VOLUME A05 MACHINE 4381- -0011647 MODEL M02 SYSTEM 0000JYP MODE SCHED SHIP 00/00/00

LOGIC TYPE -0- SYSTEMS DIAGRAMS DOC COUNTER

PAGE NUM	SH	TITLE	PART NUM	EC NUM	FEATURE B/M OR B/MS
EA005		TITLE PAGE	0000445998	A02220	.W. 0004473536
EA010		RC 11 0064 OE	0000445999	A02214	.W. 0002676390
EA020		RC 11 0074 OE	0000446000	A02214	.W. 0002676390
EA025		RC 11 0094 OE	0000446001	A02215	.W. 0004473536
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EA040		RC 11 1585 OE	0000446004	A02217	.W. 0002676390
EA045		RC 11 1585 OE	0000446005	A02217	.W. 0002676390
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EA155		RC 11 1545 OE	0000446027	A02220	.W. 0004473536
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EA215		RC 1D 0013 OE	0000446039	A02214	.W. 0004473536
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EA225		RC 1D 0043 OE	0000446041	A02217	.W. 0004473536
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EA280		RC 14 A164 OE	0000446052	A02220	.W. 0004473536
EA285		RC 14 A174 OE	0000446053	A02220	.W. 0004473536
EA290		RC 14 A484 OE	0000446054	A02214	.W. 0004473536
EA295		RC 14 A484 OE	0000446055	A02214	.W. 0004473536
EA300		RC 14 A484 OE	0000446056	A02214	.W. 0004473536
EB005		RC 11 A144 OE	0000447378	A02220	.W. 0004473538
EB015		RC 11 A184 OE	0000447379	A02220	.W. 0004473538
EB025		RC 11 A644 OE	0000447380	A02220	.W. 0004473538
EB035		RC 11 5214 OE	0000447381	A02216	.W. 0004473538
EB045		RC 11 5214 OE	0000447382	A02216	.W. 0004473538
EB055		RC 11 5384 OE	0000447383	A02217	.W. 0004473538
EB065		RC 11 1164 OE	0000447384	A02216	.W. 0004473538
EB075		RC 11 5394 OE	0000447385	A02217	.W. 0004473538
EB085		RC 11 5394 OE	0000447386	A02217	.W. 0004473538
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IBM Maintenance Information

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SAFETY INDEX TERMS/ ABBREVIATIONS INTRODUCTION START PU REPAIR CHNL REPAIR MSS REPAIR END OF REPAIR	PWR REPAIR (HWS AND MBC)	PWR REPAIR (PROC) PR 1001 THRU PR 13 XX	PWR REPAIR (PROC) PR 1401 THRU PR 18 XX	PWR REPAIR (PROC) PR 1901 THRU PR 5001	SERVICE AIDS	LOCATIONS TOOLS REMOVAL/ REPLACEMENT PREVENTIVE MAINTENANCE DIAGNOSTICS LOGS SYSTEM TEST INSTALLATION SAFETY INSP	CONSOLE FUNCTIONS MESSAGES
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4381 Processor Maintenance Information

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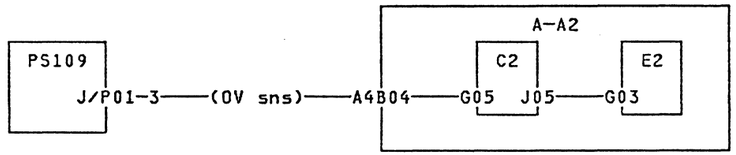
Ref Codes 11D0640E, 11D0650E

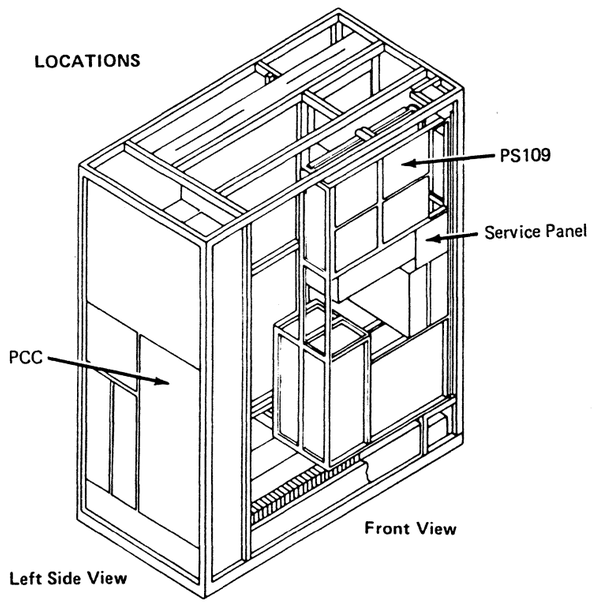
These Ref Codes indicate that the PS109 OV sense line was below +0.8 Vdc after the start line was turned on.

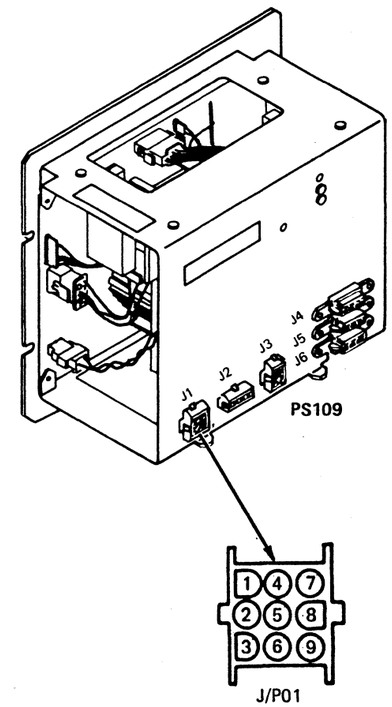
Possible cause:

- PS109.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS109. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.







Seq EA010	PN 0445999 Pg 1 of 1	EC A02214 15 SEP 83				

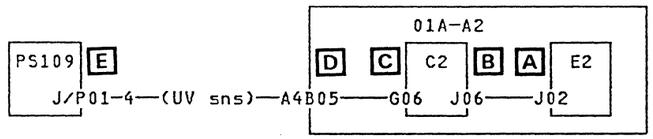
Ref Codes 11D0740E, 11D0750E

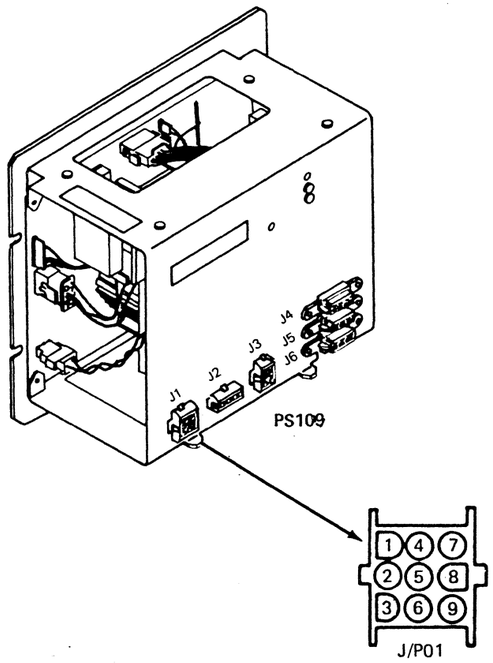
These Ref Codes indicate the PS109 UV sense line was below +2.4 Vdc after the start line to PS109 was set on.

Possible causes:

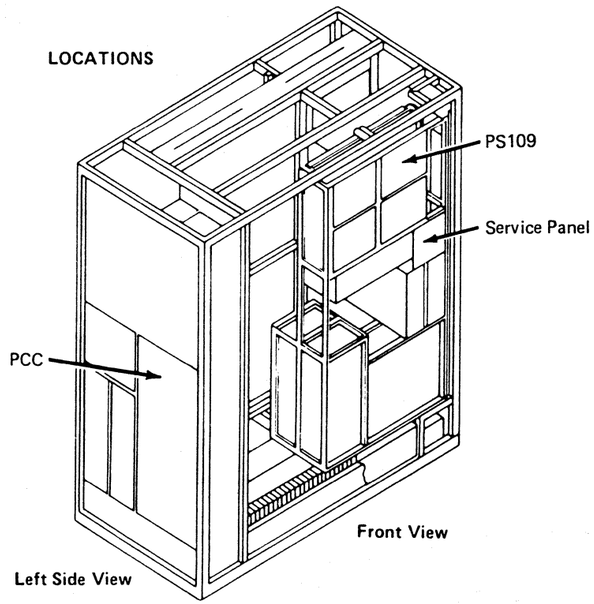
- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- 01A-A2 board
- PS109
- PS109 UV sense line open or grounded.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option F (stop after +5V start). 6. Measure for +5 Vdc at the following points: - lead to 01A-A2E2P08 [A] + lead to 01A-A2E2J02. [A]
2	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2E2 card. 3. Go to step 12.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2C2D08 [B] + lead to 01A-A2C2J06. [B]
4	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to step 12.





Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2C2D08 [C] + lead to 01A-A2C2G06.
6	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2C2 card. 4. Set PCC CB1 and CB2 on. 5. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: 1. - lead at 01A-A2A4D08 [D] 2. + lead at 01A-A2A4B05.
8	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to step 12.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS109 J/P01-4. [E]
10	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable between PS109 J/P01 and 01A-A2A4. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 12.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS109. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 12.
12	Go to **Instructions** column.	1. If still failing, the sense line may be shorted isolate to one of the following: 01A-A2E2 card 01A-A2C2 card PS109 01A-A2 board Cable from 01A-A2A4 to PS109 J/P01. 2. Set PCC CB1 and CB2 on. 3. Go to page PR 5001.



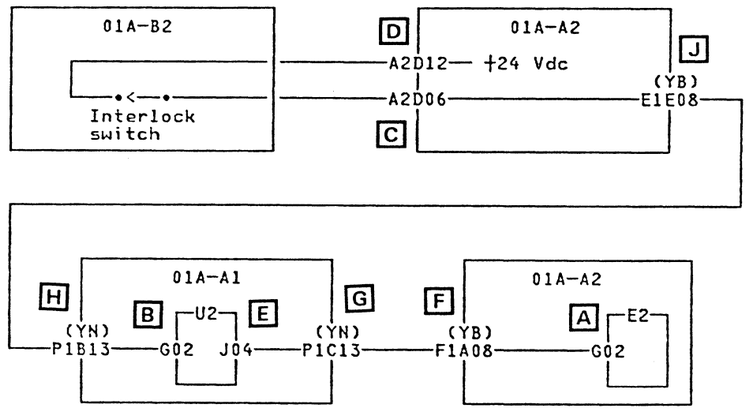
Ref Codes 11D0940E, 11D0950E

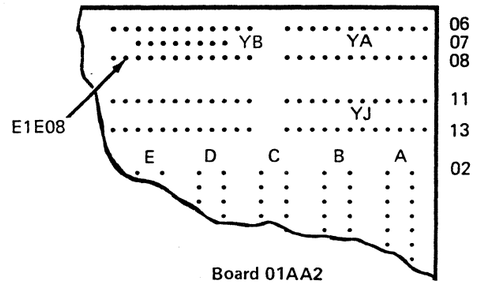
These Ref Codes indicate the door to the 01A-B2 board is open or the sense line is failing.

Possible causes:

- Open 01A-B2 plenum door
- 01A-A2E2 sense card
- 01A-A1U2 sense card
- 01A-B2 interlock switch.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Ensure door to 01A-B2 board is closed and the twist lock is tightened. **Note:** If door was open, try powering up before continuing. 3. If power is complete, return to original repair procedure or page PR 5001. 4. Set CE Mode switch to CE Mode. 5. Press service panel Power On. 6. Measure for +4 Vdc at the following points: - lead at 01A-A2E2D08 [A] + lead at 01A-A2E2G02.
2	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Go to step 25.
3	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2E2D08 [B] + lead at 01A-A1U2G02.
4	Is voltage greater than +22 Vdc?	Go to step 12.

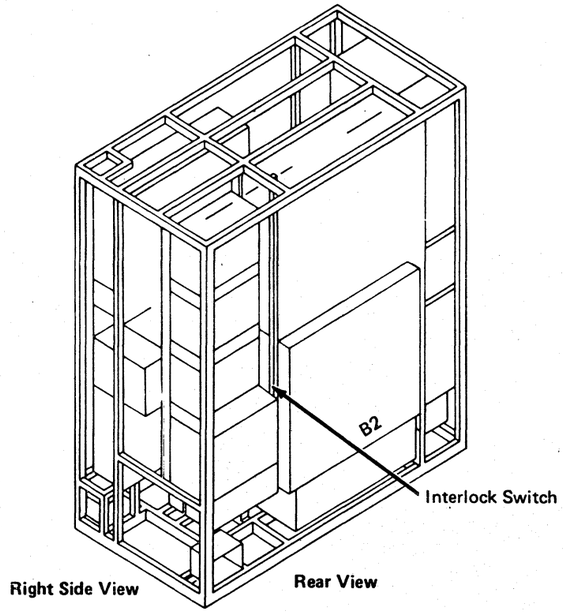




Board 01AA2

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2A2D06. C
6	Is voltage greater than +22 Vdc?	Go to step 20.
7	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at frame ground. + lead at both sides of 01A-A1B2 board interlock switch.
8	Is voltage greater than +22 Vdc on only one side of interlock switch?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange interlock switch. 4. Go to step 25.
9	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2A2D12. D
10	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A2A2 to 01A-A1B2 interlock switch. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 25.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Go to step 25.
12	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A1U2J04. E
13	Is voltage greater than +2.5 Vdc?	Go to step 15.
14	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1U2 card. 4. Go to step 25.
15	Go to **Instructions** column.	Measure for +4 Vdc at the following point. - lead at 01A-A2D2D08 + lead at 01A-A2F1A08. F
16	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Go to step 25.
17	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1P1C13. G
18	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A1YN to 01A-A2YB. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 25.
19	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Go to step 25.
20	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1P1B13. H

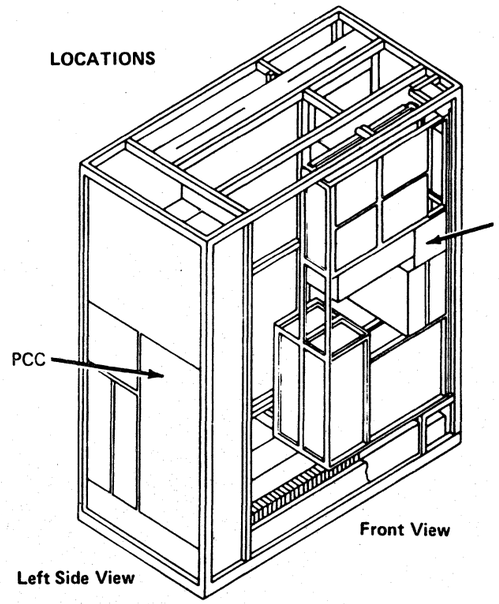
Step	Conditions	Instructions
21	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Go to step 25.
22	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 [J] + lead at 01A-A2E1E08.
23	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A1YN to 01A-A2YB. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 25.
24	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Go to step 25.
25	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Check all cables and cards for proper seating in the following areas: 01A-A1 board 01A-A2 board 01A-B2 board interlock. 4. Reset any tripped CPs. 5. Set PCC CB1 and CB2 on. 6. Go to page PR 5001.



Right Side View

Rear View

LOCATIONS



Front View

Left Side View

Seq EA030	PN 0446002 Pg 1 of 1	EC A02214 15 SEP 83	EC A02215 01 NOV 83			

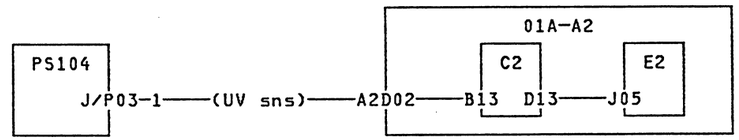
Ref Code 11D1130E

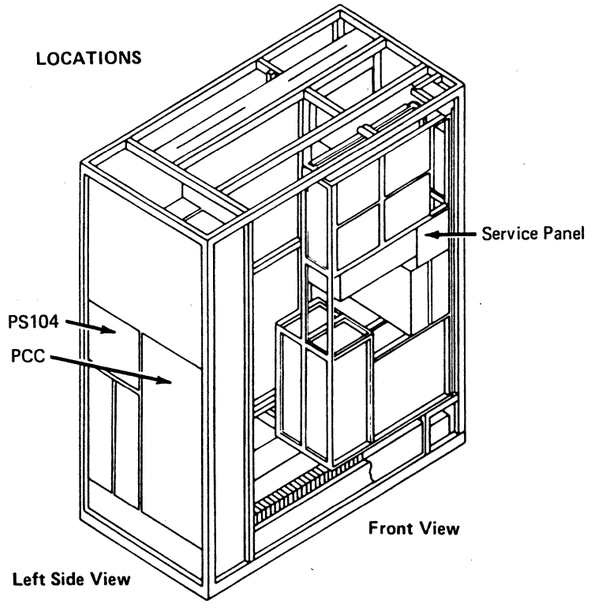
This Ref Code indicates that the PS104 UV sense line was above +0.8 Vdc after a power off sequence was started.

Possible cause:

- PS104.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. ***DANGER*** ***300 Vdc.*** 3. Exchange PS104. 4. Go to page PR 5001.





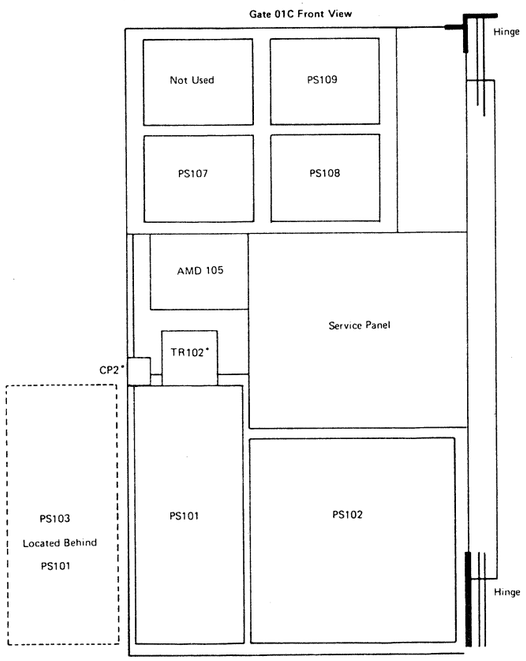
Ref Codes 1115850E, 11D1140E, 11D1150E, 11D1160E

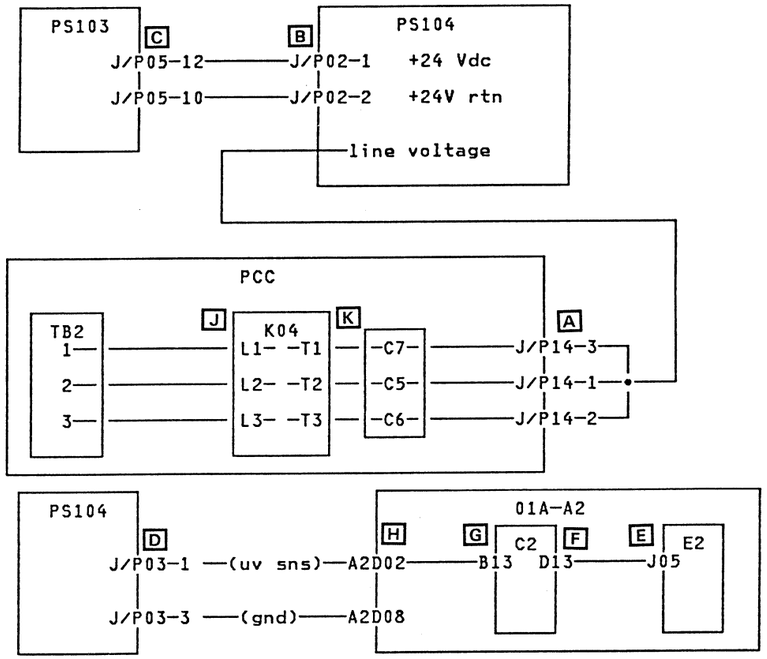
These Ref Codes indicate the line voltage or 24V bias is missing to PS104 or the 300 Vdc bulk sense line is failing.

Possible causes:

- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- PS104 F9
- PS104
- PS103
- TR104 CP2.

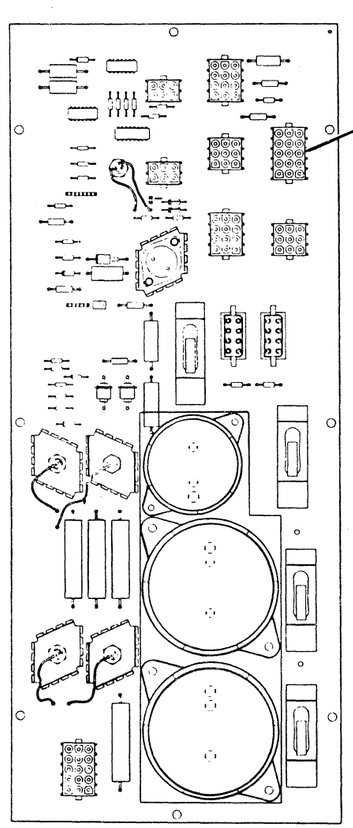
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Check PS104 F9.
2	Is F9 good?	1. If TR104A, B, C are installed, go to step 32. 2. Go to step 7.
3	Is F9 open?	1. Exchange F9. 2. Press service panel Power On.
4	Is power complete or is there a different Ref Code?	Go to page PR 5001.
5	Is the same Ref Code displayed?	Check for open PS104 F9.
6	Is F9 open?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS104. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 48.



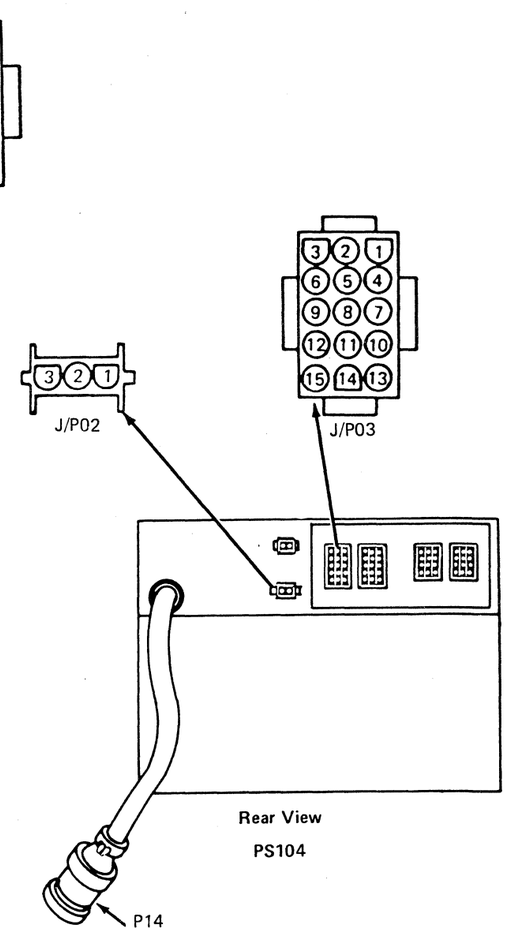


Note: UV sense is ground with PU power off; 1.5V with PU power on.

Step	Conditions	Instructions
7	Go to **Instructions** column.	1. Did you answer step 2 correctly about TR104? 2. Set CE Mode switch to CE Mode. 3. Disconnect cable at PCC J/P14. 4. Press service panel Power On. 5. Select the Diagnostic Power Up (QWD) screen. 6. Select option B (stop after K4 picked). 7. Measure for line voltage at the following points: PCC J14-1 to 2 PCC J14-2 to 3 [A] PCC J14-1 to 3 (on PCC box). **Note:** For line voltage value, see label on PCC box.
8	Is line voltage missing at any point?	Go to step 27.
9	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at PS104 J14. 3. Press service panel Power On. 4. Select the Diagnostic Power Up (QWD) screen. 5. Select option B (stop after K4 picked). 6. Measure for +24 Vdc at the following points: - lead at PS104 J/P02-2 + lead at PS104 J/P02-1. [B]
10	Is voltage greater than +22 Vdc?	Go to step 14.
11	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PS103 J/P05-10 + lead at PS103 J/P05-12. [C]

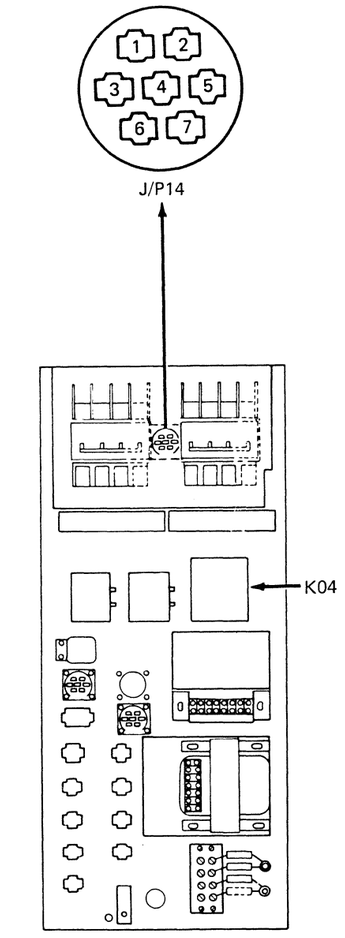


PS103



Seq EA040	PN 0446004 Pg 2 of 2	EC A02214 15 SEP 83	EC A02217 10 JAN 84			

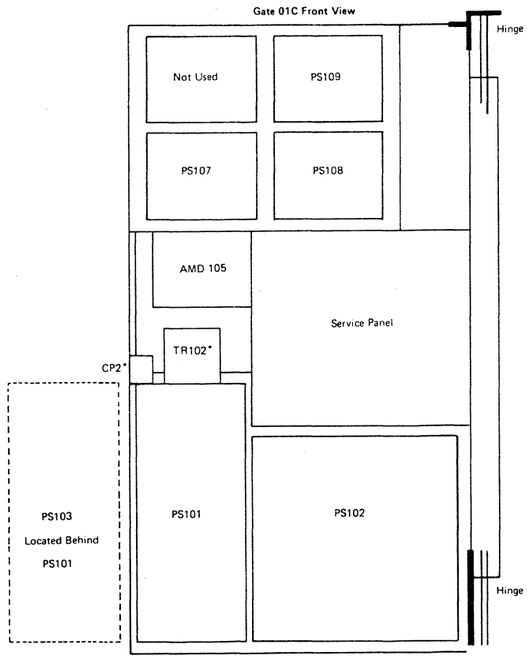
Step	Conditions	Instructions
12	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS104 J/P02 to PS103 J/P05. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Go to step 48.
13	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS103. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 48.
14	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at frame ground + lead at PS104 J/P03-1. [D]
15	Is voltage +0.8 to +1.5 Vdc?	Go to step 18.
16	Is voltage greater than +1.5 Vdc?	Go to step 22.
17	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS104. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 48.
18	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2J05. [E]

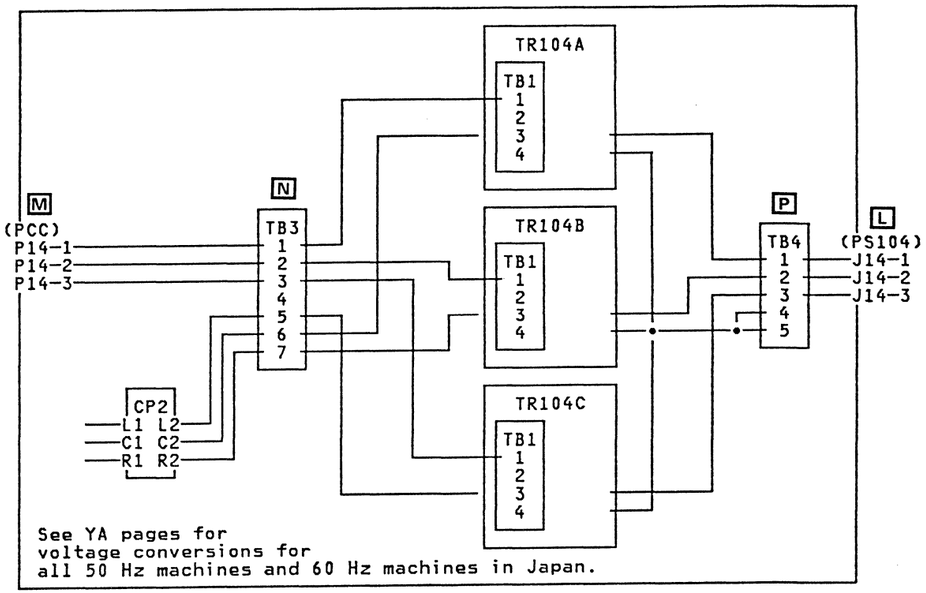


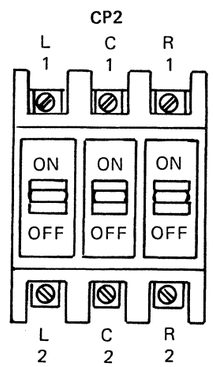
Primary Control Compartment (PCC)

Step	Conditions	Instructions
19	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2E2 card. 3. Go to step 48.
20	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2D13. [F]
21	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Go to step 48.
22	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2X2D08 + lead at 01A-A2C2B13. [G]
23	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2C2 card. 3. Go to step 48.
24	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2X2D08 + lead at 01A-A2A2D02. [H]
25	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Go to step 48.
26	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS104 J/P03 to 01A-A2A2. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 48.
27	Go to **Instructions** column.	Measure for line voltage at the following points: PCC K04-L1 to L2 PCC K04-L2 to L3 [J] PCC K04-L1 to L3. **Note:** For line voltage value, see label on PCC box.
28	Is line voltage missing at any point?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PCC K04 to PCC TB2. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Go to step 48.
29	Go to **Instructions** column.	1. Measure for line voltage at the following points: PCC K04-T1 to T2 PCC K04-T2 to T3 [K] PCC K04-T1 to T3. **Note:** For line voltage value, see label on PCC box. 2. Select the Partial Power Up/Down (QWW) screen. 3. Select UP (power-up the processor only). **Note:** Voltage is present for about four seconds.

Step	Conditions	Instructions
30	Is line voltage missing at any point?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PCC K04. 4. Go to step 48.
31	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PCC K04 to PCC J/P14. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Go to step 48.
32	Go to **Instructions** column.	1. Check for tripped TR104 CP2. 2. If tripped, reset CP2. 3. Press service panel Power On.
33	Is power complete or is a different Ref Code displayed?	Go to page PR 5001.
34	Is TR104 CP2 tripped?	1. Isolate to one of the following: PS104 TR104A TR104B TR104C TR104 CP2. 2. Exchange defective FRU. 3. Go to step 48.



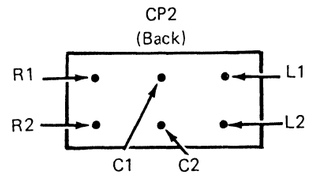




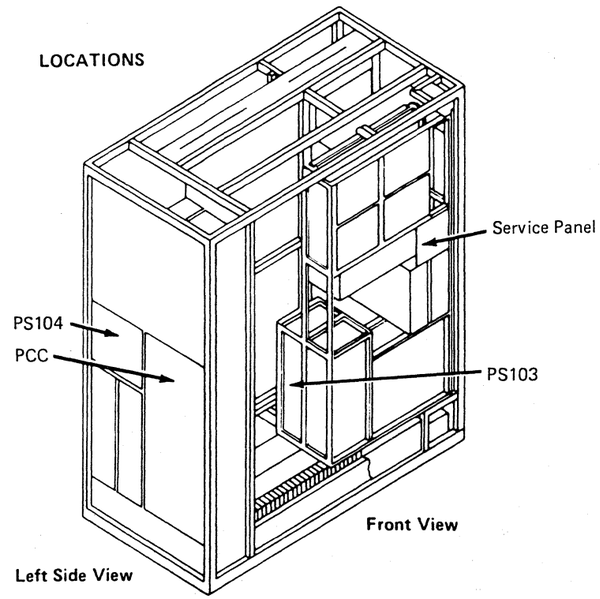
Step	Conditions	Instructions
35	Go to **Instructions** column.	1. Set CE Mode switch to CE Mode. 2. Disconnect cable at PS104 J/P14. 3. Press service panel Power On. 4. Select the Diagnostic Power Up (QWD) screen. 5. Select option B (stop after K4 picked). 6. Measure for 127 **Vac** at the following points (see note): PS104 J14-1 to frame ground PS104 J14-2 to frame ground [L] PS104 J14-3 to frame ground (cable end). **Note:** Voltage range is plus or minus 15 percent.
36	Is ac voltage present at all points?	Go to step 9.
37	Go to **Instructions** column.	1. Press ENTER to end Diagnostic Stop. 2. Disconnect cable at PCC J/P14. 3. Select the Diagnostic Power Up (QWD) screen. 4. Select option B (stop after K4 picked). 5. Measure for line voltage at the following points: PCC J14-1 to 2 PCC J14-2 to 3 [M] PCC J14-3 to 1 (on PCC box). **Note:** For line voltage value, see label on PCC box.
38	Is line voltage missing at any point?	Go to step 27.

Step	Conditions	Instructions
39	Go to **Instructions** column.	1. Press ENTER to end Diagnostic Stop. 2. Reconnect cable at PCC J14. 3. Select the Diagnostic Power Up (QWD) screen. 4. Select option B (stop after K4 picked). 5. Measure for line voltage at the following points (see note): TR104 TB3-1 to 2 TR104 TB3-2 to 3 [N] TR104 TB3-3 to 1. **Note:** For line voltage value, see lable on PCC box.
40	Is line voltage missing at any point?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from TR104 TB3 to PCC J/P14. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Go to step 48.
41	Go to **Instructions** column.	Measure for 220 **Vac** at the following points (see note): TR104A TB1-1 to 3 TR104B TB1-1 to 3 TR104C TB1-1 to 3. **Note:** Voltage range is plus or minus 15 percent.
42	Is ac voltage missing at any point?	1. Isolate to one of the following: Cable from TR104 TB3 to CP2 Cable from TR104 TB3 to TR104A, TR104B, and TR104C TR104 CP2. 2. Exchange defective FRU. 3. Go to step 48.

Step	Conditions	Instructions
43	Go to **Instructions** column.	Measure for 127 **Vac** at the following points (see note): TR104 TB4-1 to frame ground TR104 TB4-2 to frame ground [P] TR104 TB4-3 to frame ground. **Note:** Voltage range is plus or minus 15 percent.
44	Is ac voltage missing at TB4-1?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange TR104A. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR104A. 4. Go to step 48.
45	Is ac voltage missing at TB4-2?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange TR104B. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR104B. 4. Go to step 48.
46	Is ac voltage missing at TB4-3?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange TR104C. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR104C. 4. Go to step 48.



Step	Conditions	Instructions
47	Is ac voltage missing at all points?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from TR104 TB4 to PS104. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Go to step 48.
48	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Check all cables and cards for proper seating in the following areas: PS103 PS104 PCC box 01A-A2 board TR104A (if present) TR104B (if present) TR104C (if present) TR104 CP2 (if present). 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



Seq EA055	PN 0446007 Pg 2 of 2	EC A02214 15 SEP 83	EC A02217 10 JAN 84			

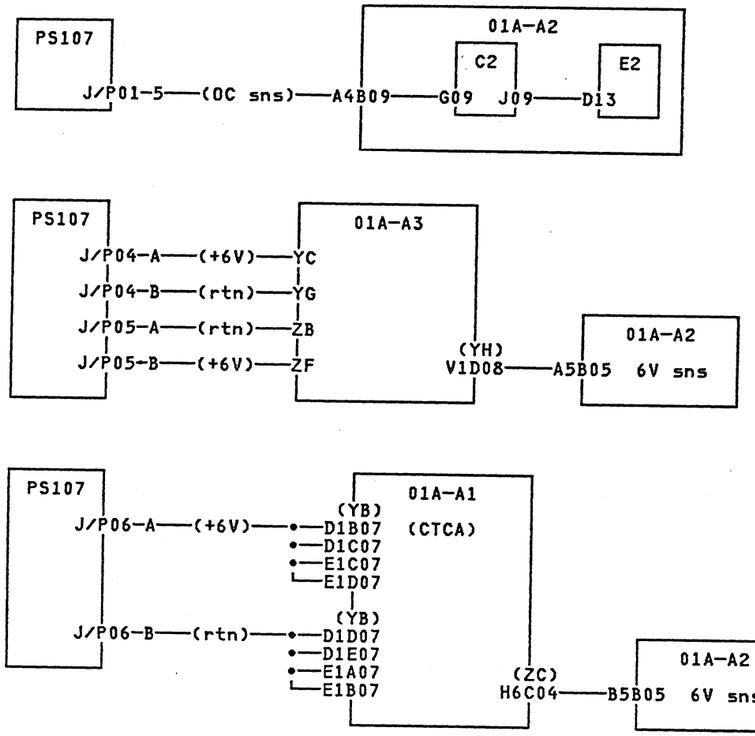
Ref Codes 1115750E, 11D1350E

These Ref Codes indicate a short in the PS107 +6 Vdc distribution.

Possible causes:

- PS107
- Short in PS107 voltage distribution.

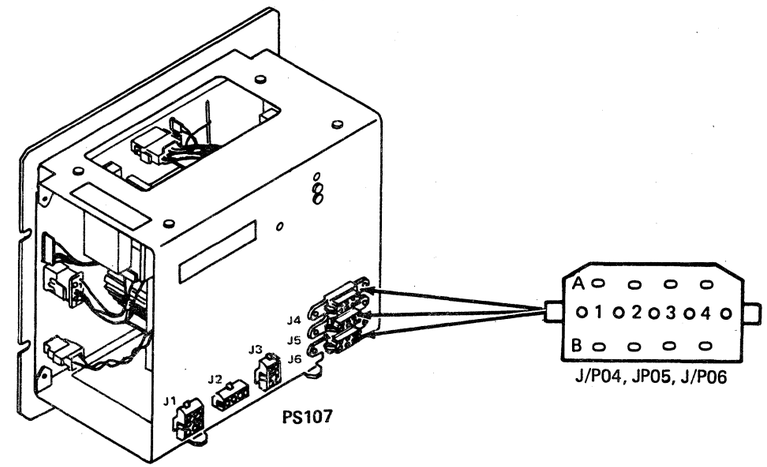
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Disconnect PS107 J/P04, J/P05, and J/P06 (if present). 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
2	Is the displayed Ref Code 11D1350E?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS107. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 25.
3	Is there a cable in PS107 P06?	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect PS107 P06. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only). 6. If Ref Code 11D1350E is displayed, go to step 14. 7. Go to step 4.



Seq EA060	PN 0446008 Pg 1 of 2

EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02220 06 JUN 84		

Step	Conditions	Instructions
4	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect PS107 P04 and P05. 4. Disconnect the cables at 01A-A3ZB, 01A-A3ZF, 01A-A3YC, and 01A-A3YG. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
5	Is the displayed Ref Code 11D1350E?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cables from 01A-A3ZB, ZF, YC, and YG to PS107 J/P04 and J/P05. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 25.
6	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Remove all cards from the 01A-A3 board. 4. Reconnect the cables at 01A-A3ZB, ZF, YC, and YG. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
7	Is the displayed Ref Code 11D1350E?	Go to step 11.

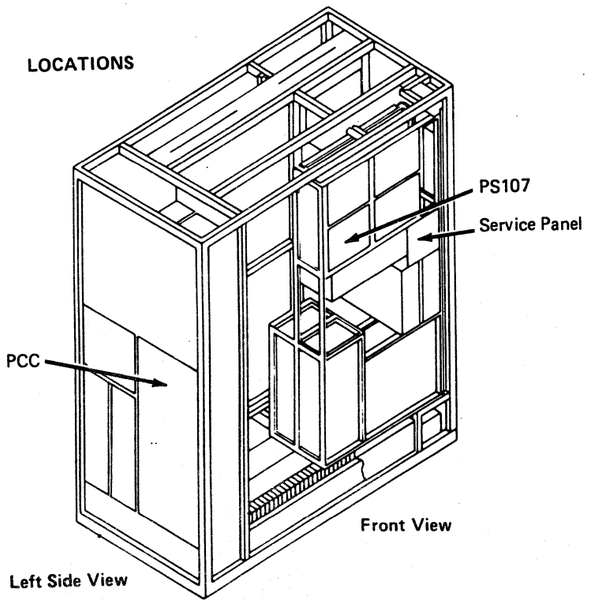


Step	Conditions	Instructions
8	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall one card in the 01A-A3 board. 4. Select Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
9	Is the displayed Ref Code 11D1350E?	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Exchange card just reinstalled. 4. Repeat steps 8, 9, and 10 until all cards have been reinstalled; then go to step 25.
10	Go to **Instructions** column.	1. Repeat steps 8, 9, and 10 until all cards have been reinstalled; then go to step 25.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect the cables at 01A-A3ZB, 01A-A3ZF, 01A-A3YC, and 01A-A3YG. 3. Disconnect cable at 01A-A3YH (card side). 4. Measure the resistance at the following points: - lead at frame ground + lead at 01A-A3V1D08.
12	Is a short indicated?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A3 board. 3. Set PCC CB1 and CB2 on. 4. Go to step 25.

Step	Conditions	Instructions
13	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2A5 to 01A-A3YH. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Set PCC CB1 and CB2 on. 4. Go to step 25.
14	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Disconnect cable at 01A-A1YB. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
15	Is the displayed Ref Code 11D1350E?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS107 J/P06 to 01A-A1YB. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 25.
16	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A1YB. 3. Remove the 01A-A1B2 and 01A-A1C2 cards. 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
17	Is the displayed Ref Code 11D1350E?	Go to step 22.

Step	Conditions	Instructions
18	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reinstall 01A-A1B2 card. 3. Press service panel Power On. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
19	Is the displayed Ref Code 11D1350E?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A1B2 card. 3. Go to step 25.
20	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reinstall 01A-A1C2 card. 3. Press service panel Power On. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
21	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A1C2 card. 3. Go to step 25.
22	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Disconnect cable at 01A-A1YB (pin side). 4. Disconnect the cable at 01A-A1ZC (card side). 5. Measure the resistance at the following points: - lead at frame ground + lead at 01A-A1H6C04.
23	Is a short indicated?	1. Exchange 01A-A1 board. 2. Go to step 25.
24	Go to **Instructions** column.	1. Exchange cable from 01A-A2B5 to 01A-A1ZC. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 2. Go to step 25.
25	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Check all cables and cards for proper seating in the following areas: PS107 01A-A1 board 01A-A2 board 01A-A3 board. 4. Reset any tripped CPs. 5. Set PCC CB1 and CB2 on. 6. Go to page PR 5001.

LOCATIONS



Seq EA065	PN 0446009 Pg 2 of 2

EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02220 06 JUN 84		

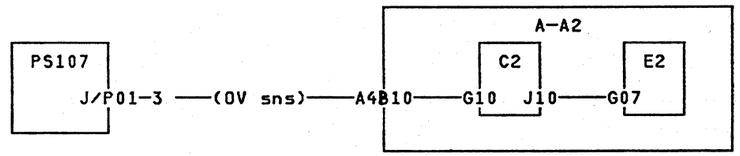
Ref Codes 11D1440E, 11D1450E

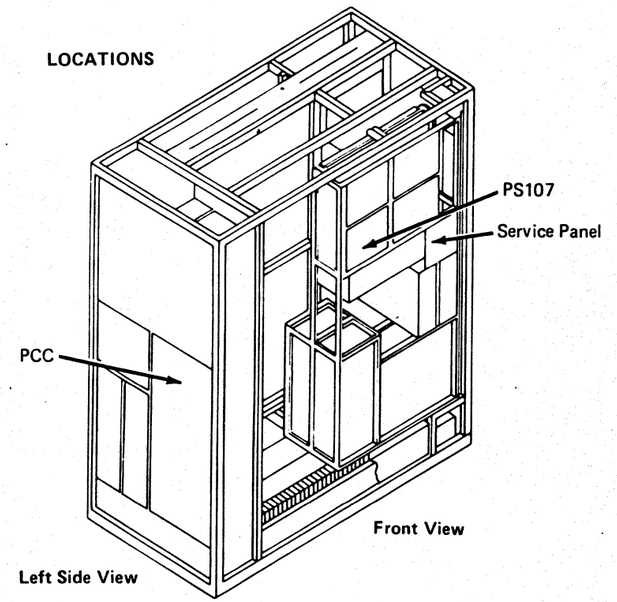
These Ref Codes indicate that the PS107 OV sense line was below +2.4 Vdc after the start line was turned on.

Possible cause:

- PS107.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS107. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.





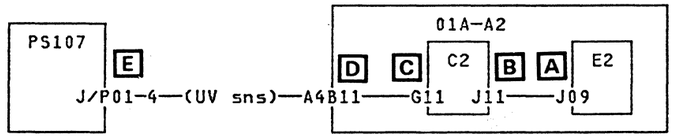
Ref Codes 11D1540E, 11D1550E

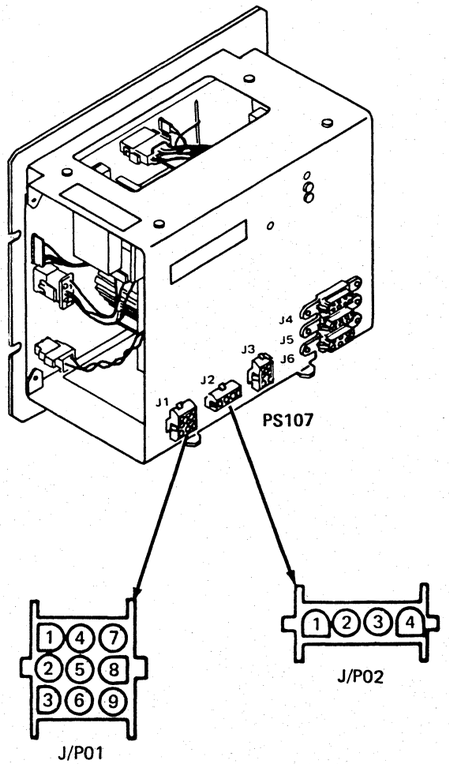
These Ref Codes indicate the PS107 UV sense line was below +2.4 Vdc after the start line to PS107 was set on.

Possible causes:

- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- PS107
- PS107 UV sense line open or grounded.

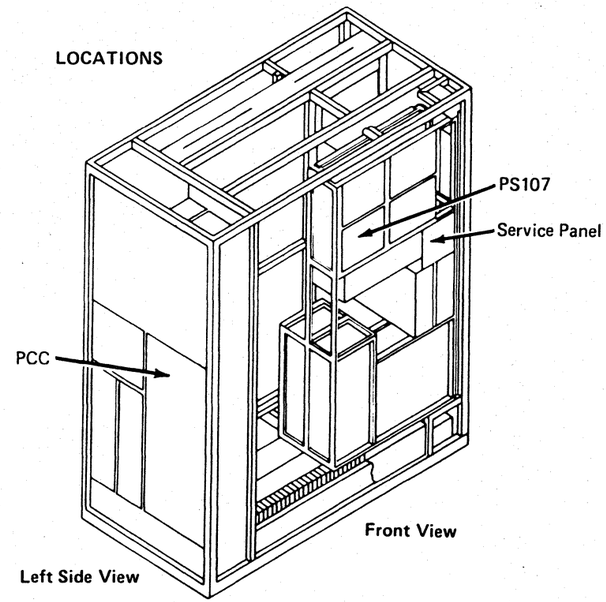
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select Option H (stop after +6V start). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 [A] + lead at 01A-A2E2J09.
2	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 [B] + lead at 01A-A2C2J11.
4	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



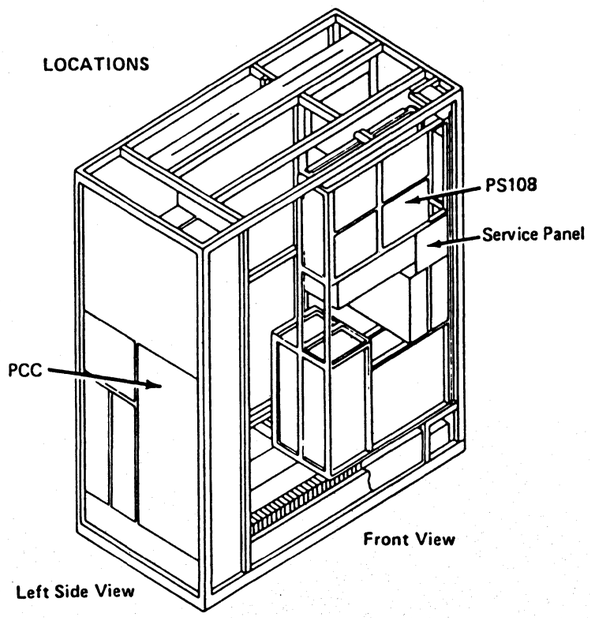


Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 [C] + lead at 01A-A2C2G11.
6	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2C2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D08 [D] + lead at 01A-A2B11.
8	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS107 J/P01-4. [E]
10	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable between PS107 J/P01 and 01A-A2A4. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS107. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

LOCATIONS



Step	Conditions	Instructions
14	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Check all cables and cards for proper seating in the following areas: PS108 01A-A4 board 01A-A2 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



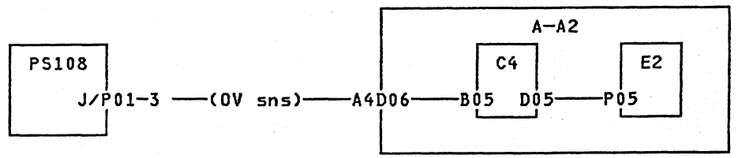
Ref Codes 11D1940E, 11D1950E

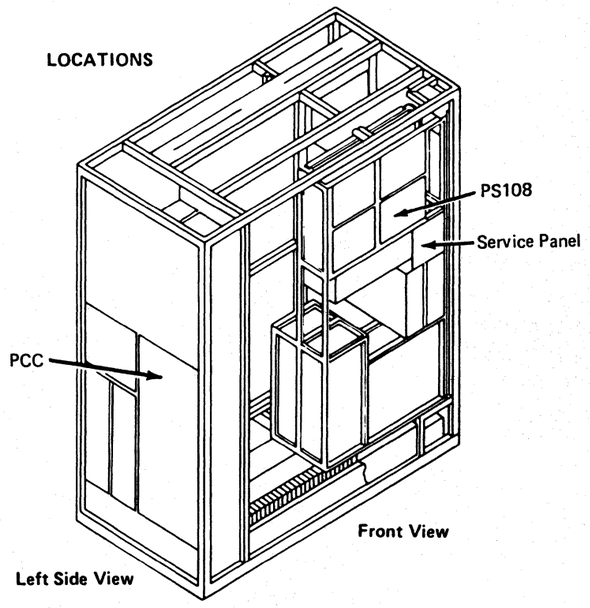
These Ref Codes indicate that the PS108 OV sense line was below +0.8 Vdc after the start line was turned on.

Possible cause:

- PS108.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS108. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.





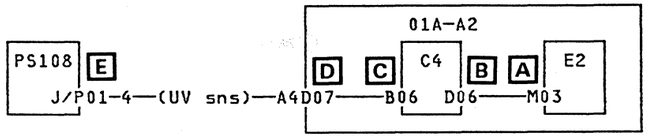
Ref Codes 11D2040E, 11D2050E

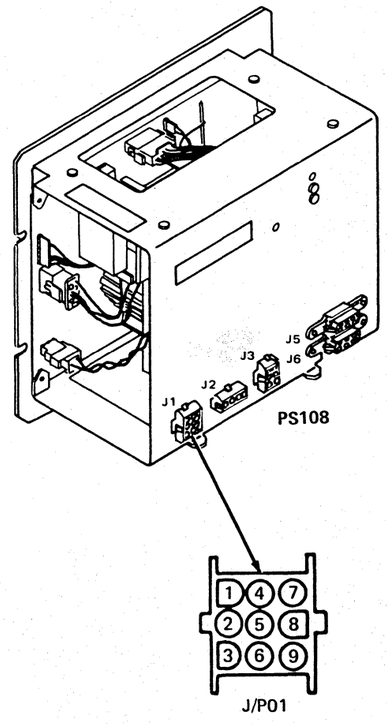
These Ref Codes indicate the PS108 UV sense line was below +2.4 Vdc after the start line to PS108 was set on.

Possible causes:

- 01A-A2C4 optoisolator card
- 01A-A2E2 sense card
- 01A-A2 board
- PS108
- PS108 UV sense line open or grounded.

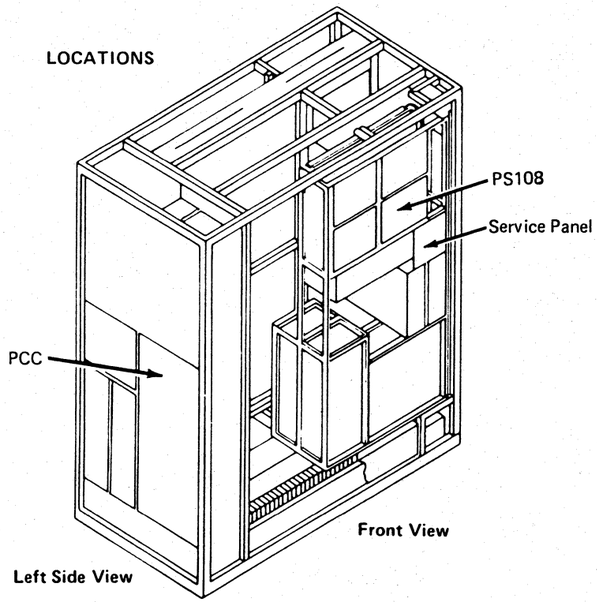
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option G (stop after +5V start). 6. Measure for +5 Vdc at the following points: - lead to 01A-A2E2P08 + lead to 01A-A2E2M03. [A]
2	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2E2 card. 3. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2C4D08 [B] + lead to 01A-A2C4D06.
4	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.





Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2C4D08 [C] + lead to 01A-A2C4B06.
6	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2C4 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: 1. - lead at 01A-A2C4D08 [D] 2. + lead at 01A-A2A4D07.
8	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS108 J/P01-4. [E]
10	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable between PS108 J/P01 and 01A-A2A4. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS108. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

LOCATIONS



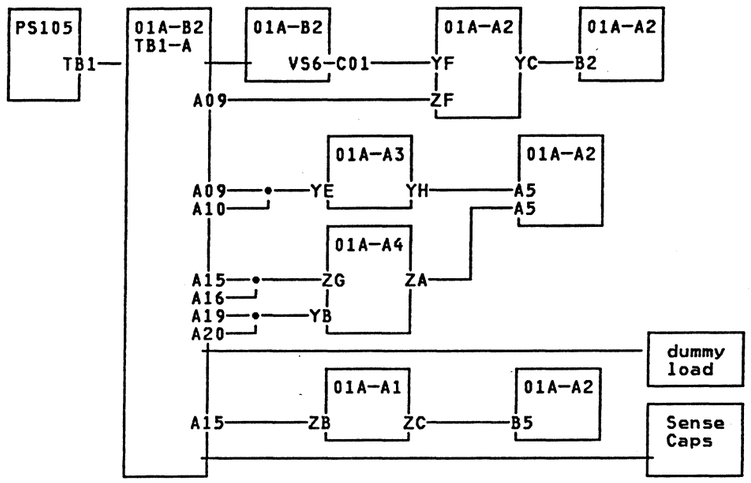
Ref Codes 1115350E, 11D2540E, 11D2550E

These Ref Codes indicate a short in the PS105 -1.5 Vdc distribution.

Possible causes:

- 01A-A1 board or card
- 01A-A2 board or card
- 01A-A3 board or card
- 01A-A4 board or card
- 01A-B2 board or module
- PS105.

Step	Conditions	Instructions
1	Go to **Instructions** column.	**Warning: A wrong installation of PS105 (part 4494199) can cause intermittent shorts or overcurrents. For proper current setting and removal instructions for the PS105 load resistor, see page PR 1024.5.** 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Disconnect the cables at 01A-A4YB, ZG (pin side). 4. Press service panel Power On. 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
2	Is the Ref Code 1XA30X0E displayed?	Go to step 13.
3	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect the cables at 01A-A4YB, ZG (pin side). 4. Disconnect the cable at 01A-A3YE (pin side). 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).



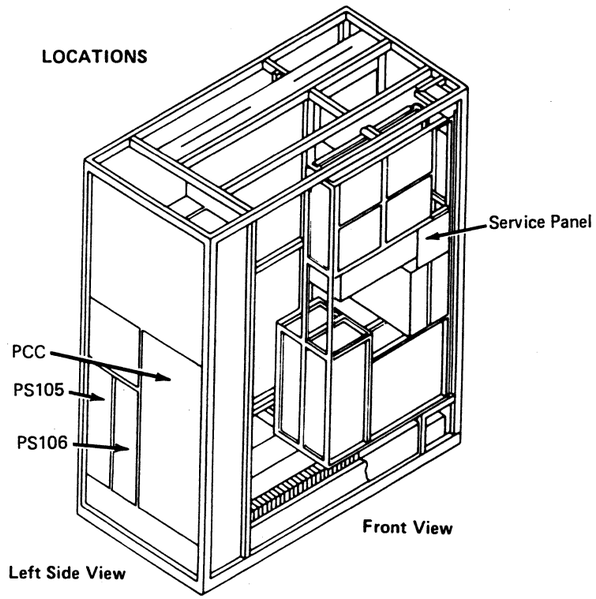
Step	Conditions	Instructions
4	Is the Ref Code 1XA31X0E displayed?	Go to step 18.
5	Is there a cable plugged at 01A-A1ZB (CTCA pin side)?	Go to step 23.
6	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect the cable at 01A-A3YE (pin side). 4. Disconnect the cable at 01A-A2ZF (pin side). 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
7	Is the Ref Code 1XA29X0E displayed?	Go to step 28.
8	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect 01A-B2 TB1-A bus from the 01A-B2 board. **Note:** A torque wrench is required to reconnect the 01A-B2 board. 3. Measure the resistance at the following points: - lead at 01A-B2 TB1-B bus + lead at 01A-B2 TB1-A bus.
9	Is an open indicated?	The short appears to be in the 01A-B2 board. 1. Isolate to one of the following: 01A-B2 module 01A-B2 board Cable from 01A-B2 VS6 to 01A-A2YF (card side). 2. Go to step 36.
10	Go to **Instructions** column.	1. Disconnect all the cables at 01A-B2 TB1-A bus except the cables connected to the sense capacitors. 2. Measure the resistance at the following points: - lead at 01A-B2 TB1-B bus + lead at 01A-B2 TB1-A bus.
11	Is an open indicated?	The short appears to be in a cable connected to the 01A-B2 TB1-A bus. 1. Isolate to one of the following: Cable from 01A-B2 TB1-A09 to 01A-A2ZF Cable from 01A-B2 TB1-A15 to 01A-A1ZB Cable from 01A-B2 TB1-A09, 10 to 01A-A3YE Cable from 01A-B2 TB1-A15, 16 to 01A-A4ZG Cable from 01A-B2 TB1-A19, 20 to 01A-A4YB Cable from 01A-B2 TB1-A bus to the PS105 load resistor (if installed). 2. Go to step 36.

Step	Conditions	Instructions
12	Go to **Instructions** column.	The short appears to be in the 01A-B2 TB1-A bus. 1. Isolate to one of the following: PS105 01A-B2 TB1-A bus 01A-B2 TB1-A bus sense capacitors Cable from 01A-B2 TB1-A sense capacitors to PS105 J/P02. 2. Go to step 36.
13	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Remove the cards from the 01A-A4 board. 4. Measure the resistance at the following points: - lead at 01A-A4N3D08 + lead at 01A-A4N3D04.
14	Is a short indicated?	The short appears to be in the 01A-A4 board. 1. Isolate to one of the following: 01A-A4 board Cable from 01A-A4ZA to 01A-A2A5. 2. Go to step 36.
15	Go to **Instructions** column.	1. Reconnect the cables at 01A-A4YB, ZG (pin side). 2. Select Partial Power Up/Down (QWW) screen. 3. Select UC.
16	Is power complete?	Go to step 33.
17	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall cards. 4. Go to step 3.
18	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Remove the cards from the 01A-A3 board. 4. Measure the resistance at the following points: - lead at 01A-A3N3D08 + lead at 01A-A3N3B13.
19	Is a short indicated?	The short appears to be in the 01A-A3 board. 1. Isolate to one of the following: 01A-A3 board Cable from 01A-A3YH to 01A-A2A5. 2. Go to step 36.
20	Go to **Instructions** column.	1. Reconnect the cable at 01A-A3YE (pin side). 2. Select Partial Power Up/Down (QWW) screen. 3. Select UC.
21	Is power complete?	Go to step 33.
22	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall cards. 4. Go to step 5.

Step	Conditions	Instructions
23	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Remove the 01A-A1B2, C2, and W2 cards. 4. Measure the resistance at the following points: - lead at 01A-A1B4D08 - lead at 01A-A1B4B13.
24	Is a short indicated?	The short appears to be in the 01A-A1 board. 1. Isolate to one of the following: 01A-A2 board Cable from 01A-A1ZC to 01A-A2B5. 2. Go to step 36.
25	Go to **Instructions** column.	1. Reconnect the cable at 01A-A1ZB (pin side). 2. Select Partial Power Up/Down (QWW) screen. 3. Select UC.
26	Is power complete?	The short appears to be a card. 1. Isolate to one of the following: 01A-A1B2 card 01A-A1C2 card 01A-A1W2 card. 2. Go to step 36.
27	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall cards. 4. Go to step 6.

Step	Conditions	Instructions
28	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Remove the cards from the 01A-A2 board. 4. Measure the resistance at the following points: - lead at 01A-A2U2D08 + lead at 01A-A2U2B06.
29	Is a short indicated?	The short appears to be in the 01A-A2 board. 1. Isolate to one of the following: 01A-A2 board Cable from 01A-A2YC to 01A-A2B2. 2. Go to step 36.
30	Go to **Instructions** column.	1. Reconnect the cable at 01A-A3YE (pin side). 2. Select Partial Power Up/Down (QWW) screen. 3. Select UC.
31	Is power complete?	Go to step 33.
32	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall cards. 4. Go to step 8.

Step	Conditions	Instructions
33	Go to **Instructions** column.	The short appears to be a card. 1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall one card removed from the failing board. 4. Select Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
34	Is the Ref Code 12D25X0E displayed?	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Exchange the card just reinstalled. 4. Repeat steps 33, 34, and 35 until all cards have been reinstalled; then go to step 36.
35	Go to **Instructions** column.	Repeat steps 33, 34, and 35 until all cards have been reinstalled; then go to step 36.
36	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Check all cables and cards for proper seating in the following areas: **Note:** A torque wrench is required to reconnect the 01A-B2 board. 01A-B2 TB1-A bus 01A-B2 board 01A-A2 board 01A-A3 board 01A-A4 board PS105. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



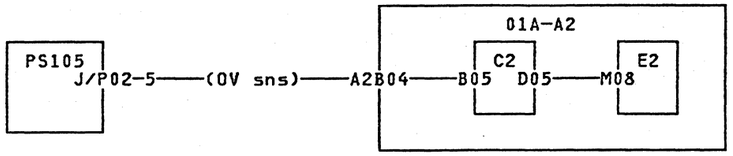
Ref Codes 11D2640E, 11D2650E

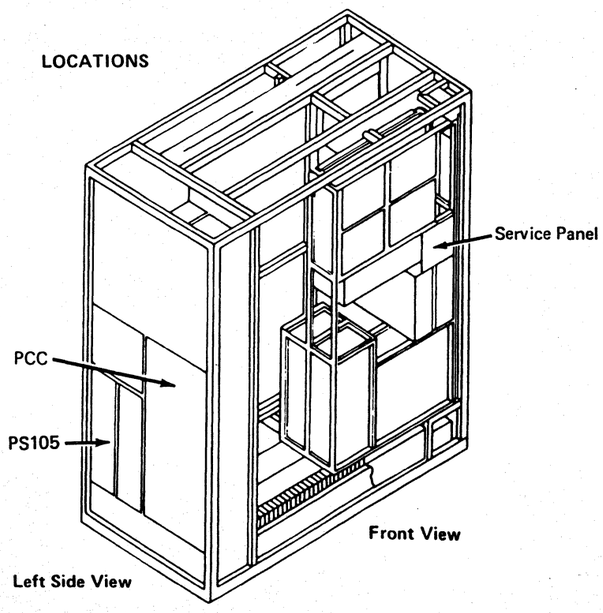
These Ref Codes indicate that the PS105 OV sense line was below +0.8 Vdc after the start line was turned on.

Possible cause:

- PS105.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS105. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.





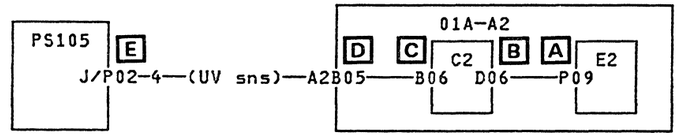
Ref Codes 11D2740E, 11D2750E

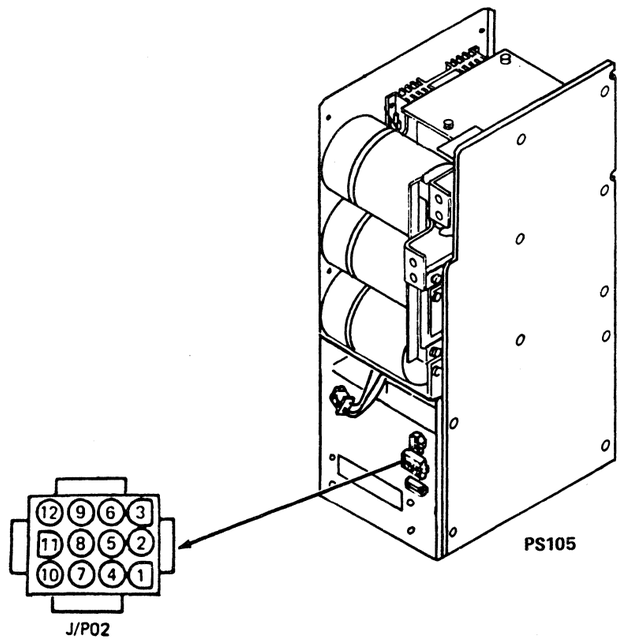
These Ref Codes indicate the PS105 UV sense line was below +2.4 Vdc after the start line to PS105 was set on.

Possible causes:

- 01A-A2C2 optoisolator card
- 01A-A2D2 sense card
- PS105
- PS105 UV sense line open or grounded.

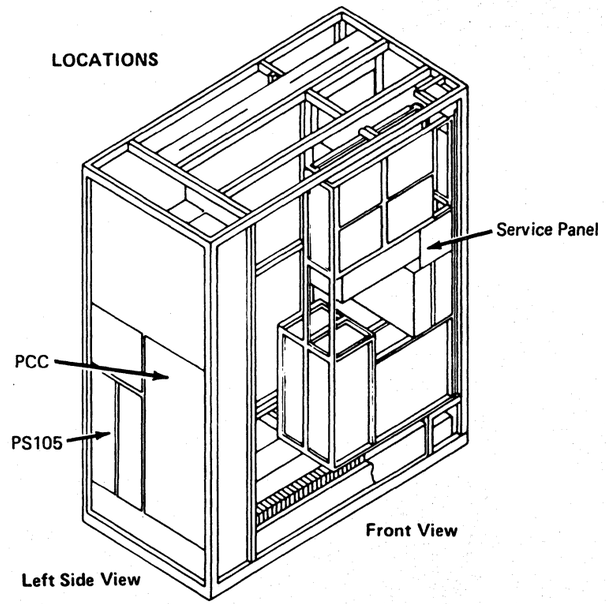
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option D (stop after -1.5/-4.3V start). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 [A] + lead at 01A-A2E2P09. **Note:** Voltage is present for about four seconds.
2	**Is voltage greater than +2.4 Vdc?**	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	1. Select Diagnostic Power Up (QWD) screen. 2. Select option D (stop after -1.5/-4.3V start). 3. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 [B] + lead at 01A-A2C2D06. **Note:** Voltage is present for about four seconds.





Step	Conditions	Instructions
4	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
5	Go to **Instructions** column.	1. Select Diagnostic Power Up (QWD) screen. 2. Select option D (stop after -1.5/-4.3V start). 3. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 [C] + lead at 01A-A2C2B06. **Note:** Voltage is present for about four seconds.
6	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2C2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	1. Select Diagnostic Power Up (QWD) screen. 2. Select option D (stop after -1.5/-4.3V start). 3. Measure for +5 Vdc at the following points: - lead at 01A-A2D08 [D] + lead at 01A-A2B05. **Note:** Voltage is present for about four seconds.
8	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

Step	Conditions	Instructions
9	Go to **Instructions** column.	1. Select Diagnostic Power Up (QWD) screen. 2. Select option D (stop after -1.5/-4.3V start). 3. Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS105 J/P02-4. [E] **Note:** Voltage is present for about four seconds.
10	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable between PS105 J/P02 and 01A-A2A2. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS105. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



Seq EA125	PN 0446021 Pg 1 of 1	EC A02214 15 SEP 83				

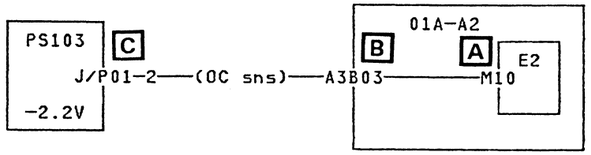
Ref Codes 11D2940E, 11D2950E

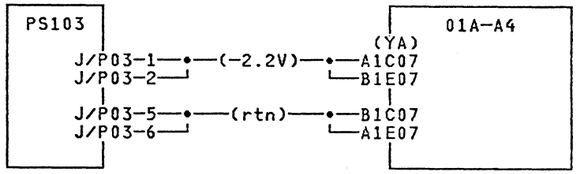
These Ref Codes indicate the PS103 -2.2 Vdc OC sense line was below +2.4 Vdc after the start line to PS103 was set on or CP1 is tripped.

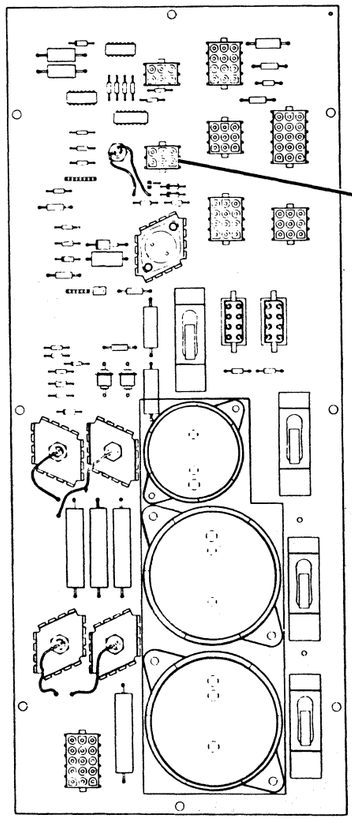
Possible causes:

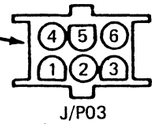
- PS103 CP1
- 01A-A4 board
- Shorted card on 01A-A4 board
- Distribution from PS103 to 01A-A4 board.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Check for a tripped PS103 CP1. 3. If tripped, reset. 4. Set CE Mode switch to CE Mode. 5. Press service panel Power On. 6. Select the Partial Power Up/Down (QWW) screen. 7. Select UC (power-up processor and I/O).
2	Is power complete?	1. Set CE Mode switch to Normal. 2. Go to page END 001.
3	Is PS103 CP1 tripped?	Go to step 11.
4	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Press service panel Power On. 3. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2M10. [A] 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only). **Note:** Voltage is present for about four seconds.









J/P03

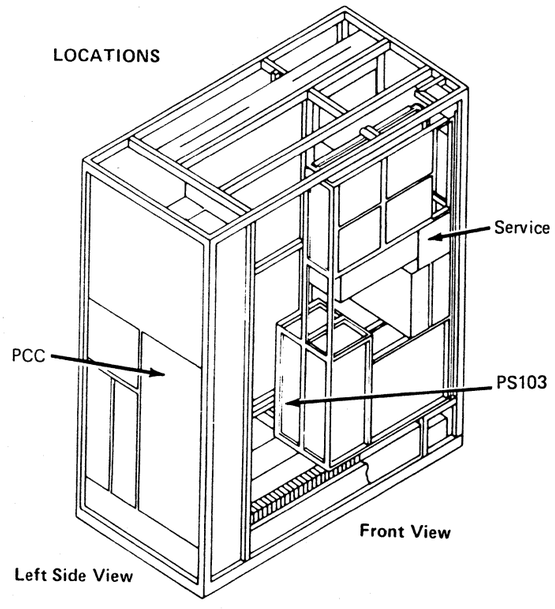
PS103

Step	Conditions	Instructions
5	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to step 23.
6	Go to **Instructions** column.	1. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 [B] + lead at 01A-A2A3B03. 2. Select the Partial Power Up/Down (QWW) screen. 3. Select UP (power-up processor only). **Note:** Voltage is present for about four seconds.
7	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to step 23.
8	Go to **Instructions** column.	1. Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS103 J/P01-2. [C] 2. Select the Partial Power Up/Down (QWW) screen. 3. Select UP (power-up processor only). **Note:** Voltage is present for about four seconds.
9	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS103 P01 to 01A-A2A3. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 23.
10	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS103. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 23.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect PS103 P03. 3. Press service panel Power On. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
12	Is PS103 CP1 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS103. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 23.

Step	Conditions	Instructions
13	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect PS103 P03. 3. Disconnect cable at 01A-A4YH (pin side). 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
14	Is PS103 CP1 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cables from 01A-A4YA to PS103 P03. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 23.
15	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Remove all cards from the 01A-A4 board. 3. Reconnect cable at 01A-A4YA (pin side). 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
16	Is PS103 CP1 tripped?	Go to step 20.
17	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall one card in the 01A-A4 board. 4. Select Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
18	Is PS103 CP1 tripped?	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Exchange card just reinstalled. 4. Reset CP1. 5. Repeat steps 17, 18, and 19 until all cards have been reinstalled, then go to step 23.
19	Go to **Instructions** column.	1. Repeat steps 17, 18, and 19 until all cards have been reinstalled, then go to step 23.
20	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect cable at 01A-A4ZA (card side). 3. Press service panel Power On. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
21	Is PS103 CP1 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A4 board. 4. Set PCC CB1 and CB2 on. 5. Go to step 23.
22	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A2A5 to 01A-A4ZA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 23.

Step	Conditions	Instructions
23	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Check all cables and cards for proper seating in the following areas: PS103 01A-A2 board 01A-A4 board. 4. Reset any tripped CPs. 5. Set PCC CB1 and CB2 on. 6. Go to page PR 5001.

LOCATIONS



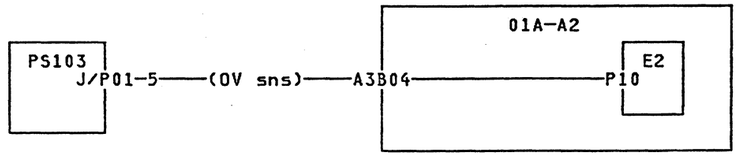
Ref Codes 11D3140E, 11D3150E

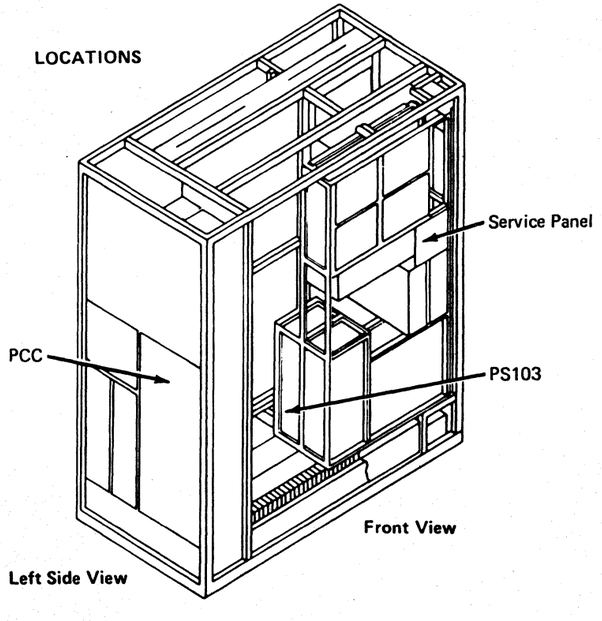
These Ref Codes indicate that the PS103 -2.2V OV sense line was below +0.8 Vdc after the start line was turned on.

Possible cause:

- PS103.

Step	Condition	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS103. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.





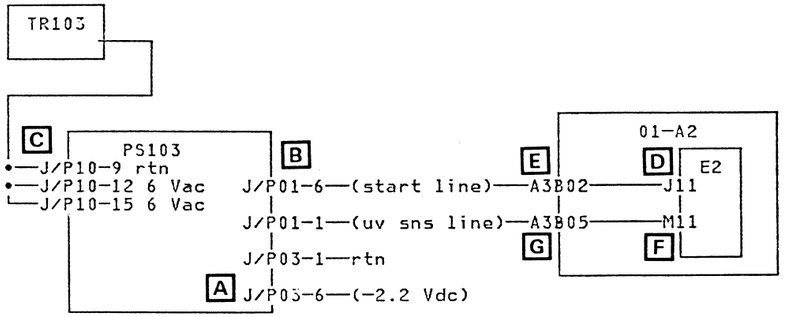
Ref Codes 11D3240E, 11D3250E

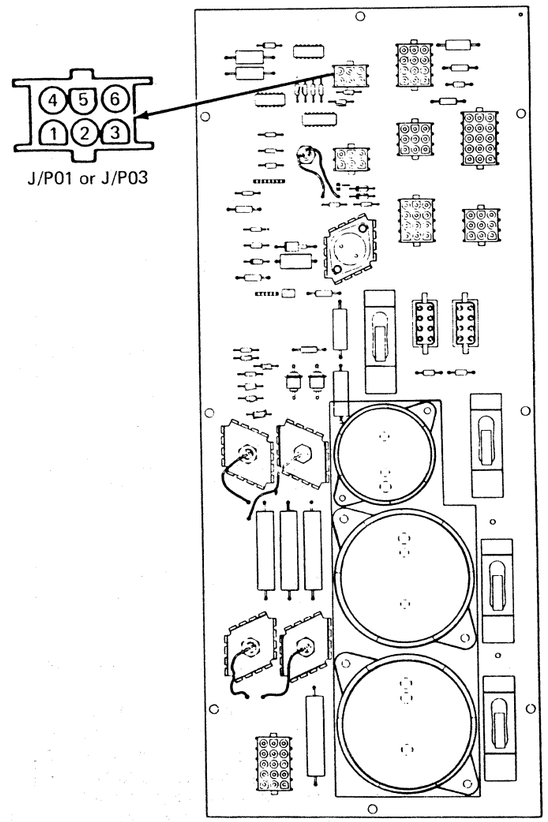
These Ref Codes indicate the PS103 -2.2 Vdc UV sense line was below +2.4V after the start line was set on.

Possible causes:

- Open start line
- 01A-A2E2 sense card
- PS103 -2.2V UV sense line open or grounded
- Failing PS103
- Failing 01A-A2 board.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option C (stop after -2.2V start). 6. Measure for +5 Vdc at the following points: - lead at PS103 P03-6 + lead at PS103 P03-1. [A]
2	Is voltage between -1.7 and -2.6 Vdc?	Go to step 15.
3	Go to **Instructions** column.	1. Press ENTER to end the Diagnostic Stop. 2. Measure for +5 Vdc at the following points: - lead to frame ground + lead to PS103 P01-6. [B]
4	Is voltage greater than +2.4 Vdc?	Go to step 8.





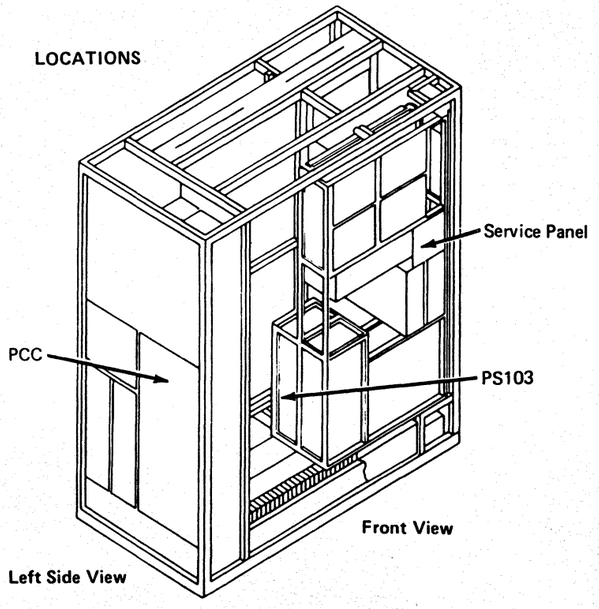
PS103

Step	Conditions	Instructions
5	Go to **Instructions** column.	1. Press ENTER to end the Diagnostic Stop. 2. Disconnect PS103 P10. 3. Select Diagnostic Power Up (QWD) screen. 4. Select option C (stop after -2.2V start). 5. Measure for +6 **Vac** at the following points: PS103 P10-12 to 9 PS103 P10-15 to 9. [C]
6	Is voltage less than 6 **Vac** at any point?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange TR103. **Note:** Check cable connectors for pushed in pins and seating before exchanging TR103. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS103. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
8	Go to **Instructions** column.	1. Select Diagnostic Power Up (QWD) screen. 2. Select option C (stop after -2.2V start). 3. Measure for +5 Vdc at the following points: - lead to 01A-A2E2D08 + lead to 01A-A2E2J11. [D]
9	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
10	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2E2D08 [E] + lead to 01A-A2A3B02.
11	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
12	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to frame ground + lead to PS103 P01-6.
13	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS103 P01 to 01A-A2A3. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
14	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS103. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

Step	Conditions	Instructions
15	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2E2D08 F + lead to 01A-A2E2M11.
16	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
17	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2E2D08 G + lead to 01A-A2A3B05.
18	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
19	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to frame ground + lead to PS103 P01-1.
20	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS103 P01 to 01A-A2A3. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

Step	Conditions	Instructions
21	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS103. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

LOCATIONS



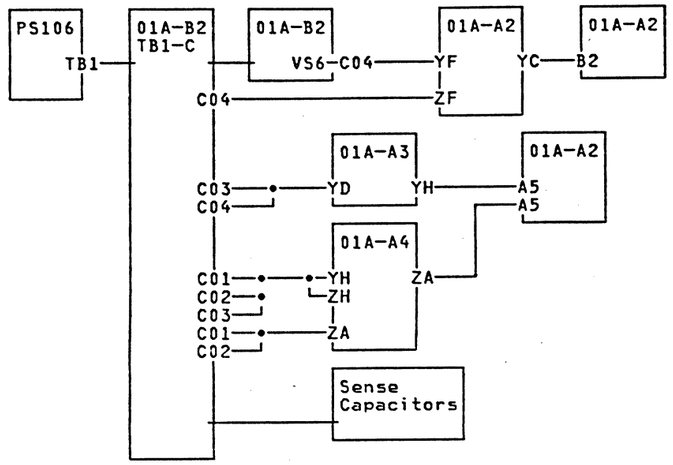
Ref Codes 1115450E, 11D3440E, 11D3450E

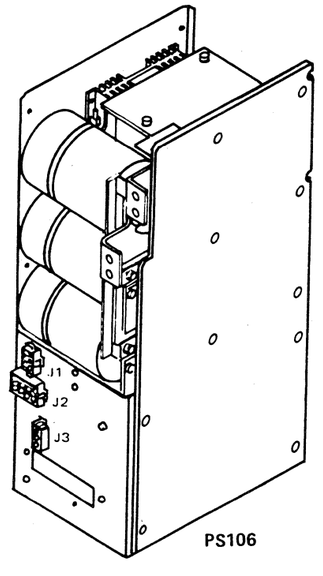
These Ref Codes indicate a short in the PS106 -4.3 Vdc distribution.

Possible causes:

- 01A-A2 board or card
- 01A-A3 board or card
- 01A-A4 board or card
- 01A-B2 board or module
- PS106.

Step	Conditions	Instructions
1	Go to **Instructions** column.	**Warning: A wrong installation of PS106 (part 4494190) can cause intermittent shorts or overcurrents. For proper current setting , see page PR 1024.5.** 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Disconnect the cables at 01A-A4YH, ZH (pin side). 4. Press service panel Power On. 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
2	Is the Ref Code 1XA64X0E displayed?	Go to step 12.
3	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect the cables at 01A-A4YH, ZH (pin side). 4. Disconnect the cable at 01A-A3YD (pin side). 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
4	Is the Ref Code 1XA62X0E displayed?	Go to step 17.





PS106

Step	Conditions	Instructions
5	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect the cable at 01A-A3YD (pin side). 4. Disconnect the cable at 01A-A2ZF (pin side). 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
6	Is the Ref Code 1XAXXX0E displayed?	Go to step 22.
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect 01A-B2 TB1-C bus from the 01A-B2 board. **Note:** A torque wrench is required to reconnect the 01A-B2 board. 3. Measure the resistance at the following points: - lead at 01A-B2 TB1-B bus + lead at 01A-B2 TB1-C bus.
8	Is an open indicated?	The short appears to be in the 01A-B2 board. 1. Isolate to one of the following: 01A-B2 module 01A-B2 board Cable from 01A-B2 VS6 to 01A-A2YF (card side). 2. Go to step 30.
9	Go to **Instructions** column.	1. Disconnect all the cables at 01A-B2 TB1-C bus except the cables connected to the sense capacitors. 2. Measure the resistance at the following points: - lead at 01A-B2 TB1-B bus + lead at 01A-B2 TB1-C bus.
10	Is an open indicated?	The short appears to be in a cable connected to the 01A-B2 TB1-C bus. 1. Isolate to one of the following: Cable from 01A-B2 TB1-C04 to 01A-A2ZF Cable from 01A-B2 TB1-C03, 04 to 01A-A3YD Cable from 01A-B2 TB1-C01, 02, 03 to 01A-A4YH, ZH Cable from 01A-B2 TB1-C01, 02 to 01A-A4ZA (if installed). 2. Go to step 30.
11	Go to **Instructions** column.	The short appears to be in the 01A-B2 TB1-C bus. 1. Isolate to one of the following: PS106 01A-B2 TB1-C bus 01A-B2 TB1-C bus sense capacitors Cable from 01A-B2 TB1-C sense capacitors to PS106 J/P02. 2. Go to step 30.

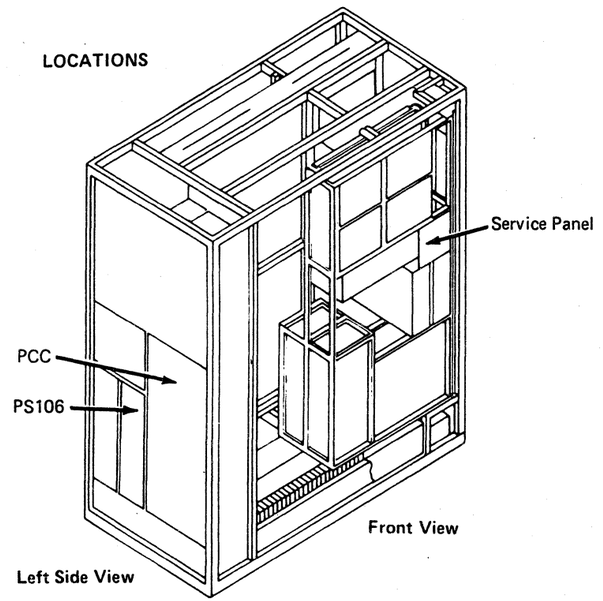
Step	Conditions	Instructions
12	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Remove the cards from the 01A-A4 board. 4. Measure the resistance at the following points: - lead at 01A-A4N3D08 + lead at 01A-A4N3D07.
13	Is a short indicated?	The short appears to be in the 01A-A4 board. 1. Isolate to one of the following: 01A-A4 board Cable from 01A-A4ZA to 01A-A2A5. 2. Go to step 30.
14	Go to **Instructions** column.	1. Reconnect the cables at 01A-A4YB, ZG (pin side). 2. Select Partial Power Up/Down (QWW) screen. 3. Select UC.
15	Is power complete?	Go to step 27.
16	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall cards. 4. Go to step 3.

Step	Conditions	Instructions
17	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Remove the cards from the 01A-A3 board. 4. Measure the resistance at the following points: - lead at 01A-A3N2D08 + lead at 01A-A3N2B06.
18	Is a short indicated?	The short appears to be in the 01A-A3 board. 1. Isolate to one of the following: 01A-A3 board Cable from 01A-A3YH to 01A-A2A5. 2. Go to step 30.
19	Go to **Instructions** column.	1. Reconnect the cable at 01A-A3YE (pin side). 2. Select Partial Power Up/Down (QWW) screen. 3. Select UC.
20	Is power complete?	Go to step 27.
21	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall cards. 4. Go to step 5.

Step	Conditions	Instructions
22	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Remove the cards from the 01A-A2 board. 4. Measure the resistance at the following points: - lead at 01A-A2U2D08 + lead at 01A-A2U2B11.
23	Is a short indicated?	The short appears to be in the 01A-A2 board. 1. Isolate to one of the following: 01A-A4 board Cable from 01A-A2YC to 01A-A2B2. 2. Go to step 30.
24	Go to **Instructions** column.	1. Reconnect the cable at 01A-A3YE (pin side). 2. Select Partial Power Up/Down (QWW) screen. 3. Select UC.
25	Is power complete?	Go to step 27.
26	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall cards. 4. Go to step 7.

Step	Conditions	Instructions
27	Go to **Instructions** column.	The short appears to be a card. 1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall one card removed from the failing board. 4. Select Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
28	Is the Ref Code 12D25X0E displayed?	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Exchange the card just reinstalled. 4. Repeat steps 27, 28, and 29 until all cards have been reinstalled; then go to step 30.
29	Go to **Instructions** column.	Repeat steps 27, 28, and 29 until all cards have been reinstalled; then go to step 30 .
30	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Check all cables and cards for proper seating in the following areas: **Note:** A torque wrench is required to reconnect the 01A-B2 board. 01A-B2 TB1-C bus 01A-B2 board 01A-A2 board 01A-A3 board 01A-A4 board PS106. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

LOCATIONS



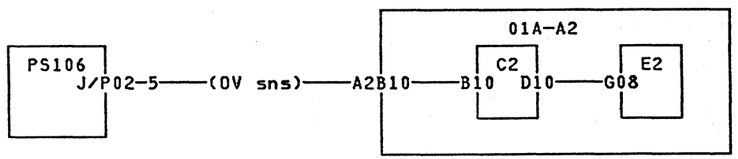
Ref Codes 11D3540E, 11D3550E

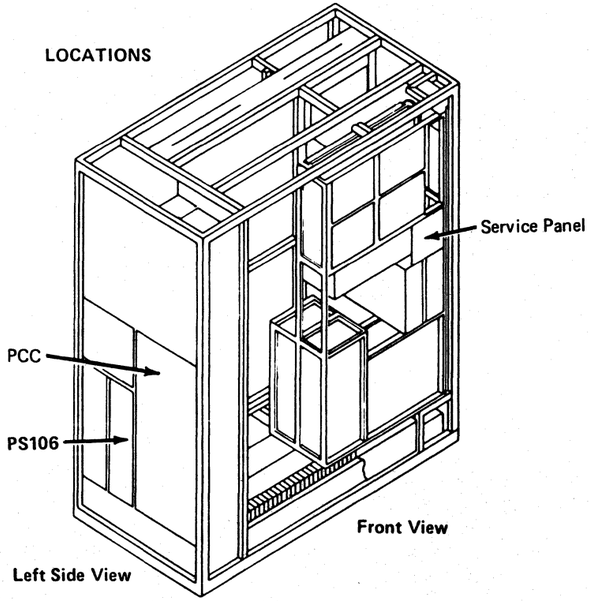
These Ref Codes indicate that the PS106 OV sense line was below +0.8 Vdc after the start line was turned on.

Possible cause:

- PS106.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS106. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



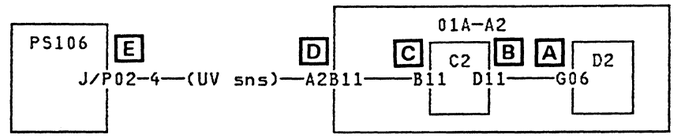


Ref Codes 11D3640E, 11D3650E

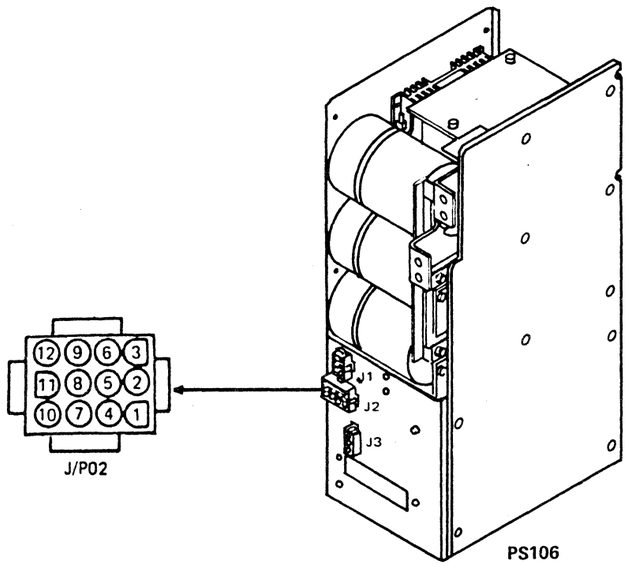
These Ref Codes indicate the PS106 UV sense line was below +2.4 Vdc after the start line to PS106 was set on.

Possible causes:

- 01A-A2C2 optoisolator card
- 01A-A2D2 sense card
- PS106
- PS106 UV sense line open or grounded.

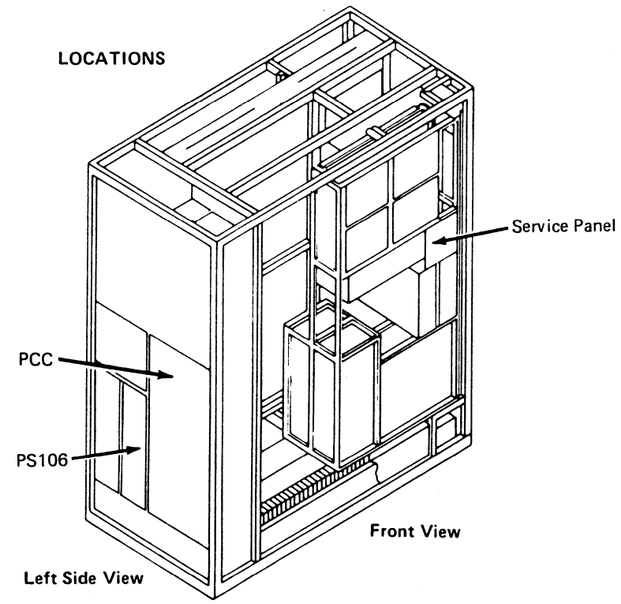


Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option D (stop after -1.5/-4.3V start). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2G06. [A] **Note:** Voltage is present for about four seconds.
2	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	1. Select Diagnostic Power Up (QWD) screen. 2. Select option D (stop after -1.5/-4.3V start). 3. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2D11. [B] **Note:** Voltage is present for about four seconds.



Step	Conditions	Instructions
4	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
5	Go to **Instructions** column.	1. Select Diagnostic Power Up (QWD) screen. 2. Select option D (stop after -1.5/-4.3V start). 3. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 [C] + lead at 01A-A2B11. **Note:** Voltage is present for about four seconds.
6	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2C2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	1. Select Diagnostic Power Up (QWD) screen. 2. Select option D (stop after -1.5/-4.3V start). 3. Measure for +5 Vdc at the following points: - lead at 01A-A2D08 [D] + lead at 01A-A2B11. **Note:** Voltage is present for about four seconds.
8	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

Step	Conditions	Instructions
9	Go to **Instructions** column.	1. Select Diagnostic Power Up (QWD) screen. 2. Select option D (stop after -1.5/-4.3V start). 3. Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS106 J/P02-4. [E] **Note:** Voltage is present for about four seconds.
10	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable between PS106 J/P02 and 01A-A2A2. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS106. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



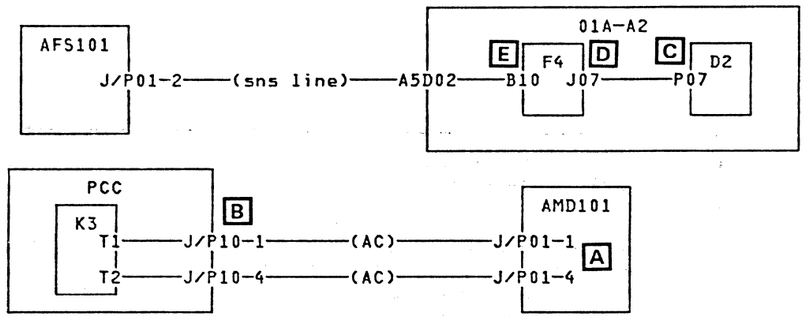
Ref Codes 11D5740E, 11D5750E

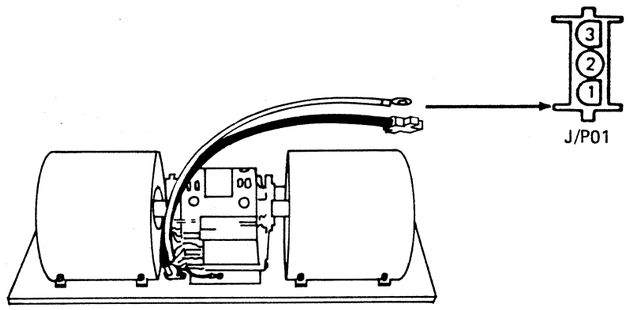
These Ref Codes indicate AMD101 is failing.

Possible causes:

- AFS101
- Missing ac to AMD101
- 01A-A2D2 sense card
- 01A-A2 board
- 01A-A2F4 serial read card
- AMD101.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Verify AMD101 is turning.
2	Is AMD101 turning?	Go to step 8.
3	Go to **Instructions** column.	1. Press ENTER to end the Diagnostic Stop. 2. Disconnect AMD101 J/P01. 3. Select Diagnostic Power Up (QWD) screen. 4. Select option A (stop after K03 picked). 5. Measure for line voltage at the following points: [A] - lead at AMD101 P01-1 (cable end) + lead at AMD101 P01-4 (cable end). **Note:** For line voltage value, see label on PCC box.



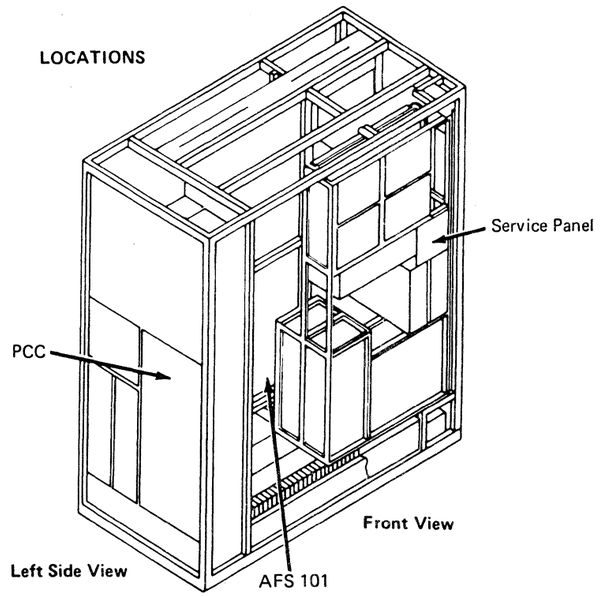


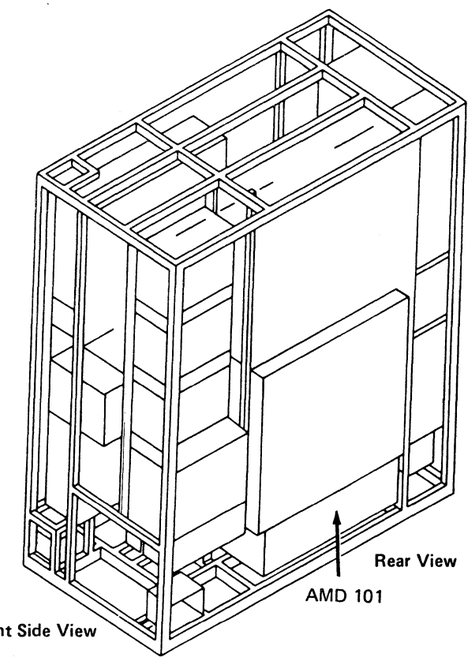
AMD 101

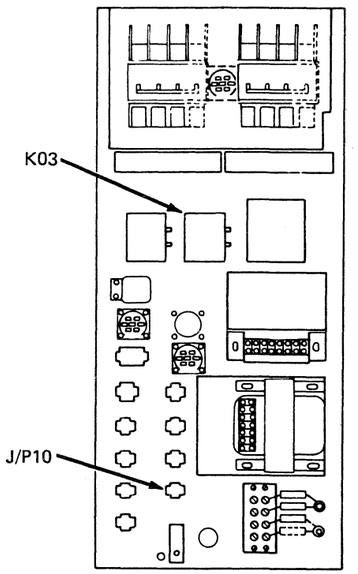
Step	Conditions	Instructions
4	Is line voltage present?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange AMD101. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
5	Go to **Instructions** column.	1. Press ENTER to end the Diagnostic Stop. 2. Reconnect AMD101 connector J/P01. 3. Disconnect PCC connector J/P10. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Measure for line voltage at the following points: - lead at PCC J10-1 (PCC box) [B] + lead at PCC J10-4 (PCC box). **Note:** For line voltage value, see label on PCC box.
6	Is line voltage present?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PCC J/P10 to AMD101 J/P01. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PCC K3 to PCC J/P10. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
8	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2D2D08 + lead to 01A-A2D2P07. [C]
9	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
10	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2F4D08 + lead to 01A-A2F4J07. [D]
11	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
12	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2F4D08 + lead to 01A-A2F4B10. [E]

Step	Conditions	Instructions
13	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2F4 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
14	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange AFS101. **Note:** Check AFS alignment to air flow (AFS should be perpendicular to AMD housing) before exchanging AFS. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

LOCATIONS







Primary Control Compartment (PCC)

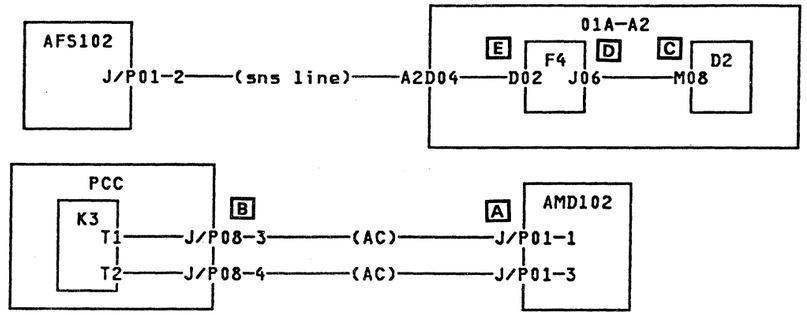
Ref Codes 11D5840E, 11D5850E

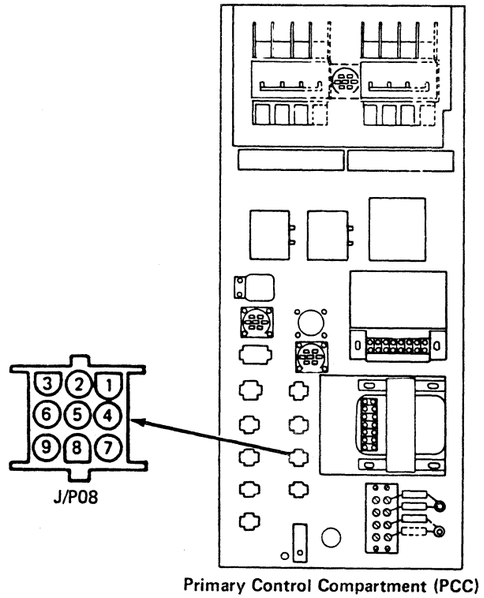
These Ref Codes indicate AMD102 is failing.

Possible causes:

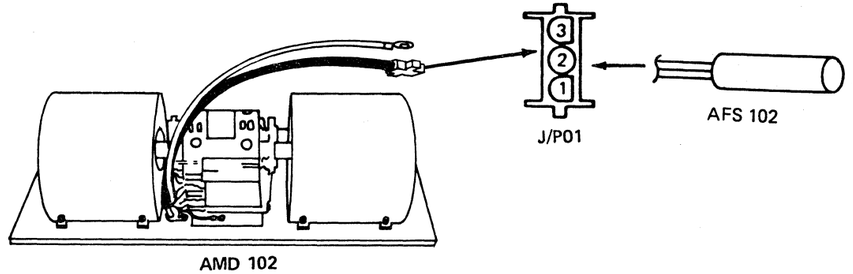
- AMD102
- AFS102
- Missing ac to AMD102
- 01A-A2D2 sense card
- 01A-A2F4 serial read card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Verify AMD102 is turning.
2	Is AMD102 turning.	Go to step 8.
3	Go to **Instructions** column.	1. Press ENTER to end the Diagnostic Stop. 2. Disconnect AMD102 J/P01. 3. Select Diagnostic Power Up (QWD) screen. 4. Select option A (stop after K03 picked). 5. Measure for line voltage at the following points: [A] - lead at AMD102 P01-1 (cable end) + lead at AMD102 P01-3 (cable end). **Note:** For line voltage value, see label on PCC box.





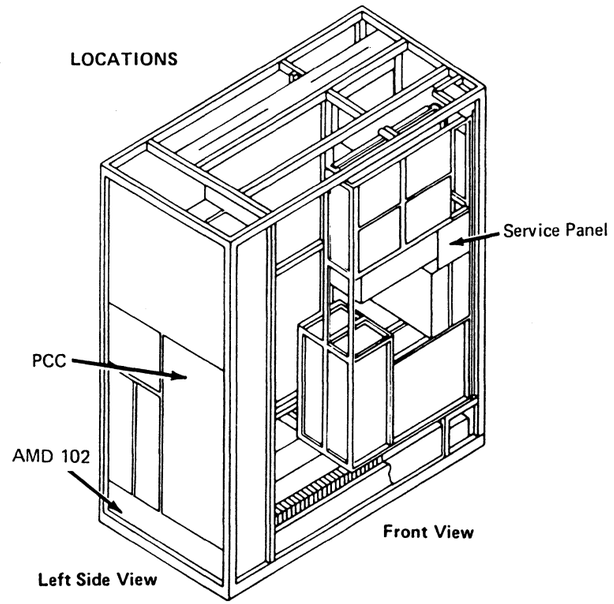
Primary Control Compartment (PCC)



AMD 102

Step	Conditions	Instructions
4	Is line voltage present?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange AMD102. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
5	Go to **Instructions** column.	1. Press ENTER to end the Diagnostic Stop. 2. Reconnect AMD102 connector J/P01. 3. Disconnect PCC connector J/P08. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Measure for line voltage at the following points: - lead at PCC J08-3 (PCC box) [B] + lead at PCC J08-4 (PCC box). **Note:** For line voltage value, see label on PCC box.
6	Is line voltage present?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PCC J/P08 to AMD102 J/P01. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PCC K3 to PCC J/P08. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
8	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2D2D08 [C] + lead to 01A-A2D2M08.
9	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
10	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2F4D08 [D] + lead to 01A-A2F4J06.
11	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
12	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2F4D08 [E] + lead to 01A-A2F4D02.

Step	Conditions	Instructions
13	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2F4 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
14	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange AFS102. **Note:** Check AFS alignment to air flow (AFS should be perpendicular to AMD housing) before exchanging AFS. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



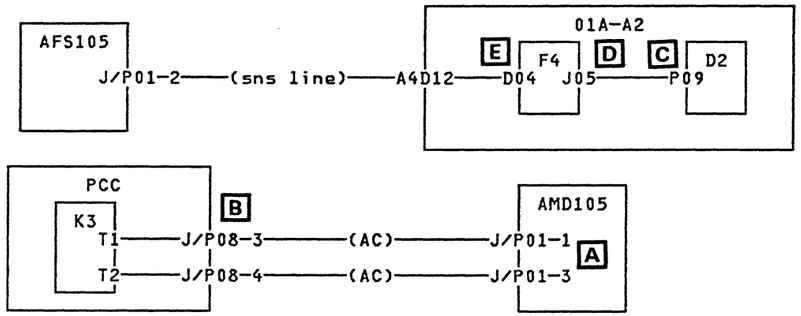
Ref Codes 11D5940E, 11D5950E

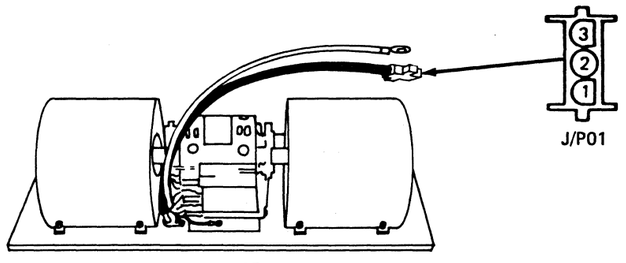
These Ref Codes indicate AMD105 is failing.

Possible causes:

- AMD105
- AFS105
- Missing ac to AMD105
- 01A-A2D2 sense card
- 01A-A2F4 serial read card.

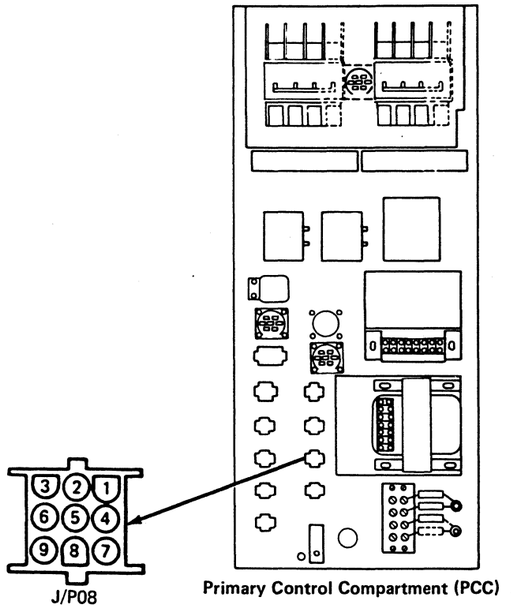
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Verify AMD105 is turning.
2	Is AMD105 turning?	Go to step 8.
3	Go to **Instructions** column.	1. Press ENTER to end the Diagnostic Stop. 2. Disconnect AMD105 J/P01. 3. Select Diagnostic Power Up (QWD) screen. 4. Select option A (stop after K03 picked). 5. Measure for line voltage at the following points: [A] - lead at AMD105 P01-1 (cable end) + lead at AMD105 P01-3 (cable end). **Note:** For line voltage value, see label on PCC box.



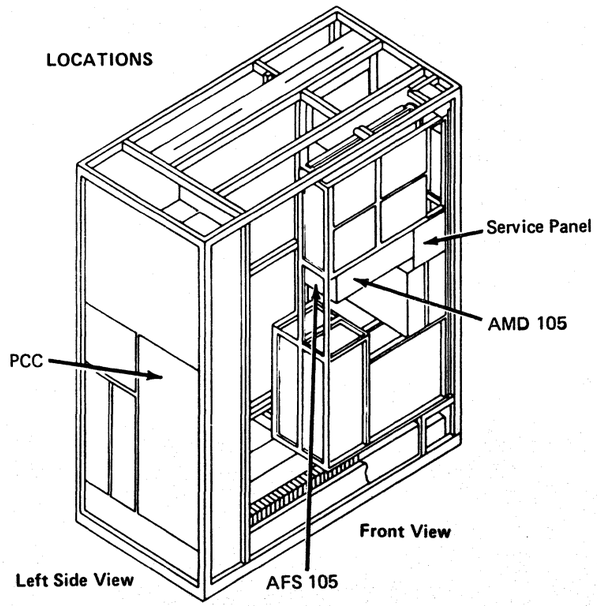


AMD 105

Step	Conditions	Instructions
4	Is line voltage present?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange AMD105. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
5	Go to **Instructions** column.	1. Press ENTER to end the Diagnostic Stop. 2. Reconnect AMD105 connector J/P01. 3. Disconnect PCC connector J/P08. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Measure for line voltage at the following points: - lead at PCC J08-3 (PCC box) [B] + lead at PCC J08-4 (PCC box). **Note:** For line voltage value, see label on PCC box.
6	Is line voltage present?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PCC J/P08 to AMD105 J/P01. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



Step	Conditions	Instructions
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PCC K3 to PCC J/P08. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
8	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2D2D08 + lead to 01A-A2D2P09. [C]
9	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
10	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2F4D08 + lead to 01A-A2F4J05. [D]
11	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
12	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2F4D08 + lead to 01A-A2F4D04. [E]
13	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2F4 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
14	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange AFS105 (see note). **Note:** Check AFS alignment to air flow (AFS should be perpendicular to AMD housing) before exchanging AFS. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



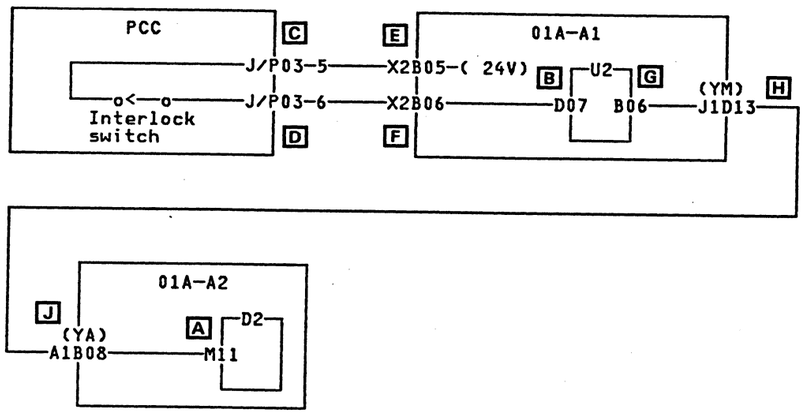
Ref Codes 11D6440E, 11D6450E

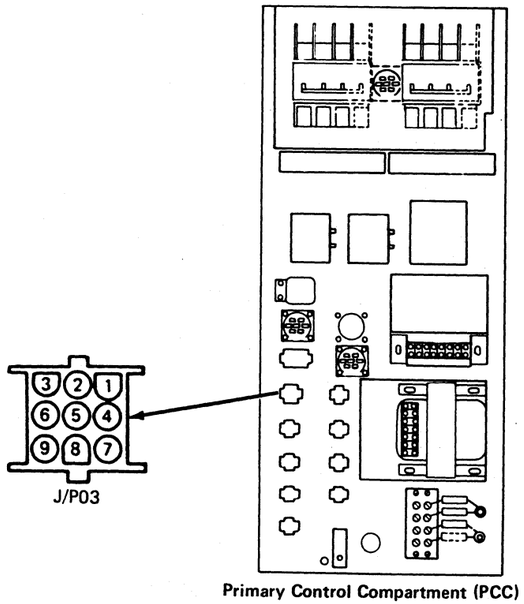
These Ref Codes indicate the door to the PCC box is open or the sense line is failing.

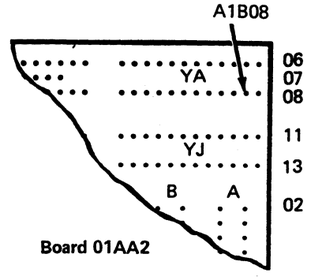
Possible causes:

- Open PCC door
- 01A-A2D2 sense card
- 01A-A1U2 reset card
- PCC interlock switch.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Ensure door to PCC box is closed and both twist locks are tightened. **Note:** If door was open, try to power up before continuing. 3. If power is complete, return to original repair procedure or page PR 5001. 4. Set CE Mode switch to CE Mode. 5. Press service panel Power On. 6. Measure for +4 Vdc at the following points: - lead at 01A-A2D2D08 [A] + lead at 01A-A2D2M11.
2	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Go to step 25.
3	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A1U2D07. [B]
4	Is voltage greater than +22 Vdc?	Go to step 18.





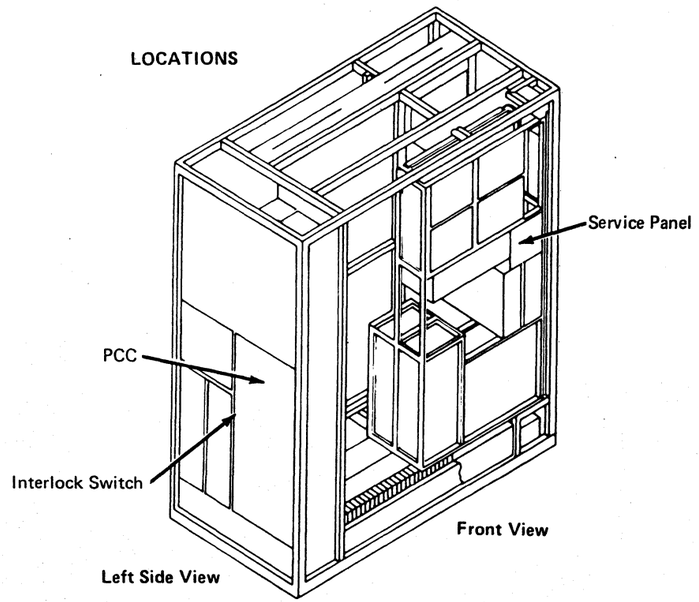


Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2D2D08 + lead at PCC P03-5. [C]
6	Is voltage less than +22 Vdc?	Go to step 12.
7	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2D2D08 + lead at PCC P03-6. [D]
8	Is voltage greater than +22 Vdc?	Go to step 15.
9	Go to **Instructions** column.	1. Open PCC cover. 2. Press PCC interlock switch plunger. 3. Measure for +24 Vdc at the following points: - lead at frame ground + lead at both sides of switch.
10	Is voltage greater than +22 Vdc on only one side of switch?	1. Set PCC CB1 and CB2 off. 2. Exchange PCC interlock switch. 3. Go to step 25.
11	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC P03 to PCC interlock switch. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 25.
12	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A1X2B05. [E]

Step	Conditions	Instructions
13	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1X2 to PCC P03. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 25.
14	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 25.
15	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X2B06. [F]
16	Is voltage greater than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 25.
17	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1X2 to PCC P03. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 25.
18	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1U2B06. [G]
19	Is voltage less than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1U2 card. 3. Go to step 25.

Step	Conditions	Instructions
20	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1J1D13. [H]
21	Is voltage less than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1 board. 3. Go to step 25.
22	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2A1B08. [J]
23	Is voltage less than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A1YM to 01A-A2YA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 25.
24	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 25.
25	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Check all cables and cards for proper seating in the following areas: PCC box 01A-A1 board 01A-A2 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

LOCATIONS



Seq EA210	PN 0446038 Pg 1 of 1	EC A02214 15 SEP 83	EC A02215 01 NOV 83		

Ref Codes 1DD0130E, 1DD1030E, 1DD1730E, 1DD2130E, 1DD3030E, 1DD3330E, 1DD4230E, 1DD4930E, 1DD5330E, 1DD6230E

These Ref Codes indicate that a spare digital sensor is failing.

Possible causes:

- 01A-A2D2 sense card
- 01A-A2E2 sense card.

Step	Conditions	Instructions
1	Is the Ref Code one of the following? 1D D333 0E 1D D423 0E 1D D493 0E 1D D533 0E 1D D623 0E	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
2	Is the Ref Code one of the following? 1D D013 0E 1D D103 0E 1D D173 0E 1D D213 0E 1D D303 0E	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

Ref Codes 1DD0230E, 1DD0330E

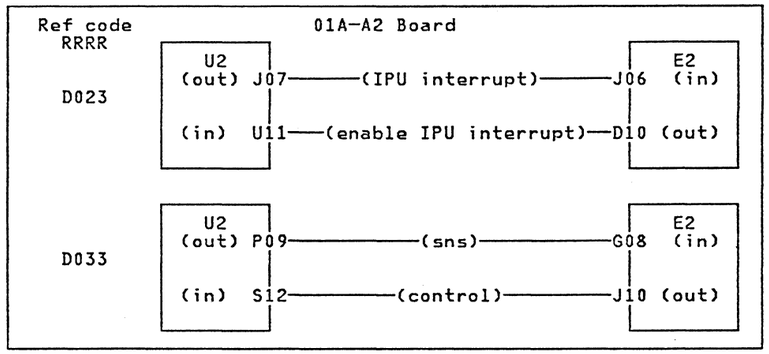
Ref Code 1DD0230E indicates the enable IPU interrupt line or IPU interrupt sensor is failing.

Ref Code 1DD0330E indicates a spare digital sensor is failing.

Possible causes:

- 01A-A2E2 sense card
- 01A-A2U2 card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	Use table [A] and the RRRR field of your Ref Code to determine the pin locations of the failing sense line. 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2XX (XX = E2 input pin).
2	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2U2D08 + lead at 01A-A2U2XX (XX = U2 output pin).
4	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

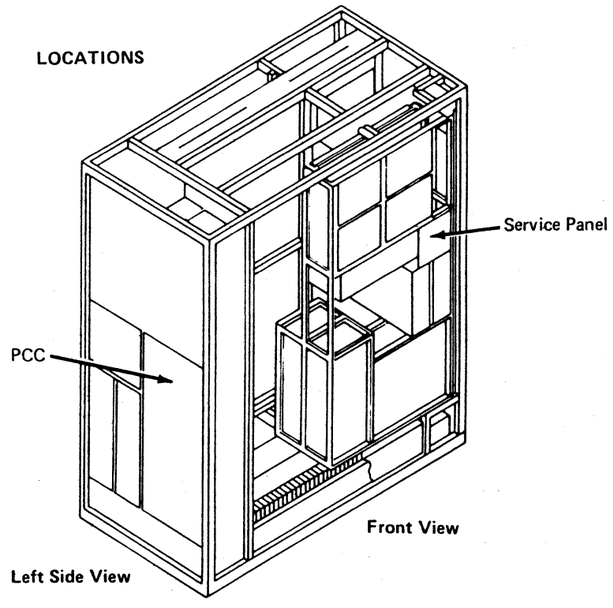


[A]

RRRR	E2 Output	U2 Input	U2 Output	E2 Input
D023	E2D10	U2U11	U2J07	E2J06
D033	E2J10	U2S12	U2P09	E2G08

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2U2D08 + lead at 01A-A2U2XX (XX = U2 input pin).
6	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2U2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2XX (XX = E2 output pin).
8	Is voltage greater than than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

LOCATIONS



Ref Codes 1DD0430E, 11DD5430E

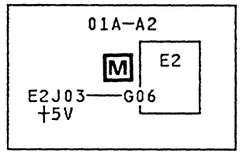
These Ref Codes indicate that a spare digital sensor is failing.

Possible causes:

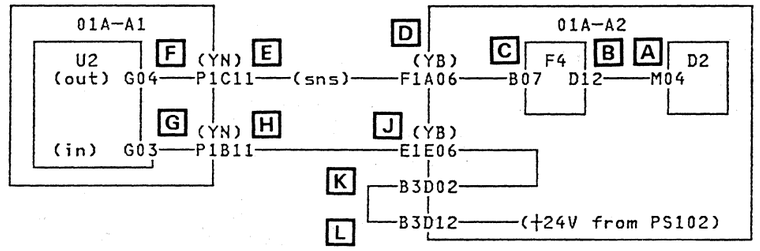
- 01A-A1U2 reset card
- 01A-A2D2 sense card
- 01A-A2E2 sense card
- 01A-A2F4 card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On.
2	Is the displayed Ref Code 1DD0430E?	Go to step 26.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2M04. [A]
4	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2F4D08 + lead at 01A-A2F4D12. [B]
6	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

RRRR=D043

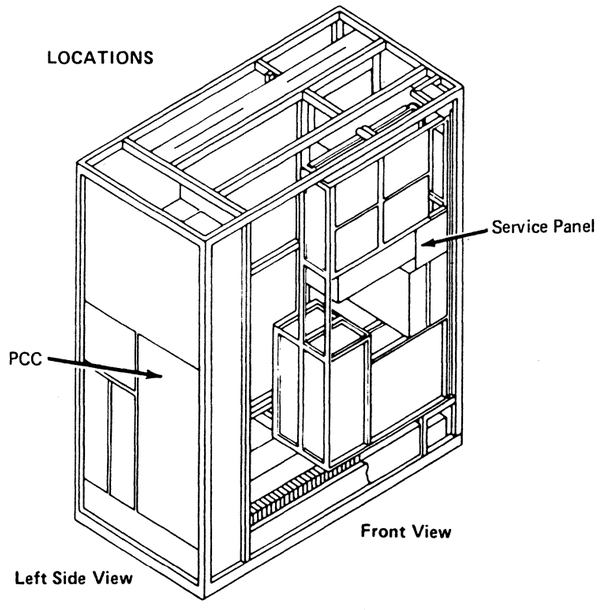


RRRR=D543



Step	Conditions	Instructions
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2F4D08 C + lead at 01A-A2F4B07.
8	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2F4 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 D + lead at 01A-A2F1A06.
10	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
11	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1U2D08 E + lead at 01A-A1P1C11.
12	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A2YB to 01A-A1YN. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
13	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1U2D08 F + lead at 01A-A1U2G04.
14	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
15	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1U2D08 G + lead at 01A-A1U2G03.
16	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1U2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
17	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1U2D08 H + lead at 01A-A1P1B11.
18	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
19	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2B3D08 J + lead at 01A-A2E1E06.

Step	Conditions	Instructions
20	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A2YB to 01A-A1YN. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
21	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2B3D08 + lead at 01A-A2B3D02. [K]
22	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
23	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2B3D08 + lead at 01A-A2B3D12. [L]
24	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable 01A-A2B3. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
25	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
26	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2G06. [M]
27	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
28	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



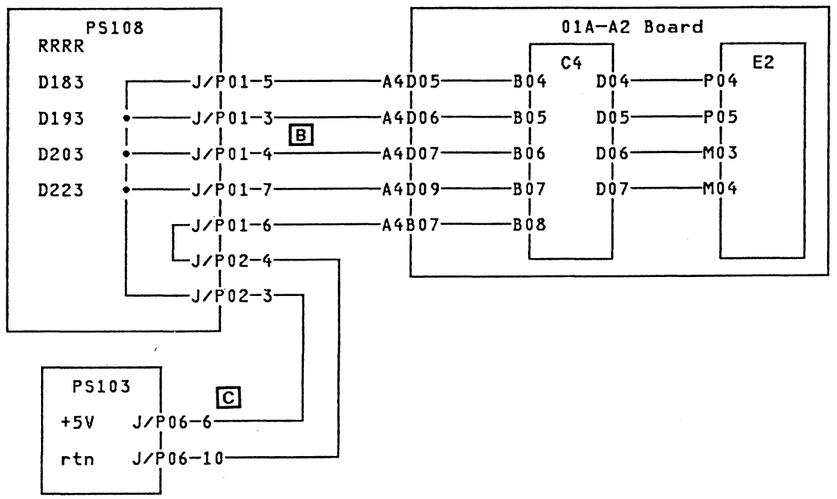
Ref Codes 1D17330E, 1DD1830E, 1DD1930E, 1DD2030E, 1DD2230E

These Ref Codes indicate that a spare digital sensor is failing.

Possible causes:

- 01A-A2C4 optoisolator card
- 01A-A2D2 sense card
- PS103
- PS108.

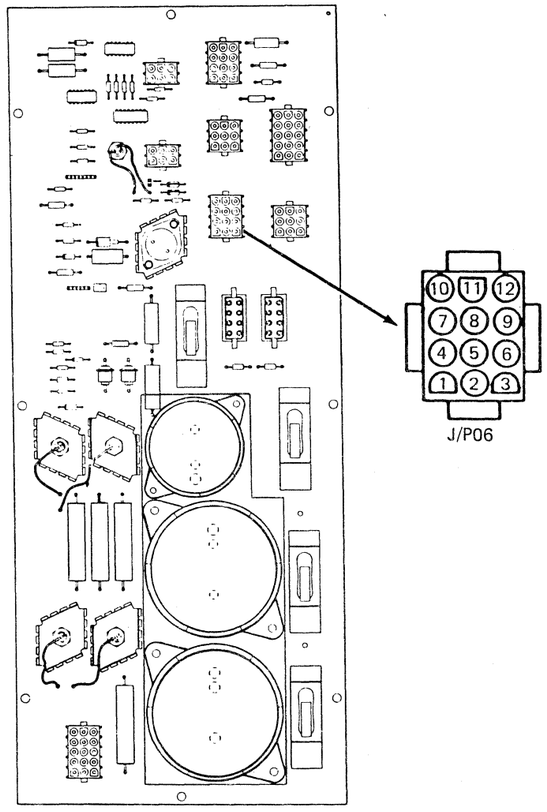
Step	Conditions	Instructions
1	Go to **Instructions** column.	Use table [A] and the RRRR field of your Ref Code to determine the pin locations of the failing sense line. 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWW) screen. 5. Select option A (stop after K03 picked).
2	Is the displayed Ref Code 1D17330E?	Go to step 14.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2XX (XX = E2 input pin).
4	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4XX (XX = C4 output pin).

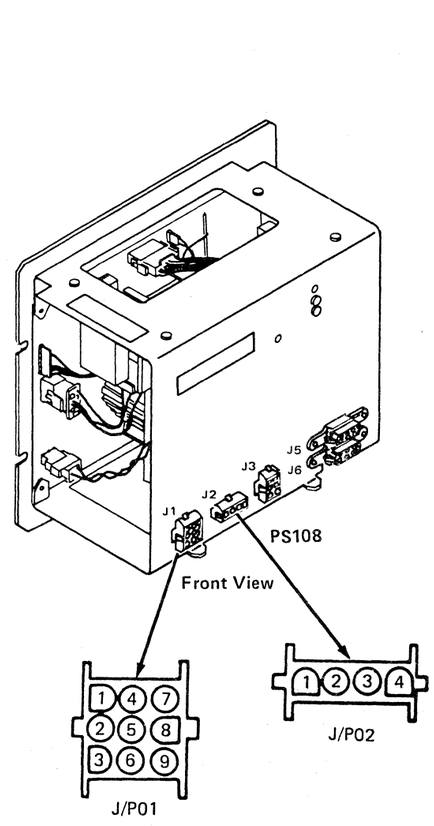


[A]

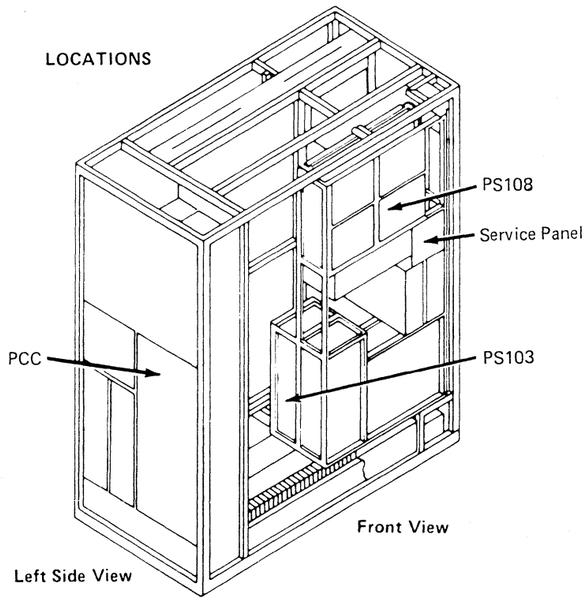
RRRR	PS108	Cable	C4 Input	C4 Output	E2 Input
D183	J/P01-5	A4D05	C4B04	C4D04	E2P04
D193	J/P01-3	A4D06	C4B05	C4D05	E2P05
D203	J/P01-4	A4D07	C4B06	C4D06	E2M03
D223	J/P01-7	A4D09	C4B07	C4D07	E2M04
D633	J/P01-6	A4B07	C4B08	None	None

Step	Conditions	Instructions
6	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4XX (XX = C4 input pin).
8	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2C4 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A4D08 + lead at 01A-A2A4XX (XX = cable pin).
10	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
11	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS108 J/P01-XX (XX = PS108 pin).





Step	Conditions	Instructions
12	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS108 J/P01 to 01A-A2A4. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
13	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS108. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
14	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at PS108 J/P02-4 + lead at PS108 J/P02-3. B
15	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS108. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
16	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at PS103 J/P06-10 + lead at PS103 J/P06-6. C
17	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS108 J/P02 to PS103 J/P06. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
18	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS103. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



Seq EA240	PN 0446044 Pg 1 of 1	EC A02214 15 SEP 83	EC A02217 10 JAN 84		

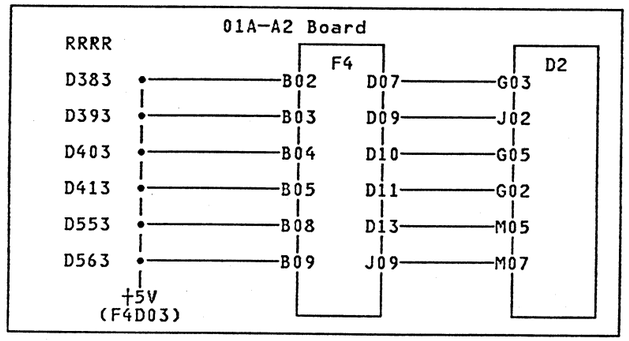
Ref Codes 1DD3830E, 1DD3930E, 1DD4030E, 1DD4130E, 1DD5530E, 1DD5630E

These Ref Codes indicate that a spare digital sensor is failing.

Possible causes:

- 01A-A2D2 sense card
- 01A-A2F4 serial read card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	Use table [A] and the RRRR field of your Ref Code to determine the pin locations of the failing sense line. 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2XX (XX = D2 input pin).
2	Is voltage greater than +2.4Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2F4D08 + lead at 01A-A2F4XX (XX = F4 output pin).
4	Is voltage greater than +2.4Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

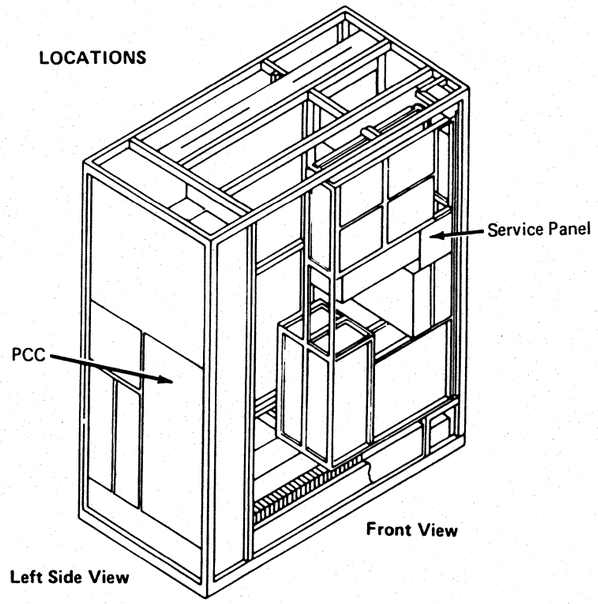


[A]

RRRR	F4 Input	F4 Output	D2 Input
D383	F4B02	F4D07	D2G03
D393	F4B03	F4D09	D2J02
D403	F4B04	F4D10	D2G05
D413	F4B05	F4D11	D2G02
D553	F4B08	F4D13	D2M05
D563	F4B09	F4J09	D2M07

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2F4D08 + lead at 01A-A2F4XX (XX = F4 input pin).
6	Is voltage greater than +4.5Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2F4 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

LOCATIONS



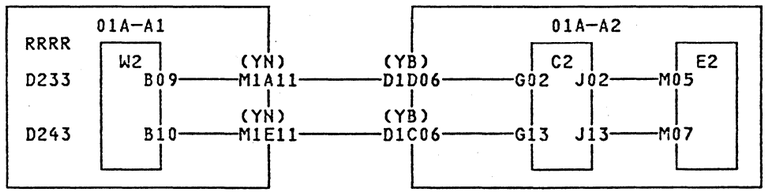
Ref Codes 1DD2330E, 1DD2430E

These Ref Codes indicate that a spare digital sensor is failing.

Possible causes:

- 01A-A1W2 tie up card
- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	Use table A and the RRRR field of your Ref Code to determine the pin locations of the failing sense line. 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2XX (XX = E2 input pin).
2	**Is voltage greater than +2.5 Vdc?**	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2XX (XX = C2 output pin).
4	**Is voltage greater than +2.5 Vdc?**	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

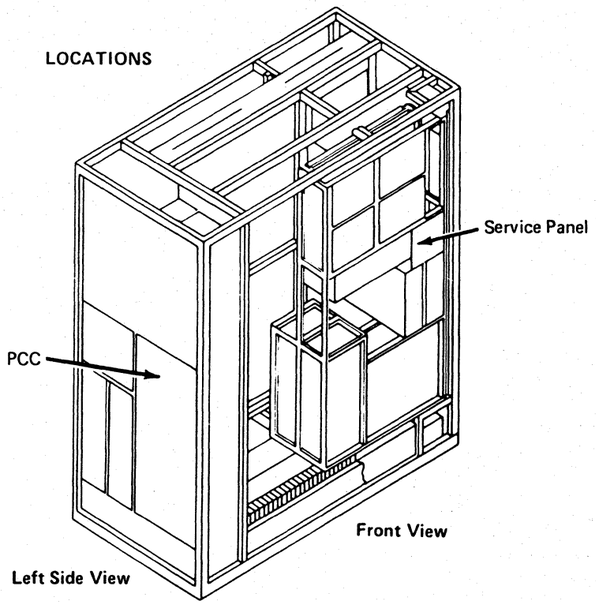


A

RRRR	W2 Output	Cable	C2 Input	C2 Output	E2 Input
D233	W2B09	M1A11—D1D06	C2G02	C2J02	E2M05
D243	W2B10	M1E11—D1C06	C2G13	C2J13	E2M07

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2XX (XX = C2 input pin).
6	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2C2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D1XX (XX = cable pin).
8	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1M5D08 + lead at 01A-A1M1XX (XX = cable pin).
10	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A1YN to 01A-A2YB. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

Step	Conditions	Instructions
11	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1W2D08 + lead at 01A-A1W2XX (XX = W2 output pin).
12	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
13	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2W2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



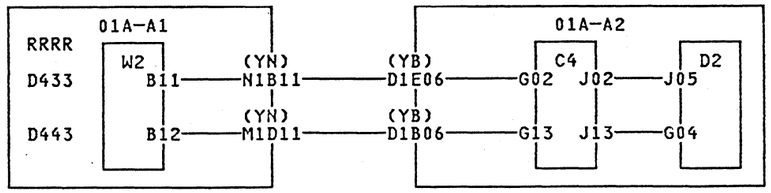
Ref Codes 1DD4330E, 1DD4430E

These Ref Codes indicate that a spare digital sensor is failing.

Possible causes:

- 01A-A2D2 sense card
- 01A-A2C4 optoisolator card
- 01A-A1W2 tie up card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	Use table [A] and the RRRR field of your Ref Code to determine the pin locations of the failing sense line. 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On switch. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2XX (XX = D2 input pin).
2	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4XX (XX = C4 output pin).
4	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

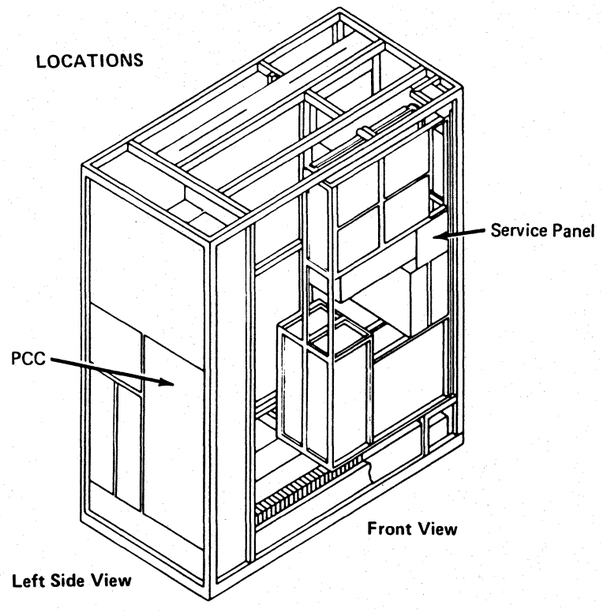


[A]

RRRR	W2 Output	Cable	C4 Input	C4 Output	D2 Input
D433	W2B11	N1B11—D1E06	C4G02	C4J02	D2J05
D443	W2B12	M1D11—D1B06	C4G13	C4J13	D2G04

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4XX (XX = C4 output pin).
6	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2C4 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D1XX (XX = cable pin).
8	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1M5D08 + lead at 01A-A1XXXX (XX = cable pin).
10	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A1YN to 01A-A2YB. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

Step	Conditions	Instructions
11	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1W2D08 + lead at 01A-A1W2XX (XX = W2 output pin).
12	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
13	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2W2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



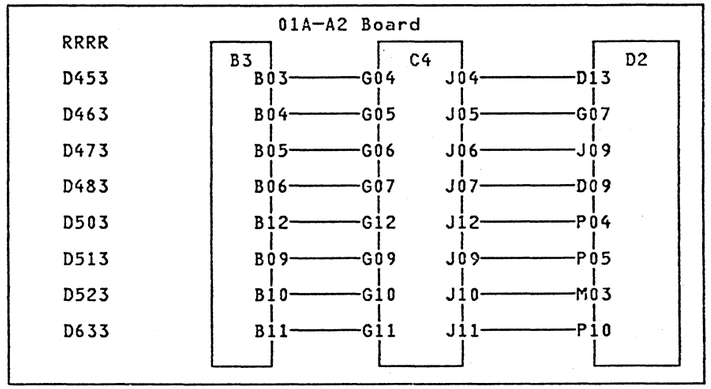
Ref Codes 1DD4530E, 1DD4630E, 1DD4730E, 1DD4830E, 1DD5030E, 1DD5130E, 1DD5230E, 1DD6330E

These Ref Codes indicate that a spare digital sensor is failing.

Possible causes:

- 01A-A2C4 optoisolator card
- 01A-A2D4 sense card.

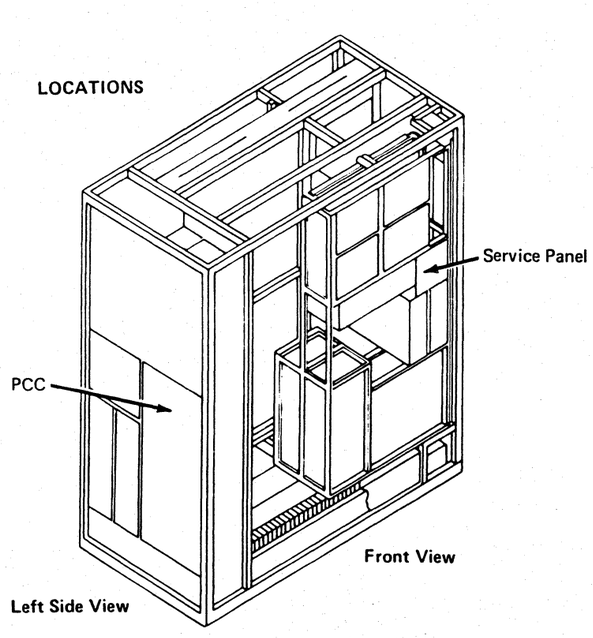
Step	Conditions	Instructions
1	Go to **Instructions** column.	Use table A and the RRRR field of your Ref Code to determine the pin locations of the failing sense line. 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2XX (XX = D2 input pin).
2	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4XX (XX = C4 output pin).
4	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



A

RRRR	B3 Output	C4 Input	C4 Output	D2 Input
D453	B3B03	C4G04	C4J04	D2D13
D463	B3B04	C4G05	C4J05	D2G07
D473	B3B05	C4G06	C4J06	D2J09
D483	B3B06	C4G07	C4J07	D2D09
D503	B3B12	C4G12	C4J12	D2P04
D513	B3B09	C4G09	C4J09	D2P05
D523	B3B10	C4G10	C4J10	D2M03
D633	B3B11	C4G11	C4J11	D2P10

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4XX (XX = C4 input pin).
6	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2C4 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2B3D08 + lead at 01A-A2B3XX (XX = B3 output pin).
8	Is voltage greater then +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2B2 cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



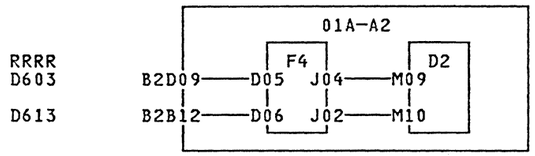
Ref Codes 1DD6030E, 1DD6130E

These Ref Codes indicate that a spare digital sensor is failing.

Possible causes:

- 01A-A2D2 sense card
- 01A-A2F4 serial read card.

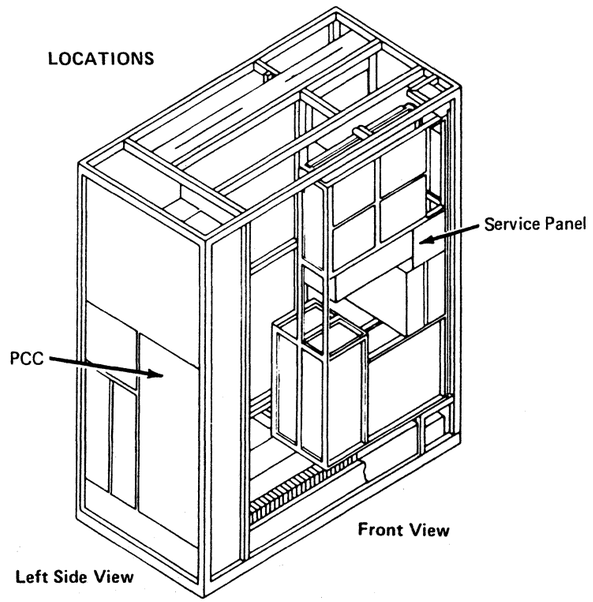
Step	Conditions	Instructions
1	Go to **Instructions** column.	Use table [A] and the RRRR field of your Ref Code to determine the pin locations of the failing sense line. 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2XX (XX = D2 input pin).
2	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2F4D08 + lead at 01A-A2F4XX (XX = F4 output pin).
4	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



[A]

RRRR	Cable	F4 Input	F4 Output	D2 Input
D603	B2D09	F4D05	F4J04	D2M09
D613	B2B12	F4D06	F4J02	D2M10

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2F4D08 + lead at 01A-A2F4XX (XX = F4 input pin).
6	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2F4 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2B2D08 + lead at 01A-A2B2XX (XX = cable pin).
8	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable at 01A-A2B2. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



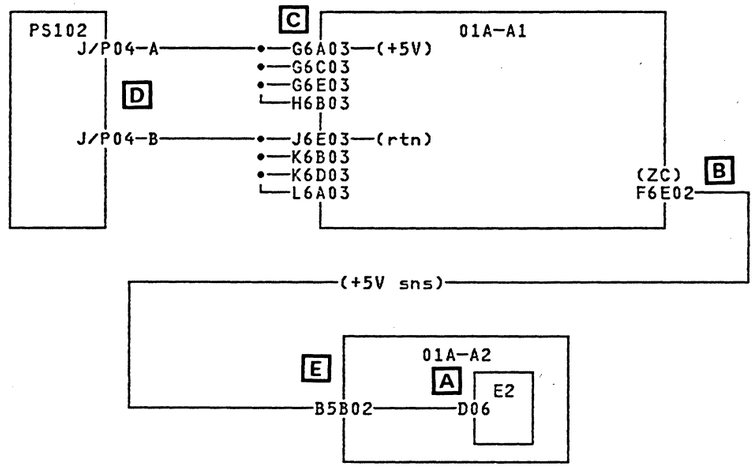
Ref Codes 14A1540E, 14A1550E

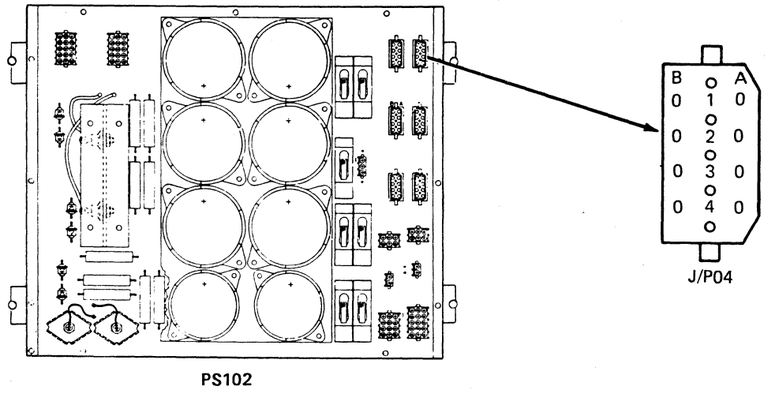
These Ref Codes indicate the +5V from PS102 is out of tolerance to the 01A-A1 board for the Channel-To-Channel Adapter (CTCA).

Possible causes:

- PS102
- 01A-A2E2 sense card
- CTCA configured without CTCA hardware present.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Check if there is a cable installed in PS102 J04.
2	Is cable installed in PS102 J04?	Go to step 4.
3	Go to **Instructions** column.	The CTCA may be configured in the system, but the hardware is not installed. The CTCA should not be configured in the system; use the following procedure: 1. Select System Configuration-Service (QFS) screen. 2. Ensure the CTCA is not enabled. 3. If enabled, disable and re-IML. 4. Go to page PR 5001.
4	Go to **Instructions** column.	Measure for +1.5 Vdc at the following points: - lead to 01A-A2E2D08 [A] + lead to 01A-A2E2D06.
5	Is voltage +1.29 to +1.71 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
6	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A2C2D08 [B] + lead to 01A-A1F6E02.

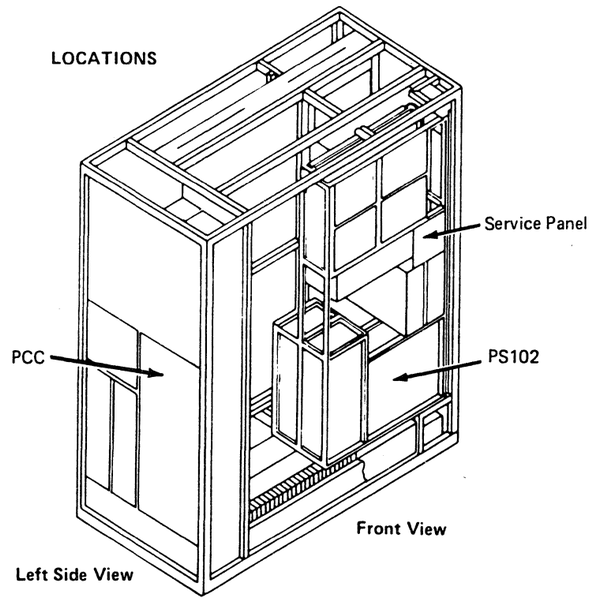




Step	Conditions	Instructions
7	Is voltage between +4.50 and +5.50 Vdc?	Go to step 13.
8	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to 01A-A1G5D08 [C] + lead to 01A-A1G6A03.
9	Is voltage +4.50 to +5.50 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
10	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead to PS102 J/P04 row B (any pin) + lead to PS102 J/P04 row A (any pin). [D]
11	Is voltage +4.50 to +5.50 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS102 J/P04 to 01A-A1ZC. **Note:** Check board for bent pins and cable connectors for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
12	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

Step	Conditions	Instructions
13	Go to **Instructions** column.	Measure for +1.5 Vdc at the following points: - lead to 01A-A2B5D08 + lead to 01A-A2B5B02. E
14	Is voltage between +1.29 and +1.71 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
15	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A1ZC to 01A-A2B5. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

LOCATIONS



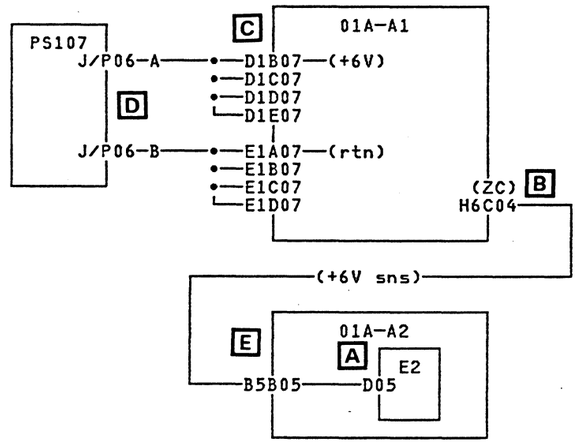
Ref Codes 14A1640E, 14A1650E

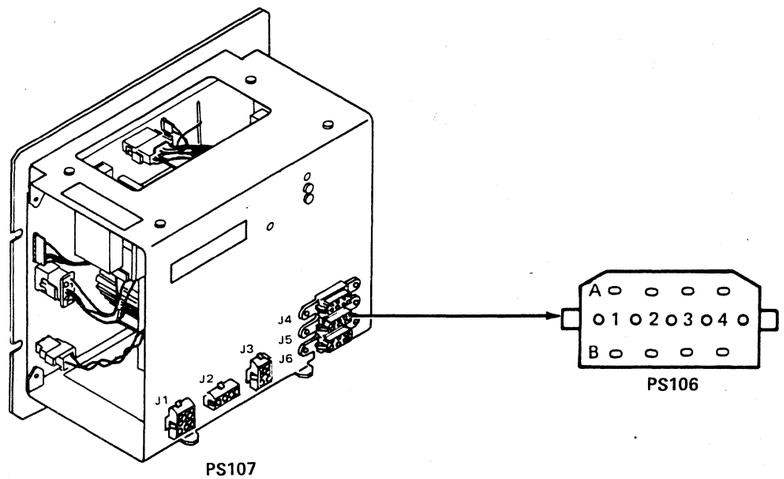
These Ref Codes indicate the +6V from PS107 is out of tolerance at the 01A-A1 board for the Channel-To-Channel Adapter (CTCA).

Possible causes:

- PS107
- 01A-A2E2 card
- 01A-A2 board
- 01A-A1 board
- Power supply adjustment.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option H 6. (stop after +6V start). 7. Measure for +1.5 Vdc at the following points: - lead at 01A-A2E2D08 [A] + lead at 01A-A2E2D05. [A]
2	Is voltage +1.36 to +1.64 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for +6 Vdc at the following points: - lead at 01A-A1H4D08 [B] + lead at 01A-A1H6C04. [B]
4	Is voltage +5.82 to +6.18 Vdc?	Go to step 10.
5	Go to **Instructions** column.	Measure for +6 Vdc at the following points: - lead to 01A-A1B3D08 + lead at 01A-A1B3B11.

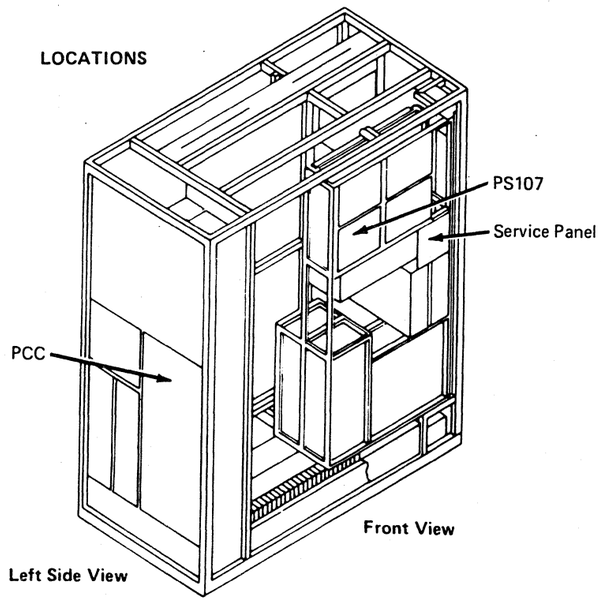




Seq EA280	PN 0446052 Pg 1 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84		

Step	Conditions	Instructions
6	Is voltage +5.82 to +6.18 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	Measure for +6 Vdc at the following points: - lead at PS107 J/P06-B [D] + lead at PS107 J/P06-A.
8	Is voltage +5.82 to +6.18 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A1YB to PS107 J/P06. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS107. **Note:** Check cable connectors for pushed in pins and seating or power supply adjustment before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
10	Go to **Instructions** column.	Measure for +1.5 Vdc at the following points: - lead at 01A-A2B5D08 [E] + lead at 01A-A2B5B05.

Step	Conditions	Instructions
11	Is voltage +1.36 to +1.64 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
12	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A1ZC to 01A-A2B5. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



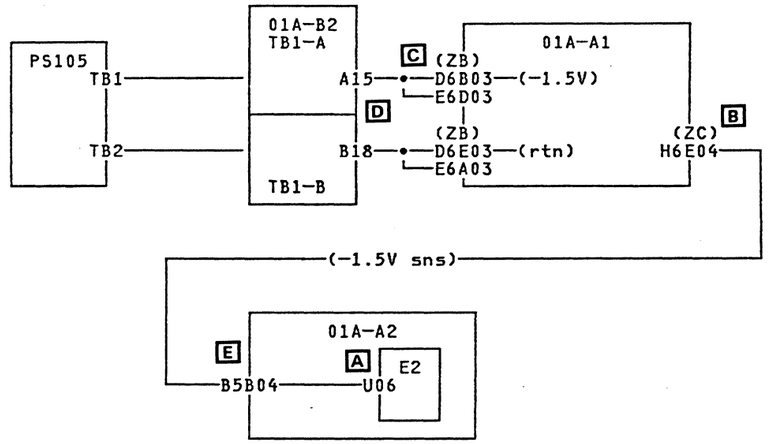
Ref Codes 14A1740E, 14A1750E

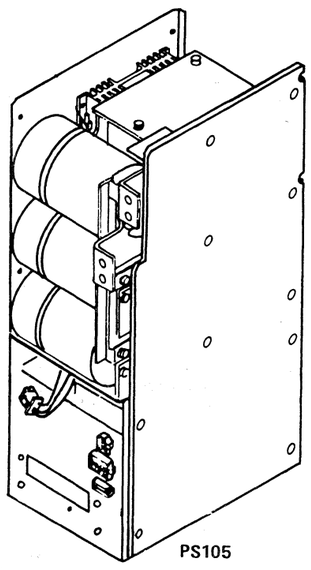
These Ref Codes indicate the -1.5V from PS105 is out of tolerance at the 01A-A1 board for the Channel-To-Channel Adapter (CTCA).

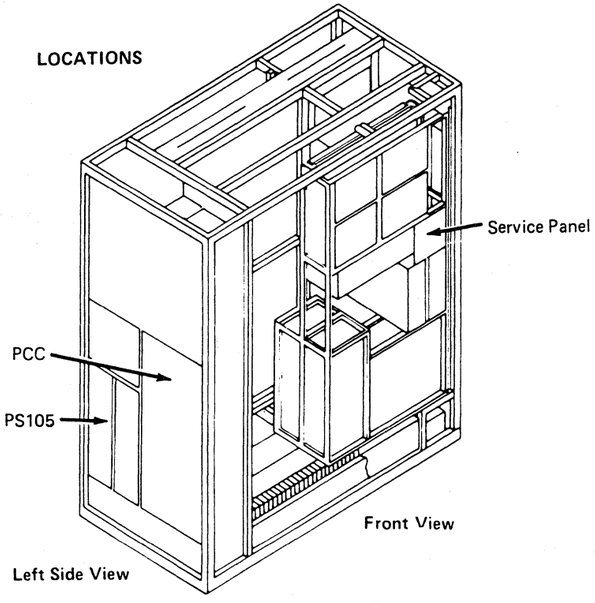
Possible causes:

- 01A-A2E2 sense card
- 01A-A2 board
- 01A-A1 board
- Power supply adjustment.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only). 6. Measure for -1.5 Vdc at the following points: - lead at 01A-A2E2D08 [A] + lead at 01A-A2E2U06. **Note:** Voltage is present for about two seconds.
2	Is voltage -1.44 to -1.59 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select UP (power-up processor only). 3. Measure for -1.5 Vdc at the following points: - lead at 01A-A1B5D08 [B] + lead at 01A-A1H6E04. **Note:** Voltage is present for about two seconds.




PS105



Step	Conditions	Instructions
4	Is voltage -1.45 to -1.55 Vdc?	Go to step 10.
5	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select UP (power-up processor only). 3. Measure for -1.5 Vdc at the following points: - lead at 01A-A1D6E03 [C] + lead at 01A-A1D6B03. **Note:** Voltage is present for about two seconds.
6	Is voltage -1.45 to -1.55 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select UP (power-up processor only). 3. Measure for -1.5 Vdc at the following points: - lead at 01AB2 TB1-B bus + lead at 01AB2 TB1-A bus. [D] **Note:** Voltage is present for about two seconds.
8	Is voltage -1.45 to -1.55 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-B2 TB1-A bus to 01A-A1ZB. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS105. **Note:** Check cable connectors for pushed in pins and seating or power supply adjustment before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
10	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select UP (power-up processor only). 3. Measure for -1.5 Vdc at the following points: - lead at 01A-A2B5D08 [E] + lead at 01A-A2B5B04. **Note:** Voltage is present for about two seconds.
11	Is voltage -1.44 to -1.59 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
12	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A1ZC to 01A-A2B5. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

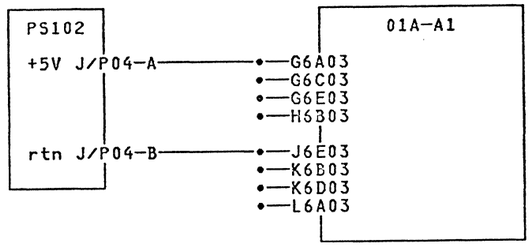
Ref Codes 14A4840E, 14A4850E

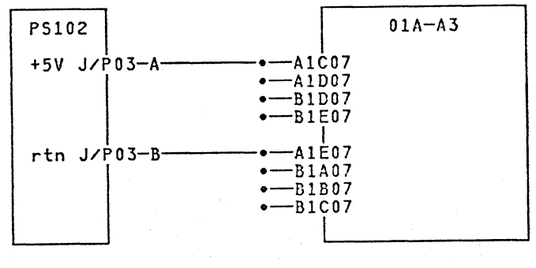
These Ref Codes indicate that PS102 CP2 is tripped.

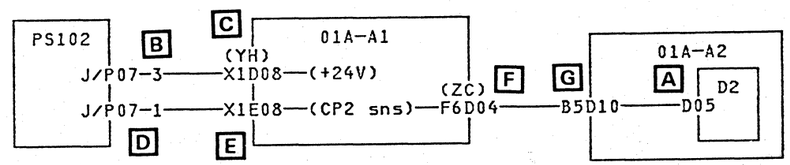
Possible causes:

- PS102
- 01A-A3 board
- +24 Vdc missing to PS102 CP2
- Short in PS102 voltage distribution.

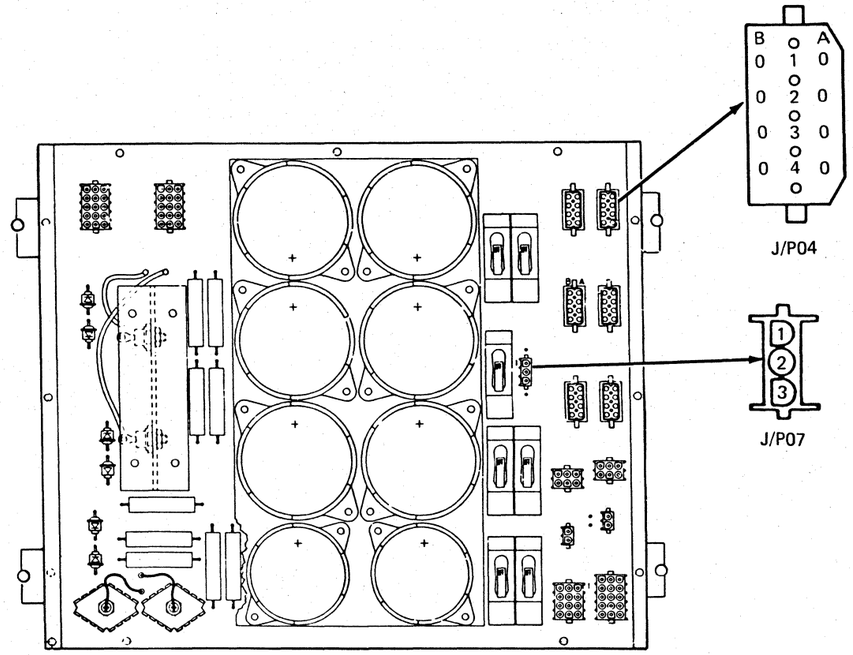
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Check for PS102 CP2 tripped. 3. If CP2 is tripped, reset CP and press Power On. 4. If CP2 trips or same Ref Code displays, go to step 2. 5. If power is complete, go to page END 001.
2	Is CP2 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Reset CP2. 4. Go to step 19.
3	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2D05. [A]
4	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Set PCC CB1 and CB2 on. 5. Go to step 42.







Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at frame ground + lead at PS102 J/P07-3. [B]
6	Is voltage greater than +22 Vdc?	Go to step 10.
7	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1X1D08. [C]
8	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A1YH (card side) to PS102 P07. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 42.
9	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Set PCC CB1 and CB2 on. 5. Go to step 42.
10	Go to **Instructions** column.	Measure for +24 Vdc at the following points. - lead at frame ground + lead at PS102 J/P07-1. [D]
11	Is voltage less than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 42.



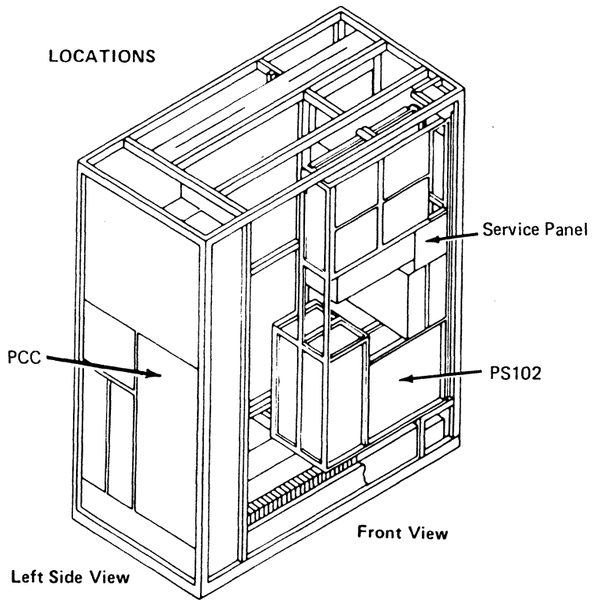
PS102

Seq EA290	PN 0446054 Pg 2 of 2	EC A02214 15 SEP 83				

Step	Conditions	Instructions
12	Go to **Instructions** column.	Measure for +24 Vdc at the following points. - lead at 01A-A1V2D08 + lead at 01A-A1X1E08. E
13	Is voltage less than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS102 P07 to 01A-A1YH (card side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 42.
14	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1F6D04. F
15	Is voltage less than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Set PCC CB1 and CB2 on. 5. Go to step 42.
16	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A2B5D10. G
17	Is voltage less than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A1ZC (card side) to 01A-A2B5. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 42.
18	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to step 42.
19	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect PS102 P03 and P04. 3. Set PCC CB1 and CB2 on. 4. Press service panel Power On.
20	Is CP2 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 42.
21	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Reconnect PS102 P03. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
22	Is CP2 tripped?	Go to step 30.
23	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect PS102 P04. 3. Disconnect the 01A-A1ZC and 01A-A1ZD (pin side) connectors. 4. Press service panel Power On.

Step	Conditions	Instructions
24	Is CP2 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A1ZD (pin side) to PS102 P04. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Reset CP2. 5. Set PCC CB1 and CB2 on. 6. Go to step 42.
25	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect the 01A-A1ZC and 01A-A1ZD (pin side) connectors. 3. Remove 01A-A1B2 and 01A-A1C2 cards. 4. Press service panel Power On.
26	Is CP2 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1 board. 4. Reset CP2. 5. Set PCC CB1 and CB2 on. 6. Press service panel Power On. 7. Go to step 42.
27	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Reinstall 01A-A1B2 card. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On.
28	Is CP2 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1B2 card. 4. Reset CP2. 5. Set PCC CB1 and CB2 on. 6. Go to step 42.
29	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A1C2 card. 4. Reset CP2. 5. Set PCC CB1 and CB2 on. 6. Go to step 42.
30	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Disconnect 01A-A3YA (pin side). 4. Reset CP2. 5. Set PCC CB1 and CB2 on. 6. Press service panel Power On.
31	Is CP2 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS102 P03 to 01A-A3YA (pin side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 42.
32	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A3YA. 3. Remove all cards from 01A-A3 board. 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
33	Is CP2 tripped?	Go to step 37.

Step	Conditions	Instructions
34	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall one card only in 01A-A3 board. 4. Select Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
35	Is CP2 tripped?	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Exchange card just reinstalled. 4. Reset CP2. 5. Repeat steps 34, 35, and 36 until all cards have been reinstalled, then go to step 42.
36	Go to **Instructions** column.	Repeat steps 34, 35, and 36 until all cards have been reinstalled, then go to step 42.
37	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Remove all cables from 01A-A3 (card side only). 4. Reset CP2. 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
38	Is CP2 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A3 board. 4. Reset CP2. 5. Go to step 42.



Step	Conditions	Instructions
39	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall one cable in 01A-A3. 4. Select Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
40	Is CP2 tripped?	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Exchange the cable just reinstalled. 4. Reset CP2. 5. Repeat steps 39, 40, and 41 until all cables have been reinstalled, then go to step 42.
41	Go to **Instructions** column.	Repeat steps 39, 40, and 41 until all cables have been reinstalled, then go to step 42.
42	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Check all cables and cards for proper seating in the following areas: PS102 01A-A1 board 01A-A2 board 01A-A3 board. 4. Reset any tripped CPs. 5. Set PCC CB1 and CB2 on. 6. Go to page PR 5001.

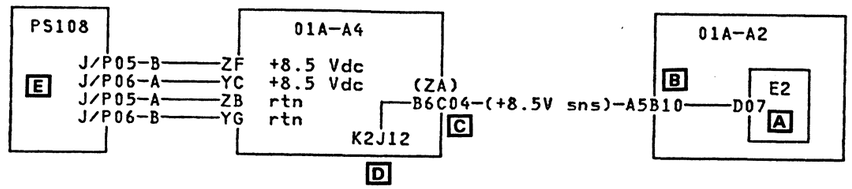
Ref Codes 11A1440E, 11A1450E

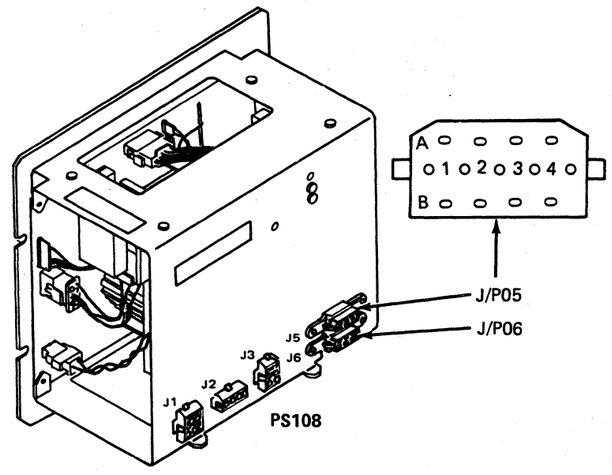
These Ref Codes indicate the +8.5 Vdc from PS108 is out of tolerance at the 01A-A4 board.

Possible causes:

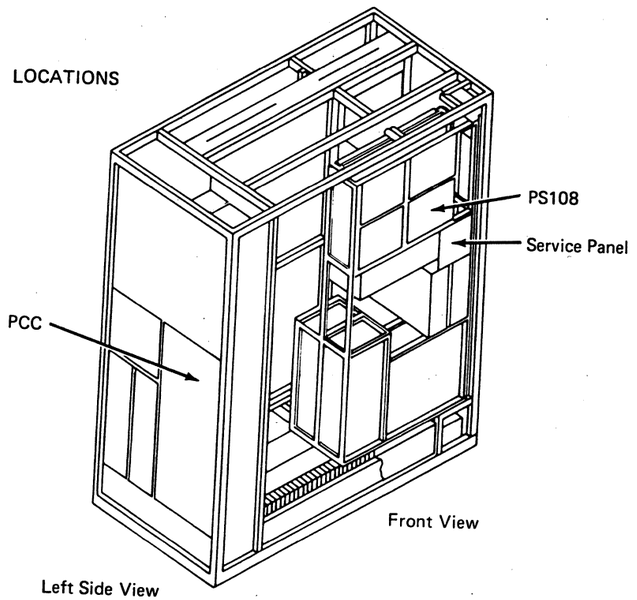
- 01A-A2A5 paddle card
- 01A-A2E2 card
- PS108
- Power supply adjustment.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option G (stop after +8.5V start). 6. Measure for +1.5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2D07. [A]
2	Is voltage +1.42 to 1.58 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for +1.5 Vdc at the following points: - lead at 01A-A2A5D08 [B] + lead at 01A-A2A5B10.
4	Is voltage +1.42 to 1.58 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.





Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +8.5 Vdc at the following points: - lead at 01A-A4C5D08 [C] + lead at 01A-A4B6C04.
6	Is voltage +8.24 to +8.76 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A4ZA to 01A-A2A5. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	Measure for +8.5 Vdc at the following points: - lead at 01A-A4K2J08 [D] + lead at 01A-A4K2J12.
8	Is voltage +8.24 to +8.76 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A4 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	Measure for +8.5 Vdc at the following points: - lead at PS108 J/P05-A [E] + lead at PS108 J/P05-B.
10	Is voltage +8.24 to +8.76 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS108 J/P05, J/P06 to 01A-A4YC, YG, ZB, and ZF. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS108. **Note:** Check cable connectors for pushed in pins and seating or power supply adjustment before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



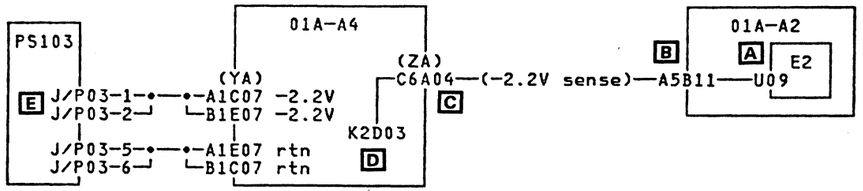
Ref Codes 11A1840E, 11A1850E

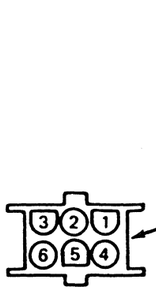
These Ref Codes indicate the -2.2V from PS103 at the 01A-A4 board is out of tolerance.

Possible causes:

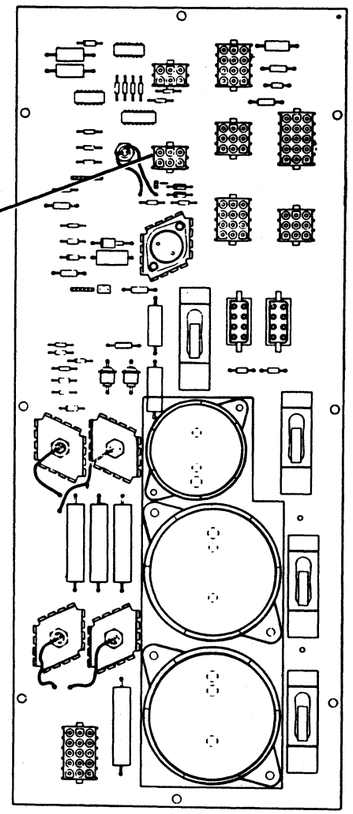
- 01A-A2E2 card
- 01A-A4 board
- PS103
- Power supply adjustment
- If this is an installation or diskette update, the wrong power group was defined.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option C (stop after -2.2V start). 6. Measure for -1.5 Vdc at the following points: - lead at 01A-A2E2D08 [A] + lead at 01A-A2E2U09.
2	Is voltage -1.42 to -1.58 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for -1.5 Vdc at the following points: - lead at 01A-A2A5D08 [B] + lead at 01A-A2A5B11.
4	Is voltage -1.42 to -1.58 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange O1A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.





J/P03

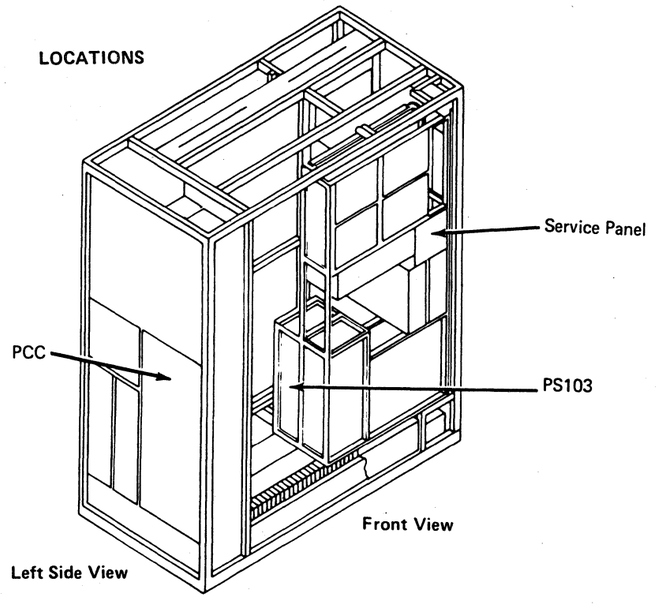

PS103

Seq EB015	PN 0447379 Pg 1 of 2	EC A02216 12 DEC 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84		

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for -2.2 Vdc at the following points: - lead at 01A-A4C5D08 [C] + lead at 01A-A4C6A04.
6	Is voltage -2.13 to -2.27 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from O1A-A4ZA to 01A-A2A5. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	Measure for -2.2 Vdc at the following points: - lead at 01A-A4K2D08 [D] + lead at 01A-A4K2D03.
8	Is voltage -2.13 to -2.27 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A4 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	Measure for -2.2 Vdc at the following points: - lead at PS103 J/P03-6 [E] + lead at PS103 J/P03-1.
10	Is voltage -2.13 to -2.27 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS103 J/P03 to 01A-A4YA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

Step	Conditions	Instructions
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS103. **Note:** Check cable connectors for pushed in pins and seating or power supply adjustment before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

LOCATIONS



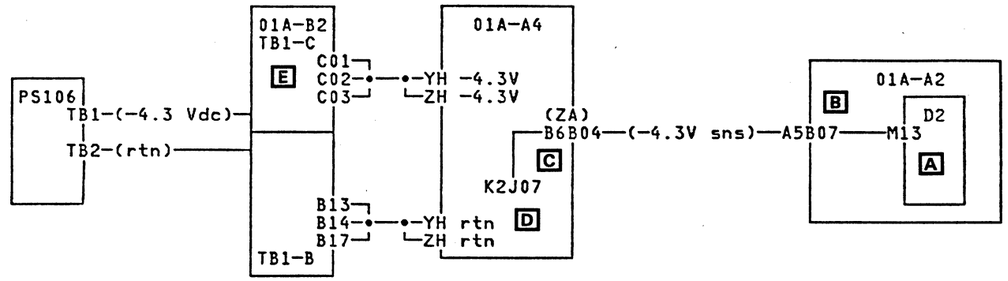
Ref Codes 11A6440E, 11A6450E

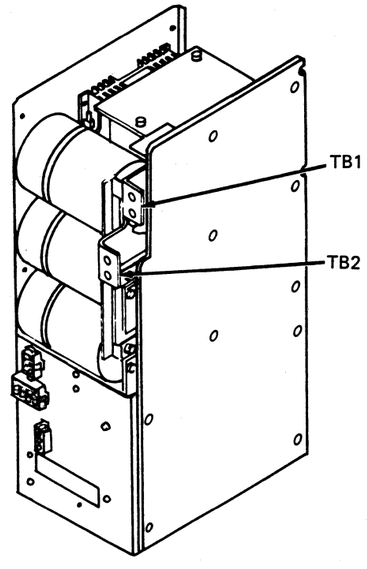
These Ref Codes indicate the -4.3 Vdc from PS106 is out of tolerance at the 01A-A4 board.

Possible causes:

- 01A-A2A5 paddle card
- 01A-A2D2 card
- 01A-A2 board
- 01A-A4 board
- Power supply adjustment.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only). 6. Measure for -1.5 Vdc at the following points: - lead to 01A-A2D2D08 [A] + lead to 01A-A2D2M13. **Note:** Voltage is present for about two seconds.
2	Is voltage -1.42 to -1.58 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2D2 card. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
3	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select UP (power-up processor only). 3. Measure for -1.5 Vdc at the following points: - lead to 01A-A2A5D08 [B] + lead to 01A-A2A5B07. **Note:** Voltage is present for about two seconds.

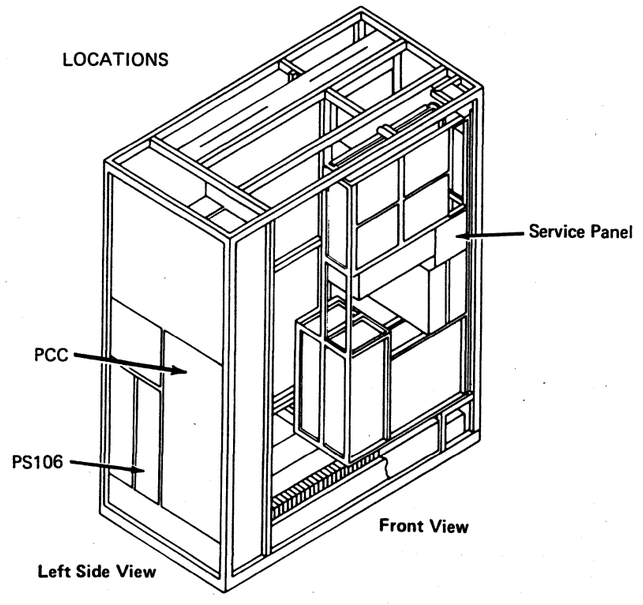




PS106

Step	Conditions	Instructions
4	Is voltage -1.42 to -1.58 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
5	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select UP (power-up processor only). 3. Measure for -4.3 Vdc at the following points: - lead to 01A-A4B5D08 [C] + lead to 01A-A4B6B04. **Note:** Voltage is present for about two seconds.
6	Is voltage -4.16 to -4.51 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A2A5 to 01A-A4ZA (card side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
7	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select UP (power-up processor only). 3. Measure for -4.3 Vdc at the following points: - lead to 01A-A4K2D08 [D] + lead to 01A-A4K2J07. **Note:** Voltage is present for about two seconds.
8	Is voltage -4.16 to -4.51 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A4 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select UP (power-up processor only). 3. Measure for -4.3 Vdc at the following points: - lead to 01A-B2 TB1-B bus [E] + lead to 01A-B2 TB1-C bus. **Note:** Voltage is present for about two seconds.
10	Is voltage -4.16 to -4.51 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-B2 TB1-C bus to 01A-A4YH, ZH (pin side). **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS106. **Note:** Check cable connector for pushed in pins and seating or power supply adjustment before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

LOCATIONS



Seq EB025	PN 0447380 Pg 2 of 2	EC A02216 12 DEC 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84		

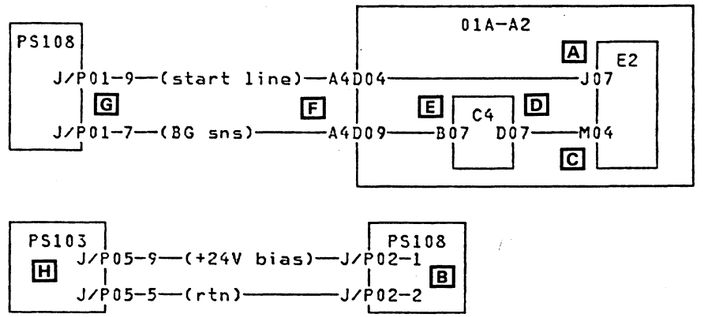
Ref Codes 1152140E, 1152150E

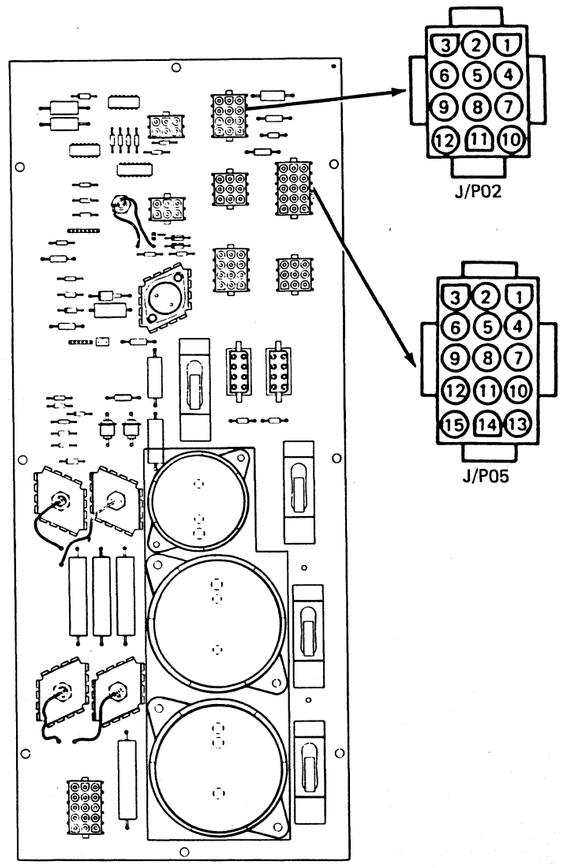
These Ref Codes indicate the PS108 BG sense line was below +2.4 Vdc after bias voltage was applied to PS108 but before the start line was set on.

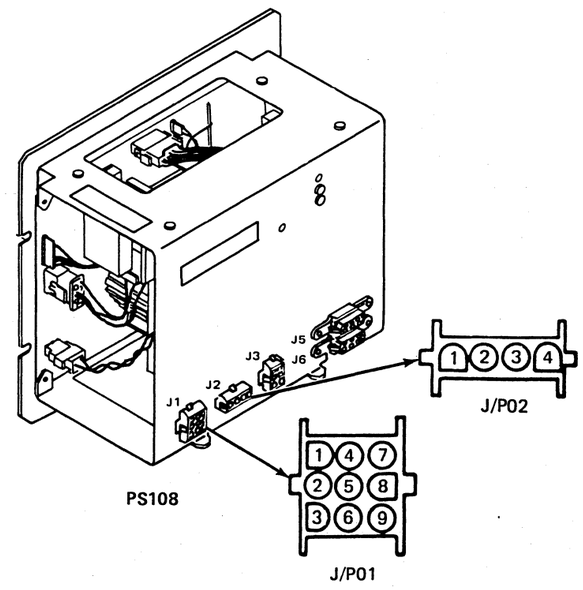
Possible causes:

- 01A-A2C4 optoisolator card
- 01A-A2E2 sense card
- PS108
- PS108 BG sense line open or grounded
- Missing +24 Vdc bias to PS108
- PS108 start line grounded.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2J07. A
2	Is voltage less than +2.4 Vdc?	Go to step 19.
3	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PS108 P02-2 + lead at PS108 P02-1. B
4	Is voltage less than +22 Vdc?	Go to step 16.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2M04. C



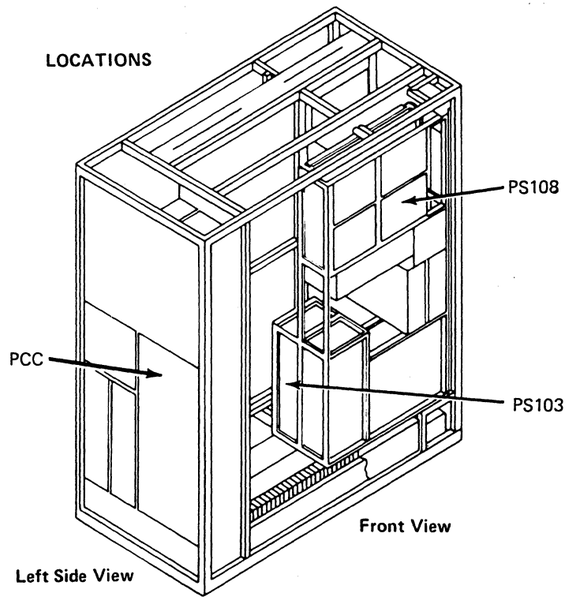




Step	Conditions	Instructions
6	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to step 22.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4D07. [D]
8	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to step 22.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4B07. [E]
10	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2C4 card. 4. Set PCC CB1 and CB2 on. 5. Go to step 22.
11	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A4D08 + lead at 01A-A2A4D09. [F]
12	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to step 22.
13	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS108 J/P01-7. [G]
14	Is voltage greater than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A2A4 to PS108 J/P01. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 22.
15	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS108. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 22.
16	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PS103 J/P05-5 + lead at PS103 J/P05-9. [H]
17	Is voltage greater than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS103 J/P05 to PS108 J/P02. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 22.

Step	Conditions	Instructions
18	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS103. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 22.
19	Go to **Instructions** column.	1. Press ENTER to end Diagnostic Stop. 2. Disconnect PS108 J/P01. 3. Select Diagnostic Power Up (QWD) screen. 4. Select option A (stop after K03 picked). 5. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2J07.
20	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS108. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 22.
21	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Go to step 22.

Step	Conditions	Instructions
22	Go to **Instructions** column.	1. Reconnect PS108 J/P01. 2. If still failing, the sense or start line may be shorted. Isolate to one of the following: 01A-A2E2 card (swap with D2 card) 01A-A2C4 card (swap with C2 card) PS108 01A-A2 board Cable from 01A-A2A4 to PS108 J/P01. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 5001.



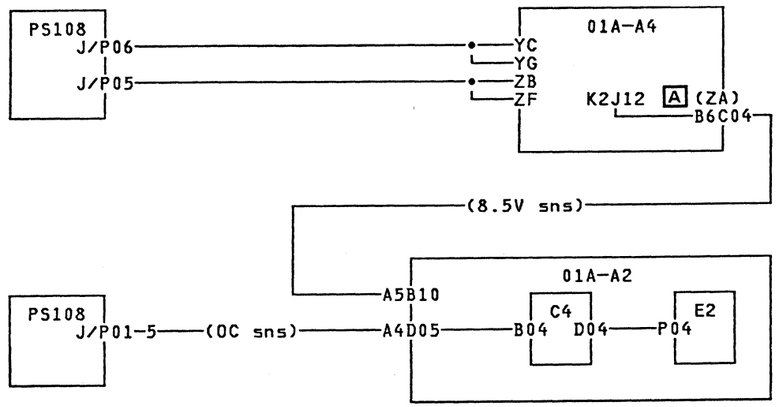
Ref Codes 1153840E, 1153850E

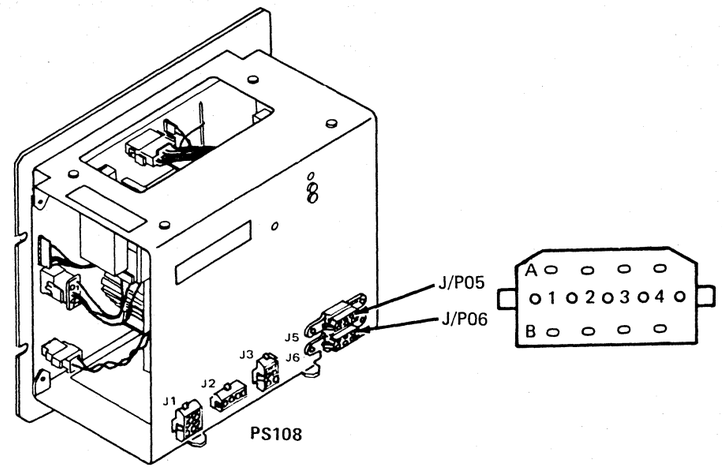
These Ref Codes indicate the PS108 OC sense line was below +2.4 Vdc after the start line to was set on.

Possible causes:

- PS108
- Short in PS108 voltage distribution.

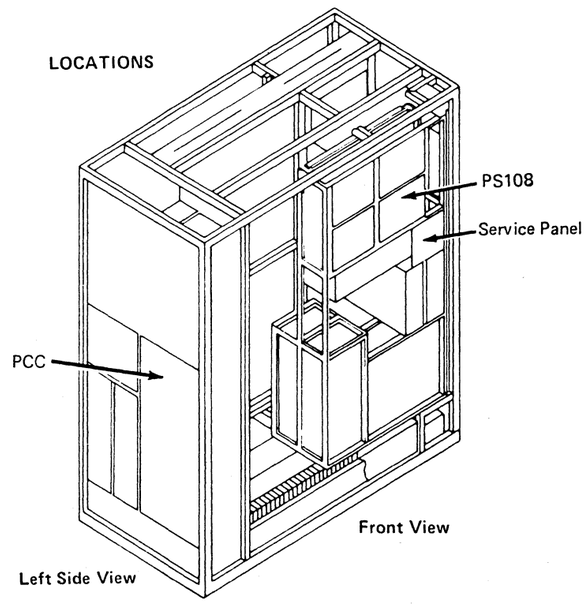
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Disconnect PS108 J/P05 and J/P06. 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
2	Is the displayed Ref Code 1153840E?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS108. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 15.
3	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect PS108 P05 and P06. 3. Disconnect the cables at 01A-A4ZB, 01A-A4ZF, 01A-A4YC, and 01A-A4YG. 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).





Step	Conditions	Instructions
4	Is the displayed Ref Code 1153840E?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cables from 01A-A4ZB, ZF, YC, and YG to PS108 J/P05 and J/P06. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 15.
5	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Remove all cards from the 01A-A4 board. 3. Measure resistance at the following points: - lead at frame ground + lead at 01A-A4K2J12. A
6	Is a short indicated?	Go to step 11.
7	Go to **Instructions** column.	1. Reconnect cables at 01A-A4ZB, 01A-A4ZF, 01A-A4YC, and 01A-A4YG. 2. Press service panel Power On.
8	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall one card in the 01A-A4 board. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
9	Is the displayed Ref Code 1153840E?	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Exchange card just reinstalled. 4. Repeat steps 8, 9, and 10 until all cards have been reinstalled; then go to step 15.
10	Go to **Instructions** column.	1. Repeat steps 8, 9, and 10 until all cards have been reinstalled; then go to step 15.
11	Go to **Instructions** column.	1. Disconnect the cable at 01A-A4ZA (card side). 2. Measure resistance at the following points: - lead at frame ground + lead at 01A-A4K2J12.
12	Is a short indicated?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A4 board. 3. Set PCC CB1 and CB2 on. 4. Go to step 15.
13	Go to **Instructions** column.	1. Reconnect the cable at 01A-A4ZA (card side). 2. Disconnect the cable at 01A-A2A5. 3. Measure resistance at the following points: - lead at frame ground + lead at 01A-A4K2J12.
14	Is a short indicated?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2A5 to 01A-A4ZA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Set PCC CB1 and CB2 on. 4. Go to step 15.

Step	Conditions	Instructions
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Check all cables and cards for proper seating in the following areas: PS108 01A-A4 board 01A-A2 board. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 5001.



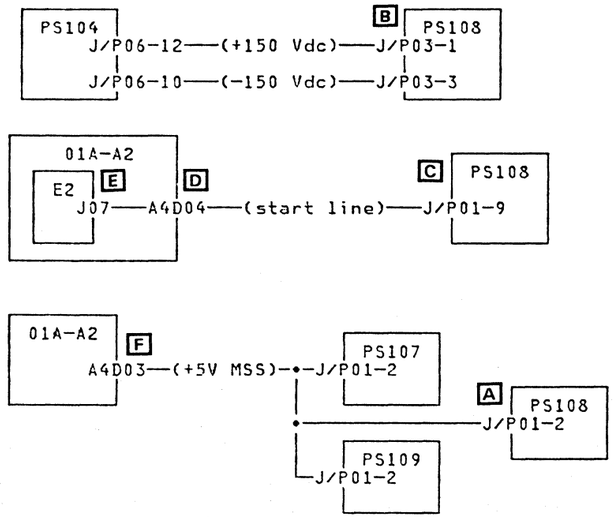
Ref Codes 1111640E, 1111650E

These Ref Codes indicate +8.5 Vdc is missing from PS108 after the start line was set on.

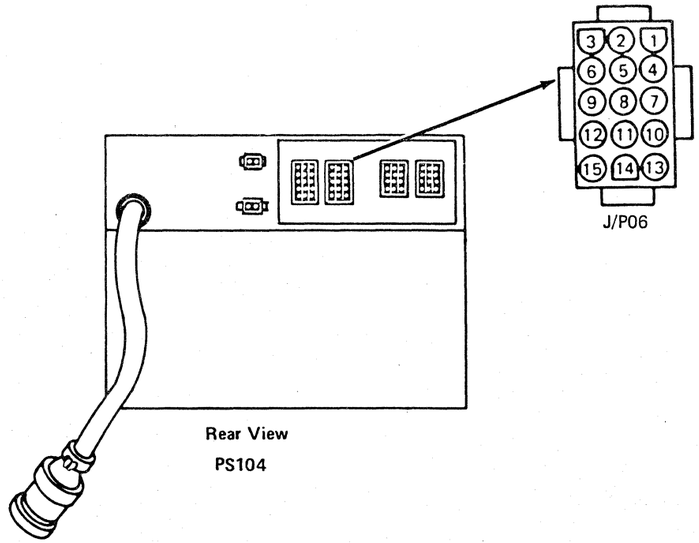
Possible causes:

- 01A-A2E2 card
- PS108 missing +5 Vdc from MSS
- PS108 missing +300 Vdc from PS104
- PS108 start line open or tied-up
- PS108.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Disconnect PS108 J/P03. 4. Press service panel Power On. 5. Select Diagnostic Power Up (QWD) screen. 6. Select option B (stop after K04 picked). 7. Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS108 J/P01-2. [A]
2	Is voltage less than +4.5 Vdc?	Go to step 12.
3	Go to **Instructions** column.	***DANGER*** ***300 Vdc.*** Measure for +300 Vdc at the following points: - lead at PS108 J03-3 [B] + lead at PS108 J03-1 (cable end).
4	Is voltage less than 225 Vdc?	Go to step 15.



Step	Conditions	Instructions
5	Go to **Instructions** column.	1. Press ENTER to end Diagnostic Stop. 2. Reconnect PS108 J/P03. 3. Select Diagnostic Power Up (QWD) screen. 4. Select option G (stop after +5V start). 5. Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS108 J/P01-9. C
6	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS108. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 18.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A4D08 + lead at 01A-A2A4D04. D
8	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A2A4 to PS108 J/P01. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 18.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2J07. E

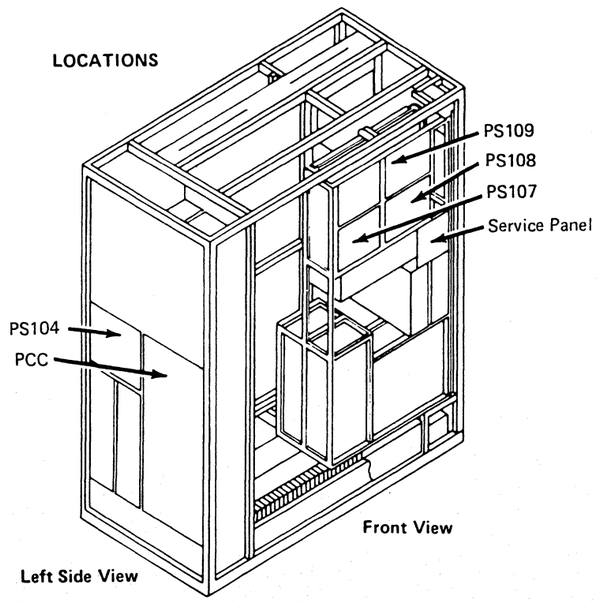


Typical PS107, 108, 109

PR 2322

Step	Conditions	Instructions
10	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to step 18.
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2E2 card. 3. Set PCC CB1 and CB2 on. 4. Go to step 18.
12	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A4D08 [F] + lead at 01A-A2A4D03.
13	Is voltage greater than +4.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A2A4 to PS108 J/P01. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 18.
14	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to step 18.

LOCATIONS



Step	Conditions	Instructions
15	Go to **Instructions** column.	***DANGER*** ***300 VDC.*** 1. Press ENTER to end Diagnostic Stop. 2. Disconnect PS104 J/P06. 3. Select Diagnostic Power Up (QWD) screen. 4. Select option B (stop after K04 picked). 5. Measure for +300 Vdc at the following points: - lead at PS104 J06-10 + lead at PS104 J06-12 (on power supply).
16	Is voltage greater than 225 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PS104 J/P06 to PS108 J/P03. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 18.
17	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS104. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 18.
18	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Check all cables and cards for proper seating in the following areas: PS108 PS104 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

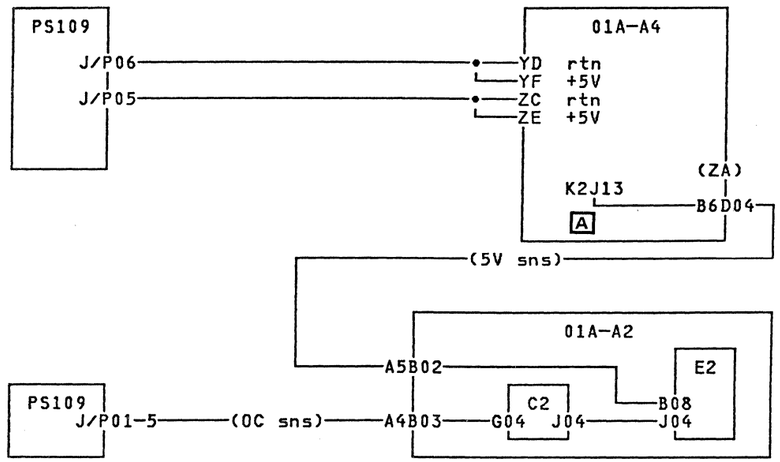
Ref Codes 1153940E, 1153950E

These Ref Codes indicate the PS109 OC sense line was below +2.4 Vdc after the start line to was set on.

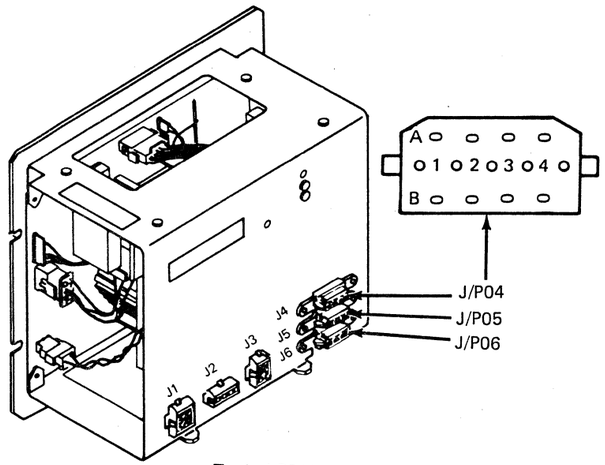
Possible causes:

- PS109
- Short circuit in 01A-A4 board
- Short circuit in card on 01A-A4 board
- Short circuit in distribution from PS109 to 01A-A4 board
- Short circuit in distribution from PS108 to 01A-A4 board.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Disconnect PS109 J05 and J06. 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
2	Is the displayed Ref Code 1153940E?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS109. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 16.
3	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect PS109 P05 and P06. 3. Disconnect the cables at 01A-A4ZC, 01A-A4ZE, 01A-A4YD, and 01A-A4YF (pin side). 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).



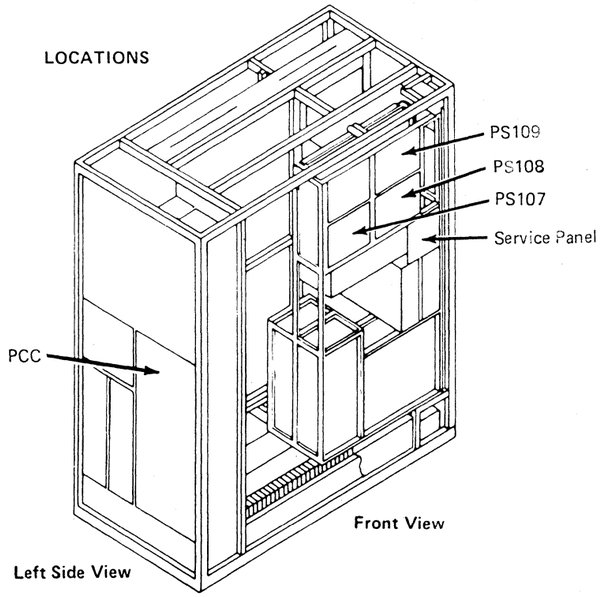
Step	Conditions	Instructions
4	Is the displayed Ref Code 1153940E?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cables from 01A-A4ZC, ZE, YD, and YF to PS109 P05 and P06. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 16.
5	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Remove cards F2 through W2 from the 01A-A4 board. 3. Reconnect the cables at 01A-A4ZC, 01A-A4ZE, 01A-A4YD, and 01A-A4YF. 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
6	Is the displayed Ref Code 1153840E?	A short in the PS108 voltage distribution can cause PS109 to overcurrent. 1. Use the displayed Ref Code and the Ref Code list at the end of PR 1001 to determine your PR XXXX entry page. 2. Leave the cards removed, and go to the new PR XXXX.
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Remove all cards from the 01A-A4 board. 3. Press service panel Power On. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
8	Is the displayed Ref Code 1153940E?	Go to step 12.



Typical PS108 or PS109

Step	Conditions	Instructions
9	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall one card in the 01A-A4 board. 4. Select Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
10	Is the displayed Ref Code 1153940E?	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Exchange card just reinstalled. 4. Repeat steps 9, 10, and 11 until all cards have been reinstalled; then go to step 16.
11	Go to **Instructions** column.	1. Repeat steps 9, 10, and 11 until all cards have been reinstalled; then go to step 16.
12	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect the cables at 01A-A4ZC, 01A-A4ZE, 01A-A4YD, and 01A-A4YF (pin side). 3. Disconnect the cable at 01A-A4ZA (card side). 4. Measure resistance at the following points: - lead at frame ground. + lead at 01A-A4K2J13. [A]
13	Is a short indicated?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A4 board. 3. Set PCC CB1 and CB2 on. 4. Go to step 16.

Step	Conditions	Instructions
14	Go to **Instructions** column.	1. Reconnect the cable at 01A-A4ZA (card side). 2. Disconnect the cable at 01A-A2A5. 3. Measure resistance at the following points: - lead at frame ground. + lead at 01A-A4K2J13.
15	Is a short indicated?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from 01A-A2A5 to 01A-A4ZA. **Note**: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Set PCC CB1 and CB2 on. 4. Go to step 16.
16	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Check all cables and cards for proper seating in the following areas: PS109 01A-A4 board 01A-A2 board. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 5001.



Power Repair Verification And Exit Procedure

- Ensure that all CPs and CBs are set on.
- Ensure that all parts and connectors in the area of any FRUs exchanged, reseated, or disconnected are correctly installed.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set the CE Mode switch to Normal. 3. Ensure I/O Power Hold switch is set to Normal. 4. Ensure FUNC1 diskette is in diskette drive 1. 5. Press OCP Power On. 6. Allow time for the I/O to sequence on.
2	Were PS105, 106, 107, 108, or 109 exchanged and not adjusted?	Go to "Voltage Adjust" procedure page PR 1021.
3	Is power complete?	Go to page END 001.
4	Is Ref Code (UU RRRR IS) with UU equal to 1X?	1. Invoke your support structure. 2. Go to page PR 1001.
5	Is a two-digit power code displayed?	Go to page PR 001
6	Go to **Instructions** column.	Go to page START 001.