



Wind speed sensor introduction



RD-WSM-ASA

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1.Product overview

The wind speed transmitter adopts the traditional three wind cup wind speed sensor structure. The wind cup is made of ASA material, which has high strength and good start. The cup body has better balance after dynamic balance processing. The built-in signal processing unit can output the corresponding wind speed signal according to user needs, It can be widely used in the fields of meteorology, ocean, environment, airport, port, laboratory, industry, agriculture and transportation.

2. Features

- 1.Range: 0-40m/s, Resolution 0.3m/s (corresponding number of pulses)
2. Anti-electromagnetic interference treatment
3. Adopt bottom outlet method
4. Use high-performance imported bearings, low rotation resistance, accurate measurement
5. ASA shell, high mechanical strength, high hardness, does not change color, can be used outdoors for a long time
6. The structure and weight of the equipment are carefully designed and distributed, with small moment of inertia and sensitive response
7. Output mode (optional): 0-5V, 0-10V, 4-20MA, pulse, RS485 (ModBus-RTU)

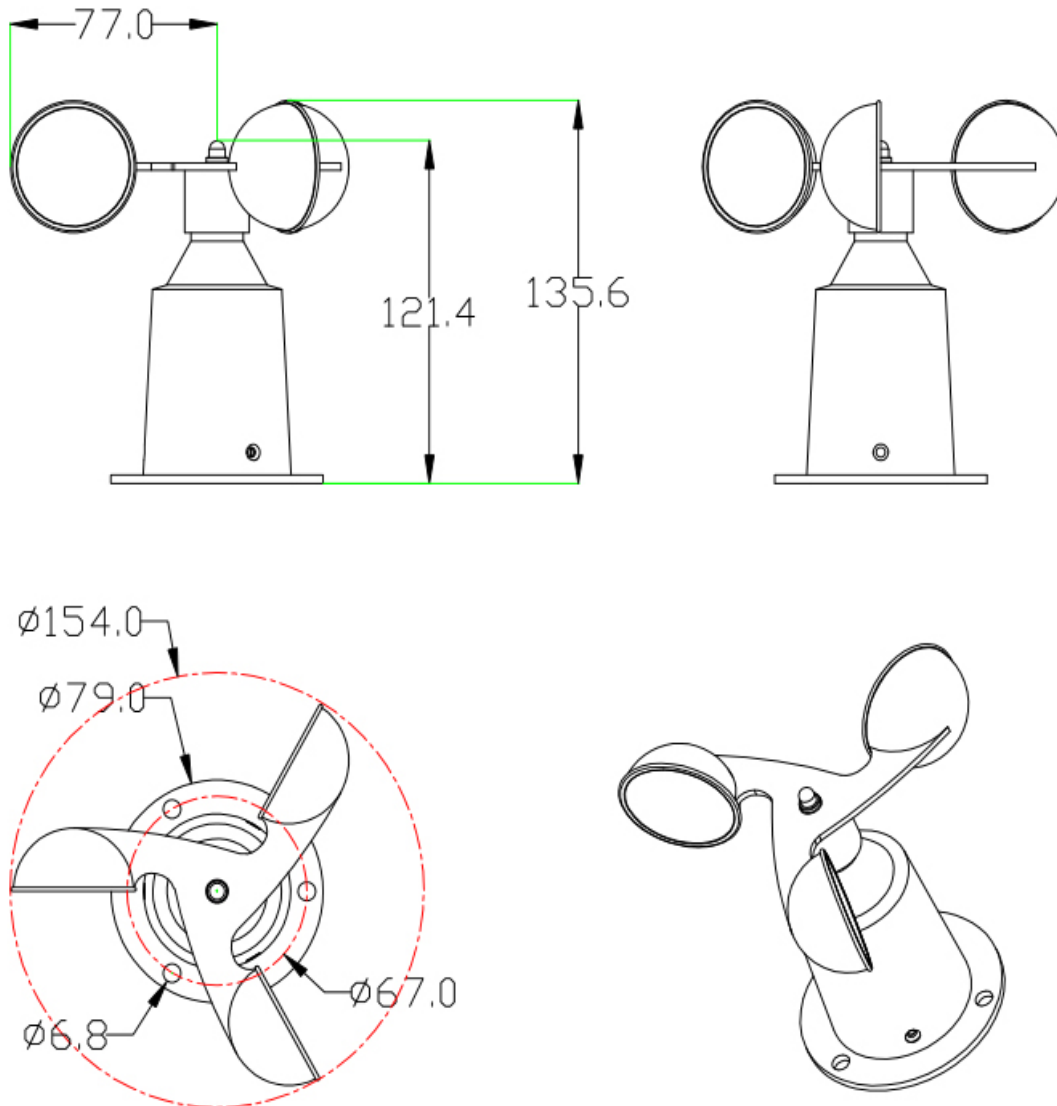
3. The main parameters

DC power supply (default)	12~24V DC
Power consumption	≤200mW
Transmitter circuit operating temperature	-20°C~+80°C, 0%RH~100%RH
Output optional	0-5V, 0-10V, 4-20MA, pulse, RS485(ModBus-RTU)
485 Communication Interface	485 communication (modbus-RTU) protocol Baud rate: 9600 Data bit length: 8 bits Parity check method: none Stop bit length: 1 bit Default ModBus communication address: 255
Resolution	0.3m/s (corresponding number of pulses)
Precision	± (0.3+0.03V) m/s V means wind speed



Measuring range	0~40m/s
Dynamic response time	≤1s
Starting wind speed	≤0.4m/s
load capacity	< 500Ω

4. Product size



5. 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) Modify the address, for example: change the address of the transmitter with address to 01, host → slave

Reserved address	Function code	Register address	New address	CRC16 low	CRC16 high
00	06	00 00	00 01	49	DB

If success, the feedback as following:

Reserved address	Function code	Register address	New address	CRC16 low	CRC16 high
00	06	00 00	00 01	49	DB

(2) Read the sensor address, for example the sensor address is 01

Reserved address	Function code	Register address	Number of registers	CRC16 low	CRC16 high
00	03	00 00	00 01	85	DB

If success, the feedback as following:

Reserved address	Function code	Data length	Address	CRC16 low	CRC16 high
00	03	02	00 01	44	44

(3) Query the data (wind speed) of the sensor (address 01, the default address is 01), host →slave

Inquiry frame

Address code	Function code	Register start address	Register length	CRC16 low	CRC 16 high
0X01	0X03	0X00 0X01	0X00 0X01	0XD5	0XCA

Response frame

Address code	Function code	Data length	Wind speed	CRC16 low	CRC 16 high
0X01	0X03	0X02	0x00 0x17	0XF8	0X4A

Data representation method:

A. Wind speed: after converting the data into decimal data ÷100

The above data shows that wind speed: 0017(HEX)=23(Decimal), wind speed =23/100=0.23m/s.