

## TREK P0865

High-speed, high voltage electrostatic voltmeter for non-contacting surface voltage measurements in the range of 0 to  $\pm 10$  kVDC or peak AC.



The Trek® P0865 is a DC stable, precision electrostatic voltmeter for non-contacting surface voltage measurements in the range of 0 to  $\pm 10$  kVDC or peak AC. The Trek P0865 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.

### PRODUCT HIGHLIGHTS

- Zero control for offset nulling
- Easy-to-read LED display
- Precision voltage monitor monitor provides a low-voltage replica of the measured electrostatic voltage for external monitoring purposes, or for use as a feedback signal in a closed-loop system
- Trek 3450 probe assembly includes a sensitive electrode and preamplifier, which is driven to the same potential as the measured value to eliminate arcing there between. A three meter cable permits remote probe positioning.
- Operated on a bench top, or with optional hardware, in a standard 19-inch rack
- NIST-traceable Certificate of Calibration provided with each unit

### APPLICATIONS

- Charge accumulation monitoring of the LCD production processes
- Monitoring surface potentials in the electrostatic painting process
- Research and development in the electrophotographic process
- Measuring electrostatic potentials on polymers, rubber, fabrics, and paper

### AT A GLANCE

#### Measurement Range

0 to  $\pm 10$  kVDC or peak AC

#### Measurement Accuracy

Better than  $\pm 0.1\%$  of full scale

#### Speed of Response

Less than 200 ms for a 1 kV step change. Less than 5 ms for a 20 kV step change

#### Full Signal Bandwidth

DC to better than 50 Hz

## TECHNICAL DATA

Performance Specifications<sup>1</sup>

Measurement Range	0 to ±10 kVDC or peak AC	
Accuracy	Better than ±0.1% of full scale (as referred to the voltage monitor).	
Speed of Response	Less than 200 ms for a 1 kV step change. Less than 5 ms for a 20 kV step change. (10 to 90%)	
Full Signal Bandwidth	DC to better than 50 Hz.	
Stability	Drift with Time: Less than 100 ppm/hour, noncumulative.	Drift with Temperature: Less than 200 ppm/°C.

Voltage Monitor Output<sup>1</sup>

A BNC output provides a low-voltage replica of the measured voltage.	
Scale Factor	1/1000th of the measured voltage
Output Noise	Less than 20 mV rms <sup>2</sup>
Output Impedance	Less than 0.1 Ω.

Voltage Display<sup>1</sup>

4½ digit LED display.	
Range	0 to ±10,000 V
Resolution	1 V
Zero Offset	Less than ±2 counts, referred to the voltage monitor.
Sampling Rate	3 readings per second

Mechanical Specifications<sup>1</sup>

Dimensions (H x W x D)	134 x 432 x 432 mm (5.25 x 17 x 17 in)
Weight	15 kg (33 lb)
Voltage Monitor Connector	BNC connector
Ground Receptacle	Green binding post

Operating Conditions<sup>1</sup>

Temperature	0 to 40°C (32 to 104°F)
Relative Humidity	To 90%, noncondensing
Probe-to-Surface Separation	3 mm ±1 mm (recommended).

Electrical Specifications<sup>1</sup>

Line Supply	Factory set for one of three nominal AC line voltages: 100 V, 115 V, or 230 VAC [CE compliant], at 48 to 63 Hz (specify when ordering).
AC Line Cord Receptacle	Standard three-prong line cord receptacle with an integral fuse holder

Features<sup>1</sup>

High Voltage Ready LED	An LED indicator illuminates when the Trek P0865 is ready to make high voltage measurements.
High Voltage On/Off	A two-position toggle switch that turns on and off the high voltage power supply inside the instrument.
Zero Adjust	A 10-turn control to null offsets or other zero errors which occur within the system
Power On/Off	A two-position rocker switch that turns on and off the main power.

<sup>1</sup> All specifications are with a Trek 450 probe at a probe-to-surface separation of 3 mm, ±1 mm

<sup>2</sup> Measured using the true rms feature of the Hewlett Packard Model 34401A digital multimeter

## REFERENCE NUMBERS

### Trek P0865

13424F	Trek P0865 Electrostatic Voltmeter (100 VAC)
13424G	Trek P0865 Electrostatic Voltmeter (115 VAC)
13424K	Trek P0865 Electrostatic Voltmeter (230 VAC)

### Optional Accessories

17218	Trek 3450EC Probe Extension Cable (from unit to probe)
17181	Trek 3460-1 Line Driver
C4062	607RA Full Rack Mount Kit (19 in)

### Probes

#### Standard Resolution

17157	Trek3450 (side-viewing)
<b>High Temperature Probes (up to 100°C)</b>	
17284	Trek 3455ET (end-viewing)
17285	Trek 3453ST (side-viewing)