SM7320M

4-20mArack temperature and humidity sensor

User Manual

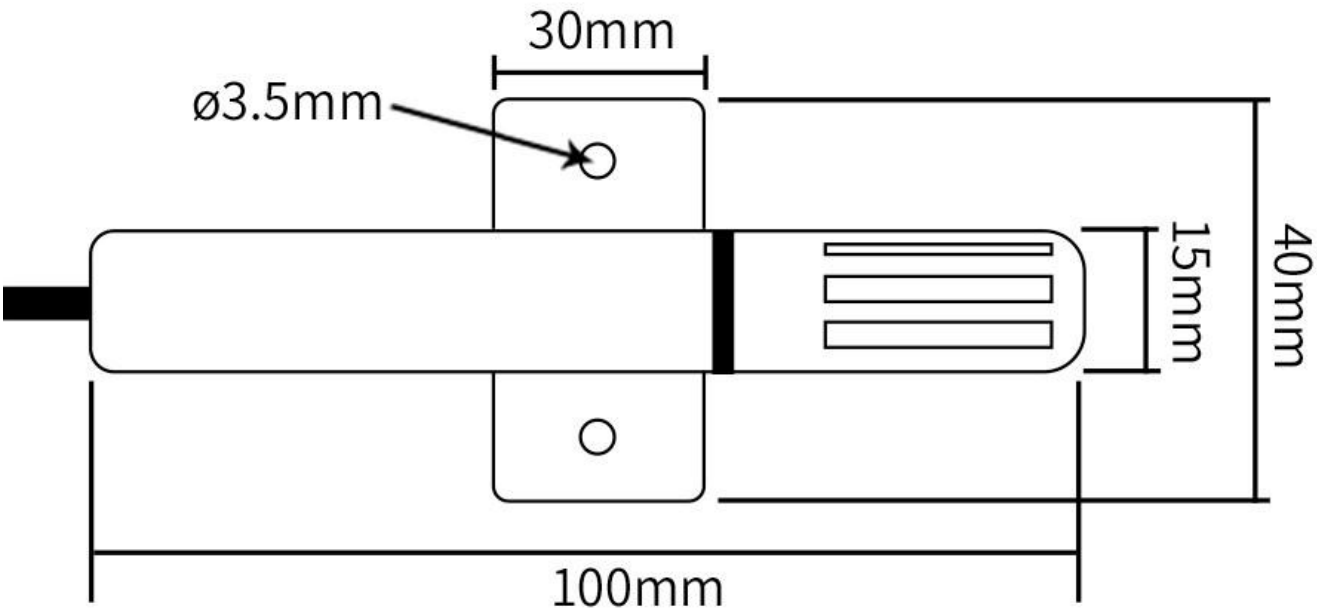
File Version: V23.6.25

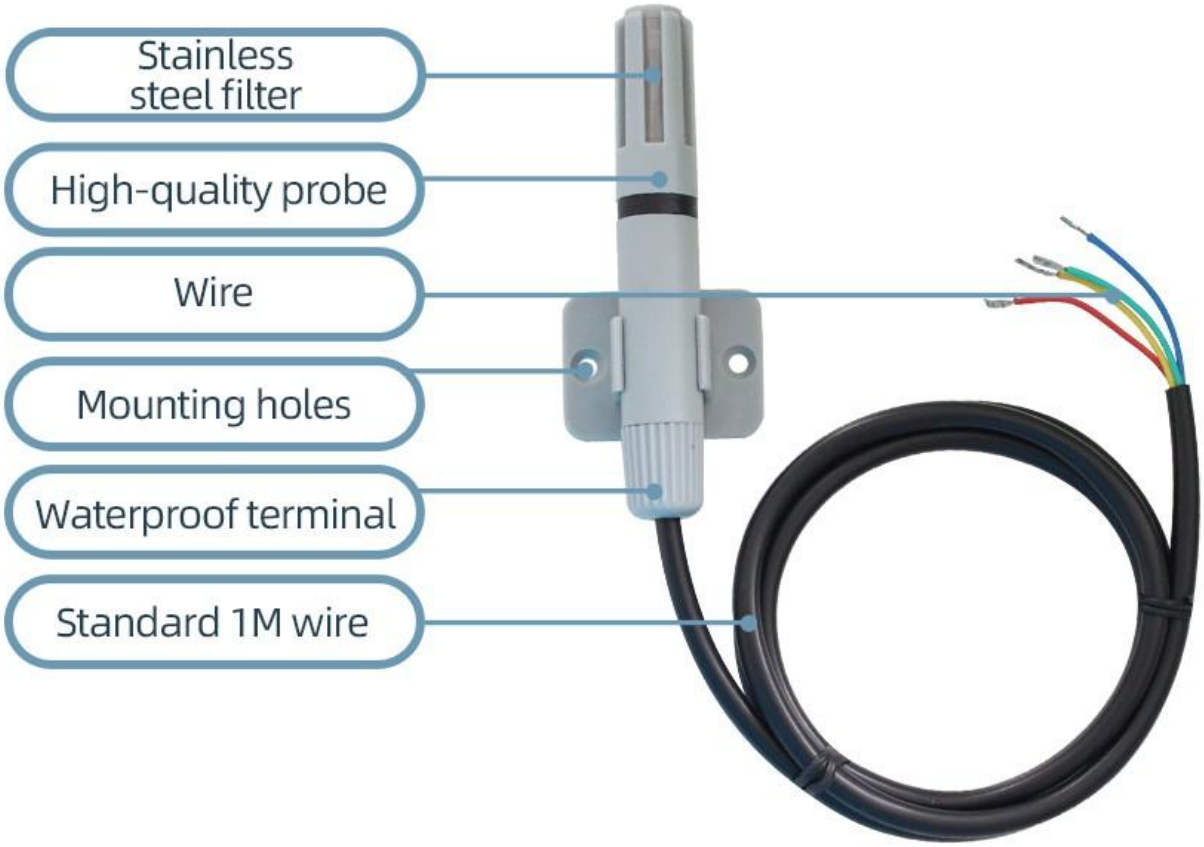
SM7320M using the standard ,easy access to PLC， DCS and other instruments or systems for monitoring temperature,humidity state quantities.The internal use of high-precision sensing core and related devices to ensure high reliability and excellent long-term stability,can be customized RS232,RS485,CAN,4-20mA,DC0~5V\10V,ZIGBEE,Lora,WIFI,GPRS and other output methods.

Technical Parameters

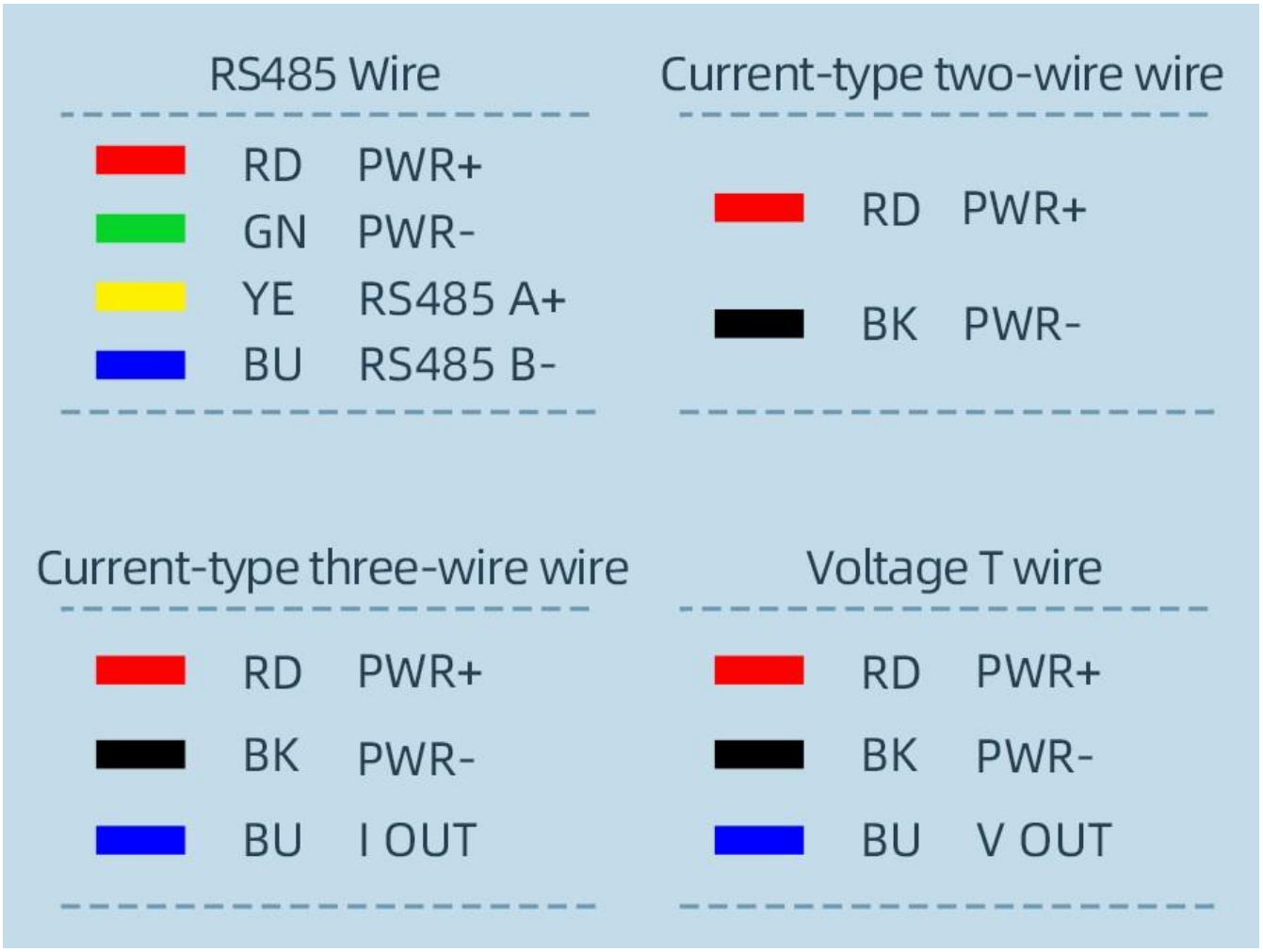
Technical parameter	Parameter value
Brand	SONBEST
Temperature measuring range	-30℃~80℃
Temperature measuring accuracy	±0.5℃ @25℃
Humidity measuring range	0~100%RH
Humidity accuracy	±3%RH @25℃
Interface	2-wire 4-20mA
Power	DC12~24V 1A
Running temperature	-30~85℃
Working humidity	5%RH~90%RH

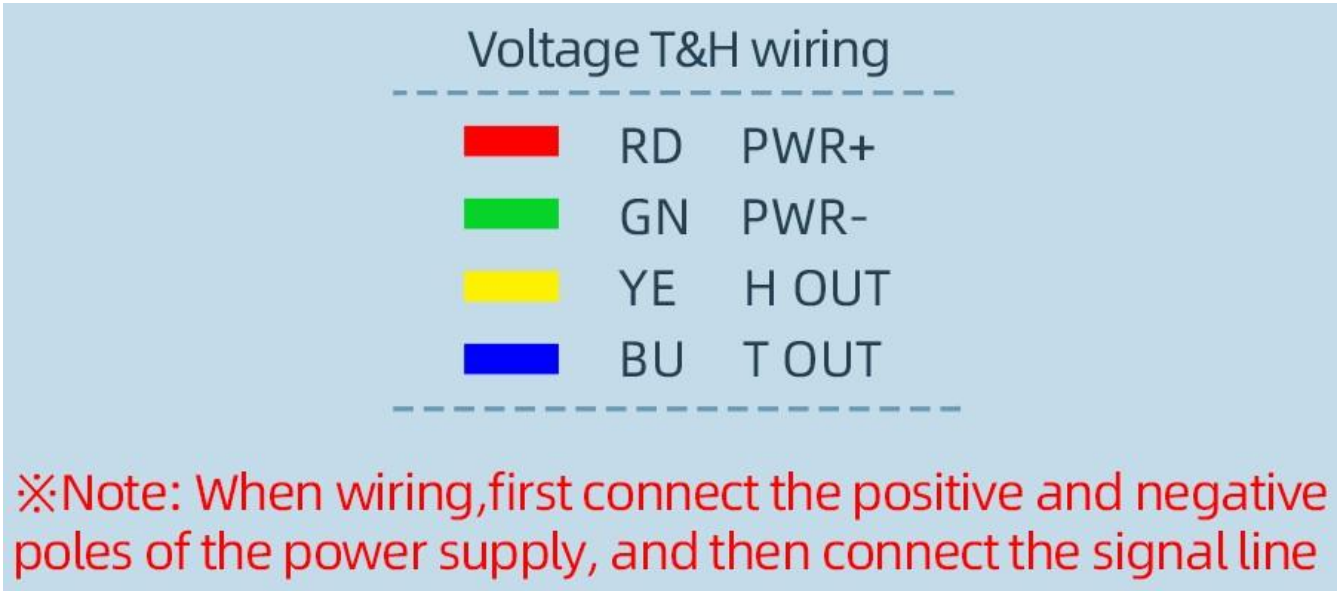
Product Size




Stainless steel filter
High-quality probe
Wire
Mounting holes
Waterproof terminal
Standard 1M wire

Wiring mode





Wiring instructions

In the case of broken wires, wire the wires as shown in the figure. If the product itself has no leads, the core color is for reference.

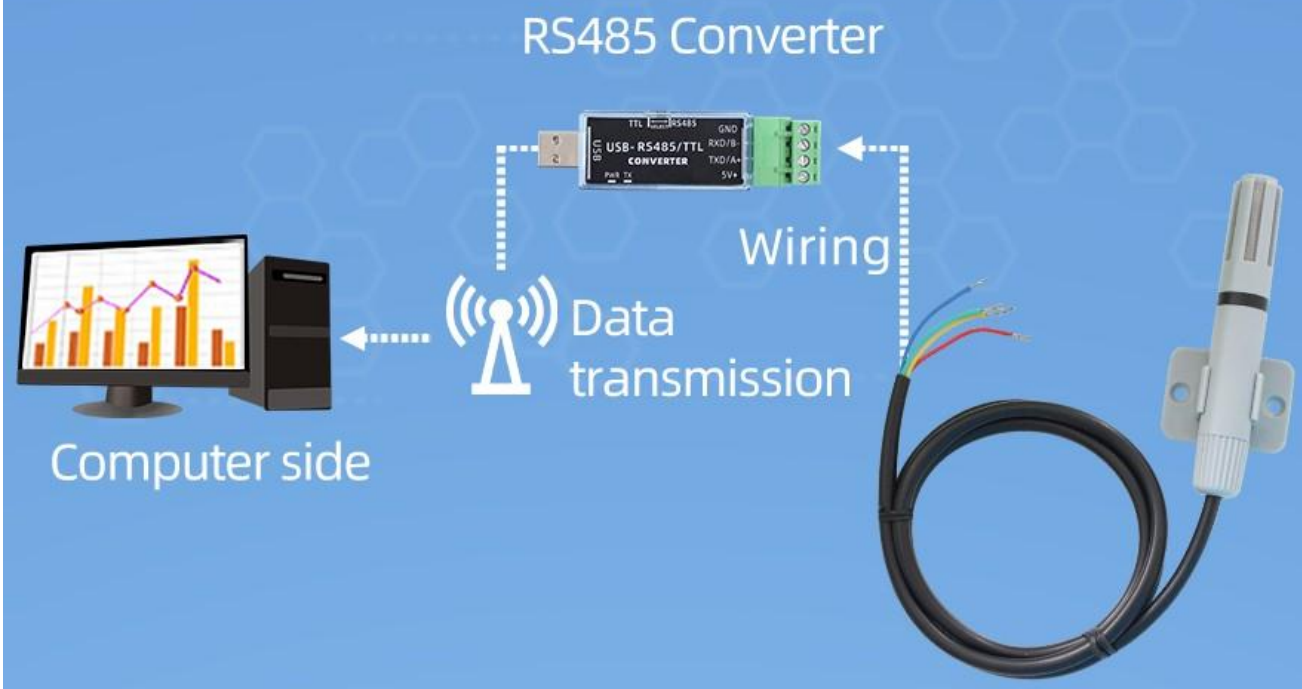
How to use?


Food storage
Temperature and humidity are very important for food storage. Changes in temperature and humidity will bring about food spoilage and cause food safety problems. Monitoring of temperature and humidity is beneficial to the timely control of relevant personnel

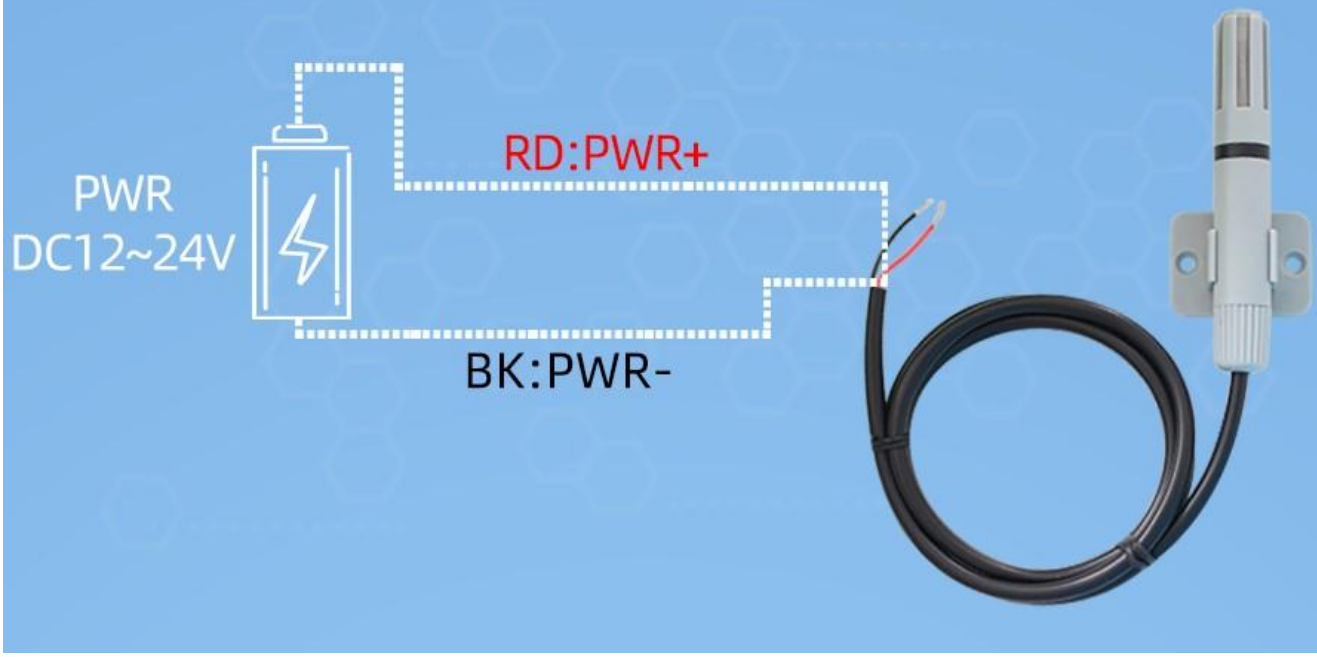

Greenhouse
Cooperate with sensors to effectively manage, create a good lighting environment for crops, and promote better photosynthesis

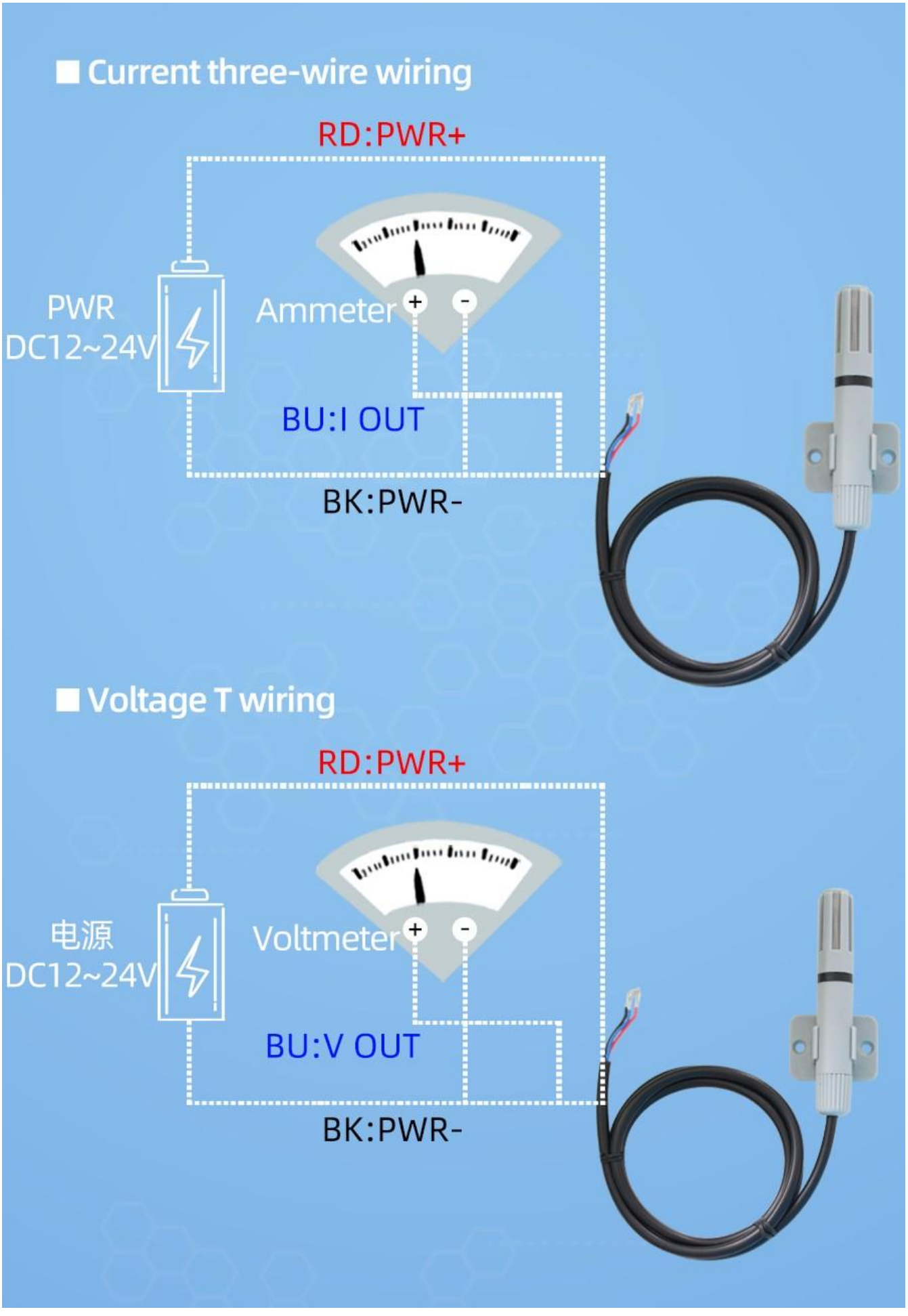
Application solution

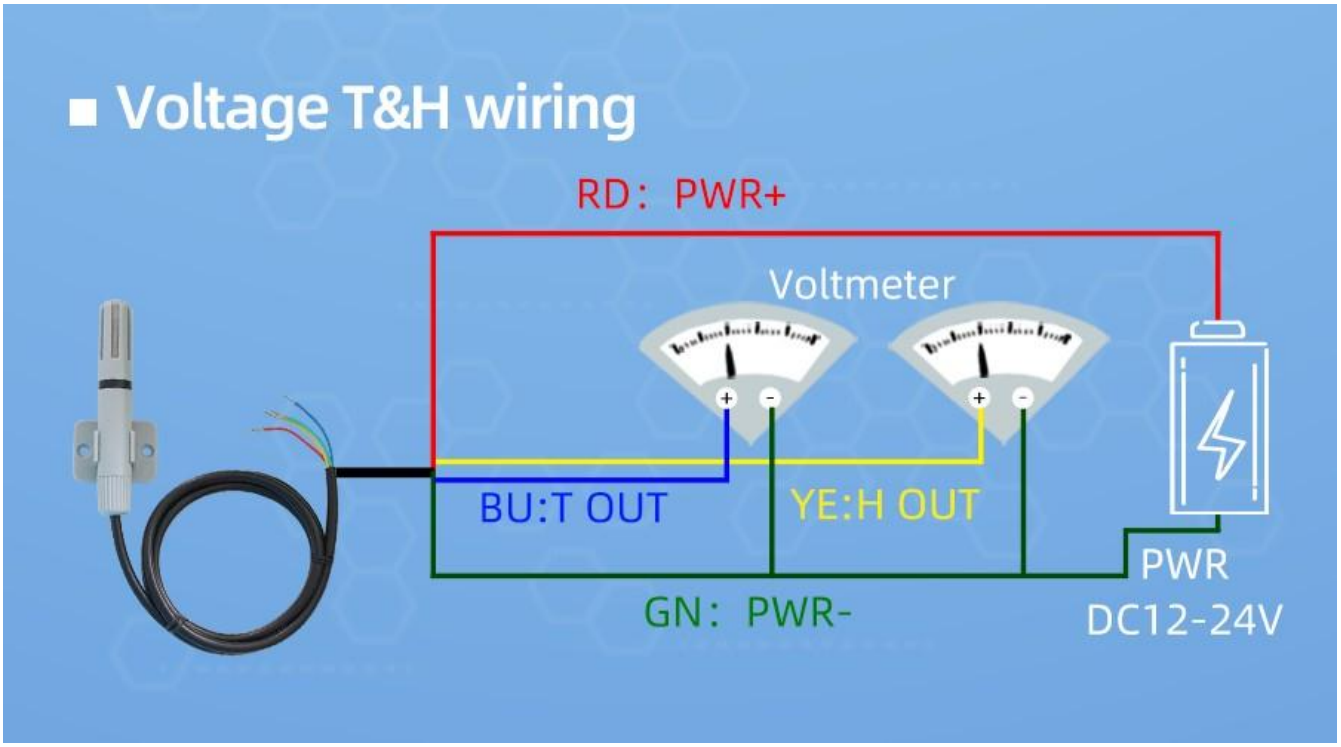
RS485 Wiring



Current two-wire wiring




■ Current three-wire wiring
RD:PWR+
PWR
DC12~24V
Ammeter
+
-
BU:I OUT
BK:PWR-
■ Voltage T wiring
RD:PWR+
电源
DC12~24V
Voltmeter
+
-
BU:V OUT
BK:PWR-



Product List

T & H sensors (no power supply)
(Delivery according to user options)

Warm reminder card

Certificate of conformity

1. temperature and current computing relationship

For example, the range is -30~80℃, the analog output is 4~20mA current signal, temperature and current The calculation relationship is as shown in the formula: C = (A2-A1) * (X-B1) / (B2-B1) + A1, where A2 is temperature range upper limit, A1 is the lower limit of the range, B2 is current output range upper limit, B1 is the lower limit, X is the currently read temperature value, and C is the calculated current value. The list of commonly used values is as follows:

current(mA)	temperatureValue (℃)	Calculation Process
4	-30	(80-(-30))*(4-4)÷(20-4)+-30
5	-23.125	(80-(-30))*(5-4)÷(20-4)+-30
6	-16.25	(80-(-30))*(6-4)÷(20-4)+-30
7	-9.375	(80-(-30))*(7-4)÷(20-4)+-30
8	-2.5	(80-(-30))*(8-4)÷(20-4)+-30
9	4.375	(80-(-30))*(9-4)÷(20-4)+-30
10	11.25	(80-(-30))*(10-4)÷(20-4)+-30
11	18.125	(80-(-30))*(11-4)÷(20-4)+-30

12	25	(80-(-30))*(12-4)÷(20-4)+-30
13	31.875	(80-(-30))*(13-4)÷(20-4)+-30
14	38.75	(80-(-30))*(14-4)÷(20-4)+-30
15	45.625	(80-(-30))*(15-4)÷(20-4)+-30
16	52.5	(80-(-30))*(16-4)÷(20-4)+-30
17	59.375	(80-(-30))*(17-4)÷(20-4)+-30
18	66.25	(80-(-30))*(18-4)÷(20-4)+-30
19	73.125	(80-(-30))*(19-4)÷(20-4)+-30
20	80	(80-(-30))*(20-4)÷(20-4)+-30

As shown in the above formula, when measuring 8mA, current current is 31.5℃。

2. humidity and current computing relationship

For example, the range is 0~100%RH, the analog output is 4~20mA current signal, humidity and current The calculation relationship is as shown in the formula: C = (A2-A1) * (X-B1) / (B2-B1) + A1, where A2 is humidity range upper limit, A1 is the lower limit of the range, B2 is current output range upper limit, B1 is the lower limit, X is the currently read humidity value, and C is the calculated current value. The list of commonly used values is as follows:

current(mA)	humidityValue (%RH)	Calculation Process
4	0.0	(100-0)*(4-4)÷(20-4)+0
5	6.3	(100-0)*(5-4)÷(20-4)+0
6	12.5	(100-0)*(6-4)÷(20-4)+0
7	18.8	(100-0)*(7-4)÷(20-4)+0
8	25.0	(100-0)*(8-4)÷(20-4)+0
9	31.3	(100-0)*(9-4)÷(20-4)+0
10	37.5	(100-0)*(10-4)÷(20-4)+0
11	43.8	(100-0)*(11-4)÷(20-4)+0
12	50.0	(100-0)*(12-4)÷(20-4)+0
13	56.3	(100-0)*(13-4)÷(20-4)+0
14	62.5	(100-0)*(14-4)÷(20-4)+0
15	68.8	(100-0)*(15-4)÷(20-4)+0
16	75.0	(100-0)*(16-4)÷(20-4)+0
17	81.3	(100-0)*(17-4)÷(20-4)+0
18	87.5	(100-0)*(18-4)÷(20-4)+0
19	93.8	(100-0)*(19-4)÷(20-4)+0
20	100.0	(100-0)*(20-4)÷(20-4)+0

As shown in the above formula, when measuring 8mA, current current is 29%RH。

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