M B Control & Systems Pvt. Ltd.
Innovative Electronics For You

Actual installation in a 5 MW Solar Plant located in West Bengal

WEATHER MONITORING STATION (WMS) - SURYA
HIGH ACCURACY AND RELIABLE ALL-IN-ONE WMS SOLUTIONS

Precise weather monitoring systems are essential and mandatory requirements for assessment and operation of Renewable plants, Substations and other Industrial applications. In Solar plants, weather monitoring sensors are the key for initial assessment on finding optimal locations for solar radiation and improving plant efficiency.

MBCS "SURYA" offers entire range of weather sensors depending on the plant size from market leading sensor manufacturers along with our in-house weather sensors under MBMet series.

WMS SURYA MEASURMENT RANGE

Solar Irradiation in
- Second Class
- Secondary Standard
Ambient Temperature
Ambient Humidity
Ambient Barometric Pressure
Ambient Dew Point
Ambient Frost Point
Wind Speed
Wind Direction
PV Module Temperature
Rain Precipitation
Datalogger with in-built GSM Modem

PYRANOMETER

Secondary Standard SR20 Series

- Response time (95%) : 3s
- Calibration uncertainty : <1.2 %
- Zero offset a : 5 W/m^2 unventilated, 2.5 W/m^2 ventilated
- Zero offset b : <± 2 W/m^2
- Spectral range : 285 to 3000 nm
- Rated operating temperature range : -40°C to +80°C
- Supply voltage : 5 to 30 VDC
- IP Protection rating : IP 67
- Calibration traceability : to WRR
- Output signal options : Analog 4 to 20mA, Milivolt and Digital RS-485 Modbus

Make : **Hukseflux**
Class : **Secondary Standard**
Model : **SR20 Series**

Second Class SR05 Series

- Response time (95%) : 18s
- Calibration uncertainty : <1.8 %
- Zero offset a : <15 W/m^2 unventilated
- Zero offset b : <±4 W/m^2
- Spectral range : 285 to 3000 nm
- Rated operating temperature range : -40°C to +80°C
- Supply voltage : 5 to 30 VDC
- IP Protection rating : IP 67
- Calibration traceability : to WRR
- Output signal options : Analog 4 to 20mA, Milivolt and Digital RS-485 Modbus

Make : **Hukseflux**
Class : **Second Class**
Model : **SR05 Series**

WIND SPEED AND DIRECTION SENSOR

MeteoWind

- Wind Speed Range : 0 to 80 m/s
- Wind Speed Accuracy : <1% of measured value (0.3 to 50 m/s) with Measnet Calibration.
- Wind Direction Range : 0 - 360°
- Wind Direction Accuracy : 2°
- Starting Wind Speed : <0.3 m/s
- Operating temperature : -40°C to +80°C
- Supply Voltage : 5 to 24VDC
- IP Protection rating : IP 65
- Output signal option : Digital RS-485 Modbus

Make : **Barani Design**
Model : **MeteoWind**

MBMet 120 Series

- Wind Speed Range : 0 to 60 m/s
- Wind Speed Accuracy : ±2%
- Wind Direction Range : 0 to 360°
- Wind Direction Accuracy : <±3°
- Acquisition cycle : 3s
- Operating temperature : -40°C to +70°C
- Supply Voltage : 12 to 24VDC
- IP Protection rating : IP 65
- Output signal options : Analog 4 to 20mA and Digital RS-485 Modbus

Make : **MBCS**
Model : **MBMet 120 Series**

Make : **MBCS**
Model : **MBMet 903 Series**

Make : **MBCS**
Model : **MBMet 901 Series**

Make : **Barani Design**
Model : **MeteoTemp**

AIR TEMPERATURE, HUMIDITY & PRESSURE SENSOR

MBMet 903 Series
- Temperature Accuracy : ±0.2°C
- Temperature Measuring Range : -40°C to +125°C
- Relative Humidity Accuracy : ±2% RH
- Relative Humidity Measuring Range : 0 to 100% RH
- Barometric Pressure Accuracy : ±1 hPa
- Barometric Pressure Measuring Range : 300 to 1100 hPa
- Power Supply : 12 to 24VDC
- IP Protection rating : IP 66
- Output signal options : Analog 4 to 20mA and Digital RS-485 Modbus

MBMet 901 Series
- Temperature Accuracy : ±0.2°C
- Temperature Stability : <0.02°C per year
- Temperature Measuring Range : -40°C to +110°C
- Sensor Element Type : RTD Class A
- Power Supply : 12 to 24VDC Self-loop powered
- IP Protection rating : IP 66
- Output signal option : Analog 4 to 20mA

MeteoTemp
- Temperature Accuracy : ±0.2°C
- Temperature Measuring Range : -40°C to +105°C
- Relative Humidity Accuracy : ±1.8% RH
- Relative Humidity Measuring Range : 0 to 100% RH
- Barometric Pressure Accuracy : ±1.5 hPa
- Barometric Pressure Measuring Range : 300 to 1100 hPa
- Dew Point / Frost Point : Calculated
- Power Supply : 5 to 15VDC with reverse polarity protection
- IP Protection rating : IP 66
- Output signal option: Digital RS485 Modbus

Make : **MBCS**
Model : **MBMet 800 Series**

PV MODULE TEMPERATURE SENSOR

MBMet 800 Series
- Measurement Range : -40° to +110°C
- Temperature Accuracy : ±0.2°C
- Temperature Stability : <0.1°C per year
- Sensor Housing : Self-Adhesive Aluminium
- Power Supply : 12 to 24VDC
- IP Protection rating : IP 67
- Output signal options : Analog 4 to 20mA and Digital RS-485 Modbus

MBMet 801 Series
- Measurement Range : -40° to +110°C
- Sensor Element Type : RTD
- Temperature Accuracy : Class A
- Temperature Stability : <0.1°C per year
- Sensor Housing : Self-Adhesive Aluminium
- Output signal options : RTD PT100/1000
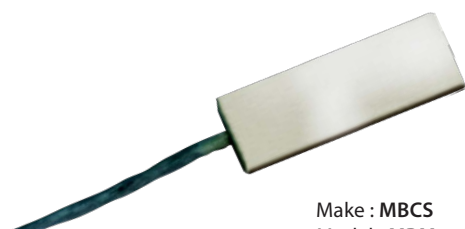
Make : **MBCS**
Model : **MBMet 801 Series**

RAIN GAUGE SENSOR

Rain Gauge Sensor SEB-200

- Accuracy : ±0.2°C (typical)
- Stability : <0.1 mm per year
- Resolution : 0.2 mm
- Measuring Range : 0°C to 60°C
- Operating Range : -40°C to +60°C
- Orifice area : Ø 200 cm2
- Output signal option : Pulse Output

Make : **Barani Design**
Model : **SEB-200**

DATALOGGER

EasyLog GSM

- Analog inputs : 4 single-ended or 4 differential
- Analog inputs range : 4 to 20mA, 0 to 2.5V
- Digital Input : 4
- PT100 Input : 3
- Pulse counters : 1
- Serial inputs : RS-485 MODBUS
- Serial output : RS-485 MODBUS TCP IP / RTU (for integration with SCADA)
- Wireless communication : Built-in GSM/GPRS Modem
- Memory : 4MB (internal flash), 512MB (external SD card - further extendable to 16GB)
- Operating voltage : 4 to 20 VDC

Make : **Barani Design**
Model : **EasyLog GSM**

MB WMS SOLAR POWER SUPPLY SYSTEM

Part of WMS offering, MBCS offer WMS Solar power supply to provide constant power supply to the datalogger and sensors or as a backup when AC power fails. MBCS provides the flexibility to customise as per the requirements of the client. The system consists of Solar Panel, Solar Charger, Battery, Cabinet and other mounting accessories.
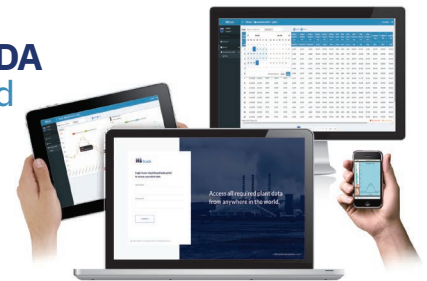
REMOTE MONITORING SOFTWARE - MBSCADA CLOUD

MBSCADA Cloud offers users to monitor and analyse plant WMS data through field datalogging devices. Users can generate reports, view trends and graphs and download reports in .xls and .pdf. MBSCADA Cloud allows multilevel account access along with accessing multiple locations through a single account.

Benefits of MBSCADA Cloud :

- User friendly software
- Realtime data can be accessed from any part of the world
- No local hardware server to be installed
- Alarms and reports
- Easy to deploy and use
- Automated reports are configured and sent by email
- Live multiple-channel trend display and preconfigured reports delivered automatically or on user-selected schedules.

M. B. Control & Systems with an experience of 35+ years in the field of electrical automation and instrumentation, in 2017 ventured into turnkey Weather Monitoring Stations. Further, under Make in India programme, we launched MBMet series of weather sensors. Under the MBCS R & D department, the sensors are designed focusing on long term stability and accuracy. The MBMet series includes Air Temperature, Relative Humidity, Barometric Pressure, Wind Measurement and Module Temperature Sensors in Digital and Analog Outputs.

**Specifications are subject to change without notice.