100 years
Since 1925

SIAP+MICROS
Environmental Monitoring Solutions

GLOBAL SOLAR RADIATION

Sensor

t055 TPIR

- High accuracy and data reliability
- Robust and easy to install
- Long-term stability

Description

TPIR measures the global solar radiation, calculated as sum of the direct sun radiation, and the radiation diffused by the sky and scattered clouds. Thanks to its standards of accuracy the sensor is a very suitable device for various applications in the field of meteorology.
TPIR is equipped with a thermopile element, specifically designed and developed for SIAP + MICROS. The sensing element generates a tension proportional to the captured radiation, which is acquired by a signal conditioning electronics that normalizes the output in a standard tension, current, Modbus or SDI-12 signal. Performance features are significantly improved thanks to a double dome made of special optical glass (Schott K5), which allows a wide range of solar radiation frequency measurement (0.3 ÷ 3 μm). The production process is fulfilled by a calibration in a climatic chamber with an artificial light source, in order to obtain high accuracy even when the temperature varies.
The sensor is supplied with power and signal cable (4m).

Main features

- **High accuracy and data reliability**
- **Robust and easy to install**
- **Protection against overvoltages**
- **Low power consumption**

Technical Specifications*

Measurement performance			
Piranometer First Class WMO			
Transducer	Thermopile		
Measurement range	0 ÷ 2000 W/m^2		
Accuracy	± 10 W/m^2		
Resolution	1 W/m^2		
Directional response	< ± 20 W/m^2		
Non linearity	± 1 %		
Spectral range	0.3 ÷ 3 μm		
Inclination response	± 2 %		
Operating conditions			
Temperature	-30°C ÷ +60°C		
Humidity	0% ÷ 100%		
Outputs			
RS485 - Modbus	Solar radiation [W/m^2]		
SDI – 12	Solar radiation [W/m^2]		
Tension	0 ÷ 2 V ↔ 0 ÷ 2000 W/m^2		
Current	4 ÷ 20 mA ↔ 0 ÷ 2000 W/m^2		
Power supply and Consumptions			
Voltage supply	7 ÷ 30 Vdc		
Power consumption *(mA)*	Min	Typical	Max
RS485-Modbus / SDI – 12 / 0 ÷ 2 V	-	1	3
4 ÷ 20 mA	5	-	25
Mechanical specifications			
Protective body	Plastic material, aluminium alloy, brass, stainless steel screws		
Weight	1.1 kg		
Dimensions	Ø = 210 mm; Height: = 250 mm		
Electrical connections	IP67 / 7 pole male connector		
Ordering codes			
Current output, Tension output, RS485-Modbus serial output	PSM-t055d-TPIR-IVS		
SDI-12 serial output	PSM-t055i-TPIR-12		

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

100 years SIAP+MICROS Since 1925 Environmental Monitoring Solutions
SIAP+MICROS S.p.a. Via Del Lavoro, 1 31020 _ San Fior (TV) _ ITALY
www.siapmicros.com sales@siapmicros.com +39 0438 491411