



INJECT RENEWABLES

DATASHEET- SOLAR IRRADIANCE SENSOR



Document Name	Solar Irradiance Sensor
Hardware Name	Pyranometer (PYRA)
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1. Introduction

The solar irradiation sensor or solar pyranometer measures global radiation, the sum at the point of measurement of both the direct and diffuse components of solar irradiance. The sensor's transducer, which converts incident radiation to electrical current, is a silicon photodiode with wide spectral response. From the sensor's output voltage, the console calculates and displays solar irradiance. It also integrates the irradiance values and displays total incident energy over a set period of time. The outer shell shields the sensor body from thermal radiation a level indicator, and fins to aid in aligning the sensor with the sun's rays. The diffuser is welded to the body for a weather-tight seal; it provides an excellent cosine response. The transducer is a hermetically-sealed silicon photodiode with integrated amplifier. Spring-loaded mounting screws, in conjunction with the level indicator, enable rapid and accurate leveling of the sensor. Each sensor is calibrated against a secondary standard pyranometer in natural daylight.

2. Specification of Sensor

Parameters	Specifications
Operating Temperature	-40° to +65° C
Storage Temperature	-45° to +70°C
Transducer	Silicon photodiode
Spectral Response	400 to 1100 nanometers
Cosine Response Percent of Reading Percent of Full Scale	±3% (0° to ±70° Incident angle) ±10% (±70° to ±85° Incident angle) ±2% (0° to ±90°)
Reference temperature	25°C
Temperature Coefficient	+ 0.12% per °C
Housing Material	UV-resistant PVC plastic
Weight	< 300 g including mounting hardware
Range	0 to 2000 W/m ²
Accuracy	±5% of full scale
Drift	up to ±2% per year
Excitation Voltage	12 to 24VDC

3. Order Code

OUTPUT:		CABLE LENGTH	
5V	0 to 5VOLTS	3M	3 meter
10V	0 to 10VOLTS	5M	5 meter
mA	4 to 20mA		
485	RS-485 MODBUS		

Example Code:

PYRA-100-5V-5M

Model No	Output	Cable Length
PYRA-100	5V	3METER

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