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GE Energy

**Functional Testing Specification**

*Parts & Repair Services  
Louisville, KY*

**125D3615xxx**

**Test Procedure for a**

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<p><b>LOU-GED-125D3615</b> <b>REV. A</b></p>	<p><b>g</b></p> <p><b>GE Energy</b> <i>Parts &amp; Repair Services</i> <i>Louisville, KY</i></p>	<p><b>Page 2 of 5</b></p>
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## 1. SCOPE

1.1 This is a functional testing procedure for a Card.

## 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

## 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, cracked, or loosely connected

4.2.1.2 Terminal strips / connectors - broken or cracked

4.2.1.3 Components - visually damaged

4.2.1.4 Capacitors - bloated or leaking

4.2.1.5 Solder joints - damaged or cold

4.2.1.6 Circuit board - burned or de-laminated

4.2.1.7 Printed wire runs / Traces - 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		Appropriate connector breakout box for 125xxx boards
2		Dual Tenma Power supply or similar
1		Switch box for connections to breakout box

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## 6. TESTING PROCESS

### 6.1 Setup

6.1.1 Setup breakout box, switches and power supply per drawing in section 7.

### 6.2 Testing Procedure

- 6.2.1 Apply power to PS2. Verify 18.7 Vdc +/- 1.1 Vdc at TP1 and -18.7 +/- 1.1 Vdc Vdc at TP2.
- 6.2.2 Turn on switches 2 thru 6.
- 6.2.3 Adjust VR2 to full CCW
- 6.2.4 Verify TP 6 is at 0 Vdc.
- 6.2.5 Ground TP12
- 6.2.6 Adjust VR51 for 0.0 Vdc at TP6.
- 6.2.7 Remove ground from TP12.
- 6.2.8 Turn on SW1 and PS1. Adjust PS1 for 1 Vdc at TP 12. Verify -4.031 Vdc +/- .081 Vdc at TP6.
- 6.2.9 Turn VR2 to full CW and verify -14.042 Vdc +/- 1.8 Vdc at TP6.
- 6.2.10 Verify TP12 is at 1 Vdc as close as possible and set TP6 to -10 Vdc with VR2.
- 6.2.11 Turn off SW1. When TP6 reaches 0 Vdc turn switches 2 thru 6 back off.
- 6.2.12 Turn SW1 back on and verify a negative voltage at TP5.
- 6.2.13 Ground TP10.
- 6.2.14 Adjust VR52 for 0.0 Vdc at TP6.
- 6.2.15 Remove ground from TP10.
- 6.2.16 Leave SW1 on.
- 6.2.17 Turn on SW3.
- 6.2.18 Turn VR3 full CW and verify 3.66 Vdc +/- .06 at TP10.
- 6.2.19 Turn VR3 full CCW and verify .720 Vdc +/- .1 at TP10.
- 6.2.20 Adjust VR3 for 1.961 Vdc at TP10. This sets 10% per minute rate on TP6.
- 6.2.21 Turn off SW3.
- 6.2.22 Turn on SW4.
- 6.2.23 Turn VR4 full CW and verify .889 Vdc +/- .017 at TP10.
- 6.2.24 Turn VR4 full CCW and verify .444 Vdc +/- .029 at TP10.
- 6.2.25 Adjust VR 4 to .588 Vdc at TP10. This sets 3% per minute rate on TP6.
- 6.2.26 Turn off SW4.

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- 6.2.27** Turn on SW5.
- 6.2.28** Turn VR5 full CW and verify .326 Vdc +/- .006 at TP10.
- 6.2.29** Turn VR5 full CCW and verify .132 Vdc +/- .01 at TP10.
- 6.2.30** Adjust VR5 for .196 Vdc at TP10. This sets 1% per minute rate on TP6.
- 6.2.31** Turn off SW5.
- 6.2.32** Turn on SW6
- 6.2.33** Turn VR6 full CW and verify .188 Vdc +/- .004 at TP10.
- 6.2.34** Turn Vr6 full CCW and verify .061 Vdc +/- .005 at TP10.
- 6.2.35** Adjust VR6 to .098 Vdc at TP10. This sets .5% per minute rate on TP6.
- 6.2.36** Turn off SW6.
- 6.2.37** Turn off SW1, when TP6 is 0 Vdc turn SW1 back on.
- 6.2.38** Using a stop watch time the following steps.
- 6.2.39** Turn on SW2 and time how long it takes TP6 to reach -10Vdc.
- 6.2.40** It should take about 20 seconds. The rest of the tests are critical that they are close to the stated time. These times where set up with the VR setting previously done.
- 6.2.41** Turn off SW2. Then turn of SW1 until TP6 reaches 0 Vdc. Then turn SW1 back on..
- 6.2.42** Turn on SW3 for 1 minute and then turn off. Check voltage at TP6. It should be 1 Vdc +/- .05. This is a rate of 10% per minute. You can time for longer if the result is in question. It should take 10 minutes to reach -10 Vdc at TP6.
- 6.2.43** Turn off SW3. Then turn off SW1 until TP6 reaches 0 Vdc. Then turn SW1 back on.
- 6.2.44** Turn on SW4 for 1 minute and then turn off. Check voltage at TP6. It should be .3 Vdc +/- .05. This is a rate of 3% per minute. You can time for longer if the result is in question. It should take 33.3 minutes to reach -10 Vdc at TP6.
- 6.2.45** Turn off SW4. Then turn off SW1 until TP6 reaches 0 Vdc. Then turn SW1 back on.
- 6.2.46** Turn on SW5 for 1 minute and then turn off. Check voltage at TP6. It should be .1 Vdc +/- .005. This is a rate of 1% per minute. You can time for longer if the result is in question. It should take 100 minutes to reach -10 Vdc at TP6.
- 6.2.47** Turn off SW5. Then turn off SW1 until TP6 reaches 0 Vdc. Then turn SW1 back on.
- 6.2.48** Turn on SW6 for 1 minute and then turn off. Check voltage at TP6. It should be .05 Vdc +/- .0005. This is a rate of .5% per minute. You can time for longer if the result is in question. It should take 200 minutes to reach -10 Vdc at TP6.
- 6.2.49** Turn off SW6. Then turn off SW1 until TP6 reaches 0 Vdc. Then turn SW1 back on.
- 6.2.50** Verify that TP6 stays 0 Vdc. SW2 thru SW6 should have been off when SW1 was used to reset.

6.2.51 Burn in for 100 hrs. and retest.

○ **\*\*\*TEST COMPLETE\*\*\***

Section 7

