

# OPERATING INSTRUCTIONS

## 140A/140B WEATHERTITE TONE TEST SET

### DESCRIPTION AND USE

#### 1. GENERAL

1.01 This section covers the description and use of Sperry Model 140A/140B Tone Test Set.

#### 2. DESCRIPTION

2.01 The Model 140A/140B Tone Test Set is encased in a heavy-duty plastic weathertite/water resistant orange case.

The 140A/140B is equipped with:

1. Tone Off-Cont switch.
2. Three (3) color LED (light emitting diode)
3. Two nylon braided cords consisting of tinsel conductors with PCV insulation and an outer nylon braid with an overall length of fourteen (14) inches.
4. Each cord is equipped with Alligator clips (Model 140B has AG-944 Alligator clips with "Bed of Nails") and a red or black insulating boot.
5. Two conductor modulator cord. (Model 140B only)
6. Five (5) inch nylon looped lanyard attached to the rear cover.

2.02 The model 140A/140B Tone Test Set uses integrated circuitry and has dual tone capability. Alternating tone at 520-1100 Hz +/- 3% or steady tone at 1010 Hz +/- 3%.

2.03 The following tests can be performed when using the 140A/140B Tone Test Set.

1. Tracing Cable Pairs.
2. Locate wire or cables in walls when used with either the Sperry 150SP, 250SSP or 400NR inductive probes.
3. Provide talk battery on dead pairs.
4. Checks for shorts, crosses and grounds.
5. Continuity testing.
6. Checks for A/C on the line.
7. Line condition identification
  - A. Clear Line
  - B. Busy Line
  - C. Ringing Line
8. Positive Line Verification.

2.04 The 140A/140B Tone Test Set can be used on solid state circuits as no DC voltage or high AC voltage is emitted out on the line in the tone position.

Note: When the 140A/140B Tone Test Set is used in the tone position, NO AUDIBLE TONE WILL BE HEARD.

You must use one of the following probes to hear tone:

1. 150SP Stationman Probe with a Linemans Test Set ("Butt Set").
2. 250SSP Stationman Speaker Probe.

2.05 Before using the 140A/140B Tone Test Set check to make sure the battery is good. This can be accomplished by putting the switch in the continuity position and touching the two clips together. The LED battery will light up green if the battery is good.

### 3. POLARITY TEST FUNCTION

- 3.01 Off Position of the function switch. In the OFF POSITION of the function switch, the 140A/ 140B Tone Test Set checks the polarity and the connection of a telephone line.
- 3.02 When the RED test lead is connected to the Ring side of the circuit and the BLACK test lead is connected to the Tip side the LED will light up GREEN showing normal polarity. If the leads are reversed, the LED will light up RED showing reverse polarity.
- 3.03 Similarly, when the modular plug is connected to a modular telephone jack, GREEN LED indicates Normal polarity and RED indicates Reverse polarity.
- 3.04 The LED will light up YELLOW if there is A/C Voltage on the line.
- 3.05 The 140B in the OFF position may also be used to detect ringing voltage on the line. When ringing voltage is present, the LED will show a flashing YELLOW light.

### 4. CONTINUITY TEST FUNCTIONS

- 4.01 In the CONT position of the function switch, the 140A/ 140B Tone Test Set can be used to check for continuity of a telephone line or other circuit.
- 4.02 When the clip leads are connected to the circuit, the LED will show GREEN if there is continuity through the circuit.
- 4.03 The brightness of the LED indicates about how much resistance is in the circuit. Zero resistance a short circuit, results in the greatest brightness. There will be a noticeable light output even for circuit resistance as much as ten thousand ohms.
- 4.04 The model 140A/ 140B may also be used in the CONT position to supply talk power to a telephone line. It will provide about 2.5 volts to a six hundred ohm power line.

### 5. TONE GENERATOR FUNCTION

- 5.01 In the TONE position of the function switch, the 140A/ 140B Tone Test Set serves as a tone generator to inject a signal into the telephone line which may be used for pair tracing.
- 5.02 Two different tones, a steady tone or an alternating tone may be selected by the small slide switch on the printed circuit board. Slide switch is accessible by removing the back cover.
- 5.03 In the steady position, (switch to the right), a steady tone of 1010 Hz +/- 3% is generated.
- 5.04 In the alternating position (switch to the left), a 520 Hz - 1010 Hz +/- 3% alternating tone is generated. The switching rate is 2 cycles per second.

### 6. BATTERY REPLACEMENT

A standard 9V battery may be used. The battery may be easily replaced by unscrewing the captive screw on the back cover.

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