

ISOPROBE® Electrostatic Voltmeter Model 244A

Uses 1017A Series Probes

Features:

- ±3kV range
- Measurement without physical contact
- Accuracy better than 0.1% at almost any probe-to-surface spacing
- Full complement of state-of-the-art high frequency probes
- Provision for Master/Slave operation



High performance with a proven track record

Manufactured with the same care and attention that have made Monroe ISOPROBE® Electrostatic Voltmeters the industry standard, the Model 244A measures surface potential of insulating, semiconductive or conductive materials on a small 0.04" (1mm) diameter spot or over a large area using patented techniques which assure high-accuracy drift-free measurements almost independent of probe/surface separation.

The fifth generation from the first name in non-contact measurement

Model 244A takes advantage of Monroe'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. Some typical and potential applications include:

- 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*

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Specifications:

Range:..... ± 3000 volts, auto polarity.

Accuracy:* 0.1%, $\pm 0.003\%/^{\circ}\text{C}$ over +20 to +40°C range (at recorder output). Useable to +50°C.

Speed of response:* 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: < 3½ms to 1% of 1kV step input.

Frequency response:..... Small signal frequency response typically $\pm 3\text{db}$ to > 300Hz.

Drift*: < 0.01V/hr after 1 hr warm-up (0.003V/hr typical). Not measurably affected by 10°C temperature variation or changes between 10% and 90% relative humidity.

Noise:* < 0.3V rms or 2 volts peak-to-peak wide band (bandwidth restricted to < 1kHz) referred to input.

Surface resolution:..... Determined by probe aperture size and surface-probe separation. Standard type 1017AE & AS probes with 0.07" (1.75mm) aperture will resolve a 0.10" (2.5mm) spot at 0.02" (0.5mm) separation.

Recorder output:..... Compressed analog output is input divided by 1000 (optional Model 244AK has divide by 200) for external loads greater than 1K Ω . Output connector is BNC.

Output filter: Bessel low pass filter with 0.7ms constant delay.

Size: 4 x 8½ x 14 inches (10 x 21.8 x 35.6 cm), 1.75" rack mounting available (1 or 2 per rack).

Weight: 7 lb. (3.2 kg)

Power requirement:..... 100, 115, 230 VAC, $\pm 10\%$, 50/60Hz, 15 watts.

CE conformance: Yes

* Dependent on specific probe model, probe-surface separation and environment. Specifications shown are for standard Type 1017AE or AS probes in a normal laboratory atmosphere. Separation for accuracy and response speed tests is 1/8" (3mm) and for noise and drift tests, 0.13mm (0.005"). Performance generally improves in controlled environments and may be degraded under exceptional dirty or dusty conditions or in ambiance of unstable gaseous constituents.

Probes:

Monroe Electronics Type 1017AE (end-viewing) or 1017AS (side-viewing) probes are 0.35" (9mm) x 0.35" (9mm) x 2.85" (72.5mm) in length. Add 0.8" (20mm) length for cable at minimum bend radius. Contains 1kHz tuning fork chopping driver and onboard hybrid microcircuit preamp. Useable from -50°C 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 10 ft. (3.05 meters). Provision has been made for air or inert gas purging of probe. Standard basic instrument package includes Model 244A electrostatic voltmeter, line cord and instruction manual. Unit is calibrated independent of probe and includes certificate of NIST traceability. Interchangeable Model 1017A probe (type specified by customer) is sold separately.



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