GE Energy	**Functional Testing Specification**
Parts & Repair Services ***Louisville, KY***	**LOU-GEIS-QC2**

Test Procedure for a ASTAT CD Plus Open Starter

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

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Initial release	G. Chandler	7/17/2014
B	Step 6.1.20, changed CN1 to CN2	G. Chandler	9/3/2014
C			

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G. Chandler			Charlie Wade
DATE	**DATE**	**DATE**	**DATE**
7/17/2014			7/21/2014

1. SCOPE

1.1 This is a functional testing procedure for a ASTAT CD Plus Open Starter.

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, N:\Design Folders\Astat\Reduced-Voltage Starters

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		Motor load panel next to theigital Siltron

6. Testing Process

6.1 Setup and Bench Test

6.1.1 First the control board assembly will be tested without the unit being connected to the motor wall or SCR power.

6.1.2 Remove the cover to the control assembly and jumper pins 1 to 2 and pins 8 to 9 of the CN2 connector.

6.1.3 Apply 115VAC to AC input terminal block between A1 and A2.

6.1.4 Verify control panel displays “STOP”.

6.1.5 Move the AC input to B1 and B2 and verify the display again displays “STOP”.

6.1.6 Momentarily short pin 3 to pin 4 and verify the unit displays “RAMP” and then displays error massage “e013”.

6.1.7 Verify +5VDC at TP2 of the control board. Use the negative side of capacitor C1 for ground reference. C1 is located along the left side of the card.

6.1.8 Momentarily short pin 5 and 6 of CN2 and verify TP2 goes to 0VDC.

6.1.9 Verify +5VDC at TP9 of the control board. Use the negative side of capacitor C1 for ground reference.

6.1.10 Momentarily short pin 7 and 6 of CN2 and verify TP9 goes to 0VDC.

6.1.11 Remove AC from unit to reset control board.

6.1.12 Remove jumper installed between pins 8 and 9 of CN2 and reapply AC power.

6.1.13 Momentarily short pin 3 to pin 4 and verify the unit displays error massage “e018”.

6.1.14 Reinstall jumper between pins 8 and 9.

6.1.15 Remove and reapply AC power to reset control board.

6.1.16 Verify the following on connector CN1.

6.1.17 With < 1 ohm between pins 11 and 12 and an open between pin 10 to 11 and pin 8 to 9 and pin 6 to 7.

6.1.18 Using the setup procedure explained in the operating manual, set the values of parameters 1R, 2R and 3R to a value of 22 and verify the following.

6.1.19 There shall be an open between pins 11 and 12 and < 1 ohm between pin 10 to 11 and pin 8 to 9 and pin 6 to 7.

6.1.20 Apply 1VDC to TP16 and verify 2VDC at pin 12 of connector CN2. Use – side of C1 as ground for this step.

6.1.21 This completes the bench test of the control assembly.

6.2 Functional Testing of the full assembly

6.2.1 Using the procedure in the owner's manual, connect the unit to the motor wall and verify unit's proper operation. Manuals should be found in the following directory; N:\Design Folders\Astat\Reduced-Voltage Starters

6.3 ***TEST COMPLETE ***

7. Notes

7.1 None at this time.

8. Attachments

8.1 None at this time.