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Wind Direction Sensor Operation and Installation Manual Model – MBMet-100-A/B/C/D

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Contents	Error! Bookmark not defined.
1. Parts of Wind Speed Sensor	2
2. Mounting Sensor to Pole	2
3. Wind Speed Sensor Specifications	3
4. Wind Speed Sensor Connection	3
5. Wind Speed Sensor Modbus Details (MBMet-100 – B)	3

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1. Parts of Wind Speed Sensor

Wind speed sensor is shipped with the following components

1. Wind Speed Sensor – 1 No
2. Cable with connector – 3mtr
3. Wind Speed sensor pipe mounting – 1 No *
4. Pole Mounting Pipe (900mm length, 31.75mm diameter) – 1 No *
5. Adapter plate – 1 No *
6. U Clamp for 50.8mm Pipe with nut, screw, spring washer and washer – 2 Set *
7. U Clamp for 31.75mm with nut, screw, spring washer and washer – 4Set *

* Mounting accessories for the wind speed are optional and should be ordered separately. These designed according to standard design are subject to change according to application requirement.

2. Mounting Sensor to Pole

2.1. Mounting the Adapter plate to 50.8mm vertical pole

Install the adapter plate shown in Fig 2.1 to 50.8mm pole with the help of the 50.8mm U-Clamp set. Use the Hole marked A in the Fig 1.1, item no 6. Follow the picture for mounting the plate as in Fig 2.1. Adapter plate should be installed on 50.8mm pole at height where wind speed has to be measured



Fig 2.1 – Adapter plate mounted on 50.8mm vertical Pole

2.2. Mounting the 31.75mm pipe to the Adapter Plate horizontal to ground

Install the pipe as shown in Fig 2.2 with the help of two 31.75mm U-Clamp sets to the Adapter Plate. Use the Hole marked B in the Fig 1.1, item no 6. Follow the picture for mounting the plate as in Fig 2.2.



Fig 2.2–Pole Mounting Pipe mounted horizontal to ground

2.3. Mounting the wind speed sensor mounting to the horizontal pipe

Install the Wind Speed pipe mount using TWO 31.75mm U-clamp sets.



Fig: 2.3 – Wind Speed Sensor pipe mount mounted on horizontal pipe

2.4. Mounting the Wind Speed sensor on the Mounting Plate

Mount the Sensor on the Sensor Plate with the 4 numbers screw, nut and washer set provided inside the sensor packet. After mounting, connect the cable to the connector.

3. Wind Speed Sensor Specifications

	MBMet-100 – A	MBMet-100 – B	MBMet-100 – C	MBMet-100 – D
Range	0-30 m/s / 0 – 60m/s	0-30 m/s / 0 – 60m/s	0-30 m/s / 0 – 60m/s	0-30 m/s / 0 – 60m/s
Output	4-20mA	Modbus RS-485	0 to 5V	0 to 10V
Accuracy	±3%FS	±2%FS	±3%FS	±3%FS
Supply Voltage	12 to 24VDC	12 to 24VDC	12 to 24VDC	12 to 24VDC
Starting Wind Speed	<0.8m/s	<0.8m/s	<0.8m/s	<0.8m/s
Operating Temperature	-30°C to +70°C	-30°C to +70°C	-30°C to +70°C	-30°C to +70°C
Storage Condition	10°C to 60°C @ 20% to 90%RH	10°C to 60°C @ 20% to 90%RH	10°C to 60°C @ 20% to 90%RH	10°C to 60°C @ 20% to 90%RH
Survival Wind Speed	70m/s	70m/s	70m/s	70m/s
Cable Type/Length	UV protected cable/3 meters	UV protected cable/3 meters	UV protected cable/3 meters	UV protected cable/3 meters
IP Protection Rating	IP65	IP65	IP65	IP65
Dimension	Cup rotor: ø200mm, Height: 150mm	Cup rotor: ø200mm, Height: 150mm	Cup rotor: ø200mm, Height: 150mm	Cup rotor: ø200mm, Height: 150mm
Main Material	Cup: 304 stainless steel, Main Body: Aluminum alloy	Cup: 304 stainless steel, Main Body: Aluminum alloy	Cup: 304 stainless steel, Main Body: Aluminum alloy	Cup: 304 stainless steel, Main Body: Aluminum alloy
Weight (Unpacked)	240g	240g	240g	240g

Table No 3.1 – Wind Speed Sensor Specifications

4. Wind Speed Sensor Connection

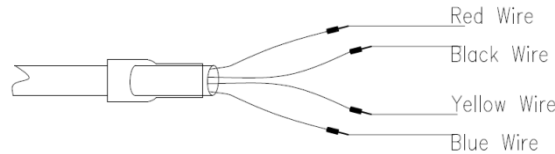


Fig: 4.1 – Wind Direction Sensor Wire

Wiring of Wind Speed Sensor				
	MBMet-100 – A	MBMet-100 – B	MBMet-100 – C	MBMet-100 – D
Red Wire	+V 12-24VDC	+V 12-24VDC	+V 12-24VDC	+V 12-24VDC
Black Wire	-V 12-24VDC and 4-20mA –	-V 12-24VDC	-V 12-24VDC	-V 12-24VDC
Yellow Wire	4-20mA +	D+ RS485	0-5V +	0-10V +
Blue/Green Wire	NA	D- RS485	0-5V -	0-10V -

Table No 4.1 – Wind Speed Sensor Wiring

5. Wind Speed Sensor Modbus Details (MBMet-100 – B)

5.1. Default Communication Parameters

Modbus ID: 1
Baud Rate: 9600
Parity: None
Stop Bit: 1

5.2. Sensor Modbus Register addresses

Modbus Register Addresses	Length	Parameters	Resolution	Function Code	Parameter Type
0	16 Bits	Wind Speed	0.1	FC3, Read Holding Register	16 Bits

Table No 6.1 – Parameter Modbus Addresses

5.3. Setting the Modbus ID in Wind Speed Sensor

Note: Only Modbus ID can be changed. Baud Rate, Parity and Stop Bit are constant.

- Step-1 Isolate the sensor from others and connect to computer via **RS-485 to USB Converter***
- Step-2 Open any Modbus Polling software and set the following in read/write definitions as below.
 Modbus ID: ID set in the device (Default-1)
 Function Code: FC6, Write Single Registers
 Address to be written: 48
- Step-3 Set desired Modbus ID ($2 < ID < 255$). Avoid 1 since 1 is the default value. You must convert the Decimal to HEX. The factory default is 01 Hex

* **RS-485 to USB Converter is to be purchased seperately and not a standard supply item**

For Example:

You want to set Modbus ID as 51.
 (51) D = (33) H

Modbus Master Command Frame
 01 06 00 30 00 33 (CRC Check Bits are not shown)

Slave Response
 01 06 00 30 00 33 (CRC Check Bits are not shown)

* **Please note that the Modbus ID if changed and forgotten, the troubleshooting of the sensor cannot be done.**

Change in the contents of the manual is purely under discretion of MB Control and Systems Pvt. Ltd. and may change without prior notice