

SOLAR RADIATION MONITORING / DATA SHEET

SS207-05

Tilted Solar Radiation Transmitter

A thermopile-based transmitter for measuring solar radiation on an adjustable tilted plane across the 0.3-3 μm spectral range. Its double glass dome, temperature compensation and RS485 Modbus-RTU interface support accurate solar-energy assessment in outdoor environments.

Overview

- 0-2000 W/m^2 measurement range with 1 W/m^2 resolution.
- 0.3-3 μm spectral response for total solar radiation measurement.
- Double glass dome with high transmittance and reduced convection influence.
- RS485 Modbus-RTU output with configurable address and baud rate.



Measured Tilted solar radiation	Range 0-2000 W/m^2	Resolution 1 W/m^2	Output RS485
Key Functions • Thermopile sensing element for accurate solar radiation measurement. • Adjustable tilt angle with a scale bracket for direct-plane analysis. • Temperature compensation improves accuracy under changing conditions. • Compact housing with a double glass dome and 95% transmittance.		Applications • Photovoltaic and solar-thermal system performance assessment. • Tilt-angle optimization and solar-resource surveys. • Meteorological and agricultural radiation monitoring. • Building-material aging and outdoor environmental studies.	

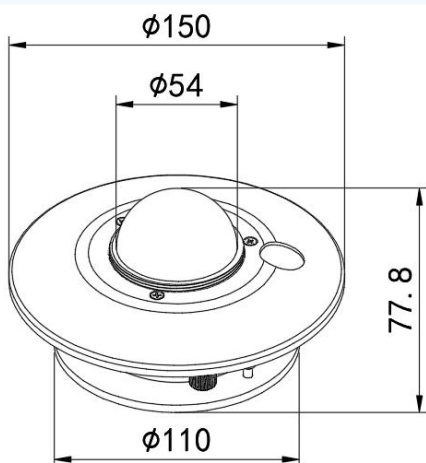
SYSTEM DATA

Technical Specifications

Item	Specification
Supply / Power	DC 10-30 V; 0.2 W
Measurement / Resolution	0-2000 W/m^2 ; 1 W/m^2
Spectral Range / Sensitivity	0.3-3 μm ; 7-14 $\mu\text{V}\cdot\text{W}^{-1}\cdot\text{m}^2$
Accuracy / Nonlinearity	$\pm 3\%$; $\leq \pm 3\%$
Response Time (95%)	$\leq 30\text{ s}$
Operating Conditions	-40 to +60 $^{\circ}\text{C}$; 0-95% RH, non-condensing
Internal Resistance	200-400 Ω
Directional / Cosine / Tilt Response	$\leq \pm 30\text{ W/m}^2$; $\leq \pm 5\%$; $\leq 2\%$
Temperature Response / Annual Stability	$\leq \pm 3\%$ (-30 to +50 $^{\circ}\text{C}$); $\leq \pm 3\%$
Zero Drift / Interface	$\leq 6\text{ W/m}^2$; RS485 Modbus-RTU
Communication Defaults	4800 bit/s default; address and baud rate configurable

HARDWARE

Transmitter Dimensions



Tilted radiation transmitter | Ø150 mm top plate | 77.8 mm height



SS207-05 tilted solar radiation transmitter

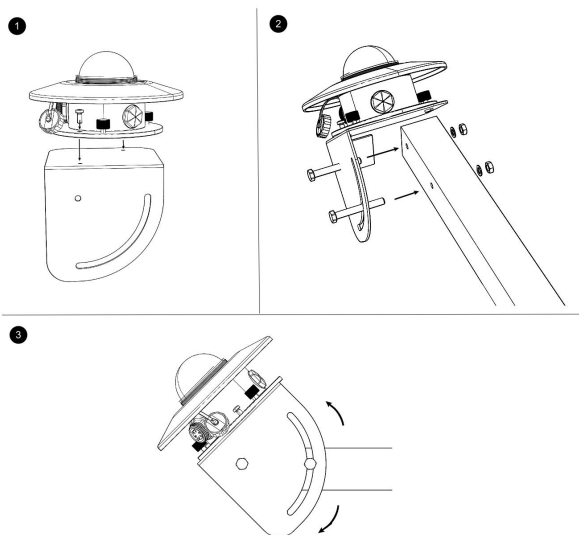
INTERFACE

RS485 Wiring

Wire colour	Function
Brown	Power positive, DC 10-30 V
Black	Power negative
Yellow	RS485-A
Blue	RS485-B

INSTALLATION

Tilt-Angle Installation



Adjustable mounting and tilt-angle bracket

Installation Requirements

- Install the support parallel to the ground at an open site without obstructions.
- Fix the transmitter to the scale bracket and mount the bracket on a prepared crossbar.
- Adjust the marked angle to the target measurement plane, then tighten the fasteners.
- Avoid damaging the glass dome; allow approximately 30 minutes of warm-up before use.

SELECTION

Product Configuration

Item	Available configuration
Product code	SS207-05 tilted solar radiation transmitter
Measurement	Tilted-plane total solar radiation; 0-2000 W/m ²
Output / communication	RS485 / Modbus-RTU; 4800 bit/s default
Mechanical design	Adjustable tilt bracket; double glass dome; Ø150 mm top plate
Included accessories	Mounting screws, signal cable, certificate, warranty card and scale bracket

Service note: keep the glass dome clean and unobstructed, check the support and fasteners regularly, and recheck the tilt angle after installation or maintenance.

CONTACT / SUPPORT

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