SR05 SERIES
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.

Introduction
SR05 series is an economical range of ISO 9060 second class pyranometers for measurement of solar radiation received by a plane surface, in W/m², 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: second class 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.](image)

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

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<th>SR05 series specifications</th>
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<tr>
<td>Measurand</td>
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<td>ISO classification</td>
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<tr>
<td>Calibration uncertainty</td>
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<td>Spectral range</td>
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<td>Standard cable length</td>
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<td>Rated operating voltage range</td>
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Output

**Version SR05-D1A3**
Communication protocol: Modbus over 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 over TTL
Digital output:
- irradiance in W/m^2
- instrument body temperature in °C
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 second class pyranometer, with Modbus over RS-485 and 0-1 V output
- SR05-D2A2 digital second class pyranometer, with Modbus over TTL and 4-20 mA output
- SR05-A1 analogue second class pyranometer with millivolt output

In addition, version SR05-D1A3-PV is available as a perfect alternative for PV reference cells. Please see SR05-D1A3-PV’s separate brochure.

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**

<table>
<thead>
<tr>
<th>VERSIONS OF SR05 (part numbers), without cable</th>
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<td>SR05-D1A3</td>
<td>digital second class pyranometer, with Modbus over RS-485 and 0-1 V output</td>
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<tr>
<td>SR05-D1A3-BL</td>
<td>digital second class pyranometer, with Modbus over RS-485 and 0-1 V output, with ball levelling</td>
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<tr>
<td>SR05-D1A3-TMBL</td>
<td>digital second class pyranometer, with Modbus over RS-485 and 0-1 V output, with tube mount on ball levelling</td>
</tr>
<tr>
<td>SR05-D2A2</td>
<td>digital second class pyranometer, with Modbus over TTL and 4-20 mA output</td>
</tr>
<tr>
<td>SR05-D2A2-BL</td>
<td>digital second class pyranometer, with Modbus over TTL and 4-20 mA output, with ball levelling</td>
</tr>
<tr>
<td>SR05-D2A2-TMBL</td>
<td>digital second class pyranometer, with Modbus over TTL and 4-20 mA output, with tube mount on ball levelling</td>
</tr>
<tr>
<td>SR05-A1</td>
<td>analogue second class pyranometer, with millivolt output</td>
</tr>
<tr>
<td>SR05-A1-BL</td>
<td>analogue second class pyranometer, with millivolt output, with ball levelling</td>
</tr>
<tr>
<td>SR05-A1-TMBL</td>
<td>analogue second class pyranometer, with millivolt output, with tube mount on ball levelling</td>
</tr>
<tr>
<td>SR05-D1A3-PV</td>
<td>digital second class pyranometer, alternative for PV reference cell (see separate product brochure)</td>
</tr>
</tbody>
</table>

**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 |

**About Hukseflux**
Hukseflux Thermal Sensors offers measurement solutions for the most challenging applications. We design and supply sensors as well as test & measuring systems, and offer related services such as engineering and consultancy. Hukseflux is ISO 9001:2008 certified. Hukseflux sensors, systems and services are offered worldwide via our office in Delft, the Netherlands and local distributors.

**See also**
- PMF01 pyranometer mounting fixture, compatible with SR05 ball levelling
- view our complete range of pyranometers

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