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GE Energy

Functional Testing Specification*Parts & Repair Services
Louisville, KY***LOU-GEF-3N8100PS106A1****Test Procedure for a 1050 Power Supply****DOCUMENT REVISION STATUS: Determined by the last entry in the "REV" and "DATE" column**

REV.	DESCRIPTION	SIGNATURE	REV. DATE
A	Transferred from different format into this procedure	C. Wade	5/13/2009
B	Adapted existing procedure to correlate with new test fixture.	C. Edlin	8/9/20
C	Corrected polarity of two voltages in 6.4.6.	C. Edlin	11/1/10

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DATE 5/13/2009	DATE 11/1/2010	DATE	DATE 5/13/2009

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1. SCOPE

1.1 This is a functional testing procedure for a 1050 Power Supply

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 GEK-71705

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, 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
5		Fluke 77MM (or Equivalent)
1	H188934	PS106A1 Test Fixture
1		115VAC Variac to plug Test Fixture into
1		Oscilloscope

6. TESTING PROCESS

6.1 Setup

- 6.1.1** Connect one meter to each of the four meter-outputs of the test fixture, which correspond to the chart below.
- 6.1.2** Connect the load-bank alligator clips of the PS106 test fixture to the PS106 card according to the following chart.

Test point on PS106 card	T8	T1	T2, 4, 7 and 20	T19	T5
Corresponding voltage	12V	5V	Common	-5V	-12V

- 6.1.3** Connect the AC output connector from the PS106 test fixture to 1TB A-B-C of the power supply.
- 6.1.4** Connect the test fixture's main AC input to the output of the variac.

6.2 Testing Procedure

- 6.2.1** Turn the fan switch on.
- 6.2.2** Adjust the variac to 80% on the 140VAC scale (115VAC).
- 6.2.3** Flip the main AC switch of the test fixture on.
- 6.2.4** If you hear a grinding sound, turn the main AC switch off. Otherwise continue on to the next step.
- 6.2.5** Verify output voltages according to the chart above.
- 6.2.6** If voltage is close continue on.

6.3 Adjustments

- 6.3.1** **WARNING---The -12V bus will track along when adjusting the +12V Bus. Too far out of an adjustment will trip the supply.**
- 6.3.2** Use P1 to adjust 5VDC.
- 6.3.3** Use P2 to adjust 12VDC.
- 6.3.4** Use P4 to adjust -5VDC.
- 6.3.5** Use P3 to adjust -12VDC.
- 6.3.6** Turn the main AC switch off.
- 6.3.7** Verify that voltages at TB1-F and TB1-G measure between 27-32VDC.
- 6.3.8** Turn the main AC switch on.
- 6.3.9** Verify that voltages at TB1-F and TB1-G drop slightly to between 25-30VDC.

6.4 Alarm Check

- 6.4.1 Turn the main AC switch off.
- 6.4.2 Verify that 1TB-D measures less than .2VDC and that 1TB-E measures less than 1.5VDC (logic Low).
- 6.4.3 Turn the main AC switch on.
- 6.4.4 Verify that 1TB-D measures 4.9VDC (logic high) and that 1TB-E measures less than 0VDC (logic Low).
- 6.4.5 Verify that the crowbar signal remains low (TPL2-C Approx. -28VDC) and that the alarm signal remains high (TPL2-F Approx. 5VDC).
- 6.4.6 Verify the voltages in the following chart.

Test Point	Voltage
TPL2-D	+5VDC
TPL2-B	+12VDC
TPL1-E	-5VDC
TPL1-B	-12VDC

6.5 Oscilloscope Tests

- 6.5.1 Additional scope signals to check:

Test Point	Waveform
PL2-B	Triangle Wave ~ .3VDC
PL2-G	Triangle Wave ~ -.3VDC
PL1-B	Triangle Wave ~ .3VDC
PL2-A	Square Wave ~ +25VDC
PL2-K	Square Wave ~ +25VDC
PL1-A	Square Wave ~ -25VDC

- 6.5.2 If further clarification is needed, the above waveforms can be found in GEK-71705.

6.6 AC Adjustments

- 6.6.1 Adjust the variac to 90% (125VAC) and verify that the buss voltage levels do not exceed 5.3V, 12.3V, -12.3V and -5.3V respectively.
- 6.6.2 Return the variac to 80% (115VAC) and verify that the buss voltage levels return to their original settings.
- 6.6.3 Turn the main AC switch off.
- 6.6.4 Turn the fan switch off.

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6.6.5 Turn the variac off and adjust it to 0% (0VAC).

6.6.6 Disconnect the fixtures AC output connector and the alligator clips.

6.7 *TEST COMPLETE *****

7. Notes

7.1 None at this time

8. Attachments

8.1 None at this time