Anemoscope/Wind Direction Sensor
[RS485 OUTPUT]
Explanatory Memorandum

JXBS-3001-FX Ver1.0

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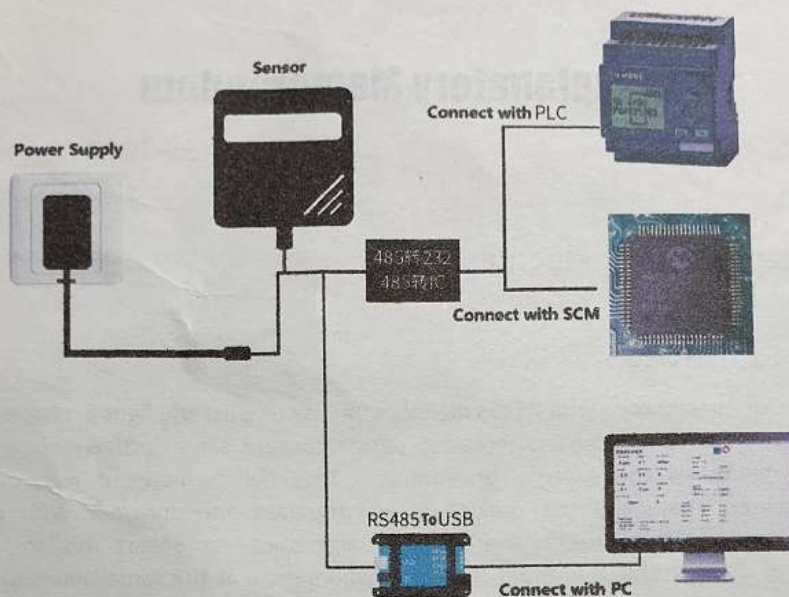
Chapter 1: Introduction

1.1. Overview

Our **Anemoscope with RS485 digital output** is compact and light in shape, easy to carry and assemble. The three-cup design concept can effectively obtain the information of the external environment. The shell is made of high quality aluminum alloy, and the outside is electroplated and sprayed. With good anti-corrosion, anti-erosion and other characteristics, can ensure the long-term use of the instrument without rust cut phenomenon, at the same time with the internal smooth bearing system, to ensure the accuracy of information collection. It is widely used in wind direction measurement of greenhouses, environmental protection, weather stations, ships, docks and aquaculture.

1.2. Main Parameters

Parameters	Index
Measure Range Of Direction	0-16th Orientation
Accuracy Of Direction	1 Orientation
Response Time	<5s
Baud Rate	9600
Communication Port	Digital RS485
Power Supply	12V-24V DC
Power Consumption	<1W
Working Temperature	-30-80℃
Working Humidity	0-100%RH （15-95%RH）

1.3. System Topology

Power Supply

Sensor

Connect with PLC

485转232
485转TTL

Connect with SCM

RS485ToUSB

Connect with PC

Chapter 2: Installation Instructions

2.1. Packaging Contents

Contents	Quantity
Sensor Device	1 set
RS485 Cable	1 set
12V Waterproof Power Source	1 set（optional）
USB TO RS485 Converter	1 set（optional）
Warranty Card & Qualification Certificate	1 set

2.2. Installation of Cables
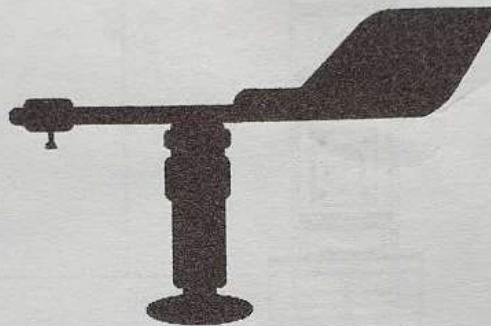
Cables	Colors	Index
Power	Brown	Positive
	Black	Negative
Communication	Blue	485+
	White	485 -

We provide 0.6M RS485 communicate cable by default. You can extend the cable as needed or connect the cables in sequence.

2.3. Device Installation

Adopt flange installation, threaded flange connection that the lower part of the wind sensor fitting firmly fixed in the flange plate, chassis on the circumference of the four Φ 6 mm mounting holes, using bolts should be firmly fixed to the bracket, to keep a complete set of equipment at the best level, ensure the accuracy of the wind data, flange connection is convenient to use, can withstand greater pressure.

2.3.1 Fixed Method

Parameters	Contents
Code	8bits Binary
Date Bit	8bit
Parity Bit	None
Stop Bit	1bit
Error Calibration	CRC Long loop code
Baud Rate	2400bps/4800bps/9600 bps Optional [Default:9600bps]

3.2.Data Frame Format Definition

Modbus-rtu communication protocol is adopted as follows:

The initial structure >=4 bytes of time

Address code = 1 byte

Function code = 1 byte

Data area = N bytes

Error check = 16 bit CRC code

The time to end the structure >=4 bytes

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

Function code: the instruction sent by the host indicates that the transmitter only USES the function code 0x03 (reads the memory data).

Data area: the data area is the specific query number area. Note that 16bits of data are in the first high byte

CRC code: two-byte check code.

Request Frame

Address	Function	Register Origin	Length	Check Code Low Order	Check Code High Order
1byte	1byte	2bytes	2bytes	1byte	1byte

Response Frame

Address	Function	Effective byte	Date 1	Date 2	Date N
1byte	1byte	1byte	2bytes	2bytes	2bytes

3.3. Register Address

Address	PLC Config Add.	Contents	Opera.
0017H	40018	Wind Direction (Unit:1)	Only R.
0100H	40101	Device Add.(0-252)	R.&W.
0101H	40102	Baud(2400/4800/9600)	R.&W.

3.4. Sample communication protocol and explanation

3.4.1. Read 0x01 Wind Direction Of Device Address

Request Frame

Address	Function	Register Origin	Length	Check Code Low Order	Check Code High Order
0x02	0x03	0x00,0x17	0x00,0x01	0x34	0x0E

Response Frame

Address	Function	Effective byte	Wind Direction	Check Code Low Order	Check Code High Order
0x02	0x03	0x02	0x00 0x03	0xF8	0x45

Wind Direction:
0003 H(Hexadecimal)=3=> Wind direction = Due East

3.4.2. Device Output Value Corresponds To Wind Direction Position

RS485 output data definition

North: 0 x000F   north-northeast: 0 x0000
Northeast: 0x0001   east-northeast: 0x0002
East: 0x0003   east-southeast: 0x0004
Southeast: 0x0005   south-southeast: 0x0006
South:0x0007   south-southwest:0x0008
Southwest: 0x0009   west-southwest: 0x000A
West: 0x000B   west-northwest: 0x000C
Northwest: 0x000D   north-northwest: 0x000E

3.5.Notification

Please check whether the package is intact, and check whether the model and specification of the transmitter are consistent with the products you choose and buy; If you have any questions, please contact us as soon as possible.

Please confirm before use: power supply output voltage is correct; Positive and negative connection of power supply and product; And read the product manual in detail or consult our company. Any wrong wiring will cause irreversible damage to the transmitter.

3.6.Warranty & After-Sales Service

The warranty terms follow the sensor after-sales terms of Weihai JXCT electronics technology Co.,Ltd. The warranty is two years for the circuit part of the sensor host, one year for the gas-sensitive probe, and three months for the accessories (shell/plug/cable)