



GE Energy

Functional Testing Specification

*Parts & Repair Services
Louisville, KY*

LOU-GED-IS200TRLYH2Exx

Test Procedure for a

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	D. Waddy	1/12/2018
B			
C			

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DATE 1/12/2018	DATE	DATE	DATE 1/24/2018

LOU- GED-IS200TRLYH2Exx REV. A	<div data-bbox="548 205 581 254" data-label="Image"></div> <div data-bbox="737 258 980 333" data-label="Text"> <p>GE Energy Parts & Repair Services Louisville, KY</p> </div>	Page 2 of 4
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1. SCOPE

1.1 This is a functional testing procedure for a 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 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		Tenma Dual output supply

<p>LOU- GED-IS200TRLYH2Exx REV. A</p>	<p>g</p> <p>GE Energy Parts & Repair Services Louisville, KY</p>	<p>Page 3 of 4</p>
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6. Testing Process

6.1 Setup

6.1.1 Setup is detailed in each step.



Note: *This test procedure is designed for IS200TRLYH2E revisions only.*

6.2 Testing Procedure

6.2.1 Initial Testing

6.2.1.1 Begin testing by inspecting the card for any visible defects.

6.2.1.2 Verify continuity between pin 1 and 18 of JR1, JS1, JT1, and JA1 individually.

6.2.1.3 Also verify continuity between pins 2, 17, and 21 of JR1, JS1, JT1, and JA1 individually.

6.2.2 SIMPLEX testing

6.2.2.1 SIMPLEX operation of this card is performed using the JA1 connector.

6.2.2.2 Connect positive 28V DC to pin 1 of JA1.

6.2.2.3 Connect the COM from the 28V DC supply to pin 17 of JA1.

6.2.2.4 Apply power to the card.

6.2.2.5 Using a multimeter (set to measure resistance), connect the negative lead to TB1-2 and the positive lead to TB1-4.

6.2.2.6 Relays K1 through K12 are N/O solid state relays. With relay K1 de-energized the multimeter should read approximately 3.4M ohms or higher (virtually open).

6.2.2.7 Relay K1 can be energized by connecting pin JA1-3 to COM. When the relay is energized the multimeter should transition from a virtually open state to <1 (closed).

6.2.2.8 Verify the remaining relays using **Table 1**. below.

6.2.3 TMR testing

6.2.3.1 TMR functionality utilizes JR1, JS1, and JT1 (referred to as JRST1) to vote on the desired relay state.

6.2.3.2 Connect positive 28V DC to pin 1 of JRST1 individually (each connector is an independent circuit and requires its own 28V input) using one output of the Tenma power supply.

6.2.3.3 Connect the COM from that supply to pin 17 of JRST1.

6.2.3.4 Apply power to the card.

6.2.3.5 Verify TMR functionality using **Table 1**, as before. Each relay will be energized by connecting at least two of the three designated pins to COM.

Relay	JA1/JRST1	Output -	Output +
K1	Pin 3	TB1-2	TB1-4
K2	Pin 4	TB1-6	TB1-8
K3	Pin 5	TB1-10	TB1-12
K4	Pin 6	TB1-14	TB1-16
K5	Pin 7	TB1-18	TB1-20
K6	Pin 8	TB1-22	TB1-24
K7	Pin 9	TB1-1	TB1-3
K8	Pin 10	TB1-5	TB1-7
K9	Pin 11	TB1-9	TB1-11
K10	Pin 12	TB1-13	TB1-15
K11	Pin 13	TB1-17	TB1-19
K12	Pin 14	TB1-21	TB1-23

Table 1.

6.3 Post Testing Burn-in

Required ☐ Yes ☒ No

6.4 *TEST COMPLETE *****

7. Notes

7.1 None at this time?

8. Attachments

8.1 None at this time?