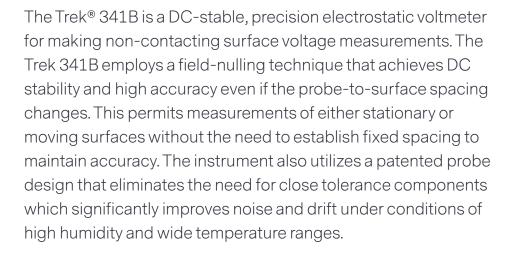




# **TREK 341B**

High-speed, high voltage electrostatic voltmeter for noncontact surface voltage measurements using a fieldnulling technique for DC stability and high accuracy.



### **PRODUCT HIGHLIGHTS**

- Superb noise and drift performance
- Precision voltage monitor output
- 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
- Easy-to-read LED display
- Optional probes offer versatility (ordered separately)
- Can be operated on a bench top, or with optional hardware, in a standard 19 in rack
- NIST-traceable Certificate of Calibration provided with each unit

#### **TYPICAL APPLICATIONS**

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



#### AT A GLANCE

#### **Measurement Range**

0 to ±20 kVDC or peak AC

#### **Measurement Accuracy**

Better than ±0.1% of full scale

## **Speed of Response**

Less than 200 µs for a 1 kV step

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# TECHNICAL DATA

Performance Specifications		
Measurement Range	0 to ±20 VDC or peak AC	
Measurement Accuracy	Better than ±0.1% of full scale, referred to the voltage monitor	
Speed of Response	Less than 200 µs for 1 kV step. Less than 5 ms for 20 kV step change (10 to 90%)	
Full Signal Bandwidth	nal Bandwidth DC to better than 25 Hz	
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
Ratio	1/1000th of the measured voltage
Output Noise	Less than 20 mV rms <sup>1</sup>
Output Impedance	Less than 0.1 $\Omega$

Voltage Display	
Voltage Display	4 ½ digit LED display
Range	0 to ±19.99 kV
Resolution	1V
Zero Offset	±2 counts, referred to the voltage monitor
Sampling Rate	3 readings per second

Mechanical Specifications	
Dimensions (H x W x D)	230 x 441 x 432 mm (9.06 x 17.36 x 17 in)
Weight	17 kg (37 lb)
Voltage Monitor Output Connector	BNC connector
Ground Receptacle	Green binding post

Operation Conditions	
Temperature	0 to 40°C (32 to 104°F)
Relative Humidity	17 kg (37 lb)
Altitude	To 2000 m (6561.68 ft)
Probe-to-Surface Separation 3 mm ±1 mm (recommended)	

Electrical Specifications	
AC Line Cord Receptacle	Standard 3-prong with integral fuse holder
Line Voltage	Factory set for one of two ranges: 90 to 127 VAC or 180 to 250 VAC, at 48 to 63 Hz
Power ON/OFF	Two-position rocker switch that turns ON and OFF the main power to the instrument

Features	
High Voltage Ready LED	LED indicator illuminates when the Trek 341B is ready to make high voltage measurements
High Voltage ON-OFF Two-position toggle switch that turns on and off the high voltage power supply inside the instrument	
Zero Control	A 10-turn control to null offsets or other zero errors that occur within the system

 $<sup>{\</sup>color{red}^{1}}\,\text{Measured using the true rms feature of the Hewlett Packard Model 34401A digital multimeter}$ 



## **REFERENCE NUMBERS**

Trek 341B Electrostatic Voltmeter	
341B-L	Trek 341B Electrostatic Voltmeter (90 to 127 VAC)
341B-H	Trek 341B Electrostatic Voltmeter (180 to 250 VAC)

Trek 341B-1 Electrostatic Voltmeter (for use with 3460-1 Line Driver) <sup>1</sup>	
341B-1-L	341B-1 Electrostatic Voltmeter (90 to 127 VAC)
341B-1-H	341B-1 Electrostatic Voltmeter (180 to 250 VAC)
17181	Model 3460 Line Driver (used with 341B-1)

Supplied Accessories	
23306	Operator's Manual
N5002	Line Cord, for 90 to 127 VAC
Varies	Line Cord, for 180 to 250 VAC (determined by the geographical destination)

Optional Accessories	
3460-1	Probe Line Driver (required when used with the Trek 341B-1 and an extended cable length)
17218	Trek 3450EC Probe Extension Cable (from the Trek 341B to the probe)
612RA	19 in Full Rack Mount Kit

Probes	
17157	Standard Resolution, Trek 3450 Side-viewing
17284	High Temperature (up to 100°C), Trek 3455ET End-viewing
17285	High Temperature (up to 100°C), Trek 3453ST Side viewing

<sup>&</sup>lt;sup>1</sup> Trek 341B-1 utilizes a separate line driver for extended probe cable lengths)