| g GE Industrial Systems | Test and Operating Procedure | |
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| | QUALITY REP: Robert Dunell | |
| TITLE: TIME DELAY RELAY CARD TEST PROCEDURE | PROCEDURE: LOU-GED-117D9900-B | |

## 1. INTRODUCTORY DESCRIPTION

A. This procedure establishes the methods for testing a 117D9900-G0X TIME DELAY RELAY 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 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

| Revision | Date | Initials | Reason for Revision |
|---|---|---|---|
| A | 10/3/95 | PDK | Initial Procedure – After Verification |
| B | 06/10/02 | RKD | Changed procedure number, Added section 5 and 6 |
| C | | | |
| D | | | |
| E | | | |
| F | | | |
| G | | | |
| H | | | |
| I | | | |
| J | | | |
| K | | | |

## 6. REFERENCE DOCUMENTATION

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## 7. THEORY OF OPERATION

This card utilizes up to three Time Delay relays on one card. The ralays are adjustable in delay time depending on the style of relay.

## 8. TEST EQUIPMENT TO BE USED

- Test Fixture # H033553
- Power Supplies Approperate for the relays being tested (28,125,250)
- Multimeter

## 9. FINAL TEST AND OPERATION PROCESS

- Visually Inspect card for bent pins.
- Adjust relay(s) to 0° (no time delay)
- Plug UUT into test fixture
- Set all relay power switches to the off position.
- Connect the multimeter between “Coil Common” and the approperate “K#” for the relay to be tested.

- Turn the relay power switch to ON and this will complete the circuit allowing you to measure the resistance of the coil. (compare resistances with that in Table 1.0)

- Disconnect Multimeter and connect its Common to "Contact Common"
- Use the Positive lead of the meter to check the relay contacts.
- Check all contacts for open or closed respectifully.
- Connect the approperate supply to the test fixture and apply power.
- Set the Multimeter for resistance and connect to a normally open contact.
- Turn the relay power switch to the ON position and note their should be ***NO*** time delay before contact closure.
- Turn the relay power switch to the OFF position and note their should be ***NO*** time delay before contact opening.
- Adjust relay(s) to 300° at 30° intervals checking the delay time after every adjustment( refer to relays for time span) looking for a non-linear occurance.
- Check all contacts for proper operation both energized and de-energized.
- Repeate procedure for each relay on the card.

## 10. SPECIAL INFORMATION

| Relay Part # | Coil Voltage | Coil Resistance | Tolerance ± | Time Range |
|---|---|---|---|---|
| | 28 VDC | 135 Ω | 5.4 Ω | .75 - 10 SEC. |
| | 125 VDC | 5000 Ω | 200 Ω | .75 - 10 SEC. |
| | 250 VDC | 12.5 KΩ | 500 Ω | .75 - 10 SEC. |

**TEST WRITTEN BY:** Paul Kelley **DATE:** 10/3/95

**TEST VERIFIED BY:** _____ **DATE:** _____