

# Pyranometer MS-80

New Generation  
ISO 9060  
Secondary Standard

EKO



Beyond Accuracy.

# MS-80

## Pyranometer

New generation

ISO 9060 Secondary standard

### MS-80

If you believed that “High-end” Solar sensors are only meant for research purposes, the “High-end” MS-80 secondary standard pyranometer was designed for industrial application and meteorological sensor networks. The MS-80 is a unique combination of EKO’s isolated detector architecture and novel optical design. It pushed the limits of traditional pyranometer characteristics to become a new reference in its class. The compact sensor with single dome is immune to offsets and easily integrates all value added features such as a ventilator, heater and different industrial interfaces.

### MS-80M (RS-485 MODBUS® RTU)

Preserve the high accuracy of the sensor while complying with the output standards used in the industry. The MS-80M can be used whenever RS-485 Modbus® RTU signal is required. With Modbus®, up to 100 sensors or other converter units can be addressed and connected in one network.

### MS-80A (4-20mA)

The MS-80A with 4-20mA current output can be operated with long cables.

#### Features

- Secondary Standard pyranometer
- Lowest zero offsets
- Fastest analog response time
- Lowest temperature dependency
- 5 years warranty & re-calibration period
- No need for dessicant inspection or change
- ISO 17025 accredited calibration
- Optional built in 4-20mA or MODBUS 485 RTU interface
- Optional ventilator / heater (MV-01)

	MS-80	MS-80A	MS-80M
ISO 9060 classification	Secondary standard		
Detector	Thermopile		
Response time 95%	< 0.5 s	< 1.5 s	< 1.0 s
Zero offset A - Thermal radiation (200W/m <sup>2</sup> )	< 1 W/m <sup>2</sup> (unventilated or ventilated)		
Zero offset B - Temperature change (5K/hr)	+/- 1 W/m <sup>2</sup>		
Long-term stability (change/yr)	< 0.5% / 5 years		
Non-linearity (100 to 1000W/m <sup>2</sup> )	+/- 0.2 %		
Directional response (at 1000W/m <sup>2</sup>   0 to 80°)	+/- 10 W/m <sup>2</sup>		
Spectral selectivity (0.35 to 1.5µm)**	+/- 3%		
Temperature dependency (-20 to 50°C)	<1%	<0.4%	<0.4%
Tilt response (0-90°   1000W/m <sup>2</sup> )	< 0.2 %		
Wavelength range (nm)	285 to 3000		
Irradiance range (W/m <sup>2</sup> )	0 to 4000		
Nominal sensitivity (µV/W/m <sup>2</sup> )	10	1mA / 100W/m <sup>2</sup>	-
Signal output	0 - 15mV	4 - 20mA	Modbus RTU
Nominal impedance	45 kΩ*	-	-
Operating temperature	- 40 to 80°C	- 40 to 80°C	- 40 to 80°C
Supply voltage	-	12-24 VDC +/- 20%	
Power consumption	-	0.08 - 0.5 W	< 0.3W
Ingress Protection	IP 67		
Calibration traceability / uncertainty	ISO 17025 / WRR / < 0.7% (k = 1.96)		
Case temperature sensor	10kΩ NTC		
Standard cable length 10m (Optional lengths 20m, 30m, 50m)			

\*Use measuring device with input impedance more than 100MΩ

\*\* Spectral error <0.3W/m<sup>2</sup>

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