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GE Industrial Systems

Functional Testing Specification

*Renewal Services
Louisville, KY*

LOU-GED-DS3800NFXA

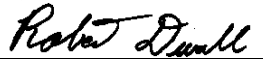
Test Procedure for a DS3800NFXA Card

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DATE 10/06/2003	DATE	DATE	DATE 10/10/03

Functional test procedure for a DS3800NFXA Card

1. SCOPE

1.1 This is a functional testing procedure for a DS3800NFXA 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 Shop Documentation

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 the local documented procedures 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
- 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		Rainbow Box
1	H033767	Standard 3800 Connector Box
1	H033772	PS for 3800 Cards
1		0-15VDC Supply

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6. TESTING PROCESS

6.1 Setup

- 6.1.1** Attach the 3800 Connector Box and the 3800 Power Supply Fixture to the rainbow box. Attach the common of the External variable supply to common of the 3800 Power Supply fixture.



Note: The various circuits of this card are tested separately. Each step tests a separate circuit. Inputs and grounds can be removed after each step unless otherwise noted.

6.2 Testing Procedure

- 6.2.1** Apply power to fixture setup. Monitor Pin 4 of rainbow box for +5v when +3.5VDC is applied to Pin 8, Pin 10, or Pin 12. Move meter to Pin 2 and look for +5Vdc when +3.5Vdc is applied to Pin 8, Pin 10, or Pin 12.
- 6.2.2** Apply +24Vdc to Pin 66. Ground Pin 78. Apply +3.5Vdc to Pin 14. See JB8 go to +24Vdc from 0.8Vdc. See JB9 go to +37Vdc from +24Vdc. See JB12 go to +0.24Vdc from + 0.37VDC.
- 6.2.3** Leave + 24Vdc applied to Pin 66. Ground Pin 80 and see JB5 go to +24Vdc from +0.8Vdc. Ground Pin 70 and see JB1 go to +24Vdc from +0.8Vdc. Ground Pin 67 and see JB4 go to +24Vdc from +0.8Vdc. Remove +24Vdc from Pin 66.
- 6.2.4** Apply +100Vdc to JB15. See red LED CR41 light and Pin 72 go low. Remove +100Vdc from JB15 and apply to JB20. See LED CR42 light and Pin 71 go low. Remove 100Vdc.
- 6.2.5** Ground Pin 6. Apply 0 to +12.5Vdc to Pin 11 and see Pin 24 follow in same polarity. Move ground from Pin 6 to Pin 13. Apply 0 to +12.5Vdc to Pin 26 and see Pin 17 follow in same polarity. Remove input and ground.
- 6.2.6** Ground Pin 30 and apply +5Vdc to Pin 32 and see Pin 18 and Pin 19 go from 0 to +5Vdc. Move ground to Pin 32 and apply +5Vdc to Pin 32. Pin 18 and Pin 19 go from 0 to -5Vdc. Remove inputs and meter.
- 6.2.7** Ground Pin 60 and see JA1 go from +4.8Vdc to -1.2Vdc. JA2 goes from -1.2 to +4.8Vdc. Move ground to Pin 68. JA3 goes from +4.8Vdc to -1.3Vdc. JA4 goes from -1.3Vdc to +4.8Vdc. Move ground to Pin 74. JA5 goes from +4.8Vdc to -1.5Vdc. JA6 goes from -1.5Vdc to +4.8Vdc. Move Ground to Pin 76. JA7

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goes from +4.8Vdc to –1.5Vdc. JA8 goes from –1.5Vdc to +4.8Vdc. Remove inputs.

6.2.8 Connect Fluke Meter on HZ across CR50. Adjust R102 for 20Khz. Monitor Pin 20 and adjust R101 for an unloaded supply voltage of +5Vdc at Pin 20. (Per GE engineer, this tach supply drops to 4.5v when loaded in the system.)

6.2.9 Ground Pin 69 and see the Amber IMOK LED light. Remove ground.

6.2.10 Ground Pin 6 and apply approximately +12.5Vdc to Pin 11. Pin 27 should switch from low to high (4.8Vdc). Reverse the input polarity to Pin 11. Pin 27 should again go from low to high. Both + and – SAT voltages on Pins 6 and 9 of U4 must be greater than the fixed voltages on Pins 7 and 8 to cause the op amp output to go low causing pin 27 to go high.

6.2.11 Component test the Ground Voltage Gain Selection resistors and R215-R218 per the elementary.

6.3 *TEST COMPLETE*****

7. NOTES

8. Oscilloscope Verification Examples:

Fig. 1

Fig. 2