

PYRANOMETER SR20-D2

Item No.: 423.035



DESCRIPTION OF FUNCTIONS

The SR20-D2 is suitable for use in any weather conditions and has superior temperature dependence. Furthermore its specifications have been tested and are documented for every individual instrument (as required by ISO 9060). 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 9060 classification:	Secondary Standard
Power supply:	5,5 ... 30 V DC
Operating temperature:	-40 ... 80 °C
Protection class:	IP67
Dimensions:	H: 85 mm (with dome) / Ø 150 mm (enclosure)
Analog output (4 ... 20 mA)	
Measuring range:	0 ... 1,600 W/m ²
Power consumption (at 12 V DC):	< 115 mW
Bus interface (RS-485)	
Measuring range:	0 ... 4,000 W/m ²
Power consumption (at 12 V DC):	< 75 mW
Protocol:	Modbus RTU
Output:	Irradiance in W/m ² Instrument body temperature in °C
Calibration registers:	Accessible to users on request
Calibration uncertainty:	< 1.2 % (k = 2)
Spectral range:	285 ... 3,000 nm
Response time (95 %):	3 s
Zero offset a:	5 W/m ² unventilated
Zero offset b:	< ± 2 W/m ²
Stability deviation:	< ± 0.5 % change per year
Non-linearity:	< ± 0.2 % (100 ... 1,000 W/m ²)
Directional error:	< ± 10 W/m ²
Directional error of individual instrument:	test report included
Temperature error:	< ± 0,4 % (-30 ... 50 °C)
Temperature error of individual instrument:	test report included
Inclination error:	< ± 0.2 % (0 ... 90 °C at 1,000 W/m ²)
Achievable accuracy for daily sums:	2 %

CONFIGURATION

Bus interface

Interface:	RS-485
Protocol:	Modbus RTU
Baud rate:	19,200 bps
Data format:	8N1
Default slave address:	51-60, see identification label

Analog output

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

MEASUREMENT VALUES RECORDED

Bus interface

G_Hx* / G_Mx*	Irradiance in horizontal plane / Irradiance in PV-module plane
T_Ux*	Ambient temperature

Analog output

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.

meteocontrol GmbH | Spicherer Straße 48 | 86157 Augsburg | Germany | phone +49 (0)821 34666 - 0 |
 fax +49 (0)821 34666 - 11 email info@meteocontrol.com | web www.meteocontrol.com

meteocontrol North America | 1110 W. Lake Cook Road Ste 370 | Buffalo Grove | Illinois | phone +1 (224) 310-5700
 email info-na@meteocontrol.com | web www.meteocontrol.com