



GE Energy

Functional Testing Specification

Parts & Repair Services
Louisville, KY

LOU-GED-DS200GGXC

Test Procedure for a High Voltage Interface/Distribution Board

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	John Madden	8-14-08
B	Corrected voltage measurement step 6.2.5	Frank Howard	03-15-12
C			

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PREPARED BY John Madden	REVIEWED BY F. Howard	REVIEWED BY	QUALITY APPROVAL <i>Charlie Wade</i>
DATE August 14, 2008	DATE 3/15/2012	DATE	DATE 8/19/2008

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1. SCOPE

1.1 This is a functional testing procedure for a DS200GGXC 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 N:\Design Folders\DS\DS200\DS200G\GGXC

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	Ref #	Description
1		Fluke 87 DMM (or Equivalent)
1	H188504	Tenma function generator
1		DS200GDPA test card (typically found near the chopper supply fixture)
1		IS200GGXI test kit (for fiber optic cable and GDPA power cable)

6. TESTING PROCESS

6.1 Setup

- 6.1.1** If the unit under test and this test procedure look a little familiar, it's because they share elements from the **DS200SHVM/SHVI** series and the **IS200GGXI** family of boards. Some of these test steps are similar to steps for those boards.

6.2 Testing Procedure

- 6.2.1 Phase Auxiliary CT's:** APPLY A 30 HZ SINEWAVE INPUT AT MAXIMUM OUTPUT OF FUNCTION GENERATOR (APPROXIMATELY 8.0V RMS) WITH ZERO OFFSET. SINCE YOU'RE TESTING 10:1 STEP-UP TRANSFORMERS, NEITHER THE FUNCTION GENERATOR NOR THE 5500A CALIBRATOR CAN SOURCE ENOUGH CURRENT TO THE PRIMARIES TO ACCURATELY READ A PROPER OUTPUT ON THE SECONDARIES, SO WE WILL TEST THEM BACKWARDS: USING A DMM SET FOR VAC, MAKE SURE THE JUMPERS ARE NOT SET TO BYPASS THE TRANSFORMERS, THEN VERIFY PROPER OUTPUT READINGS FROM THE PRIMARIES WITH AC VOLTAGE INPUT TO THE SECONDARIES AS PER TABLE BELOW:

INPUT	OUTPUT	READING
1CPL-1, 1CPL-2	CT1PL-1, CT1PL-2	.8 VRMS (or 10% of input Vac)
1CPL-3, 1CPL-4	CT3PL-1, CT3PL-2	.8 VRMS (or 10% of input Vac)

- 6.2.2 Resistance Tests, pt.1:** Measure the following resistances according to the table:

From	To	Value (Ohms)
GND	VMPL-1	24.9K
GND	VMPL-2	24.9K
GND	PC	625.1K
GND	NC	625.1K
GND	V1/L1	4.147M
GND	V2/L2	4.147M
GND	V3/L3	4.147M
GND	GSPL-6	22.1K
GND	GSPL-5	22.1K
GND	GSPL-4	22.1K

6.2.3 Resistance Tests, pt.2: This step checks 50-Ohm resistors that can be jumpered into or out of parallel. Measuring from **GND** to either **LEM1-2** or **LEM2-2**, with jumpers JP9-12 all set in 2-3 position, you should see approximately 8 ohms. Now, move jumpers 11 & 12 to their 1-2 positions, and read the resistances again. They should now be 10 ohms. Now move jumpers 9 & 10 over to their 1-2 positions. The resistances should have gone up to 12.5 ohms.

6.2.4 Voltage Tests: Using the DS200GDPA test card that we keep mounted on a piece of red Glastic material; you'll need the correct cable to connect between this board and your unit under test. One can be found in the GGXI test kit. It basically takes the three-wire 1GDPL output and expands it into a four-pin layout for a keyed connector on the GGXC's GXPL connector. The pin-out is as follows:

1GDPL-1	to	GXPL-1
1GDPL-2	to	GXPL-2
1GDPL-3	to	GXPL-4

6.2.5 Power up the GDPA card by connecting 120Vac to its ACPL connector. You should be able to measure an unregulated 62-65VDC across LEM1-1 & 3, and across LEM2-1 & 3.

6.2.6 Measure 12Vdc between the cathodes of D5 or 6, and DCOM (- side of C7).

6.2.7 Measure 5Vdc between DCOM and GSPL-1 and also between DCOM and + side of C7.

6.2.8 LED/Logic tests: With unit still powered up, ground GSPL-10 to DCOM and you should see U5 light up. Grounding GSPL-23 should make U6 light up as well.

6.2.9 Plug your fiber optic cable(s) into the lit transmitter(s). Using you meter, observe the voltage on GSPL-9 when you plug one of your lit cables into U1. It should transition from a Low (<.2Vdc) to a High (>3.6Vdc). Repeat for GSPL-22 and U2.

6.2.10 THAT'S IT FOR NOW, UNTIL WE FIND MORE STUFF TO ADD TO THIS TEST...

6.3 Post Testing Burn-in Required ☐ Yes ☒ No



Note:

6.4 *TEST COMPLETE *****

7. NOTES

7.1 None at this time.

8. ATTACHMENTS

8.1 None at this time.