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| g GE Industrial Systems | Test and Operating Procedure | |
| | DATE: 06/10/02 | PAGE 1 OF 6 |
| QUALITY REP: <i>Charlie Wade</i> 4/27/2011 | | |
| TITLE: DC300 Power Supply Test Instruction | | PROCEDURE: LOU-GED-531X111PSH-H |

1. INTRODUCTORY DESCRIPTION

- A. This procedure establishes the methods for testing a 531X111PSH Power Supply card.
- B. Environmental ranges: 70 +/- 10 Deg. F. with 20-75% R.H.
- C. Unit warm-up/stabilization period requirement: None
- D. Personnel using this procedure are expected to have a high degree of confidence and expertise in related testing and calibration procedures.
- E. Procedures not explained here are considered to be understood as common practice.

2. TEST EQUIPMENT VERIFICATION

- A. Verify the accuracy of the standard(s) used in the repair/calibration process by evidence of recent calibration labeling affixed to the test equipment.
- B. All measurement standards used in this procedure shall be traceable to the NATIONAL INSTITUTE of STANDARDS and TECHNOLOGY (N.I.S.T.) and shall have the accuracy, stability, range and resolution required for the intended use.
- C. Unless otherwise specified, the collective uncertainty of the Measurement Standard(s) shall not exceed twenty five percent of the acceptable tolerance for each characteristic being calibrated.
- D. All deviations shall be documented.

3. EQUIPMENT CLEANING

- A. All equipment clean will be performed as instructed in the GE T&IC SOP Sec. 14.0

4. EQUIPMENT INSPECTION

- A. The following criteria should be used as a guideline or basis for the inspection process of the this unit:
 - 1. Wires broken or cracked.
 - 2. Terminal strips / connectors broken or cracked.
 - 3. Loose wires.
 - 4. Components visually damaged.
 - 5. Capacitors leaking.
 - 6. Solder joint, cold or otherwise inadequate.
 - 7. Circuit board discolored or burned.
 - 8. Printed wire runs burned or damaged.

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5. REVISION HISTORY

| Revision | Date | Initials | Reason for Revision |
|----------|----------|----------|---|
| A | 1/18/01 | JDS | Initial Procedure – After Verification |
| B | 1/19/01 | RKD | Added spec. for G2 card in Step 14 |
| C | 2/06/01 | JDS | Added spec. for adjusting P1 |
| D | 06/10/02 | RKD | Updated step 54 to include G1 |
| E | 8/14/07 | CW | Added Special Note Page 3 |
| F | 2/23/09 | CW | Added notes to page 3 & 4, steps 4 thru 8, highlighted in Red |
| G | 4/27/11 | CW | Added step 58 |
| H | 8/4/2011 | CW | Corrected voltage tolerances on steps 9-7, 9-8, 9-49, 9-53 and resistance tolerances on 9-19 thru 9-35. |
| I | | | |
| J | | | |
| K | | | |

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6. REFERENCE DOCUMENTATION

- Reference: GEK-45147

7. THEORY OF OPERATION

- Reference GEK-45147

8. TEST EQUIPMENT TO BE USED

- Multimeter Fluke 85 or equivalent
- TEST FIXTURE H033815
- Oscilloscope

9. FINAL TEST AND OPERATION PROCESS

1. SETUP:

JP1 2-3 JP2 2-3 JP3 1-2 JP4 1-2 JP5 1-2

Verify switches on testbox are in the **OFF** position.

SPECIAL NOTE: All relays will be change out with new, unless we have changed them in the last 18 months. Any defective relay found will be automatically changed out.

Verify **FIELD CURRENT ADJUSTMENT** on testbox is full CCW.

Install card in testbox and connect all cables to card as labeled.

Connect multimeter to **SELECTOR SWITCH OUTPUT (RED + and WHITE-)** test jacks on front of testbox and set to DC.

Turn selector switch to **FCPL 1 to 2**

Plug fixture into 240 VAC

2. Turn on power to testbox with **ON/OFF** switch to ON.
3. Verify lamps **FAPL-1 and 2, OPTPL-1 and 2, 4PL6 to CNPL-2** all are on.
4. Turn selector switch to **+5VDC 2PL 8** and verify +5VDC +/-0.05 VDC. **Put DVM on AC and verify <20mVAC.**

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5. Turn selector switch to **+5VDC 1PL 14** and verify +5VDC +/-0.05 VDC. **Put DVM on AC and verify <20mVAC.**
6. Turn selector switch to **+5VDC 2PL 6** and verify +5VDC +/-0.05 VDC. **Put DVM on AC and verify <20mVAC.**
7. Turn selector switch to **-15VDC 2PL 2** and verify -15VDC +/-0.50 VDC. **Put DVM on AC and verify <20mVAC.**
8. Turn selector switch to **+15VDC 2PL 3** and verify +15VDC +/-0.75 VDC. **Put DVM on AC and verify <20mVAC.**
9. Turn selector switch to **+24VDC 2PL 4** and verify +24 to +28 VDC.
10. Turn selector switch to **-24VDC 2PL 6** and verify -24 to -28 VDC
11. Turn selector switch **FCPL 1 to 2**
12. Push **FCPL** switch to **ON**.
13. Adjust **FCPL ADJUSTMENT** for 0.25 VDC.
14. Turn selector switch to **FC 1PL 4** and verify multimeter reads (1.6 VDC G1 & 3) or (2.0VDC G2) +/- 0.05V. **NOTE: (If test fails check P1 adjustment.)**
15. Push **FCPL** switch to **OFF**.
16. Set multimeter to ohms.
17. Push **RP 1PL 11** switch to **ON**.
18. Verify **4PL-5 START/STOP** lamp comes on
19. Turn selector switch to **K2 4PL 7 to 8** and verify multimeter reads <3 ohms.
20. Turn selector switch to **K2 4PL 7 to 9** and verify multimeter reads > 1M ohms.
21. Push **RP 1PL 11** switch to **OFF**.
22. Verify **K2 4PL 7 to 9** reads <3 ohms.
23. Turn selector switch to **K2 4PL 7 to 8** and verify multimeter reads > 1M ohms.
24. Turn selector switch to **K3 4PL 1 to 2**.
25. Verify multimeter reads > 1M ohms.
26. Turn selector switch to **K3 4PL 2 to 3** and verify multimeter reads <3 ohms
27. Push **FRC 1PL 9** switch to **ON**.
28. Verify **K3 4PL 2 to 3** reads > 1M ohms.
29. Turn selector switch to **K3 4PL 1 to 2** and verify multimeter reads <3 ohms.
30. Push **FRC 1PL 9** to **OFF**.
31. Turn selector switch to **K1 1PL 12 to 13** and verify multimeter reads > 1M ohms.
32. Push **RP 1PL 11** switch to **ON**.
33. Verify multimeter reads <3 ohms
34. Push **RP 1PL 11** switch to **OFF**.
35. Turn selector switch to **1PL 15-18/1CPL 1-4** and verify multimeter reads <3 ohms.
36. Set multimeter to DC.

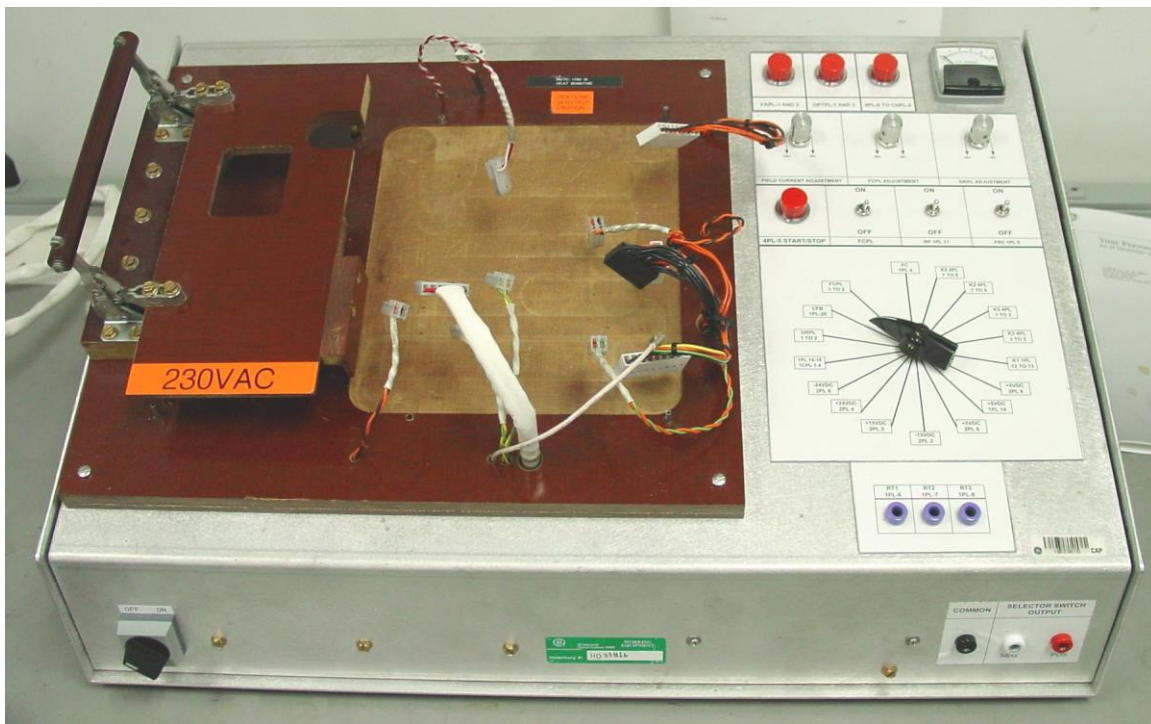
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37. Turn power **OFF**
38. Remove connector **DRPL**.
39. Turn selector switch to **CFB 1PL-20**.
40. Turn power **ON**.
41. Adjust **P2 CFB ZERO** on card for 0VDC. **NOTE IF FAILS CHECK JP3 AND 4 ARE IN 1-2 POS.**
42. Reconnect **DRPL** connector.
43. Turn selector switch to **DRPL 1to 2** and adjust **DRPL ADJUSTMENT** on test box to 0.25 VDC.
44. Turn selector switch to **CFB 1PL-20** and adjust P3 CFB ADJ on card for -2.5 VDC
45. Turn selector switch to **DRPL 1to 2** and adjust **DRPL ADJUSTMENT** on test box to 0.100 VDC.
46. Turn selector switch to **CFB 1PL-20** and verify -1.0 +/- 0.01VDC.
47. Remove **DRPL**.
48. Move jumpers JP3 and 4 to 2-3 positions.
49. Verify multimeter reads +1.0 VDC (.87 thru 1.07 VDC)
50. Move jumpers JP3 and 4 to 1-2 position
51. Reconnect **DRPL** connector.
52. Set multimeter to AC.
53. Verify from **BLACK** jack on front of test box to **PURPLE** jacks on top of test box 40 VAC on **RT1 1PL-6, RT2 1PL-7** and **RT3 1PL-8, (+- 2.0VAC)**.
- 54. OMIT STEPS 55 and 56 if "G1 or G2 card" and start at 57.**
55. Adjust **FIELD CURRENT ADJUSTMENT** CW and verify that analog meter on Testbox will go to 2.5 to 3 amps smoothly. If under
- 56. Return FIELD CURRENT ADJUSTMENT** to 0.0 amp
57. Remove **FSPL** connector and connect oscilloscope to **FSPL** post on card. Verify firing pulses when you increase and decrease **FIELD CURRENT ADJUSTMENT** on test box.
58. Verify that all stab-ons are present and are not damaged.

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|-------|-------|-------|----|-------|
| PX | MOVL3 | CPTH2 | L1 | CPTH1 |
| MOVL2 | MOVL1 | DX | L3 | L2 |
| DY | DW | L3F | KF | AF |
| DZ | | | | |

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10. SPECIAL INFORMATION



TEST WRITTEN BY: David Smith **DATE:** 1-18-2001

TEST VERIFIED BY: Kenny Greenwell **DATE:** 1-18-2001