



- 4-20mA
- Operating temperature: -40°C ~ 80°C
- Relative humidity: 0 ~ 100%

**Wiring method**

- ( 1 ) If equipped with the weather station produced by our company, directly use the sensor cable to connect the sensor to the corresponding interface on the weather station.
- ( 2 ) If the transmitter is purchased separately, the matching line sequence of the transmitter is as follows: :
  - red-----Positive power supply
  - yellow-----485+
  - blue-----485-
  - black-----Negative power supply

**Product introduction**

The Atmosphere temperature, humidity and pressure sensor is a fully digital detection, high-precision sensor. It is integrated with high-precision digital temperature, humidity and air pressure. It can accurately and quickly detect atmospheric temperature, atmospheric humidity and atmospheric pressure. The built-in signal processing unit can Output corresponding signals according to user needs, high-strength structure design can be accurately detected in harsh climate environment, can be widely used in meteorology, ocean, environment, airports, ports, laboratories, industry and agriculture and transportation and other fields.

**technical parameter**

temperature Measuring range: -40~80°C Accuracy: ±0.5°C Resolution: 0.1°C	humidity 0~100%RH ±5%RH 0.1%RH
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Air pressure Measuring range: 10~1200hPa Accuracy: ±1.5hPa Resolution: 0.1hPa
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- Power :
- DC 12V-24V
  - other\_\_\_\_\_

- Output:
- RS485

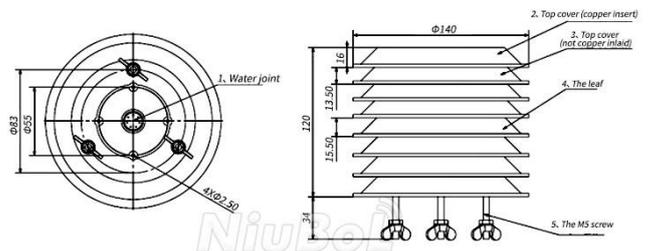
**Structure size**

*product types choosing*

Serial number	The power supply mode	Output signal	Explain
			Thermometer box temperature and humidity pressure sensor (transmitter)
	12V-24V		12V-24V power supply
		W2	RS485

For example: 12V-W2: Thermometer box temperature and humidity pressure sensor (transmitter) 12V power, RS485 output

*Product Parameter*



**MODBUS-RTU communication protocol**

- 、Serial format
- Data bits 8 bits
- Stop bit 1 or 2 bits
- Check Digit None
- Baud rate 9600 The interval between two communications is at least 1000ms



二、Communication format

【1】Write the device address

Send: 00 10 Adress CRC (5 bytes)

Returns: 00 10 CRC (4 bytes)

Instructions:

1. The address bit of the read/write address command must be 00.

2. Adress is 1 byte, the range is 0-255.

For example: send 00 10 01 BD C0

return 00 10 00 7C

[2] Read the device address

Send: 00 20 CRC (4 bytes)

Returns: 00 20 Adress CRC (5 bytes)

Description: Adress is 1 byte, the range is 0-255

For example: send 00 20 00 68

Return 00 20 01 A9 C0

【3】Read real-time data

send: Adress 03 00 00 00 03 XX XX

Description: As shown in the figure below:

code	function definition	Remark
Adress	Station number (address)	
03	function code	
00 00	initial address	
00 03	read points	
XX XX	CRC Check code, low front and high back	

return: Adress 03 06 QW QW SD SD QY QY XX XX

Description:

code	function definition	Remark
Adress	Station number (address)	
03	function code	
06	read points	
QW QW	Temperature data (front high and back low)	hex
SD SD	Humidity data (front high and back low)	hex
QY QY	Air pressure data (front high and back low)	hex

XX XX	CRC check code	
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E.g: send 01 03 00 00 00 03 05 CB

return 01 03 06 00 B4 01 10 27 80 8B 06

temperature resolution 0.1℃, humidity 0.1%RH, air pressure 0.1hpa。

**Note: 00 B4 converted to hexadecimal is 180, after data analysis, with one decimal point needs to be divided by ten, the actual temperature is 18.0 ℃, 01 10 converted to hexadecimal is 272, after data analysis, with one decimal point needs to be Divide by ten, the actual humidity is 27.2%, 27 80 converted to hexadecimal is 10112, after data analysis, with one decimal point, it needs to be divided by ten, the actual temperature is 1011.2hpa**

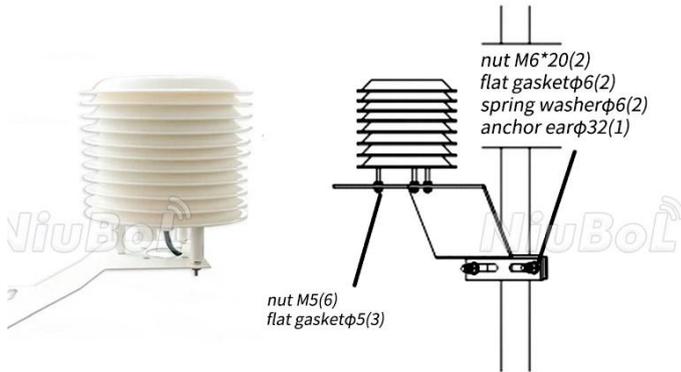
Steps to calculate CRC code:

1. The preset 16-bit register is hexadecimal FFFF (that is, all 1s). Call this register the CRC register;
2. XOR the first 8-bit data with the lower bits of the 16-bit CRC register, and place the result in the CRC register;
3. Shift the contents of the register one bit to the right (toward the lower bit), fill the highest bit with 0, and check the shifted out bit after the right shift;
4. If the shift out bit is 0: repeat step 3 (shift right one bit again)  
If the shift-out bit is 1: XOR the CRC register with the polynomial A001 (1010 0000 0000 0001);
5. Repeat steps 3 and 4 until the right shift is performed 8 times, so that the entire 8-bit data is processed;
6. Repeat steps 2 to 5 to process the next 8-bit data;
7. The final CRC register is the CRC code;
8. When the CRC result is put into the information frame, the high and low bits are exchanged, and the low bits are first.



### Installation method:

#### Installation method



As shown in the picture above, it can be matched with the bracket and installed on the bracket.

### Precautions

1. Please check whether the packaging is in good condition, and check whether the product model is consistent with the selection;
2. Do not wire live After the wiring is completed and checked, the power can be turned on;
3. When using, do not arbitrarily change the components or wires that have been soldered when the product leaves the factory.;
4. The sensor is a precision device. Please do not disassemble it by yourself or touch the surface of the sensor with sharp objects or corrosive liquids to avoid damage to the product.;
5. Please keep the verification certificate and certificate of conformity, and return it with the product during maintenance.

### Troubleshooting

1. When detecting the output, the indicator indicates that the value is 0 or not within the range. Check whether there is any obstruction by foreign objects. The collector may not be able to obtain information correctly due to wiring problems. Please

- check whether the wiring is correct and firm.
2. If not for the above reasons, please contact the manufacturer.

### Selection table

No	Power way	output Signal	Description
-			Louver box type temperature, humidity and pressure sensor (transmitter)
	12V-24V		12V-24V
		W2	RS485
For example: 12V-W2: Louver box type temperature, humidity and pressure sensor (transmitter) 12V power supply, RS485 output			

### Contact us

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