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GE Energy

**Functional Testing Specification**

*Parts & Repair Services  
Louisville, KY*

**LOU-GED-DS200SHVIG1A**

**Test Procedure for a SCR High Voltage Interface Card**

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<b>LOU-GED-DS200SHVIG1A</b> <b>REV. A</b>	<b>g</b>  <b>GE Energy</b> <i>Parts &amp; Repair Services</i> <i>Louisville, KY</i>	<b>Page 2 of 5</b>
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## 1. SCOPE

1.1 This is a functional testing procedure for both the DS200SHVI & SHVM cards.

## 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 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		Function generator (Fluke 5500A won't source enough current for this particular step)
1		120Vac to 480VAC +/- 25VAC step-up transformer ( <b>for SHVI only</b> )

## 6. TESTING PROCESS

### 6.1 Setup

6.1.1 To be performed as noted in each test step.

### 6.2 Testing Procedure

6.2.1 Place all jumpers in positions **2-3**.

6.2.2 Continuity checks: verify continuity ( $\leq 1$  ohm) between each of the points listed in the table below.

FROM	TO
FPL-1	12PL-5
FPL-2	12PL-6
BYP1B	VPL-1
BYP2B	VPL-3
BYP3B	VPL-5
BYP4B	VPL-7
BYP5B	VPL-9
BYP6B	VPL-11
BYP7B	VPL-13
MPL-1	M1
MPL-2	B1
MPL-3	M2
MPL-4	B2
MPL-5	M3
MPL-6	B3
FPL-1	12PL-5
FPL-2	12PL-6
RMPL-1	RMPL-3
RMPL-1	RMPL-5
RMPL-2	RMPL-4
RMPL-2	RMPL-6

6.2.3 Verify the proper resistance between each of the points listed below:

FROM	TO	RESISTANCE (OHMS)
L1\BYP1A	BYP1B	1422K-1428K
L2\BYP2A	BYP2B	1422K-1428K
L3\BYP3A	BYP3B	1422K-1428K
P1\BYP4A	BYP4BA	1422K-1428K
P2\BYP5A	BYP5B	1422K-1428K
M1A\BYP6A	BYP6B	1422K-1428K
M2A\BYP7A	BYP7B	1422K-1428K
USERA\BYP8A	BYP8B\UVA	1422K-1428K
USERB\BYP9A	BYP9B\UVB	1422K-1428K

**6.2.4** Diode tests: put the DMM positive (+) lead on the "from" point and the negative (-) lead on the "to" point as indicated in the table below. Set meter to diode check, measure per table below: *note: this step pertains only to the SHVI. If you're working on a SHVM skip to the next step.*

FROM (+)	TO (-)	VOLTS
CAC1	RMPL-1	.45-.7V
RMPL-1	CAC1	.OL
CAC2	RMPL-1	.45-.7V
RMPL-1	CAC2	.OL
RMPL-2	CAC1	.45-.7V
CAC1	RMPL-2	.OL
RMPL-2	CAC2	.45-.7V
CAC2	RMPL-2	.OL

**6.2.5** Using a function generator, apply a 30Hz (+/- 1Hz) 7V RMS (+/- .1v) sinewave with zero offset to the input as indicated in the table below. Using a DMM set for VAC, verify proper readings as indicated on the output points.

INPUT	OUTPUT	READING
CPL-1, CPL-2	BCPL-1, BCPL-2	.7 VRMS (+/- .1V)
CPL-3, CPL-4	BCPL-3, BCPL-4	.7 VRMS (+/- .1V)
CPL-5, CPL-6	BCPL-5, BCPL-6	.7 VRMS (+/- .1V)

**6.2.6** Place all jumpers back in the 1-2 position and verify continuity between the similarly numbered input and output points listed in previous step. The jumpers remove the transformers from the circuit. CPL-1 to BCL-1 should have continuity and so on.....

**6.2.7** Disconnect the function generator from the board.

**6.2.8** Connect 24 VDC positive thru a 1k resistor to VPL-15 and negative to VPL-16. Verify 11.75 to 12.25 VDC is present across capacitor C40. Circuit is not used but could have power applied so it needs to be verified as functioning.

**6.2.9** Shunt isolator tests

**6.2.9.1** Omitted because t4 and t5 are not present and circuit does not function.

### 6.2.10 Line filter lights testing

**6.2.10.1** Connect 480vac from the step-up transformer as indicated in the table below, and observe the neon(s) light up (dimly).

480Vac INPUT	NEONS LIT (DIMLY)
FA to FC	LT1 & LT3
FB to FC	LT2 & LT3
FA to FB	LT1 & LT2

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

## 7. NOTES

7.1 None at this time.

## 8. ATTACHMENTS

8.1 None at this time.