

Model 152-1

Resistance Meter



The Trek Model 152-1 Surface/Volume Resistance Meter is designed to precisely measure surface or volume resistance on a wide variety of conductive, dissipative, and insulative materials. The Model 152-1 employs a measurement technique which conforms to ANSI/ESD Association standards for measuring surface resistance, resistivity, and volume resistance including STM2.1 for garments, S4.1 for work surfaces, S7.1 for flooring, STM9.1 for footwear, STM11.11 for planar materials, STM11.12 for volume resistance (IEC 61340-2-3), STM12.1 for seating, STM11.13 for two point resistance measurement and STM97.1 for floor materials/footwear. A variety of measuring probe electrode configurations are available and are purchased separately.

The Model 152-1 features exceptional measurement accuracy and wide measurement ranges of 10^3 to $10^{13}\Omega$ using point-to-point probes or the two-point resistance probe for small surface area measurements. When used with the exclusive 152P-CR-1 concentric ring probe that contains a pre-amplifier, the usual noise, stray pickup and long settling time associated with other concentric ring probe designs is eliminated, thus providing ease of operation even at very high resistance values.

The electrode test voltage for the measurement probe(s) is switch selectable for 10 V or 100 V operation to conform to the individual requirements of the ANSI/ESD Association standards and testing conditions. The selected test voltage is indicated on the LCD display. The light-weight portable unit is operable via batteries or an AC line power source with a battery eliminator.



Resistance Probes



Model 152BP-5P Point-to-Point Probes

Model 152P-2P Two Point Resistance Probe

- Concentric ring probe pre-amplifier eliminates interference and enables reliable operation at high resistance values
- Exceptional accuracy, stability, & repeatability
- Complies with ANSI/ESD Association standards
- Wide measurement ranges of 10^3 to $10^{13}\Omega$
- Elastomer electrodes for excellent surface contact
- Battery or AC line operated with automatic shutoff
- Light-weight and portable
- Variety of probe types available
- Optional Accessories include Walking Test Adapter and Test Plate Set
-  compliant



Measurement and Power Solutions™

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Model 152-1 Resistance Meter (cont.)

Performance

Measurement Range

10^3 to 10^{13} Ω .

Measurement Accuracy (of reading) at 25 °C \pm 10 °C and 20% to 70% RH:

Point-to-point probes [152BP-5P]

10^3 to 10^{12} Ω range, \pm 5%,
 10^{13} Ω range, \pm 8%.

Concentric Ring Probe [152P-CR-1] and Two-point resistance probe [152P-2P]

10^3 to 10^{11} Ω range, \pm 5%,
 10^{12} to 10^{13} Ω range, \pm 10%.

Probe Electrode Test Voltage

User selectable: 10 V or 100 V, \pm 2%.

Test Current Limit

Limited to less than 13 mA in the 10 V range and less than 1.7 mA in the 100 V range.

Features

LCD Display

Three digits plus two digit exponent (scientific notation).

Low Battery Indicator

LCD message for low battery.

Test Voltage Range Indicator

Indicates the test voltage selected, either 10 V or 100 V.

Automatic Shutoff

If the unit is left idle for longer than 10 minutes, the unit automatically turns off.

Test Probes/Accessories

Model 152BP-5P Test Probes

2.27 kg (5 lb) (set of two probes)
Available for performing resistance measurements including ANSI/ESDSTM4.1 standards (point-to-point or resistance to ground measurement)

Probes/Accessories (cont.)

Model 152P-2P Two Point

Resistance Probe

Performs measurements on surface areas too small to be measured with conventional probes.

Model 152P-CR-1 Surface/Volume Concentric Ring Probe*

Measures surface and volume resistance of materials as per IEC or ESDA standards. A three (3) position switch on the probe selects either SURFACE resistance or VOLUME resistance measurements with either a GUARDED or UNGUARDED outer electrode. Uses an exclusive built-in pre-amplifier design.

Resistance Probes, 3mm x 25.4mm

Set of two miniature probes [Model 152AP-3mm x 25.4mm Resistance Probe (pair)] can be handheld and randomly positioned.

Test Plate Set

(consists of two separate plates)

The use of these plates is described in the ESD STM11.12 (IEC 61340-2-3) standard.

Conductive Plate

(5" x 5"/127 mm x 127 mm) A stainless steel conductive plate (with a mini banana plug connector).

Insulative Plate

(5.4" x 5.4"/ 137 mm x 137 mm) Acts as an insulative surface.

Walking Test Adapter Kit

The Walking Test Adapter allows analysis of resistance levels on the human body [STM 97.1].

*The Model 152-CR-1 will operate with the previous Model 152 resistivity meter in "surface" mode, just as the Model 152-CR probe did. The 152-CR will operate with the Model 152-1 Resistance Meter with the measurement being in "ohms," not "ohms/sq."

General

Battery Operation

Two (2) 9 Volt batteries (NEDA 1604 Alkaline, or equivalent) provide 6 hours of power for portable operation.

AC Line Operation

The use of a AC battery eliminator allows for AC line operation. The eliminator output connector is a female type 2.1 mm DC power plug.

ANSI/ESD Association Standards

The Model 152-1 conforms to the following IEC and ANSI/ESD Association Standards for measuring surface resistance and surface resistivity:

IEC 61340-2-3 Electrostatics Part 2 and 3

STM2.1 Garments.

S4.1 Work surfaces - resistive characterization.

S7.1 Flooring materials.

STM9.1 Footwear resistive characteristics.

STM11.11 Surface resistance measurements of static dissipative planar materials.

STM11.12 Measurements for volume resistance (IEC 61340-2-3).

STM12.1 Seating - resistive measurements.

STM11.13 Two-point resistance measurement.

STM97.1 Floor materials / footwear - resistance measurements in combination with active user.

Instrument Dimensions

180 mm H x 100 mm W x 44 mm D
(7" H x 4" W x 1.75" D).

Instrument Weight

Approximately 0.5 kg (1 lb) with batteries.

<i>Supplied Accessories</i>	• Operator's Manual [23426] • Ground Cord [N9044]
<i>Optional Accessories</i>	• Battery Eliminator/Charger (115 V AC) [L5111] • Test Plate Set [17530] • Universal AC Adapter Kit (90 to 265 V AC) [1K010] • Carrying Case [43378] • Test Probes purchased separately • Walking Adapter Kit [1K039]

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