KTH2-RM, KTH2-R-PE, KTH2-R-PVC RS485 communication Probe-type temperature and humidity transmitter

Quick Application Manual



Chengdu Ebyte Electronic Technology Co.,Ltd.

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Chapter 1 Rapid Product Application

This manual provides a quick application guide for the KTH2-RX probe-type temperature and humidity sensor module, using RS485 communication. The following sections will explain how to apply the product.

1.1 Preparation before use

The checklist to be prepared before using the KTH2-RX is shown in Table 1-1 below.

Table 1-1 List of Components to be Prepared

List	quantity	Remark
KTH2-RX	1 (piece)	
host computer	1 (piece)	A serial port driver should be installed.
USB to 485 module	1 (piece)	
DC12V power supply	1 (piece)	
Cable	several	

This section will explain the product hardware connections and related parameter settings.

1.2 Product hardware connection

The KTH2-RM (metal casing), KTH2-R-PVC (PVC casing), and KTH2-R-PE (PE casing) have the same external leads. This demonstration will use KTH2-R-PE as the model. The connection of the other two models can be referenced from KTH2-R-PE.

The cables in this product are color-coded to indicate their function: red is the positive power supply, black is the negative power supply, green is for 485 communication A, and yellow is for 485 communication B.

Figure 1-1 below shows the KTH2-R-PE connected to the USB to 485 communication module and power supply.

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Figure 1-1 Product Hardware Connection

1.3 Product Use

This chapter will detail how to quickly read and modify corresponding parameters using commands. Modifiable parameters include Modbus address, serial port baud rate, and parity bit. Readable parameters include temperature, humidity, serial port parameters, Modbus address, etc.

The default parameters for this product are: Modbus address 0x01, serial port baud rate 9600bps, and no parity. The following sections will explain how to configure and describe these parameters. For detailed information on Modbus function codes, register addresses, register contents, etc., please refer to the product manual.

The following explanation will use the temperature and humidity host computer software "Kejiexun Product General Configuration Software".

1.3.1 Serial port driver installation

If you have not used a USB to 485 (USB to TTL) adapter before or your computer does not have the CH340 driver, you need to install the driver first; if you have the CH340 driver, you can ignore section 1.3.1.

The installation steps for the host computer driver are as follows:

1. Locate the CH340 driver, click "Download Materials," and obtain the product information.
   CH340drive-Chengdu Kejiexun Electronic Technology Co., Ltd.



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Figure 1-1 CH340 driver storage location

2. After downloading and extracting, open the folder and select the corresponding driver;

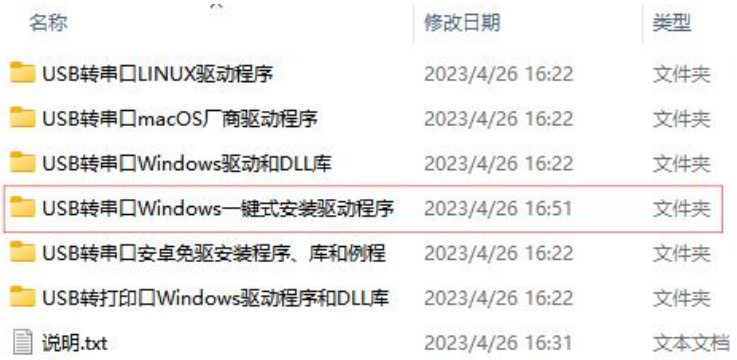


Figure 1-2 Driver Directory

3. After opening, double-click CH341SER.EXE;

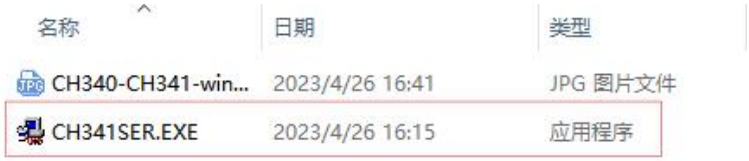


Figure 1-3 Application Content

4. Click to install;

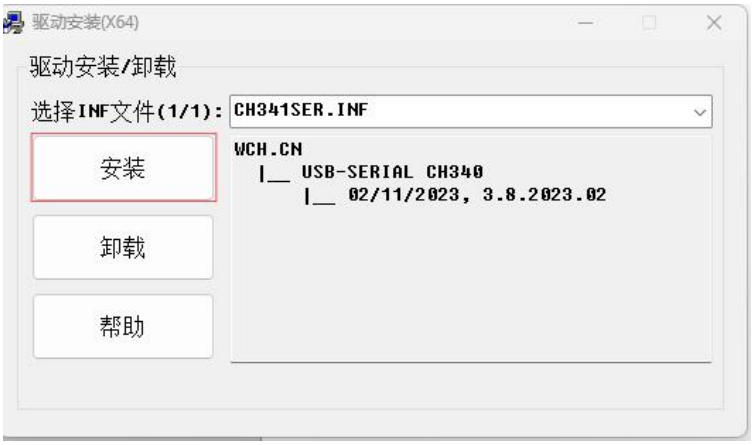


Figure 1-4 Driver installation interface

5. The following message will be displayed after successful installation;

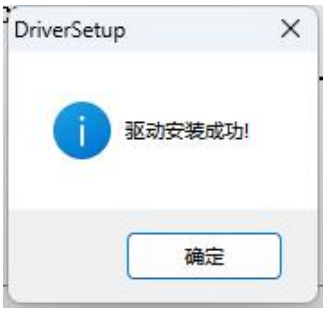


Figure 1-5 Driver installation success message

6. After connecting the USB to 485 device to the computer, open Device Manager, and the host computer will automatically recognize the port.

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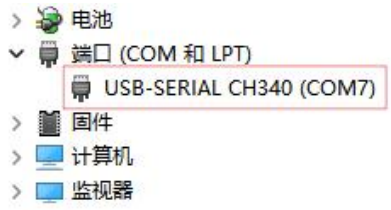


Figure 1-6 Host computer port directory

1.3.2 Serial port connection

This example will demonstrate the relevant parameters and connection of the serial port, as shown in Figure 1-7 below.

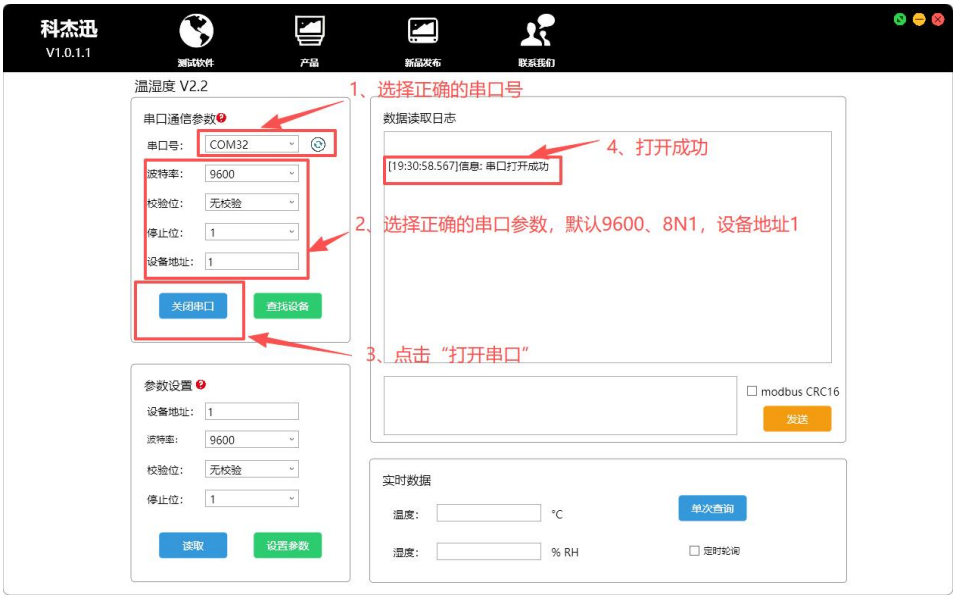


Figure 1-7 Serial communication configuration parameter interface

1.3.3 Serial port parameter modification and address setting

The serial port parameter modification and module Modbus address setting are shown in Figure 1-8 below.

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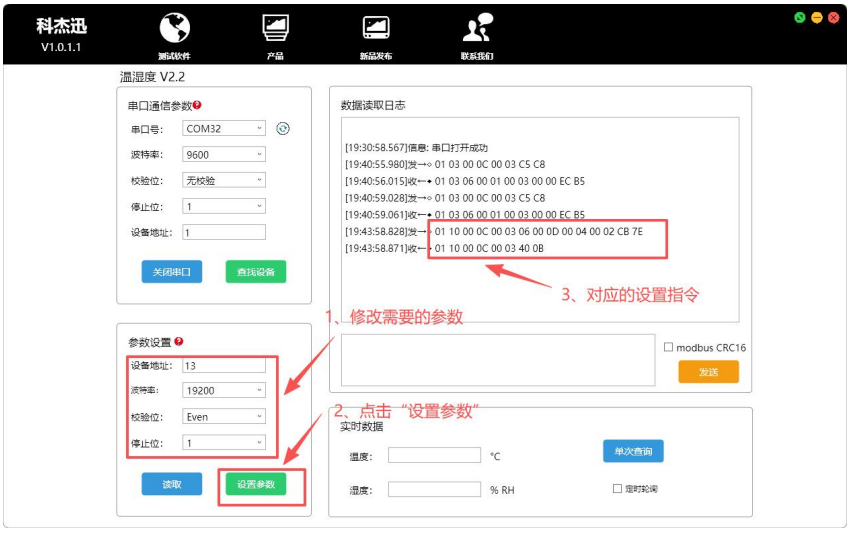


Figure 1-8 Schematic diagram of serial port parameter modification and address setting

1.3.4 Read temperature and humidity

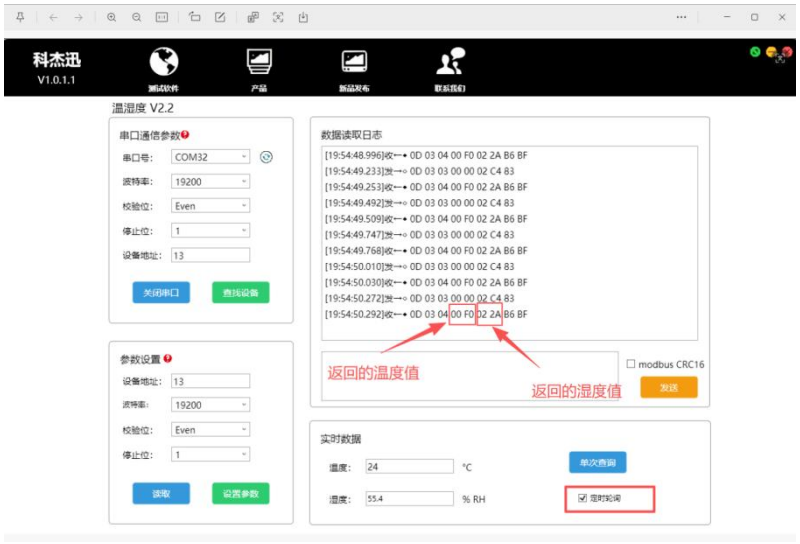


Figure 1-9 Temperature and humidity reading interface

1.4 Read temperature and humidity instructions

send	Modbus address	Function code	Operate register address	Manipulate register values	CRC16 checksum
	01	03	03 00	00 02	C4 4F

take over	Modbus address	Function code	Number of bytes returned	Register content value	CRC16 checksum
	01	03	04	01 02 02 88	5B 09

The received response was "01 03 04 01 02 02 88 5B 09". The process of converting it into actual temperature and humidity values is as follows:

0x01 02 = 0d258 = 258 * 1LSB = 25.8°C;

0x02 88 = 0d648 = 648 * 1LSB = 64.8%RH.

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