| g GE Energy | **Functional Testing Specification** |
|---|---|
| ***Parts & Repair Services***<br>***Louisville, KY*** | **LOU-GED-DS3820DOSx** |

# Test Procedure for a Drop-in Operator Station

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| A | Initial release | David Smith | 12-17-02 |
| B | Added reviewer's name and change header and footer. | C. Wade | 4/21/2009 |
| C | Added asset number to DS3820DOS_ unit. | C. Wade | 6/29/2010 |
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| PREPARED BY | REVIEWED BY | REVIEWED BY | QUALITY APPROVAL |
|---|---|---|---|
| David Smith | Steve Pharris | S. Pharris | Robert Durell |
| **DATE** | **DATE** | **DATE** | **DATE** |
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**Functional test procedure for a Drop in Operator Station**

## 1. SCOPE

**1.1** This is a functional testing procedure for a operator station.

## 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 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 or cracked
**4.2.1.2** Terminal strips / connectors broken or cracked
**4.2.1.3** Loose wires
**4.2.1.4** Components visually damaged
**4.2.1.5** Capacitors leaking or bloated
**4.2.1.6** Solder joints damaged or cold
**4.2.1.7** Circuit board burned or de-laminated
**4.2.1.8** 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 | | Fluke 85 DMM (or Equivalent) |
| 1 | H188924 | DS3820DOS_ for testing customer's cards. |
| 1 | | O-Scope |
| 1 | | Function Generator |
| 1 | | 300 Ohm Resistor |
| 1 | | DOSx Display Interface |

## 6. TESTING PROCESS

**6.1** Setup

**6.1.1** If you are testing one of the cards that go into this unit, test and validate the unit first before inserting customer's card.

**6.2** Testing Procedure

**6.2.1** Disassemble unit completely

**6.2.2** Replace all push button switches

**6.2.3** Visually inspect DS3800HPIB card for corrosion.

**6.2.4** Replace all electrolytic caps on DS3800NPZA.

**6.2.5** Re-assemble unit but do not put cover on.

**6.2.6** Place a jumper between TBAC2-3 and TBAC4-5

**6.2.7** Apply 115VAC between TBAC 2 and 5

**6.2.8** Verify IMOK led on DS3800DPZA card is on. Note delay then led will come on then go out then stay on solid after 3 to 4 seconds.

**6.2.9** Check power supplies on DS3800NPZA card

**6.2.10** Connect voltmeter between TP5 (+) and TP1 (-) verify 16 to 19.5 VDC

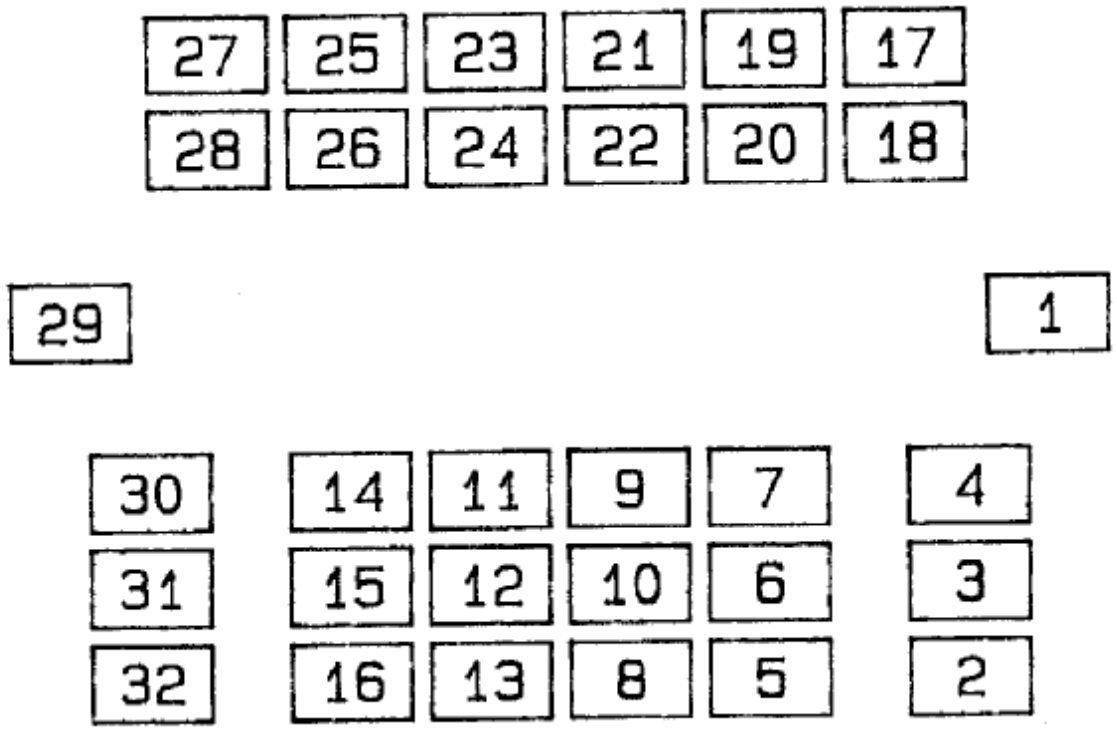
**6.2.11** Connect voltmeter between TP2 (+) and TP1 (-) verify +5.00 VDC. If not correct adjust pot R18 on DS3800NPZA for +5.00 VDC.

**6.2.12** Connect voltmeter between TP4 (+) and TP3 (-) verify +5.00 VDC. If not correct adjust pot R19 on DS3800NPZA for +5.00 VDC.

**6.2.13** Remove power from unit.

**CONTINUED BELOW**

**6.2.14** Please note the Push button chart below and verify test sequence.




Apply power to unit and verify the following self-test sequence.

1. All push button lights come on.
2. Push buttons 1-8 come on.
3. Push buttons 9-16 come on
4. Push buttons 17-24 come on
5. Push buttons 25-32 come on
6. All lights come on for 10 seconds then go out.
7. Press all switches individually and verify respective light illuminates.

**6.2.15** Remove power

**6.2.16** Remove the DPZA card and install a 300 Ohm Resistor across C9 on the NPZA card.

**6.2.17** Reinstall DPZA card

**6.2.18** Connect an O-Scope to TBDL-1 with common from scope attached to TBDL-12

**6.2.19** Apply Power

**6.2.20** Verify O-Scope displays a data pattern.

**6.2.21** Move positive lead from scope to TBDL-2 and verify inverted signal from previous step.

**6.2.22** Remove power

**6.2.23** Remove DPZA and 300 Ohm resistor across C9 installed previously.

**6.2.24** Remove O-Scope

**6.2.25** Reinstall DPZA card

**6.2.26** Connect function generator set for 1Khz at 3.85VRMS to TBDL-5 with respect to TBDL-12 but **DO NOT APPLY POWER TO FUNCTION GENERATOR**.

**6.2.27** Apply power to UUT and wait for all lights to extinguish after self-test, just as before.

**6.2.28** Apply power to function generator

**6.2.29** Verify all lights on front panel illuminate and stay illuminated for approx. 30 seconds.

**6.2.30** Remove power from function generator and UUT.

**6.2.31** Move output from function generator to TBDL-6 with respect to TBDL-12 but **DO NOT APPLY POWER TO FUNCTION GENERATOR**.

**6.2.32** Apply power to UUT and wait for all lights to extinguish after self-test, just as before.

**6.2.33** Apply power to function generator

**6.2.34** Verify all lights on front panel illuminate and stay illuminated for approx. 30 seconds.

**6.2.35** Remove power from function generator and UUT.

**6.2.36** Completely assemble unit.

**6.2.37** Connect DOSx display interface to JB of DPZA card

**6.2.38** Apply power to UUT

**6.2.39** Verify during self-test display reads 77777.

**6.2.40** Remove power from UUT

**6.2.41** Remove DOSx display interface

**6.3** ******TEST COMPLETE ******

## 7. Notes

**7.1** DOSx display interface will display random data until self-test is almost finished and then change from 77777 back to random data.

## 8. Attachments

**8.1** None at this time.