TREK 152-1

Resistance meter designed to precisely measure surface or volume resistance on a wide variety of conductive, dissipative, and insulative materals.

The Trek® 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 Advanced Energy's uniquely-designed 152P-CR-1 concentric ring probe, the instrument provides consistent ease of operation even at very high resistance values. The Trek 152-1 is lightweight, portable and operable via batteries or an AC line power source with battery eliminator.

PRODUCT HIGHLIGHTS

- 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} Ω)
- 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

TYPICAL APPLICATIONS

- 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)]

AT A GLANCE

Measurement Range

10^3 to 10^{13} Ω

Measurement Accuracy

Concentric Ring Probe(152P-CR)
10 to 10^{12}Ω range , ±5%
10^{14} Ω range, ±8%

Point to Point Probe(152AP-5P)
10^3 to 10^{13} Ω range, ±5%
10^3 to 10^{13} Ω range, ±5%

Two Point Resistance Probe (152P-2P)
10^3 to 10^{11} Ω range, ±5%
10^{12} to 10^{13} Ω range, ±10%

Probe Electrode Test Voltage

User selectable, 10 V or 100 V ±2%

Test Limit Current

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

TREK SURFACE/VOLUME RESISTANCE METER 152-1

TECHNICAL DATA

Performance Specifications		
Resistance Measurement Range	10^3 to 10^{13} Ω	
Resistivity	Resistance X Factor 10 = Resistivity	
Measurement Accuracy (of the reading) at 25°C and 20% to 70% RH	Point-to-point 5 lb probe (152AP-5P)	10^3 to 10^{12} Ω range ±5%
		10^{13} Ω range, ±8%
	Concentric ring probe (152P-CR)	10^4 to 10^{13} Ω range, ±5%
		10^{14} Ω range, ±8%
	Two point resistance probe (152P-2P)	10^3 to 10^{11} Ω range, ±5% 10^{12} to 10^{13} Ω range, ±10%
Probe Electrode Test Voltage	User selectable 10 V or 100 V, ±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	

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

Electrical Specifications	
Battery Operation	Two 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

Environmental Specifications	
Temperature	15 to 35°C (59 to 95°F)
Relative Humidity	5 to 80%, noncondensing
Altitude	To 2000 m (6561.68 ft)

Test Probes/Accessories		
Trek 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)	
Trek 152P-2P Two-Point Resistance Probe	Performs measurements on surface areas too small to be measured with conventional probes	
Trek 152P-CR-1 Surface/ Volume Concentric Ring Probe[1]	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.	
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	
	Conductive Plate	127 x 127 mm (5 x5 in) A stainless steel conductive plate with a mini banana plug
	Insulative Plate	137 x 137 mm (5.4 x5.4 in) 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)	

[1] The Trek 152-CR-1 will operate with the previous Trek 152 resistivity meter in “surface” mode, just as the Trek152-CR probe did. The 152-CR will operate with the Trek152-1 Resistance Meter with the measurement being in “ohms,” not “ohms/sq.”

TECHNICAL DATA (CONTINUED)

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 Trek 152-1 conforms to ANSI / ESD Association Standards for measuring surface resistance and surface resistivity. Please refer to the Applications section on page 1 of this data sheet for more information

REFERENCE NUMBERS

Included Accessories	
TK-23426R	Operator's Manual
TK-N9044R	Ground Cord
TK-F5054R	Universal AC Adapter

Optional Accessories	
TK-17530R	Test Plate Set
TK-43378R	Carrying Case
TK-1K039R	Walking Test Adapter Kit

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

AE's power solutions enable customer innovation in complex semiconductor and industrial thin film plasma manufacturing processes, demanding high and low voltage applications, and temperature-critical thermal processes.

With deep applications know-how and responsive service and support across the globe, AE builds collaborative partnerships to meet rapid technological developments, propel growth for its customers and power the future of technology.

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