TCP/IP Temperature and Humidity Sensor User Manual

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1. Port Description

1.1 Rear Port Diagram:

1.2 Port Description

As shown in the diagram above, the port labels from left to right are: **B, A, -, +.**

B: RS485- (This port is reserved and should not be connected in practice)
A: RS485+ (This port is reserved and should not be connected in practice.)
-: DC12V power supply negative terminal.
+: DC12V power supply positive terminal.

The RJ45 Ethernet port is located centrally in the upper section of the rear panel.

1.3 Installation Instructions

Wiring can be performed without removing the front or rear cover of the sensor.

The RS485 communication ports are not functional.

The DC12V power supply has polarity. The sensor will not operate if the positive and negative terminals are reversed.

2. Initial Setup

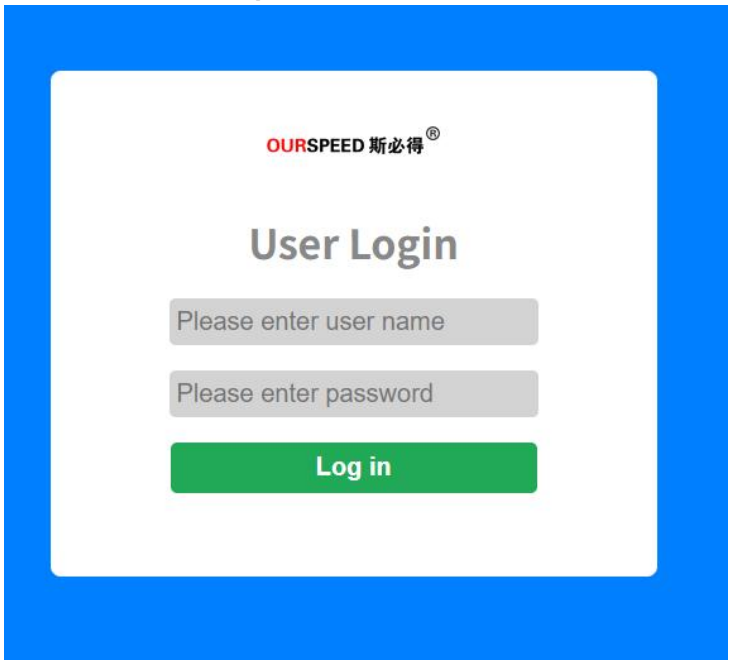
2.1 Connecting to the Network

The sensor's factory default IP address is 192.168.1.10. The default web login username is admin, and the password is 123. After supplying power to the device and connecting the network cable, you can log in via the web interface to configure system parameters.

The IP information can also be viewed by operating the buttons on the sensor's display (as shown in the image below, the obtained IP is 192.168.76.42. If the display shows all zeros, it indicates that an IP address has not been successfully obtained yet; wait a few tens of seconds and check again).

To view the IP on the sensor:
Press and hold the "MENU" button for 3 seconds to enter the menu. Then, press the MENU button (short press) multiple times until you reach the IP viewing interface.

2.2 Web Configuration



Web Login Page:

Default Username: admin

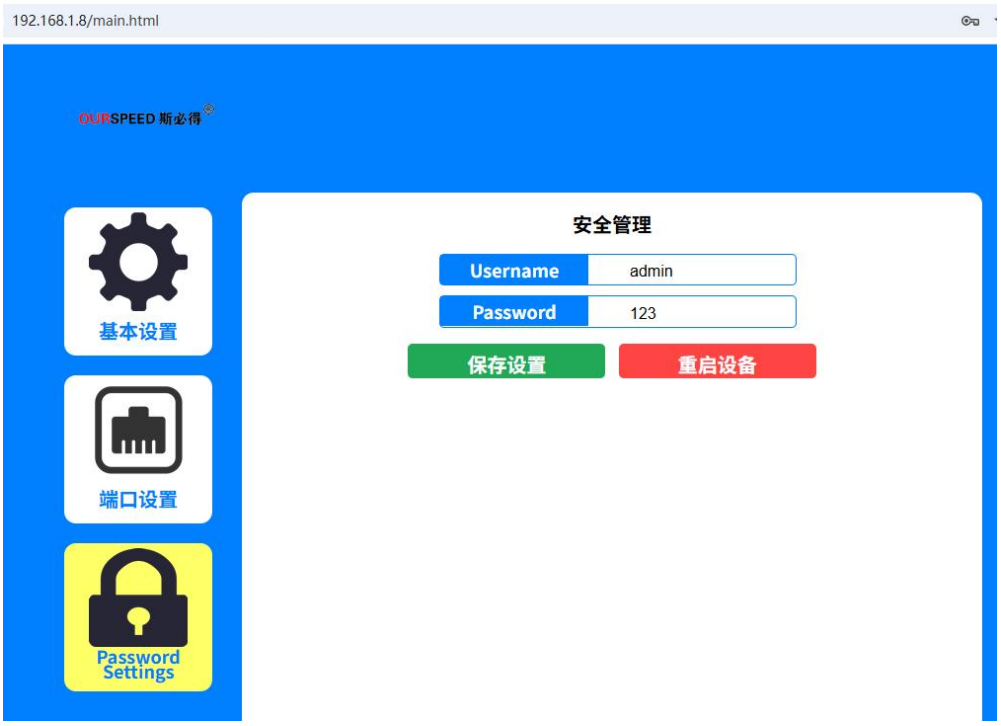
Default Password: 123

Basic Settings Page:

Network information can be configured here.

Port Settings Page:

The Modbus TCP port number can be set here. The default port is 502.



Password Settings Page:

You can change the password and restart the device here (a restart is required after modifying the IP).

2.3 Restoring Factory Default Settings

Press and hold the "MENU" key for 3 seconds to enter the setup menu. Then, press the "MENU" key (short press) multiple times to switch to the ID setting page (you will see "ID 0" displayed in the top area of the LCD screen). Press the "ENTER" key to enter the ID value adjustment function (the ID value will start blinking). At this point, press and hold the "+" key to quickly adjust the ID value to 255, then press "ENTER" to confirm.

After 30 seconds, power off and restart the sensor. The sensor will then restore to its default network settings (Default IP: 192.168.1.10, Username: admin, Password: 123).

3. Button Operation Instructions

3.1 Default Display of the Temperature and Humidity Sensor

As shown in Figure 1, this is the default display of the temperature and humidity sensor. The sensor ID is displayed at the top, with temperature and humidity readings shown in the middle.

There are four buttons at the bottom: the first is the "MENU" button, the second is the "+" button, the third is the "-" button, and the fourth is the "ENTER" button.

Figure 1: Default Display of the Temperature and Humidity Sensor

3.2 Viewing the Sensor IP

Press and hold the "MENU" button (for approximately 3 seconds) to enter the setup menu.

Then, press the "MENU" button (short press) multiple times until you reach the interface shown in the image below to view the sensor's IP address. If the display shows all zeros, it indicates that an IP address has not been obtained yet.

3.3 Setting Temperature Upper and Lower Limits

1. Press and hold the "MENU" button (for approximately 3 seconds) to enter the ID setting interface. Then, press the "MENU" button (short press) repeatedly until the sensor enters the setup page shown in the figure below, as illustrated in Figure 4.

2. Press the "ENTER" button (short press). The value to be set will begin to blink.

3. Press the "+" or "-" buttons (short press) to adjust the temperature limit value. The adjustable range is from -20 to 99. (Note: The set upper and lower limits constrain each other. For example, if the lower limit is set to 10, the adjustable range for the upper limit becomes 10 to 99. This ensures the upper limit cannot be set lower than the lower limit, and vice versa.)

4. Press and hold the "ENTER" button (for approximately 3 seconds) to save the settings. Pressing the "ENTER" button briefly will cancel the changes.

Figure 4: Setting Temperature Upper and Lower Limits on the Sensor (The setting on the left marked with 'H' is for the upper temperature limit, and the one on the right marked with 'L' is for the lower temperature limit.)

3.4 Setting Humidity Upper and Lower Limits

1. Press and hold the "MENU" button (for approximately 3 seconds) to enter the ID setting interface. Then, press the "MENU" button (short press) repeatedly until the sensor enters the setup page shown in the figure below, as illustrated in Figure 5.

2. Press the "ENTER" button (short press). The value to be set will begin to blink.

3. Press the "+" or "-" buttons (short press) to adjust the humidity limit value. The adjustable range is from 0 to 99. (Note: The set upper and lower limits constrain each other. For example, if the lower limit is set to 10, the adjustable range for the upper limit becomes 10 to 99. This ensures the upper limit cannot be set lower than the lower limit, and vice versa.)

4. Press and hold the "ENTER" button (for approximately 3 seconds) to save the settings. Pressing the "ENTER" button briefly will cancel the changes.

Figure 5: Setting Humidity Upper and Lower Limits on the Sensor (The setting on the left marked with 'H' is for the upper humidity limit, and the one on the right marked with 'L' is for the lower humidity limit.)

3.5 Setting Calibration Values for the Temperature and Humidity Sensor

1. Press and hold the "MENU" button (for approximately 3 seconds) to enter the ID setting interface. Then, press the "MENU" button (short press) repeatedly until the sensor enters the setup pages shown in the figures below, as illustrated in Figure 6 and Figure 7.

2. Press the "ENTER" button (short press). The temperature or humidity calibration value will begin to blink, indicating it is ready for adjustment.

3. Press the "+" or "-" buttons (short press) to change the temperature or humidity calibration value.

4. Press and hold the "ENTER" button (for approximately 3 seconds) to save the calibration value. Pressing the "ENTER" button briefly will cancel the calibration setting.

Note: The temperature calibration range is -2 to 2 degrees Celsius.

The humidity calibration range is -20 to 20.

Figure 6: Temperature Calibration Setting

Figure 7: Humidity Calibration Setting

4 Modbus TCP Protocol and Point Table

Modbus TCP Port: 502

Modbus Point Table:

Address	CMD	RW	Content	Data Type	Scaling Factor	Value Range
0	03	R	Temperature	Signed Int16	x100	
1	03	R	Humidity	Signed Int16	x100	
2-9	03		**System Reserved** (Writing is prohibited)			
10	03	RW	Temperature Upper Limit	Signed Int16	x1	
11	03	RW	Temperature Lower Limit	Signed Int16	x1	
12	03	RW	Humidity Upper Limit	Signed Int16	x1	
13	03	RW	Humidity Lower Limit	Signed Int16	x1	
14	03		**System Reserved**			
15	03	RW	Device ID	Int16		1-255
16	03	RW	Temperature Calibration	Signed Int16	x10	-20 ~20
17	03	RW	Humidity Calibration	Signed Int16	x1	-20~20
18-19	03		**System Reserved** (Writing is prohibited)			
20	03	R	Firmware Version			

5 Technical Specifications

Item	Specification
Product Model	SPD-THWIFI
Manufacturer	Guangzhou Speed Electronics Technology Co., Ltd.
Dimensions (L x W x H)	86mm x 86mm x 25.5mm
Operating Voltage	DC12V
Operating Current	< 100mA
Communication Interface	WiFi Wireless
Temperature Sensor Range	-40 ~ 125 °C
Temperature Accuracy	±0.3 °C
Temperature Resolution	0.1 °C
Humidity Range	0 ~ 100 %RH
Humidity Accuracy	±3 %RH
Humidity Resolution	0.1 %RH
Operating Environment Range	-20 ~ 80 °C

6 Version Update History

Version	Change Description	Date
V1.0	Initial Release	
V1.1	Added Modbus TCP Point Table	2025-08-01
