

WIND SENSOR / DATA SHEET

SS102H-01

Wind Direction Sensor

Compact aluminum wind vane for outdoor wind-direction monitoring with RS485 and analog output options.

Overview

Compact, lightweight wind direction transmitter for convenient installation and reliable outdoor operation. Aluminum-alloy housing with durable surface treatment resists high temperature, rain, snow and ultraviolet exposure; a low-resistance bearing system supports smooth rotation and accurate direction acquisition.



0–360° CONTINUOUS DIRECTION OPTION	≤0.5 s DYNAMIC RESPONSE	Modbus RTU RS485 COMMUNICATION	–40 to +60°C OPERATING TEMPERATURE
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CAPABILITY

Key Advantages

Sensing & Construction

- 8-direction, 16-direction or continuous 0–360° measurement.
- EMI-resistant design plus a low-resistance bearing system, low rotational inertia and balanced structure improve stable, responsive direction tracking.

Durability & Integration

- Full aluminum housing provides high mechanical strength and corrosion resistance; surface treatment is designed for heat, rain, snow and ultraviolet exposure.
- Standard Modbus RTU communication simplifies system integration; RS485 and analog outputs are available, with a split 4G option listed in the source.

APPLICATIONS

Application Scenarios

Greenhouses Wind-direction monitoring for greenhouse ventilation and environmental control.	Weather Stations Direction measurement for meteorological monitoring systems.	Environmental Monitoring Outdoor wind-direction measurement for environmental and ecological installations.
Marine / Docks Wind-direction monitoring on vessels, docks and coastal installations.	Aquaculture Direction monitoring for aquaculture and related outdoor operations.	General Outdoor Use Suitable for other outdoor wind-direction monitoring installations.

MEASUREMENT PRINCIPLE

Technical Principle

The vane-based mechanical structure 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 Range	8 directions / 16 directions / 0–360°
Dynamic Response	≤0.5 s
Operating Temperature / Humidity	–40°C to +60°C; 0–80% RH
Housing	Aluminum-alloy housing with durable outdoor surface treatment
Rotation / Bearing	Low-resistance high-performance bearing system
Available Outputs	RS485 Modbus RTU; 4–20 mA; 0–5 V; 0–10 V

OUTPUT CONFIGURATIONS

RS485 / Analog Output Options

Item	RS485	Analog
DC Supply	5–30 V DC	10–30 V DC
Maximum Power	0.2 W @12 V	0.6 W
Measurement Range	8 directions / 16 directions / 0–360°	8 directions / 16 directions / 0–360°
Response Time	≤0.5 s	≤0.5 s
Output / Interface	RS485, Modbus RTU	4–20 mA; 0–5 V; 0–10 V
Angular Output Note	See Modbus protocol specification	Current and voltage outputs use 1° resolution; scale corresponds to 0–360° clockwise from north
Load Capability	—	Voltage output resistance ≤250 Ω ; current output load ≤600 Ω

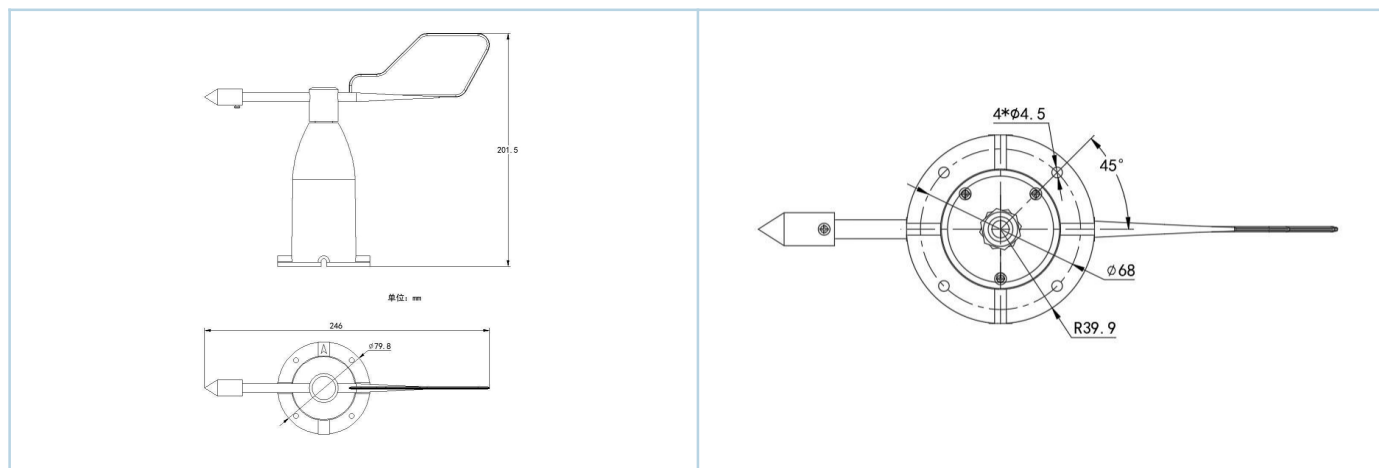
COMMUNICATION

RS485 Modbus Settings

Item	Setting
Protocol	Modbus RTU over RS485
Serial Format	8 data bits; no parity; 1 stop bit
Default Address	1
Baud Rates	2400, 4800 (default), 9600, 19200, 38400, 57600, 115200
Long-distance RS485	If transmission distance exceeds 100 m, add 120 Ω termination resistors at the front and back ends of the bus interface

MECHANICAL

Outline Dimensions



Key source dimensions: overall height 201.5 mm; overall vane length 246 mm; body / flange reference Ø79.8 mm; base Ø68 mm; four Ø4.5 mm mounting holes on R39.9.

ORDERING

Product Selection

Code	Description
SS	Company code
102H-01	Aluminum-housing wind direction transmitter
1	4–20 mA current output
2	0–5 V voltage output
3	0–10 V voltage output
4	RS485 output (Modbus protocol)
5	4G upload, split configuration
6	8-direction indication
7	16-direction indication
8	360° / 0–360° direction output

Note: Select the required output type and direction indication mode according to the application. The source lists 8-direction, 16-direction and continuous 0–360° options.

CONTACT / SUPPORT

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