

TREK 344

Precision electrostatic voltmeter for non-contacting surface voltage measurements in the range of 0 to ± 2 kV DC or peak AC.



The Trek® 344 employs a field-nulling technique for non-contacting voltage measurement that achieves DC stability and high accuracy even if the probe-to-surface spacing changes. This permits measurements of either stationary or moving surfaces without the need to establish fixed spacing to maintain accuracy.

The Trek 344 patented probe design eliminates the need for close tolerance components. This significantly improves noise and drift performance, both in the presence of contaminating particulates and under conditions of high humidity and wide temperature ranges.

A precision voltage monitor provides a low-voltage replica of the measured electrostatic potential for monitoring purposes, or for use as a feedback signal in a closed-loop system.

PRODUCT HIGHLIGHTS

- Superb noise and drift performance
- Variety of probes available for different installation requirements
- Precision voltage monitor output
- Easy-to-read LED display
- Operated on a bench top or with optional hardware, a standard 19 in rack. The rack adapter allows two Trek 344 units to mount together
- Digital enable feature provides a connection for a remote device to turn on and off the high voltage of the instrument. This makes the 344 suitable for automated or computer-controlled systems
- NIST-traceable Certificate of Calibration provided with each unit

AT A GLANCE

Measurement Range

0 to ± 2 kVDC or peak AC

Measurement Accuracy

Better than $\pm 0.05\%$ of full scale

Speed of Response

Less than 3 ms for a 1 kV step

TECHNICAL DATA

Performance Specifications		
Measurement Range	0 to ±2 kVDC or peak AC	
Accuracy	Voltage Monitor: Better than ±0.05% of full scale.	Voltage Display: Better than ±0.1% of full scale, referred to the voltage monitor.
Speed of Response	Less than 3 ms for a 1 kV step change (10 to 90%)	
Stability	Drift with Time: Less than 100 ppm/hour, noncumulative	Drift with Temperature: Less than 100 ppm/°C
Voltage Monitor		
Output	A buffered output provides a low-voltage replica of the measured voltage	
Scale	1/100th of the measured voltage	
Output Noise	Less than 2 mV rms (measured with the true rms feature of the Hewlett Packard Model 34401A digital multimeter)	
Output Impedance	Less than 0.1 Ω	
Voltage Display		
Voltage Display	3 ½ digit LED display	
Range	0 to ±1999 V	
Resolution	1 V	
Zero Offset	±1 count	
Mechanical Specifications		
Dimensions (H x W x D)	64 x 220 x 270 mm (2.5 x 8.7 x 10.6 in)	
Weight	2 kg (4.4 lb)	
Voltage Monitor Output Connector	BNC connector	
Ground Receptacle	Banana jack	
AC Line Cord Receptacle	Standard three-prong line cord receptacle	
Operation Conditions		
Temperature	0 to 40°C (32 to 104°F)	
Relative Humidity	To 90%, noncondensing	
Altitude	To 2000 m (6561.68 ft)	
Electrical Specifications		
Line Supply	100, 115, or 230 VAC ±10%, 50 to 60 Hz multimeter) (specify when ordering).	
Features		
Zero Control	A ten-turn control to null offsets that may be present at the voltage monitor output when the 344 is measuring zero volts.	
Response Control	A ten-position push-button switch that adjusts the gain of the Trek 344 to optimize the AC response. The response control is normally adjusted when changing the type of probe being used or when changing the probe-to-surface separation.	
Probe-to-Surface Separation	2 mm ± 1 mm (recommended)	

¹All specifications are with a Trek 6000B-8 probe at a probe-to-surface separation of 2 mm.

REFERENCE NUMBERS

Trek 344 Electrostatic Voltmeter	
TK-13251	Trek 344 ± 2 kV Electrostatic Voltmeter (100 VAC)
TK-13007	Trek 344 ± 2 kV Electrostatic Voltmeter (115 VAC)
TK-13008	Trek 344 ± 2 kV Electrostatic Voltmeter (230 VAC)

Included Accessories	
TK-23012	Operator's Manual
TK-N5002R	Line Cord, for 100 to 115 VAC

Optional Accessories	
TK-17127	6005B-EC Probe Extension Cable (from 344 to probe)

Probes	
Standard Resolution	
TK-17053R	Trek 6000B-7C (end-viewing, round body)
TK-17054R	Trek 6000B-8 (side-viewing, round body).
TK-17046R	Trek 6000B-15C (end-viewing, square body)
TK-17047R	Trek 6000B-16 (side-viewing, square body)
High Resolution	
TK-17051R	Trek 6000B-5C (end-viewing, round body)
TK-17052	Trek 6000B-6 (side-viewing, round body).
TK-17044R	Trek 6000B-13C (end-viewing, square body)
TK-17045R	Trek 6000B-14 (side-viewing, square body)
Minature	
TK-17205R	Trek 555P-4 (end-viewing, square body)
TK-17184R	Trek 555P-1 (side-viewing, square body).
High Temperature (up to 100°C)	
TK-17287R	Trek 6300-7 (end-viewing, square body)
TK-17288R	Trek 6300-8 (side-viewing, square body).



For international contact information,
visit advancedenergy.com.

powersales@aei.com (Sales Support)
productsupport.ep@aei.com (Technical Support)
+1 888 412 7832

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 | TRUST

Specifications are subject to change without notice. Not responsible for errors or omissions. ©2025 Advanced Energy Industries, Inc. All rights reserved. Advanced Energy®, Trek®, and AE® are U.S. trademarks of Advanced Energy Industries, Inc.