g GE Industrial Systems *Renewal Services* *Louisville,KY*	**Functional Testing Specification** **LOU–GED-331X414XX-A**

Test Procedure for a 331X414XXG0X Phase Module

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REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	Frank Howard	07/24/2002
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PREPARED BY	REVIEWED BY	REVIEWED BY	QUALITY APPROVAL
Frank Howard			Robert Dwall
DATE	**DATE**	**DATE**	**DATE**
07/24/2002			07/26/02

Functional test procedure for

1. SCOPE

1.1 This is a functional testing procedure for a 331X414XXG0X Phase Module

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 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		Fluke 85 DMM (or Equivalent)
1		Oscilliscope
1		20VDC Power Supply
1	H188547	Switched 300W Light Bulb Load
1		SCR Firing Box

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6. TESTING PROCESS

6.1 Setup

6.1.1 Replace any outdated capacitors and glass bead diodes on 193X390XXG0X firing card

6.1.2 Replace all SCR's and Diodes in Heat Sink Assemblies

6.1.3 Verify Snubber Assembly is within specifications.

6.1.4 Re-assemble unit for testing but *do not* connect Diodes DP and DN to M1 yet

6.2 Testing Procedure

6.2.1 Connect +20VDC to 20V and Com pins on firing card.

6.2.2 Connect isolated gating pulse from SCR firing box to 1P and COM on firing card.

6.2.3 Connect load across P3 and M1.

6.2.4 Connect scope leads across load using X10 probe.

6.2.5 Turn on all power.

6.2.6 Increase firing pulse and verify light comes and you get a good firing waveform of about 100V on scope. Return firing pulse to 0.

6.2.7 Move firing pulse to 1N on firing card

6.2.8 Move load leads to N2 and M1.

6.2.9 Repeat step 6.2.6

6.2.10 Move firing pulse to 2P on firing card.

6.2.11 Move load leads to CP and MC.

6.2.12 Repeat step 6.2.6

6.2.13 Move gating pulse to 2N on firing card.

6.2.14 Move load leads to CN and MC.

6.2.15 Repeat step 6.2.6

6.2.16 Turn off all power.

6.2.17 Connect Diodes DP and DN to M1.

6.2.18 Turn on all power except the switch on load.

6.2.19 Connect load leads across P3 and M1, turn on switch on load and verify light comes. Remove power to load.

6.2.20 Connect load leads across M1 and N2, turn on the switch on the load and verify light comes on.

6.3 ***TEST COMPLETE ***

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7. NOTES

8. Oscilloscope Verification Examples:

Fig. 1

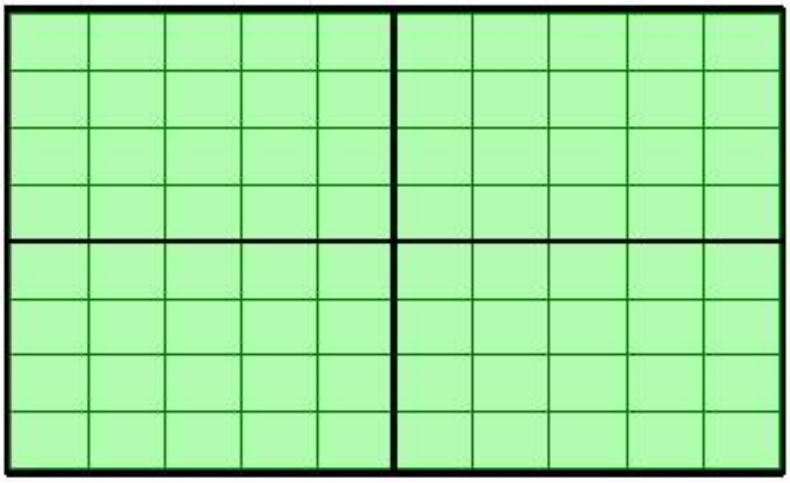
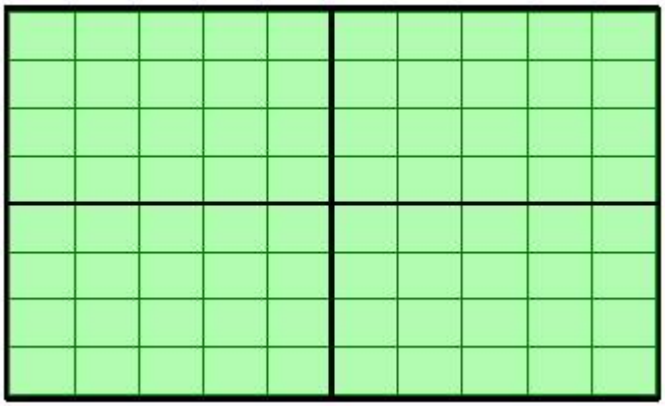


Fig. 2



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