HT-500
SDI-12

Humidity-Temperature Sensor with Shield

The Elemetron 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 resists dew formation and has excellent long-term stability.

FEATURES

- Suitable for outdoor use.
- Stable at 100% humidity.
- 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 SDI-12 commands: aM!, aM1!, 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:
  - **Typical: < ±1,5 % RH**
  - Maximum: see Figure 1
- Repeatability: ±0.2 %RH typical
- Hysteresis: < ±0.8 %RH
- Resolution: 0.01%
- Response time: < 12 seconds
- Long term drift: < 0.25%RH /year

TEMPERATURE

- Sensor temperature span: -45 ~ +130 °C
- Temperature accuracy:
  - **Typical: ± 0,1°C (20 ~ 50 C)**
  - Maximum see Figure 2
- Repeatability: ±0.15°C typical
- Resolution: 0.01°C
- Response time: < 5 seconds
- Long term drift: < 0.03°C /year

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
- Operating Temperature: - 40 ~ +80 °C
- Current consumption: < 3 mA
- Cable length: 3 meters
- Dimensions: Height=160 mm, Diameter=16 mm
- Certification: CE
- Made in E.U. under ISO9001
- Optional: MODBUS interface

SHIELD SPECIFICATIONS

- Material: UV stabilized white thermoplastic plates
- Temperature error @ 1000 W/m^2 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
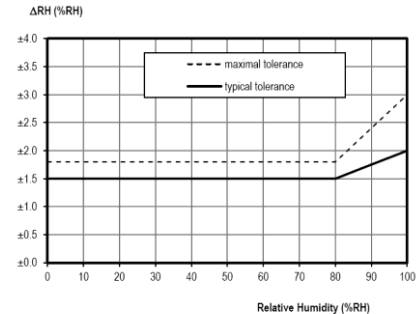- Dimensions: Height=210 mm, Diameter=130 mm

Figure 1: Typical and maximal tolerance for relative humidity in %RH at 25 °C.
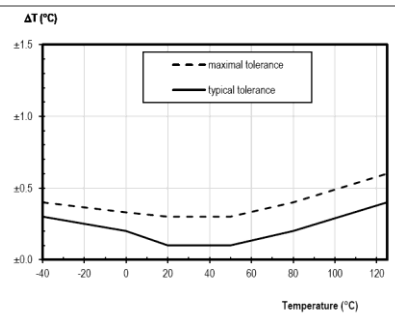

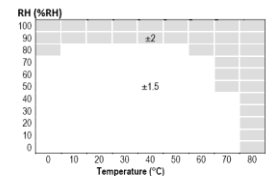Figure 2: Typical and maximal tolerance for temperature sensor in °C

Figure 3: Typical accuracy of relative humidity measurements given in %RH for temperatures 0 – 80°C.

ORDERING:

Model: HT-500
Part Number: PR.001.0023

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