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Atomsenses Wind Speed & Direction Integrated Sensor

Product Specification

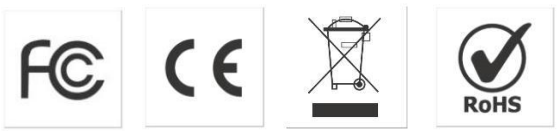
Applicability

This guide applies to the following Atomsenses products, unless otherwise specified:

Model	Description
AEM-301	- LoRaWAN Wind Sensor

Declaration of Conformity

Atomsenses sensors and other products comply with the essential requirements and relevant provisions of CE/EMC, and RoHS standards.



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Hardware Introduction

With a compact and lightweight design, The AEM-301 is a precision-engineered sensor designed to measure wind speed and direction, converting these parameters into electrical signals for seamless integration with data logging and processing systems. The three-cup design concept enables efficient acquisition of wind speed data. The shell, crafted from polycarbonate composite material, exhibits excellent anti-corrosion and anti-erosion properties, ensuring the transmitter remains rust-free during long-term usage. In conjunction with the internal smooth bearing system, it guarantees the precision of information gathering. It finds extensive application in wind speed measurement within environments such as greenhouses, environmental protection projects, weather stations, ships, docks, and breeding facilities.

Features

- **Robust Construction**: Housing crafted from aerospace-grade aluminum alloy via a precision die-cast manufacturing process, ensuring tight dimensional tolerances, superior surface finish, and exceptional durability.
- **Environmental Resilience**: Engineered for high weather resistance, structural strength, and corrosion/water resistance, making it ideal for harsh or exposed environments.
- **Advanced Protection**: Internally shielded circuitry and military-grade connectors (MIL-STD compliant) ensure long-term reliability and resistance to corrosion, moisture, and mechanical wear.
- **Precision Performance**: Equipped with an imported high-precision bearing system to guarantee accurate, stable wind speed and direction data collection under varying conditions.

Device Appearance

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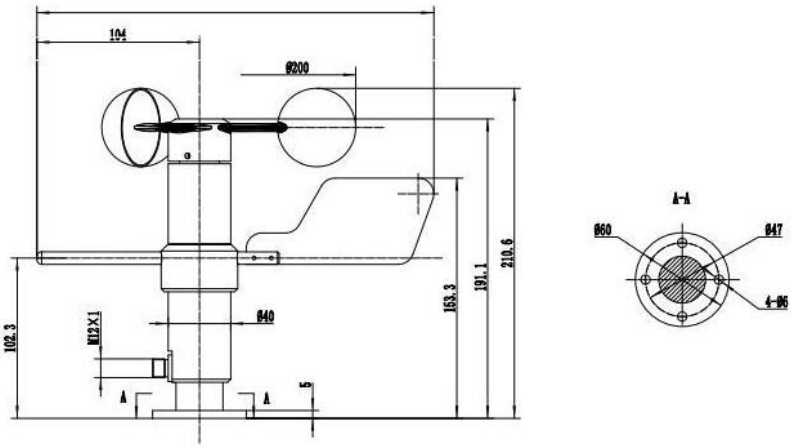
Dimensions(mm) and installation

Flange-mounted, with threaded flange connection enabling firm fixation of the wind sensor's lower pipe fitting onto the flange. The chassis measures Ø65mm, featuring four Ø6mm mounting holes on the Ø47.1mm circumference. When mounted on the bracket, the entire instrument set is maintained at an optimal level to guarantee the accuracy of wind speed data. The flange connection offers ease of use and can endure higher pressures.



Technical specifications and standards

Specifications	Parameters
DC power supply (default)	10~30V DC
Power consumption	≤0.3W
Transmitter circuit operating temperature	-20℃~+60℃， 0%RH~80%RH
Communication method	LoRaWAN (w/ LoRa External Module)
Measuring range	Wind speed: 0-30m/s,0-60m/s;
	Wind direction: 16 directions or 8 directions (0-360 degrees)
Precision	Wind speed: ±3% (≥5m/s); wind direction: ±3 degrees
Maximum power consumption	Current type MAX≤500mW; RS485 type MAX≤300mW
Start wind speed	≤0.5m/S
Surge protection	EMC Class III
Static protection	15KV
Operating temperature	-40-85℃
Working humidity	0%~95%(non-condensing)
Protection level	IP65

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