Met One Instruments

083E Relative Humidity Sensor

The 083E Relative Humidity Sensor is a highly sensitive and stable temperature measurement tool that provides outstanding accuracy. It is reliable in the full range of relative humidity conditions, from 0-100%, performing equally well in meteorological, industrial, laboratory and other demanding settings.

This model is also available with a mounted temperature sensor, and can be used with a variety of radiation shields.

FEATURES

- All solid state construction, digital electronics
- Fast response of less than 5 seconds to 90% of final value
- Low power consumption of 4 mA at 12 VDC
- Easily cleaned using distilled water
- 0-1V output for 0-100% RH
- Will operate from a 12 VDC battery

Operation

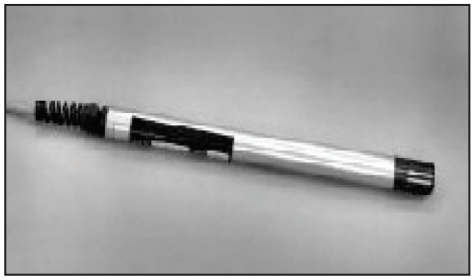
The 083E Relative Humidity Sensor measures variance in the capacitance change of a one-micron thick dielectric polymer layer.

This film absorbs water molecules through a metal electrode, and causes capacitance change proportional to relative humidity. The thin polymer layer reacts very quickly, providing up to 90% of the final value of relative humidity in fewer than five seconds.

The sensor's response is essentially linear, with small hysteresis, and negligible temperature dependence.

Construction

- The sensor is mounted on a small probe, which measures, records and displays humidity levels
- Because the sensor measures only ambient humidity, in most settings temperature compensation is unnecessary
- The probe body is water tight and made from corrosion resistant aluminum
- Immersion of the sensor element in water does not adversely affect the calibration



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SPECIFICATIONS

POWER

Input Power:	4 mA at 12 VDC (10-14 VDC)

RELATIVE HUMIDITY

Sensing Element:	Thin film polymer capacitor
Range:	0 - 100% relative humidity
Temperature Operation Range:	-50°C to +50°C (-58°F to 122°F)
Response Time:	10 sec. with 2 m/s aspiration
Temperature Coefficient:	0.04% RH/°C
Accuracy:	±2.0% from 0 – 100% humidity
Output:	0 to 1 VDC – Standard (0 to 5.0 VDC Optional)

TEMPERATURE

Temperature Sensor:	Themistor (precision multi-element)
Temperature Operation Range:	-50°C to +50°C (-58°F to 122°F)
Accuracy:	±.10°C (0.18°C)
Output:	Resistive

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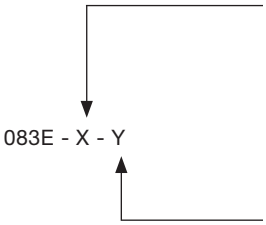
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PHYSICAL CHARACTERISTICS

Dimensions:	.75 in (19.05 mm) diameter 7.5 in (190.5 mm) length
Weight:	2.5 oz (70.9 g)

ORDERING INFORMATION



- 0	Temperature sensor not included
- 1	-50°C to +50°C, (-58°F to +122°F). Temperature sensor included Accuracy ±0.1°C (±0.18°F)
- 35	With connector for direct use with Model 073B Radiation Shield or Model 5980 Radiation Shield PN 2348 Cable Assembly – Specify length in feet or meters
- 6	With 6″ Signal Cable for direct use with Model 076B Motor Aspirated Radiation Shield

Specifications are subject to change at any time.

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