



# JWST-10 series large screen display temperature and humidity transmitter instruction manual V1.6

## I. Brief introduction

The sensor of temperature and humidity transmitter with large display adopts imported products with wide detection range, which can make accurate measurement of temperature and humidity and use temperature compensation circuit, and the product works stably and reliably.

- Large LCD display of temperature and humidity
- RS485 or RS232 communication interface
- 4mA to 20mA, 0V to 5V or 0V to 10V standard analog output
- Fast response time
- Standard 86 junction box installation method

## II. Technical parameters

### Power voltage:

Current output	DC 24V (22V~26V)
Voltage output	DC 24V (12V~24V)
Network output	DC 24V (12V~24V)

### Power consumption: ≤1.2W

### Measuring range:

Humidity: 0%RH~100%RH □ \_\_\_\_\_  
 Temperature: -10°C~60°C

### Accuracy:

Humidity: ±3%RH (5%RH~95%RH, 25°C)  
 Temperature: ±0.5°C (25°C)

### Operating temperature: -10°C~60°C

### Long-term stability:

Humidity: ≤1%RH/y  
 Temperature: ≤0.1°C/y

### Response time: ≤15s (1m/s wind speed)

### Output signal:

Current output type: 3-wire system 4mA~20mA  
 □ \_\_\_\_\_  
 Voltage output type: 0V to 5V or 0V to 10V  
 □ \_\_\_\_\_  
 Network output type: RS485 □ RS232

### Load capacity:

Current output type: ≤500Ω  
 Voltage output type: output impedance ≤250Ω

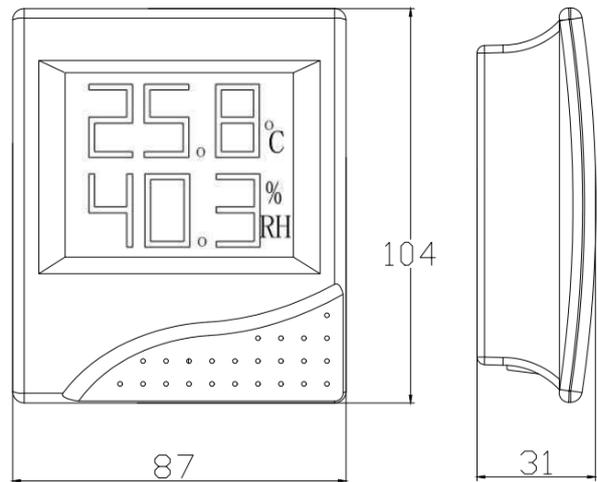
**Installation method:** wall mounting, fixed wall

**Shell:** ABS(white)104mm×87mm×31mm

**Product weight:** ≤100g

## III. Shape and Connection

**Dimensions:** 104mm×87mm×31mm



**Wiring instructions:** (Any incorrect wiring may cause irreversible damage to the transmitter)

24V: Power+ (DC 24V)      GND: Power- (GND)

T: Temperature analog output

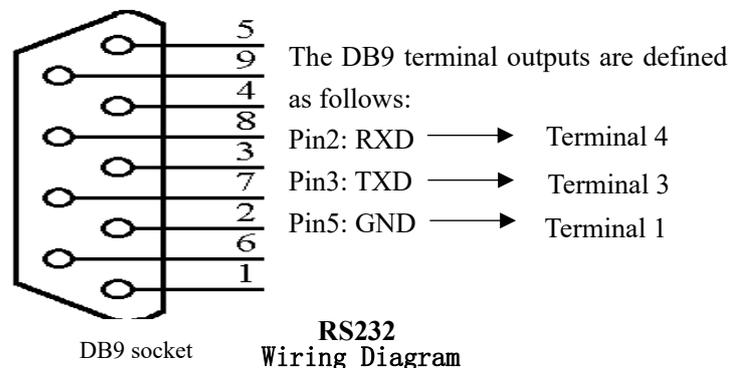
H: Humidity analog output

RS485 interface wiring

A+: A+ terminal of RS485 signal line

B-: B-terminus of RS485 signal line

RS232 interface wiring (schematic connection with the DB9 interface of RS232)



**Note:**

- Current type: JWST-10AC;**
- Voltage type: JWST-10VB/VC;**
- Network type: JWST-10W1/W2**

**IV. Installation**

**Installation steps: Install the following steps for**

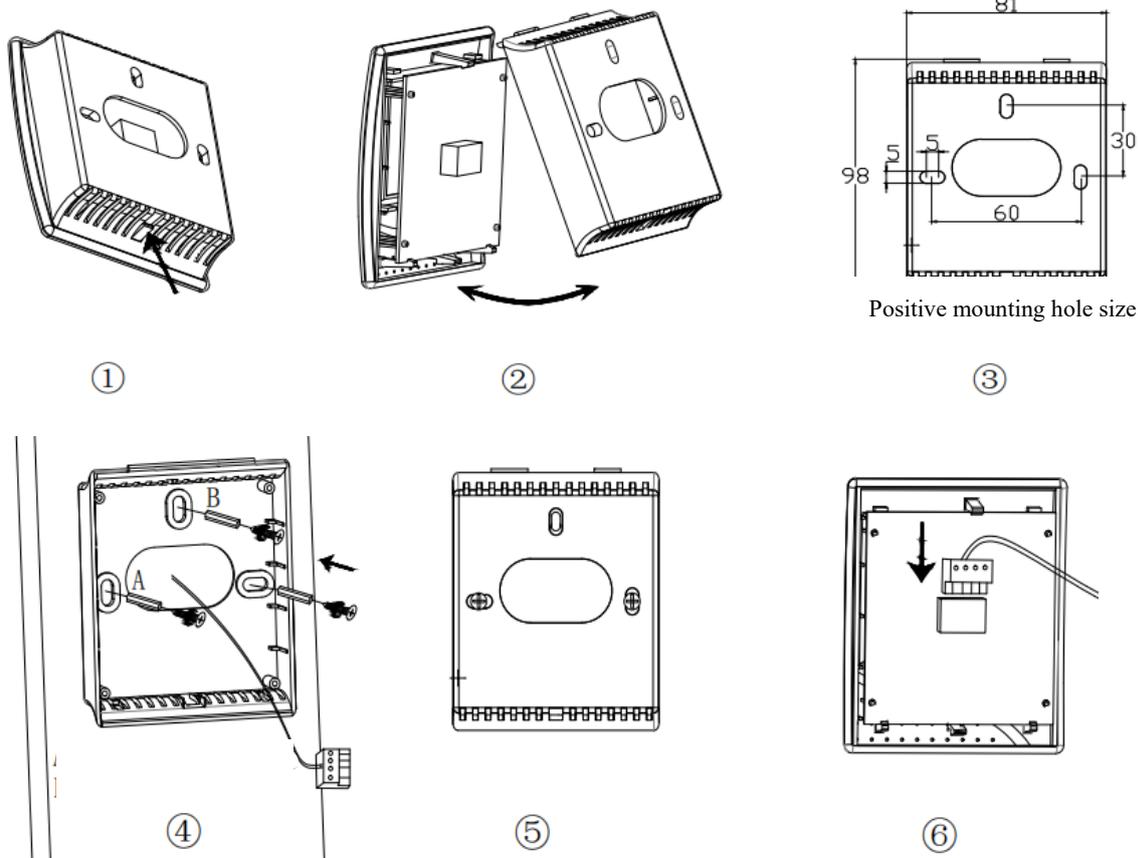
1. Open the transmitter by pressing the open cover button under the back cover of the transmitter (Figure 1);
2. Transmitter back cover has three mounting holes, choose A or B a way to fix it to the wall with expansion screws or screws. It can also be on top of a pre-built wire box on the loading wall (dimension Figure 3);
3. Connect the transmitter to the acquisition device with a cable (Figure 6).

**Installation location:**

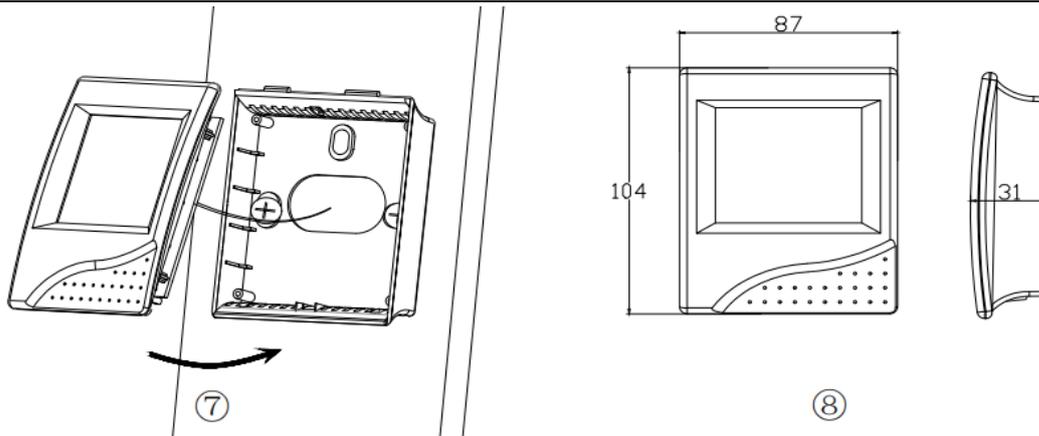
1. The transmitter should be placed as vertically as possible to ensure that when the wall is installed, the sensor is below the transmitter (the front on the transmitter is in the positive direction);
2. The installation height is the human body sitting height or the main requirement to measure the environmental area.

**Installation Notes:**

1. Avoid installing in areas where easy heat transfer will directly cause temperature differences with the measured area, otherwise inaccurate measurement of temperature and humidity will result.



A: Left and right 86 box fixed installation  
 B: Wall mounting on the upper end



2. Installed in a stable environment, avoid direct light, away from windows and air conditioning, heating and other equipment, avoid direct to the window, the door.
3. Try to stay away from high-power interference equipment to avoid inaccurate measurement, such as frequency converters, motors, etc.

## V. Use

1. After checking carefully to make sure the wiring is correct, connect the RS232 serial port of PC through RS485 conversion module (485 output) or directly (232 output), turn on the DC 24V or 12V power supply, and you can check the temperature and humidity value through the test software; for analog output: turn on the DC 24V or 12V power supply, and the corresponding current or voltage value will be output when measured with a multimeter. (See communication appendix for details)
2. If you want to disassemble the transmitter, you must first disconnect the power and then disassemble it.
3. This transmitter is indoor type, avoid having water inside the transmitter to avoid damage.

## VI. Attention

1. Please read this manual carefully before use to make sure the wiring is correct. Any incorrect wiring may cause irreversible damage to the transmitter.

Avoid installation in zones where heat transfer is easy and will directly cause temperature differences with the area to be measured, as this will result in inaccurate temperature and humidity measurements.

Prevent chemical reagents, oil, dust, etc. from directly attacking the sensor, and do not use it for a long time under the environment of condensation and extreme temperature. Do not carry out cold or thermal shock.

4. This product is an electronic product, scrapping will produce environmental pollution, scrapping should follow the national electronic device scrapping related standards.

## VII. Maintenance

Transmitters will be offset by prolonged use, to ensure measurement accuracy, it is best to calibrate once a year.

## VIII. Transportation, storage

1. Transmitter try to avoid vibration, lightly take and put.
2. Long-term optimal storage conditions: 10°C~40°C; 20%RH~50%RH.

## IX. Open box inspection

1. After opening the package, check whether the transmitter is intact.
2.

Transmitter	1set
manual	1serving
certificate of conformity	1sheet
up plug	2serving
screws	2serving

(network type products also come with a



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short-circuit cap 2).

## X. Troubleshooting and Analysis

1.Network output, such as transmitter communication can not, please check whether the wiring is correct, firm; communication test software is set correctly (serial port, baud rate, data bits, stop bit check mode, acquisition cycle, flow control Factory default: 9600, 8, 1, n, none).

2.If it is not for the above reasons, please contact the manufacturer.

## Appendix. Communication protocols

Compliant with standard MODBUS protocol (RTU method)

1.Host query, transmitter answer master-slave method

Query Data	Device Address	Function Code	Memory start address	Number of data	CRC16 (L)	CRC16(H)	Sample
Temperature	0X XX	0X03	0X0000	0X000 1	CRCL	CRCH	010300000001840A Response: Address 0302 Temperature H Temperature L CRCL CRCH
Humidity	0X XX	0X03	0X0001	0X000 1	CRCL	CRCH	010300010001D5CA Response: Address 0302 Humidity H Humidity L CRCL CRCH
Temperature and humidity	0X XX	0X03	0X0000	0X000 2	CRCL	CRCH	010300000002C40B Response: Address 0304 Temperature H Temperature L Humidity H Humidity L CRCL CRCH
Device Address	FF	0X03	0X0002	0X000 1	CRCL	CRCH	FF03000200013014 Response: FF0302 Address H Address L CRCL CRCH
Baud rate	0X XX	0X03	0X0003	0X000 1	CRCL	CRCH	010300030001740A Response: FF0302 Baud Rate Code H Baud Rate Code L CRCL CRCH



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Modify communication parameters	Device address (01-FE, hexadecimal)	Function Code	Memory start address	Set parameter H	Set parameter H	CRC 16 (L)	CRC16(H)	Sample After setting, the new address takes effect immediately after power off and reboot.
Address	Original address	0X06	0X0002	New address H	New address L	CRC L	CRCH	The operation to change the address of the transmitter with address 01 to 02 is: FF0600020002BC15 <b>the return value is the same as the issued command, i.e. the setting is successful;</b>
Baud rate	Address	0X06	0X0003	Baud rate code H	Baud rate code L	CRC L	CRCH	The communication baud rate is changed to 38400 operation as : FF0600030005AC17 <b>the return value is the same as the issued command, i.e. the setting is successful;</b>

2.The transmitter address and baud rate can be changed through the serial port (special care should be taken when modifying the baud rate, the wrong modification may result in failure to communicate)

3. Data H (high byte) and data L (low byte) are the current temperature and humidity values corresponding to each:

- The uploaded data should be divided by 10, e.g. humidity uploaded in hexadecimal 0311, converted to decimal 785, which means 78.5%.
- Positive temperature conversion, such as temperature upload hex 00FC, convert decimal to 252, which means 25.2°C.

Baud Rate Code	0	1	2	3	4	5	6
Baud rate (kbps)	1200	2400	4800	9600	19200	38400	57600

● Negative temperature conversion,

such as temperature upload hexadecimal FF8C, take the complement - (FFFF – FF8C + 1) converted to decimal for -116, said -11.6 °C.

4.Byte format 8 bits of data, no parity, 1 bit of stop bit Baud rate is 9600bps.

The baud rate code corresponds to the actual baud rate as follows: