Trek Model 821HH

Hand-Held Electrostatic Voltmeter

Trek's Model 821HH Infinitron® Hand-Held Electrostatic Voltmeter represents the next generation of contacting precision surface voltage measuring instruments, providing input characteristics far beyond the limits of any currently available hand-held voltmeter product.

The Model 821HH can easily measure the voltage level of both conductive and insulative objects and surfaces with virtually zero charge transfer to the measurement probe. This results in stable high accuracy voltage measurement capability for ESD-sensitive devices.

Key Specifications

- Measurement Range: 0 to ±2 kV DC or peak AC
- Voltage Display Accuracy: Better than 1% of full scale, ±1 digit
- Input Characteristics: Resistance greater than $1 \times 10^{14}\ \Omega$
  Capacitance less than 1×10^{-14} F
- Voltage Monitor Output: Scale factor at 1/1000

Typical Applications Include

- Semiconductors
- LEDs
- MR head sensors
- Other ESD sensitive devices

Features and Benefits

- Probe tip assumes the voltage level of the measured object's surface as the tip approaches resulting in no current flow at the time of contact.
- Battery or line operation
- Easy to read LCD display
- Records voltage, temperature and humidity
- Data graphing capabilities
- NIST-traceable Certificate of Calibration provided with each unit
- CE compliant

Model 821HH Specifications

Performance

Measurement Range	0 to ±2 kV DC or peak AC
Accuracy	
At the Voltage Monitor Output	Better than ±1% of full scale
At the Voltage Display	Better than ±1% of full scale, ±1 digit
Bandwidth (-3 dB)	1000 V p-p sine wave: better than 1 kHz (-3 dB)
Input Characteristics	Resistance greater than 1 x 10^{14} Ω Capacitance less than 1 x 10^{-14} F Current less than 1 x 10^{-14} A
Stability Drift with Time (probe in free air)	Less than 2 V/second
USB Data Rate	300 ms

Displayed Information

Voltage	0 to ±2000 V with a resolution of 1 V
Zero Offset	
Battery Status	
Time / Date	
Temperature	
Maximum and Maximum Readings	

Features

Automatic Shutoff	User settable: 5 minutes, 10 minutes, 15 minutes or disabled
Voltage Monitor Output (2.5 mm jack)	An output provides a low-voltage replica of the measured voltage
Scale	1/1000th of the measured voltage
Offset Voltage	Less than ±10 mV
Output Noise	Less than 10 mV rms *
Speed of Response (10% to 90%)	Less than 500 µS for an input step change of 1 kV
Power ON/OFF	A push-button
Record / Hold	Pressing the Record / Hold push-button will hold the measurement, while pressing and holding the Record / Hold button for a period of greater than 3 seconds will store the measurement

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

Features (cont.)

Menu	A push-button for entering the menu system to Review Data, Erase Memory and Set Auto Off functions

Mechanical

Dimensions	240 mm H x 140 mm W 52.5 mm D (9.5" H x 6" W x 2" D)
Weight	1.13 kg (2.5 lb)
Ground Reference Receptacle	Banana Jack
Voltage Monitor Connector	2.5 mm plug

Operating Conditions

Temperature	15°C to 35°C (59°F to 95°F)
Relative Humidity	5% to 75%, noncondensing
Altitude	To 2000 meters (6561.68 ft.)

Electrical

Power Requirements	Internal NiMH battery or External 15 V @ 1 A Supply / Charger
Battery Operating Time	Greater than eight hours of continuous operation

Supplied Accessories

Operators' Manual	PN: 24012 Manual with software
AC/DC Adapter	15 V @ 1 A universal AC/DC adapter
Output Monitor Cable	With 2.5 mm plug
Other	USB Cable

Certifications

Calibration	TREK, INC. certifies that each Model 821HH is tested and calibrated to specifications using measurement equipment traceable the National Institute of Standards and Technology or traceable to consensus standards
CE Compliance	
IEC 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General Requirements
IEC 61326-1	Electrical equipment for measurement, control and laboratory use - Part 1: General requirements