

Model 875 Electrostatic Voltage Sensor



Trek's Model 875 Electrostatic Voltage Sensor is designed for in-line monitoring of electrostatic charge build-up, which if left unchecked, can disrupt manufacturing processes or cause product degradation and early life failure of semi-conductors and other charge-sensitive components. Excellent for monitoring static charge levels within manufacturing equipment such as conveyors, handlers, and other tools, the 875 features an automatic calibration technique to maintain high accuracy and speed over wide variations of spacing between the non-contacting measurement probe and the surface under test.

Other features include a voltage measurement range of ± 500 V DC or peak AC, accuracy of $\pm 0.5\%$, speed of 25 ms, and low noise of 1% rms of full scale. Buffered output voltage and current monitors (4 to 20mA) are provided for remote monitoring and alarm purposes. The unit is powered by +24 V DC and is housed in a standard DIN package to enable standardized mounting.

- Measurement Range of 0 to ± 500 V DC or peak AC
- Accuracy is Independent of Probe-to-Measured Surface Spacing
- Voltage Monitor with an Accuracy Better than $\pm 0.5\%$ of full scale (F.S.)
- 4-20 mA Current Monitor
- Speed of Response < 25 ms
- Enclosure Mounts on 35mm DIN RAIL
- TTL Digital Enable Input
- TTL Fault Warning Flag Output
- CE compliant

PERFORMANCE

At 4 mm ± 1 mm probe-to-surface distance

Measurement Range
0 to ± 500 V DC or peak AC.

Measurement Accuracy
At the Voltage Monitor Output
Better than $\pm 0.5\%$ of F.S.

At the Current Monitor Output
Better than $\pm 3\%$ of F.S.

Current Monitor (4-20 mA)
Linearly related to the measured input voltage.

Scale Factor (+4 mA to +20 mA representing a -500 V to +500 V):
-500 V = 4 mA,
0 V = 12 mA,
+500 V = 20 mA.

Speed of Response (10% to 90%)
Less than 25 ms for a 0 to ± 500 V step change.

FEATURES

Voltage Monitor Output
A buffered low-voltage replica of the measured voltage.

Scale Factor
1 V / 50 V.

Noise
Less than 1% rms of full scale.

Digital Enable
An external control TTL signal. A TTL HIGH (or open) will disable all internal power supplies. A TTL LOW will provide normal ESVM operation.

Fault Warning Output
A TTL output signal. A TTL HIGH indicates normal operation of the Model 875. A TTL LOW indicates a fault condition such as: out of range operation (circuit is measuring a voltage greater than ± 500 Volts), failure of the probe, or circuit malfunction.

PROBE

Probe Dimensions
5.6 mm square x 50 mm L

Aperture Orientation / Body Type
Side / Square.

Probe Cable Length
3.0 ± 0.1 meters.

Recommended Probe-to-Surface Separation
4 mm ± 1 mm.

An optional probe holder fixture is available - contact factory.

GENERAL

Power Supply Voltage
+24 V DC $\pm 10\%$.
Power Supply Current
150 mA, maximum.

Power ON Indicator
A LED indicator illuminates when power is applied to the unit.



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