3S-TP-MB-B
Thermopile Pyranometer

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The SEVEN Thermopile Pyranometer is a product of the SEVEN meteorological sensor series, which consists of professional and intelligent measurement sensors with digital interfaces for environmental and photovoltaic system.

The SEVEN pyranometer 3S-TP-MB-B is designed to meet the "**ISO 9060:2018 Spectrally Flat Class B"** and **"IEC 61724-1:2021 Class B"** standards. Equipped with state-of-the-art thermopile detector and diffuser technology, this pyranometer utilizes the most advanced technologies in its class to provide more reliable and accurate data while remaining cost-effective. It is ideal for meeting the highest standards in solar energy system performance monitoring.

The SEVEN pyranometer also includes a humidity sensor and two temperature sensors. These additional features ensure multi-parameter environmental monitoring, allowing for precise adjustments and accurate readings under varying conditions. The integrated sensors contribute to the device's overall reliability and performance, making it a robust solution for solar energy system, meteorology and to be used in different applications assessments.

Measured irradiance, humidity and temperature data are transmitted to data loggers and other receiving units via serial RS485 interface with Modbus RTU protocol.

Benefits and Features

- ISO 9060:2018 Class B (First Class)
- IEC 61724-1:2021 Class B
- LED Indicator for Power
- Multi-Parameter Monitoring
- Fast & Simple to Install
- Free Software Update
- SunSpec Compliant
- SEVEN Remote Setup Service
- SEVEN Customer Support
- 5 Years Warranty

Technical Specifications

	3S-TP-MB-B
Measured Data	Global Horizontal (GHI) or POA Irradiance, Internal and Housing Temperature and Internal Humidity
Sensor Type	Thermopile
Spectral range (50% points)	280 to 3000 nm
Irradiance Range	0 - 4000 W/m²
Response time (95%)	0.5s (less than 10s; as per ISO9060:2018 standard, Class A)
Zero offset A - Thermal Radiation (200W/m²)	± 1 W/m² (± 7W/m²; as per ISO9060:2018 standard, Class A)
Zero offset B - Temperature change (5K/hr)	± 4 W/m² (± 4W/m²; as per ISO9060:2018 standard, Class B)
Total zero off C - Total zero off-set	± 6 W/m² (± 10W/m²; as per ISO9060:2018 standard, Class A)
Non-stability (change/year)	< 0.5% (± 0.8%; as per ISO9060:2018 standard, Class A)
Non-linearity (100 to 1000 W/m²)	± 1% (±1%; as per ISO9060:2018 standard, Class B)
Directional response (at 1000W/m² I 0 to 80°)	± 10W/m² (± 10W/m²; as per ISO9060:2018 standard, Class A)

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Technical Specifications

	3S-TP-MB-B
Spectral Error	± 0.2% (± 0.5%; as per ISO9060:2018 standard, Class A)
Temperature response (-20°C to 50°C)	± 0.4% (± 1%; as per ISO9060:2018 standard, Class A)
Irradiance Resolution	0.1 W/m²
Internal Humidity Range Accuracy Resolution	 0% to 100% ± 1% RH (20…70%) @ 25°C 1%
Internal Temperature Range Accuracy Resolution	 -40°C to +85°C ± 0.1°C (5…60°C) @ 20…80% RH 0.1°C
Housing Temperature Range Accuracy Resolution	 -40°C to +85°C ± 0.2°C 0.1°C
Accuracy of Bubble Level	±0.1°
Viewing angle	2ϖ sr
Data Output	RS485 up to 38400 Baud
Communication Protocol	Modbus RTU (Optional Modbus TCP/IP)
Output Rate	1/s
Operating Temperature Range	-40 to 85°C
Supply voltage	12 to 30 V DC
Power Consumption	20 mA @ 24 V DC
Cable Features	3x2x0,14 mm² Cable - LI2(ST)C11Y- PUR, UV and weather resistant
Cable Length	3 meter standard length (Custom length available)
Galvanic Isolation	1000 V between power supply and RS485 Bus
IP Rating	IP 68
Dimensions	Ø 140 mm x 116 mm
Sensor Housing Material	Alloy Aluminum
Shade Disk Material	ABS
Weight	0,98 kg
Standards	ISO 9060:2018 Spectrally Flat Class B (First Class), IEC 61724-1:2021 Class B, ISO/TR 9901:1990 ISO 9847
Origin	TÜRKİYE

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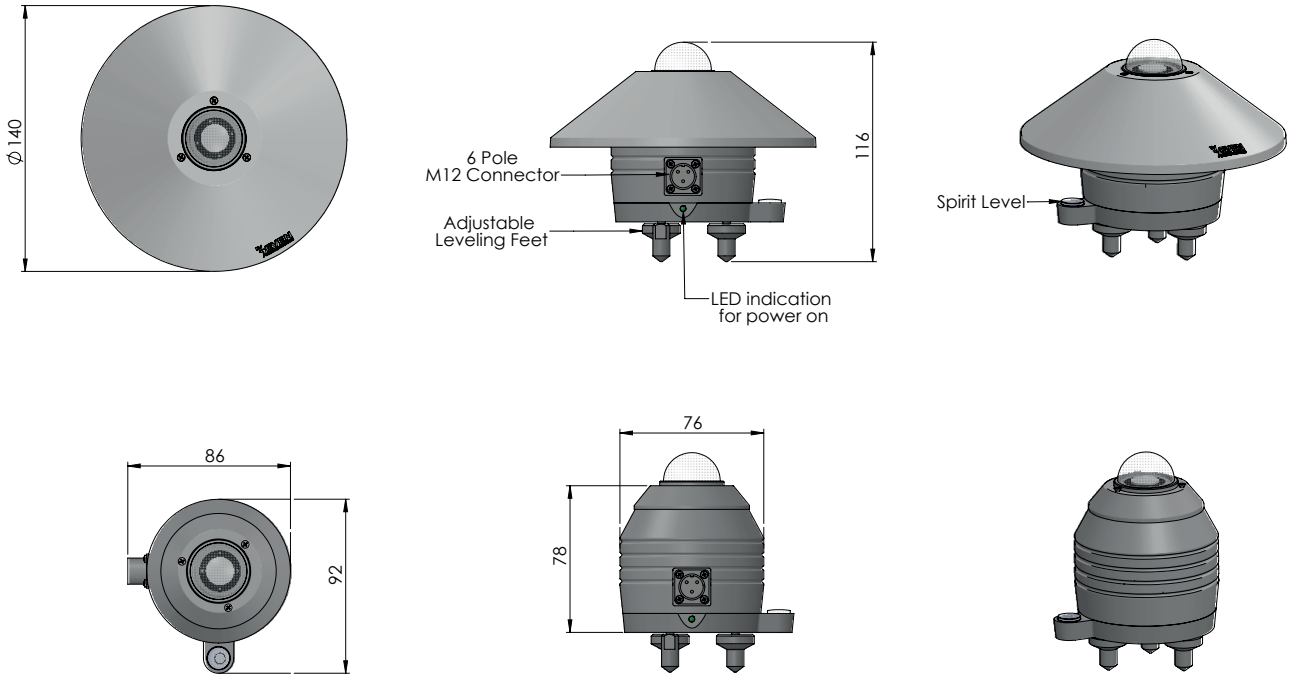
Technical Drawings

Technical Drawings of Thermopile Pyranometer



Note: All dimensions are in mm.

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

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