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4

TOTAL PART NUMBERS THIS VOLUME

PR1711

PR1731

PR1741

PR1751

PR1761

PR1771

PR1781

PR1791

PR1801

PR1811

PR1821

PR1831

PR1841

PR1851

PR1861

PR1871

PR1881

DA155

DA160

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DA170

DA175

DA180

DA185

DA190

DA195

DA200

DA205

DA210

DA215

DA220

DA225

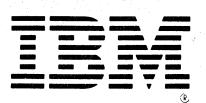
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Maintenance Information

4381-3	4381-3	4381-3	4381-3	4381-3	4381-3	4381-3	4381-3
S/N	S/N	S/N	S/N	S/N	S/N	S/N	S/N
MI	MI	MI	MI	MI	MI	MI	MI
MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION	MAINTENANCE INFORMATION
SAFETY INDEX TERMS/ ABBREVIATIONS INTRODUCTION START	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	CONSOLE FUNCTIONS MESSAGES
U REPAIR CHNL REPAIR ISS REPAIR IND OF REPAIR						DIAGNOSTICS LOGS SYSTEM TEST INSTALLATION SAFETY INSP	
VOL A01	VOL A02	VOL A03	 VOL A04	 VOL A05	VOL A06	VOL A07	VOL A08

4361

Processor

Maintenance Information

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4381 MI PN 6169375 EC A20558 D1 Oct 84

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Ref Code 1133540E

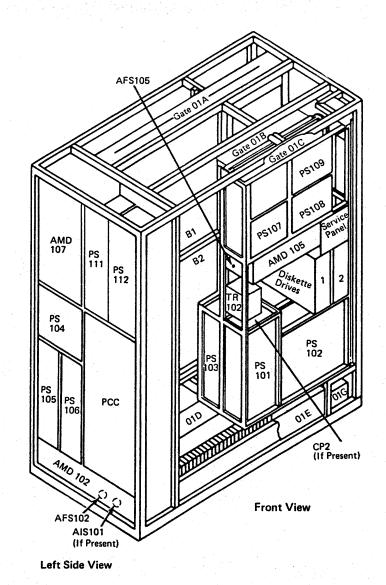
PR 1401

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



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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.
		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.	Set service panel Power Off switch to Power Off and then back to Normal. Reconnect PS106 P02. Swap 01A-A2C4 and 01A-A2C2 cards. Press service panel Power On. Measure for +5 Vdc at the following points:
		- lead at 01A-A2C2D08 + lead at 01A-A2C2B10.
8	Is voltage less than +0.8 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange card swapped into the 01A-A2C2 position. Go to page PR 5001.
9	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Disconnect cable at 01A-A2A2. Press service panel Power On. Measure for +5 Vdc at the following points:
		- lead at 01A-A2C2D08 + lead at 01A-A2C2B10.

Step	Conditions	Instructions
10	Is voltage less than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.
12	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Swap 01A-A2C2 and 01A-A2C4 cards. Press service panel Power On. Measure for +5 Vdc at the following points:
		- lead at 01A-A2D2D08 + lead at 01A-A2D2G08.
13	Is voltage less than +0.8 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange card just swapped into the 01A-A2C4 position. Go to page PR 5001.
14	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Swap 01A-A2D2 and 01A-A2E2 cards. Press service panel Power On. Measure for +5 Vdc at the following points:
·		- lead at 01A-A2D2D08 + lead at 01A-A2D2G08.

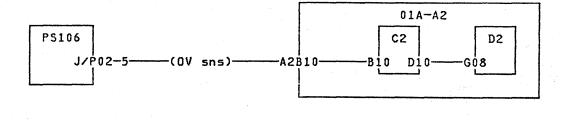
B/M 2676380 | Seq DA005

EC A20558 01 Oct 84

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PR 1403

Step	Conditions	Instructions
15	Is voltage less than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Exchange card just swapped into the 01A-A2E2 position. Go to page PR 5001.
16	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.



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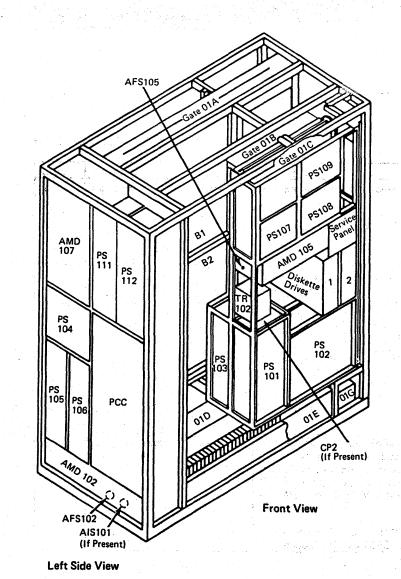
PR 1411

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?	Set service panel Power Off switch to Power Off and then back to Normai. Exchange 01A-A2D2 card. 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.	 Set service panel Power Off switch to Power Off and then back to Normal. Disconnect PS106 PO2. Press service panel Power On. Measure for +5 Vdc at the following points:
		- lead at 01A-A2C2D08 + lead at 01A-A2C2B12.



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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.	 Set service panel Power Off switch to Power Off and then back to Normal. Reconnect PS106 P02. Swap 01A-A2C4 and 01A-A2C2 cards. Press service panel Power On. Measure for +5 Vdc at the following points:
		- lead at 01A-A2C2D08 + lead at 01A-A2C2B12.
8	Is voltage less than +0.8 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange card swapped into the 01A-A2C2 position. Go to page PR 5001.
9	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Disconnect cable at 01A-A2A2. Press service panel Power On. Measure for +5 Vdc at the following points:
		- lead at 01A-A2C2D08 + lead at 01A-A2C2B12.

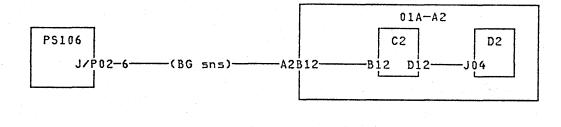
Step	Conditions	Instructions
10	Is voltage less than +0.8 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cable from 01A-A2A2 to PS106 P02.
		Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable.
		4. Set PCC CB1 and CB2 on.5. Go to page PR 5001.
11	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. 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.	Set service panel Power Off switch to Power Off and then back to Normal. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange card just swapped into the 01A-A2C4 position. Go to page PR 5001.
14	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Swap 01A-A2D2 and 01A-A2E2 cards. Press service panel Power On. Measure for +5 Vdc at the following points:
		- lead at 01A-A2D2D08 + lead at 01A-A2D2J04.

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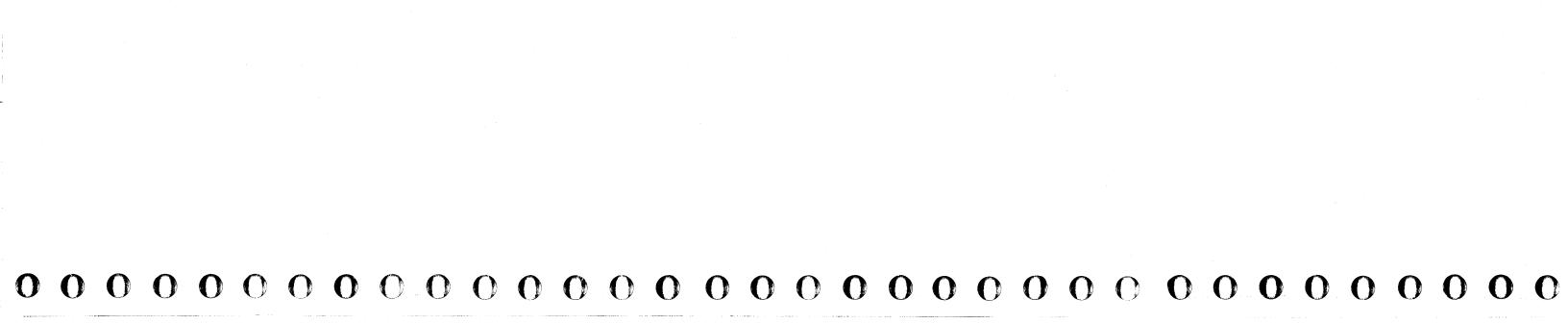
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PR 1413

Step	Conditions	Instructions
15	Is voltage less than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Exchange card just swapped into the 01A-A2E2 position. Go to page PR 5001.
6	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.



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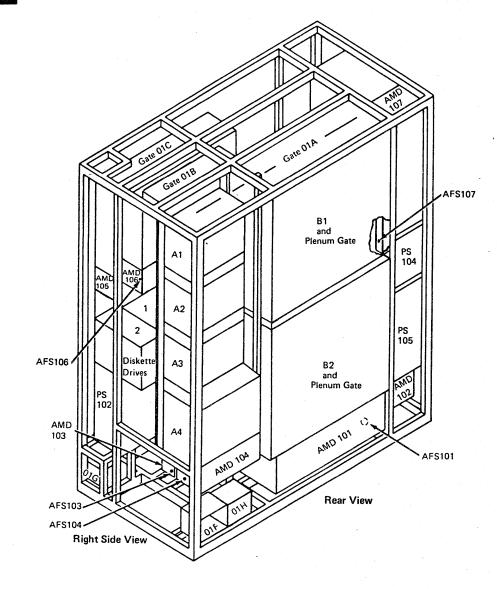
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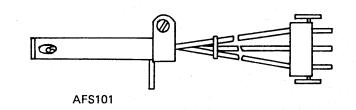
This Ref Code indicates AFS101 is failing.

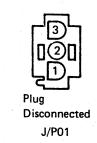
Possible causes:

- 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2D2 card. 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.







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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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.
9	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2F4 card. Go to page PR 5001.
10	Go to Instructions column.	Measure for +24 Vdc at the following points:
		+ lead at 01A-A2A5D13.
11	Is voltage +22 Vdc to +27 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.
12	Go to Instructions column.	Measure for +24 Vdc at the following points:
		- lead at 01A-A2A5D08

Step	Conditions	Instructions
13	is voltage +22 Vdc to +27 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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 (vellow wire)

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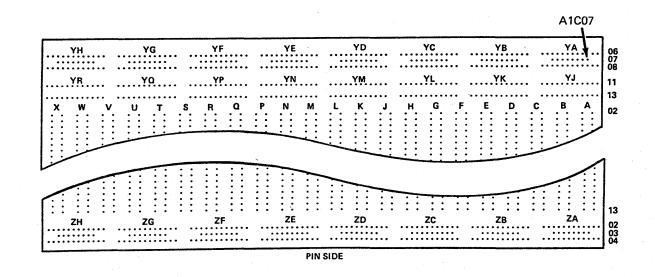
EC A20558 EC A20559 01 Oct 84 03 Dec 84

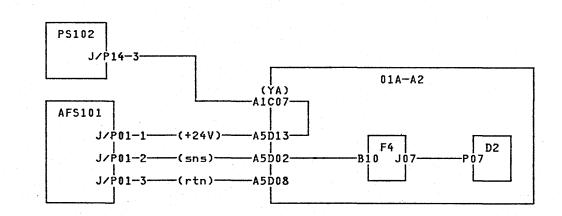
PR 1422

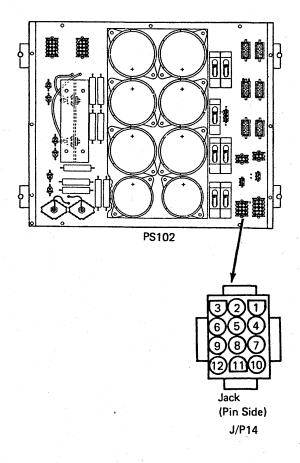




Step	Conditions	Instructions		
18	Is voltage greater than +2.5 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Exchange AFS101. 		
		Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging AFS. Underfloor air conditioning may cause AFS to fail.		
,		 Set PCC CB1 and CB2 on. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off.		
		3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.		







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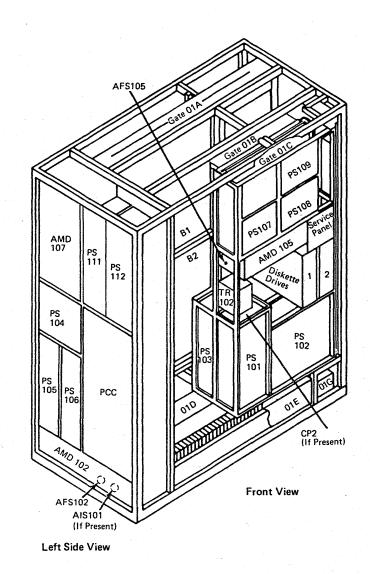
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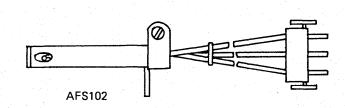
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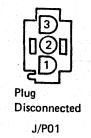
Possible causes:

- 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.		Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2D2 card. 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.		







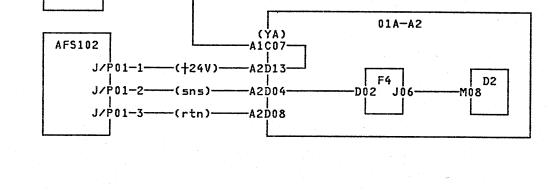
Step	tep Conditions Instructions		
7 .	Go to Instructions column.	Measure for +4 Vdc at the following points:	
		- lead at 01A-A2F4D08 + lead at 01A-A2F4J06.	
8	Is voltage less than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001. 	
9	Go to instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2F4 card. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	

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PR 1432

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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.		



PS102

J/P14-3-

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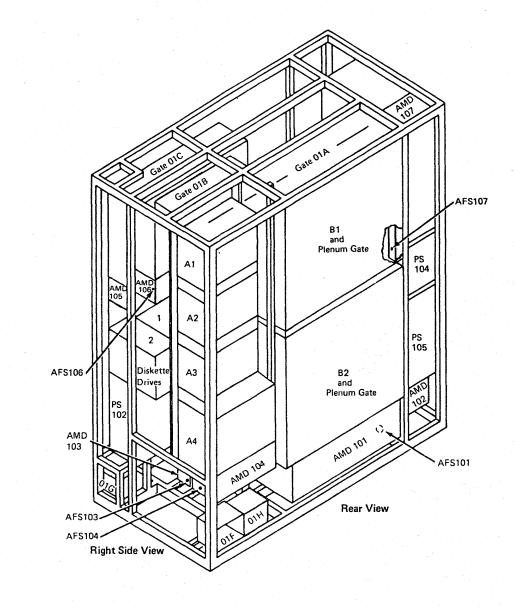
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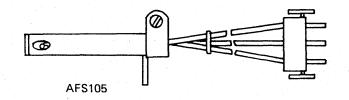
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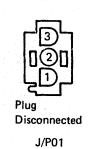
Possible causes:

- 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2D2 card. 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.







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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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.
9	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2F4 card. Go to page PR 5001.
10	Go to Instructions column.	Measure for +24 Vdc at the following points:
4, 3		+ lead at 01A-A2A4D13 - lead at 01A-A2A4D08.
11	is voltage +22 to +27 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

EC A20558 EC A20559 01 Oct 84 03 Dec 84 PN 6169160 2 of 3 4381 B/M 2676380 MI Seq DA025



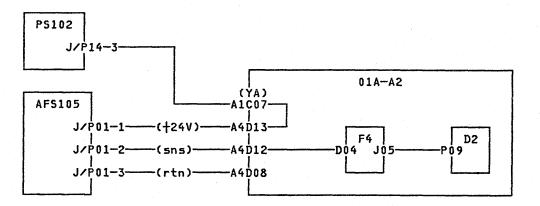




Step	Conditions	Instructions
13	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at AFS105 J/P01-3 (black wire) + lead at AFS105 J/P01-2 (yellow wire).
14	Is voltage greater than +2.5 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.

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Ref Codes 1150540E, 1150550E

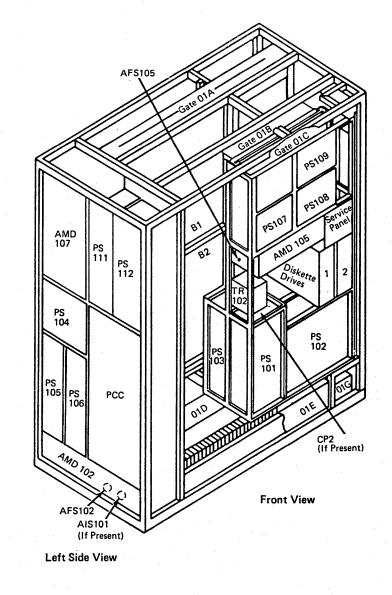
PR 1451

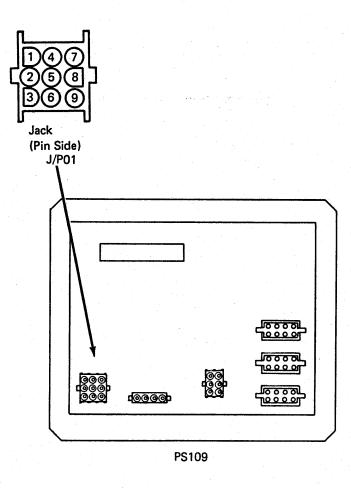
These Ref Codes indicate the PS109 OC sense line was below +2.4 Vdc after bias voltage was applied to PS109 but before the start line was set on.

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.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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.		

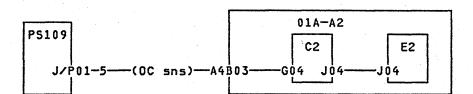




4381 MI PN 6169161 EC A20558 O1 Oct 84

Step	Conditions	Instructions		
6	Is voltage greater than +0.8 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.		

Step	Conditions	Instructions			
11	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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:			
		O1A-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.			



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Ref Code 1150640E

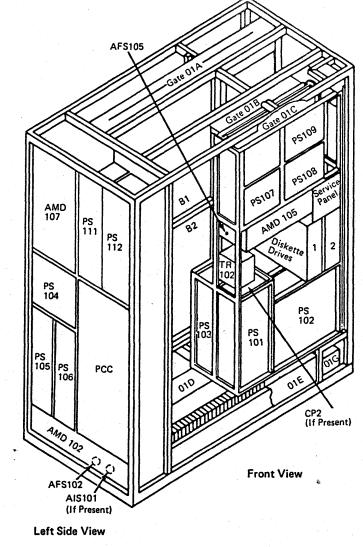
PR 1461

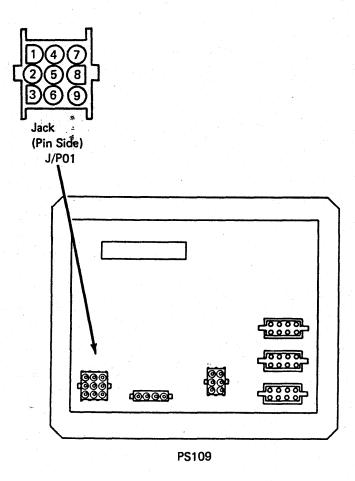
This Ref Code indicates the PS109 OV sense line was below +2.4 Vdc after bias voltage was applied to PS109 but before the start line was set on.

Possible causes:

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

Step	Conditions	Instructions 1. 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:		
1	Go to Instructions column.			
2	Is voltage greater than +2.4 Vdc?	+ lead at 01A-A2E2G03. 1. 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. 1. Set service panel Power Off switch to		
	Vdc?	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.		



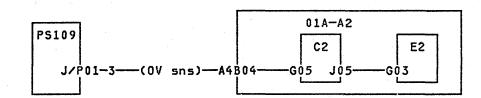


⁴³⁸¹ B/M 2676380

	MI	PN 616916
6380	Seg DA035	1 of 2

Step	Conditions	Instructions
6	Is voltage greater than +0.8 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

Step	Conditions	Instructions
11	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS109. Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
12	Go to Instructions column.	 Set PCC CB1 and CB2 on. Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UC (power-up processor and I/O). 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.



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PR 1462



Ref Code 1150740E

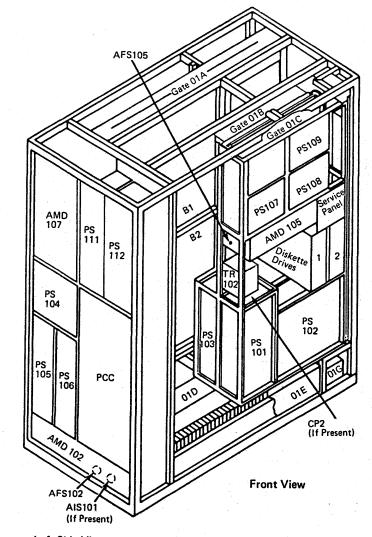
PR 1471

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
- PS10:
- PS109 UV sense line open or grounded.

Step	Conditions	Instructions
1	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange the 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.



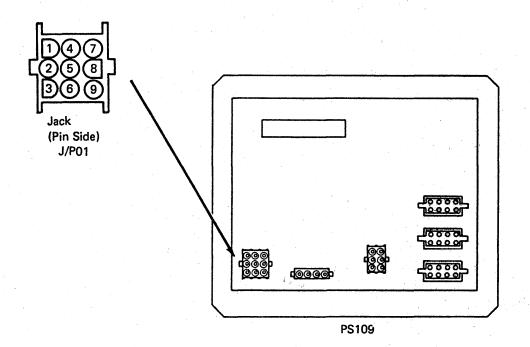
Left Side View

4381 MI B/M 2676380 Seq DA040

MI PN 6169163 Seq DA040 1 of 2 EC A20558 01 Oct 84

			 1			
Step	Conditions	Instructions		Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points:		11	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal.
		- lead at 01A-A2C2D08 + lead at 01A-A2C2G06.				2. Set PCC CB1 and CB2 off. 3. Exchange PS109.
6	Is voltage less than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2C2 card. Go to page PR 5001. 				Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
7	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08				4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
		+ lead at 01A-A2C2D08				
8	Is voltage less than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 				
		3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on.				

				01A-	-A2		
PS109	· · · · · · · · · · · · · · · · · · ·	. •		C2		E2	
J/F	01-4(UV	sns)A41	305G)6 J	6J	2	



PN 6169163 B/M 2676380 | Seq DA040

Go to Instructions column.

Is voltage less than +0.8

EC A20558

Go to page PR 5001.

- lead at frame ground + lead at PS109 J/P01-4.

Set PCC CB1 and CB2 off.

Set PCC CB1 and CB2 on. Go to page PR 5001.

and 01A-A2A4.

Measure for +5 Vdc at the following points:

Set service panel Power Off switch to Power Off and then back to Normal.

Exchange cable between PS109 J/P01

Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable.

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

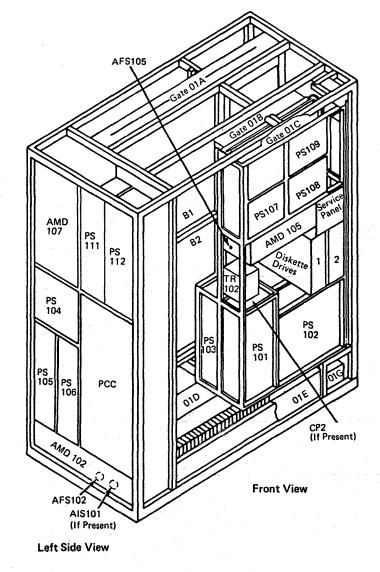
PR 1481

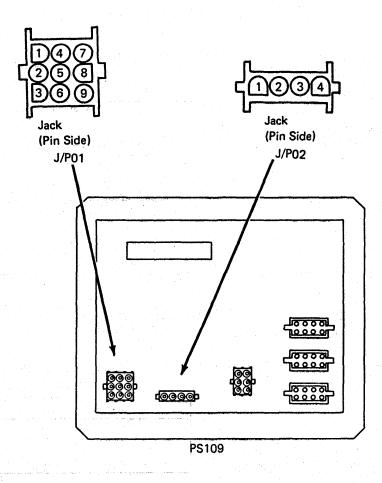
These Ref Codes indicate the PS109 BG sense line was below +2.4 Vdc after bias voltage was applied to PS109 but before the start line was set on.

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
	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). 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.





4381 B/M 2676380

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Seq	DA045	1	of .	3	

	Step	Conditions	Instructions
	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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

				<u> </u>	<u> </u>	
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Conditions

Vdc?

Is voltage greater than +2.4

Go to Instructions column.

Is voltage greater than +2.4

Go to Instructions column.

Is voltage greater than +0.8

Go to Instructions column.

Is voltage greater than +0.8

Vdc?

Instructions

Set service panel Power Off switch to Power Off and then back to Normal.

Measure for +5 Vdc at the following points:

Set service panel Power Off switch to

Power Off and then back to Normal.

Measure for +5 Vdc at the following points:

Set service panel Power Off switch to Power Off and then back to Normal.

Measure for +5 Vdc at the following points:

Set service panel Power Off switch to

Power Off and then back to Normal.

Set PCC CB1 and CB2 off.
 Exchange 01A-A2E2 card.
 Go to step 22.

- lead at 01A-A2C2D08 + lead at 01A-A2C2J07

Set PCC CB1 and CB2 off.
 Exchange the 01A-A2 board.

- lead at 01A-A2C2D08 + lead at 01A-A2C2G07.

Set PCC CB1 and CB2 off.
 Exchange 01A-A2C2 card.
 Go to step 22.

- lead at 01A-A2A4D08 + lead at 01A-A2A4B06

Set PCC CB1 and CB2 off.
 Exchange the 01A-A2 board.

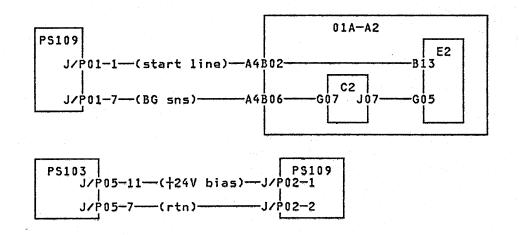
Go to step 22.

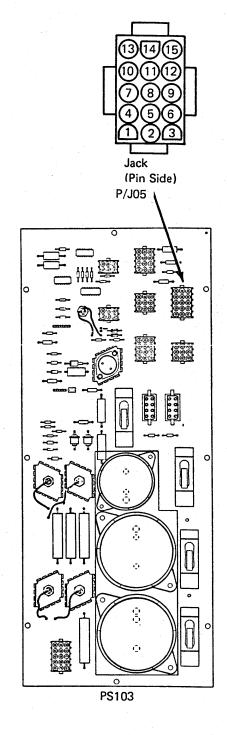
Go to step 22.

Step

Step	Conditions	Instructions
18	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Press ENTER to end Diagnostic Stop. Disconnect PS109 J/P01.
		Select Diagnostic Power Up (QWD) screen.
		4. Select option A (stop after K03 picked).
		Measure for +5 Vdc at the following points:
		- lead at 01A-A2E2D08 + lead at 01A-A2E2B13.
20	Is voltage greater than +2.4 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Reconnect PS109 J/P01. Exchange 01A-A2E2 card.

Step	Conditions	Instructions
22	Go to Instructions column.	 Set PCC CB1 and CB2 on. Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UC (power-up processor and I/O). If still failing, the sense or start line may be shorted.
		Isolate to one of the following: O1A-A2E2 card (swap with D2 card)
		O1A-A2C2 card (swap with C4 card) PS109
		01A-A2 board Cable from 01A-A2A4 to PS109 J/P01.
		6. Go to page PR 5001.





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MI PN 6169164 Seg DA045 3 of 3

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

Possible causes:

- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- PS104.

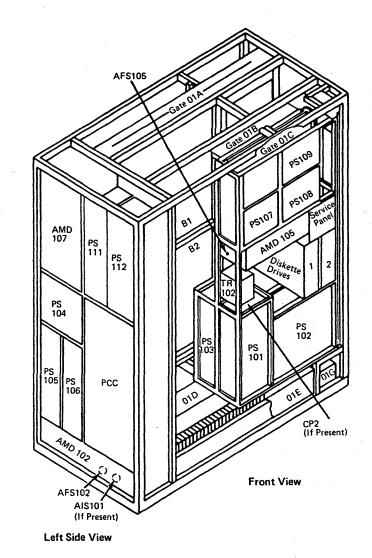
Step	Conditions	Instructions
1	Go to Instructions column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select the Diagnostic Power Up (QWD) screen. 5. Select option A (stop after K03 picked). 6. Measure 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. Go to step 12.
4	Is voltage less than +0.8 Vdc?	Go to step 12.
5	Go to Instructions column.	 Disconnect PS104 J/P03. 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.

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MI	PN 6169165
Seq DA050	1 of 4

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PR 1491



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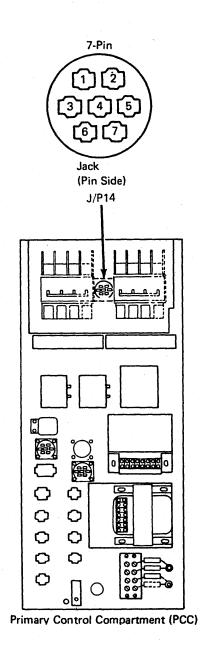
Step	Conditions	Instructions	
7	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Swap cards at 01A-A2C2 and 01A-A2C4. Press service panel Power On. Measure for +5 Vdc at the following points:	
		- lead at 01A-A2C2D08 + lead at 01A-A2C2B13.	
8	Is voltage less than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange card just swapped into 01A-A2C4 position. Go to step 22. 	
9	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Disconnect cable at 01A-A2A2. Set PCC CB1 and CB2 on. Press service panel Power On. Measure for +5 Vdc at the following points:	
		- lead at 01A-A2C2D08 + lead at 01A-A2C2B13.	
10	Is voltage less than +0.8 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	
	<u> </u>	4. Go to step 22.	

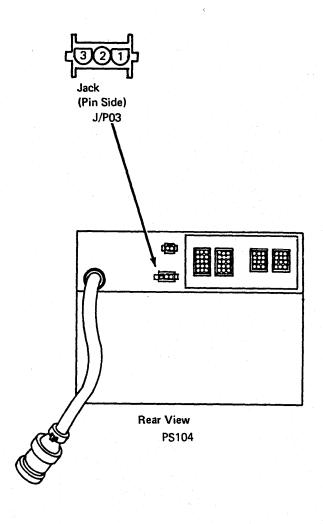
Step	Conditions	Instructions`
11	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Go to step 22.
12	Go to Instructions column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 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 O1A-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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange card just swapped into 01A-A2D2 position.

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EC A20558 EC A20559 01 Oct 84 03 Dec 84

Step	Conditions	Instructions
16	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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 KO3 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PCC K04. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS104.
		Note: Check cable connectors for pushed in pins and seating before exchanging power supply. 4. Go to step 22.





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Step	Conditions	Instructions
21	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Ensure PCC CB1 and CB2 are off. 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 PB 5001

01A-A2 PS104 C2 J/P03-3-(gnd) UV sns pwr on † +1.5V pwr off † gnd

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PR 1494

Ref Code 1151340E

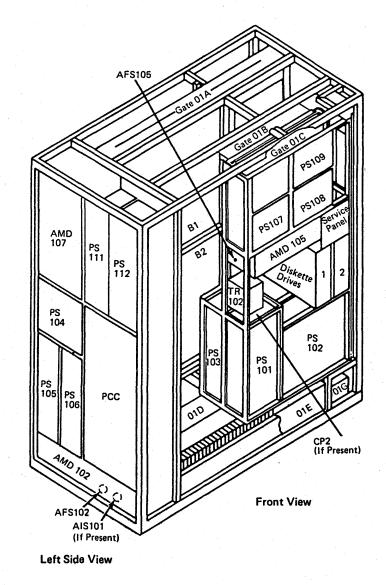
PR 1501

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.	Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after KO3 picked). Measure for +5 Vdc at the following
		points:
		- lead at 01A-A2E2D08 + lead at 01A-A2E2D13.
2	Is voltage greater than +2.4 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Go to step 12.



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MI	PN 6169166	EC A20558		
Seq DA055	1 of 3	01 Oct 84		

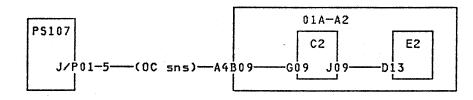
Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at 01A-A2C2D08 + lead at 01A-A2C2G09.
6	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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

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PR 1503

Step	Conditions	Instructions
11	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS107.
		Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
12	Go to Instructions column.	Set PCC CB1 and CB2 on. Press service panel Power On. 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.



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Ref Code 1151440E

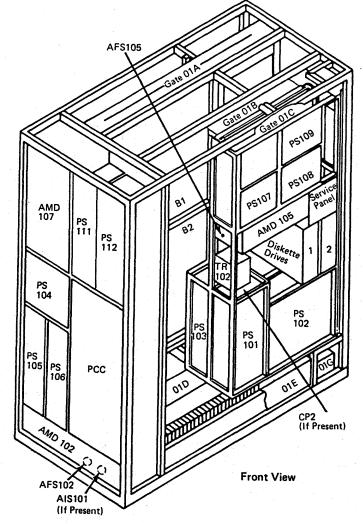
PR 1511

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.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). Measure for +5 Vdc at the following points: lead at 01A-A2E2D08
2	Is voltage greater than +2.4 Vdc?	+ lead at 01A-A2E2G07. 1. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Go to step 12.



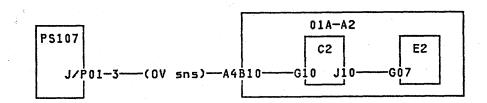
Left Side View

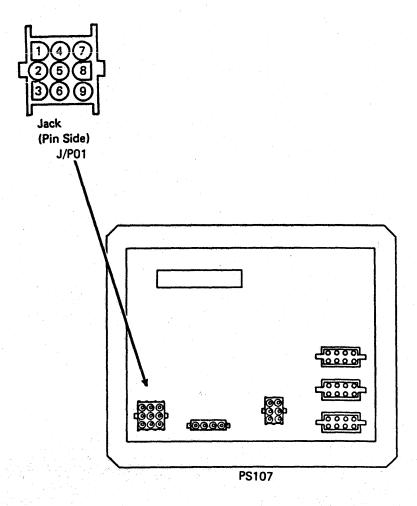
MI PN 6169167 Seg DA060 1 of 2

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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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

Step	Conditions	Instructions
11	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS107. Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
12	Go to Instructions column.	Set PCC CB1 and CB2 on. Press service panel Power On. 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.





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EC A20558 01 Oct 84

PR 1512



Ref Code 1151540E

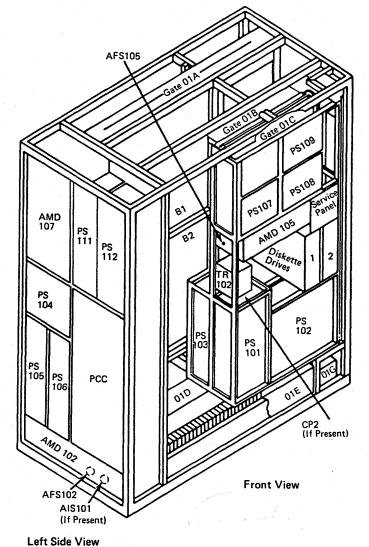
PR 1521

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.	Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.



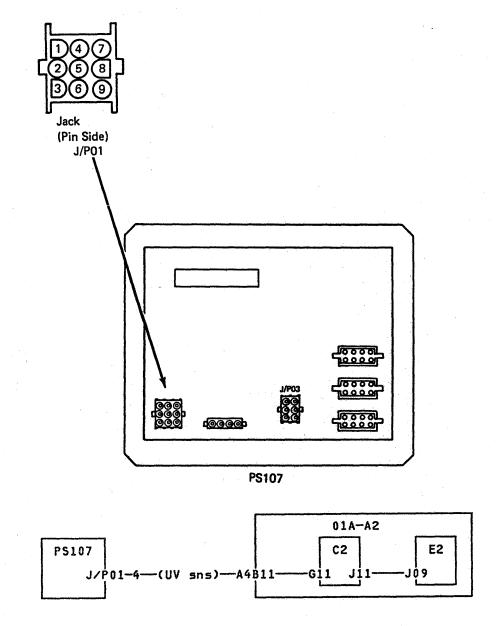
reit side view

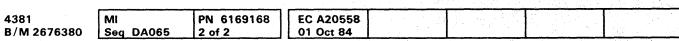
4381 MI PN 6169168 EC A20558 B/M 2676380 Seq DA065 1 of 2 01 Oct 84

Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at 01A-A2C2D08 + lead at 01A-A2C2G11.
6	Is voltage less than +0.8 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2C2 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

Step	Conditions	Instructions
11	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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

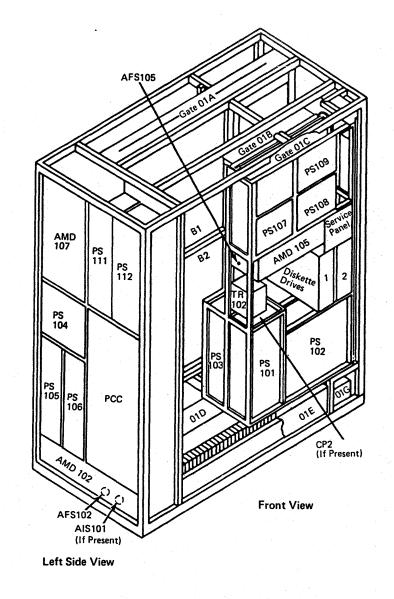
PR 1531

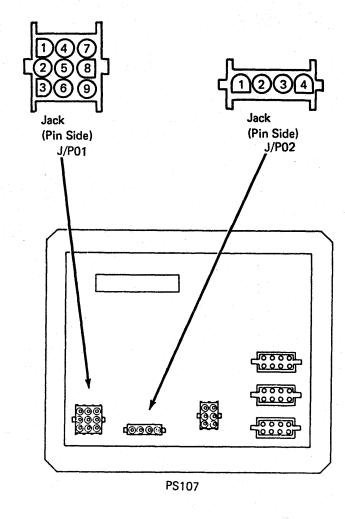
These Ref Codes indicate the PS107 BG sense line was below +2.4 Vdc after bias voltage was applied to PS107 but before the start line was set on.

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.		





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] [MI	PN 6169169
- [:	Seq DA070	1 of 3

Step	Conditions	Instructions
6	Is voltage greater than +2.4 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Go to step 22.

4381 B/M 2676380	MI Seq DA070	PN 6169169 2 of 3		EC A20558 01 Oct 84			
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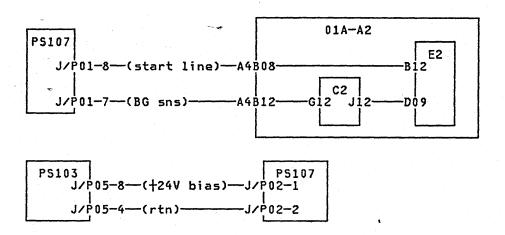
PR 1532

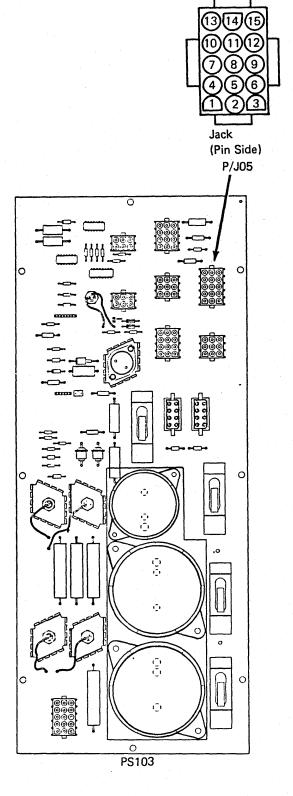
Step	Conditions	Instructions		
13	Go to Instructions column.	Measure for +5 Vdc at the following points:		
		- lead at frame ground + lead at PS107 J/P01-7.		
14	Is voltage greater than +0.8 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS107.		
	*	Note: Check cable connectors for pushed in pins and seating before exchanging power supply.		
7.		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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.		
, P. 1		4. Go to step 22.		

PR 1533

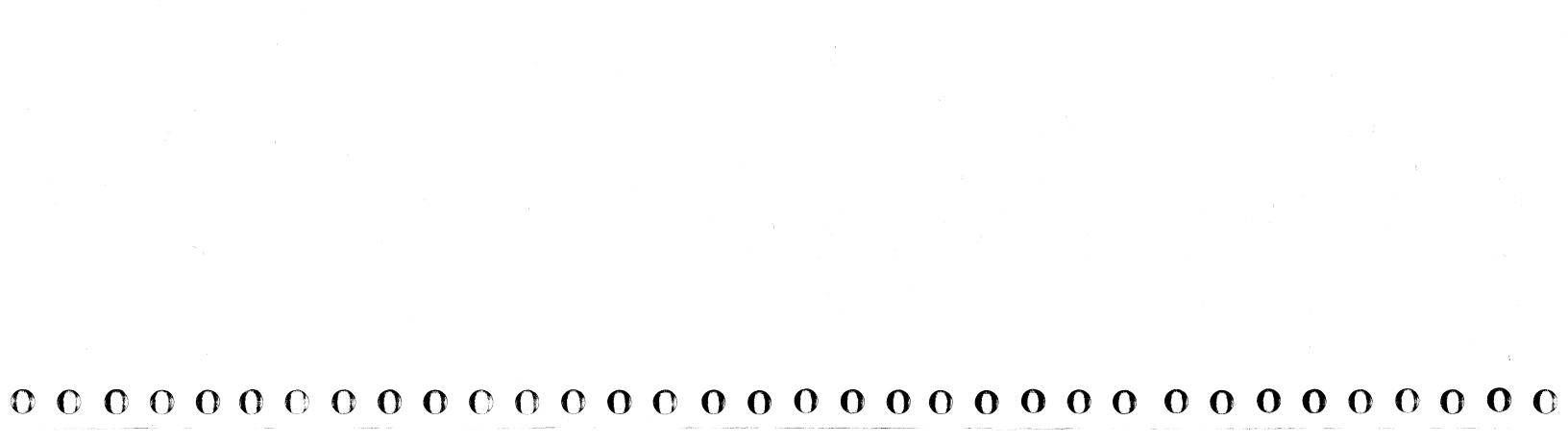
Step	Conditions	Instructions
18	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS103. Note: Check cable connectors for pushed in pins and seating before exchanging power.
	1	supply.
		4. Go to step 22.
19	Go to Instructions column.	Press ENTER to end Diagnostic Stop. Disconnect PS107 J/P01. Select Diagnostic Power Up (QWD)
		screen. 4. Select option A (stop after K03 picked).
		Measure for +5 Vdc at the following points:
		- lead at 01A-A2E2D08 + lead at 01A-A2E2B12.
20	Is voltage greater than +2.4 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Reconnect PS107 J/P01.
	<u> </u>	4. Exchange 01A-A2E2 card.

Step	Conditions	Instructions
22	Go to Instructions column.	 Set PCC CB1 and CB2 on. Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UC (power-up processor and I/O). 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.





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Ref Code 1151840E, 1151850E

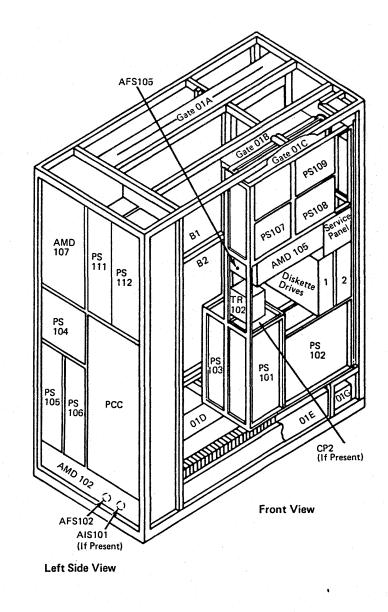
PR 1541

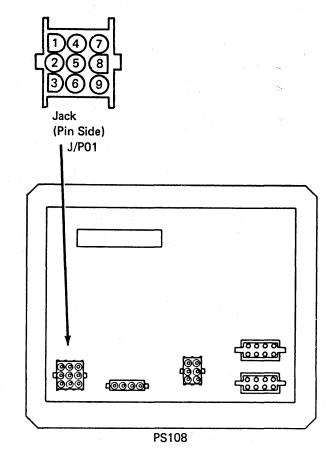
These Ref Codes indicate the PS108 OC sense line was below +2.4 Vdc after bias voltage was applied to PS108 but before the start line was set on

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.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after KO3 picked). Measure for +5 Vdc at the following points:
		- lead at 01A-A2E2D08 + lead at 01A-A2E2P04.
2	Is voltage greater than +2.4 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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.





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MI PN 6169170 Seq DA075 1 of 2

ons	Instructions		. L	Step	Conditions	Instructions
e greater than +0.8	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C4 card. Go to step 12. 			11	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS108.
structions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A4D08 + lead at 01A-A2A4D05.			40		Note: Check cable connectors for pushed in pins and seating before exchanging power supply. 1. Set PCC CB1 and CB2 on.
e greater than +0.8	1. 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.			12	Go to Instructions column.	 Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UC (power-up processor and I/O).
structions column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS108 J/P01-5.					If still failing, the sense line may be shorted. Isolate to one of the following:
e greater than +0.8	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange the cable from PS108 J/P01 to 01A-A2A4. 					O1A-A2E2 card (swap with D2 card) O1A-A2C4 card (swap with C2 card)
	Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable.					PS108 01A-A2 board
	4. Go to step 12.					Cable from 01A-A2A4 to PS108 J/P01.
						6. Go to page PR 5001.

			01A-A2	
PS108	·.		C4	E2
J/P01-5-	-(0C sns)-	-A4005	-B04 D04-	Р04

	Vdc?	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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

EC A20558 01 Oct 84

Ref Code 1151940E

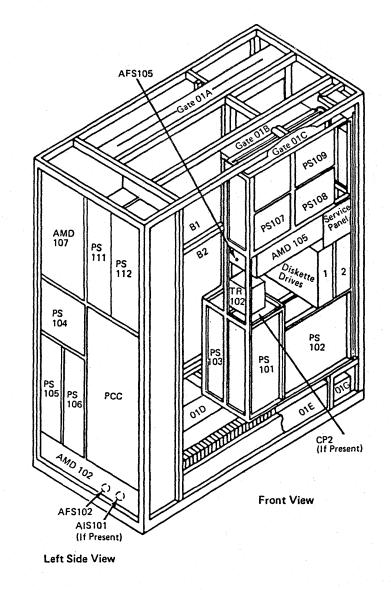
PR 1551

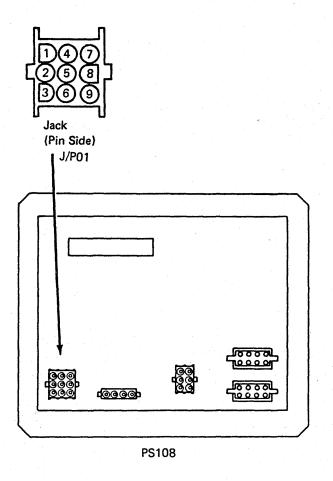
This Ref Code indicates the PS108 OV sense line was below +2.4 Vdc after bias voltage was applied to PS108 but before the start line was set on.

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.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after KO3 picked). 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Go to step 12.

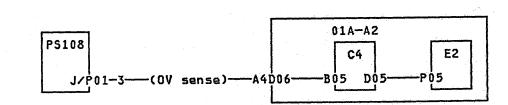




4381 B/M 2676380

МІ		PN	6169171
Seq	DA080	1 of	2

	Step	Conditions	Instructions
g points:	11	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS108.
vitch to ormal.			Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
g points:	12	Go to Instructions column.	Set PCC CB1 and CB2 on. Press service panel Power On. Select the Partial Power Up/Down (QWW screen. Select UC
vitch to ormal.		·	(power-up processor and I/O). 5. If still failing, the sense line may be shorted.
			Isolate to one of the following:
g points:	·		01A-A2E2 card (swap with D2 card)
vitch to			01A-A2C4 card (swap with C2 card)
/P01 to			PS108
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			01A-A2 board
pins and pins and le.			Cable from 01A-A2A4 to PS108 J/P01.
			6. Go to page PR 5001.



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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C4 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	

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Ref Code 1152040E

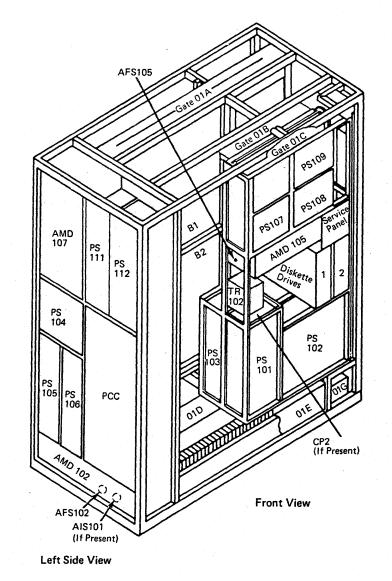
PR 1561

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.

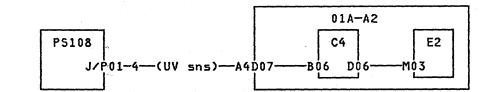
Step	Conditions	Instructions
1	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after KO3 picked).
		6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2P08 + lead at 01A-A2E2M03.
2	Is voltage less than +2.4 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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.



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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?	 Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2C4 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. 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.	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.



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Ref Code 1152540E

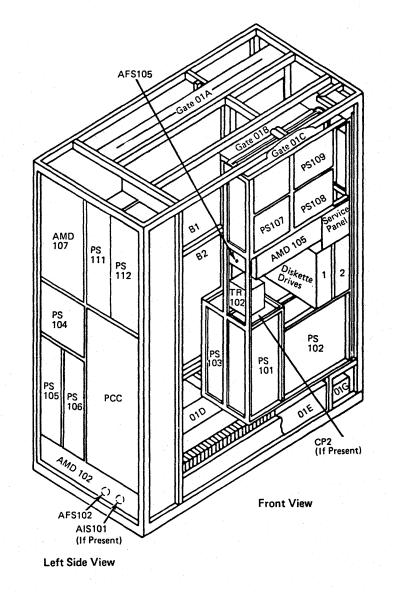
PR 1581

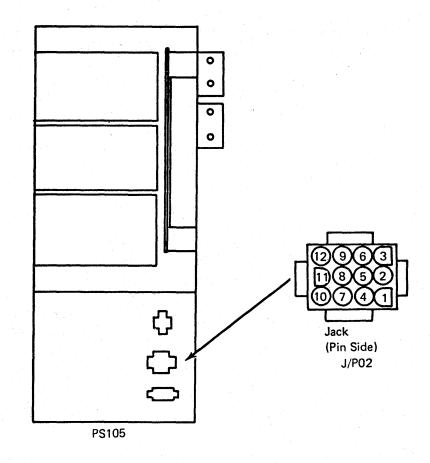
This Ref Code indicates the PS105 OC sense line was below +2.4 Vdc after bias voltage was applied to PS105 but before the start line was set on.

Possible causes:

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

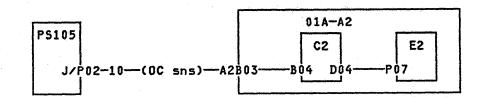
Step	Conditions	Instructions
1	Go to Instructions column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Śelect Diagnostic Power Up (QWD) screen. 5. Select option A (stop after KO3 picked). 6. Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2P07.
2	Is voltage greater than +2.4 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. 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.





PN 6169173 B/M 2676380 | Seq DA090

р	Conditions	Instructions]	Step	Conditions	Instructions
*.	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B04.		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.
	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. Go to step 12. 				Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS105.
	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A2D08 + lead at 01A-A2A2B03.				Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Go to step 12. 		12	Go to Instructions column.	Set PCC CB1 and CB2 on. Press service panel Power On. Select the Partial Power Up/Down (QWW screen.
	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS105 J/P02-10.				4. Select UC (power-up processor and I/O). 5. If still failing, the sense line may be shorted.
)	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cable from PS105 P02 to 01A-A2A2. 				Isolate to one of the following: O1A-A2E2 card (swap with D2 card)
		Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable.				01A-A2C2 card (swap with C4 card) PS105
		4. Go to step 12.				01A-A2 board
						Cable from 01A-A2A2 to PS105 J/P02.
						6. Go to page PR 5001.



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Ref Code 1152640E

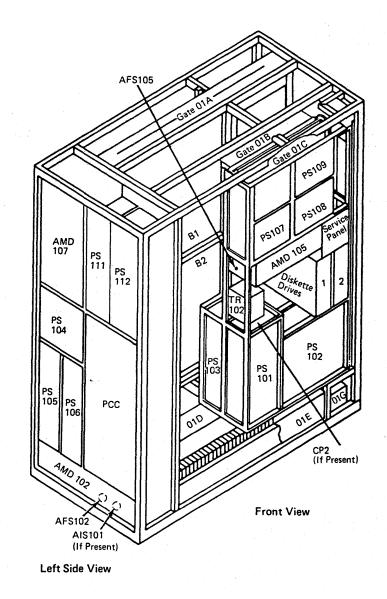
PR 1591

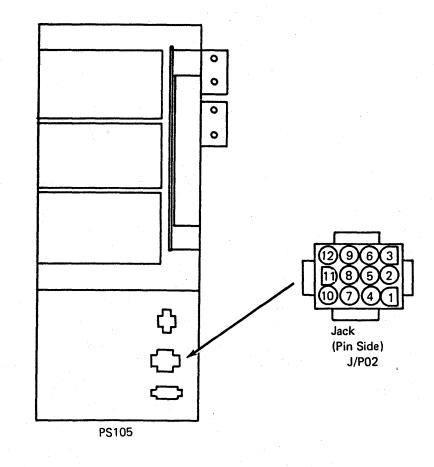
This Ref Code indicates the PS105 OV sense line was below +2.4 Vdc after bias voltage was applied to PS105 but before the start line was set on.

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.	Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). Measure for +5 Vdc at the following points:
		- lead at 01A-A2E2D08 + lead at 01A-A2E2M08.
2	Is voltage greater than +2.4 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Go to step 12.





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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.		
12	Go to Instructions column.	 Set PCC CB1 and CB2 on. Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UC (power-up processor and I/O). If still failing, the sense line may be shorted. Isolate to one of the following: 		
		O1A-A2E2 card (swap with D2 card) O1A-A2C2 card (swap with C4 card) PS105 O1A-A2 board		
		Cable from 01A-A2A2 to PS105 J/P02. 6. Go to page PR 5001.		

C2 E2
)-A2804-B05 D05-M08

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Conditions

Vdc?

Vdc?

Go to Instructions column.

is voltage greater than +0.8

Go to Instructions column.

Is voltage greater than +0.8

Go to Instructions column.

Is voltage greater than +0.8

Instructions

Measure for +5 Vdc at the following points:

Set service panel Power Off switch to

Power Off and then back to Normal.

Measure for +5 Vdc at the following points:

Set service panel Power Off switch to Power Off and then back to Normal.

Measure for +5 Vdc at the following points:

Set service panel Power Off switch to

Power Off and then back to Normal.

Exchange cable from PS105 P02 to

Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable.

- lead at 01A-A2C2D08 + lead at 01A-A2C2B05

Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card.

- lead at 01A-A2A2D08 + lead at 01A-A2A2B04.

Set PCC CB1 and CB2 off.
 Exchange 01A-A2 board.
 Go to step 12.

lead at frame ground
 lead at PS105 J/P02-5.

Set PCC CB1 and CB2 off.

01A-A2A2.

4. Go to step 12.

Go to step 12.

PR 1592

Ref Code 1152740E

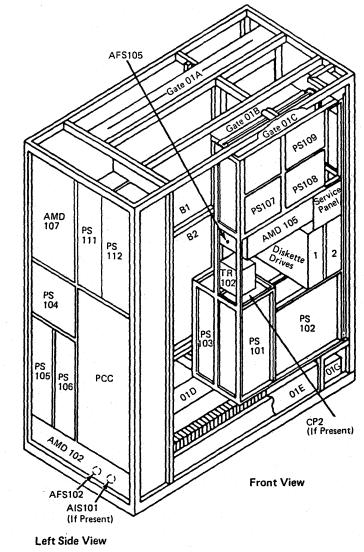
PR 1601

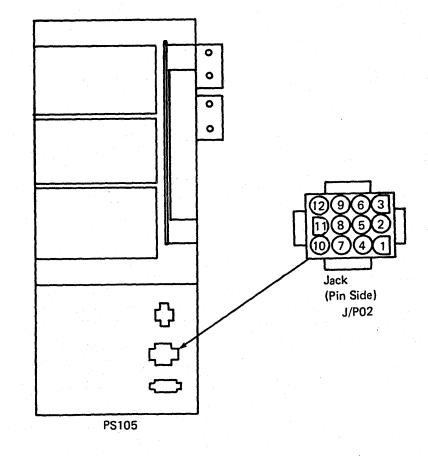
This Ref Code indicates the PS105 UV sense line was above +2.4 Vdc after bias voltage was applied and before the start line was set on.

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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001. 		





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MI	PN 6169175
	1 of 2

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.
		Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

				01A-A2		\neg
PS105				C2	E2]
J/i	02-4(UV	sns)—A2	305В	6 Д06-	—Р09]

-	is tellage less than the	The second particular to the second s
	Vdc?	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	1. Set service panel Power Off switch to
	Vdc?	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	1. Set service panel Power Off switch to
	Vdc?	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 Cat BCC CB1 and CB2 an
		4. Set PCC CB1 and CB2 on.
	I	5. Go to page PR 5001.

Instructions

Measure for +5 Vdc at the following points:

1. Set service panel Power Off switch to

- lead at 01A-A2C2D08 + lead at 01A-A2C2B06.

Conditions

Go to instructions column.

is voltage less than +0.8

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PR 1602

Ref Code 1152840E

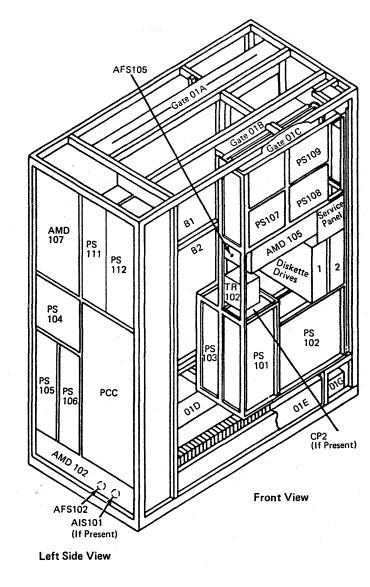
PR 1611

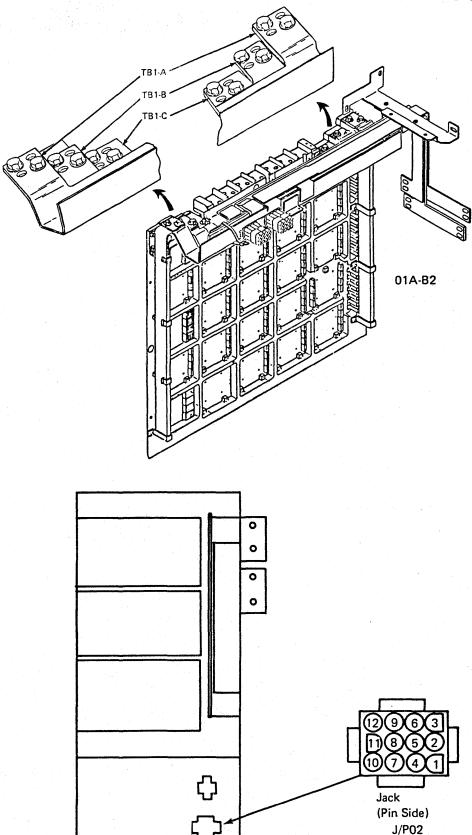
This Ref Code indicates the PS105 BG sense line was below +2.4 Vdc after bias voltage was applied to PS105 and before the start line was set on.

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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Disconnect PS105 J/P02. 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?	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.





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MI PN 6169176

Step	Conditions	Instructions
3	Go to Instructions column.	 Reconnect PS105 J/P02. Set PCC CB1 and CB2 on. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). Measure for +5 Vdc at the following points:
		lead at 01A-A2E2D08+ lead at 01A-A2E2M09.
4	Is voltage greater than +2.4 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. Go to step 14.

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B/M 2676380	Seq DA105	2 of 3	01 Oct 84	The second second	1 2 2 2

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10	Is voltage greater than +0.8 Vdc?	 lead at 01A-A2C2D08 + lead at 01A-A2A2B06. 1. 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?	Set PCC CB1 and CB2 off. 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.
13	Go to Instructions column.	 Go to step 14. 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. Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS105. Note: Check cable connectors for pushed in pins and seating before exchanging power supply.

Instructions

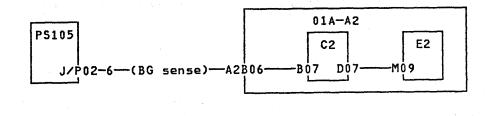
Measure for +5 Vdc at the following points:

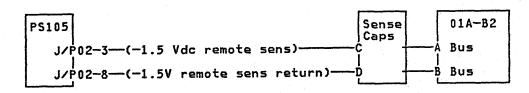
Conditions

Go to Instructions column.

PR 1613

Step	Conditions	Instructions
14	Go to Instructions column.	Set PCC CB1 and CB2 on. Press service panel Power On. Select the Partial Power Up/Down (QWW)
		screen. 4. Select UC (power-up processor and I/O).
	1.	If still failing, the sense line may be shorted. Isolate to one of the following:
		O1A-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.
1		6. Go to page PR 5001.





				
MI	PN 6169176	EC A20558		1
Seq DA105	3 of 3	01 Oct 84		<u> </u>



Ref Codes 1113150E, 1152940E

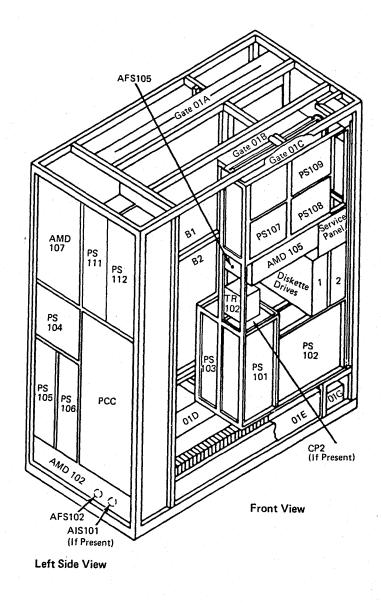
PR 1621

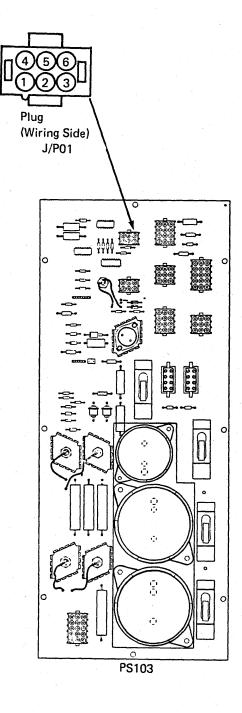
This Ref Code indicates the PS103 OC sense line was below +2.4 Vdc after ac voltage was applied to PS103 but before the start line was set on or CP1 is tripped.

Possible causes:

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

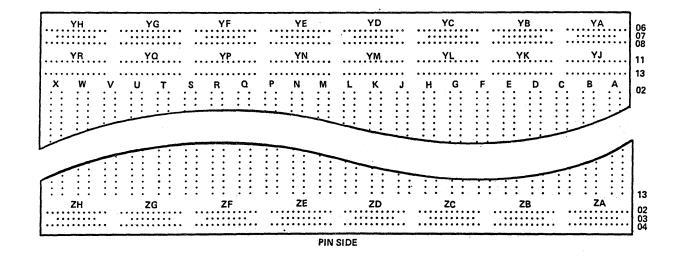
Step	Conditions	Instructions
1	Is PS103 CP1 tripped?	1. Reset PS103 CP1. 2. Press service panel Power On. 3. Go to step 9.
2	Go to Instructions column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set CE Mode switch to CE Mode. 3. Press service panel Power On. 4. Select 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
3 ,	Is voltage greater than +2.4 Vdc?	+ lead at 01A-A2E2M10. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. 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.





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Step	Conditions	Instructions
7	Is voltage greater than +2.4 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.
12	Go to Instructions column.	 Go to page PR 5001. Reconnect PS103 P03. Disconnect 01A-A4YA. Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).



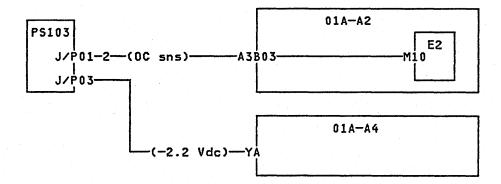
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PR 1622

PR 1623

Step	Conditions	Instructions
13	Is PS103 CP1 tripped?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Select Partial Power Up/Down (QWW) screen.
		Select DP (power-down processor only).
		3. Remove cards from 01A-A4 board. 4. Reconnect 01A-A4YA.
		Reconnect 01A-A4YA. Select Partial Power Up/Down (QWW) screen.
		6. Select UP (power-up processor only).
15	Is PS103 CP1 tripped?	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.
	_L	6. Go to page PR 5001.

Step	Conditions	Instructions
16	Go to Instructions column.	 Select Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Reinstall one card removed from 01A-A4 board. Select Partial Power Up/Down (QWW) screen. 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.



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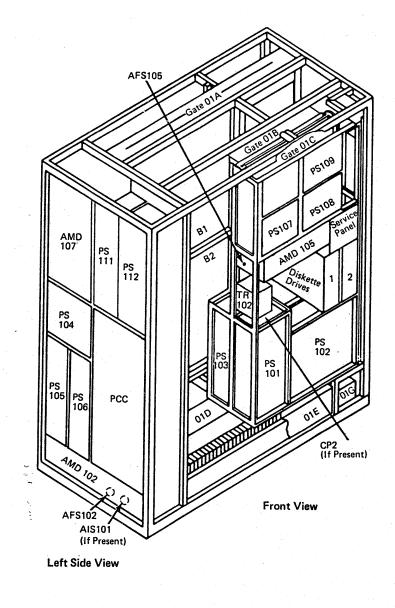
PR 1631

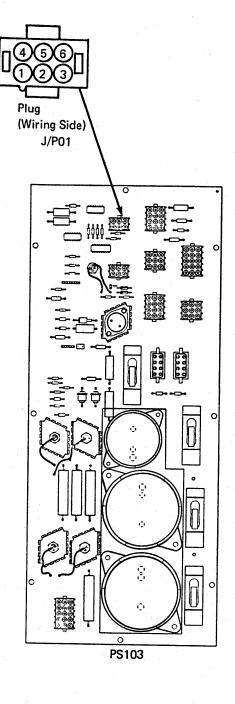
This Ref Code indicates the PS103 OV sense line was below +2.4 Vdc after ac voltage was applied to PS103 but before the start line was set on.

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 KO3 picked).
		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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 014-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.

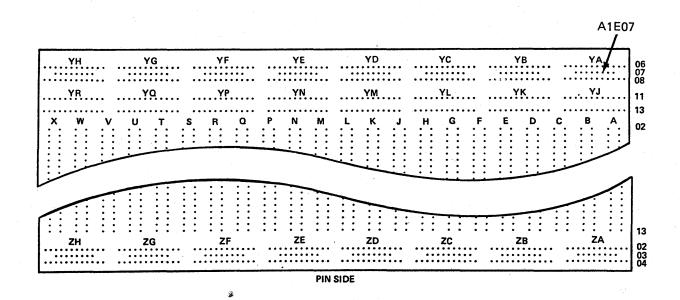


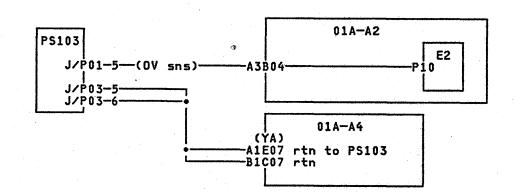


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Step	Conditions	Instructions
8	Is voltage greater than +2.4 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A2A3 to PS103 J/P01. Note: Check board for bent pins 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS103.
		Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
	٠. ٠.	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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A4 board. Set PCC CB1 and CB2 on. Go to page PR 5001.





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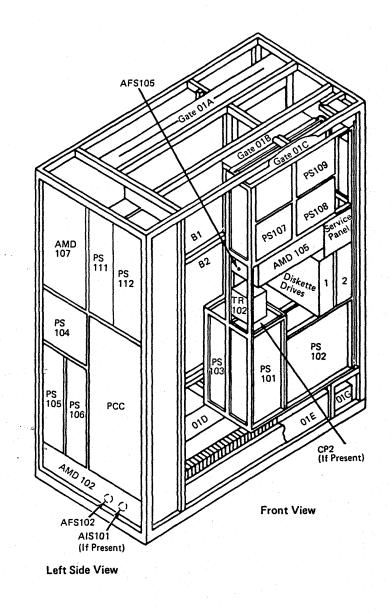
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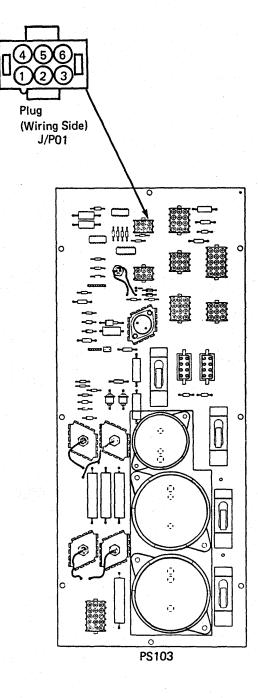
This Ref Code indicates the PS103 -2.2 Vdc UV sense line was above +2.4 Vdc after ac voltage was applied to PS103 but before the start line was set on.

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 KO3 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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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.

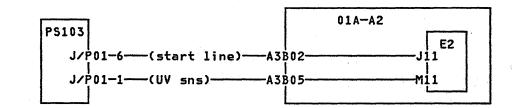




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Step	Conditions	Instructions
8	is voltage greater than +2.4 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cable from 01A-A2A3 to PS103 J/P01.
		Note: Check board for bent pins and cable 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Press ENTER to end diagnostic stop. Disconnect PS103 J/P01. Select Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). Measure for +5 Vdc at the following points:
· ·		- lead at 01A-A2E2D08 + lead at 01A-A2E2J11.
11	Is voltage greater than +2.4 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS103.

Step	Conditions	Instructions
12	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. Press servcie panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UC (power-up processor and I/O). 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.



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Note: Check cable connectors for pushed in pins and seating before exchanging power

4. Set PCC CB1 and CB2 on.

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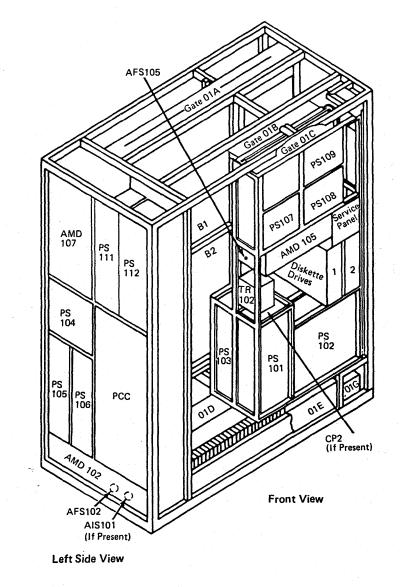
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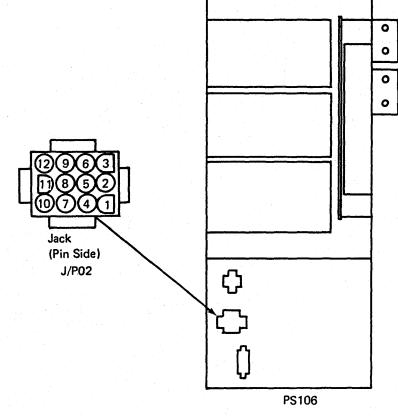
This Ref Code indicates the PS106 OC sense line was below +2.4 Vdc after bias voltage was applied to PS106 but before the

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.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after KO3 picked). Measure for +5 Vdc at the following points: lead at 01A-A2D2D08
100		+ lead at 01A-A2D2J06.
2	Is voltage greater than +2.4 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2D2 card. Go to step 12.
3	Go to Instructions column.	Measure for +5 Vdc at the following points:
e -		- 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.



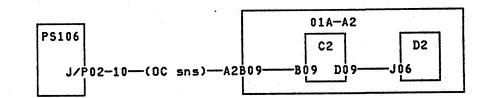


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Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points:
W		- lead at 01A-A2C2D08 + lead at 01A-A2C2B09.
6	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.
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.
		Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS106.
		Note: Check cable connectors for pushed in pins and seating before exchanging power supply.

Step	Conditions	Instructions
12	Go to Instructions column.	Set PCC CB1 and CB2 on. Press servcie panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UC (power-up processor and I/O). 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.



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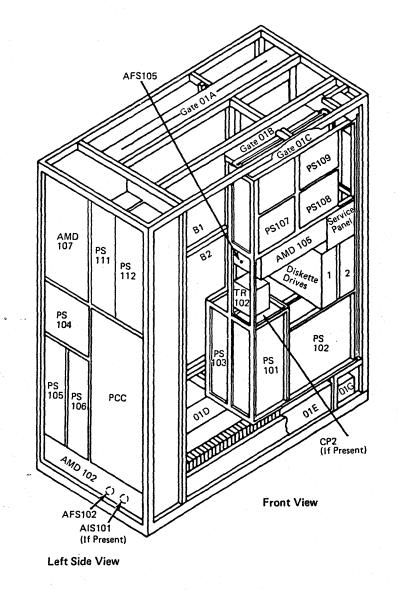
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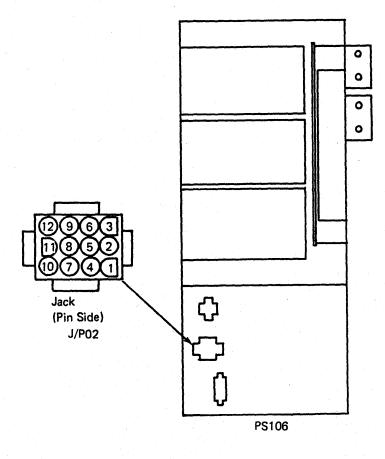
This Ref Code indicates the PS106 OV sense line was below +2.4 Vdc after bias voltage was applied to PS106 but before the start line was set on.

Possible causes:

- 01A-A2C2 optoisolator card
- 01A-A2D2 sense card
- PS100
- PS106 OV sense line open or grounded.

Step	Conditions	Instructions
1	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after KO3 picked). Measure for +5 Vdc at the following points: lead at 01A-A2D2D08 lead at 01A-A2D2G08.
2	Is voltage greater than +2.4 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Go to step 12.





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Step	Conditions	Instructions .
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) O1A-A2C2 card (swap with C4 card)
		PS106 01A-A2 board
		Cable from 01A-A2A2 to PS106 J/P02. 6. Go to page PR 5001.

20104	<u> </u>		01A-	A2		
PS106			C2		D2	
J/1	02-5-(0V sns)-A2	В10——В: 	0 D	j 0GI	8	

Ca as Imparmedians aslum	
Go to Instructions column.	Measure for +5 Vdc at the following points:
	- lead at 01A-A2C2D08 + lead at 01A-A2C2B10.
Is voltage greater than +0.8	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.
Go to Instructions column.	Measure for +5 Vdc at the following points:
	- lead at 01A-A2A2D08
	+ lead at 01A-A2A2B10.
Is voltage greater than +0.8	Set service panel Power Off switch to
Vdc?	Power Off and then back to Normal.
	2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board.
	3. Exchange 01A-A2 board. 4. Go to step 12.
Go to Instructions column.	Measure for +5 Vdc at the following points:
	- lead at frame ground
	+ lead at PS106 J/P02-5.
Is voltage greater than +0.8	Set service panel Power Off switch to
Vdc?	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.
1.	
<u> </u>	4. Go to step 12.
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.
	, to., page them oo
	1. Set service panel Power Off switch to
1	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
1	supply.
	Vdc? Go to Instructions column. Is voltage greater than +0.8 Vdc? Go to Instructions column.

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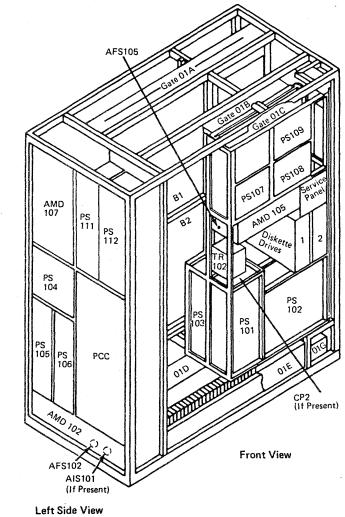
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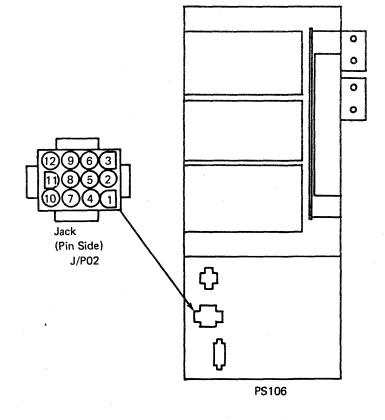
This Ref Code indicates the PS106 UV sense line was above +2.4 Vdc after bias voltage was applied and before the start line was set on.

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.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). Measure for +5 Vdc at the following points:
		- lead at 01A-A2D2D08 + lead at 01A-A2D2G06.
2	Is voltage less than +2.4 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2D2 card. 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.





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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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2C2 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.
		 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

01A-A2 C2

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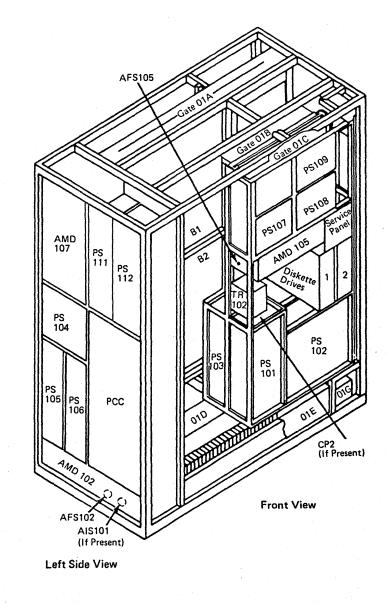
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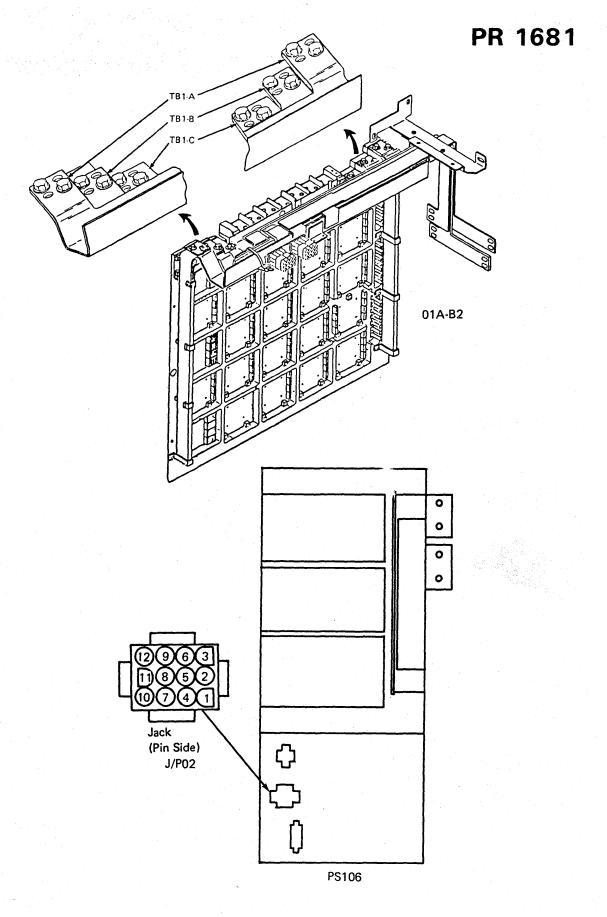
This Ref Code indicates the PS106 BG sense line was below +2.4 Vdc after bias voltage was applied to PS106 and before the start line was set on.

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.	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Disconnect PS106 J/P02. 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?	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. 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.		





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Step	Conditions	Instructions
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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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?	 Set PCC CB1 and CB2 off. 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.
		 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS106.
		Note: Check cable connectors for pushed in pins and seating before exchanging power supply.

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Step

Conditions

Vdc?

Vdc?

Vdc?

Is voltage greater than +2.4

Go to Instructions column.

Is voltage greater than +2.4

Go to Instructions column.

Is voltage greater than +0.8

Instructions

1. Set service panel Power Off switch to

Set PCC CB1 and CB2 off.
 Exchange 01A-A2D2 card.
 Go to step 14.

- lead at 01A-A2C2D08 + lead at 01A-A2C2D12.

Set PCC CB1 and CB2 off.
 Exchange 01A-A2 board.

- lead at 01A-A2C2D08 + lead at 01A-A2C2B12.

Set PCC CB1 and CB2 off.
 Exchange 01A-A2C2 card.
 Go to step 14.

4. Go to step 14.

Power Off and then back to Normal.

Measure for +5 Vdc at the following points:

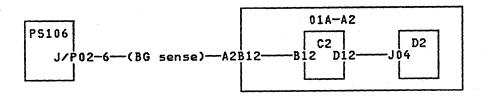
Set service panel Power Off switch to Power Off and then back to Normal.

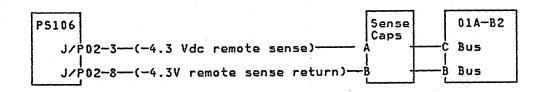
Measure for +5 Vdc at the following points:

Set service panel Power Off switch to Power Off and then back to Normal.

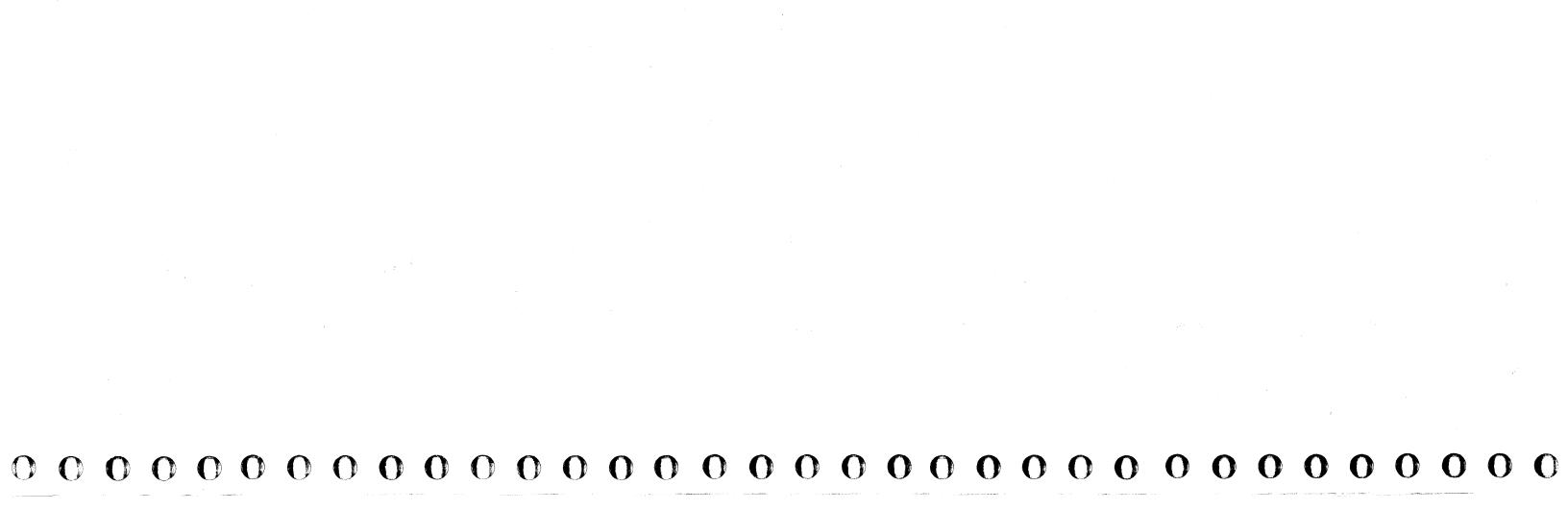
PR 1683

Step	Conditions	Instructions
14	Go to Instructions column.	Set PCC CB1 and CB2 on. Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UC (power-up processor and I/O). 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.





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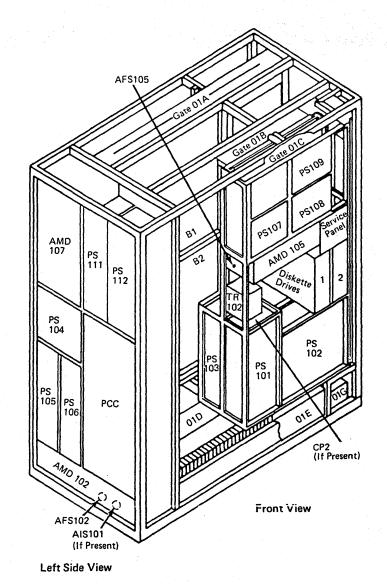
Ref Codes 11A0140E, 11A0150E

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

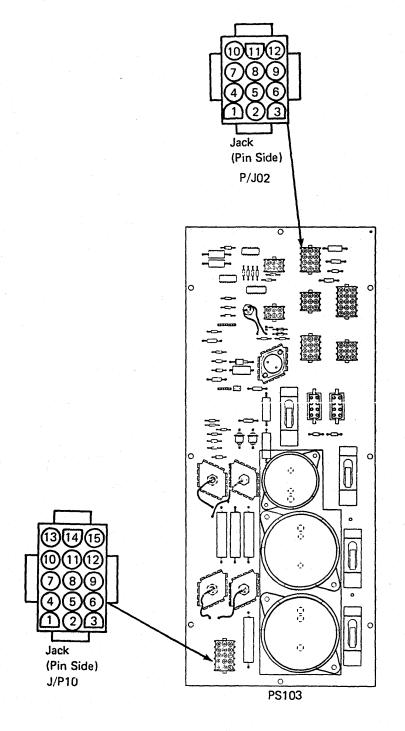
Possible causes:

- 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
2	Is voltage +1.29 to +1.71	+ lead at PS103 J/P02-2. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.



PR 1691



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Step	Conditions	Instructions
5	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.
10	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.

01A-A2 J/P02-2-(24V sns)---A3B08----B07 -J/P10-11-•-rtn -J/P10-14sense level is +1.5V with power on

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Ref Codes 1116430E, 11A0240E, 11A0250E

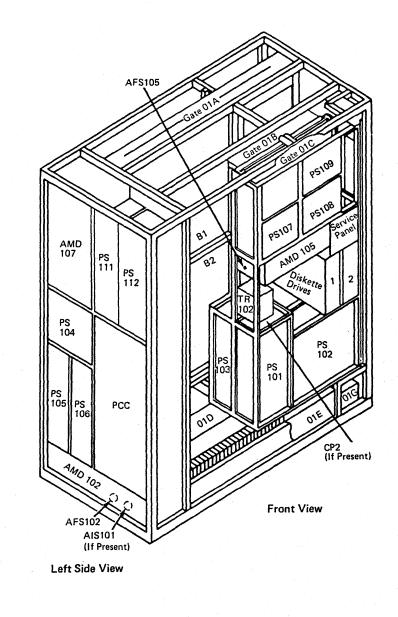
PR 1701

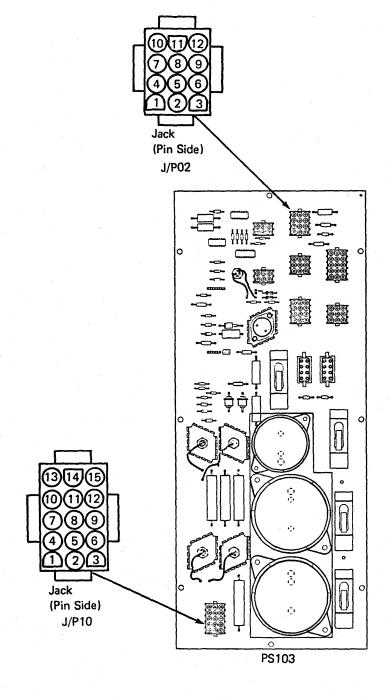
These Ref Codes indicate the +5 Vdc bias voltage from PS103 is out of tolerance.

Possible causes:

- 01A-A2E2 card
- TR103
- PS103.

Step	Conditions	Instructions
1	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). 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	Go to step 6.
3	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Disconnect PS103 J/P10. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). 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.





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PN 6169185 Seq DA150

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Step	Conditions	Instructions
5	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. Press service panel Power On. Select the Partial Power Up/Down (QWW)
		screen. 5. Select UC (power-up processor only). 6. If machine still fails, go to step 3.
8	Go to Instructions column.	7. Go to page PR 5001. 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?	Set service panel Power Off switch to Power Off and then back to Normal.
		 Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.
10	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal.
		 Set PCC CB1 and CB2 off. 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.

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PR 1702

Ref Codes 11A0740E, 11A0750E

PR 1711

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

Possible causes:

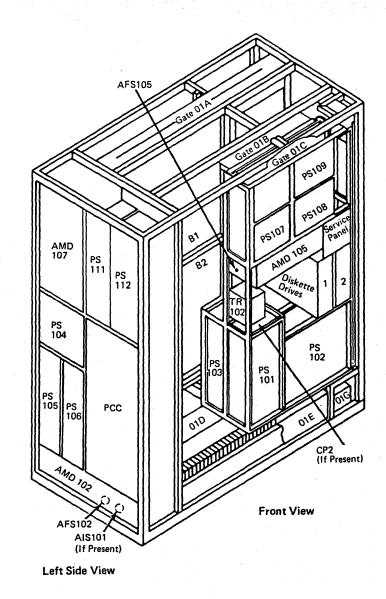
• PS102

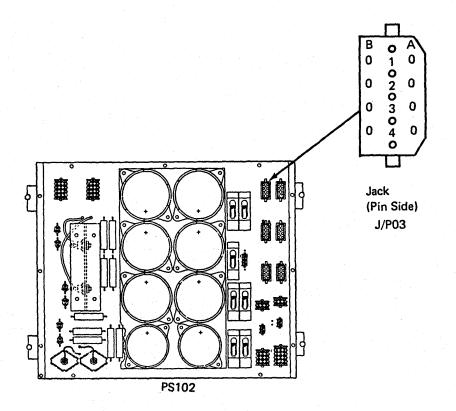
01A-A2E2 sense card

01A-A2 board

01A-A3 board.

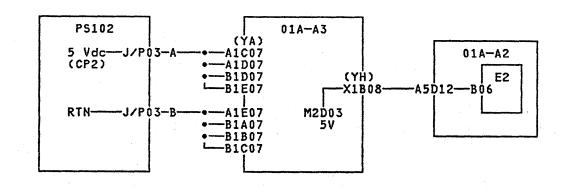
Step	Conditions	Instructions
1	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode Press service panel Power On. Measure for +1.5 Vdc at the following points: lead at 01A-A2E2D08 lead at 01A-A2E2B06.
2	Is voltage +1.29 to +1.71 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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.

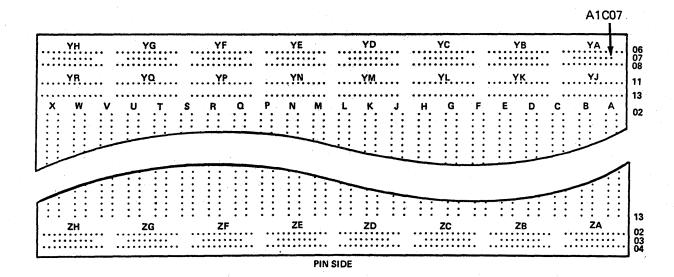




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Step	Conditions	Instructions
11	Go to Instructions column.	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange PS102. Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
12	Go to Instructions column.	Ensure PCC CB1 and CB2 are off. Reinstall and check all cables and cards for proper seating in the following areas: PS102 O1A-A2 board
		O1A-A3 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.





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Conditions

Vdc?

Is voltage +4.50 to +5.50

Go to Instructions column.

Is voltage +4.50 to +5.50

Go to Instructions column.

Is voltage +4.50 to +5.50

Vdc?

Instructions

01A-A2A5.

Go to step 12.

Go to step 12.

PS102 J/P03.

Go to step 12.

Set service panel Power Off switch to

Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable.

Measure for +5 Vdc at the following points:

Set service panel Power Off switch to Power Off and then back to Normal.

Measure for +5 Vdc at the following points:

Set service panel Power Off switch to Power Off and then back to Normal.

Exchange cable from 01A-A3YA to

Note: Check board for bent pins and

cable connector for pushed in pins and

seating before exchanging cable.

- lead at 01A-A3M2D08 + lead at 01A-A3A1C07.

Set PCC CB1 and CB2 off. Exchange 01A-A3 board.

- lead at PS102 P03-B + lead at PS102 P03-A

Set PCC CB1 and CB2 off.

Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cable from 01A-A3YH to

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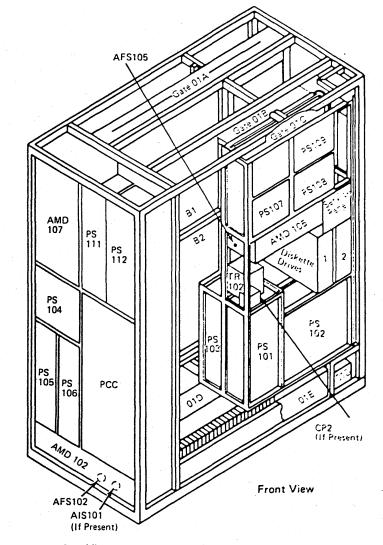
Ref Codes 11A0940E, 11A0950E

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.

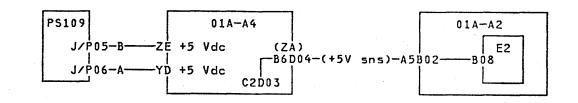
Step	Conditions	Instructions
	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option F (stop after +5V start). Measure for +1.5 Vdc at the following points:
-		- lead at 01A-A2E2D08 + lead at 01A-A2E2B08.
2	Is voltage +1.42 to +1.58 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. 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.

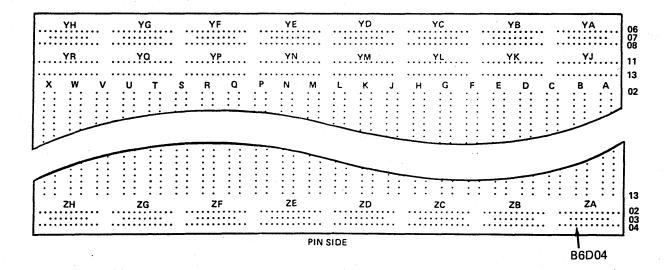


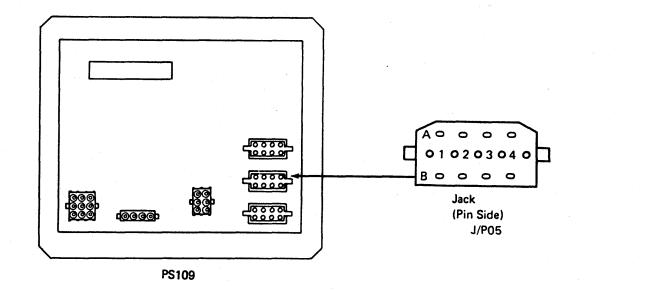
Left Side View

4381-3 MI PN 6169188 EC A20558 EC A20562 01 Oct 84 30 Aug 85

Step	Conditions Instructions		
6	Is voltage +4.85 to +5.15 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A4 board. Set PCC CB1 and CB2 on. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	







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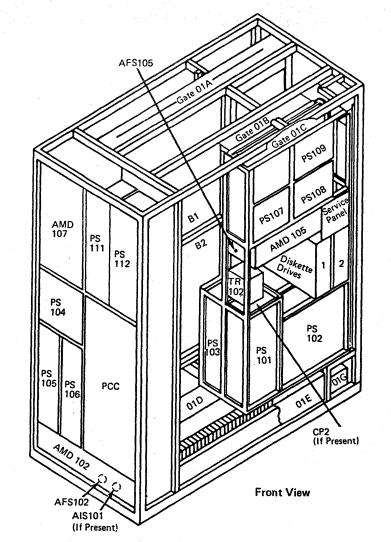
Ref Codes 11A1040E, 11A1050E

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

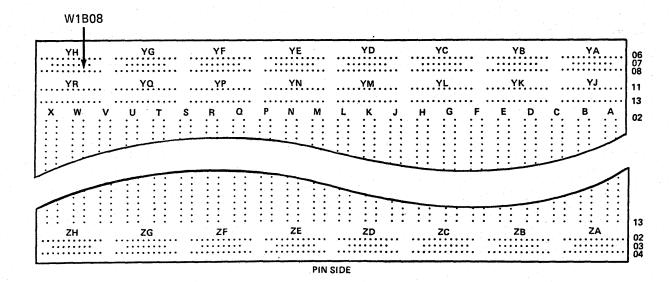
Possible causes:

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

Step	Conditions	Instructions
1	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). 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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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 O1A-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.



Left Side View



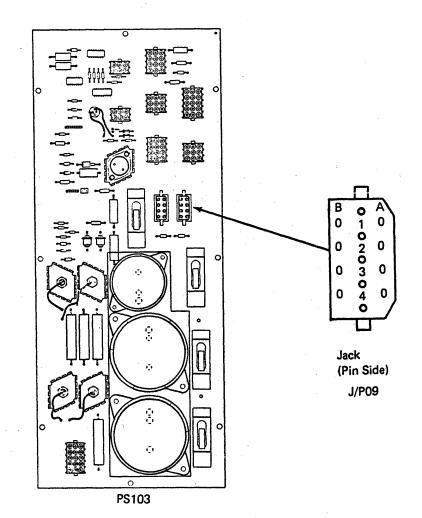
4381 | MI B/M 2676380 | Seq DA165

MI PN 6169189 Seg DA165 1 of 2

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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 O1A-A3YH to O1A-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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

01A-A2 01A-A3 U2D03



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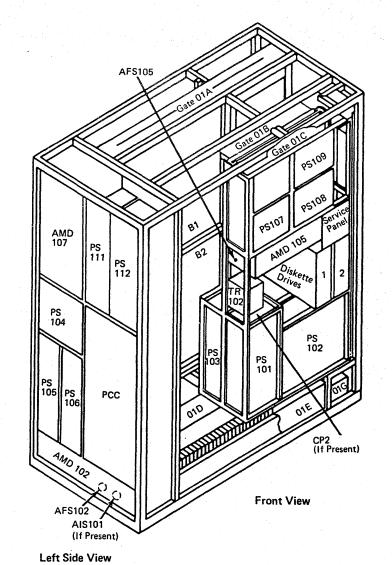
Ref Codes 11A1240E, 11A1250E

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.	Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Press service panel Power On. Select Diagnostic Power (QWD) screen. Select option H (stop after +6V start). 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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.



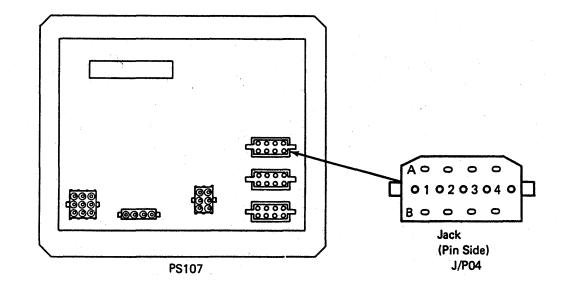
MI PN 6169190 EC A2 Seq DA170 1 of 2 01 Oc

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⁴³⁸¹ B/M 2676380

Step	Conditions	Instructions
6	Is voltage +5.82 to +6.18 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.
7	Go to Instructions column.	5. Go to page PR 5001. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A3 board. Set PCC CB1 and CB2 on. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

PS107 01A-A3 01A-A2 J/P04-A-YC +6 Vdc J/P05-B-ZF +6 Vdc (HY) -V1D08---(+6V sns)---A5B05-K2Ġ11



PN 6169190 2 of 2 B/M 2676380 | Seq DA170

EC A20558 01 Oct 84

Ref Codes 11A2640E, 11A2650E

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

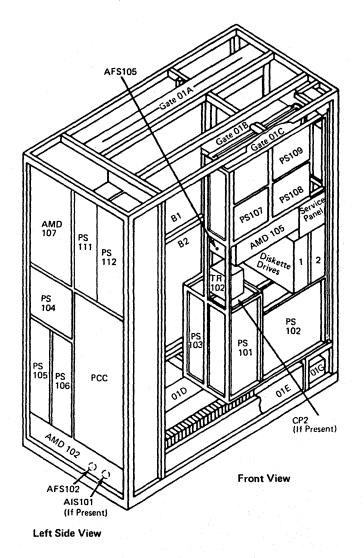
Possible causes:

- 01A-A2B2 paddle card
- 01A-A2E2 card
- 01A-A2 board
- 01A-B2 board
- Power supply adjustment.

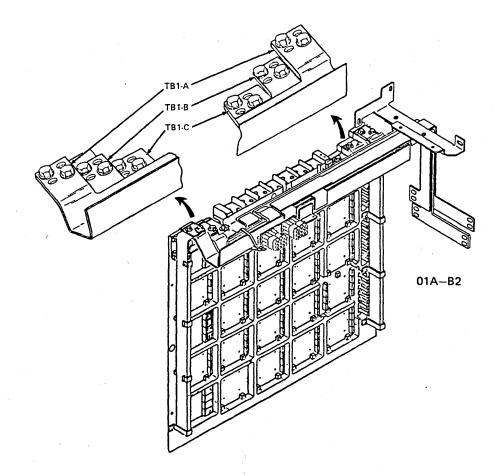
Step	Conditions	Instructions
1	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Check the 01A-B2 TB1 bus bars and PS105 for loose bolts, screws and cables. Press service panel Power On. Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). 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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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.

	·						
4381 B/M 2676380	MI Sea DA175	PN 6169191		EC A20559 03 Dec 84			
B/ WI 20/0360	Sed DAT75	1 of 3	01 001 84	U3 Dec 64	<u> </u>	<u> </u>	<u> </u>

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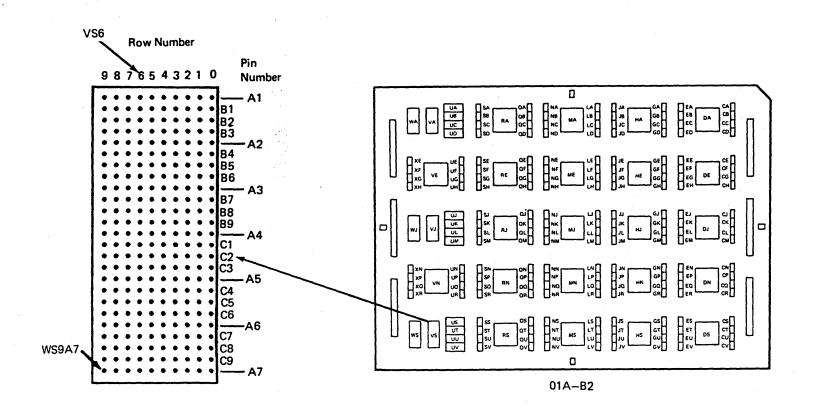
Step	Conditions	Instructions
4	Is voltage -1.44 to -1.56 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.
5	Go to Instructions column.	1. Select Partial Power Up/Down (QWW) screen, 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.
7	Go to Instructions column.	 Go to page PR 5001. Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). 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.

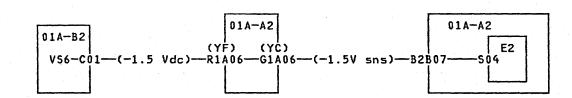


4381 MI PN 6169191 EC A20558 EC A20559 8/M 2676380 Seq DA175 2 of 3 01 Oct 84 03 Dec 84

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Instructions column.	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.
age -1.47 to -1.53	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.
Instructions column.	2. Go to page PR 5001. 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.





MI	PN 616919
Seq DA175	3 of 3

EC A20558 EC A20559 01 Oct 84 03 Dec 84

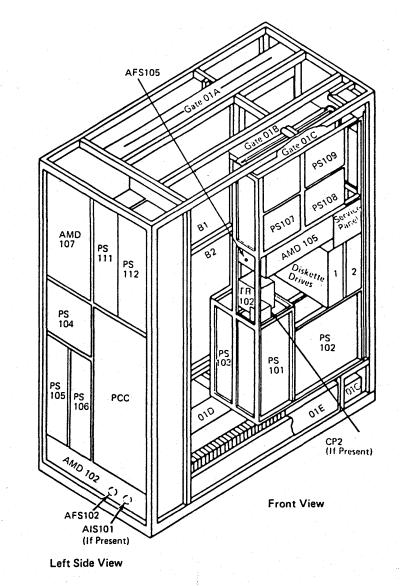
Ref Code 11D1230E

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.

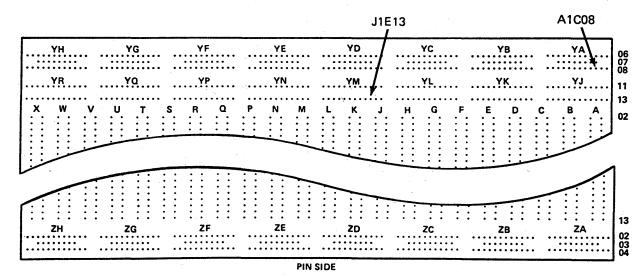
Step	Conditions	Instructions
1	Go to Instructions column.	Set PCC CB1 and CB2 off. Set CE Mode switch to CE Mode. Set PCC CB1 and CB2 on. Measure for +5 Vdc at the following points:
		- lead at 01A-A2E2D08 + lead at 01A-A2E2G04.
2	ls voltage less than +2.5 Vdc?	Go to step 6.
3	Go to Instructions column.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



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EC A20558 EC A20560 EC A20562 01 Oct 84 18 Feb 85 30 Aug 85

Step	Conditions	Instructions	Step	Conditions	Instructions
8	Go to Instructions column.	Set PCC CB1 and CB2 off. Disconnect cable at 01A-A1YM (card side).	15	Go to Instructions column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 21.
		 3. Set PCC CB1 and CB2 on. 4. Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 	16	Go to Instructions column.	 Set PCC CB1 and CB2 off. Reconnect cable at 01A-A1YM (card side). Remove 01A-A2E2 card. Set PCC CB1 and CB2 on.
		+ lead at 01A-A1V2U07.			5. Measure for · 5 Vdc at the following
9	Is voltage greater than +2.5 Vdc?	Go to step 16.			points:
10	Go to Instructions column.	1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A1V2 card.			- lead at 01A-A1V2D08 - lead at 01A-A1V2U07.
		Press service panel Power On. Select the Partial Power Up/Down (QWW) screen.	17	Is voltage greater than +2.5 Vdc?	 Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. Go to step 21.
		5. Select UC (power-up processor only).	18	Go to Instructions column.	Set PCC CB1 and CB2 off. Disconnect cable at O1A-A2YA (card side). Reinstall O1A-A2E2 card.
		Note: A TCC could also be defective. Ensure TCCs are seated and the TCC arrow is pointing up.			4. Set PCC CB1 and CB2 on. 5. Measure for · 5 Vdc at the following points: Output Description:
		6. Exchange 01A-A1 board if still failing. 7. Go to step 21.			- lead at 01A-A1V2D08 • lead at 01A-A1V2U07.
11	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08	19	Is voltage greater than +2.5 Vdc?	 Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Go to step 21.
12	Is voltage greater than +2.5 Vdc?	+ lead at 01A-A2A1C08. 1. Set PCC CB1 and CB2 off. 2. Exchange 01A-A2 board. 3. Go to step 21.	20	Go to Instructions column.	Set PCC CB1 and CB2 off. Exchange cable from 01A-A1YM to 01A-A2YA.
13	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08			Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable.
14	Is voltage greater than +2.5	+ lead at 01A-A1J1E13. 1. Set PCC CB1 and CB2 off.			



4381-3

Vdc?

PN 6169192 B/M 2676380 Seq DA180

EC A20558 | EC A20560 | EC A20562 01 Oct 84 18 Feb 85 30 Aug 85

Exchange cable from 01A-A1YM to

Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable.

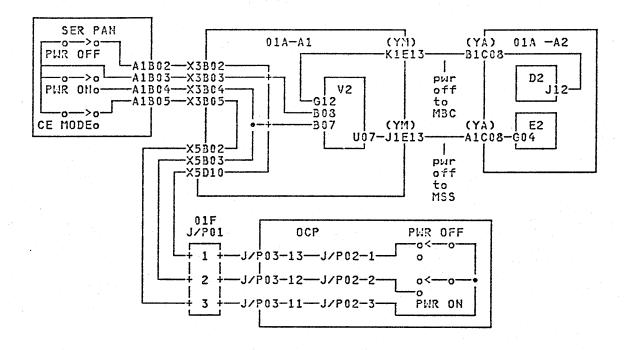
01A-A2YA.

Go to step 21.

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PR 1773

Step	Conditions	Instructions				
21	Go to Instructions column.	Ensure PCC CB1 and CB2 are off. 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.				



MI PN 6169192

00000000000000

Ref Codes 11A2940E, 11A2950E

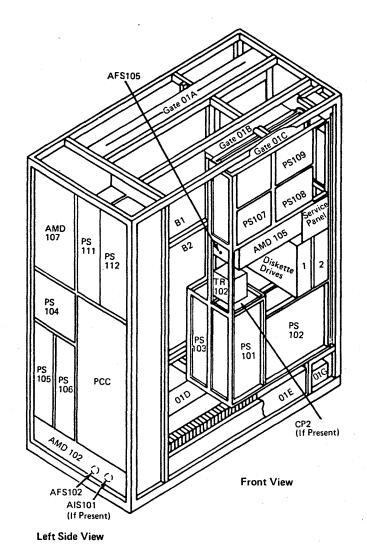
PR 1781

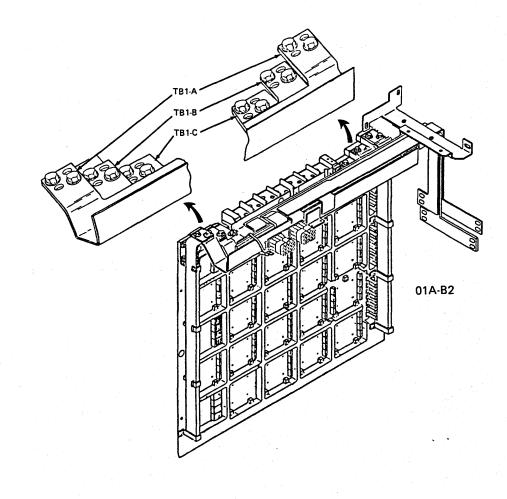
These Ref Codes indicate the -1.5V from PS105 is out of tolerance at the 01A-A2 board.

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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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.





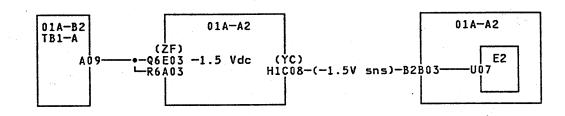
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4381 B/M 2676380

MI PN 6169193

EC A20558 EC A20559 01 Oct 84 03 Dec 84

Step	Conditions	Instructions	Step	Conditions	Instructions
4	Is voltage -1.433 to -1.59 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.	9	Go to Instructions column.	 Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). Measure for -1.5 Vdc at the following points:
5	Go to Instructions column.	Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). 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.
	•	- lead at 01A-A2H2D08 + lead at 01A-A2H1C08. Note: Voltage is present for about two seconds.	10	Is voltage -1.463 to -1.585 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cable from 01A-B2 TB1-A bus to 01A-A2ZF.
6	Is voltage -1.463 to -1.585 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cable from 01A-A2YC to 01A-A2B2.			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.
•		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
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.			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.
		Note: Voltage is present for about two		I	5. Go to page FN 5001.



B/M 2676380 Seg DA185

Is voltage -1.463 to -1.585

EC A20558 EC A20559 01 Oct 84 03 Dec 84

Set service panel Power Off switch to Power Off and then back to Normal.

Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. Set PCC CB1 and CB2 on.
 Go to page PR 5001.



PR 1791

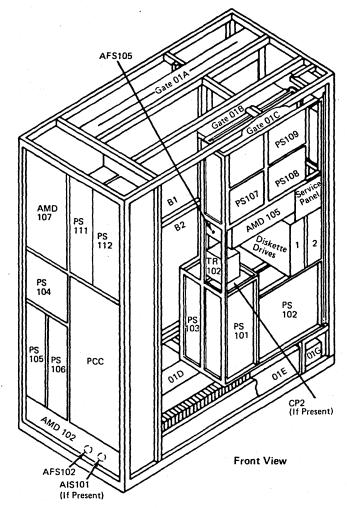
Ref Codes 11A3040E, 11A3050E

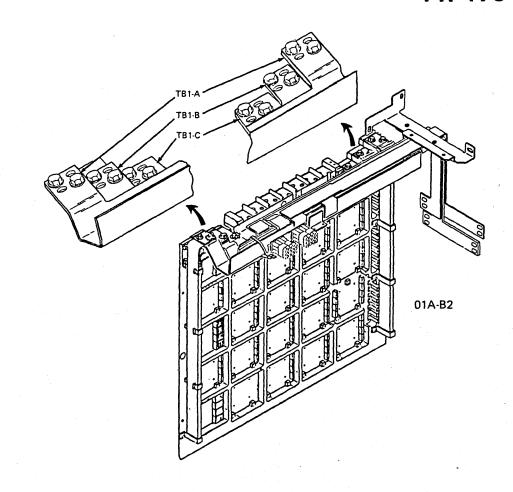
These Ref Codes indicate the -1.5V from PS105 out of tolerance at the 01A-A4 board.

Possible causes:

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

Step	Conditions	Instructions
	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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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

	YG	YF	YE	YD	YC		YA
YR	ΥQ	YP	YN	YM	YL		YJ 1
x w v	U T S	S R Q	P N M	L K J	H G F	E D C	B A 0
ZH	ZG	ZF	ZE	ZD	ZC	ZB	ZA
			PIN	SIDE			

4381 B/M 2676380

MI			PN	61	69	19
Seq	DA19)	1 01	f 2		

EC A20558 EC A20559 01 Oct 84 03 Dec 84

Step	Conditions	Instructions
9	Go to Instructions column.	Select Partial Power Up/Down (QWW) screen.
		2. Select UP
		(power-up processor only).
		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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.
. •		 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

			·			
01A-B2 TB1-A		01A-A4	1		01A-A2	
A I	5-•Z((ZA) -B6E04-(-1.5V	sns)—A5I	E2]
	19-•YI 20		2811	•		

01A-B2 TB1-A		01A-A4		01A-A2
 A: A:	16—	, -,-,-,-, ,,	 ZA) E04-(-1.5V sns)-A5 	S04S03

B/M 2676380

PN 6169194 Seg DA190 2 of 2

EC A20558 | EC A20559

Conditions

Vdc?

Is voltage -1.433 to -1.59

Go to Instructions column.

Is voltage -1.44 to -1.59

Go to Instructions column.

Is voltage -1.44 to -1.59

Vdc?

Instructions

screen. 2. Select UP

points:

seconds.

Set service panel Power Off switch to Power Off and then back to Normal.

1. Select Partial Power Up/Down (QWW)

(power-up processor only). 3. Measure for -1.5 Vdc at the following

> - lead at 01A-A4B5D08 + lead at 01A-A4B6E04.

Note: Voltage is present for about two

1. Set service panel Power Off switch to Power Off and then back to Normal.

> Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable.

1. Select Partial Power Up/Down (QWW)

(power-up processor only). 3. Measure for -1.5 Vdc at the following

> - lead at 01A-A4K2D08 + lead at 01A-A4K2B11.

Note: Voltage is present for about two

1. Set service panel Power Off switch to

Set PCC CB1 and CB2 off. 3. Exchange 01A-A4 board. Set PCC CB1 and CB2 on. Go to page PR 5001.

Power Off and then back to Normal.

Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A4ZA to

4. Set PCC CB1 and CB2 on. Go to page PR 5001.

01A-A2A5.

screen. 2. Select UP

points:

seconds.

2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.

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PR 1801

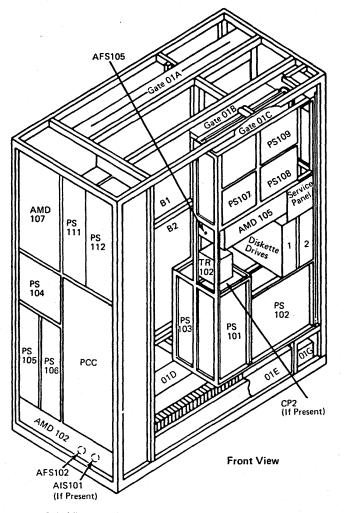
Ref Codes 11A3140E, 11A3150E

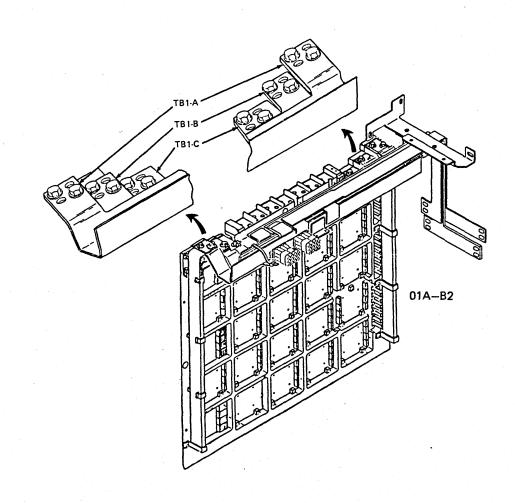
These Ref Codes indicate the -1.5V from PS105 is out of tolerance at the 01A-A3 board.

Possible causes:

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

Step	Conditions	Instructions
	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Check the 01A-B2 TB1 bus bars and PS105 for loose bolts, screws and cables. Press service panel Power On. Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). 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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2E2 card. 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.





Left Side View

W1E08 ZH ZG ZF ZE ZD ZC ZB ZA

B/M 2676380 | Seq DA195

PN 6169195 1 of 2

EC A20558 EC A20559 01 Oct 84

Step	Conditions	Instructions	Step	Conditions	Instructions
4	Is voltage -1.433 to -1.59 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001. 	9	Go to Instructions column.	Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). Measure for -1.5 Vdc at the following points:
5	Go to Instructions column.	Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). 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.
		- lead at 01A-A3W2D08 + lead at 01A-A3W1E08. Note: Voltage is present for about two seconds.	10	Is voltage -1.478 to -1.57 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cable from 01A-B2 TB1-A bus to 01A-A3YE.
6	Is voltage -1.478 to -1.57 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.
		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.	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.
7	Go to Instructions column.	 Go to page PR 5001. Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). Measure for -1.5 Vdc at the following points: 			Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS105. Note: Check cable connectors for pushed in pins and seating or power supply adjustment
		- lead at 01A-A3U2J08 + lead at 01A-A3U2B13. Note: Voltage is present for about two			before exchanging power supply. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.

01A-B2 TB1-A		01A-A3	4	01A-A2
152 4			(H) E08-(-1.5V sns)-A51	E2
	5-•Y	-1.5 Vdc U2B13		

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Is voltage -1.478 to -1.57

Vdc?

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1. Set service panel Power Off switch to Power Off and then back to Normal.

Set PCC CB1 and CB2 off. Exchange 01A-A3 board. Set PCC CB1 and CB2 on. Go to page PR 5001.

Ref Codes 11A3840E, 11A3850E, 11A3850C

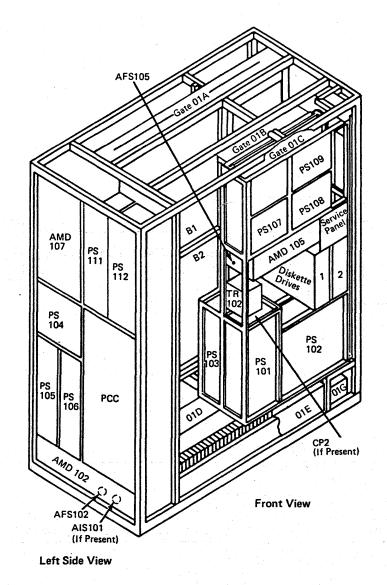
PR 1811

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.	 Set service panel Power Off switch to Power Off and then back to Normal. Set the CE Mode switch to CE Mode. Press service panel Power On. Select Analog Voltage/Temp (QWA) screen. 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.
		 Check AMD 102 filter for dirt. Ensure ample air flow to processor. Ensure room air conditioner is operating. If there have been repeated temperature warnings, exchange the AIS. 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.

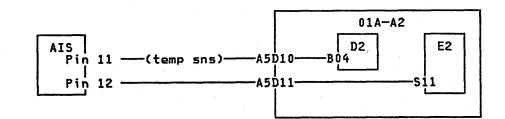


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Step	Conditions	Instructions
5	Is voltage +0.4 to +1.4 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. Set PCC CB1 and CB2 on. Go to page PR 5001.
6	Go to Instructions 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.
12	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. Set PCC CB1 and CB2 on.

Step	Conditions	Instructions
13	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange the AIS. Set PCC CB1 and CB2 on. Go to page PR 5001.



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

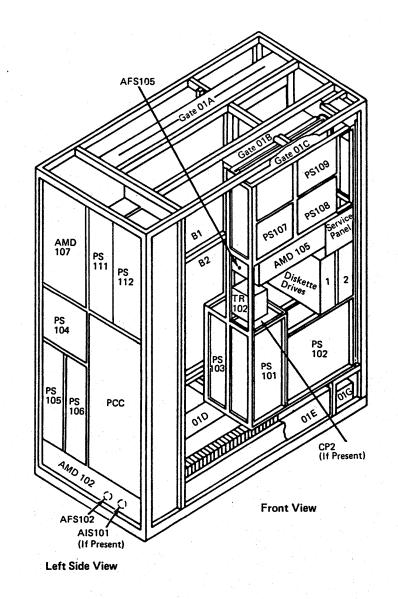
PR 1821

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.	 Set service panel Power Off switch to Power Off and then back to Normal. Check for any tripped CP in PS103. Reset any tripped CP and press Power On. If CP trips again or same Ref Code, go to step 2. If power is complete, go to page END 001.
2	Is CP2 or CP4 tripped?	Set service panel Power Off switch to Power Off and then back to Normal. Set the CE Mode switch to CE Mode. Reset tripped CP. Go to step 33.
3.	Is CP3 tripped?	Set service panel Power Off switch to Power Off and then back to Normal. Set the CE Mode switch to CE Mode. Reset tripped CP. 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.	 Disconnect PS103 J/P08 and J/P09. Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).



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

YR YQ YP YN YM YL YK YJ	YH	YG	YF	YE	YD	YC	YB	YA
X W V U T S R Q P N M L K J H G F E D C B A		YQ	YP	YN	YM	YL	YK	1.1
		U T	S R Q	P N M	L K J	H G F	E D (с в А
	ZH	ZG	ZF	ZE	ZD	ZC	ZB	ZA

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Step

Conditions

Is CP3 tripped?

Is CP3 tripped?

Is CP3 tripped?

Go to Instructions column.

Go to Instructions column.

Instructions

supply.

4. Go to step 57.

screen. Select UP

Go to step 21.

(pin side).

screen. Select UP

Reset CP3.

Go to step 57.

1. Set service panel Power Off switch to Power Off and then back to Normal.

Note: Check cable connectors for pushed in pins and seating before exchanging power

 Set service panel Power Off switch to Power Off and then back to Normal.
 Reconnect cable PS103 P08.
 Press service panel Power On.

(power-up processor only).

 Set service panel Power Off switch to Power Off and then back to Normal.
 Reconnect cable PS103 P09.
 Disconnect cable at 01A-A3YB and YF

Press service panel Power On.
 Select the Partial Power Up/Down (QWW)

(power-up processor only).

Set PCC CB1 and CB2 off.

01A-A3YB and YF.

1. Set service panel Power Off switch to Power Off and then back to Normal.

Exchange cable from PS103 J/P09 to

Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable.

Select the Partial Power Up/Down (QWW)

Set PCC CB1 and CB2 off.
 Exchange PS103.

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Step	Conditions	Instructions
16	Go to Instructions column.	Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Remove all cables from the 01A-A3 board (card side only). Reset CP3. Select the Partial Power Up/Down (QWW) screen. 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.	Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only).
		 Reinstall one cable in the 01A-A3 board. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).
19 .	Is CP3 tripped?	Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). 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.	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.	Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Reinstall one card in the 01B-A1 board. Select the Partial Power Up/Down (QWW) screen. Select UP

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Step	Conditions	Instructions
26	Is CP3 tripped?	 Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Exchange card. Reset CP3. Repeat steps 25, 26, and 27 until all cards have been reinstalled; then go to step 57.
27	Go to Instructions column.	Repeat steps 25, 26, and 27 until all cards have been reinstalled; then go to step 57.
28	Go to Instructions column.	Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Remove all cables from the 01B-A1 board (card side only). Reset CP3. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).
29	Is CP3 tripped?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01B-A1 board. Reset CP3. Go to step 57.
30	Go to Instructions column.	Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Reinstall one cable in the 01B-A1 board. Select the Partial Power Up/Down (QWW) screen.
		5. Select UP (power-up processor only).

Step	Conditions	Instructions
31	Is CP3 tripped?	Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Exchange cable.
		Note: Check cable connectors for pushed in pins and seating before exchanging cable.
		 Reset CP3. Repeat steps 30, 31, and 32 until all cables have been reinstalled; then go to step 57.
32	Go to Instructions column.	Repeat steps 30, 31, and 32 until all cables have been reinstalled; then go to step 57.
33	Go to Instructions column.	 Disconnect cables PS103 J/P04, J/P05, J/P06, and J/P07. Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).
34	Is CP2 or CP4 tripped?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

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Step	Conditions	Instructions
35	Go to Instructions column.	Select the Partial Power Up/Down (QWW)
		screen.
		2. Select DP
		(power-down processor only). 3. Reconnect cables PS103 P04 and P07.
		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.	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
	the state of the s	(power-up processor only).
38 -	Is CP2 or CP4 tripped?	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.
	1	5. Go to step 57.

Step	Conditions	Instructions
39	Go to Instructions column.	Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Reconnect cable PS104 P02. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).
40	Is CP2 or CP4 tripped?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Reconnect cable PS105 P03. Select the Partial Power Up/Down (QWW) screen. 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.
		Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

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Step	Conditions	Instructions
43	Go to Instructions column.	Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Reconnect cable PS106 P03. Select the Partial Power Up/Down (QWW) screen. 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.	Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Reconnect cable PS107 P02. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).
46	Is CP2 or CP4 tripped?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

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Step	Conditions	Instructions
47	Go to Instructions column.	 Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Reconnect cable PS108 P02. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).
48	Is CP2 or CP4 tripped?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only). Reconnect cable PS109 P02. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).
50	Is CP2 or CP4 tripped?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

PR 1827

Step	Conditions	Instructions
51	Go to Instructions column.	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.
····		
53	Go to Instructions column.	Select the Partial Power Up/Down (QWW)
		screen. 2. Select DP
•	1	(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).
 	<u>.l.</u>	1 (bosses ob brocessor omis):

Step	Conditions	Instructions
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.
		 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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 PO3. 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.

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Step	Conditions	Instructions			
57	Go to Instructions column.	Ensure PCC CB1 and CB2 are off. 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.			

PS103 CP3-J/P09-A-+5V 01A-A3 01A-A2 __E2__ 一(YF) (YH) -W1B08-U2D03 rtn-J/P09-B-01B-A1 01A-A2 CP3-J/P08-A-__E2__ (YH) —W1B08— -(YF) U2D03 rtn-J/P08-B-PS104 PS106 PS108 -J/P03-1 24V -2 rtn -3 5V -J/P02-1 24V -2 rtn -3 5V -4 rtn -J/P02-1 24V | -2 rtn CP2-J/P05-3--6-• -8-• -9-• +24V -4 rtn -11---12-• CP4-J/P06-2-• +5V -3-• -5-• -6-• -9-• PS107 PS105 PS109 -J/P03-1 24V -2 rtn -3 5V -4 rtn -J/P02-1 24V -2 rtn -3 5V -4 rtn -J/P02-1 24V -2 rtn -3 5V -4 rtn PS111 -J/P03-1 24V -2 rtn -3 5V CP4-J/P04-3-+5V | -6-• -8-• -9-• -6-• -4 rtn -8-• -9-• CP2-J/P07-2-• +24V | -2-• -2-• -6-• PS112 -J/P03-1 24V -2 rtn -3 5V -4 rtn ىــوّـــ

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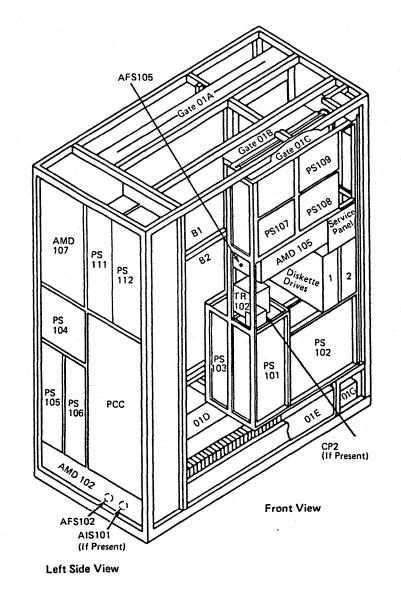
Ref Codes 11A4330E, 17A4330E

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

Possible causes:

- I/O control unit
- Power control cable
- PCI panel
- PS10
- 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.
		 Plug the PCI dummy plug into PCI panel No. 1 CU1 position. Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UI (power-up I/O only). Check the I/O status (displayed on QWW screen).
3	Does I/O status equal power is on?	Go to step 36.



MI PN 6169198

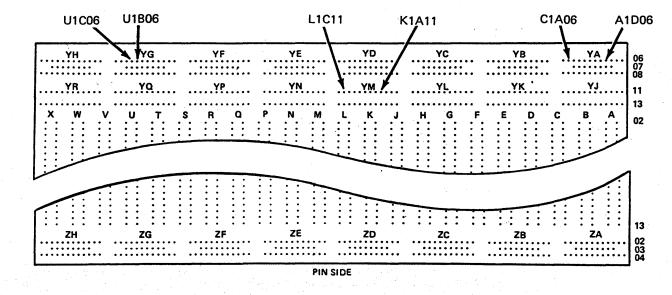
EC A20558 EC A20562 01 Oct 84 30 Aug 85

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Step	Conditions	Instructions		
4	Go to Instructions column.	Select the Partial Power Up/Down (QWW) screen. Select DI		
		(power-down I/O only).		
		CAUTION +24V may be present on power		
		control cable.		
		Reconnect power control cable to PCI panel No. 1 CU1 position.		
		Return dummy plug to original position. Select the Diagnostic Power Up (QWD) screen.		
-		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?	Set service panel Power Off switch to Power Off and then back to Normal. 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.		

Jack (Pin Side) J/P02

Jack (Pin Side) J/P03



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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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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:	1
		- lead at 01A-A2D2D08 + lead at 01A-A2D2D11.	
13	Is voltage greater than +2.5 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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.	

Step	Conditions	Instructions
19	Is voltage greater than +2.5 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A1 board. Go to step 47.
22	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A1 board.
25	Go to Instructions column.	Go to step 47. Measure for +5 Vdc at the following points:
		- lead at 01A-A2D2D08 + lead at 01A-A2D2B12.

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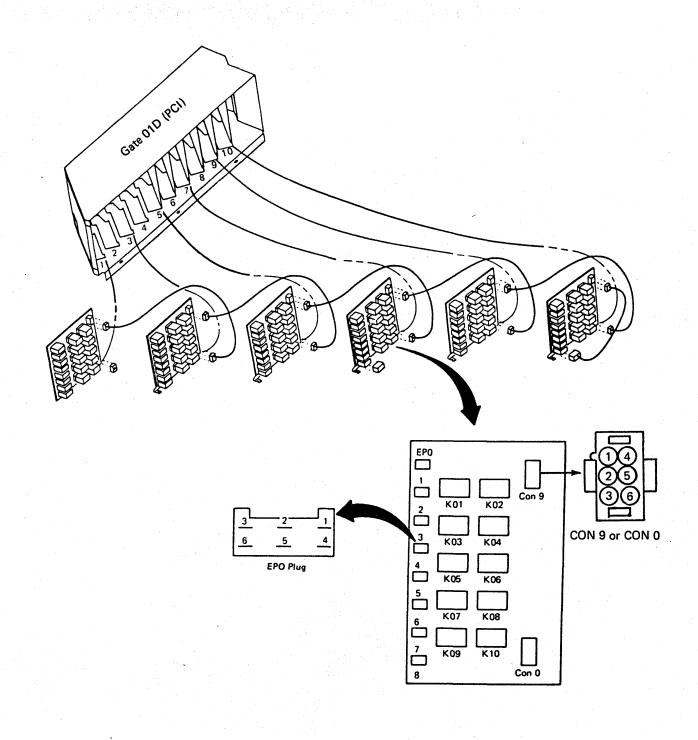
Step	Conditions	Instructions
26	Is voltage greater than +0.8 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. Go to step 47.
27	Go to Instructions column.	Select the Diagnostic Power Up (QWD) screen. Select option I (stop after power-up I/O). 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS101.
		Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
29	Go to Instructions column.	4. Go to step 47. Measure for +5 Vdc at the following points:
29	GO to instructions column.	- lead at 01A-A1D2D08 + lead at 01A-A1U1B06.
30	Is voltage less than +0.8 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

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Step	Conditions	Instructions		
32	Is voltage less than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A1 board. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Go to step 47.		
36	Go to Instructions column.	Select the Partial Power Up/Down (QWW) screen. 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/PO9-1 (last PCI panel).		

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.		
	<u>-</u>	 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.	Locate last PCI panel. Measure for +24 Vdc at the following points:		
		- lead at frame ground + lead at J/P09-4 (last PCI panel).		



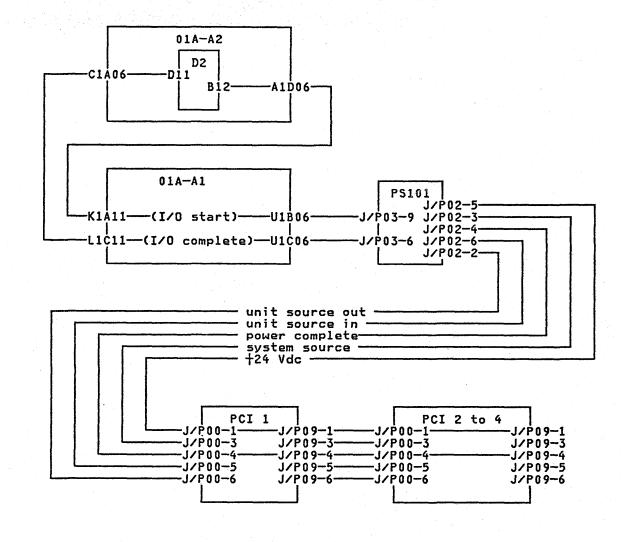
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Step	Conditions	Instructions
39	Is voltage greater than +22 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. One of the following cables is open (see note).
		PS101 P02-4 to PCI panel No. 1 P00-4. 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.
	at a	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 PO1 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 PO1 through PO8 on each PCI).
41	is voltage less than +22 Vdc?	The I/O power on sequence is failing at this plug position.
		Isolate to one of the following:
		I/O control unit Power control cable
	\$	PCI panel.
		2. Go to step 47.

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Step	Conditions	Instructions		
42	Is this the last PCI panel and plug position or the dummy plug position?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange last PCI panel or dummy plug cable assembly. 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		
45	Is power complete?	(power-up processor and I/O). 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.	Ensure PCC CB1 and CB2 are off. Reinstall and check all cables and cards for proper seating in the following areas: PS101 O1A-A1 board O1A-A2 board PCI panels No. 1 through No. 4.		
		 Reset any tripped CPs. Set PCC CB1 and CB2 on. Go to page PR 5001. 		



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Ref Codes 1114250E, 11A4440E, 11A4450E

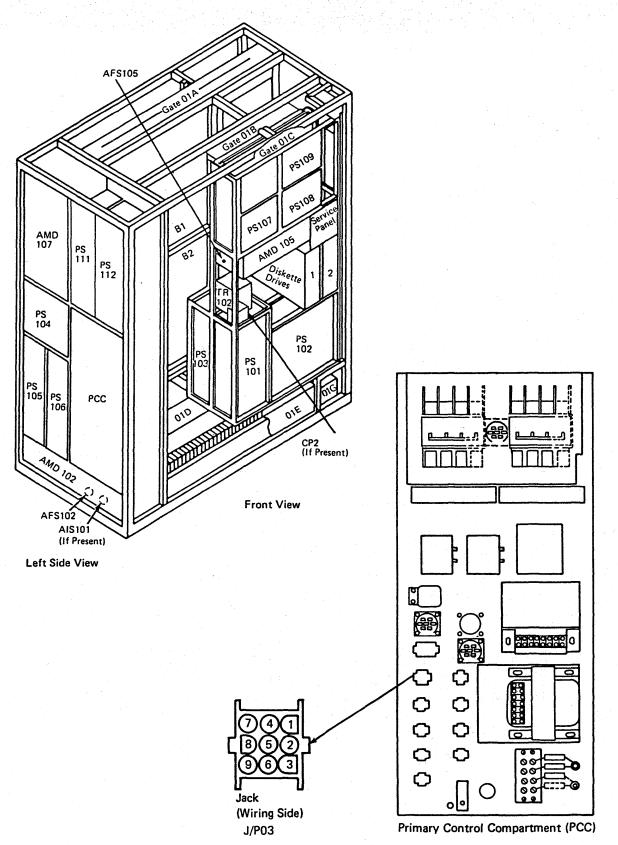
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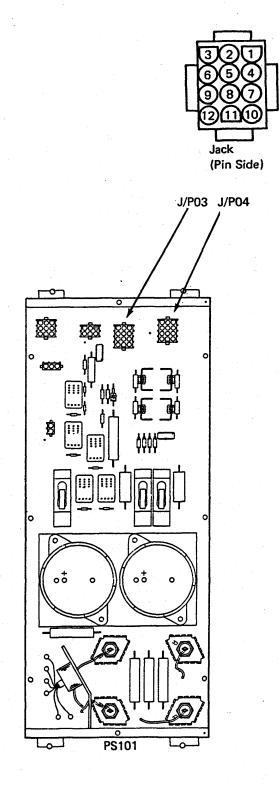
These Ref Codes indicate that PCC KO3 has failed to pick or the sense line is failing.

Possible causes:

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

Step	Conditions	Instructions		
1	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Check for PS101 CP3 tripped. 		
2	Is CP3 tripped?	Go to page PR 0141.		
3	Go to Instructions column.	Press service panel Power On. Select the Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). Measure for +24 Vdc at the following points: lead at PS101 J/P04-11		
4	la valence less than 122	+ lead at PS101 J/P04-8. Go to step 20.		
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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. 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.		





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Step	Conditions	Instructions
10	Is voltage greater than +3.5 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	4. Go to step 51. Measure for +4 Vdc at the following points:
		- lead at 01A-A2D2D08 + lead at 01A-A1U2D10.
14	Is voltage greater than +3.5 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A1 board. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A1 board. Go to step 51.

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Step	Conditions	Instructions		
19	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cable from PCC PO3 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.	 Set service panel Power Off switch to Power Off and then back to Normal. 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.	Press Service Panel Power On. Select the Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A1V2 card. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. Go to step 51.		

Step	Conditions	Instructions	
28	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A1 board. 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.	

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Step	Conditions	Instructions
36	Is voltage greater than +4.5 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS101.
		Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
38	Co to Incomediana column	4. Go to step 51. Measure for +5 Vdc at the following points:
36	Go to Instructions column.	- lead at 01A-A1V2D08 + lead at 01A-A1T1A08.
39	Is voltage greater than +4.5 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A1 board. 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.

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42	Go to Instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PCC K03 contactor. Set PCC CB1 and CB2 on. Go to step 51.
47	Is voltage less than +0.8 Vdc.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cable from PCC K03 to PCC P03.
		Note: Check cable connectors for pushed in pins and seating before exchanging cable.
	l	4. Go to step 51.

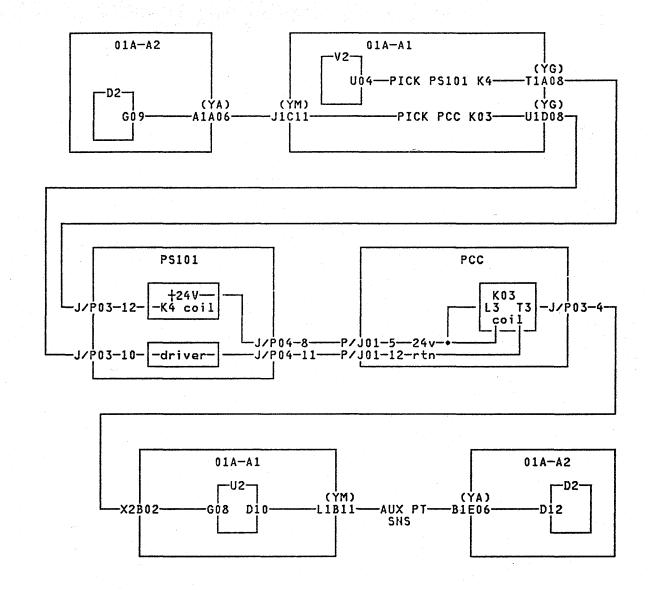
Instructions

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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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Ensure PCC CB1 and CB2 are off. 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.



Ref Codes 1114350E, 11A4540E, 11A4550E

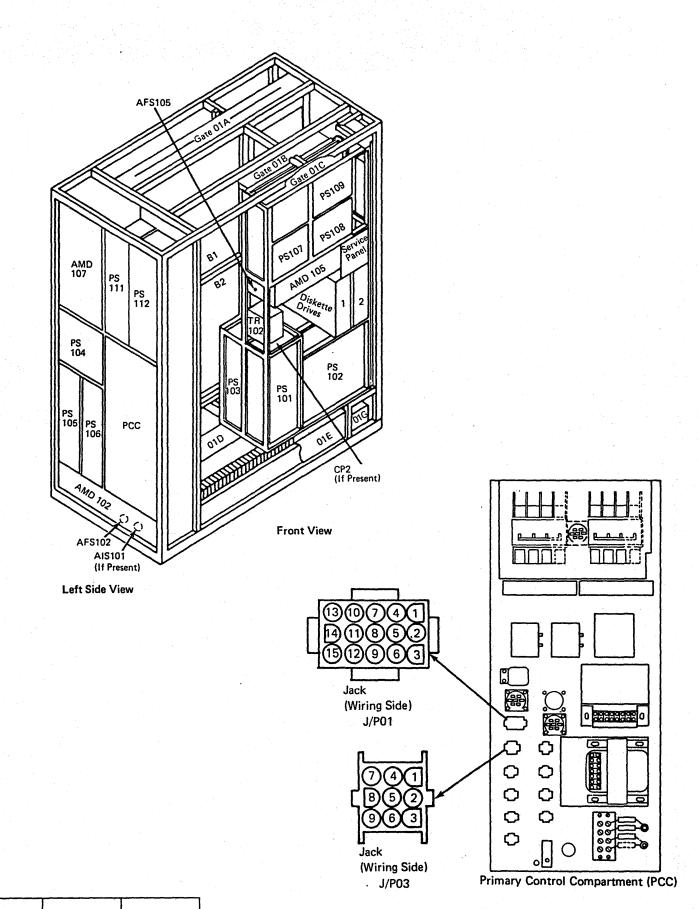
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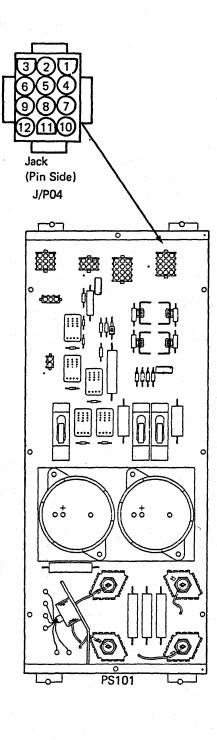
These Ref Codes indicate that PCC KO4 has failed to pick or the sense line is failing.

Possible causes:

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

Step	Conditions	Instructions
	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	Go to step 21.





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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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PCC K04 contactor. Go to step 31.
7	Go to instructions column.	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Measure for +4 Vdc at the following points:
٠.		- lead at 01A-A2D2D08 + lead at 01A-A2D2B09.
		Select the Partial Power Up/Down (QWW) screen. Select UP (power-on processor only).
		Note: Voltage is present for about two seconds.
		I

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PR 1853

Can	Conditions	Instructions
Step	Conditions	Instructions
9	Is voltage greater than +3.5 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. Go to step 31.
10	Go to Instructions column.	Measure for +4 Vdc at the following points:
		- lead at 01A-A2D2D08 + lead at 01A-A2B1D06.
		Select the Partial Power Up/Down (QWW) screen. Select UP (power-on processor only).
		Note: Voltage is present for about two seconds.
11	Is voltage greater than +3.5 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off.
		3. Exchange 01A-A2 board.4. Go to step 31.
12	Go to Instructions column.	Measure for +4 Vdc at the following points:
		- lead at 01A-A2D2D08 + lead at 01A-A1L1A11.
		Select the Partial Power Up/Down (QWW) screen.
		Select UP (power-on processor only).
		Note: Voltage is present for about two seconds.
13	Is voltage greater than +3.5 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.

Step	Conditions	Instructions
14	Go to Instructions column.	Measure for +4 Vdc at the following points:
		- lead at 01A-A2D2D08 + lead at 01A-A1U2D06.
		Select the Partial Power Up/Down (QWW) screen.
		Select UP (power-on processor only).
		Note: Voltage is present for about two seconds.
15	Is voltage greater than +3.5 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A1 board. Go to step 31.
16	Go to Instructions column.	Measure for +24 Vdc at the following points:
		- lead at 01A-A2D2D08 + lead at 01A-A1U2B05.
		Select the Partial Power Up/Down (QWW) screen. 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.

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Mi	PN 6169200	EC A2
Sea DA220	3 of 5	01 Oc

Step	Conditions	Instructions
18	Go to Instructions column.	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).
. S		Note: Voltage is present for about two seconds.
19	is voltage greater than +22 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A1 board. Go to step 31.
20	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cable from PCC J/PO3 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.

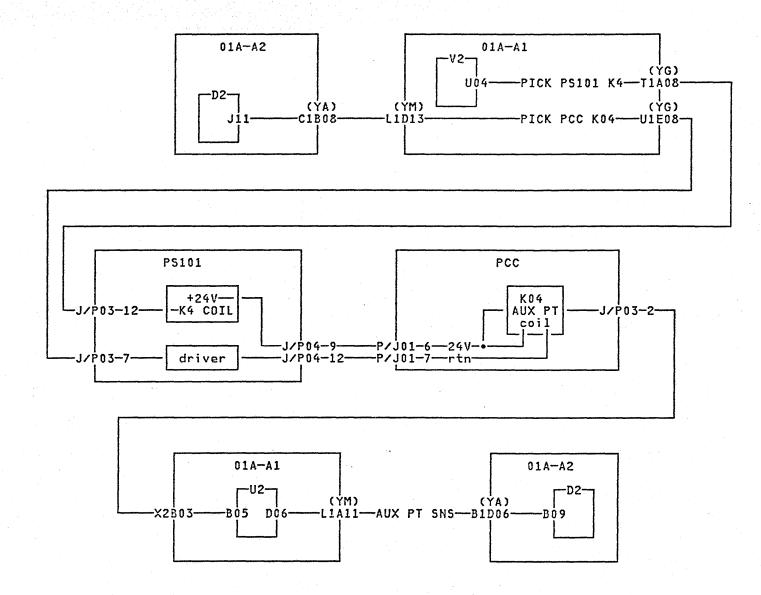
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Step	Conditions	Instructions	
22	Is voltage less than +22 Vdc?	Set PCC CB1 and CB2 off. Exchange PS101.	
		Note: Check cable connectors for pushed in pins and seating before exchanging power supply.	
	ļ	3. Go to step 31.	
23	Go to Instructions column.	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?	Set PCC CB1 and CB2 off. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PCC K04 contactor. Go to step 31.	
27	Is voltage greater than +22 Vdc missing on both sides?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	

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Step	Conditions	Instructions
29 Is voltage less than +22 Vdc?	Set PCC CB1 and CB2 off. 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	Ensure PCC CB1 and CB2 are off. Reinstall and check all cables and cards for proper seating in the following areas:
		PCC box PS101 01A-A1 board 01A-A2 board.
		 Reset any tripped CPs. Set PCC CB1 and CB2 on. Go to page PR 5001.



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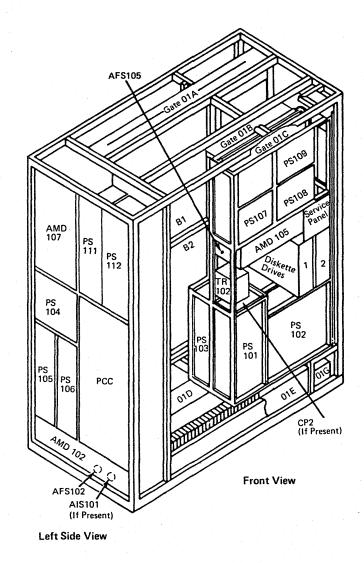
Ref Codes 11A5840E, 11A5850E

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 O1A-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 O1A-A2D2D08 + lead at O1A-A2D2S04. Note: Voltage is present for about two seconds.
2	Is voltage -1.44 to -1.56 Vdc?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2D2 card. 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.



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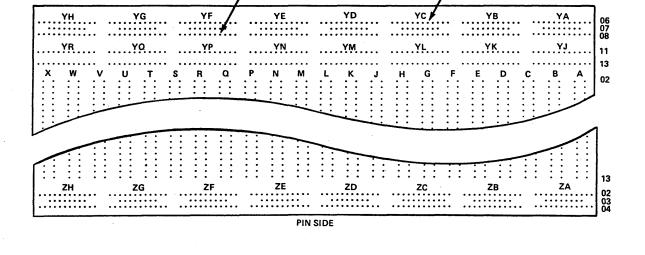
MI PN 6169201 Seq DA225 1 of 3

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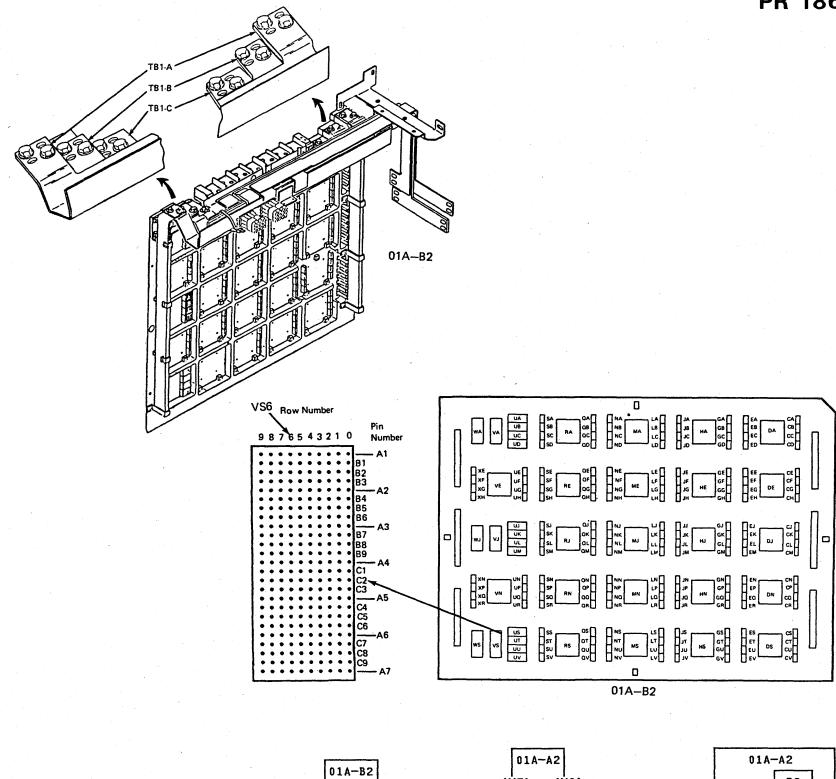
4		Instructions		
	Is voltage -1.44 to -1.56 Vdc?	1. Set service panel Power Off switch to Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange 01A-A2 board. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.		
5	Go to Instructions column.	1. Select Partial Power Up/Down (QWW) screen. 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.		

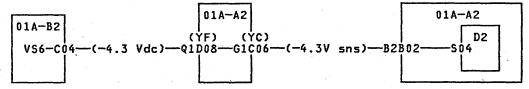
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Step	Conditions	Instructions
8	ls voltage -4.246 to -4.42 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.
9 Go to Instructions column.		Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). Measure for -4.3 Vdc at the following points: lead at O1A-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

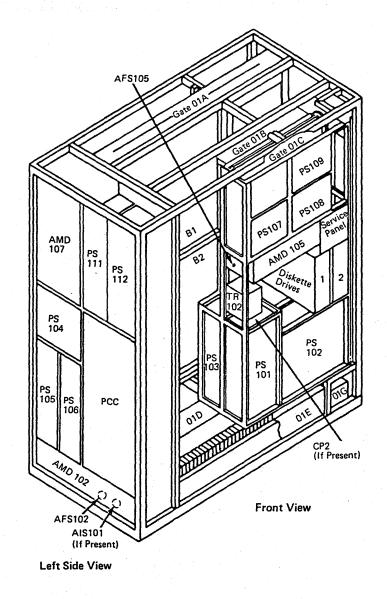
PR 1871

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.	 Set service panel Power Off switch to Power Off and then back to Normal. Set CE Mode switch to CE Mode. Check the 01A-B2 TB1 bus bars and PS106 for loose bolts, screws, and cables. Press service panel Power On. Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). 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. Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2D2 card. Go to page PR 5001. Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). Measure for -1.5 Vdc at the following points: lead at 01A-A2B2D08 		
2	Is voltage -1.425 to -1.575 Vdc?	Power Off and then back to Normal. 2. Exchange 01A-A2D2 card.		
3	Go to Instructions column.	Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). Measure for -1.5 Vdc at the following points:		



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Step	Conditions	Instructions				
4	Is voltage -1.425 to -1.575 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001 				
5 Go to Instructions column.		 Go to page PR 5001. Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). 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. Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cable from 01A-A2YC to 01A-A2B2. Note: Check board for bent pins and 				
6	Is voltage -4.163 to -4.509 Vdc?	Power Off and then back to Normal. 2. Set PCC CB1 and CB2 off. 3. Exchange cable from 01A-A2YC to 01A-A2B2.				
7	Go to Instructions column.	 Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). 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.				

ZF ZE ZD ZC ZB ZA

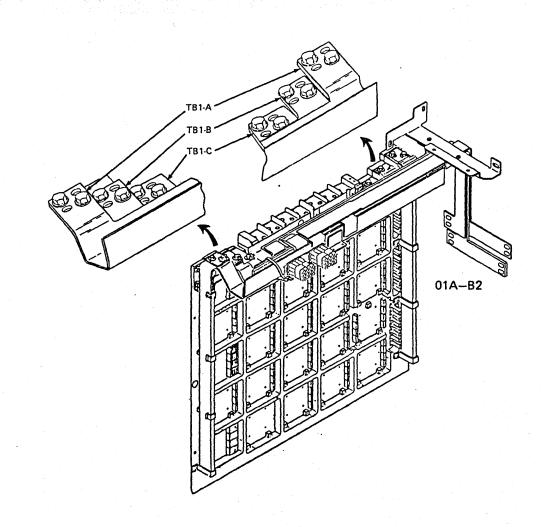
PN 6169202 B/M 2676380 Seq DA230

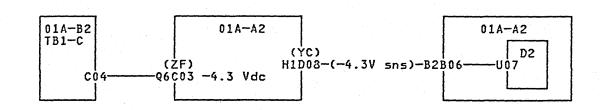
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PR 1873

Step	Conditions	Instructions
8	Is voltage -4.163 to -4.509 Vdc?	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.	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	Set service panel Power Off switch to
	Vdc?	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.
	ľ	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
• •	GO to matractions column.	adapter are needed to exchange the power
		supply. For tool part numbers, see Volume
		A07, page REM 001.
		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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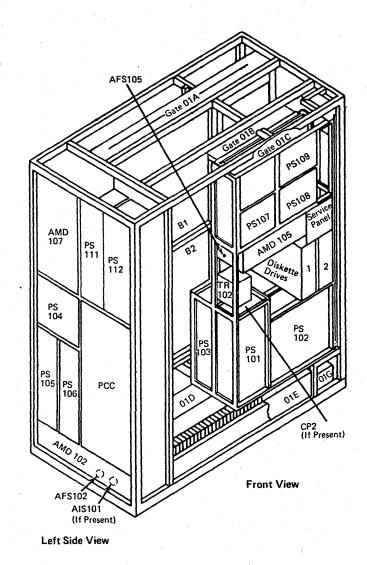
Ref Codes 11A6240E, 11A6250E

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
	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?	Set service panel Power Off switch to Power Off and then back to Normal. Exchange 01A-A2D2 card. Go to page PR 5001.
3	Go to Instructions column.	Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). 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.



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	MI			PN	616	9203
1.	Seq	DA2	35	1 0	f 3	

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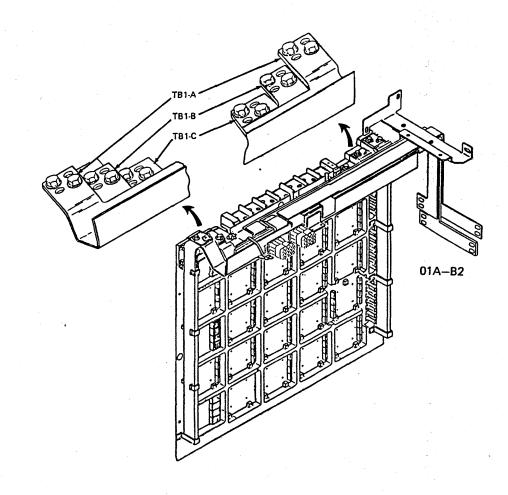
Step	Conditions	Instructions			
4	Is voltage -1.425 to -1.575 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001. 			
5	Go to Instructions column.	Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.	 Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). 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.			

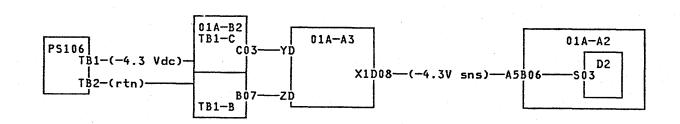
у	YG	YF	YE	YD	YC	YB	YA
YR	YΩ	YP	YN	YM	YL	YK	YJ
x w v	U T S	R Q	P N M	L K J	H G F	E D C	В А
ZH	ZG	75	ZE	ZD	i i i i i i	ZB	ZA

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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.	Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). 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?	Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.





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