



GE Energy

## Functional Testing Specification

*Parts & Repair Services  
Louisville, KY*

**LOU-GED-193X252AAG0x**

### Test Procedure for a 193X252 Card

**DOCUMENT REVISION STATUS:** Determined by the last entry in the "REV" and "DATE" column

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	G. Chandler	6/30/2009
B			
C			

© COPYRIGHT GENERAL ELECTRIC COMPANY

Hard copies are uncontrolled and are for reference only.

PROPRIETARY INFORMATION – THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF GENERAL ELECTRIC COMPANY AND MAY NOT BE USED OR DISCLOSED TO OTHERS, EXCEPT WITH THE WRITTEN PERMISSION OF GENERAL ELECTRIC COMPANY.

<b>PREPARED BY</b> G. Chandler	<b>REVIEWED BY</b>	<b>REVIEWED BY</b>	<b>QUALITY APPROVAL</b> Charlie Wade
<b>DATE</b> 6/30/2009	<b>DATE</b>	<b>DATE</b>	<b>DATE</b>

<p><b>LOU-GED-193X252AAG0x REV. A</b></p>	<p><b>g</b></p> <p><b>GE Energy</b> Parts &amp; Repair Services Louisville, KY</p>	<p><b>Page 2 of 3</b></p>
---	--	---------------------------

## 1. SCOPE

1.1 This is a functional testing procedure for a 193X252AAG01 & G02 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 **Test Instruction 224X697AB**

3.1.2 **Engineering Spec 224X250AA**

## 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		Fluke 87 DMM (or Equivalent)
1		Variable Power Supply +5VDC
1		Oscilloscope

<p><b>LOU-GED-193X252AAG0x REV. A</b></p>	<p><b>g</b></p> <p><b>GE Energy</b> Parts &amp; Repair Services Louisville, KY</p>	<p><b>Page 3 of 3</b></p>
---	--	---------------------------

## 6. TESTING PROCESS

### 6.1 Setup

- 6.1.1** Test cards must be supplied by the 6 phase star connected transformer in synchronizing transformer assembly 331X260AA. The star center should be connected to common (tab 15). The six phases should be connected to tabs 23 & 28 inclusive. Supply voltage for the STA is 205VAC min, 3 phase to STA (G01 assembly)

### 6.2 Testing Procedure

- 6.2.1 30 Volt Power Supplies**, Tabs 29 and 22 are the plus and minus 30 volt power supplies respectively. With a 60-ohm load, those supplies should be between 26VDC to 36VDC with less than 6V ripple P-P.
- 6.2.2 20 Volt Power Supplies**, Tabs 31 and 2 are the plus and minus 20 volt power supplies respectively. The supplies should be between 19.6VDC and 20.4VDC with the +-30VDC supplies loaded as in the previous step. Apply a 165-ohm load to the +- 20VDC supplies and they should sag less than .01VDC.
- 6.2.3 Regulator**, Apply 5VDC to tab 13 on the G01 and through a 6.81K 1% resistor on G02. The regulator output, tab 6, should be 7.42VDC, (+-.12VDC). The first stage output should rest at 0.00 volts, pin 11.
- 6.2.4 FET Switch**, With 5VDC applied as in the previous step, short tab 16 to common. Tab 11 should go to -6VDC, (+-10%) for G01, -12VDC min on a G02. Tab 6 should go to between +8.3VDC and +8.8VDC. Now apply -5VDC to tab 13 as above. Tab 11 should go to +6VDC, (+-10%), on G01 and +12VDC min on a G02. Tab 6 should go to between -8.3VDC and -8.8VDC.
- 6.2.5 Feedback**, With -5VDC applied as in previous step, apply a +6VDC signal to tab 18, tab 6 should go to -7.42VDC (+-.12VDC). Remove the tab 18 signal and place a 6.8K ohm resistor between tab 3 & 14, tab 6 should go to between -4.85VDC and -5.15VDC.
- 6.2.6 Auxiliary Amplifier**, Place a 10K ohm 1% resistor between tabs 8 & 9 and a 10K ohm 1% resistor from 9 to common. Place -5VDC on tab 10. Tab 8 should go to -10VDC (+-2%). Apply a -10VDC at tab 13 (tab 16 open) on G01 direct, on G02 through a 6.8K ohm 1% resistor. On G01 measure a maximum of +7VDC at tab 11, on a G02 measure a minimum of +12VDC at tab 11.

### 6.3 \*\*\*TEST COMPLETE \*\*\*

## 7. NOTES

- 7.1** None at this time.