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Processor

Maintenance Information

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Maintenance Information



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Ref Code 1133540E

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

Possible causes:

• PS106

- 01A-A2D2 sense card
- 01A-A2C2 optoisolator card.

Step	Conditions	Instructions
	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. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. Set PCC CB1 and CB2 on. 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.

			T	Г		1
Seq DA010	PN 0445931	EC A02214	EC A02219 29 FEB 84			
	- g - 0 - 2		1-0.1-0.1-0.1-0.1-0.1-0.1-0.1-0.1-0.1-0.			

PS106			
J/I	02-5(0V	sns)——A2	B10-



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PR 1401





PS106

Step	Conditions	Instructions
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 PS106. Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
		 Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 off. Exchange card swapped into the 01A-A2C2 position. 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. 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 Of Power Off and then back to Set PCC CB1 and CB2 off. Exchange cable from 01A- PS106 P02. Note: Check board for ber cable connector for pushed and seating before exchange
		 Set PCC CB1 and CB2 on. Go to page PR 5001.
11	Go to Instructions column.	 Set service panel Power Of Power Off and then back to 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 Power Off and then back to Swap 01A-A2C2 and 01A- cards. Press service panel Power 0 Measure for +5 Vdc at the points: lead at 01A-A2D2D08 lead at 01A-A2D2G08.
13	Is voltage less than +0.8 Vdc?	 Set service panel Power Of Power Off and then back to Set PCC CB1 and CB2 off. Exchange card just swappe 01A-A2C4 position. Set PCC CB1 and CB2 on. Go to page PR 5001.
14	Go to Instructions column.	 Set service panel Power Of Power Off and then back to Swap 01A-A2D2 and 01A- cards. Press service panel Power 0 Measure for +5 Vdc at the points: lead at 01A-A2D2D08 lead at 01A-A2D2G08.

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Seq DA010	PN 0445931 Pg 2 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84		

ff switch to o Normal. -A2A2 to nt pins and d in pins ging cable. Off switch to to Normal. off switch to to Normal. -A2C4 r On. e following ff switch to o Normal. ed into the Dff switch to to Normal. A-A2E2 On. following

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. Set PCC CB1 and CB2 off. Exchange card just swapped into the 01A-A2E2 position. Set PCC CB1 and CB2 on. 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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	Seq DA015	PN 0445932	EC A02214			
		Pg 1 of 1	15 SEP 83			



Ref Code 1133740E

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

Possible causes:

- PS106
- O1A-A2D2 sense card
- 01A-A2C2 optoisolator card.

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 +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 Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. Set PCC CB1 and CB2 on. 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 P02. Press service panel Power On. Measure for +5 Vdc at the following points: lead at 01A-A2C2D08 lead at 01A-A2C2B12. 	

T		1				
Seq DA020	PN 0445933		EC A02214	EC A02219		
	Pg 1 of 3		15 SEP 83	29 FEB 84		







PR 1411

FN 1411

Step	Conditions	Instructions
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 PS106.
		Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
		 Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 off. Exchange card swapped into the 01A-A2C2 position. 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. 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 Power Off and then bac Set PCC CB1 and CB2 Exchange cable from O PS106 P02. Note: Check board for cable connector for pus and seating before excl Set PCC CB1 and CB2 Go to page PR 5001.
	11	Go to Instructions column.	 Set service panel Powe Power Off and then bac Set PCC CB1 and CB2 Exchange 01A-A2 boa Set PCC CB1 and CB2 Set PCC CB1 and CB2 Go to page PR 5001.
	12	Go to Instructions column.	 Set service panel Power Power Off and then back Swap 01A-A2C2 and C cards. Press service panel Power Measure for +5 Vdc at points: lead at 01A-A2D2D0 lead at 01A-A2D2J0
	13	Is voltage less than +0.8 Vdc?	 Set service panel Power Power Off and then back Set PCC CB1 and CB2 Exchange card just sware 01A-A2C4 position. Set PCC CB1 and CB2 Go to page PR 5001.
	14	Go to Instructions column.	 Set service panel Power Power Off and then bac Swap 01A-A2D2 and 0 cards. Press service panel Pow Measure for +5 Vdc at points:
	0		- lead at 01A-A2D2D0 + lead at 01A-A2D2J0

Seq DA020	PN 0445933 Pg 2 of 3	EC A02214 15 SEP 83	EC A02219 29 FEB 84		
1	192010	10 021 00	20128 01		L

er Off switch to ack to Normal. 2 off. D1A-A2A2 to

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ver Off switch to ack to Normal. 2 off. ard. 2 on.

ver Off switch to ack to Normal. 01A-A2C4

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2 on.

er Off switch to ack to Normal. 01A-A2E2

ower On. t the following

08 04.

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. Set PCC CB1 and CB2 off. Exchange card just swapped into the 01A-A2E2 position. Set PCC CB1 and CB2 on. 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.

PCC • PS106

Left Side View

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Seq DA020	PN 0445933	EC A02214	EC A02219		
	Pg 3 of 3	15 SEP 83	29 FEB 84		

PR 1413



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Ref Code 1135740E

This Ref Code indicates AFS101 is failing.

Possible causes:

- 01A-A2F4 serial read card
- 01A-A2D2 sense card
- O1A-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. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. 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-A2F4D08 + lead at 01A-A2F4B10.		

Seq DA025 PN 0445934 Pg 1 of 3	EC A02214 15 SEP 83		



PR 1421

Step	Conditions	Instructions		
6	Is voltage greater than +4.5 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. Set PCC CB1 and CB2 off. Exchange 01A-A2F4 card. Set PCC CB1 and CB2 on. Go to page PR 5001. 		
10	Go to Instructions column.	Measure for +24 Vdc at the following points: - lead at 01A-A2A5D08 + lead at 01A-A2A5D13.		
	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. 		
12	Go to Instructions column.	 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001. Measure for +24 Vdc at the following points: - lead at 01A-A2A5D08 + lead at 01A-A2A5D08 		
		+ lead at UIA-AZATCU/.		

Ston	Conditions	Instructions
13	Is voltage +22 Vdc to +27	
	Vdc?	 Set service panel Power Power Off and then bac Set PCC CB1 and CB2 Exchange 01A-A2 boar Set PCC CB1 and CB2 Go to page PR 5001.
14	Go to Instructions column.	Measure for +24 Vdc at the points: - lead at PS102 J/P14 + lead at PS102 J/P14
15	Is voltage +22 Vdc to +27 Vdc?	 Set service panel Power Power Off and then bac Set PCC CB1 and CB2 Exchange cable from 0° PS102 J/P14. Note: Check board for cable connector for pus and seating before excl
		4. Set PCC CB1 and CB2 5. Go to page PR 5001.
16	Go to Instructions column.	 Set service panel Powe Power Off and then bac Set PCC CB1 and CB2 Exchange 01A-A2 boar Set PCC CB1 and CB2 Go to page PR 5001.
17	Go to Instructions column.	Measure for +5 Vdc at the f points: - lead at AFS101 J/P0 wire) + lead at AFS101 J/P0 wire).

Seq DA025 PN (Pg 2	0445934 of 3	EC A02214 15 SEP 83			
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PR 1422

ver Off switch to ack to Normal. 2 off. ard. 2 on.

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or bent pins and ushed in pins changing cable.

2 on.

ver Off switch to ack to Normal. 2 off. ard. 2 on.

following

P01-3 (black G P01-2 (yellow

Step	Conditions	Instructions
18	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 AFS101. Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging AFS101. Set PCC CB1 and CB2 on.
19	Go to Instructions column.	5. Go to page PR 5001. Measure for +5 Vdc at the following points: - lead at 01A-A2A5D08
20	Is voltage greater than	
20	+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-A5 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.
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 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.



Seq DA025 PN 0445934 Pg 3 of 3	EC A02214 15 SEP 83	
		All





Ref Code 1135840E

This Ref Code indicates AFS102 is failing.

Possible causes:

- 01A-A2F4 serial read card
- 01A-A2D2 sense card
- O1A-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. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. 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-A2F4D08 + lead at 01A-A2F4D02.
6	Is voltage greater than +4.5 Vdc?	Go to step 13.

Seq DA030 PN 04459 Pg 1 of 2	35	EC A02214 15 SEP 83		





PR 1431



Sten	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. Set PCC CB1 and CB2 off. Exchange 01A-A2F4 card. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 off. 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.	 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.

Seq DA030	PN 0445935 Pg 2 of 2	EC A02214 15 SEP 83		

PR 1432

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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 +4.5 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 AFS102. Set PCC CB1 and CB2 on. 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 44.5 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. Set PCC CB1 and CB2 on. 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.

PN 0445936 Pg 1 of 1	EC A02214 15 SEP 83				
	PN 0445936 Pg 1 of 1	PN 0445936 Pg 1 of 1 15 SEP 83	PN 0445936 EC A02214 Pg 1 of 1 15 SEP 83	PN 0445936 EC A02214 Pg 1 of 1 15 SEP 83	PN 0445936 EC A02214 Pg 1 of 1 15 SEP 83





Ref Code 1135940E

This Ref Code indicates AFS105 is failing.

Possible causes:

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

Step	Conditions	Instructions
1	Go to Instructions column.	 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. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. 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-A2F4D08 + lead at 01A-A2F4D04.
6	Is voltage greater than +4.5 Vdc?	Go to step 13.





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Step	Conditions	Instructions
7	Go to Instructions column.	Measure for +4 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. Set PCC CB1 and CB2 off. Exchange 01A-A2F4 card. Set PCC CB1 and CB2 on. Go to page PR 5001.
10	Go to Instructions column.	Measure for +24 Vdc at the following points: + lead at 01A-A2A4D13 - lead at 01A-A2A4D08.
11	Is voltage +22 to +27 Vdc?	 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. Set PCC CB1 and CB2 on.
12	Go to Instructions column.	 Go to page PR 5001. 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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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 +4.5 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 AFS105. Set PCC CB1 and CB2 on. 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 +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-A4 to AFS105. 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.
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.



Seq DA045	PN 0445938 Pg 1 of 1	EC A02214 15 SEP 83		÷	

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Ref Code 1150540E, 1150550E

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

Possible causes:

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

Step	Conditions	Instructions			
1	Go to Instructions column.	 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?	 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. 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. Set PCC CB1 and CB2 on. Go to step 12. 			

EC A02214 15 SEP 83	EC A02215 01 NOV 83			
	EC A02214	EC A02214 EC A02215	EC A02214 EC A02215	EC A02214 EC A02215
	15 SEP 83	15 SEP 83 01 NOV 83	15 SEP 83 01 NOV 83	15 SEP 83 01 NOV 83





PR 1451

Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2G04.
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. Set PCC CB1 and CB2 on. 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?	 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 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. Set PCC CB1 and CB2 on. 5. Go to step 12.

Step	Conditions	Instructions
	Go to Instructions column.	 Set service panel Power (Power Off and then back Set PCC CB1 and CB2 of Exchange PS109. Note: Check cable connerpushed in pins and seatin exchanging power supply Set PCC CB1 and CB2 or Go to step 12.
12	Go to Instructions column.	 If still failing, the sense line shorted isolate to one of following:
		01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card) PS109 01A-A2 board Cable from 01A-A2A J/P01.
		 Set PCC CB1 and CB2 or Go to page PR 5001.



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Seq DA050 PN 044593 Pg 2 of 2	9 EC A02214 15 SEP 83	EC A02215 01 NOV 83			
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PR 1452

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Ref Code 1150640E

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

Possible causes:

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

Step	Conditions	Instructions		
1	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. SetZCE 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-A2E2G03. 		
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. Set PCC CB1 and CB2 on. Go to step 12. 		
3	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2J05.		
4	Is voltage greater than +2.4 Vdc?	 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 step 12. 		

Seq DA055	PN 0445940 Pg 1 of 2	EC A02214 15 SEP 83		





PS109



PR 1461

Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at 01A-A2C2D08 + lead at 01A-A2C2G05.
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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. 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.
		 Set PCC CB1 and CB2 on. Go to step 12.

Step	Conditions	Instructions
11	Go to Instructions column.	 Set service panel Power Power Off and then back Set PCC CB1 and CB2 o Exchange PS109. Note: Check cable conr pushed in pins and seatil exchanging power suppl Set PCC CB1 and CB2 o Go to step 12.
12	Go to Instructions column.	 If still failing, the sense I shorted isolate to one of following: 01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card) PS109 01A-A2 board Cable from 01A-A2, J/P01.
		 Set PCC CB1 and CB2 of Go to page PR 5001.



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Seq DA055	PN 0445940 Pg 2 of 2	EC A02214 15 SEP 83			
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Service Panel

Ref Code 1150740E

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

Possible causes:

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

Step	Conditions	Instructions				
1	Go to Instructions column.	 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 to 01A-A2E2D08 + lead to 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 to 01A-A2C2D08 + lead to 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. 				

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PS109

PR 1471



Step	Conditions	Instructions		
5	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead to 01A-A2C2D08 + lead to 01A-A2C2G06.		
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 01A-A2C2 card. Set PCC CB1 and CB2 on. Go to page PR 5001. 		
7	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2A4B05.		
8	Is voltage less than +0.8 Vdc?	 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 PS109 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 cable between PS109 J/P01 and 01A-A2A4. 		
		 Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001. 		

Step	Conditions	Instructions
	Go to Instructions column.	 Set service panel Power Power Off and then back Set PCC CB1 and CB2 of Exchange PS109. Note: Check cable conn pushed in pins and seatir exchanging power supply Set PCC CB1 and CB2 o Go to page PR 5001.



Seq DA060	PN 0445941 Pg 2 of 2	EC A02214 15 SEP 83		

Ref Codes 1112250E, 1150840E, 11D0850E

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

Possible causes:

- 01A-A2C2 optoisolator card
- O1A-A2E2 sense card
- PS109
- PS109 BG sense line open or grounded
- Missing 24 Vdc bias to PS109
- PS109 start line grounded.

Step	Conditions	Instructions
1	Go to Instructions column.	 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. B
4	Is voltage less than +22 Vdc?	Go to step 16.
5	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2G05.







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Seq DA065 PN 0445942 Pg 1 of 2	EC A02214 15 SEP 83		

PR 1481

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. Set PCC CB1 and CB2 on. Go to step 22.
7	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at 01A-A2C2D08 + lead at 01A-A2C2J07.
8	Is voltage greater than +2.4 Vdc?	 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 step 22.
9	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2G07.
10	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. Set PCC CB1 and CB2 on. Go to step 22.
11	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A4D08
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 the 01A-A2 board. Set PCC CB1 and CB2 on. Go to step 22.



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	Seq DA065	PN 0445942 Pg 2 of 2	EC A02214 15 SEP 83		
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PR 1482



Step	Conditions	Instructions]	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.		18	Go to Instructions column.	 Set service panel Power Power Off and then ba Set PCC CB1 and CB2 Exchange PS103.
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 cable compushed in pins and sear power supply. 4. Set PCC CB1 and CB2 5. Go to step 22.
		 Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 4. Set PCC CB1 and CB2 on. 5. Go to step 22. 		19	Go to Instructions column.	 Press ENTER to end Di Disconnect PS109 J/P Select Diagnostic Powerscreen. Select option A (stop after K03 picked)
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. 				 5. Measure for +5 Vdc at points: lead at 01A-A2E2D0 + lead at 01A-A2E2B1
		 Note: Check cable connectors for pushed in pins and seating before power supply. 4. Set PCC CB1 and CB2 on. 5. Go to step 22 		20	Is voltage greater than +2.4 Vdc?	 Set service panel Power Power Off and then back Set PCC CB1 and CB2 Exchange PS109.
16	Go to Instructions column.	Measure for +24 Vdc at the following points:				Note: Check cable cor pushed in pins and sea power supply.
		- lead at PS103 J/P05-7 + lead at PS103 J/P05-11. H				 Set PCC CB1 and CB2 Go to step 22.
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. 		21	Go to Instructions column.	 Set service panel Power Power Off and then bar Set PCC CB1 and CB2 Exchange 01A-A2E2 c Set PCC CB1 and CB2

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4. Set PCC CB1 and CB2 on.

5. Go to step 22.

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

CB1 and CB2 Exchange 01A-A2E2 ca
 Set PCC CB1 and CB2 5. Go to step 22.

PR 1483

ce panel Power Off switch to ff and then back to Normal. CB1 and CB2 off. e PS103.	
heck cable connectors for pins and seating before pply.	
CB1 and CB2 on. p 22.	
TER to end Diagnostic Stop. ct PS109 J/P01. agnostic Power Up (QWD)	
tion A r K03 picked). for +5 Vdc at the following	
01A-A2E2D08 01A-A2E2B13.	
ce panel Power Off switch to f and then back to Normal. CB1 and CB2 off. PS109.	
neck cable connectors for pins and seating before pply.	
CB1 and CB2 on. p 22.	
te panel Power Off switch to f and then back to Normal. CB1 and CB2 off. 01A-A2E2 card. CB1 and CB2 on. p 22.	

Step	Conditions	Instructions
22	Go to Instructions	
	column	1 Personnect PS109 1/P01
	Column.	1. Reconnect F3103 3/ F01.
		2. If still failing, the sense of start line
		may be shorted isolate to one of the
an an Araba. An Araba		following:
		01A-A2E2 card
		(swap with D2 card)
		01A - A2C2 card
		lowen with CA cord
		(Swap with C4 card)
		PS109
		01A-A2 board
		Cable from 01A-A2A4 to PS109
		J/P01.
		3 Set PCC CB1 and CB2 on
		4 Go to page PR 5001
		4. Go to page n 5001.
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Ref Code 1151140E

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

Possible causes:

- 01A-A2C2 optoisolator card
- O1A-A2E2 sense card
- PS104.

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 the 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-A2E2J05.
2	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-A2E2 card. Set PCC CB1 and CB2 on. Go to step 22
3	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B13.
4	Is voltage less than +0.8	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.

Seq DA075	PN 0445944 Pg 1 of 2		EC A02214 15 SEP 83							
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PR 1491

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Rear View

Step	Conditions	Instructions
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. Swap cards at 01A-A2C2 and 01A-A2C4. 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.
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. Set PCC CB1 and CB2 on. 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.
		 Set PCC CB1 and CB2 on. Go to step 22.

4.1	Step	Conditions	Instructions
	11	Go to Instructions	
		column.	1. Set service panel Power Power Off and then back
			2. Set PCC CB1 and CB2 o
			3. Exchange 01A-A2 board
			4. Set PCC CB1 and CB2 of
			5. Go to step 22.
	12	Go to Instructions	
		column.	1. Set service panel Power
			Power Off and then back
			2. Set PCC CB1 and CB2 c
			3. Swap cards at 01A-A2C
			4. Set PCC CB1 and CB2 C
			6 Measure for +5 Vdc at th
			points:
			- lead at 01A-A2E2D08
			+ lead at 01A-A2E2J05
	13	Is voltage less than +0.8	
		Vdc?	1. Set service panel Power
			Power Off and then bac
			2. Set PCC CB1 and CB2 c
			3. Exchange card just swap
			01A-A2C4 position.
			4. Set PCC CB1 and CB2 c
			5. Go to step 22.
	14	Go to Instructions	
		column.	1. Set service panel Power
			Power Off and then bac
			2. Set PCC CB1 and CB2 c
			3. Swap cards at UIA-A2E
	1		A Set PCC CB1 and CB2 c
			5 Press service panel Pow
			6. Measure for +5 Vdc at t
		and a second second Second second	points:
	114 117		
			+ lead at 01A-A2E2J05
	15	Is voltage less than +0.8	
		Vdc?	1. Set service panel Power
			Power Off and then bac
	l		2. Set PCC CB1 and CB2 c
			3. Exchange card just swap
	}		01A-A2D2 position.
	1		4. Set PCC CB1 and CB2 c
			5. Go to step 22.
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Seq DA075	PN 0445944 Pg 2 of 2	EC A02214 15 SEP 83		

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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. Set PCC CB1 and CB2 on. Go to step 22.
		·
17	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Disconnect PCC P14. Press service panel Power On. Select the Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). 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. Set PCC CB1 and CB2 on. 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 ping and pasting before
		exchanging power supply.
		4. Set PCC CB1 and CB2 on.

Step	Conditions	Instructions
21	Go to Instructions	
	column.	1. Set service panel Power Off
		Power Off and then back to
		2. Set PCC CB1 and CB2 off.
		3. Exchange cable from PS104
		01A-A2A2.
		Note: Check board for bent
		cable connector for pushed i
		before exchanging cable
		4. Set PCC CB1 and CB2 on.
		5. Go to step 22.
22	Go to Instructions	
	column.	1. Set PCC CB1 and CB2 off.
		2. Check all cables and cards for
		seating in the following areas
		PS104
		01A-A2 board
		CIA AL BOUID.
	•	1
		3. Reset any tripped CPs.
		 Reset any tripped CPs. Set PCC CB1 and CB2 on.



	Seq DA080	PN 0445945 Pg 1 of 1	EC A02214 15 SEP 83		
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Service Panel


Ref Code 1151340E

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

Possible causes:

- 01A-A2C2 optoisolator card
- O1A-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 K03 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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. Go to step 12.

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Seq DA085	PN 0445946 Pa 1 of 2	EC A02214 15 SEP 83			
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PR 1501

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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. 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.
		 Set PCC CB1 and CB2 on. Go to step 12.

S	tep	Conditions	Ins	structions
1	1	Go to Instructions column.	1. 2. 3. 4. 5.	Set service panel Power O Power Off and then back Set PCC CB1 and CB2 of Exchange PS107. Note: Check cable conne pushed in pins and seatin exchanging power supply Set PCC CB1 and CB2 on Go to step 12.
1:	2	Go to Instructions column.	1.	If still failing, the sense lin shorted isolate to one of t following: 01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card) PS107 01A-A2 board Cable from 01A-A2A- J/P01. Set PCC CB1 and CB2 on
			3.	Go to page PR 5001.



Seq DA085	PN 0445946 Pg 2 of 2	EC A02214	
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PS107 Service Panel

Ref Code 1151440E

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

Possible causes:

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

Step	Conditions	Instructions
1	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. SetZCE 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-A2E2G07.
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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. Go to step 12.

Seq DA090	PN 0445947 Pg 1 of 2	EC A02214 15 SEP 83		





PS107

PR 1511



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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. 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.
		 Set PCC CB1 and CB2 on. Go to step 12.

Step	Conditions	Instructions
11	Go to Instructions column.	 Set service panel Power Off s Power Off and then back to N Set PCC CB1 and CB2 off. Exchange PS107. Note: Check cable connecto pushed in pins and seating be exchanging power supply.
		 Set PCC CB1 and CB2 on. Go to step 12.
12	Go to Instructions column.	 If still failing, the sense line m 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 J/P01.
	and the second	 Set PCC CB1 and CB2 on. Go to page PR 5001.



Seq DA090	PN 0445947 Pg 2 of 2	EC A02214 15 SEP 83		
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PS107

Service Panel

Ref Code 1151540E

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

Possible causes:

- 01A-A2C2 optoisolator card
- 01A-A2E2 sense card
- O1A-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. Select option A (stop after K03 picked). Measure for +5 Vdc at the following points: lead to 01A-A2E2D08 Head to 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 to 01A-A2C2D08 + lead to 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.







Seq DA095 PN 0445948 Pg 1 of 2	EC A02214 15 SEP 83		

PR 1521





Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead to 01A-A2C2D08 + lead to 01A-A2C2G11.
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 01A-A2C2 card. Set PCC CB1 and CB2 on. 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. E
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.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.

Step	Conditions	Instru	ictions
11	Go to Instructions		
	column.	1. S	et service panel Power (ower Off and then back
		2. S	et PCC CB1 and CB2 of
		3. E	xchange PS107.
and a second		i N	ote: Check cable conn
		p e	ushed in pins and seatin xchanging power supply
		4. S	et PCC CB1 and CB2 or
		5. G	io to page PR 5001.



Pg 2 of 2 15 SEP 83	Seq DA095 PN 0445948 Pg 2 of 2	EC A02214 15 SEP 83					
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PS107

- Service Panel

Ref Codes 1112650E, 1151640E, 11D1650E

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

Possible causes:

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

Step	Conditions	Instructions
1	Go to Instructions column.	 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-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.

PS107	01A-A2
J/P01-8(start line)A4 F G J/P01-7(BG sns)A4	B08 E C2 B12 G12 J12 E
PS103 J/P05-8-(+24V bias)-J H J/P05-4-(rtn)J	PS107 /P02-1 J /P02-2



Seq DA100	PN 0445949 Pg 1 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83		





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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. Go to step 22.

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Seq DA100	PN 0445949	EC A02214	EC A02215		
	Pg 2 of 2	15 SEP 83	01 NOV 83		

Ston	Conditions	
Step 12		Instructions
13	column.	Points: - lead at frame ground + lead at PS107 J/P01-7.
14	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off swi Power Off and then back to Nor Set PCC CB1 and CB2 off. Exchange cable from 01A-A2A4 PS107 J/P01. Note: Check board for bent pin cable connector for pushed in pi and seating before exchanging of
		 Set PCC CB1 and CB2 on. Go to step 22.
15	Go to Instructions column.	 Set service panel Power Off swir Power Off and then back to Nori Set PCC CB1 and CB2 off. Exchange PS107. Note: Check cable connectors f pushed in pins and seating befor
		exchanging power supply.4. Set PCC CB1 and CB2 on.5. Go to step 22.
16	Go to Instructions column.	Measure for +24 Vdc at the following points:
		- lead at PS103 J/P05-8 + lead at PS103 J/P05-4.
17	Is voltage greater than +22 Vdc?	 Set service panel Power Off switt Power Off and then back to Nord Set PCC CB1 and CB2 off. Exchange cable from PS103 J/F PS107 J/P02. Note: Check board for bent pint cable connector for pushed in pint and seating before exchanging c
		 Set PCC CB1 and CB2 on. Go to step 22.

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PR 1532

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





Seq DA105 PN 0445950	EC A02214	EC A02215		
Pg 1 of 1	15 SEP 83	01 NOV 83	 L	l

.PS107

Service Panel





Ref Code 1151840E, 1151850E

This Ref Code indicates 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
- O1A-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 K03 picked). Measure for +5 Vdc at the following points: lead at 01A-A2E2D08 Head 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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. Go to step 12.





PS108

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Seq DA110	PN 0445951 Pg 1 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02220 06 JUN 84	

PR 1541



Step	Conditions	Instructions		
5	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4B04.		
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. Set PCC CB1 and CB2 on. 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?	 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 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. Set PCC CB1 and CB2 on. 5. Go to step 12. 		

Seq DA110 PN 0445951	EC A02214	EC A02215	EC A02220		
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Step	Conditions	Instructions
11	Go to Instructions column.	 Set service panel Power Off swi Power Off and then back to Nor Set PCC CB1 and CB2 off. Exchange PS108. Note: Check cable connectors pushed in pins and seating beforexchanging power supply. Set PCC CB1 and CB2 on. Go to step 12.
12	Go to Instructions column.	 If still failing, the sense line may shorted. Isolate to one of the following: 01A-A2E2 card (swap with D2 card) 01A-A2C4 card (swap with C2 card) PS108 01A-A2 board Cable from 01A-A2A4 to PS108 J/P01. Set PCC CB1 and CB2 on. Go to page PR 5001.



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Ref Codes 1151940E

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

Possible causes:

- 01A-A2C4 optoisolator card
- O1A-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 K03 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?	 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. 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. Set PCC CB1 and CB2 on. Go to step 12.

Seq DA115 PN 0445952 Pg 1 of 2	EC A02214 15 SEP 83	





PS108



PR 1551

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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. 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. 		
		 Set PCC CB1 and CB2 on. Go to step 12. 		

11 Go to Instructions column. 1. Set service panel Power Power Off and then bac 2. Set PCC CB1 and CB2 of 3. Exchange PS108. Note: Check cable com pushed in pins and seat exchanging power supp 4. Set PCC CB1 and CB2 of 5. Go to step 12. 12 Go to Instructions column. 1. If still failing, the sense shorted isolate to one of following: 01A-A2E2 card (swap with D2 card O1A-A2C4 card (swap with C2 card PS108 01A-A2E2 card (swap with C2 card PS108 01A-A2 board Cable from 01A-A2 J/P01. 2. Set PCC CB1 and CB2 3. Go to page PR 5001.	Step	Conditions	In	structions
12Go to Instructions column.12Go to Instructions column.1.If still failing, the sense shorted isolate to one of following:01A-A2E2 card (swap with D2 card 01A-A2C4 card (swap with C2 card PS108 01A-A2 board Cable from 01A-A2 J/P01.2.Set PCC CB1 and CB2 3. Go to page PR 5001.	11 11	Go to Instructions column.	1. 2. 3.	Set service panel Power (Power Off and then back Set PCC CB1 and CB2 of Exchange PS108. Note: Check cable conne
12 Go to Instructions column. 1. If still failing, the sense shorted isolate to one of following: 01A-A2E2 card (swap with D2 card 01A-A2C4 card (swap with C2 card PS108 01A-A2 board Cable from 01A-A2 J/P01. 2. Set PCC CB1 and CB2 3. Go to page PR 5001.			4. 5.	pushed in pins and seatin exchanging power supply Set PCC CB1 and CB2 or Go to step 12.
01A-A2E2 card (swap with D2 card 01A-A2C4 card (swap with C2 card PS108 01A-A2 board Cable from 01A-A2 J/P01. 2. Set PCC CB1 and CB2 3. Go to page PR 5001.	12	Go to Instructions column.	1.	If still failing, the sense lin shorted isolate to one of following:
 Set PCC CB1 and CB2 Go to page PR 5001. 				01A-A2E2 card (swap with D2 card) 01A-A2C4 card (swap with C2 card) PS108 01A-A2 board Cable from 01A-A2A J/P01.
			2. 3.	Set PCC CB1 and CB2 or Go to page PR 5001.



Seq DA115	PN 0445952 Pg 2 of 2	EC A02214 15 SEP 83		

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PS108

Service Panel

Ref Code 1152040E

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

Possible causes:

- 01A-A2C4 optoisolator card
- O1A-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 K03 picked). Measure for +5 Vdc at the following points: lead to 01A-A2E2P08 + lead to 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 to 01A-A2C4D08 + lead to 01A-A2C4D06.			
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. 			





Seq DA120	PN 0445953 Pg 1 of 2	EC A02214 15 SEP 83	EC A02220 06 JUN 84		

PR 1561

Step	Conditions	Instructions			
5	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead to 01A-A2C4D08 + lead to 01A-A2C4B06.			
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 01A-A2C4 card. Set PCC CB1 and CB2 on. 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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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. 			
		 Set PCC CB1 and CB2 on. Go to page PR 5001. 			

Step	Conditions	Instructions
11	Go to Instructions column.	 Set service panel Power Off switch t Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange PS108.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.



Seq DA120	PN 0445953 Pg 2 of 2	EC A02214 15 SEP 83	EC A02220 06 JUN 84		
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- PS108

Service Panel

Ref Codes 1112450E, 1152240E, 11D2250E

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

Possible causes:

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

Step	Conditions	Instructions			
1	Go to Instructions column.	 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 Head at 01A-A2E2D04. 			
2	Is voltage less than +2.4 Vdc?	Go to step 19.			
3	Go to Instructions column.	Measure for +24 Vdc at the following points: - lead at PS108 P02-2 + lead at PS108 P02-1.			
4	Is voltage less than +22 Vdc?	Go to step 16.			
5	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2E2D08 + lead at 01A-A2E2M04.			

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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. Set PCC CB1 and CB2 on. Go to step 22.
7	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4D07.
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. Set PCC CB1 and CB2 on. Go to step 22.
9	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C4D08 + lead at 01A-A2C4B07.
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-A2C4 card. Set PCC CB1 and CB2 on. Go to step 22.
11	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A4D08 + lead at 01A-A2A4D09.
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. Set PCC CB1 and CB2 on. Go to step 22.

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Step	Conditions	Instructions
13	Go to Instructions column.	Measure for +5 Vdc at the follo points:
· · · ·		- lead at frame ground + lead at PS108 J/P01-7.
14	Is voltage greater than +0.8 Vdc?	 Set service panel Power Of Power Off and then back to Set PCC CB1 and CB2 off. Exchange cable from 01A- PS108 J/P01.
		Note: Check board for be cable connector for pushed and seating before exchange
		 Set PCC CB1 and CB2 on. Go to step 22.
15	Go to Instructions column.	 Set service panel Power O Power Off and then back t Set PCC CB1 and CB2 off. Exchange PS108.
		Note: Check cable connect pushed in pins and seating exchanging power supply.
		 Set PCC CB1 and CB2 on. Go to step 22.
16	Go to Instructions column.	Measure for +24 Vdc at the fol points:
-		- lead at PS103 J/P05-5 + lead at PS103 J/P05-9.
17	Is voltage greater than +22 Vdc?	 Set service panel Power O Power Off and then back t Set PCC CB1 and CB2 off. Exchange cable from PS10 PS108 J/P02.
		Note: Check cable connect pushed in pins and seating exchanging cable.
		 Set PCC CB1 and CB2 on. Go to step 22.

Seq DA125 PN 0445954 Pg 2 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83	1997 - 19		
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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 supply.
•		 Set PCC CB1 and CB2 on. Go to step 22.
19	Go to Instructions column.	 Press ENTER to end Diagnostic Stop. Disconnect PS108 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-A2E2D04.
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 PS108.
		Note: Check cable connectors for pushed in pins and seating before exchanging power supply.
		 Set PCC CB1 and CB2 on. 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. Exchange 01A-A2E2 card. Set PCC CB1 and CB2 on. Go to step 22.

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Seq DA130	PN 0445955 Pg 1 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83		

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



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Seq DA130	PN 0445955	EC /	A02214	EC A02215		
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Ref Code 1152540E

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

Possible causes:

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

Step	Conditions	Instructions
1	Go to Instructions column.	 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-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. Set PCC CB1 and CB2 on. 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?	 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 step 12.

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PR 1581



PS105

Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B04.
6	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. Set PCC CB1 and CB2 on. Go to step 12.
7	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A2D08 + lead at 01A-A2A2B03.
8	Is voltage greater than +0.8 Vdc?	 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 step 12.
9	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS105 J/P02-10.
10	Is voltage greater than +0.8 Vdc?	 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. Note: Check board for bent pins and cable connector for pushed in pins
		and seating before exchanging cable.4. Set PCC CB1 and CB2 on.5. Go to step 12.

Step	Conditions	Instructions	
11	Go to Instructions column.	1. 5 1 2. 5 3. 1	Set service panel Power Of Power Off and then back to Set PCC CB1 and CB2 off. Exchange PS105.
			Note: Check cable connec pushed in pins and seating exchanging power supply.
		4. 9 5. 0	Set PCC CB1 and CB2 on. Go to step 12.
12	Go to Instructions column.	1. I s	If still failing, the sense line shorted isolate to one of the following:
			01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card) PS105 01A-A2 board Cable from 01A-A2A2 J/P02.
		2. 9	Set PCC CB1 and CB2 on. Go to page PR 5001.



Seq DA135	PN 0445956 Pg 2 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84		

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Service Panel

Ref Code 1152640E

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

Possible causes:

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

Step	Conditions	Instructions
1	Go to Instructions column.	 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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. Go to step 12.

	Seq DA140	PN 0445957 Pg 1 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84			
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PS105

Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B05.
6	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. Set PCC CB1 and CB2 on. Go to step 12.
7	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2A2D08 + lead at 01A-A2A2B04.
8	Is voltage greater than +0.8 Vdc?	 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 step 12.
9	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at frame ground + lead at PS105 J/P02-5.
10	Is voltage greater than +0.8 Vdc?	 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. Note: Check board for bent pins and cable connector for pushed in pins
		and seating before exchanging cable.4. Set PCC CB1 and CB2 on.5. Go to step 12.

Step	Conditions	Ins	tructions
11	Go to Instructions column.	1. 2. 3.	Set service panel Power Off Power Off and then back to Set PCC CB1 and CB2 off. Exchange PS105. Note: Check cable connec pushed in pins and seating exchanging power supply.
		4. 5.	Set PCC CB1 and CB2 on. Go to step 12.
12	Go to Instructions column.	1. 2. 3.	If still failing, the sense line shorted isolate to one of the following: 01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card) PS105 01A-A2 board Cable from 01A-A2A2 J/P02. Set PCC CB1 and CB2 on. Go to page PR 5001.
		2. 3.	PS105 01A-A2 board Cable from 01A-A J/P02. Set PCC CB1 and CB2 Go to page PR 5001.



Seq DA140	PN 0445957	EC A02214	EC A02219		
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- Service Panel

Ref Code 1152740E

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

Possible causes:

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

Step	Conditions	Instructions
1	Go to Instructions column.	 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 to 01A-A2E2D08 + lead to 01A-A2E2P09.
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 to 01A-A2C2D08 + lead to 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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Seq DA145	PN 0445958	EC A02214	EC A02219		
	Pg 1 of 2	15 SEP 83	29 FEB 84		

PR 1601

PS105

Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead to 01A-A2C2D08 + lead to 01A-A2C2B06.
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 01A-A2C2 card. Set PCC CB1 and CB2 on. Go to page PR 5001.
7	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2A2B05.
8	Is voltage less than +0.8 Vdc?	 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 PS105 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 PS105 J/P02 and 01A-A2A2. 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.

Step	Conditions	Instructions
11	Go to Instructions column.	 Set service panel Power Of Power Off and then back to Set PCC CB1 and CB2 off. Exchange PS105.
		Note: Check cable connec pushed in pins and seating exchanging power supply.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.



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Seq DA145	PN 0445958 Pg 2 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84		

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Service Panel

Ref Code 1152840E

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

Possible causes:

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

Step	Conditions	Instructions
1	Go to Instructions column.	 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. Set PCC CB1 and CB2 on. Go to step 14.

PS105 F J/P02-6-(BG sense)-A2B06-B07 D07





Seq DA150 PN 0445959 Pg 1 of 3	EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02219 29 FEB 84		
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PR 1611





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 B 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. Set PCC CB1 and CB2 on. 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?	 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 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. Set PCC CB1 and CB2 on. Go to step 14.

Step	Conditions	Instructions
9	Go to Instructions column.	Measure for +5 Vdc at the followi points:
		- lead at 01A-A2C2D08 + lead at 01A-A2A2B06.
10	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off s Power Off and then back to N Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to step 14.
11	Go to Instructions column.	Measure for +5 Vdc at the followi 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. 01A-A2A2.
		Note: Check board for bent cable connector for pushed ir and seating before exchangin
		3. Go to step 14.
13	Go to Instructions column.	 Set service panel Power Off s Power Off and then back to N Set PCC CB1 and CB2 off. Exchange PS105.
		Note: Check cable connecto pushed in pins and seating be exchanging power supply.
		 Set PCC CB1 and CB2 on. Go to step 14.

	Seq DA150	PN 0445959 Pg 2 of 3	EC A02214	EC A02215 01 NOV 83	EC A02219 29 FEB 84	
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Step	Conditions	Instructions
14	Go to Instructions column.	 If still failing, the sense line may be shorted. Isolate to one of the following:
		01A-A2E2 card (swap with D2 card) 01A-A2C2 card (swap with C4 card)
		PS105 01A-A2 board
		Cable from 01A-A2A2 to PS105 J/P02.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.



Seq DA150 PN 0445959 EC Pg 3 of 3 15 5	C A02214 EC A02215 5 SEP 83 01 NOV 83	EC A02219 29 FEB 84	
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- Service Panel



Ref Codes 1113150E, 1152940E

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

Possible causes:

- O1A-A2E2 sense card
- PS103
- PS103 CP1
- PS103 OC sense line open or grounded.

Step	Conditions	Instructions
1	Is PS103 CP1 tripped?	 Reset PS103 CP1. Press service panel Power On. Go to step 9.
2	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 hord at 01A-A2E2D08 Lond at 01A-A2E2D08
3	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. Set PCC CB1 and CB2 on. 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.





PR 1621

Step	Conditions	Instructions
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.
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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. Go to page PR 5001.
9	Is power complete?	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 CE Mode switch to CE Mode. Reset PS103 CP1. Disconnect PS103 J/P03. Press service panel Power On. Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).

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Seq DA155	PN 0445960 Pg 2 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02217 10 JAN 84	,	





]301]664 J/P03 PR 1622



P\$103

Step	Conditions	Instructions
11	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 PS103. Note: Check cable connectors for pushed in pins and seating before exchanging power supply. Set PCC CB1 and CB2 on. Go to page PR 5001.
12	Go to Instructions column.	 Reconnect PS103 P03. Disconnect 01A-A4YA. Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).
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. Reset PS103 CP1. Set PCC CB1 and CB2 on. Go to page PR 5001.
14	Go to Instructions column.	 Remove cards from 01A-A4 board. Reconnect 01A-A4YA. Select Partial Power Up/Down (QWW) screen. 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. Set PCC CB1 and CB2 off. Exchange 01A-A4 board. Reset PS103 CP1. Set PCC CB1 and CB2 on. Go to page PR 5001.

Step	Conditions	Instructions
16	Go to Instructions column.	 Select Partial Power Up/ (QWW) screen. Select DP (power-down processor Reinstall one card remov 01A-A4 board. Select Partial Power Up/ (QWW) screen. Select UP (power-up processor onl)
17	Is PS103 CP1 tripped?	 Set service panel Power Power Off and then back Exchange card just reinst Reset PS103 CP1. Repeat steps 16, 17, and cards are reinstalled; the PR 5001.
18	Go to Instructions column.	Repeat steps 16, 17, and 18 are reinstalled; then go to page



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Seq DA160	PN 0445961 Pg 1 of 1	EC A02 15 SEP	214 EC A02215 83 01 NOV 83	EC A02217 10 JAN 84	

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PR 1623

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Service Panel

– PS103



Ref Code 1153240E

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

Possible causes:

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

Step	Conditions	Instructions
1	Go to Instructions column.	 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-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. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. 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-A2A3D08 + lead at 01A-A2A3B05.

Seq DA170	PN 0445963 Pg 1 of 2	EC A02214 15 SEP 83	EC A02217 10 JAN 84	EC A02219 29 FEB 84	





PR 1641

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PS103
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-A2 board. Set PCC CB1 and CB2 on. 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.
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. 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. Set PCC CB1 and CB2 off. Exchange PS103. Note: Check cable connectors for pushed in pins and seating before exchanging power supply. Set PCC CB1 and CB2 on. 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.

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Step	Conditions	Instructions
11	Is voltage greater than +2.4 Vdc?	 Set service panel Power Off service panel Power Off and then back to N Set PCC CB1 and CB2 off. Exchange PS103. Note: Check cable connector pushed in pins and seating be exchanging power supply. Set PCC CB1 and CB2 on. Go to page PR 5001.
12	Go to Instructions column.	 Set service panel Power Off service panel Power Off and then back to N Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. If still failing, isolate to one of following: Cable from 01A-A2A3 to J/P01 01A-A2 board. Set PCC CB1 and CB2 on. Go to page PR 5001.



Seq DA170	PN 0445963		EC A02214	EC A02217	EC A02219 29 FFR 84		
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PS103	

Service Panel

- PS102

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Ref Code 1153440E

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

Possible causes:

- 01A-A2C2 optoisolator card
- O1A-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 K03 picked). Measure for +5 Vdc at the following points: lead at 01A-A2D2D08 + 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. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. Set PCC CB1 and CB2 on. Go to step 12.
3	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2D09.
4	Is voltage greater than +2.4 Vdc?	 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 step 12.





PR 1651



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01A-A2

Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points:
4 - A		- lead at 01A-A2C2D08 + lead at 01A-A2C2B09. C
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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. 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. E
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.
		 Set PCC CB1 and CB2 on. Go to step 12.

Seg DA175	PN 0445964	EC A02214	EC A02217	EC A02219	
	Pg 2 of 2	15 SEP 83	10 JAN 84	29 FEB 84	

Ctor	Conditions	Instructions
11	Go to Instructions column.	 Set service panel Power Off Power Off and then back to Set PCC CB1 and CB2 off. Exchange PS106. Note: Check cable connect pushed in pins and seating exchanging power supply. Set PCC CB1 and CB2 on. Go to step 12.
12	Go to Instructions column.	 If still failing, the sense line shorted. Isolate to one of t following: 01A-A2D2 card (swap with E2) 01A-A2C2 card (swap with C4) PS106 01A-A2 board Cable from 01A-A2A2 J/P02. Set PCC CB1 and CB2 on. Go to page PR 5001.



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to PS106

Ref Code 1153540E

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

Possible causes:

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

Step	Conditions	Instructions	
1	Go to Instructions column.	 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-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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 on. Go to step 12. 	

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Seq DA180	PN 0445965	EC A02214	EC A02219			
	Pg 1 of 2	15 SEP 83	29 FEB 84			





PR 1661



PS106

Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at 01A-A2C2D08 + lead at 01A-A2C2B10.
6	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. Set PCC CB1 and CB2 on. Go to step 12.
7	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at 01A-A2A2D08 + lead at 01A-A2A2B10.
8	Is voltage greater than +0.8 Vdc?	 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 step 12.
9	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at frame ground + lead at PS106 J/P02-5.
10	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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.
		 Set PCC CB1 and CB2 on. Go to step 12.

Step	Conditions	Ins	structions
11	Go to Instructions column.	1. 2. 3. 4. 5.	Set service panel Power Off swi Power Off and then back to Nor Set PCC CB1 and CB2 off. Exchange PS106. Note: Check cable connectors pushed in pins and seating befor exchanging power supply. Set PCC CB1 and CB2 on. Go to step 12.
12	Go to Instructions column.	1. 2. 3.	If still failing, the sense line may shorted isolate to one of the following: 01A-A2D2 card (swap with E2 card) 01A-A2C2 card (swap with C4 card) PS106 01A-A2 board Cable from 01A-A2A2 to P J/P02. Set PCC CB1 and CB2 on. Go to page PR 5001.



Seq DA180	PN 0445965 Pg 2 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84		



- Service Panel

Ref Code 1153640E

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-A2E2 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 to 01A-A2D2D08 + lead to 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 to 01A-A2C2D08 + lead to 01A-A2C2D11.
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.

Seq DA185	PN 0445966 Pg 1 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84			
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PR 1671





PS106

Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead to 01A-A2C2D08 + lead to 01A-A2C2B11.
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 01A-A2C2 card. Set PCC CB1 and CB2 on. 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.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.

Step	Conditions	Instructions
11	Go to Instructions column.	 Set service panel Power Off sw Power Off and then back to No Set PCC CB1 and CB2 off. Exchange PS106. Note: Check cable connectors pushed in pins and seating before exchanging power supply.
-		 Set PCC CB1 and CB2 on. Go to page PR 5001.



Seq DA185	PN 0445966 Pg 2 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84			-

Ref Code 1153740E

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

Possible causes:

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

Step	Conditions	Instructions
1	Go to Instructions column.	 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. Set PCC CB1 and CB2 on. Go to step 14.

PS106 F E D C2 C J/P02-6-(BG sense)-A2B12-B12 D12-





PS106

Seg DA190	PN 0445967	EC A02214	EC A02215	EC A02219	-	
	Pg 1 of 3	15 SEP 83	01 NOV 83	29 FEB 84		

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PR 1681



Step	Conditions	Instructions
3	Go to Instructions column.	 Reconnect PS106 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-A2D2D08 Head at 01A-A2D2J04.
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-A2D2 card. Set PCC CB1 and CB2 on. Go to step 14.
5	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2D12.
6	Is voltage greater than +2.4 Vdc?	 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 step 14.
7	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2C2D08 + lead at 01A-A2C2B12.
8	Is voltage greater than +0.8 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A2C2 card. Set PCC CB1 and CB2 on. Go to step 14.

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Step	Conditions	Inst	tructions
9	Go to Instructions column.	Mea poir	asure for +5 Vdc at the follo nts:
			- lead at 01A-A2C2D08 + lead at 01A-A2A2B12.
10	Is voltage greater than +0.8 Vdc?	1. 2. 3. 4. 5.	Set service panel Power Of Power Off and then back to Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to step 14.
11	Go to Instructions column.	Mea poir	asure for +5 Vdc at the follo nts:
			 lead at frame ground lead at PS106 J/P02-6.
12	Is voltage greater than +0.8 Vdc?	1. 2.	Set PCC CB1 and CB2 off. Exchange the cable from PS J/PO2 to 01A-A2A2. Note: Check board for ber cable connector for pushed and seating before exchange
		3.	Go to step 14.
13	Go to Instructions column.	1. 2. 3.	Set service panel Power Of Power Off and then back to Set PCC CB1 and CB2 off. Exchange PS106. Note: Check cable connec pushed in pins and seating exchanging power supply.
		4. 5.	Set PCC CB1 and CB2 on. Go to step 14.

Seq DA190 PN 0445967 Pg 2 of 3	EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02219 29 FEB 84		
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PR 1682

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Step	Conditions	Instructions
14	Go to Instructions column.	 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.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.



Seq DA190	PN 0445967 Pg 3 of 3	EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02219 29 FEB 84	
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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:

- O1A-A2E2 sense card
- PS103
- PS103 analog sense line.

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/P02-4 + lead at PS103 J/P02-2.
2	Is voltage +1.29 to +1.71 Vdc?	Go to step 6.
3	Go to Instructions column.	 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 +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.







PS103

PR 1691

Step	Conditions	Instructions
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. Set PCC CB1 and CB2 on. Go to page PR 5001.
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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. If machine still fails, go to step 3. Set PCC CB1 and CB2 on. 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.

Step	Conditions	Instructions
9	Is voltage +1.29 to +1.71 Vdc?	 Set service panel Power Off switt Power Off and then back to Norn 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 switt Power Off and then back to Norn Set PCC CB1 and CB2 off. Exchange cable between PS103 J/P02 and 01A-A2A3. Note: Check board for bent pins cable connector for pushed in pin and seating before exchanging ca Set PCC CB1 and CB2 on. Go to page PR 5001.



Seq DA195	PN 0445968 Pg 2 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84	1	

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Service Panel

- PS103

Ref Codes 1116430E, 11A0240E, 11A0250E

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

Possible causes:

- O1A-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 Head at PS103 J/P02-11.
2	Is voltage +1.29 to +1.71 Vdc?	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.

Seq DA200	PN 0445969 Pg 1 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84	





PR 1701

PS103

Step	Conditions	Instructions
4	Is voltage less than 5 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. Set PCC CB1 and CB2 on. Go to page PR 5001.
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. Set PCC CB1 and CB2 on. 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. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. If machine still fails, go to step 3. Set PCC CB1 and CB2 on. Go to page PR 5001.
8	Go to Instructions column.	Measure for +1.5 Vdc at the following points: - lead at 01A-A2A3D08 + lead at 01A-A2A3B09.





Seq DA200	PN 0445969 Pg 2 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84	

Ref Codes 11A0740E, 11A0750E

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

Possible causes:

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

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





PS102

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Seq DA205	PN 0445970	EC A02214	EC A02219	EC A02220		
	Pg 1 of 2	15 SEP 83	29 FEB 84	06 JUN 84		

PR 1711





Step	Conditions	Instructions
6	Is voltage +4.50 to +5.50 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. Set PCC CB1 and CB2 on. Go to step 12.
7	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A3M2D08 + lead at 01A-A3A1C07.
8	Is voltage +4.50 to +5.50 Vdc?	 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 step 12.
9	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at PS102 P03-B + lead at PS102 P03-A.
10	Is voltage +4.50 to +5.50 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cable from 01A-A3YA to PS102 J/P03. Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. Set PCC CB1 and CB2 on.
-		5. Go to step 12.

Step	Conditions	Ins	structions
11	Go to Instructions column.	1. 2. 3. 4. 5.	Set service panel Power Off sw Power Off and then back to No Set PCC CB1 and CB2 off. Exchange PS102. Note: Check cable connectors pushed in pins and seating before exchanging power supply. Set PCC CB1 and CB2 on. Go to step 12.
12	Go to Instructions column.	1. 2. 3. 4. 5.	Set PCC CB1 and CB2 off. Check all cables and cards for p seating in the following areas: PS102 01A-A2 board 01A-A3 board. Reset any tripped CPs. Set PCC CB1 and CB2 on. Go to page PR 5001.



Seq DA205	PN 0445970 Pg 2 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84	

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PR 1712

Ref Codes 11A0940E, 11A0950E

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

Possible causes:

• PS109

- O1A-A2E2 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. 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 on 01A-A2E2D08 Head on 01A-A2E2B08.
2	ls 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-A2E2 card. Set PCC CB1 and CB2 on. 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.

LE +5 Vdc (ZA) -YD +5 Vdc D B6D04-(+5V sns)-A5B02-C2D03 PS109 J/P05-B-

Fg 1 01 2 19 SEF 63 29 FEB 64 06 JUN 64	Seq DA220	PN 0445973 Pg 1 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84		
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PS109





Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at 01A-A4B5D08 + lead at 01A-A4B6D04.
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.
		 Set PCC CB1 and CB2 on. 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-A4C2D03.
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	ls 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 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.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.

Step	Conditions	Instructions
11	Go to Instruction column.	 Set service panel Power Off switc Power Off and then back to Norm Set PCC CB1 and CB2 off. Exchange PS109. Note: Check cable connectors fo pushed in pins and seating or pow supply adjustment before exchange power supply.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.



Se	eq DA220	PN 0445973 Pg 2 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84	



Ref Codes 11A1040E, 11A1050E

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

Possible causes:

- O1A-A2E2 card
- 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. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. Set PCC CB1 and CB2 on. 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?	 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-A3P5D08 + lead at 01A-A3W1B08.		





Seq DA225 PN 0445974 Pg 1 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84		
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Step	Conditions	Instructions
6	Is voltage +4.50 to +5.50 Vdc?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. 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. Set PCC CB1 and CB2 on. 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	ls voltage +4.50 to +5.50 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 +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?	 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/P09 to 01A-A3YB. 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.

Step	Conditions	Instructions
11	Go to Instructions column.	 Set service panel Power Off swi Power Off and then back to Nor Set PCC CB1 and CB2 off. Exchange PS103.
		Note: Check cable connectors to pushed in pins and seating before exchanging power supply.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.



	Seq DA225	PN 0445974 Pg 2 of 2	ſ	EC A02214 15 SEP 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84		
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- Service Panel

- PS103

PR 1742

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
- O1A-A2E2 card
- 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 to 01A-A2E2D08 + lead to 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. Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. Set PCC CB1 and CB2 on. Go to page PR 5001. 		
3	Go to Instructions column.	Measure for +1.5 Vdc at the following points: - lead to 01A-A2A5D08 + lead to 01A-A2A5B05.		
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. 		

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Seq DA230	PN 0445975	EC A02214	EC A02215	EC A02219	EC A02220	
-	Pg 1 of 2	15 SEP 83	01 NOV 83	29 FEB 84	06 JUN 84	





PS107

PR 1751

PR 1751

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Step	Conditions	Instructions
5	Go to Instructions column.	Measure for +6 Vdc at the following points:
		- lead to 01A-A3P2D08 + lead to 01A-A3V1D08.
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.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.
7	Go to Instructions column.	Measure for +6 Vdc at the following points:
-		- lead to 01A-A3K2J08 + lead to 01A-A3K2J12.
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 to PS107 J/P04-B + lead to 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.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.

Step	Conditions	Instructions	
11	Go to Instructions column.	 Set service pane Power Off and t Set PCC CB1 ar Exchange PS10 Note: Check ca pushed in pins a supply adjustme power supply. 	el Power Off sw hen back to No id CB2 off. 7. able connectors and seating or p ent before excha
		4. Set PCC CB1 ar 5. Go to page PR 9	nd CB2 on. 5001.



Seq DA230 PN 0445975	EC A02214	EC A02215	EC A02219	EC A02220	-
Pg 2 of 2	15 SEP 83	01 NOV 83	29 FEB 84	06 JUN 84	

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- PS107

- Service Panel

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. 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 to 01A-A2E2D08 lead to 01A-A2E2S04. Note: Voltage is present for about two seconds.
2	ls 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-A2E2 card. Set PCC CB1 and CB2 on. Go to page PR 5001



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Seq DA235	PN 0445976	EC A02214	EC A02219	EC A02220	
	Pg 1 of 2	15 SEP 83	29 FEB 84	06 JUN 84	



Step	Conditions	Instructions		
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 to 01A-A2B2D08 lead to 01A-A2B2B07. Note: Voltage is present for about two seconds. 		
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.	 Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). Measure for -1.5 Vdc at the following points: lead to 01A-A2G2D08 lead to 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. Set PCC CB1 and CB2 on. Go to page PR 5001. 		

Step	Conditions	Instructions
7	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 to 01A-A2R2D08 lead to 01A-A2R1A06. Note: Voltage is present for about two seconds.
8	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 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: lead to 01A-B2 TB1-B bus lead to 01A-B2 TB1-A bus. Note: Voltage is present for about two seconds.
10	Is voltage -1.47 to -1.53 Vdc?	 Isolate to one of the following: Cable from 01A-B2VS6 to 01A-A2YF 01A-B2 board. 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 PS105. Note: Check cable connector for pushed in pins and seating or power supply adjustment before exchanging power supply. Set PCC CB1 and CB2 on

	Seq DA235	PN 0445976 Pg 2 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84		
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PCC

Left Side View



PR 1762

Ref Code 11D1230E

This Ref Code indicates the power off to MSS signal line is at a down level and the MBC has failed to power off the MSS.

Possible causes:

- 01A-A1V2 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	Is 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 lead at 01A-A2E2G04. 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.	 Set PCC CB1 and CB2 off. Exchange 01A-A2E2 card. 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.		





Seq DA240

PN 0445977 Pg 1 of 2

EC A02214 15 SEP 83

Step	Conditions Instructions			
8	Go to Instructions column.	 Set PCC CB1 and CB2 off. Disconnect cable at 01A-A1YM (card side). Set PCC CB1 and CB2 on. Measure for +5 Vdc at the following points: lead at 01A-A1V2D08 lead at 01A-A1V2U07. 		
9	Is voltage greater than +2.5 Vdc?	Go to step 16.		
10	Go to Instructions column.	 Set PCC CB1 and CB2 off. Exchange 01A-A1V2 card. Note: A TCC could also be defective. 		
		 arrow is pointing up. Exchange 01A-A1 board if still failing. Go to step 21. 		
11	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2A1C08.		
12	Is voltage greater than +2.5 Vdc?	 Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Go to step 21. 		
13	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1J1E13.		
14	Is voltage greater than +2.5 Vdc?	 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.		
		3. Go to step 21.		

CB2 off. board. CB2 off. 01A-A 2 card. CB2 on. c at the 2D08 2U07. CB2 off. E2 card.
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Step	Conditions	Instructions
21	Go to Instructions	
	column.	1. Set PCC CB1 and CB2 off.
		2. Check all cables and cards for proper seating in the following areas:
		01A-A1 board
		01A-A2 board
		Service panel
		OCP
		01F-J1.
		3. Reset any tripped CPs.
		4. Set PCC CB1 and CB2 on.
		5. Go to page PR 5001.



Seq DA245	PN 0445978 Pg 1 of 1	EC A02214 15 SEP 83			
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Ref Codes 11A2940E, 11A2950E

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

Possible causes:

- PS105
- 01A-A2E2 sense card.

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 Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). Measure for -1.5 Vdc at the following points: lead on 01A-A2E2D08 lead on 01A-A2E2U07. Note: Voltage is present for about two seconds. 			
2	Is voltage -1.44 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-A2E2 card. Set PCC CB1 and CB2 on. 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-A2B2D08 lead at 01A-A2B2B03. Note: Voltage is present for about two seconds. 			





PR 1781

Step	Conditions	Instructions
4	Is voltage -1.44 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.	 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-A2H2D08 lead at 01A-A2H1C08. Note: Voltage is present for about two seconds.
6	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 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. Set PCC CB1 and CB2 on. 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 -1.5 Vdc at the following points: lead at 01A-A2Q2D08 lead at 01A-A2Q6E03. Note: Voltage is present for about two seconds.

Step	Conditions	Instructions
8	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.
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: 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 -1.56 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. Note: Check cable connectors for pushed in pins and seating before exchanging cable. Set PCC CB1 and CB2 on. 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 PS105. Note: Check cable connectors for pushed in pins and seating or power supply adjustment before exchanging power supply. Set PCC CB1 and CB2 on. Go to page PR 5001.

 Seq DA250
 PN 0445979 Pg 2 of 2
 EC A02214
 EC A02217
 EC A02219
 EC A02220

 15 SEP 83
 10 JAN 84
 29 FEB 84
 06 JUN 84
 Left Side View

LOCATIONS

PCC



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-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 Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). Measure for -1.5 Vdc at the following points: lead on 01A-A2E2D08 lead on 01A-A2E2S03. Note: Voltage is present for about two seconds.
2	Is voltage -1.44 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-A2E2 card. Set PCC CB1 and CB2 on. 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-A2A5B04. Note: Voltage is present for about two seconds.





Seq DA255	PN 0445980 Pg 1 of 2	EC A02214	EC A02219	EC A02220		
	1191012	13 021 03	2312004	100 0011 04	L	

PR 1791



PS105

Step	Conditions	Instructions
	Is voltage -1.44 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.
	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-A4B5D08 C
		Note: Voltage is present for about two seconds.
;	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 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.
,	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-A4K2D08 D + lead at 01A-A4K2B11.
		Note: Voltage is present for about two seconds.

Step	Conditions	Instructions
8	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-A4 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:
		- lead at 01A-B2 TB1-B bus + lead at 01A-B2 TB1-A bus.
		seconds.
10	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 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.
		 Set PCC CB1 and CB2 on. 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 PS105. Note: Check cable connectors for pushed in pins and seating or power supply adjustment before exchanging power supply.
		 Set PCC CB1 and CB2 on. Go to page PR 5001.

PCC

PS105 ·

Seq DA255	PN 0445980 Pg 2 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84		

PR 1792



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.

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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 Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). Measure for -1.5 Vdc at the following points: lead on 01A-A2E2D08 lead on 01A-A2E2P13. Note: Voltage is present for about two
2	Is voltage -1.44 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-A2E2 card. Set PCC CB1 and CB2 on. 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-A2A5D05. Note: Voltage is present for about two seconds.

Seq DA260 PN 0445981	EC A02214	EC A02215	EC A02219	EC A02220	
Pg 1 of 2	15 SEP 83	01 NOV 83	29 FEB 84	06 JUN 84	
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PR 1801

Step	Conditions	Instructions		Step	Conditions	Instru
4	Is voltage -1.44 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. 		8	Is voltage -1.45 to -1.55 Vdc?	1. S P 2. S 3. E 4. S 5. G
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-A3W2D08 lead at 01A-A3W1E08. Note: Voltage is present for about two seconds. 		9	Go to Instructions column.	1. S ((2. S (r 3. M p - + Note: secon
6	Is voltage -1.45 to -1.55 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. Set PCC CB1 and CB2 on. Go to page PR 5001. 	LOCATIONS	10	Is voltage -1.45 to -1.55 Vdc?	1. S P 2. S 3. E b N ca an 4. S 5. G
7	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-A3U2J08 lead at 01A-A3U2B13. Note: Voltage is present for about two seconds. 	PCC PS105	11	Go to Instructions column.	1. S P 2. S 3. E N p st p 4. S 5. G
			Left Side View			

Seq DA260	PN 0445981 Pg 2 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84	

uctions

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. So to page PR 5001.

Select Partial Power Up/Down QWW) screen. Select UP

power-up processor only).

Aeasure for -1.5 Vdc at the following points:

lead at 01A-B2 TB1-B bus lead at 01A-B2 TB1-A bus.

: Voltage is present for about two nds.

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.

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

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

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.

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

PR 1802

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Ref Codes 11A3840E, 11A3850E

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 AMD102 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.		



Normal Temperature Ranges

Shutoff: Less than 5 and more than 42 degrees celsius.

Warning: 6 to 7 and 40 to 41 degrees celsius.

CE Mode Temperature Range

Shutoff: Less than 3 and more than 46 degrees celsius.

Warning: None.



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PR 1811
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. Go to page PR 5001.

	Step	Conditions	Ins	tructions
	13	Go to Instructions column.	1. 2. 3.	Set service panel Power Off switch Power Off and then back to Norma 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?	1. 2. 3. 4. 5.	Set service panel Power Off switch Power Off and then back to Norma 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. Set PCC CB1 and CB2 on. Go to page PR 5001.
	15	Go to Instructions column.	1. 2. 3. 4. 5.	Set service panel Power Off switch Power Off and then back to Norma Set PCC CB1 and CB2 off. Exchange the AIS. Set PCC CB1 and CB2 on. Go to page PR 5001.
LOCATI PCC Air Inlet Sensor	ONS	Front Vi	ew	- Service Panel
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Seq DA265	PN 0445982 Pg 2 of 2	EC A02214 15 SEP 83	EC A02217 10 JAN 84		-

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PR 1812

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

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

Possible causes:

- PS103
- Short on 01A-A3 board
- Short on PS104 through PS109.

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 PS103 CPs. Reset any tripped CP and press Power On. If CP trips again or same Ref Code, go to step 2. If power 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 19.
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 P09. Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).

Seq DA270	PN 0445983 Pg 1 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02219 29 FEB 84		



PR 1821

Step	Conditions	Instructions
6	Is CP3 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. Go to step 35.
7	Go to Instructions column.	 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 (pin side). Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).
8	Is CP3 tripped?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Reset CP3. Exchange cable from PS103 P09 to 01A-A3YB and YF. Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. Go to step 35.
9	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).
10	Is CP3 tripped?	Go to step 14.



 Seq DA270
 PN 0445983
 EC A02214
 EC A02215
 EC A02219

 Pg 2 of 2
 15 SEP 83
 01 NOV 83
 29 FEB 84

PR 1822

Step	Conditions	Instructions		
11	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). 		
12	Is CP3 tripped?	 Select the Partial Power Up/Down (QWW) screen. Select DP (power-down processor only) Exchange card. Reset CP3. Repeat steps 11, 12, and 13 until all cards have been reinstalled, then go to step 35. 		
13	Go to Instructions column.	 Repeat steps 11, 12, and 13 until all cards have been reinstalled, then go to step 35. 		
14	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). 		
15	Is CP3 tripped?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A3 board. Reset CP3. Go to step 35. 		



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Seq DA275	PN 0445984 Pg 1 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02219 29 FEB 84	i.	
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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). Reinstall one cable in the 01A-A3 board. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).
17	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 16, 17, and 18 until all cables have been reinstalled, then go to step 35.
18	Go to Instructions column.	 Repeat steps 16, 17, and 18 until all cables have been reinstalled, then go to step 35.
19	Go to Instructions column.	 Disconnect cables PS103 P05 and P06. Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).
20	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. Reset CP2 or CP4. Go to step 35.

Step	Conditions	Instructions			
21	Go to Instructions column.	 Select the Partial Power Up/ (QWW) screen. Select DP (power-down processor only 3. Reconnect cables PS103 PO PO6. Disconnect the following cab 			
		PS104 P02 PS105 P03 PS106 P03 PS107 P02 PS108 P02 PS109 P02.			
		 Select the Partial Power Up/ (QWW) screen. Select UP (power-up processor only). 			
22	Is CP2 or CP4 tripped?	 Set service panel Power Off Power Off and then back to Set PCC CB1 and CB2 off. Exchange cable from PS103 P06 to PS104 through PS103 			
		Note: Check cable connected pushed in pins and seating be exchanging cable.			
		 Reset CP2 or CP4. Go to step 35. 			
23	Go to Instructions column.	 Select the Partial Power Up/ (QWW) screen. Select DP (power-down processor only) Reconnect cable PS104 P02. Select the Partial Power Up/ (QWW) screen. Select UP (power-up processor only). 			

Seq DA275 PN 0445984 Pg 2 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02219 29 FEB 84	

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Up/Down	
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Off switch to k to Normal. off. 5103 P05 and PS109.	
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Step	Conditions	Instructions	Step	Conditions	Instructions
24	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. Reset CP2 or CP4. Go to step 35. 	28	Is CP2 or CP4 tripped?	 Set service panel Power O Power Off and then back t Set PCC CB1 and CB2 off. Exchange PS106. Note: Check cable connec pushed in pins and seating exchanging power supply. Reset CP2 or CP4. Go to step 35.
25	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). 	29	Go to Instructions column.	 Select the Partial Power Up (QWW) screen. Select DP (power-down processor or 3. Reconnect cable PS107 PO Select the Partial Power Up (QWW) screen. Select UP (power-up processor only)
26	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 PS105. Note: Check cable connectors for pushed in pins and seating before exchanging power supply. Reset CP2 or CP4. Go to step 35. 	30	Is CP2 or CP4 tripped?	 Set service panel Power Of Power Off and then back to Set PCC CB1 and CB2 off. Exchange PS107. Note: Check cable connect pushed in pins and seating exchanging power supply. Reset CP2 or CP4. Go to step 35.
27	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). 	31	Go to Instructions column.	 Select the Partial Power Up (QWW) screen. Select DP (power-down processor or 3. Reconnect cable PS108 PO Select the Partial Power Up (QWW) screen. Select UP (power-up processor only)

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Seq DA280	PN 0445985 Pg 1 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83		

PR 1825

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Step	Conditions	Instructions
32	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. Reset CP2 or CP4. Go to step 35.
33	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).
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 PS109. Note: Check cable connectors for pushed in pins and seating before exchanging power supply. Reset CP2 or CP4. Go to step 35.
35	Go to Instructions column.	 Set PCC CB1 and CB2 off. Check all cables and cards for proper seating in the following areas: PS103 01A-A3 board PS104 through PS109. Reset any tripped CPs. Set PCC CB1 and CB2 on. Go to page PR 5001.



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Seq DA280	PN 0445985 Pg 2 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83		

PR 1826

Ref Codes 11A4330E, 17A4330E

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

Possible causes:

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

Step	Conditions	Instructions
1	Is this a new installation?	Go to step 45.
	or	
	Did you just add control	
2	Go to Instructions	
	column.	1. Set service panel Power Off switch to
		Power Off and then back to Normal.
		2. Set CE Mode switch to CE Mode.
		CAUTION
		+24V may be present on power control cable.
		3. Plug the PCI dummy plug into PCI
		panel No.1 CU1 position.
		4. Press service panel Power On.
		5. Select the Partial Power Up/Down (QWW) screen.
		6. Select UI
		(power-up I/O only).
		7. Check the I/O status
		(displayed on UVVVV screen).
3	Does I/O Status equal	Go to step 37.





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Seq DA285	PN 0445986 Pg 1 of 2	EC A02214 15 SEP 83			

PR 1831

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). Measure for +24 Vdc at the following points: lead at frame ground tead at PS101 P02-3
5	Is voltage less than +22	Go to step 23.
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. Exchange PS101. Note: Check cable connectors for pushed in pins and seating before exchanging power supply. Set PCC CB1 and CB2 on. Go to step 48.
8	Go to Instructions column.	Measure for +24 Vdc at the following points: - lead at frame ground
		+ lead at PS101 P02-4.
3	is voltage less than +22 Vdc?	GO TO STEP 30.



Seq DA285 PN 0445 Pg 2 of	986 2	EC A02214 15 SEP 83		



PR 1832

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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.
		 Set PCC CB1 and CB2 on. Go to step 48.
12	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at 01A-A2D2D08 + lead at 01A-A2D2D11.
13	Is voltage greater than +2.5 Vdc?	 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 step 48.
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. Set PCC CB1 and CB2 on. Go to step 48.
16	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A2C1A06.

Step	Conditions	Instructions
17	Is voltage greater than +2.5 Vdc?	 Set service panel Power Of Power Off and then back Set PCC CB1 and CB2 off Exchange 01A-A2 board. Set PCC CB1 and CB2 on Go to step 48.
18	Go to Instructions column.	Measure for +5 Vdc at the foll points: - lead at 01A-A1D2D08 + lead at 01A-A1L1C11.
19	Is voltage greater than +2.5 Vdc?	 Set service panel Power C Power Off and then back Set PCC CB1 and CB2 off Exchange cable from 01A 01A-A1YM. Note: Check board for be cable connector for pushe and seating before exchar Set PCC CB1 and CB2 on Go to step 48.
20	Go to Instructions column.	Measure for +5 Vdc at the follo points: - lead at 01A-A1D2D08 + lead at 01A-A1U1C06.
21	Is voltage greater than +2.5 Vdc?	 Set service panel Power C Power Off and then back Set PCC CB1 and CB2 off Exchange 01A-A1 board. Set PCC CB1 and CB2 on Go to step 48.

Seq DA290 PN 0445987 Pg 1 of 2 Pg 1 of 2	EC A02214 15 SEP 83				
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Step	Conditions	Instructions
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. Set PCC CB1 and CB2 on.
23	Go to Instructions column.	 Go to step 48. Press ENTER to end Diagnostic Stop. Measure for +5 Vdc at the following points: lead at 01A-A2D2D08 lead at 01A-A2D2B12.
24	Is voltage less than +2.5 Vdc?	Go to step 27.
25	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.
26	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. Set PCC CB1 and CB2 on. Go to step 48.
27	Go to Instructions column.	 Set PCC CB1 and CB2 off. Exchange PS101. Note: Check cable connectors for pushed in pins and seating before exchanging power supply. Set PCC CB1 and CB2 on. Go to step 48.

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Seq DA290	PN 0445987 Pg 2 of 2	EC A02214 15 SEP 83			
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Sten	Conditions	Instructions
28	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at frame ground + lead at PS101 P03-9. J
29	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. Set PCC CB1 and CB2 on.
		5. Go to step 48.
30	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at 01A-A1D2D08 + lead at 01A-A1U1B06. K
31	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 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.
		 Set PCC CB1 and CB2 on. Go to step 48.
32	Go to Instructions column.	Measure for +5 Vdc at the following points:
		- lead at 01A-A1D2D08 + lead at 01A-A1K1A11.
33	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 01A-A1 board. Set PCC CB1 and CB2 on. Go to step 48.

Step	Conditions	Instructions
34	Go to Instructions column.	Measure for +5 Vdc at the followin points:
		- lead at 01A-A2D2D08 + lead at 01A-A2A1D06.
35	Is voltage less than +2.5 Vdc?	 Set service panel Power Off sv Power Off and then back to No Set PCC CB1 and CB2 off. Exchange cable from 01A-A2 01A-A1YM. Note: Check board for bent p cable connector for pushed in
		and seating before exchanging4. Set PCC CB1 and CB2 on.5. Go to step 48.
36	Go to Instructions column.	 Set service panel Power Off sw Power Off and then back to No Set PCC CB1 and CB2 off. Exchange 01A-A2 board. Set PCC CB1 and CB2 on. Go to step 48.
37	Go to Instructions column.	 Select the Partial Power Up/D (QWW) screen. Select DI (power-down I/O only). CAUTION +24V may be present On por control cable. Reconnect power control cable panel No.1 CU1 position. Return dummy plug to original position. Select the Diagnostic Power U (QWD) screen. Select option I (stop after power-up I/O). Locate the last PCI panel J/PC Measure for +24 Vdc at the fo points: lead at frame ground + lead at J/P09-1
	-	(last PCI panel).

Seq DA295	PN 0445988 Pg 1 of 3	EC A02214 15 SEP 83		 ~

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Step	Conditions	Instructions	Step	Conditions	Instructions
38	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. One of the following cables is open (see note). 	40	Is voltage greater than +22 Vdc?	 Set service panel Power Power Off and then back Set PCC CB1 and CB2 of One of the following cat (see note).
		PS101 P02-5 to PCI panel No.1 P00-1.			PS101 P02-4 to PC P00-4.
		PCI panel No.1 P09-1 to PCI panel No. 2 P00-1.			PCI panel No.1 P09 panel No. 2 P00-4.
		PCI panel No.2 P09-1 to PCI panel No. 3 P00-1.			PCI panel No.2 P09- panel No. 3 P00-4.
		PCI panel No.3 P09-1 to PCI panel No. 4 P00-1.			PCI panel No.3 P09- panel No. 4 P00-4.
		Note: PCI panels 5 through 8 use same points.			Note: PCI panels 5 thro same points.
		4. Exchange the failing cable.			4. Exchange failing cable.
		Note: Check cable connectors for pushed in pins and seating before exchanging cable.			Note: Check cable compushed in pins and seatien exchanging cable.
		 Set PCC CB1 and CB2 on. Go to step 48. 			 Set PCC CB1 and CB2 of Go to step 48.
39	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) 	41	Go to Instructions column.	 This is a common proce an I/O power timeout to or control unit. Start wit PO1 and continue seque each control unit plug ha metered. Measure for +24 Vdc at

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panel Power Off switch to and then back to Normal. B1 and CB2 off. following cables is open

P02-4 to PCI panel No.1

nel No.1 P09-4 to PCI

nel No.2 P09-4 to PCI

nel No.3 P09-4 to PCI

panels 5 through 8 use

eck cable connectors for oins and seating before

B1 and CB2 on.

mmon procedure to isolate ver timeout to a PCI panel unit. Start with PCI panel 1 ontinue sequentially until rol unit plug has been

or +24 Vdc at the following

(X is P01 through P08 on each PCI).

- lead at frame ground + lead at PCI POX-4

Step	Conditions	Instructions
42	Is voltage less than +22 Vdc?	The I/O power on sequence is failing at this plug position.
		1. Isolate to one of the following:
		I/O control unit Power control cable PCI panel.
		2. Go to step 48.
43	Last PCI panel and plug position. or 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. Set PCC CB1 and CB2 on. Go to step 48.
44	Is voltage greater than +22 Vdc?	Go to step 41 and next sequential plug position.
45	Is this a new installation or	The I/O timeout value may not be long enough to allow the I/O to power up. Verify or change the timeout value.
	Did you just add control units?	 Set CE Mode switch to CE Mode. Select the System Configuration (QFO) screen. Check the I/O timeout value (value should equal 1 to 2 minutes for each control unit). If necessary, increase the I/O timeout value; re-IML. Select the Partial Power Up/Down (QWW) screen. Select UC (power-up processor and I/O).
46	Is power complete?	 Set CE Mode switch to Normal. Go to page END 001.
47	Go to Instructions column.	Go to step 2.

Step	Conditions	Instructions
48	Go to Instructions column.	 Set service panel Power Off switc Power Off and then back to Norm Set PCC CB1 and CB2 off. Check all cables and cards for prosenting in the following areas: PS101 01A-A1 board 01A-A2 board PCI panels 1 to 4.
		 Reset any tripped CPs. Set PCC CB1 and CB2 on. Go to page PR 5001.



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PS101

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Ref Codes 1114250E, 11A4440E, 11A4450E

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

Possible causes:

- O1A-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 P04-11 Head at PS101 P04-8.
4	Is voltage less than +22 Vdc?	Go to step 20.
5	Go to Instructions column.	Measure for +24 Vdc at the following points: - lead at 01A-A2D2D08 + lead at PCC 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.

Seq DA300 PN 0445989 Pg 1 of 2	EC A02214 15 SEP 83		







Step	Conditions	Instructions
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.
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.
	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. Go to step 51.
13	Go to Instructions column.	Measure for +4 Vdc at the following points: - lead at 01A-A2D2D08 + lead at 01A-A1U2D10.
14	Is voltage greater than +3.5 Vdc?	 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.



Seq DA300 PN 0445989 Pg 2 of 2	EC A02214 15 SEP 83	•		



Step	Conditions	Instructions
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?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange 01A-A1U2 card. 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.
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 P03 to 01A-A1X2. Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable. 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.



Primary Control Compartment (PCC)

Seq DA305	PN 0445990	EC A02214	EC A02217		
	Pg 1 of 2	15 SEP 83	10 JAN 84		

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Step	Conditions	Instructions	
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. 	
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.	

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Step	Conditions	Instructions
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 swit Power Off and then back to Norr 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 N + lead at 01A-A1J1C11.
32	Is voltage greater than +4.5 Vdc?	 Set service panel Power Off swit Power Off and then back to Norr Set PCC CB1 and CB2 off. Exchange cable from 01A-A2YA 01A-A1YM. Note: Check board for bent pine cable connector for pushed in pin and seating before exchanging c Go to step 51.
33	Go to Instructions column.	Measure for +5 Vdc at the following points:
		+ lead at 01A-A1U1D08.
34	Is voltage greater than +4.5 Vdc?	 Set service panel Power Off swit Power Off and then back to Norr 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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Seq DA305	PN 0445990 Pg 2 of 2	EC A02214 15 SEP 83	EC A02217 10 JAN 84		×	

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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. 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. Go to step 51.
38	Go to Instructions column.	Measure for +5 Vdc at the following points: - lead at 01A-A1V2D08 + lead at 01A-A1T1A08.
39	Is voltage greater than +4.5 Vdc?	 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.

Step	Conditions	Instructions
41	Is voltage greater than +4.5 Vdc?	 Set service panel Power Of Power Off and then back 1 Set PCC CB1 and CB2 off Exchange cable from PS10 01A-A1YG. Note: Check board for bac cable connector for pushe and seating before exchar Go to step 51.
42	Go to Instructions column.	 Set service panel Power Of Power Off and then back to Set PCC CB1 and CB2 off Exchange PS101. Note: Check cable conne pushed in pins and seating exchanging power supply. Go to step 51.
43	Go to Instructions column.	Measure for +25 Vdc at the fol 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 fol points: - lead at PCC K03-T3 + lead at PCC K03-L3.
46	Is voltage greater than +22 Vdc?	 Set service panel Power O Power Off and then back t Set PCC CB1 and CB2 off. Exchange PCC K03 contact Set PCC CB1 and CB2 on. Go to step 51.

Seq DA310	PN 0445991 Pg 1 of 2	EC A02214 15 SEP 83	EC A02217 10 JAN 84		

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Step	Conditions	Instructions		
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. Go to step 51. 		
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 PO1 to PCC K03 contactor. Note: Check cable connectors for pushed in pins and seating before exchanging cable. 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. Go to step 51. 		





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Ref Codes 1114350E, 11A4540E, 11A4550E

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

Possible causes:

- 01A-A2D2 sense card
- 01A-A1U2 reset card •
- PCC KO4 •
- 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. Press service panel Power On. Measure for +24 Vdc at the following points:
		- lead at frame ground + lead at PCC P03-2.
		 Select the Partial Power Up/Down (QWW) screen. Select UP (power-on processor only). Note: Voltage is present for about four seconds.
2	Is voltage greater than +22 Vdc?	Go to step 8.
3	Go to Instructions column.	 Select the Diagnostic Power Up (QWD) screen. Select option A (stop after K03 picked). Measure for +24 Vdc at the following points: lead at frame ground lead at PS101 P04-12.
4	Is voltage less than +22 Vdc?	Go to step 21.









Seq DA315	PN 0445992 Pg 1 of 2	EC A02214 15 SEP 83		

Step	Conditions	Instructions
5	Go to Instructions column.	 Press ENTER to end Diagnostic Stop. Measure for +24 Vdc at the following points: lead at frame ground lead at PS101 P04-12. Select the Partial Power Up/Down (QWW) screen. Select UP (power-on processor only).
		Note: Voltage is present for about 4 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. Go to step 31.
8	Go to Instructions column.	 Measure for +4 Vdc at the following points: 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 4 seconds.

Seq DA315	PN 0445992 Pg 2 of 2	EC A02214 15 SEP 83		







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 four 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. Exchange 01A-A2 board. 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 4 seconds.



ſ	Seq DA320	PN 0445993 Pg 1 of 2	EC A02214 15 SEP 83	EC A02217 10 JAN 84		
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Step	Conditions	Instructions
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. Go to step 31.
14	Go to Instructions column.	 Measure for +4 Vdc at the following points: lead at 01A-A2D2D08 F lead at 01A-A1U2D06. F Select the Partial Power Up/Down (QWW) screen. Select UP (power-on processor only). Note: Voltage is present for about four 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 four seconds.

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Step	Conditions	Instructions
17	Is voltage greater than +22 Vdc?	 Set service panel Power Off sw Power Off and then back to No Set PCC CB1 and CB2 off. Exchange 01A-A1U2 card. Go to step 31.
18	Go to Instructions column.	 Measure for +24 Vdc at the fol points: lead at 01A-A2D2D08 n
		 + lead at 01A-A1X2B03. 2. Select the Partial Power Up/Do (QWW) screen. 3. Select UP (power-on processor only). Note: Voltage is present for about seconds.
19	Is voltage greater than +22 Vdc?	 Set service panel Power Off sw Power Off and then back to No Set PCC CB1 and CB2 off. Exchange 01A-A1 board. Go to step 31.
20	Go to Instructions column.	 Set service panel Power Off sw Power Off and then back to No Set PCC CB1 and CB2 off. Exchange cable from PCC J/PO 01A-A1X2. Note: Check board for bent pi
		cable connector for pushed in p and seating before exchanging4. Go to step 31.
21	Go to Instructions column.	Measure for +24 Vdc at the followir points:
		- lead at frame ground + lead at PS101 J/P04-9.

Seq DA320	PN 0445993 Pg 2 of 2	EC A02214 15 SEP 83	EC A02217 10 JAN 84		
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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
		a. Go to step 31.
23	Go to Instructions column.	Measure for +24 Vdc at the following points:
		- lead at frame ground + lead at PCC P01-6.
24	Is voltage less than +22 Vdc?	 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.
		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 P01.
		Note: Check cable connectors for pushed in pins and seating before exchanging cable.
		4. Go to step 31.



Seq DA325	PN 0445994 Pg 1 of 1	EC A02214 15 SEP 83		

Ins	Instructions						
Me poi	Measure for +24 Vdc at the following points:						
	- lead at frame ground + lead at PCC P01-7.						
1. 2.	Set PCC CB1 and CB2 off. Exchange cable from PCC K04 to PCC P01.						
	Note: Check cable connectors for pushed in pins and seating before exchanging cable.						
3.	Go to step 31.						
1.	Set service panel Power Off switch to						
	Power Off and then back to Normal.						
2.	Set PCC CB1 and CB2 off.						
3.	Exchange cable from PS101 P04 to PCC P01.						
	Note: Check cable connectors for pushed in pins and seating before exchanging cable.						
4.	Go to step 31.						
•							
1. 2.	Set PCC CB1 and CB2 off. Check all cables and cards for proper seating in the following areas:						
	PCC box PS101 01A-A1 board 01A-A2 board.						
_							
3. 4. 5.	Reset any tripped CPs. Set PCC CB1 and CB2 on. Go to page PR 5001.						



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
- O1A-A2A2 board
- ٠ 01A-A2B2 board
- 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. 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 on 01A-A2D2D08 lead on 01A-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. Set PCC CB1 and CB2 off. Exchange 01A-A2D2 card. Set PCC CB1 and CB2 on. 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-A2B2D08 lead at 01A-A2B2B02. Note: Voltage is present for about two seconds.

Seq DA330	PN 0445995 Pg 1 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84	







Step	Conditions	Instructions
4	ls 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.	 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-A2G2D08 lead at 01A-A2G1C06. Note: Voltage is present for about two seconds.
6	Is voltage -4.24 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 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. Set PCC CB1 and CB2 on. 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-A2Q2D08 lead at 01A-A2Q1D08. Note: Voltage is present for about two seconds.

Step	Conditions	Instructions
8	Is voltage -4.24 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 to 01A-B2 TB1-B bus + lead to 01A-B2 TB1-C bus. Note: Voltage is present for about two seconds.
10	Is voltage -4.24 to -4.42 Vdc?	 Isolate to one of the following: Cable from 01A-B2VS6 to 01A-A2YF 01A-B2 board. 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 PS106. Note: Check cable connectors for pushed in pins and seating or power supply adjustment before exchanging power supply. Set PCC CB1 and CB2 on. Go to page PR 5001.

		Seq DA330	PN 0445995 Pg 2 of 2	EC A02214 15 SEP 83	EC A02215 01 NOV 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84	
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Ref Codes 11A6140E, 11A6150E

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

Possible causes:

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

Step	Conditions	Instructions	
1	Go to Instructions column.	 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 Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). Measure for -1.5 Vdc at the following points: 	
		- lead on 01A-A2D2D08 A + lead on 01A-A2D2U07. Note: Voltage is present for about two seconds	
2	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-A2D2 card. Set PCC CB1 and CB2 on. 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-A2B2D08 lead at 01A-A2B2B06. Note: Voltage is present for about two seconds. 	







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Seq DA335	PN 0445996 Pg 1 of 2	EC A02214 15 SEP 83	EC A02217 10 JAN 84	EC A02219 29 FEB 84	EC A02220 06 JUN 84	

PR 1871







Step	Conditions	Instructions	
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.	 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 	
6	Is voltage -4.16 to -4.51 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. 5. Go to page PR 5001. 	LOCAT
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: 	PCC
		- lead at 01A-A2Q2D08 D + lead at 01A-A2Q6C03. D Note: Voltage is present for about two seconds.	



Seq DA335 PN 0 Pg 2	0445996 E	EC A02214	EC A02217 10 JAN 84	EC A02219 29 FEB 84	EC A02220 06 JUN 84	· .
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Instructions

 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.

Select Partial Power Up/Down (QWW) screen.

2. Select UP

1.

3.

(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.

 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-A2ZF.

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

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

 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 or power supply adjustment before exchanging power supply.

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

PR 1872

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
- O1A-A2 board
- O1A-A3 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. 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 to 01A-A2D2U08 lead to 01A-A2D2S03.
		Note: Voltage is present for about two seconds.
2	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-A2D2 card. Set PCC CB1 and CB2 on. 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 to 01A-A2A5D08 lead to 01A-A2A5B06.
		Note: Voltage is present for about two seconds.

Seq DA340	PN 0445997 Pg 1 of 2	EC A02214 15 SEP 83	EC A02219 29 FEB 84	EC A02220 06 JUN 84	



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Step	Conditions	Instructions
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.	 Select Partial Power Up/Down (QWW) screen. Select UP (power-up processor only). Measure for -4.3 Vdc at the following points: lead to 01A-A3X2D08 lead to 01A-A3X1D08. Note: Voltage is present for about two seconds.
6	Is voltage -4.20 to -4.46 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. Set PCC CB1 and CB2 on. 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 to 01A-A3K2D08 lead to 01A-A3K2B06. Note: Voltage is present for about two seconds.
8	ls voltage -4.20 to -4.46 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.

Step	Conditions	Instructions
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 to 01A-B2 TB1-B bus + lead to 01A-B2 TB1-C bus. Note: Voltage is present for about two seconds.
10	Is voltage -4.20 to -4.46 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 forZpushed in pins and seating before exchanging cable. Set PCC CB1 and CB2 on. 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 PS106. Note: Check cable connectors for pushed in pins and seating or power supply adjustment before exchanging power supply. Set PCC CB1 and CB2 on. Go to page PR 5001.



<u>16</u>	Seq DA340	PN 0445997	EC A02214	EC A02219	EC A02220	
		Pg 2 of 2	15 SEP 83	29 FEB 84	06 JUN 84	

Step	Conditions		Instructions					
10	Go to Instructions column.	1.	Repeat steps 8, 9, and 10 until all cards have been reinstalled, then go to step 22.					
11	Go to Instructions column.	1. 2.	Set service panel Power Off switch to Power Off and then back to Normal. Disconnect the cable at 01A-A4ZA					
		3.	(card side). Disconnect the cables at 01A-A4ZC, 01A-A4ZE, 01A-A4YD, and 01A-A4YF.					
		4.	Measure resistance at the following points:					
			01A-B6D04 to frame ground 01A-C6B04 to frame ground (if PS109 J/P04 installed).					
12	Is a short indicated?							
		1. 2. 3. 4.	Exchange 01A-A4 board. Set PCC CB1 and CB2 on. Go to step 22.					
13	Go to Instructions							
	column.	1.	Reconnect the cable at 01A-A4ZA (card side).					
		2. 3.	Disconnect the cable at 01A-A2A5. Measure resistance at the following points:					
			01A-B6D04 to frame ground					
			01A-C6B04 to frame ground (if PS109 J/P04 installed).					
14	Is a short indicated?							
		1. 2.	Set PCC CB1 and CB2 off. Exchange cable from 01A-A2A5 to 01A-A4ZA.					
			Note: Check board for bent pins and cable connector for pushed in pins and seating before exchanging cable.					
		3.	Set PCC CB1 and CB2 on.					

Step	Conditions	Instructions
15	Go to Instructions column.	 Set service panel Pow Power Off and then ba Reconnect PS109 P04 Disconnect PS108 P04 Press service panel Po Select the Partial Pow (QWW) screen. Select UP (power-up processor of
16	Is the displayed Ref Code 11D0540E?	 Set service panel Pow Power Off and then ba Set PCC CB1 and CB2 Exchange cable from F PS108 P04.
		 4. Set PCC CB1 and CB2 5. Go to step 22.
17	Go to Instructions column.	 Set service panel Power Power Off and then ba Reconnect PS108 P04 Disconnect PS108 P05 Press service panel Po Select the Partial Power (QWW) screen. Select UP (power-up processor of
18	Is the displayed Ref Code 11D0540E?	 Set service panel Power Power Off and then ba Set PCC CB1 and CB2 Exchange PS108. Note: Check cable co pushed in pins and sea exchanging power sup Set PCC CB1 and CB2 Go to step 22.

	Seg DA350	PN 0445788	EC A02214	EC A02215	T		
i i Ug		Pg 1 of 2	15 SEP 83	01 NOV 83	1		

PR 1893 ver Off switch to back to Normal. 4. ower On. ver Up/Down only). ver Off switch to back to Normal. 2 off. PS109 P04 to onnectors for ating before 2 on. ver Off switch to ack to Normal. 4.)5 and P06. ower On. ver Up/Down only). ver Off switch to back to Normal. 2 off. onnectors for eating before pply. 2 on.

PR 1893

Step	Conditions	Instructions
19	Go to Instructions column.	 Set service panel Power Off switch to Power Off and then back to Normal. Reconnect PS108 P05 and P06. Disconnect cables at 01A-A4ZB, Zf, YC, and YF. Press service panel Power On. Select the Partial Power Up/Down (QWW) screen. Select UP (power-up processor only).
20	Is the displayed Ref Code 11D0540E?	 Set service panel Power Off switch to Power Off and then back to Normal. Set PCC CB1 and CB2 off. Exchange cables from 01A-A4ZB, Zf, YC, and YF to PS108 P05 and P06. 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 step 22.
21	Go to Instructions column.	Go to step 6.
22	Go to Instructions column.	 Set PCC CB1 and CB2 off. Check all cables and cards for proper seating in the following areas: PS109 PS108
		01A-A4 board 01A-A2 board. 3. Reset any tripped CPs. 4. Set PCC CB1 and CB2 on. 5. Go to page PR 5001.
		5. Go to page PR 5001.



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Seq DA350	PN 0445788	EC A02214	EC A02215		
	Pg 2 of 2	15 SEP 83	01 NOV 83		
			and the second		