MBMET 501 SERIES

Smart Solar Irradiation Measurement

Solar Analysis Simplified

Overview

MBMet-501 series provides cost effective and accurate measurement of solar irradiation. The sensor provides multiple measurement options and is ideal for monitoring Photo Voltaic (PV) systems – rooftop or ground installed.

The sensor can be used to monitor and analyze performance of PV arrays. Spectral response of the sensor is comparable to PV arrays. This sensor also doubles as a Smart Device – Allowing multiple 3rd Party Sensors to be connected to it and provide a single RS-485 Modbus Output.

It has inputs for External PT100 Sensors, 4 – 20mA Inputs, Pulse Input for Wind Speed Sensors or Rain Gauge and Resistance Input for Wind Direction Sensors.

2 Years Standard Warranty

A Class IEC-60751 COMPLIANT

A Class IEC-61724-1 COMPLIANT

Benefits and Features

- *Temperature compensated Solar Irradiation measurement*
- *Measures cell temperature*
- *Option for external Air or PV Module Temperature measurement*
- *Options for measuring wind speed and direction, Rain Gauge, analog inputs (4-20mA) and RTD (PT100) sensors*
- *Housed in robust cast aluminum enclosure*
- *Site configurable Analog Inputs*

Technical Specifications

Input Voltage	9-32VDC

SOLAR IRRADIATION

Sensor Type	Monocrystalline Silicon (85mm x 64mm)
Measuring Range	0-1500 W/m²
Sensor Type	Monocrystalline Silicon (85mm x 64mm)
Accuracy	±2% of reading
Resolution	1
Response time	2-3 seconds
Stability	0.5% per annum

CELL TEMPERATURE

Measuring Range	-40°C to 90°C
Accuracy	±0.3% FS
Resolution	0.1
Response time	2-3 seconds

DIGITAL INPUT

Number of Inputs	1
Input Frequency	0 – 200 Hz
Isolation	Optical
Sensor Input Types and Resolution	Status: ON/OFF Counter: 1 Rain Gauge: 0.1mm Wind speed: 0.1 meter/.sec

EXTERNAL RTD INPUTS

Number of Inputs	1/2
Sensor Type	RTD- PT100
Measuring Range	-30 to 150°C
Accuracy	±0.3% FS
Resolution	0.1
Response time	3-5 seconds

ANALOG INPUTS (4-20MA)

Number of Inputs	2
Measuring Range	-1000.0 to +1000.0
ADC Resolution	16 bits
Resolution	0.1

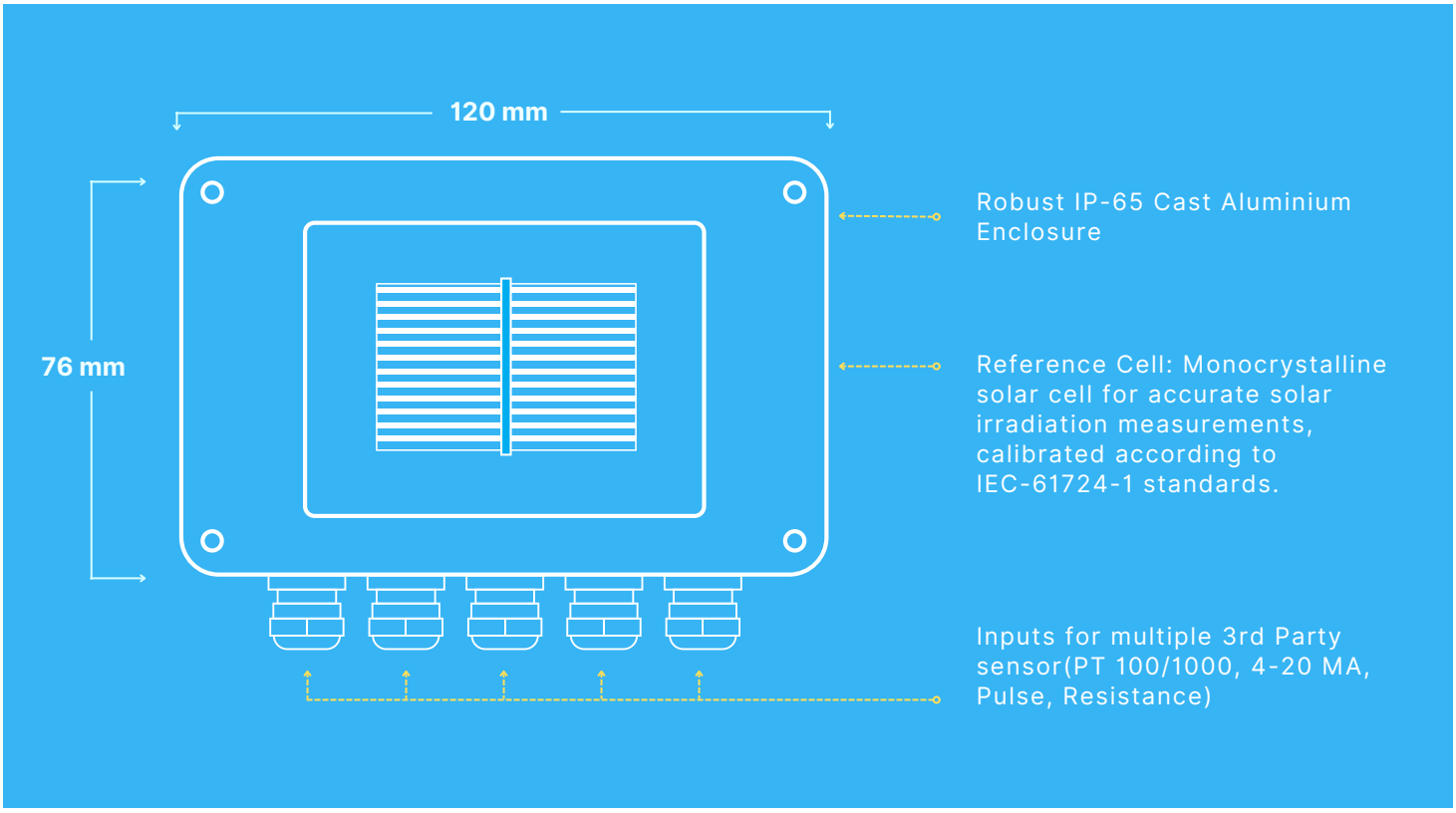
WIND DIRECTION INPUT

Number of Inputs	1
Input Resistance	1K to 10K Ohms
Measurement Range	0 to 360°C
Resolution	1°

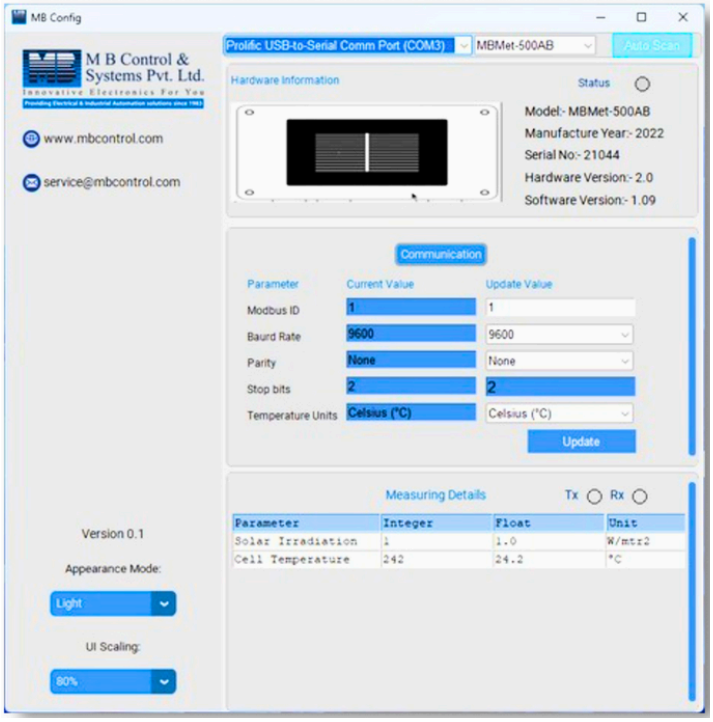
General Specifications

PARAMETER	SPECIFICATION
Irradiation Sensor Enclosure	Cast Aluminum
Ingress Protection	IP65
Irradiation Sensor Enclosure Size	125 (L) x 80 (W) x 57 (H) mm
Weight	350 grams (approx.)
Mounting Clamp (suitable for mounting on PV module side)	SS 304
Cable Terminals	1.5 sq. mm. copper
Integrated Ambient Temperature Sensor	40mm x 4mm (SS304)
Cable glands	M12 x 1.5 mm
Ambient operating temperature	-30°C to 70°C
Ambient operating humidity	0 to 99% RH
Power Consumption	100mW

Feature Diagram



Sensor Configuration Software



Configuration Software: "MB Config", a configuration software designed specially for configuration and trouble-shooting all MBMet Sensors. Users can download this Free to use software to a standard Laptop / PC and connect MBMet Sensors to it. All configuration settings, Modbus Frame Analysis, Heating Operation, Real-Time Data Viewing can be done seamlessly through this compact and powerful tool.

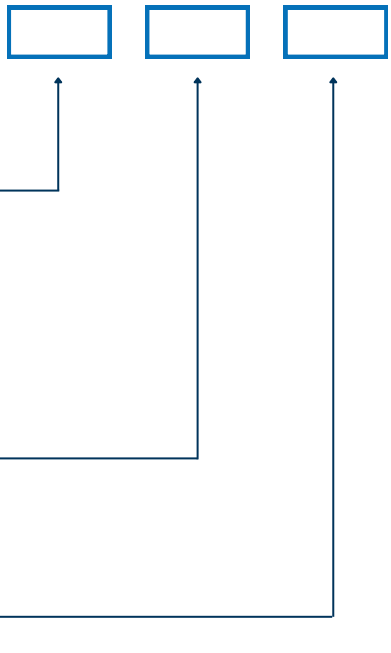
Ordering String

MBMet-501

Options	
Digital Inputs-1 Wind Direction Input-1 4-20mA Inputs -2 RTD (PT100/1000) Inputs-1	E
Digital Inputs-1 Wind Direction Input-1 4-20mA Inputs -2 RTD (PT100/1000) Inputs-2	F

Communication	
RS-485 Modbus	B

Cable Length	
No Cable	X
Cable in mm	



For example: MBMet-501EB **Measured Parameters:** Digital Inputs-1 + Wind Direction Input-1 +4-20mA Inputs -2 + RTD (PT100/1000) Inputs-1
Output: RS-485 Modbus

Certifications

IEC-61000-4-18 Damped Oscillatory Wave Immunity Test

IEC-61000-4-8 Power Frequency Magnetic Field Immunity Test