

This instrument is a basic Model 244 ISOPROBE® Electrostatic Voltmeter which has been extensively improved to provide high speed, low noise electrostatic measurements in the range of ± 15 volts.

Applications:

The Model 244AL is designed to function as a general purpose materials research and evaluation tool. Its unique capability for reliable, NON-CONTACTING measurement of electrostatic potential in the millivolt range exposes broad new areas for exploratory research as well as providing a precision instrument for existing applications in electrostatic measurements.

Some typical and potential applications include:

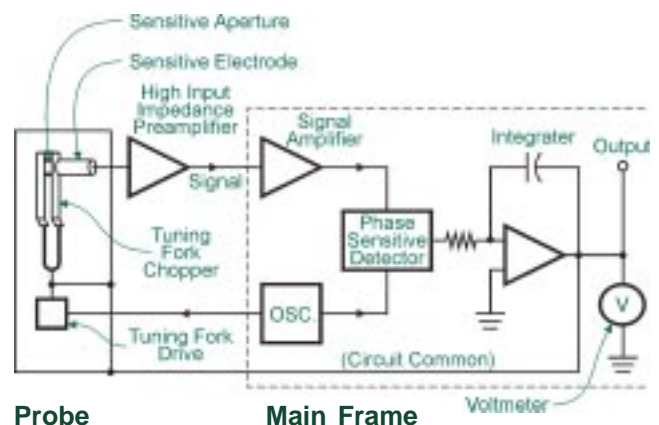
- **Contact Potential Measurements**
- **Electrophotographic Measurements**
- **Radiation Effects on Insulators and Semiconductors**
- **Electret Measurements**
- **Bioelectric Potential Studies**



Principle of Operation:

The electrostatic electrode “looks” at the surface to be measured through a small hole at or near the end of the probe. The chopped AC signal induced on this signal is proportional to the differential voltage between the surface to be measured and the probe assembly. Its phase is dictated by the DC polarity. This signal and a reference signal from the oscillator are fed to a phase sensitive demodulator whose output feeds a DC integrating amplifier. The output of this amplifier is used to drive the probe housing and electrode to the same potential as that of the surface undergoing measurement. The feedback principle and null seeking operation make a remarkably stable and accurate instrument.

Simplified Block Diagram:



ISOPROBE® Electrostatic Millivolt Meter model 244AL

Specifications:

| | |
|---------------------------|--|
| Range: | ±15 volts |
| Accuracy: | 0.1% or 10mV, whichever is greater |
| Meter resolution: | 10mV |
| Noise: | 20mV rms, typ. |
| Speed of response: | 2ms, 10% to 90%, |
| Output: | 1:1, ±15 volts |
| Drift:* | Less than 10mV/h |
| Output Filter: | Bessel low pass filter with 0.7ms constant delay |
| Size: | 4 x 8.5 x 14 inches (10 x 21.8 x 35.6 cm), 1.75" rack mounting available (1 or 2 per rack) |
| Weight: | 6.5 lb. (3.0 kg) |
| Power Requirement: | 100, 115, 230 VAC, ±10%, 15W |
| CE Conformance: | Yes |

* Specifications are based on use of Models 1017AEL or 1017ASL probe at 0.005" probe to surface spacing. To achieve best drift characteristics, probe must be purged with filtered air or inert gas in a stable laboratory environment.

For further details, see individual data sheets for Models 244 and 1017A or consult the factory.

Probe-to-surface spacing:

Probe-to-surface spacing should not exceed 0.100" in normal use, optimum being between 0.005" and 0.015". Noise, drift, and speed or response deteriorate directly with increased probe-to-surface spacing. Measurement accuracy, however, can be made independent of probe-to-surface spacing with proper use of the front panel balance and zero controls.

Calibration:

Monroe Electronics instruments are factory-calibrated prior to shipment. Recalibration should be performed annually, or more frequently if specified by contract or company policy. Your instrument should also be recalibrated any time it has been repaired or tampered with. We are happy to recalibrate your instrument for you at a reasonable cost, or provide information and procedures on calibration upon request.

Warranty:

Monroe Electronics, Inc., warrants that each instrument and sub-assembly manufactured by them shall be free from defects in material and workmanship for a period of one year after shipment from the factory. This warranty is applicable to the original purchaser only.

The finest Electrostatic instrumentation and support:

For more than 40 years - ever since we invented the feedback--nulled electrostatic voltmeter, Monroe has been the technology and quality leader in electrostatic detection and measurement instrumentation. Today we offer the world's most complete array of fieldmeters, voltmeters, and resistivity meters. Our customers include the leading makers of photocopiers and laser printers, converters and microelectronics worldwide.

We know you need quality support as well as quality products. We pride ourselves on providing our customers with the most knowledgeable applications and installation support — as well as superior customer service.

How can we help?

Contact your Monroe Electronics representative for price and delivery information on this and other ME products, to schedule a no-obligation demonstration at your convenience. For the name of your nearest dealer, or for technical or applications assistance, contact Monroe Electronics directly at the address and numbers below.

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