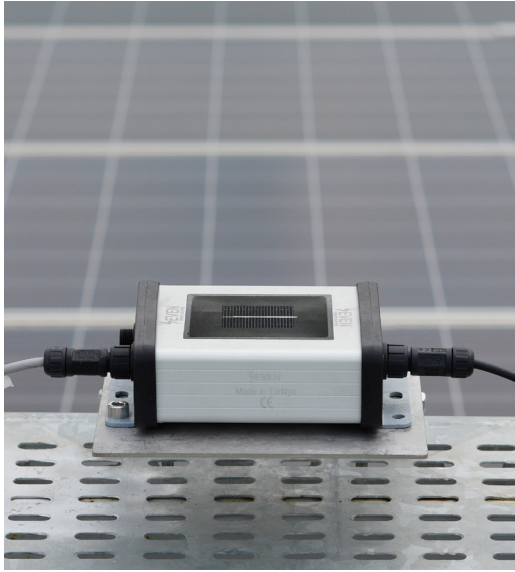


Irradiance Sensor



The Irradiance Sensor is part of the SEVEN meteorological sensor range, which includes professional and intelligent measuring sensors with a digital or analog interface for environmental and industrial applications such as photovoltaic plants.

The Irradiance Sensor, called PV Pyranometer with photovoltaic reference cell, provide irradiance data in W/m^2 to the user to calculate the performance ratio of the PV plants.

Irradiance Sensors are available with various outputs according to customer requirements. The measured irradiance data is transmitted to data loggers and receiver units according to input requirements.

SEVEN products use reliable and high-quality components to provide accurate meteorological information in environmental and industrial applications. The Irradiance Sensor is specifically designed according to the requirements of PV plant monitoring systems, based on standards such as IEC 61724 and IEC 60904.

Benefits and Features

- Class A Compliance
- Fast & Simple to Install
- Similar Structure with PV Panels
- Free Software Update
- SunSpec Compliant (for Modbus RTU)
- SEVEN Remote Setup Service
- SEVEN Customer Support
- 5 Years Warranty

Models

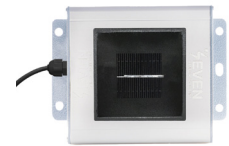
3S-IS

Modbus Irradiance Sensors is designed for professional use in industrial, commercial and utility-scale photovoltaic plants. The Irradiance Sensor operates as a hub for several sensors. All measured meteorological data are transmitted to dataloggers and receiver units via 2-wire RS485 bus with Modbus RTU protocol.



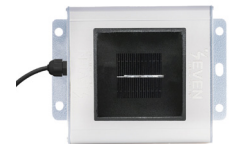
3S-IS-T-I

Irradiance sensors with analog 4-20 mA output measures irradiance and cell temperature data. The measured irradiance value is the temperature-compensated. The 4-20 mA Irradiance Sensor is connected to suitable analog inputs of dataloggers or other receiver units.



3S-IS-T-V

0-1,5 V Irradiance Sensor specially designed for SolarEdge datalogger. It is also compatible with other dataloggers and receiver units with the suitable inputs. 0-1,5V Irradiance Sensor measures irradiance and cell temperature data. The measured Irradiance value is the temperature compensated.



3S-IS-LR

The Low-Cost Irradiance Sensor is specially designed for residential and rooftop applications or small-scale PV applications. Advanced features and high accuracy for meteorological sensors are not required for these applications. The cost of the sensor should be proportional to the scale of the PV system. SEVEN achieved that by Low-Cost Irradiance Sensor. The measured irradiance value is transmitted to dataloggers and receiver units via a 2-wire RS485 bus with Modbus RTU protocol.

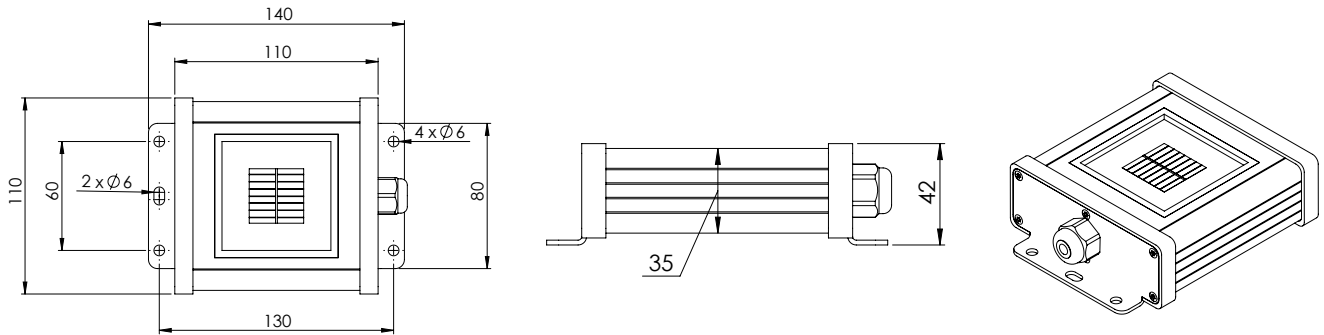


Technical Specifications

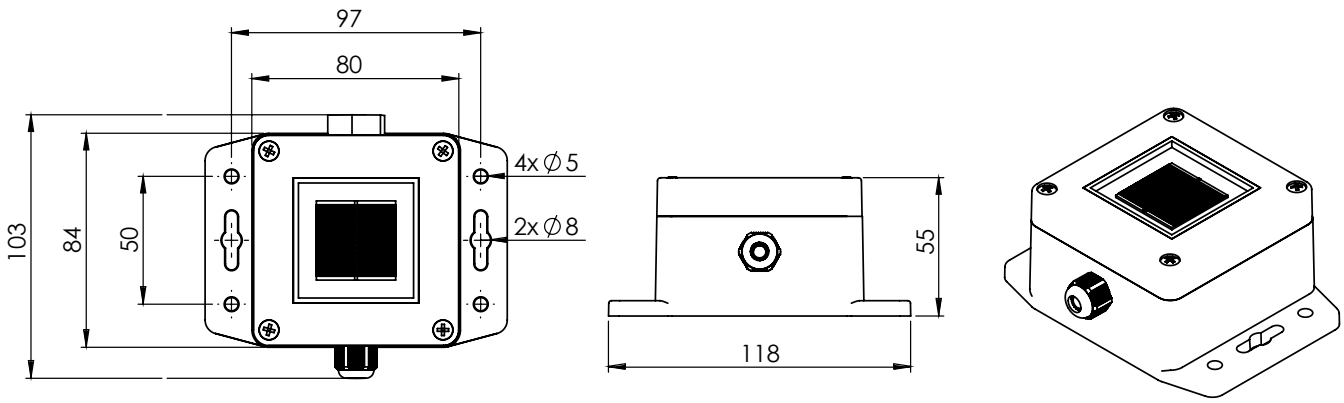
	3S-IS	3S-IS-T-I	3S-IS-T-V	3S-IS-LR
Sensor Type	Silicon Reference Cell (31 mm x 31 mm)			
Measured Data	Irradiance, Cell & Module & Ambient Temperature, Wind Speed & Direction and Relative Humidity	Irradiance and Cell Temp.	Irradiance and Cell Temp.	Irradiance
Irradiance Range	0 - 1600 W/m ²	0 - 1500 W/m ²		0 to 1600 W/m ²
Uncertainty	≤2% (Less than 2%; as per IEC 61724-1 standard Class A)			≤ 5%
Resolution	0.1 W/m ² (Less than 1W/m ² ; as per IEC 61724-1 standard Class A)			
Response Time	1 SEC. (Less than 3 sec; as per IEC 61724-1 standard Class A)			
Drift	<0.3% / year			
Field of View	170° (Larger than 160° as per IEC 61724-1 standard Class A)			
Tilt-Azimuthal Angle	0°- 0° (≤1°; as per IEC 61724-1 standard Class A)			
Output Rate	1/s	-	-	1/s
Data Output	RS485 up to 38400 Baud	Analog 4-20 mA	Analog 0-1,5 V	RS485 up to 38400 Baud
Communication Protocol	Modbus RTU	-	-	Modbus RTU
Power Supply	12 to 30 V DC			
Power Consumption	30 mA max @24 VDC	50 mA max @24 VDC	15 mA max @24 VDC	10 mA max @24 VDC
Electrical Connection	3 m LIYYC11Y PUR Cable, UV and Weather Resistant			
Galvanic Isolation	1000 V between power supply and RS485 bus	-	-	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 % RH			
Box Dimensions	140 mm x 110 mm x 42 mm (W x L x H)			118 mm x 84 mm x 55 mm (W x L x H)
Weight	0.3 kg			0.2 kg
IP Rating	IP 54 (Optional IP 65, IP 68)			IP 67
Sensor Housing Material	Aluminum			ABS
Compliant Standard	IEC 61724-1:2021 and IEC 60904			-
Calibration	Each sensor is calibrated under a Class AAA Sun Simulator according to IEC 60904-2 and IEC 60904-4 standards using a reference cell calibrated by the ISFH Institute in Germany.			-
Test	Each sensor is tested in natural sunlight using a reference cell calibrated by the Fraunhofer ISE Institute in Germany.			
Origin	TÜRKİYE			

Technical Drawings

Technical Drawings of 3S-IS / 3S-IS-T-I / 3S-IS-T-V



Technical Drawings of 3S-IS-LR



Note: All dimensions are in mm.