SEM5006 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

APPLICATION

- Meteorological monitoring
- Micro environmental monitoring
- Grid environment monitoring
- Agrometeorological monitoring
- Traffic meteorological monitoring
- PV environmental monitoring

OVERVIEW

SEM5006 compact meteorological station is an instrument for monitoring meteorological parameters in various fields. Through a highly integrated structure, the multi parameters such as atmospheric temperature, humidity, wind speed, wind direction, air pressure, illumination, solar radiation and rainfall can be continuously monitored online for 24 hours in the outdoor meteorological parameters, and the five parameters can be output to users at one time through the digital communication interface.

SPECIFICATION

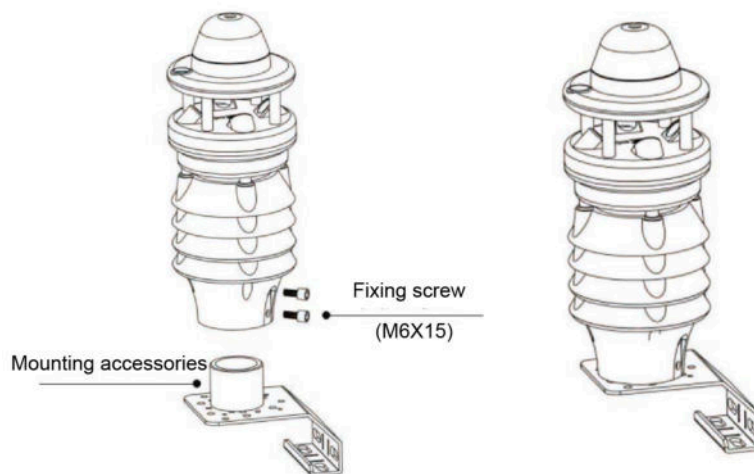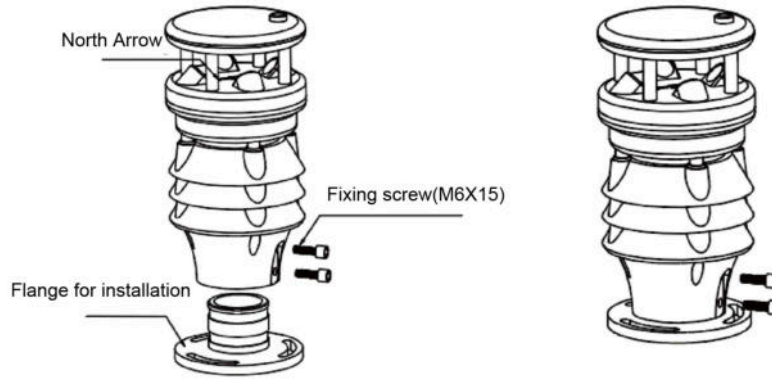| ITEMS	Range	Accuracy	Resolution	Sampling frequency
Wind speed	0-60m /s	± （0.3+0.03V） m/s；V≤30m/s ± （0.3+0.05V） m/s; V ≥ 30m/s (V=wind tunnel standard wind speed)	0.01m/s	4Hz
Wind direction	0-359.5°	± 3 ° (when wind speed ＜ 10m/s)	0.1°	4Hz
Air temperature	- 40 °C - + 85 °C	±0.3°C@25°C	0.01 °C	1Hz
Air 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/m²	±5%	1W	1Hz
Rainfall (Optical or Piezoelectric)	0-200mm/h	Resolution: 0.2mm (optical), 0.1mm (piezoelectric)		1Hz
Working temperature	-40°C~80°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)			
Customized functions	NMEA protocol, ASCII (ASCII compatible with Vaisala), CAN interface (ASCII), tilt angle/ electronic compass, heating function, GPS positioning, built-in 4G			

DIMENSION
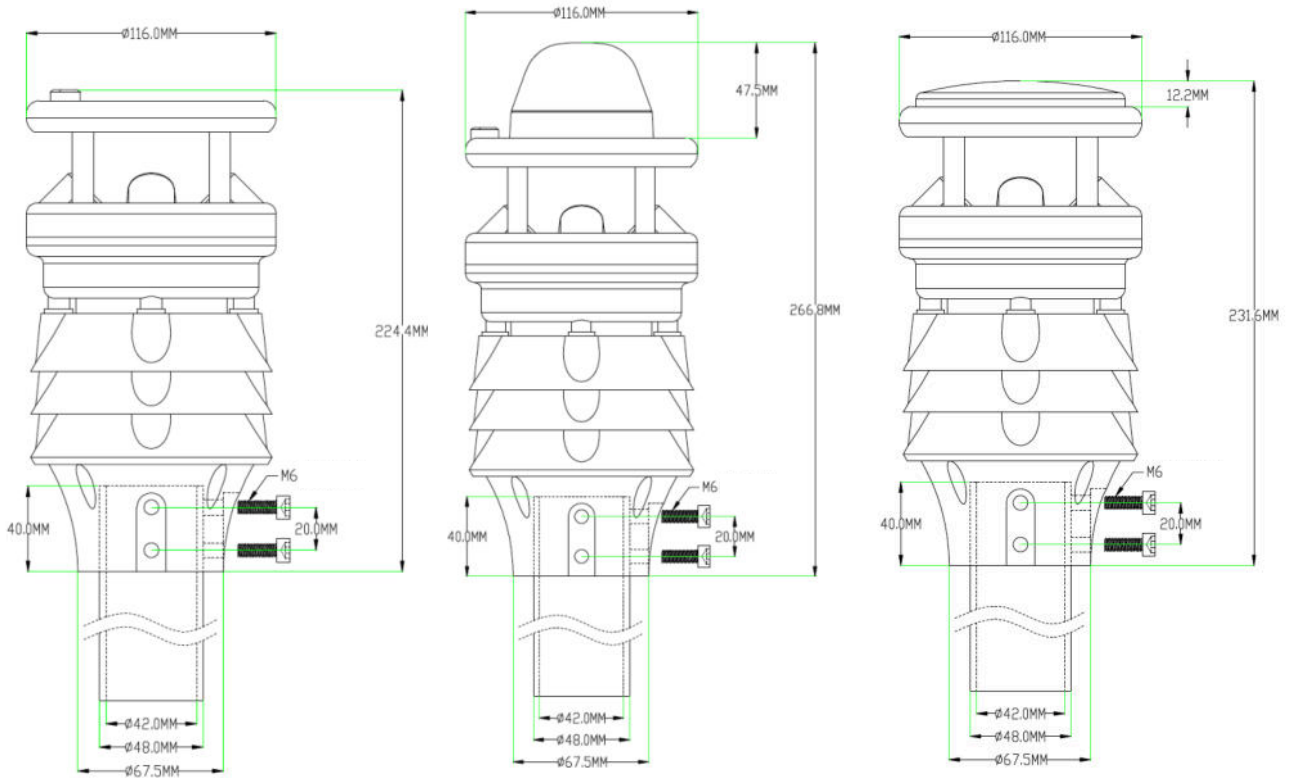
Standard type

Optical rainfall type

Piezoelectric rainfall type

INSTALLATION

● *Fixing method of bending plate:*

Fixing screw
(M6X15)

Mounting accessories

● *Fixing method of flange plate:*

ORDER CODE

Name	Compact Weather Station	
Model	**Code**	Function
	SEM5006	Wind speed+wind direction+temperature +humidity+atmospheric pressure
	SEM5006I	Wind speed+wind direction+temperature +humidity+atmospheric pressure+Illumination
	SEM5006S	Wind speed+wind direction+temperature +humidity+atmospheric pressure+solar radiation
	SEM5006O	Wind speed+wind direction+temperature +humidity+atmospheric pressure+rainfall (Optical Rain Gauge)
	SEM5006P	Wind speed+wind direction+temperature +humidity+atmospheric pressure+rainfall (Piezoelectric rain gauge)
	SEM5006L	Wind speed+wind direction+temperature +humidity+atmospheric pressure+rainfall (Optical Rain Gauge)+Illumination
	SEM5006R	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 three-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. The optional electronic compass is used to measure the apparent wind speed and direction data, and the GPS is used to calculate the real wind speed and direction.
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.