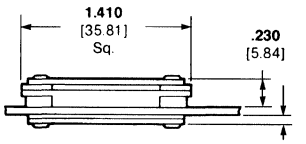
Bias Spring — Phosphor Bronze

Insulator — FR-4 — Glass-filled epoxy

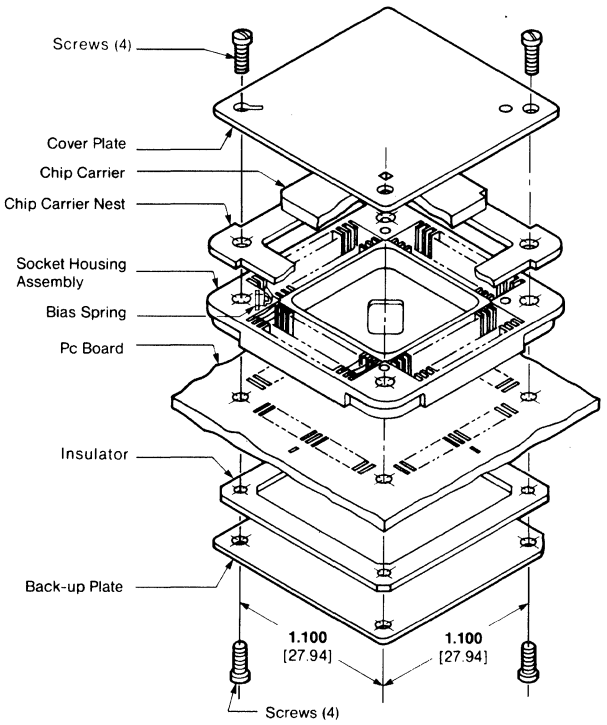
Back-Up and Cover Plates — Stainless steel (standard), copper-clad invar (optional)

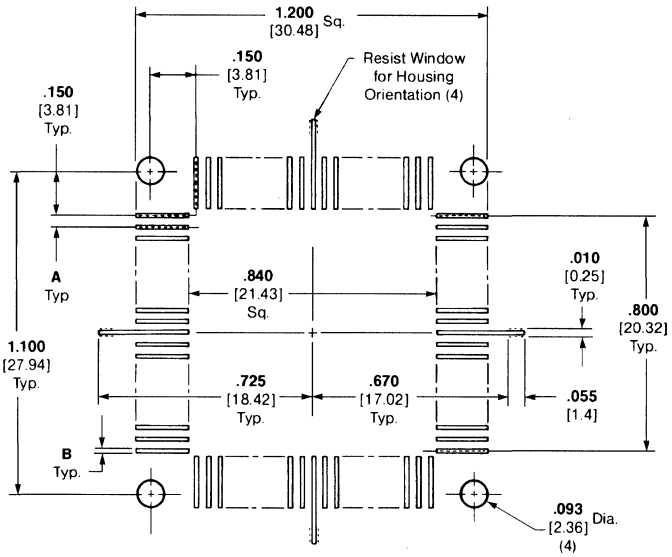
Screws — Stainless steel

[1]UL 94V-0
UL temperature rating: 220°C



Assembly Detail





Recommended Printed Circuit Board Layout

No. of Pos.	Dimensions A	Dimensions B	Part Numbers Polyphenylene Sulfide	Part Numbers LCP
68	.050 1.27	.012 0.3	821516-1	821516-6
84	.040 1.02	.012 0.3	—	821517-6
132	.025 0.64	.012 0.3	821518-1	821518-6
156	.020 0.51	.010 0.25	—	821519-6
164	.020 0.51	.010 0.25	—	821520-6

Performance Characteristics

Contact Resistance (Dry Circuit, Low Level):
10 milliohms maximum increase between initial and subsequent measurements

Capacitance:
0.5 picofarad max. (calculated)

Insulation Resistance:
Initial — 5,000 megohms min.
Final — 1,000 megohms min.

Dielectric Withstanding Voltage:
Initial — 1,000 VAC, 60 Hz for one minute
Final — 900 VAC, 60 Hz

Test Conditions

Thermal Shock:
25 cycles @ −65°C to +85°C

Vibration:
20 G's max., 10–2000 Hz, 100 milliamps

Physical Shock:
100 G's half-sine in 6 milliseconds; 3 shocks in each direction applied along three mutually perpendicular planes — total 18 shocks

Temperature/Humidity:
10 cycles, +25°C to +65°C @ 95% RH with low cold shock @ −10°C

Durability:
50 cycles

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

PGA Sockets

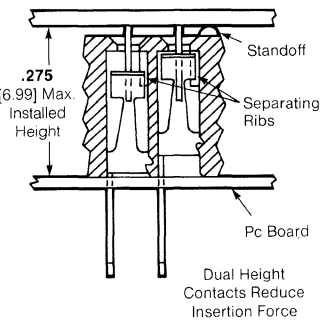
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

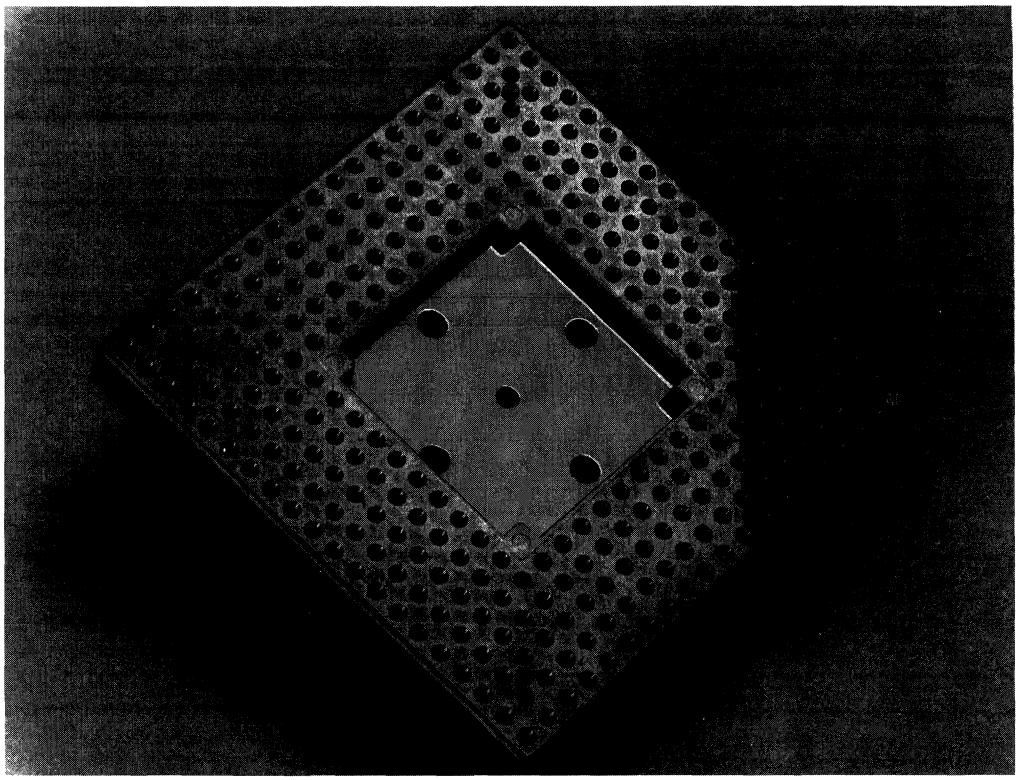
Low Insertion Force (LIF) Sockets

Product Facts

- Uses the same board area as the substrate
- Preloaded contacts of dual height reduce force to install substrate
- Materials suitable for 105°C max.
- Installed socket height equals .275 [6.99] max. which allows .500 [12.7] spacing between pc boards
- The dual-beam contact provides two wide gold-plated surfaces to contact the substrate pins
- Circuit cavity lead-in facilitates substrate loading
- Accepts .016 – .020 [0.41 – 0.51] diameter pin
- Solder leg lengths of .110, .140 and .170 [2.79, 3.56 and 4.32] accommodate 1/16, 3/32 or 1/8 [1.59, 2.38 or 3.18] thick pc boards
- Sockets are packaged in tubes for automatic handling
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476



Side Sectional View



LIF PGA sockets are a true low-force product due to a preloaded dual-beam contact and staggered contact row heights. The contacts have long beams with ample deflection to provide *both* sufficient normal forces and low insertion/extraction forces. Other types of sockets must compromise between either low normal force or high insertion/extraction force.

All non-symmetrical PGA patterns use a discrete housing socket for positive polarization. A symmetrical pattern does not allow for polarization and uses a full-grid housing socket. To reduce overall mated package height, counterbores in the surface of the housing are available for acceptance of PGA pin standoffs.

The LIF-S (Standard) sockets have phosphor bronze contacts and the LIF-P (Premium) sockets have beryllium copper contacts. The sockets are supplied with grid sizes from 10 x 10 to 25 x 25.

Performance Characteristics

Contact Resistance:
15 milliohms max. (Initial)
25 milliohms max. (Final)

Insulation Resistance:
5,000 megohms mins.

Dielectric Withstanding Voltage:
1000 Volts

Pin Insertion Force[1]:
50 grams typ.

Pin Retention Force[2]:
15 grams min.

[1]Value obtained using .018 [0.46] diameter steel pin.
[2]Value obtained using .016 [0.41] diameter steel pin.

Test Conditions

Heat Age:
33 days at 105°C

Thermal Shock:
MIL-STD-1344, Method 1003, Cond. A, −65°C to +105°C

Temperature/Humidity Cycling:
MIL-STD-1344, Method 1002, Type II

Vibration:
MIL-STD-1344, Method 2005, Cond. IV, 20 G's max.

Shock:
MIL-STD-1344, Method 1004, Cond. C, 100 G's at 6 milliseconds

Note: Contact resistance will not exceed the final value after testing at these specified conditions.

Materials

Housing — Glass-filled polyester, 94V-0 rated

Contacts — Beryllium copper (LIF-P); phosphor bronze (LIF-S)

Plating — Contacts .000030 [0.00076] gold-over-nickle*; solder leg tin/lead

*Tin plated contacts for use with plastic devices having tin plated leads can be made available.

Technical Documents

Instruction Sheet:

IS 9531 Mechanical Action Insertion/Extraction Tool

Product Specification:
108-11032

PGA Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

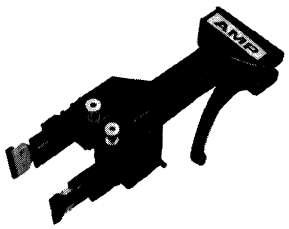
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Low Insertion Force (LIF) Sockets

PGA Package Extraction Tool—Metal

No. of Blades	Part Number
5	58113-1
10	58113-3
13	58113-4
16	58113-5

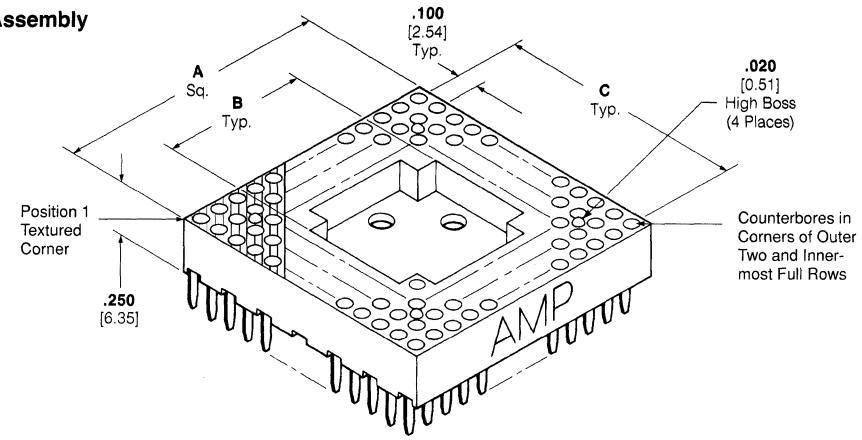
PGA Package Mechanical Action Insertion/Extraction Tool

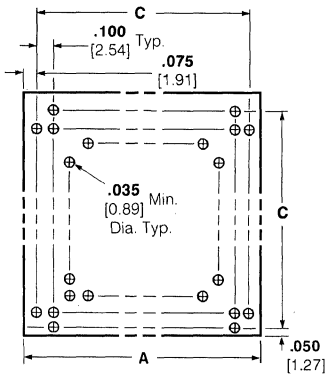


Grid Sizes	Part Number
10 x 10–16 x 16	58417-1
17 x 17–25 x 25	58417-2

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Typical Assembly





Recommended PC Board Hole Pattern

Grid Size	No. of Pos.	Dimensions A	Dimensions B	Dimensions C	Grid Patterns, Solder Tail Length and Part Numbers for LIF-P[1] & LIF-S[2] See Page:
10 x 10	65 Thru 100	**1.050** 26.67	**.350** 8.89	**.900** 22.86	10092
11 x 11	68 Thru 96	**1.150** 29.21	**.450** 11.43	**1.000** 25.4	10092-10093
12 x 12	84 Thru 89	**1.250** 31.75	**.550** 13.97	**1.100** 27.94	10093
13 x 13	88 Thru 133	**1.350** 34.29	**.650** 16.51	**1.200** 30.48	10094-10095
14 x 14	132 Thru 196	**1.450** 36.83	**.750** 19.05	**1.300** 33.02	10096
15 x 15	144 Thru 225	**1.550** 39.97	**.650** 16.51	**1.400** 35.56	10097-10098
16 x 16	155 Thru 175	**1.650** 41.91	**.750** 19.05	**1.500** 38.10	10098
17 x 17	168 Thru 225	**1.750** 44.45	**.650** 16.51	**1.600** 40.64	10099
18 x 18	179 Thru 223	**1.850** 46.99	**.950** 24.13	**1.700** 43.18	10100
19 x 19	257	**1.950** 49.53	**.850** 21.59	**1.800** 45.72	10100
20 x 20	299	**2.050** 52.07	**.950** 24.13	**1.900** 48.26	10101
21 x 21	289	**2.150** 54.61	**.850** 21.59	**2.000** 50.8	10101

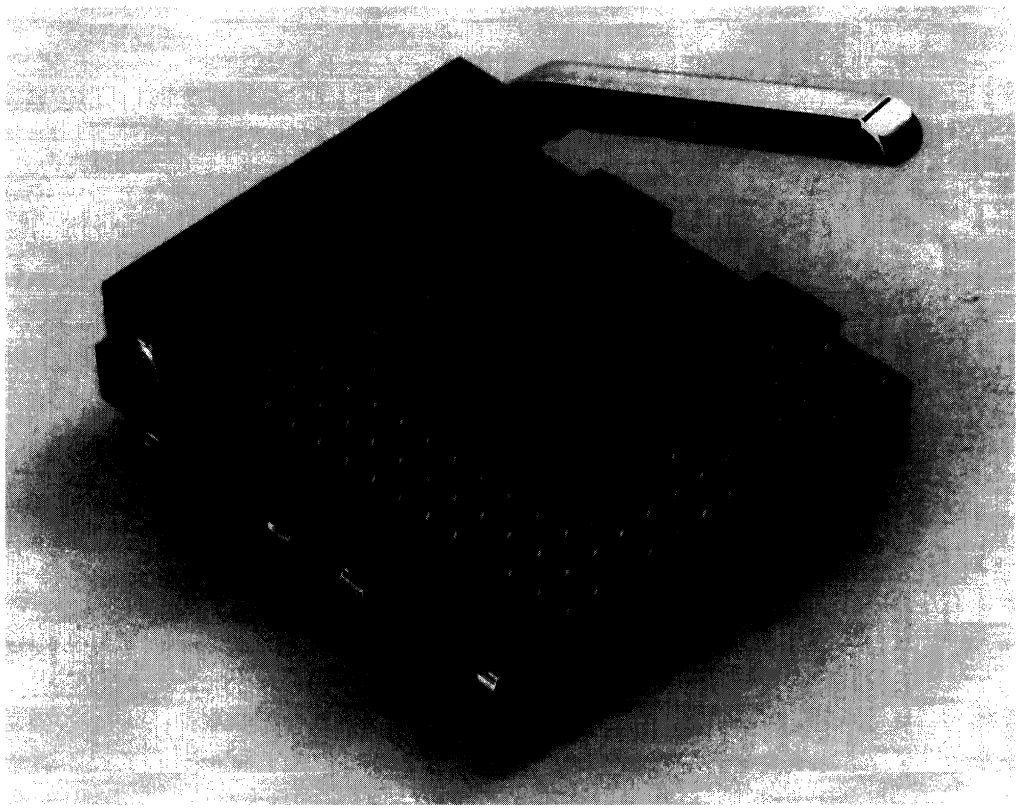
[1]Beryllium copper contacts
[2]Phosphor bronze contacts

Note: 25 x 25 grid size sockets can be made available; contact AMP Incorporated.

Zero Insertion Force (ZIF) Sockets

Product Facts

- Operated by integral cam
- Installation height (closed) is .290 [7.37] for 10 x 10 through 14 x 14 sockets and .336 [8.53] for 15 x 15 through 25 x 25 sockets, which allows .500 [12.7] spacing between boards
- Contact wiping occurs during closing sequence
- Materials suitable for 105°C environments
- Dual beam contact provides two wide gold-plated surfaces to contact the substrate pins
- Solder leg lengths of .110, .140 and .170 [2.79, 3.56 and 4.32] accommodate 1/16, 3/32 or 1/8 [1.59, 2.38 or 3.18] thick pc boards
- Accepts .016 – .020 [0.41–0.51] diameter pins
- Circuit cavity lead-in facilitates substrate loading
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476



AMP ZIF sockets feature a free-moving cam which allows the substrate pins to be inserted and extracted without force when in the open position. In the closed position, the normally closed contacts maintain a constant pressure on the substrate pins. The sockets come in grid sizes from 10 x 10 through 25 x 25.

ZIF sockets are used in a growing number of applications where a user-friendly style socket is needed; especially where frequent mating and high pin counts are predominant.

Performance Characteristics

Contact Resistance (Initial):
15 milliohms max.

Contact Resistance (Final):
25 milliohms max.

Capacitance (Adjacent Contact):
1 picofarad max.

Inductance (Mutual):
2 nh @ 1 MHz typ.

Insulation Resistance:
5,000 megohms min.

Dielectric Withstanding Voltage:
1,000 volts

Pin Retention Force[1]:
15 grams min. avg. per contact

Minimum Operating Cycles:
50

[1]Value obtained using an .016 [0.41] diameter steel pin.

Test Conditions

Heat Age:
33 days @ 105°C

Thermal Shock:
MIL-STD-1344, Method 1003, Cond. A, −65°C to +105°C

Temperature/Humidity Cycling:
MIL-STD-1344, Method 1002, Type II

Vibration:
MIL-STD-1344, Method 2005, Cond. IV, 20 G's max.

Shock:
MIL-STD-1344, Method 2004, Cond. C, 100 G's @ 8 milliseconds

Note: Contact resistance will not exceed the final value after testing at these specified conditions.

Materials

Housing — Glass-filled polyester, 94V-0 rated

Contacts — Beryllium copper

Plating — Contacts gold-over-nickel; solder leg tin/lead

Actuator Handle — Zinc-aluminum alloy

Assembly Pins — Stainless steel

Technical Document

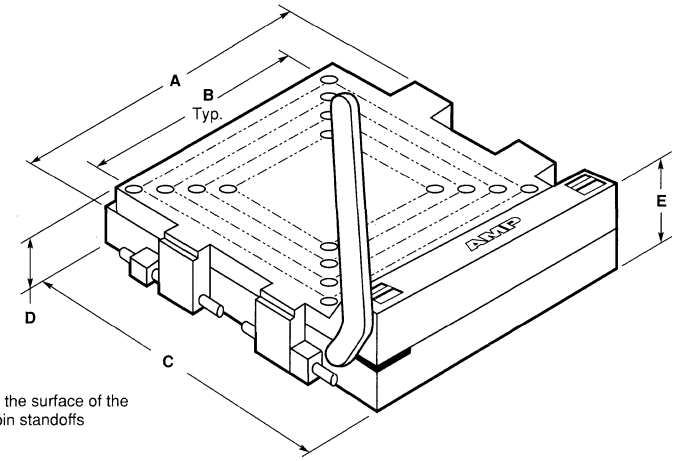
Product Specification:
108-11033

PGA Sockets
(Continued)

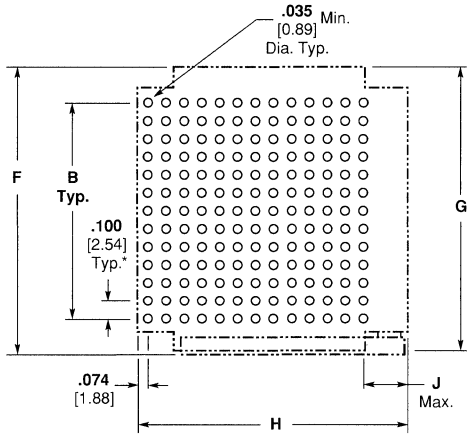
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Zero Insertion Force (ZIF) Sockets



Note: Counterbores on the surface of the socket to accept PGA pin standoffs



*.050 x .100 [1.27 x 2.54] interstitial design sockets are available.
See pages 10103-10114.

Recommended Printed Circuit Board Layout

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Grid Size	No. of Pos.	Dimensions A	B	C	D	E	F	G	H	J	Grid Patterns, Solder Tail Length and Part Numbers See Page:
10 x 10	68 Thru 100	**1.300** 33.03	**.900** 22.86	**1.378** 35.0	**.301** 7.65	**.451** 11.46	**1.358** 34.49	**1.313** 33.35	**1.432** 36.37	**.452** 11.48	10092
11 x 11	68 Thru 121	**1.400** 35.56	**1.000** 25.4	**1.476** 37.49	**.301** 7.65	**.451** 11.46	**1.460** 37.08	**1.413** 35.89	**1.530** 38.86	**.452** 11.48	10092-10093
13 x 13	101 Thru 169	**1.600** 40.64	**1.200** 30.48	**1.742** 44.25	**.301** 7.65	**.461** 11.71	**1.660** 42.16	**1.613** 40.97	**1.755** 44.58	**.476** 12.09	10094-10095
14 x 14	132 Thru 196	**1.700** 43.18	**1.300** 33.02	**1.842** 46.79	**.301** 7.65	**.461** 11.71	**1.760** 44.7	**1.713** 43.51	**1.855** 47.12	**.476** 12.09	10096
15 x 15	144 Thru 225	**1.840** 46.74	**1.400** 35.56	**1.941** 49.3	**.347** 8.81	**.487** 12.37	**1.900** 48.26	**1.855** 47.12	**1.954** 49.63	**.476** 12.09	10097-10098
16 x 16	155 Thru 256	**1.940** 49.28	**1.500** 38.1	**2.063** 52.4	**.347** 8.81	**.507** 12.88	**2.000** 50.8	**1.953** 49.66	**2.099** 53.31	**.520** 13.21	10098
17 x 17	168 Thru 289	**2.040** 51.82	**1.600** 40.64	**2.158** 54.81	**.347** 8.81	**.507** 12.88	**2.098** 53.29	**2.053** 52.15	**2.194** 55.73	**.520** 13.21	10099
18 x 18	179 Thru 324	**2.140** 54.36	**1.700** 43.18	**2.260** 57.4	**.347** 8.81	**.507** 12.88	**2.200** 55.88	**2.153** 54.69	**2.291** 58.19	**.520** 13.21	10100
19 x 19	257 Thru 361	**2.240** 56.9	**1.800** 45.72	**2.380** 60.45	**.347** 8.81	**.527** 13.39	**2.298** 58.37	**2.253** 57.23	**2.410** 61.21	**.533** 13.54	10100-10101
20 x 20	299 Thru 400	**2.340** 59.44	**1.900** 48.26	**2.480** 62.99	**.347** 8.81	**.527** 13.39	**2.398** 60.91	**3.353** 85.17	**2.510** 63.75	**.533** 13.54	10101

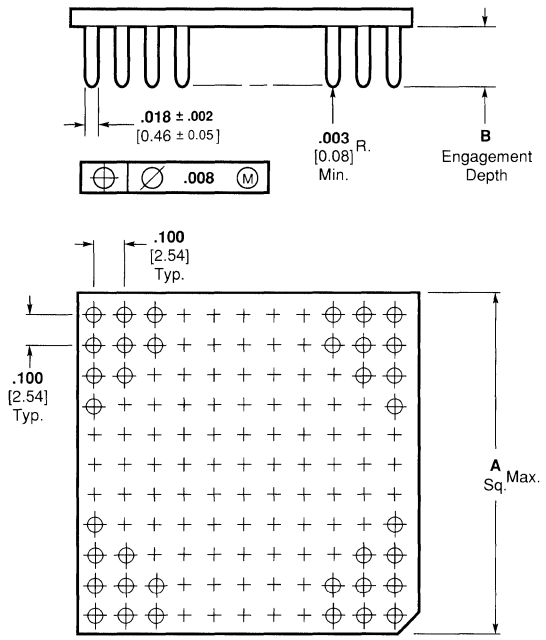
PGA Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Substrate Design Requirements

- Polarization can be accomplished by adding or eliminating pins
- Tips of pins must be free of burrs
- Gold plated pins



B-Engagement Depth[1]:
LIF and ZIF Sockets—.125/.210 [3.18/5.33] 10 x 10–14 x 14
.130/.215 [3.3/5.46] 15 x 15–20 x 20

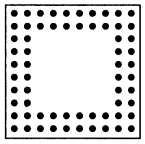
Grid Size	A
10 x 10	**1.080** 27.43
11 x 11	**1.180** 29.98
12 x 12	**1.280** 32.51
13 x 13	**1.380** 35.05
14 x 14	**1.480** 37.59
15 x 15	**1.620** 41.15
16 x 16	**1.720** 43.69
17 x 17	**1.820** 46.23
18 x 18	**1.920** 48.77
19 x 19	**2.020** 51.31
20 x 20	**2.120** 53.85
21 x 21	**2.220** 56.39

[1]Dimension shown is for substrates without standoffs. Housings designed to clear substrate standoffs can be made available.

PGA Sockets — Patterns

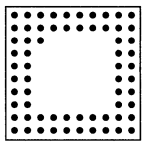
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



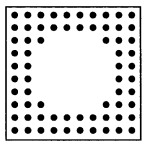
10 x 10
64 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55270-4
LIF-S[2]	10088	.110 2.79	55630-2



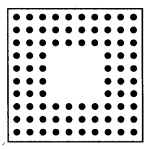
10 x 10
65 Positions
Type II
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55270-1



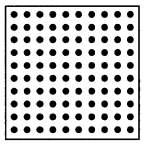
10 x 10
68 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55270-3
LIF-P	10088	.140 3.56	55656-2
LIF-S	10088	.110 2.79	916220-2
LIF-S[2]	10088	.110 2.79	55630-3
ZIF	10090	.110 2.79	55280-3
ZIF	10090	.140 3.56	1-55280-1



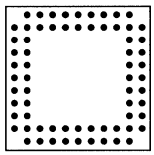
10 x 10
84 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55270-2
LIF-S	10088	.110 2.79	916220-1
ZIF	10090	.110 2.79	55280-4



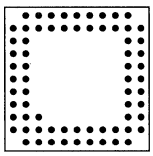
10 x 10
100 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55270-5
LIF-S	10088	.110 2.79	916220-4
ZIF	10090	.110 2.79	1-55280-0



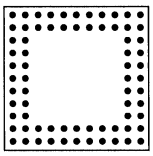
11 x 11
68 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55271-4
LIF-P	10088	.170 4.32	1-55271-1
LIF-S	10088	.110 2.79	916221-3
LIF-S[3]	10088	.110 2.79	919221-7
ZIF	10090	.110 2.79	55281-2



11 x 11
69 Positions
Type I
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55271-5
LIF-S[2]	10088	.110 2.79	55631-2
ZIF	10090	.110 2.79	55281-3



11 x 11
72 Positions
(Symmetrical)

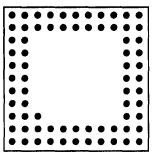
Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	1-55271-0

Legend:
LIF-P — Low Insertion Force (Premium)
LIF-S — Low Insertion Force (Standard)
ZIF — ZIF Production
[1]Refer to these pages for product information.
[2]Optional tin-plated contacts.
[3]Open center.

PGA Sockets — Patterns
(Continued)

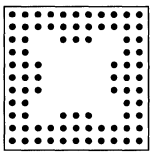
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



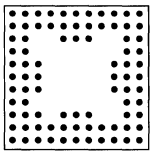
11 x 11
73 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	1-55271-3



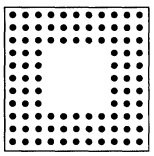
11 x 11
84 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55271-2



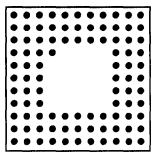
11 x 11
85 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55271-3
LIF-P	10088	.140 3.56	55271-6
LIF-S	10088	.110 2.79	916221-2
LIF-S[2]	10088	.110 2.79	55631-3



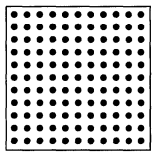
11 x 11
96 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	1-55271-2



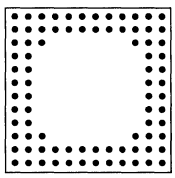
11 x 11
97 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	1-55271-5



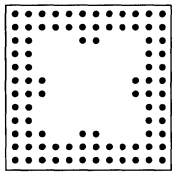
11 x 11
121 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55271-9
ZIF	10090	.110 2.79	1-55281-0



12 x 12
84 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55272-5
LIF-S	10088	.110 2.79	916222-1



12 x 12
89 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55272-3

Legend:
LIF-P — Low Insertion Force (Premium)
LIF-S — Low Insertion Force (Standard)
ZIF — ZIF Production
[1]Refer to these pages for product information.
[2]Optional tin-plated contacts.

PGA Sockets — Patterns
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
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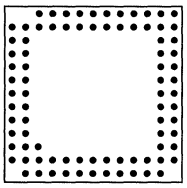
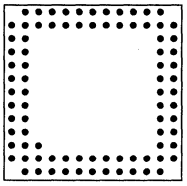
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



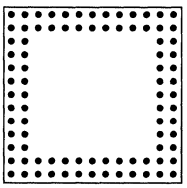
13 x 13
84 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	1-55273-1



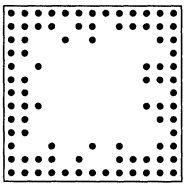
13 x 13
85 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55273-7
LIF-P	10088	.140 3.56	1-55273-9



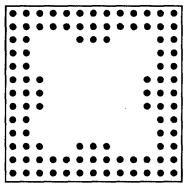
13 x 13
88 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	1-55273-0
LIF-S	10088	.110 2.79	916223-8



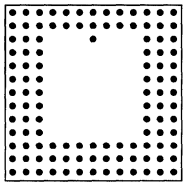
13 x 13
88 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.110 2.79	1-916223-3



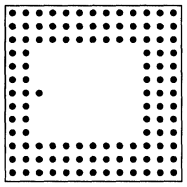
13 x 13
101 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55273-5
LIF-S	10088	.110 2.79	916223-5
ZIF	10090	.110 2.79	55283-5



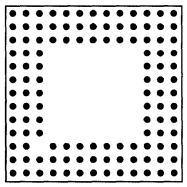
13 x 13
114 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZIF	10090	.110 2.79	55283-4



13 x 13
114 Positions
Type II
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55273-3
LIF-P	10088	.140 3.56	1-55273-6
LIF-S	10088	.110 2.79	916223-3
LIF-S[2]	10088	.110 2.79	55633-2



13 x 13
119 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	1-55273-3
ZIF	10090	.110 2.79	55283-1

Legend:
LIF-P — Low Insertion Force (Premium)
LIF-S — Low Insertion Force (Standard)
ZIF — ZIF Production
[1]Refer to these pages for product information.
[2]Optional tin-plated contacts.

PGA Sockets — Patterns
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
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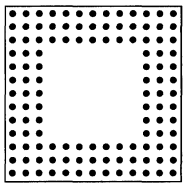
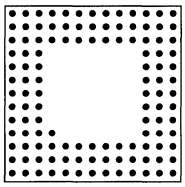
Charts contain dimensions in inches over millimeters.



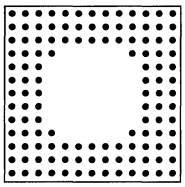
13 x 13
120 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55273-1
LIF-S	10088	.110 2.79	916223-1



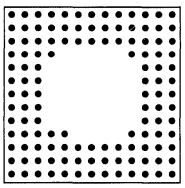
13 x 13
121 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55273-2
LIF-S	10088	.110 2.79	916223-2
LIF-S[2]	10088	.110 2.79	55633-3
LIF-S[3]	10088	.110 2.79	1-916223-6
ZIF	10090	.110 2.79	55283-2



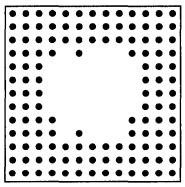
13 x 13
124 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55273-4
LIF-S	10088	.140 3.56	1-916223-5
ZIF	10090	.110 2.79	55283-6



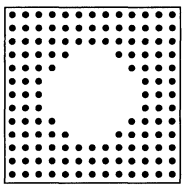
13 x 13
125 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55273-8



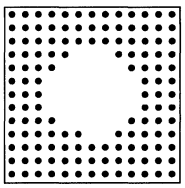
13 x 13
128 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	1-55273-8
LIF-S	10088	.110 2.79	1-916223-1



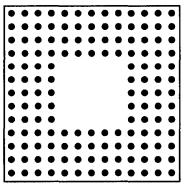
13 x 13
132 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	1-55273-4
LIF-S	10088	.110 2.79	1-916223-0



13 x 13
133 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	1-55273-2
LIF-S	10088	.110 2.79	916223-9
ZIF	10090	.110 2.79	1-55283-2



13 x 13
144 Positions
(Symmetrical)

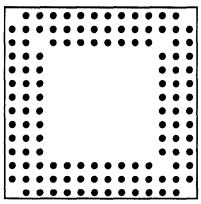
Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	1-55273-7

Legend:
LIF-P — Low Insertion Force (Premium)
LIF-S — Low Insertion Force (Standard)
ZIF — ZIF Production
[1]Refer to these pages for product information.
[2]Optional tin-plated contacts.
[3]Open center.

PGA Sockets — Patterns
(Continued)

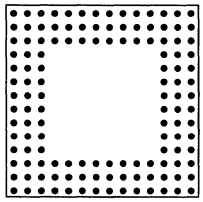
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



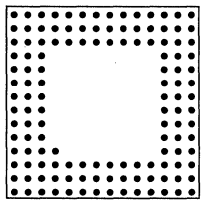
14 x 14
125 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.110 2.79	916224-5



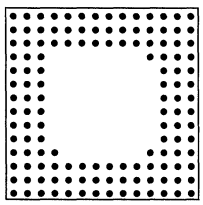
14 x 14
132 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55274-1
LIF-P	10088	.140 3.56	55274-9
LIF-S	10088	.110 2.79	916224-1
LIF-S[3]	10088	.110 2.79	916224-8
ZIF	10090	.110 2.79	55284-1



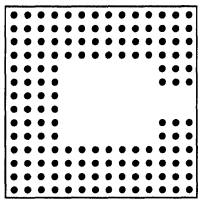
14 x 14
133 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55274-5
LIF-S	10088	.110 2.79	916224-3



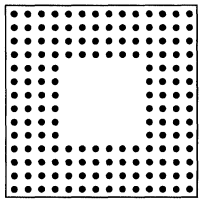
14 x 14
135 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.110 2.79	916224-4



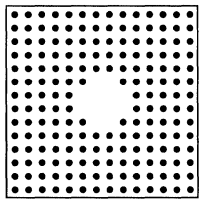
14 x 14
148 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.140 3.56	1-55274-0



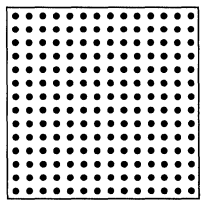
14 x 14
160 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-S[3]	10088	.110 2.79	1-916224-9



14 x 14
184 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.110 2.79	916224-6



14 x 14
196 Positions
(Symmetrical)

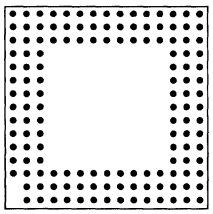
Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55274-3
LIF-S	10088	.140 3.56	916224-2
ZIF	10090	.110 2.79	1-55284-0

Legend:
LIF-P — Low Insertion Force (Premium)
LIF-S — Low Insertion Force (Standard)
ZIF — ZIF Production
[1]Refer to these pages for product information.
[2]Optional tin-plated contacts.
[3]Open center.

PGA Sockets — Patterns
(Continued)

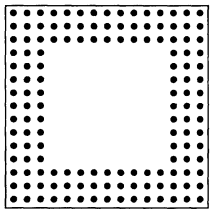
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



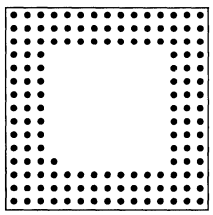
15 x 15
142 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	2-55275-2
LIF-S	10088	.110 2.79	1-916225-2
LIF-S	10088	.140 3.56	1-916225-3
LIF-S[3]	10088	.110 2.79	1-916225-5



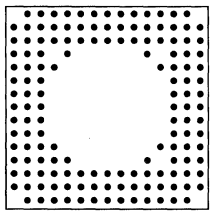
15 x 15
144 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55275-1
LIF-P	10088	.140 3.56	55275-5
LIF-S	10088	.110 2.79	916225-1
ZIF	10090	.140 3.56	55285-1



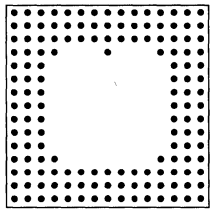
15 x 15
145 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55275-4
LIF-P	10088	.140 3.56	2-55275-0
LIF-S	10088	.110 2.79	916225-3
LIF-S	10088	.140 3.56	1-916225-4
LIF-S[2]	10088	.110 2.79	55635-2
ZIF	10090	.140 3.56	55285-2



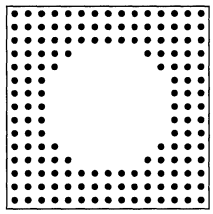
15 x 15
149 Positions
Type I
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55275-3
LIF-P	10088	.140 3.56	1-55275-3
LIF-S	10088	.110 2.79	916225-2
LIF-S[2]	10088	.110 2.79	55635-3
ZIF	10090	.140 3.56	55285-4



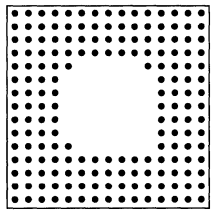
15 x 15
149 Positions
Type II
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	1-55275-1
LIF-S	10088	.110 2.79	916225-5



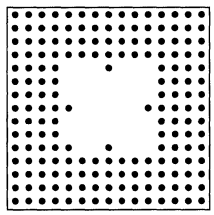
15 x 15
156 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.140 3.56	1-55275-2
LIF-S	10088	.140 3.56	1-916225-0



15 x 15
179 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55275-2
LIF-S	10088	.110 2.79	916225-8



15 x 15
181 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55275-8
LIF-P	10088	.140 3.56	55275-9
LIF-S	10088	.110 2.79	916225-4
LIF-S[2]	10088	.140 2.56	55635-4
ZIF	10090	.140 3.56	55285-3

Legend:
LIF-P — Low Insertion Force (Premium)
LIF-S — Low Insertion Force (Standard)
ZIF — ZIF Production
[1]Refer to these pages for product information.
[2]Optional tin-plated contacts.
[3]Open center.

PGA Sockets — Patterns
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
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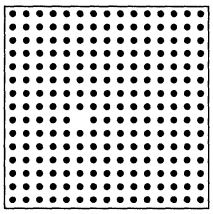
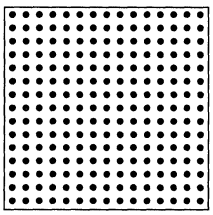
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



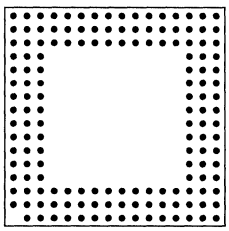
15 x 15
224 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.170 4.32	1-55275-6



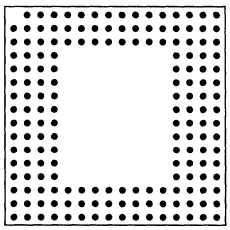
15 x 15
225 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55275-7
ZIF	10090	.140 3.56	1-55285-0



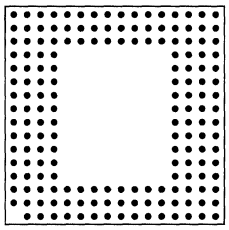
16 x 16
155 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.110 2.79	916226-3
ZIF	10090	.140 3.56	55286-4



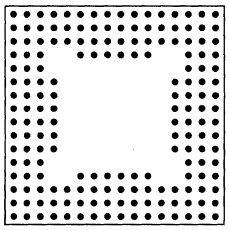
16 x 16
175 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.140 3.56	916266-1
LIF-S	10088	.110 2.79	916226-2



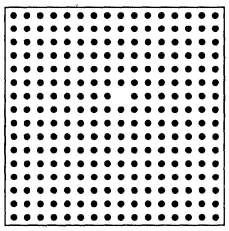
16 x 16
175 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-S[3]	10088	.110 2.79	916226-6
ZIF	10090	.140 3.56	55286-7



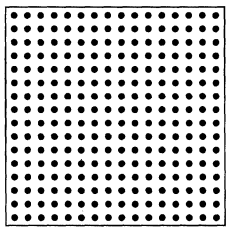
16 x 16
181 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.110 2.79	916226-4



16 x 16
255 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.140 3.56	916266-7



16 x 16
256 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZIF	10090	.140 3.56	1-55286-0

Legend:
LIF-P — Low Insertion Force (Premium)
LIF-S — Low Insertion Force (Standard)
ZIF — ZIF Production
[1]Refer to these pages for product information.
[2]Optional tin-plated contacts.
[3]Open center.

PGA Sockets — Patterns
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
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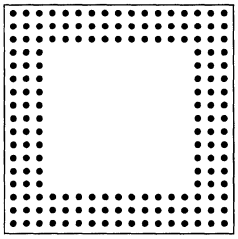
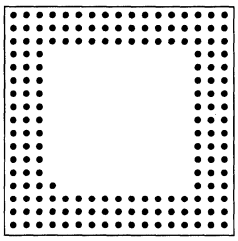
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



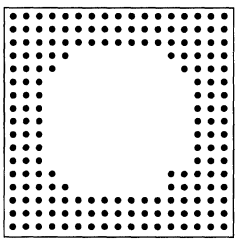
17 x 17
168 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55589-6
LIF-S	10088	.110 2.79	916227-7
LIF-S[3]	10088	.110 2.79	1-916227-2
LIF-S	10088	.140 3.56	1-916227-0
LIF-S	10088	.170 4.32	916227-8
LIF-S[2]	10088	.110 2.79	55637-2
ZIF	10090	.140 3.56	5-55287-5



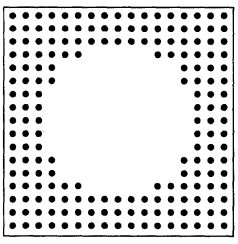
17 x 17
169 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55589-5
LIF-S	10088	.110 2.79	916227-3



17 x 17
181 Positions
(Non-Symmetrical)

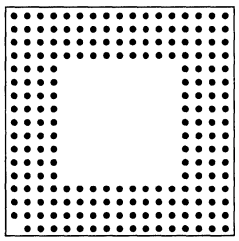
Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.140 3.56	55589-7
LIF-S	10088	.140 3.56	916227-5
ZIF[4]	10090	.140 3.56	55287-6



17 x 17
188 Positions
(Symmetrical)

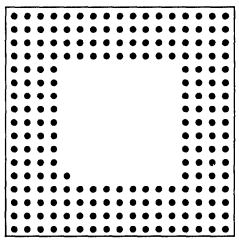
Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.110 2.79	916227-9

Legend:
LIF-P — Low Insertion Force (Premium)
LIF-S — Low Insertion Force (Standard)
ZIF — ZIF Production
[1]Refer to these pages for product information.
[2]Optional tin-plated contacts.
[3]Open center.
[4]Rotate pattern 180° for ZIF style only.



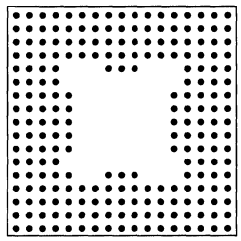
17 x 17
207 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.110 2.79	916227-6



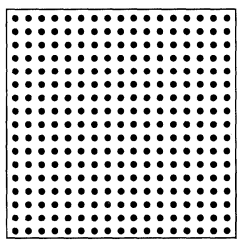
17 x 17
209 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55589-2
LIF-S	10088	.110 2.79	916227-1
LIF-S	10088	.140 3.56	1-916227-1
ZIF	10090	.140 3.56	55287-1



17 x 17
225 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.110 2.79	55589-4
LIF-S	10088	.140 3.56	1-916227-3
ZIF	10090	.140 3.56	5-55287-4



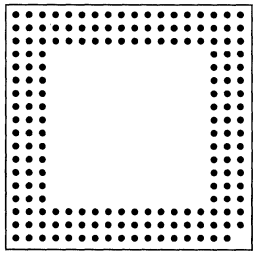
17 x 17
289 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZIF	10090	.140 3.56	1-55287-0

PGA Sockets — Patterns
(Continued)

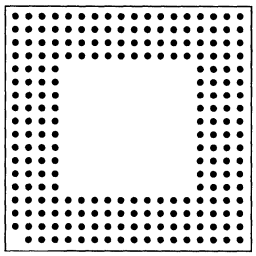
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



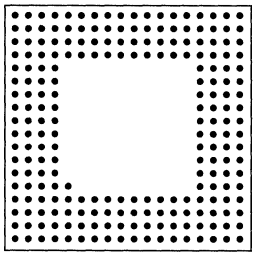
Style	Page[1]	Solder Tail Length	Socket Number
LIF-P	10088	.140 3.56	916241-1
LIF-S	10088	.140 3.56	916228-3
ZIF[4]	10090	.140 3.56	55288-5

18 x 18
179 Positions
(Non-Symmetrical)



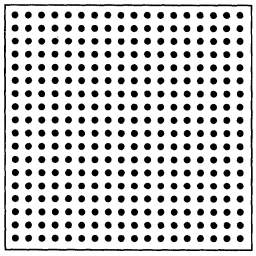
Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.140 3.56	916228-1
LIF-S	10088	.170 4.32	916228-2
ZIF	10090	.140 3.56	55288-3

18 x 18
223 Positions
(Non-Symmetrical)



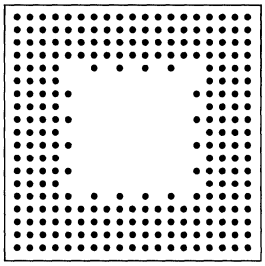
Style	Page[1]	Solder Tail Length	Socket Number
ZIF	10090	.110 2.79	55288-2

18 x 18
225 Positions
(Non-Symmetrical)



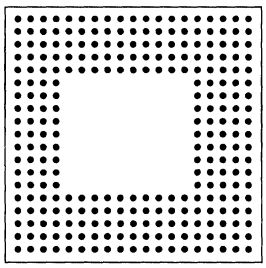
Style	Page[1]	Solder Tail Length	Socket Number
ZIF	10090	.140 3.56	1-55288-0

18 x 18
324 Positions
(Symmetrical)



19 x 19
257 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.140 3.56	916229-1
LIF-S	10088	.170 4.32	916229-2
ZIF	10090	.140 3.56	55289-1



19 x 19
271 Positions
(Non-Symmetrical)

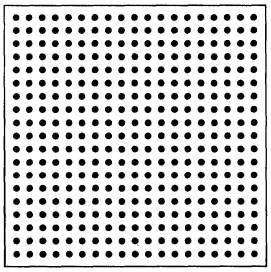
Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.110 2.79	916229-3

Legend:
LIF-P — Low Insertion Force (Premium)
LIF-S — Low Insertion Force (Standard)
ZIF — ZIF Production
[1]Refer to these pages for product information.
[4]Rotate pattern 90° clockwise for ZIF style only.

PGA Sockets — Patterns
(Continued)

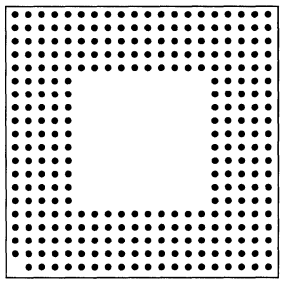
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



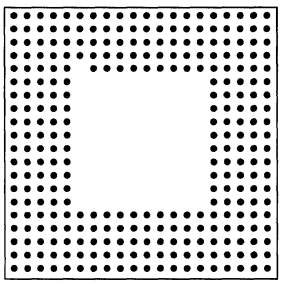
19 x 19
361 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZIF	10090	.140 3.56	1-55289-0



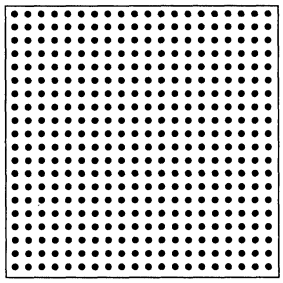
20 x 20
299 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.110 2.79	916300-1
LIF-S	10088	.140 3.56	916300-3
LIF-S	10088	.170 4.32	916300-2



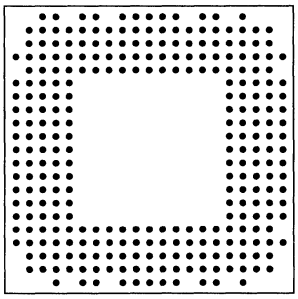
20 x 20
299 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZIF	10090	.140 3.56	5-55290-4



20 x 20
400 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZIF	10090	.140 3.56	1-55290-0



21 x 21
289 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
LIF-S	10088	.110 2.79	916301-2

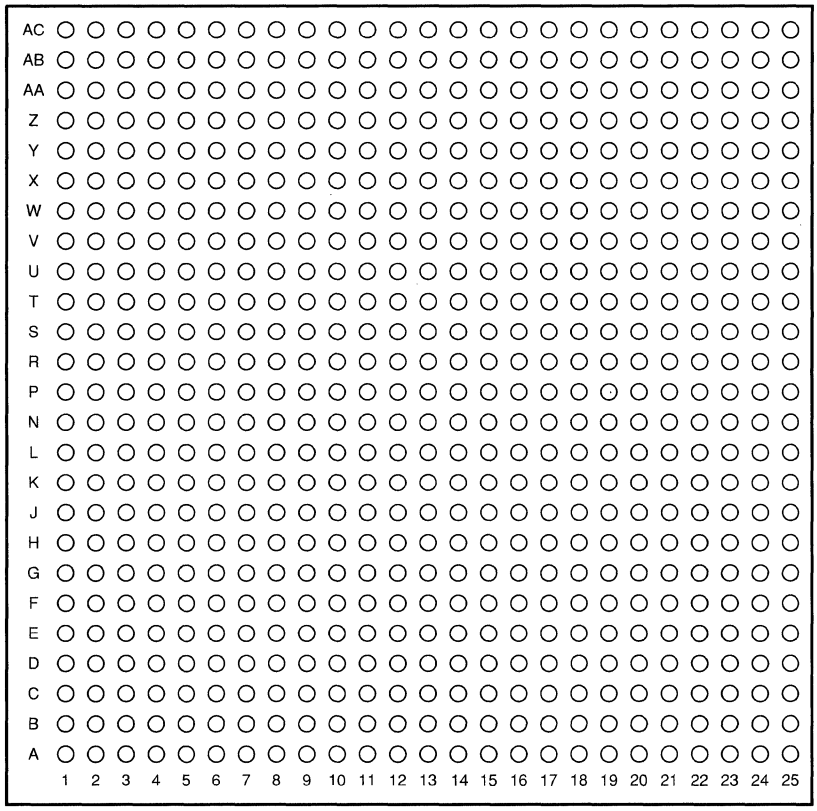
Legend:
LIF-P — Low Insertion Force (Premium)
LIF-S — Low Insertion Force (Standard)
ZIF — ZIF Production
[1]Refer to these pages for product information.

PGA Sockets — Patterns
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

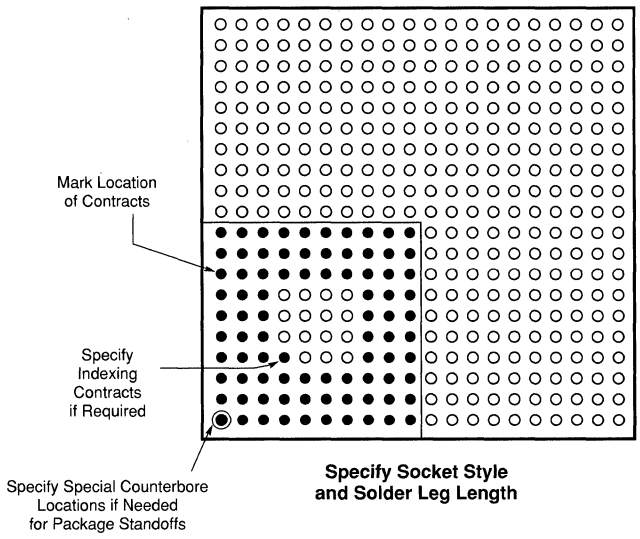
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Custom Pattern (Design Your Own)



Top View of Socket

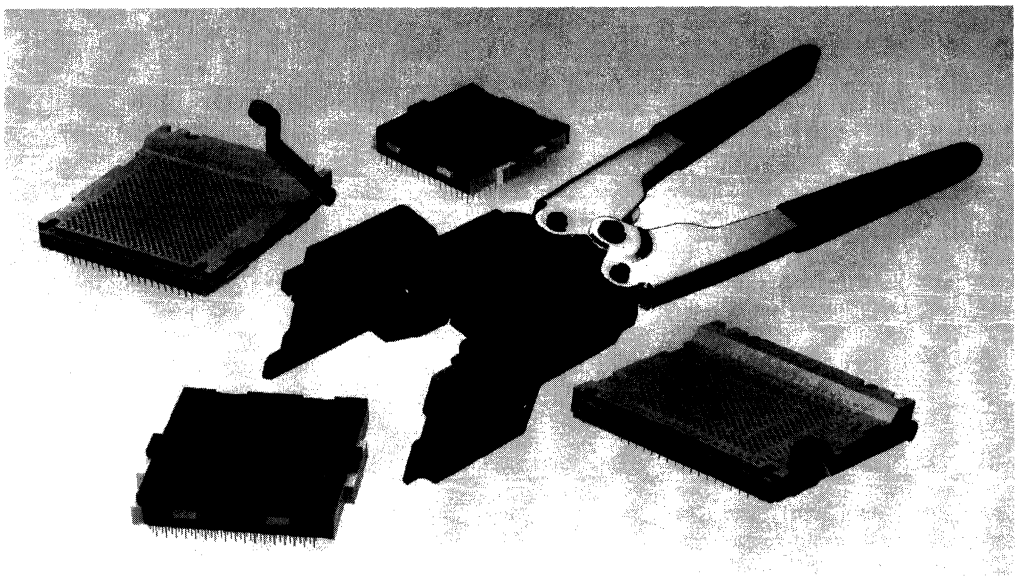
Note: .100 [2.54] Grid



Specify Socket Style and Solder Leg Length

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Tool Actuated ZIF (TAZ) and Handle Actuated ZIF (HAZ) PGA Sockets



AMP has recently introduced two new IC sockets to the PGA family: Production Tool Actuated ZIF (TAZ) and Burn-In Interstitial Handle Actuated ZIF (HAZ). Both feature zero insertion force (ZIF) mating and unmating, making them ideal when pin density is too great for easy, safe and reliable use of low-force style PGA sockets.

The Production TAZ PGA socket features a spring-loaded cover that keeps the empty socket in an open position. A hand tool is used to actuate the socket, eliminating the space normally taken up by a lever-type actuator used on conventional sockets. Available in standard .100 x .100 [2.54 x 2.54] (TAZ 100) or interstitial .050 x .100 [1.27 x. 2.54] (TAZ 50) contact patterns, the socket is suitable for robotic handling. The IC package and the pc board are protected from package to socket mating/unmating forces, since the tool action is in a horizontal direction rather than being transmitted vertically into the pc board. TAZ PGA sockets can also be made available in burn-in versions*.

The Burn-In HAZ socket is made from high temperature materials and uses the conventional handle for actuation, eliminating the need for a special tool. In this Catalog Supplement we are featuring the .050 x .100 [1.27 x 2.54] (HAZ 50) interstitial design, however, .100 x .100 [2.54 x 2.54] (HAZ 100) patterns are available (see the AMP IC Sockets Catalog 82172). HAZ PGA sockets can also be made available in production versions*.

All sockets will accept any PGA package with a pin diameter of .018±.002 [0.46±0.05] and a length of .150 to .210 [3.81 to 5.33]. Various solder leg lengths accommodate 1/16 [1.57], 3/32 [2.39] and 1/8 [3.18] inch thick pc boards.

*Contact AMP Incorporated for information.

Product Facts

TAZ Sockets

- Smaller in size than other ZIF sockets
- Adaptable to robotic handling
- Easy detection of bent IC pins
- Large funnel entry
- Normally closed contacts
- Full wiping contacts
- Spring-loaded socket cover
- Compatible hand tool

HAZ Sockets

- Convenient lever actuation with no tool required
- Easy detection of bent IC pins
- Large funnel entry
- Normally closed contacts
- Full wiping contacts

Technical Documents

Product Specifications:
(TAZ) 108-1338
(HAZ) 108-1246

Application Specification:
(TAZ) 114-1068
(HAZ) 114-1067

Tool Actuated ZIF (TAZ) PGA Sockets for Production Applications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Performance Characteristics

Current Rating:
1 ampere DC or AC rms, 60 Hz

Termination Resistance:
15 milliohms max. (Initial)

Dielectric Withstanding Voltage:
1000 VAC

Insulation Resistance:
5000 megohms min. (Initial)

Temperature Rise vs. Current:
10°C max. above ambient

Operating Temperature:
−55°C to +125°C

Pin Retention Force:
Closed Position — 14 grams min. average/contact
Open Position — 0

Durability:
50 cycles

Test Conditions

Physical Shock:
50 G's

Thermal Shock:
25 cycles between −55°C and +125°C

Humidity-Temperature Cycling:
10 cycles between 25°C and 65°C at 95% RH

Vibration:
15 G's

Materials and Finish

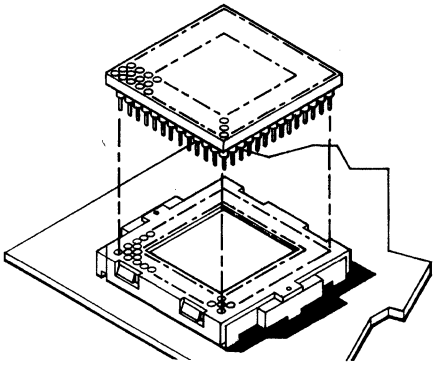
Housing — Liquid Crystal Polymer (LCP)

Contact — Beryllium copper with .000030 [0.00076] min. thick gold over .000050 [0.00127] min thick nickel plate in contact area and .000150 [0.0038] min. thick tin-lead over .000050 [0.00127] min. thick nickel plate on solder tail. Other contact platings can be made available; contact AMP Incorporated for information.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

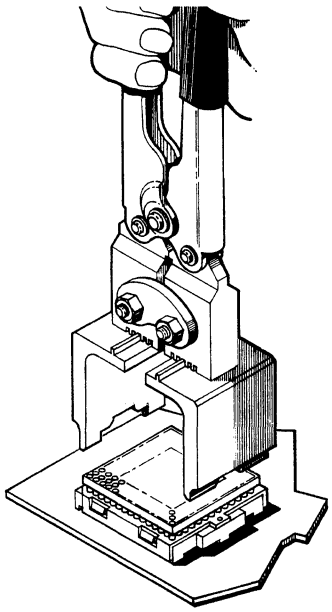
For **tooling** information, call **1-800-722-1111.**

Assembly Procedure

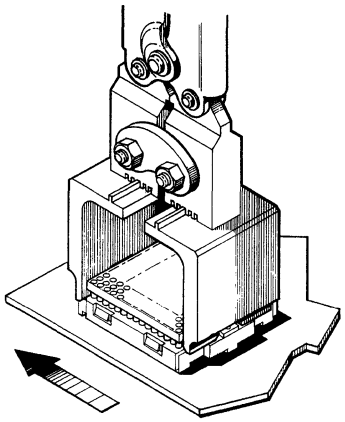


1. Loading IC package into socket.

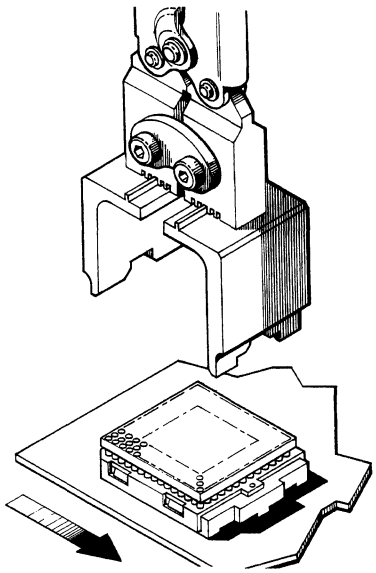
Note: Spring loaded cover aligns empty socket in open position.



2. Aligning tool with socket

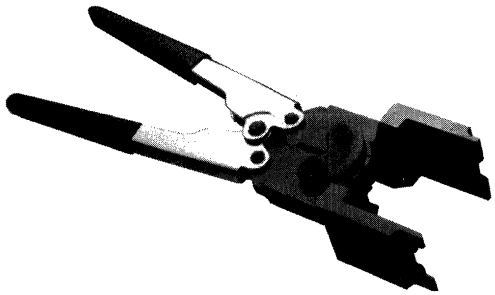


3. Cam the socket cover and the package to the closed position.



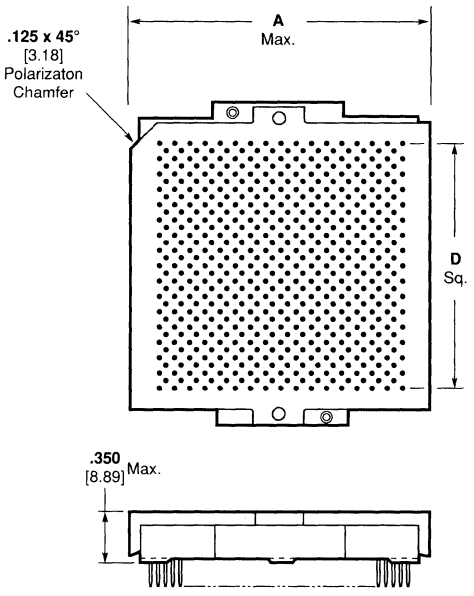
4. Rotate tool 180° and realign with socket. Cam the socket cover and the package to the open position. Remove the IC package.

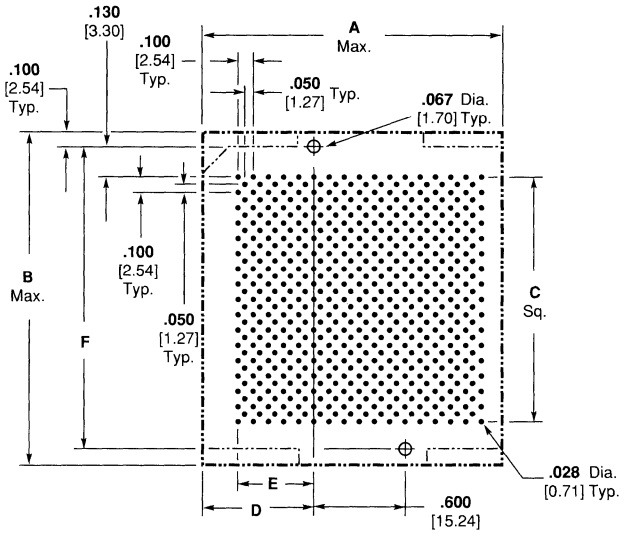
Actuation Hand Tool Part No. 854234-1



Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.





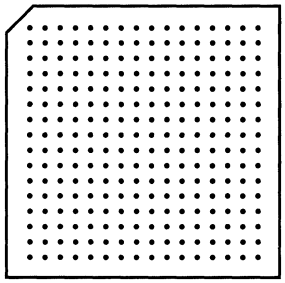
Recommended PC Board Hole Pattern

Grid Size	Dimensions						No. of Pos.	Center Line
	A	B	C	D	E	F		
16 x 16	**1.860** 47.24	**2.060** 52.32	**1.500** 38.10	**.625** 15.88	**.500** 12.70	**1.860** 47.24	481	**.050** 1.27
							256	**.100** 2.54
17 x 17	**1.860** 47.24	**2.060** 52.32	**1.600** 40.64	**.625** 15.88	**.500** 12.70	**1.860** 47.24	365	**.050** 1.27
							545	**.050** 1.27
							168	**.100** 2.54
							289	**.100** 2.54
18 x 18	**2.060** 52.32	**2.260** 57.40	**1.700** 43.18	**.725** 18.42	**.600** 15.24	**2.060** 52.32	391	**.050** 1.27
							613	**.050** 1.27
							223	**.100** 2.54
							324	**.100** 2.54
19 x 19	**2.060** 52.32	**2.260** 57.40	**1.800** 45.72	**.725** 18.42	**.600** 15.24	**2.060** 52.32	685	**.050** 1.27
							257	**.100** 2.54
							361	**.100** 2.54

Note: See pages 10106 and 10107 for patterns, solder tail lengths and part numbers.

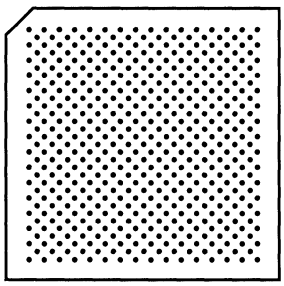
PGA Patterns for TAZ Sockets

Specifications subject to change.
For latest design specifications...
1-800-522-6752



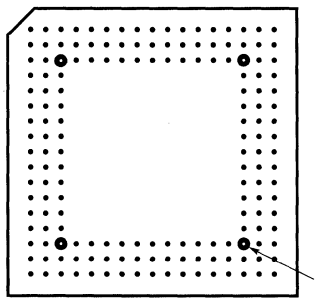
16 x 16
256 Positions

Solder Tail Length	Socket Part Number
.110 2.79	382532-3



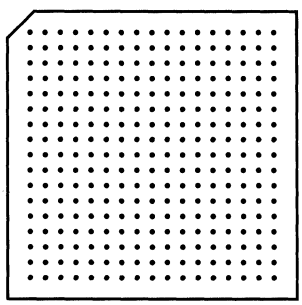
16 x 16
481 Positions

Solder Tail Length	Socket Part Number
.110 2.79	382532-2



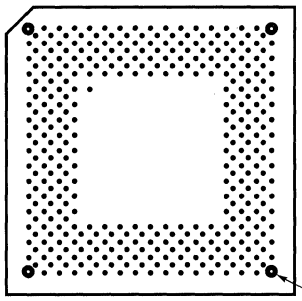
17 x 17
168 Positions

Solder Tail Length	Socket Part Number
.170 4.32	382532-5



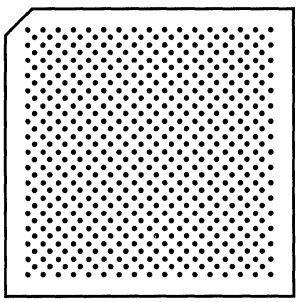
17 x 17
289 Positions

Solder Tail Length	Socket Part Number
.170 4.32	382532-4



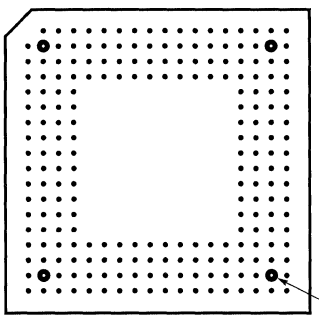
17 x 17
365 Positions

Solder Tail Length	Socket Part Number
.140 3.56	382532-6



17 x 17
545 Positions

Solder Tail Length	Socket Part Number
.110 2.79	382532-1

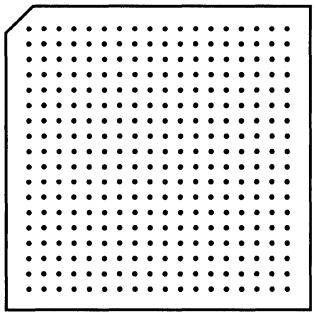


18 x 18
223 Positions

Solder Tail Length	Socket Part Number
.170 4.32	382533-5

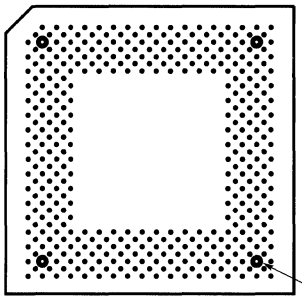
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



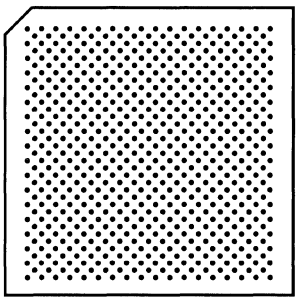
18 x 18
324 Positions

Solder Tail Length	Socket Part Number
.170 4.32	382533-3



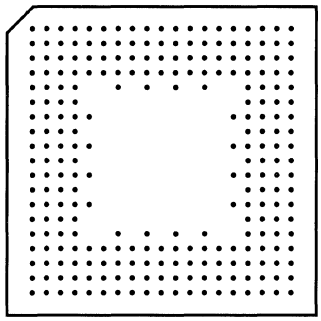
18 x 18
391 Positions

Solder Tail Length	Socket Part Number
.170 4.32	382533-4
.110 2.79	382533-6



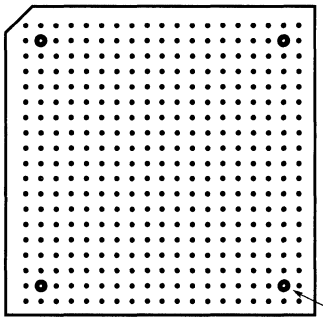
18 x 18
613 Positions

Solder Tail Length	Socket Part Number
.170 4.32	382533-2



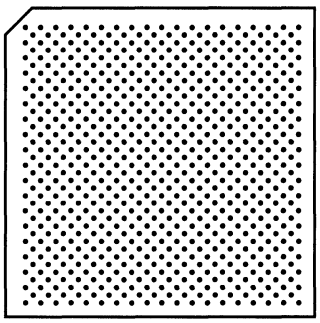
19 x 19
257 Positions

Solder Tail Length	Socket Part Number
.170 4.32	382533-8



19 x 19
361 Positions

Solder Tail Length	Socket Part Number
.170 4.32	382533-7



19 x 19
685 Positions

Solder Tail Length	Socket Part Number
.170 4.32	382533-1

Note: Other solder tail lengths can be made available. Contact AMP Incorporated for information.

Handle Actuated ZIF (HAZ) PGA Sockets for Burn-In Applications

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Performance Characteristics

Current Rating:
1 ampere DC or AC rms, 60 Hz

Termination Resistance:
15 miliohms max. (Initial)

Dielectric Withstanding Voltage:
1000 VAC

Insulation Resistance:
10,000 megohms, min. (Initial)

Temperature Rise vs. Current:
10°C max. above ambient

Operating Temperature:
−55°C to +160°C

Pin Retention Force:
Closed Position — 14 grams min. average/contact
Open Position — 0

Handle Actuating Force:
2 lbs. [8.9 N]/100 contacts max.

Durability:
1000 cycles

Test Conditions

Physical Shock:
100 G's

Thermal Shock:
25 cycles between −55°C and +160°C

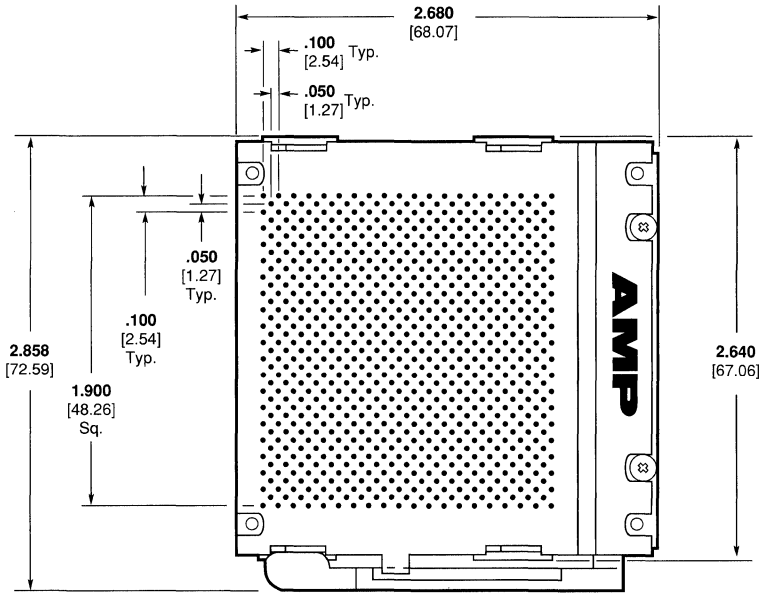
Vibration:
20 G's

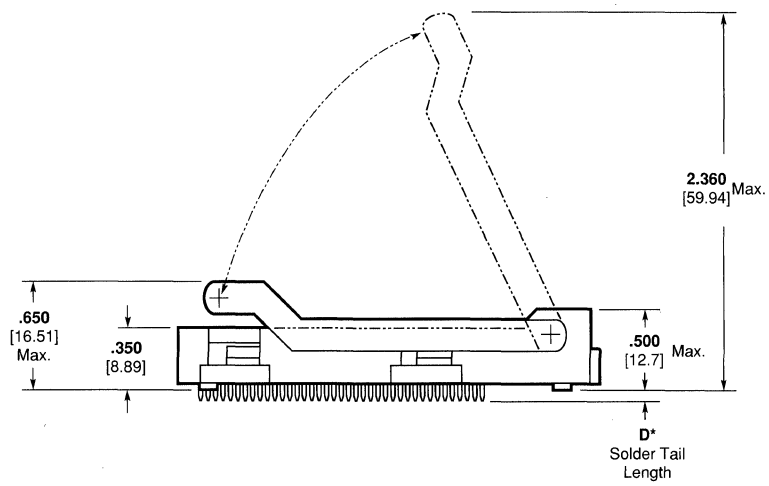
Materials and Finish

Housing and Cover — Liquid Crystal Polymer (LCP)

Contact — Beryllium Copper with .000030 [0.00076] min. thick gold over .000050 [0.00127] min. thick nickel plate in contact area and .000150 [0.0038] min. thick tin-lead over .000050 [0.00127] min. thick nickel plate on solder tail

Actuator Handle — Die cast zinc with nickel plating then overcoated with a solid film lubricant



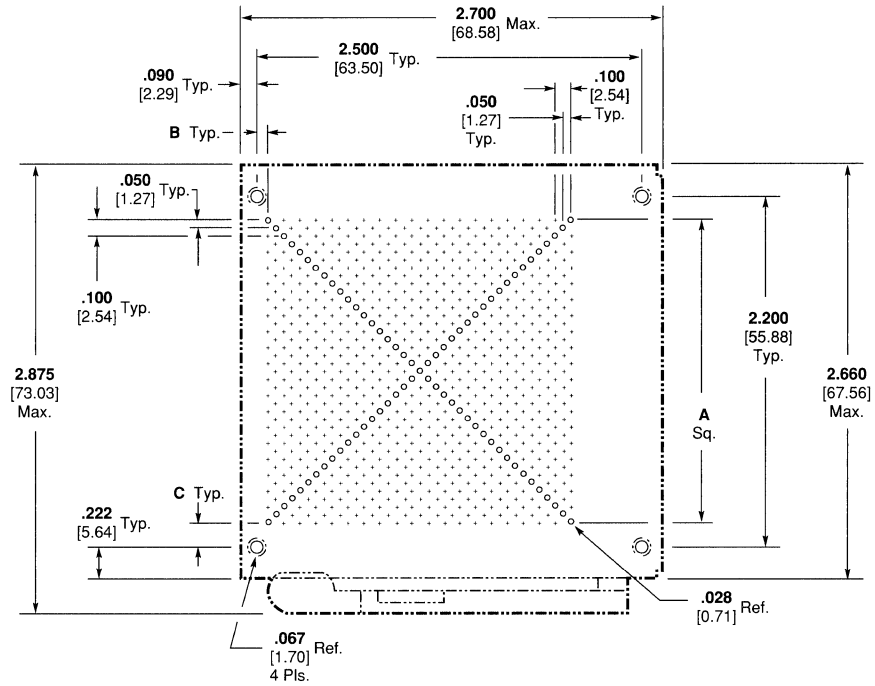


* See table on opposite page.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.



Recommended PC Board Layout Dimensions*

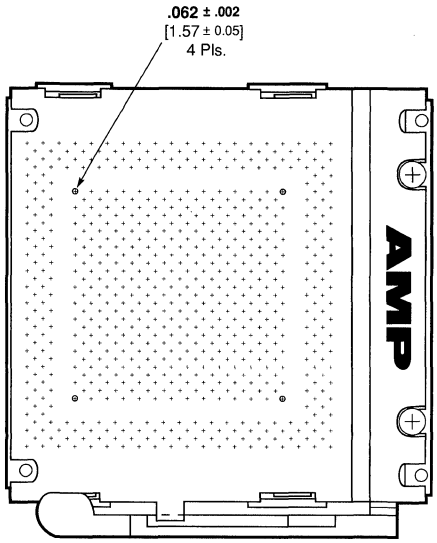
No. of Pos.	Dimensions A	B	C	D Solder Tail Length	Socket Part Number
300	**1.300** 33.02	**.341** 8.66	**.450** 11.43	**.110** 2.79	382320-8
361	**1.300** 33.02	**.341** 8.66	**.450** 11.43	**.110** 2.79	382320-3
365	**1.300** 33.02	**.341** 8.66	**.450** 11.43	**.110** 2.79	382320-7
389	**1.600** 40.64	**.191** 4.85	**.300** 7.62	**.110** 2.79	382320-4
391	**1.700** 43.18	**.241** 6.12	**.250** 6.35	**.170** 4.32	382320-2
545	**1.600** 40.64	**.191** 4.85	**.300** 7.62	**.110** 2.79	382320-5
564	**1.900** 48.26	**.041** 1.04	**.150** 3.81	**.170** 4.32	382320-6
761	**1.900** 48.26	**.041** 1.04	**.150** 3.81	**.170** 4.32	382320-1

*For specific recommended hole pattern layouts, see pages 10110-10113.

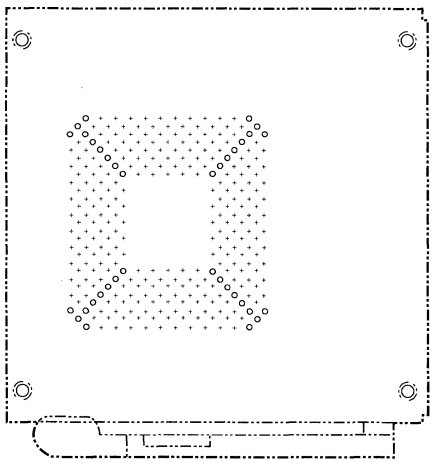
PGA Patterns for HAZ Sockets

Specifications subject to change.
For latest design specifications...
1-800-522-6752

300 Positions
Part No. 382320-8

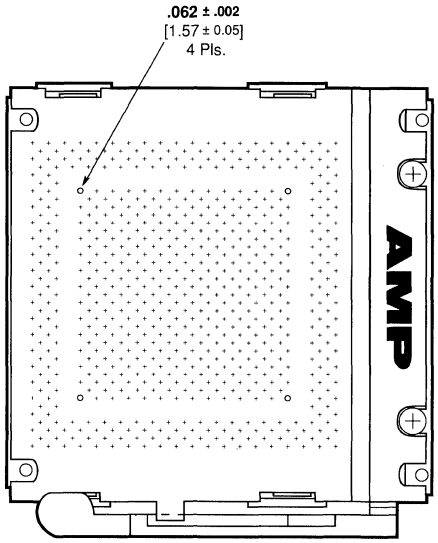


Cover Hole Pattern

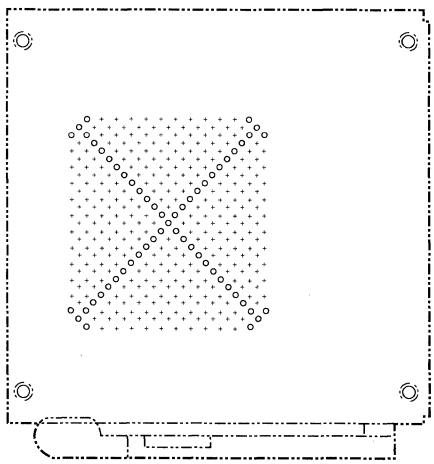


Recommended PC Board Hole Pattern*

361 Positions
Part No. 382320-3



Cover Hole Pattern

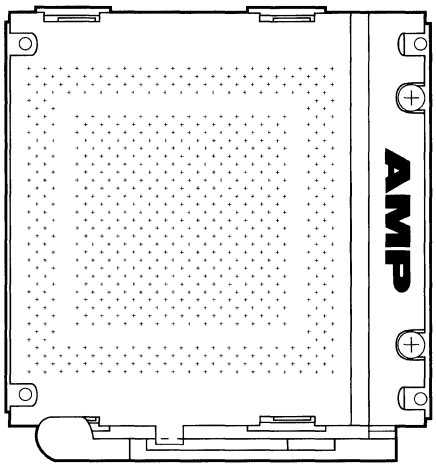


Recommended PC Board Hole Pattern*

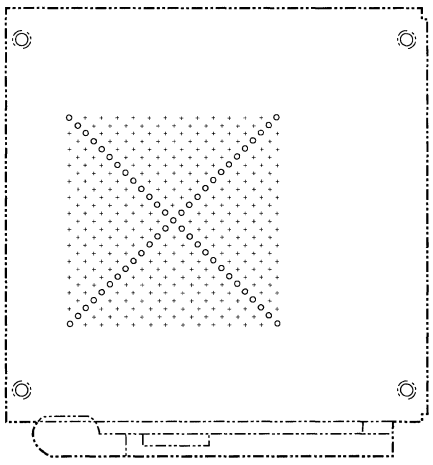
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

365 Positions
Part No. 382320-7

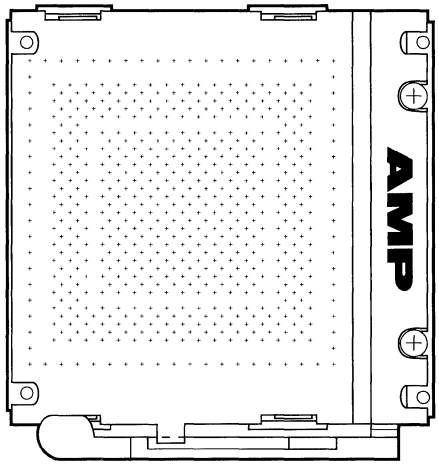


Cover Hole Pattern

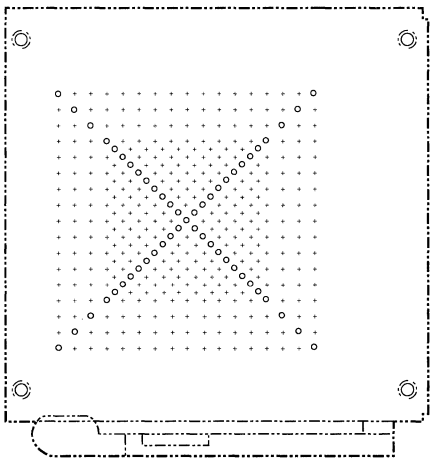


Recommended PC Board Hole Pattern*

389 Positions
Part No. 382320-4



Cover Hole Pattern



Recommended PC Board Hole Pattern*

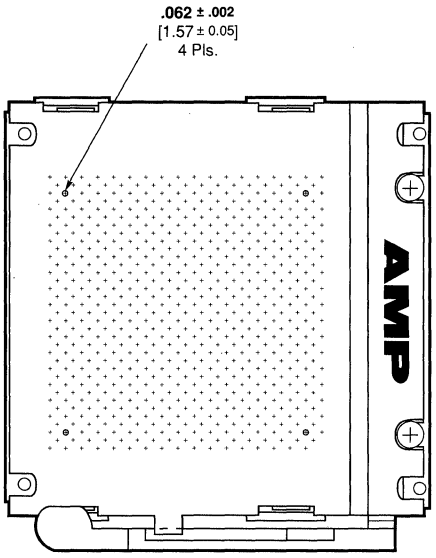
Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

* See page 10109 for tabled dimensions.

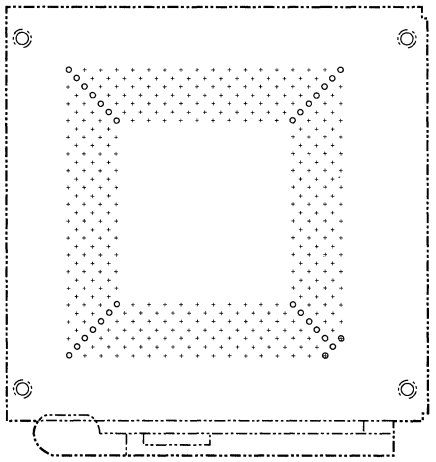
PGA Patterns For HAZ Sockets

Specifications subject to change.
For latest design specifications...
1-800-522-6752

391 Positions
Part No. 382320-2

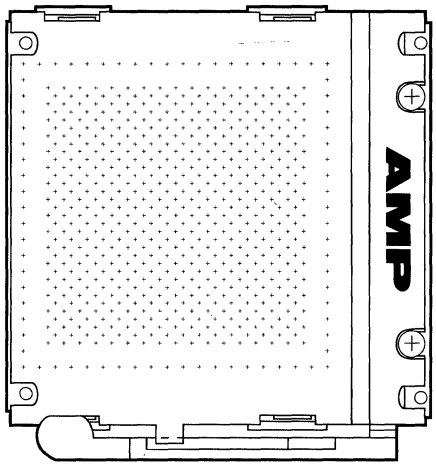


Cover Hole Pattern

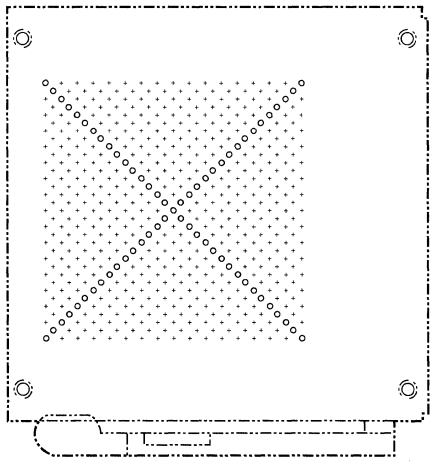


Recommended PC Board
Hole Pattern*

545 Positions
Part No. 382320-5



Cover Hole Pattern

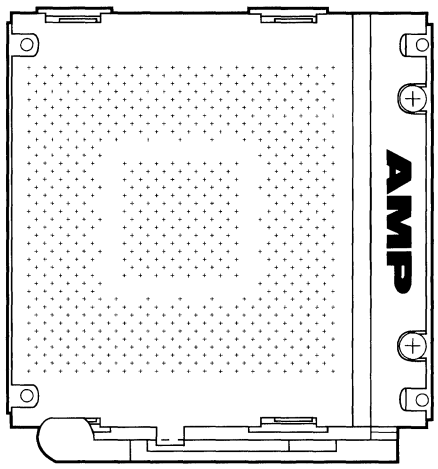


Recommended PC Board
Hole Pattern*

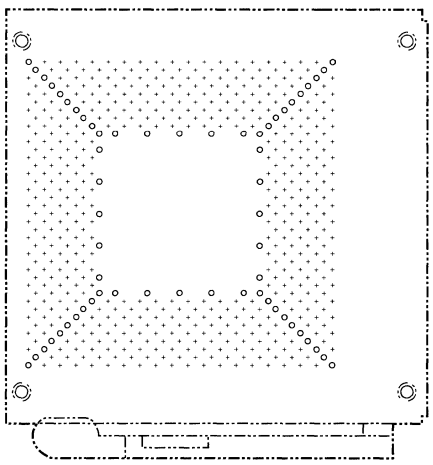
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

564 Positions
Part No. 382320-6

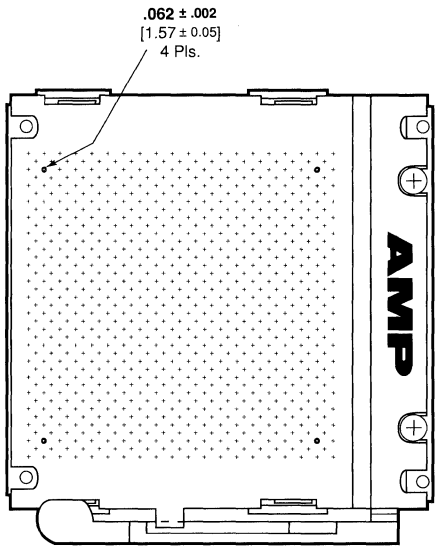


Cover Hole Pattern

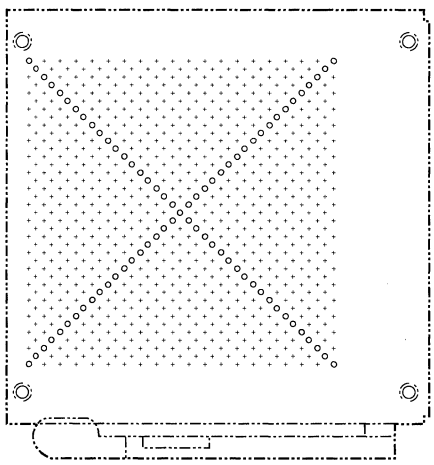


Recommended PC Board Hole Pattern*

761 Positions
Part No. 382320-1



Cover Hole Pattern



Recommended PC Board Hole Pattern*

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

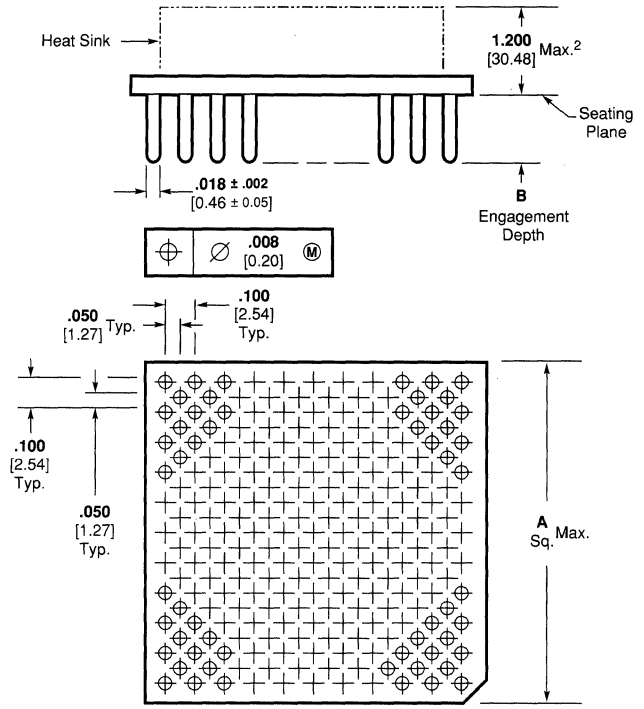
* See page 10109 for tabled dimensions.

Substrate Design Requirements

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

- Polarization can be accomplished by adding or eliminating pins
- Gold plated pins[1]
- Standoffs on substrate pins may require counterbores in socket cavities to ensure proper engagement depth
- Tips of pins must be free of excessive burrs. Tips may have sharp corners
- Interstitial or standard contact patterns can be accommodated



Grid Size	Dimensions		
	A	B	
	Max.	Min.	Max.
16x16	**1.680** 42.67	**.130** 3.30	**.210** 5.33
17x17	**1.780** 45.21	**.130** 3.30	**.210** 5.33
18x18	**1.880** 47.75	**.150** 3.81	**.210** 5.33
19x19	**1.980** 50.29	**.150** 3.81	**.210** 5.33
20x20	**2.080** 52.83	**.150** 3.81	**.210** 5.33

[1]Other platings can be accommodated. Contact AMP Incorporated for information.
[2]Applies to Tool Actuated ZIF (TAZ) sockets only.

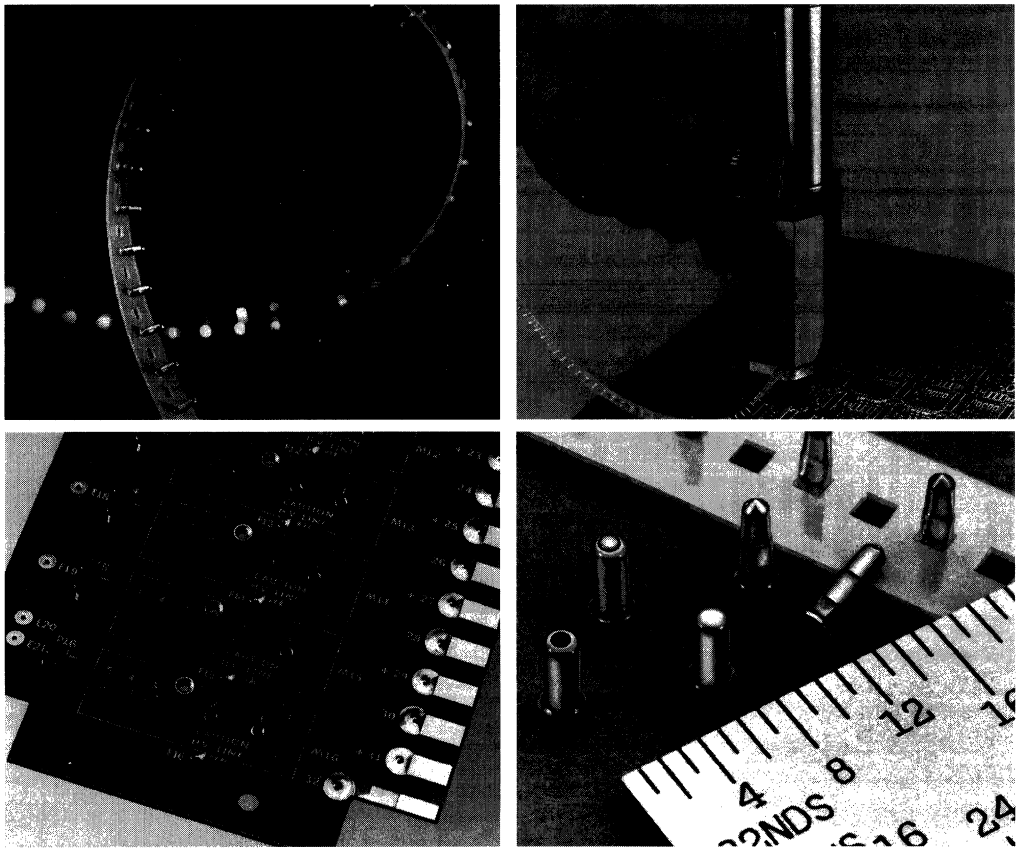
Miniature Spring Sockets (For Ultra-Low Socketing Requirements)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Product Facts

- SMT and IRR processing compatibility
- Five different hole size series (.039 to .107 [0.99 to 2.72]) available to accommodate a pin diameter range of .012 to .065 [0.30 to 1.65] and board thicknesses of .031 to .125 [0.79 to 3.18]
- Low-Profile, above-board height of .022 [0.56] allows maximum board-to-board clearance
- Small head diameters allow centerline spacing as close as .070 [1.78]
- Sockets accept round, square or rectangular leads without socket orientation
- Bellmouth design provides easy insertion of leads
- Inner helical spring assures maximum reliability
- Two basic design configurations available — Flat bottom sockets with closed, open and knockout bottom designs, and bullet nose sockets
- Hand-held, bench-mounted and computerized insertion equipment available



The AMP Miniature Spring Socket System is composed of a series of individual sockets, each utilizing a permanently secured helical spring design to accept round, square or rectangular leads interchangeably in a diameter range of .012 to .065 [0.30 to 1.65].

The unique Miniature Spring Socket design (helical spring for multiple points of contact and a crimped spring and eyelet) provides low contact resistance while most other manufacturers utilize a spring pressed into a sleeve.

This pluggable, low profile system allows tighter board stacking and increased printed circuit board clearance with pin densities up to .070 [1.78] grid spacing. Since Miniature Spring Sockets are a system, the damage to components and conductive patterns normally experienced through excessive temperatures in hand, wave, SMT or IRR soldering operations is eliminated.

The Miniature Spring Socket System is compatible with a broad range of application tooling available to support the various manufacturing levels. The tooling consists of a pneumatic hand insertion tool capable of inserting 2000 polyester tape-mounted sockets per hour, bench machines for loose piece and polyester tape products, with insertion rates up to 3000 sockets per hour, and the AMP Comp-U-Sertor, a fixed head insertion machine for high volume application of polyester tape-mounted sockets (up to 14,000 insertions per hour).

Note: Sockets on Single Row In-Line Nylon Strip can be made available.

Technical Documents

Product Specifications:
108-14008
108-14021 Polyester Strip

Application Specification:
114-26004 Polyester Strip

Instruction Sheet:
IS 2117 Knockout Plug Tool

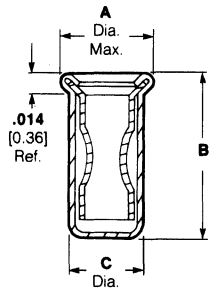
Miniature Spring Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

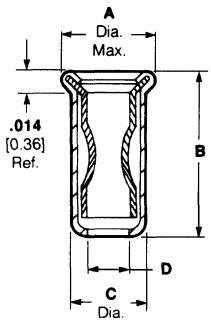
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Flat Bottom Sockets

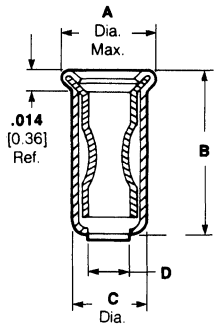
Closed Bottom



Open Bottom*



Knockout Bottom**

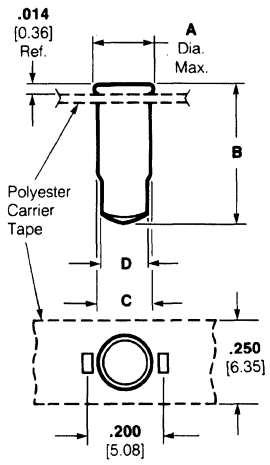


*Open Bottom Sockets can be made available.
** See page 10121 for knockout plug tool.

Material:

Spring — Beryllium copper
Contact Sleeve — Copper

Bullet Nose Sockets (Loose Piece and Tape Mounted)



Series I Sockets — For .012 – .021 [0.30 – 0.53] Round and .009 – .015 [0.23 – 0.38] Square Leads[3]

Flat Bottom — Hole Size: $.041^{\pm.002}$ [$1.04^{\pm0.05}$] for Semi-Automatic Insertion
$.042^{\pm.002}$ [$1.07^{\pm0.05}$] for Hand Insertion

Pin Dia. Range	Dimensions				Finish		Part Numbers	
	A	B	C	D	Spring	Sleeve	Closed Bottom	Knockout Bottom
.013 – .020	**.059**	**.142**	**.038**	**.023**	Gold[1]	Gold[2]	2-330808-8	3-330808-8
0.33 – 0.51	1.50	3.61	0.97	0.58	Gold[1]	Tin	6-330808-5	5-330808-3
					Tin	Tin	2-330808-7	3-330808-7
.013 – .020	**.059**	**.178**	**.039**	**.025**	Tin	Tin	1-332095-2	—
0.33 – 0.51	1.50	4.52	0.99	0.64	Gold[1]	Tin	2-332095-4	1-332095-9
					Gold[1]	Gold[2]	2-332095-1	2-332095-2

Bullet Nose — Hole Size: $.042^{\pm.003}$ [$1.07^{\pm0.08}$] for Semi-Automatic/Automatic Insertion
$.043^{\pm.002}$ [$1.09^{\pm0.05}$] for Hand Insertion

Pin Dia. Range	Dimensions				Finish		Part Numbers		
	A	B	C	D	Spring	Sleeve	Loose Piece	Polyester Carrier Tape	
								Without Sealant 50,000/Reel	With Sealant 50,000/Reel
.012 – .021	**.066**	**.184**	**.042**	**.038**	Gold[1]	Tin	645946-2	645950-2	—
0.30 – 0.53	1.67	4.64	1.07	0.97	Tin	Tin	—	—	645949-1
.015 – .021	**.066**	**.158**	**.042**	**.038**	Gold[1]	Tin	645945-2	—	645947-2
0.38 – 0.53	1.67	4.01	1.07	0.97	Tin	Tin	645945-1	645948-1	645947-1

[1].000030 [0.00076] gold plating.
[2]Gold flash.
[3]To calculate diameter required for rectangular or square leads: Pin Diameter = $\left[\sqrt{(\text{Lead Width})^2 + (\text{Lead Thickness})^2}\right] - .003$.

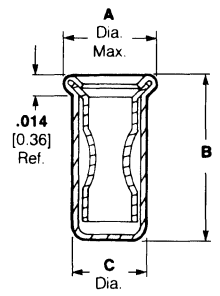
Miniature Spring Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

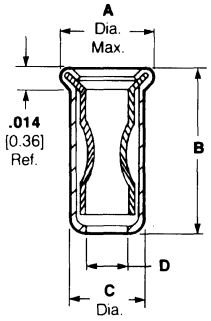
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Flat Bottom Sockets

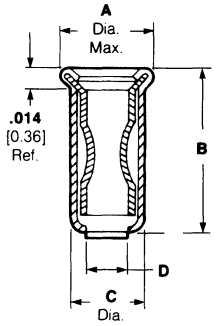
Closed Bottom



Open Bottom*



Knockout Bottom**

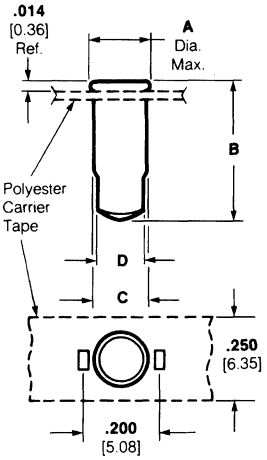


*Open Bottom Sockets can be made available.
** See page 10121 for knockout plug tool.

Material:

Spring — Beryllium copper
Contact Sleeve — Copper

Bullet Nose Sockets (Loose Piece and Tape Mounted)



Series II Sockets — For .014 – .026 [0.36 – 0.66] Round and .010 – .018 [0.25 – 0.46] Square Leads[3]

Flat Bottom — Hole Size: $.052^{+.003}_{-.002}$ [$1.32^{+0.08}_{-0.05}$] for Semi-Automatic/Automatic Insertion
$.054^{\pm.002}$[$1.37^{\pm0.05}$] for Hand Insertion

Pin Dia. Range	Dimensions				Finish		Part Numbers	
	A	B	C	D	Spring	Sleeve	Closed Bottom	Knockout Bottom
.018 – .021 0.46 – 0.53	**.070** 1.78	**.138** 3.51	**.050** 1.27	**.030** 0.75	Gold[1]	Gold[2]	2-331272-2	3-331272-0
					Gold[1]	Tin	2-331272-3	3-331272-1
					Tin	Tin	2-331272-1	—
.014 – .026 0.36 – 0.66	**.070** 1.78	**.260** 6.60	**.050** 1.27	**.030** 0.76	Gold[1]	Gold[2]	50863-4	—
					Gold[1]	Tin	50863-5	50863-3
					Tin	Tin	50863-8	50863-7
.022 – .025 0.56 – 0.64	**.070** 1.78	**.138** 3.51	**.050** 1.27	**.030** 0.76	Gold[1]	Gold[2]	2-331272-6	3-331272-4
					Gold[1]	Tin	2-331272-7	3-331272-5
					Tin	Tin	2-331272-5	3-331272-3
.014 – .026 0.36 – 0.66	**.070** 1.78	**.178** 4.52	**.050** 1.27	**.030** 0.76	Gold[1]	Gold[2]	50462-6	—
					Gold[1]	Tin	50462-8	50462-5
					Tin	Tin	50462-7	50462-4

Bullet Nose — Hole Size: $.052^{\pm.003}$ [$1.32^{\pm0.08}$] for Semi-Automatic/Automatic Insertion
$.053^{\pm.003}$ [$1.35^{\pm0.08}$] for Hand Insertion

Pin Dia. Range	Dimensions				Finish		Part Numbers		
	A	B	C	D	Spring	Sleeve	Loose Piece	Polyester Carrier Tape	
								Without Sealant 50,000/Reel	With Sealant 50,000/Reel
.014 – .026 0.35 – 0.66	**.075** 1.91	**.184** 4.67	**.051** 1.30	**.047** 1.19	Gold[1]	Tin	645952-2	—	645955-2
					Tin	Tin	645952-1	645956-1	645955-1
.020 – .026 0.51 – 0.66	**.075** 1.91	**.158** 4.01	**.048** 1.22	**.047** 1.19	Gold[1]	Tin	645951-2	645954-2	645953-2
					Tin	Tin	645951-1	645954-1	645953-1

[1].000030 [0.00076] gold plating.
[2]Gold flash.
[3]To calculate diameter required for rectangular or square leads: Pin Diameter = $\left[\sqrt{(\text{Lead Width})^2 + (\text{Lead Thickness})^2}\right]$ – .003.

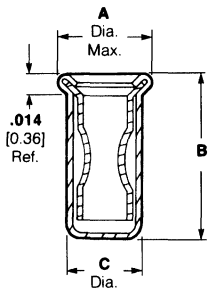
Miniature Spring Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

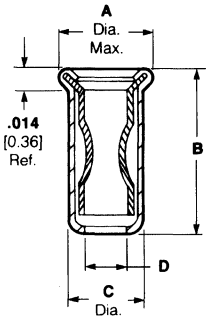
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Flat Bottom Sockets

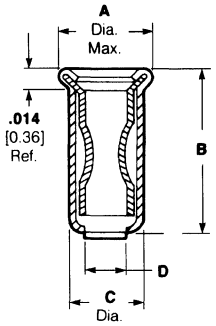
Closed Bottom



Open Bottom*



Knockout Bottom**

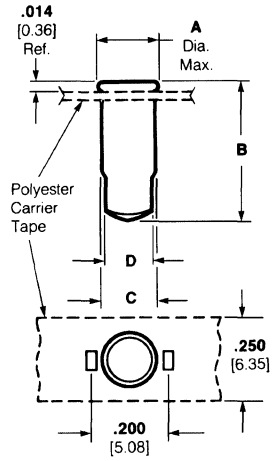


*Open Bottom Sockets can be made available.
** See page 10121 for knockout plug tool.

Material:

Spring — Beryllium copper
Contact Sleeve — Copper

Bullet Nose Sockets (Loose Piece and Tape Mounted)



Series III Sockets — For .026 – .033 [0.66 – 0.53] Round and .025 [0.64] Square Leads[3]

Flat Bottom — Hole Size: .059 – .062 [1.50 – 1.57] for Semi-Automatic/Automatic Insertion
.065 ±.002 [1.65 ±0.05] for Hand Insertion

Pin Dia. Range	Dimensions				Finish		Part Numbers	
	A	B	C	D	Spring	Sleeve	Closed Bottom	Knockout Bottom
.026 – .029 0.66 – 0.74	**.080** 2.03	**.138** 3.51	**.061** 1.55	**.037** 0.94	Gold[1]	Gold[2]	1-331677-1	3-331677-0
					Gold[1]	Tin	3-331677-8	3-331677-2
					Tin	Tin	1-331677-0	—
.026 – .033 0.66 – 0.84	**.080** 2.03	**.257** 6.53	**.061** 1.55	**.037** 0.94	Gold[1]	Gold[2]	50864	—
					Gold[1]	Tin	50864-1	50864-3
					Tin	Tin	50864-6	50864-7
.030 – .033 0.76 – 0.84	**.080** 2.03	**.138** 3.51	**.061** 1.55	**.037** 0.94	Gold[1]	Gold[2]	1-331677-4	2-331677-9
					Gold[1]	Tin	1-331677-8	3-331677-4
					Tin	Tin	1-331677-3	—

Bullet Nose — Hole Size: .063 ±.003 [1.60 ±0.08] for Semi-Automatic/Automatic Insertion
.064 ±.002 [1.63 ±0.05] for Hand Insertion

Pin Dia. Range	Dimensions				Finish		Part Numbers		
	A	B	C	D	Spring	Sleeve	Loose Piece	Polyester Carrier Tape	
								Without Sealant 10,000/Reel	With Sealant 10,000/Reel
.028 – .033 0.71 – 0.84	**.080** 2.03	**.290** 7.37	**.061** 1.55	**.057** 1.45	Gold[1]	Tin	—	—	1-645986-2
					Tin	Tin	—	1-645990-1	1-645986-2

[1].000030 [0.00076] gold plating.
[2]Gold flash.
[3]To calculate diameter required for rectangular or square leads: Pin Diameter = $\left[\sqrt{(\text{Lead Width})^2 + (\text{Lead Thickness})^2}\right] - .003$.

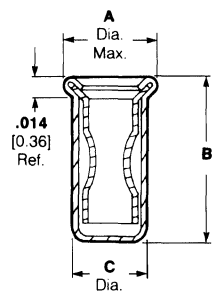
Miniature Spring Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

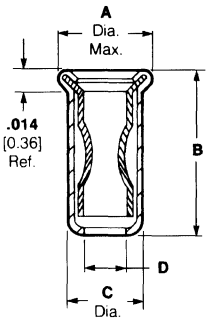
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Flat Bottom Sockets

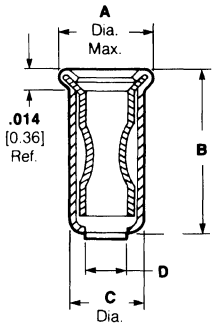
Closed Bottom



Open Bottom*



Knockout Bottom**

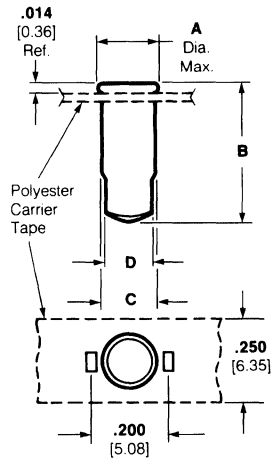


*Open Bottom Sockets can be made available.
** See page 10121 for knockout plug tool.

Material:

Spring — Beryllium copper
Contact Sleeve — Copper

Bullet Nose Sockets (Loose Piece and Tape Mounted)



Series IV Sockets — For .034 – .041 [0.86 – 1.04] Round and .026 – .031 [0.66 – 0.79] Square Leads[3]

Flat Bottom — Hole Size: $.072^{+.004}_{-.003}$ $[1.83^{+0.10}_{-0.08}]$ for Semi-Automatic Insertion
$.072^{\pm.004}[1.83^{\pm0.10}]$ for Hand Insertion

Pin Dia. Range	Dimensions				Finish		Part Numbers	
	A	B	C	D	Spring	Sleeve	Closed Bottom	Knockout Bottom
.034 – .041 0.86 – 1.04	**.089** 2.26	**.260** 6.60	**.070** 1.78	**.046** 1.17	Gold[1]	Gold[2]	50865	50865-2
					Gold[1]	Tin	50865-5	50865-1
					Tin	Tin	50865-8	50865-7
.037 – .040 0.94 – 1.02	**.089** 2.26	**.143** 3.63	**.070** 1.78	**.045** 1.14	Gold[1]	Gold[2]	1-332070-1	1-332070-7
					Gold[1]	Tin	2-332070-3	3-332070-5
					Tin	Tin	2-332070-2	3-332070-4

Bullet Nose — Hole Size: $.072^{\pm.003}$ $[1.83^{\pm0.08}]$ for Semi-Automatic/Automatic Insertion
Hand Insertion not recommended

Pin Dia. Range	Dimensions				Finish		Part Numbers		
	A	B	C	D	Spring	Sleeve	Loose Piece	Polyester Carrier Tape	
								Without Sealant 10,000/Reel	With Sealant 10,000/Reel
.037 – .041 0.94 – 1.04	**.089** 2.26	**.260** 6.60	**.074** 1.88	**.066** 1.68	Gold[1]	Tin	645500-1	1-645502-1	1-645501-1
					Tin	Tin	—	—	1-645501-2

[1].000030 [0.00076] gold plating.
[2]Gold flash.
[3]To calculate diameter required for rectangular or square leads: Pin Diameter = $\left[\sqrt{(\text{Lead Width})^2 + (\text{Lead Thickness})^2}\right] - .003$.

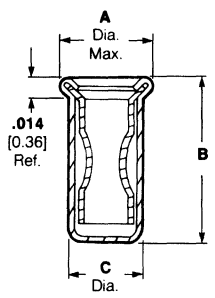
Miniature Spring Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

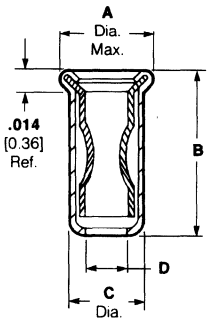
Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Flat Bottom Sockets

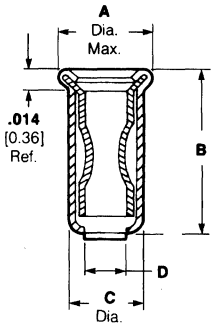
Closed Bottom



Open Bottom



Knockout Bottom*

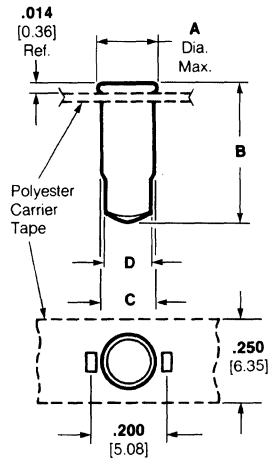


*Knockout Bottom Sockets can be made available.
See page 10121 for knockout plug tool.

Material:

Spring — Beryllium copper
Contact Sleeve — Copper

Bullet Nose Sockets (Loose Piece and Tape Mounted)



Series V Sockets — For .042 – .065 [1.07 – 1.65] Round and .032 – .048 [0.81 – 1.22] Square Leads[3]

Flat Bottom — Hole Size: $.101^{\pm.003}$ [$2.57^{\pm0.08}$] for Semi-Automatic Insertion
$.105^{\pm.002}$[$2.67^{\pm0.05}$] for Hand Insertion

Pin Dia. Range	Dimensions				Finish		Part Numbers	
	A	B	C	D	Spring	Sleeve	Closed Bottom	Open Bottom
.042 – .049 1.07 – 1.24	**.118** 3.00	**.288** 7.31	**.101** 2.57	**.068** 1.73	Gold[1]	Gold[2]	50871-4	50871
					Gold[1]	Tin	50871-5	50871-1
					Tin	Tin	50871-8	50871-6
.050 – .057 1.27 – 1.45	**.118** 3.00	**.288** 7.31	**.101** 2.57	**.068** 1.73	Gold[1]	Gold[2]	1-50871-3	—
					Gold[1]	Tin	1-50871-4	1-50871-0
					Tin	Tin	1-50871-7	—
.056 – .065 1.42 – 1.65	**.118** 3.00	**.288** 7.31	**.101** 2.57	**.068** 1.73	Gold[1]	Gold[2]	2-50871-2	1-50871-8
					Gold[1]	Tin	2-50871-3	1-50871-9
					Tin	Tin	2-50871-6	2-50871-4

Bullet Nose — Hole Size: $.104^{\pm.003}$ [$2.64^{\pm0.08}$] for Semi-Automatic/Automatic Insertion
$.105^{\pm.002}$ [$2.67^{\pm0.05}$] for Hand Insertion

Pin Dia. Range	Dimensions				Finish		Part Numbers		
	A	B	C	D	Spring	Sleeve	Loose Piece	Polyester Carrier Tape	
								Without Sealant 10,000/Reel	With Sealant 10,000/Reel
.042 – .049 1.07 – 1.24	**.120** 3.05	**.308** 7.82	**.100** 2.54	—	Gold[2]	Tin	645980-2	1-645979-2	1-645991-2
					Tin	Tin	645980-1	—	1-645991-1

[1].000030 [0.00076] gold plating.
[2]Gold flash.
[3]To calculate diameter required for rectangular or square leads: Pin Diameter = $\left[\sqrt{(\text{Lead Width})^2 + (\text{Lead Thickness})^2}\right] - .003$.

Miniature Spring Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Hand Insertion Tooling for Loose Piece Flat Bottom or Bullet Nose Sockets

Prototype Insertion Kit No. 382337-1

AMP's prototype kit simplifies socket selection and helps solve design problems by providing an assortment of Miniature Spring Sockets in 5 sizes. The sockets fit plated-through hole sizes from .043 to .105 [1.09 to 2.67] and accept lead sizes from .012 to .030 [0.30 to 0.76], both round and rectangular shapes. The kit contains sockets, orientation trays, insertion tool and instructions.

Miniature Spring Socket Insertion Tool No. 382378-1

This tool can be used for low cost prototype and small volume operations.

Hand Insertion Tooling for Bullet Nose Sockets on Polyester Carrier Tape

AMP pneumatic hand tools are capable of inserting up to 2000 bullet nose miniature spring sockets per hour.

Socket Series	Pneumatic Hand Tool Number
1	59940-1
2	59940-2
3	59940-3
4	59940-4
5	59940-5

Knockout Plug Tool Part No. 69728

Socket Series	Tip Number
1, 2	69728
3	69728-1
4	69728-2
5	69728-3

This tool is used to remove the presheared bottom from flat bottom sockets (knockout bottom design) for feedthrough applications.

For **tooling** information, call **1-800-722-1111**.

Miniature Spring Sockets
(Continued)

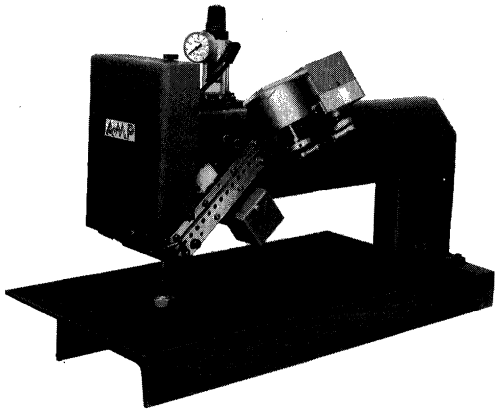
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Semi-Automatic Insertion Equipment

Insertion Machine for Loose Piece Flat Bottom or Bullet Nose Sockets

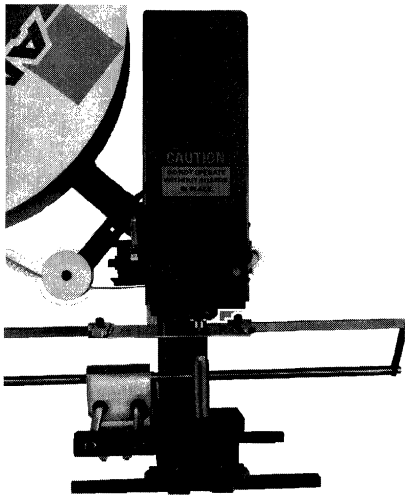
This bench-mounted, semi-automatic machine is capable of inserting 3000 loose piece sockets per hour into panels with predrilled holes of .038 to .101 [0.97 to 2.56] in diameter and of virtually any pattern configuration. The machine can accommodate board thicknesses from .031 to .125 [0.79 to 3.18].



Socket Series	Machine Number
1	682127-2
2	682127-3
3	682127-4
4	682127-5
5	682127-6

Insertion Machine for Bullet Nose Sockets on Polyester Tape

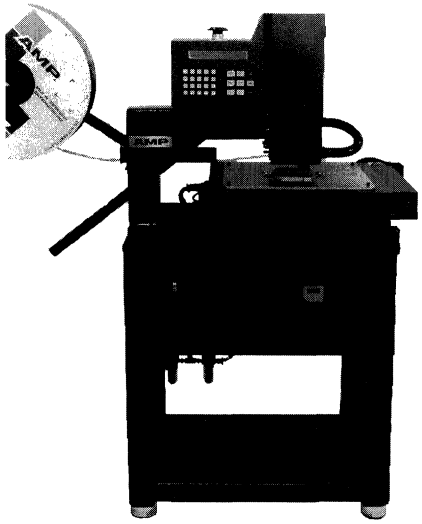
The U-Sertor semi-automatic bench machine is capable of inserting up to 3000 bullet nose sockets per hour.



Socket Series	Machine Number
1	817917-1
2	817917-2
3	817917-3
4	817917-4
5	817917-5

Comp-U-Sertor Insertion Equipment for Bullet Nose Sockets on Polyester Tape

The AMP Comp-U-Sertor machine is a computer controlled x-y positioner designed to accurately and consistently position pc boards. The Comp-U-Sertor utilizes the AMP Fixed Head Insertion System (FHIS). It is capable of inserting up to 14,000 sockets per hour.



Part No. (Base) 816100-7, -9

Insertion Heads

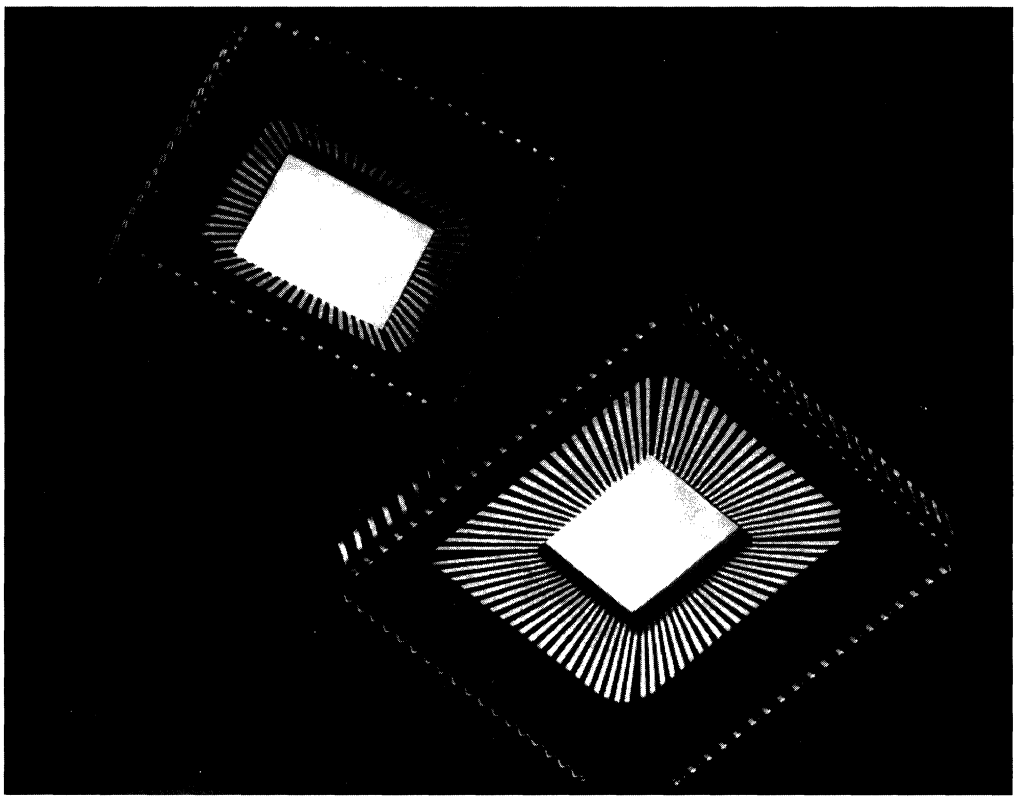
Socket Series	Head Number
1	813960-1
2	813960-2
3	813960-3
4	813960-4
5	813960-5

For **tooling** information, call **1-800-722-1111.**

Premolded Plastic Chip Carrier

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



The AMP Premolded Plastic Chip Carrier is a user oriented package that requires only assembly and closure to form the final product. AMP Chip Carriers can be designed into several forms including the popular quad package which has been tooled to the JEDEC format. With leads on .050 [1.27] centerlines, this package is available in 28, 44, 52, 68 and 84 positions.

A "cavity-down" mounting configuration positions the chip's active surface facing the printed circuit board. The back side of the chip, which is the primary heat transfer surface, is attached to the substrate (metal or ceramic) for low thermal resistance and forced air cooling, with heat sinks if desired. "Cavity up" configurations, which are especially suited to EPROM packages, are also available.

The compliant lead compensates for deformation caused by thermal mismatch of the chip carrier mounting substrate. In addition, leads have low mass and good tolerance to stress in high vibration environments, and they offer low inductance (1.4 nH).

The chip cavity facilitates encapsulation with silicone compounds which remain soft after full polymerization. This insures internal compliance and minimal stress build-up inside the package due to the difference in thermal expansion of the various elements. The silicone compound also forms a chemical bond to the surface of the IC chip to prevent corrosion.

With only simple tooling adaptation, these plastic chip carriers can be processed using existing commercial die bond, wire bond, encapsulation or cover attachment equipment.

AMP Premolded Plastic Chip Carriers are a particularly important form of premolded package. They provide very high density packaging of LSI circuits and lend themselves to efficient manufacturing, offering fundamental solutions to major problems in the field of microelectronic packaging.

Note: See page 10070 for compatible chip carrier sockets.

Product Facts

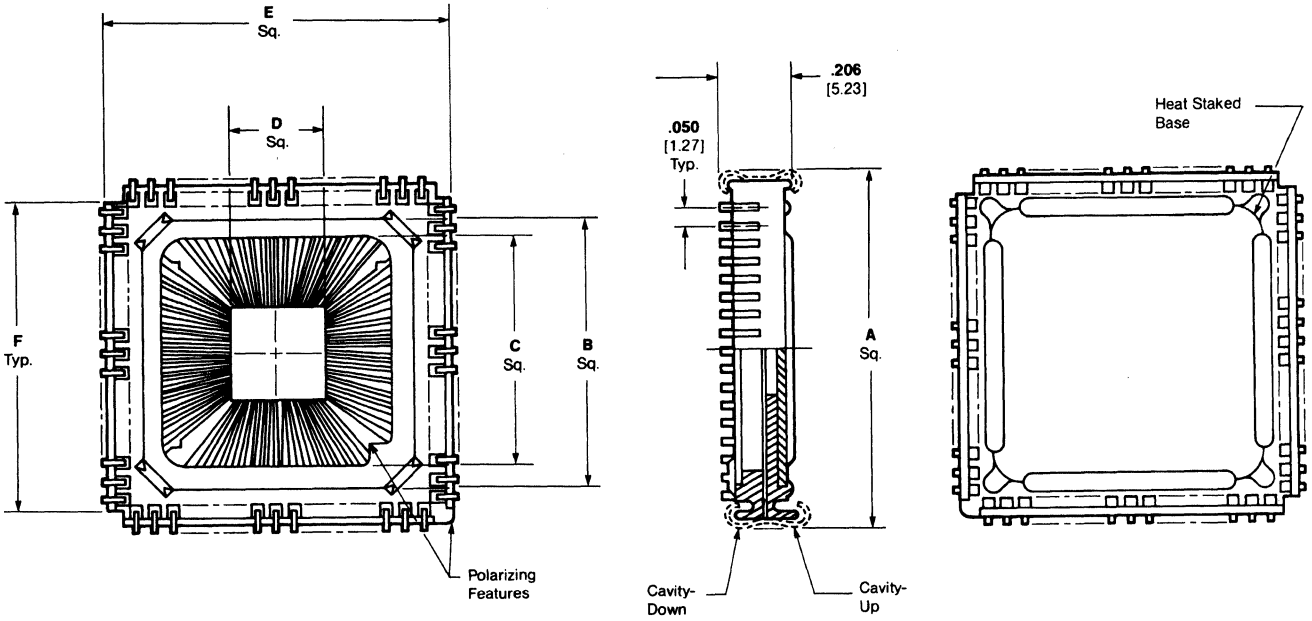
- Eliminates the need for expensive in-house molding, plating, trimming and lead forming
- Shortest wirebonds possible by changing cavity size to fit the chip on the production line
- Facilitates heat sink attachment for better thermal management—2°C/Watt thermal resistance at junction to case
- "Cavity-down" and "cavity-up" mounting available
- Lower lead inductance—1.4 nH
- Less mass and less stress in high vibration environments
- Conforms to JEDEC envelope for .050 [1.27] centerline leaded Type A chip carriers
- Compliant leads facilitate economical and reliable surface mounting
- Supplied with a heat stacked aluminum base; optionally available without a base
- May be socketed or soldered directly onto substrate
- About 3:1 reduction in space over DIP Packages
- Interchangeable with many post-molded packages
- Facilitates use of silicone encapsulants for increased reliability

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Premolded Plastic Chip Carrier
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimeters.



Materials and Finish:

Lead Frame — Copper alloy 194-temper 2 with standard .000030 [0.00076] min. gold plating all over; other finishes available.

Housing — Polyphenylene sulfide, 40% glass filled, UL 94V-0 rated; Also can be made available in VECTRA A130, UL 94V-0 rated

Standard Base — Aluminum alloy 6061-T6

Standard Cover — 400 series stainless steel

No. of Pos.[1]	Dimensions						Part Numbers with Base	
	A	B	C	E	F	D[2]	Cavity Up	Cavity Down
28	**.482** 12.24	**.310** 7.82	**.260** 6.60	**.450** 11.43	**.350** 8.89	**.200** 5.08	821555-4	821555-3
44	**.683** 17.35	**.474** 12.04	**.394** 10.01	**.650** 16.51	**.550** 13.97	**.250** 6.35	821556-6	821556-5
						.300 7.62	821556-8	821556-7
52	**.783** 19.89	**.590** 14.99	**.480** 12.19	**.750** 19.05	**.650** 16.51	**.300** 7.62	821554-4	821554-3
68	**.984** 24.99	**.750** 19.05	**.630** 16.00	**.950** 24.13	**.850** 21.59	**.300** 7.62	1-821504-2	821504-9
						.380 9.65	1-821504-3	1-821504-0
						.400 10.16	1-821504-5	1-821504-6
						.430 10.92	1-821504-4	1-821504-1
84	**1.180** 29.97	**.970** 24.64	**.850** 21.59	**1.150** 29.21	**1.050** 26.67	**.390** 9.91	821507-3	821507-4

[1]Other chip carrier sizes and configurations can be made available. Contact AMP Incorporated for information.
[2]Other cavity sizes can be made available in the min./max. sizes shown below.

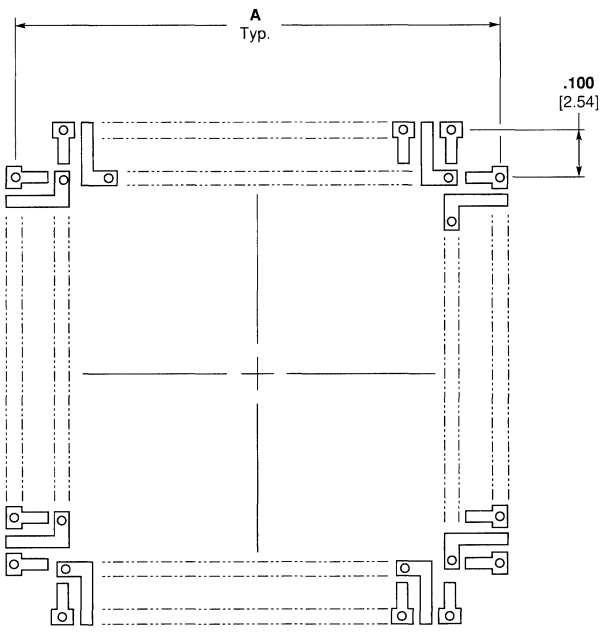
No. of Pos.	Minimum	Maximum
28	**.160** 4.06	**.200** 5.08
44	**.240** 6.09	**.335** 8.51
52	**.245** 6.22	**.390** 9.91
68	**.295** 7.49	**.505** 12.83
84	**.385** 9.78	**.690** 17.53

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Premolded Plastic Chip Carrier
(Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

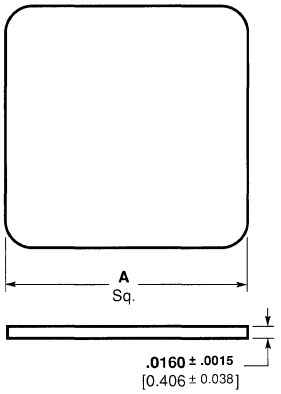
Charts contain dimensions in inches over millimeters.



Recommended Printed Circuit Board Pattern

No. of Pos.	Dimension A
28	**.500** 12.70
44	**.700** 17.78
52	**.800** 20.32
68	**1.000** 25.40
84	**1.200** 30.48

Standard Covers[1] (Stainless Steel)

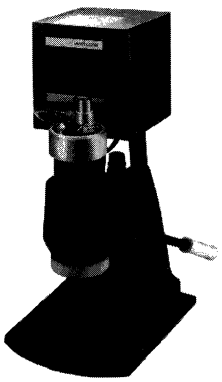


No. of Pos.	A	Part No.
28	**.306** 7.77	821557-1
44	**.467** 11.86	821539-1
52	**.585** 14.86	821538-1
68	**.745** 18.92	821503-1
84	**.965** 24.51	821531-1

[1]Must be purchased separately.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Application Tooling



Heat Staking Machine
Part No. 58021-1

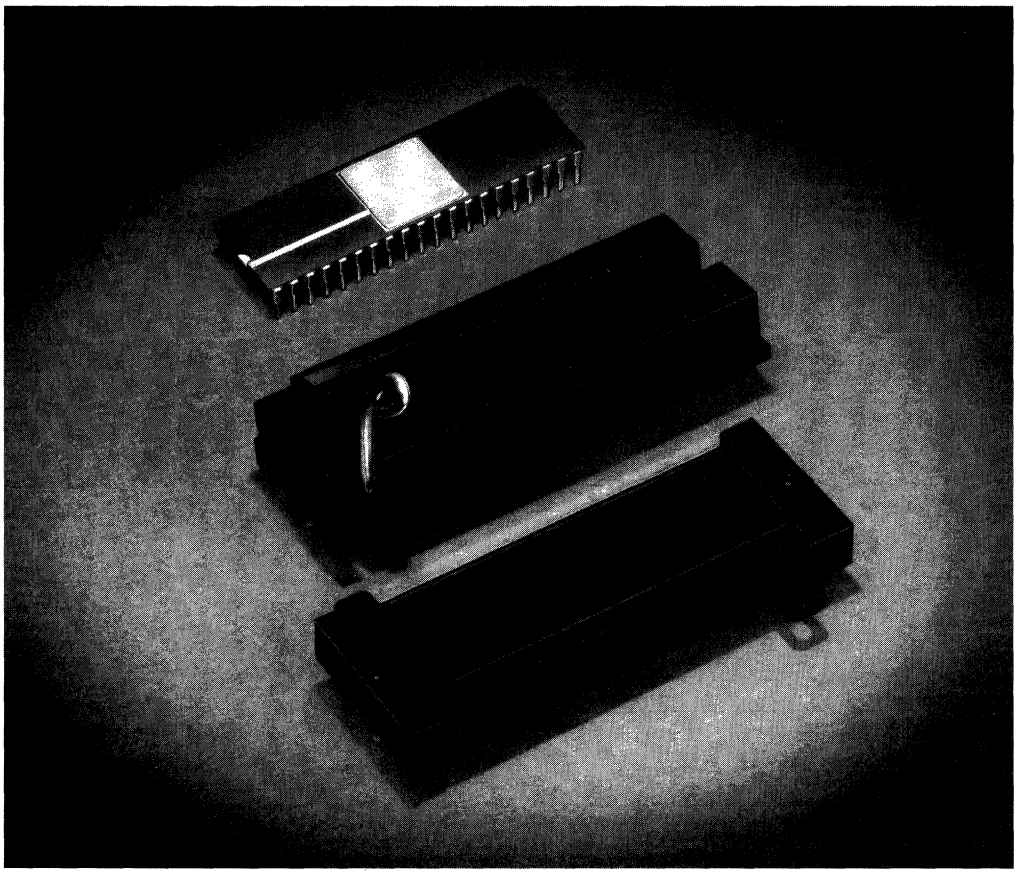
For **tooling** information, call **1-800-722-1111.**

DIP Burn-In Sockets (ZIF-Lock — Zero Insertion Force Connectors and Header Sockets)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimeters.



The AMP line of ZIF-Lock Connectors and matching Header Sockets offers test and burn-in capabilities for ceramic and plastic dual in-line packages.

ZIF-Lock Connectors provide true zero insertion and withdrawal force characteristics for over 25,000 operations. The unique, "normally closed" beryllium copper contacts are available in tin-lead or gold plate and are not dependent on the plastic housing to sustain contact forces. Connectors may be soldered directly to the pc board or used with the appropriate header socket. Also the units are height compatible with existing equipment.

The connectors feature a choice of vertical or horizontal cam-action handles. A positive locking feature insures containment of the DIP device and prevents accidental opening. In addition, the DIP device cannot be inserted with the contact system closed, preventing possible leg damage.

ZIF-Lock connectors are available in standard pin positions from 14 through 20 on .300 [7.62] centers and in 24, 28 and 40 positions on .600 [15.24] centers. Header Sockets are available to accommodate the entire family of ZIF-Lock Connectors.

Technical Document

Product Specification:
108-11036

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.

Product Facts—Connector

- Normally closed contacts omit dependence on plastic housing to sustain contact forces
- Contacts available in tin-lead plated or selective gold plated versions
- Actuation effective for 25,000 cycles, minimum (1000 cycles at 150°C for burn-in applications)
- Handles available in up "on" or down "on" versions
- True zero insertion and withdrawal force characteristics
- Wide entry angle accommodates misaligned DIP device legs
- DIP device cannot be inserted when connector is closed, preventing leg damage
- Positive lock actuation ensures DIP device containment and stops accidental opening
- Height compatible for use in existing equipment
- Can be directly soldered to pc board or used with matching header
- Available in 14 through 40 positions

Product Facts—Header

- Housing heights of .270 [6.86] and .500 [12.70]
- Polyethersulfone housing can be used to 105°C with tin-lead plated contacts
- Integral threaded screw inserts
- Wrap-type legs available
- Available in 14 through 40 positions
- Accommodates entire line of ZIF-Lock Connectors

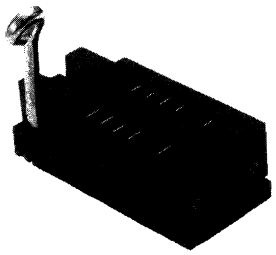
Specifications subject to change.
For latest design specifications...
1-800-522-6752

DIP Burn-In Sockets
(Continued)

ZIF-Lock (Zero Insertion Force) Connectors

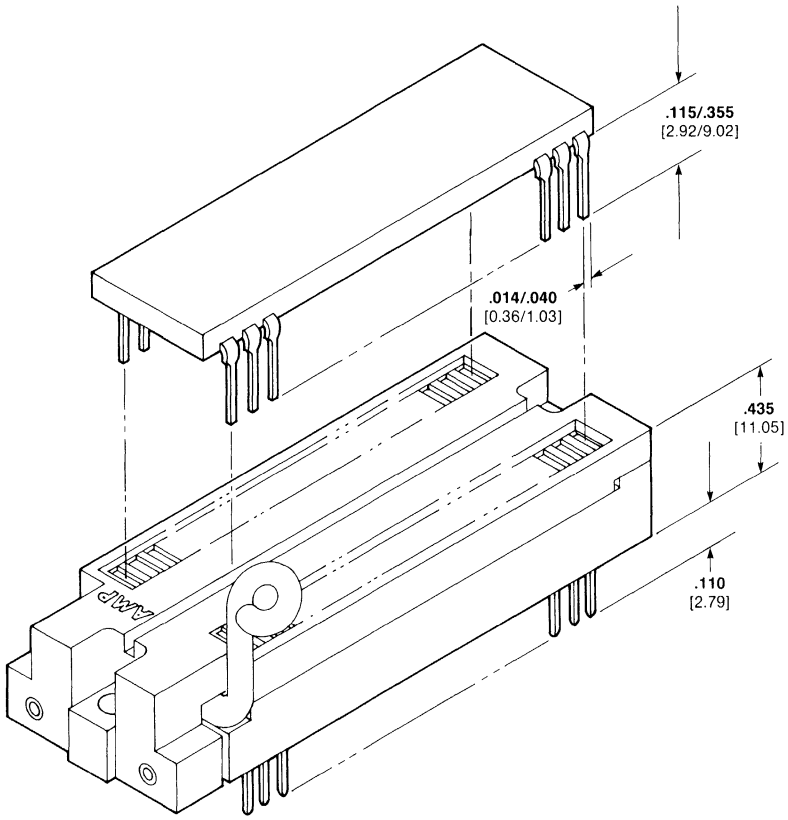
Material and Finish:

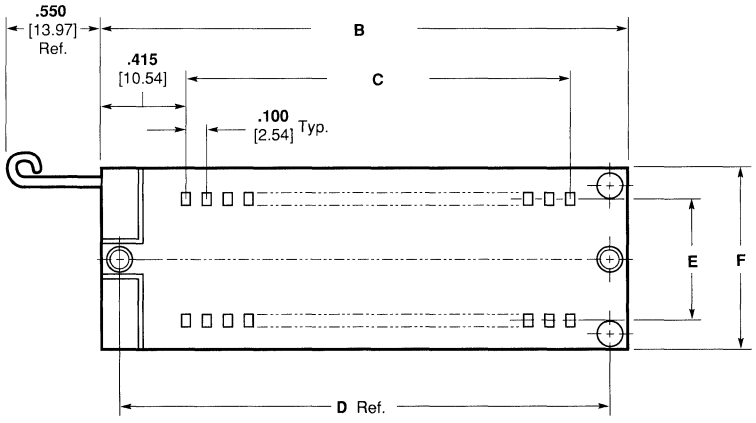
Body — Polyethersulfone[1]
Contacts — Beryllium copper CA 172 with 93-7 bright tin-lead plating or selective gold plating[2] over nickel with tin-lead plated legs

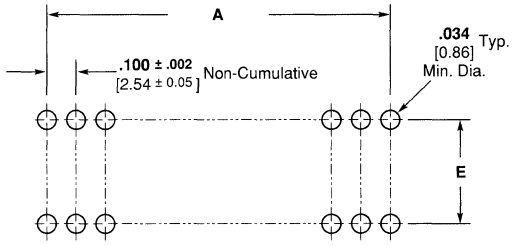


[1]Can be used to 105°C with tin-lead plated contacts or 150°C with selective gold plated contacts.
[2]Selective gold recommended for burn-in applications.

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.







Printed Circuit Board Layout

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimeters.

No. of Pos.	Dimensions						Plating	Color	Temp. °C	Handle "ON" Position	Part Number
	A	B	C	D	E	F					
14	**.600** 15.24	**1.290** 32.77	**.600** 15.24	**1.115** 28.32	**.300** 7.62	**.595** 15.11	Tin-Lead	Black	105	Down	55173-5
							Gold	Black	150	Down	55173-6
16	**.700** 17.78	**1.390** 35.31	**.700** 17.78	**1.215** 30.86	**.300** 7.62	**.595** 15.11	Tin-Lead	Black	105	Down	55174-5
							Gold	Black	150	Down	55174-6
18	**.800** 20.32	**1.490** 37.85	**.800** 20.32	**1.315** 33.40	**.300** 7.62	**.595** 15.11	Gold	Black	150	Up	55175-4
							Tin-Lead	Black	105	Down	55175-5
							Gold	Black	150	Down	55175-6
20	**.900** 22.86	**1.590** 40.39	**.900** 22.86	**1.415** 35.94	**.300** 7.62	**.595** 15.11	Tin-Lead	Black	105	Down	55176-5
							Gold	Black	150	Down	55176-6
24	**1.100** 27.94	**1.790** 45.47	**1.100** 27.94	**1.615** 41.02	**.600** 15.24	**.895** 22.73	Tin-Lead	Black	105	Down	54993-5
							Gold	Black	150	Down	54993-6
28	**1.300** 33.02	**1.990** 50.55	**1.300** 33.02	**1.815** 46.10	**.600** 15.24	**.895** 22.73	Gold	Black	150	Up	54994-4
							Tin-Lead	Black	105	Down	54994-5
							Gold	Black	150	Down	54994-6
40	**1.900** 48.26	**2.590** 65.79	**1.900** 48.26	**2.415** 61.34	**.600** 15.24	**.895** 22.73	Tin-Lead	Black	105	Down	54995-5
							Gold	Black	150	Down	54995-6

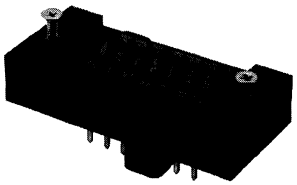
Specifications subject to change.
For latest design specifications...
1-800-522-6752

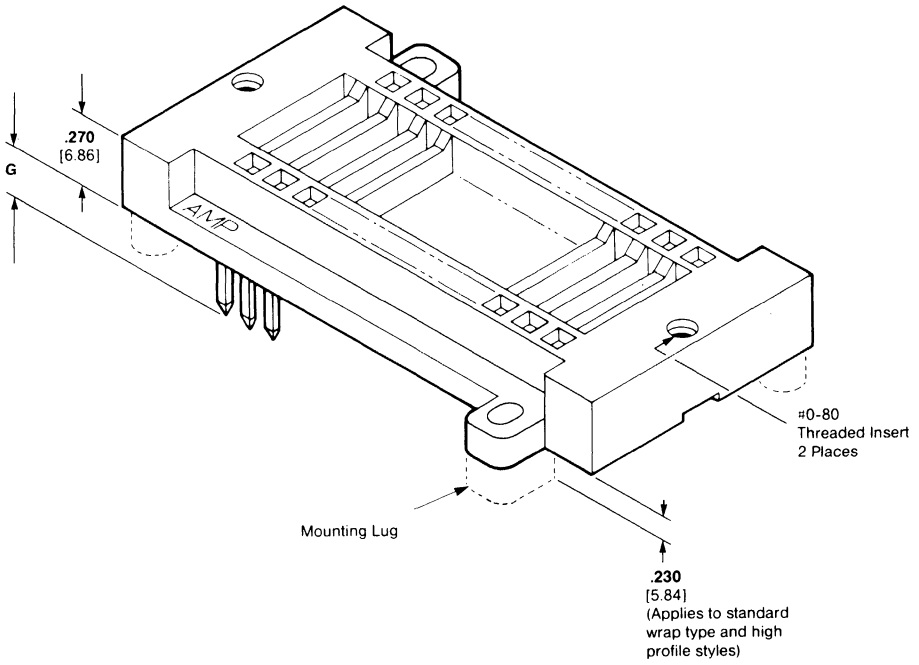
DIP Burn-In Sockets
(Continued)

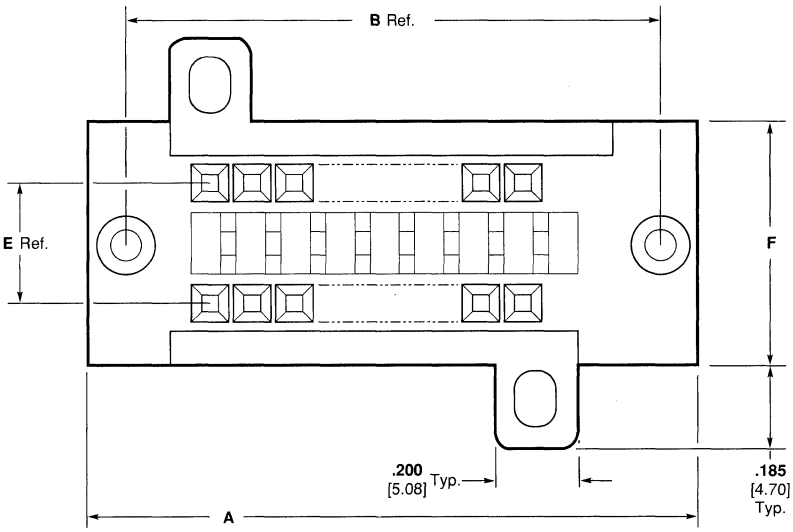
Header Socket for ZIF-Lock Connectors

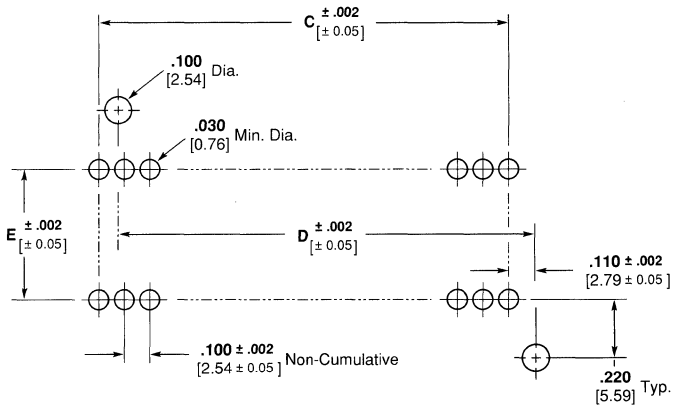
Material and Finish:

Body — Polyethersulfone, black
Contacts — Beryllium copper with 93-7 bright tin-lead plating









Recommended Printed Circuit Board Layout

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

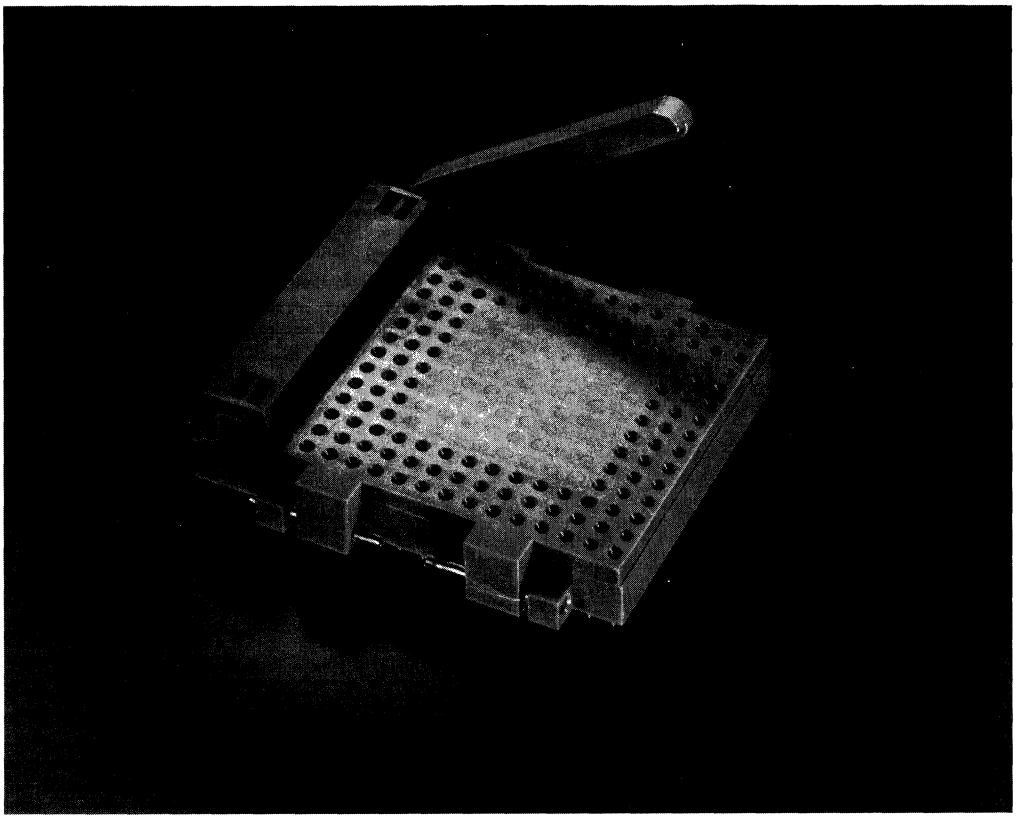
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

No. of Pos.	Dimensions							Style	Part Number
	A	B	C	D	E	F	G		
14	**1.290** 32.77	**1.115** 28.32	**.600** 15.24	**.600** 15.24	**.300** 7.62	**.595** 15.11	**.180** 4.57	Standard 180	55202-1
							.410 10.41	Wrap Type 410	55202-2
							.410 10.41	High Profile 410	55202-3
16	**1.390** 35.31	**1.215** 30.86	**.700** 17.78	**.700** 17.78	**.300** 7.62	**.595** 15.11	**.180** 4.57	Standard 180	55203-1
							.410 10.41	High Profile 410	55203-3
18	**1.490** 37.85	**1.315** 33.40	**.800** 20.32	**.800** 20.32	**.300** 7.62	**.595** 15.11	**.410** 10.41	High Profile 410	55204-3
20	**1.590** 40.39	**1.415** 35.94	**.900** 22.87	**.900** 22.87	**.300** 7.62	**.595** 15.11	**.180** 4.57	Standard 180	55205-1
							.410 10.41	High Profile 410	55205-3
24	**1.790** 45.47	**1.615** 41.02	**1.100** 27.94	**1.100** 27.94	**.600** 15.24	**.895** 22.73	**.180** 4.57	Standard 180	55206-1
							.410 10.41	High Profile 410	55206-3
28	**1.990** 50.55	**1.815** 46.10	**1.300** 33.02	**1.300** 33.02	**.600** 15.24	**.865** 22.73	**.180** 4.57	Standard 180	55207-1
							.410 10.41	High Profile 410	55207-3
40	**2.590** 65.79	**2.415** 61.34	**1.900** 48.26	**1.900** 48.26	**.600** 15.24	**.895** 22.73	**.180** 4.57	Standard 180	55208-1

PGA Burn-In Sockets

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



Zero Insertion Force (ZIF) Sockets

Product Facts

- Operated by integral cam
- Contact wiping occurs during closing sequence
- Materials suitable for 150°C max.
- Two gold-plated surfaces contact the substrate pins
- Allows 1.000 [25.40] spacing between printed circuit boards
- Solder leg lengths accommodate 1/16, 3/32 or 1/8 [1.59, 2.38 or 3.18] thick pc boards

AMP Zero Insertion Force (ZIF) Sockets for Pin Grid Array Substrates make it easy to install and remove high-pin-count pin grid array substrate packages.

The Burn-In ZIF Socket features a free-moving cam. In the open position, this cam allows the substrate pins to be inserted and extracted without force. When the cam is in the closed position, the normally closed contacts maintain a constant pressure on the substrate pins.

Housings are made from glass-filled polyethersulfone material and will withstand burn-in environments up to 150°C.

Performance Characteristics

Contact Resistance (Initial):
15 milliohms max.

Contact Resistance (Final):
25 milliohms max.

Capacitance (Adjacent Contact):
1 picofarad max.

Inductance (Mutual):
2 nh @ 1 MHz typ.

Insulation Resistance:
5,000 megohms min.

Dielectric Withstanding Voltage:
1,000 volts

Pin Retention Force[1]:
15 Grams min.

Minimum Operating Cycles:
1000

[1]Value obtained using an .016 [0.41] diameter steel pin.

Test Conditions

Temperature Life:
1000 hrs. @ 150°C

Thermal Shock:
MIL-STD-1344, Method 1003, Cond. A, −55°C to +150°C

Vibration:
MIL-STD-1344, Method 2005, Cond. IV, 20 G's max.

Shock:
MIL-STD-1344, Method 2004, Cond. C, 100 G's @ 8 milliseconds

Note: Contact resistance will not exceed the final value after testing at these specified conditions.

Materials and Finishes:

Housing — Glass-filled polyethersulfone

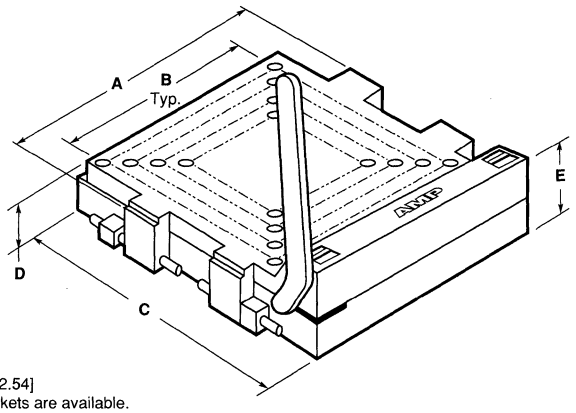
Contacts — Beryllium copper plated gold-over-nickel

Solder Leg — Plated tin/lead

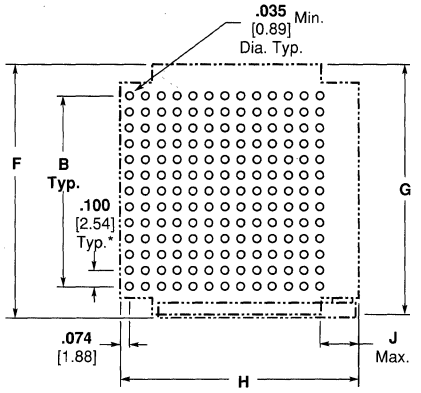
Actuator Handle — Zinc aluminum alloy

Assembly Pins — Stainless steel

Zero Insertion Force (ZIF) Sockets (Continued)



* .050 x .100 [1.27 x 2.54] interstitial design sockets are available. See pages 10103-10114.



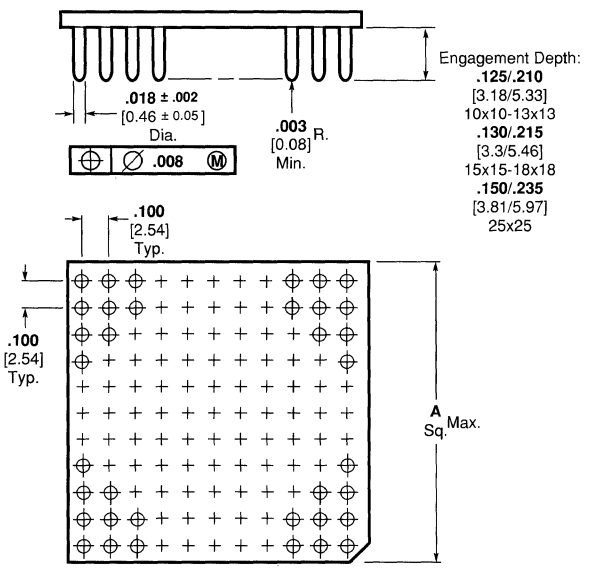
Recommended Printed Circuit Board Layout

Grid Size	No. of Pos.	Dimensions A	B	C	D	E	F	G	H	J	Grid Patterns, Solder Tail Length and Part Numbers See Page:
10 x 10	64 Thru 100	**1.300** 33.03	**.900** 22.86	**1.378** 35.00	**.301** 7.65	**.451** 11.46	**1.358** 34.49	**1.313** 33.35	**1.432** 36.37	**.452** 11.48	10133
11 x 11	68 Thru 121	**1.400** 35.56	**1.000** 25.40	**1.476** 37.49	**.301** 7.65	**.451** 11.46	**1.460** 37.08	**1.413** 35.89	**1.530** 38.86	**.452** 11.48	10133-10134
12 x 12	144	**1.500** 38.10	**1.100** 27.94	**1.571** 39.90	**.301** 7.65	**.451** 11.46	**1.558** 39.57	**1.513** 38.43	**1.625** 41.28	**.452** 11.48	10134
13 x 13	84 Thru 169	**1.600** 40.64	**1.200** 30.48	**1.742** 44.25	**.301** 7.65	**.461** 11.71	**1.660** 42.16	**1.613** 40.97	**1.755** 44.58	**.476** 12.09	10134-10135
15 x 15	144 Thru 225	**1.840** 46.74	**1.400** 35.56	**1.941** 49.30	**.347** 8.81	**.487** 12.37	**1.900** 48.26	**1.855** 47.12	**1.954** 49.63	**.476** 12.09	10136
16 x 16	155 Thru 256	**1.940** 49.28	**1.500** 38.1	**2.063** 52.4	**.347** 8.81	**.507** 12.88	**2.000** 50.8	**1.953** 49.66	**2.099** 53.31	**.520** 13.21	10136
17 x 17	168 Thru 289	**2.040** 51.82	**1.600** 40.64	**2.158** 54.81	**.347** 8.81	**.507** 12.88	**2.098** 53.29	**2.053** 52.15	**2.194** 55.73	**.520** 13.21	10137
18 x 18	223 Thru 324	**2.140** 54.36	**1.700** 43.18	**2.260** 57.4	**.347** 8.81	**.507** 12.88	**2.200** 55.88	**2.153** 54.69	**2.291** 58.19	**.520** 13.21	10137
25 x 25	625	**3.000** 76.2	**2.400** 60.96	**3.135** 79.63	**.397** 10.08	**.572** 14.53	**3.076** 78.13	**3.058** 77.67	**3.147** 79.93	**.578** 14.68	10137

Substrate Design Requirements

- Polarization is to be accomplished by eliminating or adding pin(s)
- Tips of pins must be free of burrs
- Engagement Depth:
  .125/.210 [3.18/5.33] 10x10–13x13
  .130/.215 [3.3/5.46] 15x15–18x18
  .150/.235 [3.81/5.97] 25x25
  (without substrate standoffs[1])
- Pins to be gold plated

[1]Housing designs that clear substrate standoffs can be made available. Contact AMP Incorporated for information.



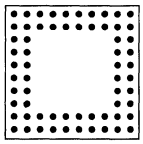
Grid Size	A
10x10	**1.080** 27.43
11x11	**1.180** 29.98
12x12	**1.280** 32.51
13x13	**1.380** 35.05
15x15	**1.620** 41.15
16x16	**1.720** 43.69
17x17	**1.820** 46.23
18x18	**1.920** 48.77
25x25	**2.620** 66.55

Important:
Specifications subject to change. To ensure correct footprint information, ask for customer print.

PGA Burn-In Sockets — Patterns

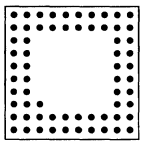
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



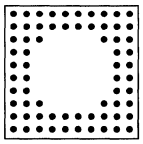
10 x 10
64 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55380-5



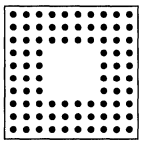
10 x 10
65 Positions
Type I
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55380-3



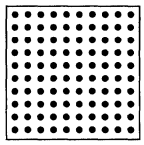
10 x 10
68 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55380-2



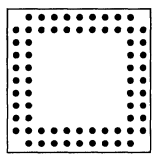
10 x 10
84 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55380-4



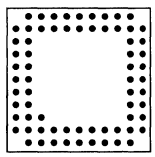
10 x 10
100 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55380-1



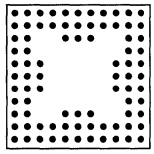
11 x 11
68 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55381-4



11 x 11
69 Positions
Type I
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55381-5



11 x 11
84 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55381-3

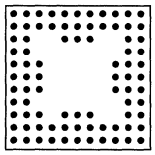
Legend:
ZBI — ZIF Burn-In

[1]Refer to these pages for product information.

PGA Burn-In Sockets — Patterns
(Continued)

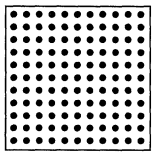
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



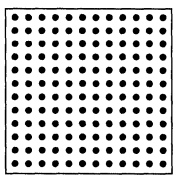
11 x 11
85 Positions
Type I
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55381-6



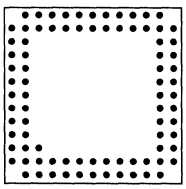
11 x 11
121 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55381-1



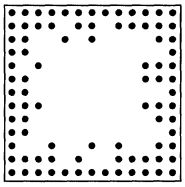
12 x 12
144 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55382-1



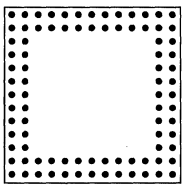
13 x 13
85 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55383-5



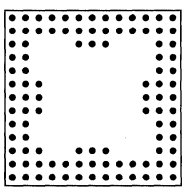
13 x 13
88 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	1-55383-2



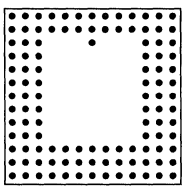
13 x 13
88 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55383-7



13 x 13
101 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55383-2



13 x 13
114 Positions
(Non-Symmetrical)

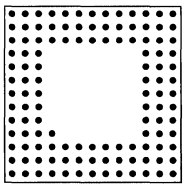
Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55383-3

Legend:
ZBI — ZIF Burn-In
[1]Refer to these pages for product information.

PGA Burn-In Sockets — Patterns
(Continued)

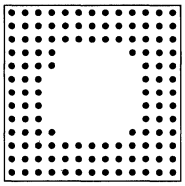
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



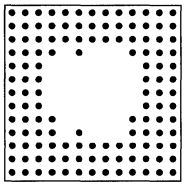
13 x 13
121 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55383-4



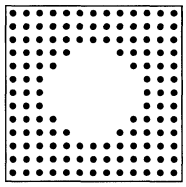
13 x 13
125 Positions
Type I
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55383-6



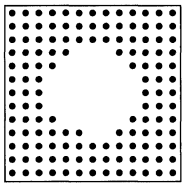
13 x 13
128 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	1-55383-1



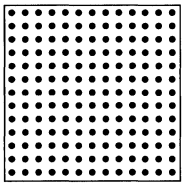
13 x 13
132 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	1-55383-0



13 x 13
133 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55383-9



13 x 13
169 Positions
(Symmetrical)

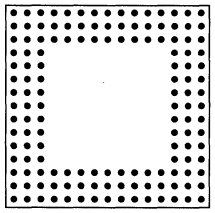
Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55383-1

Legend:
ZBI — ZIF Burn-In
[1]Refer to these pages for product information.

PGA Burn-In Sockets — Patterns
(Continued)

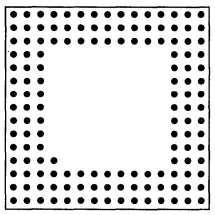
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



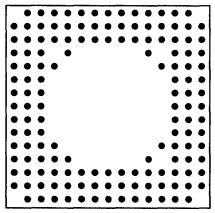
15 x 15
144 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55385-5



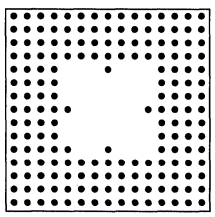
15 x 15
145 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55385-3



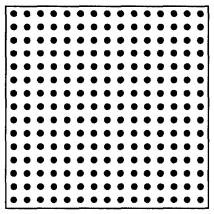
15 x 15
149 Positions
Type I
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55385-2



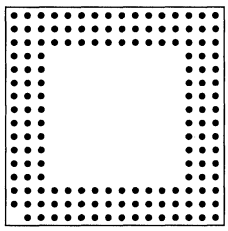
15 x 15
181 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55385-4



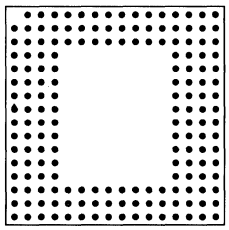
15 x 15
225 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55385-1



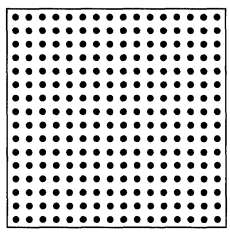
16 x 16
155 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55386-2



16 x 16
175 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55573-8



16 x 16
256 Positions
(Symmetrical)

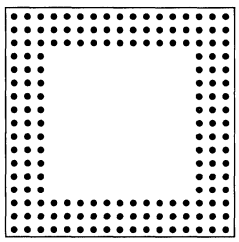
Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55386-1

Legend:
ZBI — ZIF Burn-In
[1]Refer to these pages for product information.

PGA Burn-In Sockets — Patterns
(Continued)

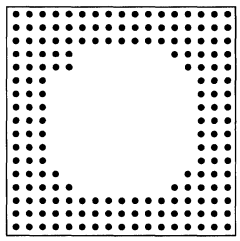
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.



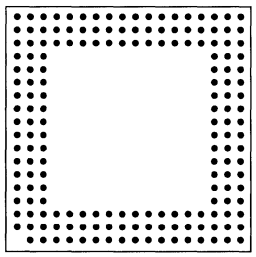
17 x 17
168 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55378-4



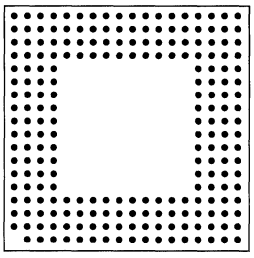
17 x 17
181 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55387-2



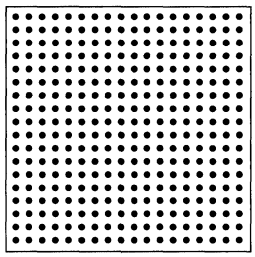
18 x 18
179 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55388-3



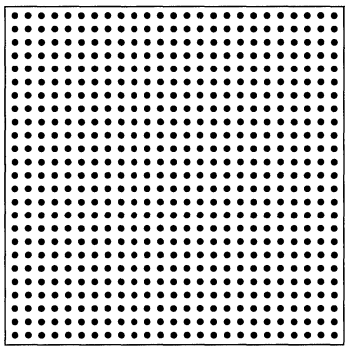
18 x 18
223 Positions
(Non-Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55388-2



18 x 18
324 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.140 3.56	55388-1



25 x 25
625 Positions
(Symmetrical)

Style	Page[1]	Solder Tail Length	Socket Number
ZBI	10132	.110 2.79	55565-1

Legend:
ZBI — ZIF Burn-In

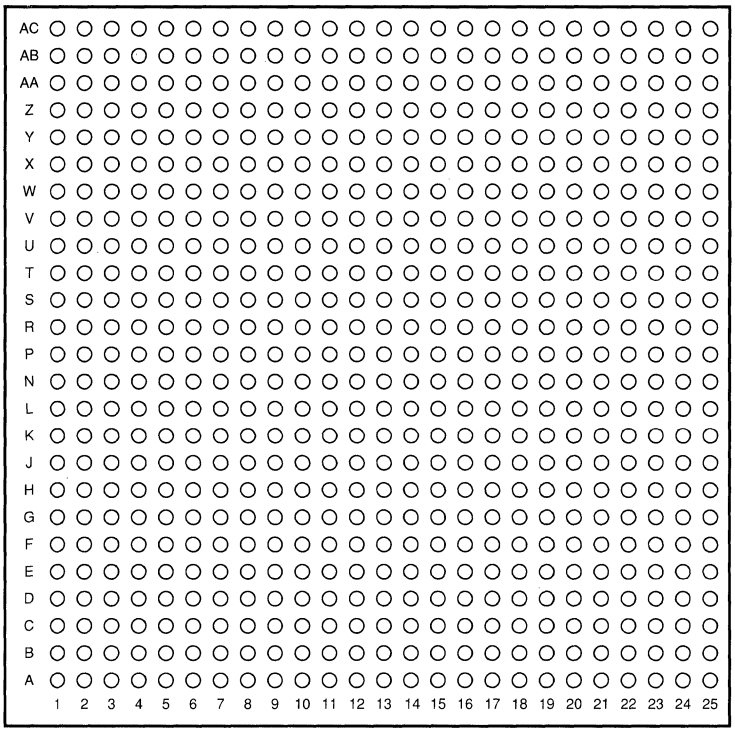
[1]Refer to these pages for product information.

PGA Burn-In Sockets — Patterns
(Continued)

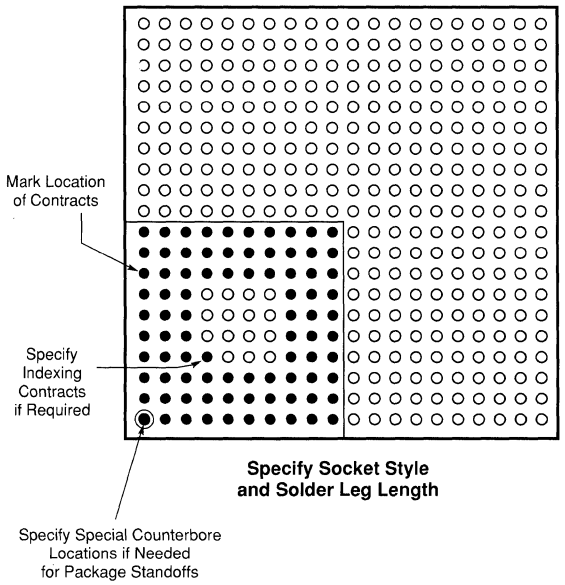
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Custom Pattern (Design Your Own)

Note: .100 [2.54] Grid



Top View of Socket



Specify Socket Style and Solder Leg Length

[1]Refer to page 10132 for product information.

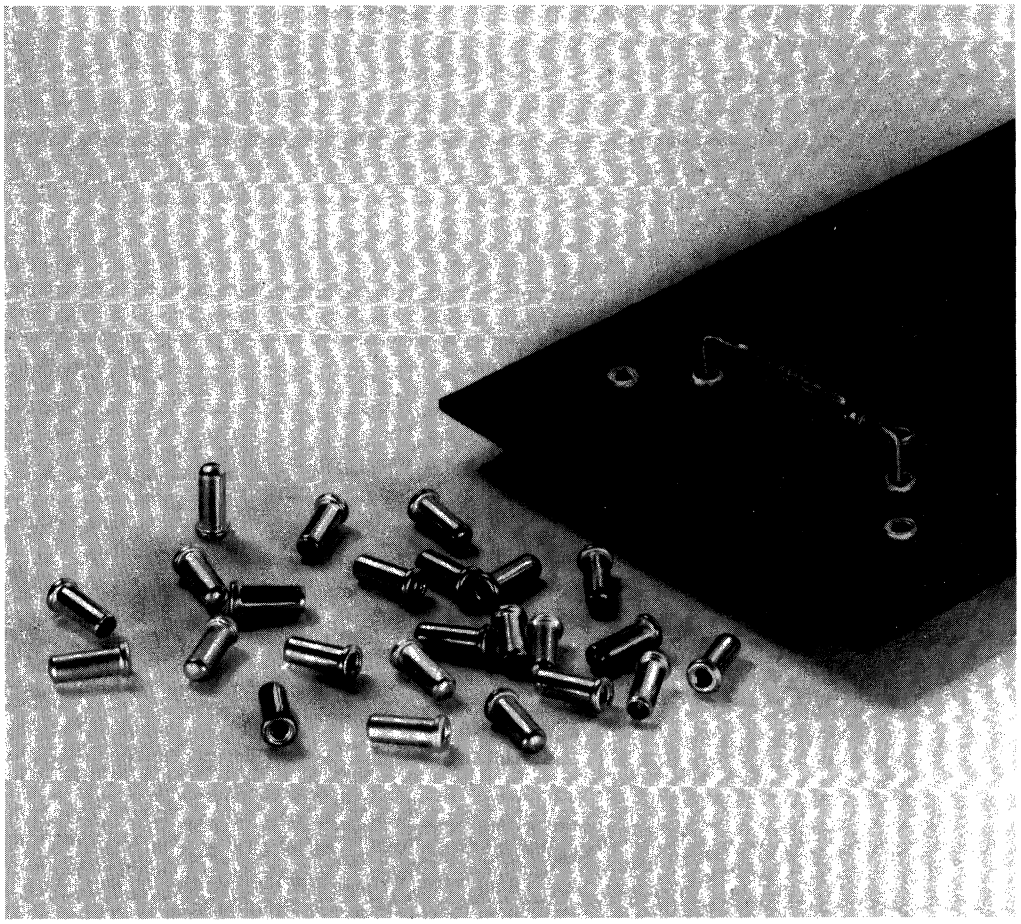
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

Reusable Receptacles for Component Testing

Product Facts

- Variety of test receptacles is available
- Receptacles help prevent heat damage to pc boards and components during burn-in and bread-boarding evaluation
- Receptacles accept component leads in ranges .018 – .040 [0.46 – 1.02]; .036 – .051 [0.91 – 1.30]; and .036 – .054 [0.91 – 1.37]
- Receptacles eliminate need for soldering components directly to the board
- Board components are designed to be inserted and extracted a minimum of 100 times
- Application tooling provides high speed insertion (see page 10140)



AMP Reusable Receptacles for testing and mounting printed circuit board components are available in standard open and closed bottom versions, an economy closed bottom version and a stand-off version. These receptacles extend the life of pc boards as well as components and protect them from damage during burn-in and bread-boarding. The receptacles eliminate individual soldering of each component lead into the circuit layout. Testing is accomplished by hand insertion of component leads.

Each receptacle consists of a drawn copper cup, flared at one end to facilitate entry of a component lead. The flared lip retains the receptacle at the proper position in the pc board. A beryllium copper spring, plated with tin or gold over nickel, holds the component lead in position and exerts uniform pressure to maintain conductivity.

The standard receptacles, both open and closed bottom types, feature gold-plated cups. The cups for the economy and stand-off versions are tin-lead plated. Spacers are tin-lead plated brass.

A hole diameter of .089 [2.26] is required for mounting. Once installed, these receptacles accept component leads from .018 – .054 [0.46 – 1.37] without deterioration of performance over an extended period.

Retention values are maintained best when a receptacle is used for repeated acceptance of component leads of the same size as those previously inserted or larger.

Among the applications for which these receptacles are used are: (1) for prototype work in arranging components on pc boards; (2) as a quick and reliable socket for testing transistors, resistors, diodes, capacitors and other components at the prototype stage; (3) when selecting among various components with different electrical values; and (4) as a module connector when receptacles are inserted in a pattern to accept the leads of the module, providing plug-and-remove mounting for modular circuits.

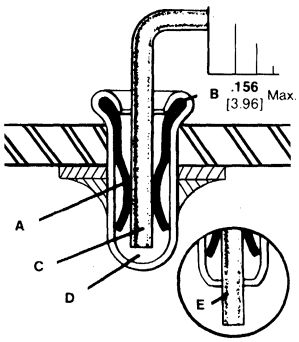
Test Sockets
(Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

Reusable Receptacles for Component Testing

Typical Application



A. Receptacle spring member assures true readings by maintaining uniform pressure to create maximum conductivity and hold component leads in place.

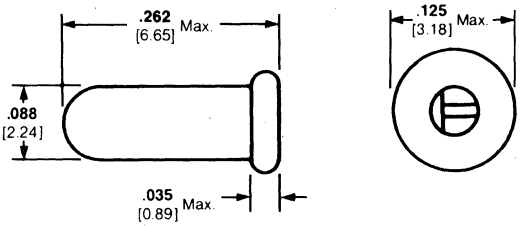
B. Flared lip acts as a stop for the socket and creates a bellmouth entry for easy insertion of component leads.

C. Receptacles firmly retain component leads in two ranges: .018–.040 [0.46–1.02] and .036–.051 [0.19–1.30].

D. Drawn copper cup in all sizes and styles is inserted into .089 [2.26] mounting hole.

E. Open-end styles are available for lead feed-through.

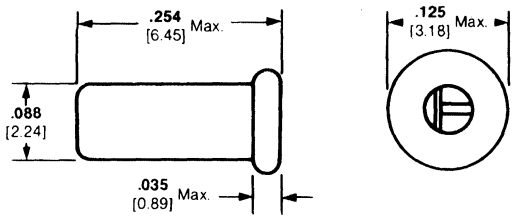
Closed Bottom



Accepts Lead Size	Finish		Part Number
	Cup	Spring	
.018–.040 0.46–1.02	Gold[1]	Gold[1]	380598-1
	Tin-Lead	Gold[1]	380598-2
	Tin-Lead	Tin-Lead	380598-3
.036–.051 0.91–1.30	Tin-Lead	Tin-Lead	1-380758-0
	Tin-Lead	Gold[1]	1-380758-1

[1].000030 [0.00076] gold plating over nickel plating.

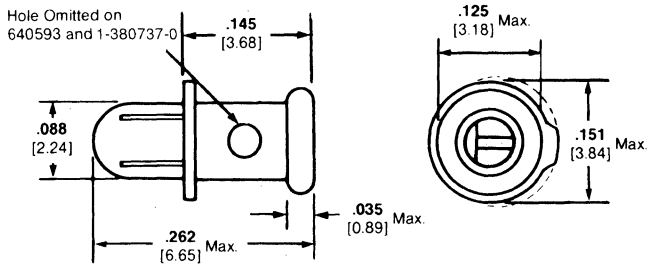
Open Bottom



Accepts Lead Size	Finish		Part Number
	Cup	Spring	
.018–.040 0.46–1.02	Gold[1]	Gold[1]	380635-1
	Tin-Lead	Gold[1]	380635-2
	Tin-Lead	Tin-Lead	380635-5
.036–.051 0.91–1.30	Tin-Lead	Tin-Lead	640206-1
	Tin-Lead	Gold[1]	640206-2

[1].000030 [0.00076] gold plating over nickel plating.

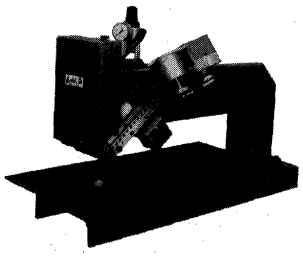
Stand-Off



Accepts Lead Size	Finish		Part Number
	Cup	Spring	
.018–.040 0.46–1.02	Tin-Lead	Gold[1]	1-380737-0
	Tin-Lead	Tin-Lead	640593-1

[1].000030 [0.00076] gold plating over nickel plating.

Application Tooling



Part No. 818120-2

Insertion Machine

This bench mounted semi-automatic machine loads loose piece receptacles into virtually any pattern of pre-drilled holes at rates up to 3000 per hour.

Its basic design offers ease of operation, eliminates extensive operator training, reduces the possibility of human error and assures long, trouble-free service. It accommodates board thicknesses of .062–.125 [1.57–3.18]. Adjusting the machine for a different board thickness requires one simple adjustment and is accomplished with a minimum of downtime.

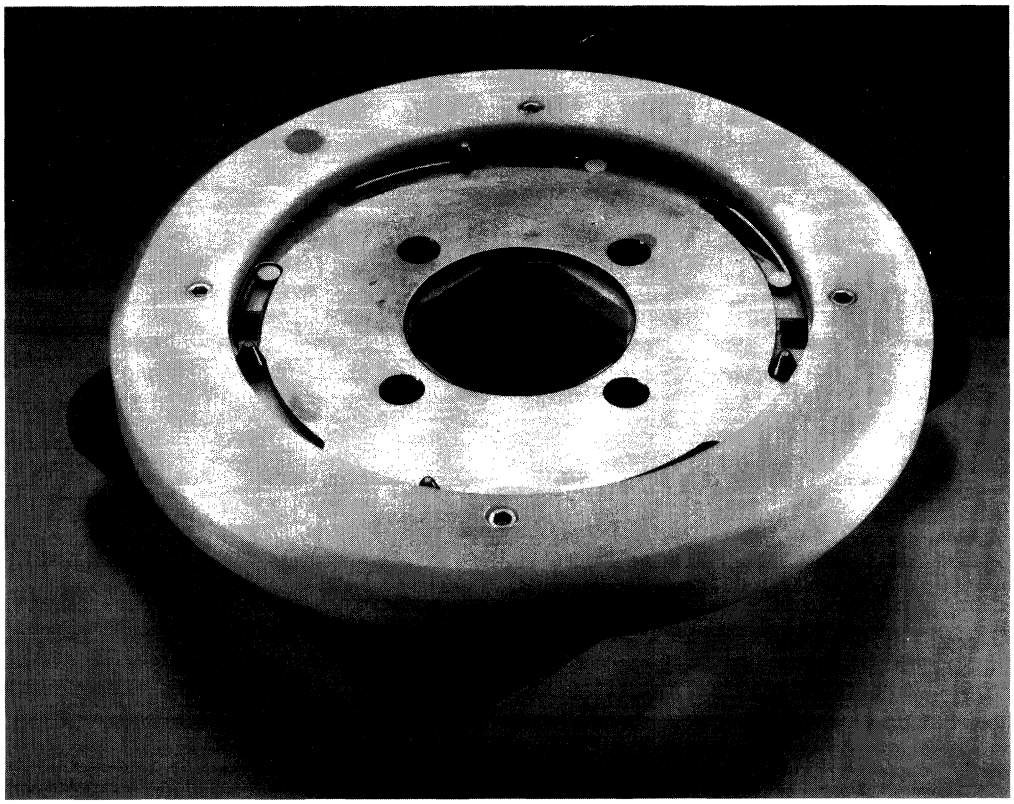
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

164/220-Position INTERPOSER Test and Burn-In-Socket Assembly

Product Facts

- Accommodates 220-position and 164-position substrates
- Protective carrier supports the chip carrier prior to, during and after testing and may serve as fixturing for subsequent lead trim and form operations.
- Protective carrier features:
  a. Comb-like grooves which support leads and maintain registration
  b. Four easy-to-use corner latches which lock the chip carrier in place
  c. Visual, molded-in orientation and polarizing features for alignment of chip carrier to protective carrier and the protective carrier to socket
  d. Stackability for ease in transportation and storage
  e. Keyed slots for robotic handling
- Socket, protective carrier and contact modules are molded from UL 94V-0 rated Liquid Crystal Polymer (LCP) which permits the socket assembly to be used up to 175°C
- Mechanical compression by means of rotary cam steel top plate
- A nylon ring or metal handle are available tools to assist in final tightening
- Socket and chip carrier use the same footprint



The newly designed INTERPOSER Test and Burn-In Socket Assembly will accommodate 1.500 [38.10] square ceramic chip carriers having up to 220 leads on .025 [0.64] centerlines and chip carriers 1.00 [25.4] square with up to 164 leads. The originally designed 220-position protective carrier now accommodates a smaller 164-position insert, extending the useful range of the assembly to smaller substrates.

The test device assembly consists of four major components:

The **rotary cam steel top locking plate** holds the protective carrier in place and enhances mechanical strength.

The **protective carrier**, which encases the ceramic chip carrier may be purchased separately or as part of the overall test device assembly. It provides chip carrier protection during transportation from the manufacturer's location, in normal handling and during subsequent processing operations. The same protective carrier then becomes an integral part of the fixturing testing and lead trimming operations. It has a molded-in visual index indicating "position 1" for proper chip carrier orientation. In additon, comb-like grooves support the individual leads while corner mounted positive locking latches hold the chip carrier securely in place.

The **socket** itself is designed primarily as a test socket to house high-speed, low inductance contacts (usually gold-over-nickel plated beryllium copper). However, the socket can be mounted directly onto a system board.

The **bottom plate** is designed to stiffen the printed circuit board. Polarizing features assure correct assembly of the component layers. The assembly is locked together by the camming mechanism of the top locking plate.

To meet the requirements for high temperature and humidity test environments, all non-metal components are molded from Liquid Crystal Polymer (LCP), known for its superior performance characteristics under such conditions.

164/220-Position INTERPOSER Test and Burn-In-Socket Assembly

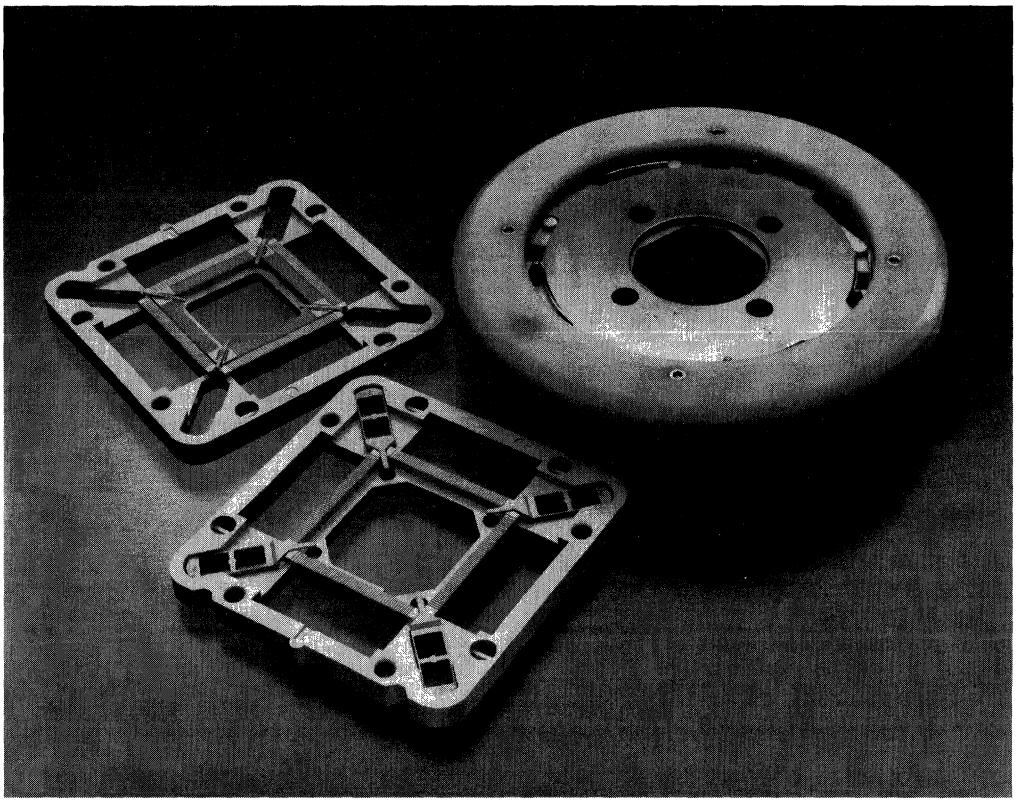
220-Position Test Device Assembly Part No. 823488-1

220-Position Protective Carrier Part No. 821658-1

164-Position Protective Carrier with Insert Part No. 823667-1

164-Position Insert Only Part No. 823667-2

Handle Tool Part No. 823485-1



Performance Characteristics

Characteristic Impedance:
50 ohms ±5%

Line-to-Line Resistance:
200 megohms

Capacitive Load (Max.):
5 picofarads between adjacent contacts

Contact Resistance:
15 milliohms, 20 milliohms max.

Current Carrying:
1 ampere max.

Materials and Finish:

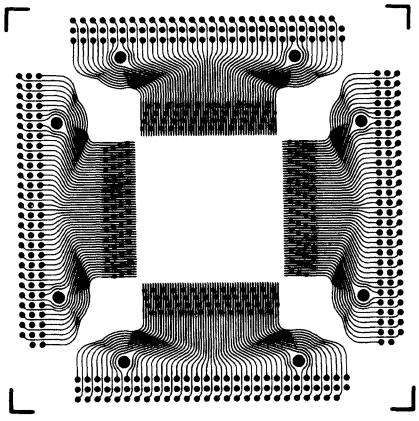
Housing — Liquid crystal polymer (LCP)

Contacts — Beryllium copper with .000050 [0.00127] gold over .000050 [0.00127] nickel plating

Top and Bottom Plates — Nickel plated steel

Guide Pins — Nickel plated brass

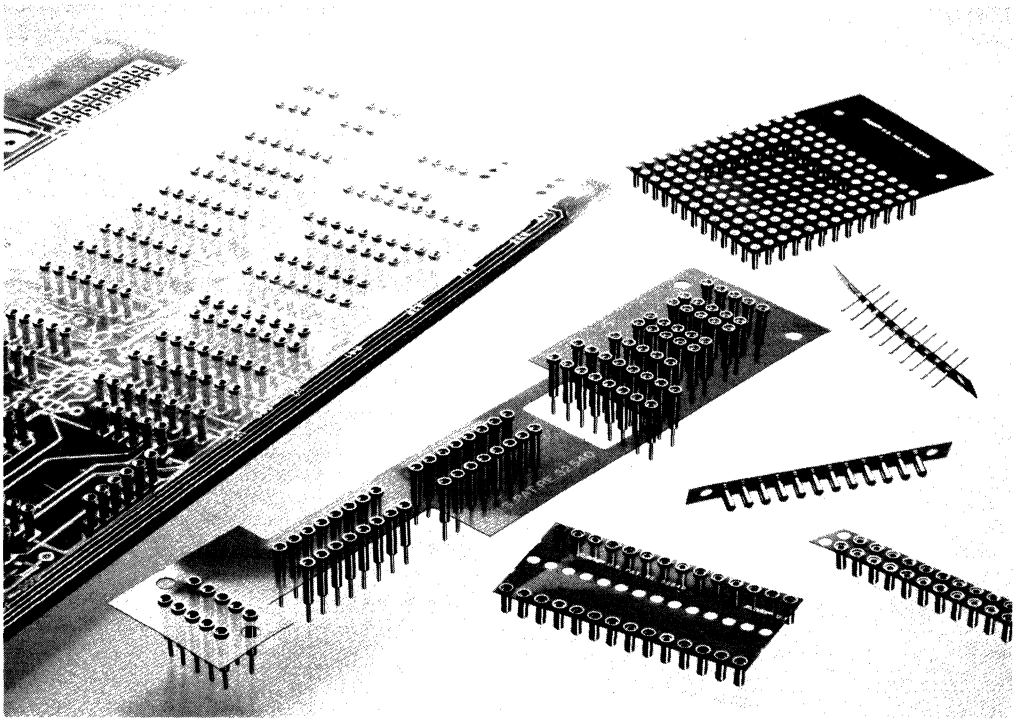
Recommended Printed Circuit Board Layout[1]



[1] For dimensions contact AMP Incorporated.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Film Carrier Sockets and Pins



AMP Film Carrier Sockets and Pins, ideal for extremely low-profile, high-density applications, are affixed to a disposable film carrier which is removed after soldering. The sockets are available in standard DIP, SIP, ZIP and PGA configurations, as well as in custom layouts and multiple patterns on a single carrier.

The socket and film carrier withstand temperatures ranging from –259°C to +400°C for compatibility with vapor phase, infrared, hand and wave soldering. The socket/carrier assembly is manually placed on the board. Following soldering, the carrier is peeled away, leaving free-standing socket terminals that allow visual inspection, easy flux removal and excellent heat dissipation. The flexible carrier eliminates concern about contact damage during carrier insertion or extraction.

The sockets offer low height above the pc board (.031 [0.79]), permit excellent air flow around ICs, and allow very dense packaging, with the smallest socket being .058 [1.47] in diameter.

Male pins that mate with the sockets are also available for modular board-to-board interconnection.

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Metric symbols used are:
C (Celsius)
N (newton)

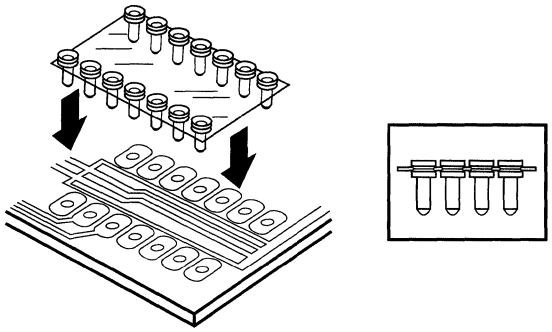
Product Facts

- Low profile — .031 [0.78] above pc board
- Withstands temperatures to +400°C
- Closed Bottom — inhibits flux and solder wicking
- Ease of removing film carrier after soldering
- Visual inspection on both sides of pc board
- Excellent air flow around IC's
- Manual assembly
- Footprints to customer requirements
- Custom multiple footprints on single film carrier

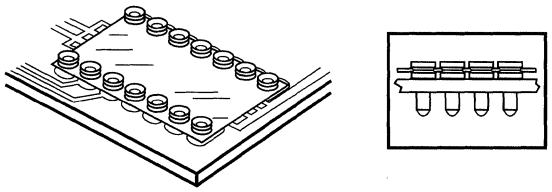
Film Carrier Sockets and Pins

How to Use Film Carrier Sockets and Pins

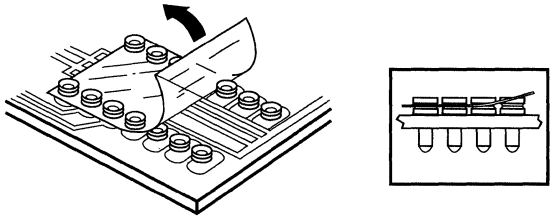
1. Place Film Carrier Socket in pc board.



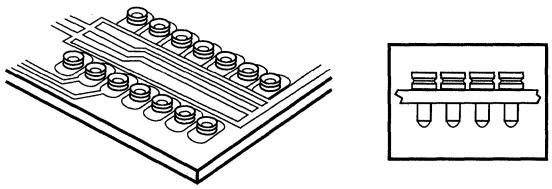
2. Send pc board and Film Carrier Socket through soldering operation.



3. Strip away film carrier.



4. Free standing socket terminal for improved inspection, cleaning and dissipation of heat.



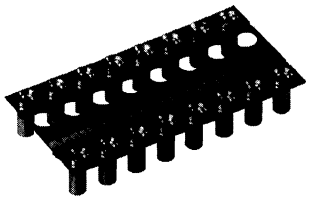
Film Carrier Sockets

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

DIP Socket Assemblies

Sockets will accept a .016–.022 [0.41–0.56] or .010–.018 [0.25–0.46] diameter pin



Materials:

Film — Polyimide

Sleeves — Brass, ½ Hard Composition 22, Copper Alloy 360, QQ-B-626

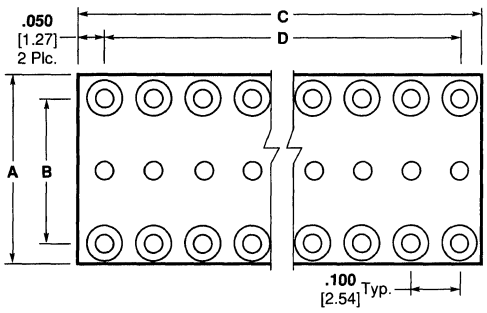
Contacts — Beryllium Copper, ¼ Hard Copper Alloy 172 ASTM-8-194, QQ-C-533, Heat Treated

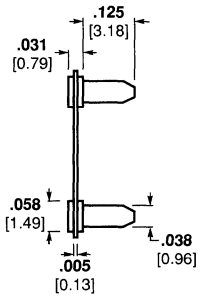
Finish:

Contacts — .000030 [0.00076] Gold over .000050 [0.00127] Nickel or .000150 [0.0038] to .000275 [0.00699] Tin/Lead Type 1 over .000050 [0.00127] to .000100 [0.00254] Nickel

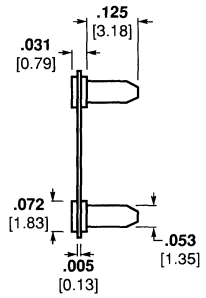
Sleeves — .000200 [0.00508] to .000300 [0.00762] Tin/Lead Type 1 over .000050 [0.00127] to .000100 [0.00254] Nickel

Plating Specifications —
Nickel per QQ-N-290
Gold per MIL-G-45204
Tin/Lead per MIL-P-81728





Type A



Type B

No. of Pos.	Dimensions A	B	C	D	Terminal Types[1]	Minimum Acceptable Pin Length	Part Numbers Contact Tin / Sleeve Tin	Contact Gold / Sleeve Tin
8	.400 10.16	.300 7.62	.400 10.16	.300 7.62	A	.090 2.29	—	382522-8
					B	.075 1.91	382447-8	382459-8
14	.400 10.16	.300 7.62	.700 17.78	.600 15.24	A	.090 2.29	—	1-382522-4
					B	.075 1.91	1-382447-4	1-382459-4
16	.400 10.16	.300 7.62	.800 20.32	.700 17.78	A	.090 2.29	—	1-382522-6
					B	.075 1.91	1-382447-6	1-382459-6
18	.400 10.16	.300 7.62	.900 22.86	.800 20.32	A	.090 2.29	—	1-382522-8
					B	.075 1.91	1-382447-1	1-382459-8
20	.400 10.16	.300 7.62	1.000 25.40	.900 22.86	A	.090 2.29	—	2-382522-0
					B	.075 1.91	2-382447-0	2-382459-0
24	.400 10.16	.300 7.62	1.200 30.48	1.100 27.94	A	.090 2.29	—	2-382522-4
					B	.075 1.91	2-382447-4	2-382459-4
28	.700 17.78	.600 15.24	1.400 35.56	1.300 33.02	A	.090 2.29	—	2-382522-8
					B	.075 1.91	2-382447-8	2-382459-8
32	.700 17.78	.600 15.24	1.600 40.64	1.500 38.10	A	.090 2.29	—	3-382522-2
					B	.075 1.91	3-382447-2	3-382459-2
40	.700 17.78	.600 15.24	2.000 50.80	1.900 48.26	A	.090 2.29	—	4-382522-0
					B	.075 1.91	4-382447-0	4-382459-0
64	1.000 25.40	.900 22.86	3.200 81.28	3.100 78.74	A	.090 2.29	—	6-382522-4
					B	.075 1.91	6-382447-4	6-382459-4

[1]Standard terminal types are listed on pages 10154 and 10155.
Any terminal type can be made available in this configuration; contact AMP Incorporated.

Note: See page 10153 for samples of terminal types for customer evaluation.

Film Carrier Sockets (Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

SIP Socket Assemblies

Sockets will accept a .016 – .022 [0.41 – 0.56] or .010 – .018 [0.25 – 0.46] diameter pin

Materials:

Film — Polyimide

Sleeves — Brass, ½ Hard Composition 22, Copper Alloy 360, QQ-B-626

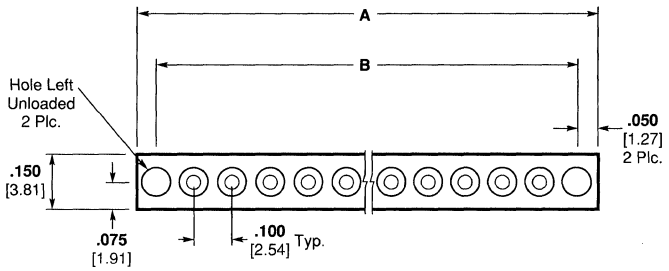
Contacts — Beryllium Copper, ¼ Hard Copper Alloy 172 ASTM-8-194, QQ-C-533, Heat Treated

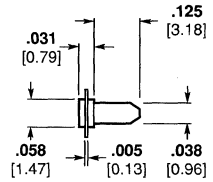
Finish:

Contacts — .000030 [0.00076] Gold over .000050 [0.00127] Nickel or .000150 [0.0038] to .000275 [0.00699] Tin/Lead Type 1 over .000050 [0.00127] to .000100 [0.00254] Nickel

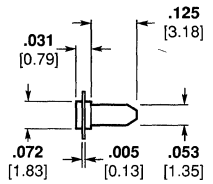
Sleeves — .000200 [0.00508] to .000300 [0.00762] Tin/Lead Type 1 over .000050 [0.00127] to .000100 [0.00254] Nickel

Plating Specifications —
Nickel per QQ-N-290
Gold per MIL-G-45204
Tin/Lead per MIL-P-81728





Type A



Type B

No. of Pos.	Dimensions A	Dimensions B	Terminal Types[1]	Minimum Acceptable Pin Length	Part Numbers Contact / Sleeve Tin	Part Numbers Contact / Sleeve Gold
8	**1.000** 25.40	**.900** 22.86	A	**.090** 2.29	—	382521-8
			B	**.075** 1.91	382445-8	382495-8
10	**1.200** 30.48	**1.100** 27.94	A	**.090** 2.29	—	1-382521-0
			B	**.075** 1.91	1-382445-0	1-382495-0
12	**1.400** 35.56	**1.300** 33.02	A	**.090** 2.29	—	1-382521-2
			B	**.075** 1.91	1-382445-2	1-382495-2
14	**1.600** 40.64	**1.500** 38.10	A	**.090** 2.29	—	1-382521-4
			B	**.075** 1.91	1-382445-4	1-382495-4
16	**1.800** 45.72	**1.700** 43.18	A	**.090** 2.29	—	1-382521-6
			B	**.075** 1.91	1-382445-6	1-382495-6
20	**2.200** 55.88	**2.100** 53.34	A	**.090** 2.29	—	2-382521-0
			B	**.075** 1.91	2-382445-0	2-382495-0
24	**2.600** 66.04	**2.500** 63.50	A	**.090** 2.29	—	2-382521-4
			B	**.075** 1.91	2-382445-4	2-382495-4
100	**10.200** 259.08	**10.100** 256.54	A	**.090** 2.29	—	382521-1
			B	**.075** 1.91	382445-1	382495-1

[1]Standard terminal types are listed on pages 10154 and 10155.
Any terminal type can be made available in this configuration; contact AMP Incorporated.

Note: See page 10153 for samples of terminal types for customer evaluation.

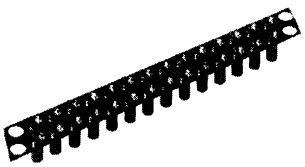
Film Carrier Sockets (Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

ZIP Socket Assemblies

Sockets will accept a .016–.022 [0.41–0.56] or .010–.018 [0.25–0.46] diameter pin



Materials:

Film — Polyimide

Sleeves — Brass, ½ Hard Composition 22, Copper Alloy 360, QQ-B-626

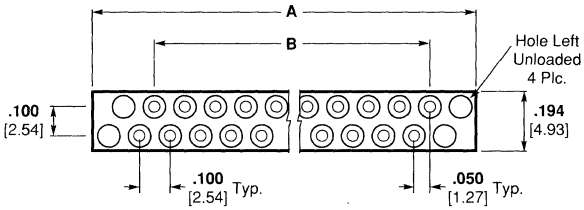
Contacts — Beryllium Copper, ¼ hard Copper Alloy 172 ASTM-8-194, QQ-C-533, Heat Treated

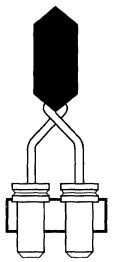
Finish:

Contacts — .000030 [0.00076] Gold over .000050 [0.00127] Nickel or .000150 [0.0038] to .000275 [0.00699] Tin/Lead Type 1 over .000050 [0.00127] to .000100 [0.00254] Nickel

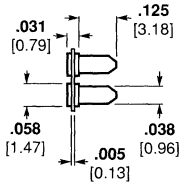
Sleeves — .000200 [0.00508] to .000300 [0.00762] Tin/Lead Type 1 over .000050 [0.00127] to .000100 [0.00254] Nickel

Plating Specifications —
Nickel per QQ-N-290
Gold per MIL-G-45204
Tin/Lead per MIL-P-81728

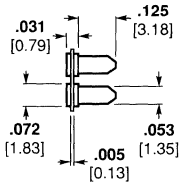




Typical Assembly View



Type A



Type B

No. of Pos.	Dimensions A	Dimensions B	Terminal Types[1]	Minimum Acceptable Pin Length	Part Numbers Contact Tin / Sleeve Tin	Part Numbers Contact Gold / Sleeve Tin
20	**1.250** 31.75	**.900** 22.86	A	**.090** 2.29	—	2-382520-0
			B	**.075** 1.91	2-382448-0	2-382458-0
24	**1.450** 36.83	**1.100** 27.94	A	**.090** 2.29	—	2-382520-4
			B	**.075** 1.91	2-382448-4	2-382458-4
28	**1.650** 41.91	**1.300** 33.02	A	**.090** 2.29	—	2-382520-8
			B	**.075** 1.91	2-382448-8	2-382458-8
40	**2.250** 57.15	**1.900** 48.26	A	**.090** 2.29	—	4-382520-0
			B	**.075** 1.91	4-382448-0	4-382458-0

[1]Standard terminal types are listed on pages 10154 and 10155.
Any terminal type can be made available in this configuration; contact AMP Incorporated.

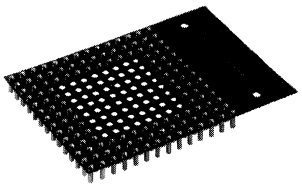
Note: See page 10153 for samples of terminal types for customer evaluation.

Film Carrier Sockets (Continued)

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

PGA Socket Assemblies

Sockets will accept a .016–.022 [0.41–0.56] or .010–.018 [0.25–0.46] diameter pin



Materials:

Film — Polyimide

Sleeves — Brass, ½ Hard Composition 22, Copper Alloy 360, QQ-B-626

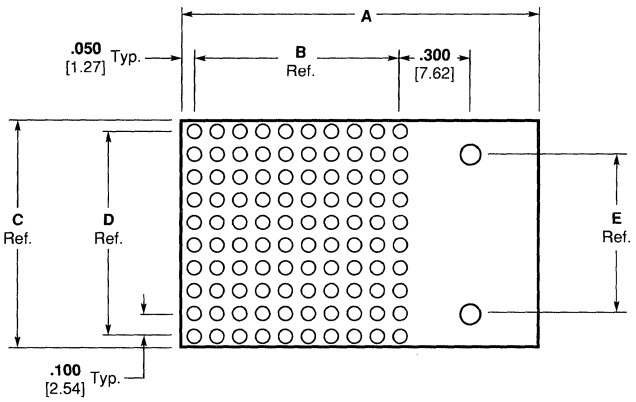
Contacts — Beryllium Copper, ¼ Hard Copper Alloy 172 ASTM-8-194, QQ-C-533, Heat Treated

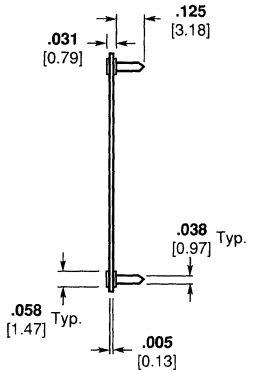
Finish:

Contacts — .000030 [0.00076] Gold over .000050 [0.00127] Nickel

Sleeves — .000200 [0.00508] Tin/Lead over .000050 [0.00127] Nickel

Plating Specifications — Nickel per QQ-N-290
Gold per MIL-G-45204
Tin/Lead per MIL-P-81728





Grid Size	No. of Pos.	Dimensions A	B	C	D	E	Terminal Type[1]	Minimum Acceptable Pin Length	Base Part Number[2]
10 x 10	68, 84 and 100	**1.550** 39.37	**.900** 22.86	**1.000** 25.40	**.900** 22.86	**.700** 17.78	A	**.090** 2.29	382450
11 x 11	68, 84 and 121	**1.650** 41.91	**1.000** 25.40	**1.100** 27.94	**1.000** 25.40	**.800** 20.32	A	**.090** 2.29	382451
13 x 13	114, 121 and 169	**1.850** 46.99	**1.200** 30.48	**1.300** 33.02	**1.200** 30.48	**1.000** 25.40	A	**.090** 2.29	382453
14 x 14	132 and 196	**1.950** 49.53	**1.300** 33.02	**1.400** 35.56	**1.300** 33.02	**1.100** 27.94	A	**.090** 2.29	382454
15 x 15	145, 149 and 181	**2.050** 52.07	**1.400** 35.56	**1.500** 38.10	**1.400** 35.56	**1.200** 30.48	A	**.090** 2.29	382455
17 x 17	168	**2.250** 57.15	**1.600** 40.64	**1.700** 43.18	**1.600** 40.64	**1.400** 35.56	A	**.090** 2.29	382457

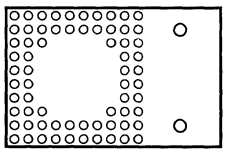
[1] Standard terminal types are listed on pages 10154 and 10155.
[2] See pages 10149 and 10150 for patterns and part number suffixes.
Any terminal type can be made available in this configuration;contact AMP Incorporated.

Note: See page 10153 for samples of terminal types for customer evaluation.

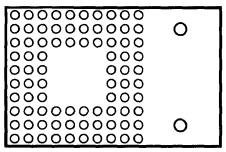
PGA Grid Patterns

Specifications subject to change.
For latest design specifications...
1-800-522-6752

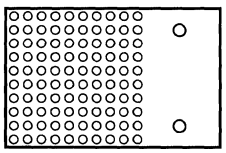
10 x 10
68 Position
Part No. 382450-1



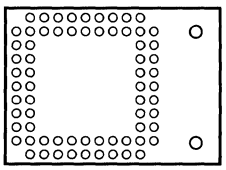
10 x 10
84 Position
Part No. 382450-2



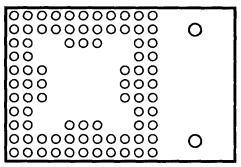
10 x 10
100 Position
Part No. 382450-3



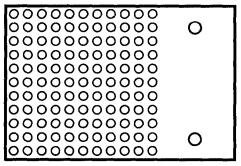
11 x 11
68 Position
Part No. 382451-1



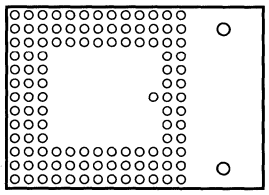
11 x 11
84 Position
Part No. 382451-2



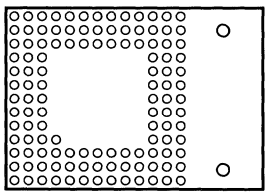
11 x 11
121 Position
Part No. 382451-3



13 x 13
114 Position
Part No. 382453-1



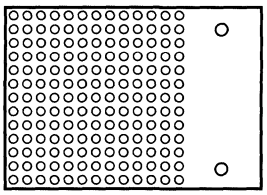
13 x 13
121 Position
Part No. 382453-2



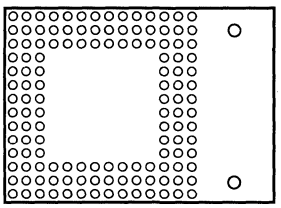
PGA Grid Patterns (Continued)

Specifications subject to change.
For latest design specifications...
1-800-522-6752

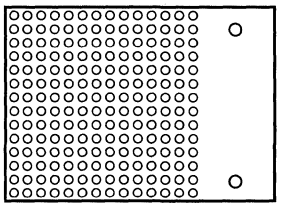
13 x 13
169 Position
Part No. 382453-3



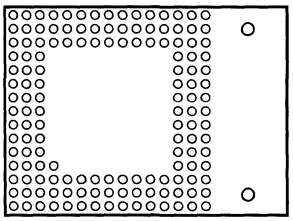
14 x 14
132 Position
Part No. 382454-1



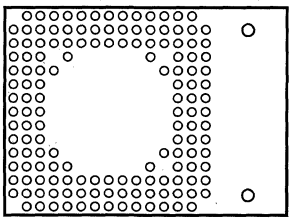
14 x 14
196 Position
Part No. 382454-2



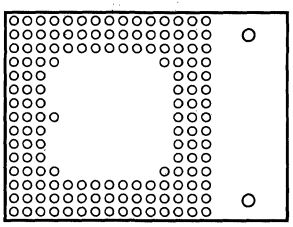
15 x 15
145 Position
Part No. 382455-1



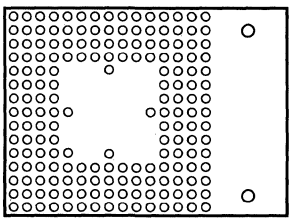
15 x 15
149 Position
Part No. 382455-2



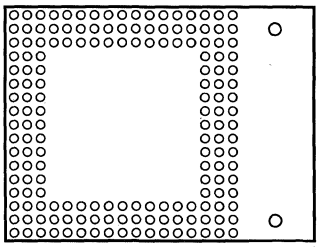
15 x 15
149 Position
Part No. 382455-3



15 x 15
181 Position
Part No. 382455-4



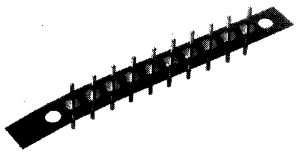
17 x 17
168 Position
Part No. 382457-1



Film Carrier Pins

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.



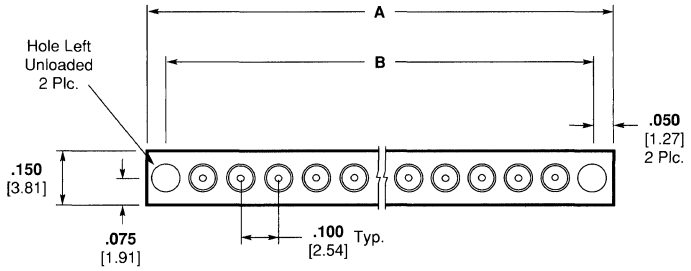
Materials:

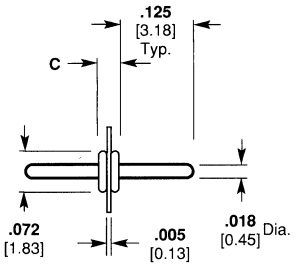
Film — Polyimide
Terminals — Brass, ½ Hard Composition 22, Copper Alloy 360, QQ-B-626

Finish:

Terminals —
Gold .000010 [0.00025] over .000050 [0.00127] Nickel
Tin/Lead .000200 [0.00508] over .000050 [0.00127] Nickel

Plating Specifications —
Nickel per QQ-N-290
Gold per MIL-G-45204
Tin/Lead per MIL-P-81728





No. of Pos.	Terminal Type[1]	Dimensions			Part Numbers	
		A	B	C	Terminal	
					Tin	Gold
8	G	**1.000** 25.40	**.900** 22.86	**.030** 0.76	382449-8	382490-8
	H	**1.000** 25.40	**.900** 22.86	**.070** 1.78	382460-8	—
	J	**1.000** 25.40	**.900** 22.86	**.085** 2.16	382461-8	—
10	G	**1.200** 30.48	**1.100** 27.94	**.030** 0.76	1-382449-0	1-382490-0
	H	**1.200** 30.48	**1.100** 27.94	**.070** 1.78	1-382460-0	1-382492-0
	J	**1.200** 30.48	**1.100** 27.94	**.085** 2.16	1-382461-0	1-382494-0
12	G	**1.400** 35.56	**1.300** 33.02	**.030** 0.76	1-382449-2	1-382490-2
14	G	**1.600** 40.64	**1.500** 38.10	**.030** 0.76	1-382449-4	1-382490-4
16	G	**1.800** 45.72	**1.700** 43.18	**.030** 0.76	1-382449-6	1-382490-6
20	G	**2.200** 55.88	**2.100** 53.34	**.030** 0.76	2-382449-0	2-382490-0
24	G	**2.600** 66.04	**2.500** 63.05	**.030** 0.76	2-382449-4	2-382490-4
100	G	**10.200** 259.08	**10.100** 256.54	**.030** 0.76	382449-1	382490-1

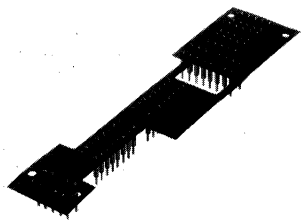
[1]Standard terminal types are listed on pages 10154 and 10155.
Any terminal type can be made available in this configuration; contact AMP Incorporated.

Note: See page 10153 for samples of terminal types for customer evaluation.

Custom Sheets of Sockets

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.



Materials:

Film — Polyimide

Terminals — Brass, ½ Hard Composition 22, Copper Alloy 360, QQ-B-626

Contacts — Beryllium Copper, ¼ Hard Copper Alloy 172 ASTM-8-194, QQ-C-533, Heat Treated

Finish:

Contacts — .000030 [0.00076] Gold over .000050 [0.00127] Nickel or .000150 [0.0038] to .000275 [0.00699] Tin/Lead Type 1 over .000050 [0.00127] to .000100 [0.00254] Nickel

Sleeves — .000200 [0.00508] to .000300 [0.00762] Tin/Lead Type 1 over .000050 [0.00127] to .000100 [0.00025] Nickel

Plating Specifications —
Nickel per QQ-N-290
Gold per MIL-G-45204
Tin/Lead per MIL-P-81728

Maximize Your Socket Loading Rate with Sheets of Sockets

This unique concept in terminal loading, features all the standard advantages of film carrier sockets plus an exceptionally fast pc board loading rate of pins or socket positions.

No expensive tooling or machinery is required. Just send your pc board or copy of artwork to us. AMP will produce a finished sheet loaded with sockets and ready for your soldering operation.

Cut out areas for loading caps, resistors, IC's or other hardware may be incorporated into the sheet.

Ordering Information

For custom sheets of sockets, send the following information:

- Artwork, pc board or drawing of pc board.
- Locate cutout requirements for high profile pc board components.
- Specify terminal type (Example, A or B, etc. and plating combination gold/tin, gold/gold or tin/tin).

Loading Rate

Loading Rate per Sheet	Pins Per Board/Sheet	Pins Loaded per Hour
20 Seconds Typical[1]	100	18,000
	500	90,000
	1,000	180,000
	2,000	360,000
	3,000	540,000
	4,000	720,000
	5,000	900,000
	10,000	1,800,000

[1]Loading rate shown will vary with operator's skill.

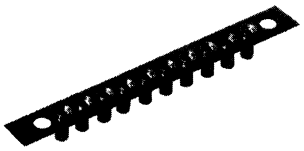
Note: Also available upon request are custom sheets of sockets configured as Side-by-Side and End-to-End DIPS.

Film Carrier Socket and Pin Types for Terminal Evaluation

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

SIP Socket Assemblies



Materials:

Film — Polyimide

Sleeves — Brass, ½ Hard Composition 22, Copper Alloy 360, QQ-B-626

Contacts — Beryllium Copper, ¼ Hard Copper Alloy 172 ASTM-8-194, QQ-C-533, Heat Treated

Finish:

Contacts — .000030 [0.00076] Gold over .000050 [0.00127] Nickel or .000150 [0.0038] to .000275 [0.00699] Tin/Lead Type 1 over .000050 [0.00127] to .000100 [0.00254] Nickel

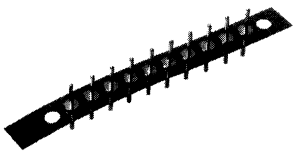
Sleeves — .000010 [0.00025] Gold over .000050 [0.00127] Nickel or .000200 [0.00508] to .000300 [0.00762] Tin/Lead Type 1 over .000050 [0.00127] to.000100 [0.00254] Nickel

Plating Specifications —
Nickel per QQ-N-290
Gold per MIL-G-45204
Tin/Lead per MIL-P-81728

No. of Pos.	Terminal Type[1]	Minimum Acceptable Pin Length	Part Numbers		
			Contact Tin / Sleeve Tin	Contact Gold / Sleeve Tin	Contact Gold / Sleeve Gold
10	A	**.090** 2.29	—	382521-8	1-382511-0
	B	**.075** 1.91	1-382445-0	1-382495-0	1-382509-0
	C	**.100** 2.54	1-382499-0	1-382500-0	1-382501-0
	D	**.100** 2.54	1-382496-0	1-382497-0	1-382498-0
	E	**.075** 1.91	1-382505-0	1-382506-0	1-382507-0
	F	**.100** 2.54	1-382502-0	1-382503-0	1-382504-0

[1]See page 10154 for terminal types.

Pin



Materials:

Film — Polyimide

Terminals — Brass, ½ Hard Composition 22, Copper Alloy 360, QQ-B-626

Finish:

Terminals — .000010 [0.00025] Gold over .000050 [0.00127] Nickel or .000200 [0.00508] Tin/Lead over .000050 [0.00127] Nickel

Plating Specifications —
Nickel per QQ-N-290
Gold per MIL-G-45204
Tin/Lead per MIL-P-81728

No. of Pos.	Terminal Type[1]	Part Numbers Terminals	
		Tin	Gold
10	G	1-382449-0	1-382490-0
	H	1-382460-0	1-382492-0
	J	1-382461-0	1-382494-0

[1]See page 10155 for terminal types.

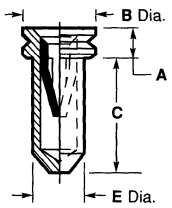
Terminal Types — Sockets

Specifications subject to change.
For latest design specifications...
1-800-522-6752

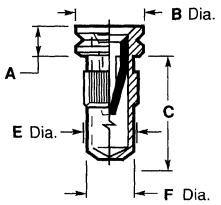
Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimeters.

Sockets will accept a .016–.022 [0.41–0.56] or .010–.018 [0.25–0.46] diameter pin

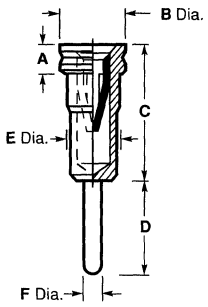
A and B



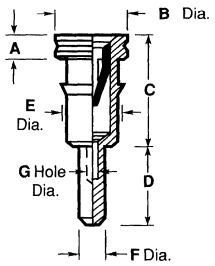
C



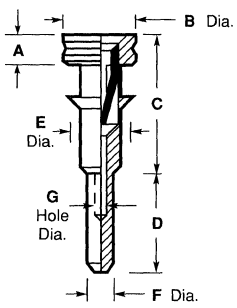
D



E



F



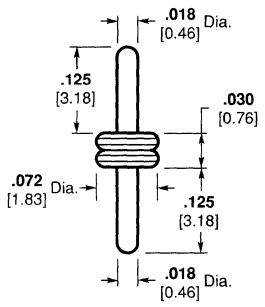
Terminal Type	Minimum Acceptable Pin Length	Dimensions						
		A	B Dia.	C	D Dia.	E Dia.	F Dia.	G Dia.
A	**.090** 2.29	**.031** 0.79	**.058** 1.47	**.125** 3.18	—	**.038** 0.97	—	—
B	**.075** 1.91	**.031** 0.79	**.072** 1.83	**.125** 3.18	—	**.053** 1.35	—	—
C	**.100** 2.54	**.031** 0.79	**.072** 1.83	**.125** 3.18	—	**.059** 1.50	**.052** 1.32	—
D	**.100** 2.54	**.031** 0.79	**.072** 1.83	**.165** 4.19	**.125** 3.18	**.056** 1.42	**.020** 0.51	—
E	**.075** 1.91	**.031** 0.79	**.072** 1.83	**.095** 2.41	**.095** 2.41	**.059** 1.50	**.028** 0.71	**.021** 0.53
F	**.100** 2.54	**.031** 0.79	**.072** 1.83	**.120** 3.05	**.140** 3.56	**.059** 1.50	**.028** 0.71	**.021** 0.53

Terminal Types — Pins

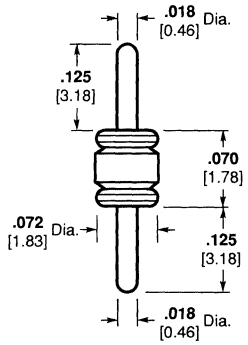
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.

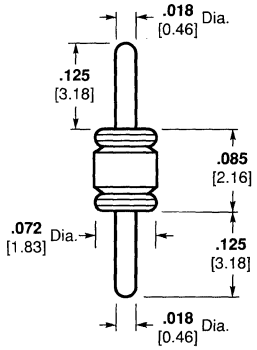
G



H

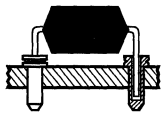


J

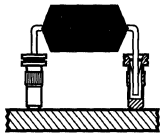


For IC Devices

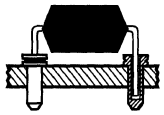
Type A and B
Near Flush Mount
Typical Assembly



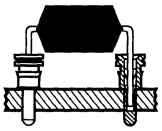
Type C
Surface Mount
Typical Assembly



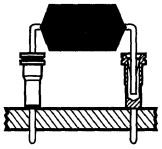
Type D
Low Profile
Typical Assembly

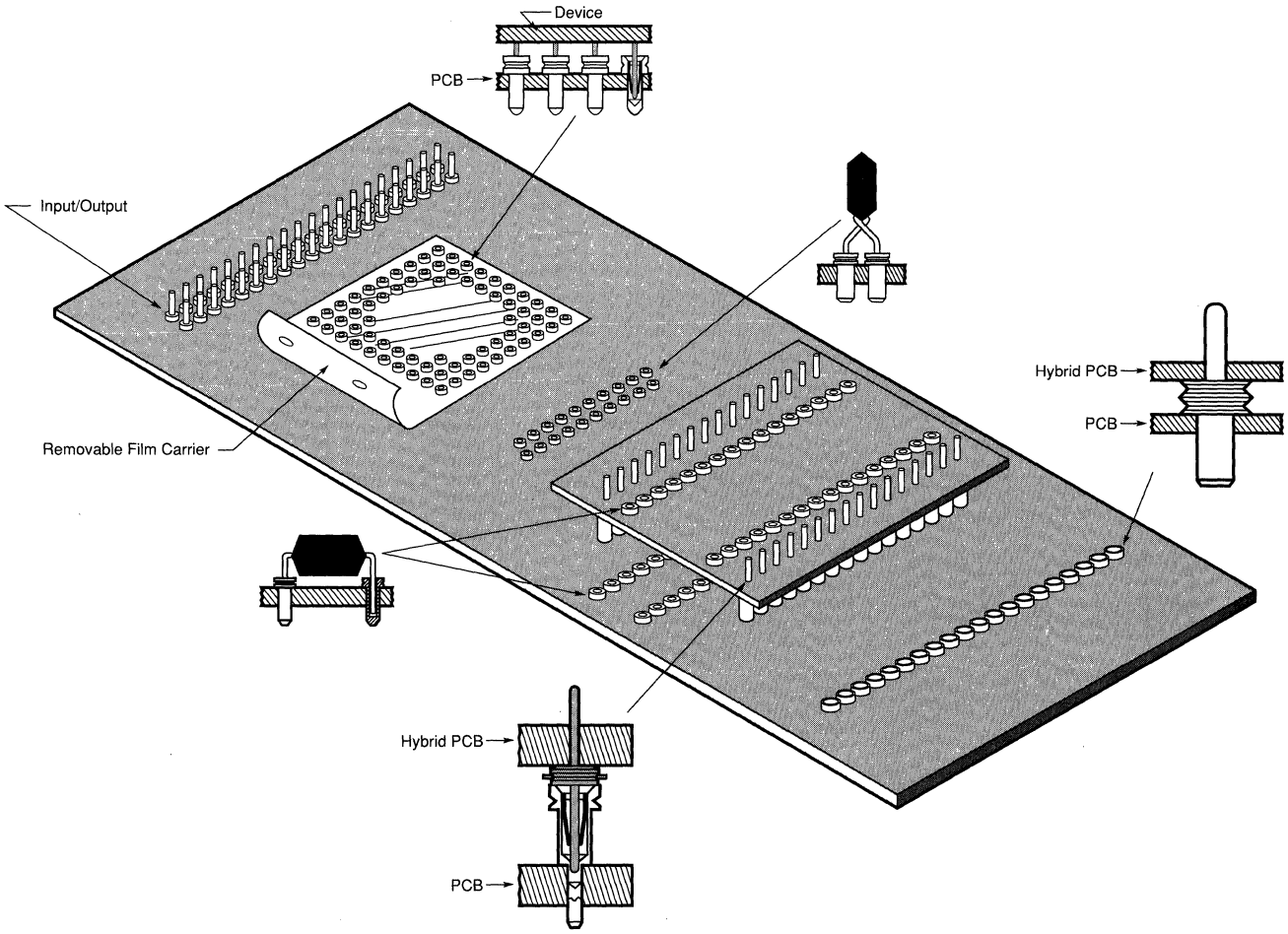


Type E
Ultra-Low Profile
Solder Tail
Typical Assembly



Type F
Very Low Profile
Solder Tail Standoff
Typical Assembly



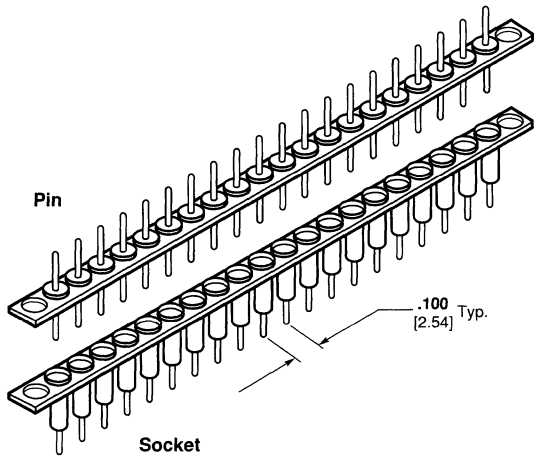


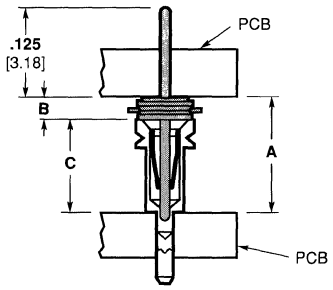
Specifications subject to change.
For latest design specifications...
1-800-522-6752

Dimensioning:
Dimensions are in inches and millimeters.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimeters.

For Board-to-Board Interconnection

Socket Types D or E

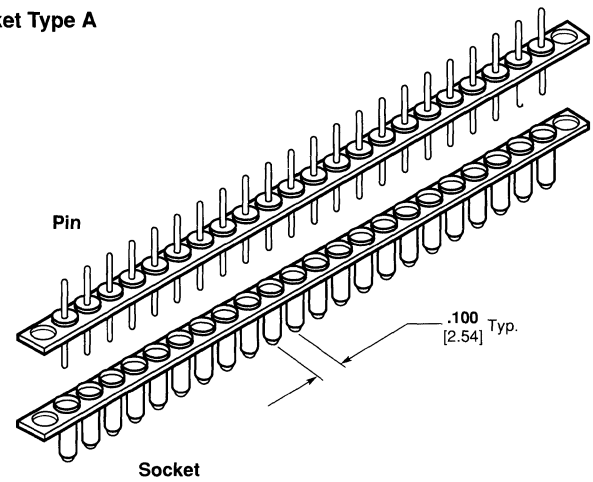


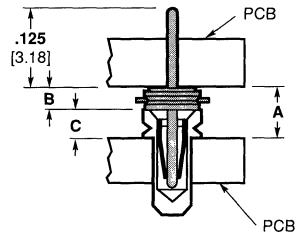


Pin Assemblies	Dimensions			Socket Assemblies
Pin Type[1]	A	B	C	Terminal Type[2]
G	**.125** 3.18	**.030** 0.76	**.095** 2.41	E
H	**.165** 4.19	**.070** 1.78	**.095** 2.41	E
J	**.180** 4.57	**.085** 2.16	**.095** 2.41	E
G	**.195** 4.95	**.030** 0.76	**.165** 4.19	D
H	**.235** 5.97	**.070** 1.78	**.165** 4.19	D
J	**.250** 6.35	**.085** 2.16	**.165** 4.19	D

[1]See page 10155 for pin types.
[2]See page 10154 for terminal types.

Socket Type A





Pin Assemblies	Dimensions			Socket Assemblies
Pin Type[1]	A	B	C	Terminal Type[2]
G	**.060** 1.52	**.030** 0.76	**.030** 0.76	A
H	**.100** 4.19	**.070** 1.78	**.030** 0.76	A
J	**.115** 2.92	**.085** 2.16	**.030** 0.76	A

[1]See page 10155 for pin types.
[2]See page 10154 for terminal types.

Specifications subject to change.
For latest design specifications...
1-800-522-6752

Grid Patterns

Design Your Own Pattern

AMP has complete design and manufacturing capabilities available for your layout (footprint). By answering the following questions we can manufacture a socket to accept your device.

Company Name: _____

Address: _____

Specifier: _____

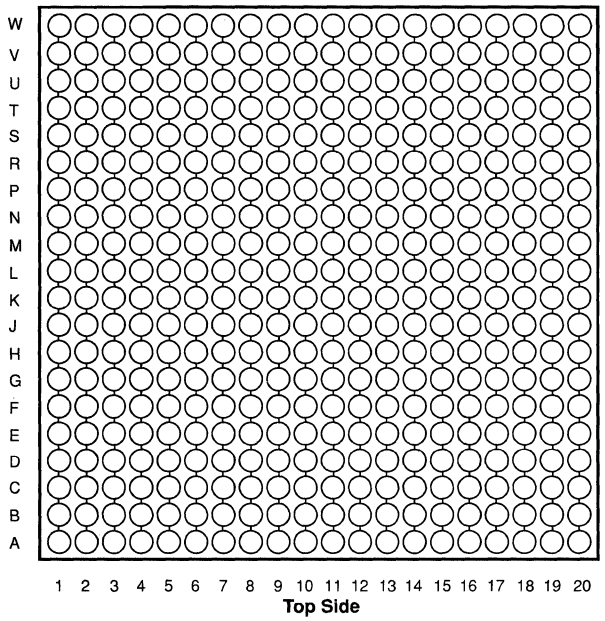
Phone Number: _____

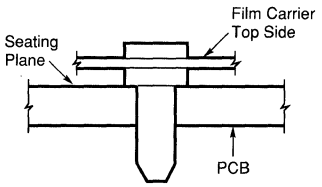
Pin Count: _____

Projected Yearly Usage: _____

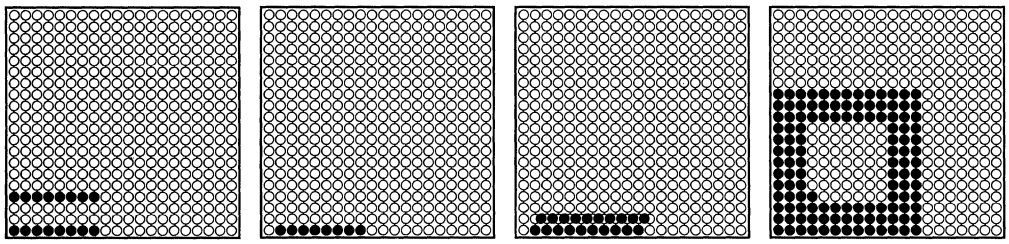
Date: _____

1. Fill in pin location.





Examples



DIP
Part No. 382447-8

SIP
Part No. 382445-8

ZIP
Part No. 2-382448-0

PGA
Part No. 382453-2

2. Check terminal type required.
(See pages 10154 & 10155 for description)

☐ **A** ☐ **C** ☐ **E** ☐ **G** ☐ **J**

☐ **B** ☐ **D** ☐ **F** ☐ **H**

3. Check plating type.

☐ **Contact — Tin/Lead, Sleeve — Tin/Lead**

☐ **Contact — Tin/Lead, Sleeve — Gold**

☐ **Contact — Gold, Sleeve — Gold**

☐ **Other**

Technical Documents

Various technical documents are available for your use:

Product Specifications describe technical performance, characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-1283 DIP and SIP Socket, on Film
108-1289 PGA Socket, on Film
108-1334 Terminals, Film Carrier

Performance Specifications

Termination Resistance, Dry Circuit: 20 milliohms, max. initial

Vibration, Sinusoidal High Freq.: 15 G's between 10–2000 Hz

Physical Shock: 100 G's

Contact Retention: 7.5 lbs. [33.36 N]

Durability: 5 Cycles

Thermal Shock: −40°C to +125°C

Insertion and Withdrawal Force (Average):

Terminal Types	Force With .018 [0.46] Diameter Test Pin			
	Gold Plated Contact		Tin/Lead Plated Contact	
	Insertion	Withdrawal	Insertion	Withdrawal
A	**2.65 oz.** [75g]	**1.41 oz.** [40g]	—	—
B, C, D & F	**2.65 oz.** [75g]	**1.59 oz.** [45g]	**8.82 oz.** [250g]	**2.65 oz.** [75g]
E	**3.53 oz.** [100g]	**2.12 oz.** [60g]	**12.34 oz.** [350g]	**5.29 oz.** [150g]

11

AMP

Indexes

Catalog List

Catalog	Title

Terminals and Splices

(Section 1)

65472	Closed End Splices
82004	FASTON Terminals (Insulated and Uninsulated)
82011	Terminals & Splices For High Temp. Applications (STRATO-THERM)
82016	Taper Technique
82020	COPALUM Terminals and Splices (For Solid & Stranded Aluminum or Copper Wire)
82023	AMP PICABOND Connectors
82025	AMPOWER Terminals & Splices
82035	Taper Tab Receptacles
82038	Radiation Resistant/150°C Preinsulated Terminals and Splices
82039	TERMI-FOIL Terminals and Splices
82042	Standard Terminals & Splices
82065	AMP Mini-Drop Wire Splice
82126	COPALUM Sealed Terminals & Splices
82211	Tel-Splice Connectors
82214	AMPOWER II Terminals and Splices per MIL-T-16366
82221	Magnet Wire Terminals (AMPLIVAR and MAG-MATE)
82227	Machine Applied Terminations, Open Barrel (Rings, Spades, Pins, Receptacles, Splices, Tabs)
82268	CABLE MAKER Battery Terminals
82274	Ultra-Pod Fully Insulated FASTON Receptacles
82564	ELECTRO-TAP Connector
82565	AMPOWER Quick Disconnect Terminals
82567	AMPOWER Terminals for Diesel Electric Locomotives
82600	AMPOWER II Terminals & Splices
82602	Pre-Insulated Sealed Terminals and Splices
82603	AMPOWER Solder Quick Disconnect Terminals

Pin and Socket Connectors

(Section 2)

65095	Shielded AMPLIMITE .050 Series, Slimline Connectors
65141	High Current Product
65301	MATRIX Commercial/Industrial Cylindrical Connectors
65481	AMP Sealed Connectors
65541	M Series V.35 Special Application Connectors
65561	AMPLIMITE .050 Series Vertical Receptacle Headers, Series III, with ACTION PIN Contacts (.050 x .100 [1.27 x 2.54] Centerlines)
82003	M Series Pin & Socket Connectors
82010	ARINC 404 Rack and Panel Connectors
82017	Breakaway-Splice-Type Pin and Socket Connectors
82021	CPC (Circular Plastic) and Metal-Shell CPC Connectors
82036	High Density Rectangular Connectors
82045	Metrimate Pin and Socket Connectors
82046	Modular Connectors AMP "G" Series Connectors (A Multimate Product)
82053	Audio/Instrument Connectors

Catalog	Title

Pin and Socket Connectors (Continued)

(Section 2)

82057	ECONOSEAL Sealed Pin and Socket Connectors
82068	AMPLIMITE and AMPLIMITE .050 Series Connectors and Terminators (Subminiature D)
82069	Subminiature D Pin & Socket Connectors per MIL-C-24308 (AMPLIMITE)
82103	Shielded Circular DIN Connectors
82106	ARINC 600 Connectors, Contacts, and Accessories
82181	Soft-Shell Pin & Socket Connectors
82208	AMPLIMITE .050 Series Connectors, Series III
82212	Shielded Miniature Circular DIN Connectors
82237	.093 [2.36] and .062 [1.57] Soft-Shell Commercial Pin and Socket Connectors
82273	AMP Universal Power (U-P) Connectors
82623	MIL-C-5015 Style Circular Plastic Connectors (CPC)
82647	Cylindrical Connectors
82693	Power IV Connectors
82724	Metrimate Vertical-Mount Drawer Connector
82725	Metrimate 43° – Mount Printed Circuit Board Plug Header
82785	MATRIX Engine/Firewall Cylindrical Connectors
82982	AMP Shielded Miniature Circular DIN Right-Angle Board-Mount Receptacles, Surface-Mount

Printed Circuit Board Connectors

(Section 3)

65062	Micro-Strip Interconnection System for MIPS Ngine Modules from LSI Logic
65069	Micro-Strip Cable Assemblies
65146	AMPSEAL Automotive Plug Connector and Header Assembly
65194	High Speed, Controlled Impedance Two-Piece Connectors
65224	Wire-to-Board Connectors, AMP Dynamic Series Connectors/D-3000 Series
65358	Z-PACK 2 mm FB (Futurebus+) Connectors
65359	AMPMODU Surface-Mount Receptacles
65445	AMPLIMITE HD-20 Subminiature D Stacked PCB Connectors Series I, Series II and Hybrid Styles
65459	Bifurcated Leaf Connectors
65701	Memory Card/PC Card Connectors
65790	AMPMODU Metristak 1.0 mm Connector System
82001	Commercial Interconnection Systems (Modular Board-to-Board & Wire-to-Board Systems)
82005	Printed Circuit Connectors (TERMI-TWIST)
82006	Printed Circuit Connectors Wrap-Type
82014	AMP Chevron-Shaped Contact Connectors
82015	Box Contact Connectors
82033	AMP Wrap Printed Circuit Connectors, .025" Square Posts
82037	AMP-BLADE Two-Piece Printed Circuit Edge Connectors
82040	AMP Multiple Tap Printed Circuit Edge Connector

Catalog List

Catalog	Title

Printed Circuit Board Connectors (Continued)

(Section 3)

82055	AMP Standard Tandem Spring and Mini-Tandem Spring Receptacle Contacts
82056	MTA-100 and MTA-156 Connectors and Headers; CST-100 and SL-156 Connectors
82060	.031 x .062 Interconnection System (AMPMODU)
82076	Two-Piece Printed Circuit Board Connectors (AMPMODU)
82104	MT and Shielded MT Interconnection System (AMPMODU)
82105	AMPMODU Stacking Connectors .025 x .025 [.64 x .64] Posts
82107	AMPMODU Level V IDC Connectors, .125 x .125 [3.18 x 3.18] Centers
82124	AMP-ULTREX Interconnection System 2 mm [.079"] Centerline
82125	AMP-ULTREX Interconnection System 2.5 & 2.54 mm [.098 & .100"] Centerlines
82159	Printed Circuit Board Terminals and Disconnects
82160	MTE Interconnection System (AMPMODU)
82170	Micro-MaTch Wire-to-Board Connectors
82178	System 50 Connectors (AMPMODU)
82182	AMP EDGEMATE Connectors
82183	2 mm Common Termination Connector System
82187	.025 Square Interconnection System (AMPMODU)
82228	AMP Mass Termination EI Series Connectors (MT EI)
82229	Low Profile Mini AMP-IN Headers (Crimp & MT Type)
82230	AMP Hinge Connectors, Standard and Reverse Type
82231	AMP I/O Connector Series Multiple-Tap Connectors
82233	AMP ACTION PIN Connectors
82235	AMP Economy Interconnection Series Connectors (EI)
82244	CHAMP .050 Connectors
82252	AMP 1.25 mm F-P Board-to-Board Connectors
82618	Two-Piece, High Density Printed Circuit Board Connectors
82619	One-Piece Printed Circuit Board Connectors (Board-to-Board, Wire-to-Board)
82625	Conductive Carbon Fiber Connectors
82643	AMPMODU 50/50 Grid Connector System
82721	Eurocard Connectors per DIN 41612 and IEC 603-2
82771	AMPMODU 2 mm Connectors (Board-to-Board)
82832	AMPINNERGY Wire-to-Board Connectors
82919	Micro-Strip Interconnection System for Intel486 DX CPU-Cache Module
82950	Enhanced Eurocard Connector

Coaxial and Flat Coaxial Cable Products

(Section 4)

65198	Hex Crimp and Printed Circuit Board SMA Connectors
65199	SSMB Cable and Printed Circuit Board Connectors

Catalog	Title

Coaxial and Flat Coaxial Cable Products (Continued)

(Section 4)

65578	LAN-LINE Thinnet Tap System for Ethernet/IEEE 802.3 10BASE2 Networks
82074	Guide to RF Connectors
82158	Multiple Transmission Cable Assemblies, Cable and Connectors
82240	LAN-LINE Thinnet Tap System
82671	Point-to-Point Cable Assemblies
82677	Commercial BNC Hex Crimp Connectors
82904	SMB Subminiature Coaxial Connectors

Ribbon and Flat Cable Connectors

(Section 5)

65213	2.0 mm [.079"] AMP-LATCH Ribbon Cable Connectors
65705	Paddlecard Cable Assemblies
82007	Flexible Film Products
82012	Ribbon Cable Connector System (AMP-LATCH)
82210	AMP FPC Connectors

Fiber Optics

(Section 6)

65355	Small Outline SC DUPLEX Transceiver Multisource for FDDI
65370	Rackmount FDDI Dual Bypass Switch Module
65372	1x2 Singlemode Switch
65538	Fixed Optical Fiber Attenuator 1310 or 1500nm±40nm; 1200-1600nm Broadband
65550	Fiber Optic Switches
65552	Singlemode 1480nm/1550nm Wavelength Division Multiplexer
65576	Handheld Optical Communications Test Set Model AM9100
65692	Fiber Optic Distribution Products
65693	Fiber Optic Distribution Products-Adapter Plates
65764	Fiber Optic Distribution Products Termination & Distribution Unit
65766	PIN/Preamp Modules
65771	Ruggedized Fiber Optic Switches
65772	Fiber Optic Attenuators
65782	Fiber Optic Distribution Products Patch Panels
65837	Fiber Optic Distribution Products Snap-In Adapter Plates
65838	Fiber Optic Distribution Products Swing-Out Action Tray
65872	Ruggedized Multimode Fiber Optic Couplers
82188	Fiber Optic Interconnection System (OPTIMATE)
82265	Fiber Optic Finger Splice
82684	KAPTRON FDDI Dual Bypass Switch Module
82685	KAPTRON Multimode Couplers
82686	KAPTRON Wavelength Division Multiplexers
82687	KAPTRON Singlemode Wideband Couplers 1310 nm & 1550 nm ± 40 nm 1310/1550 nm ± 40 nm Dual Window
82944	Universal Closure New Canister (UCNC) Fiber Optic Closure

Catalog List

Catalog	Title
Miscellaneous Connectors	
(Section 7)	
65211	AMPINNERGY Wire-to-Wire Connectors
65498	Electrostatic Discharge (ESD) Protected Connectors
65696	Quiet Line Filtered CHAMP Connectors
65723	Cyber Products Portable Data Carriers
65724	PCMCIA Ethernet LAN Adapter Card Assembly
65725	PCMCIA 14,400 bps FAX-Modem V.32bis
65726	PCMCIA FLASH Memory Card
65833	PED-CON Raised Floor/Signal Reference Grid Connector
65864	AMP Power Lock Connectors
82008	Miniature Ribbon Connector System (CHAMP)
82024	High Voltage Lead Assemblies, Connectors and Receptacles (LGH)
82026	AMPLIMATE Connectors (Serpent Intermateable)
82048	Relay Sockets with Crimp-Type Receptacles
82054	High Current Commercial Connectors
82061	AMP Quiet Line Filter Products
82066	Modular Interconnection System
82099	CHAMP Products for Field Installation
82101	SDL Connectors
82157	CR Connector Systems Zero Insertion Force
82161	AMPLIFLEX Surface-To-Surface Resilient Connectors
82165	Dual-Line Interlock (DLI) Connectors
82166	Multiple Interlock Connectors (MIC) Mark I and Mark II
82167	AMP Four-Position Data Connector for the IBM Token Ring Network and the IEEE 802.5 Local Area Network
82232	AMP Pulse Lock Connectors
82234	AMP Drawer Connectors
82236	AMP Positive Lock Connectors (Mark I/II)
82242	Appliance Connectors
82258	Access Floor Workstation Module
82697	AMPINNERGY Modular Wiring System
82795	AMP Ferrite Block Filtered Connectors
82846	Terminators
Switches and Programming Systems	
(Section 8)	
65025	2-Position, Low Profile (Novo Shunt) with Handle
82018	AMP Standard Patchcord Programming Systems
82019	Coaxial Patchcord Programming System
82027	AMP Universal Patchcord Programming Products
82043	Low Capacitance, Shielded Patchcord Programming Systems
82044	Patchcord Programming Systems and Panels
82062	AMP Modular Interface Connector Device
82162	Printed Circuit Board Switches & Shunts

Catalog	Title
Miscellaneous Products	
(Section 9)	
65284	Pluggable Bus Bar Connector
65410	Identifier Plate
65451	TERMI-BLOK Stacking Connectors
65427	WRENCH-LOK Connectors for Grounding
65503	Miniwedge Connectors
65564	AMP Multiconductor Cable
65663	High Speed Digital Transmission Cables
65755	Planar Ribbon Cable
82047	Power Cord Receptacle
82050	SPIRAP Plastic Cable Wrap
82051	Terminal Blocks
82052	FLEXI-BLOCK Terminal Block System
82058	Flexible Conduit Connectors
82059	Universal Closures
82063	AMP-FIT Products
82067	Convenience Outlet
82075	Non-Metallic Sheathed Cable Splicing Devices and Tap
82155	AMPACT Grounding System
82205	COPALUM Connectors and Heat Shrink Tubing System
82215	AMPSULATION Type MHWP31 Heat-Shrinkable Tubing
82225	New Universal Closures (UCN)
82226	Undercarpet Cabling System Selection Guide
82239	FLEX-MODE Interconnect Modules for Voice and Data
82254	WRENCH-LOK Connectors for Aluminum Applications
82257	AMP Quiet Front Terminal Block
82258	Access Floor Workstation Module
82266	Battery Cleaner and Corrosion Preventative Products
82267	Silicone Fusion Tape
82269	Undercarpet Cabling Floor Service Box
82271	AMPOWER Wave Crimp System
82272	Flame Retardant Universal Vault/Building Entry Closures
82571	AMP Cold Shrink Tape
82617	Electric Utility Products
82624	AMP-TY Nylon Cable Ties, Tools and Accessories
82664	Universal Distribution Connectors for Telephone Grounding, Street Lights and Service Entrance Drops
82781	Terminal Junction Blocks
82913	C-LOK Grounding and Bonding Connectors
IC Sockets	
(Section 10)	
65238	Low Insertion Force (LIF) PGA Socket for Intel 486 DX2 CPU Device (Heat Sink Compatible)
65262	Tool Actuated ZIF (TAZ) and Handle Actuated ZIF (HAZ) PGA Sockets for TI TMS320C40 Digital Signal Processor
65324	Zero Insertion Force (ZIF) PGA OverDrive Ready Socket for Intel 19 x 19 238-Position OverDrive Processor

Catalog	Title

IC Sockets (Continued)

(Section 10)

65326	Bail Actuated ZIF (BAZ) PGA Upgrade Sockets for Intel OverDrive Processors
65353	Economy DIP Sockets (DIPLOMATE)
65413	PGA OverDrive Ready Sockets for Intel 17 x 17, 169-Position OverDrive Processor
65423	ZIP Sockets (DIPLOMATE ZP)
65463	Surface Mount and Surface Mount Compatible DIPLOMATE Dual Leaf (DL) DIP Sockets
65473	Low Profile SOJ-Style Surface Mount PLCC Socket
65530	PGA Low Insertion Force (LIF) Sockets
65548	Low Insertion Force, Low Profile Surface Mount PLCC Sockets
65559	196 Position MICRO-PITCH Surface Mount Socket
65648	Mini Memory Module, Surface Mount (M3) SIMM Socket
65657	High Performance Low Insertion Force (LIF) PGA Sockets for the Intel Pentium Processor
65658	Single Lever (SL) ZIF PGA Sockets for Intel OverDrive Upgrade Devices
65687	Film Carrier IC Sockets for Surface Mounting
65759	Dual Read-Out SIMM Socket for IDT 128KB/256KB Secondary Cache Modules
65767	Test Probe Receptacles
65818	MICRO-PITCH PQFP Upgrade Adapters
82172	IC Sockets
82251	Film Carrier Sockets and Pins
82730	Screw Machine IC Sockets
82801	20 x 28 PGA Film Carrier Socket for Intel Turbocache Controller 82485
82820	Tool Actuated ZIF (TAZ) and Handle Actuated ZIF (HAZ) PGA Sockets
82821	LIF PGA Socket for Compatible Heat Sink
82834	Dual Read-Out SIMM Sockets

Application Tooling

65004	AMP-O-MATIC Side-Feed Stripper-Crimper, Model II Machine
65083	Rotary Index Table for MAG-MATE Terminals
65404	Applicators for Wire Termination
65780	CERTI-CRIMP Hand Tools
65828	AMP-O-LECTRIC Model "G" Termination Unit
82078	AMP MA-6U Applicator
82185	R-CAM 2A Cable Assembly Machine
82186	AMP Comp-U-Sertor Insertion Machine
82189	LM 43 Lead-Making Machine
82190	LM 35 Lead-Making Machine
82191	LM 42 Lead-Making Machine
82198	Coaxial Cable Stripper
82219	CHAMPOMATOR 3A Terminating Machine
82220	AUTO-PRO Terminating Machine
82243	Insulation Displacement Crimp (IDC) Power Unit
82247	CHAMPOMATOR 2.5 Terminating Machine
82259	AMP-O-LECTRIC Model K Terminating Machine
82270	AMP-O-LECTRIC Model KII Terminating Machine
82275	Crimp Quality Monitor (CQM)
82276	PRO-CRIMPER II Hand Tool

Catalog	Title

Application Tooling (Continued)

82278	R-CAM 3A Ribbon Cable Assembly Machine
82626	Model 2614 and Model 1210 Pneumatic Tools
82629	DECAM D-1A Double End Cable Assembly Machine
82659	AMPOMATOR CLS III Machine
82798	Shielded Data Link Connector, Hand Tool Kit
82906	Fiber Cleaver for Singlemode and Multimode Optical Fibers
82907	Precision Stripping Tool for Optical Fibers
82945	High Volume Tube Feeder
82946	High Volume Gang of Tubes (GOT) Feeder
82954	Modular Plug Dual Terminator
82969	Data Acquisition System

Surface Mount Products

65230	Products for Surface Mount Assembly

Qualified Military Products (See page 2)

82009	Qualified Products For Military Applications
82010	ARINC 404 Rack and Panel Connectors
82012	Ribbon Cable Connector System (AMP-LATCH)
82015	Box Contact Connectors
82037	AMP-BLADE Two-Piece Printed Circuit Edge Connectors
82042	Standard Terminals & Splices
82069	Subminiature D Pin & Socket Connectors per MIL-C-24308 (AMPLIMITE)
82074	Guide to RF Connectors
82172	IC Sockets
82188	Fiber Optic Interconnection System (OPTIMATE)
82214	AMPOWER II Terminals and Splices per MIL-T-16366
82215	AMPSULATION Type MHWP31 Heat-Shrinkable Tubing
82647	Cylindrical Connectors
82781	Terminal Junction Blocks

NETCONNECT Open Wiring Systems

65096	110Connect System
82164	NETCONNECT Open Wiring Systems
82167	AMP Four-Position Data Connector and Related Products for the IBM Token Ring Network and the IEEE 802.5 Local Area Network
82226	Undercarpet Cabling System Selection Guide
82239	FLEX-MODE Interconnect Modules for Voice and Data
82240	LAN-LINE Thinnet Tap System
82258	Access Floor Workstation Module
82269	Undercarpet Cabling Floor Service Box
82697	AMPINNERGY Modular Wiring System

Outside Plant (OSP) Products

65689	Products for Outside Plant Applications

Alphabetical Index

Alphabetical Index

C

Alphabetical Index

D

E

F

Alphabetical Index

G

H

Alphabetical Index

Alphabetical Index

N

O

Alphabetical Index

Alphabetical Index

S

Alphabetical Index

Alphabetical Index

W

Z

Part Number Index

13126 to 62780

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

62781 to 87525

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

87543 to 103657

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

103658 to 201092

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

201092 to 204173

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

204173 to 220061

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

220061 to 228213

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

228214 to 350423

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

350424 to 480324

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

480339 to 520128

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

520129 to 554439

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

554501 to 643408

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

643410 to 745906

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

745907 to 749179

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

749180 to 821949

Note: The numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Part Number Index

821950 to 940993

Note: The numerical index lists all cataloged part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

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Harrisburg, PA, U.S.A.
Phone: 717-564-0100
FAX: 717-986-7813

AMP S.A. Argentina
Buenos Aires, Argentina
Phone: 54-1-11-1286
FAX: 54-1-11-2837

AMP do Brasil, Ltda.
São Paulo, Brazil
Phone: 55-11-861-3311
FAX: 55-11-861-0397

AMP of Canada, Ltd.
Markham (Toronto)
Ontario, Canada
Phone: 416-475-6222
FAX: 1-416-474-5520

AMP Incorporated
Harrisburg, PA, U.S.A.
Phone: 717-564-0100
FAX: 717-986-7813

AMP de Mexico, S.A.
Mexico City, Mexico
Phone: 525-729-0400
FAX: 525-398-7964

Europe

Regional Center
AMP
Slough, SL2 4JN England
Phone: 44-753-676-800
FAX: 44-753-676-801

AMP Österreich m.b.h.
Wien (Vienna), Australia
Phone: 43-1-277-97-0
FAX: 43-1-270-2661

AMP Belgium
Zaventem (Brussels), Belgium
Phone: 32-2-719-2511
FAX: 32-2-721-3263

AMP Danmark
Viby, Denmark
Phone: 45-86-295-055
FAX: 45-86-295-133

AMP Finland Oy
Helsinki, Finland
Phone: 358-0-547-2255
FAX: 358-0-547-2250

AMP de France S.A.
Pontoise, France
Phone: 33-1-3420-8888
FAX: 33-1-3420-8600

AMP Deutschland G.m.b.h.
Langen, Germany
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FAX: 49-6103-709223

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Stanmore
Middlesex, England
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FAX: 44-81-954-6234

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FAX: 31-73-21-2365

AMP-Hungry Trading Kft.
Esztergom, Hungary
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FAX: 36-1-157-4312

AMP Ireland, Ltd.
Dublin, Ireland
Phone: 353-1-51-7333
FAX: 353-1-52-7685

AMP Italia S.p.A.
Collegno, (Turin), Italy
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FAX: 39-11-403-1116

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Rud (Oslo), Norway
Phone: 47-67-135-080
FAX: 47-67-136-998

AMP Portugal, Lda.
Lisbon, Portugal
Phone: 351-1-3877016
FAX: 351-1-3877172

AMP Española, S.A.
Barcelona, Spain
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FAX: 34-3-201-7879

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Stockhom -Jakobsberg,
Sweden
Phone: 46-8-580-833-00
FAX: 46-8-580-194-70

AMP (Schweiz) A.G.
Steinach, Switzerland
Phone: 41-7-147-0707
FAX: 41-7-147-0347

Asia/Pacific

Regional Center
AMP
Kawasaki, Kanagawa 213, Japan
Phone: 81-44-813-8502
FAX: 81-44-813-8500

Australian AMP Pty., Ltd.
Castle Hill, NSW 2154
Phone: 61-2-680-3377
FAX: 61-2-099-5649

AMP (Japan), Ltd.
Kawasaki-shi, Japan
Phone: 81-044-844-8111
FAX: 81-44-812-3207

AMP Korea, Ltd.
Seoul, South Korea
Phone: 82-2-589-0535
FAX: 82-2-589-0524

AMP Products (Malaysia) Sdn. Bhd.
Kuala Lumpur, Malaysia
Phone: 60-4-840931
FAX: 60-4-849521

AMP Products Pacific, Ltd.
Kowloon, Hong Kong
Phone: 852-735-1628
FAX: 852-735-0243

AMP Singapore, Pte., Ltd.
Singapore
Phone: 65-482-0311
FAX: 65-482-1012

AMP Taiwan B.V.
Taipei, Taiwan
Republic of China
Phone: 886-2-325-0391
FAX: 886-2-325-0398

AMP (Thailand), Ltd.
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Phone: 662-513-9888
FAX: 662-513-9889

AMP Tools (India), Pvt., Ltd.
Cochin, India
Phone: 91-484-802-597
FAX: 91-484-802-593

New Zealand AMP, Ltd.
Auckland, New Zealand
Phone: 64-9-6344580
FAX: 64-9-6344586

Wholly Owned Companies

ACSYS Incorporated
Burlington, MA, U.S.A.
Phone: 617-270-5566
FAX: 617-270-5575

AMP Packaging Systems
Austin, TX, U.S.A.
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FAX: 512-244-5109

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Phone: 512-244-3500
FAX: 512-244-7040

Carroll Touch International
Japan Branch
Tokyo 160, Japan
Phone: 81-3-345-8231

Kaptron, Inc.
Palo Alto, CA, U.S.A.
Phone: 415-493-8008
FAX: 415-493-8924

Matrix Science Corp.
Torrance, CA, U.S.A.
Phone: 310-328-0271
FAX: 310-328-6606

Pamcor, Inc.
Old San Juan, PR
Phone: 809-733-8186

Precision Interconnect Corporation
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Phone: 503-620-9400
FAX: 503-620-7131

Raylan Corporation
Palo Alto, CA, U.S.A.
Phone: 415-813-0400
FAX: 415-494-7844

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AMP Incorporated, Harrisburg, PA 17105; Phone: 717-564-0100; FAX: 717-986-7813
Product Information Center; Phone: 1-800-522-6752

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AMP Incorporated, Harrisburg, PA 17105
Phone: 717-564-0100 TWX: 510-657-4110
Product Information Center: Phone: 1-800-522-6752