Wind speed sensor introduce

RD-WSM-O-1

HONDE TECHNOLOGY CO.,LTD

Honde Technology CO.,LTD
https://hondetec.en.alibaba.com/

1. Product introduce

The three-cup wind speed sensor is a wind speed measuring instrument independently developed and produced by our company. The sensor housing is made of aluminum material with very small dimensional tolerances. It has high weather resistance, high strength, corrosion resistance and water resistance. Internal integrated photoelectric conversion mechanism, industrial microcomputer processor, standard current generator, current driver, etc. The circuit PCB uses military-grade A-level materials to ensure the stability of the measurement parameters and electrical performance; the electronic components are all imported industrial-grade chips, which makes the whole have extremely reliable anti-electromagnetic interference ability, and can guarantee the host at -30 ℃ ~ 75 ℃, Humidity can work normally in the range of 15-85%RH (non-condensing). After the product is upgraded, the output signals are diverse. The wired output includes: analog signal (voltage, current), digital signal RS485; wireless output includes: LoRa, Bluetooth, WIFI, GPRS, 4G, NB-IOT, CAT-1.

2. Product Features

1. The sensor has a compact design, high measurement accuracy, fast response speed, and good interchangeability.

2. Realize low cost, low price and high performance.

3. Flange installation method, can achieve the lower outlet, side outlet, simple and convenient.

4. High data transmission efficiency and reliable performance to ensure normal work.

5. Wide range of power supply adaptability, good linearity of data information, and long signal transmission distance.

6. With two parameters, wind speed and wind level, the data is reliable.

3. Range of use

This product is widely used in wind speed measurement in the environment of greenhouse, environmental protection, weather station, engineering machinery, ship, wharf, breeding and other environments.

4. Technical Parameters

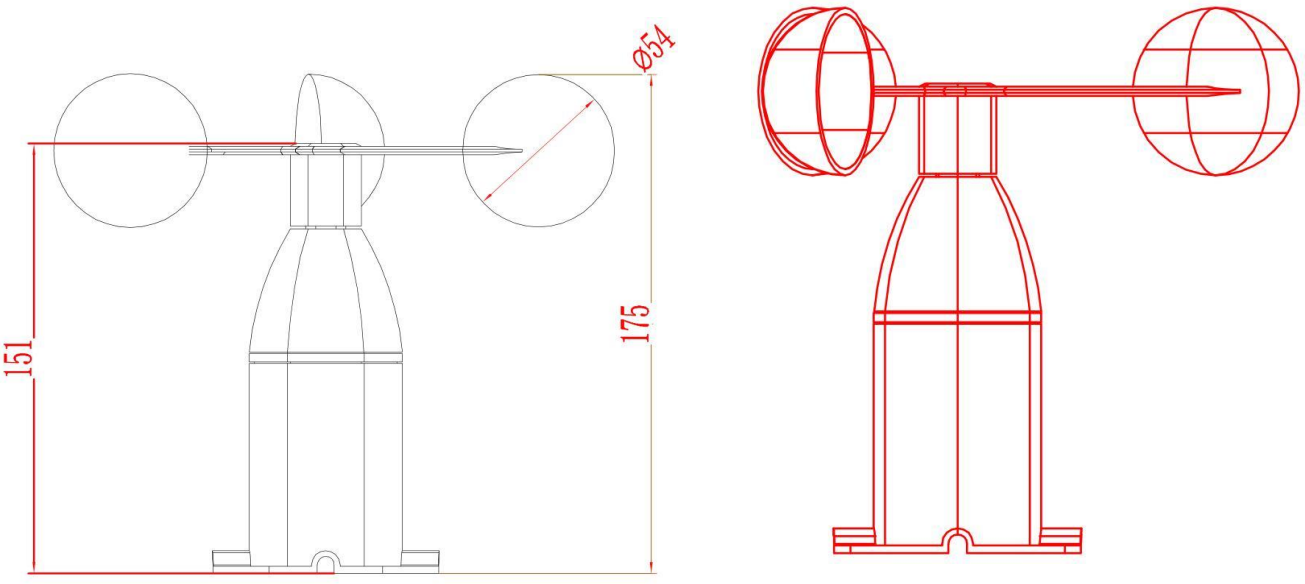
Measure range	0-30m/s,0-50m/s, 0-60m/s(The default is 0-30m/S)
Start wind speed	0.3m/s
Response time	＜1s
Resolution	0.1m/s
Accuracy	±（0.3+0.03V）m/s
Output	A: Voltage signal (select one of 0～2V, 0～5V, 0～10V)
	B: 4～20mA (current loop)

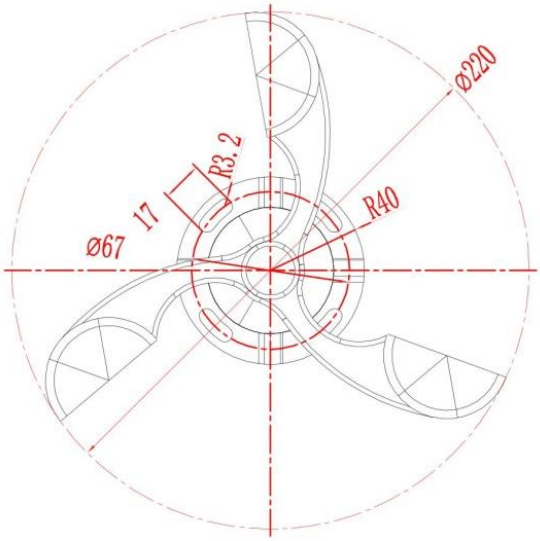
	C: RS485 (standard Modbus-RTU protocol, device default address: 01)
Power	5～24V DC (when the output signal is 0～2V, RS485)
	12～24V DC (when the output signal is 0～5V, 0～10V, 4～20mA)
Maximum power consumption	Pulse type ≤200mW；Voltage type≤300mW；Current type≤700mW
Working temperature	-30~70℃
Working humidity	≤100%RH
Signal output	0-2V,4-20mA,RS485
Wireless transmission	LoRa, Bluetooth, WIFI, GPRS, 4G, NB-IOT, CAT-1
Cable specifications	2-meter 3-wire system (analog signal); 2-meter 4-wire system (RS485) (optional cable length)

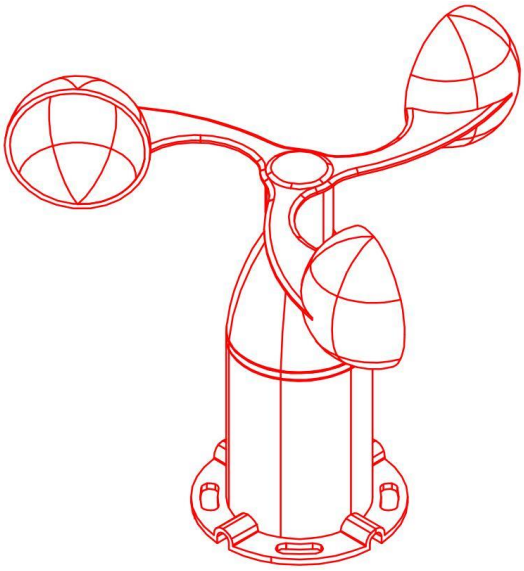
5. Current signal impedance requirements

Supply voltage	9V	12V	20V	24V
Maximum impedance	125Ω	250Ω	500Ω	>500Ω

6. Dimensions







7. Wiring definition

1.RS485 output

Wire colour	**Interface**
Red	Power positive (12-24VDC)
Black	Power negative
Yellow	RS485A
Green	RS485B

2. Analog output

Wire colour	**Interface**
Red	Power positive (12-24VDC)
Black	Power negative , Analog output common end
Yellow	Analog output

8. Installation method

1. Side outlet

2. Bottom outlet

3. Aviation joint

4. Waterproof connector

9. Analog voltage and current output

V: the voltage value collected by the collector, unit: V

A: Current value collected by the collector, unit: mA

output signal	Data conversion method for each range	
	0 ~ 30m/s	0 ~ 60m/s
0 ~ 2V DC	Wind speed = 15*V	Wind speed = 30*V
0 ~ 5V DC	Wind speed = 6*V	Wind speed = 12*V
0 ~ 10V DC	Wind speed = 3*V	Wind speed = 6*V
4 ~ 20mA	Wind speed = 1.875*A − 7.5	Wind speed = 3.75*A − 15
pulse	One pulse represents 0.083m/s	

10. Communication protocol

1. Basic agreement

RS485 signal, standard Modbus-RTU protocol

Baud rate: 9600bps can be set, factory default is 9600bps; Check digit: none; Data bit: 8; Stop bit: 1

2. Communication protocol examples and explanations

(1) Query the data (wind speed, wind level) of the sensor (the default sensor address is 1), host →slave

- Inquiry frame

Address code	Function code	Register start address	Register length	CRC16 low	CRC 16 high
0X01	0X03	0X00 0X00	0X00 0X02	0XC4	0X0B

- Response frame

Address code	Function code	Data length	Wind speed	Wind level	CRC16 low	CRC 16 high
0X01	0X03	0X04	0x00 0x42	0x00 0x03	0x1A	0X26

Data representation method:

A. Wind speed: after converting the data into decimal data ÷10

B. Wind level: convert data to decimal

The above data shows that wind speed: 3.6 m/s, wind level: level 3.

(2) Modify the address, for example: change the address of the transmitter with address 1 to 2, host → slave

Original address	Function code	Start register address high	Start register address low	Reserved 3	New address	CRC16 low	CRC16 high
0X01	0X06	0X00	0X30	0X00	0X02	0X08	0X04

The data returned from the slave to the master is the same as the sent data, the same means that the setting is successful

Note: If you forget the original address of the sensor, you can use the broadcast address 0xfe instead. When using the broadcast address 0xfe, the master can only connect one slave at a time.