



RELATIVE HUMIDITY/TEMPERATURE SENSOR

FEATURES

- All Solid State Construction
- Less Than Five Second Response Time
- Low Power, <5 mA @ 12 VDC
- Easily Cleaned Using Distilled Water
- 0-1 VDC Output for 0-100% RH
- May Be Battery Powered

The P/N 102798 Relative Humidity sensor provides sensitivity, accuracy, linearity and stability not typically encountered with conventional relative humidity sensors. It is extremely well suited for meteorological, industrial, laboratory and other demanding applications. The P/N 102798 Relative Humidity sensor can also be supplied with a temperature sensor and can be used with our various radiation shields for reliable, accurate measurements.

Operation

The P/N 102798 Relative Humidity Sensor operation is based on the capacitance change of a polymer, thin film capacitor. A one-micron thick dielectric polymer layer absorbs water molecules through a thin metal electrode and causes capacitance change proportional to relative humidity. The thin polymer layer reacts very fast, and therefore, the response time is very short; less than five seconds to 90% of the final value of relative humidity. The sensor responds to the full range from 0-100% relative humidity. Its response is essentially linear, with small hysteresis, and negligible temperature dependence.

Construction

The sensor is mounted in a small cylindrical aluminum housing which contains all the electronics necessary to provide an output for indicating or recording humidity and/or temperature. Since the capacitance change of the sensor is sensitive only to the ambient humidity, temperature compensation is not required for most applications. The probe body is water tight and made from corrosion resistant aluminum. Immersion in water does not affect the calibration of the sensor. The polymer material is resistant to most chemicals. The calibration of the sensor is not affected by liquid.



SPECIFICATIONS

RELATIVE HUMIDITY

RH Sensing Element: Thin film polymer capacitor
Range: 0 to 100% RH
Temperature Operation Range: -50°C to +60°C (-58°F to 140°F)
Response Time: 10 sec. with 2 m/s aspiration
Accuracy: ±2.0% from 0 to 100% RH
Temperature Coefficient: Compensated internally
Output: 0 to 1 VDC Standard (0 to 5.0 VDC Optional)

TEMPERATURE

Temperature Sensor: Thermistor
Temperature Range: -50°C to +60°C (-58°F to 140°F)
Accuracy: ±0.10°C (0.18°F), -50° to +50°C; ±0.50°C (±0.90°F), 50° to 60°C
Output: Resistive

GENERAL

Input Power: 10 to 18 VDC @ <5 mA
Dimensions: Length: 8.5 in (21.59 cm)
Diameter: 0.75 in (1.91 cm)
Weight: 2.5 oz (70.9 g)

ORDERING INFORMATION

102798-G0-H0 = Humidity sensor with connector
102798-G0-H1 = Humidity & Temperature sensor with connector
102798-G1-H0 = Humidity sensor, 6" cable
102798-G1-H1 = Humidity & Temperature sensor, 6" cable



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