

# 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			
<b>Temperature [°C]</b>			
Transducer	Pt100 1/3 DIN 43760		
Measurement range	-30 °C ÷ +60 °C		
Accuracy	1/3 DIN 43760 ± 0.1		
Resolution	0.03		
<b>Relative Humidity [%]</b>			
Transducer	Capacitive		
Measurement range	0 ÷ 100 %		
Accuracy	±2		
Resolution	0.01		
Repeatability	0.15		
Hysteresis	±1		
Long-term stability	< 0.25 a year		
<b>Solar Radiation [W/m<sup>2</sup>]</b>			
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%		
<b>Operating conditions</b>			
Temperature	-30°C ÷ +60°C		
Humidity	0% ÷ 100%		
<b>Outputs</b>			
RS485 - Modbus / SDI - 12	Temperature, Humidity, dew point and frost point, solar radiation.		
<b>Power supply and Consumption</b>			
Voltage supply	7 ÷ 30 Vdc		
Power consumption (mA)	Min	Typical	Max
RS485-Modbus / SDI-12	-	1	3
<b>Mechanical specifications</b>			
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		
<b>Ordering codes</b>			
RS485-Modbus serial output	PSM-t026l-TTEPRHSO-S		
SDI-12 serial output	PSM-t026m-TTEPRHSO-D		

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