

<b>g</b> <b>GE Industrial Systems</b>	<b>Test and Operating Procedure</b>	
	<b>DATE: 4-12-01</b>	<b>PAGE 1 OF 5</b>
<b>QUALITY REP:</b>		
<b>TITLE:</b> <b>Test Instructions for a 193X424AAG0X</b>		<b>PROCEDURE:</b> <b>LOU – GED – 193X424AAG0X - A</b>

## **1. INTRODUCTORY DESCRIPTION**

- A. This procedure establishes the methods for testing a 193X424AAG0X 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	Reason for Revision
A	4/12/01	Initial Release
B		
C		
D		
E		
F		
G		
H		
I		
J		
K		

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## 6. **REFERENCE DOCUMENTATION**

- Reference: GEK
- Factory Procedure #

## 7. **THEORY OF OPERATION**

- Reference: GEK

## 8. **TEST EQUIPMENT TO BE USED**

- Power Supply capable of 20 VDC output.
- Firing box.
- 120VDC self-powered test lamp.
- Fluke 87 multimeter.(or equivalent)
- Oscilloscope.

## 9. **FINAL TEST AND OPERATION PROCESS**

- Current feedback circuit test:  
Connections: Fluke Multimeter leads to “COM” & “CF” pins of 193x389 isolation card. Lead clamps of 120 Vac test lamp to busses “CP” & “P3” of unit assembly. Set meter to read Vac Switch Test Lamp on. Meter should read approximately 24m Vac. Switch meter to read Vac. Reading should be approximately 25m VDC. Switch lamp off. Move lead clamps to “CN” & “N2” busses. Switch lamp on. Meter should read approximately 60m VDC. Switch meter to read Vac. Reading should be approximately

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33m Vac. See diagram of 331X389AAG01 (#366764198AA) in the 331X424 book for the rest of current feedback circuitry. Perform component test on the resistors in that circuit and verify that they are in compliance for tolerance. Current feedback test is concluded.

- Unit Assembly Test:

Connections: Firing Box – Positive firing pulse to “IN” of isolation card. Firing pulse common to 20V common on power supply. 20V power supply - +20VDC to “20V” pin of isolation card. 20V common of power supply to “COM” pin of isolation card. Oscilloscope should be connected to “INC” and “ING” gate outputs on card at this time. Throughout the test procedure, the scope leads should be moved to the appropriate output points of the isolation card to verify that signal output matches closely to firing box signals, and that no floating DC or other problems arise as the test is performed. Connect lead clamps of 120V test lamp to busses “N1” and “L1”. Switch lamp on. Switch 20V on. Switch firing box on, then turn dial up from 0% to 100%. Test lamp should light up accordingly. Repeat this test with the following connections and verify operation.

Firing Signal (Isolation Card)	Test Lamp (Busses)	Oscilloscope (Isolation Card)
“1P”	“P1” & “L1”	“1PG” & “1PC”
“2P”	“P1” & “L2”	“2PG” & “2PC”
“2N”	“N1” & “L2”	“2NG” & “2NC”
“3N”	“N1” & “L3”	“3NG” & “3NC”
“3P”	“P1” & “L3”	“3PG” & “3PC”

You’ve just checked the rest of the isolation card, all six SCR’S, and the related chokes.

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Next perform a component test on the 193X385 card. Verify that the resistors are in tolerance and comply with the data on Table one of page 36B590249AB. The group number of this card determines the value of those resistors.

See Special Information before continuing.

## 10. SPECIAL INFORMATION

- Check tin plating on copper busses. Replate if necessary.
- Check lamination of phoenetic sheets between heatsinks (especially where heatsink mounting bolts are held into those sheets).
- Repair as necessary, but only after any plating repairs have been performed to busses.

**TEST WRITTEN BY:**

**DATE:**

**TEST VERIFIED BY: John L. Madden**\_\_\_\_\_

**DATE:** 2-21-00