The Trek Model 370TR is a precision electrostatic voltmeter with the unique capability of making noncontacting surface voltage measurements in the range of 0 to ±3 kV DC or peak AC.

The 370TR employs an electrostatic field-nulling technique which achieves high DC stability and high measurement accuracy even if the probe to measured surface spacing changes. This permits measurements of either stationary or moving surfaces without the need to establish fixed spacing to maintain accuracy.

The Model 3629A Transparent probe permits light to pass through the probe to provide simultaneous radiation and measurement of a surface. This is useful for photosensitive surface studies such as ‘time of flight’ measurements of photoconductor surfaces.

A Digital Enable connection permits remote ON/OFF measurement capability. An automatic gain control feature of the 370TR eliminates the need for manual adjustment when changing probes or when changing the probe to measured surface separation. The 370TR also features one-step, push-button zeroing. When the ZERO button on the front panel is pressed, the 370TR automatically adjusts the output to zero volts when the probe is coupled to a known zero volt surface.

A precision voltage 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.

An optional data acquisition module is available, featuring an IEEE-488 compatible interface, 14-bit resolution, 12-bit accuracy, and a programmable sampling period from 10 µs to 30 minutes.
All specifications are with a 3627 or 3629A probe at a probe-to-surface separation of 2 mm unless otherwise noted.

**Model 370TR Specifications**

**Features (cont.)**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Monitor Output</td>
<td>A buffered output providing a low-voltage replica of the measured voltage.</td>
</tr>
<tr>
<td>Scale Factors</td>
<td>1/100th of the measured voltage. (1/200, 1/300, 1/600, 1/1000 options available.)</td>
</tr>
<tr>
<td>Offset Voltage</td>
<td>Less than 10 mV.</td>
</tr>
<tr>
<td>Output Noise</td>
<td>Less than 20 mV rms (measured with the true rms feature of the Hewlett Packard Model 34401A digital multimeter).</td>
</tr>
<tr>
<td>Output Impedance</td>
<td>Less than 0.1 Ω.</td>
</tr>
<tr>
<td>Output Current Limit</td>
<td>±10 mA</td>
</tr>
<tr>
<td>Digital Enable</td>
<td>An open collector, TTL compatible input to enable or disable the measurement. A TTL high will disable the measurement, while a TTL low will enable the measurement.</td>
</tr>
</tbody>
</table>

**Probes**

- Model 3629A (Transparent)  
  - Body Shape: Square.  
  - Aperture Size: 5.3 mm diameter.  
  - Aperture Location: Side.  
  - Dimensions: 11.8 mm sq. x 65.6 mm L.

- Model 3627  
  - Body Shape: Square.  
  - Aperture Size: 1.5 mm x 3.0 mm.  
  - Aperture Location: Side.  
  - Dimensions: 11.8 mm sq. x 76.2 mm L.

**Certification and Compliance**

TREK, INC. certifies that each Model 370TR is tested and calibrated to specifications using measurement equipment traceable to the National Institute of Standards and Technology.

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All specifications are subject to change.  

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