VOLUME A04 MACHINE 4381- -0010900 MODEL R03 SYSTEM 0000LBH MODE SCHED SHIP 84/10/30

LOGIC TYPE -0- SYSTEMS DIAGRAMS DOC COUNTER

PAGE NUM	SH	TITLE	PART NUM	EC NUM	FEATURE B/M OR B/MS
DA001			0006169375	A20558	.W. 0002676380
DA005			0006169156	A20558	.W. 0002676380
DA010		PR1411	0006169157	A20558	.W. 0002676380
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DA020		PR1431	0006169159	A20559	.W. 0002676380
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DA090		PR1581	0006169173	A20558	.W. 0002676380
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DA105		PR1611	0006169176	A20558	.W. 0002676380
DA110		PR1621	0006169177	A20558	.W. 0002676380
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DA130		PR1661	0006169181	A20558	.W. 0002676380
DA135		PR1671	0006169182	A20558	.W. 0002676380
DA140		PR1681	0006169183	A20558	.W. 0002676380
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DA150		PR1701	0006169185	A20558	.W. 0002676380
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DA205		PR1821	0006169197	A20558	.W. 0002676380
DA210		PR1831	0006169198	A20562	.W. 0002676380
DA215		PR1841	0006169199	A20562	.W. 0002676380
DA220		PR1851	0006169200	A20560	.W. 0002676380
DA225		PR1861	0006169201	A20559	.W. 0002676380
DA230		PR1871	0006169202	A20560	.W. 0002676380
DA235		PR1881	0006169203	A20559	.W. 0002676380

TOTAL PART NUMBERS THIS VOLUME 48

IBM Maintenance Information

4381-3 S/N MI	4381-3 S/N MI	4381-3 S/N MI	4381-3 S/N MI	4381-3 S/N MI	4381-3 S/N MI	4381-3 S/N MI	4381-3 S/N MI
MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION
SAFETY INDEX TERMS/ ABBREVIATIONS INTRODUCTION START PU REPAIR CHNL REPAIR MSS REPAIR END OF REPAIR	PWR REPAIR (HWS AND MBC) PR 001 THRU PR 999	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

IBM has prepared this maintenance manual for you in the use for installation, maintenance, or repair of the specific machine indicated. IBM makes no representation that it is suitable for any other purpose.

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4381 B/M 2676380	MI Seq DA001	PN 6169375 2 of 2	EC A20558 01 Oct 84				

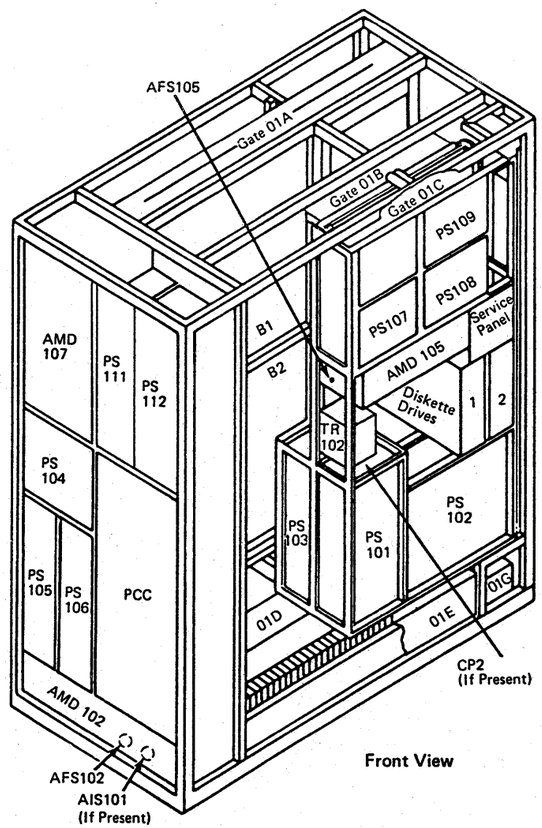
Ref Code 1133540E

This Ref Code indicates the PS106 OV sense line was above +0.8 Vdc before bias voltages were applied to PS106.

Possible causes:

- PS106
- 01A-A2D2 sense card
- 01A-A2C2 optoisolator 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. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2G08.
2	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2D2 card. 3. 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-A2C2B10.
4	Is voltage less than +0.8 Vdc?	Go to step 12.
5	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect PS106 P02. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B10.



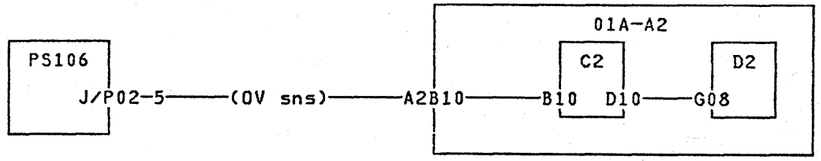
Front View

Left Side View

4381 B/M 2676380	MI Seq DA005	PN 6169156 1 of 3	EC A20558 01 Oct 84				

Step	Conditions	Instructions
6	Is voltage less than +0.8 Vdc?	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect PS106 P02. 3. Swap 01A-A2C4 and 01A-A2C2 cards. 4. Press service panel Power On. 5. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B10.
8	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange card swapped into the 01A-A2C2 position. 3. 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. Disconnect cable at 01A-A2A2. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B10.
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 cable from 01A-A2A2 to PS106 P02. **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 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. Swap 01A-A2C2 and 01A-A2C4 cards. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2G08.
13	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange card just swapped into the 01A-A2C4 position. 3. 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. Swap 01A-A2D2 and 01A-A2E2 cards. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2G08.

Step	Conditions	Instructions
15	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange card just swapped into the 01A-A2E2 position. 3. Go to page PR 5001.
16	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.



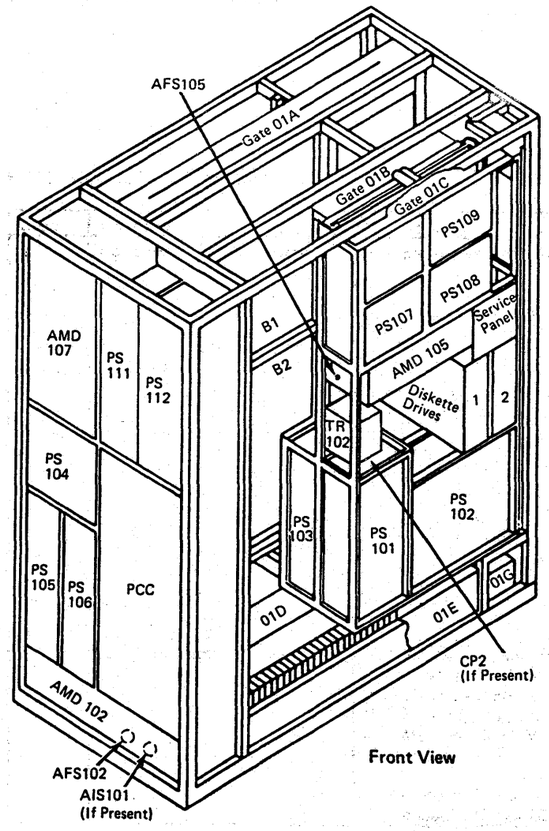
0 0 0

This Ref Code indicates the PS106 BG sense line was above +0.8 Vdc before bias voltages were applied to PS106.

Possible causes:

- PS106
- 01A-A2D2 sense card
- 01A-A2C2 optoisolator 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. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2J04.
2	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2D2 card. 3. 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-A2C2B12.
4	Is voltage less than +0.8 Vdc?	Go to step 12.
5	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect PS106 P02. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B12.

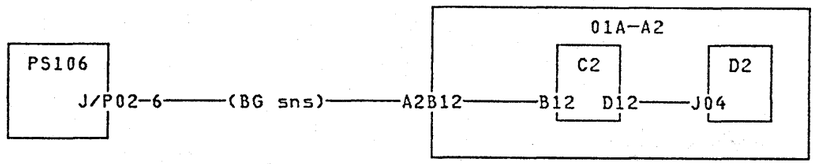


Front View

Left Side View

Step	Conditions	Instructions
6	Is voltage less than +0.8 Vdc?	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect PS106 P02. 3. Swap 01A-A2C4 and 01A-A2C2 cards. 4. Press service panel Power On. 5. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B12.
8	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange card swapped into the 01A-A2C2 position. 3. 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. Disconnect cable at 01A-A2A2. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B12.
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 cable from 01A-A2A2 to PS106 P02. **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 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. Swap 01A-A2C2 and 01A-A2C4 cards. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2J04.
13	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange card just swapped into the 01A-A2C4 position. 3. 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. Swap 01A-A2D2 and 01A-A2E2 cards. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2J04.

Step	Conditions	Instructions
15	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange card just swapped into the 01A-A2E2 position. 3. Go to page PR 5001.
16	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.



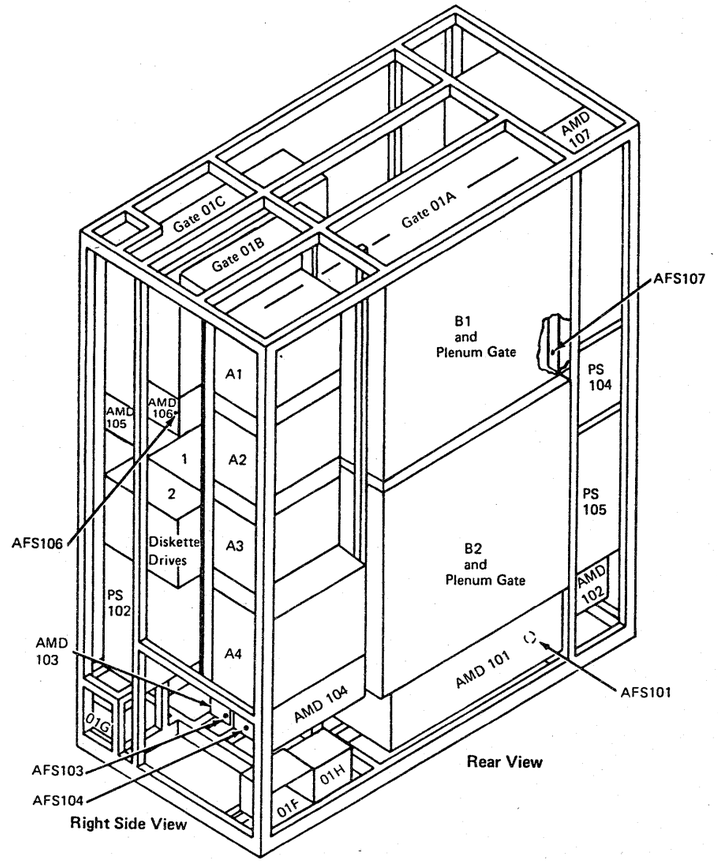
Ref Code 1135740E

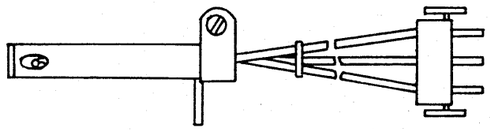
This Ref Code indicates AFS101 is failing.

Possible causes:

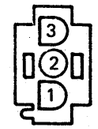
- 01A-A2F4 serial read card
- 01A-A2D2 sense card
- 01A-A2 board
- AFS101
- AFS101 sense line
- Missing +24 Vdc to AFS101.

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. Measure for +24 Vdc at the following points: - lead at AFS101 J/P01-3 (black wire) + lead at AFS101 J/P01-1 (red wire).
2	Is voltage less than +22 Vdc?	Go to step 10.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2P07.
4	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2D2 card. 3. 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-A2F4B10.





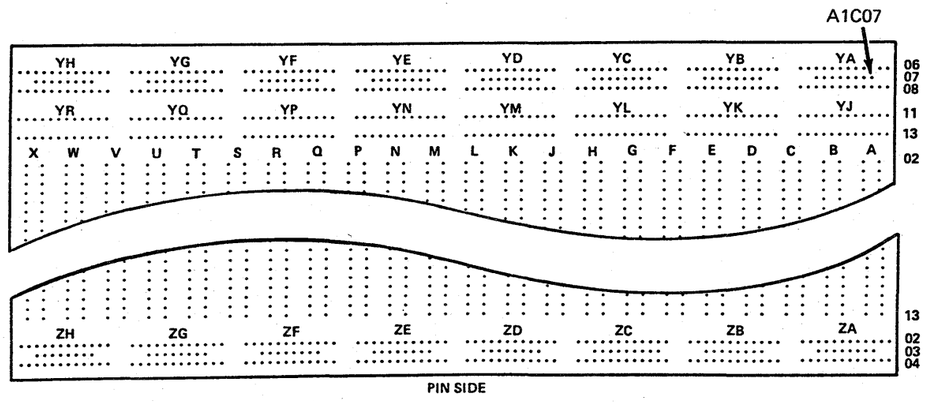
AFS101

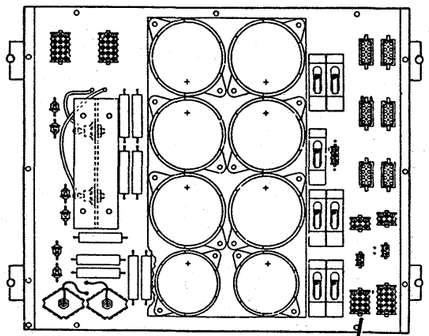


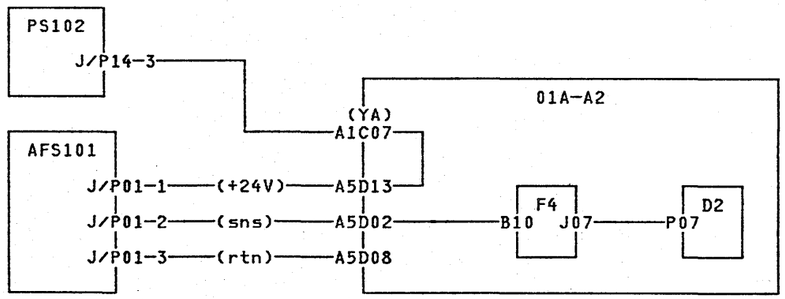
Plug
Disconnected
J/P01

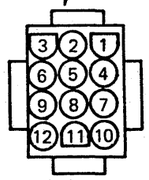
Step	Conditions	Instructions
6	Is voltage greater than +2.5 Vdc?	Go to step 17.
7	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A2F4D08 + lead at 01A-A2F4J07.
8	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 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. Exchange 01A-A2F4 card. 3. Go to page PR 5001.
10	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2A5D08 + lead at 01A-A2A5D13.
11	Is voltage +22 Vdc to +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 01A-A2A5 to AFS101. **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.
12	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2A5D08 + lead at 01A-A2A1C07.
13	Is voltage +22 Vdc to +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-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
14	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PS102 J/P14-2 + lead at PS102 J/P14-3.
15	Is voltage +22 Vdc to +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 01A-A2YA to PS102 J/P14. **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.
16	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.
17	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at AFS101 J/P01-3 (black wire) + lead at AFS101 J/P01-2 (yellow wire).

Step	Conditions	Instructions
18	Is voltage greater than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange AFS101. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging AFS. Underfloor air conditioning may cause AFS to fail. 3. Set PCC CB1 and CB2 on. 4. Go to page PR 5001.
19	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A5D08 + lead at 01A-A2A5D02.
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 01A-A2A5 to AFS101. **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.	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.









Jack
(Pin Side)
J/P14

4381 B/M 2676380	MI Seg DA015	PN 6169158 3 of 3	EC A20558 01 Oct 84	EC A20559 03 Dec 84			

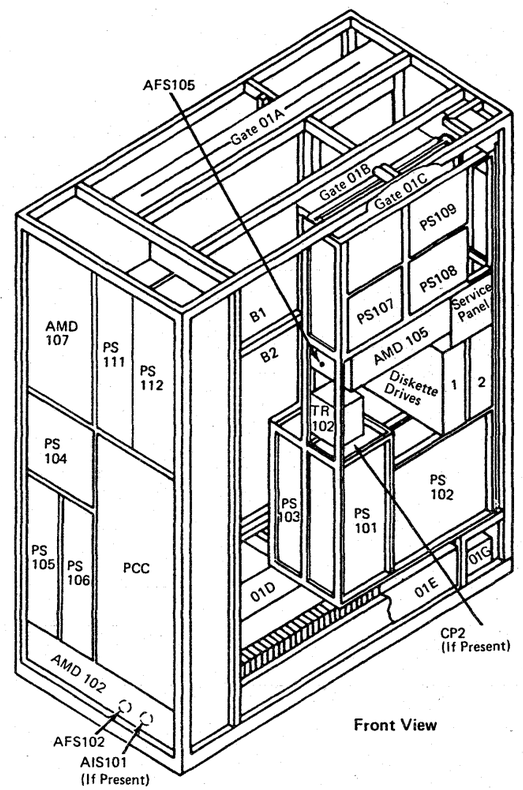
Ref Code 1135840E

This Ref Code indicates AFS102 is failing.

Possible causes:

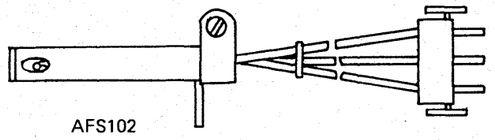
- 01A-A2F4 serial read card
- 01A-A2D2 sense card
- 01A-A2 board
- AFS102
- AFS102 sense line
- +24 Vdc to AFS102.

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. Measure for +24 Vdc at the following points: - lead at AFS102 J/P01-3 (black wire) + lead at AFS102 J/P01-1 (red wire).
2	Is voltage less than +22 Vdc?	Go to step 10.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2M08.
4	Is voltage less than +.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2D2 card. 3. 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-A2F4D02.
6	Is voltage greater than +2.5 Vdc?	Go to step 13.

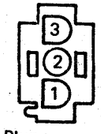


Front View

Left Side View



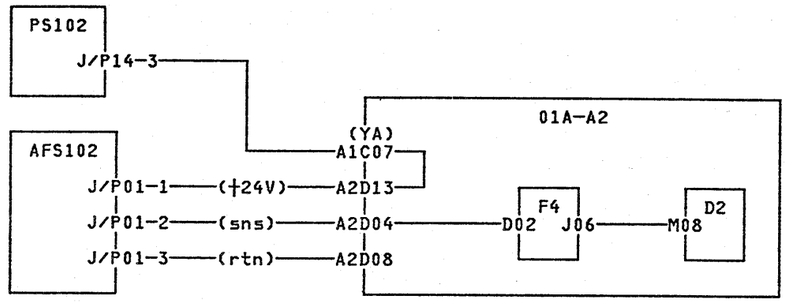
AFS102



Plug
Disconnected
J/P01

Step	Conditions	Instructions
7	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A2F4D08 + lead at 01A-A2F4J06.
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 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. Exchange 01A-A2F4 card. 3. Go to page PR 5001.
10	Go to **Instructions** column.	Measure for +24 Vdc at the following points: + lead at 01A-A2A2D13 - lead at 01A-A2A2D08.
11	Is voltage +21 Vdc to +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 01A-A2A2 to AFS102. **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.
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 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

Step	Conditions	Instructions
13	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at AFS J/P01-3 (black wire) + lead at AFS J/P01-2 (yellow wire).
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 AFS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging AFS. Underfloor air conditioning may cause AFS to fail. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
15	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A2D08 + lead at 01A-A2A2D04.
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 cable from 01A-A2 to AFS102. **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.
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 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

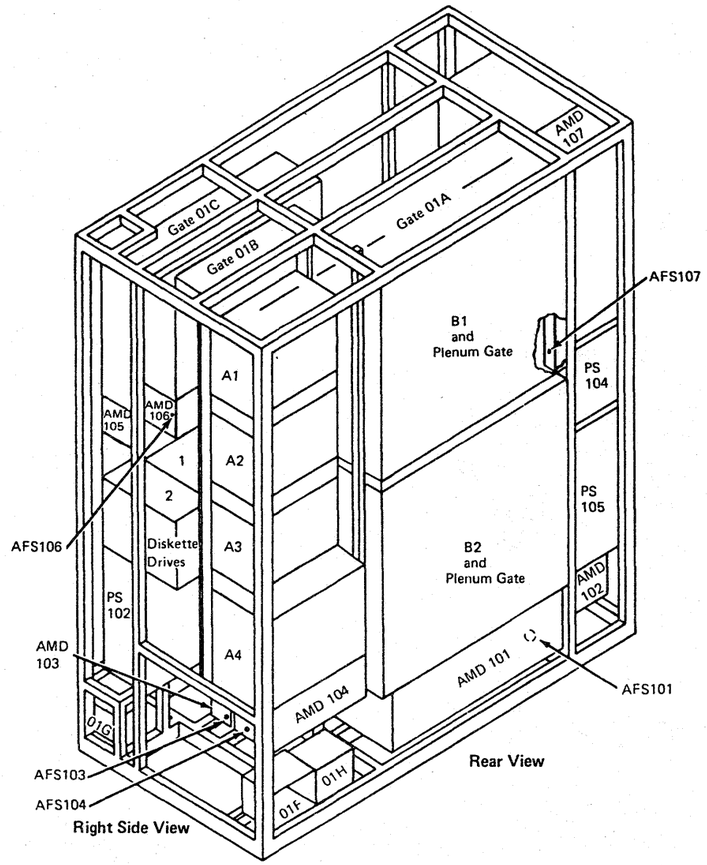


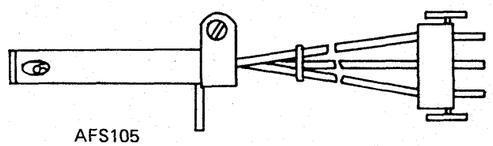
This Ref Code indicates AFS105 is failing.

Possible causes:

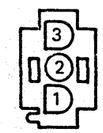
- 01A-A2F4 serial read card
- 01A-A2D2 sense card
- AFS105
- AFS105 sense line
- +24 Vdc to AFS105.

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. Measure for +24 Vdc at the following points: - lead at AFS105 J/P01-3 (black wire) + lead at AFS105 J/P01-1 (red wire).
2	Is voltage less than +22 Vdc?	Go to step 10.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2P09.
4	Is voltage less than +0.8 Vdc.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2D2 card. 3. 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-A2F4D04.
6	Is voltage greater than +2.5 Vdc?	Go to step 13.





AFS105

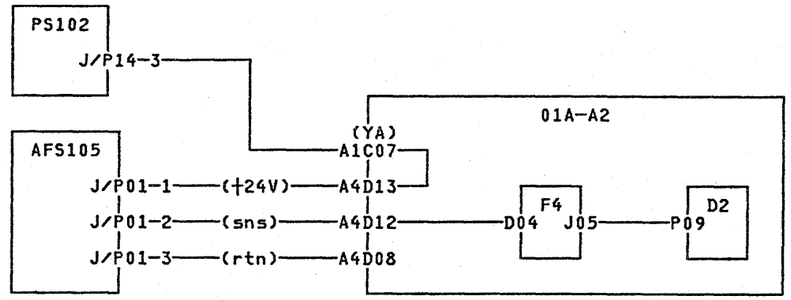


Plug Disconnected

J/P01

Step	Conditions	Instructions
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2F4D08 + lead at 01A-A2F4J05.
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 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. Exchange 01A-A2F4 card. 3. Go to page PR 5001.
10	Go to **Instructions** column.	Measure for +24 Vdc at the following points: + lead at 01A-A2A4D13 - lead at 01A-A2A4D08.
11	Is voltage +22 to +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 01A-A2A4 to AFS105. **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.
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 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

Step	Conditions	Instructions
13	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at AFS105 J/P01-3 (black wire) + lead at AFS105 J/P01-2 (yellow wire).
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 AFS105. **Note:** Check cable connectors for pushed in pins and seating before exchanging AFS. Underfloor air conditioning may cause AFS to fail. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
15	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A4D08 + lead at 01A-A2A4D12.
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 cable from 01A-A4 to AFS105. **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.
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 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



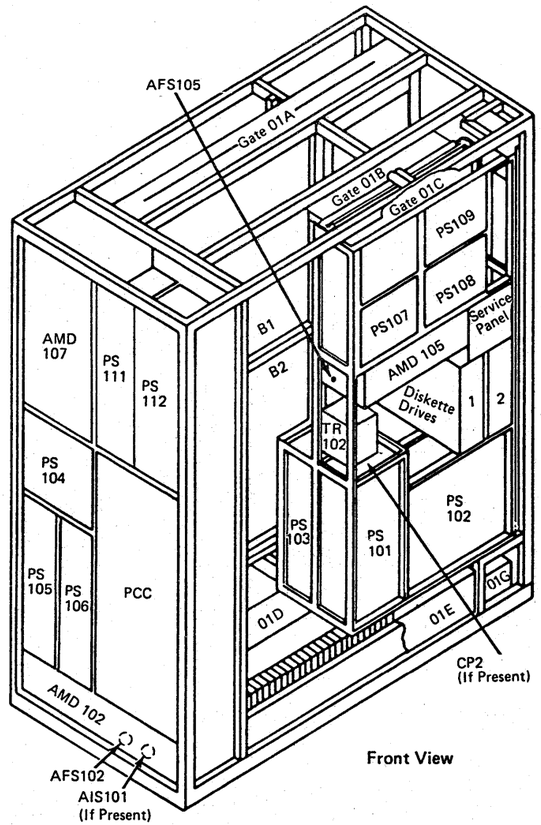
Ref Codes 1150540E, 1150550E

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

Possible causes:

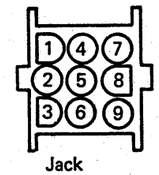
- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- PS109
- PS109 OC sense line open or grounded.

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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2J04.
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. Go to step 12.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2J04.
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. Go to step 12.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2G04.

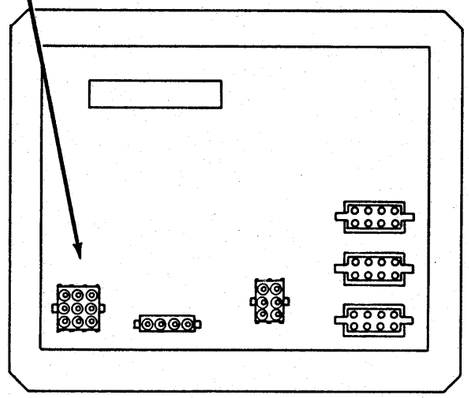


Left Side View

Front View



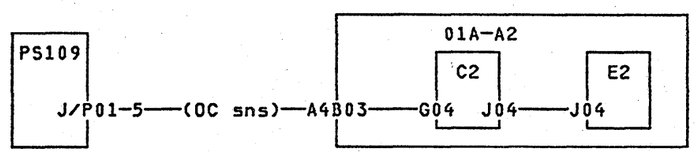
Jack (Pin Side) J/P01



PS109

4381 B/M 2676380	MI Seq DA030	PN 6169161 1 of 2	EC A20558 01 Oct 84				

Step	Conditions	Instructions
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. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A2D08 + lead at 01A-A2A4B03.
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. 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/P01-5.
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 from PS109 P01 to 01A-A2A4. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. 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.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. If still failing, the sense line may be shorted. Isolate to one of the following: 01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card) PS109 01A-A2 board Cable from 01A-A2A4 to PS109 J/P01. 6. Go to page PR 5001.



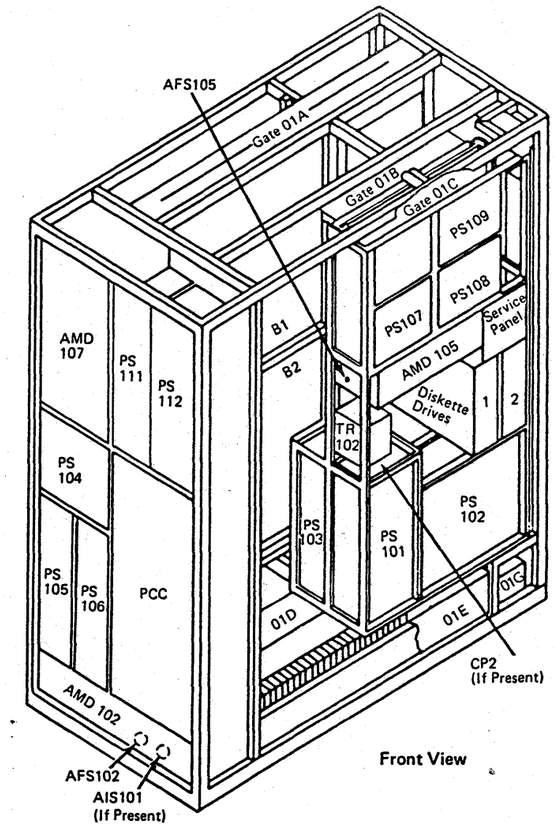
Ref Code 1150640E

This Ref Code indicates the PS109 OV sense line was below +2.4 Vdc after bias voltage was applied to PS109 but before the start line was set on.

Possible causes:

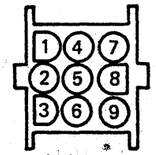
- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- PS109
- PS109 OV sense line open or grounded.

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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2G03.
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. Go to step 12.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2J05.
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. Go to step 12.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2G05.

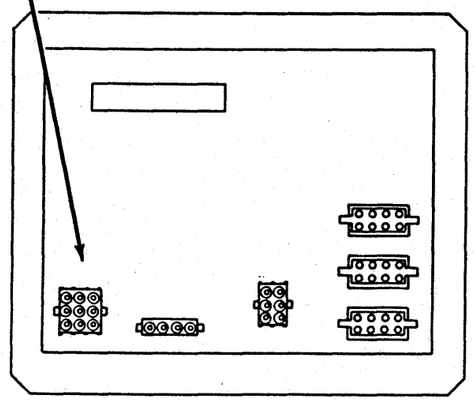


Front View

Left Side View

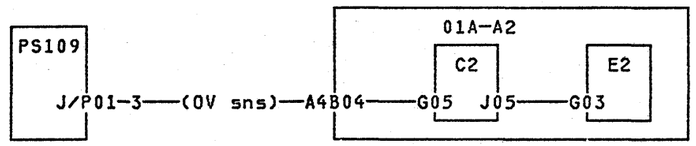


Jack (Pin Side) J/P01



PS109

Step	Conditions	Instructions
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. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A2D08 + lead at 01A-A2A4B04.
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. 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/P01-3.
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 from PS109 P01 to 01A-A2A4. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. 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.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. If still failing, the sense line may be shorted. Isolate to one of the following: 01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card) PS109 01A-A2 board Cable from 01A-A2A4 to PS109 J/P01. 6. Go to page PR 5001.



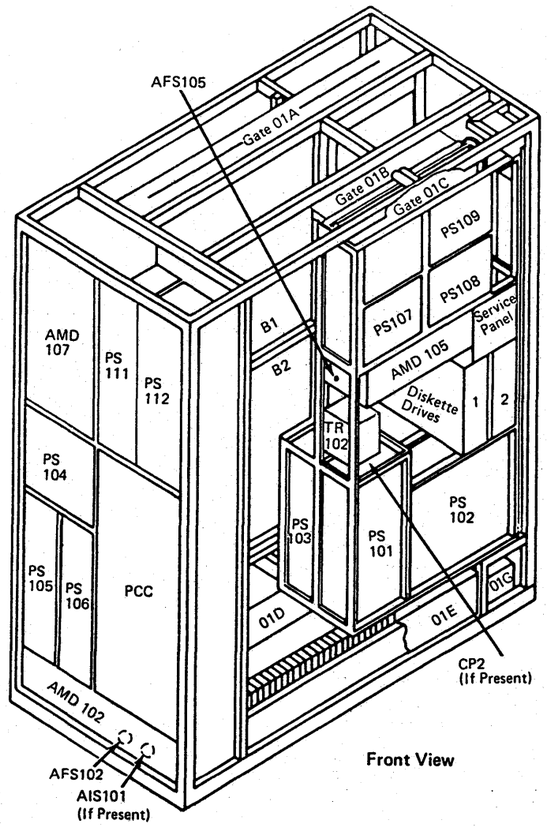
Ref Code 1150740E

This Ref Code indicates the PS109 UV sense line was above +2.4 Vdc after bias voltage was applied but before start line was set on.

Possible causes:

- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- 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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2J02.
2	Is voltage less 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 at 01A-A2C2D08 + lead at 01A-A2C2J06.
4	Is voltage less 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 the 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

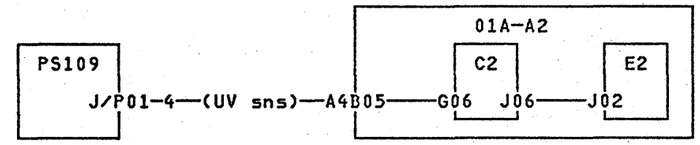


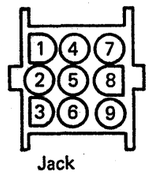
Front View

Left Side View

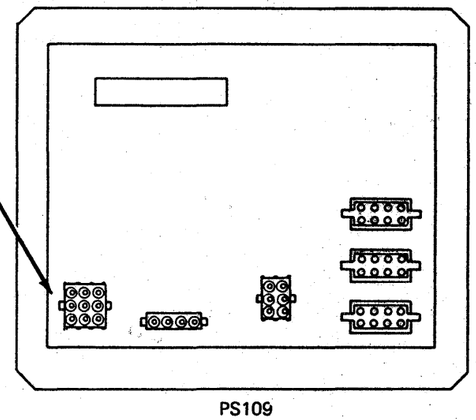
4381 B/M 2676380	MI Seq DA040	PN 6169163 1 of 2	EC A20558 01 Oct 84				

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2G06.
6	Is voltage less 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 page PR 5001.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2A4B05.
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 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 PS109 J/P01-4.
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 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 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 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 page PR 5001.





Jack
(Pin Side)
J/P01



PS109

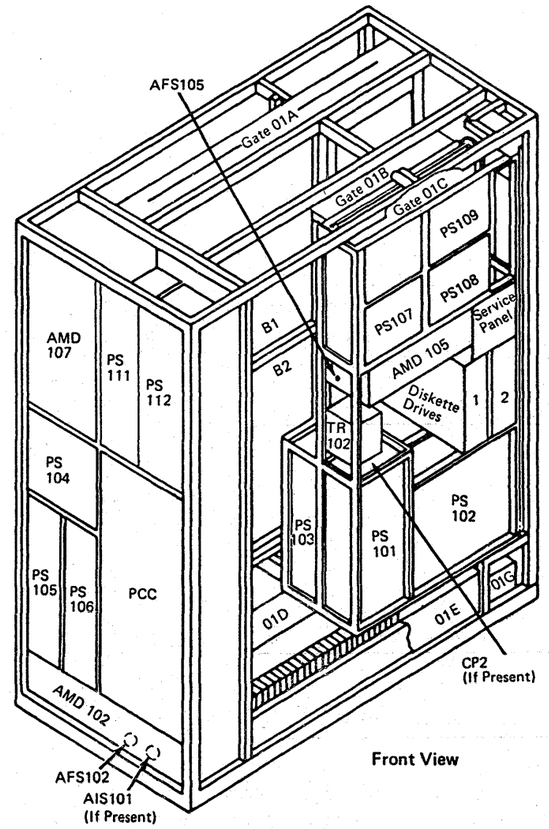
Ref Codes 1112250E, 1150840E, 11D0840E, 11D0850E

These Ref Codes indicate the PS109 BG sense line was below +2.4 Vdc after bias voltage was applied to PS109 but before the start line was set on.

Possible causes:

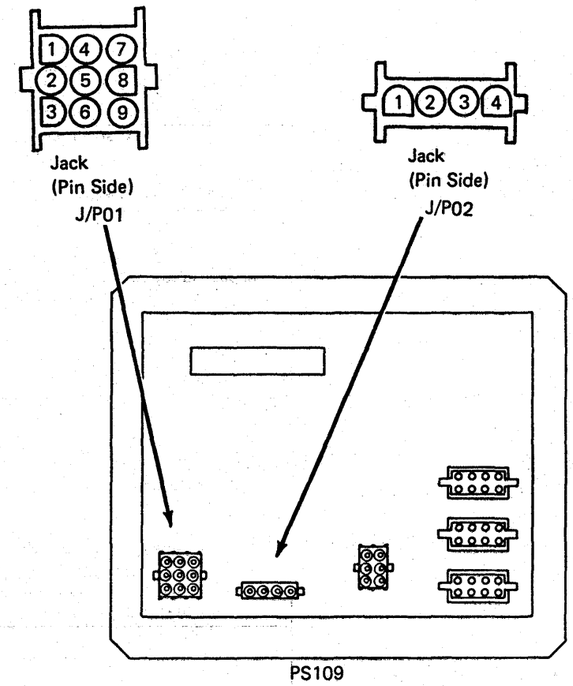
- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- PS109
- PS109 BG sense line open or grounded
- Missing 24 Vdc bias to PS109
- PS109 start line grounded.

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-A2E2B13.
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 PS109 P02-2 + lead at PS109 P02-1.
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-A2E2G05.



Left Side View

Front View



PS109

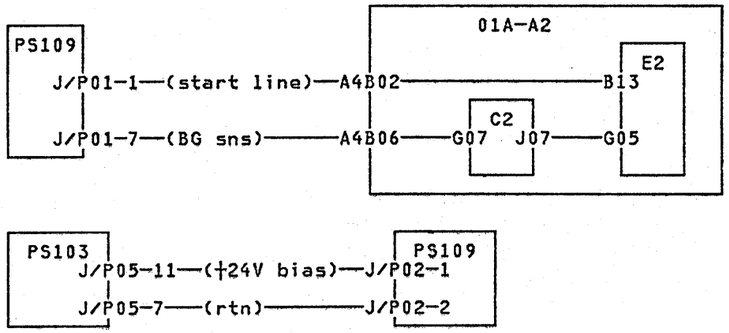
4381 B/M 2676380	MI Seq DA045	PN 6169164 1 of 3	EC A20558 01 Oct 84				

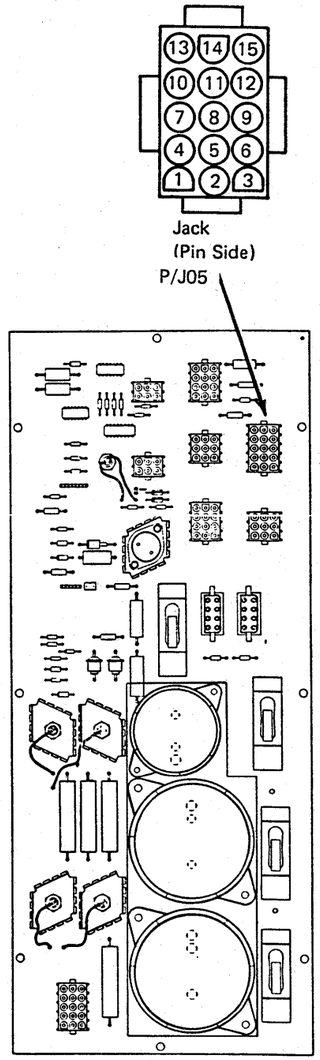
Step	Conditions	Instructions
6	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2E2 card. 4. Go to step 22.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2J07.
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 the 01A-A2 board. 4. Go to step 22.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2G07.
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-A2C2 card. 4. Go to step 22.
11	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A4D08 + lead at 01A-A2A4B06.
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 the 01A-A2 board. 4. Go to step 22.
13	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS109 J/P01-7.
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 the cable from 01A-A2A4 to PS109 J/P01. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. 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 PS109. **Note:** Check cable connectors for pushed in pins and seating before power supply. 4. Go to step 22.
16	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PS103 J/P05-7 + lead at PS103 J/P05-11.
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 the cable from PS103 J/P05 to PS109 J/P02. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 22.

PR 1482

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 power supply. 4. Go to step 22.
19	Go to **Instructions** column.	1. Press ENTER to end Diagnostic Stop. 2. Disconnect PS109 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-A2E2B13.
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 PS109. **Note:** Check cable connectors for pushed in pins and seating before power supply. 4. 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. Reconnect PS109 J/P01. 4. Exchange 01A-A2E2 card.

Step	Conditions	Instructions
22	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. 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-A2C2 card (swap with C4 card) PS109 01A-A2 board Cable from 01A-A2A4 to PS109 J/P01. 6. Go to page PR 5001.





0 0 0

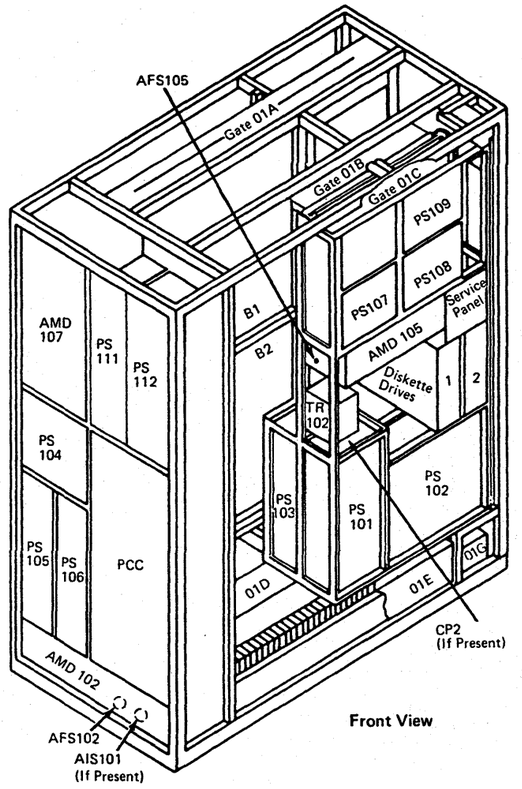
Ref Code 1151140E

This Ref Code indicates the PS104 UV sense line was above +0.8 Vdc after bias voltage was applied to PS104 but before the start line was set on.

Possible causes:

- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- 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 CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select the 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-A2E2J05.
2	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-A2E2 card. 4. If the machine still fails after you have exchangedthe 01A-A2E2 card, then exchange PS104. 5. Go to step 22.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B13.
4	Is voltage less than +0.8 Vdc?	Go to step 12.
5	Go to **Instructions** column.	1. Disconnect PS104 J/P03. 2. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B13.
6	Is voltage less than +0.8 Vdc?	Go to step 17.



Front View

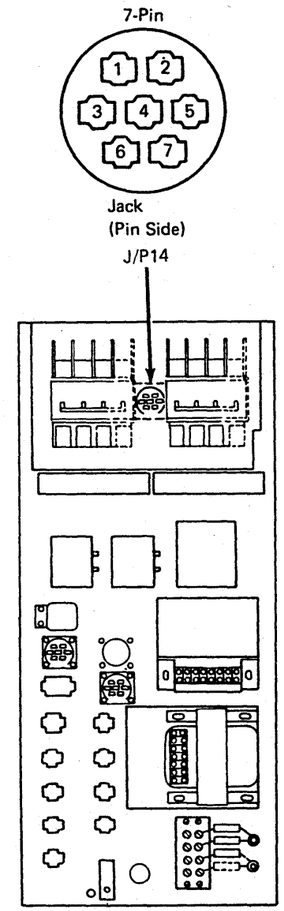
Left Side View

Step	Conditions	Instructions
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Swap cards at 01A-A2C2 and 01A-A2C4. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B13.
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 card just swapped into 01A-A2C4 position. 4. Go to step 22.
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. Disconnect cable at 01A-A2A2. 4. Set PCC CB1 and CB2 on. 5. Press service panel Power On. 6. Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B13.
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 cable from 01A-A2A2 to PS104 P03. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 22.

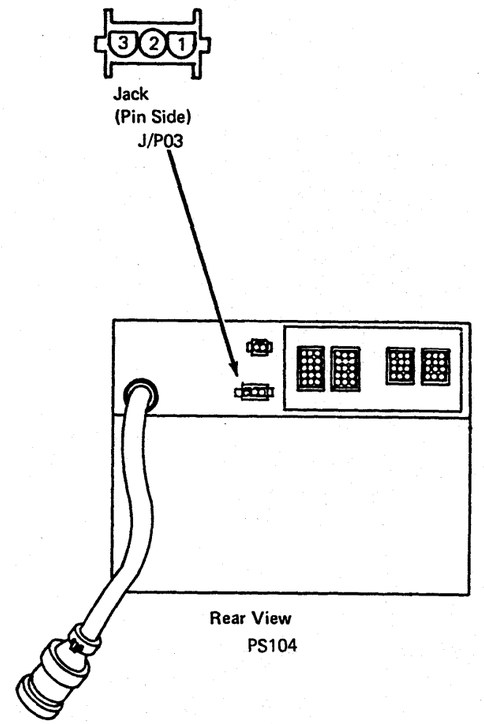
Step	Conditions	Instructions
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Go to step 22.
12	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Swap cards at 01A-A2C2 and 01A-A2C4. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2J05.
13	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 card just swapped into 01A-A2C4 position. 4. Go to step 22.
14	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Swap cards at 01A-A2E2 and 01A-A2D2. 3. Press service panel Power On. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2J05.
15	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 card just swapped into 01A-A2D2 position. 4. Go to step 22.

PR 1492

Step	Conditions	Instructions
16	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 22.
17	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect PCC P14. 3. Press service panel Power On. 4. Select the Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Measure for line voltage at the following points: PCC J14-1 to frame ground PCC J14-2 to frame ground PCC J14-3 to frame ground (measure on PCC box).
18	Is ac voltage present 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 22.
19	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS104 J/P03-3.
20	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 PS104. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 22.

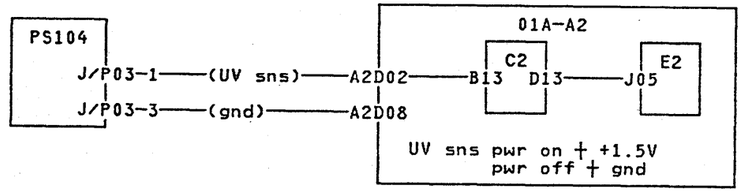


Primary Control Compartment (PCC)



Rear View
PS104

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 cable from PS104 J/P03 to 01A-A2A2. **Note:** Check board for bent pins and cable connector for pushed in pins before exchanging cable.
22	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS104 01A-A2 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



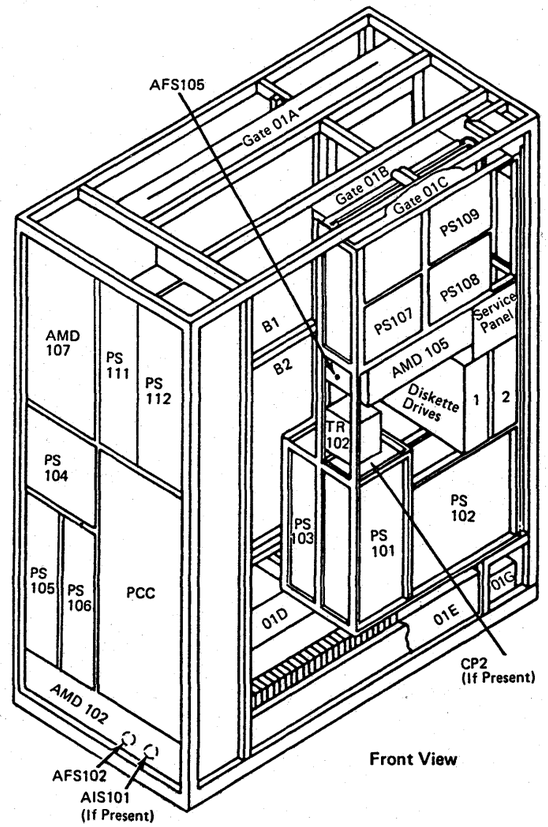
Ref Code 1151340E

This Ref Code indicates the PS107 OC sense line was below +2.4 Vdc after bias voltage was applied to PS107 but before the start line was set on.

Possible causes:

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

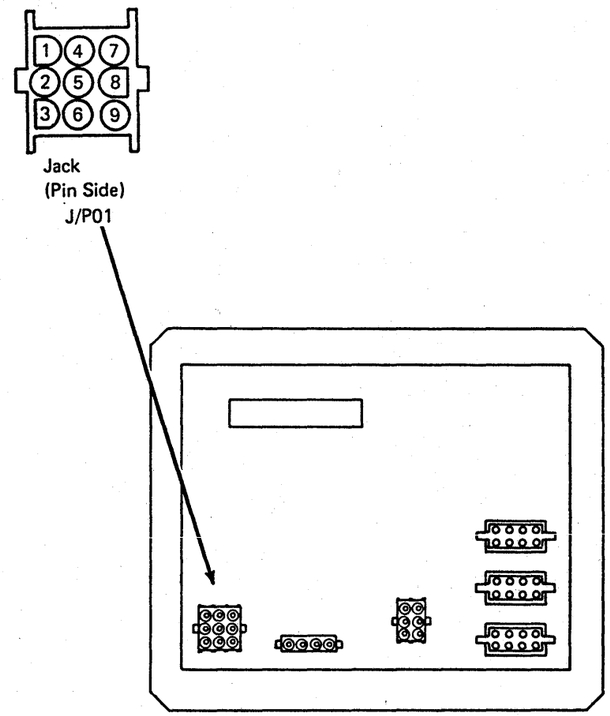
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2D13.
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. Go to step 12.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2J09.
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. Go to step 12.



Front View

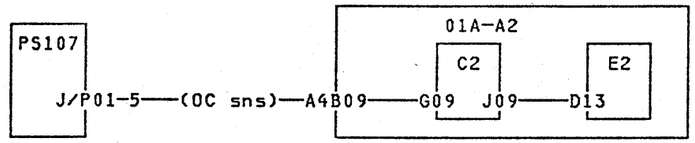
Left Side View

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2G09.
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. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A2D08 + lead at 01A-A2A4B09.
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. Go to step 12.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS107 J/P01-5.
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 from PS107 P01 to 01A-A2A4. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 12.



PS107

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 PS107. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. If still failing, the sense line may be shorted. Isolate to one of the following: 01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card) PS107 01A-A2 board Cable from 01A-A2A4 to PS107 J/P01. 6. Go to page PR 5001.



0 0 0

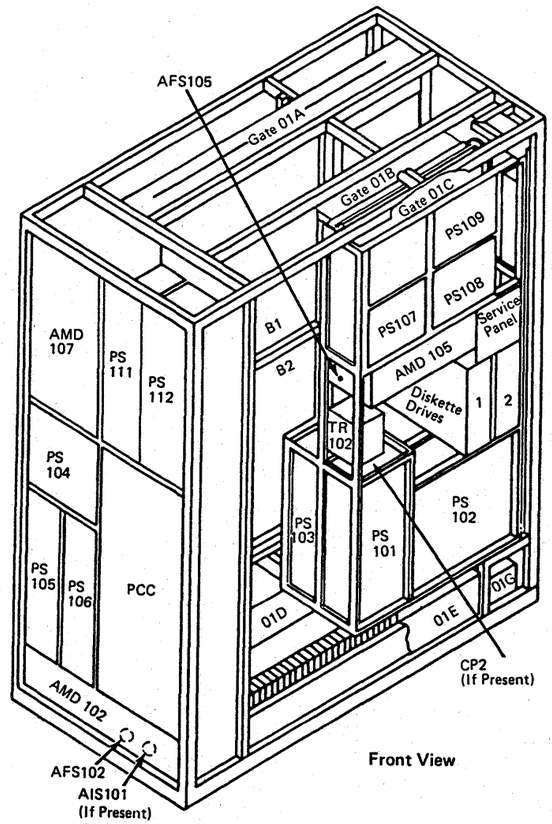
Ref Code 1151440E

This Ref Code indicates the PS107 OV sense line was below +2.4 Vdc after bias voltage was applied to PS107 but before the start line was set on.

Possible causes:

- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- PS107
- PS107 OV 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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2G07.
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. Go to step 12.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2J10.
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. Go to step 12.

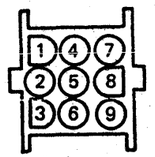


Front View

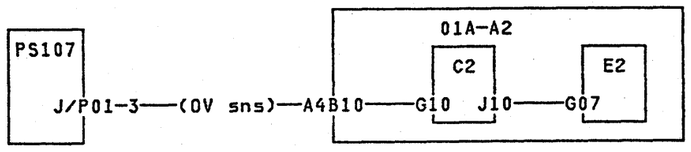
Left Side View

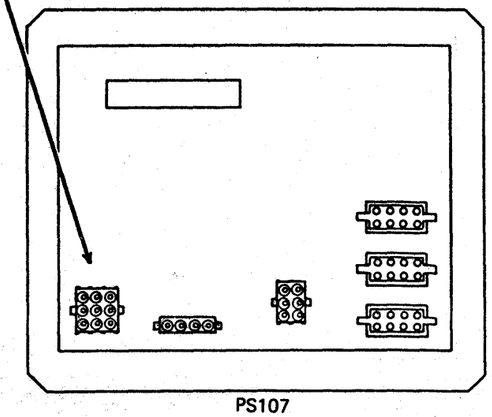
4381 B/M 2676380	MI Seq DA060	PN 6169167 1 of 2	EC A20558 01 Oct 84				

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2G10.
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. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A2D08 + lead at 01A-A2A4B10.
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. Go to step 12.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS107 J/P01-3.
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 from PS107 P01 to 01A-A2A4. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. 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 PS107. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. If still failing, the sense line may be shorted. Isolate to one of the following: 01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card) PS107 01A-A2 board Cable from 01A-A2A4 to PS107 J/P01. 6. Go to page PR 5001.



Jack
(Pin Side)
J/P01





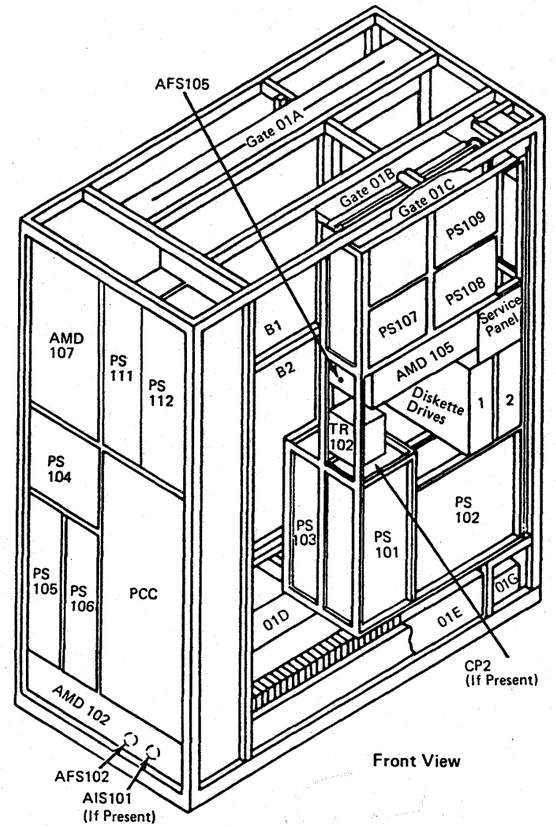
Ref Code 1151540E

This Ref Code indicates the PS107 UV sense line was above +2.4 Vdc after bias voltage was applied before or after start.

Possible causes:

- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- 01A-A2 board
- PS107
- PS107 UV sense line open or grounded.

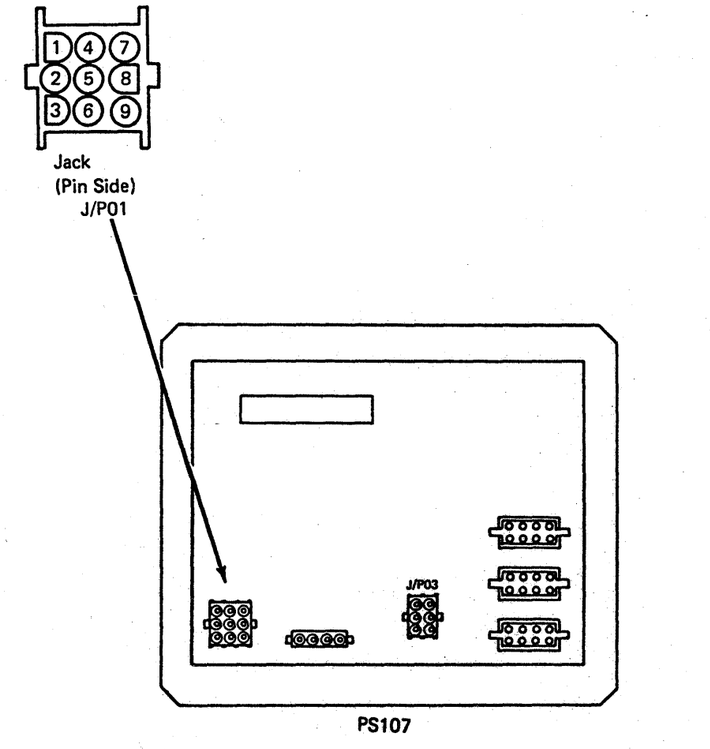
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2J09.
2	Is voltage less 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 at 01A-A2C2D08 + lead at 01A-A2C2J11.
4	Is voltage less 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.

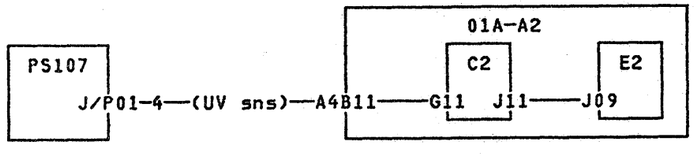


Front View

Left Side View

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2G11.
6	Is voltage less 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 page PR 5001.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2A4B11.
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 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.
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 the 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.





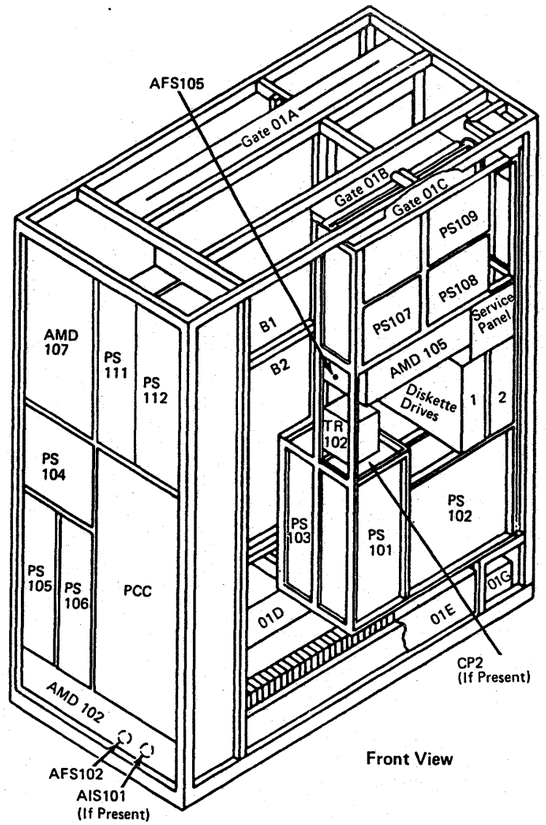
Ref Codes 1112650E, 1151640E, 11D1640E, 11D1650E

These Ref Codes indicate the PS107 BG sense line was below +2.4 Vdc after bias voltage was applied to PS107 but before the start line was set on.

Possible causes:

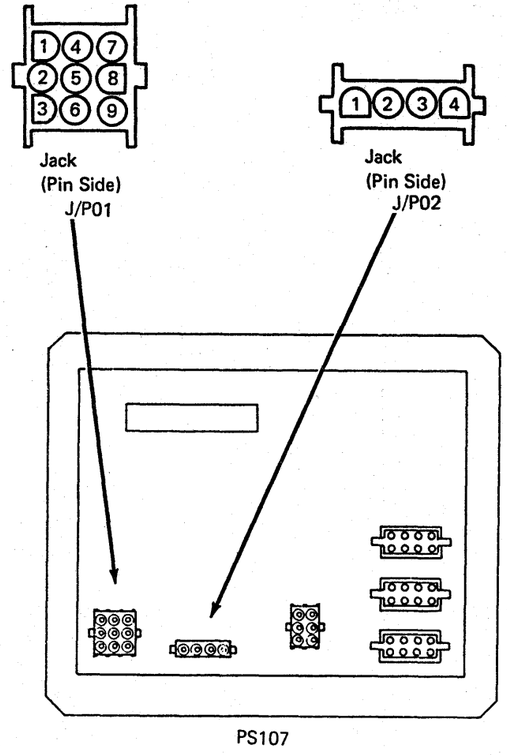
- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- PS107
- PS107 BG sense line open or grounded
- Missing 24 Vdc bias to PS107
- PS107 start line grounded.

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-A2E2B12.
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 PS107 P02-2 + lead at PS107 P02-1.
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-A2E2D09.



Left Side View

Front View

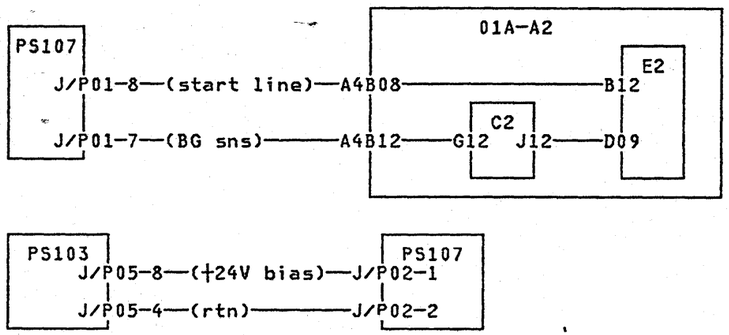


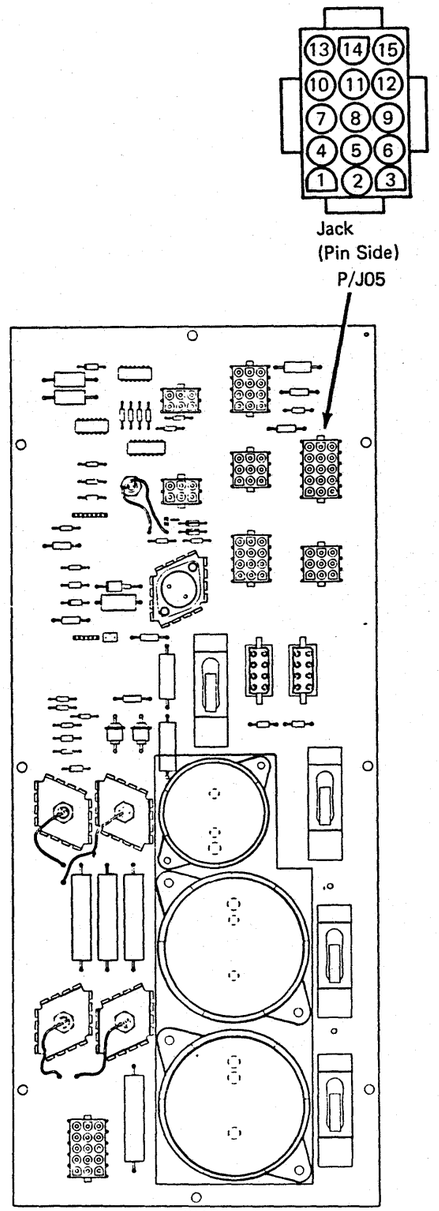
PS107

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. Go to step 22.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2J12.
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. Go to step 22.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2G12.
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-A2C2 card. 4. Go to step 22.
11	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A4D08 + lead at 01A-A2A4B12.
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. Go to step 22.
13	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS107 J/P01-7.
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 PS107 J/P01. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. 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 PS107. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 22.
16	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PS103 J/P05-8 + lead at PS103 J/P05-4.
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 PS107 J/P02. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. 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. Go to step 22.
19	Go to **Instructions** column.	1. Press ENTER to end Diagnostic Stop. 2. Disconnect PS107 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-A2E2B12.
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 PS107. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. 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. Reconnect PS107 J/P01. 4. Exchange 01A-A2E2 card.

Step	Conditions	Instructions
22	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. 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-A2C2 card (swap with C4 card) PS107 Cable from 01A-A2A4 to PS107 J/P01 01A-A2 board. 6. Go to page PR 5001.





0 0 0

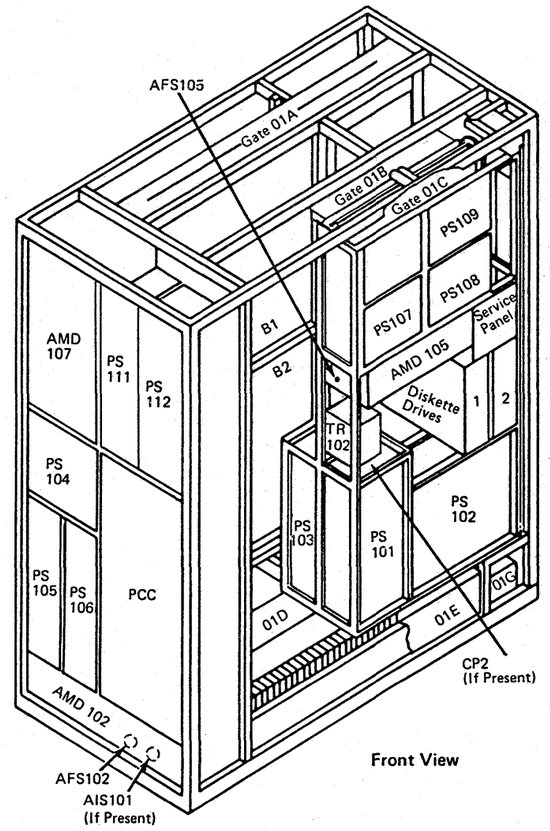
Ref Code 1151840E, 1151850E

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

Possible causes:

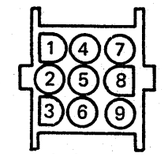
- 01A-A2C4 optoisolator card
- 01A-A2E2 sense card
- PS108
- PS108 OC sense line open or grounded.

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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2P04.
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. Go to step 12.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4D04.
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. Go to step 12.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4B04.

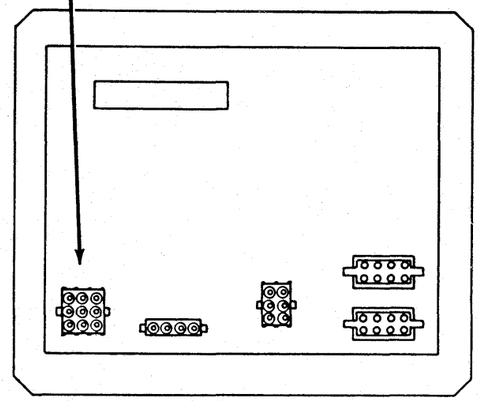


Left Side View

Front View

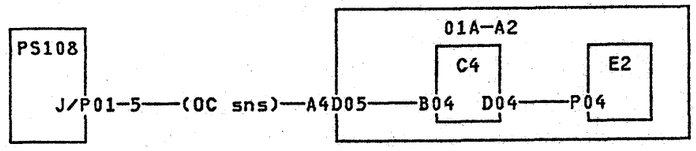


Jack
(Pin Side)
J/P01



PS108

Step	Conditions	Instructions
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. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A4D08 + lead at 01A-A2A4D05.
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. Go to step 12.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS108 J/P01-5.
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 the 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. 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 PS108. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. If still failing, the sense 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. 6. Go to page PR 5001.



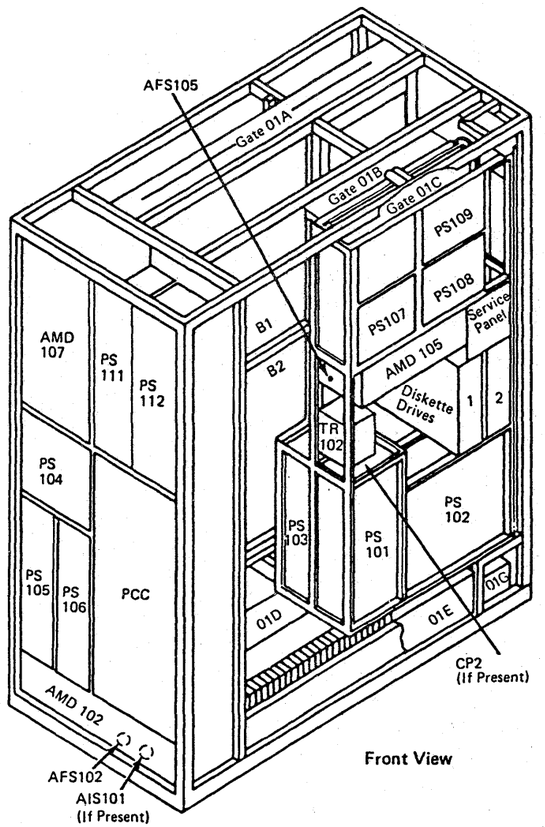
Ref Code 1151940E

This Ref Code indicates the PS108 OV sense line was below +2.4 Vdc after bias voltage was applied to PS108 but before the start line was set on.

Possible causes:

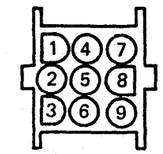
- 01A-A2C4 optoisolator card
- 01A-A2E2 sense card
- PS108
- PS108 OV sense line open or grounded.

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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2P05.
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. Go to step 12.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4D05.
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. Go to step 12.

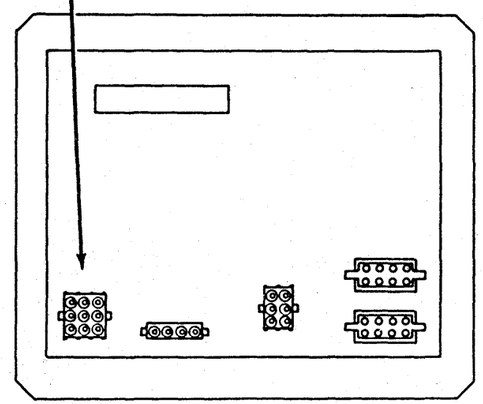


Left Side View

Front View

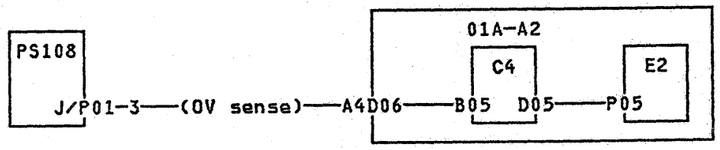


Jack
(Pin Side)
J/P01



PS108

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4B05.
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. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A4D08 + lead at 01A-A2A4D06.
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. Go to step 12.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS108 J/P01-3.
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 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. 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 PS108. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. If still failing, the sense 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. 6. Go to page PR 5001.



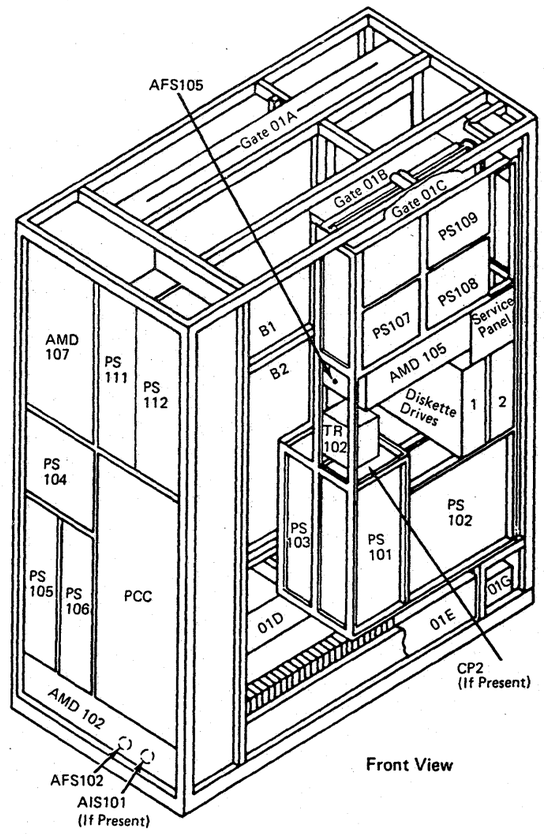
Ref Code 1152040E

This Ref Code indicates the PS108 UV sense line was above +2.4 Vdc after bias voltage was applied but before the start line was set on.

Possible causes:

- 01A-A2C4 optoisolator card
- 01A-A2E2 sense card
- PS108
- PS108 UV sense line tied up
- 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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2P08 + lead at 01A-A2E2M03.
2	Is voltage less 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 at 01A-A2C4D08 + lead at 01A-A2C4D06.
4	Is voltage less 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.



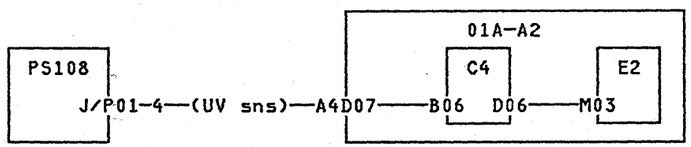
Front View

Left Side View

4381 B/M 2676380	MI Seq DA085	PN 6169172 1 of 2	EC A20558 01 Oct 84				

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4B06.
6	Is voltage less than +0.8 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2C4 card. 3. 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-A2A4D07.
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 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.
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 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.

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 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.



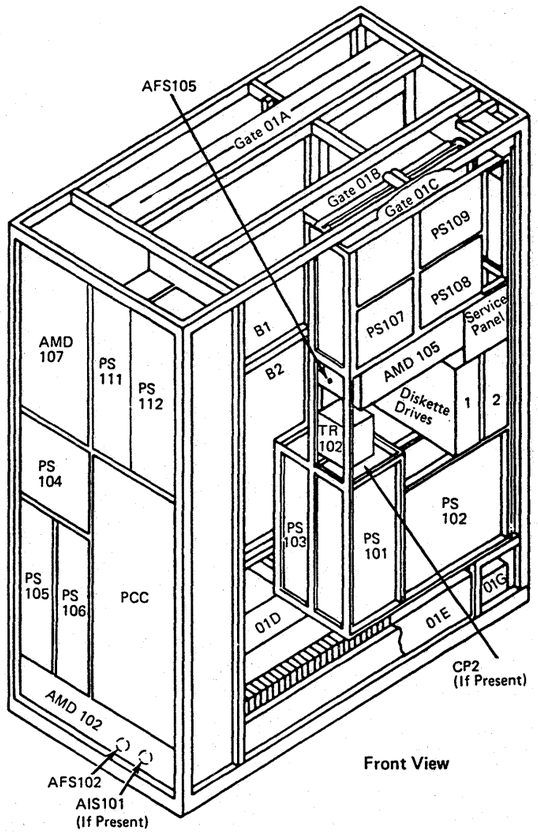
Ref Code 1152540E

This Ref Code indicates the PS105 OC sense line was below +2.4 Vdc after bias voltage was applied to PS105 but before the start line was set on.

Possible causes:

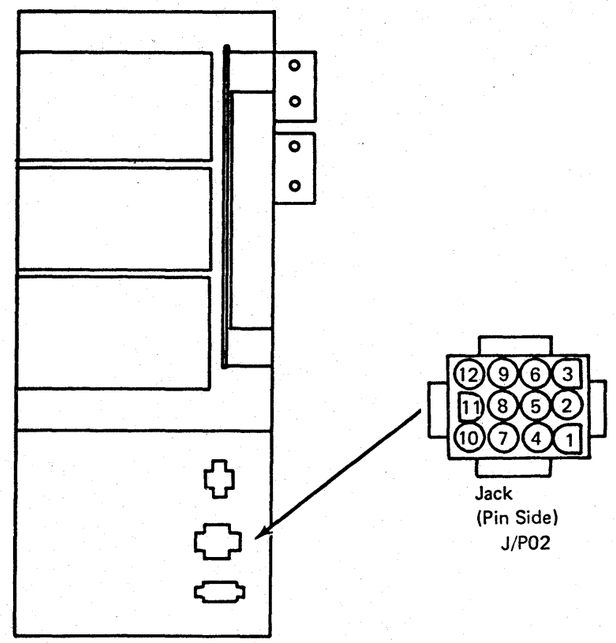
- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- PS105
- PS105 OC sense line open or grounded.

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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2P07.
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. Go to step 12.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2D04.
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. Go to step 12.



Front View

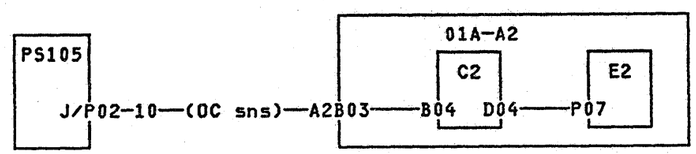
Left Side View



Jack
(Pin Side)
J/P02

PS105

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B04.
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. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A2D08 + lead at 01A-A2A2B03.
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. Go to step 12.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS105 J/P02-10.
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 from PS105 P02 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 12.
11	Go to **Instructions** column.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. If still failing, the sense line may be shorted. Isolate to one of the following: 01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card) PS105 01A-A2 board Cable from 01A-A2A2 to PS105 J/P02. 6. Go to page PR 5001.



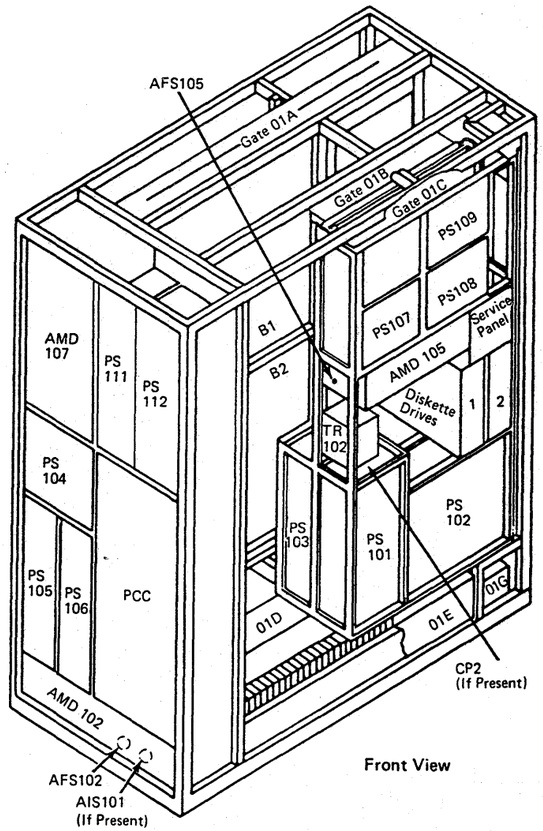
Ref Code 1152640E

This Ref Code indicates the PS105 OV sense line was below +2.4 Vdc after bias voltage was applied to PS105 but before the start line was set on.

Possible causes:

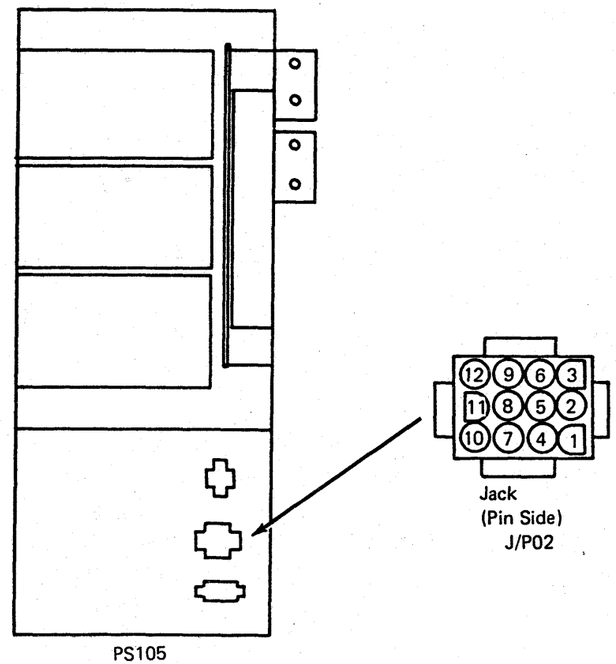
- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- PS105
- PS105 OV sense line open or grounded.

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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2M08.
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. Go to step 12.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2D05.
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. Go to step 12.



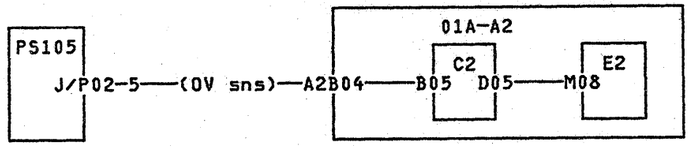
Front View

Left Side View



PS105

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B05.
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. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A2D08 + lead at 01A-A2A2B04.
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. Go to step 12.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS105 J/P02-5.
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 from PS105 P02 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 12.
11	Go to **Instructions** column.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. If still failing, the sense line may be shorted. Isolate to one of the following: 01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card) PS105 01A-A2 board Cable from 01A-A2A2 to PS105 J/P02. 6. Go to page PR 5001.



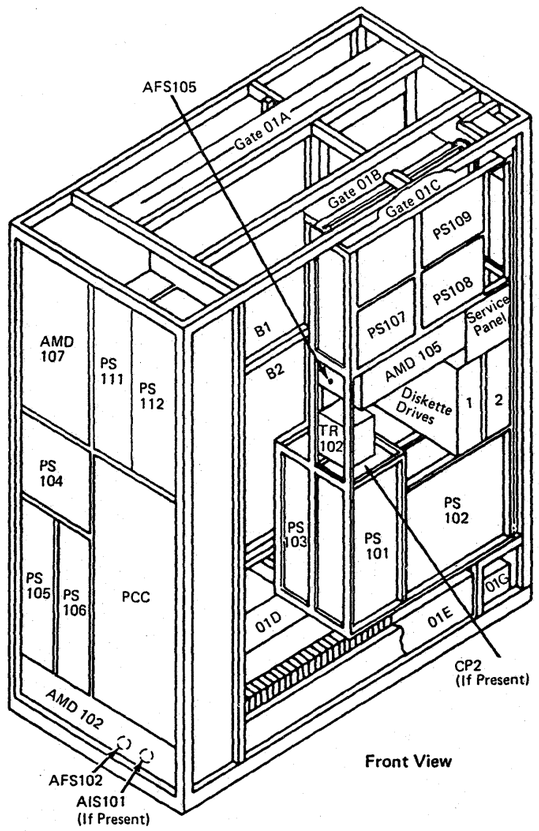
Ref Code 1152740E

This Ref Code indicates the PS105 UV sense line was above +2.4 Vdc after bias voltage was applied and before the start line was set on.

Possible causes:

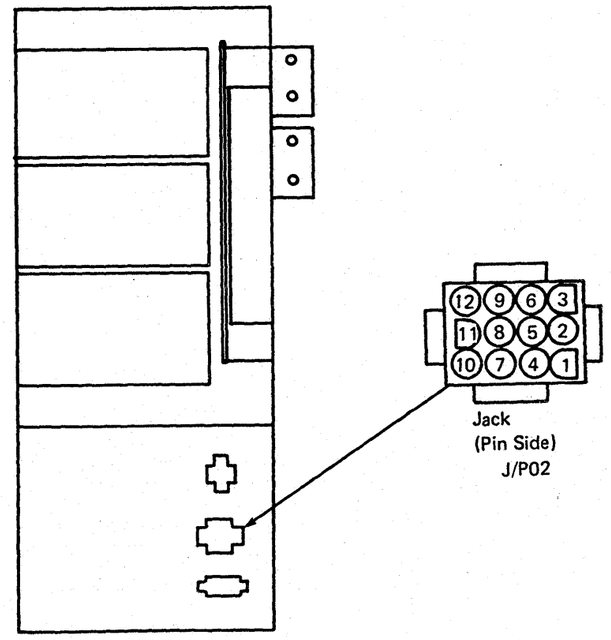
- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- PS105
- PS105 UV sense line open or grounded.

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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2P09.
2	Is voltage less 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 at 01A-A2C2D08 + lead at 01A-A2C2D06.
4	Is voltage less 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.



Front View

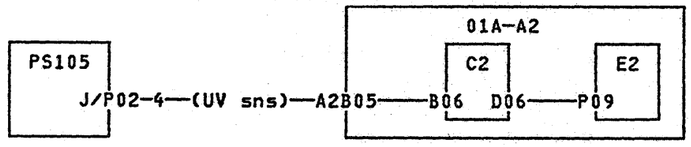
Left Side View



PS105

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B06.
6	Is voltage less 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 page PR 5001.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2A2B05.
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 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 PS105 J/P02-4.
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 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.

Step	Conditions	Instructions
11	Go to **Instructions** column.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.



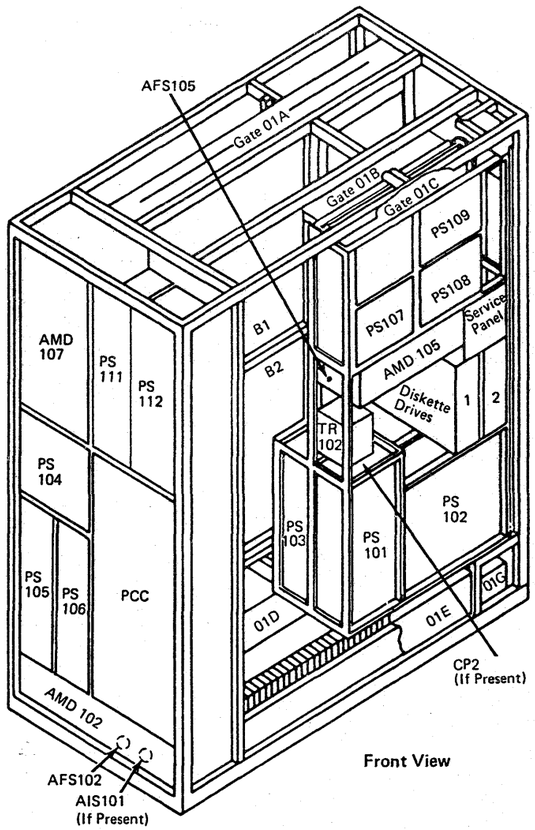
Ref Code 1152840E

This Ref Code indicates the PS105 BG sense line was below +2.4 Vdc after bias voltage was applied to PS105 and before the start line was set on.

Possible causes:

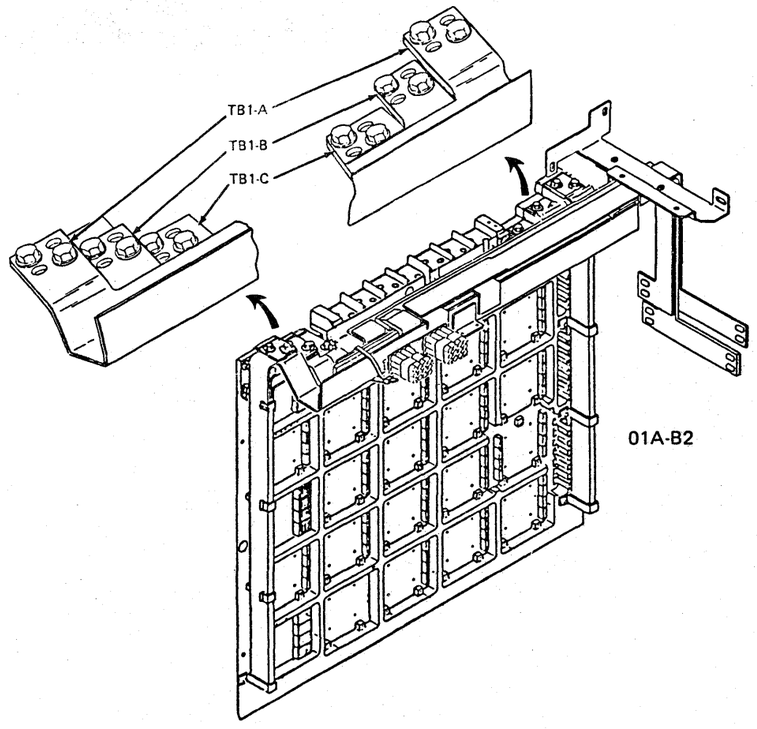
- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- PS105
- PS105 BG sense line open or grounded
- PS105 remote sense line open.

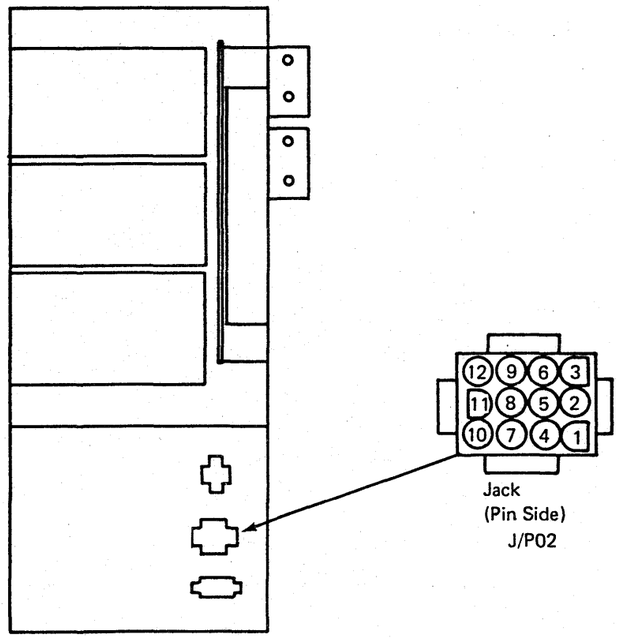
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Disconnect PS105 J/P02. 4. Check the resistance between the following points: - lead at 01A-B2 TB1-A + lead at PS105 P02-3 (cable end).
2	Is an open indicated?	1. Exchange cable from PS105 J/P02 to 01A-B2 TB-1 sense capacitors. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 2. Go to step 14.



Front View

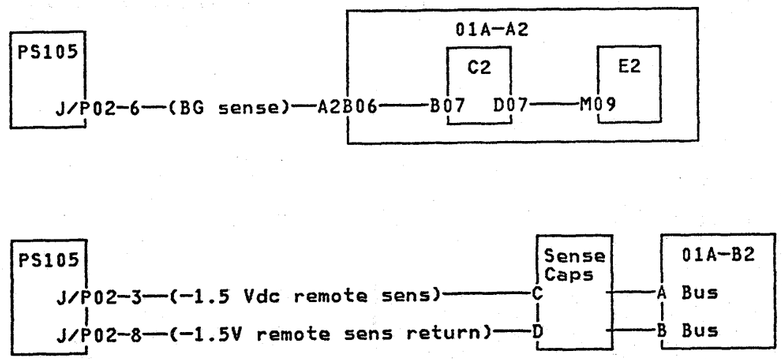
Left Side View





Step	Conditions	Instructions
3	Go to **Instructions** column.	1. Reconnect PS105 J/P02. 2. Set PCC CB1 and CB2 on. 3. Set CE Mode switch to CE Mode. 4. Press service panel Power On. 5. Select Diagnostic Power Up (QWD) screen. 6. Select option A (stop after K03 picked). 7. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2M09.
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-A2E2 card. 4. Go to step 14.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2D07.
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-A2 board. 4. Go to step 14.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B07.
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-A2C2 card. 4. Go to step 14.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2A2B06.
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. Go to step 14.
11	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS105 J/P02-6.
12	Is voltage greater than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PS105 J/P02 to 01A-A2A2. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 14.
13	Go to **Instructions** column.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.

Step	Conditions	Instructions
14	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. If still failing, the sense line may be shorted. Isolate to one of the following: 01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card) PS105 01A-A2 board Cable from 01A-A2A2 to PS105 J/P02. 6. Go to page PR 5001.



0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

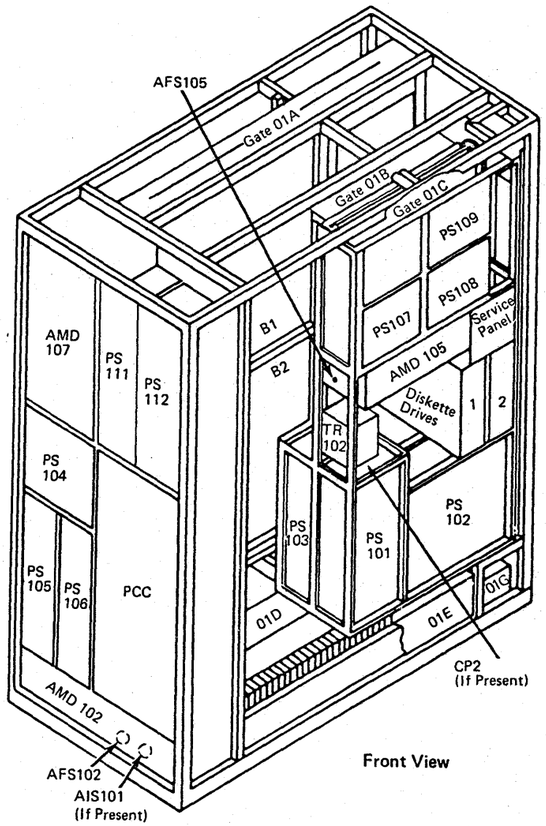
Ref Codes 1113150E, 1152940E

This Ref Code indicates the PS103 OC sense line was below +2.4 Vdc after ac voltage was applied to PS103 but before the start line was set on or CP1 is tripped.

Possible causes:

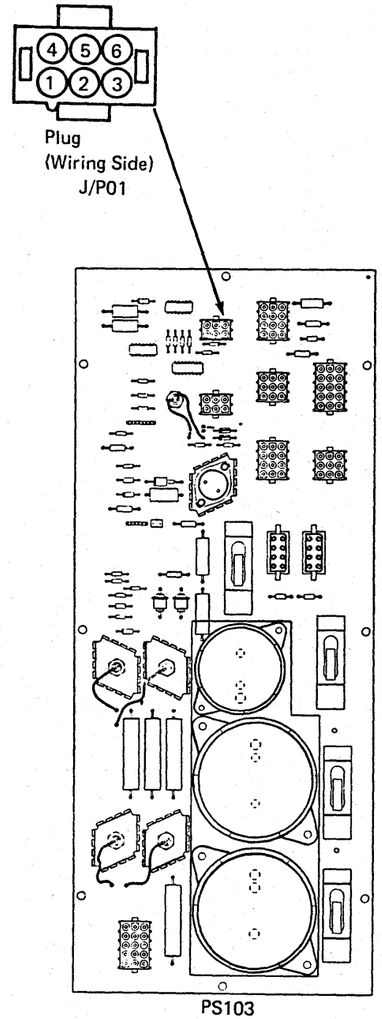
- 01A-A2E2 sense card
- PS103
- PS103 CP1
- PS103 OC sense line open or grounded.

Step	Conditions	Instructions
1	Is PS103 CP1 tripped?	1. Reset PS103 CP1. 2. Press service panel Power On. 3. Go to step 9.
2	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-A2E2M10.
3	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.
4	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A3D08 + lead at 01A-A2A3B03.
5	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.
6	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS103 J/P01-2.



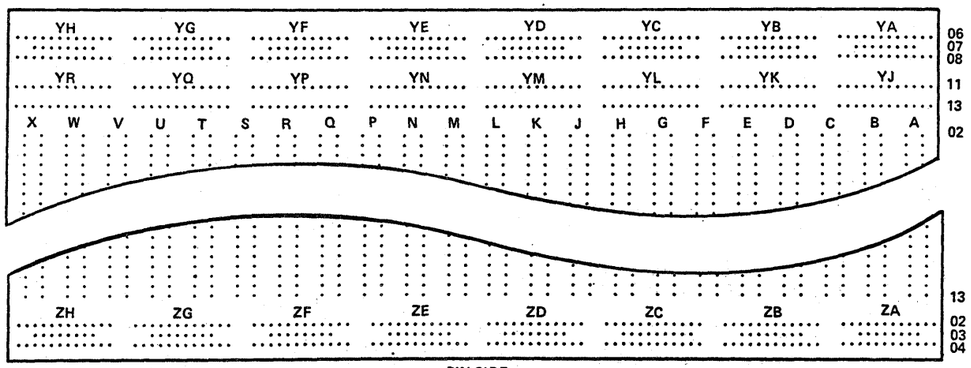
Front View

Left Side View

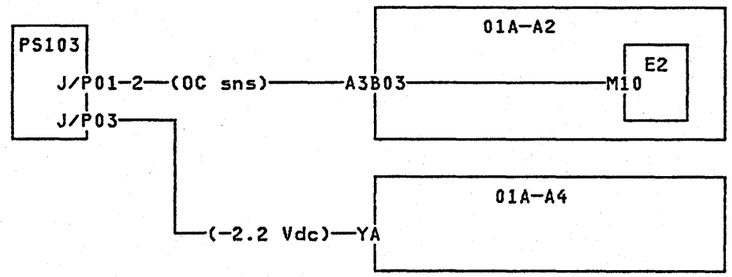


PS103

Step	Conditions	Instructions
7	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 cable from 01A-A2A3 to PS103 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 page PR 5001.
8	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.
9	Is power complete?	Go to page PR 5001.
10	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. Reset PS103 CP1. 4. Disconnect PS103 J/P03. 5. Press service panel Power On. 6. Select Partial Power Up/Down (QWW) screen. 7. Select UP (power-up processor only).
11	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 page PR 5001.
12	Go to **Instructions** column.	1. Reconnect PS103 P03. 2. Disconnect 01A-A4YA. 3. Select Partial Power Up/Down (QWW) screen. 4. Select UP (power-up processor only).



Step	Conditions	Instructions
13	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 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. Reset PS103 CP1. 5. Set PCC CB1 and CB2 on. 6. Go to page PR 5001.
14	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Remove cards from 01A-A4 board. 4. Reconnect 01A-A4YA. 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
15	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. Reset PS103 CP1. 5. Set PCC CB1 and CB2 on. 6. Go to page PR 5001.
16	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall one card removed from 01A-A4 board. 4. Select Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
17	Is PS103 CP1 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange card just reinstalled. 3. Reset PS103 CP1. 4. Repeat steps 16, 17, and 18 until all cards are reinstalled; then go to page PR 5001.
18	Go to **Instructions** column.	Repeat steps 16, 17, and 18 until all cards are reinstalled; then go to page PR 5001.



0 0 0

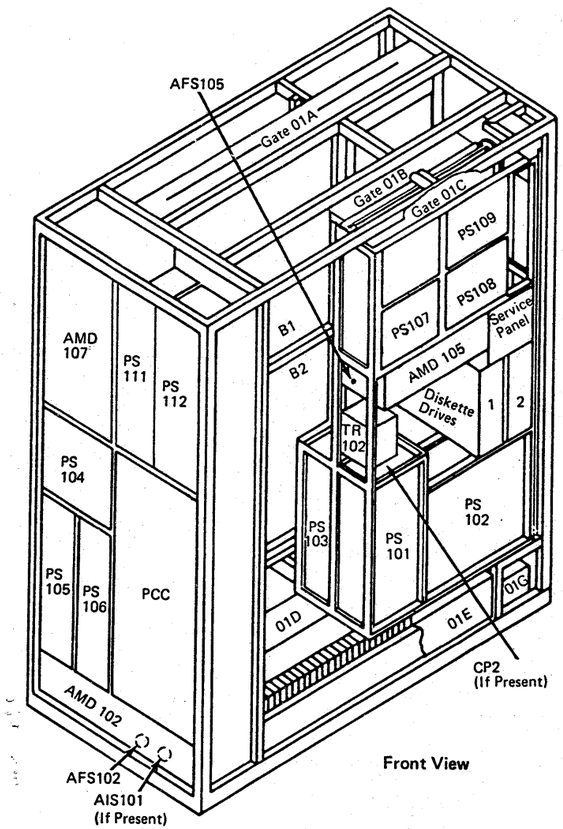
Ref Code 1153140E

This Ref Code indicates the PS103 OV sense line was below +2.4 Vdc after ac voltage was applied to PS103 but before the start line was set on.

Possible causes:

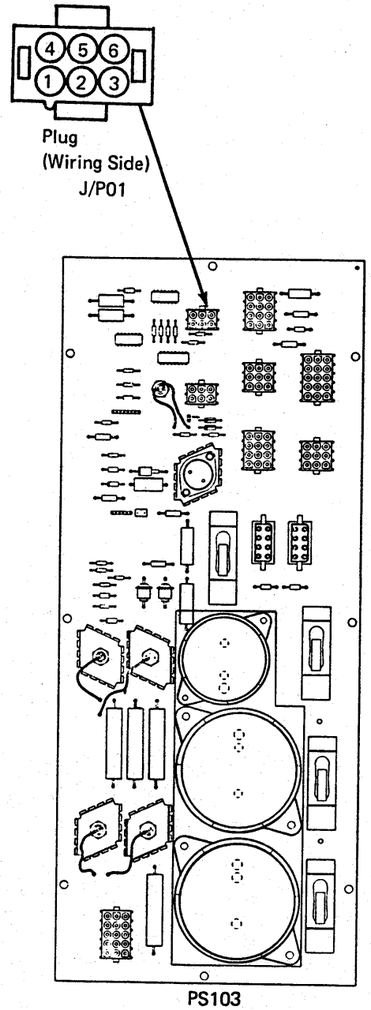
- 01A-A2E2 sense card
- PS103
- PS103 OV sense line open or grounded.

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 A (stop after K03 picked). 6. Measure for +24 Vdc at the following points: - lead at frame ground + lead at PS103 J/P01-5.
2	Is voltage greater than +0.8 Vdc?	Go to step 10.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2P10.
4	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.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A3D08 + lead at 01A-A2A3B04.
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-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 frame ground + lead at PS103 J/P01-5.



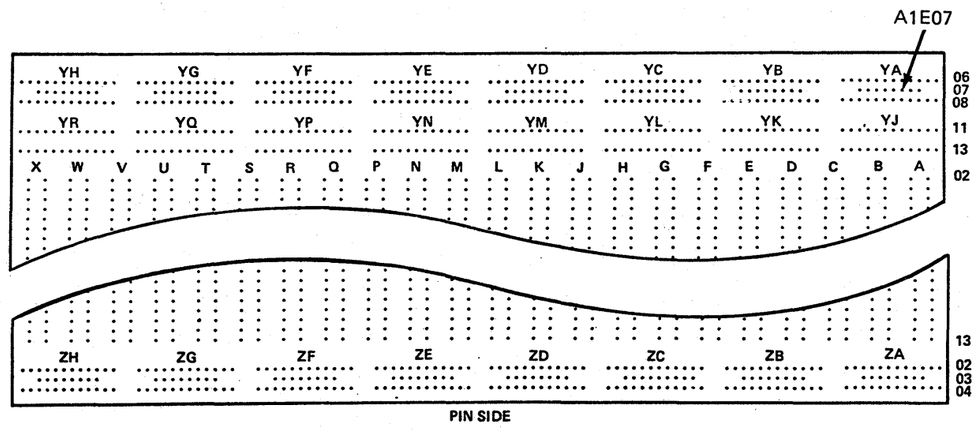
Left Side View

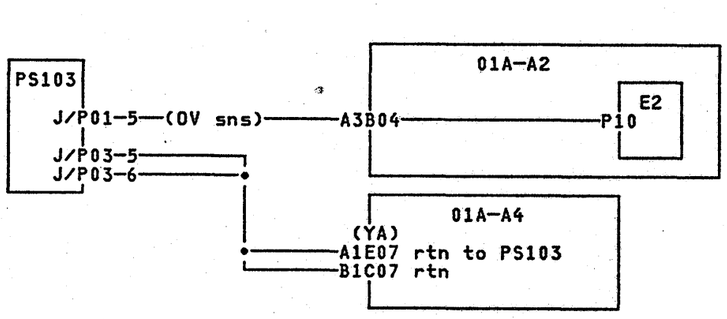
Front View



PS103

Step	Conditions	Instructions
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 cable from 01A-A2A3 to PS103 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 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 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.
10	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at frame ground + lead at 01A-A4A1E07.
11	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-A4YA to PS103 J/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 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 01A-A4 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.





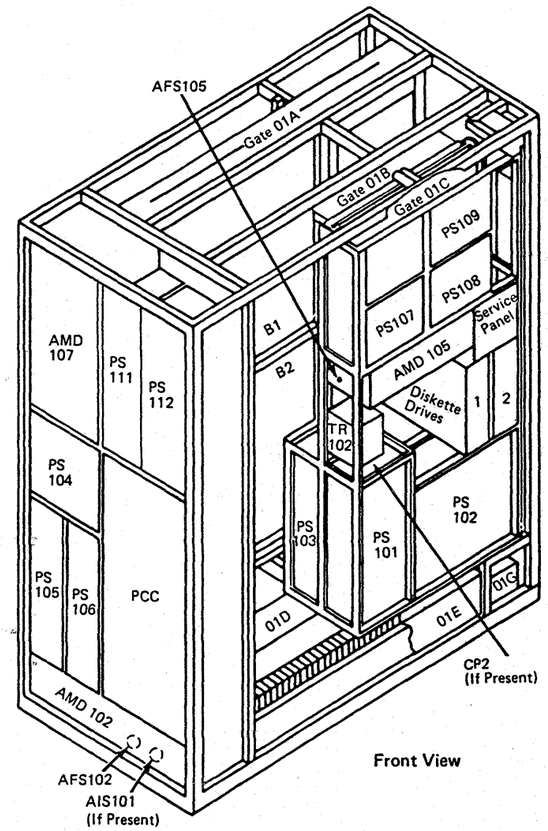
Ref Code 1153240E

This Ref Code indicates the PS103 -2.2 Vdc UV sense line was above +2.4 Vdc after ac voltage was applied to PS103 but before the start line was set on.

Possible causes:

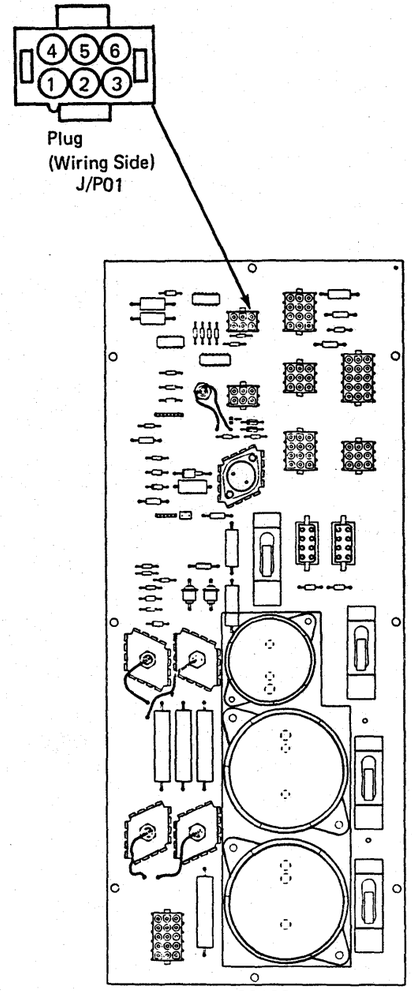
- 01A-A2E2 sense card
- PS103
- PS103 start line
- PS103 UV sense line tied up.

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-A2E2J11.
2	Is voltage less than +2.4 Vdc?	Go to step 10.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2M11.
4	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.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A3D08 + lead at 01A-A2A3B05.
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-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 frame ground + lead at PS103 J/P01-1.



Left Side View

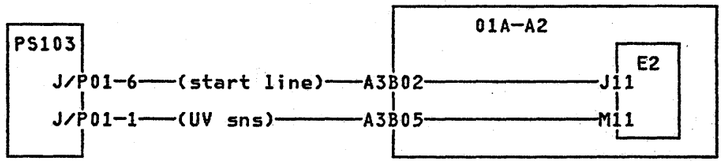
Front View



PS103

Step	Conditions	Instructions
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 cable from 01A-A2A3 to PS103 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 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 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.
10	Go to **Instructions** column.	1. Press ENTER to end diagnostic stop. 2. Disconnect PS103 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-A2E2J11.
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 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
12	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. Press servcie panel Power On. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UC (power-up processor and I/O). 6. If still failing, isolate to one of the following: Cable from 01A-A2A3 to PS103 J/P01 01A-A2 board. 7. Go to page PR 5001.



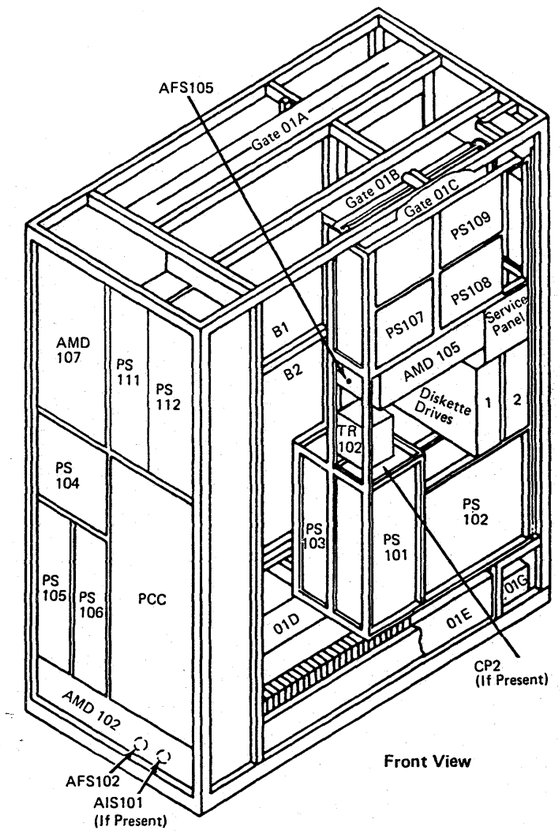
Ref Code 1153440E

This Ref Code indicates the PS106 OC sense line was below +2.4 Vdc after bias voltage was applied to PS106 but before the start line was set on.

Possible causes:

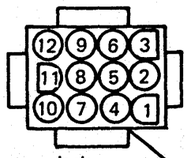
- 01A-A2C2 optoisolator card
- 01A-A2D2 sense card
- PS106
- PS106 OC sense line open or grounded.

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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2J06.
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-A2D2 card. 3. Go to step 12.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2D09.
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. Go to step 12.

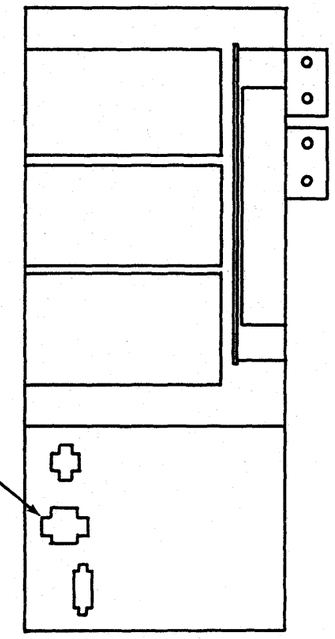


Front View

Left Side View



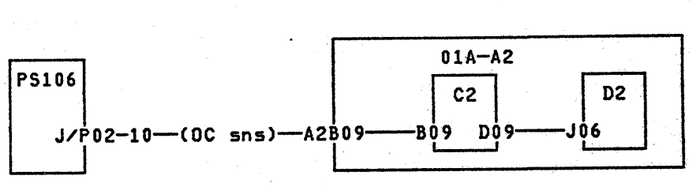
Jack
(Pin Side)
J/P02



PS106

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B09.
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. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A2D08 + lead at 01A-A2A2B09.
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. Go to step 12.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS106 J/P02-10.
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 from PS106 J/P02 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 12.
11	Go to **Instructions** column.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.

Step	Conditions	Instructions
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press servcie panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. If still failing, the sense line may be shorted. Isolate to one of the following: 01A-A2D2 card (swap with E2) 01A-A2C2 card (swap with C4) PS106 01A-A2 board Cable from 01A-A2A2 to PS106 J/P02. 6. Go to page PR 5001.



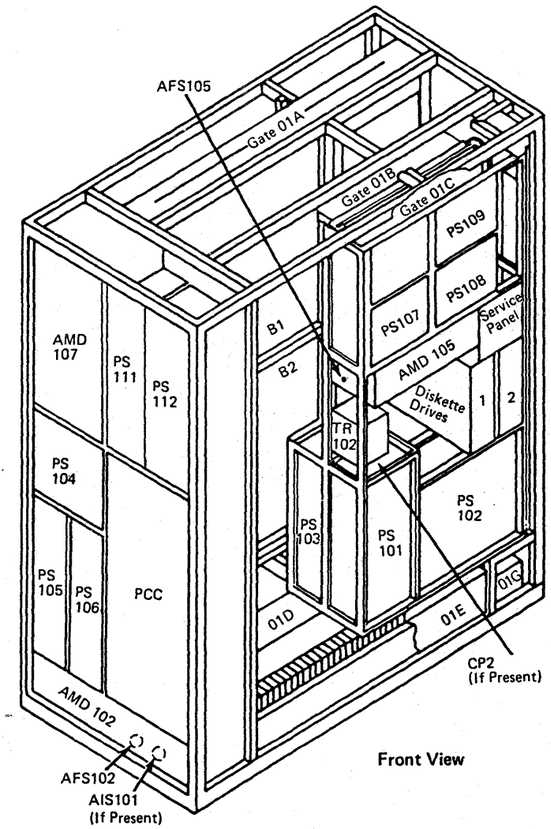
Ref Code 1153540E

This Ref Code indicates the PS106 OV sense line was below +2.4 Vdc after bias voltage was applied to PS106 but before the start line was set on.

Possible causes:

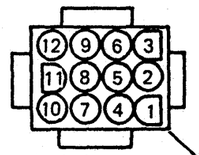
- 01A-A2C2 optoisolator card
- 01A-A2D2 sense card
- PS106
- PS106 OV sense line open or grounded.

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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2G08.
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. Go to step 12.
3	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2D10.
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. Go to step 12.

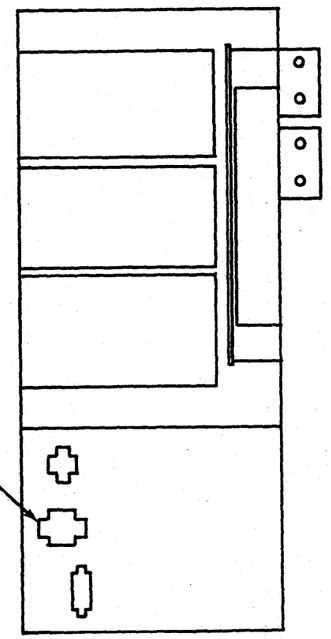


Front View

Left Side View

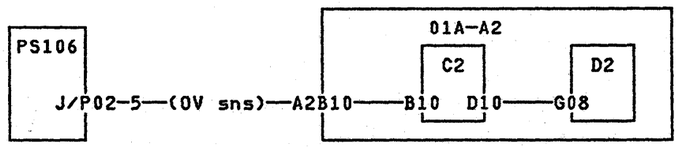


Jack
(Pin Side)
J/P02



PS106

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B10.
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. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A2D08 + lead at 01A-A2A2B10.
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. Go to step 12.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS106 J/P02-5.
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 from PS106 P02 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 12.
11	Go to **Instructions** column.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.
12	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. If still failing, the sense line may be shorted. Isolate to one of the following: 01A-A2D2 card (swap with E2 card) 01A-A2C2 card (swap with C4 card) PS106 01A-A2 board Cable from 01A-A2A2 to PS106 J/P02. 6. Go to page PR 5001.

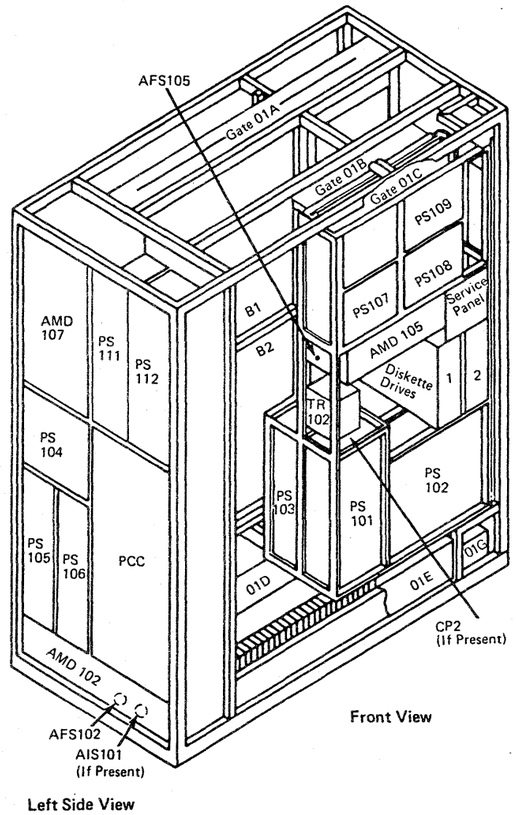


This Ref Code indicates the PS106 UV sense line was above +2.4 Vdc after bias voltage was applied and before the start line was set on.

Possible causes:

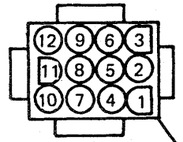
- 01A-A2C2 optoisolator card
- 01A-A2D2 sense card
- PS106
- PS106 UV sense line open or grounded.

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 A (stop after K03 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2G06.
2	Is voltage less than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2D2 card. 3. 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-A2C2D11.
4	Is voltage less 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.

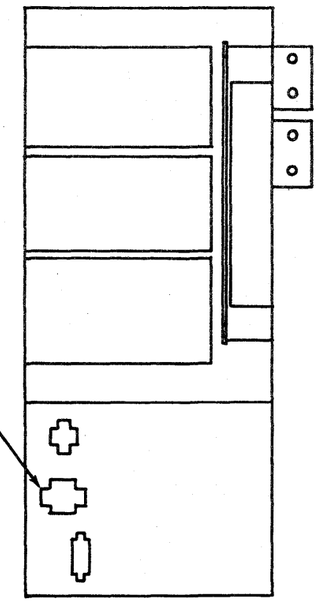


Front View

Left Side View

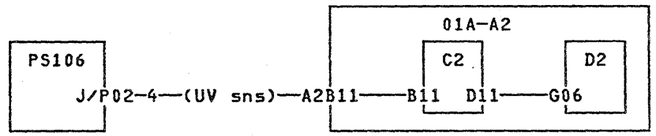


Jack
(Pin Side)
J/P02



PS106

Step	Conditions	Instructions
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B11.
6	Is voltage less 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 page PR 5001.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2A2B11.
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 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 PS106 J/P02-4.
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 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.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.



PR 1672

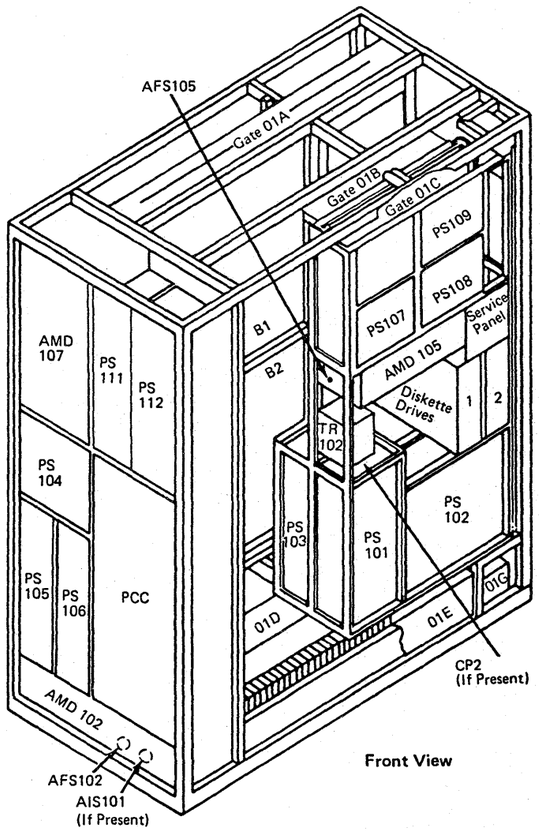
Ref Code 1153740E

This Ref Code indicates the PS106 BG sense line was below +2.4 Vdc after bias voltage was applied to PS106 and before the start line was set on.

Possible causes:

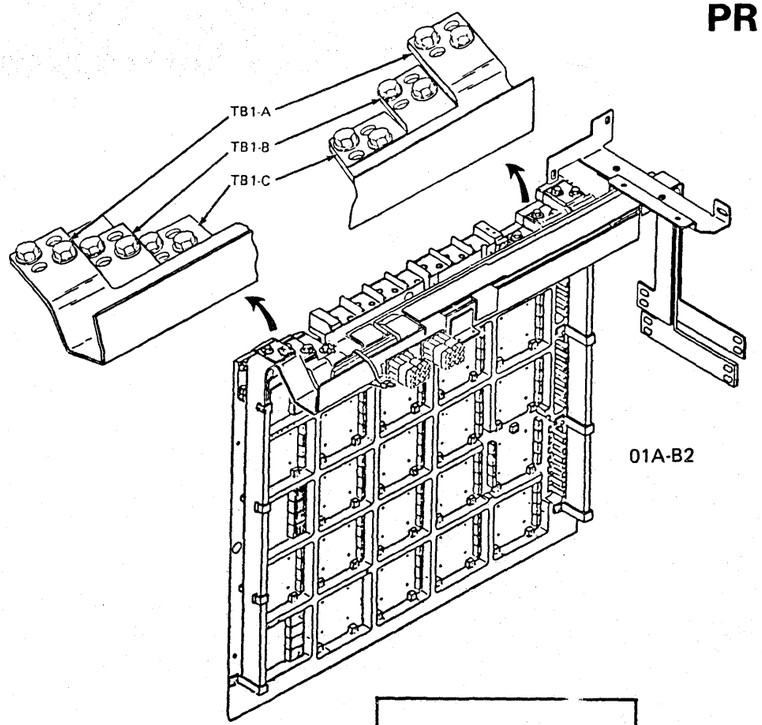
- 01A-A2C2 optoisolator card
- 01A-A2D2 sense card
- PS106
- PS106 BG sense line open or grounded
- PS106 remote sense line open.

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. Disconnect PS106 J/P02. 4. Check the resistance between the following points: - lead at 01A-B2 TB1-C + lead at PS106 P02-3 (cable end).
2	Is an open indicated?	1. Exchange cable from PS106 J/P02 to 01A-B2 TB-1 sense capacitors. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 2. Go to step 14.
3	Go to **Instructions** column.	1. Reconnect PS106 J/P02. 2. Set PCC CB1 and CB2 on. 3. Set CE Mode switch to CE Mode. 4. Press service panel Power On. 5. Select Diagnostic Power Up (QWD) screen. 6. Select option A (stop after K03 picked). 7. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2J04.

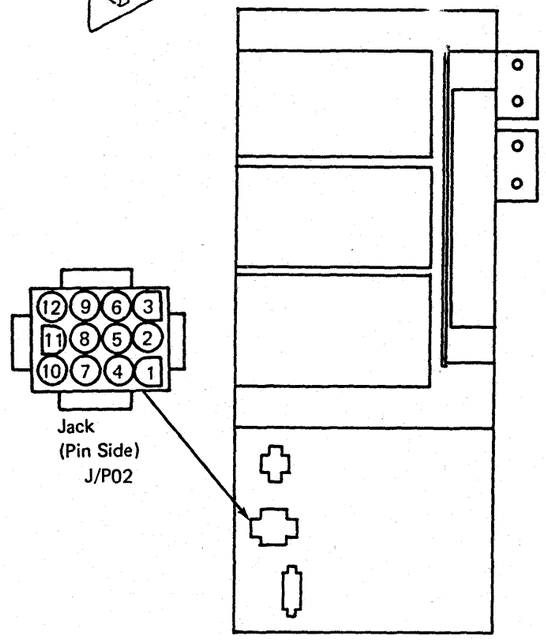


Front View

Left Side View



01A-B2

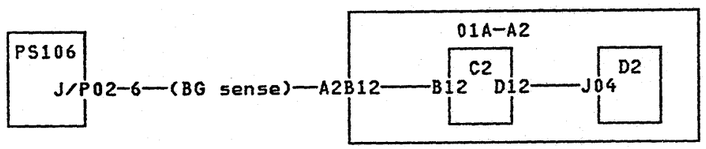


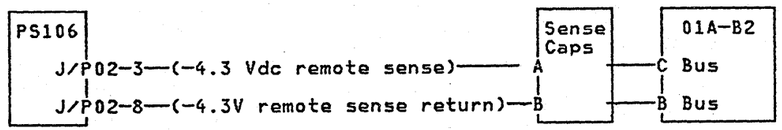
Jack
(Pin Side)
J/P02

PS106

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-A2D2 card. 4. Go to step 14.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2D12.
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-A2 board. 4. Go to step 14.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B12.
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-A2C2 card. 4. Go to step 14.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2A2B12.
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. Go to step 14.
11	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS106 J/P02-6.
12	Is voltage greater than +0.8 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange the cable from PS106 J/P02 to 01A-A2A2. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 3. Go to step 14.
13	Go to **Instructions** column.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.

Step	Conditions	Instructions
14	Go to **Instructions** column.	1. Set PCC CB1 and CB2 on. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UC (power-up processor and I/O). 5. If still failing, the sense line may be shorted. Isolate to one of the following: 01A-A2D2 card (swap with E2) 01A-A2C2 card (swap with C4) PS106 01A-A2 board Cable from 01A-A2A2 to PS106 J/P02. 6. Go to page PR 5001.





0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

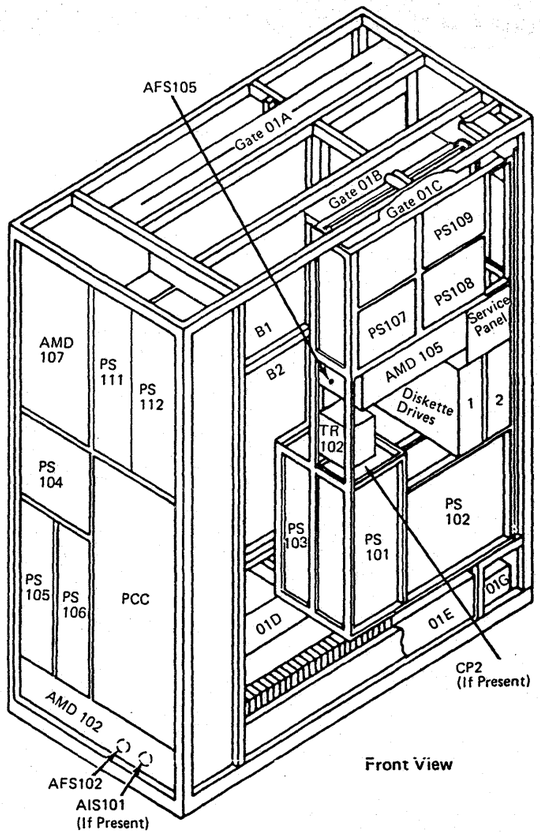
Ref Codes 11A0140E, 11A0150E

These Ref Codes indicate the +24 Vdc bias voltage from PS103 is out of tolerance.

Possible causes:

- 01A-A2E2 sense card
- PS103
- TR103
- PS103 analog sense line.

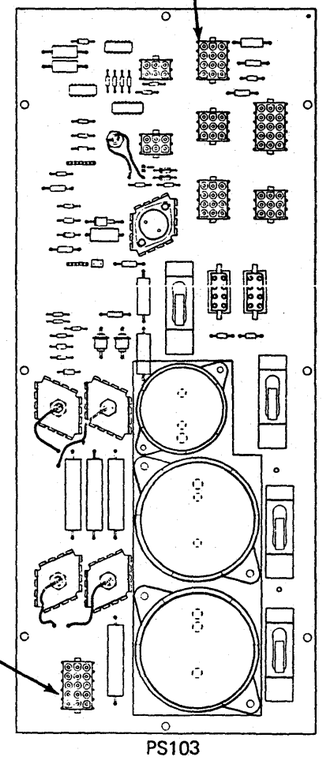
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Measure for +1.5 Vdc at the following points: - lead at PS103 J/P02-4 + lead at PS103 J/P02-2.
2	Is voltage +1.29 to +1.71 Vdc?	Go to step 6.
3	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect PS103 J/P10. 3. Press service panel Power On. 4. Select Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Measure for +24 **Vac** at the following points (cable end): PS103 P10-1 to P10-11 PS103 P10-2 to P10-11 PS103 P10-4 to P10-14 PS103 P10-5 to P10-14.
4	Is voltage less than 24 **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.



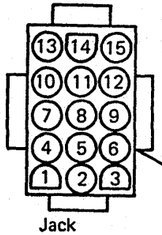
Front View

Left Side View

Jack
(Pin Side)
P/J02

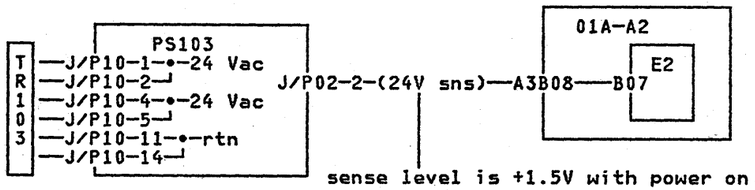


PS103



Jack
(Pin Side)
J/P10

Step	Conditions	Instructions
5	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.
6	Go to **Instructions** column.	Measure for +1.5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2B07.
7	Is voltage +1.29 to +1.71 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2E2 card. 3. Press service panel Power On. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UC (power-up processor only). 6. If machine still fails, go to step 3. 7. Go to page PR 5001.
8	Go to **Instructions** column.	Measure for +1.5 Vdc at the following points: - lead at 01A-A2A3D08 + lead at 01A-A2A3B08.
9	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-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
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 cable between PS103 J/P02 and 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.



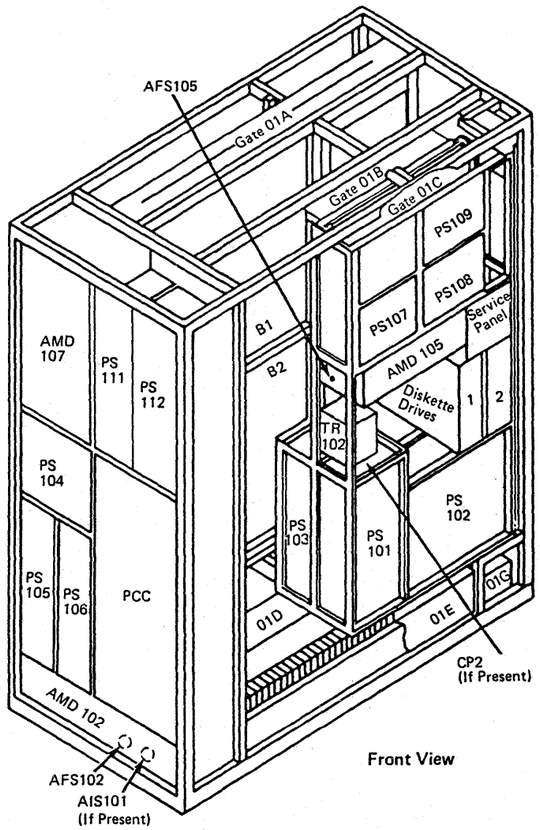
Ref Codes 1116430E, 11A0240E, 11A0250E

These Ref Codes indicate the +5 Vdc bias voltage from PS103 is out of tolerance.

Possible causes:

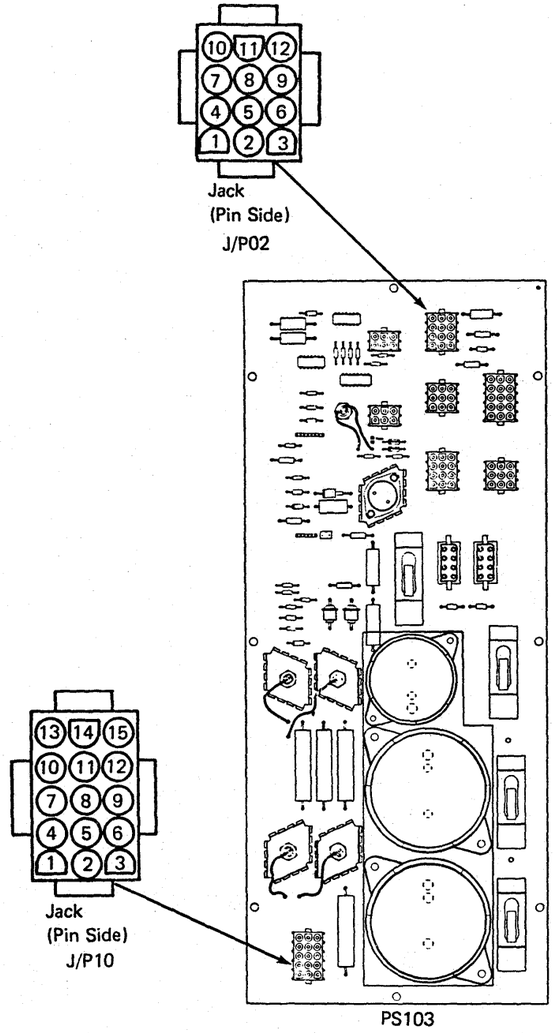
- 01A-A2E2 card
- TR103
- PS103.

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 +1.5 Vdc at the following points: - lead at PS103 J/P02-1 + lead at PS103 J/P02-11.
2	Is voltage +1.29 to +1.71 Vdc?	Go to step 6.
3	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect PS103 J/P10. 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 **Vac** at the following points (cable end): PS103 P10-7 to P10-3 PS103 P10-8 to P10-3 PS103 P10-10 to P10-6 PS103 P10-13 to P10-6.
4	Is voltage less than 5 **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.



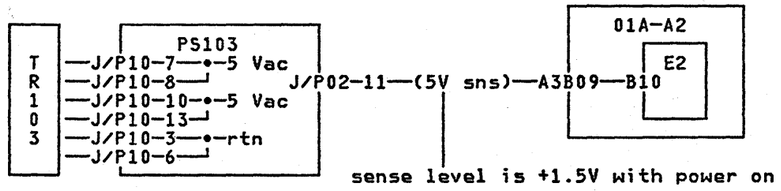
Front View

Left Side View



PS103

Step	Conditions	Instructions
5	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.
6	Go to **Instructions** column.	Measure for +1.5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2B10.
7	Is voltage +1.29 to +1.71 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2E2 card. 3. Press service panel Power On. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UC (power-up processor only). 6. If machine still fails, go to step 3. 7. Go to page PR 5001.
8	Go to **Instructions** column.	Measure for +1.5 Vdc at the following points: - lead at 01A-A2A3D08 + lead at 01A-A2A3B09.
9	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-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
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 cable from PS103 J/P02 and 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.



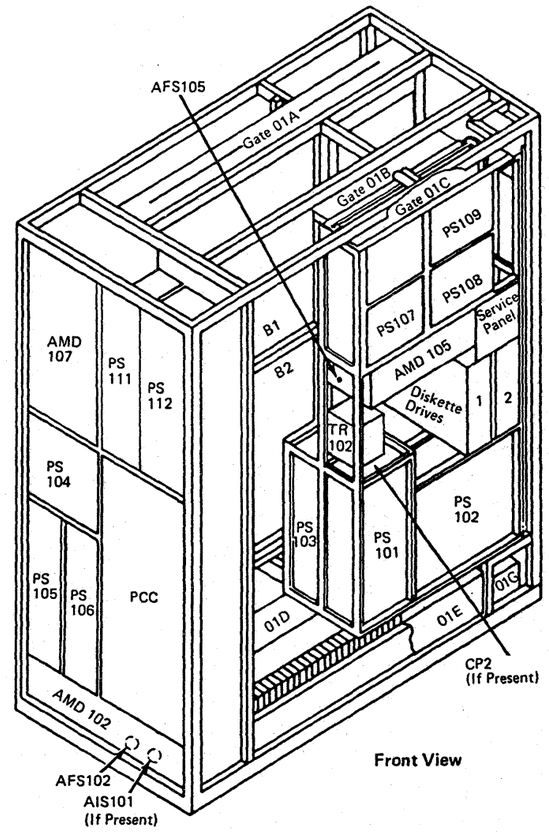
Ref Codes 11A0740E, 11A0750E

These Ref Codes indicate the +5V from PS102 is out of tolerance at the 01A-A3 board.

Possible causes:

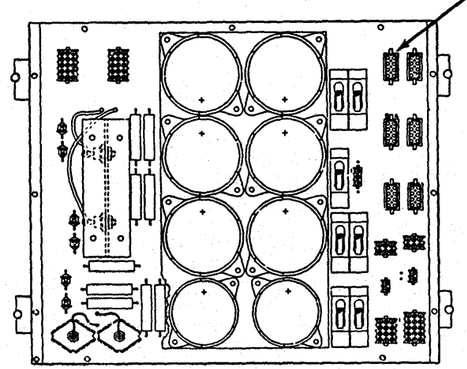
- PS102
- 01A-A2E2 sense card
- 01A-A2 board
- 01A-A3 board.

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. Measure for +1.5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2B06.
2	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. Go to step 12.
3	Go to **Instructions** column.	Measure for +1.5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2A5D12.
4	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-A2 board. 4. Go to step 12.
5	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A3M2D08 + lead at 01A-A3M2D03.

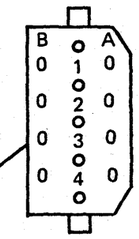


Front View

Left Side View

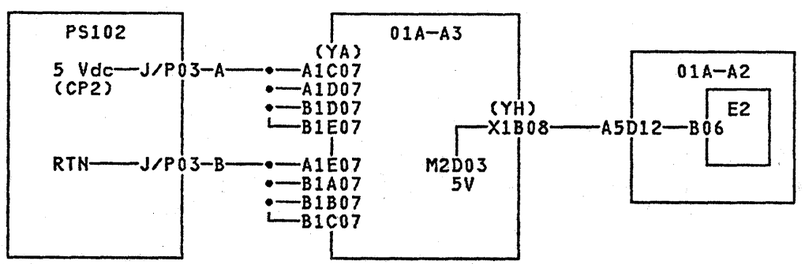


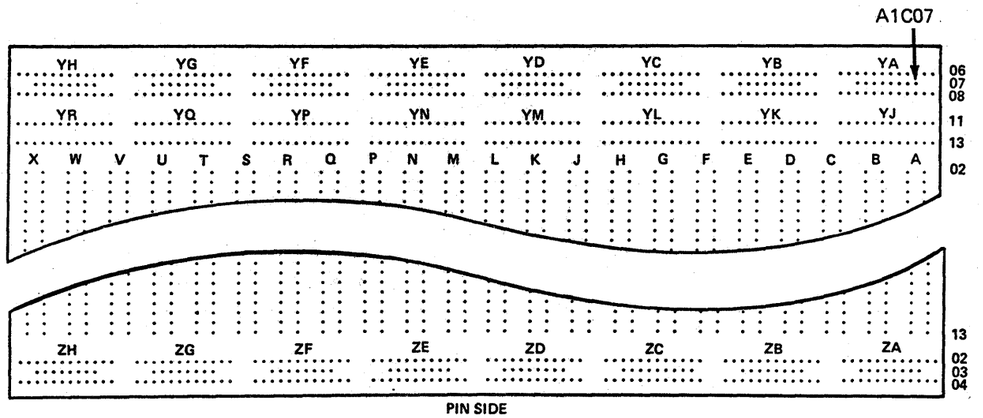
PS102



Jack
(Pin Side)
J/P03

Step	Conditions	Instructions
6	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 01A-A3YH to 01A-A2A5. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 12.
7	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A3M2D08 + lead at 01A-A3A1C07.
8	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-A3 board. 4. Go to step 12.
9	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at PS102 P03-B + lead at PS102 P03-A.
10	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 01A-A3YA to PS102 J/P03. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. 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 PS102. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply.
12	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS102 01A-A2 board 01A-A3 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.





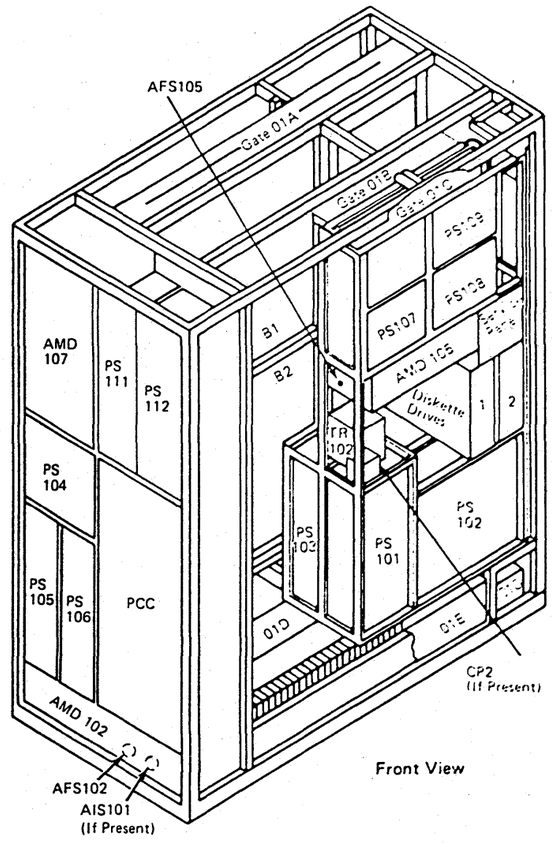
Ref Codes 11A0940E, 11A0950E

These Ref Codes indicate the +5V from PS109 is out of tolerance at the 01A-A4 board.

Possible causes:

- PS109
- 01A-A4 board
- 01A-A2E2 sense card
- 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 F (stop after +5V start). 6. Measure for +1.5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2B08.
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. Exchange 01A-A2E2 card. 3. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for +1.5 Vdc at the following points: - lead at 01A-A2A5D08 + lead at 01A-A2A5B02.
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.	Measure for +5 Vdc at the following points: - lead at 01A-A4B5D08 + lead at 01A-A4B6D04.

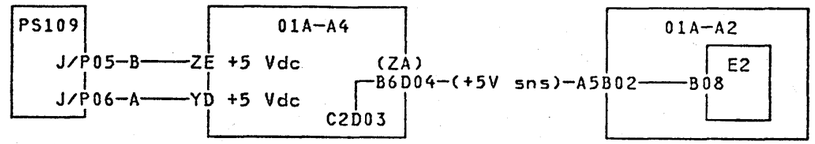


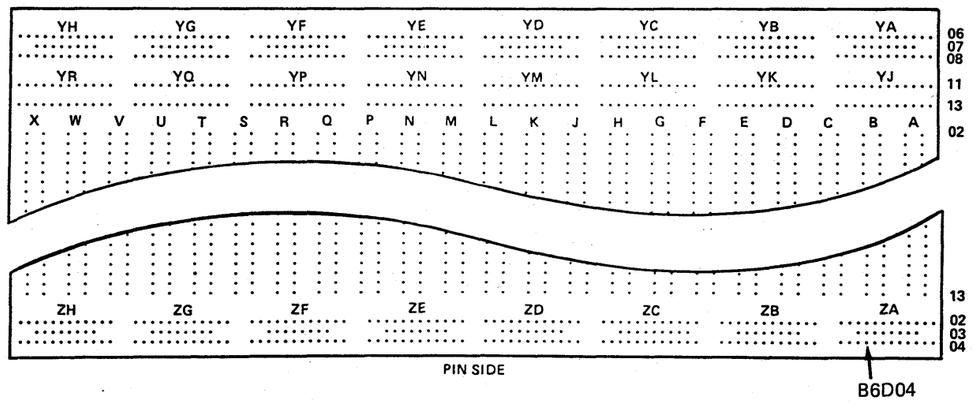
Front View

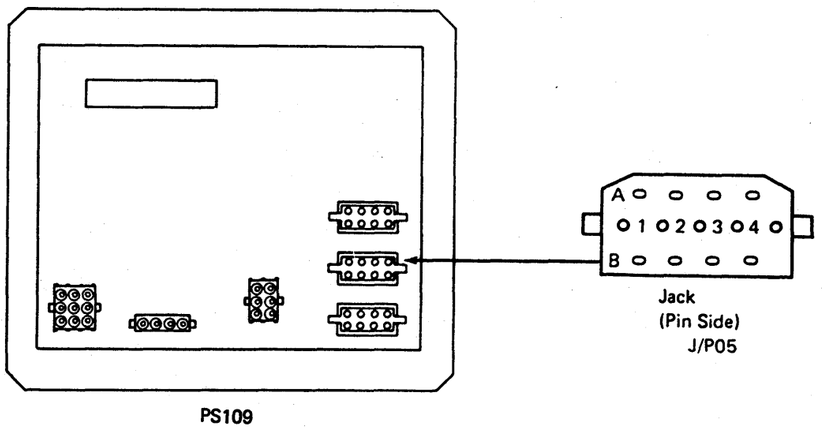
Left Side View

4381-3 B/M 2676380	MI Seq DA160	PN 6169188 1 of 2	EC A20558 01 Oct 84	EC A20562 30 Aug 85			

Step	Conditions	Instructions
6	Is voltage +4.85 to +5.15 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 +5 Vdc at the following points: - lead at 01A-A4C2D08 + lead at 01A-A4C2D02.
8	Is voltage +4.85 to +5.15 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 +5 Vdc at the following points: - lead at PS109 J/P05-A + lead at PS109 J/P05-B.
10	Is voltage +4.85 to +5.15 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 PS109 J/P05, J/P06 to 01A-A4YD, ZE. **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 **Instruction** 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 or power supply adjustment before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.







4381-3 B/M 2676380	MI Seq DA160	PN 6169188 2 of 2	EC A20558 01 Oct 84	EC A20562 30 Aug 85			

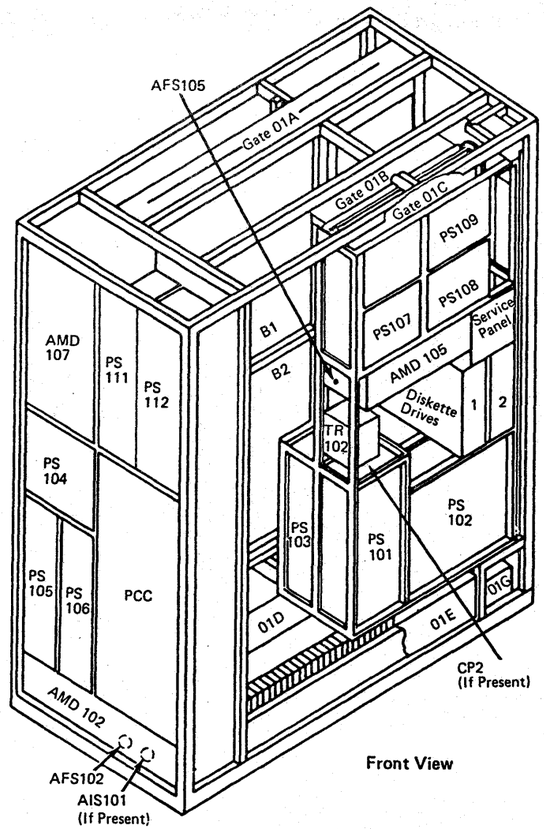
Ref Codes 11A1040E, 11A1050E

These Ref Codes indicate the +5V from PS103 is out of tolerance at the 01A-A3 board.

Possible causes:

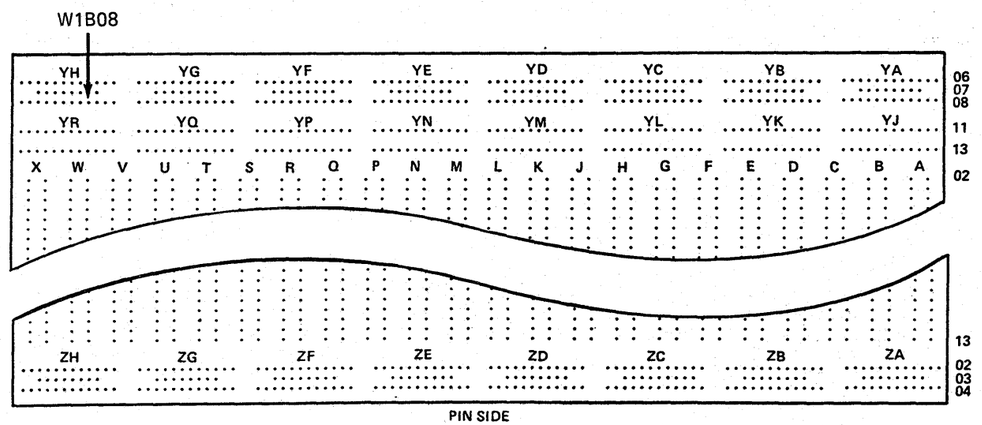
- 01A-A2E2 card
- 01A-A3 board
- PS103.

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 +1.5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2B11.
2	Is voltage +1.29 to +1.71 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 +1.5 Vdc at the following points: - lead at 01A-A2A5D08 + lead at 01A-A2A5B03.
4	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-A2 board. 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-A3P5D08 + lead at 01A-A3W1B08.



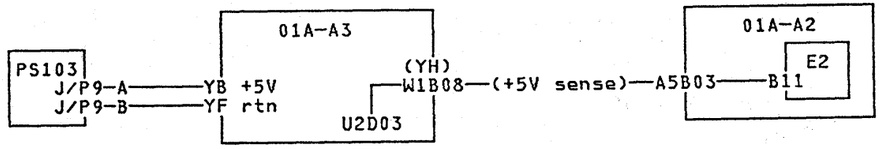
Front View

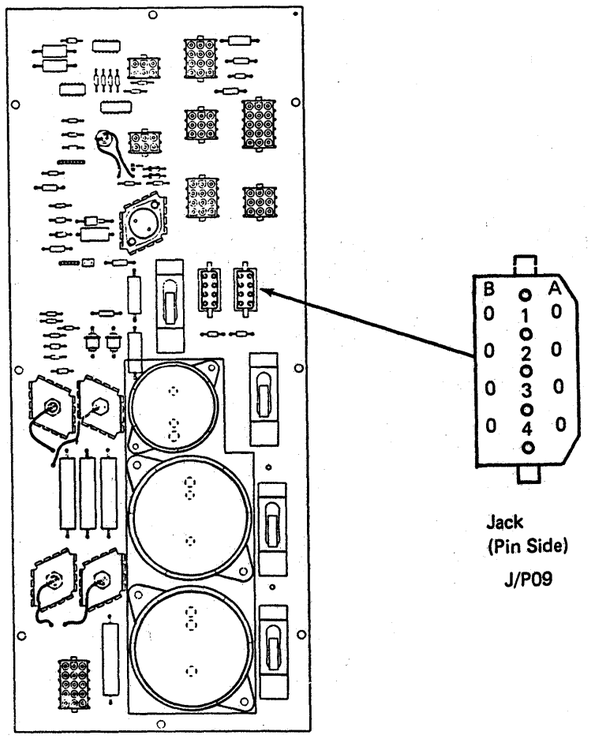
Left Side View



PIN SIDE

Step	Conditions	Instructions
6	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 01A-A3YH 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 +5 Vdc at the following points: - lead at 01A-A3U2D08 + lead at 01A-A3U2D03.
8	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-A3 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 PS103 J/P09-B + lead at PS103 J/P09-A.
10	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 PS103 J/P09 to 01A-A3YB. **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 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.





PS103

Jack
(Pin Side)
J/P09

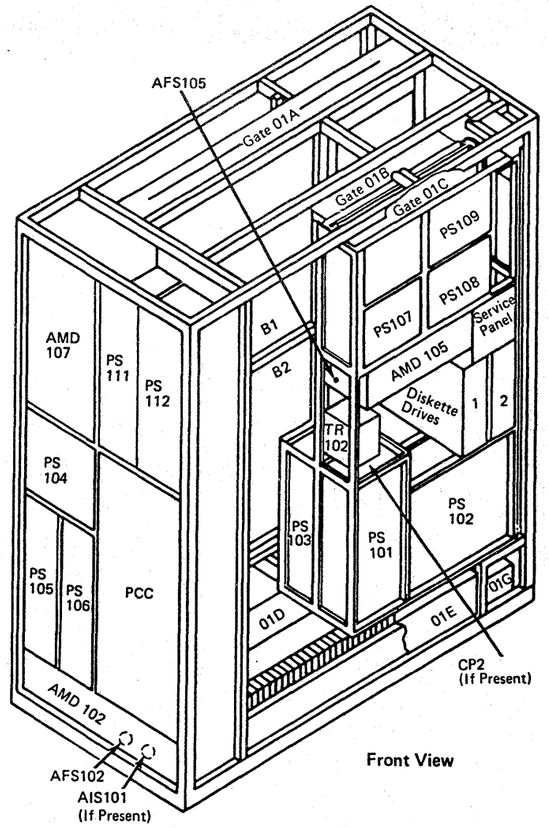
Ref Codes 11A1240E, 11A1250E

These Ref Codes indicate the +6V from PS107 is out of tolerance at the 01A-A3 board.

Possible causes:

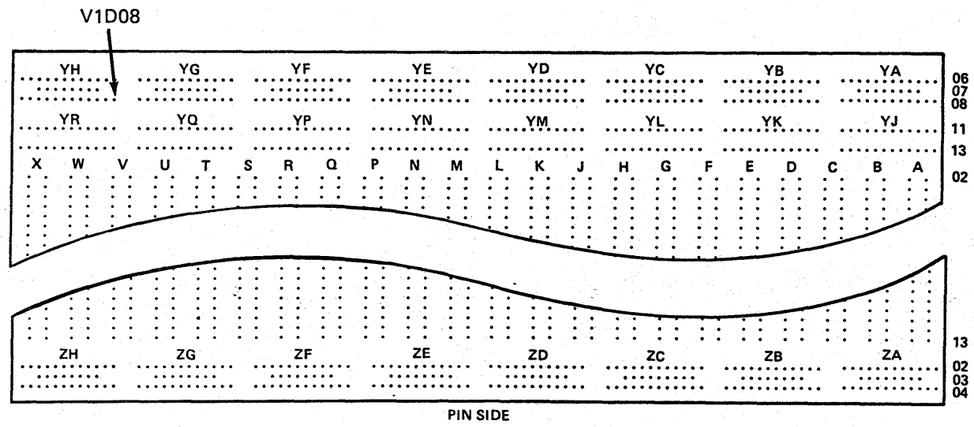
- 01A-A2A5 paddle card
- 01A-A2E2 card
- 01A-A2 board
- 01A-A3 board
- PS107
- Power supply adjustment.

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 (QWD) screen. 5. Select option H (stop after +6V start). 6. Measure for +1.5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2D12.
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. Exchange 01A-A2E2 card. 3. Go to page PR 5001.
3	Go to **Instructions** column.	Measure for +1.5 Vdc at the following points: - lead at 01A-A2A5D08 + lead at 01A-A2A5B05.
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.	Measure for +6 Vdc at the following points: - lead at 01A-A3P2D08 + lead at 01A-A3V1D08.



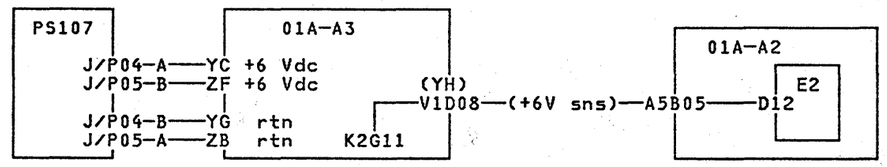
Front View

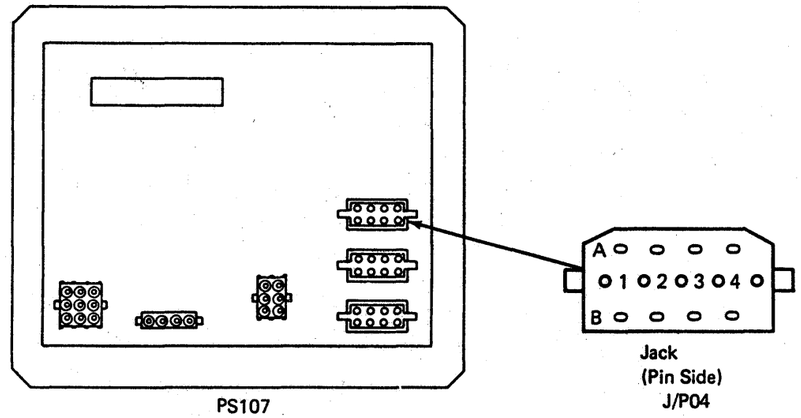
Left Side View



PIN SIDE

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 cable from 01A-A3YH 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 +6 Vdc at the following points: - lead at 01A-A3K2J08 + lead at 01A-A3K2G11.
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 01A-A3 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	Measure for +6 Vdc at the following points: - lead at PS107 J/P04-B + lead at PS107 J/P04-A.
10	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 cables from PS107 J/P04, J/P05 to 01A-A3ZB, 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 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.





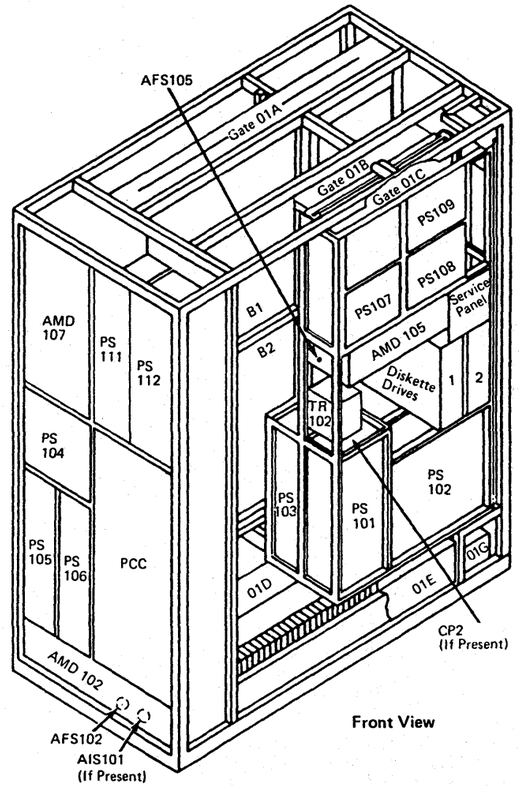
Ref Codes 11A2640E, 11A2650E

These Ref Codes indicate the -1.5 Vdc from PS105 is out of tolerance at the 01A-B2 board.

Possible causes:

- 01A-A2B2 paddle card
- 01A-A2E2 card
- 01A-A2 board
- 01A-B2 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. Check the 01A-B2 TB1 bus bars and PS105 for loose bolts, screws and cables. 4. Press service panel Power On. 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only). 7. Measure for -1.5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2S04. **Note:** Voltage is present for about two seconds.
2	Is voltage -1.44 to -1.56 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.	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-A2B2D08 + lead at 01A-A2B2B07. **Note:** Voltage is present for about two seconds.

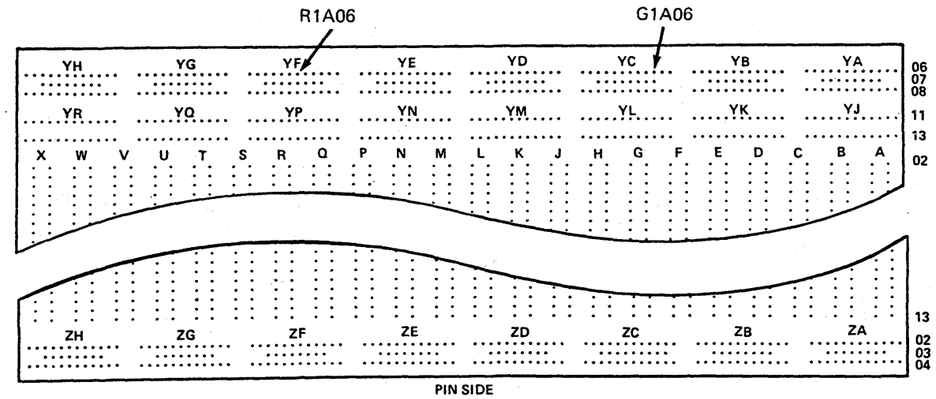


Front View

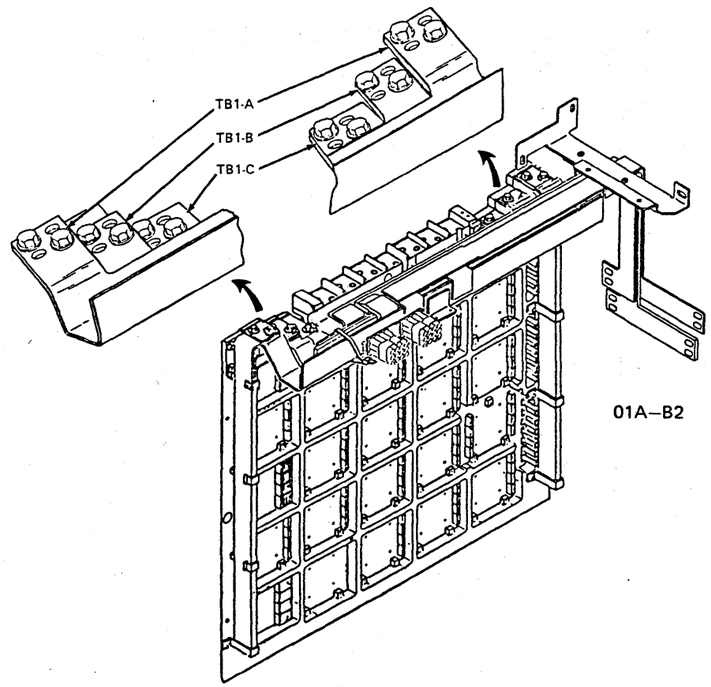
Left Side View

4381 B/M 2676380	MI Seq DA175	PN 6169191 1 of 3	EC A20558 01 Oct 84	EC A20559 03 Dec 84			

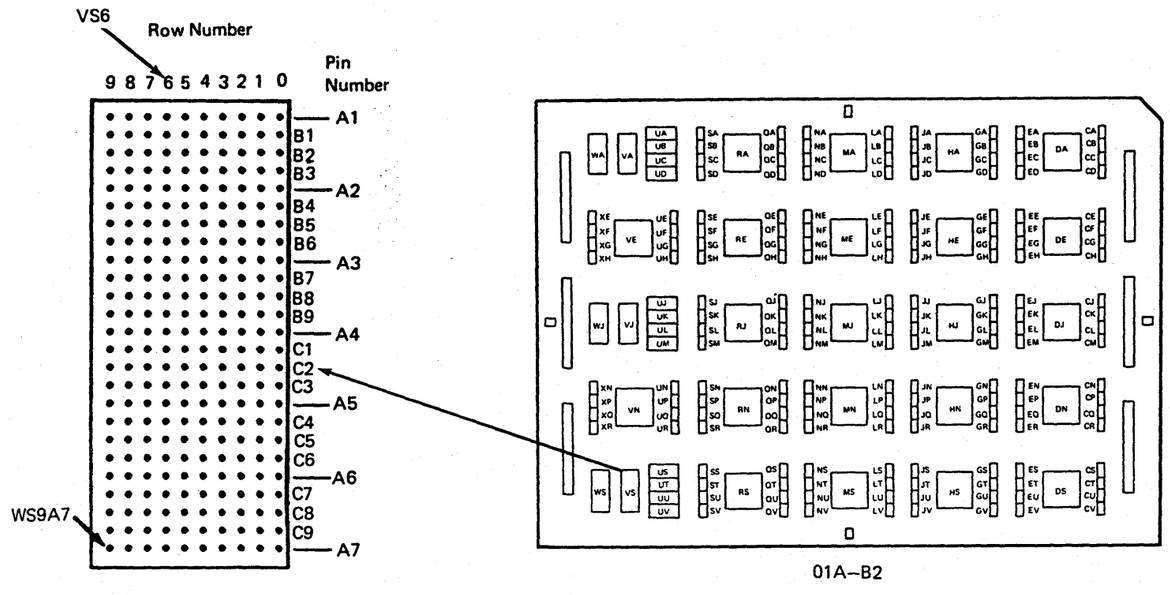
Step	Conditions	Instructions
4	Is voltage -1.44 to -1.56 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
5	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select UP (power-up processor only). 3. Measure for -1.5 Vdc at the following points: - lead at 01A-A2G2D08 + lead at 01A-A2G1A06. **Note:** Voltage is present for about two seconds.
6	Is voltage -1.47 to -1.53 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-A2YC to 01A-A2B2. **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 -1.5 Vdc at the following points: - lead at 01A-A2R2D08 + lead at 01A-A2R1A06. **Note:** Voltage is present for about two seconds.
8	Is voltage -1.47 to -1.53 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.

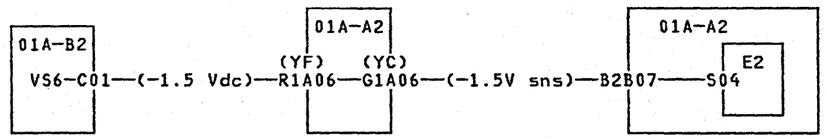


PIN SIDE



Step	Conditions	Instructions
9	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-B2 TB1-B bus + lead at 01A-B2 TB1-A bus. **Note:** Voltage is present for about two seconds.
10	Is voltage -1.47 to -1.53 Vdc?	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the board. For tool part numbers, see Volume A07, page REM 001. 1. Isolate to one of the following: Cable from 01A-B2VS6 to 01A-A2YF 01A-B2 board. 2. Go to page PR 5001.
11	Go to **Instructions** column.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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 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.





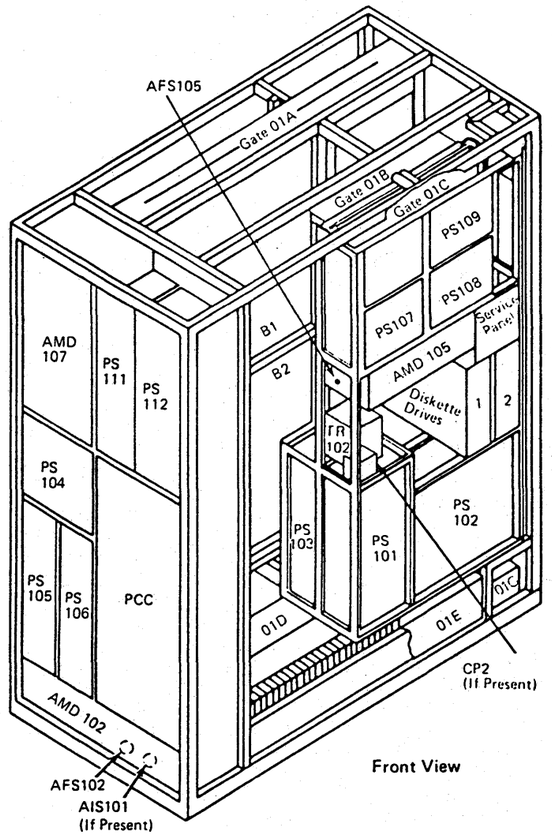
Ref Code 11D1230E

This Ref Code indicates the MBC has failed to power off the MSS.

Possible causes:

- 01A-A1V2 card
- 01A-A2U2 card
- 01A-A2D2 card
- 01A-A2E2 card.

Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Set CE Mode switch to CE Mode. 3. Set PCC CB1 and CB2 on. 4. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2G04.
2	Is voltage less than +2.5 Vdc?	Go to step 6.
3	Go to **Instructions** column.	1. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2G04. 2. Press service panel Power On.
4	Is voltage less than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Go to step 21.
5	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2E2 card. 3. Go to step 21.
6	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U07.
7	Is voltage greater than +2.5 Vdc?	Go to step 11.

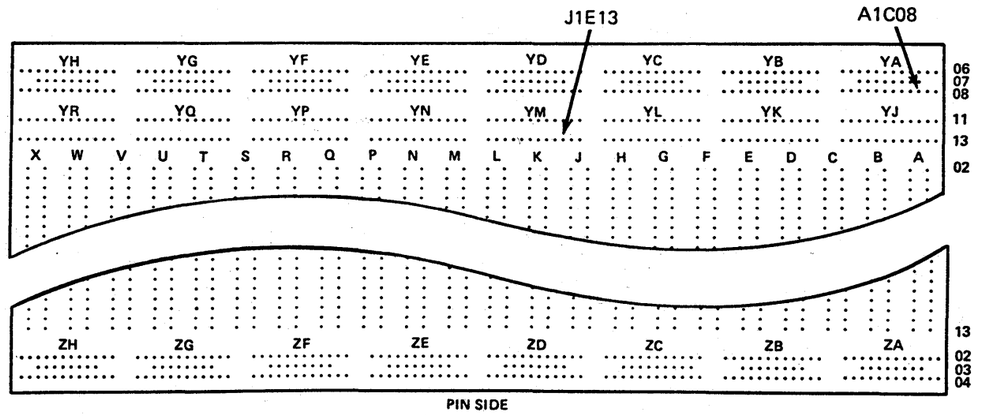


Front View

Left Side View

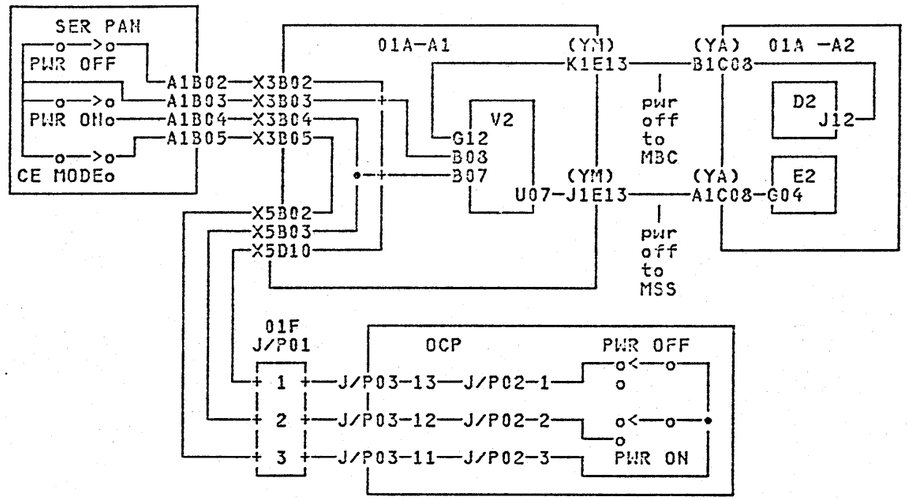
4381-3 B/M 2676380	MI Seq DA180	PN 6169192 1 of 3	EC A20558 01 Oct 84	EC A20560 18 Feb 85	EC A20562 30 Aug 85		

Step	Conditions	Instructions
8	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at 01A-A1YM (card side). 3. Set PCC CB1 and CB2 on. 4. Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U07.
9	Is voltage greater than +2.5 Vdc?	Go to step 16.
10	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card. 3. Press service panel Power On. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UC (power-up processor only). **Note:** A TCC could also be defective. Ensure TCCs are seated and the TCC arrow is pointing up. 6. Exchange 01A-A1 board if still failing. 7. Go to step 21.
11	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2A1C08.
12	Is voltage greater than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 21.
13	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1J1E13.
14	Is voltage greater 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 21.
15	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 21.
16	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Reconnect cable at 01A-A1YM (card side). 3. Remove 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U07.
17	Is voltage greater than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2E2 card. 3. Go to step 21.
18	Go to **Instructions** column.	1. Set PCC CB1 and CB2 off. 2. Disconnect cable at 01A-A2YA (card side). 3. Reinstall 01A-A2E2 card. 4. Set PCC CB1 and CB2 on. 5. Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U07.
19	Is voltage greater than +2.5 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 21.
20	Go to **Instructions** column.	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.



4381-3 B/M 2676380	MI Seq DA180	PN 6169192 2 of 3	EC A20558 01 Oct 84	EC A20560 18 Feb 85	EC A20562 30 Aug 85		

Step	Conditions	Instructions
21	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Check all cables and cards for proper seating in the following areas: 01A-A1 board 01A-A2 board Service panel OCP (Display and Keyboard). 01F-J1. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



0 0 0

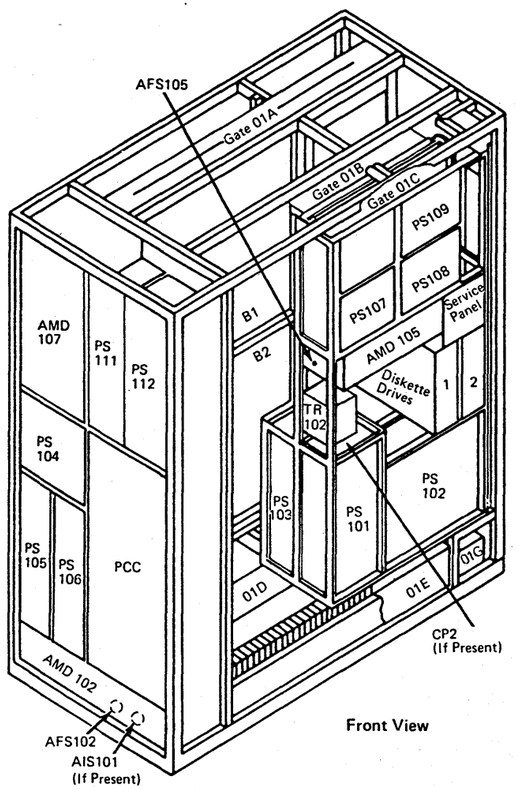
Ref Codes 11A2940E, 11A2950E

These Ref Codes indicate the -1.5V from PS105 is out of tolerance at the 01A-A2 board.

Possible causes:

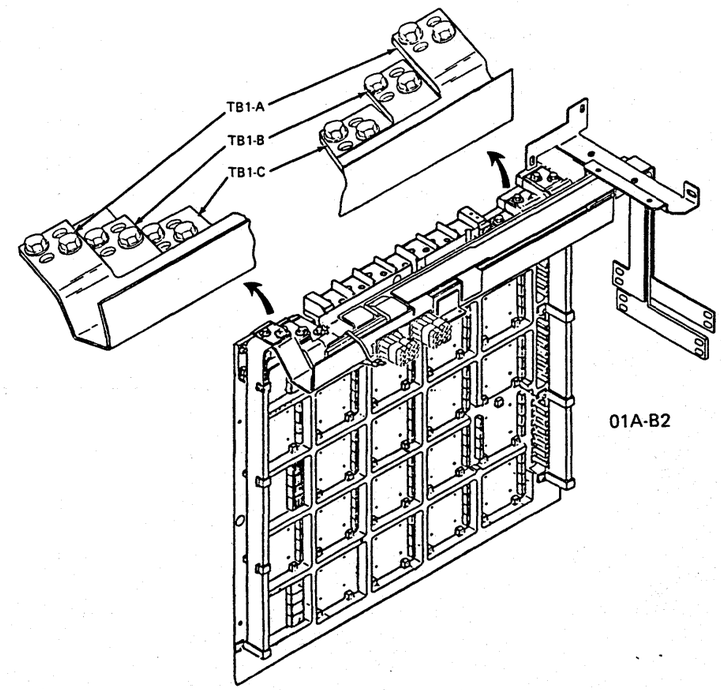
- PS105
- 01A-A2 board
- 01A-A2E2 sense card.

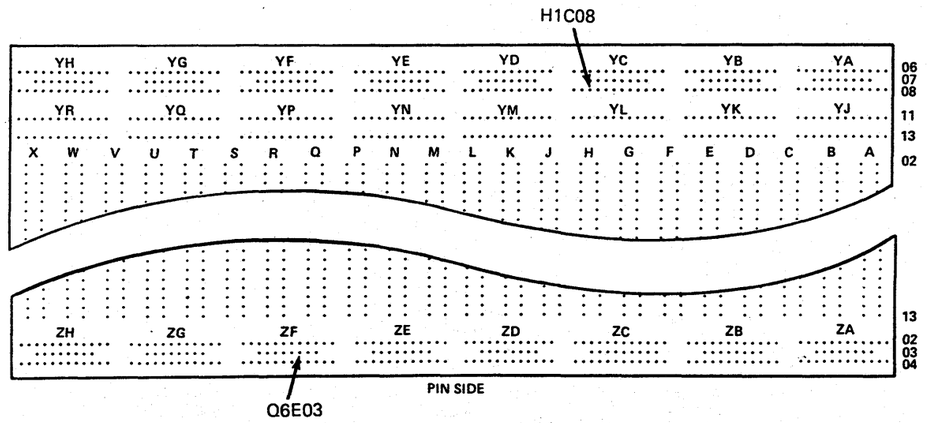
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Check the 01A-B2 TB1 bus bars and PS105 for loose bolts, screws and cables. 4. Press service panel Power On. 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only). 7. Measure for -1.5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2U07. **Note:** Voltage is present for about two seconds.
2	Is voltage -1.433 to -1.59 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.	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-A2B2D08 + lead at 01A-A2B2B03. **Note:** Voltage is present for about two seconds.



Front View

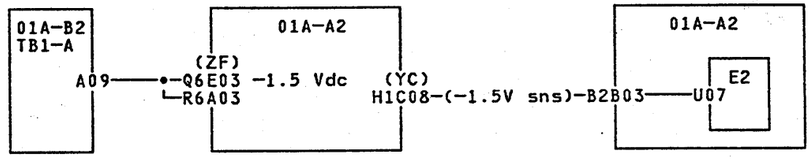
Left Side View





4381 B/M 2676380	MI Seq DA185	PN 6169193 1 of 2	EC A20558 01 Oct 84	EC A20559 03 Dec 84			

Step	Conditions	Instructions
4	Is voltage -1.433 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.
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-A2H2D08 + lead at 01A-A2H1C08. **Note:** Voltage is present for about two seconds.
6	Is voltage -1.463 to -1.585 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-A2YC to 01A-A2B2. **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 -1.5 Vdc at the following points: - lead at 01A-A2Q2D08 + lead at 01A-A2Q6E03. **Note:** Voltage is present for about two seconds.
8	Is voltage -1.463 to -1.585 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. 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-B2 TB1-B bus + lead at 01A-B2 TB1-A bus. **Note:** Voltage is present for about two seconds.
10	Is voltage -1.463 to -1.585 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-A2ZF. **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.
11	Go to **Instructions** column.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.



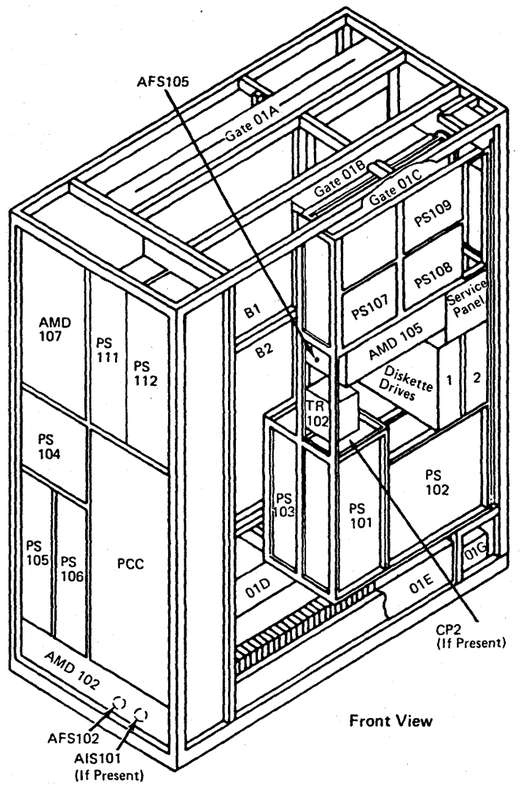
Ref Codes 11A3040E, 11A3050E

These Ref Codes indicate the -1.5V from PS105 out of tolerance at the 01A-A4 board.

Possible causes:

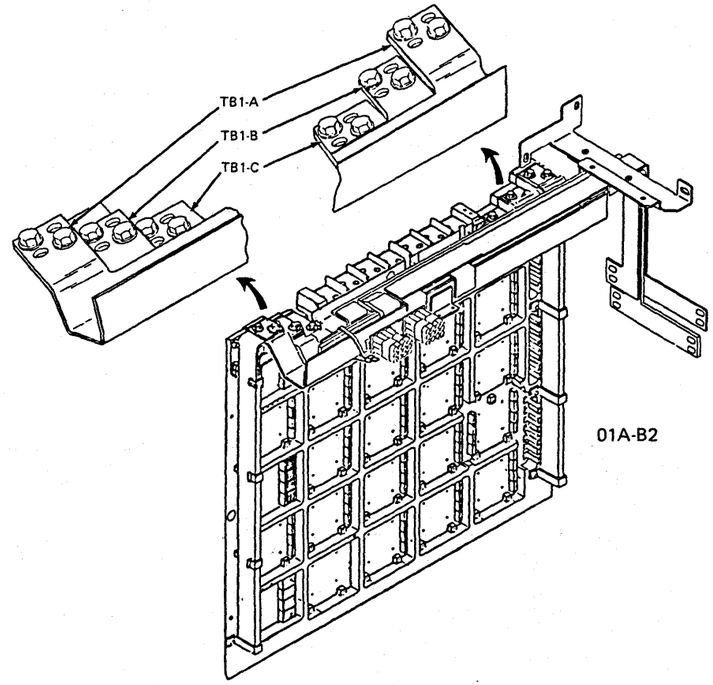
- PS105
- 01A-A2 board
- 01A-A4 board
- 01A-A2E2 sense card
- Power supply adjustment.

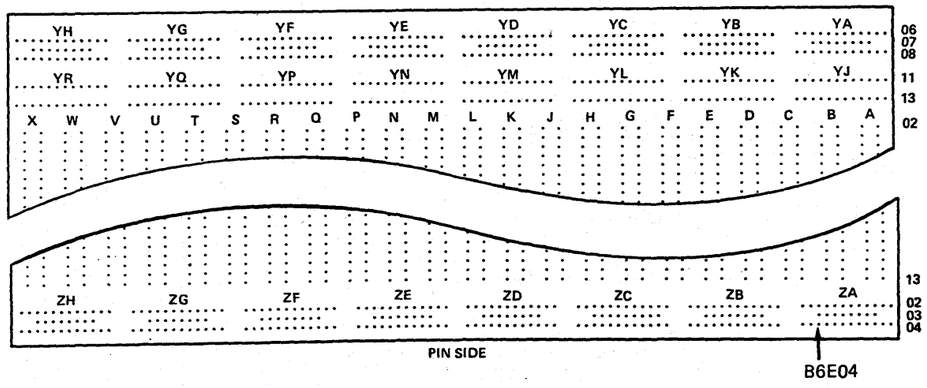
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Check the 01A-B2 TB1 bus bars and PS105 for loose bolts, screws and cables. 4. Press service panel Power On. 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only). 7. Measure for -1.5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2S03. **Note:** Voltage is present for about two seconds.
2	Is voltage -1.433 to -1.59 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.	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-A2A5D08 + lead at 01A-A2A5B04. **Note:** Voltage is present for about two seconds.



Left Side View

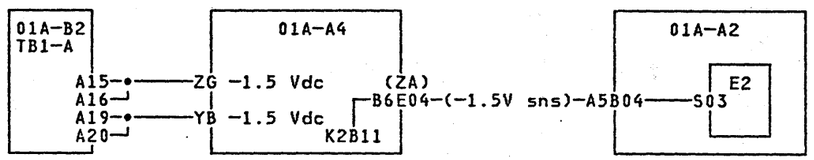
Front View





Step	Conditions	Instructions
4	Is voltage -1.433 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.
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-A4B5D08 + lead at 01A-A4B6E04. **Note:** Voltage is present for about two seconds.
6	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 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.	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-A4K2D08 + lead at 01A-A4K2B11. **Note:** Voltage is present for about two seconds.
8	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-A4 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

Step	Conditions	Instructions
9	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-B2 TB1-B bus + lead at 01A-B2 TB1-A bus. **Note:** Voltage is present for about two seconds.
10	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 cable from 01A-B2 TB1-A bus to 01A-A4YB and ZG. **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.
11	Go to **Instructions** column.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.



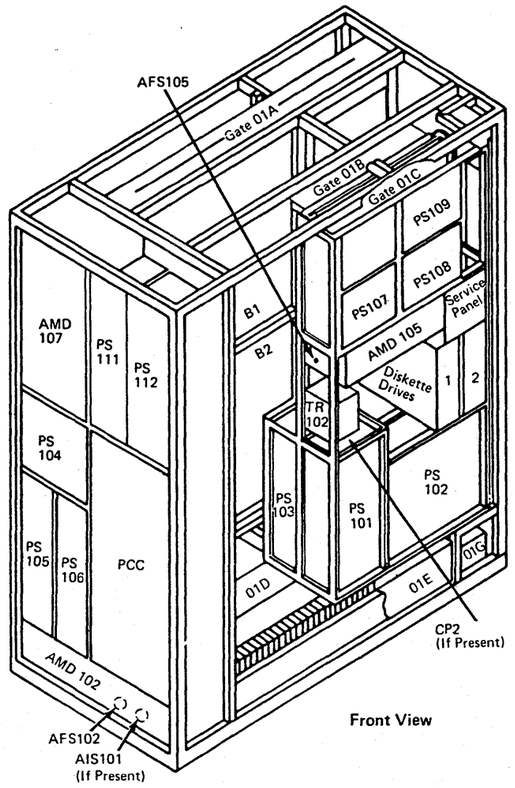
Ref Codes 11A3140E, 11A3150E

These Ref Codes indicate the -1.5V from PS105 is out of tolerance at the 01A-A3 board.

Possible causes:

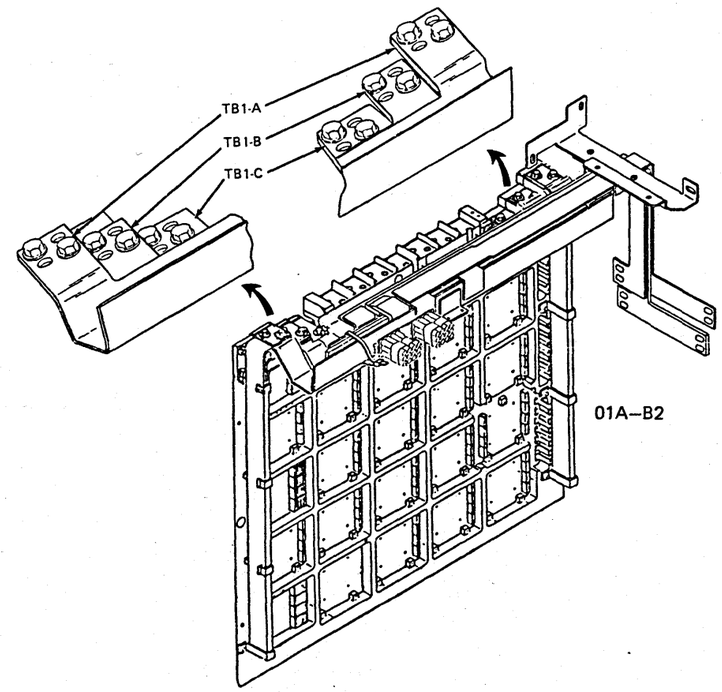
- 01A-A2E2 sense card
- 01A-A2 board
- 01A-A3 board
- Power supply adjustment.

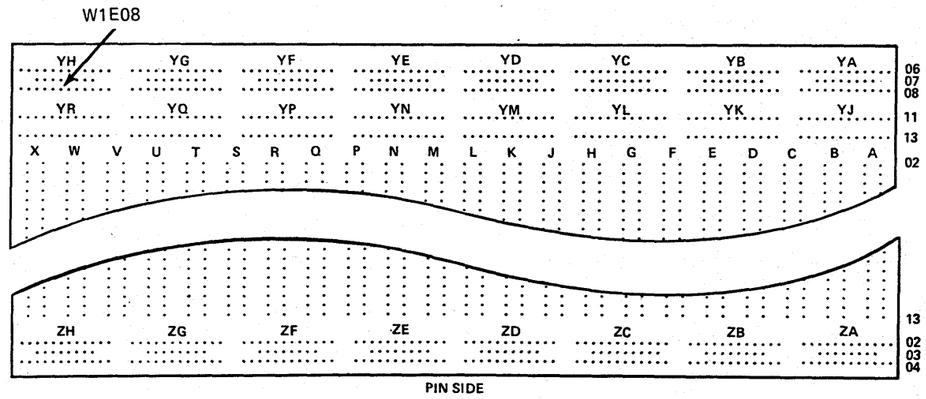
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Check the 01A-B2 TB1 bus bars and PS105 for loose bolts, screws and cables. 4. Press service panel Power On. 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only). 7. Measure for -1.5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2P13. **Note:** Voltage is present for about two seconds.
2	Is voltage -1.433 to -1.59 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.	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-A2A5D08 + lead at 01A-A2A5D05. **Note:** Voltage is present for about two seconds.



Front View

Left Side View

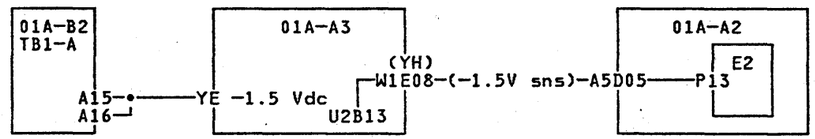




PIN SIDE

4381 B/M 2676380	MI Seq DA195	PN 6169195 1 of 2	EC A20558 01 Oct 84	EC A20559 03 Dec 84			

Step	Conditions	Instructions
4	Is voltage -1.433 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.
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-A3W2D08 + lead at 01A-A3W1E08. **Note:** Voltage is present for about two seconds.
6	Is voltage -1.478 to -1.57 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 the cable from 01A-A3YH 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.	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-A3U2J08 + lead at 01A-A3U2B13. **Note:** Voltage is present for about two seconds.
8	Is voltage -1.478 to -1.57 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-A3 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 -1.5 Vdc at the following points: - lead at 01A-B2 TB1-B bus + lead at 01A-B2 TB1-A bus. **Note:** Voltage is present for about two seconds.
10	Is voltage -1.478 to -1.57 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-A3YE. **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.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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.



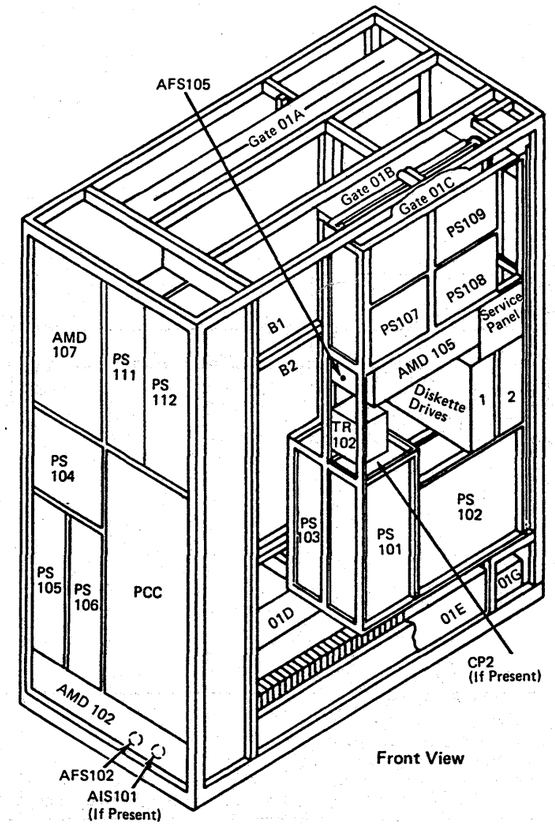
Ref Codes 11A3840E, 11A3850E, 11A3850C

These Ref Codes indicate that the air inlet temperature is out of tolerance.

Possible causes:

- Air Inlet Sensor (AIS)
- AIS sense line
- 01A-A2D2 sense card
- 01A-A2E2 sense card
- 01A-A2 board
- Room temperature.

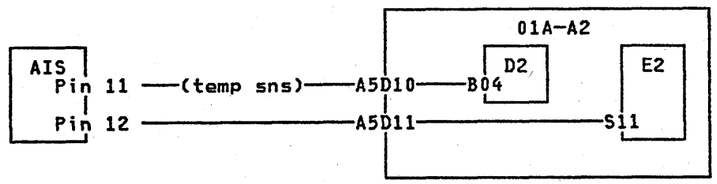
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set the CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select Analog Voltage/Temp (QWA) screen. 5. Check temperature displayed.
2	Is the temperature less than 5 degrees Celsius or greater than 42 degrees Celsius?	Go to step 4.
3	Go to **Instructions** column.	The input air temperature is in the warning range. 1. Check AMD102 filter for dirt. 2. Ensure ample air flow to processor. 3. Ensure room air conditioner is operating. 4. If there have been repeated temperature warnings, exchange the AIS. 5. Go to page PR 5001.
4	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2B04.



Front View

Left Side View

Step	Conditions	Instructions
5	Is voltage +0.4 to +1.4 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.
6	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A5D08 + lead at 01A-A2A5D10.
7	Is voltage +0.4 to +1.4 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.
8	Go to **Instructions** column.	Measure for +3 Vdc at the following points: - lead at 01A-A2A5D08 + lead at 01A-A2A5D11.
9	Is voltage +2.7 to +3.3 Vdc?	Go to step 13.
10	Go to **Instructions** column.	Measure for +3 Vdc at the following points: - lead at 01A-A2E2D08. + lead at 01A-A2E2S11.
11	Is voltage +2.7 to +3.3 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 01A-A2E2 card. 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. Measure resistance at the following points: 01A-A2A5D10 to AIS pin 11 01A-A2A5D11 to AIS pin 12.
14	Is an open indicated at either 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 AIS to 01A-A2A5. **Note:** Check loose wires 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.
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 the AIS. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



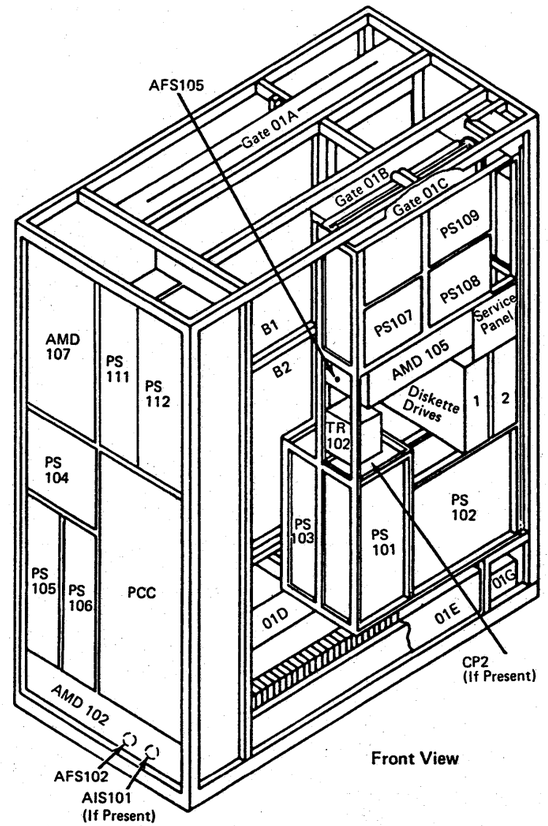
Ref Codes 1115050E, 1115250E, 11A4240E, 11A4250E, 12A4240E, 12A4250E

These Ref Codes indicate CP2, CP3, or CP4 is tripped on PS103.

Possible causes:

- PS103
- Short on 01A-A3 board
- Short on 01B-A1 board
- Short on PS104 through PS112.

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 any tripped CP in PS103. 3. Reset any tripped CP and press Power On. 4. If CP trips again or same Ref Code, go to step 2. 5. If power is complete, go to page END 001.
2	Is CP2 or CP4 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set the CE Mode switch to CE Mode. 3. Reset tripped CP. 4. Go to step 33.
3	Is CP3 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set the CE Mode switch to CE Mode. 3. Reset tripped CP. 4. Go to step 5.
4	Are all CPs in the On position?	Use Ref Code 1124240E and the Ref Code list on PR 1001 to determine the PR entry page.
5	Go to **Instructions** column.	1. Disconnect PS103 J/P08 and J/P09. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UP (power-up processor only).

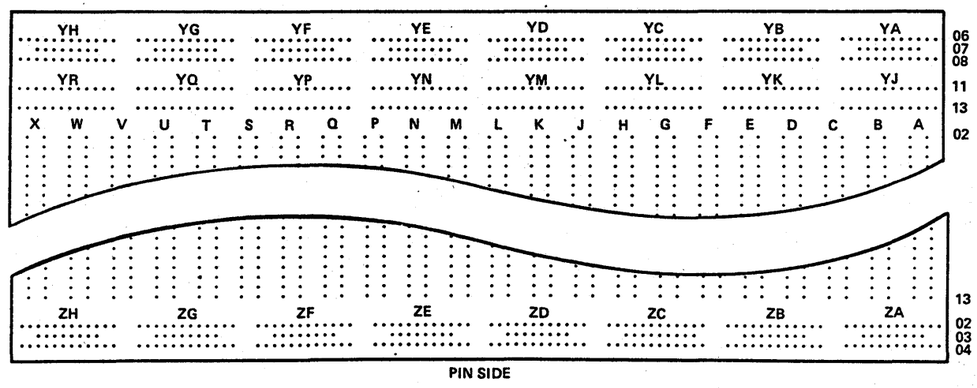


Front View

Left Side View

Step	Conditions	Instructions
6	Is CP3 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. Go to step 57.
7	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable PS103 P08. 3. Press service panel Power On. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
8	Is CP3 tripped?	Go to step 21.
9	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable PS103 P09. 3. Disconnect cable at 01A-A3YB and YF (pin side). 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
10	Is CP3 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Reset CP3. 4. Exchange cable from PS103 J/P09 to 01A-A3YB and YF. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 5. Go to step 57.

Step	Conditions	Instructions
11	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01A-A3YB and YF (pin side). 3. Remove all cards from the 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).
12	Is CP3 tripped?	Go to step 16.
13	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-A3 board. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
14	Is CP3 tripped?	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only) 3. Exchange card. 4. Reset CP3. 5. Repeat steps 13, 14, and 15 until all cards have been reinstalled; then go to step 57.
15	Go to **Instructions** column.	1. Repeat steps 13, 14, and 15 until all cards have been reinstalled; then go to step 57.



PR 1822

Step	Conditions	Instructions
16	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Remove all cables from the 01A-A3 board (card side only). 4. Reset CP3. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
17	Is CP3 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 CP3. 5. Go to step 57.
18	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall one cable in the 01A-A3 board. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
19	Is CP3 tripped?	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Exchange cable. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Reset CP3. 5. Repeat steps 18, 19, and 20 until all cables have been reinstalled; then go to step 57.
20	Go to **Instructions** column.	1. Repeat steps 18, 19, and 20 until all cables have been reinstalled; then go to step 57.

Step	Conditions	Instructions
21	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Disconnect cable at 01B-A1YB and YF (pin side). 3. Reset CP3. 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
22	Is CP3 tripped?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Reset CP3. 4. Exchange cable from PS103 J/P08 to 01B-A1YB and YF. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 5. Go to step 57.
23	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Reconnect cable at 01B-A1YB and YF (pin side). 3. Remove all cards from the 01B-A1 board. 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
24	Is CP3 tripped?	Go to step 28.
25	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 01B-A1 board. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).

Step	Conditions	Instructions
26	Is CP3 tripped?	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Exchange card. 4. Reset CP3. 5. Repeat steps 25, 26, and 27 until all cards have been reinstalled; then go to step 57.
27	Go to **Instructions** column.	1. Repeat steps 25, 26, and 27 until all cards have been reinstalled; then go to step 57.
28	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Remove all cables from the 01B-A1 board (card side only). 4. Reset CP3. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
29	Is CP3 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 01B-A1 board. 4. Reset CP3. 5. Go to step 57.
30	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reinstall one cable in the 01B-A1 board. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
31	Is CP3 tripped?	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Exchange cable. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Reset CP3. 5. Repeat steps 30, 31, and 32 until all cables have been reinstalled; then go to step 57.
32	Go to **Instructions** column.	1. Repeat steps 30, 31, and 32 until all cables have been reinstalled; then go to step 57.
33	Go to **Instructions** column.	1. Disconnect cables PS103 J/P04, J/P05, J/P06, and J/P07. 2. Press service panel Power On. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UP (power-up processor only).
34	Is CP2 or CP4 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. Reset CP2 or CP4. 5. Go to step 57.

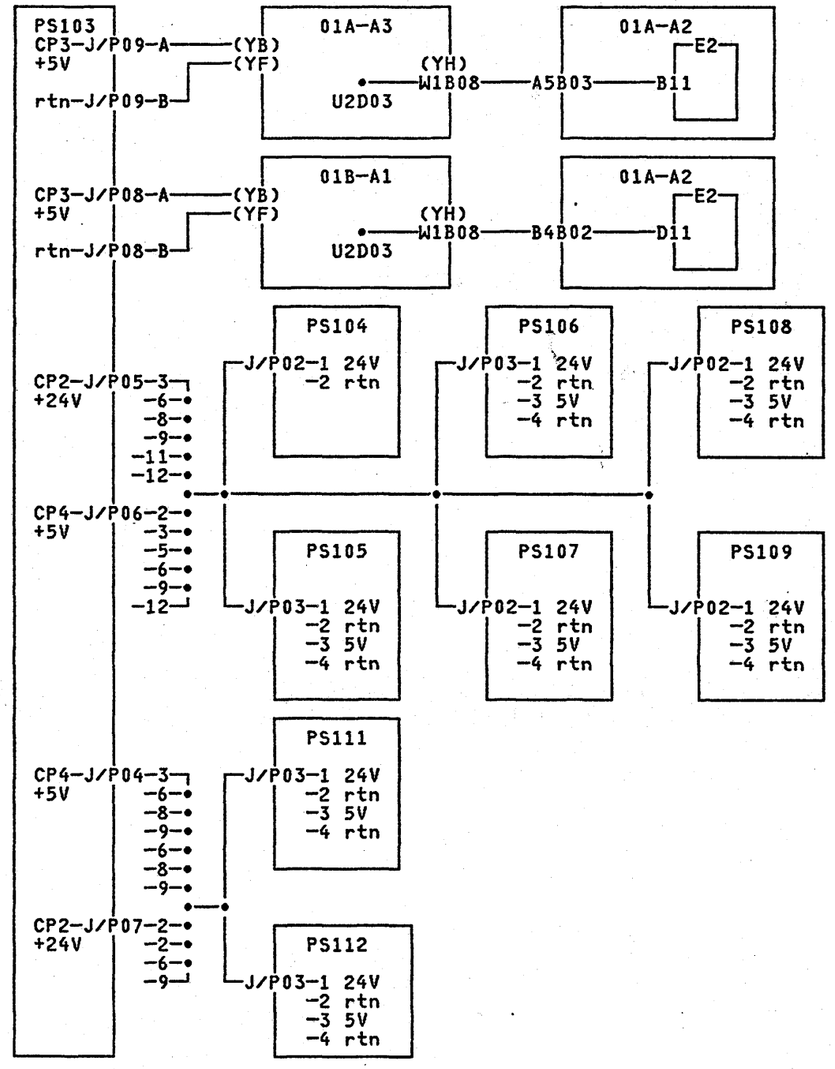
Step	Conditions	Instructions
35	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect cables PS103 P04 and P07. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
36	Is CP2 or CP4 tripped?	Go to step 51.
37	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect cables PS103 P05 and P06. 4. Disconnect the following cables: PS104 J/P02 PS105 J/P03 PS106 J/P03 PS107 J/P02 PS108 J/P02 PS109 J/P02. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
38	Is CP2 or CP4 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 PS103 J/P05 and J/P06 to PS104 through PS109. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Reset CP2 or CP4. 5. Go to step 57.

Step	Conditions	Instructions
39	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect cable PS104 P02. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
40	Is CP2 or CP4 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 PS104. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Reset CP2 or CP4. 5. Go to step 57.
41	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect cable PS105 P03. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
42	Is CP2 or CP4 tripped?	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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. Reset CP2 or CP4. 5. Go to step 57.

Step	Conditions	Instructions
43	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect cable PS106 P03. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
44	Is CP2 or CP4 tripped?	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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. Reset CP2 or CP4. 5. Go to step 57.
45	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect cable PS107 P02. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
46	Is CP2 or CP4 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 PS107. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Reset CP2 or CP4. 5. Go to step 57.
47	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect cable PS108 P02. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
48	Is CP2 or CP4 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 PS108. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Reset CP2 or CP4. 5. Go to step 57.
49	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect cable PS109 P02. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
50	Is CP2 or CP4 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 PS109. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Reset CP2 or CP4. 5. Go to step 57.

Step	Conditions	Instructions
51	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Disconnect the following cables: PS111 J/P03 PS112 J/P03. 4. Reset CP2 or CP4. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only).
52	Is CP2 or CP4 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 PS103 J/P04, J/P07 to PS111 and PS112. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Reset CP2 or CP4. 5. Go to step 57.
53	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect cable PS111 P03. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
54	Is CP2 or CP4 tripped?	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS111. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Reset CP2 or CP4. 5. Go to step 57.
55	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DP (power-down processor only). 3. Reconnect cable PS112 P03. 4. Select the Partial Power Up/Down (QWW) screen. 5. Select UP (power-up processor only).
56	Is CP2 or CP4 tripped?	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS112. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Reset CP2 or CP4.

Step	Conditions	Instructions
57	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS103 01A-A3 board 01B-A1 board PS104 through PS112. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



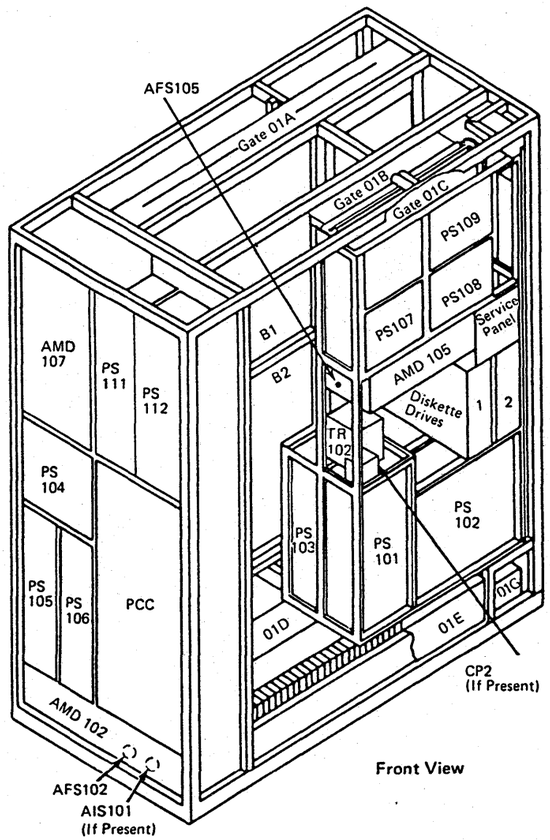
Ref Codes 11A4330E, 17A4330E

These Ref Codes indicate the I/O failed to power on.

Possible causes:

- I/O control unit
- Power control cable
- PCI panel
- PS101
- 01A-A2D2 sense card
- I/O time-out value.

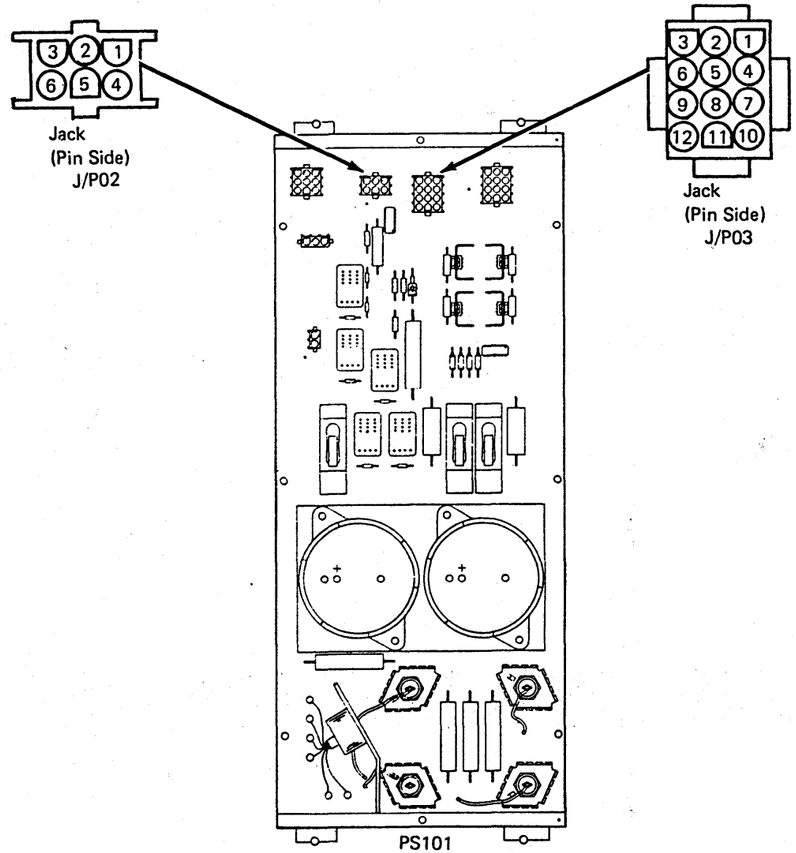
Step	Conditions	Instructions
1	Is this a new installation or did you just add control units?	Go to step 44.
2	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. **CAUTION** **+24V may be present on power control cable.** 3. Plug the PCI dummy plug into PCI panel No. 1 CU1 position. 4. Press service panel Power On. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UI (power-up I/O only). 7. Check the I/O status (displayed on QWW screen).
3	Does I/O status equal power is on?	Go to step 36.

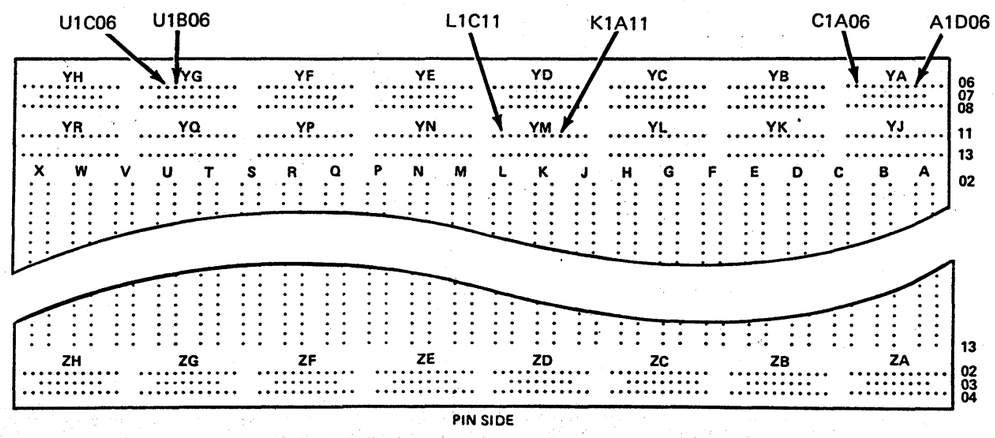


Front View

Left Side View

Step	Conditions	Instructions
4	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DI (power-down I/O only). **CAUTION** **+24V may be present on power control cable.** 3. Reconnect power control cable to PCI panel No. 1 CU1 position. 4. Return dummy plug to original position. 5. Select the Diagnostic Power Up (QWD) screen. 6. Select option I (stop after power-up I/O). 7. Measure for +24 Vdc at the following points: - lead at frame ground + lead at PS101 P02-3.
5	Is voltage less than +22 Vdc?	Go to step 25.
6	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at frame ground + lead at PS101 P02-5.
7	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 PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 47.
8	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at frame ground + lead at PS101 P02-4.
9	Is voltage less than +22 Vdc?	Go to step 35.





PR 1832

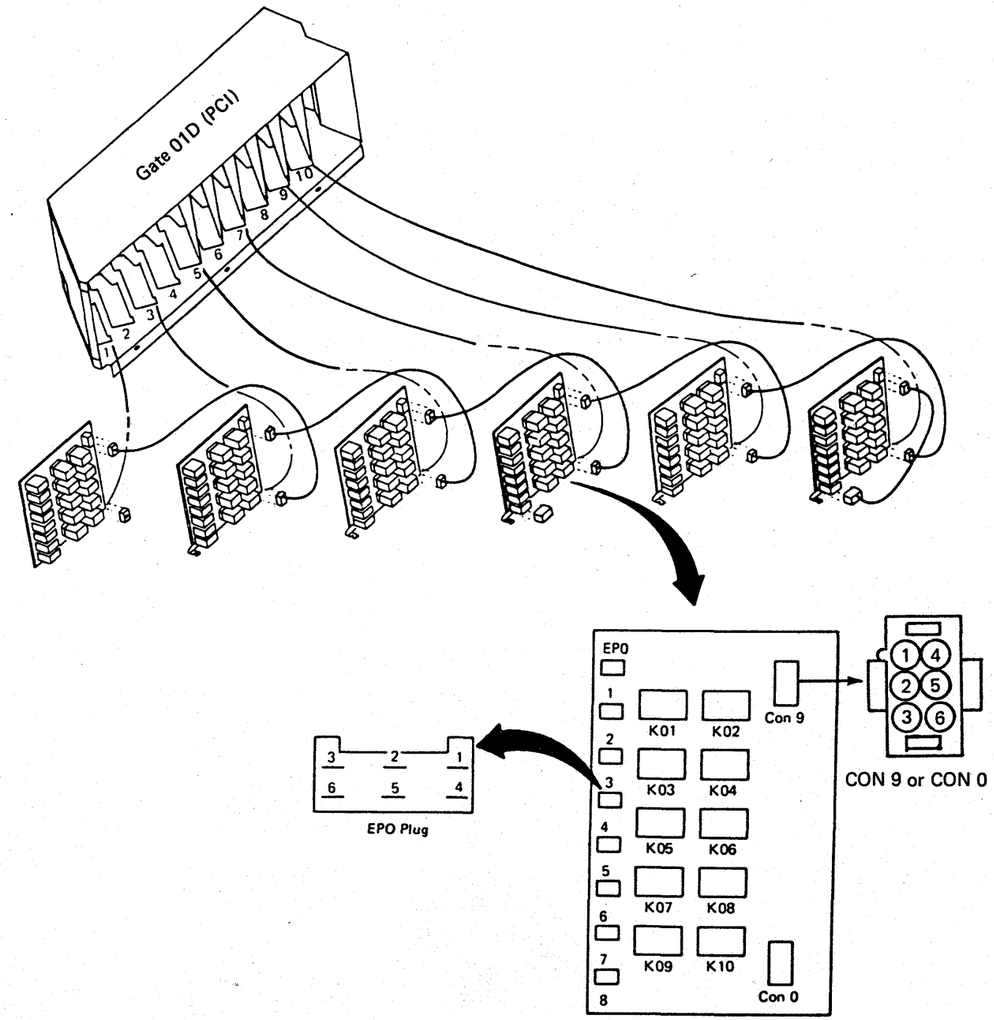
Step	Conditions	Instructions
10	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS101 P03-6.
11	Is voltage less than +2.5 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 47.
12	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2D11.
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 01A-A2D2 card. 4. Go to step 47.
14	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2C1A06.
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 01A-A2 board. 4. Go to step 47.
16	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2C1A06.
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 01A-A2 board. 4. Go to step 47.
18	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1D2D08 + lead at 01A-A1L1C11.
19	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-A2YA to 01A-A1YM. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 47.
20	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1D2D08 + lead at 01A-A1U1C06.
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-A1 board. 4. Go to step 47.
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-A1YG to PS101 P03. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 47.
23	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1D2D08 + lead at 01A-A1U1B06.
24	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. Go to step 47.
25	Go to **Instructions** column.	1. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2B12.

Step	Conditions	Instructions
26	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-A2D2 card. 4. Go to step 47.
27	Go to **Instructions** column.	1. Select the Diagnostic Power Up (QWD) screen. 2. Select option I (stop after power-up I/O). 3. Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS101 P03-9.
28	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 PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 47.
29	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1D2D08 + lead at 01A-A1U1B06.
30	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 PS101 P03 to 01A-A1YG. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 47.
31	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1D2D08 + lead at 01A-A1K1A11.

Step	Conditions	Instructions
32	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-A1 board. 4. Go to step 47.
33	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2A1D06.
34	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-A2YA to 01A-A1YM. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 47.
35	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 47.
36	Go to **Instructions** column.	1. Select the Partial Power Up/Down (QWW) screen. 2. Select DI (power-down I/O only). **CAUTION** **+24V may be present on power control cable.** 3. Reconnect power control cable to PCI panel No. 1 CU1 position. 4. Return dummy plug to original position. 5. Select the Diagnostic Power Up (QWD) screen. 6. Select option I (stop after power-up I/O). 7. Locate the last PCI panel J/P09. 8. Measure for +24 Vdc at the following points: - lead at frame ground + lead at J/P09-1 (last PCI panel).

PR 1834

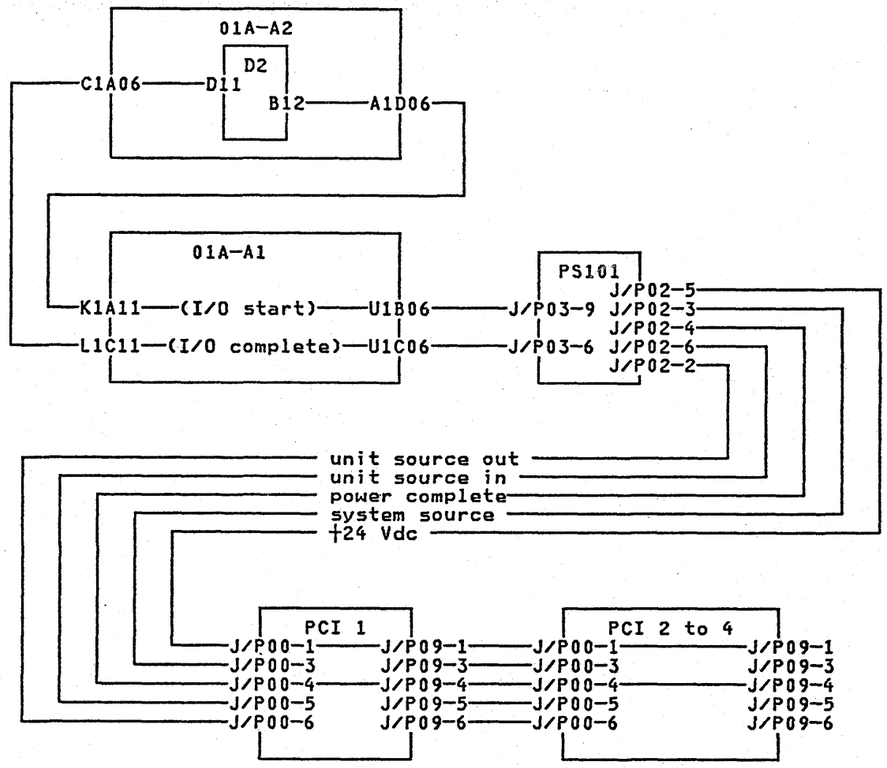
Step	Conditions	Instructions
37	Is voltage less than +22 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. One of the following cables is open (see note). PS101 P02-5 to PCI panel No. 1 P00-1. PCI panel No. 1 P09-1 to PCI panel No. 2 P00-1. PCI panel No. 2 P09-1 to PCI panel No. 3 P00-1. PCI panel No. 3 P09-1 to PCI panel No. 4 P00-1. **Note:** PCI panels No. 5 through No. 8 use the same points. 4. Exchange the failing cable. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 5. Go to step 47.
38	Go to **Instructions** column.	1. Locate last PCI panel. 2. Measure for +24 Vdc at the following points: - lead at frame ground + lead at J/P09-4 (last PCI panel).



Step	Conditions	Instructions
39	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. One of the following cables is open (see note). PS101 P02-4 to PCI panel No. 1 P00-4. PCI panel No. 1 P09-4 to PCI panel No. 2 P00-4. PCI panel No. 2 P09-4 to PCI panel No. 3 P00-4. PCI panel No. 3 P09-4 to PCI panel No. 4 P00-4. **Note:** PCI panels No. 5 through No. 8 use the same points. 4. Exchange failing cable. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 5. Go to step 47.
40	Go to **Instructions** column.	1. This is a common procedure to isolate an I/O power time-out to a PCI panel or control unit. Start with PCI panel No. 1 P01 and continue sequentially until each control unit plug has been metered. 2. Measure for +24 Vdc at the following points: - lead at frame ground + lead at PCI POX-4 (X is P01 through P08 on each PCI).
41	Is voltage less than +22 Vdc?	The I/O power on sequence is failing at this plug position. 1. Isolate to one of the following: I/O control unit Power control cable PCI panel. 2. Go to step 47.

PR 1836

Step	Conditions	Instructions
42	Is this the last PCI panel and plug position or the dummy plug position?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange last PCI panel or dummy plug cable assembly. 4. Go to step 47.
43	Is voltage greater than +22 Vdc?	Go to step 41 and next sequential plug position.
44	Is this a new installation or did you just add control units?	The I/O time-out value may not be long enough to allow the I/O to power up. Verify or change the time-out value. 1. Set CE Mode switch to CE Mode. 2. Select the System Configuration (QFO) screen. 3. Check the I/O time-out value (value should equal 1 to 2 minutes for each control unit). 4. If necessary, increase the I/O time-out value; re-IML. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UC (power-up processor and I/O).
45	Is power complete?	1. Set CE Mode switch to Normal. 2. Go to page END 001.
46	Go to **Instructions** column.	Go to step 2.
47	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS101 01A-A1 board 01A-A2 board PCI panels No. 1 through No. 4. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



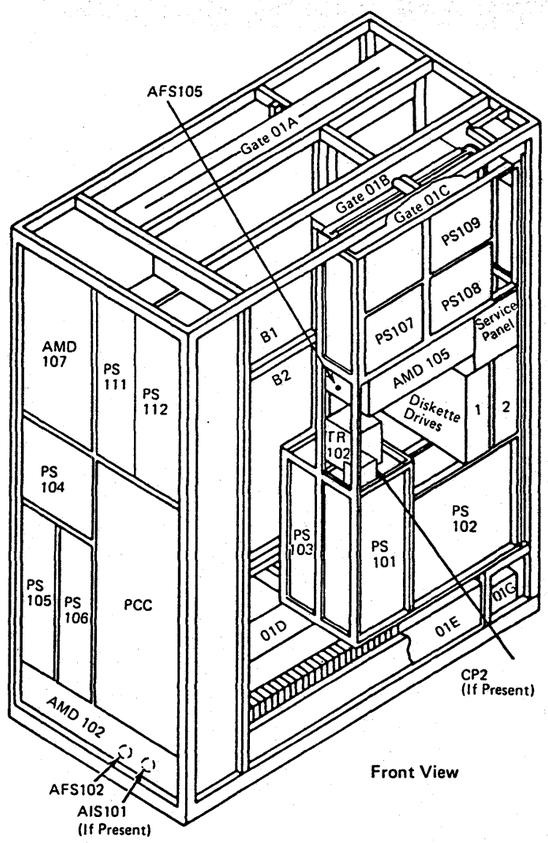
Ref Codes 1114250E, 11A4440E, 11A4450E

These Ref Codes indicate that PCC K03 has failed to pick or the sense line is failing.

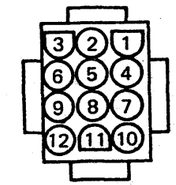
Possible causes:

- 01A-A2D2 card
- 01A-A1V2 card
- 01A-A1U2 card
- PCC K03
- PS101.

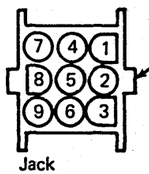
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Check for PS101 CP3 tripped.
2	Is CP3 tripped?	Go to page PR 0141.
3	Go to **Instructions** column.	1. Press service panel Power On. 2. Select the Diagnostic Power Up (QWD) screen. 3. Select option A (stop after K03 picked). 4. Measure for +24 Vdc at the following points: - lead at PS101 J/P04-11 + lead at PS101 J/P04-8.
4	Is voltage less than +22 Vdc?	Go to step 20.
5	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at frame ground + lead at PCC J/P03-4.
6	Is voltage less than +22 Vdc?	Go to step 43.
7	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2D12.
8	Is voltage greater than +3.5 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 51.
9	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2B1E06.



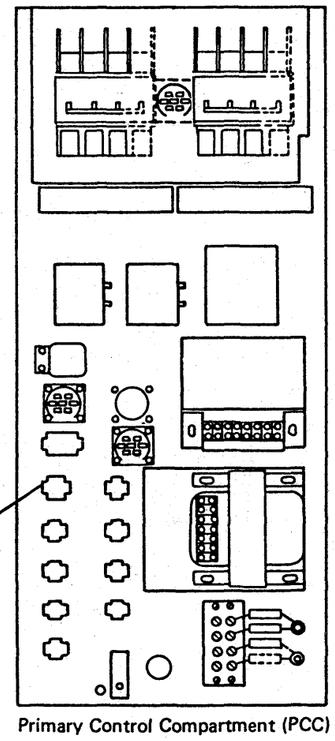
Left Side View



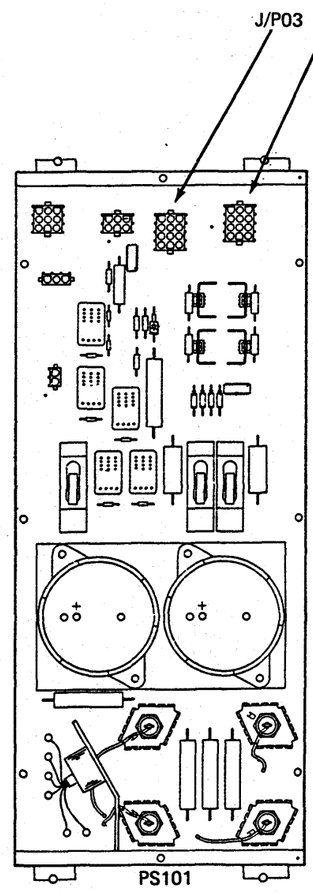
Jack
(Pin Side)



Jack
(Wiring Side)
J/P03

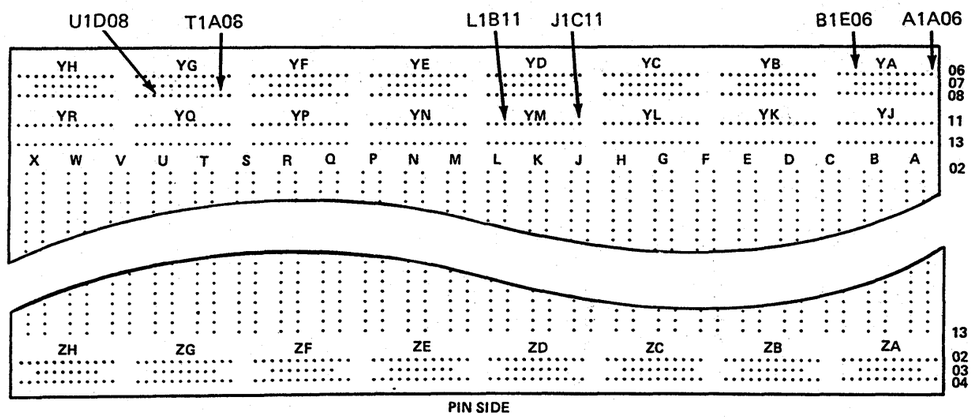


Primary Control Compartment (PCC)



PS101

Step	Conditions	Instructions
10	Is voltage greater than +3.5 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 51.
11	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A1L1B11.
12	Is voltage greater than +3.5 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-A1YM to 01A-A2YA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 51.
13	Go to **Instructions** column.	Measure for +4 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A1U2D10.
14	Is voltage greater than +3.5 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. Go to step 51.
15	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A1U2G08.
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. Go to step 51.
17	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A1X2B02.
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. Go to step 51.

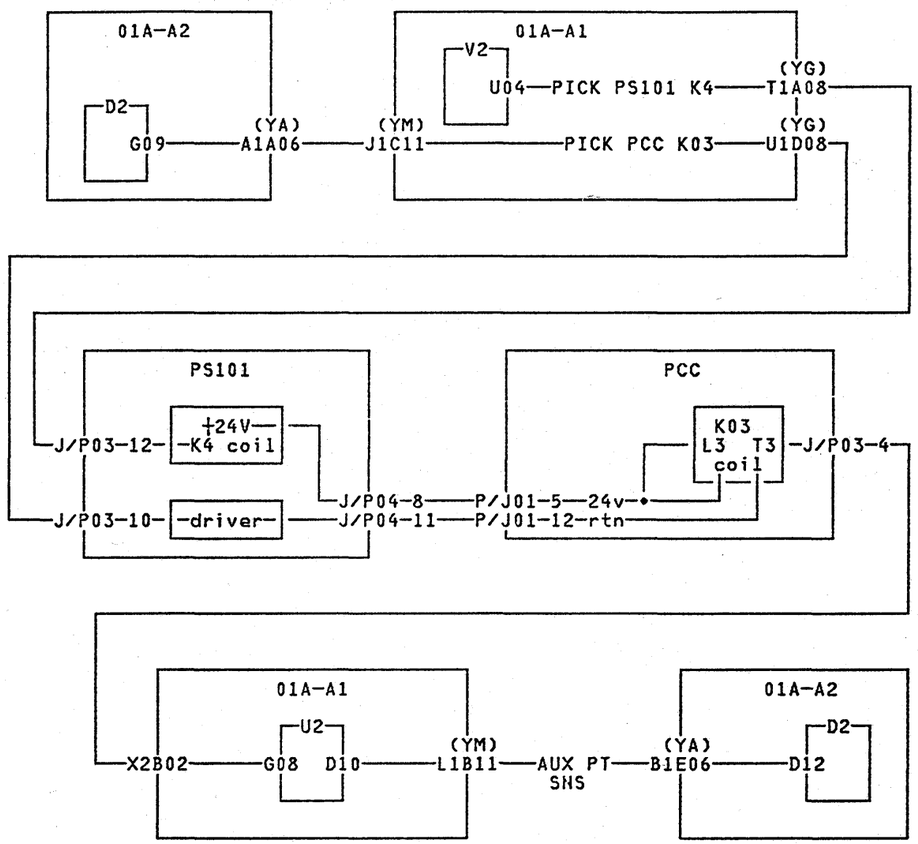


Step	Conditions	Instructions
19	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from PCC P03 to 01A-A1X2. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 51.
20	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2G09.
21	Is voltage less than +4.5 Vdc?	Go to step 29.
22	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1V2U04.
23	Is voltage less than +4.5 Vdc?	Go to step 38.
24	Go to **Instructions** column.	1. Press Service Panel Power On. 2. Select the Diagnostic Power Up (QWD) screen. 3. Select option A (stop after K03 picked). 4. Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS101 J/P03-12.
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-A1V2 card. 4. Go to step 51.
26	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS101 J/P03-10.
27	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-A2D2 card. 4. Go to step 51.

Step	Conditions	Instructions
28	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 PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 51.
29	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2A1A06.
30	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 01A-A2 board. 4. Go to step 51.
31	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1J1C11.
32	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-A2YA to 01A-A1YM. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 51.
33	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A1U1D08.
34	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 01A-A1 board. 4. Go to step 51.
35	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS101 J/P03-10.

Step	Conditions	Instructions
36	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 PS101 P03 to 01A-A1YG. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 51.
37	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 PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 51.
38	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1T1A08.
39	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 01A-A1 board. 4. Go to step 51.
40	Go to **Instructions** column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS101 J/P03-12.
41	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 PS103 P03 to 01A-A1YG. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 51.
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. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 51.
43	Go to **Instructions** column.	Measure for +25 Vdc at the following points: - lead at PCC K03-B(coil) + lead at PCC K03-A(coil).
44	Is voltage less than +0.8 Vdc.	Go to step 48.
45	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PCC K03-T3 + lead at PCC K03-L3.
46	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 PCC K03 contactor. 4. Set PCC CB1 and CB2 on. 5. Go to step 51.
47	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 PCC K03 to PCC P03. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Go to step 51.

Step	Conditions	Instructions
48	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at PCC J/P01-12 + lead at PCC J/P01-5.
49	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 PCC P01 to PCC K03 contactor. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Go to step 51.
50	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 P01 to PS101 P04. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable.
51	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PS101 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.



0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

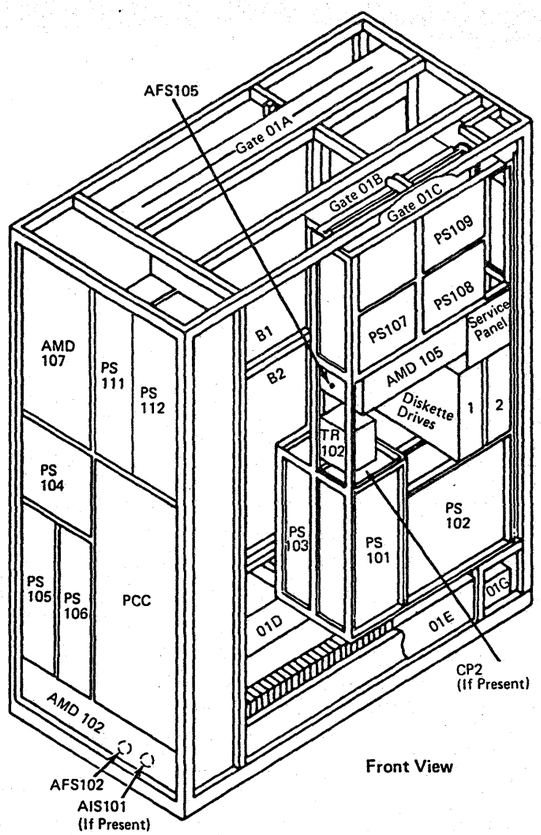
Ref Codes 1114350E, 11A4540E, 11A4550E

These Ref Codes indicate that PCC K04 has failed to pick or the sense line is failing.

Possible causes:

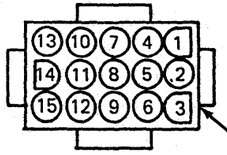
- 01A-A2D2 sense card
- 01A-A1U2 reset card
- PCC K04
- PS101.

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. Measure for +24 Vdc at the following points: - lead at frame ground + lead at PCC J/P03-2. 5. Select the Partial Power Up/Down (QWW) screen. 6. Select UP (power-on processor only). **Note:** Voltage is present for about two seconds.
2	Is voltage greater than +22 Vdc?	Go to step 8.
3	Go to **Instructions** column.	1. Select the Diagnostic Power Up (QWD) screen. 2. Select option A (stop after K03 picked). 3. Measure for +24 Vdc at the following points: - lead at frame ground + lead at PS101 J/P04-12.
4	Is voltage less than +22 Vdc?	Go to step 21.

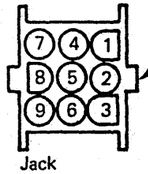


Left Side View

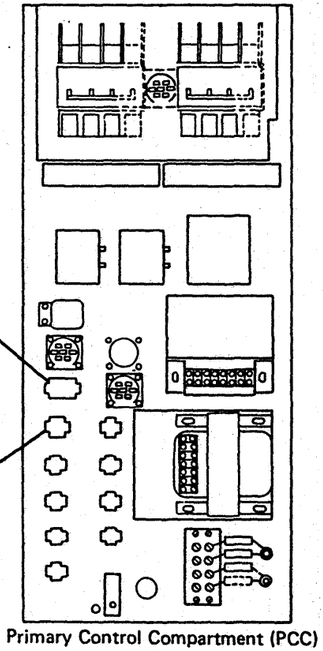
Front View



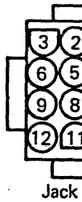
Jack
(Wiring Side)
J/P01



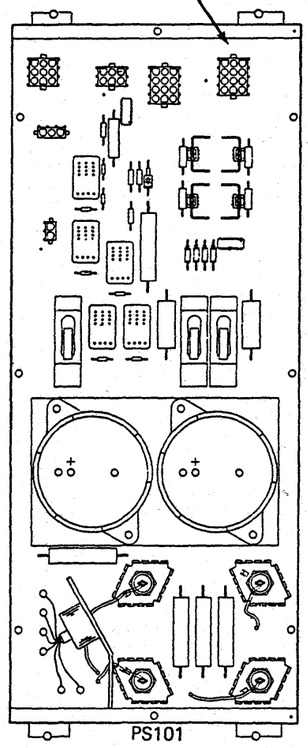
Jack
(Wiring Side)
J/P03



Primary Control Compartment (PCC)

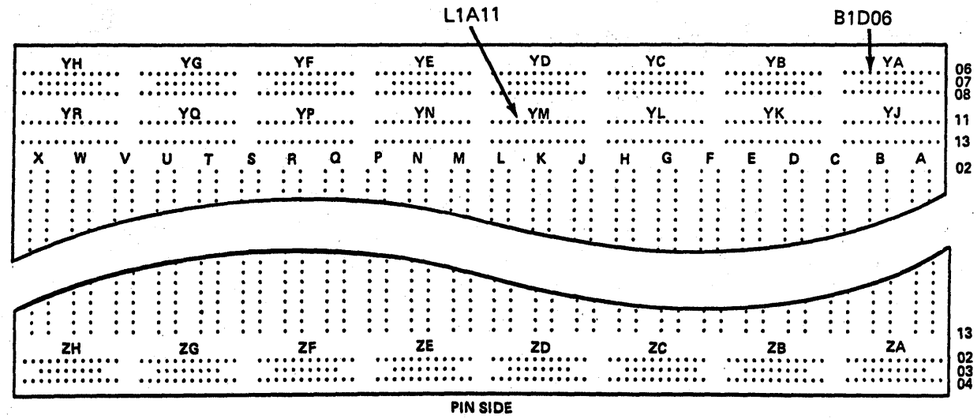


Jack
(Pin Side)
J/P04



PS101

Step	Conditions	Instructions
5	Go to **Instructions** column.	1. Press ENTER to end Diagnostic Stop. 2. Measure for +24 Vdc at the following points: - lead at frame ground + lead at PS101 J/P04-12. 3. Select the Partial Power Up/Down (QWW) screen. 4. Select UP (power-on processor only). **Note:** Voltage is present for about two seconds.
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 PCC K04 contactor. 4. Go to step 31.
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 PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 31.
8	Go to **Instructions** column.	1. Measure for +4 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2B09. 2. Select the Partial Power Up/Down (QWW) screen. 3. Select UP (power-on processor only). **Note:** Voltage is present for about two seconds.

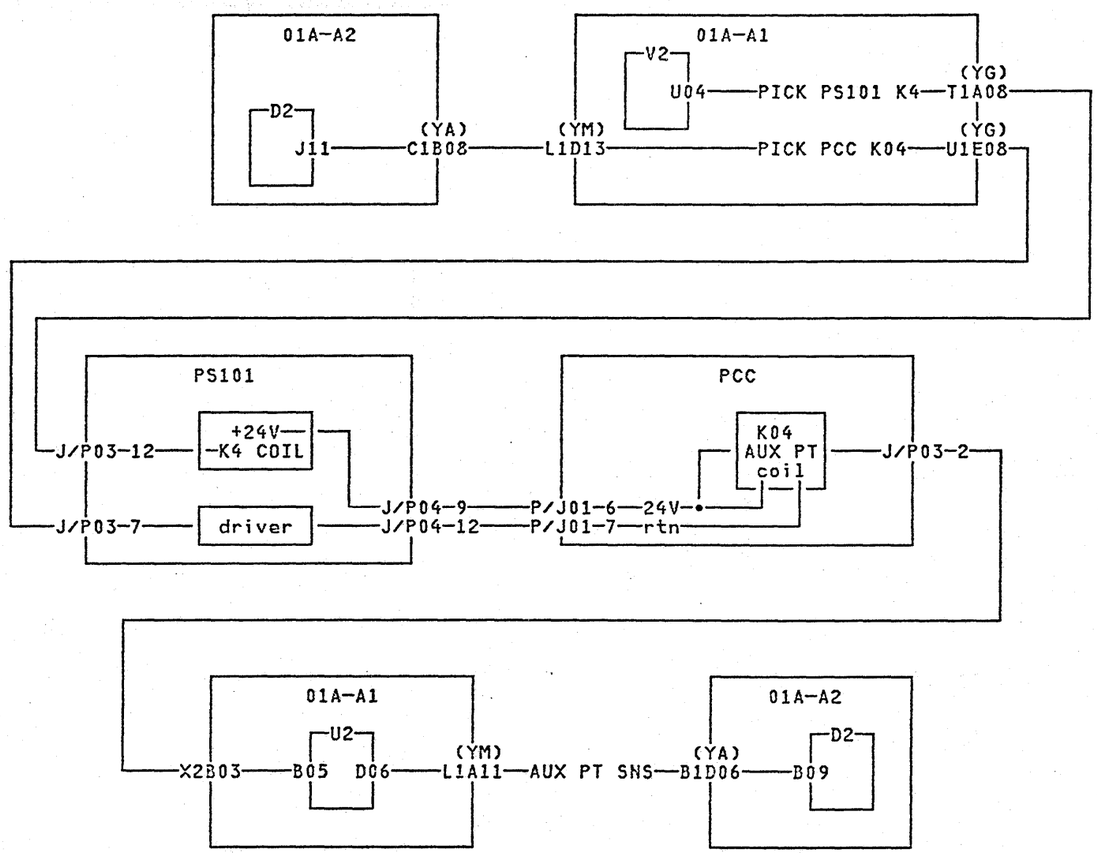


PR 1852

Step	Conditions	Instructions
9	Is voltage greater than +3.5 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 31.
10	Go to **Instructions** column.	1. Measure for +4 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2B1D06. 2. Select the Partial Power Up/Down (QWW) screen. 3. Select UP (power-on processor only). **Note:** Voltage is present for about two seconds.
11	Is voltage greater than +3.5 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 31.
12	Go to **Instructions** column.	1. Measure for +4 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A1L1A11. 2. Select the Partial Power Up/Down (QWW) screen. 3. Select UP (power-on processor only). **Note:** Voltage is present for about two seconds.
13	Is voltage greater than +3.5 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-A1YM to 01A-A2YA. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 31.
14	Go to **Instructions** column.	1. Measure for +4 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A1U2D06. 2. Select the Partial Power Up/Down (QWW) screen. 3. Select UP (power-on processor only). **Note:** Voltage is present for about two seconds.
15	Is voltage greater than +3.5 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. Go to step 31.
16	Go to **Instructions** column.	1. Measure for +24 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A1U2B05. 2. Select the Partial Power Up/Down (QWW) screen. 3. Select UP (power-on processor only). **Note:** Voltage is present for about two seconds.
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 01A-A1U2 card. 4. Go to step 31.

Step	Conditions	Instructions
18	Go to **Instructions** column.	1. Measure for +24 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A1X2B03. 2. Select the Partial Power Up/Down (QWW) screen. 3. Select UP (power-on processor only). **Note:** Voltage is present for about two seconds.
19	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 31.
20	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 J/P03 to 01A-A1X2. **Note:** Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Go to step 31.
21	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at frame ground + lead at PS101 J/P04-9.
22	Is voltage less than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange PS101. **Note:** Check cable connectors for pushed in pins and seating before exchanging power supply. 3. Go to step 31.
23	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at frame ground + lead at PCC J/P01-6.
24	Is voltage less than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC J/P01 to PS101 J/P04. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 31.
25	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at frame ground + lead at both sides of PCC K04 coil.
26	Is voltage greater than +22 Vdc on one side only?	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 contactor. 4. Go to step 31.
27	Is voltage greater than +22 Vdc missing on both sides?	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/P01. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 4. Go to step 31.
28	Go to **Instructions** column.	Measure for +24 Vdc at the following points: - lead at frame ground + lead at PCC J/P01-7.

Step	Conditions	Instructions
29	Is voltage less than +22 Vdc?	1. Set PCC CB1 and CB2 off. 2. Exchange cable from PCC K04 to PCC J/P01. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable. 3. Go to step 31.
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. Exchange cable from PS101 P04 to PCC J/P01. **Note:** Check cable connectors for pushed in pins and seating before exchanging cable.
31	Go to **Instructions** column.	1. Ensure PCC CB1 and CB2 are off. 2. Reinstall and check all cables and cards for proper seating in the following areas: PCC box PS101 01A-A1 board 01A-A2 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.



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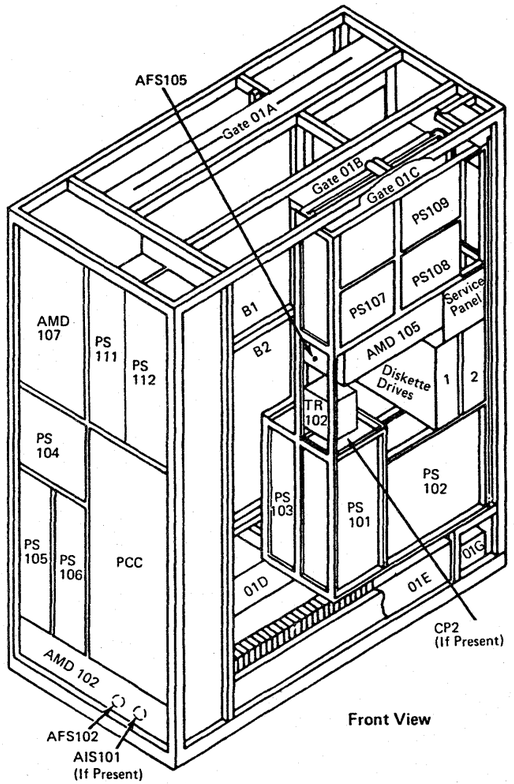
Ref Codes 11A5840E, 11A5850E

These Ref Codes indicate the -4.3V from PS106 is out of tolerance at the 01A-B2 board.

Possible causes:

- 01A-A2B2 paddle card
- 01A-A2A2 board
- 01A-A2B2 board
- 01A-A2D2 sense card
- 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. Check the 01A-B2 TB1 bus bars and PS106 for loose bolts, screws and cables. 4. Press service panel Power On. 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only). 7. Measure for -1.5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2S04. **Note:** Voltage is present for about two seconds.
2	Is voltage -1.44 to -1.56 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2D2 card. 3. 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-A2B2D08 + lead at 01A-A2B2B02. **Note:** Voltage is present for about two seconds.

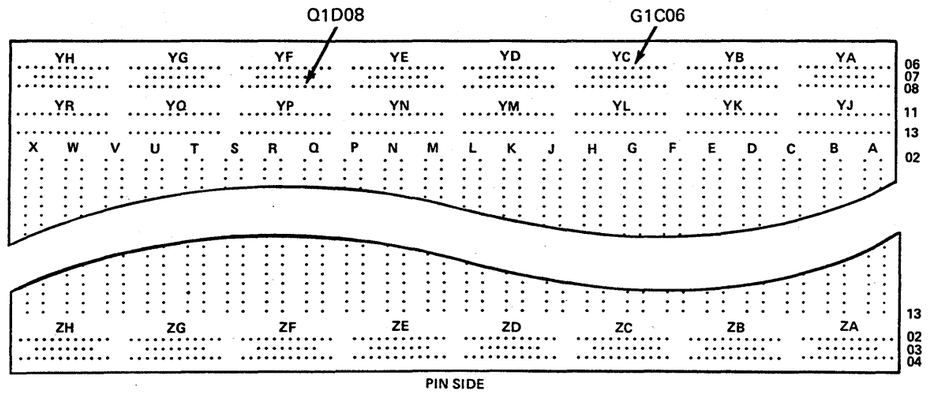


Front View

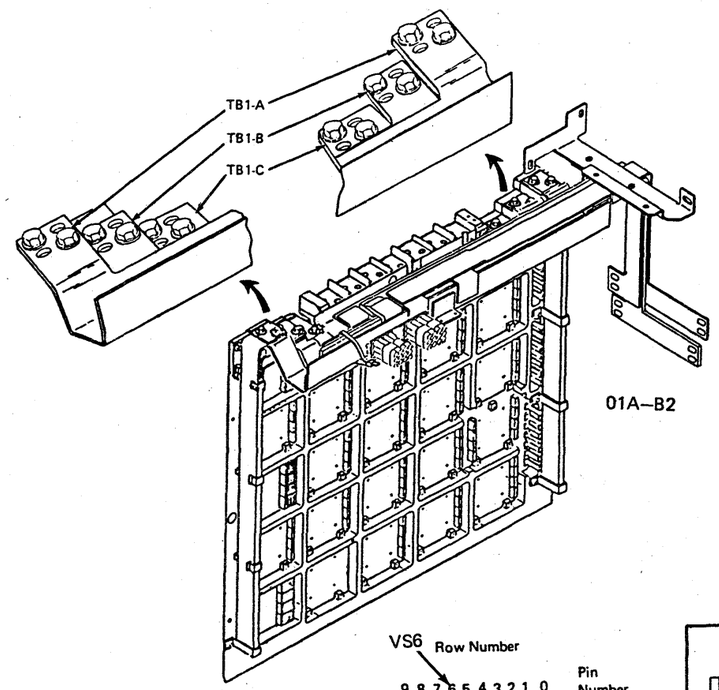
Left Side View

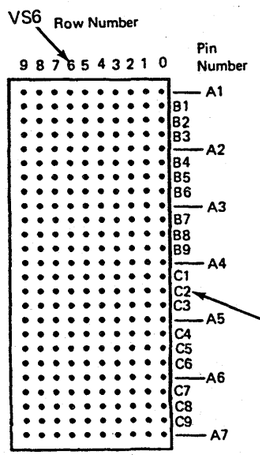
4381 B/M 2676380	MI Seq DA225	PN 6169201 1 of 3	EC A20558 01 Oct 84	EC A20559 03 Dec 84			

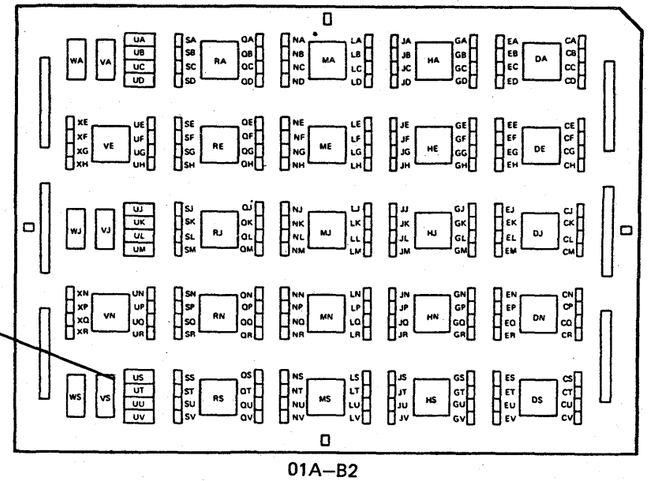
Step	Conditions	Instructions
4	Is voltage -1.44 to -1.56 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
5	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select UP (power-up processor only). 3. Measure for -4.3 Vdc at the following points: - lead at 01A-A2G2D08 + lead at 01A-A2G1C06. **Note:** Voltage is present for about two seconds.
6	Is voltage -4.246 to -4.42 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-A2YC to 01A-A2B2. **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 at 01A-A2Q2D08 + lead at 01A-A2Q1D08. **Note:** Voltage is present for about two seconds.

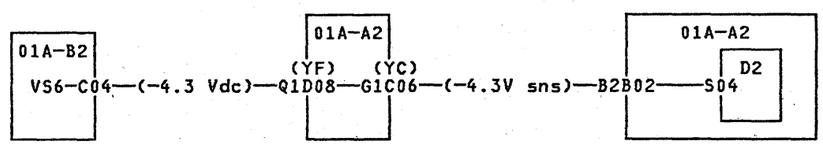


Step	Conditions	Instructions
8	Is voltage -4.246 to -4.42 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
9	Go to **Instructions** column.	1. Select Partial Power Up/Down (QWW) screen. 2. Select UP (power-up processor only). 3. Measure for -4.3 Vdc at the following points: - lead at 01A-B2 TB1-B bus + lead at 01A-B2 TB1-C bus. **Note:** Voltage is present for about two seconds.
10	Is voltage -4.246 to -4.42 Vdc?	1. Isolate to one of the following: Cable from 01A-B2VS6 to 01A-A2YF 01A-B2 board. 2. Go to page PR 5001.
11	Go to **Instructions** column.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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 or power supply adjustment before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.









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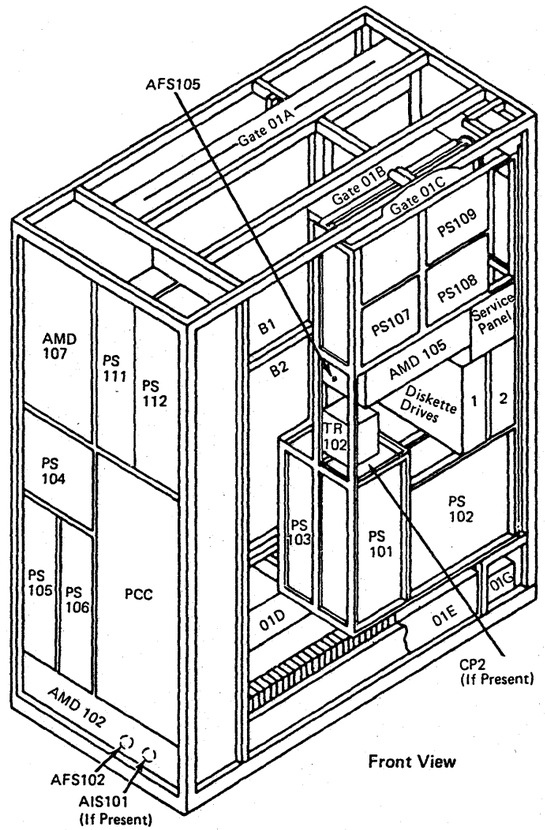
Ref Codes 11A6140E, 11A6150E

These Ref Codes indicate the -4.3V from PS106 is out of tolerance at the 01A-A2 board.

Possible causes:

- PS106
- 01A-A2D2 sense card
- Power supply adjustment.

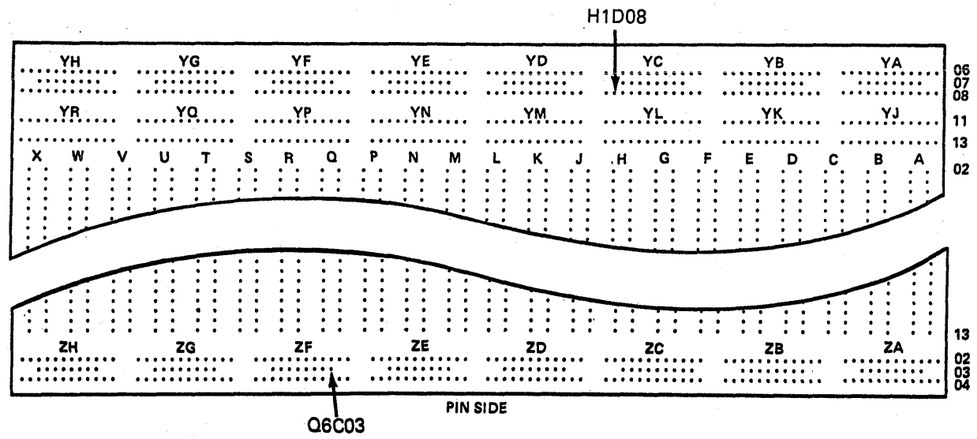
Step	Conditions	Instructions
1	Go to **Instructions** column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Check the 01A-B2 TB1 bus bars and PS106 for loose bolts, screws, and cables. 4. Press service panel Power On. 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only). 7. Measure for -1.5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2D2U07. **Note:** Voltage is present for about two seconds.
2	Is voltage -1.425 to -1.575 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2D2 card. 3. 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-A2B2D08 + lead at 01A-A2B2B06. **Note:** Voltage is present for about two seconds.



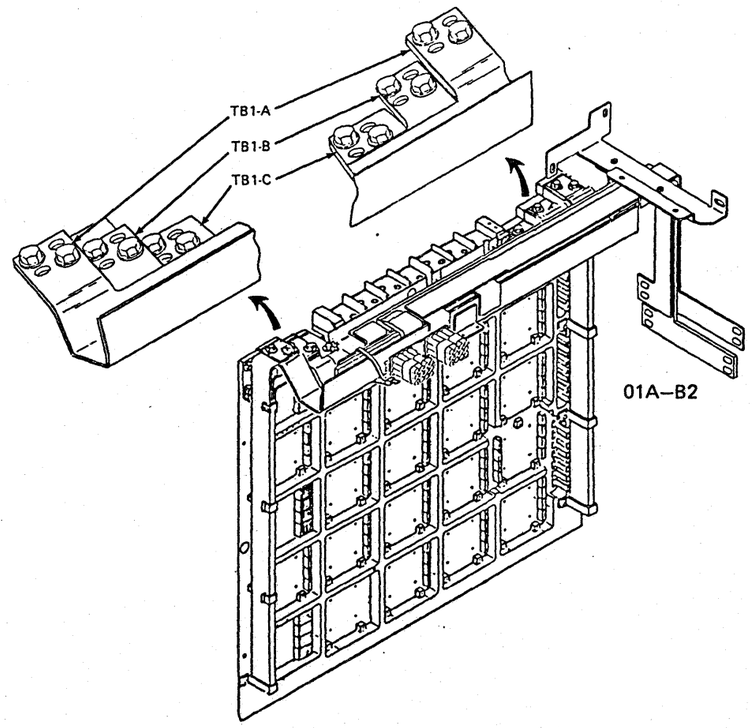
Front View

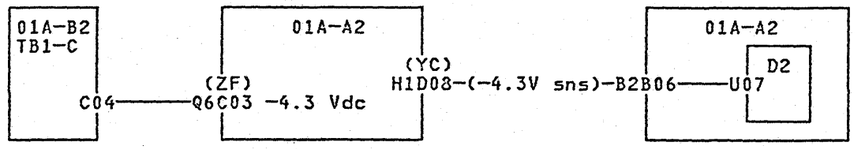
Left Side View

Step	Conditions	Instructions
4	Is voltage -1.425 to -1.575 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 at 01A-A2H2D08 + lead at 01A-A2H1D08. **Note:** Voltage is present for about two seconds.
6	Is voltage -4.163 to -4.509 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-A2YC to 01A-A2B2. **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 at 01A-A2Q2D08 + lead at 01A-A2Q6C03. **Note:** Voltage is present for about two seconds.



Step	Conditions	Instructions
8	Is voltage -4.163 to -4.509 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. 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 at 01A-B2 TB1-B bus + lead at 01A-B2 TB1-C bus. **Note:** Voltage is present for about two seconds.
10	Is voltage -4.163 to -4.509 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-A2ZF. **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.
11	Go to **Instructions** column.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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 or power supply adjustment before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.





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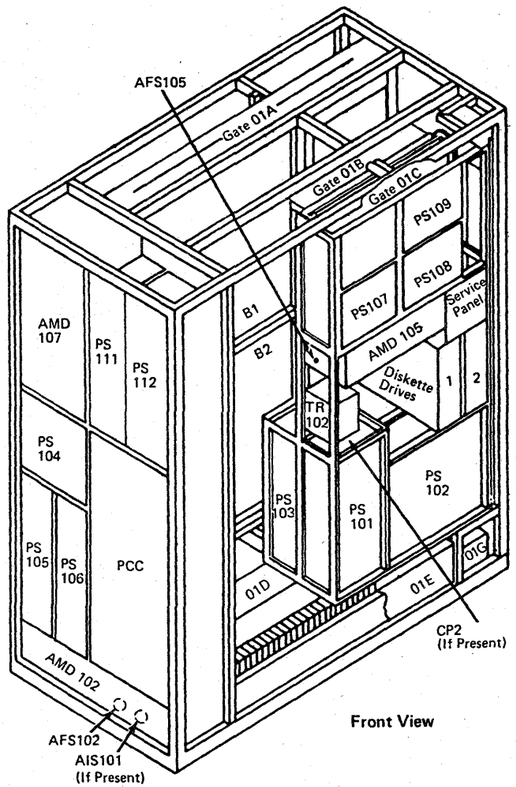
Ref Codes 11A6240E, 11A6250E

These Ref Codes indicate the -4.3 Vdc from PS106 is out of tolerance at the 01A-A3 board.

Possible causes:

- 01A-A2A5 paddle card
- 01A-A2D2 card
- 01A-A2 board
- 01A-A3 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. Check the 01A-B2 TB1 bus bars and PS106 for loose bolts, screws and cables. 4. Press service panel Power On. 5. Select Partial Power Up/Down (QWW) screen. 6. Select UP (power-up processor only). 7. Measure for -1.5 Vdc at the following points: - lead at 01A-A2D2U08 + lead at 01A-A2D2S03. **Note:** Voltage is present for about two seconds.
2	Is voltage -1.425 to -1.575 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Exchange 01A-A2D2 card. 3. 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-A2A5D08 + lead at 01A-A2A5B06. **Note:** Voltage is present for about two seconds.

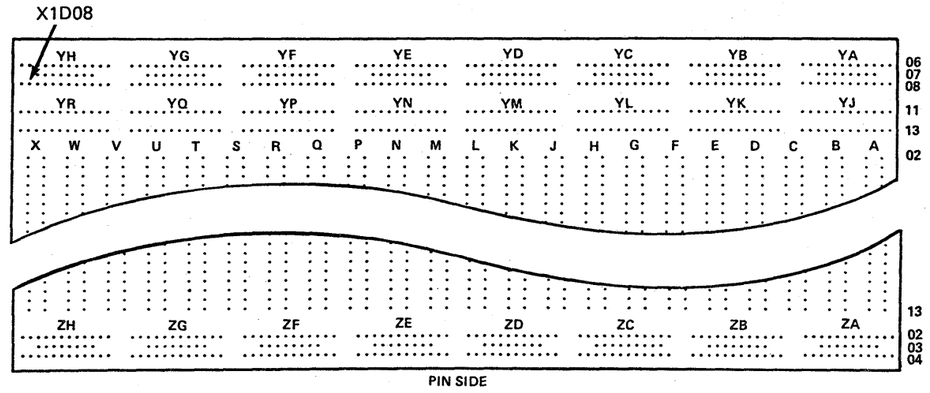


Front View

Left Side View

4381 B/M 2676380	MI Seq DA235	PN 6169203 1 of 3	EC A20558 01 Oct 84	EC A20559 03 Dec 84			

Step	Conditions	Instructions
4	Is voltage -1.425 to -1.575 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 at 01A-A3X2D08 + lead at 01A-A3X1D08. **Note:** Voltage is present for about two seconds.
6	Is voltage -4.206 to -4.466 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-A3YH. **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 at 01A-A3K2D08 + lead at 01A-A3K2B06. **Note:** Voltage is present for about two seconds.



Step	Conditions	Instructions
8	Is voltage -4.206 to -4.466 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-A3 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 at 01A-B2 TB1-B bus + lead at 01A-B2 TB1-C bus. **Note:** Voltage is present for about two seconds.
10	Is voltage -4.206 to -4.466 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-A3YD. **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.	A torque wrench and a 1/4 to 3/8 drive adapter are needed to exchange the power supply. For tool part numbers, see Volume A07, page REM 001. 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 or power supply adjustment before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.