

Technical Datasheet

SOLAR RADIATION TRANSMITTER PLXSRT300



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PLXSRT300

The Polwax PLXSRT300 Solar Radiation Transmitter is a precision-engineered pyranometer designed for continuous measurement of global solar radiation across a full 180° hemispherical field of view. Built using a high-accuracy photoelectric sensing element with wide spectral response, the PLXSRT300 delivers reliable and stable solar irradiance data even under varying environmental and climatic conditions.

To ensure long-term outdoor performance, the sensor is equipped with a high-transparency, anti-dust treated protective dome, which minimizes environmental interference while maintaining excellent light transmission. The rugged industrial-grade housing, combined with a built-in leveling bubble and adjustment mechanism, allows quick and accurate installation in outdoor and industrial environments.

Features

- High-precision photosensitive element with full-spectrum absorption
- 180° hemispherical measurement for accurate global solar radiation
- High-transmittance dust cover with anti-dust surface treatment
- Built-in leveling bubble with mechanical adjustment for easy installation
- Multiple output options:
RS485 / 4-20 mA / Voltage
- Rugged design suitable for outdoor and industrial environments



Installation Guidelines

- Fix the transmitter firmly using mounting holes on a stable surface.
- Ensure the sensor surface is perfectly horizontal using the built-in bubble level.
- Adjust using the leveling screw if required.
- Remove the protective cover after installation.
- Avoid shading from nearby structures or objects.





Technical Details

Measurement Parameter	Solar Radiation (Global Radiation)
Measurement Range	0 to 1800 W/m ²
Temperature	−40 °C to +120 °C
Resolution	1 W/m ²
Accuracy / Non-linearity	±3%
Response Time	≤ 10 seconds
Annual Stability	≤ ±2%
Spectral Response	Full spectrum (wide-band absorption)
Field of View	180°
Power Supply	DC 7–30 V (Analog) / DC 9–30 V (Rs485)
Power Consumption	≤ 0.6 W (RS485), ≤ 0.06 W (Analog)
Output Signals	Rs485 (Modbus RTU), 4-20 mA, 0-5 V, 0-10 V
Communication Protocol	Modbus RTU (Rs485)
Operating Temperature	−25 °C to +60 °C
Operating Humidity	0–95% RH (non-condensing)
Protection	Weather-resistant housing for outdoor use
Mounting	Pole / Flat surface mounting
Level Adjustment	Built-in leveling bubble with thumb screw
Housing Material	Industrial-grade aluminum alloy

Applications & Case Studies

Case Study 1: Solar Power Plant Performance Monitoring

Client Background

A utility-scale solar PV power plant required accurate real-time solar irradiance data to evaluate panel efficiency, energy yield, and system losses.

Challenge:

- Inconsistent irradiance readings from low-grade sensors
- Difficulty correlating solar input with power output
- Need for reliable data integration with SCADA systems

Solution:

The Polwax PLXSRT300 Solar Radiation Transmitter was installed at multiple locations across the solar field. Using RS485 Modbus RTU output, the sensor was seamlessly integrated with the plant's SCADA system.

Result:

- ✓ Accurate real-time solar radiation data (W/m^2)
- ✓ Improved performance ratio (PR) analysis
- ✓ Better fault detection and predictive maintenance
- ✓ Increased confidence in energy yield calculations



Case Study 2: Smart Agriculture & Greenhouse Automation

Client Background

A commercial greenhouse operator required solar radiation data to optimize plant growth, shading systems, and irrigation cycles.

Challenge:

- Manual estimation of sunlight exposure
- Crop stress due to overexposure and insufficient shading
- Lack of automation based on real irradiance values

Solution:

The Polwax PLXSRT300 was installed on the greenhouse roof and connected to the climate control system via 4–20 mA output.

Result:

- ✓ Automated shading control based on real solar intensity
- ✓ Improved crop health and uniform growth
- ✓ Reduced water and energy consumption
- ✓ Enhanced environmental control accuracy





POLWAX Group has got an experienced, highly-qualified project team conducting extensive R&D operations. Owing to that, goods holding the POLWAX brand feature customer-tailored flexibility and meet requirements of various industries.

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