# OPERATING INSTRUCTION - ELECTRONIC SINGLE LEAD VERIFICATION SYSTEM

CONTENTS



## 1. GENERAL INFORMATION

### 1.1 Purpose and Use

1.11 The ITE-6157 is a Single Lead Continuity Verification Test Set. This set may be used on any system, for wet and dry lead verification, and on any working or non-working circuits which may be encountered by a Western Electric Installer. It is capable of verifying continuity of leads with resistances of 0 ohms to 250 ohms.

### 1.2 Description

1.21 The ITE-6157 is a Digital Electronic Device mounted in a two piece protective case with dimensions 7-1/2" x 7-1/2" x 5".

1.22 To aid the Installer in performing continuity tests using the ITE-6157, a built-in talk circuit is included in the test set.

## 2. PRECAUTIONS

2.1 General precautions to be taken against personal injury equipment damage, and service interruptions are covered in Installation Handbook 0 and are to be observed at all times as they apply to the operations being performed.

## 3. CONTROL FUNCTIONS

3.1 Volume control adjacent to talk circuit inputs controls the level of tone in talk circuit.

3.2 Recessed screws adjacent to test probe terminals labeled "HI ADJ" and "LO ADJ" control the high and low resistance thresholds. respectively. Further detail regarding these controls is included in Paragraph 6.

## 4. TEST EQUIPMENT

4.1 The following equipment is required in conjunction with the ITE-6157 for continuity testing:

| Quantity | Code Number | Description |
|---|---|---|
| 2 | ITE-9650 | Headset |
| 2 | ITE-9408 | Test Probe |
| 1 | ITE-2260A | Call Wire Telephone Jack |

## 5. OPERATION

5.1 Follow the instructions below in sequence to begin testing with the ITE-6157.

5.11 Flip power switch to "OFF".

5.12 Run power cord from front panel to 115 VAC outlet.

5.13 Plug ITE-9650 (without varistor) into "TALK 1" on front panel.

5.14 Run dry twisted pair from "TALK 2" binding posts to remote station or, short "TALK 2" binding posts if remote headset is not used.

| CAUTION | DO NOT CONNECT "TALK 2" BINDING POSTS TO "WET" LEADS. THIS PRACTICE WILL CAUSE SERVICE INTERRUPTION. |
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5.15 At remote station, connect twisted pair to ITE-2260A Call Wire Telephone Jack.

5.16 Plug ITE-9650 Headset into ITE-2260A.

5.17 Run dry third wire from "TEST PROBES: REMOTE" binding post (black) on front panel to remote station and connect to ITE-9408 Test Probe or plug probe directly into binding post if remote headset is not used.

NOTE: It is vital that all connections made in this third wire be of as high integrity as possible (e.g., it is recommended that if it is necessary to twist two wires together, that this connection be soldered). Failure to meet this criteria can cause incorrect test indications.

5.18 Flip power switch to "ON" and listen for side tone. If no side tone is present, check headset(s) for varistors, check connections, and make sure test set is on (indicated by pilot light).

5.19 Touch test probe to frame ground, instructing Installer at remote station to do same. A continuous tone will be heard in headsets. Adjust volume for desired loudness. If you do not get a continuous tone, refer to Paragraph 6. If continuous tone is received, proceed with continuity test.

5.2 Interpretation of Test Results

5.21 If an INTERRUPTED, HIGH-PITCHED TONE is heard this indicates NO CONTINUITY and is due to an over-voltage condition. An over-voltage condition occurs when the voltage between the test inputs (local and remote test probes) is greater than +7.5 VDC, or less than -10.0 VDC, indicating that the test probes have been placed across a battery supply or a working circuit with a voltage drop outside the limits of the set voltage threshold.

5.22 If NO TONE is heard in the headsets this indicates NO CONTINUITY. This occurs when the AC impedance or DC resistance between the test inputs (local and remote test probes) is greater than the HIGH-RESISTANCE THRESHOLD of the test set. This may indicate one of the following:

(a) The test input probes have been placed across equipment with a high impedance;

(b) The lead under test contains an open (infinite resistance);

(c) The lead under test has high resistance, i.e., it may be in an unusually long cable (between floors) with a resistance which exceeds the upper limit of the high resistance range (HIGH-RESISTANCE THRESHOLD) of the test set. See Paragraph 6 following, for threshold adjustment procedures.

5.23 A CONTINUOUS HIGH-PITCHED TONE heard in the headsets indicates continuity on the lead under test and that the lead has a resistance greater than the LOW-RESISTANCE THRESHOLD, but less than the HIGH-RESISTANCE THRESHOLD.

5.24 A CONTINUOUS LOW-PITCHED TONE heard in the headsets indicates continuity on the lead under test and that the lead has a resistance greater than 0 ohms, but less than the LOW-RESISTANCE THRESHOLD.

NOTE: If continuity cannot be established on a significant number of leads, check operating instructions and schematics. If the test set-up conforms to these instructions, then refer to Paragraph 6 for resistance threshold adjustments.

6. CALIBRATION

6.1 Both the low resistance threshold and the high resistance threshold may be adjusted to meet specific job needs (e.g., extra long cable runs). The low resistance threshold is preset by the manufacturer at 8 ohms and the high resistance threshold is preset at 68 ohms.

6.2 To adjust either threshold to any desired value, follow the steps listed below:

6.21 Set up test set as specified in Paragraph 5.

6.22 Attach desired resistance for threshold across test probe terminals.

6.23 Listen for appropriate tone in headset. (See Paragraph 5.2 for interpretation of tones.)

6.24 Disconnect resistance from test probe terminals.

6.25 To lower threshold value, rotate appropriate recessed screw (located adjacent to test probe terminals on panel of test set) in the counter-clockwise direction.

6.26 To raise threshold value, rotate appropriate recessed screw in the clockwise direction.

6.27 Reconnect resistance across test probe terminals.

6.28 Listen for appropriate tone in headset.

6.29 Repeat steps 6.24 through 6.28 until appropriate tone is received in headset.

NOTE: Resistance must be disconnected and reconnected after each adjustment of recessed screw. Tone will not change unless continuity is broken and then re-established.

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| CAUTION: | HIGH RESISTANCE THRESHOLD MUST BE SET FOR A HIGHER VALUE THAN THE LOW RESISTANCE THRESHOLD OR TEST SET WILL NOT FUNCTION PROPERLY. |

## 7. FIELD MAINTENANCE INFORMATION

7.1 A 0.5A fuse and spare are located on test set circuit board. To gain access, remove left and right panel screws and lift entire assembly from case.

7.2 Any maintenance required beyond fuse replacement should be performed by Installation Stockkeeping.

Engineering Planning Manager
(Installation)