

Silicon Solar Radiation Sensor Type pyrSi-03



- Monocrystalline Silicon Cell (50 x 50 mm²) laminated under special Solar Glass with excellent UV resistance and long-term stability
- Plain integration into the top cover of the box
- Advanced weatherproof junction box made of UV resistant material with cable gland and screw-less terminal for the connection of the measuring cable
- High precision shunt resistor directly soldered to the terminals of the cell
- Linear output signal in the range 50...1500 W/m²
- Individual calibration of each sensors in the natural sunlight at AM 1,5 spectrum by means of a compatible calibrated reference cell
- Output signal in the range of 90...100 mV @ 1000 W/m²
- Accuracy of monthly sums compared to a W.M.O. class 1 Pyranometer (e.g. CMP 11) according to ISO 9060: better±5%
- Very small drift of <0.3%/ year (experience since 1989)
- Option 1: integrated temperature sensor (Pt100 or Pt1000)
- Option 2:integrated signal amplifier with output signal 0...10 VDC
- Warranty: 10 years !!!



Mounting plate, made of fiber glass reinforced polyester

Option 1:

Integrated Temperature Sensors (Pt100 or Pt1000)

(with direct thermal contact to the back side of the solar measuring cell) Scale of discount for additional Temperature Sensor (Pt100 or Pt1000)



Option 2:

Integrated precision Signal Amplifier for the Solar Radiation Signal

The board with amplifier circuit and separate terminals is integrated in the housing of the PyrSi-03. Technical data:

- Linear Output Signal: 0...10 VDC and 4...20 mA at radiation 0...1200 W/m² (other range on request) ; Accuracy: $\pm 0,5\%$
- Supply Voltage: 12...30 VDC / max. 5 mA

Remark: this option with additional 4...20 mA output will be available from May 2013. Until this only the version with 0... 10 VDC is available.

Option 3:

Integrated precision Dual-Amplifier for the Solar Radiation Signal and the Temperature of the Solar Cell

The board with amplifier circuit and separate terminals is integrated in the housing of the PyrSi-03. Technical data for Solar Radiation and Temperature Measurement:

- Linear Output Signal: 0...10 VDC at Solar Radiation 0...1200 W/m² (other range on request) ; Accuracy: $\pm 0,5\%$
- Linear Output Signal 0... 10 VDC at Cell-Temperature $-30...+70^{\circ}\text{C}$; Accuracy: $\pm 0,2^{\circ}\text{C}$
- Supply Voltage: 12...30 VDC / max. 5 mA

Option 4:

Integrated digital signal converter to RS-485 with MODBUS-RTU protocol for the Solar Radiation Signal and the Temperature of the Solar Cell

The electronic board with the digital signal converter and separate terminals is integrated in the housing of the PyrSi-03. Included in this option is a digital temperature sensor with direct thermal contact to the back side of the solar measuring cell.

Technical data for Solar Radiation and Temperature Measurement:

- Galvanic isolated digital output signal via RS-485 with protocol MODBUS RTU
- Supply Voltage: 12...30 VDC / approx. 5 mA

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