



GE Energy

## Functional Testing Specification

Parts & Repair Services  
Louisville, KY

LOU-GED-DS3800XTFU

### Test Procedure for a DS3800XTFU card

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<b>PREPARED BY</b> G. Chandler	<b>REVIEWED BY</b>	<b>REVIEWED BY</b>	<b>QUALITY APPROVAL</b> <i>Charlie Wade</i>
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## 1. SCOPE

1.1 This is a functional testing procedure for a Distribution 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)
2		+/- 15VDC Adjustable Power Supply

## 6. Testing Process

### 6.1 Testing

**6.1.1** With an ohmmeter, verify TP31 (com) is < 1 ohm to the following points.

JA1	JA5	JA6	JA9	JA10	JA13	JA14	JA17	JA18	JA22	JA21	JA26
JB2	JB3	JB5	JC2	JC3	JC5	JD2	JD3	JD5	JE2	JE3	J35
JF2	JF3	JF5	JG2	JG3	JG5	JH9	JH13	JH14	JH17	JH18	JH22
JH23	JJ2	JJ4	JJ6	JJ8	JN3	JN4	JN5	JN6			

**6.1.2** With an ohmmeter, verify < 1 ohm between the following points

JA4-JB1	JA3-JB4	JA8-JC1	JA7-JC4	JA12-JD1	JA11-JD4
JA16-JE1	JA15-JE4	JA20-JF1	JA19-JF4	JA24-JG1	JA23-JG4
JK1-JJ1	JK2-JJ3	JK3-JJ5	JK4-JJ7	JK6-JJ9	

**6.1.3** Verify 10K ohms (+/- 1%) from TP1 to JA2 and JA25.

**6.1.4** Verify 1.21K ohms (+/- 1%) from JH11 to TP31 (com).

**6.1.5** Verify 10K ohms (+/- 1%) from the following points.

TP9 to JL7 and JH21
TP10 to JL8 and JH24

**6.1.6** Remove jumpers J1-J6.

**6.1.7** Remove any components installed in the saddle clamps.

**6.1.8** Verify < 1 ohm between the following points.

JL1 – JH16
JL3 – JH15
JL5 – JH20
JL6 – JH19

**6.1.9** Connect and ohmmeter between TP27 and TP28 and verify the following.

**6.1.10** With R1 full CW, ohmmeter reads 34 ohms (+/- 10%).

**6.1.11** With R1 full CCW, ohmmeter reads 134 ohms (+/- 10%)

**6.1.12** Verify smooth operation of R1 from CW to CCW position.

**6.1.13** Repeat previous step with the ohmmeter between TP29 and TP30 and using R2.

**6.1.14** Verify the following resistance measurements

TP28 to the center pin of J1 = 60.5 ohms (+/- 2%).
TP28 to the center pin of J2 = 30 ohms (+/- 2%).
TP28 to the center pin of J3 = 15 ohms (+/- 1%).
TP29 to the center pin of J4 = 60.5 ohms (+/- 2%).
TP29 to the center pin of J5 = 30 ohms (+/- 2%).
TP29 to the center pin of J6 = 15 ohms (+/- 1%).
TP27 to the nom pin of J1 = 60.5 ohms (+/- 2%).
TP27 to the nom pin of J2 = 30 ohms (+/- 2%).
TP27 to the nom pin of J3 = 15 ohms (+/- 1%).
TP30 to the nom pin of J4 = 60.5 ohms (+/- 2%).
TP30 to the nom pin of J5 = 30 ohms (+/- 2%).
TP30 to the nom pin of J6 = 15 ohms (+/- 1%).

**6.1.15** Verify TP27 < 1 ohm to the following points.

J1/+25
J2/+50
J3/+100

**6.1.16** Verify TP30 < 1 ohm to the following points.

J4/+25
J5/+50
J6/+100

**6.1.17** Verify 40K ohm (+/- 1%) from JJ10 to the following points.

JJ1
JJ3
JJ5
JJ7
JJ9

**6.1.18** Reinstall jumpers J1-J6.

- 6.1.19 Place jumpers J7 – J11 in the “out” position.
- 6.1.20 Connect +15VDC across capacitor C1 observing polarity.
- 6.1.21 Connect -15VDC across capacitor C2 observing polarity.
- 6.1.22 Verify +15VDC at pin JH12 with reference to TP31 (com).
- 6.1.23 Monitor TP8 with a voltmeter, reference to TP31 (com).
- 6.1.24 Ground pins 6 of connectors JB – JG, one pin at a time.
- 6.1.25 Each time pin 6 is grounded, TP8 will change from +15VDC to 0VDC.
- 6.1.26 Use the following table and apply +5VDC to the input, with reference to TP31 (com) and verify +5VDC (+/- .1V) on the correct output.

INPUT	OUTPUT
JM1	JB10, JD10, JF10
JM3	JC8, JE8, JG8
JM4	JB8, JE10
JM5	JD8, JG10
JM6	JC10, JF8

- 6.1.27 Repeat the previous step using -5VDC as the input. The output should be -5VDC (+/- .1V).

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

### 7. Notes

- 7.1 None at this time.

### 8. Attachments

- 8.1 None at this time.