3S-ALBEDO
Albedometer

Albedometer

The Albedometer is part of the SEVEN meteorological sensor range, which includes professional and intelligent measuring sensors for environmental and industrial applications such as PV plants.

The albedometer simply consists of two irradiance sensors, where the front sensor measures the incident POA irradiance and the rear sensor measures the reflected irradiance. It helps to calculate the performance ratio and measure the solar albedo. Solar albedo is the ratio of reflected irradiance to POA irradiance.

The albedometer is designed for professional use in photovoltaic plants that use bifacial panels.

The measured values can be transmitted to dataloggers and receiving units via the serial RS485 interface with MODBUS RTU protocol.

SEVEN products use reliable and high-quality components to provide accurate meteorological data. The albedometer is specially designed according to the requirements of PV plant monitoring systems.

Benefits and Features

- Class A Compliance
- Similar Structure with PV Modules
- Fast & Simple to Install
- Low Power Consumption
- Free Software Update
- SEVEN Remote Setup Service
- SEVEN Customer Support
- 2 Year Warranty
- 2 pieces PT1000 Module Temperature Sensor Connection (Optional)

Models

3S-ALBEDO

The 3S-Albedo Albedometer is designed for professional use in industrial, commercial, and utility-scale photovoltaic plants. All measured data is transmitted to data loggers and receiving units via a 3-wire RS485 data bus using the Modbus RTU protocol. For bifacial systems, the measured albedo value can be used as a reference in calculating the site's performance ratio (PR) and in overall performance analysis.

3S-ALBEDO-2T

The 3S-Albedo-2T Albedometer is designed for professional use in industrial, commercial, and utility-scale photovoltaic plants. It functions as a hub that allows the connection of two PT1000 module temperature sensors. All measured meteorological data is transmitted to data loggers and receiving units via a 3-wire RS485 data bus using the Modbus RTU protocol.
For bifacial systems, the measured albedo value can be used as a reference in calculating the site's performance ratio (PR) and in overall performance analysis.
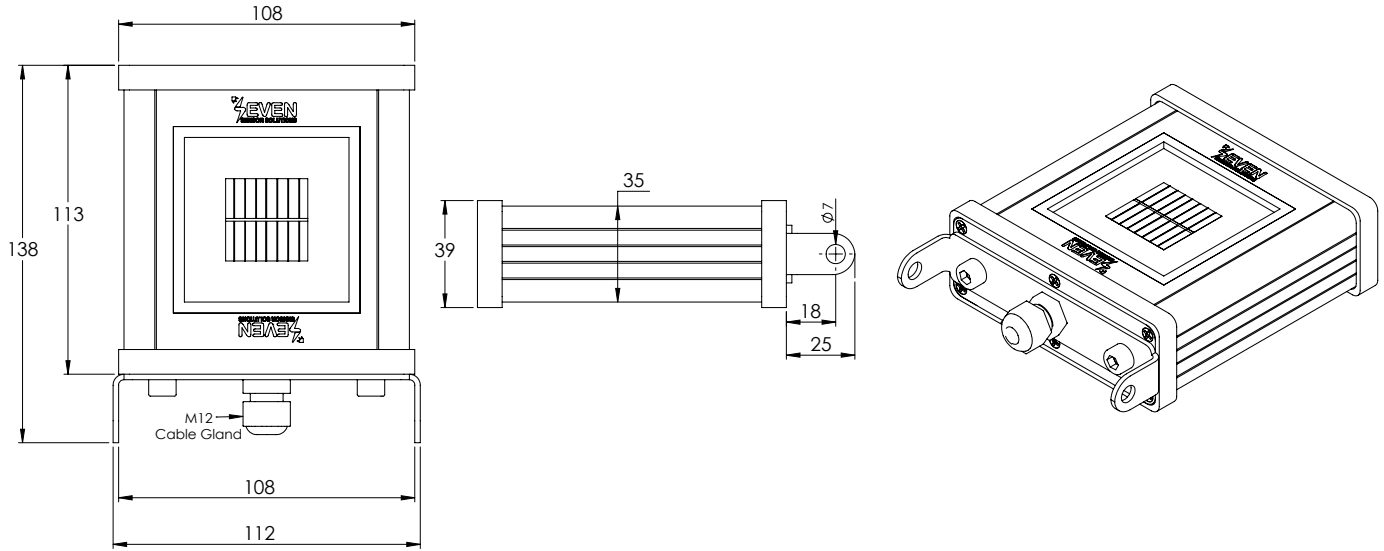
3S-ALBEDO
Albedometer

Technical Specifications

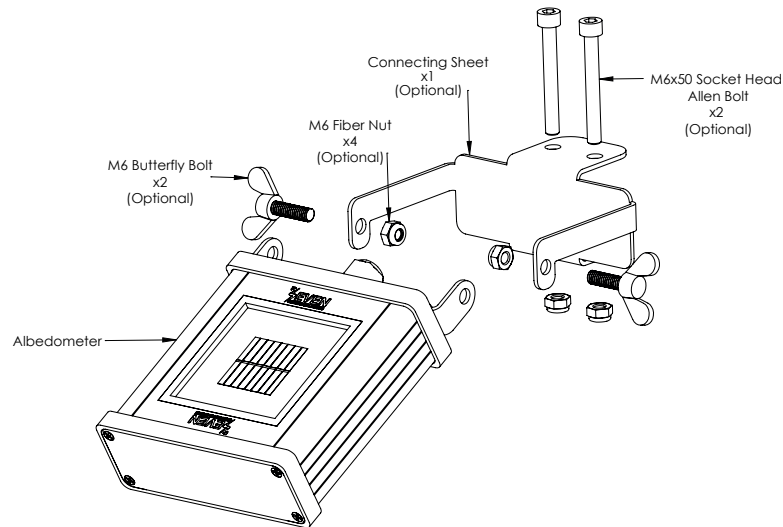|	3S-ALBEDO	3S-ALBEDO-2T
Sensor Type	Silicone Reference Cell (31 x 31 mm)	
Measured Data	POA Irradiance, Reflected Irradiance, Solar Albedo and 2x Cell Temperature	POA Irradiance, Reflected Irradiance, Solar Albedo, 2x Cell Temperature, and 2 pcs PT1000 Module Temperature
Connectable Sensor	-	2 X 3S-MT-PT1000
Irradiance Range	0 - 1600 W/m²	
Albedo Range	POA (greater than 0) GH (0-1)	
Uncertainty	≤1% (less than 2%; Class A as per IEC 61724-1 standard)	
Resolution	0,1 W/m² (less than 1 W/m²; Class A as per IEC 61724-1 standard)	
Response Time	1 sec. (less than 3 sec; Class A as per IEC 61724-1 standard)	
Field of View	170° (larger than 160°; Class A according to IEC 61724-1 standard)	
Tilt-Azimuth Angle	0°- 0° (less than 1°; Class A according to IEC 61724-1 standard)	
Output Rate	1/sec	
Data Output	RS485 up to 38400 Baud	
Communication Protocol	Modbus RTU	
Power Supply	12 ... 30 V DC	
Power Consumption	20 mA maks @ 24 V DC	22 mA maks @ 24 V DC
Cable Length and Description	3 m 3x2x0.22 mm², 24 AWG LI2YC11Y-TP PUR Cable, UV and Weather Resistant	
Galvanic Isolation	1000 V between power supply and RS485 bus	
Module Temperature Sensor Type	Class A PT1000 according to EN 60751:2022	
Operating Temperature Range	-40°C ... + 85°C	
Box Dimensions	138 mm x 112 mm x 39 mm (L x W x H)	
Weight	0,52 kg	0,53 kg
IP Rating	IP54 (Optional IP65, IP68)	
Sensor Housing Material	Aluminium	
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.	
Origin	TÜRKİYE	

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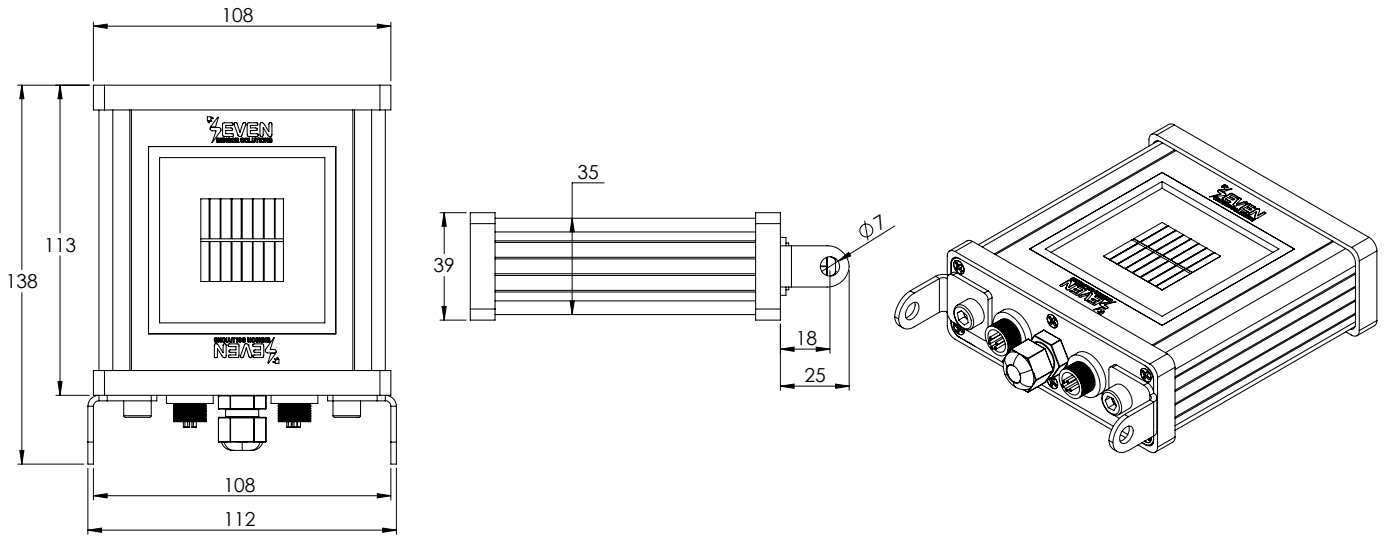## 3S-ALBEDO Technical Drawing

Note: All measurements are given in mm.

Optional Parts for Albedometer Installation

3S-ALBEDO
Albedometer

3S-ALBEDO-2T Technical Drawing

Note: All measurements are given in mm.

Optional Parts for Albedometer Installation