



TREK 520 SERIES

Portable electrostatic voltmeter for accurate, non-contacting measurements of electrostatic surface voltage for ESD applications in ionized or non-ionized environments.



The Trek® 520 (± 2 kV) and Trek 523 (± 20 kV) hand held electrostatic voltmeters that utilize a measurement technique that overcomes the disadvantage of the typical hand held field meter by providing surface voltage measurements which are essentially independent of the sensor probe-to-measured surface spacing. The Trek 520 is available in two versions. The 520-1 has a digital meter to display the measured voltage. The 520-2 has an analog output monitor in addition to the digital display. This analog output monitor can be used to record the measured voltage or to view it on an oscilloscope.

PRODUCT HIGHLIGHTS

- Accurately measures surface voltage at a wide range of spacings
- No need to maintain a fixed spacing
- Chopper stabilized for drift-free operation in ionized environments
- NIST-traceable Certificate of Calibration provided with each unit

APPLICATIONS

- Measurement of electrostatic surface charge build up
- Manufacturing processes
- Electronic assembly testing
- Semiconductor material testing
- Dissipative material testing
- Automotive electronics testing
- ESD Auditing and troubleshooting

AT A GLANCE

Measurement Range

Trek 520: 0 to ± 2 kVDC
Trek 523: 0 to ± 20 kVDC

Measurement Accuracy

Better than $\pm 5\%$ of full scale over the entire recommended probe-to-surface separation range

Speed of Response

Trek 520: Less than 25 ms for a 0 to ± 2 kV input step change

Sampling Rate

Trek 523: 2.5 readings per second

TREK ELECTROSTATIC VOLTMETER 520

TECHNICAL DATA

Performance Specifications		
	Trek 520 ¹	Trek 523
Measurement Range	0 to ±2 kVDC	0 to ±20 kVDC
Ratio	1/1000th of the measured voltage	-
Speed of Response	Less than 25 ms for an input step change of 2 kV (10% to 90%)	-
Output Impedance	47 Ω	-
Measurement Accuracy	<div><p>Model 520 Compared to Typical Fieldmeter Displayed Voltage vs. Probe-to-Surface Separation</p><p>Probe-to Surface Separation (mm)</p><p>----- Surface Voltage — 520 Performance — Typical Fieldmeter</p></div>	<div><p>Model 523 Compared to Typical Fieldmeter Displayed Voltage vs. Probe-to-Surface Separation</p><p>Probe-to Surface Separation (mm)</p><p>----- Surface Voltage — 523 Performance — Typical Fieldmeter</p></div>

Mechanical Specifications		
	Trek 520	Trek 523
Dimensions (H x W x D)	31 x 59 x 173 mm (1.2 x 2.4 x 6.8 in)	31 x 59 x 183 mm (1.2 x 2.4 x 7.3 in)
Weight	0.2 kg (0.44 lb) with battery	0.2 kg (0.44 lb) with battery

Features		
	Trek 520	Trek 523
Power On/Off	Push-button switch	
Stability	Drift with Time: Less than 600 ppm/hour, noncumulative	
	Drift with Temperature: Less than 600 ppm/°C	
Operating Time	Approximately 8 hours with a full battery	
Hold	A momentary push-button will command the voltage display to hold the value displayed until the switch is released	
Voltage Display Range	3 ½ digit LED display	
Range	0 to ±1999 V	0 to ±19.99 kV
Resolution	1 V	10 V
Zero Offset	Less than ±1 count	Less than ±4 counts
Sampling Rate	2.5 readings per second	

Electrical Specifications		
Power Requirements	One 9 V NEDA 1604 battery, IEC 6R61 battery or equivalent	
Ground Receptacle	Snap-on connector	

Environmental Specifications		
Temperature	15 to 35°C (59 to 95°F)	
Relative Humidity	To 85%, noncondensing	

¹ Trek 520-2 contains an analog monitor output (1.3 mm jack) which provides a low-voltage replica of the measured voltage

REFERENCE NUMBERS

Included Accessories	
23100	Operator's Manual (Trek 520)
23099	Operator's Manual (Trek 523)
N9079	Ground Reference Cable Assembly ¹
F1003R	9 V Battery

Optional Accessories	
43469	Carrying Case

¹ Always use the original grounding cord without any safety resistor. Failure to do so will lead to measurement errors.



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.

PRECISION | POWER | PERFORMANCE



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