

# AIR TEMPERATURE RELATIVE HUMIDITY AND GLOBAL SOLAR RADIATION Combined Sensor

*t026 TTEPRHSO*



- Compact and very affordable
- 3 sensors all in one body
- Naturally ventilated protection shield

# Description

TTEPRHSO is a very solid and compact sensor, which allows to measure simultaneously air temperature, relative humidity and global solar radiation. It is featured by an extreme flexibility, which makes the sensor an excellent versatile device, suitable for many different applications, ensuring at the same time high standards of performance in all the measurement fields. The air temperature sensing element is composed of a platinum Pt100 resistance thermometer with a response curve, compliant with the DIN 43760 Class 1/3 standard and 4-wire connection. The humidity measurement is given using a laser-cut capacitive polymer transducer connected to an electronic signal conditioning board, and a silicon cell detects solar radiation generating a tension proportional to the captured incident radiation. Sensor body is made of anticorrosive aluminium alloy, and it is protected by an external non-hygroscopic and UV-stabilized plastic shield that assures also a ventilated environment for the sensing components. TTEPRHSO is supplied with power and signal cable (4 m).



## Main features

- **High accuracy**
- **Protected against overvoltages**
- **Naturally ventilated protection shield**

## Technical Specifications\*

### Measurement performance

#### Temperature [°C]

Transducer	Pt100 1/3 DIN 43760
Measurement range	-30 °C ÷ +60 °C
Accuracy	1/3 DIN 43760 ± 0.1
Resolution	0.03

#### Relative Humidity [%]

Transducer	Capacitive
Measurement range	0 ÷ 100 %
Accuracy	±2
Resolution	0.01
Repeatability	0.15
Hysteresis	±1
Long-term stability	< 0.25 a year

#### Solar Radiation [W/m<sup>2</sup>]

Transducer	Silicon cell
Measurement range	0 ÷ 1300 W/m <sup>2</sup>
Spectral range	0.36 ÷ 1.12 μm
Resolution	0.2 mV/W/m <sup>2</sup>
Directional response	± 5% at 75°
Long-term stability	< 2% a year
Non linearity	< 1%

### Operating conditions

Temperature	-30°C ÷ +60°C
Humidity	0% ÷ 100%

### Outputs

RS485 - Modbus / SDI - 12	Temperature, Humidity, dew point and frost point, solar radiation.
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### Power supply and Consumption

Voltage supply	7 ÷ 30 Vdc		
Power consumption (mA)	Min	Typical	Max
RS485-Modbus / SDI-12	-	1	3

### Mechanical specifications

Protective body	ABS plastic material, and stainless steel screws
Weight	1.4 kg
Dimensions	Ø 240 mm; Height 342 mm
Electrical connections	IP67 / 7 male poles

### Ordering codes

RS485-Modbus serial output	t026l-TTEPRHSO-S
SDI-12 serial output	t026m-TTEPRHSO-D

\*Changes on technical performances can be applied upon request of specific calibration