485 wind direction sensor
user's Guide

JXBS-3001-FX
Ver1.0

Chapter 1 Product Introduction

1.1 product description

The JXBS-3001-FS series wind direction sensor is small and light, easy to carry and assemble. The three-cup design concept can effectively obtain external environmental information. The shell is made of high-quality aluminum alloy profiles, and the exterior is electroplated and sprayed, which has good anti-corrosion, Anti-corrosion and other characteristics can ensure that the instrument is free from rusting in long-term use, and at the same time, with the smooth internal bearing system to ensure the accuracy of information collection. It is widely used in wind direction measurement in greenhouses, environmental protection, weather stations, ships, docks, and breeding.

1.2 Main parameters

| parameter	Technical index
Wind direction measurement range	16positions
Wind direction measurement accuracy	1positions
Response time	Less than 5 seconds
Baud rate	9600

Communication port	RS485
Power supply	12V-24V DC
Power	<1W
Operating temperature	-30-80℃
Working humidity environment	0-100%RH（15-95%RH）

1.3 System framework diagram

单接

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1.3 System framework diagram

单接
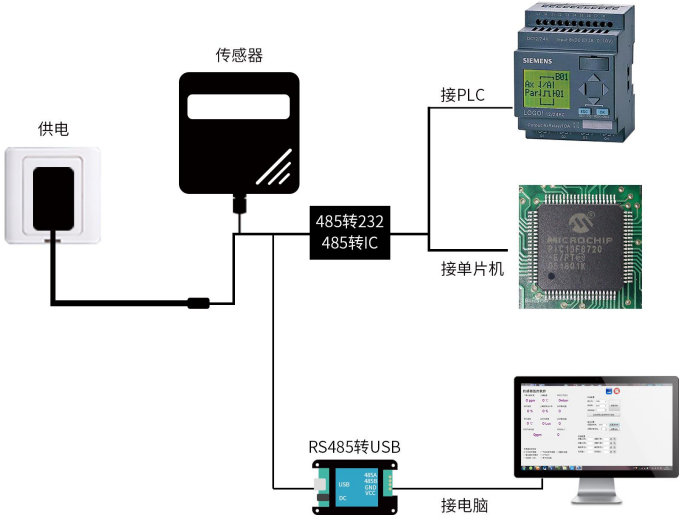
多接
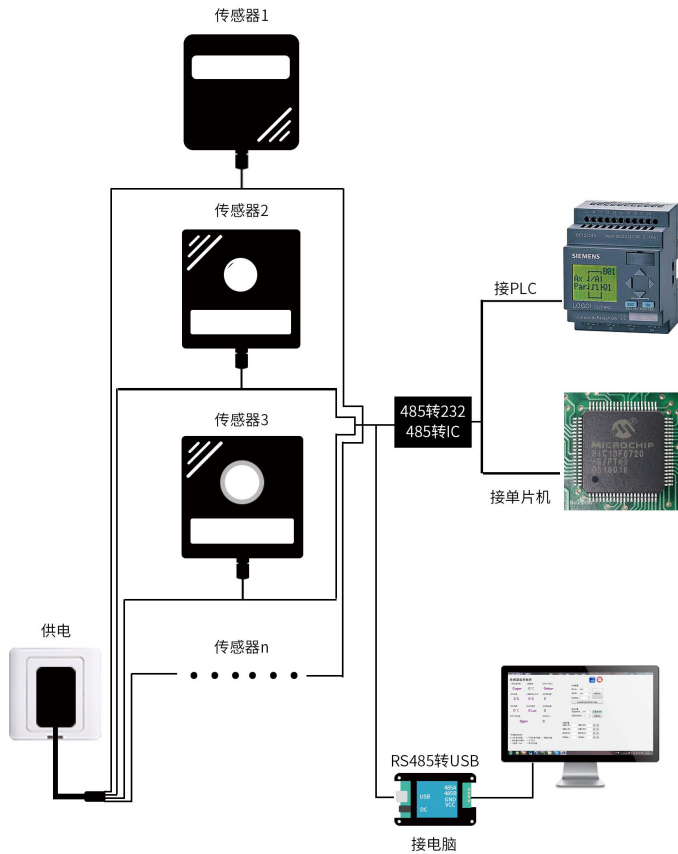
Chapter 2 Hardware Connection

2.1Inspection before equipment installation

Please check the equipment list before installing the

equipment:

name	Quantity
High precision sensor	1set
Wind direction 485 line	1 piece
12V waterproof power supply	1set （Optional）
USB to 485 device	1set （Optional）
Warranty card/certificate	1 serving

2.1.1 Wiring mode

	Thread color	Description
power er	brown	Power is positive
supply ly	black	Power negative
Communi muni	yellow ow	485A

|		
catio n	blue	485B

The factory default provides 0.6 meters long wire, customers can extend the wire as needed or wire in order.

2.2Installation method

Flange installation is adopted, and the threaded flange connection makes the lower pipe fitting of the wind direction sensor firmly fixed on the flange plate. Four mounting holes of Φ 6mm are opened on the circumference of the chassis, and bolts are used to tightly fix it on the bracket to make the whole instrument Keep it at the best level to ensure the accuracy of the wind direction data. The flange connection is convenient to use and can withstand greater pressure.

2.2.1 a fixed way
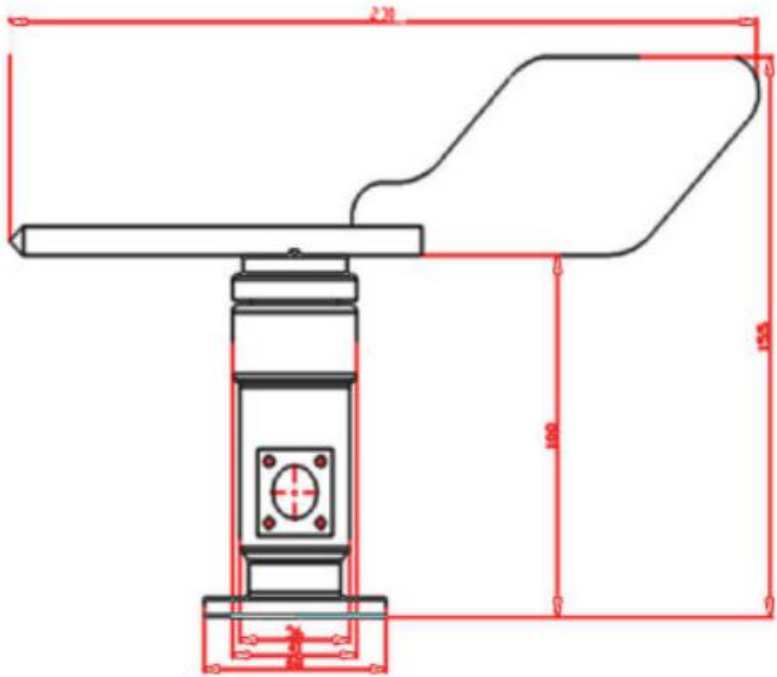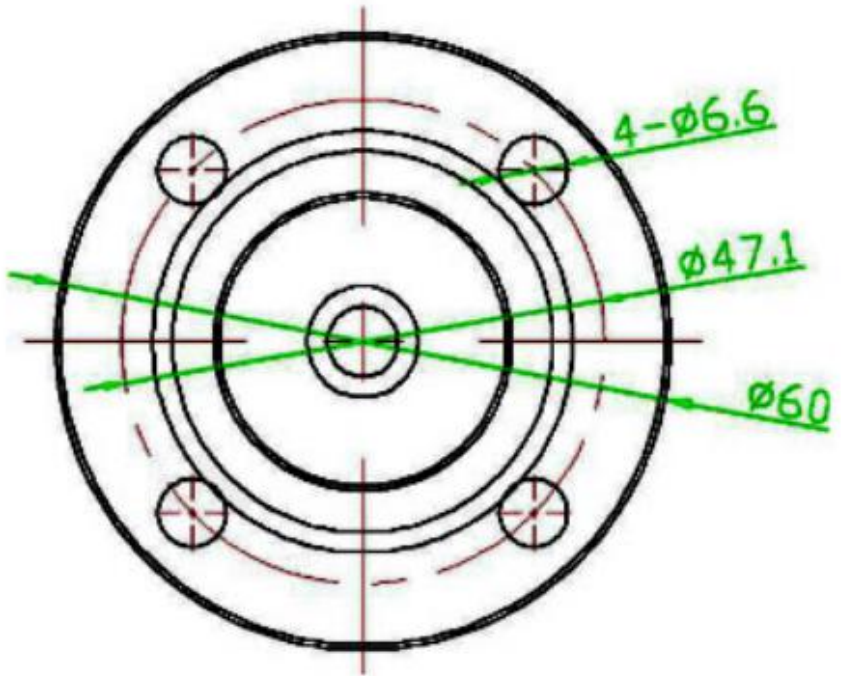
Chapter 3 Communication Protocol

3.1Basic communication parameters

parameter	content
coding	8-bit binary
Data bit	8-bit
Parity bit	无
Stop bit	1-bit
Wrong calibration	CRC lengthy cyclic code
Baud rate	2400bps/4800bps/9600 bps can be set, the factory default is 9600bps

coding	8-bit binary

3.2 Data frame format definition

Adopt Modbus-RTU communication protocol, the format is as follows:

Initial structure >= 4 byte time

Address code = 1 byte

Function code = 1 byte

Data area = N bytes

Error check = 16-bit CRC code

End structure >= 4 bytes time

Address code: the address of the transmitter, which is unique in the communication network (factory default 0x01).

Function code: The command function prompt issued by the host, this transmitter only uses function code 0x03 (read memory data).

Data area: The data area is the specific query data area, pay attention to the 16bits data high byte first

CRC code: two-byte check code.

Interrogation frame

address code	function code	Register address	Register length	Check code low bit	Check code high bit
1byte	1byte	2byte	2byte	1byte	1byte
Reply frame address code	function code	Effective bytes	Data area	Second data area	Nth data area
1byte	1byte	1byte	2byte	2byte	2byte

1.4 Register address

Register	PLC	content	operati

address	configuration address		
			ng
0017H	40018	Wind direction (unit 1 direction)	Read only
0100H	40101	Device address (0-252)	Read and write
0101H	40102	Baud rate (2400/4800/9600)	Read and write

3.3 Communication protocol example and explanation

3.3.1 Read the wind direction value of the device address 0x01

Interrogation frame

address code	function code	initial address	Data length	Check code low bit	Check code high
0x02	0x03	0x00,0x17	0x00,0x01	0x34	0x0E

Reply frame (for example, read the wind direction value is 3)

address code	function code	Effective bytes	Wind direction value	Check code low bit	Check code high
0x02	0x03	0x02	0x00 0x03	0xF8	0x45

```
Wind direction:
0003 H (hexadecimal) = 3 => wind direction =
true east
```

3.3.2The output value of the wind direction sensor corresponds to the position of the wind direction

0x000ERS485 output data definition

True north: 0x000F   North-northeast: 0x0000

Northeast: 0x0001   East Northeast: 0x0002

True east: 0x0003   East southeast: 0x0004

Southeast: 0x0005   South by Southeast: 0x0006

True South: 0x0007   South by Southwest: 0x0008

Southwest: 0x0009   West Southwest: 0x000A

West: 0x000B   West to Northwest: 0x000C

Northwest: 0x000D   Northwest: 0x000E

3.4Notes

Please check whether the packaging is intact, and check whether the transmitter model and specifications are consistent with the product you purchased; if you have any questions, please contact our company as soon as possible.

Please confirm before use: whether the output voltage of the power supply is correct; the positive and negative connections of the power supply and the positive and negative connections of the product; and read the product manual or consult our company. Any error in the wiring will cause irreversible damage to the transmitter.

3.2 Warranty and after-sales

The warranty clauses follow the sensor after-sales clauses of Weihai Jingxun Changtong Electronic Technology Co., Ltd., two years for the sensor host circuit part, one year for gas-sensitive probes, and three months for accessories

(housing/plugs/cables, etc.)