

# MBMET 500 SERIES

## Silicon Irradiance Sensor

Versatile All-in-One Solution

### Overview

MBMet-500 series provides cost effective and accurate measurement of solar irradiation. The sensor provides multiple measurement options and is ideal for monitoring Photovoltaic (PV) systems - Rooftop or Ground mounted. The sensors are used.

The sensors are used to monitor and analyze performance of PV arrays. Spectral response of MBMet - 500 series is comparable to PV arrays.

Options are provided for measurement signal Outputs as analog (4-20mA) or digital (RS 485)



**2**  
Years  
Standard  
Warranty



**A**  
Class  
IEC-60751  
Compliant



**A**  
Class  
IEC-61724-1  
Compliant

## Benefits and Features



Temperature  
compensated  
Solar Irradiation  
measurement



Site Configurable  
Temperature  
Units



Robust Cast  
Aluminium IP-65  
Enclosure



Built-in EMI/EMC  
Surge Protection



Optional External  
PV Module  
Temperature and  
Air Temperature  
Sensor

## TECHNICAL SPECIFICATIONS

**INPUT VOLTAGE.** 9-32 VDC

## SOLAR IRRADIATION

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

## AMBIENT AIR TEMPERATURE (EXTERNAL SENSOR WITH THREE METERS SILICON CABLE) 500C

SENSOR TYPE	RTD PT100
MEASURING RANGE	-40°C TO 90°C
ACCURACY	±0.3% FS
RESOLUTION	0.1
RESPONSE TIME	3-5 SECONDS

## CELL TEMPERATURE

MEASURING RANGE	-40°C TO 90°C
Accuracy	±0.3% FS
Resolution	0.1
Response time	2-3 seconds

## AMBIENT AIR TEMPERATURE (INTEGRATED SENSOR) 500B and 500E

SENSOR TYPE	RTD PT100
MEASURING RANGE	-40°C to 90°C
ACCURACY	±0.3% FS
RESOLUTION	0.1
RESPONSE TIME	3-5 seconds

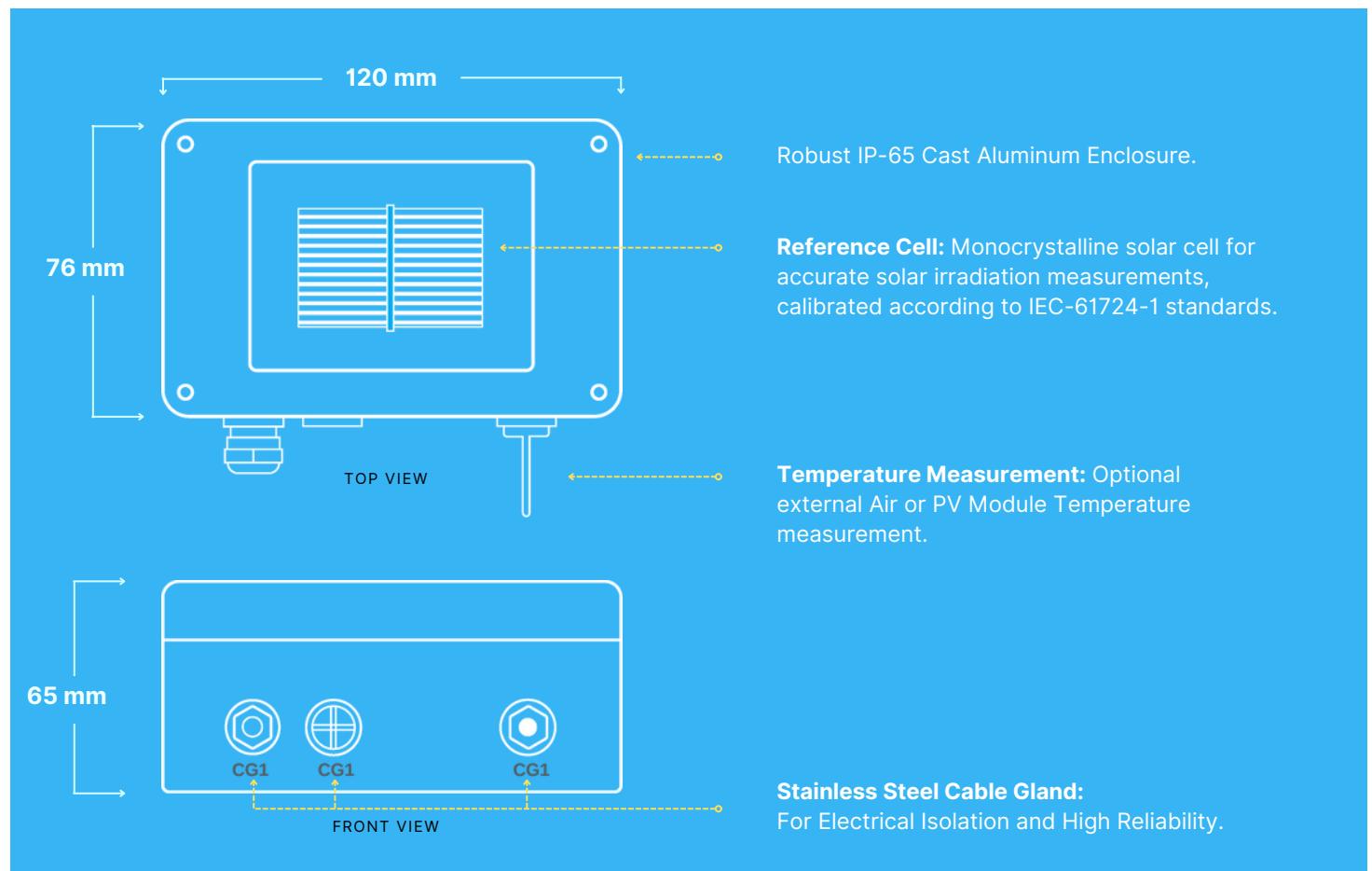
## PV MODULE TEMPERATURE (EXTERNAL SENSOR WITH THREE METERS SILICON CABLE) 500D and 500E

SENSOR TYPE	RTD PT100
MEASURING RANGE	-40°C TO 90°C
ACCURACY	±0.3% FS
RESOLUTION	0.1
RESPONSE TIME	4-6 seconds

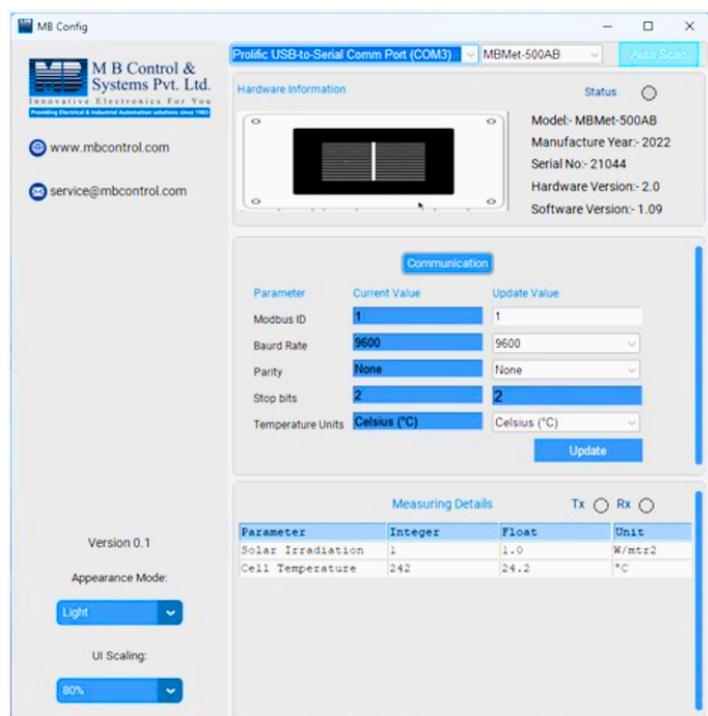
## Parameter and Specification

PARAMETER	SPECIFICATION
Irradiation Sensor Enclosure	Cast Aluminum
Ingress Protection	IP65
Irradiation Sensor Enclosure Size	120 (L) x 76 (W) x 65 (H) mm
Weight	300 grams
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) (Optional)
Cable Glands	M12 x 1.5mm
Ambient Operating Temperature	-30°C to 70°C
Ambient Operating Humidity	0 to 99% RH
Power Consumption (At 12 VDC)	(4 - 20mA) 50mW & (RS-485) 100mW

## Feature Diagram



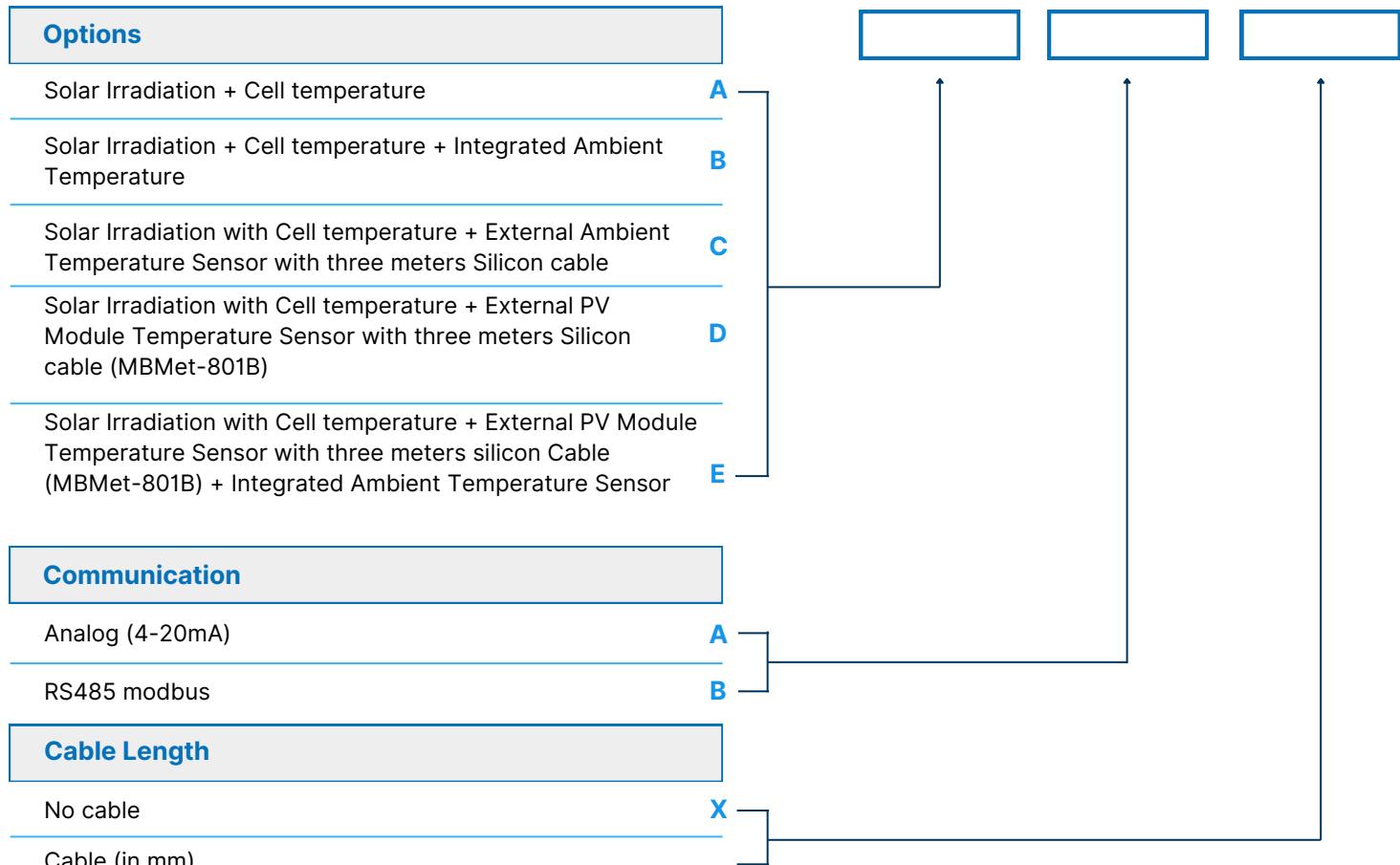
## Sensor Configuration Software



**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-500



**For example:** MBMet-500-CB **Measured Parameters:** Solar Irradiation + Cell Temperature + External Ambient Temperature with three meters Silicon cable **Output:** RS-485 with MODBUS RTU protocol

## Certifications

- IEC-61000-4-18** Damped Oscillatory Wave Immunity Test
- IEC-61000-4-8** Power Frequency Magnetic Field Immunity Test



## SEE ALSO

- MBMET 800 SERIES PV MODULE TEMPERATURE SENSOR MBLOGGER
- NANO AND 1000 SERIES DATALOGGERS PM180 SERIES POWER QUALITY
- METER MBMET 901 SERIES AIR TEMPERATURE, HUMIDITY & PRESSURE
- SENSOR PM130 SERIES MULTIFUNCTION METERS

MBMET-500 VERSION 2