HUKX

Sensor
Technology

Brochure

Spectrally flat Class C
pyranometers

SR05
series

SR05 series
Spectrally flat Class C pyranometer

with various outputs

Pyranometers of the SR05 series are the most affordable of Hukx pyranometers meeting ISO 9060 requirements. They are ideal for general solar radiation measurements in (agro-)meteorological networks and PV monitoring systems. SR05s are easy to mount and install with various outputs available—both digital and analog—for seamless system integration.

Introduction

SR05 series is Hukx's most economical range of ISO 9060 classified pyranometers. Pyranometers are engineered 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 mounting and the output needed. SR05 series' combination of easy installation, good accuracy, and cost-efficiency makes these spectrally flat pyranometers ideal for installation in (agro-) meteorology networks and commercial-scale PV system monitoring.

Benefits

– industry-standard digital and analog outputs: easy implementation and servicing
– simplified mounting and leveling: unique ball leveling and tube mount (optional)
– affordable pricing: finally budget-conscious Class C performance for large networks

Figure 1 SR05 with ball leveling and tube mount.

Suggested use

– general solar radiation measurements
– (agro-)meteorological networks
– IEC 61724-1 Class B plane of array irradiance in commercial-scale PV system performance monitoring
– IEC 61724-1 Class A reflected radiation in utility-scale PV system performance measurement

SR05 series design

SR05 pyranometers feature a thermopile sensor with a black-coated surface, a single dome, and a protective anodized aluminum body with a visible bubble level. Optionally, the sensor has a unique ball leveling mechanism and tube mount for easy installation.

SR05 has a variety of industry-standard outputs, both digital and analog:

– SR05-D1A3: Modbus over RS-485 and 0-1 V output
– SR05-D2A2: Modbus over TTL and 4-20 mA current loop output
– SR05-A1: conventional analog millivolt output

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

Figure 2 Easy leveling and installation of SR05 with its unique tube mount with ball leveling (optional). SR05 series also offers various industry-standard digital and analog outputs.

Standards

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

Versions

SR05 series offers various versions with industry standard outputs, both digital and analog, 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 analog Class C pyranometer: with millivolt output
– with ball leveling
– with ball leveling and tube mount (for tube diameters 25 - 40 mm)
– extension cable with connector pair: 10, 20 m

Options

– cable lengths: 10, 20 m

Figure 4 'Top-down view' of SR05.

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
SR05-D2A2	digital Class C pyranometer, with Modbus over TLL and 4-20 mA
SR05-A1	analog 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

Leveling options for SR05

BL01	ball leveling, for leveling of SR05
TMBL01	tube mount with ball leveling, for mounting SR05 on a tube

SR05 | SR05 with BL01 | SR05 with TMBL01

Figure 5 Leveling options for SR05: BL01 (ball leveling) and TMBL01 (tube mount with ball leveling).

See also

- Read about the PMF01 pyranometer mounting fixture, compatible with SR05 ball leveling.
- View our complete range of pyranometers.

SR05 series specifications

General specifications

measurand	hemispherical solar radiation
ISO classification:	
ISO 9060:2018	spectrally flat Class C pyranometer
ISO 9060:1990	second class pyranometer
IEC 61724-1:2021 compliance	meets class A PV monitoring system requirements for reflected solar irradiance measurement meets Class B PV monitoring System requirements for GHI and POA solar irradiance measurement
WMO performance level	moderate quality pyranometer
calibration uncertainty	< 2.4 % (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 – version -A1	 5 to 30 VDC passive sensor
leveling	optional ball leveling, with/without tube mount

Output

Version SR05-D1A3	
communication protocol	Modbus
hardware interface	2-wire (half duplex) RS 485
digital output	– irradiance in W/m² – instrument body temperature in °C
analog output	0-1 V
Version SR05-D2A2	
communication protocol	Modbus
hardware interface	TTL
digital output	same as SR05-D1A3
analog output	4-10 mA current loop
Version SR05-A1	
analog output	millivolt
sensitivity (nominal)	10 x 10^{-6} V/(W/m²)

About Hukx

Hukx is the leading innovator in solar radiation and heat flux sensor technology. We are proud to set the standard in high-accuracy measurement, and to be working at the heart of the energy transition.

Customers worldwide rely on our bestselling pyranometers and heat flux sensors. From sensor design and selection to supply and recalibration, we support you across the entire lifecycle.

Hukx is headquartered in the Netherlands, with locally owned representative sales offices in the USA, Brazil, India, China, Southeast Asia, and Japan.

Let us help you select the best sensor for your application.
Get in touch with our experts today via: info@hukx.com

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