SERRATA
INSTRUMENTS

WS-O-100-A (4-20 mA analog output version)

WS-O-100-D (Rs485 Modbus version)

Wind Speed Sensor

SPECIFICATIONS

Output	4-20mA	RS485
Supply Voltage	Mark on the label	Mark on the label
Load Capacity	<500Ω(typ 250Ω)	
Range	0-60m/s	0-60m/s
Accuracy	±0.5m/s(<5m/s) ±3%FS(≥5m/s)	±0.5m/s(<5m/s) ±2%FS(≥5m/s)
Power Consumption	<0.7W	<0.3W
Starting Threshold	<0.5m/s	
Response Time	1S	
Ingress Protection	IP65	
Operating	-30℃-+70℃	
Weight(unpacked)	360g	
Dimension	Cup rotor:ø220mm,Height:175mm	
Main material	Cup:304stainless steel, Main Body:Aluminum alloy	
Finish	Polyester powder electrostatic spraying(black)	
Storage Condition	10℃-60℃@20%-90%RH	

Wind speed sensor is specifically designed to accurately and reliably measure wind velocity under the adverse environmental conditions. Shell is made of high-strength aluminum alloy, the wind cup is made of 304 stainless steel, the PCB board is painted with conformal coating. The WS-O-100 Wind speed sensor has good performance in harsh environment.

FEATURES

- Low starting threshold
- Massive all-metal construction
- Strong corrosion resistant ability
- Wide range, good stability
- Various output signals optional
- Easy Installation

Part:

Wind speed sensor: 1

Cable: 1

Install screws: 1 sets

OUTPUT CHARACTERISTICS

- **Current**

Characteristic transfer function:

$V=(I-4)/(20-4)*30$(Range:0-30m/s), $V=(I-4)/(20-4)*60$(Range:0-60m/s).

(where V = wind speed (m/s),I = output current(mA))

- **RS485**

If the transmission distance is over 100m, please add one 120Ω terminal matching resistance on the front end and back end of bus interface respectively. See appendix for communication protocol.

MOUNTING

- When the wind speed sensor is unpacked it should be checked carefully for any signs of shipping damage.

- Proper placement of the instrument is very important. Eddies from trees, buildings, or other structures can greatly influence wind speed observations. To get meaningful data for most applications locate the instrument well above or upwind from obstructions.   For some applications it may not be practical or necessary to meet these requirements.

- Flange mounted, fix four screws on the bracket and keep the product horizontal.

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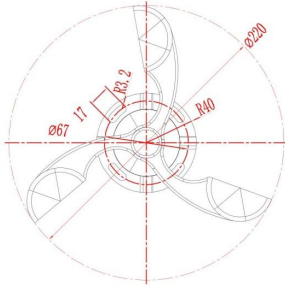
WARRANTY

This product is warranted to be free of defects in materials and construction for a period of 12 months from date of lead time.

Liability is limited to repair or replacement of defective item.

ELECTRICAL CONNECTIONS

Connector（cable）	Current (1 x 4-20 mA)	RS485
Red	V+	V+
Black	V-	V-
Yellow	Signal	RS485A
Green		RS485B

Note: This product has been tested and complies with European CE requirements for EMC directive.

Communication Protocol（MODBUS）

Transmission mode: MODBUS-RTU,**Baud rate:** 9600bps,**Data bits:**8,**Stop bit:**1,**Check bit:**no

Slave address:the factory default is 01H (set according to the need,00H to FFH)

- **The 03H Function Code Example: Read The Wind Speed**

Host Scan Order(slave address:0x01)

01 03 00 00 00 01 840A

Slave Response

01 03 02 00 2E 3858

Wind speed:(002E)H=(46)D,46/10=4.6(m/s)

- **The 06H Function Code Example: Modify the slave address(After the restart to take effect)**

Host Scan Order (Changed the 01H to 02H):

01 06 00 30 00 02 0804

Slave Response:

01 06 00 30 00 02 0804

- **If you forget the original address, you should use the broadcast address(FEH) (ensure that no other devices on the bus at this time).**

Note:

1. All underlined is fixed bit;

2. The last two bytes is CRC check command.

CE