

# MS-60S Pyranometer

Class B & Spectrally Flat



## Overview

Designed for agricultural research, meteorological applications and small to medium scale solar plants, the S-series MS-60S ISO 9060:2018 Class B Pyranometer is part of the most accurate, reliable and robust family of pyranometers in the world.

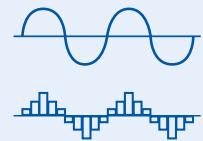
Built with the same industry-leading features as the Class A MS-80S, the MS-60S comes with EKO's unique 4-channel smart interface for compatibility with 99% of data loggers, DAQ, and SCADA systems, plus internal diagnostic sensors for remote visibility over internal temperature, humidity, tilt and roll angle; ensuring optimum performance with reduced maintenance costs.

Spectrally flat and with a new double-dome construction for lower offsets and cosine errors, the MS-60S also includes a 5-year warranty and advanced surge protection for a Class B sensor that combines the latest technology with the highest standards of quality, accuracy, and reliability.

## Features



5-year warranty & recommended 2-year recalibration interval



Smart 4-channel Analogue & Digital Interface



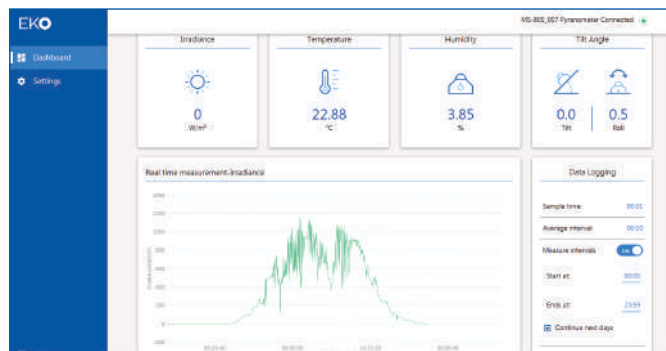
Level A EMI/EMC electronics surge filter & protection



Internal Diagnostics for temperature, tilt, roll, and relative humidity

## Software

With 'Hibi', a new, custom-built programme developed by EKO, users can connect their pyranometer with a standard laptop for real-time access to the internal diagnostics, custom settings, and irradiance data, helping to make the MS-60S the most accessible Class B pyranometer available. Easy to use, deploy, and maintain.



## Accessories



### MV-01

Achieve IEC 61724-1 compliance with the MV-01 ventilator and heater, an optional add-on that keeps the MS-60S free from dew, ice and snow. Proven under all environmental conditions, the MS-60S plus MV-01 is the go-to option globally for rooftop solar stations, solar parks of all sizes, and large weather monitoring sensor networks.



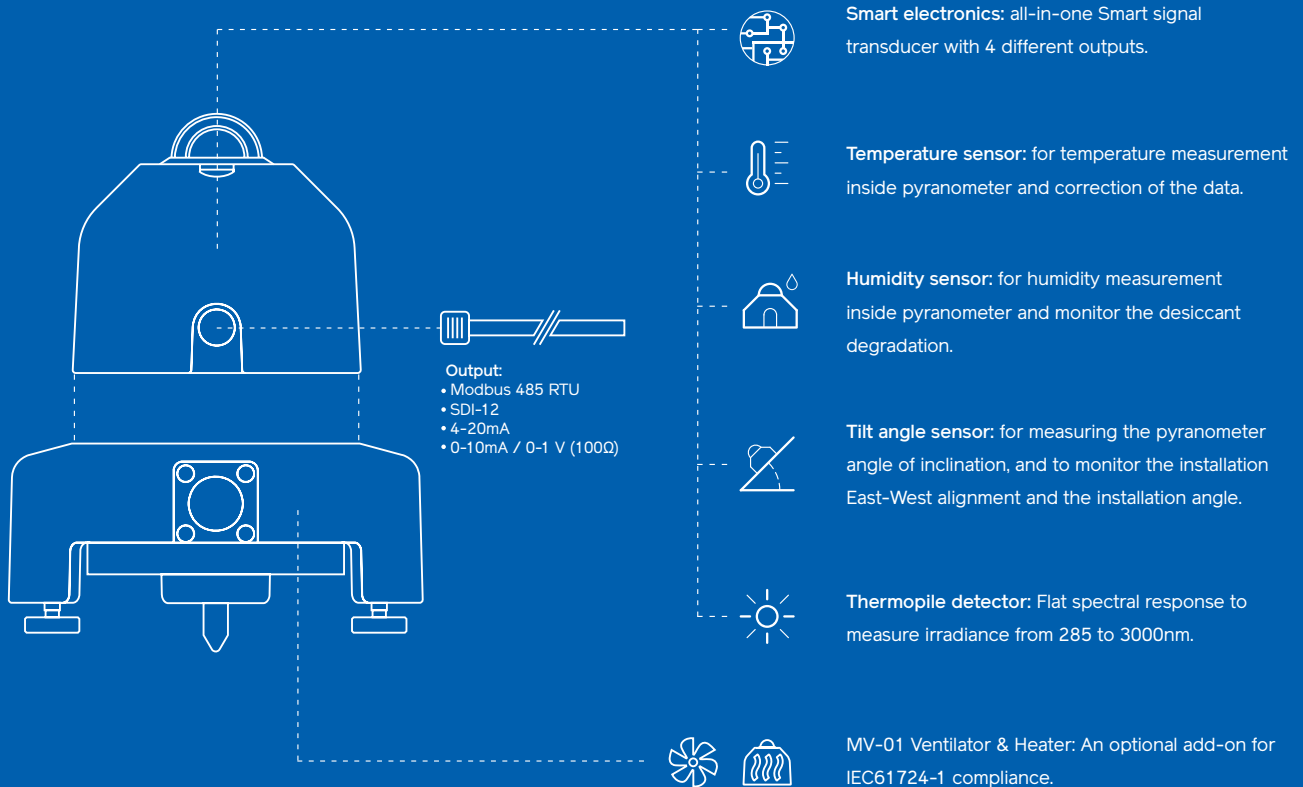
### MS-Albedo Kit

The MS-Albedo kit can be used with any MS or S-Series EKO pyranometer, allowing two pyranometers to be deployed for albedo or reflected irradiance measurements for Bi-facial PV applications. The robust aluminium and stainless steel parts provide a reliable solution for easy, on-site assembly.

## ISO Specifications

ISO 9060:2018 Parameters	CLASS B	MS-60S
Response time 95%	<20s	<18s
Zero offset A - Thermal Radiation (200W/m <sup>2</sup> )	± 15W/m <sup>2</sup>	± 5W/m <sup>2</sup>
Zero offset B - Temperature change (5K/hr)	± 4W/m <sup>2</sup>	± 2W/m <sup>2</sup>
Zero offset C - Complete zero off-set	± 21W/m <sup>2</sup>	± 7W/m <sup>2</sup>
Non-stability (change/year)	± 1.5%	< 1.5%
Non-linearity (100 to 1000W/m <sup>2</sup> )	± 1%	± 1%
Directional Response (at 1000W/m <sup>2</sup>   0 to 80°)	± 20W/m <sup>2</sup>	± 18W/m <sup>2</sup>
Spectral Error (Spectral selectivity ± 3%)	± 1%	± 0.2%
Temperature Response (-20°C to 50°C)	± 2%	± 2%
Tilt Response (0-90°   1000W/m <sup>2</sup> )	± 2%	± 1%
Additional Signal Processing error	± 5W/m <sup>2</sup>	< 1W/m <sup>2</sup>

## Feature Diagram



## Technical Features

Wavelength Range (nm)	285 to 3000 (50% points)
Irradiance range (W/m <sup>2</sup> )	0 to 2000
Signal Output	MODBUS 485 RTU, SDI-12, 4-20mA, configurable 0-10mA / 0-1V*
Sensor Diagnostic	Relative Humidity ± 2% Temp. ± 0.1% / Tilt Angle ± 1°
Operating temperature	-40 to 80°C
Supply voltage	5 - 30 VDC
Power Consumption	< 0.2 W
Ingress Protection	IP 67
Standard Cable Length	10m (Optional lengths 20m, 30m, 50m)

\*Configurable with external 100Ω precision shunt resistor

## Application

With the same industry-leading build quality, internal diagnostics, 4-channel analog & digital interface, and electronic surge protection as the Class A MS-80S, the MS-60S is an excellent option for agricultural research, meteorological applications and small to medium scale solar plants.

Add the optional MV-01 heater and ventilator to prevent a build-up of dew, ice, or snow, and the MS-60S is both IEC-61724-1 compliant and well suited to application in remote areas where accuracy and reliability are paramount.



## QR

Use the QR code to visit our website, contact our team, or to find out more about the **MS-60S**, other related products, and the full range of Class and industry-leading S-Series pyranometers.



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Made in Japan for over 90 years, EKO solar energy sensors and environmental instruments are built on a legacy of innovation, an uncompromising commitment to quality, and industry-leading accuracy.

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Albedometers



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Thermal Cond. Testers

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