

MONROE ISOPROBE 279

Electrostatic voltmeter that measures surface potential in the range of ± 3000 volts without contacting the measured surface.



The Monroe Isoprobe[®] 279 is an electrostatic voltmeter designed for maximum performance at a moderate price. The Model 279 measures electrostatic surface potential without physical contact and offers full function performance, humidity tolerance, and high reliability for a wide range of industrial applications in minimum space.

PRODUCT HIGHLIGHTS

- Low profile half rack size for multi-channel applications
- Full complement of interchangeable probes
- Selectable recorder output range
- LED meter with “black out” for dark room applications

TYPICAL APPLICATIONS

- Electrophotographic and xerographic measurements
- IC manufacturing and handling
- Radiation effects on insulators and semiconductors
- Electret research
- Static electrification, electric field studies
- Process monitoring and control

AT A GLANCE

Range

± 3000 volts, auto polarity

Accuracy

0.1%, $\pm 0.003\%/^{\circ}\text{C}$ over +20 to +40°C range (at recorder output)

Speed of Response (10% to 90%)

For typical input step: <3 ms

For 1kV step: <2½ ms

For 2kV step: <3½ ms

For 3kV step: <4 ms

TECHNICAL DATA

Performance Specifications	
Range	±3000 volts, auto polarity
Accuracy ¹	0.1%, ±0.003%/°C over +20 to +40°C range (at recorder output). Useable to +50°C.
Speed of Response ¹	For typical input step: <3ms (10% to 90%)
	For 1kV step: <2½ms (10% to 90%)
	For 2kV step: <3½ms (10% to 90%)
	For 3kV step: <4ms (10% to 90%)
Settling Time	<3½ ms to 1% of 1 kV step input
Frequency Response	Small signal frequency response, typically ±3 db to >300 Hz
Drift ¹	<0.01V/hr after 1 hr warm-up (0.003 V/hr typical). Not measurably affected by 10°C temperature variation or changes between 10% and 90% relative humidity.
Noise ¹	<0.3 V rms or 2 volts peak-to-peak wide band (bandwidth restricted to <1 kHz) referred to input.
Surface Resolution	Determined by probe aperture size and surface-probe separation. Standard type 1034E & S probes with 1.75 mm (0.007 in) aperture will resolve a 2.5 mm (0.10 in) spot at 0.5 mm (0.02 in) separation.

Mechanical Specifications	
Dimensions (H x W x D)	44 x 208 x 384 mm (1.7 x 8.2 x 15.1 in)
Weight	1.8 kg (4 lb)
Output Filter	Bessel low pass filter with 0.7 ms constant delay

Electrical Specifications	
Power Requirement	100, 115, 230 VAC, ±10%, 50/60Hz, 15 watts
Recorder Output	Compressed analog output is input divided by 100, 200, or 1000 (factory selectable). Typical maximum dynamic range at isolated BNC connector is > ±18 volts for external loads >10kΩ

¹ Dependent on specific probe model, probe-to-surface separation and environment. Specifications shown are for standard Type 1034E or S probes in normal laboratory atmosphere. Separation for accuracy and response speed tests is 3 mm (1/8 in) and for noise and drift tests, 0.13 mm (0.005 in). Performance generally improves in controlled environments and may be degraded under exceptional dirty or dusty conditions or in ambiance of unstable gaseous constituents.

MONROE 1034 SERIES PROBES

Monroe 1034E (end-viewing) or 1034S (side-viewing) probes are 9 x 9 x 72.5 mm (0.35 x 0.35 x 2.85 in) in length. Add 20 mm (0.8 in) length for cable at minimum bend radius. Contains 1kHz tuning fork chopping driver and onboard hybrid microcircuit preamp. Useable from -50 to +80°C. Optional probe configurations are available for high or low resolution and transparent probes for light decay measurements. Length of probe cable is 3 m (10 ft). Provision has been made for air or inert gas purging of probe. Rear mounted connector on instrument is standard; front panel connector is optional. Unit is calibrated independent of probe and includes certificate of NIST traceability. Interchangeable Monroe 1034 probe (type specified by customer) is sold separately. See Monroe 1034 data sheet for more details and options.

HIGH PERFORMANCE WITH A PROVEN TRACK RECORD

The Monroe 279 takes advantage of Advanced Energy's years of experience in design of reliable instruments for non-contacting measurement of electrostatic potential combined with modern semiconductor technology. A full spectrum of proven-design interchangeable probes exposes broad new areas for exploratory research as well as providing a precision instrument for routine applications in electrostatic measurements.

REFERENCE NUMBERS

Included Accessories	
-	Operator's Manual
-	Line Cord
-	Probe Hole Vent Plug



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ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

AE's power solutions enable customer innovation in complex semiconductor and industrial thin film plasma manufacturing processes, demanding high and low voltage applications, and temperature-critical thermal processes.

With deep applications know-how and responsive service and support across the globe, AE builds collaborative partnerships to meet rapid technological developments, propel growth for its customers and power the future of technology.

PRECISION | POWER | PERFORMANCE

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