

User Manual for MSR102 Fully Functional RTU Product



Table of Contents

1. Product Introduction of MSR102 Series	1
2. Technical Specifications	1
2.1. Power Supply Parameters	1
2.2 Signal	1
2.3. Performance Specifications	1
2.4. Ports	2
3. Instructions	4
3.1 Installation Steps	4
3.2 Wiring Mode	4
3.1. Connect to the Cloud Platform	5
3.3.1. Network Port Realizes MAC Cloud Platform via MODBUS RTU Protocol	5
3.4.MAC Cloud Platform Display	17
3.4.1. Wireless Terminal Realizes MAC Cloud Platform via MQTT Protocol	18
4. Protocol Description	20
4.1 RTU Register Address List with MODBUS Function	20
4.2 MQTT Protocol	22
5. Description of External 485 Device	23
5.1.Connect to RS485-W608 Data Acquisition Card Supporting MODBUS RTU Protocol	23
6. Operation Interface of MSR102 RTU	24
6.1. Device Operation Interface	24
6.1.1 Display Screen	25
6.2.2 Main Menu	25
7. Common Faults and Precautions	27
7.1. Common Faults	27
7.2. Precautions	27

1. Product Introduction of MSR102 Series

MSR102 is a multi-functional host for wireless remote monitoring, management, measurement and control, easy to install, having complete functions. It integrates analog signal acquisition, switch value input, relay output, counting and wireless data communication. It can be directly connected to analog signals, level signals, dry contacts, pulse signals output by various sensors and meters, etc. And two RS485 (southbound and northbound) interfaces are provided, which makes it easier to connect to the upper computer and to read the data of the lower computer. It is an ideal choice for realizing wireless remote monitoring and data collection.

2. Technical Specifications

2.1. Power Supply Parameters

- (1) Supply voltage: DC12-24V
- (2) Current: 0.5A (MAX) @DC12V
- (3) External power supply: current limit $<1A$, voltage equal to equipment supply voltage

2.2 Signal

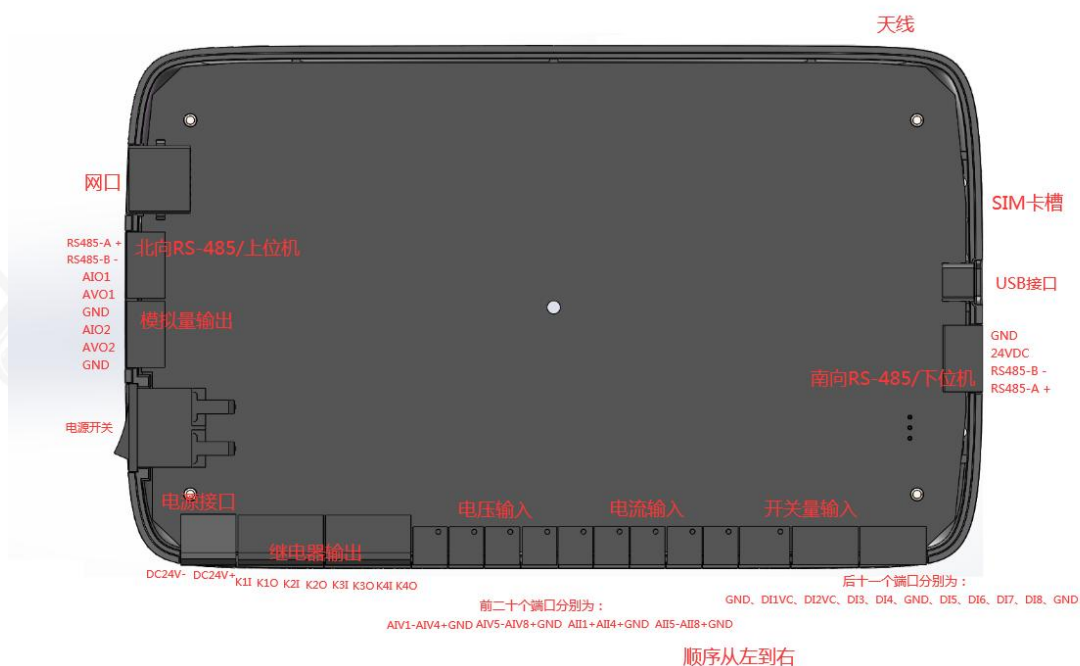
- (1) Wireless signal access: 2G, WIFI, 4G (choose one)
- (2) Analog input: 8 channels 0-20mA input, 8 channels 0-5V voltage input
- (3) Analog output: 2 channels, 0-20mA output, 0-10V output optional
- (4) Acquisition accuracy: 0.2%
- (5) Output accuracy: 0.3%
- (6) Switch value input: 8-channel active input, among which DI0 and DI1 channels support counting, and the speed of DI0 up to 6MHz, DI1 above 100MHz
- (7) Relay output: 4-channel relay output function, AC220V/5A DC30V/5A, max

2.3. Performance Specifications

- (1) Environmental-friendly flame retardant plastic shell, color customizable, black by default
- (2) USB TYPE-C interface for setting, debugging and upgrading
- (3) Power, alarm and network indicator
- (4) Push-type buttons
- (5) Two communication interfaces of southbound and northbound RS485

- (6) 1.3 inch OLED screen display
- (7) 100M RJ45 interface
- (8) Drawer type SIM card holder
- (9) Weight of 600g
- (10) SMA antenna socket
- (11) Normal work 200mA
- (12) Standard plug-in terminal interface
- (13) Ship type power switch
- (14) Dimension: 207×126×33mm
- (15) Working environment of -20°C~60°C 0%~95%RH
- (16) Storage environment of -30°C~65°C 30%~80%RH

2.4. Ports



RS485-A+: RS485 communication interface(+)

RS485-B-: RS485 communication interface(-)

AI1: Analog current output channel 1

AV1: Analog voltage output channel 1

GND: power supply (-)

AI2: Analog current output channel 2

AV2: Analog voltage output channel 2

DC24V-: 24V power supply (-)

DC24V+: 24V power supply(+)

K1I: the first pin input of the first relay

K1O: The second pin output of the first relay

K2I: the first pin input of the second relay

K2O: the second pin output of the second relay

K3I: the first pin input of the third relay

K3O: The second pin output of the third relay

K4I: the first pin input of the fourth relay

K4O: The second pin output of the fourth relay

AIV1: The first channel analog voltage input

AIV2: The second channel analog voltage input

AIV3: The third channel analog voltage input

AIV4: The fourth channel analog voltage input

AIV5: The fifth channel analog voltage input

AIV6: The sixth channel analog voltage input

AIV7: The seventh channel analog voltage input

AIV8: The eighth channel analog voltage input

AII1: Analog current input of Channel 1

AII2: Analog current input of Channel 2

AII3: Analog current input of Channel 3

AII4: Analog current input of Channel 4

AII5: Analog current input of Channel 5

AII6: Analog current input of Channel 6

AII7: Analog current input of Channel 7

AII8: Analog current input of Channel 8

DI1VC: switch value input channel 1 (countable)

DI2VC: switch value input channel 2 (countable)

DI3: switch value input channel 3

DI4: switch value input channel 4

DI5: switch value input channel 5

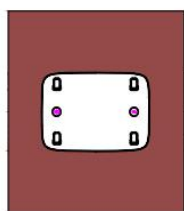
DI6: switch value input channel 6

DI7: switch value input channel 7

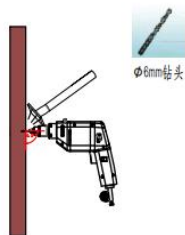
DI8: switch value input channel 8

3. Instructions

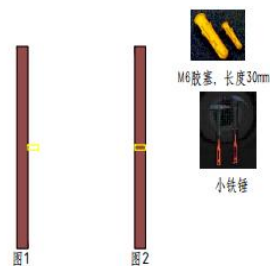
3.1 Installation Steps



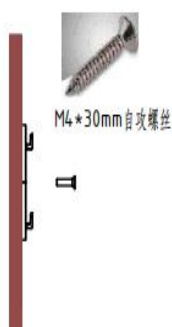
1. 将安装板放在安装位置并用水平仪测量水平度,然后使用标记器标记孔位置。



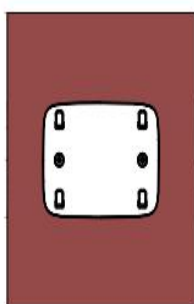
2. 用带Φ6钻头的电钻钻取做标记的位置, 钻孔深度为40mm的2个孔用来放胶基的大小(胶基规格M6*30mm), 然后用吸尘器把表面的灰尘吸干净, 如图所示。



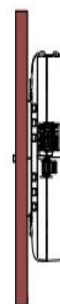
3. 把胶基对准所钻取的两个Φ6mm孔, 在用锤子敲进去与墙面水平即可, 如图1、图2所示。



4. 在用2个M4 (M4*30mm) 自攻螺丝对准所放M6胶基的位置固定, 如图所示。



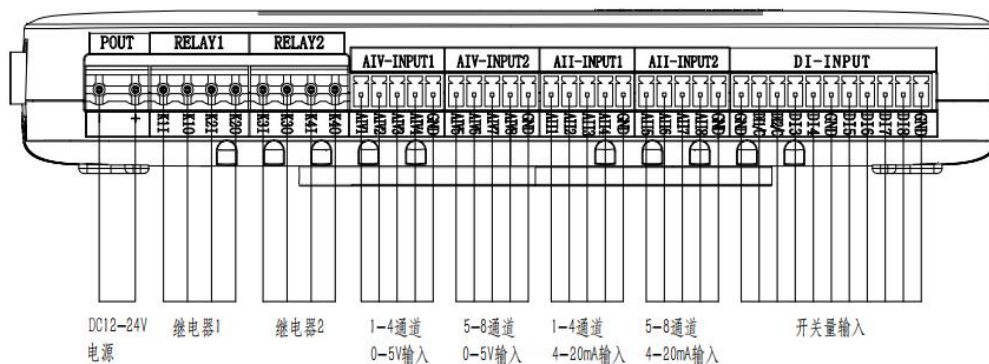
5. 用十字板手拧紧, 如图所示。



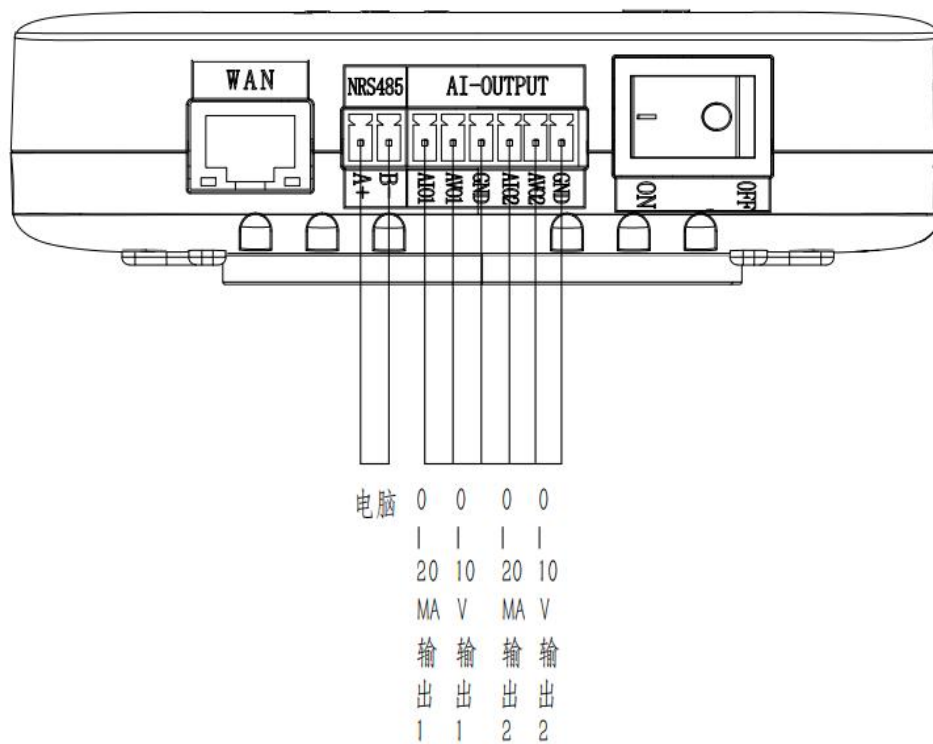
6. 然后用主机从后盖扣住挂钩, 如图所示。

3.2 Wiring Mode

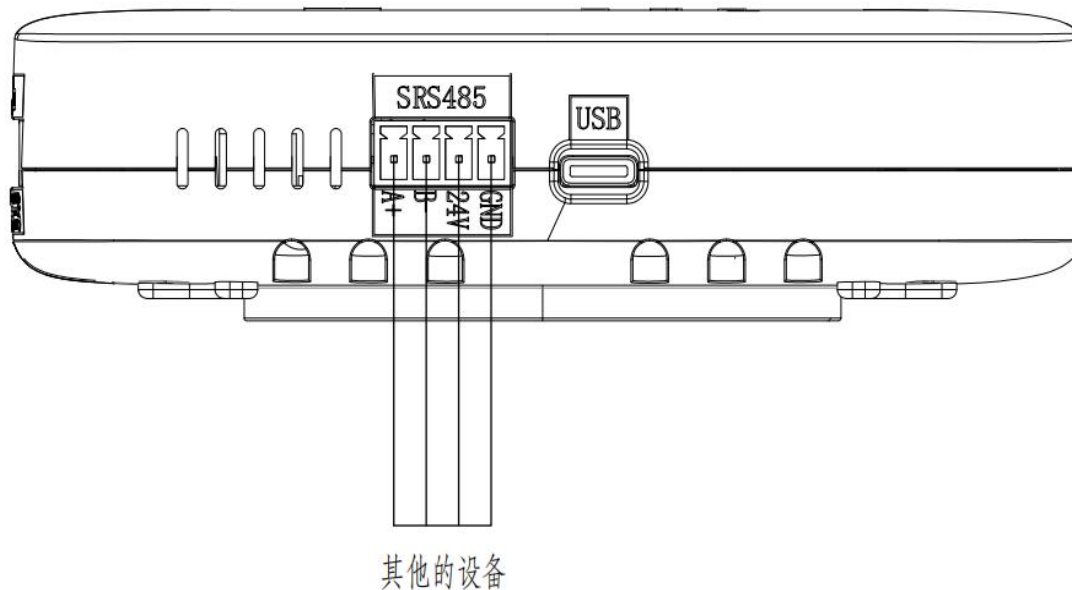
(1) RTU front wiring method



(2) RTU wiring on the left side



(3) RTU wiring on the right side

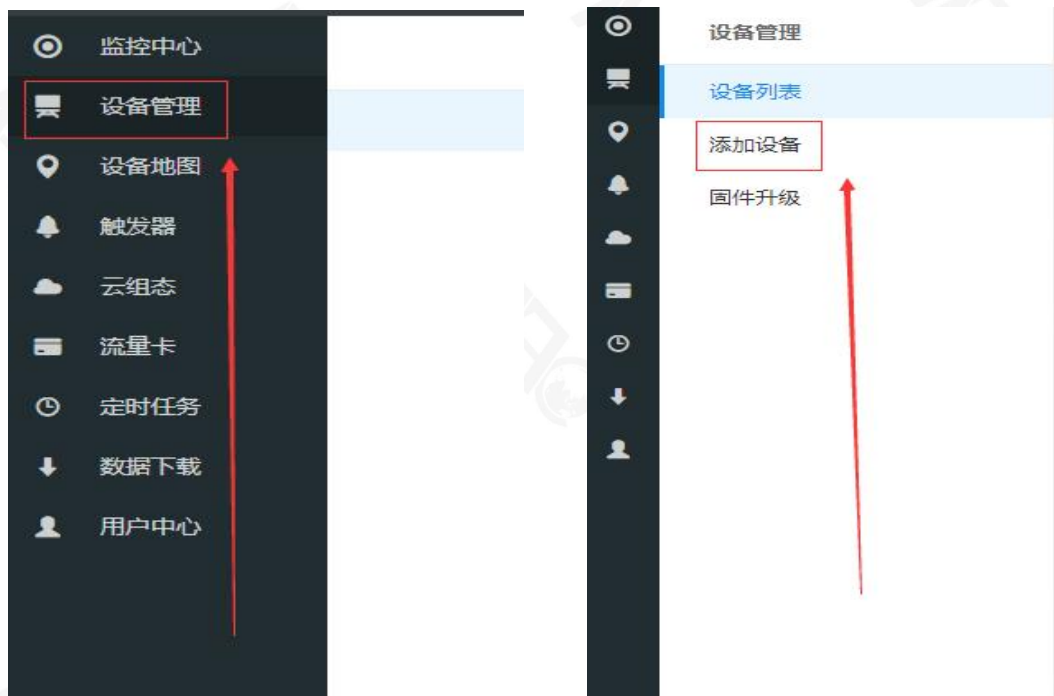


3.1. Connect to the Cloud Platform

3.3.1. Network Port Realizes MAC Cloud Platform via MODBUS RTU Protocol

(1) MAC platform configuration

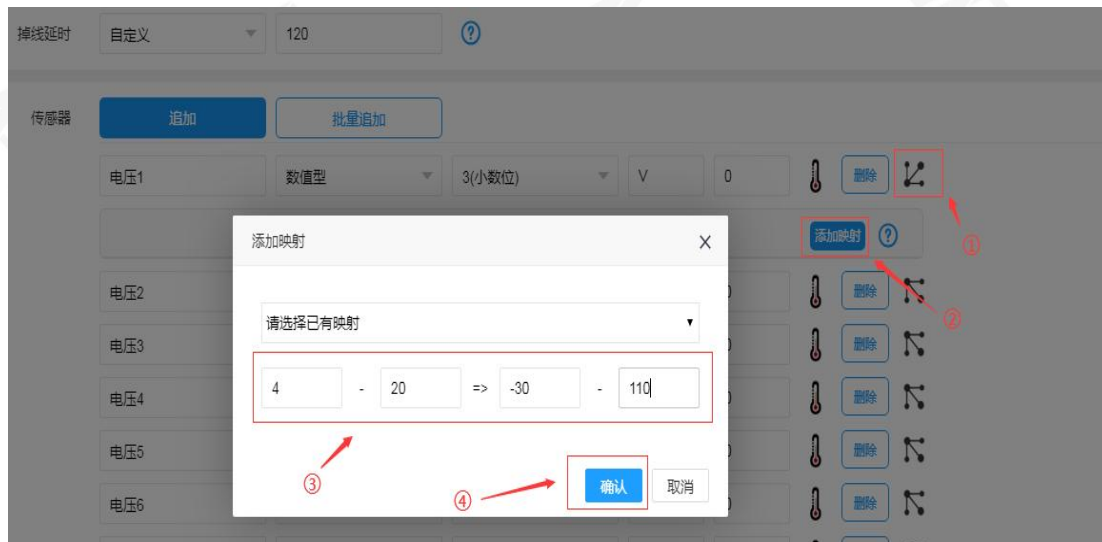
① Log in to the IoT platform <http://www.mac-smart-iot.com/index.htm> users without platform accounts can register by themselves. After login-in, click Device Management in the left toolbar, and then click Add Device. As shown below:



②In Add Device interface, users can set device related information. The specific operation interface is shown in the figure below:

电压1	传感器名称	数值型	传感器类型	3(小数位)	小数位	V 单位	0 序号	删除	↕
电压2		数值型		3(小数位)		V	0	删除	↕
电压3		数值型		3(小数位)		V	0	删除	↕
电压4		数值型		3(小数位)		V	0	删除	↕
电压5		数值型		3(小数位)		V	0	删除	↕
电压6		数值型		3(小数位)		V	0	删除	↕

③Click MORE and then click Add Mapping to add the mapping of the corresponding sensor. The first half of the mapping is the voltage or current range (4-20ma or 0-5V) output by the sensor, and the second half is the range range. For example, sensor-1 is a temperature sensor with an output of 4-20mA, and the temperature measurement range is -30°C—110°C. When adding a mapping, you can set it as shown in the figure below:

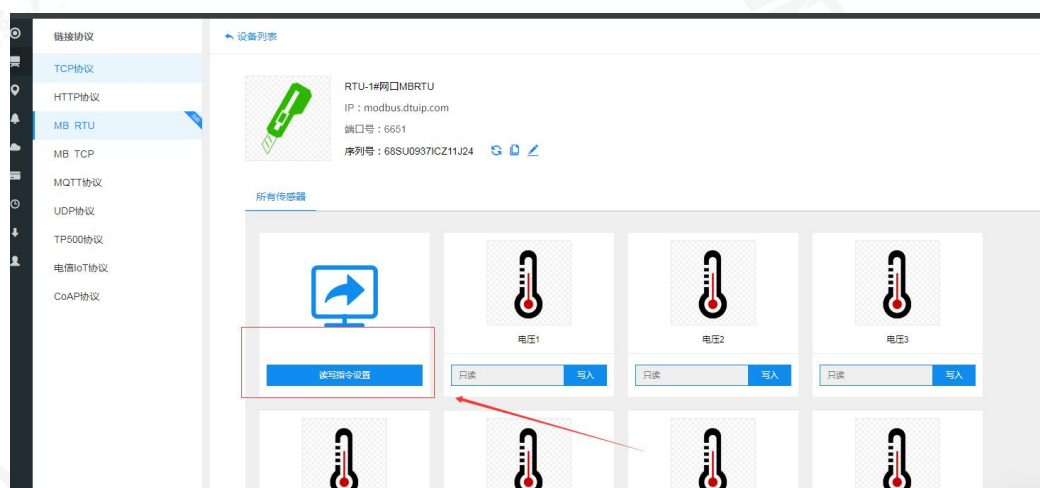


④ After configuration, select the approximate geographic location of the device on the map, and click Create Device to complete the creation of the device.

⑤ After creating the device, click the device option in the left menu bar to view the added device, namely RTU-1#net port MBRTU device, and click Connection Setting of the RTU-net port MBRTU .



⑥ After entering the device connection interface, click Read and Write Command Setting. As shown below:



⑦ Configure read and write commands. Click OK after configuration. (The device register address is listed below and can be set as required) as shown in the figure below:

读写指令设置

序号	传感器	从站地址	功能码	偏置	数据格式	数据位	字节顺序	采集周期
1	电压1	1	04只读	1	32位 浮点型数		AB CD	10
2	电压2	1	04只读	3	32位 浮点型数		AB CD	10
3	电压3	1	04只读	5	32位 浮点型数		AB CD	10
4	电压4	1	04只读	7	32位 浮点型数		AB CD	10
5	电压5	1	04只读	9	32位 浮点型数		AB CD	10
6	电压6	1	04只读	11	32位 浮点型数		AB CD	10
7	电压7	1	04只读	13	32位 浮点型数		AB CD	10
8	电压8	1	04只读	15	32位 浮点型数		AB CD	10
9	电流1	1	04只读	17	32位 浮点型数		AB CD	10
10	电流2	1	04只读	19	32位 浮点型数		AB CD	10

确定 取消

读写指令设置

11	电流3	1	04只读	21	32位 浮点型数		AB CD	10
12	电流4	1	04只读	23	32位 浮点型数		AB CD	10
13	电流5	1	04只读	25	32位 浮点型数		AB CD	10
14	电流6	1	04只读	27	32位 浮点型数		AB CD	10
15	电流7	1	04只读	29	32位 浮点型数		AB CD	10
16	电流8	1	04只读	31	32位 浮点型数		AB CD	10
17	继电器1	1	01读写	1	bit			10
18	继电器2	1	01读写	2	bit			10
19	继电器3	1	01读写	3	bit			10
20	继电器4	1	01读写	4	bit			10
21	开关量1	1	02只读	1	bit			10

确定 取消

读写指令设置

22	开关量2	1	02只读	2	bit			10
23	开关量3	1	02只读	3	bit			10
24	开关量4	1	02只读	4	bit			10
25	开关量5	1	02只读	5	bit			10
26	开关量6	1	02只读	6	bit			10
27	开关量7	1	02只读	7	bit			10
28	开关量8	1	02只读	8	bit			10
29	模拟量输出计数1	1	03读写	1	32位 无符号数		AB CD	01
30	模拟量输出计数2	1	03读写	3	32位 无符号数		AB CD	10
31	模拟量输出频率1	1	03读写	5	32位 无符号数		AB CD	10
32	模拟量输出频率2	1	03读写	7	32位 无符号数		AB CD	10

确定 取消

读写指令设置

32	模拟量输出频率2	1	03读写	7	32位 无符号数		AB CD	10
33	模拟量输出1	1	03读写	9	32位 浮点型数		AB CD	10
34	模拟量输出2	1	03读写	11	32位 浮点型数		AB CD	10
35	外接采集卡1	2	03读写	1	32位 浮点型数		AB CD	10
36	外接采集卡2	2	03读写	3	32位 浮点型数		AB CD	10
37	外接采集卡3	2	03读写	5	32位 浮点型数		AB CD	10
38	外接采集卡4	2	03读写	7	32位 浮点型数		AB CD	10
39	外接采集卡5	2	03读写	9	32位 浮点型数		AB CD	10
40	外接采集卡6	2	03读写	11	32位 浮点型数		AB CD	10
41	外接采集卡7	2	03读写	13	32位 浮点型数		AB CD	10
42	外接采集卡8	2	03读写	15	32位 浮点型数		AB CD	10

确定 取消

Note:**1. Slave address**

(1) The platform supports one DTU to access multiple devices (via RS485), so the slave address of each device is required to be different.

2. Function code

(1) 01 read and write: read and write the switch value (bit), the default function code 05 is used to write (no need to set separately), the function code is generally for the switch output point of the PLC (such as the point Q of Siemens PLC) .

(2) 02 read-only: read the switch value (bit), which is read-only and cannot be written. Generally, it is for the switch input point of PLC (such as the point I of Siemens PLC).

(3) 03 read and write: read and write the integer/floating point data, and the default function code 06 is used to write (16-bit integer data) and 10 function code (32-bit and 64-bit integer and floating point data), namely, use 06 for write for a single register and 10 for multiple registers.

(4) 04 Read-only: Read integer/floating-point data, read-only but not write.

3. Bias

(1) Bias indicates the data address. If the data address is expressed in hexadecimal (starting from 0x0000), you need to convert the hexadecimal to decimal and add 1 to get bias value. If the address is represented by area code + serial number (such as 40001), then the bias only takes the serial number (that is, 1).

4. Data format

(1) Bit: Binary bit

(2) 16-bit signed number: occupies 1 bias, 2 bytes, represents positive and negative integers, and the data range is -32768~32767.

(3) 16-bit unsigned number: occupies 1 bias, 2 bytes, represents a positive integer, and the data range is 0~65535.

(4) read and write 16-bit bit-by-bit : occupies 1 bias, which represents 16-bit binary, and specifies the specific bit by data bits (1~16).

(5) 32-bit signed number: occupies 2 biases, 4 bytes, representing positive and negative integers, and the data range is -2147483648~2147483647.

(6) 32-bit unsigned number: occupies 2 offsets, 4 bytes, representing a positive integer, data example 0~4294967295.

(7) 32-bit floating-point number: occupies 2 biases, 4 bytes, representing positive number, negative number, positive number and decimal numbers.

(8) 64-bit floating-point number: occupies 4 biases, 8 bytes, representing positive numbers, negative numbers, positive numbers, and decimals.

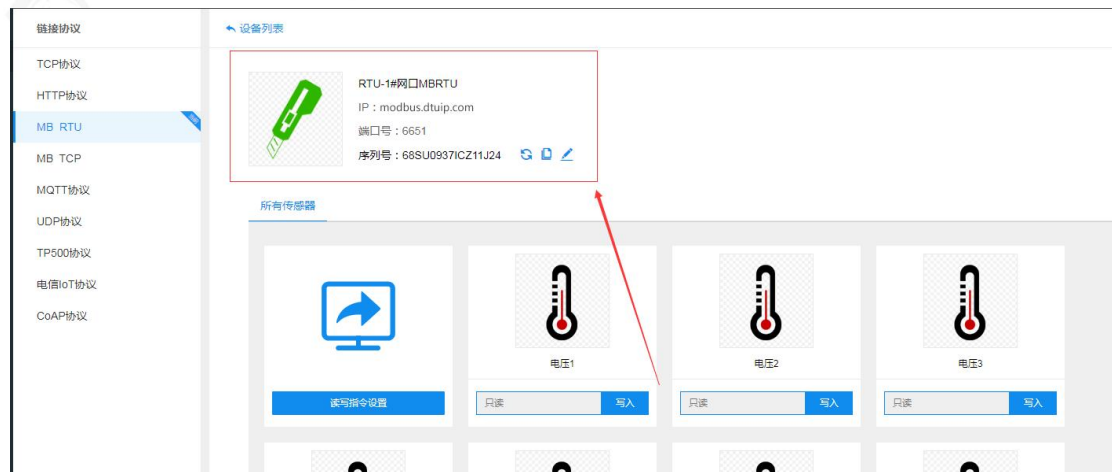
5. Byte Order

Indicates the high and low order of bytes.

6. Collection cycle

Indicates the cycle time of reading sensor data. Since the MODBUS protocol is a request-response protocol, it will wait for receiving each time when the data is read. The waiting process will cause a delay. The maximum delay is 20 seconds, so the more data does not respond, the longer collection cycle will be.

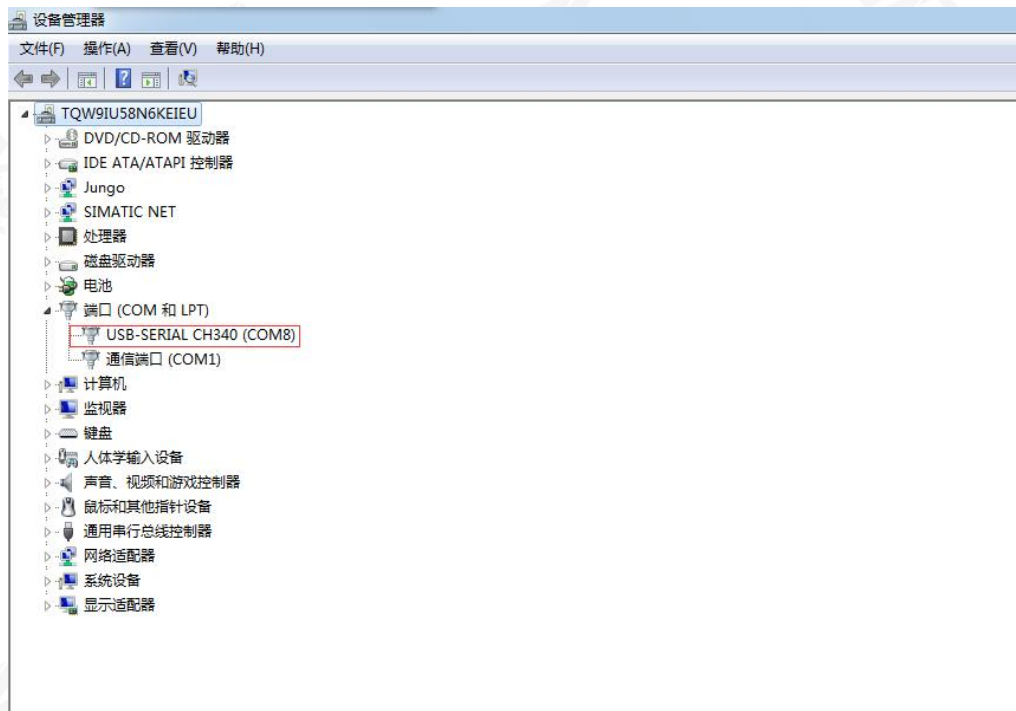
⑧After setting, click Save. After entering again, check the server IP, server port number and serial number of the RTU-1# network port MBRTU in the device information. as the picture shows:



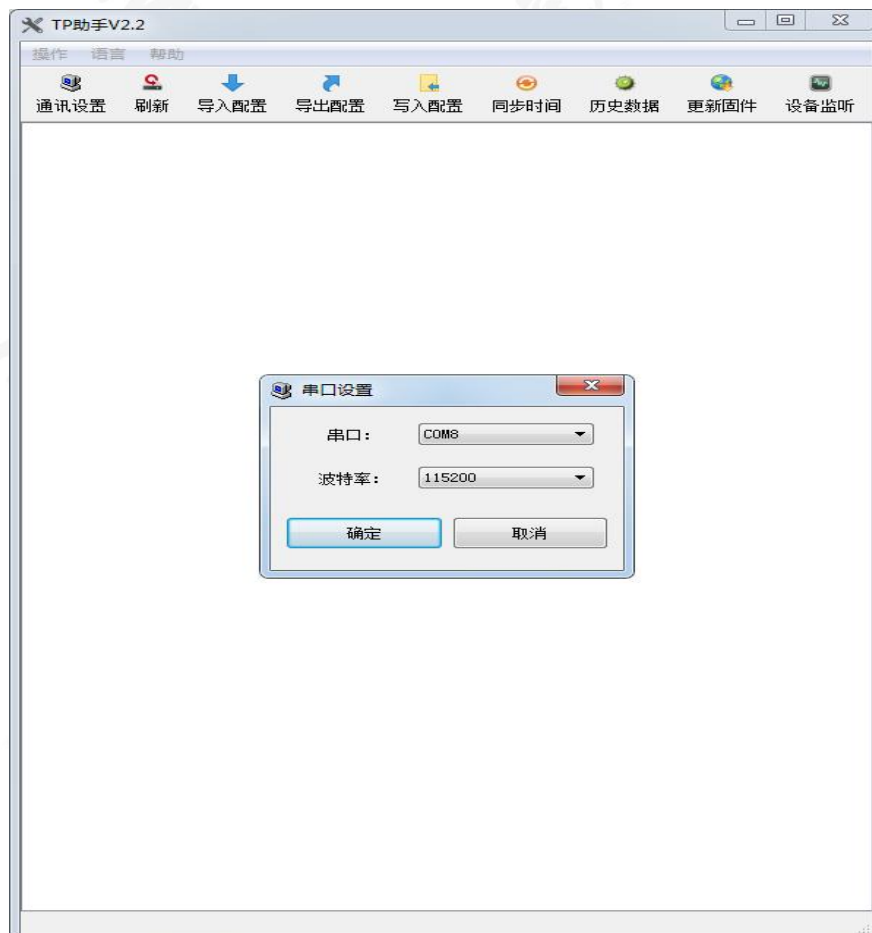
(2) Device parameter configuration

After configuring the relevant parameters on the MAC IoT platform, configure the parameters of the device. After completing the basic networking operations, you can connect to the MAC IoT platform to realize remote monitoring of the cloud platform.

①Install the CH340 driver in the product documentation, power on the device, connect the device to the computer with a USB cable, and find the corresponding com port after connecting the USB cable in the device manager port option of the computer, as shown in the figure:



②Open the configuration tool, click the communication setting of the first item on the left side of the configuration tool, the serial port setting pop-up window appears. For the serial port, select com8 port corresponding to that of CH340 driver, and the communication baud rate of the USB port is 115200. As shown in the figure:



③After setting the serial port, click Refresh in the operation menu bar, and all the configuration options of RTU will appear on the configuration tool interface.







The options that need to be configured when using MB RTU protocol to connect to the MAC platform are as follows:

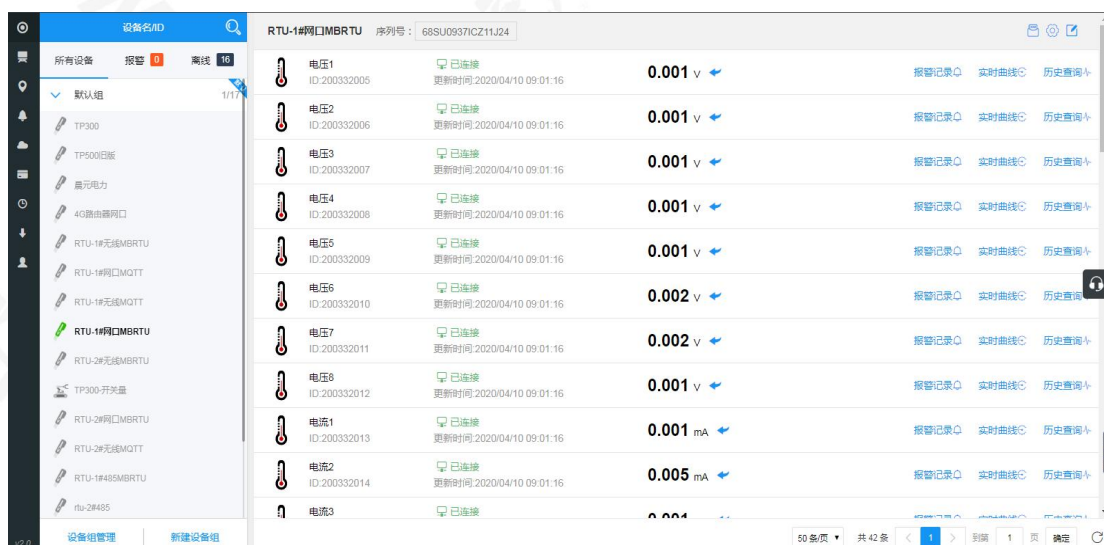
11. TOPIC connection via Ethernet: It is configured as the serial number of the device information column in the MAC platform, necessary or MAC connection;
 12. Server address connection via Ethernet: the server address of the data server,necessary, as the IP of the device information column in the MAC platform.
 13. Port number of server connection via Ethernet: necessary option, the MQTT protocol server port number of MAC platform is 1883. (If you connect to other servers, configure the corresponding port number of other servers)
 14. Ethernet connection heartbeat packet: Q
 15. Ethernet connection heartbeat interval: The data upload time is recommended to be 30 seconds, and 1000, maximum (when using MQTT protocol and TCP active reporting protocol, need to be configured as a custom value, and no need to configure this option when using modbus protocol).
 16. Network port working mode: here we choose MODBUS RTU protocol, support MQTT, MODBUS RTU, TCP.
 - 17-18. mqtt protocol user name and password: the user name of MAC IoT platform MQTT protocol: MQTT, and the password is MQTTPW
- (Note: other unexplained options are fixed items, no configuration required)

④After the configuration is complete, double-click 01. to save the parameters, then double-click 02. Restart the device, refresh again, and then select the device monitoring in the menu bar, the device print message information box will pop up, click start monitoring, and you can view the current working status of the device in the information box, as the picture shows:



3.4.MAC Cloud Platform Display

After configuring the MAC platform and TP assistant, you can monitor the relevant information of the device transmission data on the MAC cloud platform. The MAC console interface is shown in the figure. (In addition to displaying data on the MAC platform in the form of tables, there are other display methods such as historical curves and configurations. For details, please refer to the application display and help center of the MAC platform)



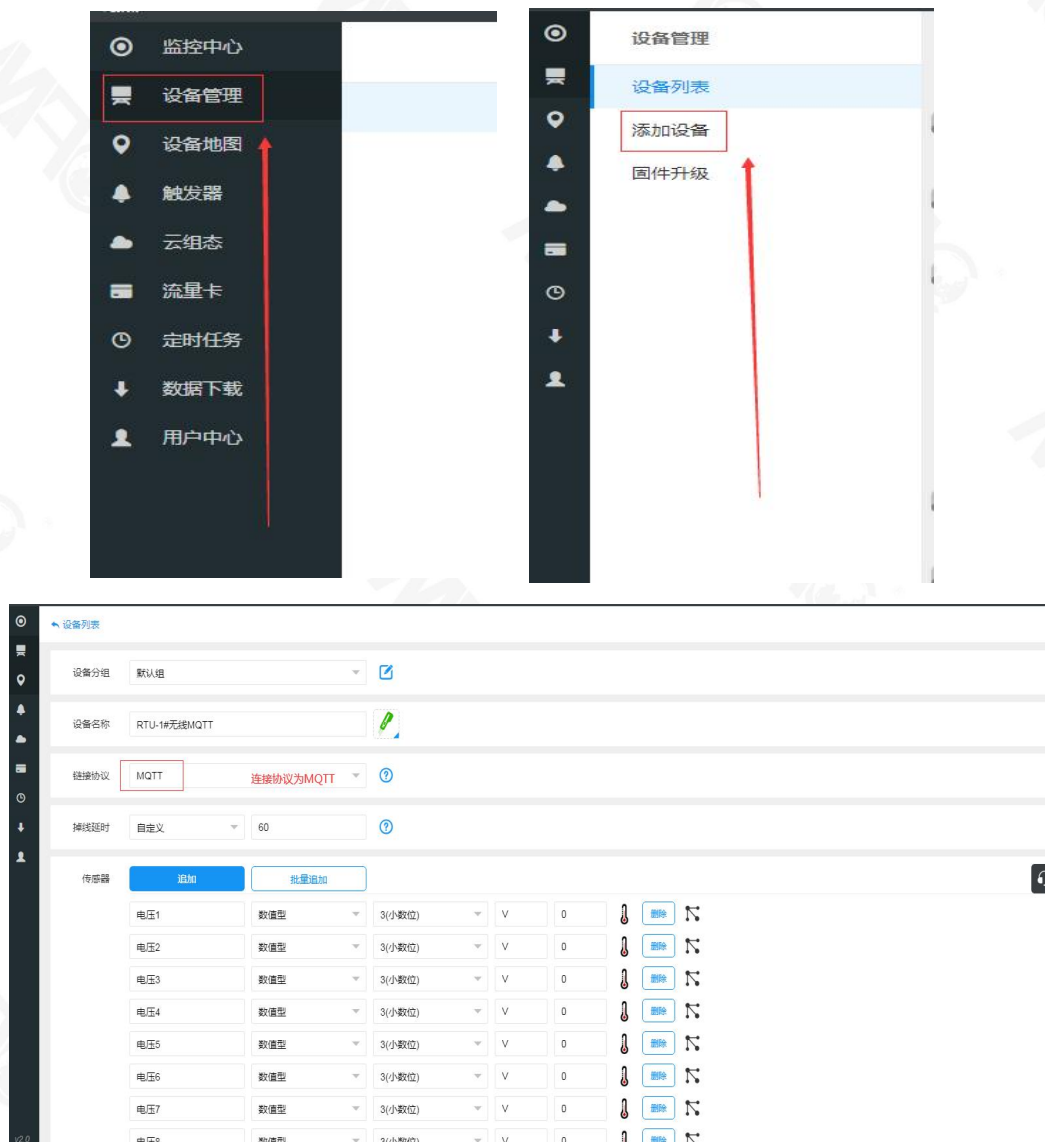
If you use the network port MQTT protocol, you can refer to the following wireless MQTT steps.

Note: The network port supports Modbus tcp, Modbus rtu, MQTT, and TCP client protocols.

3.4.1. Wireless Terminal Realizes MAC Cloud Platform via MQTT Protocol

(1) MAC platform configuration

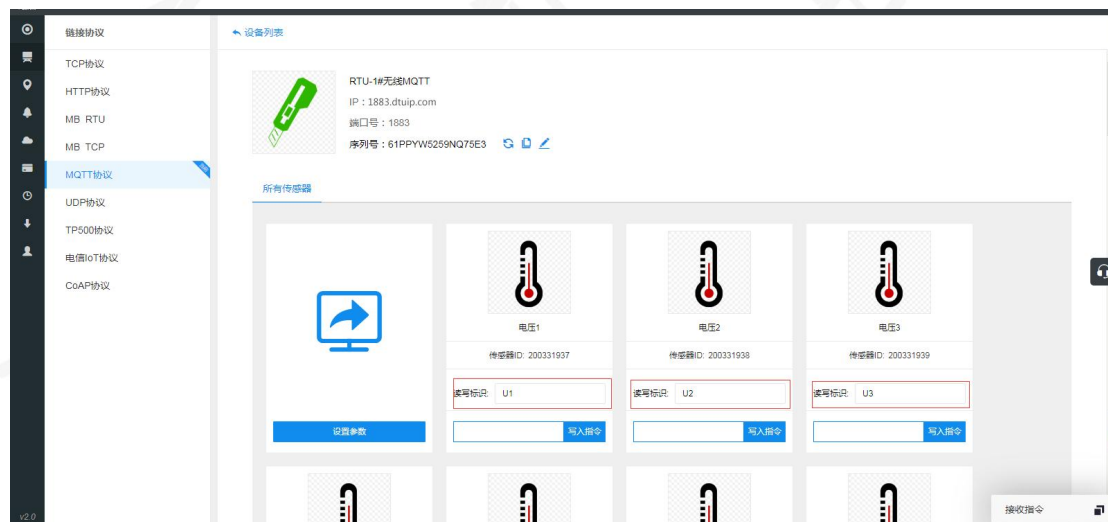
① When creating a device, select the device's connection protocol as MQTT, which is the MQTT protocol. The other settings are the same as that when the network port is connected through the MB RTU protocol (the previous example), as shown in Figure 3-1:



② After creating the device, click the device option in the left menu bar, and then

enter the connection setting interface. The device information and all sensors can be displayed on the page. There is a read-write flag input box next to each sensor icon, click to set the read-write flag.

If you use the wireless terminal MB RTU protocol, you can refer to the steps for network port end MB RTU protocol as above



The MQTT read-write flag can be set as follows:

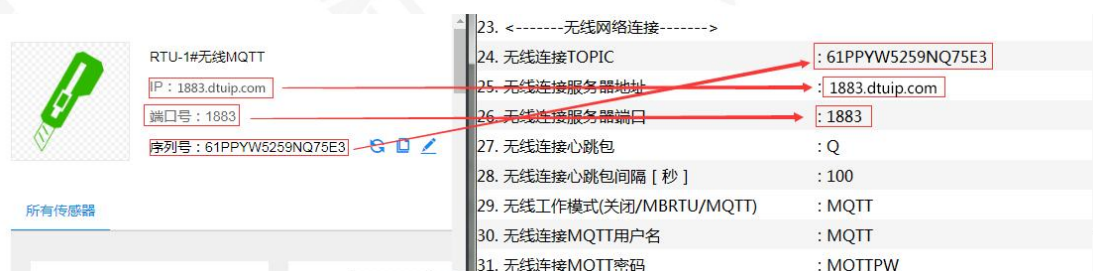
Voltage: U1, U2... Current: I1, I2... Relay: DO1, DO2... Switch value: DI1, DI2...

Analog output count: C1, C2... Analog output frequency F1, F2... Analog output:

AO1, AO2...

(2) TP assistant configuration

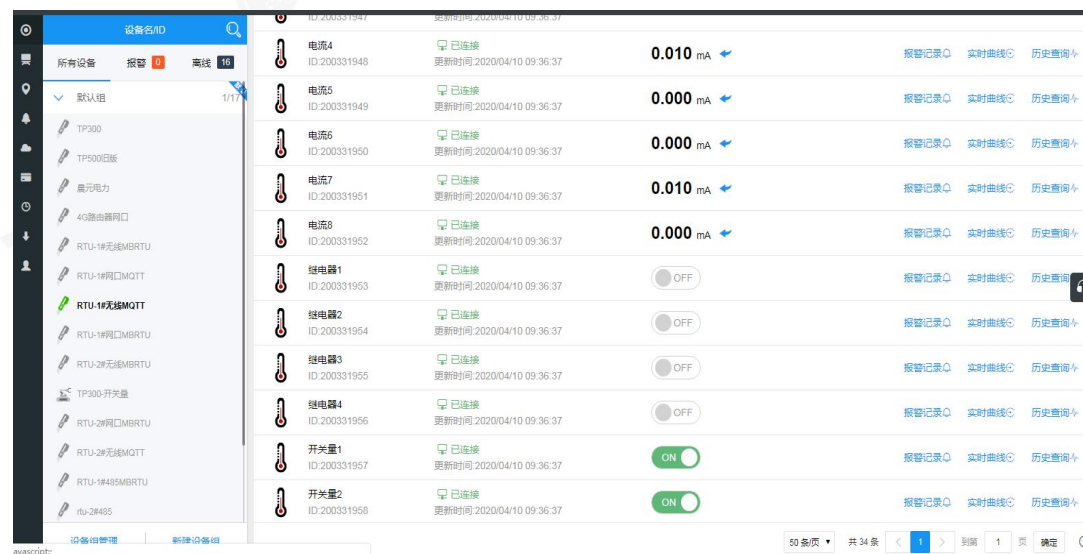
① Use the TP assistant to read the configuration of the device, enter the configuration interface, set the login package to the serial number corresponding to the RTU-wireless MQTT device, the server address is set to the IP in the device information, and the port number is set to that in device information. The reporting time is set to 120, the communication method is MQTT, and the device address is set as 1 (consistent with the slave address set on the MAC platform) as shown in Figure 3-4:



After the configuration is complete, double-click 01 to save the parameters and double-click 02 to restart the device. Enter the device monitoring interface and click Start Monitoring to view the operating status information of the device.

(3) MAC Platform Display

After configuring the platform information and RTU, open the MAC platform console, and the interface shown in Figure 3-5 will appear.



Note: The wireless terminal only supports MQTT protocol and Modbus rtu protocol

4. Protocol Description

4.1 RTU Register Address List with MODBUS Function

(1) 01 register

Address (HEX)	Data length (bit)	Type of data	Function notes
0000H	1	Bit	Channel 1 of relay input
0001H	1	Bit	Channel 2 of relay input
0002H	1	Bit	Channel 3 of relay input
0003H	1	Bit	Channel 4 of relay input

(2) 02 register

Address	Data length (bit)	Type of data	Function notes
---------	-------------------	--------------	----------------

(HEX)			
0000H	1	Bit	Channel 1 of switch value
0001H	1	Bit	Channel 2 of switch value
0002H	1	Bit	Channel 3 of switch value
0003H	1	Bit	Channel 4 of switch value
0004H	1	Bit	Channel 5 of switch value
0005H	1	Bit	Channel 6 of switch value
0006H	1	Bit	Channel 7 of switch value
0007H	1	Bit	Channel 8 of switch value

(3) 03 register

Address (HEX)	Data length (bit)	Type of data	Function notes
0000H	4	Int	Channel 1 of analog output counting
0002H	4	Int	Channel 2 of analog output counting
0004H	4	Int	Channel 1 of analog output frequency
0006H	4	Int	Channel 2 of analog output frequency
0008H	4	Float	Channel 1 of analog output
0010H	4	Float	Channel 2 of analog output
0000H	4	Float	Channel 1 of external acquisition card
0002H	4	Float	Channel 2 of external acquisition card
0004H	4	Float	Channel 3 of external acquisition card
0006H	4	Float	Channel 4 of external acquisition card
0008H	4	Float	Channel 5 of external acquisition card
0010H	4	Float	Channel 6 of external acquisition card
0012H	4	Float	Channel 7 of external acquisition card
0014H	4	Float	Channel 8 of external acquisition card

(4) 04 register

Address (HEX)	Data length (bit)	Type of data	Function notes
0000H	4	Float	Channel 1 of voltage input
0002H	4	Float	Channel 2 of voltage input

0004H	4	Float	Channel 3 of voltage input
0006H	4	Float	Channel 4 of voltage input
0008H	4	Float	Channel 5 of voltage input
0010H	4	Float	Channel 6 of voltage input
0012H	4	Float	Channel 7 of voltage input
0014H	4	Float	Channel 8 of voltage input
0016H	4	Float	Channel 1 of current input
0018H	4	Float	Channel 2 of current input
0020H	4	Float	Channel 3 of current input
0022H	4	Float	Channel 4 of current input
0024H	4	Float	Channel 5 of current input
0026H	4	Float	Channel 6 of current input
0028H	4	Float	Channel 7 of current input
0030H	4	Float	Channel 8 of current input

4.2 MQTT Protocol

(1) The MQTT protocol is a message transmission protocol in a publish/subscribe model of a client-server architecture. The client connects to the server through the network and publishes the message to the server. After receiving the message, the server forwards the application message to the qualified client to subscribe.

(2) The server address and port number configured by MSR102 RTU when connecting with MAC are that of the server, and the serial number assigned by the MAC platform is the client ID and the subject. MSR102 RTU publishes the message, and the MAC server can display the transmitted data content on the corresponding device after receiving the message.

(3) For example: 2019-11-4 16:50:55: {"times": "2019-11-4
16:50:55", "sensorDatas": [{"flag": "U1", "value": 0.00}, {"flag": "U2", "value": 0.00}, {"fl
ag": "U3", "value": 0.00}, {"flag": "U4", "value": 0.00}, {"flag": "U5", "value": 0.00}, {"flag
": "U6", "value": 0.00}, {"flag": "U7", "value": 0.00}, {"flag": "U8", "value": 0.00}, {"flag": "
I1", "value": 0.00}, {"flag": "I2", "value": 0.00}, {"flag": "I3", "value": 0.01}, {"flag": "I4", "
value": 0.03}, {"flag": "I5", "value": 0.00}, {"flag": "I6", "value": 0.01}, {"flag": "I7", "value

```
":0.00},{ "flag":"I8","value":0.00},{ "flag":"C1","value":0},{ "flag":"C2","value":0},{ "flag":"F1","value":0},{ "flag":"F2","value":0},{ "flag":"AO1","value":0.00},{ "flag":"AO2","value":0.00},{ "flag":"DI1","switcher":0},{ "flag":"DI2","switcher":0},{ "flag":"DI3","switcher":0},{ "flag":"DI4","switcher":0},{ "flag":"DI5","switcher":0},{ "flag":"DI6","switcher":0},{ "flag":"DI7","switcher":0},{ "flag":"DI8","switcher":0},{ "flag":"DO1","switcher":0},{ "flag":"DO2","switcher":0},{ "flag":"DO3","switcher":0},{ "flag":"DO4","switcher":0}}
```

5. Description of External 485 Device

5.1.Connect to RS485-W608 Data Acquisition Card Supporting MODBUS RTU Protocol

34. 透传RS485功能(开启/关闭)	: 开启
35. 透传RS485使用端口(无线/以太网/北向485)	: 无线
36. RS485透传使用独立SOCKET(是/否)	: 是
37. RS485透传连接序列号	: 5G6L55ZL5RY14MZ2
38. RS485透传服务器地址	: modbus.dtuip.com
39. RS485透传服务器端口	: 6651
40. RS485透传心跳包	: Q
41. RS485透传心跳时间 [秒]	: 30
42. modbus地址	: 1
43. 模拟量1输出(电流/电压)	: 电压
44. 模拟量2输出(电流/电压)	: 电压
45. 记录上报间隔[秒]	: 60



RS485-1608

IP : modbus.dtuip.com

端口号 : 6651

序列号 : 52IFSP9567D0UNJM



(1) 34. Transparent transmission RS485 function (on/off): on

- (2) 35. Port used for transparent transmission of RS485 (wireless/Ethernet/northbound 485): wireless
- (3) 36. Use independent SOCKET for RS485 transparent transmission (Yes/No): Yes (here, wireless and RS485 transparent transmission are separate, not through the same device)
- (4) Modbus address: 1. 1 is the device address of RS485-1608.

Note: 43. Analog 1 output (current/voltage) and 44. Analog 1 output (current/voltage) are the output ports of RTU. The output port of RTU has two output functions of analog output voltage or current. Only one of the functions can be selected when using it.

6. Operation interface of MSR102 RTU

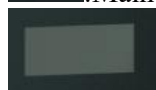
6.1. Device Operation Interface



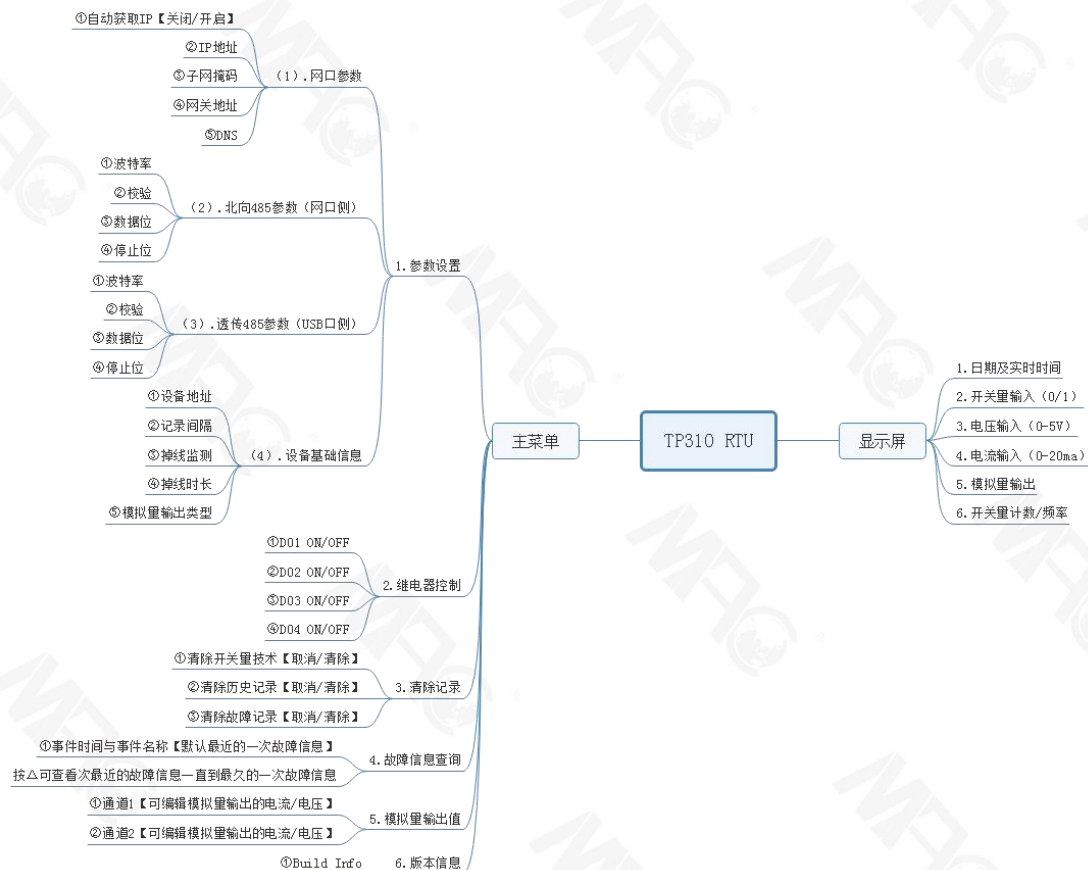
:Back



:Main menu & Edit & Confirm



:Display of OLED screen



6.1.1 Display Screen

The screen displays the date and real-time time by default. Keep pressing , it will display [from left to right, from top to bottom, the serial number increases sequentially],
 (1) Switch value input (0/1) (2) Voltage input (0-5V) (3) Current input (0-20ma) (4) Analog output (5) Switch value count/frequency (6) Date and Real time

6.2.2 Main Menu

Press  to enter the main menu, a total of 6 columns (the order is introduced from top to bottom by default)

(1) Parameter settings

①Network port parameters

A. Obtain IP automatically [off/on] B. IP address C. Subnet mask D. Gateway address E. DNS

②Northbound 485 parameters (network port side)

A. Baud rate B. Check C. Data bit D. Stop bit

③Transparent transmission 485 parameters (USB port side)

A. Baud rate B. Check C. Data bit D. Stop bit

④Basic equipment information

A. Device address B. Record interval C. Offline monitoring D. Offline duration E. Analog

output type

(2) Relay control

①D01 ON/OFF ②D02 ON/OFF ③D03 ON/OFF ④D04 ON/OFF

(3) Clear records

①Clear switch value technology [Cancel/Clear]

②Clear historical records [Cancel/Clear] ③Clear fault records [Cancel/Clear]

(4) Fault information query

① Event time and event name [latest fault information by default] Press  to view the latest fault information to the oldest fault information

(5) Analog output value

①Channel 1 【editable current/voltage of analog output】

②Channel 2 【editable current/voltage of analog output】

(6) Version Information

①Build Info

7. Common Faults and Precautions

7.1. Common Faults

- (1) Wired network is abnormal
- (2) SD card is abnormal
- (3) Adc is abnormal
- (4) Wi-Fi is abnormal
- (5) The sim card is abnormal
- (6) Wireless network is abnormal
- (7) Signal is abnormal
- (8) Wireless mqtt is abnormal
- (9) Wireless server connection is abnormal
- (10) Wired server connection is abnormal
- (11) Wired server connection is abnormal
- (12) 485 independent server connection server is abnormal

7.2. Precautions

- (1) Non-professionals should not disassemble the shell.
- (2) Please do not expose this product directly to the sun or other heat sources, and do not store it in the open air.
- (3) This product adopts ABS engineering fireproof plastic shell to prevent corrosion of the shell by chemicals such as acid and alkali.
- (4) Do not use in a humid environment.