

C-type Integrated Weather Station MWS10



Version: V1.2



1. Product introduction

1.1 Product Overview

MWS10 C-type integrated weather station can be widely used for environmental detection. It integrates wind speed, wind direction, temperature and humidity, noise collection, PM2.5 and PM10, CO2, and atmospheric pressure. The equipment adopts the standard MODBUS-RTU communication protocol and RS485 signal output., the communication distance can be up to 2000 meters, and the data can be uploaded to the customer's monitoring software or PLC configuration screen through 485 communication, and it also supports secondary development.

This product is widely used in various occasions where it is necessary to measure ambient temperature and humidity, noise, air quality, CO2, atmospheric pressure, etc. It is safe, reliable, beautiful, and durable, and easy to install.

1.2 Functional features

This product is small in size and light in weight. It is made of high-quality anti-UV material and has a long service life. It uses a high-sensitivity probe with stable signal and high precision. The key components are imported devices, which are stable and reliable, and have the characteristics of wide measurement range, good linearity, good waterproof performance, easy use, easy installation, and long transmission distance.

- It adopts an integrated design of multiple collection devices and is easy to install.
- Wind speed and wind direction structure and weight are carefully designed and distributed respectively, with small moment of inertia and sensitive response.
- Noise collection measurement is accurate, range up to 30dB~120dB.
- PM2.5 and PM10 are collected at the same time. Range: 0-1000ug/m3, resolution 1ug/m3. Unique dual-frequency data collection and automatic calibration technology adopted makes the consistency can reach ±10%.
- CO2 range: 0-5000ppm, resolution 1ppm.
- Ambient temperature and humidity measured by measuring unit imported from Switzerland and the measurement is accurate.
- Wide range 0-120Kpa air pressure range, which can be applied to various altitudes.
- Using a dedicated 485 circuit, the communication is stable, and the power supply is within a wide voltage range of 10~30V.

1.3 Main Technical Parameters



DC Power Supply	10-30VDC	
Maximum power consumption	RS485 output	0.8W
Accuracy	Wind speed	±0.3m/s
	Humidity	±3%RH(60%RH,25℃)
	Temperature	±0.5℃(25℃)
	Atmospheric pressure	±0.15Кра@25℃ 75Кра
	Noise	±3db
	PM10 PM2.5	±10%(25°C)
	CO2	±(40ppm+ 3%F·S) (25℃)
Measuring range	Wind speed	0~70m/s
	Wind direction	8 directions
	Humidity	0%RH~99%RH
	Temperature	-40° ℃ ~+120° ℃
	Atmospheric pressure	0-120Кра
	Noise	30dB~120dB
	PM10 PM2.5	0-1000ug/m3
	CO2	0-5000ppm
Long term stability	Temperature	≤0.1°C/y
	Humidity	≤1%/y
	Atmospheric pressure	-0.1Кра/у
	Noise	≤3db/y
	PM10 PM2.5	≤1%/y
	CO2	≤1%/y
Response time	Wind speed	≤0.5s
	Wind direction	≤0.5s
	Temperature & Humidity	≤1s
	Light intensity	≤0.1s
	Atmospheric pressure	≤1s
	Noise	≤1s
	PM10 PM2.5	≤90S
	CO2	≤90S
Output signal	RS485	RS485 Modbus

Note: If you select the PM element, you cannot select the CO2 element, and they cannot be selected at the same time.







Device Dimension (Unit, mm)

Dimension of Device W/ Sleeve(Unit,mm)

3. Equipment installation instructions

3.1 Interface description

The wide voltage power input range is 10~30V. When wiring the 485 signal line, pay attention to the fact that the A and B lines cannot be connected in reverse, and the addresses of multiple devices on the bus cannot conflict.

	Wire color	Definition
Power supply	Brown	Power + (10~30VDC)
	Back	Power -
Communication	Green	485-A
	Blue	485-В