



GE Energy

## Functional Testing Specification

Parts & Repair Services  
Louisville, KY

LOU-GED-IS200TRLYxxF

### Test Procedure for an IS200TRLYxxFxx Mark VIe TRLYxxF Relay Output with TMR Contact Voting

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release. Covers versions H1, H2, S1, and S2 of this card.	J. Francis	01/10/2014
B			
C			

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<b>PREPARED BY</b> J. Francis	<b>REVIEWED BY</b>	<b>REVIEWED BY</b>	<b>QUALITY APPROVAL</b> <i>Charlie Wade</i>
<b>DATE</b> 01/10/2014	<b>DATE</b>	<b>DATE</b>	<b>DATE</b> 1/17/2014

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## 1. SCOPE

- 1.1 This is a functional testing procedure for an **IS200TRLYxxF** MARK Vie Relay Output with TMR Contact Voting

## 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	H190121	Mark Vie TMR Test Rack with computer

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## 6. TESTING PROCESS

### 6.1 Testing Procedure



**Note: The following tests assume you are familiar with using ToolboxST. You will need to perform downloads at least twice for UUT to be setup fully. You should also wait for approximately 3 minutes in between downloads for rack and UUT to reboot.**

- 6.1.1 Turn “OFF” Rack Power located at front right side of test rack.
- 6.1.2 Remove test card (GOLD card) from test rack and install Unit Under Test (UUT) into test rack.
- 6.1.3 Turn “ON” Rack Power switch. Wait for test rack to fully boot, approximately 3 minutes.
- 6.1.4 Open **ToolboxST** and open “**LVLTMRO1**” by double-clicking on it and click the “ONLINE” button in the toolbar.
- 6.1.5 Click on the “HARDWARE” tab, this will show you all of the modules setup in the rack under the “Distributed IO” icon. The PDOA module should have a red circle with an X through it, indicating no communications.
- 6.1.6 Double click on the “X” on the PDOA Module. This will bring up a configuration box to enter the serial number of the UUT and hardware form. Click “OK” button when done.
- 6.1.7 From the menu, Download Controller Setup by going to **Device->Download->Download Wizard**. Follow instructions in dialog boxes that follow.



**Note: The following portions of the test assume you are familiar with using ToolboxST. You will need to perform downloads at least twice for UUT to be setup fully. You should also wait for approximately 3 minutes in between downloads for rack and UUT to reboot.**

- 6.1.8 After all downloads completed successfully, bring unit online in ToolboxST and check that the red circle with an X through it is gone and ToolboxST will communicate with PDOA Modules.
- 6.1.9 At this time all of the LED’s on the **PDOA Test Panel** should not be illuminated.
- 6.1.10 From the menu, open PDOA Live View by going to **View->Liveviews**. When selection dialog box appears, double click on **PDOA** selection. Go online when prompted.
- 6.1.11 When first opened, all “**RELAY###**” and “**Relay ## Feedback**” indicators should be RED. All “**WPDF Fuse Feedback**” should be GREEN.
- 6.1.12 On WPDF Daughter card, remove fuses 1 at a time and verify that the appropriate Fuse Feedback indicator turns RED, this may take a couple of seconds.

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- 6.1.13** On WPDF Daughter card, reinstall fuses 1 at a time and verify that the appropriate Fuse Feedback indicator turns GREEN, this may take a couple of seconds.
- 6.1.14** Using the mouse pointer, click on the buttons next to the “**Relay ##**” indicators. When a button is depressed, the corresponding “**RELAY ##**” indicator should turn GREEN and the corresponding LED on the PDOA Test Panel should illuminate.
- 6.1.15** Turn on all LED’s on the PDOA Test Panel.
- 6.1.16** Remove power from the R PACK module on the TRLYxxF card and verify that all of the LED’s on the PDOA Test Panel stay illuminated. Reapply power to the R PACK module. Wait for the module to come back online before proceeding to next step.
- 6.1.17** Remove power from the S PACK module on the TRLYxxF card and verify that all of the LED’s on the PDOA Test Panel stay illuminated. Reapply power to the S PACK module. Wait for the module to come back online before proceeding to next step.
- 6.1.18** Remove power from the T PACK module on the TRLYxxF card and verify that all of the LED’s on the PDOA Test Panel stay illuminated. Reapply power to the T PACK module.
- 6.1.19** Let unit run online for at least 48 hours.
- 6.1.20** After testing has been completed successfully, remove UUT, reinstall GOLD card, and verify successfully operation in ToolboxST.

**6.2 \*\*\*TEST COMPLETE \*\*\***

**7. NOTES**

- 7.1** Live View screens will be forthcoming and tests will be amended as needed.

**8. ATTACHMENTS**

- 8.1** None at this time.