g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GEB-4006L5030Gx**

Test Procedure for a 4006L5030G001

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DATE	**DATE**	**DATE**	**DATE**
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1. SCOPE

1.1 This is a functional testing procedure for a 4006L5030G001.

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 site specific SRA's 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
2		Fluke 87 DMM (or Equivalent)
1		Variac
1		Rainbow Box
1		Standard Connector Box for DS3800
2		Tenma Dual Power Supply
1		Tenma 64VDC power supply
1		Oscilloscope
1		10K Ohm Resistor
1	VPP36-1560	Center Tap Transformer
1		4006L5036G001 Circuit Card

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6. Testing Process

6.1 Setup/Testing Procedure

6.1.1 NOTE: This card requires several setups to test entire card. The procedure covers Setup for each test individually.

6.2 24VDC Regulator Test

6.2.1 Connect Rainbow box to Standard DS3800 Connector box

6.2.2 Install UUT onto connector box

6.2.3 Connect variac set for 18VAC to PA51 and PA61

6.2.4 Connect 10K Ohm resistor across PA75 and PA80

6.2.5 Apply power from variac and verify +24VDC +/- 6VDC across 10K ohm resistor

6.2.6 Remove power from variac and disconnect it from PA51 and PA61

6.3 +/-15VDC Regulator Test

6.3.1 Connect variac to transformer and configure for 36VAC output with a center tap (18VAC from one side of secondary to center tap)

6.3.2 Connect center tap from transformer to PA31

6.3.3 Connect one 18VAC output of transformer to PA15 and the other 18VAC output to PA21

6.3.4 Verify 40 Ohms between PA11 and PA13

6.3.5 Apply power from variac

6.3.6 Adjust R1 for +15VDC at PA5 with respect to PA1

6.3.7 Adjust R2 for -15VDC at PA7 with respect to PA1

6.3.8 Allow card to set for 5 minutes and readjust R1 and R2 if necessary

6.3.9 Remove power from variac and disconnect transformer

6.4 Firing Circuits

NOTE: This card has two firing circuits. They have to be fired one at a time to prevent a short across the SCR's and damage to the circuit card.

6.4.1 Set Tenma power supplies for +/- 15VDC and 24VDC

6.4.2 Connect output from 24VDC supply to PA51 (+) and PA61 (-). Also connect output from 24VDC supply to 4006L5036 card by connecting positive lead to circuit A D38 Cathode with respect to TP19

6.4.3 Connect +15VDC to TP18 of 5036 card with respect to TP19

6.4.4 Connect -15VDC to TP21 of 5036 card with respect to TP19

6.4.5 Connect Oscilloscope to TP16 of 5036 card

6.4.6 Connect TP16 of 5036 card to PA27

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6.4.7 Apply power to both cards (24VDC to 5030 card and +/-15VDC and 24VDC to 5036 card)

6.4.8 Verify a firing pulse on Oscilloscope

6.4.9 Verify LED2 is illuminated **(It is VERY dim)**

6.4.10 Move connection at PA27 to PA29 (to fire other remaining SCR's)

6.4.11 Verify LED1 is illuminated **(It is VERY dim)**

6.5 SCR Test

6.5.1 With firing pulse still applied to PA29 do the following

6.5.2 Connect DMM set for DCV to TB5 with respect to TB8

6.5.3 Connect variac set to 0VAC to TB1 and TB3

6.5.4 Connect DMM set for ACV to TB1 and TB3 to monitor incoming AC voltage

6.5.5 Increase voltage on variac and verify that DMM reads -1.5VDC when output from variac is approx. 130VAC

6.5.6 Return variac to 0VAC

6.5.7 Move firing pulse from PA29 to PA27

6.5.8 Increase voltage on variac and verify that DMM reads -1.5VDC when output from variac is approx. 130VAC

6.5.9 Return variac to 0VAC

6.5.10 Remove all power from both circuit cards but leave the +/-15VDC set at the same voltages, you'll need them again in a minute

6.6 Voltage Feedback Test

NOTE: At this point you no longer need the 5036 card so it can be set aside.

6.6.1 Using power supplies from previous step connect +15VDC to PA15 and -15VDC to PA21 both with respect to PA1

6.6.2 Apply power

6.6.3 Apply 60VDC to TB6 with respect to TB7

6.6.4 Verify 1.25VDC at PA71 with respect to PA1

6.7 ***TEST COMPLETE ***

7. Notes

7.1 None at this time.

8. Attachments

8.1 None at this time.

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