Meteo Station and Sensor Commissioning Guide

1. Integrated Meteo station and sensor

The parameters of the Meteo station and sensor listed in the following table have been integrated in the SUNGROW Logger1000. Please find the specific models in the following table, which are subject to change without notice.

Integrated Meteo stations and sensors with Logger1000:

No.	Brand	Model	Wiring
1	Sungrow	PC-4 PC-4 PRO	RS485 Connection
2	Lufft	WS601	
3	Kipp&Zonen	SMP10 RT1	
4	Rainwise	PVMet75 PVMet200	
5	Ingenieurbüro	Si-RS485TC	
6	Meteo sensor	Meteo sensor	AI Connection

Table 1-1 Integrated list

2. Commissioning Guide

2.1. Limitations

The Meteo station and sensor that needs to be connected to Logger1000 must support Modbus protocol or analog signal output. Before starting work, please make sure that

Meteo station and sensor are properly connected to the power supply and connected to the Logger1000.

2.2. Connect the Meteo station and sensor

RS485 Connection:

The following figure shows the connection between the Logger1000 and the meteo station via RS485.

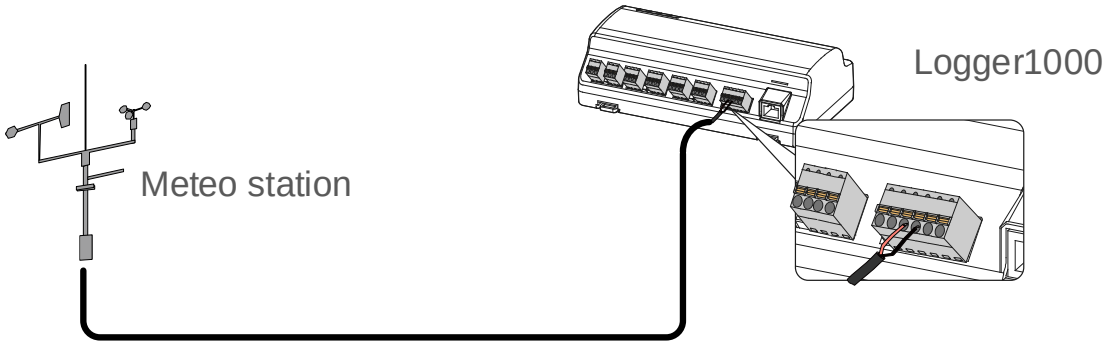

Figure 2-1 RS485 Connection

Connect the communication cable led from the meteo station to the RS485 port of the Logger1000. If multiple inverters are connected to the Logger1000 together with the Meteo Station, the Meteo Station should be connected on the end of the daisy chain.

AI Connection:

The following figure shows the connection between the Logger1000 and the meteo sensor via AI.

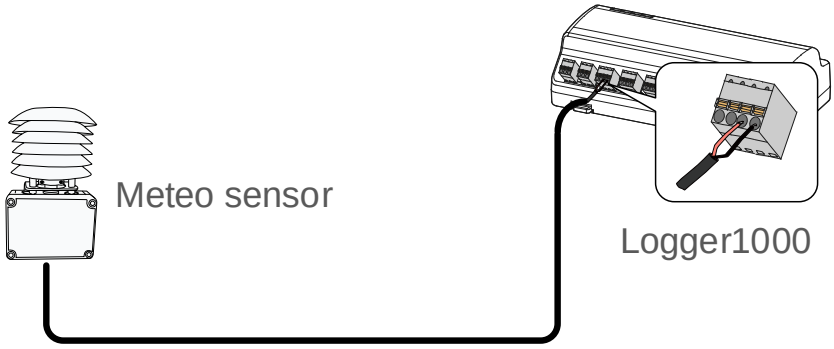

Figure 2-2 AI Connection

2.3. Logger1000 Login

WLAN Login:

Step 1: Open the WLAN network settings of the PC/Pad/Mobile phone, search the WLAN network "SG-XXXXX" of the Logger1000 and connect.

Step 2: Enter the IP address 11.11.11.1 of the Logger1000 in the browser to enter the general user login interface.

Step 3: Clike the button "Login" in the upper right corner, enter the default password "pw1111", and click "Login", to enter the O&M user interface.

Ethernet Login:

Step 1: Connect the Logger1000 to PC via ethernet cable.

Step 2: Setting the PC IP address and subnet mask, let PC and Logger1000 in the same LAN network. The Logger1000 ethernet default IP address and subnet mask are 12.12.12.12, 255.255.255.0. The PC IP address and subnet mask can set 12.12.12.XXX, 255.255.255.0.

Step 3: Enter the IP address 12.12.12.12 of the Logger1000 in the browser to enter the general user login interface.

Step 4: Click the button "Login" in the upper right corner, enter the default password "pw1111", and click "Login", to enter the O&M user interface.

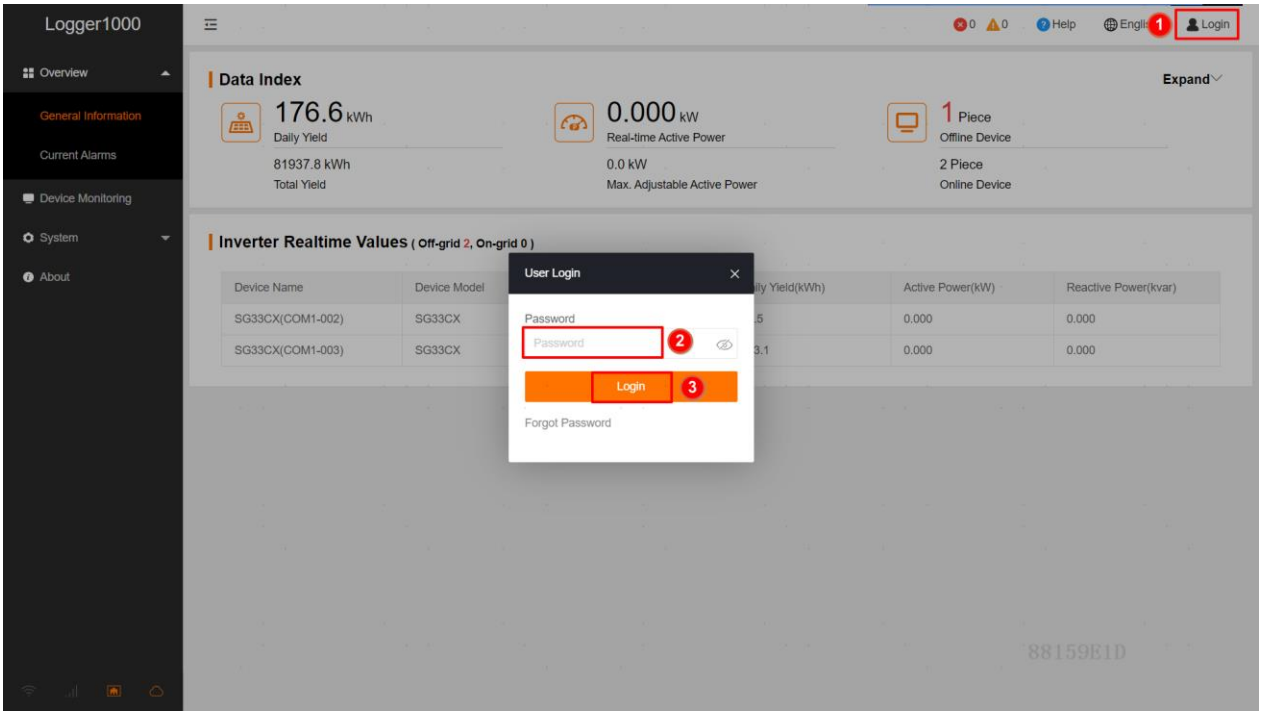

Figure 2-3 Login

2.4. Add the Meteo staion and sensor

2.4.1. RS485 type Meteo station

Set the RS485 port parameter:

Step 1: Click “System” -> “Port Parameter” -> “RS485” to enter the corresponding interface.

Step 2: Click the “Settings” icon of the port connected. According to the parameters of the meteo station (refer to the meteo station’s user manual), select the values of “Baud Rate” “Parity Bit” and “Stop Bit” in the pop-up window, then click “Save”.

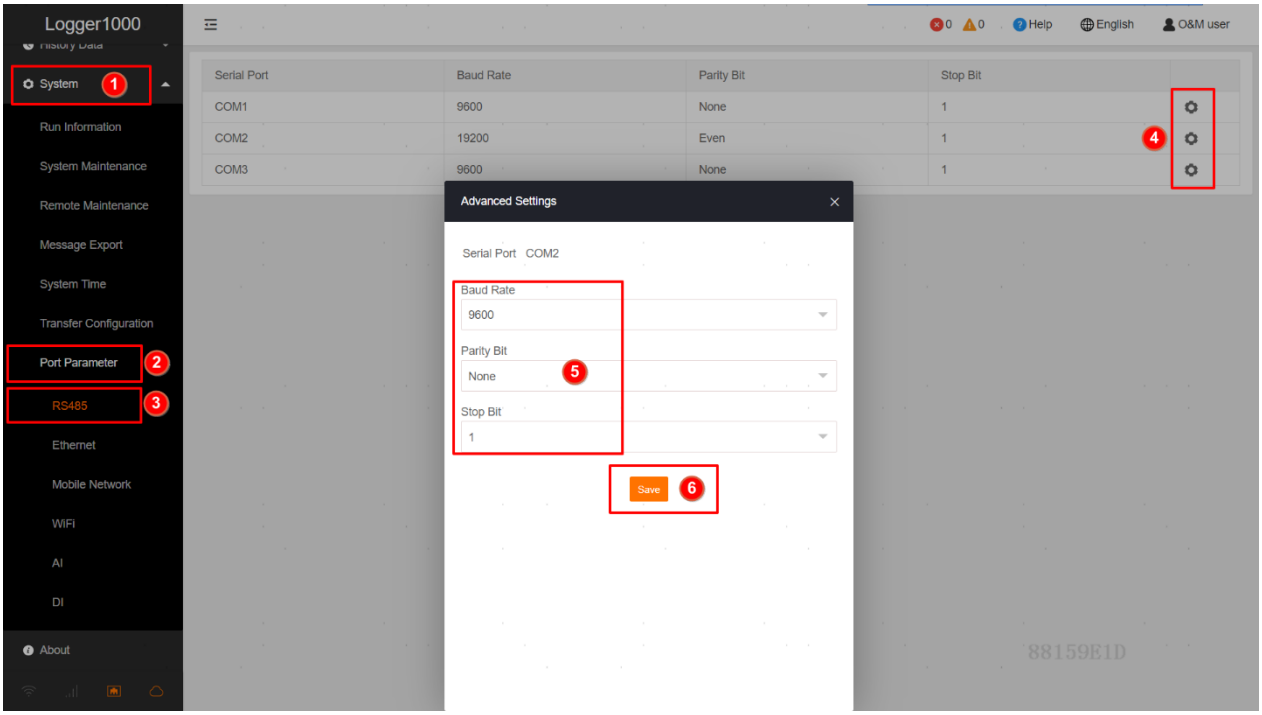

Figure 2-4 Set RS485 port parameter

Add the Meteo station:

✓ **Type 1: Compatible Meteo station**

Step 1: Click “Device” -> “Device List” -> “Add Device” to enter the corresponding interface.

Step 2: In the pop-up window, select “Meteo Station” in the “Device Type”.

Step 3: Select the corresponding Logger1000 COM “Port” which connect the Meteo Station

Step 4: Select the corresponding meteo station model in the “Device Model”.

Step 5: Enter the value of “Beginning Address” and the “Device Quantity”, then click “Save”.

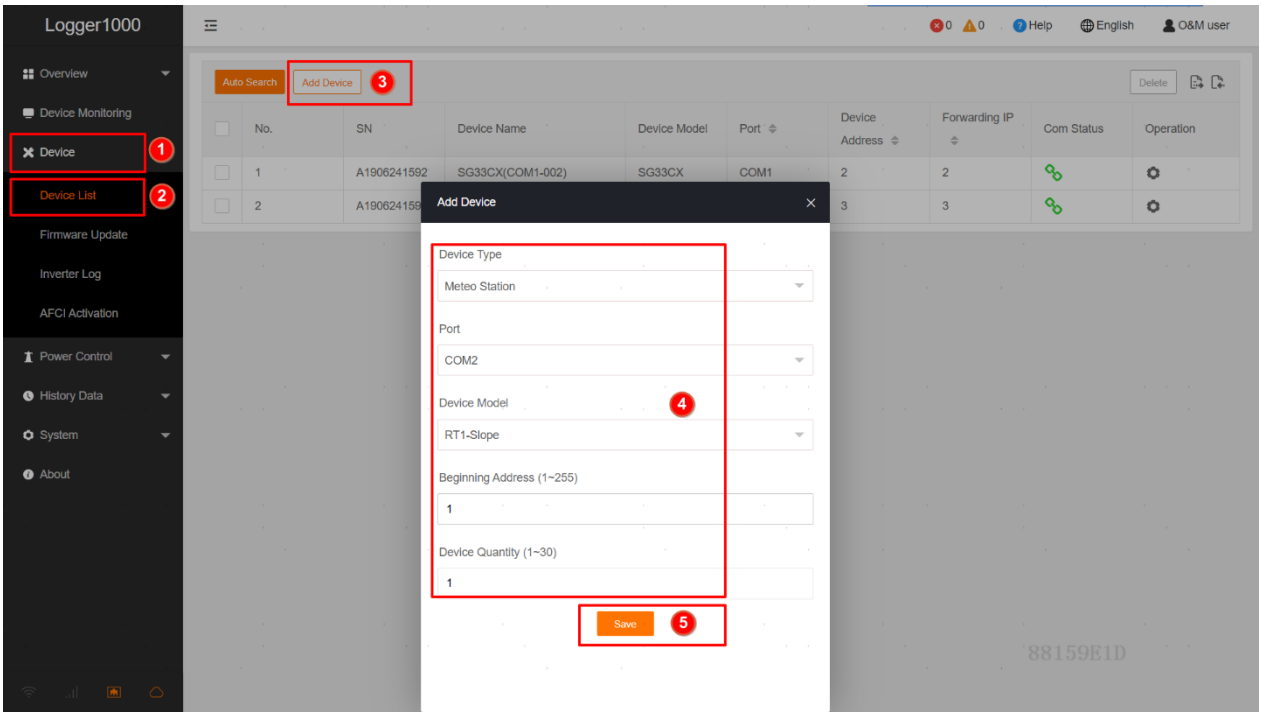

Figure 2-5 Add the compatible meteo station

After completing the above steps will successfully add the compatible meteo station to the Logger1000.

Note:

The Modbus ID addresses of the devices connected in the same COM port of Logger1000 cannot be repeated.

✓ **Type 2: Third-party Meteo station:**

Step 1: Click “Device” -> “Device List” -> “Add Device” to enter the corresponding interface.

Step 2: In the pop-up window, select “Meteo Station” in the “Device Type”.

Step 3: Select the corresponding Logger1000 COM “Port” which connect the Meteo Station

Step 4: Select the “Others” in the “Device Model”.

Step 5: Select “Custom” in the “Configuration Method”, then click “Next”.

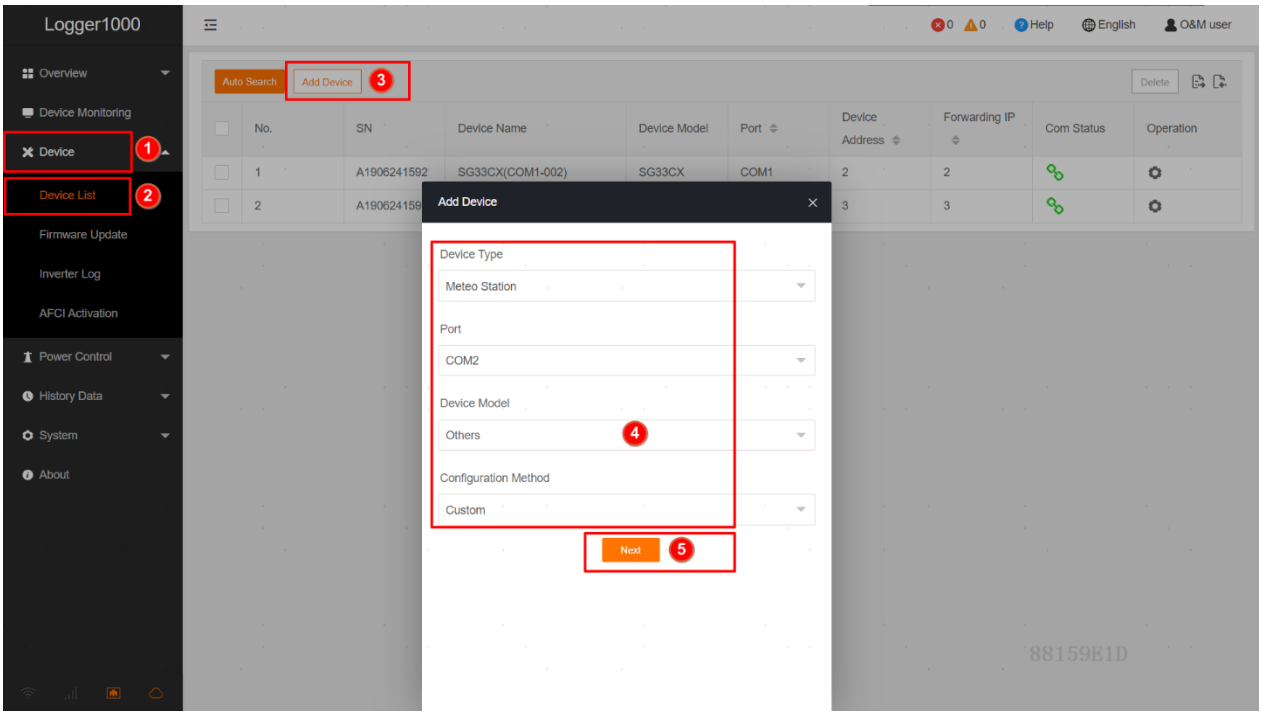

Figure 2-6 Add the Third-party meteo station

Step 6: Enter or select corresponding value of parameters in the pop-up window.

Note: *The user can select up to 13 objects for setting. For the corresponding parameters(such as register address, register type, etc.), please refer to the user manual of the connected meteo station.*

Parameter Description:

No.	Item	Description
1	Byte Order	Refer to the device Modbus map, parse the order of the read byte stream
2	Beginning Address	The beginning address of the device
3	Quantity of Device	The number of the device
4	Debug Address	The device address to be read when click “Read-back”, the range is [(“Beginning Address”), (“Beginning Address”+ “Quantity of Device”-1)]

5	Read Type	With or without framing when send messages at this point, recommend to choose continuous type
6	Coefficient	Refer to the Modbus map of the device, the coefficient that multiplied the value
7	Read-back Value	The value of the selected measuring point read when click “Read-back”

Table 2-1 Parameter description

Step 7: Select the points to be measured, click “Read-back” to read the information from the meteo station in real-time to check the correctness of parameter setting.

Step 8: After confirming that the read-back data is correct, then click “Confirm”.

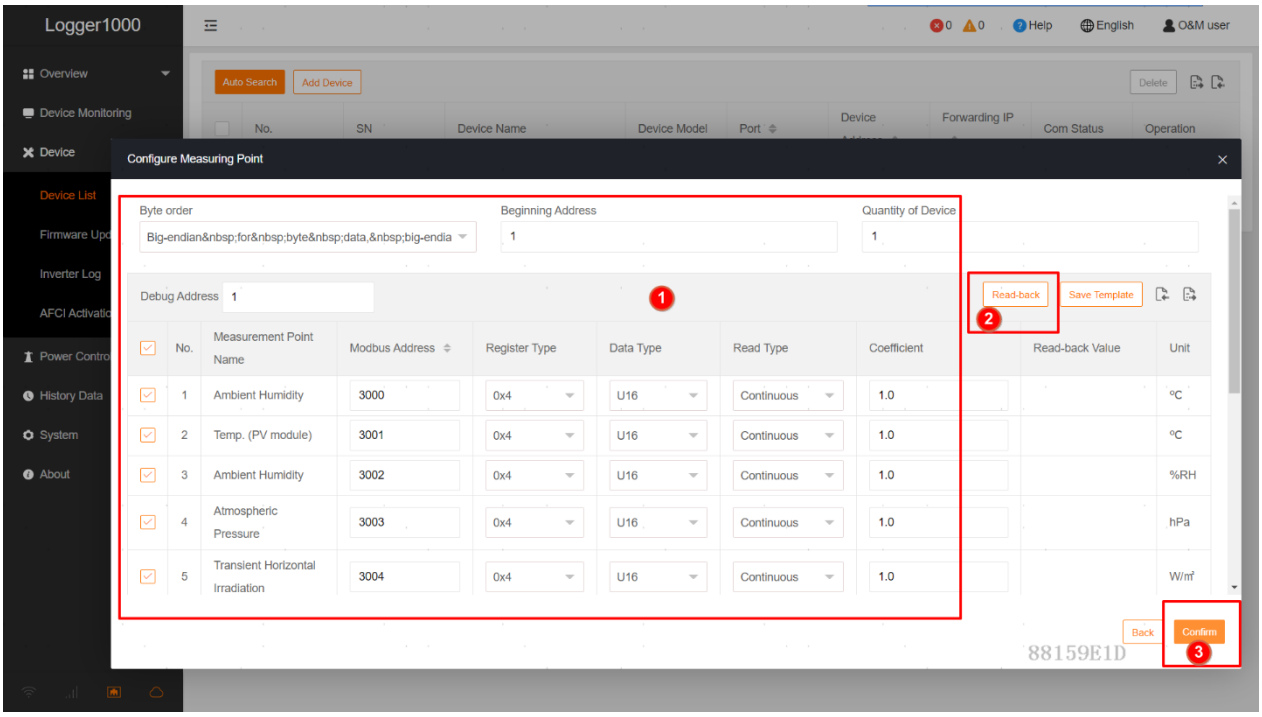

Figure 2-7 Configure measuring point

After completing the above steps will successfully add the Third-party meteo station to the Logger1000.

If need to modify the configuration parameters after adding the device can refer to the following steps.

Step 1: Click “Device” -> “Device List” -> "Configure Measuring Point" icon of the device which wants to change.

Step 2: Modify the configuration parameters in the pop-up window, then click “Confirm”.

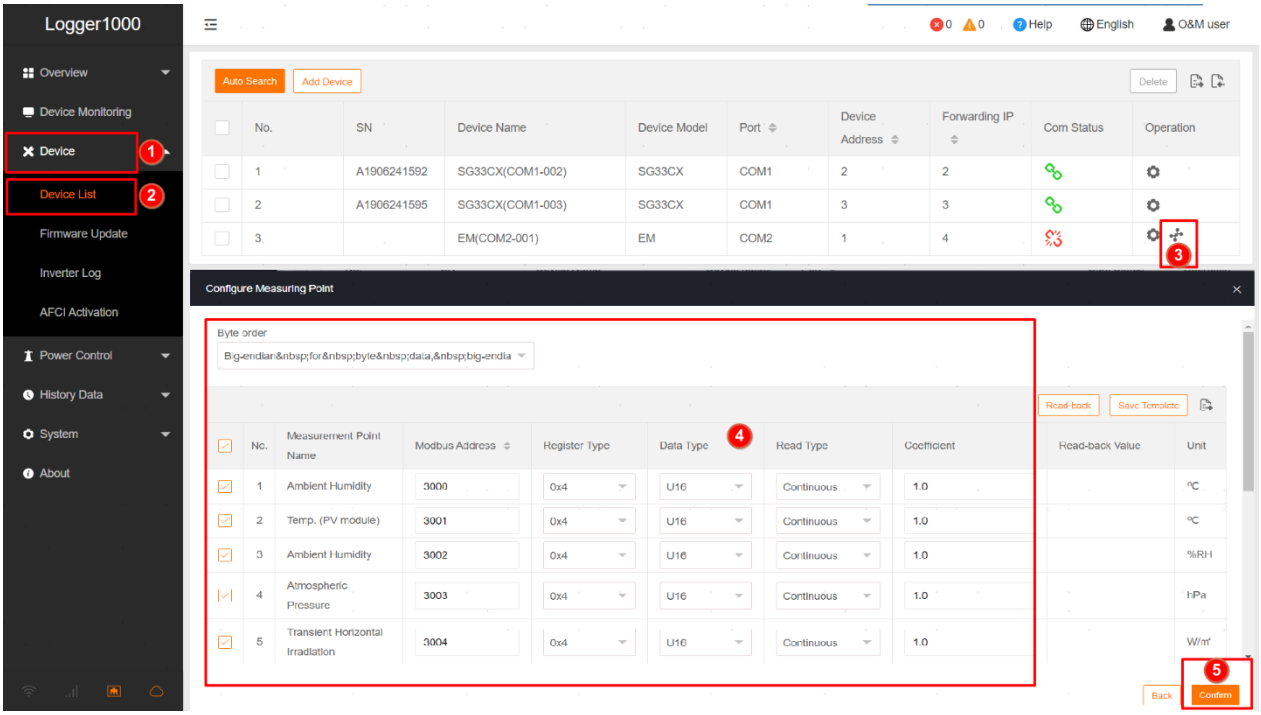

Figure 2-8 Modify configure measuring point

In addition, the user can save the configuration parameters as a template(stored in the Logger) or export the configuration file (stored in the user's PC). Then if need to add the same type of meteo station in the future, it can be select the template or import the configuration “.xml” file directly through the logger1000.

Step 1: Click “Device” -> “Device List” -> "Configure Measuring Point" icon of the device which wants to save the template or export the configuration file.

Step 2: Click “Save Template” ,then enter the template name in the pop-up prompt window and click “Confirm” to save the configuration file as a template in Logger. Or click the "Export" icon and save the configuration file to the PC.

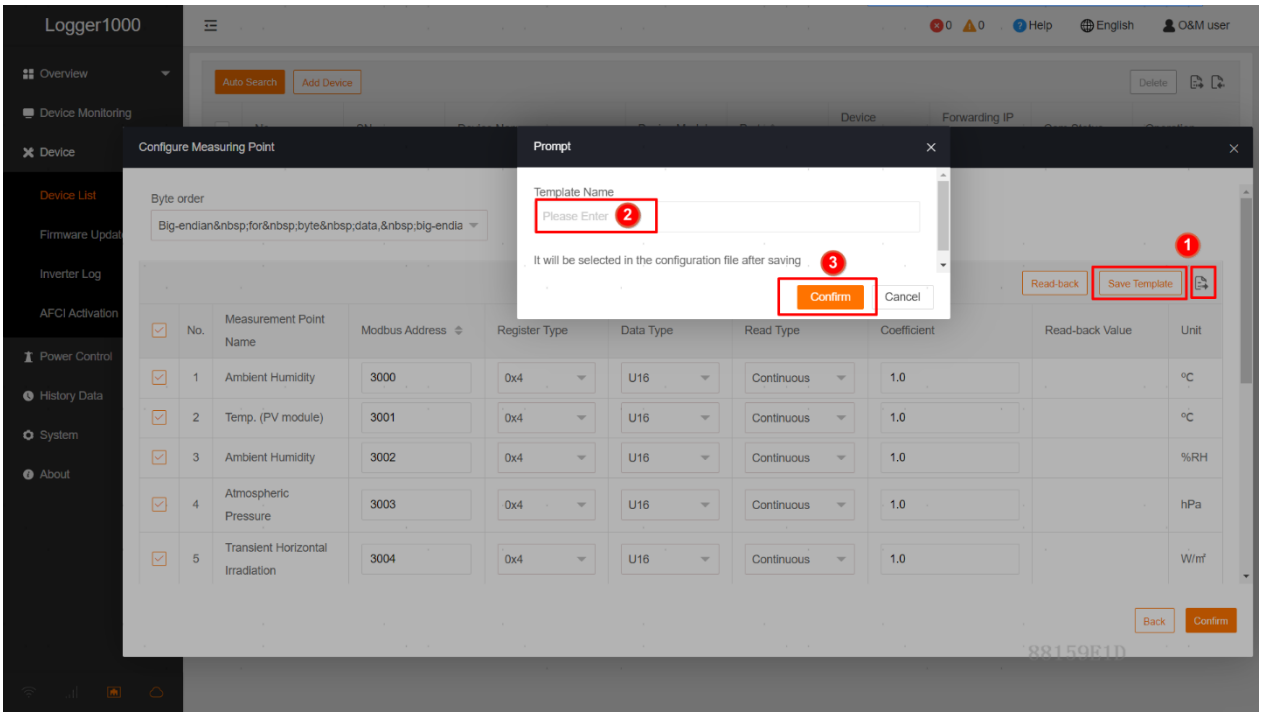

Figure 2-9 Save template or export configuration file

Step 3: Refer to “Type 2: Add the Third-party Meteo Station” Step 1-4

Step 4: Select “Import Files” in the “Configuration Method”, then select the corresponding template in the “Configuration File” drop-down lists or click the icon to import the configuration file

Step 5: Enter the value of “Beginning Address” and the “Device Quantity”, then click “Save”.

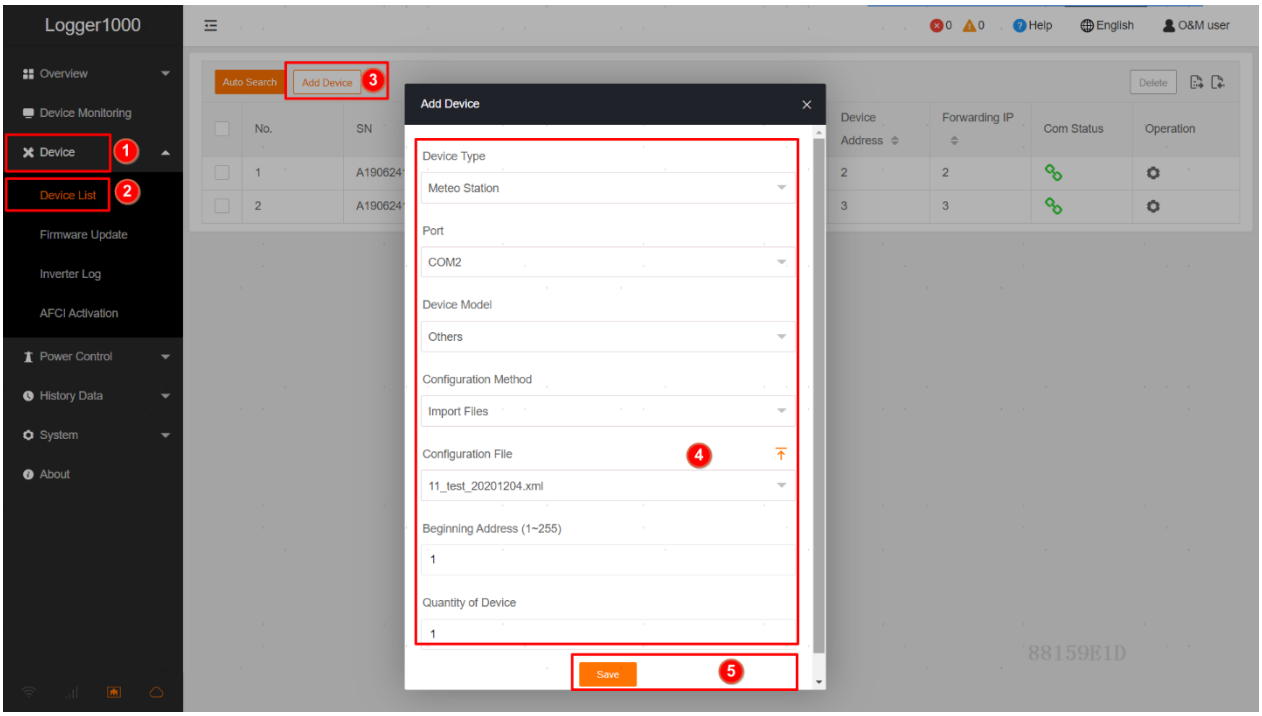

Figure 2-10 Add the Third-party meteo station based on template or import configuration file

Note:

The template name should be a combination of numbers, letters, dashes and underscores starting with English letters, with a maximum length of 32 bits.

The Modbus ID addresses of the devices connected in the same COM port of Logger1000 cannot be repeated.

2.4.2. AI type Meteo Sensor

Set the AI port parameter:

Step 1: Click “System” -> “Port Parameter” -> “AI” to enter the corresponding interface.

Step 2: According to the parameters of the sensor connected (Refer to the sensor’s user manual), select the “Input Type” of the corresponding AI port and enter the “Lower Limit” and “Upper Limit” (meteo sensor output analog signal like 0 to 10V or 4 to 20mA) values, then click icon to save.

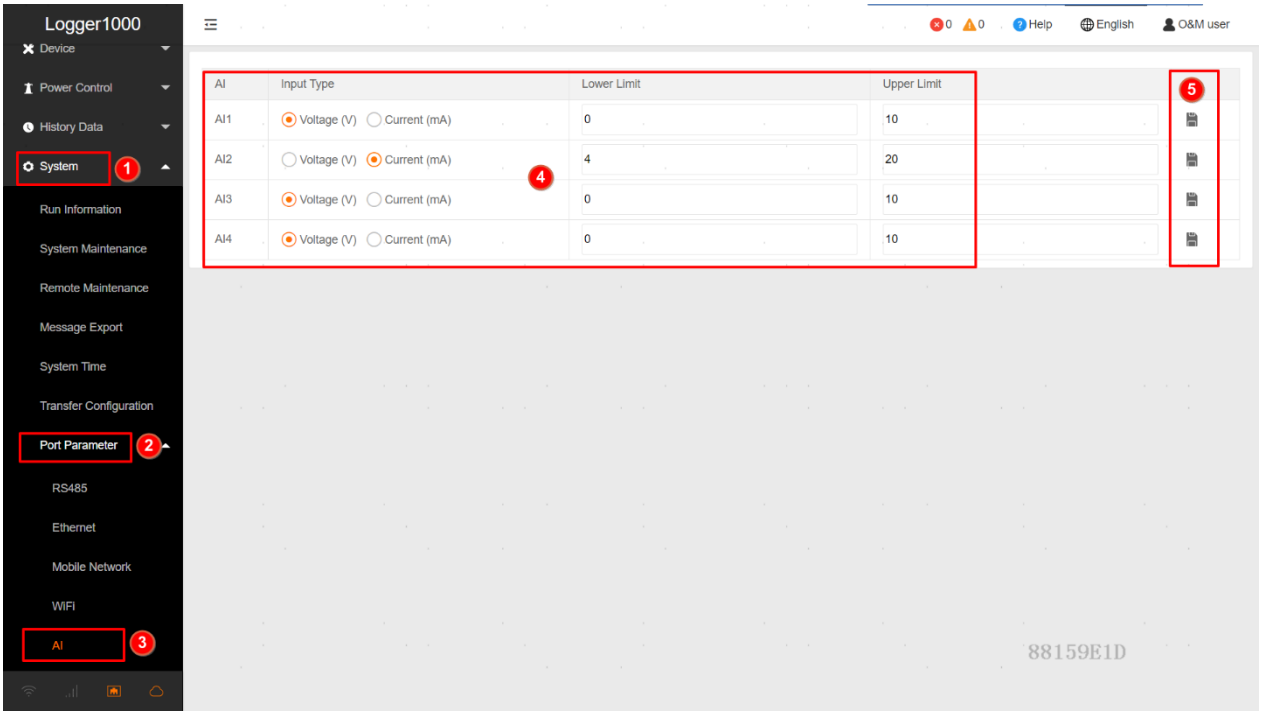

Figure 2-11 Set AI port parameter

Add the Meteo sensor:

Step 1: Click “Device” -> “Device List” -> “Add Device” to enter the corresponding interface.

Step 2: In the pop-up window, select “Virtual Weather Station” in the “Device Type”, then click “Save”.

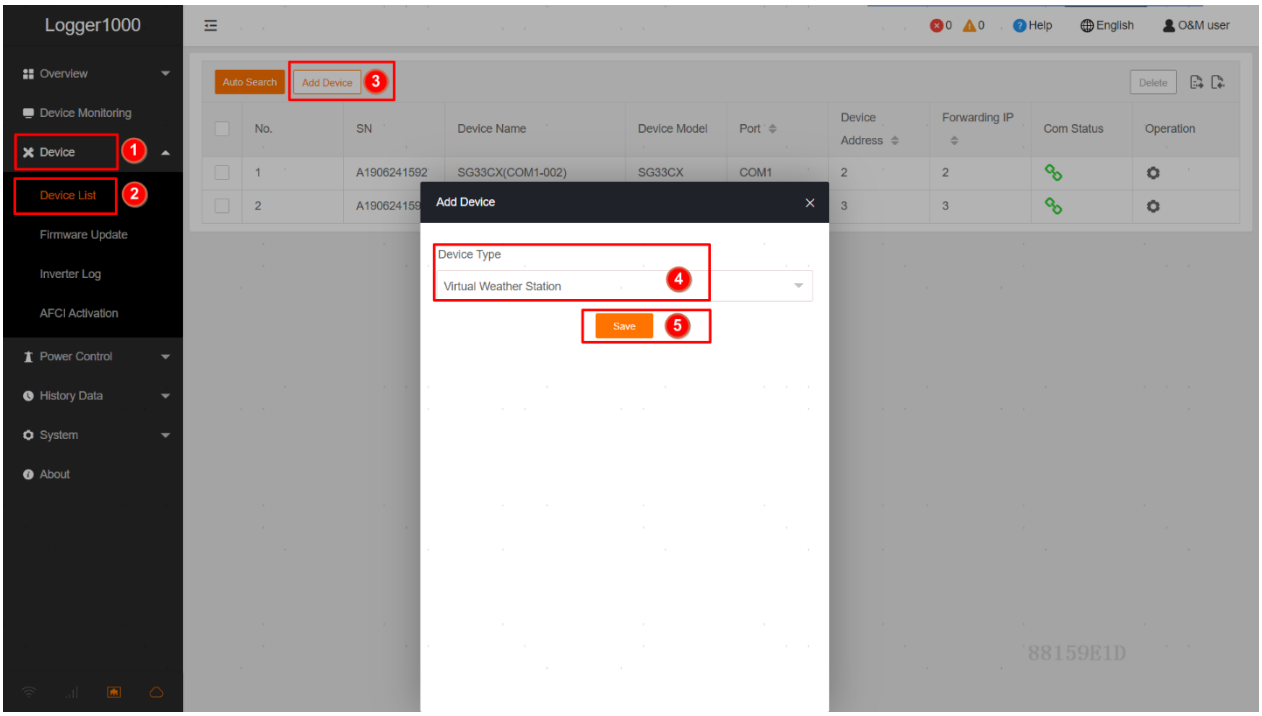

Figure 2-12 Add the meteo sensor

Step 3: Click “Device Monitoring” -> “Meteorological Station” -> “Initial Parameter”, select the “AI” ports to which the sensors connected and enter the “Min.” and “Max.” (meteo sensor converted sample data like 0 to 1500 W/㎡ or -40 to +90℃) values, then click “Save”.

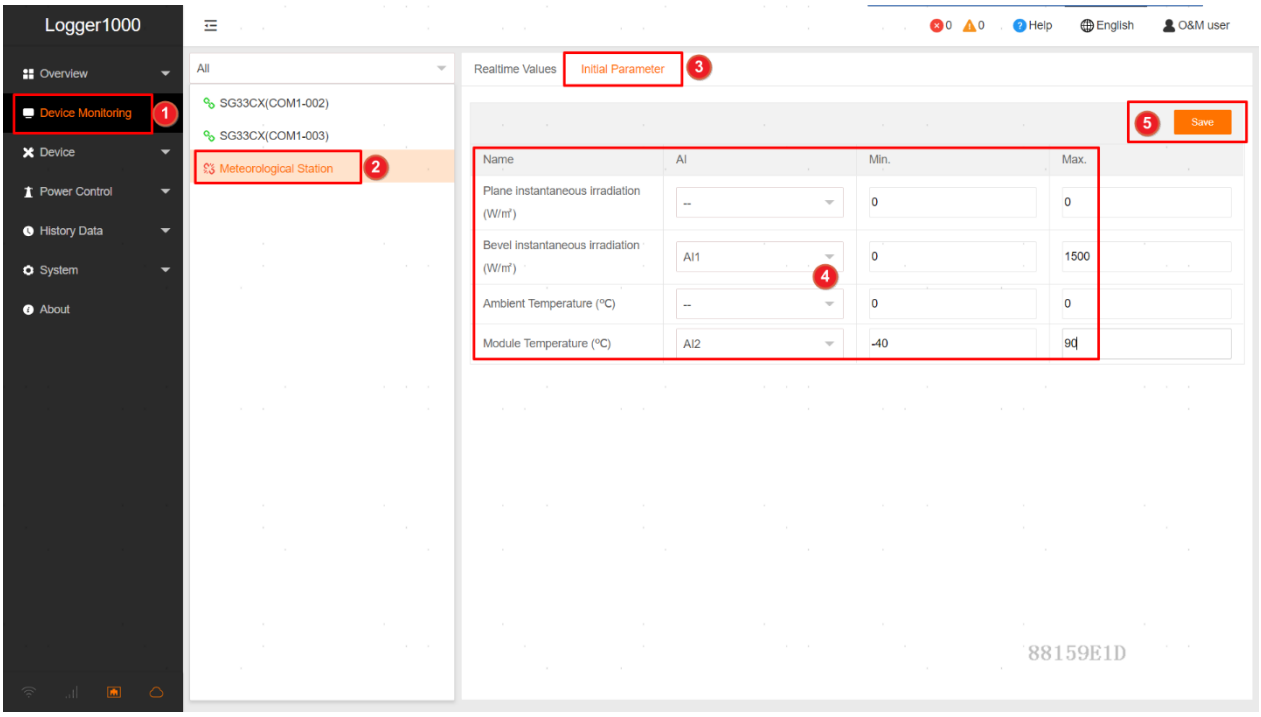

Figure 2-13 Meteo sensor initial parameter setting

Step 4: Click “Realtime Values” to read the information from the meteo sensor in real-time to check the correctness of parameter setting.

After completing the above steps will successfully add the meteo sensor to the Logger1000.

2.5. Delete the Meteo staion and sensor

Step 1: Click “Device” -> “Device List”, then select the device which wants to delete and click "Delete".

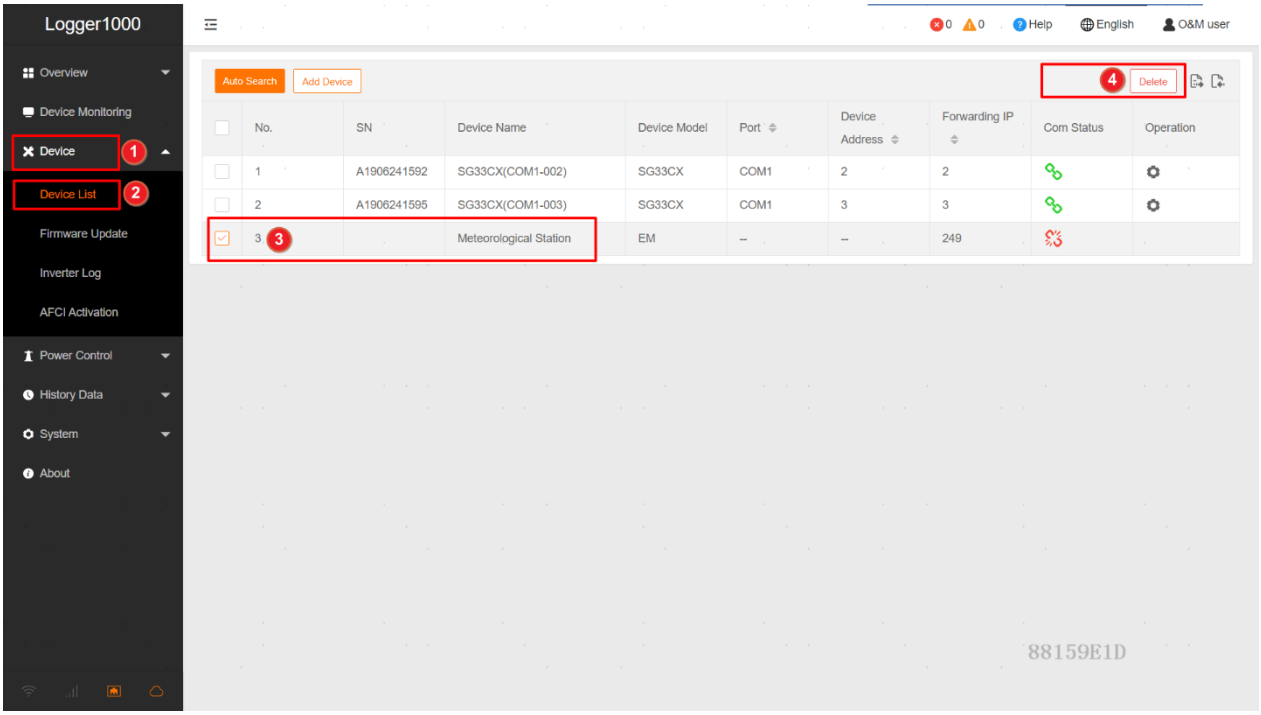

Figure 2-14 Delete the meteo station and sensor

The End