

Trek Model 800 InfiniTron[®]

Ultra-High Impedance Voltmeter



The ± 100 V Trek Model 800 InfiniTron[®] Voltmeter may be used in either contacting or non-contacting mode to acquire precision surface voltage measurements. It is especially beneficial when used with applications that demand infinitely high loading impedance levels far beyond the reach of currently available high impedance voltmeter instruments. The Model 800 comes with a guarantee of virtually no modification of the object being measured. This allows the instrument to indicate, with high precision, the voltage level of both conductive and insulative objects and surfaces.

Key Specifications

- Measurement Range: 0 to ± 100 V DC or peak AC
- Measurement Accuracy: Better than $\pm 0.1\%$ of full scale (voltage monitor output)
- Speed of Response: Less than 3.5 ms for a 100 V input step
- Input Characteristics
 - Resistance: Greater than $1 \times 10^{16} \Omega$
 - Capacitance: Less than 1×10^{-15} F

Typical Applications Include

- Accurate reading of electrostatic voltage levels associated with ESD sensitive components, circuits and surfaces

Features and Benefits

- Two voltage monitor outputs scale factors at 20:1 and 1:1
- Probe electrode may be easily replaced with other sensor tips
- 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
- CE compliant
- Designed to be operated on a bench top

Available Probes

- **Model 800P Probe**
 - **Sensor**
1.27 mm gold plated rounded tip electrode. The sensors may be easily replaced, dependent on the measurement requirements
 - **Orientation**
Pencil probe structure with end contact sensor.
 - **Probe Dimensions**
192.2 mm L x 33.9 mm Diameter (7.57" L x 1.34" Diameter)
 - **Probe Cable Length**
3 m ± 76 mm (10 ft ± 3 in.)



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Model 800 Specifications

Performance

Measurement Range	0 to ± 100 V DC or peak AC
Measurement Accuracy	
Voltage Monitor Output	Better than $\pm 0.1\%$ of full scale
Voltage Display	Better than $\pm 0.1\%$ of reading, ± 1 digit (referred to measured input)
Speed of Response (10% to 90%)	Less than 3.5 ms for 100 V step
Large Signal Bandwidth (-3 db)	DC to greater than 100 Hz for 200 V pp
Input Resistance	Greater than $1 \times 10^{16} \Omega$
Input Capacitance	Less than 1×10^{-15} F

Voltage Monitor

Output	Two BNC outputs provide buffered low-voltage replica of the measured voltage
Ratio	20:1 of the measured to output voltage and 1:1 representation
Output Voltage	Less than ± 5 mV
Output Noise	Less than 10 mV rms
Output Impedance	Less than 0.5 Ω

Features

LCD Display Screen with LED back-light	127 mm x 38 mm (5" x 1.5") screen displays prompts and voltage measurements with date and time
Display Resolution	240 x 64 pixels
Hold Mode	Controlled by local pushbuttons or remotely through HOLD BNC Connector
Zero	Controlled by local pushbuttons or remotely by applying a momentary (100 ms minimum) TTL low through a designated BNC Connector
Null Offsets (Auto Null Adjustment)	Nulling of the input voltage and current is necessary when the unit is first powered on, or when the display prompts that an auto null adjustment is necessary. Placing the probe in a holster on the side of the unit and pressing the NULL OFFSETS pushbutton provides nullification of the voltage offsets and the "leakage" currents, which are dependent on environmental conditions. An audio tone will signal when the null offsets process is completed.
TEMP/RH Meter Connector	A connector receives an input from an optional thermo hygrometer (Omega Model HH311) and enables the Model 800 to display environmental data on the LCD screen.
USB Communications Port	4-pin Type B connector

Note: All specifications measured with a 5-minute warmup time.

Mechanical

Dimensions	10.2 cm H x 31.6 cm W x 24.1 cm D (4" H x 12.5" W x 9.5" D)
Weight	2.5 kg (5.5 lb)
BNC Connectors	Two Voltage Monitors (20:1, 1:1) Hold Reset
Ground Receptacle	Threaded ground stud
Power ON/OFF	A momentary push-button
Probe Connector Location	Front panel

Operating Conditions

Temperature	10°C to 35°C (50°F to 95°F)
Relative Humidity	0 to 80%, noncondensing
Altitude	To 2000 m (6561.68 ft.)

Electrical

AC Line Cord Receptacle	Selected per geographic destination
Line Voltage	12 V AC, $\pm 10\%$ @ 1 A
DC Connector	2.1 mm DC power plug

Accessories

Operator's Manual with software	PN: 23338
Ground Cord	PN: N9044
AC Line Cord	Selected per geographic destination
USB Cable	1.8 m (6 ft) PN: BA103
Probe	Model 800P PN: 17491
Probe Tips	1.27 mm gold plated rounded tip electrode Additional tips can be customized in various other sizes to cater to a wide field of applications; please contact the factory for more information
Carrying Case	PN: 47032

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