

PYRANOMETER SMP11

Item No.: 423.029



DESCRIPTION OF FUNCTIONS

The SMP11 is suitable for use in any weather conditions. It is used both in climate and water sciences as well as meteorology. With this device, the entire irradiation can be measured. The pyranometer has both an RS485 Modbus interface, as well as an current interface (4 ... 20 mA), ensuring easy connection to any meteocontrol data logger.

TECHNICAL DATA

ISO classification:	Secondary Standard
Power supply:	5 ... 30 V DC
Current consumption (at 12 V DC):	100 mW
Operating temperature:	-40 ... 80 °C
Protection class:	IP67
Dimensions:	H: 92,5 mm (with dome) / Ø 150 mm (enclosure)
Current interface (4 ... 20 mA)	
Maximum range of the analogue output:	0 ... 1600 W/m ²
Bus interface (RS-485)	
Maximum range of the Bus interface:	-400 ... 4000 W/m ²
Protocol:	Modbus RTU
Spectral range (50 % points):	285 ... 2800 nm
Response time (63 %):	< 0,7 s
Response time (95 %):	< 2 s
Zero offset a (thermal radiation: 200 W/m ²):	< 7 W/m ²
Zero offset b (temperature change: 5 K/h):	< 2 W/m ²
Stability deviation (per year):	< 0,5 %
Non-linearity (100 ... 1,000 W/m ²):	< 0,2 %
Directional error (at 80 ° and 1,000 W/m ²):	< 10 W/m ²
Temperature error:	< 1 % (-20 ... 50 °C) < 2 % (-40 ... 70 °C)
Inclination error (at 1,000 W/m ²):	< 0,2 %
Expected daily accuracy:	< 2 %
Error accuracy:	0,1 °

CONFIGURATION

Bus interface

Interface:	RS-485
Protocol:	Modbus RTU
Adjustable baud rates:	1200, 2400, 4800, 9600, 19200, 38400, 115200, 460800
Default baud rate:	19200
Selectable data formats:	8N1, 8N2, 8E1, 8E2, 8O1, 8O2, 7N1, 7N2, 7E1, 7E2, 7O1, 7O2
Default data format:	8N1
Default slave address:	51-60, see identification label
Note:	Changes regarding communication settings are only possible in connection with an USB converter on RS485 and the manufacturer's software.

Current interface

Gradient:	100
Offset:	-400
Unit:	W/m ²
Abbreviation:	G_Hx* / G_Mx*

MEASUREMENT VALUES RECORDED

Bus interface

G_H / G_M**	Irradiance in horizontal plane / Irradiance in PV module plane
T_U	Ambient temperature

Current interface

G_Hx / G_Mx	Irradiance in horizontal plane / Irradiance in PV module plane
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PARTICULARITIES

*

x is a placeholder for a consecutive number. If more than one sensor of a given type is installed, the numbering starts with 1. Otherwise, 0 is used.

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Depending on whether the irradiation in the horizontal plane or at the module level is to be measured, a corresponding modbus file can be selected (horizontal or module level).
