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GE Industrial Systems

Functional Testing Specification

*Renewal Services
Louisville, KY*

LOU-GED-IC3601A201

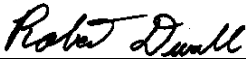
Test Procedure for a Power Supply Assembly

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Functional test procedure for a Power Supply Assembly

1. SCOPE

1.1 This is a functional testing procedure for an IC3601A201A 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 **IC3601A201A folder**

3.1.2 **IC3600SPSM folder (for reference)**

3.1.3 **68A9417 (component spec sheet, hand modified notations made in Louisville shop, included in either of the above folders)**

3.1.4 **IC3600SPSMsh.2 (silk-screening diagram, hand modified notation made in Louisville shop, also included in either of the above noted folders)**

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.

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Qty	Reference #	Description
1		Fluke 85 DMM (or Equivalent)
<u>1</u>		115Vac outlet & "cheater cord"
1		500 ohm pot
1		20ohm resistor, 20W or higher rating

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6. TESTING PROCESS

6.1 Setup

- 6.1.1** Refer to IC3601A201A sh 3.0. The drawing shows connections for a 500 ohm external pot connection to ADJ 1 and ADJ 2 pins of TB1 (if not labeled on unit, refer to IC3601A201A sh 2.1) Tie L1 to L3 and L2 to L4 of TB1 before connecting 115Vac power. This assures proper voltage output on secondary side of transformer.



Note: Be sure to have replaced all electrolytic caps, and beware of C1 of the A201A unit, which is a 35V cap that normally has 50-60Vdc on it. C1 of the SPSM card is a 25V cap that can see 28-30Vdc, beware of that as well.

6.2 Testing Procedure

- 6.2.1** Power unit up. Reading between pins +VAR and 0V, adjust 500 Ohm external pot to 0 ohms. Using internal 200 ohm pot located on SPSM card, you should be able to adjust output from appx. 13Vdc to 36Vdc(if range is wider, check again after adding load). Adjust output to 20Vdc. Now connect a 20 Ohm 20W resistor between +VAR and 0V.
- 6.2.2** Continuing to read 20Vdc at that point, adjust 500 ohm external pot to 500 ohms. This should bring output to appx. 30Vdc. Keep in mind this may overpower your resistor, so do not leave this power on long. Use of a muffin fan is also recommended if you plan to leave powered up long. Now adjust internal pot from one extreme to the other, and range shouldn't change by much, appx. 14Vdc to 32Vdc.
- 6.2.3** If unit passes, then you are finished.

6.3 *****TEST COMPLETE*****

- 7. NOTES** Most of the work done to this card will be on the IC3600SPSM card. If you find it necessary to change diodes, remember that CR1 & CR2 mount opposite to the rest of the diodes on the board. These diodes mount cathode UP when positioned over the circles silk-screened onto board. The rest mount cathode DOWN when positioned over the circles silk-screened onto the board. Check these against the schematic for final assurance. Also, if adjustable regulator TL431ACL P (Q4) is to be replaced, the old 4 pin can is obsolete, and has been replaced with a 3 pin plastic case. Refer to the hand modified drawing 68A9417 in either the IC3601A201A folder or the IC3600SPSM folder for conversion mounting. If you have ever replaced a 2n4983 UJT with the 2n4987 plastic case then you will be somewhat familiar with the lead bending arrangement. Most importantly: There was a revision change at some

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point where the engineers changed several resistor values having to do with the voltage divider circuit surrounding Q4 and the internal 200 ohm pot. The revision is not published, but new values were hand written into both the BOM and schematic drawings before they were put into Livelink, and they may not jive with what's on your card as it arrived in the facility. Go ahead and update the SPSM card to these new resistance values. Pay close attention to the actual values called for and what you actually install into the card. Getting the values wrong can cause problems with adjustment range of output.

8. Oscilloscope Verification Examples:

Fig. 1

Fig. 2