

Self-Cleaning Irradiance Sensor

The 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 photovoltaic plants. The Irradiance Sensor, called PV Pyranometer with photovoltaic reference cell, provides irradiance data in W/m^2 to the user based on IEC 61724-1:2021 and IEC 60904-2 standards to calculate the performance ratio of the PV plants.

The measured irradiance data is transmitted to data loggers and receiver units via a 3-wire RS485 bus with Modbus RTU protocol.

In accordance with IEC 61724-1:2021, clause 8.2.5 (and Table 7), Class A monitoring requires mitigation of soiling effects on Irradiance Sensors and at least weekly cleaning for typical sensors and installations. Where local conditions permit, the interval may be extended; technologies that provide soiling reduction/detection equivalent to weekly cleaning are also acceptable. The Automatic Cleaning Irradiance Sensor is designed to meet these requirements by reducing the need for manual cleaning, thereby decreasing site visits and labor needs.

Its cleaning system operates once per day at a user-defined time via the GUI as standard. If desired, up to three different times can be set in the GUI, increasing the daily cleaning frequency to as many as three cycles.



Benefits and Features

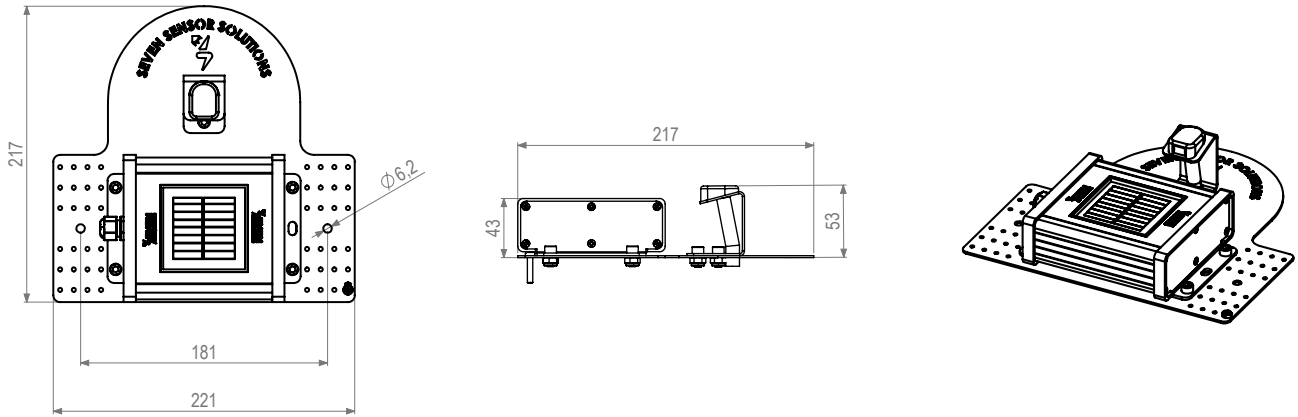
- IEC 61724-1:2021 Compliant (Class A Monitoring)
- SunSpec Compliant
- Similar Structure with PV Panels
- SEVEN Remote Setup Service
- Automatic Cleaning System (Reduces Labor Cost)
- SEVEN Customer Support
- Quick & Easy Installation
- 2 Years Warranty
- Free Software Update

Technical Specifications

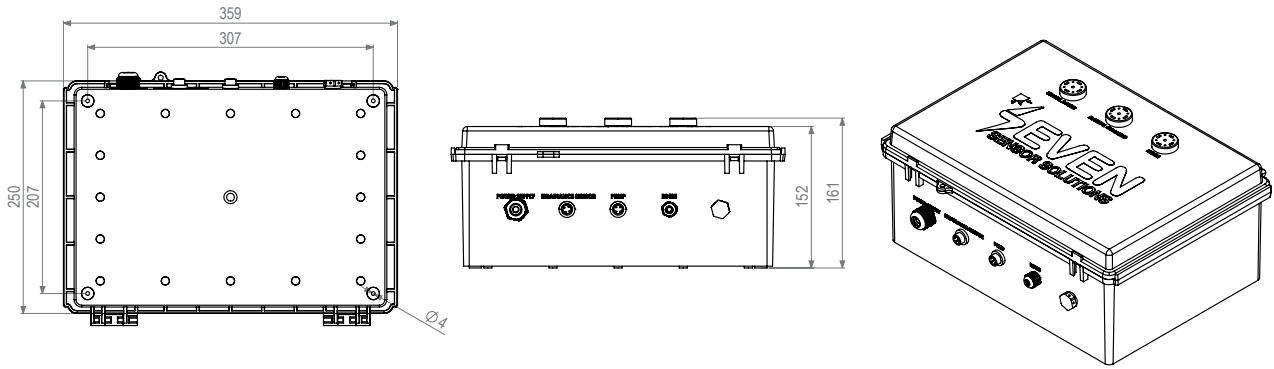
Item Code	3S-SCIS
Measured Data	Irradiance and Cell Temp.
Irradiance Range	0 - 1600 W/m ²
Uncertainty	≤2% (Less than 2%; as per IEC 61724-1 standard Class A)
Resolution	0.1 W/m ² (Less than 1W/m ² ; as per IEC 61724-1 standard Class A)
Response Time	1 sec. (Less than 3 sec; as per IEC 61724-1 standard 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
Data Output	RS485 up to 38400 Baud
Communication Protocol	Modbus RTU
Power Supply	110-240V AC or 24V 5A DC
Power Consumption	Pump Passive: Max. 20 mA @ 24V DC
	Pump Active: Max. 3 A @ 24V DC
Cabel Length and Feature	3 m LI2Y(st)C11Y 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	-20°C - 85°C
Operating Humidity Range	0% - 100% RH
Water Tank Capacity	18 Liters
Water Consumption	36 Liters/year (Refilling required twice a year)
Washing Liquid	Pure Water: 100% (Should be used when the ambient temperature is above 0°C)
	Pure Water: 65% + Antifreeze: 35% (Should be used when the ambient temperature is below 0°C)
Water Hose Length	5 m (up to 20m on request)
Max. Water Line Height	5 m
Weight	10.0 kg
IP Rating	IP54 (Optional IP 65, IP 68)
Sensor Housing Material	Aluminum
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

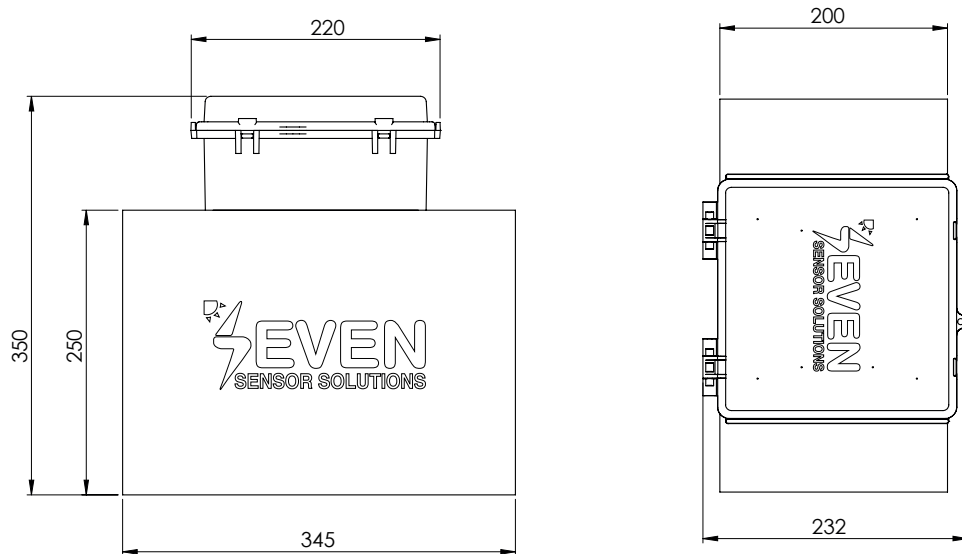
Irradiance Sensor



Electronic Panel



Water Tank



Note: All dimensions are in mm.

*SEVEN has the right to make modifications on this documentation without notice.