g GE Industrial Systems *Renewal Services* *Louisville,KY*	**Functional Testing Specification** **LOU–GED-DS3820FE2**

Test Procedure for a Trimmable Voltage Supply

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	D. Bush	22-OCT-02
B			
C			

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DATE	**DATE**	**DATE**	**DATE**
22-OCT-02			10/24/2002

Functional test procedure for a Trimmable Voltage Supply

1. SCOPE

1.1 This is a functional testing procedure for a unit.

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

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		Inductive Load
1		Ocilloscope
1		20K ohm Pot

6. TESTING PROCESS

6.1 Setup Replace all out-dated capacitors and old glass bead diodes on the DS3800NFEA circuit board.

✍ **Note: STATIC Check the SCR and Diodes on the Heat Sink Assembly before applying power.**

6.2 Testing Procedure

6.2.1 Connect AC input (460V 3 Phase)

6.2.2 Connect the Blue Load to the FPOS and FNEG connections. Set a DVM to read DC output voltage between this connection. Also connect an ocilloscope to this connection.

6.2.3 Turn the R1 pot on the DS3800NFEA circuit board to fully CW.

6.2.4 Verify the waveform should be as shown below.(Fig.1)

6.2.5 Measure the DC output voltage between FPOS and FNEG. It must be +300Vdc +/-30Vdc.

6.2.6 Adjust R1 pot on the control card fully CCW and measure the DC voltage at FPOS and FNEG. It must be +25Vdc +/-25Vdc.

6.2.7 Adjust R1 completely through its adjustment range while observing the DC voltage between FPOS and FNEG. The voltage must go from +25Vdc to +300Vdc.

6.2.8 Now adjust R1 for +150Vdc +/-3Vdc between FPOS and FNEG. Remove the AC input power. Reapply AC input power. Verify the output voltage returns to +150Vdc +/-3Vdc.

6.2.9 Adjust R1 fully CW. Measure the DC resistance between (1) FLH1 and FLL1 and (2) FLH2 and FLL2. It must be 0+/-1 ohm.

6.2.10 Turn off the AC input power to the unit. Measure the resistance between (1) FLH1 and FLL1 and (2) FLH2 and FLL2. It must be greater than 10 megohms.

6.2.11 Connect a remote 20K ohm pot to the RCH, RCC and RCL Terminals with the CW end at TB3-3(RCH), the wiper to TB3-2(RCC) and the CCW end to TB3-1(RCL)

6.2.12 Rotate R1 on the control card fully CCW. And the remote 20K ohm pot fully CCW.

6.2.13 Re-apply the AC input voltage to the unit and adjust the remote 20K ohm pot while observing that the output at FPOS --- FNEG connection swings from 10Vdc +/-60Vdc to 300Vdc +/- 30Vdc.

6.2.14 Turn the remote pot fully CCW and adjust R1 for 250Vdc. (This is the default setting)

6.2.15 Turn off AC input power and remove the remote pot. END OF TEST.

6.3 ***TEST COMPLETE ***

7. NOTES

8. Oscilloscope Verification Examples:

Fig. 1

Fig. 2