The Trek Model 341B is a DC-stable, precision electrostatic voltmeter for making noncontacting surface voltage measurements. The 341B employs a field-nulling technique 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 instrument also utilizes a patented probe design that eliminates the need for close tolerance components which significantly improves noise and drift under conditions of high humidity and wide temperature ranges.

**Key Specifications**

- Measurement Range: 0 to ±20 kV DC or peak AC
- Measurement Accuracy: Better than ±0.1% of full scale
- Speed of Response: Less than 200 µs for a 1 kV step

**Typical Applications Include**

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

**Features and Benefits**

- 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 (order separately)
- Can be operated on a bench top, or with optional hardware, in a standard 19-inch rack
- NIST-traceable Certificate of Calibration provided with each unit
- CE compliant

**Available Probes**

<table>
<thead>
<tr>
<th>Standard Resolution</th>
<th>High Temperature (up to 100°C)</th>
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</thead>
<tbody>
<tr>
<td>PN 17157: Model 3450 Side-viewing</td>
<td>PN 17284 Model 3455ET End-viewing</td>
</tr>
<tr>
<td>PN 17285 Model 3453ST Side-viewing</td>
<td>PN 17181, Model 3460 Line Driver (used with 341B-1)</td>
</tr>
</tbody>
</table>

**Available Configurations**

<table>
<thead>
<tr>
<th>Model 341B</th>
<th>Model 341B-1 (for use with 3460-1 Line Driver)</th>
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<tbody>
<tr>
<td>PN 341B-L, 341B Electrostatic Voltmeter (90-127 V AC)</td>
<td>PN 341B-1-L, 341B-1 Electrostatic Voltmeter (90 to 127 V AC)</td>
</tr>
<tr>
<td>PN 341B-H, 341B Electrostatic Voltmeter (180-250 V AC)</td>
<td>PN 341B-1-H, 341B-1 Electrostatic Voltmeter (180 to 250 V AC)</td>
</tr>
<tr>
<td>PN 17181, Model 3460 Line Driver (used with 341B-1)</td>
<td>PN 17181, Model 3460 Line Driver (used with 341B-1)</td>
</tr>
</tbody>
</table>

(Model 341B-1 utilizes a separate line driver for extended probe cable lengths)
## Model 341B Specifications

### Performance
- **Measurement Range**: 0 to ±20 kV DC 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
- **Full Signal Bandwidth**: DC to better than 25 Hz
- **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**: 1/100th of the measured voltage
- **Output Noise**: Less than 20 mV rms
- **Output Impedance**: Less than 0.1 Ω

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

### Features
- **High Voltage Ready LED**: LED indicator illuminates when the Model 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

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

### Operating Conditions
- **Temperature**: 0°C to 40°C (32°F to 104°F)
- **Relative Humidity**: To 90%, noncondensing
- **Altitude**: To 2000 m (6561.68 ft.)
- **Probe-to-Surface Separation**: 3 mm ±1 mm (recommended)

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

### Supplied Accessories
- **Operator’s Manual**: PN: 23306
- **Line Cord**: PN: N5002 (for 90 to 127 V AC) PN: Determined by the geographical destination (for 180 to 250 V AC)

### Optional Accessories
- **Probes**: Please refer to Page 1
- **Probe Line Driver** (required when used with the 341B-1 and an extended cable length): Model: 3460-1
- **Probe Extension Cable** (from the 341B to the probe): PN: 17218, Model 3450EC Probe Extension Cable
- **Full-Rack Mount Kit**: Model 603RA (19-inch)

### Certification
TREK, INC. certifies that each Model 341B is tested and calibrated to specifications using measurement equipment traceable to the National Institute of Standards and Technology or traceable to consensus standards.

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*Measured using the true rms feature of the Hewlett Packard Model 34401A digital multimeter

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