

Low-Cost Irradiance Sensor



The Low-Cost Irradiance Sensor is part of the SEVEN meteorological sensor range, which includes professional and intelligent measuring sensors with a digital interface for environmental and industrial applications such as residential and rooftop or small-scale PV plants.

The Low-Cost 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.

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 values are transmitted to dataloggers and receiving units via the serial RS485 interface with MODBUS RTU protocol.

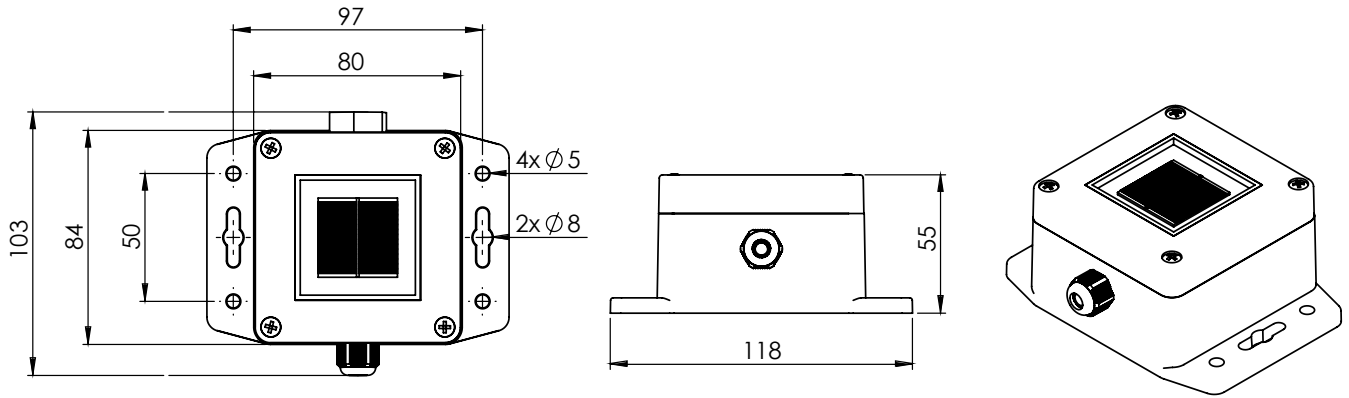
Benefits and Features

- Economical Solution
- Similar Structure with PV panels
- Fast & Simple to Install
- Free Software Update
- SunSpec Compliant
- SEVEN Remote Setup Service
- SEVEN Customer Support
- 5 Years Warranty

Technical Specifications

Measured Data	Plane of Array Irradiance
Sensor Type	Silicon Reference Cell (31 x 31 mm)
Measuring Range	0 to 1600 W/m^2
Uncertainty	$\leq 5\%$
Resolution	0.1 W/m^2 (less than 1 W/m^2 ; as per IEC 61724-1 standard Class A)
Response Time	1 s 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 ($\leq 1^\circ$; as per IEC 61724-1 standard Class A)
Output Rate	1/s
Data Output	RS485 up to 38400 Baud
Communication Protocol	Modbus RTU
Power Supply	12 to 30 V DC
Power Consumption	10 mA max @ 24 V DC
Electrical Connection	3 m LIYYC11Y PUR Cable, UV and Weather Resistant
Galvanic Isolation	1000 V Between Power Supply and RS485 Bus
Operating Temperature Range	-40°C to +85°C
Operating Humidity Range	0 to 100 % RH
Box Dimensions	118 mm x 84 mm x 55 mm (W x L x H)
Weight	0.2 kg
IP Rating	IP 67
Sensor Housing Material	ABS
Test	Each sensor is tested in natural sunlight using a reference cell calibrated by the Fraunhofer ISE Institute in Germany.
Origin	TÜRKİYE

Technical Drawing



Note: All dimensions are in mm.