g GE Industrial Systems	**Functional Testing Specification**
Renewal Services ***Louisville,KY***	**LOU-GED-137D5138**

Test Procedure for a Card 137D5138G0004

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	Paul Kelley	12/19/2003
B			
C			

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DATE	**DATE**	**DATE**	**DATE**
12/12/2003			01/28/04

Functional test procedure for a 137D5138G0004

1. SCOPE

1.1 This is a functional testing procedure for a 137D5138G0004

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		GP Turbine Card GP Test Box
1		30V DC PS
1		-22V DC PS
1		Fluke 715 Precision Voltage Source (or equivalent)

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6. TESTING PROCESS

Note: This test uses values for a particular turbine and valve to verify proper functionality of the board. It is a copy of a factory test procedure dated 1-31-96 found in file 137D5138.tif.

6.1 Testing Procedure

6.1.1 With no power to the board, set VR1, VR2, VR3 fully CCW.

6.1.2 Unsolder and lift the R10 side of R15.

6.1.3 Clip one lead of a ohmmeter on the CR7 anode and the other on the lifted side of R15. Adjust VR53 for an ohms reading from table 1 below (combination of R15 and VR53). Leave R15 disconnected.

Table 1

Turbine	Valve	Ohms
469	CV4	69.852
554	1	172.5

6.1.4 Put the positive lead of the ohmmeter on the cathode of CR6 and the negative lead on the R10 side of R14. Adjust VR52 for an ohms reading from table 2 below (combination of R14 and VR52).

Table 2

Turbine	Valve	Ohms
469	CV4	25.559
554	1	42.67

6.1.5 Put the positive lead of the ohmmeter on the cathode of CR8 and the negative lead on the R10 side of R16. Adjust VR54 for an ohms reading from table 3 below (combination of R16 and VR54).

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Table 3

Turbine	Valve	Ohms
469	CV4	Maximum
554	1	41.87

6.1.6 Resolder R15 into the circuit.

6.1.7 Apply power to the board (+30V to pin 17, -22V to pin 21 and com to pin 19).

6.1.8 Ground pin 3 to common.

6.1.9 Adjust VR58 for +5.00 volts at TP4.

6.1.10 Remove ground from pin 3 and apply +5.00 volts to pin 3.

6.1.11 Adjust VR57 for 0.00 volts at TP4.

6.1.12 Remove voltage from pin 3.

6.1.13 Ground pin 36.

6.1.14 Adjust VR3 for 0.00 volts on pin 3.

6.1.15 Adjust VR2 to the volts from table 4 below at TP1.

Table 4

Turbine	Valve	Volts
469	CV4	.899
554	1	3.479

6.1.16 Adjust VR1 to the volts from table 5 below at TP2.

Table 5

Turbine	Valve	Volts
469	CV4	Maximum
554	1	4.728

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6.1.17 Tag board with the turbine and value numbers used.

6.2 ***TEST COMPLETE ***

7. NOTES

7.1 None noted at this time.

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