

Thygro SDI-12

TEMPERATURE-HUMIDITY SENSOR WITH SHIELD

The Symmetron Humidity - Temperature sensor is designed for accurate and stable measurements in meteorology systems.

The sensor is based on a factory-calibrated Swiss-made element. It exhibits dew formation resistance and excellent long term stability,

FEATURES

- Stable at 100% humidity.
- Easy Stylitis data logger setup from Symmetron software library.
- Analog humidity and temperature output, in 3 user-selectable ranges for compatibility with most data loggers:
 - 0 ~ 1V
 - 0 ~ 2.5V
 - 0 ~ 5V
- Digital SDI-12 humidity and temperature output.
 - Provides instantaneous values.
 - Provides the average values for the interval between readings.
 - Responds to a subset of SD-12 commands: aR0!, aR1!, aI!, ?!, aAb!



PROBE SPECIFICATIONS

HUMIDITY

- Measurement principle: Capacitive sensor
- Temperature operation span: - 40 ~ +90 °C
- Humidity operation span: 0 ... 100 % RH (max. Dew Point: 80 °C)
- Humidity accuracy:
 - $\pm 1.8\% \text{ RH (0 ~ 80 \% RH @ 23 }^\circ\text{C)}$
 - $\pm 3\% \text{ RH (80 ~ 100 \% RH @ 23 }^\circ\text{C)}$
- Repeatability: $\pm 0.2\%$
- Hysteresis: $\pm 1\%$
- Linearity: $\pm 1\%$
- Resolution: 0.02%
- Response time: <math>< 12</math> seconds
- Long term drift: <math>< 0.5\% / \text{year}</math>

TEMPERATURE

- Temperature operation span: - 40 ~ +90 °C
- Temperature accuracy:
 - $\pm 0.2^\circ\text{C (0 ~ 60 }^\circ\text{C)}$
 - $\pm 1^\circ\text{C (-20}^\circ\text{C ~ 0}^\circ\text{C \& 60}^\circ\text{C ~ 90}^\circ\text{C)}$
- Repeatability: $\pm 0.1^\circ\text{C}$
- Resolution: 0.015°C
- Response time: <math>< 12</math> seconds
- Long term drift: <math>< 0.05^\circ\text{C / year}</math>

GENERAL

- Analog humidity and temperature output, in user-selectable ranges: 0~1V, 0~ 2.5V, 0~5V.
- SDI-12, v1.3 compatible.
- Sampling rate: 2 seconds.
- Operation voltage: 8...30 Volts DC
- Current consumption: <math>< 3</math> mA
- Cable length: 3 meters
- Dimensions: Height=160 mm, Diameter=16 mm

SHIELD SPECIFICATIONS

- Material: UV stabilized white thermoplastic plates
- Temperature error @ 1000 W/m² radiation intensity:
 - 0.4°C RMS @ 3 m/s wind speed
 - 0.7°C RMS @ 2 m/s wind speed
 - 1.5°C RMS @ 1 m/s wind speed
- Dimensions: Height=210 mm, Diameter=130 mm

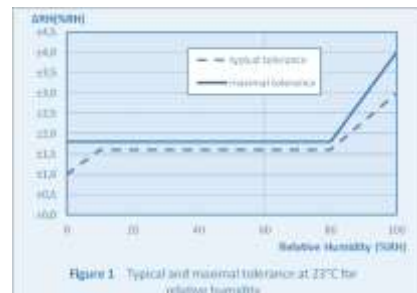


Figure 1: Typical and maximal tolerance at 23°C for relative humidity

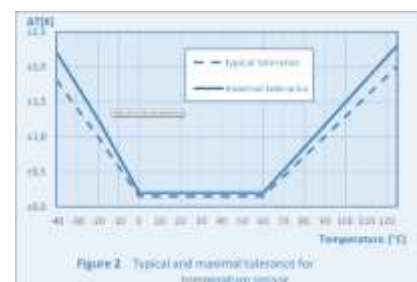


Figure 2: Typical and maximal tolerance for temperature range

ORDER CODES:

Sensor with shield: 002.000.0079

Sensor only: 002.000.0080

Shield only: 003.001.1202



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