



GE Energy

Functional Testing Specification

Parts & Repair Services
Louisville, KY

LOU-GED-DS200IMCP

Test Procedure for a AC-2000 Power Supply and Gate Driver card


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REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	L. Groves	07/09/02
B	Corrected some measurement values. Revised grammar and redundancy.	Cristyn Edlin	11/19/08
C	Corrected incorrect step 7.28	Steve Pharris	08/04/11
D.	Added step to verify DB circuit at 7.16	R. Johnson	12/08/17

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PREPARED BY Cristyn Edlin	REVIEWED BY S. Pharris	REVIEWED BY	QUALITY APPROVAL 
DATE 11/19/08	DATE 8/04/2011	DATE	DATE 11/20/2008

This test procedure is for the DS200IMCP Power Supply and DS200IIBD Gate Driver cards.

1. SCOPE

- 1.1** This is a functional testing procedure for the DS200IMCP and DS200IIBD AC-2000 Power Supply and Gate Driver cards.

2. STANDARDS OF QUALITY

- 2.1** Refer to the current revision of the IPC-A-610 standard for workmanship standards.

3. APPLICABLE DOCUMENTS

- 3.1** The following document(s) shall form part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue shall apply.
- 3.1.1** Check board's electronic folder for more information.

4. ENGINEERING REQUIREMENTS

- 4.1** Equipment Cleaning
- 4.1.1** Equipment should be clean and free of debris prior to applying power unless performing an initial check. Refer to the local documented procedures for cleaning guidelines.
- 4.2** Equipment Inspection
- 4.2.1** Equipment should be visually inspected for any defects prior to applying power. This inspection should include the following as a minimum:
- 4.2.1.1** Wires broken or cracked
 - 4.2.1.2** Terminal strips / connectors broken or cracked
 - 4.2.1.3** Loose wires
 - 4.2.1.4** Components visually damaged
 - 4.2.1.5** Capacitors leaking
 - 4.2.1.6** Solder joints damaged or cold
 - 4.2.1.7** Circuit board burned or de-laminated
 - 4.2.1.8** Printed wire runs burned or damaged

5. EQUIPMENT REQUIRED

- 5.1** The following equipment is required to perform the process requirements. Equipment may be substituted provided that all accuracy's and test ratios are equivalent or better.

Qty	Reference #	Description
1	H188526	Test fixture
1	H033762	CI004 AC2000 Test drive
1		Fluke 85 DMM (or Equivalent)
1		O-scope

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6. **TESTING SETUP**

6.1 Connect O-scope to the O-scope output on the back of the fixture.

6.2 Connect card to the H188526 test fixture.

7. **TESTING PROCEDURE**

7.1 Turn power switch to on.

7.2 Verify all green neon lights of the test fixture come on.

7.3 Verify power supply voltages using the test jacks on the fixture.

7.4 Identify the fault indicator LEDs of the Gate Driver card.

7.5 Verify that there is some combination of fault indicator LEDs lit.

7.6 Verify LEDs CR31, CR32 of the Power Supply card are off.

7.7 Press the red FLTRST-27 pushbutton.

7.8 Verify that the fault indicator LEDs of the Gate Driver card go off.

7.9 Verify that LED CR31 of the Power Supply card comes on.

7.10 Verify that LED CR32 of the Power Supply card remains off.

7.11 Press the red pushbuttons, labeled ENA-20, ENB-21, and ENC-22 at the same time and release.

7.12 Verify that LED CR32 of the Power Supply card comes on.

7.13 Press and release the black pushbutton, labeled ENERGIZES K1 and K2 and verify that the green neon light, labeled CNTB-1 goes off and comes back on.

7.14 Repeat step 7.13 and verify contacts 4PL-1 and 2 switches from closed to opened and back to closed.

7.15 Repeat step 7.13 and verify contacts 4PL-1 and 3 switches from opened to closed and back to opened.

7.16 Press DBTST-19 and verify DBPL-3 LED does not illuminate.

Press ENDB-23 and verify DBPL-3 LED does not illuminate.

Press both DBTST-19 and ENDB-23 and verify that DBPL-3 LED does illuminate.

7.17 Press SS1-24 and verify that CCPL-1 LED comes on.

7.18 Press SS1-25 and verify that CCPL-2 LED comes on.

7.19 Press SS1-26 and verify that CCPL-3 and 4 LED's comes on.

7.20 Connect your meter to the meter output on the back of the fixture.

7.21 Turn rotary switch to 1PL-3 and verify 5VDC.

7.22 Turn rotary switch to 1PL-5 and verify 0VDC.

- 7.23** Turn rotary switch to 1PL-6 and verify 2.5VDC.
- 7.24** Turn rotary switch to 1PL-8 and verify 5V p-p with a frequency increase from 250 kHz to 305 kHz when the knob, labeled APL, BPL, CPL-8 is varied from min to max.
- 7.25** Repeat step 7.24 for rotary switch positions 1PL-9 and 10.
- 7.26** Turn rotary switch to 1PL-11 and verify 5V p-p with a frequency of 250 kHz.
- 7.27** Turn rotary switch to 1PL-12 and verify 5V p-p with a frequency of 250 kHz.
- 7.28** Turn rotary switch to 1PL-13 and verify .5VDC with DMM.
- 7.29** Verify the voltages of the following table with a 1kHz Square wave.

Switch Position	O-Scope Output	Meter Output
APL-1	20 V p-p	+ 3.7 VDC
APL-5	0 V p-p	+ 3.7 VDC
APL-7	20 V p-p	+ 3.7 VDC
APL-12	0 V p-p	+ 3.7 VDC
BPL-1	20 V p-p	+ 3.7 VDC
BPL-5	0 V p-p	+ 3.7 VDC
BPL-7	20 V p-p	+ 3.7 VDC
BPL-12	0 V p-p	+ 3.7 VDC
CPL-1	20 V p-p	+ 3.7 VDC
CPL-5	0 V p-p	+ 3.7 VDC
CPL-7	20 V p-p	+ 3.7 VDC
CPL-12	0 V p-p	+ 3.7 VDC

- 7.30** Remove the card from the H188526 test fixture.
- 7.31** Install card into the H033762 test drive and perform the SCR test.
- 7.32** This can be done by entering the following in on the programmer: [set], [drv], [7], [7], [Enter], [Reset], [Reset], [test], [1], [2], [Enter]
- 7.33** Push run switch up and verify motor runs in both directions.
- 7.34** Burn card in for at least 30 minutes in each direction.
- 7.35** *****TEST COMPLETE** ***

7. NOTES

