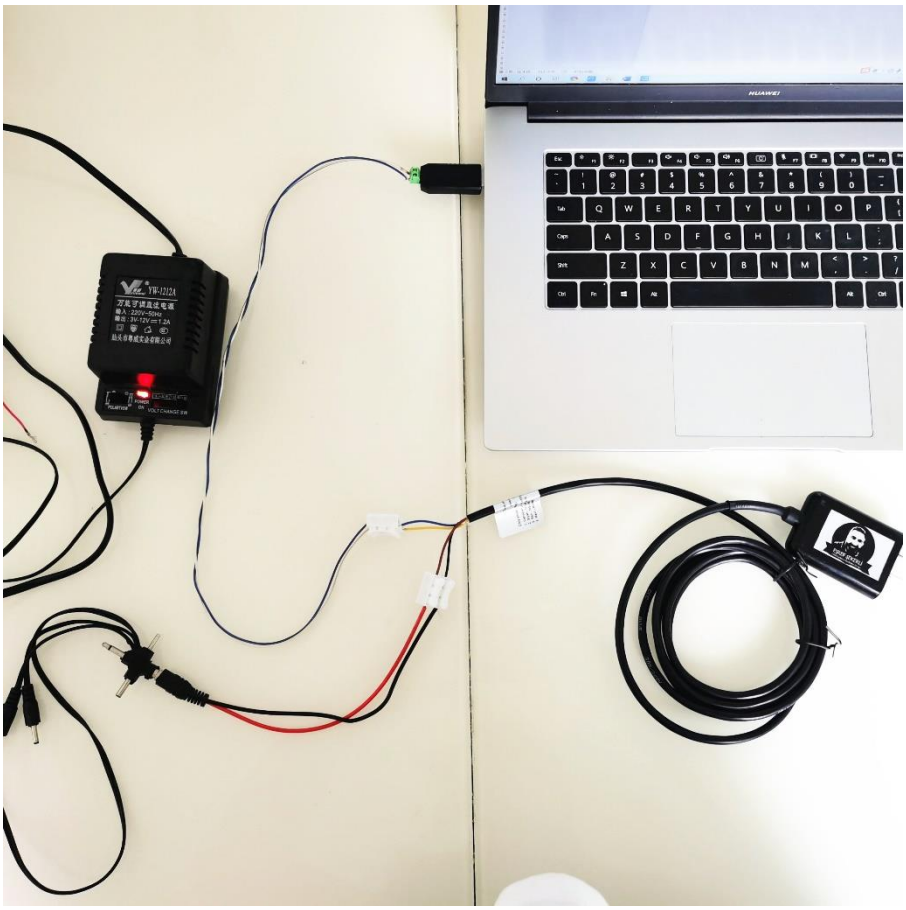
HONDE TECHNOLOGY CO.,LTD

Water PH sensor instruction manual



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https://hondetec.en.alibaba.com/

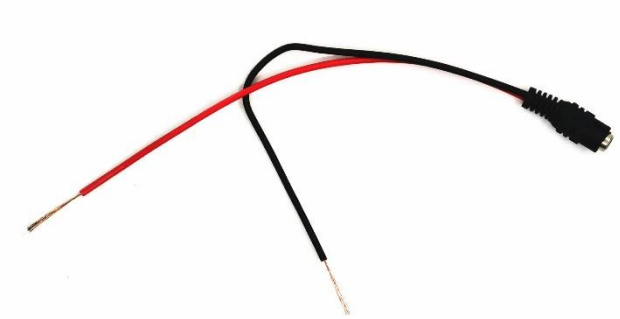
1. Hardware preparation

1.1 DC power supply:12~24V, above 100mA

Due to different connector standards, it is recommended to purchase locally.

1.2 Power interface conversion line

It is used for the connect the power to the sensors.

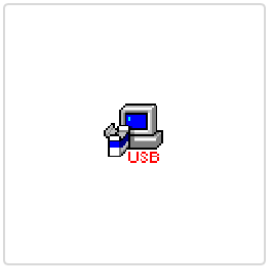


1.3 RS485-USB converter

1. It is used for the connect the sensor to the PC.

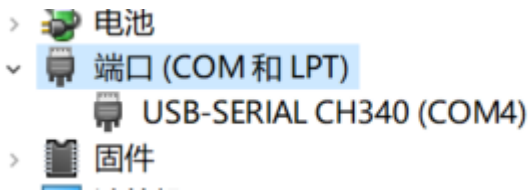
2. Install the RS485-USB converter driver

Please check it in the attachment and please insert the RS485-USB converter first to your PC, and then install the driver.



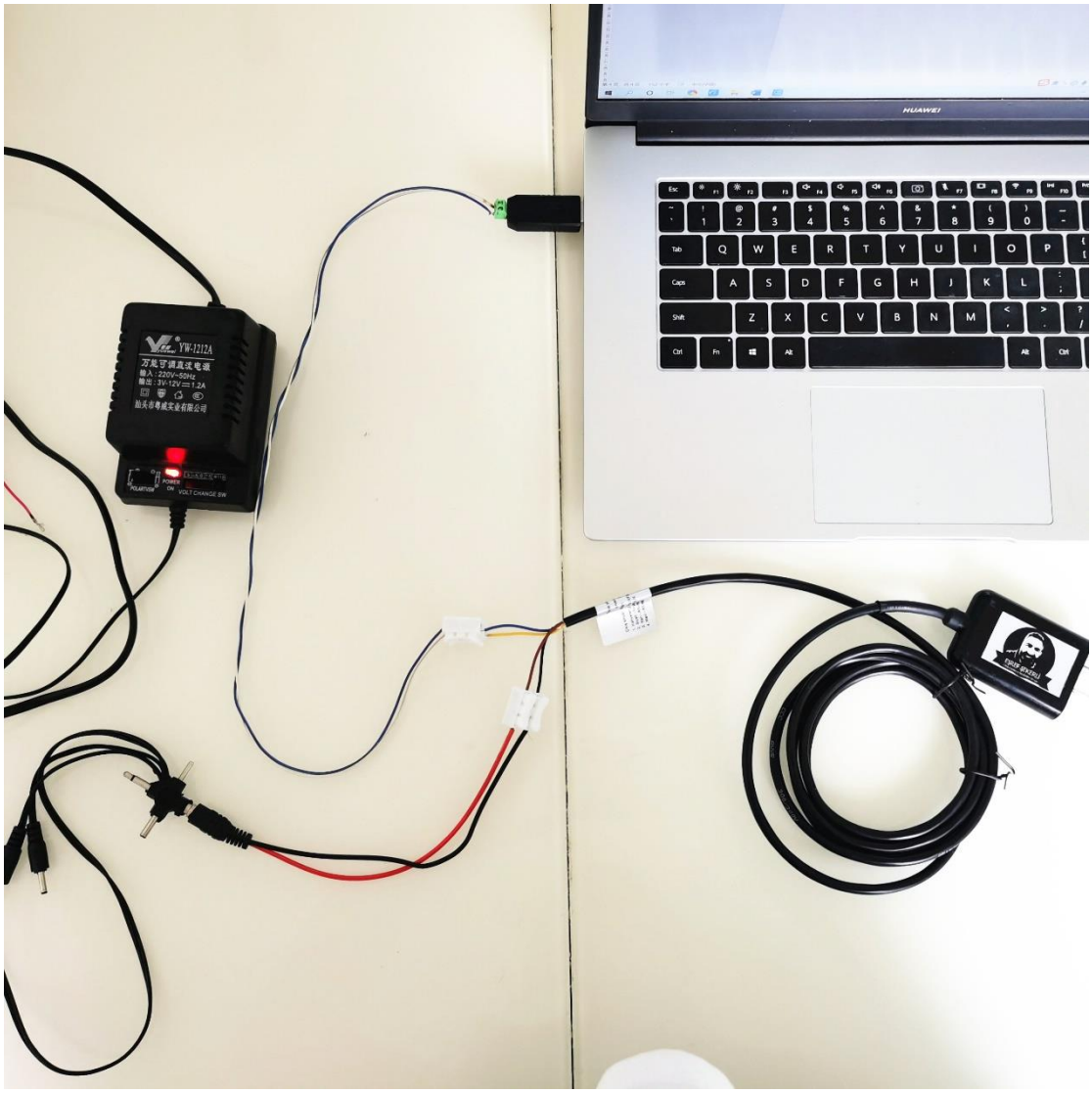
3. Check the USB COM port NO. and remember it, the following steps will use this COM port NO., the view method is as follows:

My Computer ---> Properties ---> Device Manager ---> Double-click Ports (COM and LPT) ---> USB-SERIAL CH340 (COM4), COM 4 is the COM port NO. we will use later.



4. The test sensors

2. Hardware connection



1. Sensor connect

Please pay attention the wire connect order:

1.Sensor red wire connect the power positive 5-24VDC.

2.Sensor black wire connect the power negative

3.Sensor yellow wire connect the RS485-USB converter RS485A (it shows “A” or “D+” in the converter)

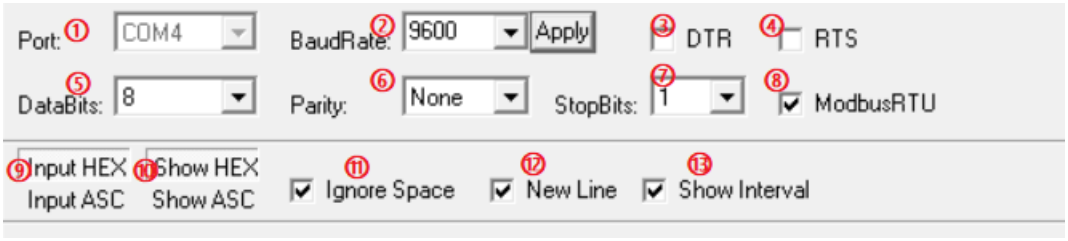
4.Sensor green wire connect the RS485-USB converter RS485B (it shows ”B” or “D-“ in the converter)

Note: The wiring sequence must not be wrong

3. Set the test software

1. Please open the commix software in the attachment

2. Make the settings as following



(1) Port : Please choose the port COM NO. just checked from your PC.

(2) Baud Rate: Please choose the 9600 (The sensor default is 9600), and then click the “apply”.

(3) DTR is empty

(4) RTS is empty

(5) Data Bits: 8

(6) Parity: None

(7) Stop Bits: 1

(8) Modbus RTU (Please click here to choose the Modbus RTU)

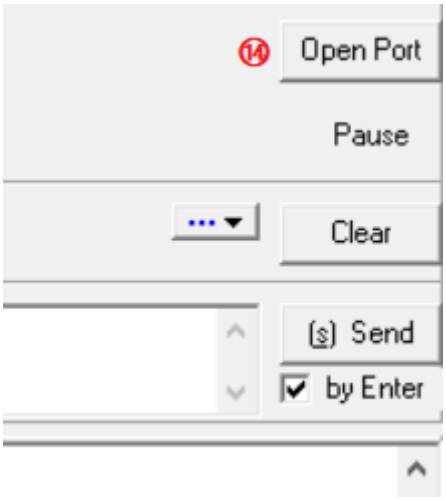
(9) Choose " Input HEX"

(10) Choose "Show HEX"

(11) Choose" Ignore space"

(12) Choose "New line"

(13) Choose "Show interval"



(14) Open port

Above are the basic set of the software.

4. Test the sensors

1. Connect the wires in the above order

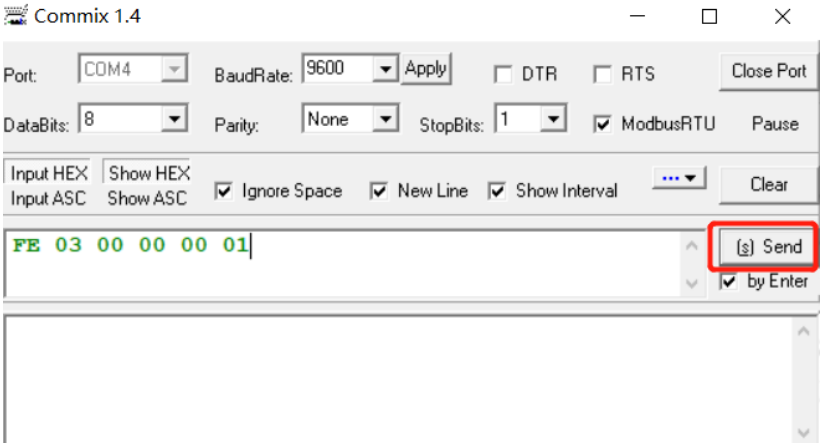
2 . Query data PH sensor

Standard Modbus-RTU protocol, baud rate: 9600; check digit: none; data bit: 8; stop bit: 1

(1). Query data

Query the data of the transmitter (If the sensor address is 01) (PH value), host → slave

FE 03 00 00 00 01



It means:

Address	Function code	Start register address high	Start register address low	Register length high	Register length low
0XFE	0X03	0X00	0X00	0X00	0X01

If the transmitter receives correctly, return the following data(for example, the sensor address is 01 and PH value is 6.86), slave → host

01 03 02 02 AE 38 98, it means:

Address	Function code	Data length	Register 0 data high	Register 0 data low	CRC16 low	CRC16 high
0X01	0X03	0X02	0X02	0XAE	0x38	0X98
			PH Value			

Data representation method:

PH value representation: Convert data to decimal ÷100

The above data indicates that the pH value is 6.86

(2) .PH value offset calibration

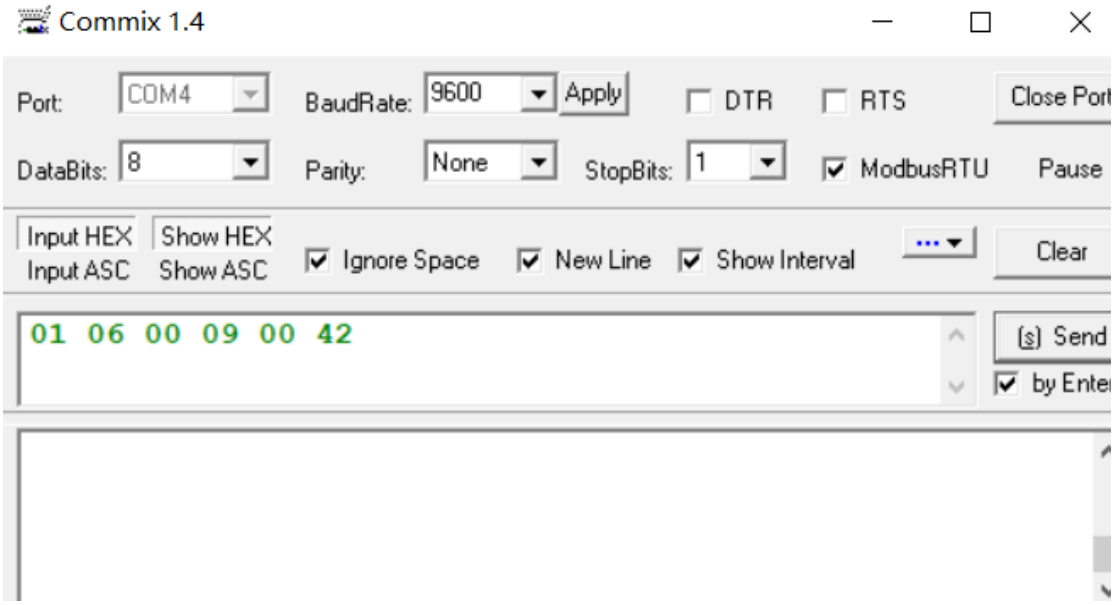
Data description	Data length	Register address	Type of data	Read and write type	Note
PH offset value	1	0X0009	Integer	Read/Write	Numerical accumulation, 0X0000: Restore to the initial value

For example add 0.66 to the sensors address 01 to the present value, send the following instruction

First, if add 0.66 to the PH value, need write 66 to the sensor in the register of the 00 09.

Second, change the 66 to the HEX is 00 42

So need send the following information:



If success, feed back :01 06 00 09 00 42 78 D8.

(3). Modify the sensor address, for example: change the address of the transmitter with address 1 to 2,

host → slave

Original address	Function code	Reserved 1	Reserved 2	Reserved 3	new address	CRC16 low	CRC16 high
0X01	0X06	0X00	0X00	0X00	0X02	0X08	0X0B

If the transmitter receives correctly, return the following data, slave → host

Original address	Function code	Data length	Reserved 1	new address	CRC16 low	CRC16 high
0X01	0X06	0X02	0X00	0X02	0X39	0X49

Remark: If you forget the original address of the sensor, you can use the broadcast address 0XFE instead. When using 0XFE, the host can only be connected to one slave, and the return address is still the original address, which can be used as the address query method.

Please pay attention that, there is no need send the CRC in above software, so just send :

01 06 00 00 00 02 is ok.