



## Operating Principle

The Model 275A measures resistance, using a bridge principle, between its front panel banana jack and its conductive pushbutton switch. In normal operation the jack is grounded via the cord provided and the operator presses the button with one finger to perform the test. The tested circuit includes: contact resistance between the operator's finger and the pushbutton, the operator's body resistance, skin contact resistance between the operator and the wrist strap and the resistor in the wrist strapcord. The integrity of the "hard" connections (wires, snaps, plugs, etc.) is also tested.

A continuous green light means the grounding system is **SAFE** (total resistance between 0.5 megohms and 10 or 100 megohms - whichever is selected). A continuous red light and audible warning means **HAZARD**-that the total resistance is less than 0.5 megohms and the operator is at risk of electrical shock. This condition should be corrected.

A continuous yellow light and audible warning means that the resistance of the circuit is greater than 10 megohms or 100 megohms (whichever is selected), implying an **OPEN** due to broken leads, poor electrical contact or improper wearing of the wriststrap by the operator thus posing the risk of static damage to sensitive components. This condition should be corrected.

## Features:

- **CONVENIENT** - Pressing a single button turn instrument on and performs test.
- **SIMPLE** - No adjustments necessary.
- **SAFE** - Powered by common 9-volt battery.
- **ACCURATE** - Hazard and Open conditions indicated within 10% of nominal values
- **AFFORDABLE** - Low Price permits use at each workstation.
- **TWO RANGES** - Meet most requirements

## Description:

This compact unit with easy push-button testing will indicate if wrist straps and work area grounding systems are within acceptable limits to control damage to sensitive components due to electrostatic discharges.

The Model 275A features three LED's to indicate a "Hazard, Safe or Open" condition of the wrist strap or work area grounding system being tested. Simply by pushing the button on the Model 275A, the operator can check the wristband, skin contact of the wristband, coil cord, conductive work surfaces, heel straps or any series combination of these items to a maximum of 10 megohms or 100 megohms. The unit will also indicate when potential operator hazards are present due to resistance less than 0.5 megohms in the grounding system.

The unit is supplied with a ground cord and an optional leather carrying case is available.

### **Specifications:**

#### **Indicators, LED:**

<b>RED Hazard</b>	Resistance below 500k $\Omega$
<b>GREEN Safe</b>	Resistance between 500k $\Omega$ and 10 M $\Omega$ or 100M $\Omega$ (selectable)
<b>YELLOW Open</b>	Resistance above 10M $\Omega$ or 100M $\Omega$ (selectable)
<b>Audible alarm</b>	Sounds for Open or Hazard condition
<b>Tolerance</b>	+10% of value
<b>Battery</b>	9 volt, Eveready 216 or NEDA #1604 alkaline
<b>Size</b>	3.8" x 2.4" x 1.1"
<b>Weight</b>	4 oz
<b>Accessories:</b>	Manual, connecting cable, 9V battery

### **Other Tests:**

**Wrist strap** - The wrist strap and its cord may be tested by plugging the wrist strap cord into the red jack on Model 275A and pressing the TEST button with a conductive portion of the wrist strap.

**Conductive table mat** - To test a conductive table mat whose acceptable total resistance to ground should fall within the 0.5 megohm to 10 megohm or 0.5 megohm to 100 megohms (whichever is selected) range, the operator should NOT wear a wrist strap. With the Model 275A's cord connected to ground, place one hand flat on the mat and press the TEST button with the other.

**Conductive floor mat** - Test as for conductive table mat OR wear conductive footwear while standing on the mat. A wrist strap should NOT be worn for this test.

### **Performance Verification:**

There are no internal adjustments in this instrument. Accuracy may be verified through the use of variable resistors (pot + fixed resistor) of 0.5 megohm, 10 megohms, and 100 megohms,  $\pm$  (approximately) 20%. Connect between the red jack and the pushbutton. With the button pressed, adjust the pot to cross the desired trip-point then remove and measure the total resistance.

### **Battery Replacement:**

The battery should be considered "dead" when its open circuit voltage falls below 7.2 volts. Generally, the lights will be too dim to be useful.

### **Calibration:**

Monroe Electronics instruments are factory-calibrated prior to shipment. Recalibration should be performed annually, or more frequently if specified by contract or company policy. Your instrument should also be recalibrated any time it has been repaired or tampered with. We are happy to recalibrate your instrument for you at a reasonable cost, or provide information and procedures on calibration upon request.

### **Warranty:**

Monroe Electronics, Inc., warrants that each instrument and sub-assembly manufactured by them shall be free from defects in material and workmanship for a period of two years after shipment from the factory. This warranty is applicable to the original purchaser only.

### **The finest ESD instrumentation and support:**

For more than 50 years - ever since we invented the feedback--nulled electrostatic voltmeter, Monroe has been the technology and quality leader in electrostatic detection and measurement instrumentation. Today we offer the world's most complete array of fieldmeters, voltmeters and resistivity meters. Our customers include the leading makers of photocopiers and laser printers to converters and microelectronics worldwide.

We know you need quality support as well as quality products. We pride ourselves on providing our customers with the most knowledgeable applications and installation support - as well as superior customer service.

### **How can we help?**

Contact your Monroe Electronics representative for price and delivery information on this and other ME products, to schedule a no-obligation demonstration at your convenience. For the name of your nearest dealer, or for technical or applications assistance, contact Monroe Electronics directly at the address and numbers below.