

SR05 SERIES

Spectrally flat Class C (Second class) pyranometers with various outputs

SR05 series is the most affordable range of pyranometers meeting ISO 9060 requirements. They are ideal for general solar radiation measurements in (agro-)meteorological networks and PV monitoring systems. SR05's are easy to mount and install. Various outputs are available, both digital and analogue, for ease of integration.



Figure 1 SR05 with ball levelling and tube mount.



Figure 2 Easy levelling of SR05 on its tube mount with ball levelling. SR05 series offers various industry standard digital and analogue outputs.

Introduction

SR05 series is an economical range of ISO 9060 class C pyranometers for measurement of solar radiation received by a plane surface, in W/m^2 , from a 180° field of view angle. Different configurations are available, depending on its mounting and the output needed. The combination of easy installation and its cost makes SR05 ideal for installation in (agro-) meteorology networks and PV power plant monitoring.

Benefits

- industry standard digital and analogue outputs: easy implementation and servicing
- easy mounting and levelling
- pricing: Class C pyranometers finally affordable for large networks

Suggested use

- general solar radiation measurements
- (agro-)meteorological networks
- PV power plant monitoring

SR05 series design

SR05 pyranometers employ a thermopile sensor with black coated surface, one dome and an anodised aluminium body with visible bubble level. Optionally the sensor has a unique ball levelling mechanism and tube mount, for easy installation. SR05 has a variety of industry standard outputs, both digital and analogue: SR05-D1A3 offers Modbus over RS-485 and 0-1 V output, SR05-D2A2 offers Modbus over TTL and 4-20 mA current loop output. Version SR05-A1 offers a conventional analogue millivolt output.



Figure 3 'Exploded view' of SR05. The optional ball levelling and tube mount allow for easy installation. The cable (standard 3 m) has an M12-A connector.

Standards

Applicable instrument classification standards are ISO 9060 and WMO-No. 8.



SR05 series specifications

Measurand	hemispherical solar radiation
ISO classification	
ISO 9060:2018	spectrally flat Class C pyranometer
ISO 9060:1990	second class pyranometer
WMO performance level	moderate quality pyranometer
Calibration uncertainty	< 1.8 % (k = 2)
Calibration traceability	to WRR
Spectral range	285 to 3000 x 10 ⁻⁹ m
Rated operating temperature range	-40 to +80 °C
Standard cable length	3 m
Rated operating voltage range	
-versions -D1A3 and -D2A2	5 to 30 VDC
-version -A1	passive sensor
Levelling	ball levelling, optional with / without tube mount

Output

Version SR05-D1A3

Communication protocol	Modbus
Hardware interface	2-wire (half duplex) RS 485

Digital output	-irradiance in W/m ² -instrument body temperature in °C
----------------	---

Analogue output	0-1 V
-----------------	-------

Version SR05-D2A2

Communication protocol	Modbus
Hardware interface	TTL
Digital output	same as SR05 D1A3
Analogue output	4-20 mA current loop

Version SR05-A1

Analogue output	millivolt
Sensitivity (nominal)	10 x 10 ⁻⁶ V/(W/m ²)

Versions

SR05 series offers various versions with industry standard outputs, both digital and analogue, each with several options:

- SR05-D1A3 digital Class C pyranometer, with Modbus over RS-485 and 0-1 V output
- SR05-D2A2 digital Class C pyranometer, with Modbus over TTL and 4-20 mA output
- SR05-A1 analogue Class C pyranometer with millivolt output

Options

- cable lengths: 10, 20 m
- extension cable with connector pair: 10, 20 m
- with ball levelling
- with ball levelling and tube mount (for tube diameters 25 – 40 mm)
- OEM versions

Table 1 Ordering codes for SR05

VERSIONS OF SR05 (part numbers), without cable	
SR05-D1A3	digital Class C pyranometer, with Modbus over RS-485 and 0-1 V output
SR05-D2A2	digital Class C pyranometer, with Modbus over TTL and 4-20 mA output
SR05-A1	analogue Class C pyranometer, with millivolt output
CABLE FOR SR05, with female M12-A connector at sensor end, non-stripped on other end	
`-03' after SR05 part number	standard cable length: 3 m
`-10' after SR05 part number	cable length: 10 m
`-20' after SR05 part number	cable length: 20 m
CABLE EXTENSION FOR SR05, with male and female M12-A connectors	
C06E-10	cable length: 10 m
C06E-20	cable length: 20 m
LEVELLING OPTIONS FOR SR05	
BL01	ball levelling, for levelling of SR05
TMBL01	tube mount with ball levelling, for mounting SR05 on a tube



See also

- [PMF01](#) pyranometer mounting fixture, compatible with SR05 ball levelling
- view our complete [range of pyranometers](#)

About Hukseflux

Hukseflux is the leading expert in measurement of energy transfer. We design and manufacture sensors and measuring systems that support the energy transition. We are market leaders in solar radiation- and heat flux measurement. Hukseflux products and services are offered worldwide via our office in Delft, the Netherlands and local distributors.

Are you interested in this product?
E-mail us at: info@hukseflux.com