



GE Energy

Functional Testing Specification

*Parts & Repair Services
Louisville, KY*

**LOU-MG-3300A03B00xx
Voltage Regulator**

Test Procedure for a Voltage Regulator

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LOU-MG-3300A03B00xx-A REV. A	<div data-bbox="548 201 581 254" data-label="Image"></div> <div data-bbox="737 258 980 333" data-label="Text"> <p>GE Energy Parts & Repair Services Louisville, KY</p> </div>	Page 2 of 3
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1. SCOPE

1.1 This is a functional testing procedure for a Voltage Regulator.

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 unit for GEK Information.**

3.1.2 **GEK 2400 3300A03B0044**

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		Oscilloscope
1		120VAC Variac
1		Load (Light Bulb)

<p>LOU-MG-3300A03B00xx-A REV. A</p>	<p>g</p> <p>GE Energy Parts & Repair Services Louisville, KY</p>	<p>Page 3 of 3</p>
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6. TESTING PROCESS

6.1 Setup

- 6.1.1 Connect a power cord via 120VAC Variac to terminal 5 (neutral) and terminal 7 (line voltage). There should be a jumper between terminals 6 & 7.
- 6.1.2 If not done already, hook up a 500-ohm test pot across terminals 2, 3, & 4, see diagram for further clarity. There should be a rheostat with the load.
- 6.1.3 The light bulb should be connected across terminals 10 & 11 to simulate load.
- 6.1.4 Connect scope across D1, this will allow you to monitor the SCR's firing angle as the voltage regulator is adjusted. You may have to use a ground isolation plug on the scope to keep scope from interfering with regulator.

6.2 Testing Procedure

- 6.2.1 Slowly increase the voltage to get the SCR to conduct between NO LOAD to FULL LOAD, if variac appears to be binding as voltage is increased, check connections and look for any shorts. The light will be off for NO LOAD and on for FULL LOAD.
- 6.2.2 Vary the pots until you get desired waveform. Once the full load waveform is selected and it has stabilized, turn off the unit then on again, and the regulator should go to full conduction and slowly come back to original cal setting.
- 6.2.3 Power down and change connection from terminals (6 & 7) to (6 & 8) and check settings. If OK, then power down again and change connection from (6 & 8) to (6 & 9) and check settings again. This checks the diodes and capacitors that the original connection missed.
- 6.2.4 Let unit burn in for at least 30 minutes.

6.3 *****TEST COMPLETE *****

7. NOTES

7.1

8. ATTACHMENTS

8.1