g GE Energy	**Functional Testing Specification**
Renewal Services ***Louisville, KY***	**LOU-GED-193X531xx**

Test Procedure for a Valutrol Diagnostic Card

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	J. Barton	6/25/02
B	Spelling errors	C. Wade	4/10/2009
C			

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J. Barton			Robert Dunlap
DATE	**DATE**	**DATE**	**DATE**
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Functional test procedure for a Valutrol diagnostic card

1. SCOPE

1.1 This is a functional testing procedure for a 193X531xx diagnostic 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.
2.1.1 GEK-45118

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		Oscilloscope
1		Valutrol test Fixture

6. TESTING PROCESS

6.1 Inspection / Installation

6.1.1 Verify SPEED REF. and CEMF pot's turn as should

6.1.2 Verify Diag. switch has 3 permanent positions: (Left – Static; Center – Neutral; Right – Run)

6.1.3 Verify solder joints of SPEED REF. And CEMF pots are in good condition, if not re-flow as needed.

6.1.4 Remove shop test board and install UUT, verify all connections are correct

6.2 STATIC Operation Test

6.2.1 Connect DMM to LR on MCC (Main Control Card) and COM

6.2.2 Release E-Stop button and move switch to Static position (left) on the UUT

6.2.3 Verify RTR LED On MCC (Main Control Card) illuminates.

6.2.4 If RTR illuminates and shortly goes out; Adjust SPEED REF. to 0v at LR on MCC.

6.2.5 Verify SPEED REF. pot will adjust voltage in positive and negative directions with no dead spots or jumps in voltage.

6.2.6 Re-adjust SPEED REF. to 0v at LR on MCC and verify knob center marking is located at top of knob, if not adjust knobs position on shaft as needed.

6.2.7 Connect DMM to CFB on MCC (Main Control Card) and COM

6.2.8 Verify CEMF. pot will adjust voltage in positive and negative directions with no dead spots or jumps in voltage. (zero voltage may have slight "dead" spot in both directions of approx. 200mV.)

6.2.9 Re-adjust CEMF to 0v at CFB on MCC and verify knob center marking is located at top of knob, if not adjust knobs position on shaft as needed.

6.2.10 Return Diag. switch to center (neutral) position.

6.3 RUN Operation Test

6.3.1 Connect Oscilloscope to VFB on MCC.

6.3.2 Move Diag. switch to RUN position (right).

6.3.3 Verify SPEED REF. adjusts amplitude of output spikes smoothly.

6.3.4 Return SPEED REF. to 0v output per VFB.

6.3.5 Move switch to Neutral position (center).

6.3.6 Press E-STOP on Valutrol Drive to disconnect power

6.4 ***TEST COMPLETE ***

7. NOTES

7.1 No notes at this time