SEM5004 Compact Meteorological Station

MAIN FEATURES

- Miniaturization design
- High integration, all-in-one
- Modular, no moving parts
- Special process heat insulation treatment of protective cover
- Support extended parameter measurement

APPLICATION

- Meteorological monitoring
- Micro environmental monitoring
- Grid environment monitoring
- Agrometeorological monitoring
- Traffic meteorological monitoring
- PV environmental monitoring
- Meteorological monitoring of wind power generation

OVERVIEW

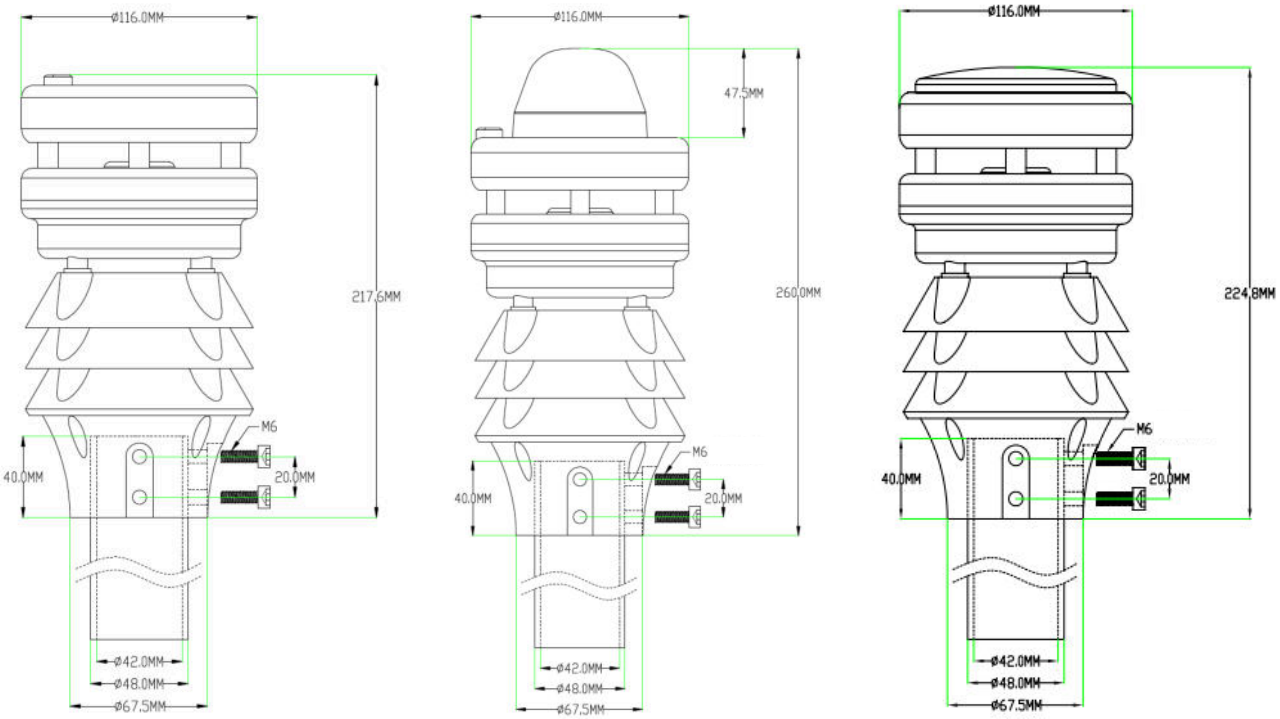
SEM5004 compact meteorological station is a multi parameter micro meteorological station independently developed by our company, which integrates atmospheric temperature, humidity, wind speed, wind direction, pressure, light, solar radiation rainfall and other parameters. It can be applied to the monitoring and control of urban grid environment, smart street lamps, environmental monitoring of scenic spots, agricultural meteorology, highway meteorology and other fields related to meteorological parameter monitoring. High cost performance.

SPECIFICATION

ITEMS	Range	Accuracy	Resolution	Sampling frequency
Wind speed	0-40m /s	± (0.5+0.05V) M/S	0.01m/s	10Hz
Wind direction	0-359.5°	± 5 ° (when wind speed < 10m/s)	0.1°	10Hz
Air temperature	- 40 °C - + 85 °C	±0.3°C@25°C	0.01 °C	1Hz
Air Humidity	0-100%RH	± 3% RH (10% - 80% RH, no condensation)	0.01%RH	1Hz
Atmospheric pressure	500 -1100hPa	±0.5hPa (25°C, 950-1100hPa)	0.1hPa	1Hz
Illumination	0-200KLux	±3% or 1%F.S	10Lux	1Hz
Solar radiation	0-2000W/㎡	±5%	1W	1Hz
Rainfall (Optical or Piezoelectric)	0-200mm/h	Resolution: 0.2mm (optical), 0.1mm (piezoelectric)		1Hz
Working temperature	-30°C~70°C			
Output signal	Default RS485 interface, ModbusRTU; Customizable SDI-12			
Max. output frequency	Passive mode: 1/S, Active mode: 1/min			
Power supply	DC9-24V			
Protection level	IP65			
Fixing method	Default fixed by sleeve (Flange fixing or bending plate fixing optional)			
Fixing bracket	None for standard products, 1.5m and 1.8m brackets are optional			
Cable	Default 3m cable (other length optional)			

E-mail: info@cdsentec.com www.cdsentec.com

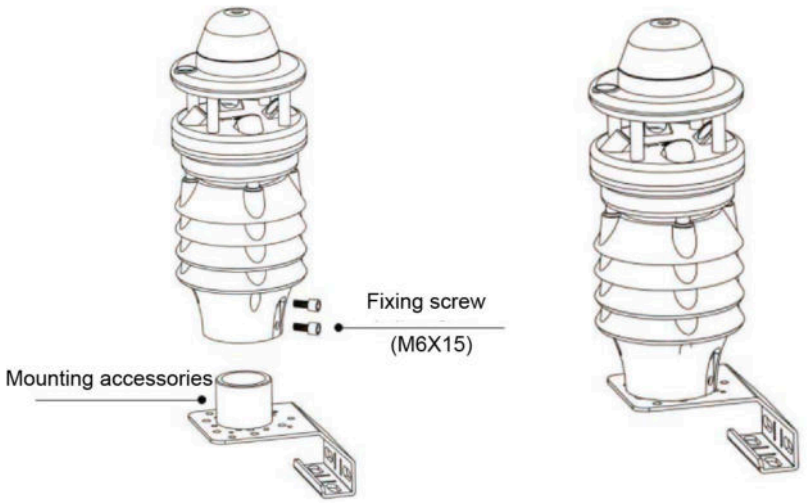
DIMENSION



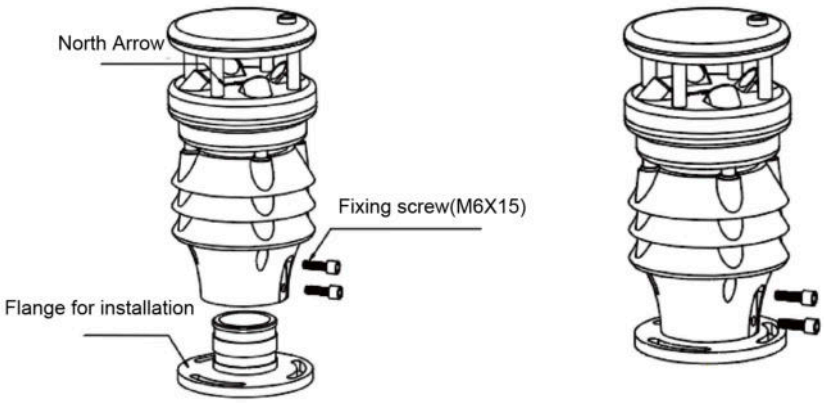
Standard type | Optical rainfall type | Piezoelectric rainfall type

INSTALLATION

- ***Fixing method of bending plate:***



- *Fixing method of flange plate:*



ORDER CODE

Name	Compact Weather Station	
Model	**Code**	Function
	SEM5004	Wind speed+wind direction+temperature +humidity+atmospheric pressure
	SEM5004I	Wind speed+wind direction+temperature +humidity+atmospheric pressure+Illumination
	SEM5004S	Wind speed+wind direction+temperature +humidity+atmospheric pressure+solar radiation
	SEM5004O	Wind speed+wind direction+temperature +humidity+atmospheric pressure+rainfall (Optical Rain Gauge)
	SEM5004P	Wind speed+wind direction+temperature +humidity+atmospheric pressure+rainfall (Piezoelectric rain gauge)
	SEM5004L	Wind speed+wind direction+temperature +humidity+atmospheric pressure+rainfall (Optical Rain Gauge)+Illumination
	SEM5004R	Wind speed+wind direction+temperature +humidity+atmospheric pressure+rainfall (Optical Rain Gauge)+solar radiation

Note:

1. The sensor integrated with the three parameters of atmospheric temperature, humidity and pressure is installed in a 3-layer outdoor radiation shield, which is configured with a special proportion of PC+fiber, and the internal thermal insulation layer is sprayed to minimize the impact of solar radiation. No moving parts, ensuring the accuracy of long-term measurement data.
2. Two parameters of wind speed and direction: measure the wind speed and direction through ultrasonic principle, and output the instantaneous wind speed, instantaneous wind direction, average wind speed, average wind direction and other data.
3. Illuminance: high specification 400-1100nm wavelength range optical element is selected to cooperate with filter for measurement.
4. Solar radiation: use high specification photothermal element and filter to measure.
5. Optical rainfall: automatically sense the rain falling on its outer surface, and calculate the rainfall according to the size and number of raindrops. Compared with the traditional physical tipping bucket rain gauge, the accuracy of the optical rain gauge is its weakness. Most of the time, the reading of the optical rain gauge will be close to the tipping bucket, but there will be significant deviation in abnormal events (rainstorm). However, it has no moving parts, and is more suitable for use in places where tipping bucket rainfall monitoring cannot be used, such as mobile monitoring and maintenance. Compared with tipping bucket rainfall, optical rainfall has higher sensitivity to a small amount of rainfall and is not limited by the installation site.
6. Piezoelectric rainfall: The piezoelectric rain gauge measures the size of raindrops by the impact force on the external surface of the falling raindrops, and calculates the rainfall. Compared with the traditional non physical tipping bucket rain gauge, the accuracy is its weakness. In most cases, the measured value of the piezoelectric rain gauge will be close to that of the tipping bucket rain gauge, but there will be significant deviation for special cases (short-term heavy rainfall). The arc shaped top cover is designed not to retain rainwater, and can work around the clock without maintenance. Small size, no moving parts, easy installation. It is more suitable for occasions that need to be moved and cannot be maintained.