WIND MEASUREMENT / DATA SHEET

SS102-04A
Low-Temperature Wind Direction Sensor

Heated 360-degree wind direction measurement for reliable operation in severe cold environments.

Overview

- SS102-04A is a low-temperature, high-reliability wind direction sensor for stable and accurate environmental wind direction measurement.
- The internal digital circuit captures the azimuth signal of the wind direction rod and outputs an electrical signal linearly related to wind direction.
- Built-in temperature detection and PTC heating automatically activate or deactivate heating as ambient temperature changes, supporting severe cold environments.



Measuring range **0-360 deg**	**Start speed** **>=0.5 m/s**	**Accuracy** **16 directions**	**IP rating** **IP65**
Operating voltage **15-30 VDC**	**Wind resistance** **>70 m/s**	**Heating** **24 VDC / 48 W**	**Output** **4-20 mA / RS485**

Key Advantages

- Non-contact magnetic sensing measurement principle.
- Built-in high-performance sensor for accurate and reliable data collection.
- Full metal shell with corrosion and wind resistance.
- Aluminum-alloy wind direction rod for harsh operating conditions.
- Wide wind speed measurement range and low startup wind speed.
- Built-in temperature detection and PTC heating for cold environments.
- Fault-tolerant circuit design helps protect against wiring errors.
- CE EMC, multi-level lightning protection and surge protection are stated in the source datasheet.

Application Scenarios

- Factories and electric power facilities.
- Ports, mines and construction machinery.
- Wind turbines and large mechanical equipment.
- High-altitude operations and outdoor wind monitoring.

Measurement Principle

SS102-04A uses non-contact magnetic sensing. The internal circuit collects the azimuth signal of the wind direction rod and outputs an electrical signal that is linearly related to environmental wind direction. Built-in temperature detection and PTC heating automatically activate or deactivate heating as ambient temperature changes.

Technical Specifications

Item	Specification
Measuring range	0-360 deg
Operating voltage	15-30 VDC
Starting wind speed	>=0.5 m/s
Accuracy	16 directions +/-3 deg; +/-2.5 deg
Output signal	4-20 mA; 0-5 VDC; 0-10 VDC; RS485 (Modbus)
Operating temperature	-20 C to +85 C
Working humidity	0%-95% RH, non-condensing
Wind resistance	>70 m/s for 30 min
Protection level	IP65
Main material	Aluminum alloy / polyester coating
Wind cup material	ABS
Heating method	PTC heating
Heating voltage	24 VDC (48 W)
Heating start temperature	3 C +/-2 C
Heating stop temperature	40 C +/-5 C
Group pulse immunity	Ordinary: Level 3 (2000 V, 100 kHz), Class B; lightning-resistant: Level 4 (4000 V, 100 kHz), Class B
Surge immunity	Ordinary: Level 1 (common mode 500 V, differential mode 250 V), Class B; lightning-resistant: Level 4 (common mode 4000 V, differential mode 2000 V), Class B

Technical indicators and cable definitions may vary by actual product configuration. Refer to the confirmed order and supplied wiring definition.

Output / Communication

Output Options

- 4-20 mA analog output.
- 0-5 VDC analog output.
- 0-10 VDC analog output.
- RS485 digital output using Modbus protocol.

Protection and Electrical Notes

- Operating supply: 15-30 VDC.
- Heating: PTC, 24 VDC (48 W); start at 3 C +/-2 C and stop at 40 C +/-5 C.
- Group pulse and surge immunity levels are listed in the specifications.
- Fault-tolerant protection is stated for wiring errors.
- Confirm the actual output and wiring configuration before connection.

Mechanical Dimensions / Installation

The accessible product-page text does not state numerical mechanical dimensions or provide an installation drawing. Confirm the final mechanical drawing and mounting interface against the ordered configuration.

Configuration Notes

The product page lists output options but does not provide a pin-by-pin wiring definition. Confirm the final electrical connection and cable definition against the actual order.

Product Selection / Ordering Information

Selection	Configuration
Base model	SS102-04A - Low-Temperature Wind Direction Sensor
Output signal	4-20 mA; 0-5 VDC; 0-10 VDC; RS485 (Modbus)
Operating voltage	15-30 VDC
Heating	PTC; 24 VDC (48 W); start 3 C +/-2 C; stop 40 C +/-5 C
Precision options	16 wind directions +/-3 deg; +/-2.5 deg
Measuring range	Wind direction angle, 0-360 deg
Units	Degree

Specify SS102-04A together with the required output configuration.

CONTACT / SUPPORT

SpeSense Technologies Inc.
Add: No. 9 Yuhe Road, Guitang Subdistrict, Yuhua District, Changsha City
Tel: +86-15386478166
Email: info@spesense.com
Web: www.spesense.com

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