



MS-80S Pyranometer

Technical Specifications

ISO 9060:2018 Class A (Secondary standard)

"fast response & spectrally flat"

Quartz diffusor technology

ISO 17025 certified calibration

5 years warranty and recommended recalibration

MS-80S is a "Spectrally flat" ISO 9060:2018 Class A pyranometer. The innovative patented design was inspired by the combination of latest technologies and state-of-the-art thermopile sensor, enabling a breakthrough in unprecedented low zero-offset behaviour and fast sensor response.

The MS-80S with smart sensor technology and onboard diagnostic functions now standard for all smart sensors. Preserve the high accuracy of the sensor while complying with the various output standards used in the industry. The new Smart signal transducer which allows selecting from 4 types of output in one unit. The new electronics ensure a great benefit for system integrators who work with various industrial interface standards.

This new Smart transducer will also have additional features such as internal temperature and humidity sensors and a tilt sensor for remote sensor diagnostics. These additional internal sensors will help

the user to monitor the stability of the irradiance sensors as well as to ensure its proper installation and maintenance practices.

Solar irradiance is calculated by relating the pyranometer sensitivity with the input voltage then convert the result to a digital signal for the Modbus 485 RTU and SDI-12 outputs. In the case of the 4-20mA and 0-10mA/0-1V outputs, the results is converted into a current corresponding to the solar irradiance within the specified range. Temperature and Linearity Compensation Functions are embedded to maximize the sensor performance. Pyranometer temperature can be compensated using the temperature measured by a thermocouple PT100 integrated in the sensor body of the Class A sensors.

The optional MV-01 heater and ventilator are recommended, particularly over areas impacted by dew, frost, snow, and dust. Due to the ultra-low temperature dependency and exceptional non-linearity

characteristics, the converter guarantees an optimal sensor performance, under any environmental conditions.

The MS-80S pyranometers are manufactured in a consistent way followed by strict quality inspection and performance evaluation. For each sensor the directional response and temperature dependency are measured and validated through a measurement report that comes with the sensor. EKO provides a unique calibration compliant to the international standards defined by ISO/IEC17025/9847.

The sensor has 5 years warranty, 5 years recommended re-calibration interval and no longer the requirement for the desiccant to be changed.

	MS-80S
ISO 9060:2018	Class A
ISO 9060:1990	(Secondary Standard)
Sub-category "Spectrally flat"	Compliant
Sub-category "Fast response"	Compliant
Output	Modbus 485 RTU, SDI-12, 4-20mA, 0-1V (100Ω)
Response time 95%	< 0.5 Sec.
Zero off-set a) 200W/m²	+/- 1 W/m ²
Zero off-set b) 5K/hr	+/- 1 W/m ²
Complete zero off-set c)	+/- 2 W/m ²
Non-stability change/1 year	-
Non-stability change/5 years	+/- 0.5 %
Non-linearity at 1000W/m²	+/- 0.2 %
Directional response at 1000W/m²	+/- 10 W/m ²
Spectral error	+/- 0.13 %
Temperature response -10°C to 40°C	+/- 0.5 %
Temperature response -20°C to 50°C	+/- 0.5 %
Tilt response at 1000W/m²	+/- 0.2 %
Operating temperature range	-40 - 80 °C
Irradiance range	0 - 4000 W/m ²
Wavelength range	285 - 3000 nm
Power supply	5 - 36 VDC
Power consumption	< 0.2 W
Ingress protection IP	67

Cable length	10 m
Additional signal processing errors	< 1.7 W/m ²

Options	MS-80S
Cable length	20 / 30 / 50 m
Ventilation unit	MV-01
Albedo mounting kit	MS-albedo Kit

Specifications are subject to change without further notice.