INTOIOT YM7320B
Temperature and
Humidity Sensor
Module

INTOIOT YM7320B Temperature and Humidity Sensor Module User Manual

Contents

INTOIOT YM7320B Temperature and Humidity Sensor Module

Product Information

Specifications

- **Temperature Measuring Range:** -30°C to 80°C
- **Humidity Measuring Range:** 0% to 100% RH
- **Communication Interface:** RS485
- **Default Baud Rate:** 9600 8 n 1
- **Power:** DC9~24V 1A
- **Running Temperature:** -30°C to 85°C
- **Working Humidity:** 5%RH to 90%RH

Product Usage Instructions

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.

Communication Protocol
The product uses RS485 MODBUS-RTU standard protocol format.Default device address is 1, default baud rate is 9600,8,n,1.

Data Reading
To read data, use function code 0x03. For example, to query data from the device, send the command: 01 03 00 00 00 02 C4 0B.

Common Data Address Table

Register Address	Data Type	Value Range	Description
40001	temperature	0~65535	Read Only
40002	humidity	0~65535	Read Only

Frequently Asked Questions (FAQ)

- **Q: What is the default device address and baud rate?**

  A: The default device address is 1, and the default baud rate is 9600,8,n,1.

- **Q: What is the power requirement for the product?**

  A: The product requires DC power ranging from 9V to 24V with a current rating of 1A.

- **Q: How to interpret the data received from the device?**

  A: The data received is in hexadecimal format. Refer to the user manual for specific data interpretation guidelines.

YM7320B
RS485 optional temperature and humidity sensor module with supported plastic housing
User Manual
File Version: V24.3.19

YM7320B using the standard RS485 bus MODBUS-RTU protocol,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
Shanghai hitdo Industrial Co., Ltd INTOIOT Brand Division 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
Temperature measuring range	-30℃~80℃
Temperature measuring accuracy	±0.5℃ @25℃
Humidity measuring range	0~100%RH
Humidity accuracy	±3%RH @25℃
Communication Interface	RS485
Default baud rate	9600 8 n 1
Power	DC9~24V 1A
Running temperature	-30~85℃
Working humidity	5%RH~90%RH

Product Size

PCB thickness:1.6mm

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.
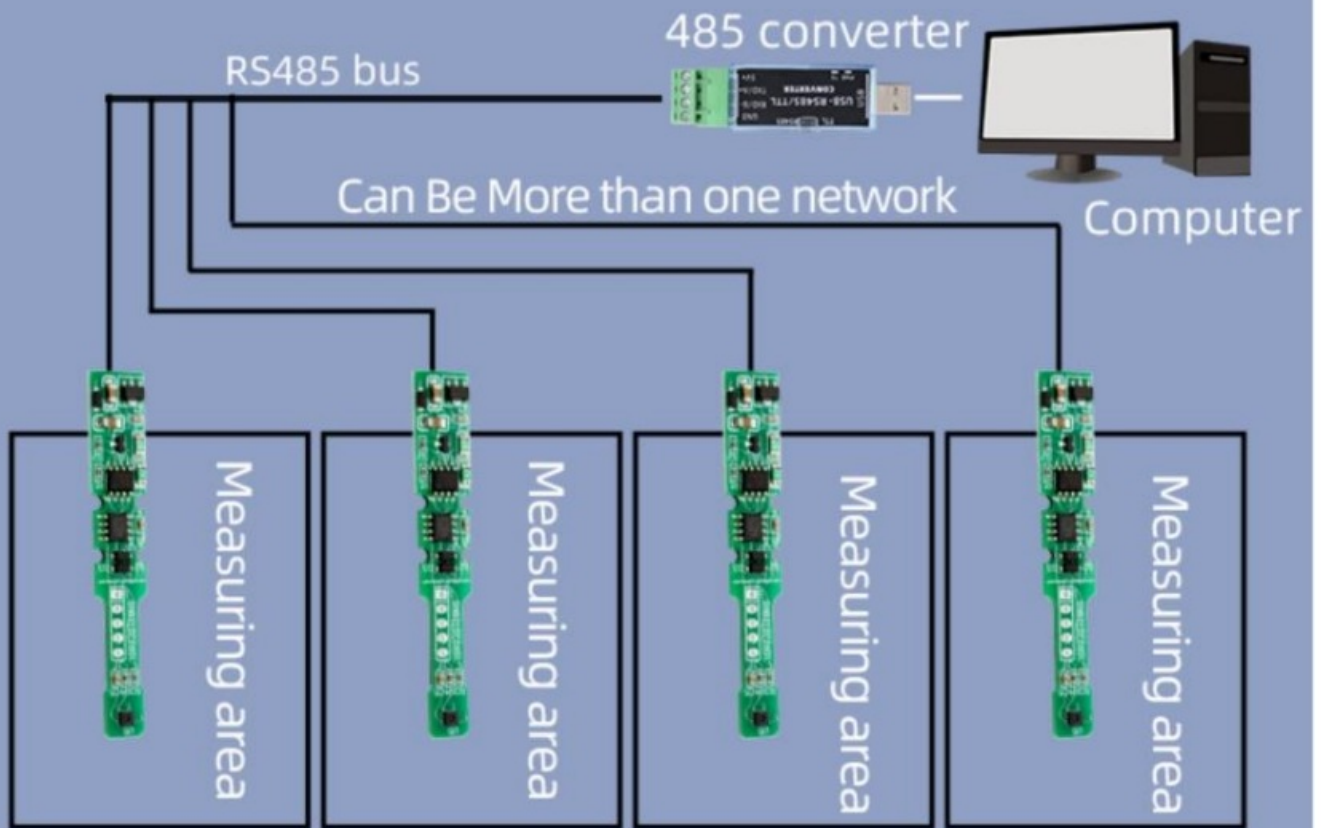
How to use?

Temperature and humidity collection module can be widely used in grain storage, heat source heat pump, machine shop, library, museum, Greenhouse Greenhouse, ar- chives and other indoor measurement fields
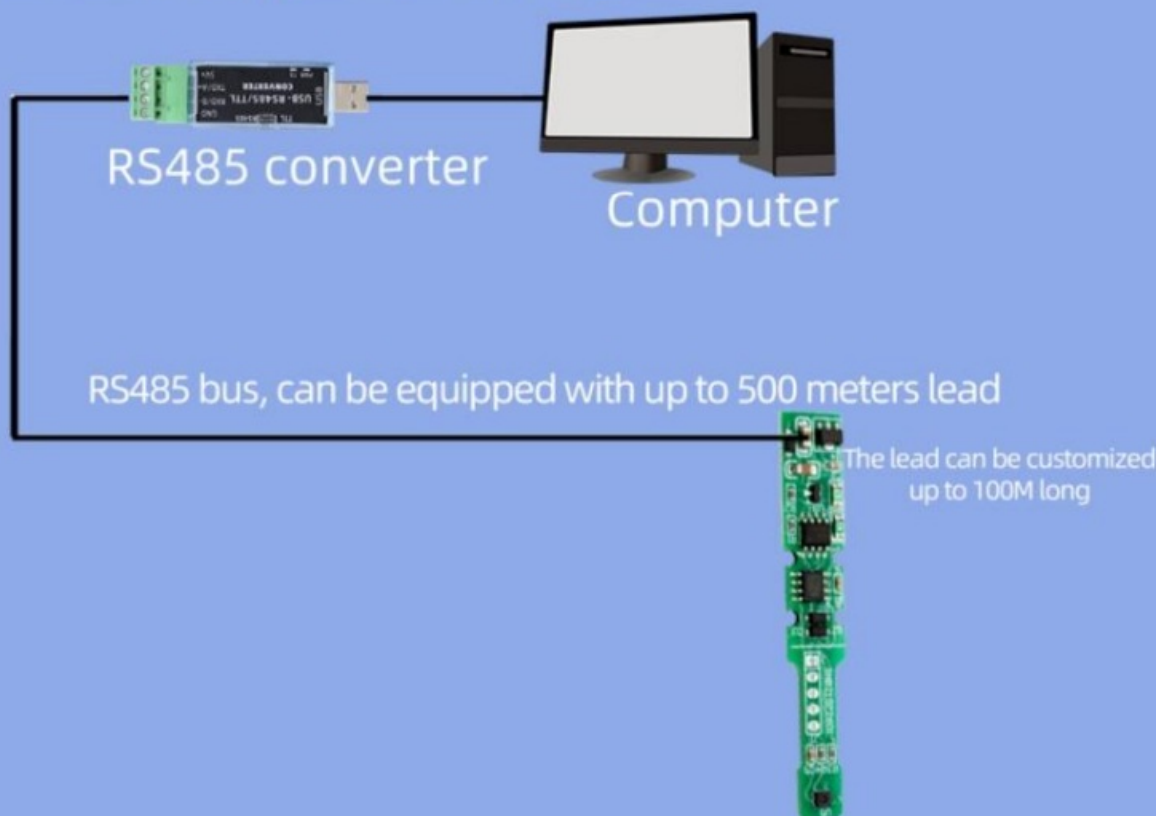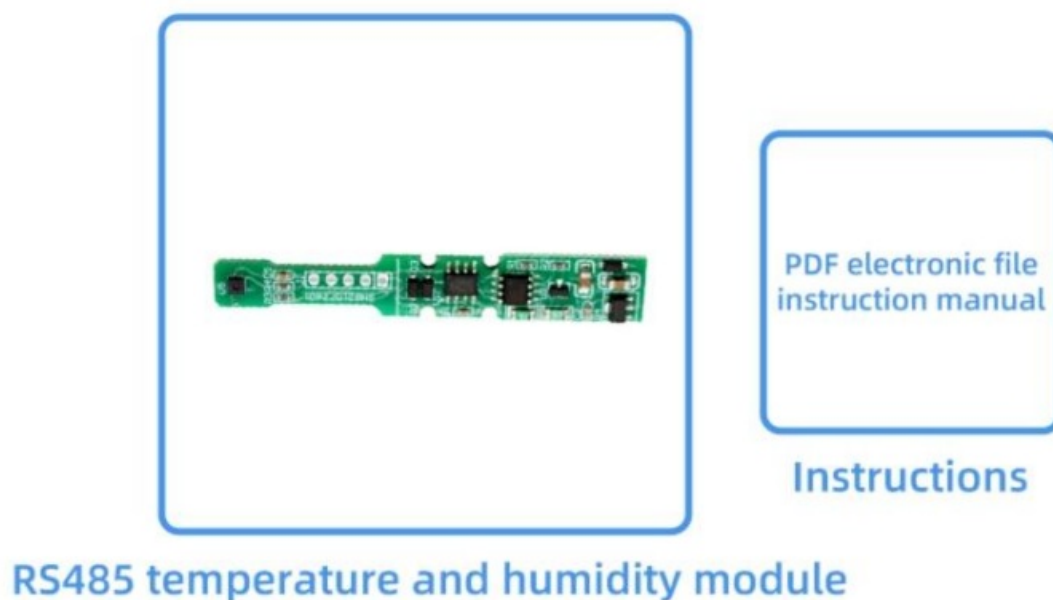

Application solution

RS485 networking application scheme

RS485 bus

485 converter

Can Be More than one network

Computer

Measuring area

Measuring area

Measuring area

Measuring area

Stand-alone application program

RS485 converter

Computer

RS485 bus, can be equipped with up to 500 meters lead

The lead can be customized up to 100M long

Product List

PDF electronic file instruction manual

Instructions

RS485 temperature and humidity module

Communication Protocol

The product uses RS485 MODBUS-RTU standard protocol format, all operation or reply commands are hexadecimal data. The default device address is 1 when the device leaves the factory, and the module or NON-Recorder default baud rate is 9600,8,n,1 ,but data recorder default baud rate is 115200 .

Read data (function code 0x03)

Inquiry frame (hexadecimal), sending example: query 1 data of 1# device, the upper computer sends the command: 01 03 00 00 00 02 C4 0B .

Address	Function Code	Start Address	Data Length	Check Code
01	03	00 00	00 02	C4 0B

For the correct query frame, the device will respond with data: 01 03 04 00 7A 00 00 DB EA , response format:

Address	Function Code	Length	Data 1	Data 2	Check Code
01	03	04	00 79	00 7A	DB EA

Data description: The data in the command is hexadecimal, take data 1 as an example, 00 79 is converted to decimal value as 121, assuming the data magnification is 100, then the real value is 121/100=1.21, Others and so on.

Common data address table

Configuration Address	Register Address	Register Description	Data Type	Value Range
40001	00 00	temperature	Read Only	0~65535
40002	00 01	humidity	Read Only	0~65535

40101	00 64	Model Code	Read/Write	0~65535
40102	00 65	total number of measuring points	read/write	1~20
40103	00 66	device address	read/write	1~249
40104	00 67	baud rate	read/write	0~6
40105	00 68	communication mode	read/write	1~4
40106	00 69	protocol type	read/write	1~10

Read and modify device address

Read or query device address
If you don't know the current device address and there is only one device on the bus, you can query the device address through the commandFA 03 00 66 00 01 71 9E .

Device Address	Function Code	Start Address	Data Length	Check Code
FA	03	00 66	00 01	71 9E

FA means 250 is the general address, when you don't know the address, you can use 250 to get the real device address, 00 66 is the device address register.

For the correct query command, the device will respond, for example, the response data is: 01 03 02 00 01 79 84, and its format parsing is shown in the following table:

Device Address	Function Code	Start Address	Model Code	Check Code
01	03	02	00 01	79 84

In the response data, the first byte 01 represents the real address of the current device.

Change device address

For example, if the current device address is 1 and we want to change it to 02, the command is: 01 06

Device Address	Function Code	Register Address	Target Address	Check Code
01	06	00 66	00 02	E8 14

In the response data, after the modification is successful, the first byte is the new device address. Generally, after the device address is changed, it will take effect immediately. At this time, the user needs to change the query command of his software accordingly. .

Read and modify baud rate

Read baud rate

The default factory baud rate of the device is 9600. If you need to change it, you can change it according to the following table and the corresponding communication protocol. For example, to read the baud rate ID of the current device, the command is: 01 03 00 67 00 01 35 D5 , the format is parsed as follows.

Device Address	Function Code	Start Address	Data Length	Check Code
01	03	00 67	00 01	35 D5

Read the baud rate code of the current device. Baud rate code: 1 is 2400; 2 is 4800; 3 is 9600; 4 is 19200; 5 is 38400; 6 is 115200.

For the correct query command, the device will respond, for example, the response data is: 01 03 02 00 03 F8 45, and its format analysis is shown in the following table:

Device Address	Function Code	Data Length	Baud Rate Code	Check Code
01	03	02	00 03	F8 45

According to the baud rate code, 03 is 9600, that is, the baud rate of the current device is 9600.

Change the baud rate

For example, change the baud rate from 9600 to 38400, that is, change the code from 3 to 5, the command is: 01 06 00 67 00 05 F8 16 .

Device Address	Function Code	Register Address	Target Baud Rate	Check Code
01	06	00 67	00 05	F8 16

Change the baud rate from 9600 to 38400, that is, change the code from 3 to 5. The new baud rate will take effect immediately, and the device will lose response at this time, and the baud rate of the device needs to be checked accordingly Modified.

Read and modify correction value

Read correction value
When there is an error between the data and the reference standard, we can reduce the display error by adjusting the correction value. The correction difference can be modified in a rang e of plus or minus 1000, that is, the value range is 0-1000 or 64535 -65535. For example, when the displayed value is too small by 100, we can correct it by adding 100. The command is: 01 03 00 6B 00 01 F5 D6 . In the command, 100 is hexadecimal 0x64 ;If you need to reduce it, you can set a negative value, such as -100, the corresponding hexadecimal value is FF 9C, the calculation method is 100-65535=65435, and then converted to hexadecimal, it is 0x FF 9C. Device The correction value starts from 00 6B. We take the first parameter as an example to illustrate. When there are multiple parameters, the correction value is read and modified in the same way.

Device Address	Function Code	Start Address	Data Length	Check Code
01	03	00 6B	00 01	F5 D6

For the correct query command, the device will respond, for example, the response data is: 01 03 02 00 64 B9 AF, and its format parsing is shown in the following table:

Device Address	Function Code	Data Length	Correction Value	Check Code
01	03	02	00 64	B9 AF

In the response data, the first byte 01 represents the real address of the current device, and 00 6B is the first state correction value register. If the device has multiple parameters, other parameters operate in the same way as this The same, generally temperature and humidity have this parameter, and lighting generally does not have this parameter.

Change the correction value
For example, if the current state is too small, we want to add 1 to its real value, and add 100 to the current value. The correction operation command is: 01 06 00 6B 00 64 F9 FD .

Device Address	Function Code	Register Address	Target Address	Check Code
01	06	00 6B	00 64	F9 FD

After the operation is successful, the device will return the information: 01 06 00 6B 00 64 F9 FD , after the successful change, the parameters will take effect immediately.

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Documents / Resources

INTOIOT YM7320B Temperature and Humidity Sensor Module [pdf] User Manual
YM7320B Temperature and Humidity Sensor Module, YM7320B, Temperature and Humidity Sensor Module, Humidity Sensor Module, Sensor Module

References

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- **User Manual**