

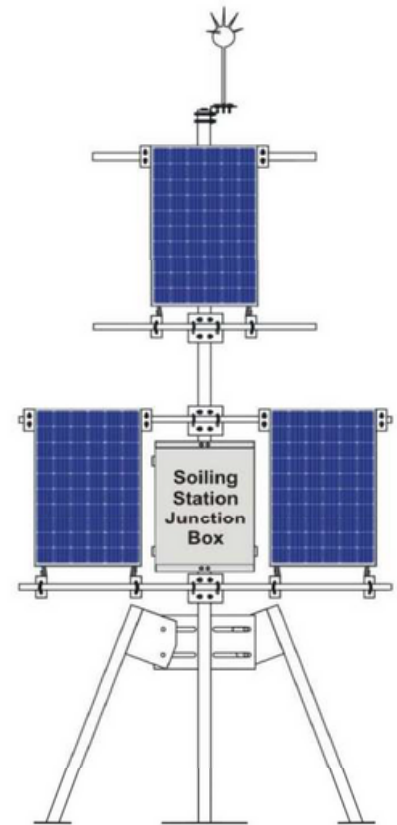
Soiling Monitoring Station

Accurate & Reliable Soiling Measurements

Overview

MBMet-700 Soiling Monitoring Stations provide PV Plant owners with Accurate and Reliable Soiling Measurements. It measures and calculates metrics such as Soiling Loss Index and Soiling Ratio so that PV Plant O&M teams can evaluate and manage the impact of Soiling on PV Plant Performance. These stations can be used in both Prospective and Operational PV Plants. In Prospective plants, they are used to estimate production loss estimates due to Soiling. In Operational plants, they are needed to monitor actual production losses due to Soiling – and make optimal PV Plant cleaning schedules. MBMet-700 Soiling Monitoring Stations calculate Soiling Loss by comparing Short-Circuit Current and Back of Module Temperatures of a Reference PV Module and a Test PV Module.

Both the Reference and Test PV Modules are identical – the Reference Module is kept clean (either manually once a day, or automatically using the Automatic Cleaning version of the Station) while the Test Module is allowed to Soil Naturally (Cleaned only when the PV Plant is Cleaned). The station supports a wide-range of PV Modules – ones used in Utility Grade Solar Plants.

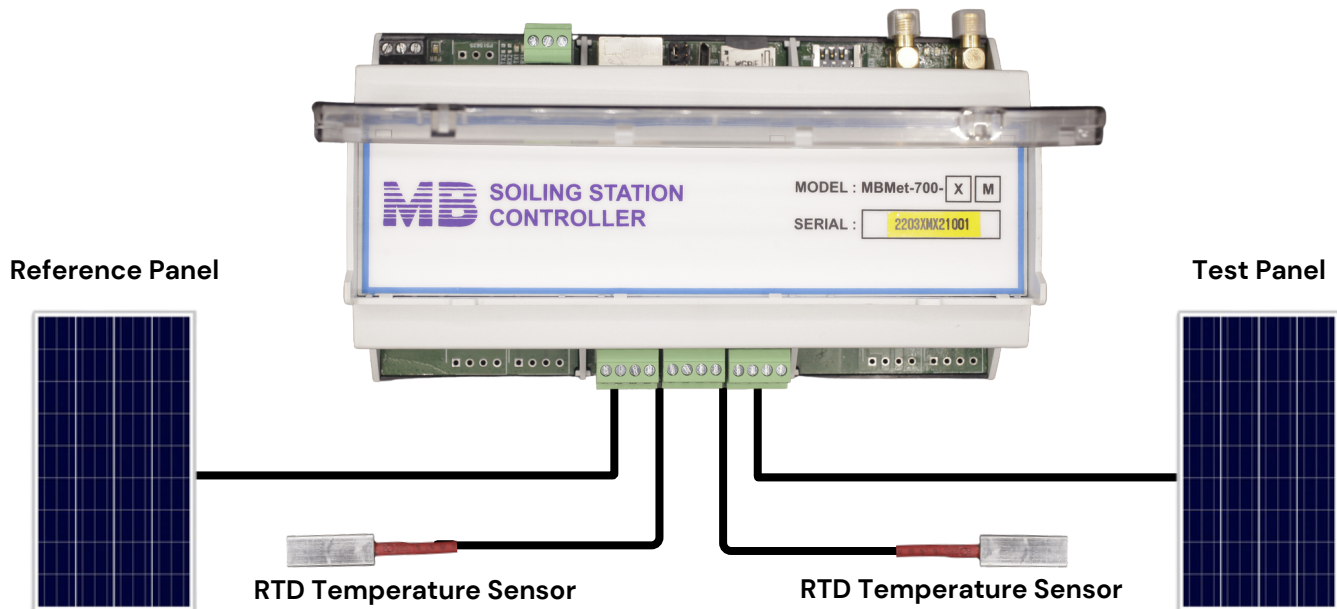


The System comes with the following

- ▶ Class A PV Module Temperature Sensors (MBMet-801B: 2 Units)
- ▶ Soiling Station Controller, Calibrated and Configured with the required Modules
- ▶ IP65 Enclosure, pre-wired with the required components (Surge Protection Devices, Terminals, SMPS, MCBs, etc.)
- ▶ Three meters Heavy Duty GI Mounting Pole with Lightning Arrestor
- ▶ Battery Backup System (Optional)
- ▶ Solar Modules as per Site Requirements
- ▶ Cleaning Nozzles and equipment such as Pump, Level Switched, Solenoid Valves, etc. (Only for Stations with Automatic Cleaning option)

Benefits and Features:

- IEC-61724 compliant Technology
- High Soiling Accuracy of 1%
- Automatic Cleaning of Panels
- Multiple communication options – RS-485 Modbus, Modbus TCP/IP, FTP, SNMP, Cellular to connect with PV Plant Monitoring Systems.
- Built-in Webserver for Data Retrieval and configuration – no additional software needed.
- Real-time Data and Daily Average Soiling Loss
- Data Filtering to remove unqualified Data and maximise accuracy
- Back up of Historical Data
- Supports a Wide Range of PV Modules – up to Full Sized Ones
- Complete, Turnkey Solution



Technical Specifications

Micro-Processor	32 bits ARM Processor
Input Voltage	9-32 VDC

DataLogging

Logging Interval	Site Configurable
Data Storage	Via SD Card (FAT32) up-to 16 GB
Data Retrieval	FTP via Modem and ETH port

Soiling Measurement

Solar Panels	35W, 50W, 100W and above
Panel Temperature Sensor	RTD PT1000
Temperature measurement range	-40 to + 90 C
Temperature Accuracy	±0.2 C
Panel Parameters	Voltage, short circuit current, temperature, and irradiation
Soiling Parameters	Soiling Ratio Soiling Index
Soiling accuracy	±1.0%

Ports

Serial Port-1	RS-485 Port
Configurable Baud Rate	9,600 and 19,200 bps
Optical Isolation	2.5KV RMS
Protocols Supported	MODBUS RTU Master- Read parameters from Smart Charger
Ethernet Port	1
Protocols Supported	MODBUS TCP Slave, SNMP Client and FTP
Datalogger Configuration	Via in-built web server

Inbuilt Modem (Optional)

Network	Quad Band 4G Modem with Antenna
Frequency Band	TDD LTE: B40/B41
Data Retrieval	GSM: 900/1800

Electrical

Power Consumption	With Cellular Modem: 4.10 Watt at 12VDC
	Without Cellular Modem: 2.75 Watt at 12VDC

Environmental

Operating Temperature	-5°C to +70°C
Storage Temperature	-20°C to +80°C
Humidity	95% max noncondensing
RTC	Temperature compensated RTC

Models

Serial No.	Features	MBMet-700-X-X	MBMet-700-X-M	MBMet 700-C-X	MBMet 700-C-M
1	Port Serial Port -1 RS-485	✓	✓	✓	✓
2	Port ETH	✓	✓	✓	✓
3	MMC SD Card (16GB)	✓	✓	✓	✓
4	Maximum number of MODBUS TCP Slave clients	4	4	4	4
5	SNTP Client	1	1	1	1
6	File Transfer Clients	2	2	2	2
7	RTC (Battery Backed Up)	✓	✓	✓	✓
8	Digital Inputs (optically isolated) for water level monitoring	x	x	2	2
9	Digital Outputs for water pump control	x	x	1	1
10	Digital Outputs for water output control for cleaning PV modules	x	x	2	2
11	Cellular Modem	x	✓	x	✓

Our extensive lineup of "MBMet" Sensors forms the cornerstone of advanced Weather Monitoring. With unwavering accuracy and cutting-edge technology, these sensors empower industries such as solar, meteorology, and agriculture to make informed decisions. From Solar Irradiation to Atmospheric Data, each sensor offers precise insights crucial for optimizing performance, enhancing safety, and ensuring efficiency in the face of ever-changing weather conditions

SEE ALSO

MBMet 500 Solar Irradiance Sensor

MBMet 702 Series Radiation Shield

MBMet 800 Series PV Module Temperature Sensor

MBMet 901 Series Air Temperature, Humidity & Pressure Sensor

MBLogger Nano and 1000 Series Dataloggers

