



THE EASTERN SPECIALTY COMPANY

# SERVICE GROUND TEST SET

CAT. 900



## USE

This device has been designed to check the condition of the ground connection on a secondary service. If for any reason the ground connection has a resistance, this can be immediately detected by the Test Set.

## SPECIFICATIONS

- **Size:** 6.5" x 4.125" x 2.625"
- **Weight:** 1.375 lbs.

## ACCESSORIES

- Carrying Case, Catalog No. 901

## FUNCTIONALITY

The instrument consists essentially of a voltmeter which can be shunted by a resistance of 60 ohms. The voltmeter is of the suppressed zero type with a double range, from 65 to 130 or from 130 to 260, and can be used for checking service voltage independently of the ground test.

When making the ground test, connect one lead to a live 120V leg of the service and the other lead to the ground connection. Depress the range button marked "130 V." The voltmeter will indicate the prevailing voltage. Then depress the button marked "Ground Test." Two amperes will now flow through the shunt resistor and the ground return. If the resistance of the ground is zero, then there should be no change in the reading of the voltmeter. But if the ground connection has measurable resistance, then part of the IR drop will be across the ground, leaving less across the shunt resistor, and the reading of the voltmeter will drop.

The suppressed zero magnifies the visible effect of the voltage drop and also facilitates reading of the actual voltage on a small meter of this type. Scale divisions are in increments of two volts in terms of the low range, four volts on the high range. To assist in making a rapid check of the condition of the ground, the voltmeter scale is divided into colored sectors as follows:

- Red 65 to 86 Volts
- Yellow 86 to 106 Volts
- Green 106 to 130 Volts

The 86 and 106 volt points correspond, respectively, to ground resistance of 24 and 8 ohms. In addition to checking service grounds, the Test Set can be used to check the condition of potential transformers on transformer rated metering installations. The current drain at 120 volts is 2 amperes, which will place a burden of 240 voltamperes on the secondary of the potential transformer. Any excessive deflection of the voltmeter will then indicate a condition requiring further investigation.

