

# Trek Model 152-1

## Surface/Volume 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. It features exceptional measurement accuracy and wide measurement ranges. When used with Trek's uniquely-designed 152P-CR-1 concentric ring probe (shown to left), the instrument provides consistent ease of operation even at very high resistance values. The Model 152-1 is lightweight, portable and operable via batteries or an AC line power source with battery eliminator.

### Key Specifications

- Measurement Range:  $10^3$  to  $10^{13} \Omega$
- Measurement Accuracy (of reading) at  $25^\circ \pm 10^\circ \text{C}$  and 20% to 70% RH:
  - Point to Point Probe (152BP-5P):  $10^3$  to  $10^{12} \Omega$  range,  $\pm 5\%$   
 $10^{13} \Omega$  range,  $\pm 8\%$
  - Concentric Ring Probe (152-CR-1):  $10^3$  to  $10^{13} \Omega$  range,  $\pm 5\%$
  - Two Point Resistance Probe (152P-2P):  $10^3$  to  $10^{13} \Omega$  range,  $\pm 10\%$
- Probe Electrode Test Voltage: User selectable, 10 V or 100 V  $\pm 2\%$
- Test Limit Current: Limited to less than 13 mA in 10 V range and 1.7 mA in 100 V range

### Typical Applications Include

- Measuring surface or volume resistance on materials
  - Conductive, dissipative, insulative
- Measuring in accordance with ANSI/ESD Standards for
  - Garments (STM2.1)
  - Work surfaces (S4.1)
  - Flooring (S7.1)
  - Footwear (STM9.1)
  - Planar materials (STM11.11)
  - Volume resistance (STM11.12 and IEC 61340-2-3)
  - Seating (STM12.1)
  - Two point resistance measurements (STM11.13)
  - Floor materials/footwear (STM97.1)



### Features and Benefit

- Complies to ANSI/ESD Association Standards
- Concentric ring probe pre-amplifier eliminates interference and enables reliable operation at high resistance values
- Exceptional accuracy, stability and repeatability
- Wide measurement range ( $10^3$  to  $10^{13} \Omega$ )
- Elastomer electrodes for excellent surface contact
- Optional accessories include a Walking Test Adapter and Test Plate set
- NIST-traceable Certificate of Calibration provided with each unit
- CE compliant



## Model 152-1 Specifications

### Performance

Resistance Measurement Range	$10^3$ to $10^{13} \Omega$
Resistivity	Resistance X Factor 10 = Resistivity
Measurement Accuracy (of the reading) at 25 °C and 20% to 70% RH	<p><i>Point-to-point 5 lb probe (152BP-5P)</i>  <math>10^3</math> to <math>10^{12} \Omega</math> range, <math>\pm 5\%</math>  <math>10^{13} \Omega</math> range, <math>\pm 8\%</math></p> <p><i>Concentric Ring Probe (152P-CR)</i>  <math>10^3</math> to <math>10^{12} \Omega</math> range, <math>\pm 5\%</math>  <math>10^{13} \Omega</math> range, <math>\pm 8\%</math></p> <p><i>Two point resistance probe (152P-2P)</i>  <math>10^3</math> to <math>10^{11} \Omega</math> range, <math>\pm 5\%</math>  <math>10^{12}</math> to <math>10^{13} \Omega</math> range, <math>\pm 10\%</math></p>
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
ANSI / ESD Association Standards	The Model 152-1 conforms to ANSI / ESD Association Standards for measuring surface resistance and surface resistivity. Please refer to the <i>Applications</i> section on page 1 of this data sheet for more information

### Test Probes/Accessories

Model 152BP-5P Test Probes	Set of 2 (2.27 kg / 5 lb). Available for performing resistance measurements including ANSI/ESD STM 4.1 standards (point-to-point or resistance to ground measurement)
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 distance or VOLUME resistance measurements with either a GUARDED or UNGUARDED outer electrode. Uses an exclusive built-in pre-amplifier design.
Model 152AP-Resistance Probes (miniature, set of 2)	3mm X 25.4mm. Can be handheld or randomly positioned

### Test Probes / Accessories (cont.)

Test Plate Set (consists of two separate plates)	The use of these plates is described in the ESD STM 11.12 (IEC 61340-2-3) standard
<i>Conductive Plate</i>	(5" x 5" / 127 mm x 127 mm) A stainless steel conductive plate with a mini banana plug
<i>Insulative Plate</i>	(5.4" x 5.4" / 137 mm x 137 mm) Acts as an insulative surface
Walking Test Adapter Kit	The Walking Test Adapter allows the analysis of resistance levels on the human body (STM 97.1)

### Mechanical

Dimensions	180 mm H x 100 mm W x 44 mm D (7" H x 4" W x 1.75" D)
Weight	Approximately 0.5 kg (1 lb.) with battery

### Operating Conditions

Temperature	15°C to 35°C (59 °F to 95 °F)
Relative Humidity	5% to 80%, non-condensing
Altitude	To 2000 m (6561.68 ft.)

### Power Requirements

Battery Operation	Two (2) 9-Volt batteries (NEDA 1605 Alkaline, or equivalent) provide approx 6 hrs of power
AC Line Operation	The use of an AC battery eliminator allows for AC line operation. The eliminator output connector is a female type 2.1 mm, DC power plug

### Included Accessories

Operator's Manual	PN: 23426
Ground Cord	PN: N9044

### Optional Accessories

Test Plate Set	PN: 17530
Universal Adapter (90 V to 260 V)	PN: F5054R
Carrying Case	PN: 43378
Walking Test Adapter Kit	Model 1K039

### Notes

\*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."

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