Product Catalogue

Meteorological Sensors And Data Acquisition Systems

M B Control & Systems Pvt. Ltd.

MB MET

The Experts in Monitoring & Automation

Company Profile

MB Control & Systems Pvt. Ltd. (MBCS) is a reliable name in the Indian and international power industry, with a strong legacy dating back to 1983. As an ISO 9001–certified organization, MBCS has been at the forefront of delivering high-performance monitoring, automation and control solutions for utilities, renewable energy projects, smart infrastructure and industrial applications.
Driven by engineering excellence, innovation and a commitment to long-term reliability, MBCS has earned a reputation as a preferred partner for mission-critical applications across substations, solar plants and industrial facilities. With decades of practical field experience, our solutions are designed not just in theory but to perform consistently under real-world conditions.

Application-Based Solutions

MBCS specializes in high-accuracy meteorological sensors designed for precise environmental monitoring. Our sensor solutions deliver reliable, real-time measurements of critical weather parameters, enabling data-driven decision-making and performance optimization across renewable energy and industrial applications. In addition to meteorological sensing, MBCS offers a comprehensive portfolio of metering, monitoring, automation, and control systems for power generation, transmission, distribution, renewable energy projects, and industrial plants.
Our solutions are widely adopted by utilities, EPCs, IPPs, OEMs, and panel builders, with a strong emphasis on IEC compliance, seamless system integration, and scalable architecture to meet evolving operational requirements.

MBMet – Precision Environmental Monitoring

MBMet, a dedicated brand under MB Control, focuses on meteorological and solar resource assessment solutions engineered for precision, durability, and long-term field performance. MBMet systems comply with global standards such as IEC 61724-1 Class A, ensuring accurate and traceable data for critical decision-making. These solutions are designed for seamless connectivity, real-time data acquisition, and reliable operation in harsh outdoor conditions.

Our Expertise at Your Service

At MBCS, all products are designed, calibrated, and tested in-house, enabling strict quality control and effortless system integration. Our team of experienced engineers and industry experts provides end-to-end support, from hardware deploy-ment to cloud-based dashboards. We believe customer satisfaction is built on quality, reliability, and responsive service. By understanding the unique requirements of each project, we deliver tailored solutions that ensure long-term value and operational excellence.

MB Control – Scope of Services

MB Control provides end-to-end solutions covering the complete project lifecycle:

- Site survey and layout design
- Comprehensive engineering and system design
- Complete Factory Acceptance Testing (FAT) at our facility
- Installation, testing, and commissioning
- Data validation and regulatory compliance documentation
- SCADA and cloud integration support
- Project handover support
- SDLC / RLDC support

Commitment to the Future

With over 40 years of industry experience, MBCS continues to grow as a pioneer in monitoring and automation solutions. Looking ahead, we remain committed to strengthening our presence in both domestic and international markets while delivering innovative, reliable, and future-ready systems for the evolving energy and infrastructure landscape.

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MBMET 100 Series

Wind Speed Sensor

Precise and Reliable Wind Speed Measurement

Overview

The MBMet 100 series Wind Speed Sensors are specifically designed to provide reliable and accurate wind velocity measurements under adverse environmental conditions. The sensor inside and turning position comes withprotective sealing offering superb dirt and weather resistance for long-term measurement stability in dirty and cloudy environments.



Benefits & Features

- Low starting threshold
- Strong corrosion resistant ability
- Various Output signal options
- Double bearing design
- Easy Installation
- Stainless steel wind cup, anti-wind load upto 70m/s

Technical Specifications

Model/ Parameter	MBMet - 110A	MBMet - 110B	MBMet - 110C	MBMet - 110D
Output	4-20mA	RS-485Modbus	0-5V	0-10V
Input Voltage	12 to 24VDC			

Wind Direction

Measuring Range	0 to 360°
Starting Wind Speed	<0.8m/s
Survival Wind Speed	70m/s
Accuracy	± 2%FS

General Specifications

Operating Temperature	-30°C to +70°C
Ingress Protection Rating	IP65
Storage Condition	10°C to 60°C @ 20% to 90%RH
Cable Type/Length	UV protected cable/3 meters
Dimension	Cup rotor : ø200mm, Height : 150mm
Body Material	Vane : 304 stainless steel, Main Body : Aluminum alloy
Weight (packed)	Approx. 480g (with standard 3 meters cable)
Power Consumption	16.8mA @ 12VDC

MBMET 110 Series

Wind Direction Sensor

Precise Navigation, Affordable Precision

Overview

The MBMet 110 series Wind Direction Sensors, offers unparalleled precision and unwavering accuracy in wind direction determination, all while maintaining an accessible price point. MBMet 110 series construction reflects high reliability and durability providing minimal maintenance. The sensor material design offers superb dirt and weather resistance for long-term measurement stability in dusty environments.



Benefits & Features

- Low starting threshold
- Strong corrosion resistant ability
- Various Output signal options
- Double bearing design
- Long-term stability in dusty environment
- Easy Installation

Technical Specifications

Model/ Parameter	MBMet - 110A	MBMet - 110B	MBMet - 110C	MBMet - 110D
Output	4-20mA	RS-485Modbus	0-5V	0-10V
Input Voltage	12 to 24VDC			

Wind Direction

Measuring Range	0 to 360°
Starting Wind Speed	<0.5m/s
Survival Wind Speed	70m/s
Accuracy	± 2%FS

General Specifications

Operating Temperature	-30°C to +70°C
Ingress Protection Rating	IP65
Storage Condition	10°C to 60°C @ 20% to 90%RH
Cable Type/Length	UV protected cable/3 meters
Dimension	Cup rotor : ø200mm, Height : 150mm
Body Material	Vane : 304 stainless steel, Main Body : Aluminum alloy
Weight (packed)	approx. 480g (with standard 3 meters cable)

MBMET 130 Series

Wind Speed & Direction Sensor

Wind Insights Perfected: Precise Speed and Direction Monitoring

Overview

MBMet 130 series offers combined Wind Speed and Direction Sensor in an integrated design construction. The rotary wind cups and vane are designed to stand up to strong-force winds and at the same time be sensitive to light breeze. The wind speed part adopts the traditional three-wind cup structure, featuring low start wind speed, large measuring range, stability and a long service life.



Benefits & Features

- Compact Wind Speed and Direction Sensor
- Low starting threshold
- Easy maintenance
- Adapts to harsh weather conditions
- Easy Installation
- Outputs in Digital RS-485 Modbus and Analog 4-20mA

Technical Specifications

Model/ Parameter	MBMet - 130A	MBMet - 130B
Output	4-20mA	RS-485 Modbus
Input Voltage	12 to 24VDC	

Wind Speed (Anemometer)

Measuring Range	0 to 45m/s	0 to 70m/s
Accuracy	±3%	
Resolution	0.1m/s	
Starting Threshold	0.5m/s	
Extreme Wind Speed	75m/s	

Wind Direction (Vane)

Model/ Parameter	0 to 360°
Output	≤±3°
Input Voltage	1°

General Specifications

Operating Temperature	-40°C to +70°C
Ingress Protection Rating	IP65
Installation Bracket	Included
Body Material	Carbon fiber and Aluminum alloy
Weight (unpacked)	700g
Power Consumption	0.3W

MBMET 200 Series

Rain Gauge

Overview

The MBMet-200 Series of Rain Gauge is a self-emptying, high accuracy sensor designed for accurate and reliable measurement of Rainfall. It's rugged design makes it ideal for use in applications such as Weather Monitoring, Irrigation Control, Flood Detection, Research, and others where precise Rainfall data is needed.



Benefits & Features

- Self- Emptying mechanism
- High Sensitivity: Detects low Drizzles easily
- Quick Response Time: Provides instant Data
- Easy Maintenance and Cleaning
- Easy Installation
- Simple and Reliable
- Built-in Clock (In RS-485 Output Model)

Technical Specifications

Model/ Parameter	MBMet - 200A	MBMet - 200B
Measurement Principle	Tipping Bucket	
Rain Orifice Area	200 cm2	
Measurement Range	0 – 480 mm / hr	
Accuracy	+/- 2%	
Resolution	0.2 mm	
Stability	< 0.0125 mm per year	
Operating Temperature	-40C to 80C	
Input Voltage		12 – 24 VDC (Only for RS-485 Output Model)

General Specifications

Parameter	Specification
Rain Orifice Area	200 cm2
Dimensions	20 cm height
Cable Length	3 meters (Standard)
Weight	700g

MBMET 702 Series

Radiation Shield

Overview

Ambient weather sensors are widely used in solar, meteorology, agriculture, and smart city applications, where accurate data is essential. Continuous solar radiation can damage sensors and affect measurement accuracy, making radiation shields necessary. The MBMet 702 Radiation Shield provides a durable, cost-effective solution, protecting sensors from solar radiation, weather, and environmental contaminants to ensure reliable measurements in harsh conditions.



Benefits & Features

- Reduction in solar radiation errors – greater accuracy
- Unique wasp and bug deterrence
- Enhanced Protection to keep the sensor safe from various environmental factors
- Extra secure positive locking cable glands
- Proven toughness, U.V stability and salt spray resistance

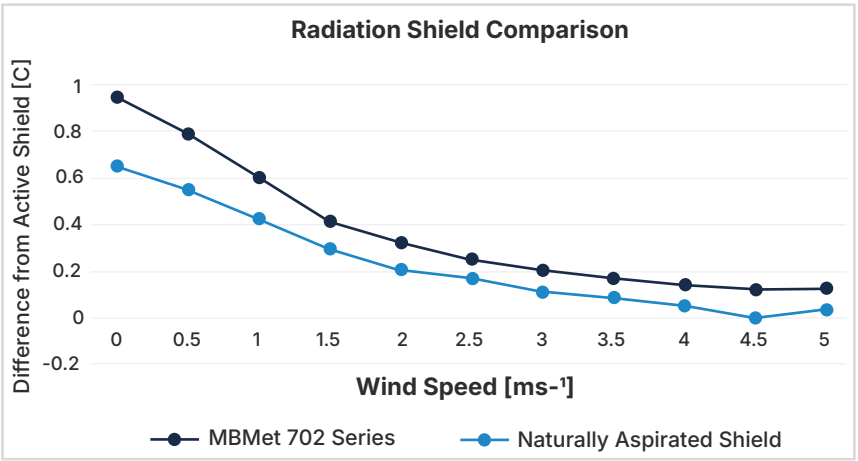
Radiation Shield Specifications

Housing Material	Double louvred UV stable Polycarbonate Plastic plates with Stainless Steel screws
Housing Plates	10-Plates Radiation Shield
Dimensions	Outer diameter : 123mm, Height : 208mm (without mounting bracket)
Weight	MBMet 702-AA : 715g and MBMet 702-AB : 770g (with mounting bracket)
Waterproof Glands	M32*1.5

Test Inter-comparison

The data in the graph are averages that show the mean temperature difference as a function of wind speed. Temperature measurements from each passive shield were compared to temperature measurements from an active shield.

In conclusion, MBMet 702 series performs better at different wind speeds as compared to other Naturally Aspirated Shields in the market.



MBMET 901 Series

Atmospheric Air Temperature, Relative Humidity & Barometric Pressure Sensor

Overview

MBMet 901 series offers highly accurate, fully calibrated and stable measurement of Atmospheric Air Temperature, Relative Humidity, Barometric Pressure, Air Density and Dew Point. Low power consumption, fast response time, and long-term stability makes the MBMet 901 ideal for a wide number of applications ranging from portable devices to product designed for harsh environments. When exposed to sunlight, the sensor must be housed in a Radiation shield.

The MBMet-901 Sensor uses only the latest generation Relative Humidity, Temperature and Barometric Pressure components to Deliver Reliable and Repeatable Measurements. The Sensor Filter is Field-Replaceable which makes Maintenance very easy and reduces Downtime. The MBMet-901 Series Sensor is Tested to Perform in Harsh Environments, specially in conditions which have high Electromagnetic Interference, making it ideal for Solar Plants, Wind Resource Assessment, Electrical Substations, etc.



Technical Specifications

Ambient Temperature	
Measuring Range	-40°C to +125°C
Resolution	0.001°C
Accuracy (Typical)	±0.2°C
Response Time	2s
Stability	<0.03°C per year

Relative Humidity	
Measuring Range	0 to 100%RH
Resolution	0.001%RH
Accuracy (At 25°C)	±2%RH
Response Time	4s
Stability	<0.2%RH per year

Dew Point	
Measuring Range	-40°C to 105°C
Resolution	0.001°C
Accuracy	Calculated
Response Time	8-30s

Benefits & Features

- Accurate and stable measurements
- WMO Compliant
- Reverse Polarity Protection
- Each sensor element is individually calibrated
- Field replaceable filter – eliminates downtime
- Fast response time

Barometric Pressure	
Measuring Range	300 to 1250 hPa
Resolution	0.001 hPa
Accuracy (At 25°C)	±0.4 hPa
Response Time	0.1s
Stability	±1 hPa Per Year

Air Density	
Accuracy	Calculated
Calculation Time	5s

MBMET 902 Series

Indoor Temperature and Relative Humidity Sensor

For Demanding HVAC and Light Industrial Applications

Overview

MBMet 902 is a fully calibrated, loop-powered transmitter designed for accurate measurement of atmospheric air temperature and relative humidity. Suitable for HVAC, industrial, pharmaceutical, and building automation applications, it is available in temperature-only or temperature-and-humidity variants. The series supports wall or duct mounting, features a durable polycarbonate enclosure for harsh environments, and offers easy two-wire installation with optional filter caps for demanding conditions.



Benefits & Features

- Accurate and stable measurements
- Wide RH and temperature measuring range
- Class-A PT100 RTD for high precision
- IP66-rated rugged enclosure
- Fast response time

General Specifications

Mounting	Wall / Duct
Wall Mount	80mm (H) × 82mm (W) × 55mm (D)
Duct Mount	80mm (H) × 82mm (W) × 55mm (D) with 180mm Duct mounting arrangements
Cable Gland	PG7
Weight	Wall Mount : 300gm Approx. / Duct Mount : 500gm Approx.
	Reverse voltage and surge

Technical Specifications

Model/ Parameter	MBMet - 902A	MBMet - 902B
Input Voltage	10 to 30 VDC	

Relative Humidity

Measuring Range	0-100%RH
Output	4-20mA (two wire-Loop Current)
Accuracy at 25°C	±2%RH (0 to 90%), ±3%RH (90 to 100%)
Hysteresis	±0.8%RH of operating humidity span
Repeatability	±0.1%RH
Long-term Drift	<0.25%RH/year
Response Time at +25°C	8 sec in 1m/s airflow

Terminal Details

Terminal Type	Screw Type
Connection	≤2.5 sq. mm, AWG 14
Protection	IP66

Environmental

Operating Temperature	-20°C to +75°C
Operating Humidity	0 to 100%RH (non-condensing)

MBMet 903

Pressure Sensor

Overview

The MBMet-903 Series Pressure Sensor is designed for accurate and reliable pressure monitoring in demanding environmental and industrial applications. It delivers highly precise, fully calibrated measurements with excellent stability across a wide operating range.

Engineered with advanced pressure-sensing technology, the MBMet-903 offers low power consumption, fast response time, and long-term measurement consistency. Its robust design supports fixed installations and is optimized for integration into control systems using a DIN rail mounting system inside cabinets, ensuring secure installation, organized wiring, and ease of maintenance in industrial environments. The sensor maintains reliable performance even under harsh environmental conditions, including exposure to temperature variations and electromagnetic interference.

With its durable construction and high measurement accuracy, the MBMet-903 is ideal for enclosed monitoring system, where precise and stable pressure data is essential for performance analysis and operational reliability.



2 Years STANDARD WARRANTY

Key Features

- Ultra-Low Noise
- Power Efficiency
- Wide Measurement Range
- Fast Response Performance
- Long-Term Stability

Technical Specifications

Features	Specification
Measuring Range	300 to 1250 hPa
Operating Temperature Range	-40°C to +85°C
Operating Humidity Range	5% to 85%
Resolution	0.01 hPa
Absolute Pressure Accuracy	±0.2 hPa
Response Time	0.1 s
Short-term Drift	±0.01 hPa
Output	Modbus (RS-485)

Features	Specification
Operating Voltage	9 to 32 VDC
Power Consumption	13 mA @ 12 VDC
Weight	Approx. 40gm
Dimenssion	50mm x 23mm x 75mm
Mounting Type	DIN Rail Mounting
Sensor Housing	ABS Enclosure
IP Rating	IP20

MBMet 50X Family of Solar Irradiation Sensors

Solar radiation monitoring sits at the core of every photovoltaic monitoring system. It measures how much sunlight reaches a site and converts that measurement into usable data. This data supports plant design, daily operation, performance checks, and long-term studies. Without on-site radiation measurement, plant output cannot be checked against real weather conditions. Accurate sensors, correct installation, and certified calibration produce records that remain reliable across the full project life.





Why Solar Radiation Monitoring is Needed

Solar radiation data shows how much sunlight reaches the ground at any time. This directly affects how much power a solar plant can generate. Plant layout, inverter capacity, tracker movement, and energy estimates all rely on this data. Even small errors in sunlight measurement can cause noticeable changes in yearly energy output. Models and satellite data give estimates, but they cannot capture local conditions. Clouds, dust, humidity, and nearby objects change sunlight at each site. Ground sensors measure the actual sunlight at the plant. Continuous measurement creates a long-term record that supports performance checks, warranty review, and asset value tracking.

Why Reference Cells Are Needed

Reference cells measure sunlight using the same working principle as photovoltaic modules. They convert incoming light into electrical current. This makes them suitable for checking how a plant should perform under real operating conditions. Pyranometers measure absolute sunlight levels. Reference cells show how solar modules respond to that sunlight. Operators compare reference cell output with inverter output. Differences point to issues such as dust buildup, shading, wiring faults, or module aging. Reference cells are installed at the same tilt and direction as the solar modules. This setup allows direct comparison between expected and actual performance. Temperature sensors connected to the reference cell adjust readings for heat effects, which improves accuracy during high sunlight periods.

Certifications That Matter

Solar radiation data used in financed projects must follow international standards. These standards define accuracy limits, calibration methods, and data quality rules.

Common standards include:

ISO 9060 for solar radiation sensor classification
IEC 61724 for solar plant monitoring and data handling
IEC 60904 for photovoltaic reference devices

Calibration must follow recognized standards and be done at approved laboratories. Lenders and auditors review calibration certificates to confirm traceability and validity. Certified sensors support formal performance ratio calculations and bankable reporting.

What We Provide

M.B. Control & Systems provides solar radiation monitoring systems under the MBMET range. These systems include radiation sensors, reference cells, temperature sensors, and dataloggers built for long-term outdoor use. All parts use standard connections and work with data loggers, SCADA systems, or cloud platforms. The systems focus on steady measurement, correct calibration, and reliable data collection for different project needs. This setup delivers dependable solar radiation data that supports design checks, daily performance monitoring, and long-term asset management for photovoltaic installations.

MBMET 500 Series

Solar Irradiation Sensor

Overview

The MBMet-500 Series offers cost-effective and accurate measurement of solar irradiance. It provides multiple measurement options and is ideal for monitoring photovoltaic (PV) systems, including both rooftop and ground-mounted installations. Designed with a sensor element that closely replicates the characteristics of a photovoltaic (PV) module, the sensor delivers a spectral response and incident angle behavior highly comparable to actual PV arrays. This makes the MBMet-500 Series highly suitable for performance monitoring and analysis of PV systems. The series supports both analog (4–20 mA) and digital (RS-485) output options, ensuring easy integration with a wide range of monitoring and control systems.



Benefits & 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/m²
Accuracy	±3% 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

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 × 1.5mm

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

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

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	3-5 seconds

Parameter	Specification
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

MBMET 501 Series

Smart Solar Irradiation Sensor

Overview

The MBMet-502 series offers cost-effective and accurate solar irradiation measurement for rooftop and ground-mounted PV systems. It enables PV performance monitoring with a spectral response comparable to PV arrays and functions as a smart device with a single RS-485 Modbus output. The sensor supports multiple third-party inputs, including PT100/PT1000, 4–20 mA, and pulse inputs for wind speed or rain gauge sensors.



Benefits & 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	9-32 VDC

Solar Irradiation

Sensor Type	Monocrystalline Silicon (85mm x 64mm)
Measuring Range	0-1500 W/m²
Accuracy	±3% 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

Wind Direction Input

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

Parameter	Specification
Cable Terminals	1.5 sq. mm. copper
Integrated Ambient Temperature Sensor	40mm x 4mm (SS304)
Cable Terminals	M12 × 1.5 mm
Ambient operating temperature	-30°C to 70°C
Ambient operating humidity	0 to 99% RH
Power Consumption	100mW

Digital Input

Number of Inputs	2
Measuring Range	-1000.0 to +1000.0
ADC Resolution	16 bits
Accuracy	±0.3% FS
Resolution	0.1

MBMET 502 Series

Smart Solar Irradiation Sensor

Overview

The MBMet-502 series offers cost-effective and accurate solar irradiation measurement for rooftop and ground-mounted PV systems. It enables PV performance monitoring with a spectral response comparable to PV arrays and functions as a smart device with a single RS-485 Modbus output. The sensor supports multiple third-party inputs, including PT100/PT1000, 4–20 mA, and pulse inputs for wind speed or rain gauge sensors.



Benefits & 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

Solar Irradiation

Sensor Type	Monocrystalline Silicon (85mm x 64mm)
Measuring Range	0-1500 W/m²
Accuracy	±3% 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

Technical Specifications

Input Voltage	9-32 VDC

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

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

Parameter	Specification
Cable Terminals	1.5 sq. mm. copper
Integrated Ambient Temperature Sensor	40mm x 4mm (SS304)
Cable Terminals	M12 × 1.5 mm
Ambient operating temperature	-30°C to 70°C
Ambient operating humidity	0 to 99% RH
Power Consumption	100mW

MBMET 700 Series

Soiling Monitoring Station

Accurate & Reliable Soiling Measurements

Overview

MBMet-700 Soiling Monitoring Stations provide accurate and reliable soiling measurements for PV plants, helping O&M teams assess soiling impact using metrics like Soiling Loss Index and Soiling Ratio. Suitable for both prospective and operational plants, they support production loss estimation, performance monitoring, and optimized cleaning schedules. Soiling loss is calculated by comparing short-circuit current and back-of-module temperatures between a clean reference module and a naturally soiled test module, with support for a wide range of utility-scale PV modules.



Benefits & Features

- IEC-61724 compliant Technology
- High Soiling Accuracy of 1%
- Automatic Cleaning of Panels
- Multiple communication options – RS-485 Modbus, Modbus TCP/IP, FTP, SNTP, 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

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, SNTP Client and FTP
Datalogger Configuration	Via in-built web server

Environmental

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

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
Soling accuracy	±1.0%

Inbuilt Modem (Optional)

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

Electrical

Power Consumption	With Cellular Modem: 9 Watt at 12VDC
	Without Cellular Modem: 4 Watt at 12VDC

MBMET 800 Series

PV Module Temperature Sensor

Class A accuracy at any cable length

Overview

The MBMet-800 Series is designed for photovoltaic system performance monitoring, providing accurate PV module temperature measurement using a PT100/PT1000 Class A sensor sealed in a durable aluminium housing. It delivers stable readings over long cable lengths and is built to withstand harsh Indian climates and electrical conditions, with surge protection up to 2.5 kV.
For bifacial modules, the MBMet-800-BI series offers an ultra-compact 75 mm design that minimizes impact on bifaciality and fits easily between PV cells.



Benefits & Features

- Class A Accuracy (±0.2°C) for precise performance ratio calculations
- Wide Temperature Range: -40°C to +150°C
- Compact Design – Ideal for bifacial PV modules
- Stable readings at any cable length
- Surge Protection up to 2.5kV for safe operations
- Long-Term Stability: <0.1°C drift per year
- IEC-Compliant & Globally Certified
- 2-Year Standard Warranty with Calibration Certificate

Technical Specifications

Model/ Parameter	MBMet - 801A	MBMet - 801B	MBMet - 802	MBMet - 803
Output	PT 100	PT 1000	4-20mA	RS-485 Modbus
Sensor Type	RTD Class A			
Input Voltage	NA	NA	(Self-loop powered) 12 to 24 VDC	12 to 24 VDC

Module Temperature			
Measuring Range	-40°C to +110°C		-40°C to +150°C
Accuracy	Class A	±0.2°C	
Temperature Stability	<0.1°C per year		

General Specifications			
Operating Atmospheric Temperature	-40°C to +150°C		
Operating Ambient Humidity (Non-condensing)	0.1 to 99.9% RH		
Sensor Transmitter Cable	EMC Compliant, Shielded, Outdoor Cable		
Sensor Cable-Length	3 meters		
Sensor Housing	Aluminium with double-sided tape		
Transmitter Housing	NA	Powder Coated-Cast Aluminium, IP67	
Dimension Size	NA	64 x 58 x 34 mm (LxWxH)	98 x 64 x 36 mm (LxWxH)
Weight (Packed)	72g (+3 meters cable)	518g (+5meters cable)	754g (+5meters cable)
Power Consumption	NA	20mA max @12/24VDC	30mA @12VDC

MBLogger Range of Dataloggers

The MBLogger range of dataloggers is designed for use in automatic weather stations, solar monitoring systems, and environmental monitoring projects. These dataloggers act as the central data acquisition and communication units within a monitoring station. They collect sensor data, store it securely and transfer it to local or remote systems for analysis and reporting.

The platform supports continuous outdoor operation and works with standard industry signal types. Most importantly, it does not limit sensor choice or station design, which allows use across different monitoring applications and site conditions.



Why Dataloggers Are Required and Essential for Meteorological Stations

Meteorological stations depend on uninterrupted data collection. Sensors measure physical parameters, but they cannot manage data on their own. The datalogger performs this role.

Central Data Collection

- Receives signals from all connected sensors
- Supports analog, digital, pulse, and serial inputs
- Collects measurements at fixed, user-defined intervals

Reliable Outdoor Operation

- Designed for year-round use in heat, cold, dust, and rain
- Restarts automatically after power loss
- Flags sensor faults and communication errors early

Without a datalogger, a meteorological station cannot record data in a steady or usable way. The datalogger turns raw sensor readings into clear records that support weather forecasting, climate tracking, and performance checks.

Accurate Time Stamping

- Records each sensor reading with an exact time stamp
- Aligns data from different sensors correctly
- Supports comparison with forecast models and satellite data

Remote Data Access

- Sends data through Ethernet, serial networks, or cellular links
- Allows operators to view live values and historical trends remotely
- Reduces site visits and maintenance effort

Local Data Storage

- Stores data inside the unit during power or network outages
- Prevents gaps in long-term weather records
- Transfers stored data automatically once communication returns

Why the MBLogger Platform Fits Meteorological Stations

The MBLogger range follows a common platform structure. This allows the same configuration method, data format, and operating logic to be used across stations of different sizes. The platform connects with local servers, SCADA systems, and cloud-based monitoring tools using standard communication methods. This consistency simplifies installation, operation, and long-term maintenance. It also supports uniform data handling across multiple sites and projects. Stable logging improves data confidence during audits, reporting, and long-term climate analysis, where complete and time-aligned records remain critical. Reliable records also support regulatory submissions, forecasting validation, and historical weather comparison across regions. M.B. Control & Systems supplies the MBLogger range as part of the MBMET portfolio, with focus on stable data capture, secure storage, and long-term operational reliability.

MB LOGGER Nano Series

Compact and Powerful Dataloggers

Specially tailored for Meteorological Applications

Overview

The MBLogger Nano Series of dataloggers are a compact, cost effective, yet powerful range of dataloggers suitable for applications such as Meteorology, Renewable Plant Monitoring, Hydrology, Agriculture, and Research Applications. The MBLogger Nano Series uses a Powerful 32-Bit Processor and a 24-Bit ADC to Ensure accurate and reliable Data Capture from various sources. The Battery Backed up Real Time Clock (RTC) along with a Built-In GPS ensure accurate Time Stamping of Data. The datalogger has a Built-In Webserver for Quick and Easy Configuration. The On-Board Cellular Modem ensures Stable Data Telemetry and Connectivity to the Cloud.



Highlights

- Operational in Extreme environments of -40°C to +70°C
- Compact in Size for Smaller Applications
- Built-in Webserver with Libraries for easy and efficient Datalogger Configuration
- Data Telemetry via MODBUS, MQTT,MQTTS,FTP,SFTP,API
- Built-In GPS for Time Synchronisation and Geo Location Tagging
- Configurable Data Logging and Update Rates
- High-resolution data acquisition using a 32-bit ARM processor and 24-bit ADC
- Supports SNTP and GPS-based time synchronization for accurate timestamping
- Firmware Over the Air (FOTA) Support.
- Internal on board dedicated RTC.
- Broad Input Voltage Range of 9 – 32VDC
- Provides Easy Sensor integration with RS-485, ETH Ports, 2 Configurable Ports
- Calculates Sunrise & Sunset, Daily Sunshine Duration, Albedo Ratio, Daily Rainfall
- Expansion Modules available for Greater Monitoring and Control
- Supports multiple input types (4–20 mA, 0–1 V, 0–10 V, pulse) for flexible integration
- RJ-11 interface support for easy connection of wind and rain sensors
- OTA With Remote Configuration.
- Calculation of DNI/DHI

TECHNICAL SPECIFICATIONS

GENERAL SPECIFICATIONS	
Micro-Processor	32 bits ARM Processor
RTC	Temperature Compensated RTC
ADC	24-Bit

PORTS	
Serial Ports	1 RS-485 Port
Configurable Baud Rate	9,600 and 19,200 bps
Optical Isolation	2.5KV RMS
Ethernet Port	1
Protocols Supported	MODBUS TCP/IP Master and Slave, MODBUS RTU Master/Slave, SNTP Client, FTP, SFTP, HTTP, MQTT MQTTS, UDP, TCP, IPv4,TLS *DavisTalk
Datalogger Configuration	via in-built web server

*Select Models Only

PORTS - NANO PRO ONLY	
Analog Inputs	4-20mA (16 bits) mV (0-10,000mV – differential-16 bits) mV (0-1,000mV – differential-16 bits)
Sampling Rate	10Hz
Accuracy	±0.1%
Digital Inputs	Avg, Min, Max, Std Deviation, Integration etc.
Max Input Frequency	<100Hz
Statistics	Totalisation, Wind Speed calculation etc.

PORTS - NANO K ONLY	
RJ 11 Ports	2 x RJ11 Ports suitable for Davis Sensors

DATA LOGGING	
Datalogging Time Period	Site Configurable
Datalogging Memory	16/32 GB On-board Storage
Data Transfer	FTP via modem and ETH ports

INBUILT MODEM/GPS (OPTIONAL)	
Network	Quad-Band 4G Modem
Frequency Band	LTE CAT 4
	GSM : 900/1800

ENVIRONMENTAL	
Operating Temperature	-40°C to +70°C
Storage Temperature	-50°C to +80°C
Humidity	95% max – noncondensing

PHYSICAL	
Protection	IP42
Dimensions (W x H x L)	90 × 62 × 80 mm
Mounting	DIN Rail
Weight	350g (Approx.)
Housing Material	Polycarbonate

ELECTRICAL	
Voltage Input	9-32VDC
Power Consumption	With Cellular Modem : 2.80 Watt at 12VDC
	Without Cellular Modem : 1.35 Watt at 12VDC

SPECIAL FUNCTIONS
Day Sun Rise and Sunset time
Day Duration
Day Solar Energy
Day Sunshine duration
Albedometer Ratio
Day Rainfall
Direct Normal Irradiance (DNI)
Diffuse Horizontal Irradiance (DHI)

2 Built-In Web Server

- Built-in Web server For Easy Datalogger Configuration
- Secure Multiple User Access Depending on User Role
- View Device Log and Error Log for easy Diagnostics
- View Real Time Data of all connected Devices
- Download Datalog Files in .csv Format
- Built-in Library of Sensors and Devices foreasy
- One-Click configurationMBCompact

MB LOGGER 1000 Pro

Industrial Grade Dataloggers

Specially tailored for Meteorological Applications

Overview

The MBLogger 1000 Pro is the Flagship Datalogger of the MBMET Range of Meteorological Solutions. The Datalogger's reliability and performance makes it ideal for Critical applications such as Meteorology, Renewable Plant Monitoring, Hydrological Systems, Agriculture and Research, etc. The MBLogger 1000 Pro uses a Powerful 32-Bit Processor and 2 x 24-Bit ADCs to Ensure accurate and reliable Data Capture from various sources. The Battery Backed up Real Time Clock (RTC) along with a Built-In GPS ensure accurate Time Stamping of Data. The Datalogger has a Built-In Webserver for Quick and Easy Configuration. The On-Board Cellular Modem ensures Stable Data Telemetry and Connectivity to the Cloud.



Highlights

- Operational in Extreme environments of -40°C to +70°C
- OLED Display for quick Troubleshooting
- Built-in Webserver with Libraries for easy and efficient Datalogger Configuration
- Data Telemetry via MODBUS, MQTT,MQTTS,FTP, SFTP,API
- Built-In GPS for Time Synchronisation and Geo Location Tagging
- Configurable Data Logging and Update Rates
- Internal on board dedicated RTC.
- Broad Input Voltage Range of 9 – 32 VDC
- High-resolution data acquisition using a 32-bit ARM processor and 24-bit ADC
- Supports SNTP and GPS-based time synchronization for accurate timestamping
- Provides Easy Sensor integration with RS-232, RS-485 and ETH Ports
- Measures and Captures Rapidly changing Data with up to 10Hz Sampling Rate for Analog Channels and 100Hz Input Frequency for Pulse Inputs
- Calculates Sunrise & Sunset, Daily Sunshine Duration, Albedo Ratio, Daily Rainfall
- Expansion Modules available for Greater Monitoring and Control
- Control of Pyranometer Ventilation Units
- Supports multiple input types (4–20 mA, 0–1 V, 0–10 V, pulse) for flexible integration
- Firmware Over the Air (FOTA) Support.
- OTA With Remote Configuration.
- Calculation of DNI/DHI

TECHNICAL SPECIFICATIONS

GENERAL SPECIFICATIONS

Micro-Processor	32 bits ARM Processor
RTC	Temperature Compensated RTC
ADC	2 x 24-Bit

ELECTRICAL

Voltage Input	9-32VDC
Power Consumption	With Cellular Model : 4.10 Watt at 12VDC
	Without Cellular Model : 2.75 Watt at 12VDC

INPUTS

Analog Inputs	13	
	4-20mA (24 bits)	4
	mV (0-10,000mV - differential - 24 bits)	4
	mV (0-1,000mV - differential - 24 bits)	4
	PT100 / PT1000	1
Sampling Rate	10Hz	
Accuracy	±0.1%	
Statistics	Avg, Min, Max, Std Deviation, Integration etc.	
Digital Inputs	4 (Optically Isolated)	
Max Input Frequency	<100Hz	
Statistics	Totalisation, Wind Speed calculation etc.	

PORTS

Serial Ports	1 RS-485 Port
	1 RS-485 and RS-232 Port (software configurable)
Configurable Baud Rate	9,600 and 19,200 bps
Optical Isolation	2.5KV RMS
Ethernet Port	1
Protocols Supported	MODBUS TCP/IP Master and Slave, MODBUS RTU Master/Slave, SNTP Client, FTP, SFTP, HTTP,MQTT, MQTTS, UDP, TCP, IPv4,TLS *DavisTalk, *Gill Protocol
Datalogger Config./ Diagnostics	via in-built web server

*Select Models Only

DATA LOGGING

Datalogging Time Period	Site Configurable
Datalogging Memory	16/32 GB On-board Storage

INBUILT MODEM/GPS

Network	Quad-Band 4G Modem
Frequency Band	LTE CAT 4
	GSM : 900/1800

COLOR OLED DISPLAY AND KEYS

Display Parameters	IED, Sensors, Alarm Conditions, Display Parameters ETH Gateway status, File transfer status, Modem Signal Strength, Communication Status etc.
Display	Graphic Color 160 × 120 pixel resolution
Keypad	Four buttons capacitive keypad

ADD ON MODULE

Model	MBMET-404
Function	Digital Output Module
Number of Outputs	4

ENVIRONMENTAL

Operating Temperature	-40°C to +70°C
Storage Temperature	-50°C to +80°C
Humidity	95% max – noncondensing

PHYSICAL

Protection	IP42
Dimensions (W x H x L)	90 × 62 × 162 mm
Mounting	DIN Rail
Weight	500g (Approx.)
Housing Material	Polycarbonate

SPECIAL FUNCTIONS

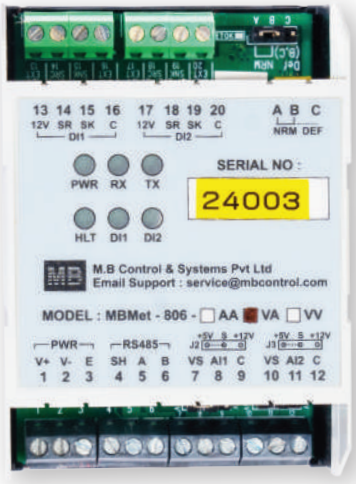
Day Sun Rise and Sunset time
Day Duration
Day Solar Energy
Day Sunshine duration
Albedometer Ratio
Day Rainfall
Direct Normal Irradiance (DNI)
Diffuse Horizontal Irradiance (DHI)

MBMET 806 Series

Smart Interface

Overview

The MBMet-806 Smart Interface series is a Powerful Smart Interface for Field Measurement Signals. It is used to convert Field signals such as Voltage, Digital or Current into Modbus RTU Protocol over RS-485. The Smart Interface comes with 2 Digital Inputs, and a combination of 2 Analog Inputs (Voltage 0 – 5 VDC, Current 4 – 20 mA).



Benefits & Features

- Easy Configuration with Status, Counter, Rain Gauge, Wind speed sensor input.
- 16 bits ADC resolution.
- Sampling rate 10Hz.
- Isolated RS485 serial communication.
- Isolated (1.5KV) two wire RS485 Modbus RTU Communication.
- High accuracy.
- LED Indication for Power Input, CPU health, Digital Input, RS485 Rx and Tx .
- Configurable Baud Rates upto 19,200.

Technical Specifications

Parameter		Specification
Power Supply	Model- MBMet-806	1.5 sq. mm. copper
Digital input Channel 1 & 2	0-1000Hz	Can be configured for the following: i) Status input ii) Counter input iii) Rain Gauge input iv) Wind speed sensor input
Digital input Sensor Excitation power supply		+12V DC (max 60mA) for each digital input channel. Short circuit protected.
Analog input 1 & 2	0-5.0VDC	ADC resolution- 16 bits Sampling rate – 5 Hz 4-20mA Accuracy – 0.1%
	4-20mA	
LED Indications		i) Power Input LED ii) CPU Health LED iii) Digital Input status iv) RS485 Rx and Tx LED
Analog input Sensor Excitation power supply		Selectable between +5V or +12V DC (max 50mA) for each analog input individually. Short circuit protected.

Communication Parameters

Communication	Isolated (1.5KV) two wire RS485 Modbus RTU
Output data format	32 bits signed integer and 32 bits floating point. (Without any scaling factor)
Baud rates	Configurable 4200, 9600 and 19200

General Specifications

Ingress protection	IP-20
Housing Material	ABS Plastic
Dimension (L X B XD)rates	51 mm X 74 mm X 50 mm DIN Rail mounted
Weight	100 gm approx.

MBMET M-1448 Series

Smart Box

Overview

SmartBox – Series Model M-1448 provides smart and intelligent interface for field measurement signals. It can be used to convert commonly used analog signals at any site to serial RS485 MODBUS RTU protocol. This enables transmission of signal values over large distances without any loss in accuracy and resolution. Smart box also reduces copper. Two voltage or mA signals and one RTD signal can be interfaced using SmartBox.



Benefits & Features

- Smart signal interface solution
- One RTD (PT100 or PT1000) input channel
- Two analog input (mV or mA) channels.
- Analog input channels can be configured individually at site.
- Optional calibration input constant for mV input channels.
- 24 bits ADC resolution.
- Sampling rate 10Hz.
- Isolated RS485 serial communication.
- Available for AC or DC power supply.
- Field mounted IP65 enclosure.

Communication Parameters

Parameter	Specification
Communication Port	RS485
Isolation	1.5KV
Protocol	MODBUS RTU
Baud rates	4200, 9600 or 19200 (site configurable)
Parity	Odd, Even or None
Device ID	1 to 247

Technical Specifications

Parameter		Specification
Power Supply	Model- M1448-A	220VAC Power supply
	Model- M1448-D	9-32VDC Power Supply
Analog Input Channel 1 & 2	0-1000mV	Either mV or mA input is user selectable at site. Optional calibration constant for mV input. Option for four sample average filter.
	4-20mA	
RTD Input	PT100	RTD input class A. Range -20 to +1200C Unit selectable at site 0C, 0K or 0F
	PT1000	
ADC Resolution		24 bits
Sampling Rate		10Hz
Accuracy		0.10%

Technical Specifications

Parameter	Specification
Charger Sensor Enclosure	Powder coated cast aluminum
Ingress Protection	IP65
Enclosure Size	125 (L) x 80 (W) x 57 (H) mm
Weight	500 grams (approx.)

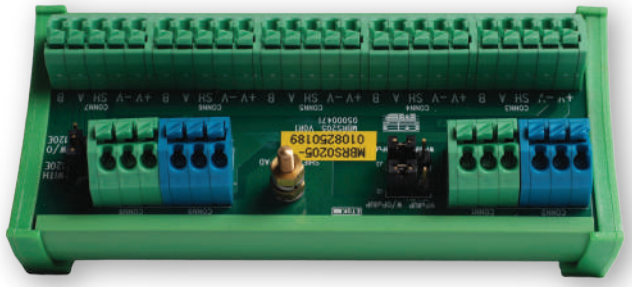
Parameter	Specification
Cable terminals	1.5 sq. mm. for signals and 4.0 sq. mm for power
Ambient operating temperature	-30 to 700°C
Ambient operating humidity	0 to 99% RH

MBRS-205

Smart Modbus Communication Module

Overview

The MBRS-205 is a Smart Device which simplifies the communication between a Master Device and Multiple Slave Devices over the RS-485 Modbus network. This significantly reduces the Panel / Enclosure Wiring Time and Also reduces the number of Terminals required in the Panel / Enclosure. The MBRS-205 allows the connection of up to 6 RS-485 Slave Devices in a single Module; For networks having more than 6 Devices, multiple MBRS-205 devices can be Daisy Chained together. The MBRS-205 Device also allows the Distribution of Power Supply to the Various Slave devices, further reducing the Wiring Complexity. With additional features such as a 120 ohms terminating resistor and an option for active pull up and pull down (5 VDC), it increases the reliability and performance of Devices communicating using the Modbus RTU over RS-485 Protocol.



Benefits & Features

- Up-to six slave devices can be connected to one master device.
- Option for 120 ohms terminating resistor for RS485 network.
- Distributes power supply to the slave devices.
- Can be daisy chained for interfacing more than six slave devices.
- Option for active pull up and pull down (5V DC) for RS485 lines.

Key Benefits

- Improved Reliability
- Easier Troubleshooting
- Simplified Wiring
- Enhanced Performance

Technical Specifications

Features	Specification
Weight	120 gm
Enclosure Material	ABS
Power Requirement	9 to 32 VDC (up to 100 mA/device)
Connector	No. of pins: Three and Five Connection method: Push-in spring

Features	Specification
Mounting Type	DIN Rail mounting
No of Terminals	Six
IP class	20
Dimensions	107 × 48 × 23 mm

MBMET 1300

Wireless Zigbee Module

Wind Insights Perfected: Precise Speed and Direction Monitoring

Overview



The MBMet 1300 Zigbee module is a reliable, low-power wireless solution designed for robust Zigbee PRO mesh networks. It enables efficient master–slave communication for IoT and M2M applications, ensuring stable and scalable network deployment.

Equipped with a Modbus RS-485 interface, the MBMet 1300 can connect up to 32 devices, transmitting their data wirelessly through a Zigbee mesh network. This eliminates expensive cabling, reduces installation time, and protects against cable-related surge damage.

Specifically designed for meteorological applications, it supports sensors such as pyranometers, module temperature sensors, and albedometers distributed across solar plants, enabling seamless communication to the datalogger or control room without physical cables.

Ideal applications include meteorological stations and electrical substations.

Benefits & Features

Robust Mesh Networking: Build self-healing, scalable mesh networks where every mains-powered device acts as a router. This extends the range and increases the reliability of your network, ensuring data reaches its destination even if a path is temporarily unavailable.

Ultra-Low Power Consumption: Designed for battery-operated devices, MBMet 1300 Zigbee modules offer multiple sleep modes. This allows sensors and other end devices to operate for years on a single battery, making them perfect for remote monitoring and sensing applications.

Secure & Reliable Communication: With built-in 128-bit AES encryption, your data is protected from unauthorized access. The Zigbee protocol's robust packet delivery and acknowledgment features ensure reliable data transmission.

Connect Devices via Modbus RTU: Easily set up and connect Devices and Sensors communicating over Modbus RS-485 to the module.

Interoperable Standard: As a member of the Zigbee Alliance, the Zigbee protocol ensures interoperability with other Zigbee-certified devices. This allows you to integrate your solution with a wide ecosystem of third-party products.

Technical Specifications

Features	Specification
Input Voltage	9 – 30 VDC
Power Consumption	0.5 W
Transmit burst current	135 mA @ 3.3 VDC
Input Power Isolation	3 KV
Frequency Band	ISM 2.4 GHz
Transmit Power	+19 dBm
Indoor / Urban Range	Approx 30 mtr*
Outdoor / RF Line of Sight Range	Approx 1 KM*
Protocol	802.15.4
Network Layer	Personal Area Network

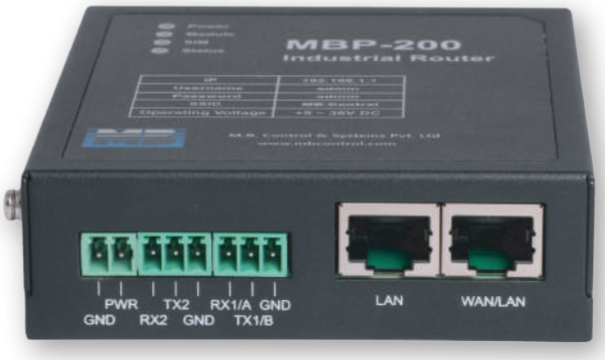
Features	Specification
Antena	5 dBi
Weight	233 gm
Enclosure Material	ABS
Connector	No. of pins: 3&5. Connection: Push-in spring
Mounting Type	DIN rail mounting
Ingress protection	IP20 (Class III)
Cable Terminals	1 sq. mm
Ambient Operating Temperature	-40 °C to 70 °C
Ambient Operating Humidity	0 to 99 %RH
Dimensions	23 × 75 × 50 mm

MBP 200

Industrial Grade Dual Sim Cellular Router

Overview

The MBP-200 Dual SIM Cellular Communication Router is designed to provide Secure and Reliable Connectivity for Remote Locations. With Cellular (2G - 5G), Wifi, and Ethernet connectivity and additional Features such as Dual SIM, Failover and VPN Support, the MBP-200 Cellular Router is ideal for a Large range of Applications such as Renewable Energy, Electrical Utilities, Sub- Stations, Telemetry, Smart Cities, etc. The MBP-200 has a High Performance 32-Bit communication processor and industrial grade wireless module and uses an embedded RTOS (Real Time Operating System). The Router features 1 RS232 Port, 1 RS232 / RS485 Port, 1 Ethernet LAN Port, 1 Ethernet WAN Port which can be easily connected to both Serial and Ethernet Devices along with Wifi to achieve Transparent Data Transmission and Data Routing.



Benefits & Features

- Industrial Grade 32-Bit Processor
- Anti Interference Technology with EMC Protection
- Metal Enclosure suitable for Industrial grade applications
- Powerful and Intelligent Data Terminal for automatic Data Transmission after Power On
- Multiple Ports (Serial, Ethernet) to support a large range of devices
- Configuration the Web Server and Command Line Interface
- Cellular Link Redundancy with Dual SIM
- Supports Wifi

Cellular Standards

Standards and Frequency Bands	LTE-TDD B38 / B40 / B41 LTE-FDD B1 / B2 / B3 / B4 / B5 / B7 / B8 / B20 / B28 WCDMA / HSPA+ B1 / B3 / B5 / B8 GSM / GPRS / EDGE 850 / 900 / 1800 MHz
Bandwidth	LTE FDD: Downlink: 100 Mbps, Uplink: 50 Mbps DC-HSPA+: Downlink: 42 Mbps, Uplink: 5.76 Mbps HSPA+: Downlink: 21 Mbps, Uplink: 5.76 Mbps HSDPA: Downlink: 7.2 Mbps, Uplink: 5.76 Mbps UMTS: 384 Kbps
Transmit Power	< 23 dBm
Receiver Sensitivity	> - 97 dBm

Wifi Standards

Standards and Frequency Bands	IEEE 802.11 b/g/n
Bandwidth	IEEE 802.11 b/g: 54 Mbps IEEE 802.11 n: 150 Mbps
Secure Encryption	WEP, WPA, WPA2, WPA3 and other Encryption Modes
Transmit Power	20 dBm (11n), 24 dBm (11g), 26 dBm (11b)
Receiver Humidity	← 72 dBm @ 54 Mbps

Power, Hardware, and Interfaces

CPU	**Industrial Grade 32 Bit Processor**
FLASH	16 MB
DDR2	128 MB
Power Supply	5 - 36 VDC
Standby Power Consumption	83 mA @ 12 VDC
Communication Power Consumption	150 mA @ 12 VDC
Button	Reset Button
SIM / UIM	1 Standard SIM Card Interfaces. 1.8V / 3V SIM / UIM Card 15 KV ESD Protection
Indicator Light	1 Power, 1 System, 1 SIM, 1 Online, 1 Ethernet, 1 Signal Strength
Serial Ports	1 RS232 / RS485 Port, Data Bits: 5, 6, 7, 8 Bits Stop Bits: 1, 1.5, 2 Bits, Parity: No Parity, Even Parity, Odd Parity, Baud Rate: 2400 - 115200
WAN / LAN	1 × 10 / 100 Mbps Ethernet Port, Adaptive MDI / MDIX, 15KV ESD Protection

Physical Properties

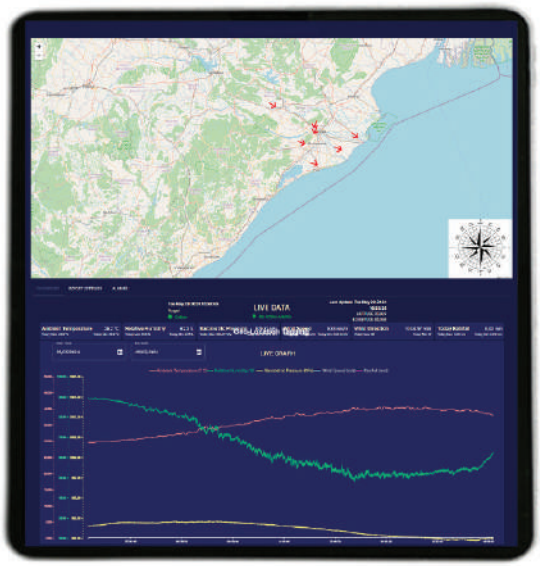
Dimensions	100 × 97 × 25 mm (Not including Antenna + Mounting)
Bandwidth	Approx. 330g
Operating Temperature	- 35C to + 75C
Storage Temperature	- 40C to + 85C
Relative Humidity	95% RH (Non Condensing)

MBSCADA MET

Cloud-based Monitoring Software

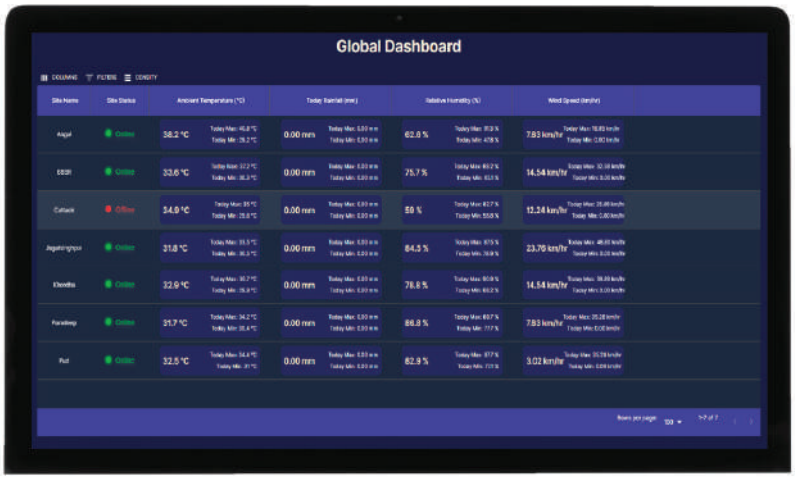
Overview

MBSCADA MET is a state-of-the-art cloud-based SCADA software tailored for application in meteorology. With its intuitive interface and advanced functionalities, MBSCADA MET offers seamless monitoring and control of weather-related data. Notably, MBSCADA MET is distinguished due to its multi-plant dashboard, geo-location tagging and wind direction map along with the implementation of a secure SSL certified login facility, ensuring the utmost data security for all authorized users.



Benefits & Features

- Real-time data collection and control
- Comprehensive Site List in a Single Screen
- Multi-Plant Global Dashboard
- Interface with any IoT-enabled devices and sensors
- Geo-Location Tagging
- Wind Direction Map
- Alarms for Multiple Plants and Plant Equipments
- Special licenses such as Wind Rose diagram,
- Sunrise and Sunset Time
- Powerful and user-customizable reports
- Centralized monitoring platform - Integrate multiple
- Sites into a single dashboard
- Safe password protected user login with SSL
- Certified data security



Multi-Plant Global Dashboard

Get access to MBSCADA MET's unparalleled multi-plant global dashboard for real-time performance monitoring of multi-plants to gain insights on the live status of all plant equipments in different geographies.

Global Alarms

Get real-time alarms about plant health and faulty devices through MBSCADA MET's Global Alarms robust in-app and email notification feature to minimize plant downtime and maximize energy production.

Wind Direction Map & Geo-Tagging

View the wind direction of different plant sites in a sinlgle map showcasing the wind status at plant locations. Get real-time live location of plant sites and live updates about faulty devices and plant health with MBSCADA MET's Geo-location Tagging feature and stay updated to reduce plant downtime and maximize energy production.

MB CONFIG - SENSOR 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.

Key Features:

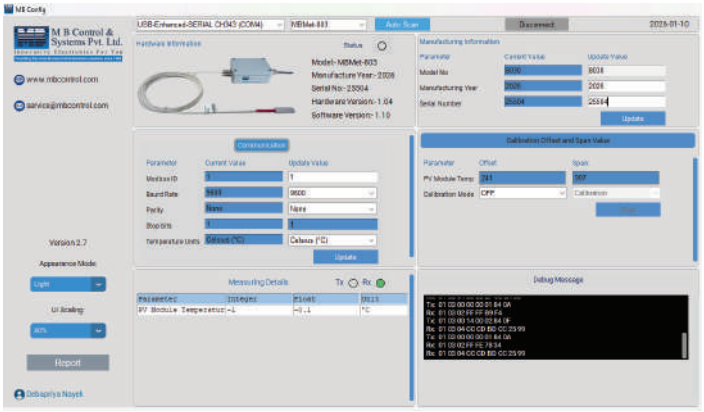
- Free to download and use
- Designed for the configuration and troubleshooting of all MBMet Sensors
- Easy plug-and-play connectivity using RS-485 to USB converter
- Simple configuration of Modbus parameters such as Device ID, Baud Rate, Stop Bit, and Parity







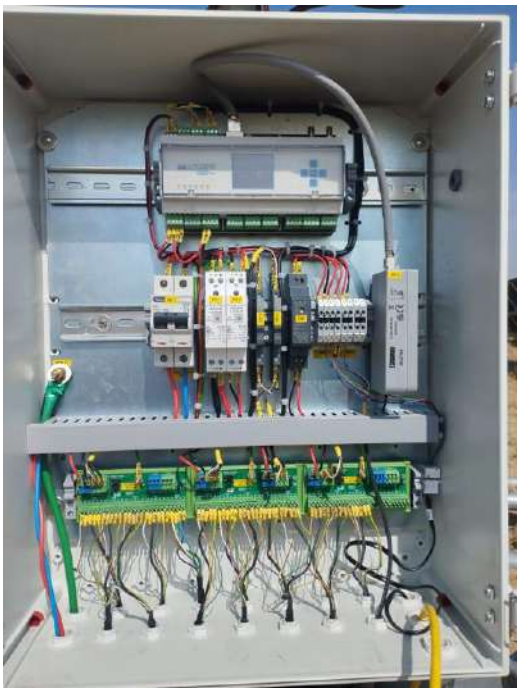




Scan the QR Code to Access and download the MB Config Software:

PROJECT REFERENCES

MB Control and MBMET have successfully delivered engineering projects across multiple locations, specializing in Meteorological Solutions for Renewable Energy. Our experienced engineers execute installations at solar plants, open fields, and industrial sites with a strong focus on quality and timely delivery. We provide end-to-end support from planning and design to installation and maintenance. Our solutions are built for long service life and reliable performance in all weather conditions, ensuring consistent results across diverse environments.





CERTIFICATION

At MB Control and Systems, all products are designed, manufactured, and tested in accordance with applicable national and international standards. Each product undergoes strict inspection and verification at every stage of its lifecycle to ensure consistent quality, safety, and reliability. Before dispatch, every device goes through strict testing. This includes functional testing, electrical testing, safety checks, and performance verification under real working conditions. Only products that pass all quality checks are approved for delivery.

All MB Control and Systems products carry applicable product-level certifications to ensure compliance with relevant technical, safety, and regulatory requirements. Certification and conformity are validated by internationally recognized independent certification bodies. Our integrated management systems reflect our commitment to quality, information security, environmental responsibility, and occupational health and safety.

Management System Certifications

Standard	Certification Title	Scope / Relevance
ISO 9001:2015	Quality Management System (QMS)	Ensures consistent product quality and continuous improvement
ISO/IEC 27001:2022	Information Security Management System (ISMS)	Protects information assets and data security
ISO 14001:2015	Environmental Management System (EMS)	Commitment to environmental sustainability and compliance
ISO 45001:2018	Occupational Health & Safety Management System (OHSMS)	Ensures safe and healthy working conditions

RESEARCH & DEVELOPMENT

MB Control and Systems has a dedicated in-house research and development team with more than 15 engineers. The team handles complete product development internally.

Our R&D work covers PCB design, hardware development, firmware design, embedded programming, and software development. From concept to final product, all key development activities are done within the company.

The R&D engineers have strong technical knowledge and practical experience. They work closely with production and testing teams to make sure products are reliable, easy to use, and ready for real-world use. Continuous improvement and careful testing are part of everyday R&D work.

M B Control & Systems Pvt. Ltd.

MBMET



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