
INSTRUCTION MANUAL

Aqueous solution PH

TYPE RS485

JXBS-3001-GZ

VER1.1

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I BRIEF INTRODUCTION

1.1 Product Overview

This product probe is made of PH glass electrode and silver silver chloride reference electrode, which has the characteristics of wide measurement range, high precision, good linearity, good versatility, convenient using, easy installation, long transmission distance and moderate price.

1.2 Primary Parameters

TABLE 1 Primary Parameters

PARAMETERS	TECHNICAL SPECIFICATIONS
POWER SUPPLY	12-24V DC
POWER	$\leq 0.15W$ (@12V DC, 25°C)

MEASUREMENT PRECISION	$\pm 0.5\text{pH}$
PH MEASUREMENT RANGE	0-14pH
LONG-TERM STABILITY	$\leq 5\%/y$
OUTPUT SIGNAL	RS485
WORKING TEMPERATURE	0-65°C
RESPONDING SPEED	$\leq 15\text{s}$

1.3 System Frame Diagram

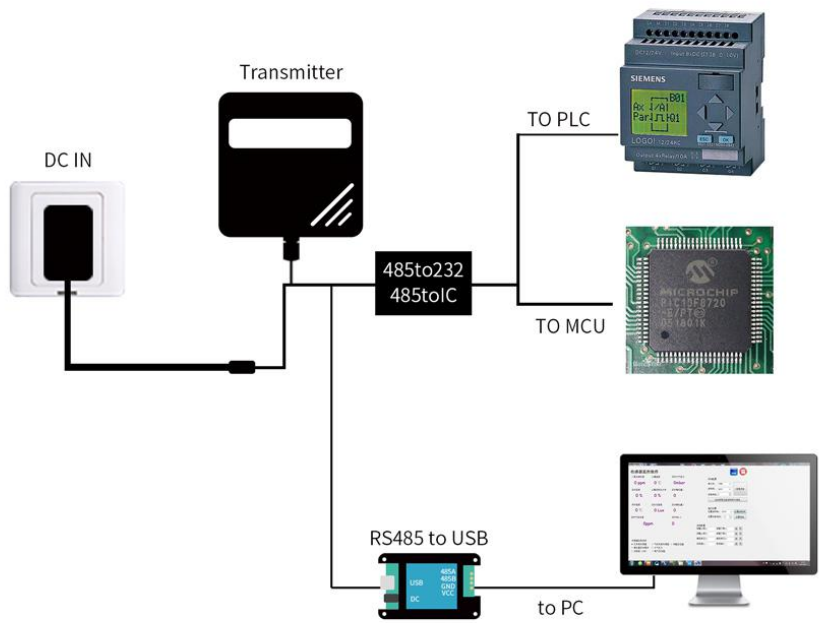


FIGURE 1 SINGLE-ENDED

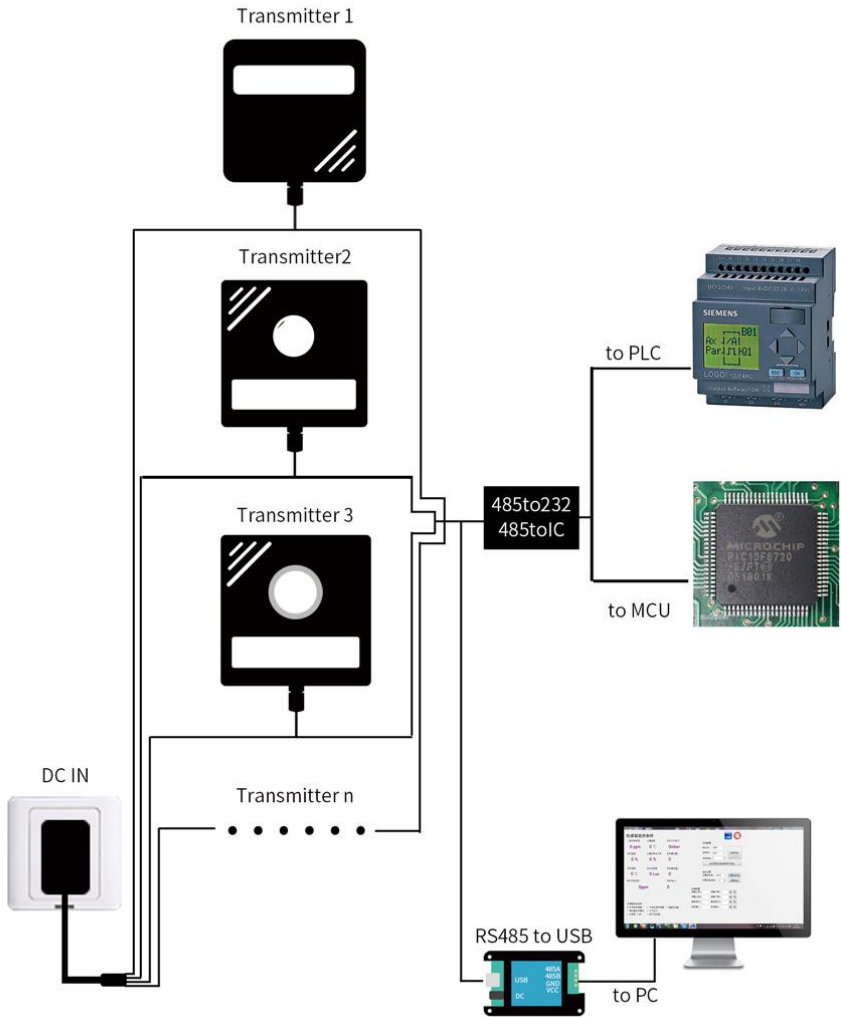


FIGURE 2 MUTIPLE-ENDED

II HARDWARE CONNECTIONS

2.1 CHECKING BEFORE INSTALLATION

Check the list of devices before installation:

Name	Number
THE SENSOR DEVICE	1
12V POWER ADAPTER (Optional)	1
WARRANTY CARD / CERTIFICATE	1
THE USB TO 485 DEVICE (Optional)	1

TABLE 2 List of Devices

2.2 Interface Description

The power interface is wide voltage power input 12-24V can be. When connecting the 485 signal cable, note that the A/B lines cannot be reversed. The addresses of multiple devices on the bus must not conflict.

TABLE 3 Wiring Sequence

	Line Color	Description
Power	Brown	Power supply Positive (12-24V DC)
	Black	Power supply Negative
Communication	Yellow (Gray)	485-A
	Blue	485-B

We provide default cable length of 0.6 meters, you can extend the cable yourself according to your needs.

2.3 Installation Description

1. When the electrode is used for the first time or when it is left unused for a long time, activate the electrode in 3NKCL solution for 8 hours. The electrode protection cap is worn at the factory and contains the protective solution.

2, When using, remove the electrode protection cap and then throw the probe into the solution to be tested, taking care to prevent the rigid object from damaging the electrode ball.

III CONFIGURATION TOOL INSTALLATION AND USE

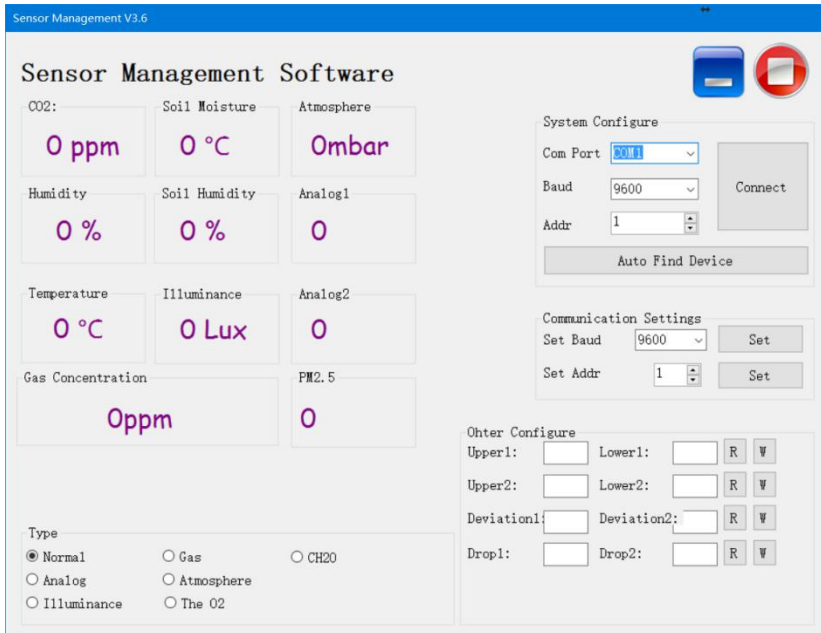
We provide **CONFIGURATION TOOL** , which can be easily used to test our sensor device.

3.1 Sensor Access Computer

Transmitter can be connected to PC with the RS485 to USB adapter. You can check the COM port number through Device Manager (right click My Computer).



3.2 HOW TO USE CONFIGURATION TOOL



Please note that this software can only test one device at the same time. After connecting the physical device, click the **CONNECT** button to read the information. In the UNCONNECT state, you can modify BAUD and ADDR in COMMUNICATION SETTINGS.

Under the software, different check boxes can be selected according to different situations. For example, you can choose the

GAS option to test the RS485 OXYGEN SENSOR , you can choose the NORMAL option to test the RS485 TEMPERATURE AND HUMIDITY SENSOR .

IV COMMUNICATION PROTOCOL

4.1 Communication Basic Parameters

TABLE 4 Communication Basic Parameters

PARAMETERS	CONTENT
Code	8-bit binary
Data bits	8 bit
Parity bit	No
Stop bit	1 bit

Error checking

CRC (redundant loop code)

Baud rate

2400 bps/ 4800 bps/ 9600 bps can be set
factory defaults to 9600 bps

For more information about **MODBUS RTU** please visit the website "www.modbus.org".

4.2 Register Address

Register Address	Plc Configuration Address	Content	Operation
000D H	4000E	pH (Unit 0.1pH)	Read-Only
0100H	40101	Device Address (0-252)	R/W
0101H	40102	Baud Rate (2400/4800/9600)	R/W

TABLE 5 Register Address

4.3 Communication example

4.3.1 Read Device Address 0x01's pH Concentration

TABLE 6 Inquiry Frame

Address Code	Function Code	Start Address	Data Length	CRC_L	CRC_H
0x01	0x03	0x00	0x00	0x15	0xC9
		0x0d	0x01		

TABLE 7 Answer Frames

(For example, the reading is 7.1pH)

Address Code	Function Code	Return the number of valid bytes	Data area	CRC_L	CRC_H
0x01	0x03	0x02	0x00	0xD8	0x15
			0x47		

PH:

0047H (hexadecimal) =71=>PH =7.1pH