

## Features

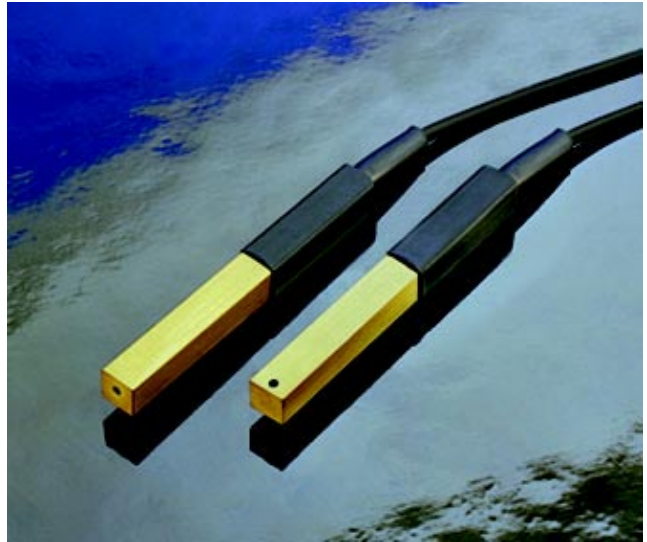
- Compact size: 0.35”H x 0.35”W x 2.85”L (9mm x 9mm x 72.5 mm)
- Toner resistant-Super-Flex cable
- Faster 1 kHz chopping speeds response
- Hybrid preamplifier
- Gas purge capability

## Applications

- Product development
- Component testing
- ESD measurements
- Materials qualification
- Triboelectric studies
- Static monitoring
- Process management
- IC handlers
- Photoreceptor research

## Accessories

- **Extension Cables** – Lengths to 100 feet
- **Purge Kit** – Model 1017/22G includes air pump, dust and chemical filters, tubing and fittings necessary for purging
- **Gradient Adapters** – Models 1017E/22D and 1017S/22D slip on end of probes to convert electrostatic voltmeter to high speed, high resolution electrostatic fieldmeter with range to over 20kV/cm



## Description

The Monroe Electronics Miniature Probe is an advanced-technology extended performance probe for use with Monroe Electronics ISOPROBE® Electrostatic Voltmeters. Available in end-viewing and side-viewing configurations, the probe incorporates a hybrid on-board preamplifier and high frequency tuning fork modulator. These features contribute to significantly faster response speed with compatible voltmeters made by Monroe Electronics. All on-board circuitry is fully protected against overvoltage and arc-overs.

All incorporate a convenient purging gas inlet in the base of the probe. Clean, filtered air (or inert gas) entering this inlet is exhausted through the sensing aperture, preventing the entrance of contaminants and maintaining a clean atmosphere in the vicinity of the electrode for greater stability.

## Application Notes

Two basic probe model series are available for ISOPROBE® Electrostatic voltmeters in current production—Models 1017A and 1034. Both are available in several types designed for specific purposes and are designated by suffix letter or letters. An “E” denotes an End-viewing probe and an “S” denotes Side viewing. Where the choice is available, the selection may be based on user preference or to satisfy physical constraints in mounting. End viewing probes are generally simpler to position. Please refer to the **Probe Selection Guide** below.

- **Standard probes (E or S)** — for general electrostatic measurements – these probes have a 0.070” (1.78mm) diameter sensing aperture chosen for best compromise of resolution, noise and overall ease of use. Strip resolution is shown in Curves 1 & 2.
- **High Resolution Probes (EH only)** – for resolving smaller spots of charge than the standard probes – these have a 0.02” (0.51mm) diameter aperture. The smaller aperture area leads to much lower signal-to-noise ratio and degraded noise, drift and response speed. These probes are useful for certain specific applications but are more difficult to use for common measurement problems. See Curve 3
- **Slit Aperture Probes (EJ only)** – a special high resolution probe that permits very high resolution measurements along one dimension. It is useful for measuring line patterns as fine as 0.01” (0.25mm). It is also more difficult to use than standard probes.
- **Low Resolution Probes (EL & SL)**– have large 0.13” (3.30mm) diameter sensing aperture enabling low noise measurements at relatively large probe-to-surface spacing – up to 0.25” (6mm). They are also recommended for the Model 244AL ISOPROBE® Electrostatic Millivoltmeter.
- **Transparent Probes (T)** – Provide for measurement of light decay (photodischarge) of photoreceptor materials. Incorporating no mirrors, glass plates or other optical impediments the 0.25” (6.4mm) diameter viewing area is truly transparent. Slightly larger than the standard probes, they are 0.37” (9.5mm) square and 3.25” (82.6mm) long.

### Probe Selection Guide

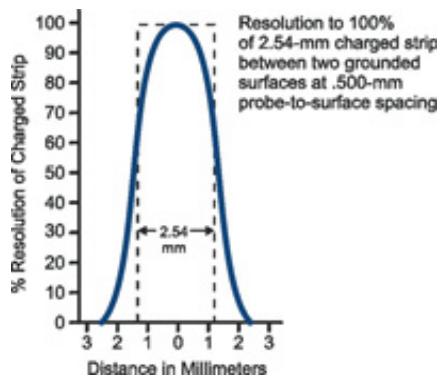
Isoprobe® Electrostatic Voltmeter	Basic Probe	Available Probe Types (by suffix)	Connector Style
244A	1017A	E, S, EH, EJ EL, SL, T	Circular Plastic
244AL	1017A	E, S, EH, EJ EL, SL, T	Circular Plastic
279	1034	E, S, EH, EJ EL, SL, T	Circular Plastic

# Miniature Electrostatic Voltmeter Probes model 1017A, 1034

## ISOPROBE® Electrostatic Voltmeter Probe Performance

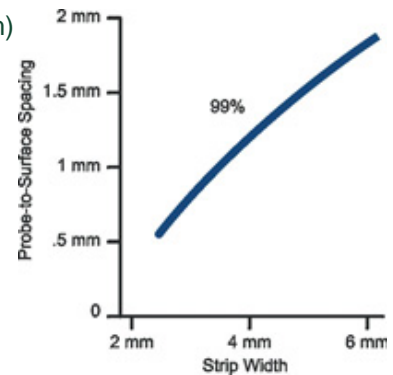
Probe	Used With	Special Features	10% to 90% Step Response	Noise Referred to Input*
1017AE or AS	244A	General Measurement	<2.5ms to 1kV	<0.3Vrms or 2Vp-p
1017AEH	244A	High Resolution	<2.5ms to 1kV (typ.)	<2.0Vrms (typ.)
1017AEL or ASL	244A	High Gain	<2.5ms to 1kV (typ.)	0.4Vrms
1017T	244A	Transparent	3.5ms	08.Vrms
1017EJ	244A	Slit Aperture	(Special Purpose)	
1017AEL or ASL	244AL	Low Noise	<3ms to 10V	20mVrms (typ.)
1034E or S	279	General Measurement	<2.5ms to 1kV	<0.3Vrms or 2Vp-p
1034AEH	279	High Resolution	3ms to 2kV	1.5Vrms
1034EL or SL	279	High Gain	<2.5ms to 1kV	0.4Vrms
1034T	279	Transparent	3.5ms	0.8Vrms

## Typical Performance Characteristics

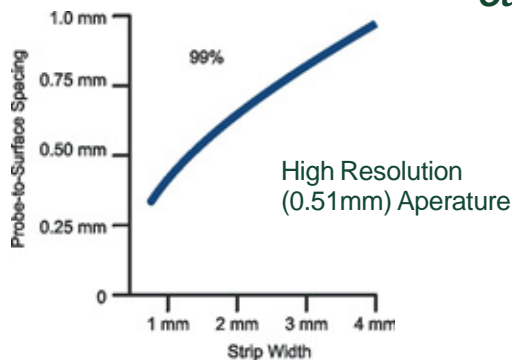


Curve 1

Standard (1.78mm) Aperture

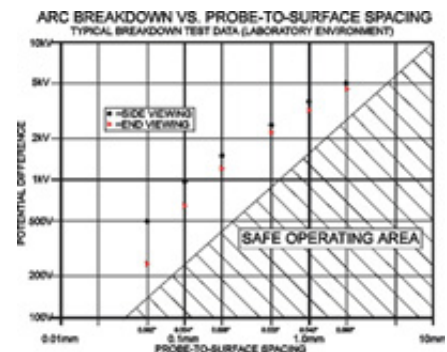


Curve 2



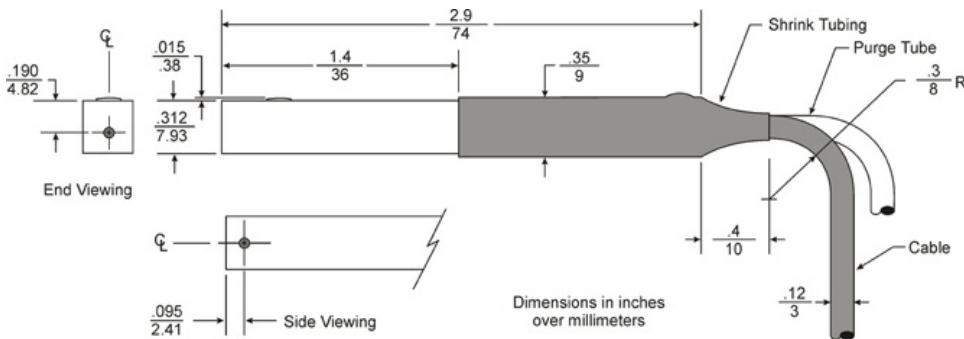
Curve 3

Curve 4



## Miniature Electrostatic Voltmeter Probes model 1017A, 1034

### Dimension Drawing



### Specifications:

#### Surface

**Resolution:** Dependent on probe-to-surface spacing and aperture size. For standard E & S type probes, see Curves #1 and #2. For high resolution EH probes see Curve #3.

#### Operating Temperature Range:

-50°C to +80°C (-58°F to 176°F).  
Available for operation at temperatures up to 100°C (212°F) on special order at additional cost.

#### Standard Cable

**Length:** 10 feet.

**Performance:** These miniature probes offer performance levels that are dependent upon the ISOPROBE® Electrostatic Voltmeter they are used with. Check individual instrument specifications for details on speed of response, noise, drift and accuracy.

### Calibration:

Monroe Electronics instruments are factory-calibrated prior to shipment. Although 1017AS and 1034 probes are not calibrated, the instruments they are used with are. 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.