



GE Energy

Functional Testing Specification

*Parts & Repair Services
Louisville, KY*

LOU-GED-DS3800NVSA

Test Procedure for a DS3800NVSA

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	Steve Pharris	11/03/2010
B			
C			

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DATE 11/03/2010	DATE	DATE	DATE 11/15/2010

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1. SCOPE

1.1 This is a functional testing procedure for a DS3800NVSA.

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		100K Ohm Resistor
1		Millivolt Source
1		DS3800 Power Supply
1		DS3800 Connector Box
1		Rainbow Box
1		DS3800DVSA

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6. Testing Process

6.1 Setup

- 6.1.1 Connect PA1-PA9
- 6.1.2 Connect PA10-PA1
- 6.1.3 Connect PA76-SW81 and set H

6.2 Testing Procedure


- 6.2.1 Apply Power
- 6.2.2 Adjust R4 (on daughter card) for .5V at PA54
- 6.2.3 Remove connection between PA1 and PA10
- 6.2.4 Using mV source apply 1VDC to PA10
- 6.2.5 Verify PA54 = 1.5V
- 6.2.6 Move connection from PA10 to PA20
- 6.2.7 Verify PA54 = 1.5V
- 6.2.8 Reverse polarity at PA20 to apply -1V
- 6.2.9 Verify PA54 = -.5V
- 6.2.10 Increase voltage at PA20 to -3V
- 6.2.11 Verify PA54 = -2.5V
- 6.2.12 Move connection at PA20 to PA26
- 6.2.13 Using mV source apply 5V to PA26
- 6.2.14 Verify PA30 = 2.9V
- 6.2.15 Move connection at PA26 to PA13
- 6.2.16 Verify PA21 = 2.9V
- 6.2.17 Move connection at PA13 to PA24
- 6.2.18 Verify PA29 = 2.9V
- 6.2.19 Connect PA74 to SW82 and set H
- 6.2.20 Move connection at PA24 to PA39
- 6.2.21 Using mV source apply -.01V at PA39
- 6.2.22 Verify PA12 = 2.2V
- 6.2.23 Reverse polarity at PA39
- 6.2.24 Verify PA12 hits positive rail
- 6.2.25 Move connection at PA39 to PA51
- 6.2.26 Using mV source apply -.01V at PA51
- 6.2.27 Verify PA12 = 2.2V

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- 6.2.28** Reverse polarity at PA51
- 6.2.29** Verify PA12 hits positive rail
- 6.2.30** Move connection at PA51 to PA32
- 6.2.31** Using mV source apply -.01V at PA32
- 6.2.32** Verify PA12 = 3.5V
- 6.2.33** Reverse polarity at PA32
- 6.2.34** Verify PA12 hits positive rail
- 6.2.35** Move connection at PA32 to PA38
- 6.2.36** Using mV source apply -.01V at PA38
- 6.2.37** Verify PA12 = -5.9V
- 6.2.38** Set SW82-H
- 6.2.39** Verify PA12 hits positive rail
- 6.2.40** Set SW82-L
- 6.2.41** Reverse polarity at PA38
- 6.2.42** Verify PA12 hits positive rail
- 6.2.43** Move connection at PA38 to PA62
- 6.2.44** Using mV source apply -.5V at PA62
- 6.2.45** Verify PA35 = -6V (if not adjust R58)
- 6.2.46** Verify PA33 = 6V
- 6.2.47** Move connection at PA62 to PA68
- 6.2.48** Using mV source apply -.5V at PA68
- 6.2.49** Verify PA49 = -6V (if not adjust R59)
- 6.2.50** Connect PA28 to PA1
- 6.2.51** Move connection at PA68 to PA31
- 6.2.52** Using mV source apply -2V at PA31
- 6.2.53** Verify PA37 = 2V
- 6.2.54** Reverse polarity at PA31
- 6.2.55** Verify PA37 = -2V
- 6.2.56** Remove mV source from PA31 and connect to PA28
- 6.2.57** Connect PA31 to PA1
- 6.2.58** Verify PA37 = 2V
- 6.2.59** Reverse polarity at PA28
- 6.2.60** Verify PA37 = -2V
- 6.2.61** Remove mV source from PA28 and connect to PA1

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- 6.2.62** Using mV source apply -1V at PA22
- 6.2.63** Verify PA36 = 1.1V
- 6.2.64** Reverse polarity at PA22
- 6.2.65** Verify PA36 = -1.1V
- 6.2.66** Move connection at PA22 to PA32
- 6.2.67** Using mV source apply 1.5V at PA32
- 6.2.68** Verify PA42 = -3V (if not adjust R9 on daughter card)
- 6.2.69** Move connection at PA32 to PA20
- 6.2.70** Using mV source apply 1.5V at PA20
- 6.2.71** Verify PA40 = -3V (if not adjust R3 on daughter card)
- 6.2.72** Move connection at PA20 to PA57
- 6.2.73** Using mV source apply 2V at PA57
- 6.2.74** Verify PA59 = -4V (if not adjust R2 on daughter card)
- 6.2.75** Move connection at PA57 to PA55
- 6.2.76** Verify PA59 = -4V
- 6.2.77** Move connection at PA55 to PA58
- 6.2.78** Verify PA59 = -4V
- 6.2.79** Move connection at PA58 to PA56
- 6.2.80** Verify PA59 = -4V
- 6.2.81** Move connection at PA56 to PA66
- 6.2.82** Verify PA59 = -4V
- 6.2.83** Move connection at PA66 to PA65
- 6.2.84** Verify PA59 = -4V
- 6.2.85** Move connection at PA65 to PA63
- 6.2.86** Verify PA59 = -4V
- 6.2.87** Move connection at PA63 to PA61
- 6.2.88** Verify PA59 = -4V
- 6.2.89** Connect PA14 to SW83 and set L
- 6.2.90** Connect PA16 to SW84 and set L
- 6.2.91** Connect PA6 to SW85 and set H
- 6.2.92** Connect PA8 to SW86 and set H
- 6.2.93** Verify PA15 = 6V (if not adjust R1 on daughter card)
- 6.2.94** Set SW85 and SW86 to L
- 6.2.95** Set SW83 and SW84 to H

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- 6.2.96** Verify PA15 = 6V
- 6.2.97** Set SW83 to L
- 6.2.98** Set SW85 and SW86 to H
- 6.2.99** Verify PA15 = 6V
- 6.2.100** Set SW84 to L
- 6.2.101** Set SW83 to H
- 6.2.102** Verify PA15 = 6V
- 6.2.103** Set SW84 to H
- 6.2.104** Verify PA15 = 12V
- 6.2.105** Set SW83, SW84, SW85, and SW86 to L
- 6.2.106** Connect PA80 to SW87 and set to L
- 6.2.107** Connect PA69 to PA3 through a 100K ohm resistor
- 6.2.108** Verify PA69 inversely follows SW87
- 6.2.109** Remove connections at PA69, PA3, and SW87
- 6.2.110** Using mV source apply 0V at PA37
- 6.2.111** Verify PA78 = H
- 6.2.112** Increase mV source to 3V
- 6.2.113** Verify PA78 = L
- 6.2.114** Decrease mV source to 0V
- 6.2.115** Verify PA78 = H
- 6.2.116** Move connection at PA37 to PA33
- 6.2.117** Increase mV source to 3V
- 6.2.118** Verify PA78 = L
- 6.2.119** Decrease mV source to 0V
- 6.2.120** Verify PA78 = H
- 6.2.121** Remove connections at PA14 and PA16
- 6.2.122** Verify IMOK LED = Off
- 6.2.123** Make the following connections PA12 to PA15 to PA33 to PA36 to PA37 to PA49 to PA54 then connect to PA1
- 6.2.124** Verify IMOK LED = On
- 6.2.125** Remove Connections made in step 6.2.123
- 6.2.126** Verify IMOK LED = Off

6.3 *TEST COMPLETE*****

7. Notes

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7.1 None at this time.