

## TREK PD06078

Four-channel electrostatic voltmeter for monitoring critical operations associated with semiconductor, LCD, electronic assembly, and other processes with static charge.



The Trek® PD06078 contains four electrostatic voltmeters in a single enclosure. Each channel features a measurement range of 0 to  $\pm 10$  kV and accuracy better than 5% reading plus  $\pm 0.2\%$  of full scale over the probe to surface separation distance of 15 to 30 mm. Each channel of the Trek PD06078 utilizes a DC stable electrostatic field chopper probe which can be remotely located and easily positioned within process equipment to provide highly accurate, non-contacting, spacing independent, voltage measurements in either ionized or non-ionized environments.

### PRODUCT HIGHLIGHTS

- Four electrostatic voltmeters in a single enclosure
- Voltage output monitors and 4 to 20 mA current loop outputs provide accurate and concise measurement results for each ESVM channel and can provide additional signal interfacing to facility monitoring equipment
- Front panel LED provides visual monitoring for each channel (switch selectable)
- Two probes types available: side view probe and a 45° angle probe
- Chopper probes are DC stable with or without incident air ion flow
- Drift-free measurements
- Patented probe design significantly improves noise and drift performance, both in the presence of contaminating particulates and under conditions of high humidity and wide temperature ranges
- NIST-traceable Certificate of Calibration provided with each unit

### AT A GLANCE

#### Measurement Range

$\pm 10$  kVDC or peak AC

#### Measurement Accuracy

Better than  $\pm 5\%$  of reading,  $\pm 0.2\%$  of full scale over a probe-to-surface separation of 15 to 30 mm

#### Speed of Response

Less than 50 ms for a 1 kV step

## TREK ELECTROSTATIC VOLTMETER PD06078

### TECHNICAL DATA

The Trek PD06078 Electrostatic voltmeter provides four independent channels of accurate non-contacting measurement of electrostatic surface voltage for ESD/EOS sensitive processes in either ionized or non-ionized environments. The probes are chopper stabilized for drift-free operation.

Performance Specifications (For each individual channel)	
Measurement Range	0 to $\pm 10$ kVDC or peak AC
Accuracy	Better than $\pm 5\%$ of reading, $\pm 0.2\%$ of full scale over a probe-to-surface separation of 15 to 30 mm.
Speed of Response	Less than 50 ms for a 1 kV step.
Drift with Time	Less than $\pm 1\%$ of full scale, noncumulative.

Mechanical Specifications	
Dimensions (H x W x D)	177 x 203 x 228 mm (7 x 8 x 9 in)
Weight	3.6 kg (8 lb)
Output Connector (one for each channel)	A six position output connector (6P/4C) provides connections for the output voltage monitor, the current output, and a ground connection
Power ON/OFF	Front panel switch
Probe Connector Locations	Rear panel

Operating Conditions	
Temperature	15 to 35°C (59 to 95°F)
Relative Humidity	5 to 85%, noncondensing

Electrical Specifications	
Low Voltage Safety Compliance	IEC 61010-1:2001. Overvoltage Category: CAT I: Peripheral level outputs (less than 60 volts). Pollution Category Degree 1: Operate in environments where no pollution or only dry, nonconductive pollution occurs.

Features		
Four Position Channel Switch	Selects one of the four channels outputs for display on the DPM	
Digital Panel Meter (DPM)	3½ digit LED voltage display.	
	Range	0 to $\pm 10.00$ kV.
	Resolution	10 V
	Zero Offset	Less than or equal to $\pm 2$ counts
ZERO Control (one for each channel)	Rear panel potentiometer used to produce zero volts output when probe is coupled to a known zero voltage source	
Monitor Output (one for each channel)	Scale Factor	The voltage monitor is scaled at 1/1000th of the measured voltage for each channel
	Output Noise	Less than 10 mV rms (using the side view probe and measured using the true rms feature of the Hewlett Packard Model 34401A digital voltmeter)
	Output Impedance	47 ohms
Current Output (one for each channel)	Provides a current of 4 to 20 mA that represents measured voltages -10 kV to +10 kV.	
Ground Connections	Four banana jacks and a designated terminal on the output connector are all tied to chassis ground	

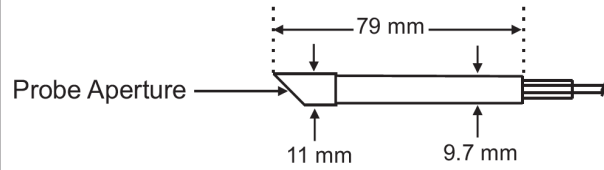
<sup>1</sup> This instrument is designed to make electrostatic voltage measurements only! For safety, this instrument should never be used to perform measurements of "hard" voltage sources or voltage sources which can deliver currents high enough to cause harmful shocks or personal injury.

PROBES<sup>1</sup>

45° Orientation (Model 542P-45D)

Aperture size of 3.8 mm (0.15 in) diameter

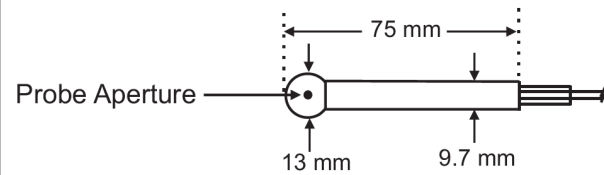
Dimensions 11 diameter x 79 mm L (0.43 diameter x 3.1 in L)



Side Orientation (Model 542P-S)

Aperture size of 4 mm (0.156 in) diameter

Dimensions 13 diameter x 75 mm L (0.51 diameter x 3 in L)



<sup>1</sup> Vacuum application probes are available.



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## 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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