

<b>g</b> <i>GE Industrial Systems</i>	<b>Test and Operating Procedure</b>	
	<b>DATE :</b> 12-02-99	<b>PAGE 1 OF 6</b>
<b>QUALITY REP:</b>		
<b>TITLE: TESTING INSTRUCTION FOR IC3650SODC</b>		<b>PROCEDURE: LOU – GED-IC3650SODC-A</b>

## **1. INTRODUCTORY DESCRIPTION**

- A. This procedure establishes the methods for testing a. IC3650SODC
- 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		Initial Procedure – After Verification
B		
C		
D		
E		
F		
G		
H		
I		
J		
K		

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## 6. REFERENCE DOCUMENTATION

- Reference:

## 7. THEORY OF OPERATION

## 8. TEST EQUIPMENT TO BE USED

- Lodtrak Calibration Module
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## 9. FINAL TEST AND OPERATION PROCESS

### OVERLOAD/ OVER TEMPERATURE CARD (IC3650SODC)

- Set controls as follows
  - “UNBALANCE” switch – “F. L. AMPS”
  - “UNBALANCE” potentiometer – CCW
  - “CURRENT INPUT” – Both CCW
  - “OVERLOAD/ OVER TEMPERATURE” – “F. L. AMPS”
  - “FUNCTION” – OVERLOAD/OVER TEMPERATURE”

Insert both Overload/ Over Temperature and relay driver cards in their appropriate slots and apply sufficient force to ensure good contact in their sockets. Rotate “ALARM”, “TRIP”, “RUN”, and “STALL” trim pots fully CW (approximately 15 turns). TURN CARD POWER SWITCH TO “ON”.

- (OMIT IF NO ALARM FUNCTION IS REQUIRED).  
Set “RTD RESISTANCE” decade switch the resistance equivalent to the desired alarm temperature.

EXAMPLE:	E. q. 120 C	<u>RTD Resistance Setting</u>
	SODC1- 10 $\Omega$ Copper	013.7
	SODC2- 120 OHM Nickel	219.29
	SODC3- 100 OHM Platinum	146.3

For other types or temperatures, refer to published resistance tables. Turn “ALARM” pot CCW until alarm lamp lights. Turn CW until lamp goes out then slowly CCW again until lamp just lights again.

- Set “RTD RESISTANCE” decade switch for the resistance equivalent to the desired trip temperature.

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EXAMPLE:     E. q. 130 C                      Switch Setting  
                   SODC1- 10 OHM Copper            014.0  
                   SODC2- 120 OHM Nickel           228.96  
                   SODC3- 100 OHM Platinum        150.2

For other types or temperatures, refer to published resistance tables. Turn “TRIP” pot CCW until trip lamp lights. Turn CW until lamp goes out then slowly CCW again until lamp just lights again.

4. Set “RTD RESISTANCE” decade switch for the resistance equivalent to 40 C.

EXAMPLE:     E. q. 40 C                      Switch Setting  
                   SODC1- 10 OHM Copper            010.6  
                   SODC2- 120 OHM Nickel           152.3  
                   SODC3- 100 OHM Platinum        115.4

Adjust “CURRENT INPUT” controls until digital meter displays the desired full load current, (between 2.0, 3.5 and 5.0 amps, if the customer doesn’t specify setting use 3.5 amps). Turn “OVERLOAD/ OVER TEMPERATURE” switch to “ADJUST F. L. “ and rotate “RUN” trim potentiometer on card until display reads the full load current chosen previously.

5. Turn “OVERLOAD/ OVER TEMPERATURE” switch to “l. r. AMPS”. Adjust “CURRENT INPUT” controls until digital meter displays the desired locked rotor current (between 12 and 30 amps if locked rotor current is six times full load current, example  $6 \times 3.5 = 21$  amps ). Turn “OVERLOAD/ OVER TEMPERATURE” switch to “ADJUST L. R.” and turn “STALL” pot on card until meter displays the number from the chart below for the desired maximum stall time. (This operation will approximately set the desired stall time). The number shown is for 10 OHM Cu RTD. It will vary from these values for the Ni & Pt RTD’s.

TIME (sec.)	RTD TRIP 130 C	TEMP 155 C	TIME (sec.)	RTD TEMP 130 C	TEMP 155 C	TIME (sec.)	RTD TRIP 130 C	TEMP 155 C
5	999	1247	10	522	651	20	284	355
5.5	913	1138	11	479	597	21	273	340
6	840	1048	12	443	552	22	263	328
6.5	779	972	13	412	514	23	253	316
7	727	906	14	386	481	24	245	305
7.5	681	849	15	363	453	25	237	296
8	641	800	16	343	428	26	230	287
8.5	606	756	17	326	407	27	223	278
9	575	717	18	311	387	28	217	271
9.5	547	682	19	297	370	30	206	257

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6. Turn “OVERLOAD/ OVER TEMPERATURE” switch to time. Wait ten seconds then push and hold yellow “TIME” button. Card will experience a simulated locked rotor and after the trip the meter will display the time taken to trip. Releasing the button resets the circuit card and timer, and after a wait of ten seconds, the button may be depressed again to repeat the test. If the time taken is too short then rotate the stall pot CW a little and repeat the test. If the time is too long rotate the pot CCW. Repeat until the time to trip is within acceptable limits.
7. Turn card power switch to “OFF”. Remove cards.
8. Make sure the RTD setting is 40 C for timing calibration – Too low settings causes an increase in time. Too high settings, causes a decrease in time.

END OF CALIBRATION

## 10. SPECIAL INFORMATION

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**TEST WRITTEN BY:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**TEST VERIFIED BY:** \_\_\_\_\_ **DATE:** \_\_\_\_\_