

# MS-80S Pyranometer

Class A, Spectrally Flat & Fast Response



## Overview

Designed for scientific research, industrial applications, and photovoltaic system performance monitoring, the MS-80S builds on the revolutionary design of the original MS-80 Class A pyranometer, bringing our state-of-the-art thermopile detector and Quartz diffusor technology together with new internal diagnostics and a unique 3-channel smart interface.

Combined with a 5-year warranty and industry-first 5-year calibration interval, the MS-80S is the best-in-class for accuracy, speed and reliability; and, as one of the only top tier 'fast-response' and 'spectrally flat' Class A pyranometers with unprecedented low zero-offset behaviour available, it's the standout choice for every application.

## Features



<0.5s Super-Fast response for always accurate measurements



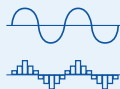
<1W/m<sup>2</sup> Record Lowest Zero Offset A, and <0.5% Lowest Non-Stability over 5-Years



Level A EMI/EMC Electronics Surge Filter & Protection



5 Year Warranty & Recommended Recalibration Interval



Smart 3-channel Analog & Digital Interface



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

## Development

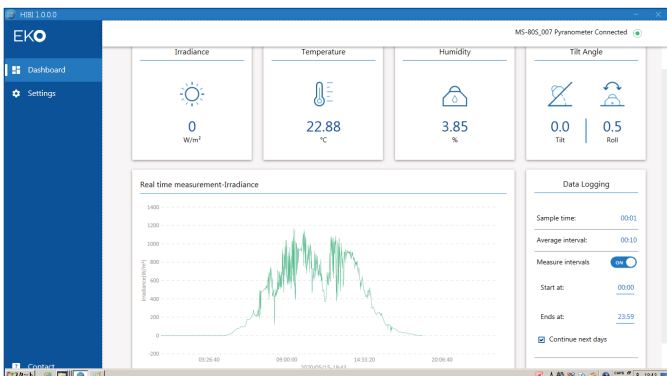
The MS-80 set new industry standards on launch in 2016 and remains a class-leader for ISO 9060:2018 Class A solar sensors today, one of the few Class A pyranometers, before the MS-80S, in the top tier 'fast-response' and 'spectrally flat' sub-categories, with unprecedented low zero-offset behaviour, and a 5-year recalibration interval.

The MS-80S builds on this achievement with the addition of a new 3-channel smart interface that allows the MS-80S to easily connect to any analogue or digital measuring system, giving users a choice with Modbus 485 RTU for digital outputs; alongside 4-20mA and 0-10mA (0-1V) analogue options; while the new internal diagnostic system offers visibility over internal temperature, humidity, tilt and roll angle; helping to ensure optimum performance without the need for regular physical checks.

These new features, along with EKO's unique 5-year recalibration interval, make the MS-80S is the best value Class A sensor available; an ideal solution for complex networks, hard to reach locations, and monitoring stations with restricted access.

## 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-80S the most accessible Class A pyranometer available. Easy to use, deploy, and maintain.



## Related Products



### MV-01

Meet IEC 61724-1 standards with the MV-01 ventilator and heater, an optional add-on that helps to reduce sensor soiling and keeps the MS-80S free from dew, ice and snow. Proven in challenging environmental conditions, the MS-80S 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

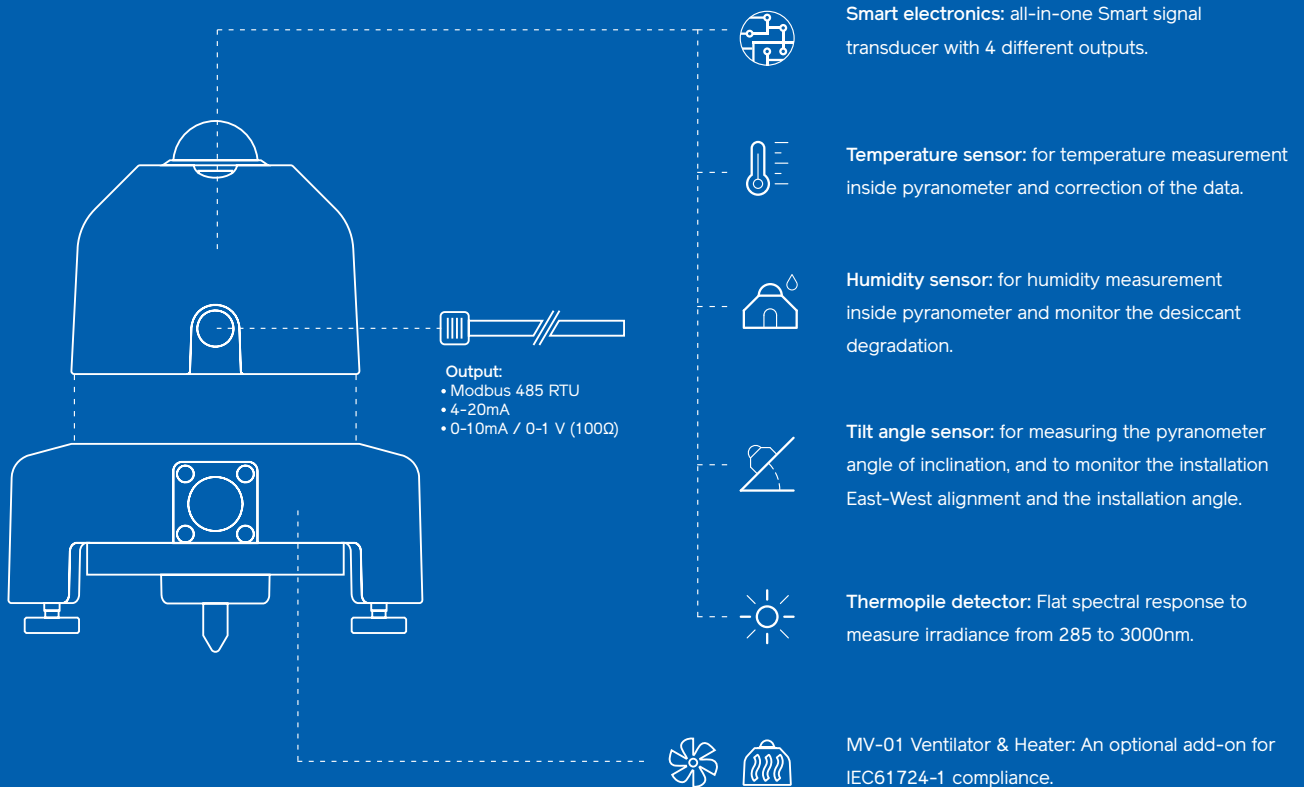
Included with the MS-80S Albedometer, the MS-Albedo kit can be used with any combination of MS or S-Series EKO pyranometers, compliant with IEC 61724-1:2021, to be deployed for albedo or reflected irradiance measurements for Bi-facial PV applications. The robust aluminium and stainless steel parts provide a reliable solution for easy, on-site assembly.



### Solar Monitoring Station

EKO's class-leading MS and S-Series Pyranometers with the ultra-accurate MS-57 Pyrliometer & the STR-Series automated sun tracker for second-to-none GHI, DHI & DNI measurements for PV site evaluation, performance monitoring, and cell optimisation.

## Feature Diagram



## ISO Specifications

ISO 9060:2018 Parameters	CLASS A	MS-80S
Response time 95%	<10s	<0.5s
Zero offset A - Thermal Radiation (200W/m <sup>2</sup> )	± 7W/m <sup>2</sup>	± 1W/m <sup>2</sup>
Zero offset B - Temperature change (5K/hr)	± 2W/m <sup>2</sup>	± 1W/m <sup>2</sup>
Zero offset C - Total zero off-set	± 10W/m <sup>2</sup>	± 2W/m <sup>2</sup>
Non-stability (change/year)	± 0.8%	< 0.5%/5 years
Non-linearity (100 to 1000W/m <sup>2</sup> )	± 0.5%	± 0.2%
Directional Response (at 1000W/m <sup>2</sup>   0 to 80°)	± 10W/m <sup>2</sup>	± 10W/m <sup>2</sup>
Spectral Error	± 0.5%	± 0.2%
Temperature Response (-20°C to 50°C)	± 1%	± 0.5%
Tilt Response (0-90°   1000W/m <sup>2</sup> )	± 0.5%	± 0.2%
Additional Signal Processing error	± 2W/m <sup>2</sup>	< 1 W/m <sup>2</sup>

## Applications

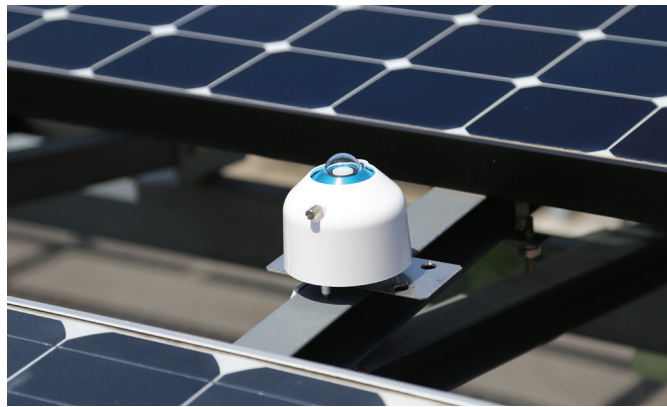


The MS-80S Class A pyranometer is designed for scientific research, industrial applications, photovoltaic system performance monitoring, and any application requiring the highest standard of accuracy possible.

Built to last, with a 5-year warranty, 5-year recalibration interval, low-zero offset, and incredible stability, the MS-80S is the standout choice for utility-scale applications and other large-scale projects.

### QR

Use the QR code to visit our website, contact our team, or to find out more about the **MS-80S**, other related products, and the full range of Class and industry-leading S-Series pyranometers.



## Technical Features

Wavelength Range (nm)	285 to 3000
Irradiance range (W/m <sup>2</sup> )	0 to 4000
Signal Output	Modbus 485 RTU 4-20mA / 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
Calibration traceability / uncertainty	ISO 17025 / WRR / < 0.7% (k = 1.96)
Standard Cable Length	10m (Optional lengths 20m, 30m, 50m)

\*Configurable with external 100Ω precision shunt resistor

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