



GE Energy

Functional Testing Specification

Parts & Repair Services
Louisville, KY

LOU-GED-DS200QTBAG1A

Test Procedure for a DS200QTBAG1A terminal board

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	Steve Pharris	9/6/11
B	Clarified burn-in requirements	C. Wade	12/17/2013
C			

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DATE 09/06/2011	DATE	DATE	DATE 9/7/2011

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1. SCOPE

1.1 This is a functional testing procedure for a terminal board.

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 site specific SRA's 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	H188505	Fluke 5500A Calibrator
1	H188703	Sencore LC103 Tester
1		Tenma power supply
1		O-Scope
1		2K Ohm Resistor

6. Testing Process

6.1 Setup

6.1.1 Remove J1.

6.2 Testing Procedure

6.2.1 Using DMM Verify less than 2 ohms between the following points.

From	To		From	To		From	To
TB1-1	JFF1		JRS3	JFF23		TB1-46	JGG9
TB1-2	JFF2		JRS4	JFF24		TB1-47	JGG10
TB1-3	JFF3		JRS5	JFF25		TB1-48	JGG11
TB1-4	JFF4		JRS6	JFF26		TB1-49	JGG12
TB1-5	JFF5		JRS7	JFF24		TB1-50	JGG13
TB1-6	JFF6		JRS8	JFF28		TB1-51	JGG14
TB1-7	JFF7		JRS9	JFF29		TB1-52	JGG15
TB1-8	JFF8		TB1-27	JFF30		TB1-53	JGG16
TB1-9	JFF9		TB1-28	JFF31		TB1-54	JGG17
TB1-9	TB1-13		TB1-29	JFF32		TB1-55	JGG18
TB1-10	JFF10		TB1-30	JFF33		TB1-56	JGG19
TB1-10	TB1-14		TB1-31	JFF34		TB1-57	JGG20
TB1-11	JFF11		TB1-32	JFF35		TB1-58	JGG21
TB1-11	TB1-15		TB1-33	JFF36		TB1-59	JGG22
TB1-12	JFF12		TB1-34	JFF37		TB1-60	JGG23
TB1-12	TB1-16		TB1-35	JFF38		TB1-61	JGG24
TB1-21	JFF15		TB1-36	JFF39		TB1-62	JGG25
TB1-19	JFF13		TB1-37	JFF40		TB1-63	JGG26
TB1-20	TB1-22		TB1-38	JGG1		TB1-64	JGG29
TB1-22	JFF16		TB1-39	JGG2		TB1-65	JGG27
TB1-25	JFF19		TB1-40	JGG3		TB1-66	JGG28
TB1-23	JFF17		TB1-41	JGG4		TB1-67	JGG30
TB1-24	TB1-26		TB1-42	JGG5		TB1-68	JGG31
TB1-26	JFF20		TB1-43	JGG6		TB1-69	JGG32
JRS1	JFF21		TB1-44	JGG7		JGG33	JGG34
JRS2	JFF22		TB1-45	JGG8			

6.2.2 Set J1 to 20mA

6.2.2.1 Verify TB1-65 to JGG28 = 250 Ohms

6.2.3 Set J1 to 1mA

6.2.3.1 Verify TB1-65 to JGG28=5K Ohms

6.2.4 Relay Test

6.2.6.1 Verify the following points are less than 2 ohms.

From	To
JEE1	JAI (Ground)
JEE1	JAJ (Ground)
JEE4	JAI (Signal)
JEE4	JAJ (Signal)

6.2.5 Apply 5VDC to JEE5 (+) and JEE6 (-).

6.2.6.2 Verify the following

From	To	Result
JEE1	JAJ (Ground)	Open
JEE4	JAI (Signal)	Open
JEE2	JAI (Signal)	<2 Ohms
JEE3	JAJ (Ground)	<2 Ohms

6.2.6 Remove 5VDC

6.2.6.3 Verify the following points read open (infinite).

From	To
JEE2	JAI (Signal)
JEE3	JAJ (Ground)

6.2.7 MOV Test

6.2.7.1 Verify the following points are infinite resistance (great than 5 Meg ohms) from CGND (Ground Eyelet) to the following points.

TB1-1		TB1-35		TB1-50
TB1-3		TB1-36		TB1-51
TB1-5		TB1-37		TB1-52
TB1-7		TB1-38		TB1-53
TB1-9		TB1-39		TB1-54
TB1-11		TB1-40		TB1-55
TB1-19		TB1-41		TB1-56
TB1-23		TB1-42		TB1-57
TB1-27		TB1-43		TB1-58
TB1-28		TB1-44		TB1-59
TB1-29		TB1-45		TB1-60
TB1-30		TB1-46		TB1-61
TB1-31		TB1-47		TB1-62
TB1-32		TB1-48		JAI (Ground)
TB1-33		TB1-49		JAJ (Ground)
TB1-34				

6.2.8 Capacitor SIP's

6.2.8.1 Set Sencore LC103 for .1uF @ 25V

6.2.8.2 Connect the positive lead to CGND (Ground Eyelet) and leave it there.

6.2.8.3 Move the negative lead to the points listed below and press the "Capacitor Good/Bad" Button.

Point	Result		Point	Result
TB1-2	Good		TB1-26	Good
TB1-4	Good		TB1-63	Good
TB1-6	Good		TB1-64	Good
TB1-8	Good		TB1-65	Good
TB1-10	Good		TB1-66	Good
TB1-12	Good		TB1-67	Good
TB1-21	Good		TB1-68	Good
TB1-22	Good		TB1-69	Good
TB1-25	Good			

6.2.9 Clipper Circuits

6.2.9.1 Using the Fluke 5500A apply a 5.5V 60Hz Sine wave thru a 2K Ohm resistor to the following inputs and verify a 4.4Vpk-pk clipped waveform on the outputs.

Inputs		Output	
TB1-51	TB1-52	JGG14	JGG15
TB1-53	TB1-54	JGG16	JGG17
TB1-55	TB1-56	JGG18	JGG19
TB1-57	TB1-58	JGG20	JGG21
TB1-59	TB1-60	JGG22	JGG23
TB1-61	TB1-62	JGG24	JGG25

6.3 Burn-in requirements

6.3.6 Normal repairs; burn-in steps 6.2.4 thru 6.2.6 and 6.2.9 for 1 hours and retest.

6.3.7 **All Revitalization Cards shall be burned-in for three (3) hours, check text box in SAP to determine if they fall into this category.**

6.4 ***TEST COMPLETE***

7. Notes

7.2 None at this time.

8. Attachments

8.2 None at this time.