



RELATIVE HUMIDITY SENSORS

FEATURES:

- Inexpensive
- Excellent Long-Term Stability
- Wide Operating Temperature Range
- Contamination Resistant
- Optional Temperature Sensor
- Linear Voltage Output
- Compact Size

Climatronics' capacitive relative humidity sensors, P/N 102273 and 102425 are specifically designed for meteorological monitoring systems. Very low power consumption makes these relative humidity sensors ideal for integration with data acquisition systems operating at remote locations. Both sensors provide a linear 0 - 1 VDC output signal corresponding to 0 - 100% relative humidity.

The sensors require a minimum of maintenance or calibration and feature exceptional resistance to contaminants. Repeatability is also excellent, even after complete sensor saturation. The P/N 102273 sensor maintains its accuracy over the full range of humidity, even in conditions close to condensation. This is accomplished by electronic temperature compensation of the humidity element. The moderately priced P/N 102425 sensor does not have the high overall accuracy of the P/N 102273 and exhibits a decrease in accuracy in the upper 10% of its range.

Both sensors include the provision for adding a temperature measurement. The temperature option for the P/N 102273 is a dual bead thermistor with electrical and performance characteristics identical to that of Climatronics P/N 100093 temperature sensor. Adding a PT1000 platinum transducer to the P/N 102425 changes its identification number to P/N 102802. The temperature output of this sensor is a 0-1 Vdc linear signal over the specified temperature range. Dimensions and weight of the sensors remain the same with or without the temperature option.



SPECIFICATIONS

PERFORMANCE

Relative Humidity:

Accuracy:

P/N 102273

± 1.0% RH from 0 - 100%

P/N 102425/102802

± 3% RH from 0 – 90%; 0° to 40°C
 ± 5% RH from 90 - 100%; 0° to 40°C
 ± 5% RH from 0 - 90%; -40° to 0°C
 and 40° to 60°C
 ± 7% RH from 90 - 100%; -40° to 0°C
 and 40° to 60°C

Repeatability:

Operating Range:

Operating Temperature Range:

Long Term Stability:

Response Time (without filter):

± 0.3% RH

0 - 100 %

-40° to +60°C

± 1% RH over 12 months

10 seconds

0 - 100 %

-40° to +60°C

± 2% RH over 24 months

10 seconds

Temperature:

Type:

Accuracy:

Dual bead thermistor

±0.27°F (±0.15°C) from
 -30° to +50°C; ±0.90°F (±0.50°C)
 from +50° to +70°C

PT1000 IEC 751 Class B

± 0.6°C

Range:

-30° to +70°C

-40° to +60°C

ELECTRICAL

Relative Humidity

Excitation Power:

Signal Output:

Output Impedance:

4.8 - 30 Vdc; 2.5 mA @ 12 Vdc

0 - 1 Vdc = 0 - 100%

1000 Ohms

5 - 28 Vdc; 1 mA average

0 - 1 Vdc = 0 - 100%

Temperature:

Excitation Power:

Signal output:

Precision DC voltage supplied
 by CLIMATRONICS data
 logger or signal conditioner

5 – 28 Vdc; 1 mA average

Variable, low level DC voltage
 for input to data logger or
 signal conditioner

0 – 1 Vdc = -40° to +60°C

PHYSICAL

Length:

Transducer Diameter:

Weight:

10.12" (257 mm)

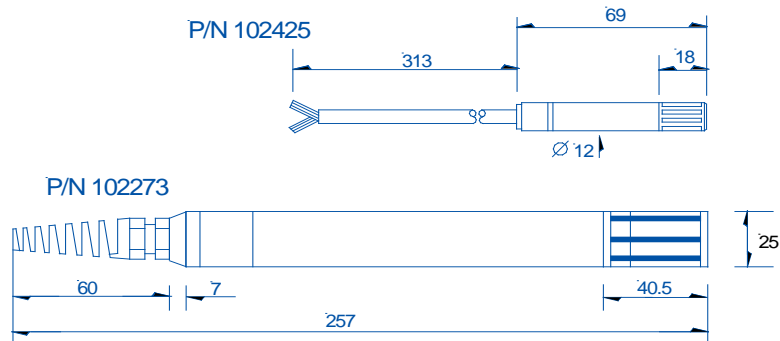
0.98" (25 mm)

0.15 lb (70 g)

2.7" (69 mm)

0.47" (12 mm)

0.15 lb (70 g)



Dimensions in mm / Modifications reserved



Climatronics Corporation
 140 Wilbur Place
 Bohemia, NY 11716-2404

TEL: 631-567-7300
 FAX: 631-567-7585
 E-Mail: sales@climatronics.com

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