



# **WIND SPEED SENSOR**

## **MANUAL**



## INTRODUCTION & PRINCIPLE

IoTx wind speed sensor adopts advanced circuit module technology to develop output and transmission, and internally converts pulse signal into digital signal. The appearance is small and light, easy to carry and assemble. The three cup design concept can effectively obtain the external environment information. The shell is made of high-quality aluminum alloy profiles, and the external part is electroplated and sprayed with plastic. It has good anti-corrosion, anti-corrosion and other characteristics, which can ensure that the instrument can be used for a long time without rust. At the same time, with the internal smooth bearing system, it ensures the accuracy of information collection.

It is widely used in wind speed measurement of intelligent greenhouse, weather station, ship, cableway, engineering machinery, environmental protection, weather station, wharf, aquaculture and other environments.

## FEATURES

- 1.Small size, convenient transportation and simple installation
- 2.High accuracy, wide range and good stability
- 3.Standard metal wind cup design, good processing quality
- 4.High linearity, long signal transmission distance, strong anti-interference ability

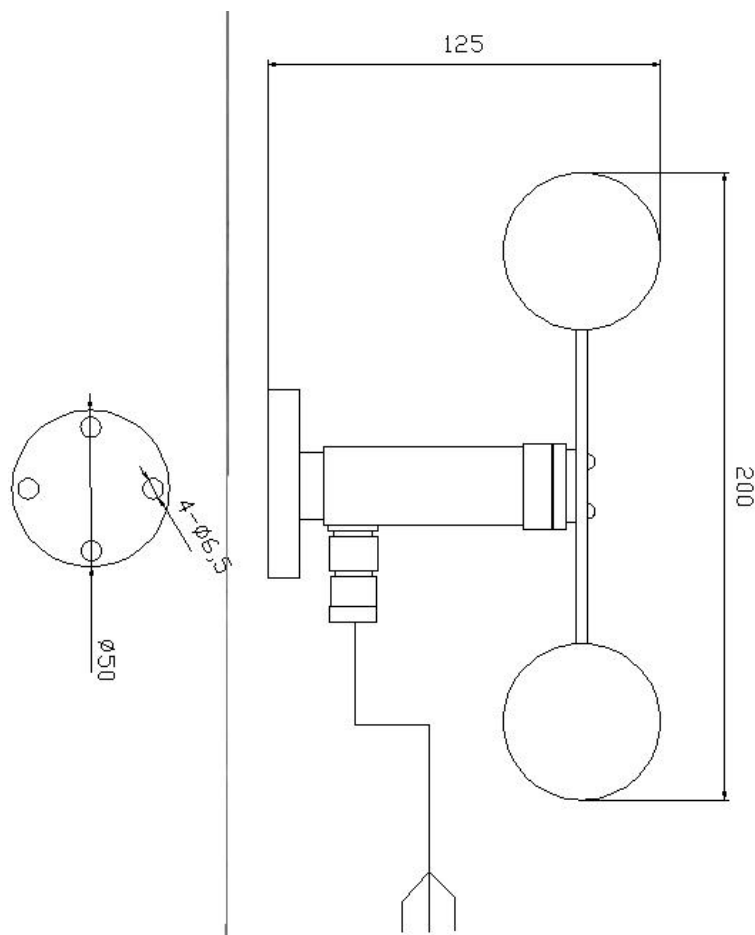
## TECHNICAL SPECIFICATION

- ◆Measuring range: 0-30 m/s 、 0-60m/s (Customize)
- ◆Supply voltage: DC12V; DC24V
- ◆Output signal: 4-20mA & RS485modbus
- ◆Accuracy: 0~30m/S ≤0.8m/S
- ◆Resolution:0.7 m/S
- ◆Load capacity: <500 ohms (current)
- ◆Start the wind: 0.7m/s
- ◆Response time:<1S
- ◆Working voltage: DC12V <30ma(current); DC12V <20ma(485)
- ◆Power Consumption: DC12V <0.36W(current); DC12V <0.24W (485)
- ◆Working temperature: -20—60℃
- ◆Weight: 0.32Kg
- ◆Installation method: flange mounting or thread mounting
- ◆Standard line length: 1.5m
- ◆Farthest lead wire: current200 m、RS485 100m、Voltage 50m
- ◆Ingress Protection: IP65
- ◆

## FIXED MODE

It adopts standard flange installation, chassis  $\phi 59\text{mm}$ , equipped with four  $\phi 56\text{mm}$  mounting holes, and the hole center distance is fixed to the corresponding bracket with screws when installing, maintaining the best level to ensure the accuracy of the data.

## SIZE



## AVIATION PLUG WIRING

The current output sensor comes standard with a 2.5-meter three-core cable from the factory. Users can customize a suitable length of cable according to their needs. The cable size is  $0.2\text{mm}^2$  three-core shielded cable. The wiring color is defined as:

Analog output color	
Red	Positive pole
Black	Negative pole
Yellow	Signal line

The 485 output sensor comes standard with a 3-meter four-core cable. The user can customize a suitable length of cable according to the needs. The cable size is 0.2mm<sup>2</sup> four-core shielded cable. The wiring color is defined as:

Digital output	
Red	Positive pole
Black	Negative pole
Yellow	A
Blue	B

## COMMUNICATION PROTOCOL

### 1. The CRC16 description of the system:

In all the following descriptions, the two bytes of CRC16 in the MODBUS RTU protocol are specified by the MODBUS protocol: the low byte is first, and the high byte is last.

In the following description, it is assumed that the system address is 0x01 (the system default address is 0x01)

### 2. System's standard MODBUS register description

Special Note: Each register data is 16 bits and two bytes, with the high byte first and the low byte last.

The number or length of the registers in the MODBUS command are two bytes and 16 bits as a unit, instead of single byte 8 bits as a unit. The user should ensure that the range of the two parameters of the address and number of registers in the command is within the range specified by this system. If it is out of range, the output result of the system cannot be predicted. The user should ensure that the MODBUS command meets the requirements of this manual in the software design of the host computer.

Wind speed measurement module default parameters:

Address: 01

Baud rate: 9600 Communication port parameters: 9600,8, N, 1

For users, you can modify the module address or baud rate with the 06 command, and read the real-time wind speed value with the 03 command.

(Note that the wind speed has been increased by a factor of 100. The actual value must be divided by 100.) The unit is: m / s

**The following example introduces the method of using Modbus RTU commands to access system registers.:**

1、Read the internal register (read the wind speed value)

Command sent: 01 03 00 00 00 01 84 0A

01	03	00 00	00 01	84 0A
Device address	Function code	Start register address	No. of registers	CRC16 check digit

Respond: 01 03 02 06 02 3A 25

01	03	02	06 02	3A 25
System address	Function code	Number of bytes in the data segment	Data segment data	CRC16 check digit

**The data in the data section is the wind speed value. 06 02 = 0602H is converted into decimal and it is 15.38m / s (divided by 100)**

2、Modify internal register (modify module address) command (change 01 address to 02)

Send: 01 06 00 A1 00 02 59 E9

01	06	00 A1	00 02	59 E9
Current address	Function code	Start register address	New address	CRC16 check digit

Respond: 01 06 00 A1 00 02 59 E9 (The data

is returned as it is, the modification is

successful) The new address of the system: **02**

3、Modify internal register (modify module baud rate) command (change baud rate to 19200)

Send: 01 06 00 A2 00 02 A9 E9

01	06	00 A2	00 02	A9 E9
Current address	Function code	Start register address	New baud rate	CRC16 check digit

4、4. Answer: 01 06 00 A2 00 02 A9 E9 (The data is returned as it is, indicating that the modification is successful.) New system baud rate: 19200

The following is the baud rate corresponding to the code

**00 00:** 4800    **00 01:** 9600    **00 02:** 19200    **00 03:** 38400    **00 04:** 56000    **00 05:** 115200

