3S-2IS
Dual Orientation Irradiance Sensor

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SEVEN Dual Orientation Irradiance Sensor is part of the SEVEN meteorological sensor series, which includes professional and intelligent measurement with digital interfaces for environmental and industrial applications such as two orientation PV plants.

SEVEN Dual Orientation Irradiance Sensor is a special sensor for accurate Performance Ratio (PR) calculation in two orientation PV plants.

Dual Orientation Irradiance Sensor has simple installation and setup process. The mounting structure is designed for this application and is suitable to locate the sensors to a related orientation. Related firmware for the sensor can be downloaded via the link provided by SEVEN team. The user can enter the PV module numbers of each orientation to SEVEN GUI. Then, the software calculates the **Total Effective Irradiance** for the performance ratio calculation of the complete plant.

The sensor box of Dual Orientation Irradiance Sensor has inputs for the second Irradiance Sensor, two Module Temperature Sensors, an Ambient Temperature Sensor, and a Wind Speed Sensor. The electronic card in the sensor box collects the data received from all input sensors.

All collected meteorological data are transferred to data loggers and receiving units via a 2-wire RS485 bus with Modbus RTU protocol.

Benefits and Features

- Total Effective Irradiance Calculation
- Class A Compliance
- Accurate Data for PR calculation
- Fast & Simple to Install
- Free Remote Software Update
- SunSpec Compliant
- SEVEN Remote Setup Service
- SEVEN Customer Support
- 5 Years Warranty

Technical Specifications

	3S-2IS
Reference Cell	Monocrystalline Silicon (31 mm x 31 mm)
Current Shunt	High precision shunt resistor directly soldered to the terminals of the cell
Irradiance Range	0 - 1600 W/m²
Uncertainty	≤1,2% (less than 2%; as per IEC61724-1 standard Class A)
Resolution	0.1 W/m² (less than 1W/m²; as per IEC61724-1 standard Class A)
Response Time	1 sec. (less than 3 sec; as per IEC61724-1 standard Class A)
Drift	Very small drift of <0.3%/ year
Field of View	Larger than 160° as per IEC61724-1 standard Class A
Tilt-Azimuthal Angle	0°- 0° (≤ 1°; as per IEC61724-1 standard Class A)
Output Rate	1/s
Data Output	RS485 up to 38400 Baud
Communication Protocol	Modbus RTU
Power Supply	12 to 30 VDC
Power Consumption	25 mA max @24 VDC

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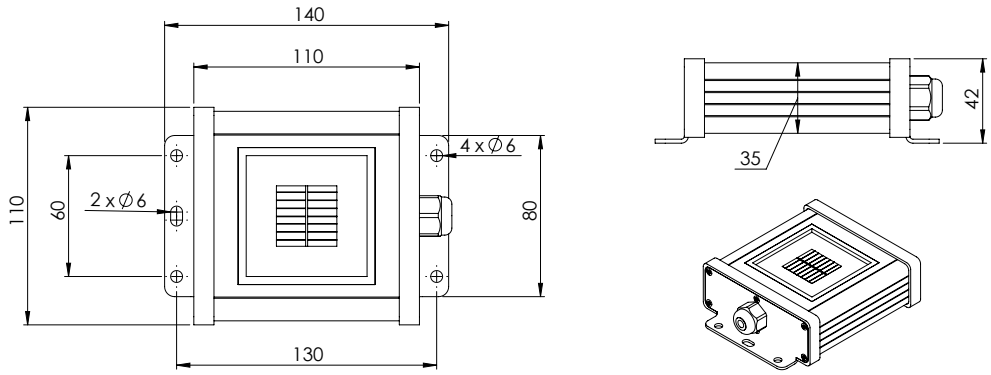
Revision 0.0

Technical Specifications

	3S-2IS
Electrical Connection	3 m LIYYC11Y PUR Cable, UV and Weather Resistant
Galvanic Isolation	1000 V between power supply and RS485 bus
Cell Temperature Sensor Type	PT1000 Class A as per EN 60751
Operating Temperature Range	-40°C to + 85°C
Operating Humidity Range	0 to 100 %
Box Dimensions	140 mm x 110 mm x 42 mm (WxLxH)
Weight	0.3 kg
IP Rating	IP54 (IP65, IP68 options)
Sensor Housing Material	Aluminum
DIN Standard	IEC 61724-1:2021 and IEC 60904
Calibration	Each sensor is calibrated under Class AAA Sun Simulator as per IEC 60904-2 and IEC 60904-4 by using a reference cell calibrated by ISFH-Germany
Test	The test is carried under natural sunlight by using a calibrated reference cell from Fraunhofer ISE, Germany
Origin	TÜRKİYE

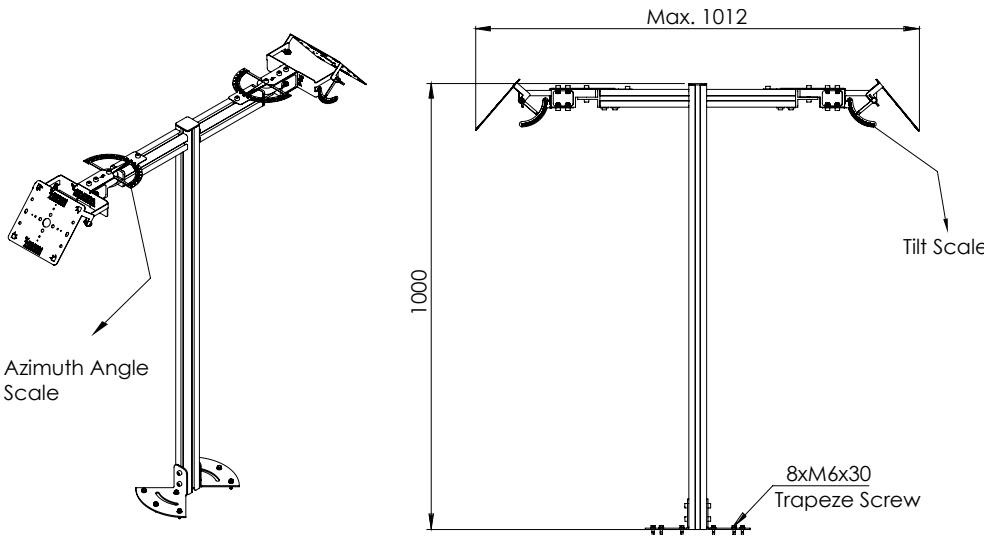
Technical Drawings

Technical Drawing of Irradiance Sensor



Technical Drawing of Mounting Structure

Dual Orientation Irradiance Sensor has an optional Mounting Structure. The Mounting Structure is designed for two Irradiance Sensors.



Note: All dimensions are in mm.

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