g GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GEF-ODI32**

Test Procedure for ODI32 Printed Circuit Board

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Functional test procedure for ODI32 Printed Circuit Board

1. SCOPE

1.1 This specification provides the Engineering Requirements for testing the IFI32 printed circuit board. The process applies ODI32 and ODI32A boards model number 44A398711-G02.

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	**GEK-36093**	Diagnostic Software for 1050T Controls
3.1.2	**GEK-71632**	Diagnostic Software for 1050MC Controls
3.1.3	**GEK-45668**	Computer Access Panel
3.1.4	**44C389937**	Schematics

4. ENGINEERING REQUIREMENTS

4.1 Description

The ODI32 is an output driver board contains circuits that permit the operation of lamps, relays, and other solid-state devices from the processor bus. Each board contains 32 identical driver elements and the necessary interface circuits to permit control of these drivers from the processor bus.

4.2 Equipment Cleaning

4.2.1 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.

4.3 Equipment Inspection

4.3.1 Equipment should be visually inspected for any defects prior to applying power. This inspection should include the following as a minimum:

- **4.3.1.1** Wires broken or cracked
- **4.3.1.2** Terminal strips / connectors broken or cracked
- **4.3.1.3** Loose wires
- **4.3.1.4** Components visually damaged
- **4.3.1.5** Capacitors leaking
- **4.3.1.6** Solder joints damaged or cold
- **4.3.1.7** Circuit board burned or de-laminated
- **4.3.1.8** Printed wire runs 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	GE 1050T & MC PWM Control	CPU3 Model
1	GE Computer Access Panel	External Interface
1	Diagnostic Tape Specific to Control	Diagnostic Tape
1	Executive Tape Specific to Control	Executive Tape
1	Part Program	Exercise Tape
1	Axis Cart	Motion Cart for Control
1	OD Lamp Test Panel	Output Test Lamps.

6. TESTING PROCESS

6.1 Diagnostic Test

6.1.1 Configure the ODI32 Circuit Board as MC OD#3 per enclosed table.

6.1.2 Install ODI32 board in 1050MC Plug OD#3 Cable into lower PL.

6.1.3 Load the Diagnostic.

6.1.3.1 Once the tape is fully loaded it will rewind back to the beginning (Before Test No. 1). The Display should show: Depress "Control OFF", then ON, follow this instruction at this time. If the Computer Access Panel is hooked up you will also have to hit the RUN switch to start the control's Diagnostic program.

6.1.4 Setup the control for testing.

6.1.4.1 Depress **"Cycle Start"** (check to see if there are 3 OD boards.

6.1.4.2 Depress **"Option Stop"** button (Cycle Start and Option Stop push button will quit flashing).

6.1.4.3 Test All Board Test; depress "**Cycle Start "**to run test. If all pass go on to Mode One Test (Depress "**Next"** than enter 1 from keyboard. Run for 1 to 2 hours.

** **If there is no Errors go on to Functional Test.**

6.2 Functional Test

6.2.1 Running IFI32 as OD#3 (Loading Exec and running Part Program)

6.2.1.1 Load Executive Tape.

6.2.1.2 When completed turn Mode switch to AUX DATA then push O on Keyboard, Display will read OD

6.2.1.3 Depress **"NEXT" to OD 4**

6.2.1.4 Turn on 1st 16 OD Output 1-16, using Keyboard enter "00" then enter"$'" the Word 1st bit should change state from 0 to 1 and output test Lamp should turn on. Repeat this entering in "01-15" all OD Words should be 1 and all Output Test Lamps should be on.

Note OUTPUT LAMP 4 OD Word 3 will be on all the time when you test this output you will see the lamp blink when you change OD Word 3 state.

Turn off all output lamps by changing OD Word back to 0.

6.2.1.5 Depress **"NEXT" to OD 5**

6.2.1.6 Turn on 2nd OD Outputs 17-32 as done in 5.2.1.4

6.2.1.7 Turn Control off

6.2.1.8 Change OD#3 Plug from Lower to Upper PL, turn on Control and repeat steps 5.2.1.2 to 5.2.1.7.

6.2.1.9 Remove OD32 board from 1050MC and strap it for 1050T OD#1.

6.2.1.10 Install in 1050T PWM Drive Control and load Executive Tape.

6.2.1.11 After Tape is loaded, Run Part Program Tape.

6.2.1.12 Turn on Control and Axis Cart Push RUN on Computer Access Panel, then Depress Control **"ON"** to take control out of E-Stop then depress **"CYCLE START".** Part Program should run.

6.2.1.13 Run all of Part Program after it is finished Shut down control and remove OD32.

6.3 TEST COMPLETE

7. REFERENCES

7.1 None at this time