
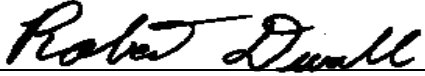


<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <small>1/15/2004</small>  GE Industrial Control Systems </div> <div style="text-align: center;"> <h2>Test and Operating Procedure</h2> </div> </div>	<div style="display: flex; justify-content: space-between;"> <div>DATE : 1/15/2004</div> <div>PAGE 1 OF 6</div> </div>
QUALITY REP: 	
TITLE: Test Procedure for 531X308PCS Card	PROCEDURE: LOU-GED-531X308PCSxx-D

1. INTRODUCTORY DESCRIPTION

- A. This procedure establishes the methods for testing a 531X308PCSxx Card.
- B. Environmental ranges: 70 +/- 10 Deg. F. with 20-75% R.H.
- C. Unit warm-up/stabilization period requirement:
- 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.


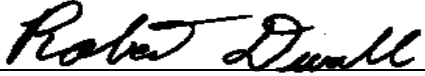
3. EQUIPMENT CLEANING

- A. All equipment clean will be performed as instructed in the GEES 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.
 7. Circuit board discolored or burned.
 8. Printed wire runs burned or damaged.

5. REVISION HISTORY

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Revision	Date	Initials	Reason for Revision
A	01/15/04	SDP	Initial Release
B	2/6/2009	DL	Added snubber test
C	8/13/2010	JH	Added Varic, 22.1K resisitor, and drawing for snubber test
D	11/22/2013	C. Wade	Added note to replace 15 ohm resisitors on all revisions, if applicable.
E			
F			
G			
H			
I			
J			
K			

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6. REFERENCE DOCUMENTATION

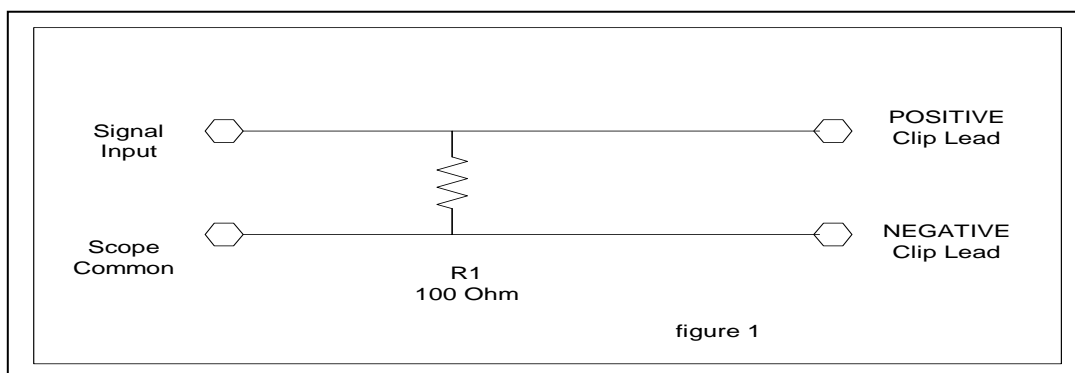
- Reference: DC300 Service Manual
- Factory Procedure #308AG4.DOC

8. TEST EQUIPMENT TO BE USED

- **Fluke 85 DMM or equivalent**
- **100 Ohm Resistor**
- **SCR firing box**
- **O-Scope**
- **BNC to Bananna jack adapter**
- **Variac**
- **22.1K Resistor**

9. FINAL TEST AND OPERATION PROCESS

- Before testing card, replace all 15 ohm, 2 watt, WW resistors, 104X123CC009, if applicable. On half the cards we have seen, they have been cracked.
- Use a DMM to verify the value of all resistors and capacitors.
- Set the DMM for diode check and verify all diodes. Note: D1 & D12 will read shorted in circuit, except on groups 5 & 6 cards, which have no 47.5 ohm resistor across the output.
- Setup test as outlined in figure 1.



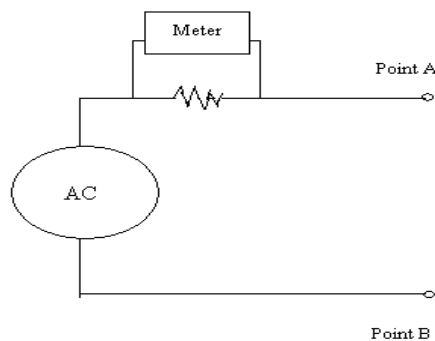

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Snubber Test

- For the points listed below, apply 100 \pm 1 VAC through a 22.1K resistor to point A with respect to point B. Then verify a voltage drop of 68 \pm 4 VAC across the 22.1 resistor. G5 & G6 cards have no snubbers.


G1 & G2
G3 & G4

A	B	DCS	P1
DCS	P1		
3ACS	P1		
2ACS	P1		
1ACS	P1		
4ACS	P2		
5ACS	P2		
6ACS	P2		

Circuit Tests

- Connect 5PL14 to common non-isolated connection on SCR firing box.
- Connect 5PL1 to Positive non-isolated connection on SCR firing box.
- Connect Scope to 6FPL (Common to pin 1 and Signal to pin 2).
- Set scope Vertical to .2 V/div and Horizontal to 50uSec/div.
- Verify SCR firing box is set to NORMAL and apply power.



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Robert D. Dull

TITLE:

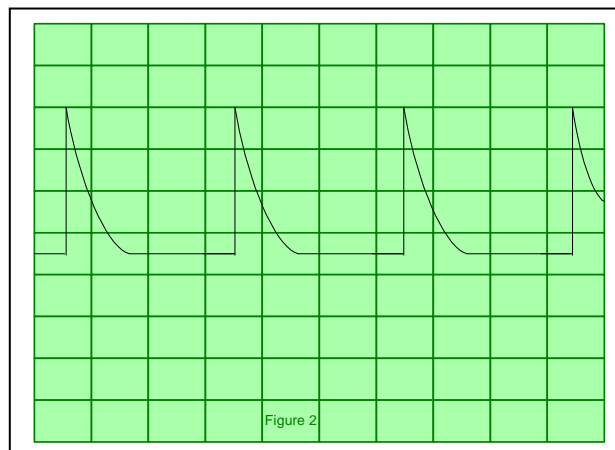
Test Procedure for 531X308PCS Card

PROCEDURE:

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- Turn output to MAX and verify waveform in figure 2.
- Repeat this test for the remaining circuits using the information in table 1. Note:
Groups 1, 3, & 5 cards have 12 pulse circuits
- If no deviations are found from the waveform in figure 2 then all is OK.

UUT	SCR Box Common	SCR Box +	Scope +	Scope -
6FPL	5PL14	5PL1	6FPL2	6FPL1
5FPL	5PL14	5PL3	5FPL2	5FPL1
4FPL	5PL14	5PL5	4FPL2	4FPL1
3FPL	5PL14	5PL7	3FPL2	3FPL1
2FPL	5PL14	5PL9	2FPL2	2FPL1
1FPL	5PL14	5PL11	1FPL2	1FPL1
1RPL	5PL14	5PL13	1RPL2	1RPL1
2RPL	5PL14	5PL15	2RPL2	2RPL1
3RPL	5PL14	5PL17	3RPL2	3RPL1
4RPL	5PL14	5PL19	4RPL2	4RPL1
5RPL	5PL14	5PL21	5RPL2	5RPL1
6RPL	5PL14	5PL23	6RPL2	6RPL1



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10.SPECIAL INFORMATION

- a. None available at this time.

TEST WRITTEN BY: Steve Pharris

DATE: 01/15/2004

TEST VERIFIED BY: Jill Hardin

DATE: 8/13/2010