



## Leviton Manufacturing Co., Inc.

Telcom Division

2222 - 222nd Street SE, Bothell, WA 98021-4422

Tel. No. (206) 486-2222 • Fax No. (206) 483-5270

### **INSTRUCTIONS LEVITON MODEL 49561 SPEAKER PROBE. FOR USE WITH LEVITON MODEL 49560 TONE TEST SET.**

**WARNING! HAZARD OF ELECTRIC SHOCK. NOT INTENDED FOR USE ON ENERGIZED WIRING CIRCUITS.** To avoid electric shock, disconnect all sources of electric current before testing. If you are unfamiliar with electrical wiring, consult a qualified electrician or other professional. Check local codes or other requirements before working on electrical or communications wiring circuits.

Power is provided to the 49561 Speaker Probe by a NEDA type 1604 9-Volt battery or equivalent, such as Eveready® No. 216 or RCA VS323. An alkaline type 9-Volt battery should be used if the Speaker Probe is to be used below 0° F. NOTE: Battery is included.

#### **BATTERY REPLACEMENT**

Using a 3/16" blade screwdriver, remove the battery door hold-down screw and lift off the battery door. Remove the battery from the housing and connect the new battery. Insert the battery, bottom end first, into the probe handle. Note the positive and negative designations when installing the battery. Re-install the battery door. If the probe does not work, check to see if the battery is installed backwards. This condition will not damage the probe.

#### **STONE SOURCE**

The Speaker Probe requires a signal to be traced. The Leviton Model 49560 Tone Test Set is an excellent choice for a tone source. An ideal tone source is typically in the range of 500 Hz to 1,000 Hz and is applied to the circuit to be traced. Performance of the test probe is better with a modulated tone. Connect the tone source to a metallic circuit, either across a cable pair or split-cable pairs. Connecting one side of the tone source to a common ground can dissipate the signal, causing conductor identification difficulty.

#### **OPERATION**

The Model 49561 Speaker Probe can be used with or without a lineman's test set (or "butt set"). Signals from the wires being tested can be heard on the built-in speaker. In a noisy environment, or if preferred, leads from the lineman's test set can be connected to the "ears" of the probe, and used as an auxiliary speaker. (See Speaker Probe Operation Check, Item 3)

Installation and repair personnel with a test probe can accomplish the following:

- a) Identify individual pairs in outside plant cables at terminals, closures, pedestals, etc.
- b) Identify station wiring, cables, or key equipment in closets, distribution terminals, etc.
- c) Identify drop wires or buried service wires at terminals and pedestals.
- d) Locate prewiring after wall covering is installed.
- e) Locate opens in wires.

**NOTE:** When testing communications circuits, disconnect the conductors under test from the central office line and the customer's station equipment whenever possible. This will prevent C.O. equipment and customer interference during testing. Failure to do the above can reduce the volume of the tone being traced.

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## **SPEAKER PROBE OPERATION CHECK**

Before using the Speaker Probe, check it for proper operation.

- 1) Ensure that a battery is properly installed.
- 2) The condition of the test probe can be determined by sliding the switch into the "on" position and holding it near a source of induced noise such as fluorescent lamps, the leads of an active tone test set, motors, dial tone, etc. As the probe approaches the signal source, the sound should be heard through the speaker. **CAUTION:** The test probe need only be held near a noise source to check operation.

**WARNING! HAZARD OF ELECTRIC SHOCK.** To avoid electric shock, never touch any part of the probe to exposed power sources such as electrical outlets or live electrical wiring. Never attempt repair, installation, or modification of telephone equipment or wiring systems if you wear an electronic heart regulation device. If you are unfamiliar with telephone wiring, consult a qualified technician. For more information, refer to Leviton's Telephone Wiring System Troubleshooting Guide.

- 3) To test operation with a lineman's test set, connect one of the lineman's test telephone set spring clips to either double contact tab, set the hand set test telephone set switch to the TALK position, and place receiver to ear. Connect the other hand test telephone set spring clip to the other double contact tab to the test probe (needle points of the spring clips should be seated in the holes of the contact tabs.) A battery click should be heard in the hand test telephone set switch in the TALK position, it also functions in the MONITOR position but at a reduced volume. At times, this reduced volume may make it easier to identify the proper cable pair.

At any time the probe is not in use, remove the hand test telephone set spring clips from the split contact tabs to prevent any unnecessary battery drain.

**CAUTION: NEVER CONNECT THE "EARS" OF THE SPEAKER PROBE TO ANY VOLTAGE SOURCE – THE PROBE WILL BE DAMAGED!**

## **IDENTIFYING WIRING OR CABLING**

With the tone connected, identify a specific wire pair from among a large number of pairs by inserting the test probe into groups of wires until tone is heard. In multi-binder cables, insert the test probe into the groups of wires comprising the binder group until the tone is heard.

Once generally located, separate the wires and touch the individual conductors with the probe tip until tone is distinctly heard, indicating the conductors being tested.

As a final test, place the probe tip parallel to and against the conductors being identified. Tone should be heard, indicating the conductors under test. Shorting the two conductors with the probe tip (between terminal screws or clips, or against bare wire) will cut-off or greatly reduce the tone being heard, verifying the pair.

## **LOCATING OPENS**

Locate opens with the test probe in a manner similar to identifying conductor pairs. With the tone applied and the conductor pair identified, move the test probe along the conductors until a definite lessening of tone is heard, which indicates that the open has been passed.

If only one conductor of a pair is believed open, a slight drop in tone volume is an indication that the open has been passed and the tone may carry past the open on the good conductor.