

WIND SENSOR / DATA SHEET

SS102-03

Wind Direction Sensor

Compact polycarbonate wind direction transmitter for 8-direction, 16-direction or 0–360° measurement, available with multiple output configurations for industrial and environmental monitoring.

Overview

Lightweight, compact mechanical structure for convenient transport and installation. Updated vane design provides reliable wind-direction information; the polycarbonate composite housing supports corrosion resistance, weather resistance and long-term structural stability. Internal bearing system minimizes rotational resistance for accurate data acquisition in greenhouses, environmental monitoring, meteorological stations, ships, docks and aquaculture environments.



8 / 16 / 0–360° DIRECTION MODES	≤0.5 s RESPONSE TIME	10–30 V DC / 5 V SUPPLY OPTIONS	RS485 / ANALOG GPRS / 4G / 5V OUTPUTS
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CAPABILITY

Key Advantages

Sensing & Construction

- 8-direction, 16-direction or 0–360° measurement modes.
- EMI-resistant design with high-performance imported bearings for smooth rotation and accurate sensing.

Durability & Integration

- Durable polycarbonate enclosure with high mechanical strength, corrosion resistance and outdoor suitability.
- Standard Modbus RTU communication for convenient system integration.

APPLICATIONS

Application Scenarios

Greenhouses & Agriculture Wind-direction monitoring for greenhouse and agricultural environments.	Environmental Monitoring Outdoor environmental protection and ecological monitoring.	Meteorological Stations Directional measurement for weather and meteorological stations.	Ships, Docks & Aquaculture Wind-direction monitoring on ships, docks and aquaculture sites.
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MEASUREMENT PRINCIPLE

Technical Principle

The sensor uses a vane-based mechanical structure that aligns itself with the wind direction. The rotation angle or directional position is converted by the transmitter electronics into RS485, analog, wireless or 5 V output signals depending on the selected configuration. Low rotational inertia and smooth internal bearings support fast, stable response.

PERFORMANCE

Technical Specifications

Item	Specification
Measurement Modes	8-direction, 16-direction or 0–360°
Housing Material	Polycarbonate composite
Operating Temperature / Humidity	–40°C to +60°C; 0% RH to 80% RH
Applications	Greenhouse, environmental protection, meteorological station, ship, dock, aquaculture

OUTPUT CONFIGURATIONS

RS485 Version

Parameter	Value
Supply Voltage (Default)	10–30 V DC
Maximum Power Consumption	0.15 W (8-direction) / 0.2 W (0–360°)
Communication Interface	RS485 communication (Modbus) protocol
Baud Rate	2400 / 4800 (default) / 9600
Data Format	8 data bits, no parity, 1 stop bit
Default Modbus Address	1
Supported Function Code	03
Parameter Setting	Configured through the supplied software via the RS485 interface
Measurement Range	8-direction, 16-direction or 0–360°
Dynamic Response Speed	≤0.5 s

Analog Output Version

Parameter	Value
Supply Voltage (Default)	10–30 V DC
Maximum Power Consumption	0.75 W (current output / voltage output)
Measurement Range	8-direction, 16-direction or 0–360°
Dynamic Response Time	8-direction: ≤0.5 s; 0–360°: ≤0.8 s
Output Signal	Current output: 4–20 mA; Voltage output: 0–5 V / 0–10 V
Load Capacity	Voltage output resistance ≤250 Ω ; Current output ≤600 Ω

ADDITIONAL CONFIGURATIONS

Wireless / 5V Specifications

GPRS / 4G Version

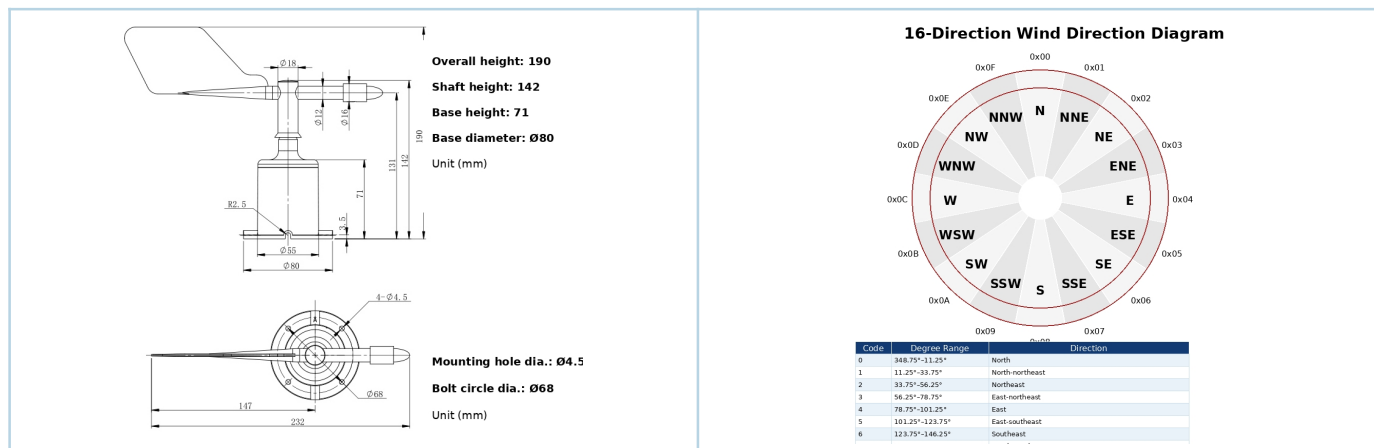
Parameter	GPRS / 4G Version
Supply Voltage (Default)	10–30 V DC
Maximum Power Consumption	GPRS output: 1.2 W; 4G output: 1.5 W
Communication Mode	GPRS/GSM via China Mobile or China Unicom cellular network; 4G via China Mobile / China Unicom / China Telecom cellular network
Measurement Range	8-direction or 0–360°
Accuracy	±1°
Dynamic Response Speed	≤0.5 s

5V Power Supply Version

Parameter	5V Power Supply Version
Supply Voltage (Default)	5 V DC
Maximum Power Consumption	0.12 W
Operating Temperature / Humidity	–40°C to +60°C; 0% RH to 80% RH
Measurement Range	8-direction or 0–360°
Accuracy	±1°
Dynamic Response Time	8-direction: ≤0.5 s; 0–360°: ≤0.8 s
Output Signal	Selectable voltage output: 0–5 V, 0–3 V, 0–2.5 V, 1–5 V
Load Capacity	Output resistance ≤250 Ω

DIMENSIONS & DIRECTION MAPPING

Translated Figures



Dimensions: overall height 190 mm; base Ø80 mm; mounting holes Ø4.5 mm; bolt circle Ø68 mm; overall length 232 mm.

CONTACT / SUPPORT

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