SENSECAP

THE NEW GENERATION LORAWAN SENSORS OF SENSECAP

How to Configure the Template for S2100 Data Logger

Version: v1.0.2

Table of Contents

1. Preset Template

1.1 Sensor Probe List

Seeed offers a variety of sensor templates that can be quickly configured by simply selecting the template and applying it. Please refer to the excel to check the detail measurements:

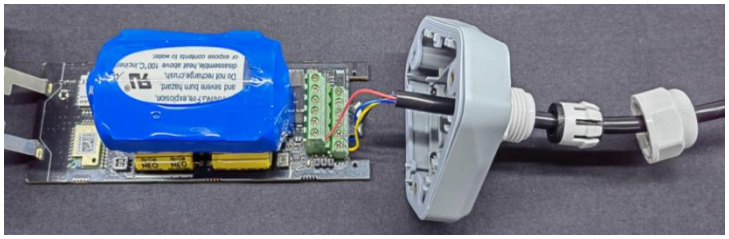
https://files.seeedstudio.com/products/SenseCAP/S2100/SenseCAP_Mate_App_Preset_Template_Reference_List.xlsx

Name	Introduction Link
01-S500 Weather Station	https://www.seeedstudio.com/SenseCAPONE-S500-5in1-Compact-Weather-Sensor-p-4880.html
02-S700 Weather Station	https://www.seeedstudio.com/SenseCAPONE-S700-7in1-Compact-Weather-Sensor-p-4879.html
03-S900 Weather Station	https://www.seeedstudio.com/SenseCAPONE-S900-9in1-Compact-Weather-Sensor-p-4881.html
04-S1000 Weather Station	https://www.seeedstudio.com/SenseCAP-S1000-10-in-1-Compact-Weather-Sensor-with-CO2-Measurement-p-5362.html
05-ORCH S4 T&H&Baro&Light Sensor	https://www.seeedstudio.com/ORCH-S4-A1B-p-4856.html
06-pH Sensor	https://www.seeedstudio.com/RS485-pH-Sensor-S-pH-01A-p-4632.html
07-EC&TDS Sensor	https://www.seeedstudio.com/EC-RS485-p-4848.html
08-PAR Sensor	https://www.seeedstudio.com/RS485-S-PAR-02A-p-4829.html
09-Leaf Temp&Humi Sensor	https://www.seeedstudio.com/leaf-wetness-sensor-p-b-4861.html
10-Light Intensity Sensor	https://www.seeedstudio.com/light-intensity-sensor-p-a-4863.html
11-Rain Gauge RG-15	https://www.seeedstudio.com/Rain-Gauge-RG-15-p-4648.html

12-Liquid Level Sensor	https://www.seeedstudio.com/Liquid-Level-Sensor-p-4619.html

1.2 How to Use the Preset Template

1) Hook up the sensor probe to data logger.

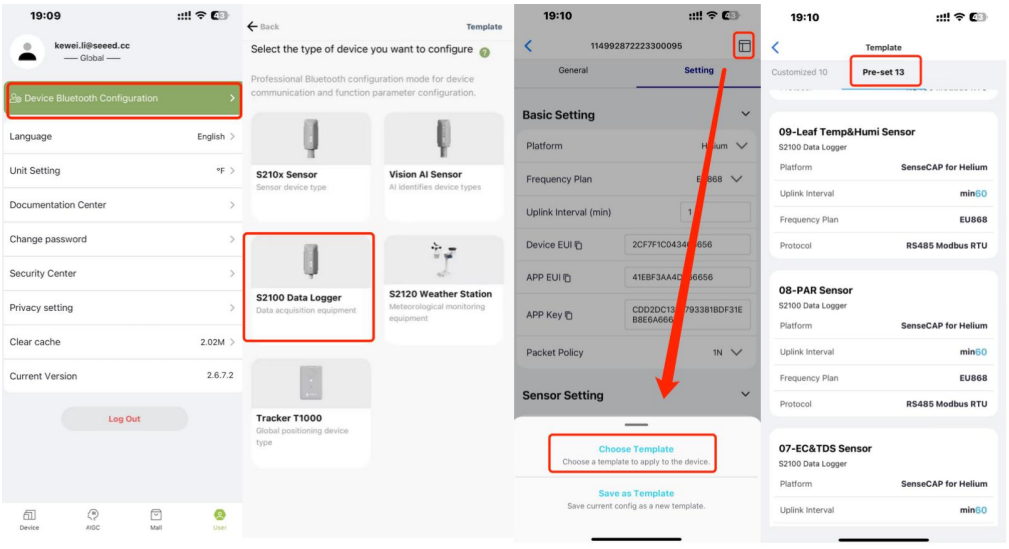


For the sequential connection of the sensor, please refer to the sensor datasheet or the subsequent chapters.

2) Assemble the data logger and tighten the screws to ensure water resistance.

3) Select the S2100 and pair to data logger via SenseCAP Mate App.

4) Click on the template feature in the upper right corner.

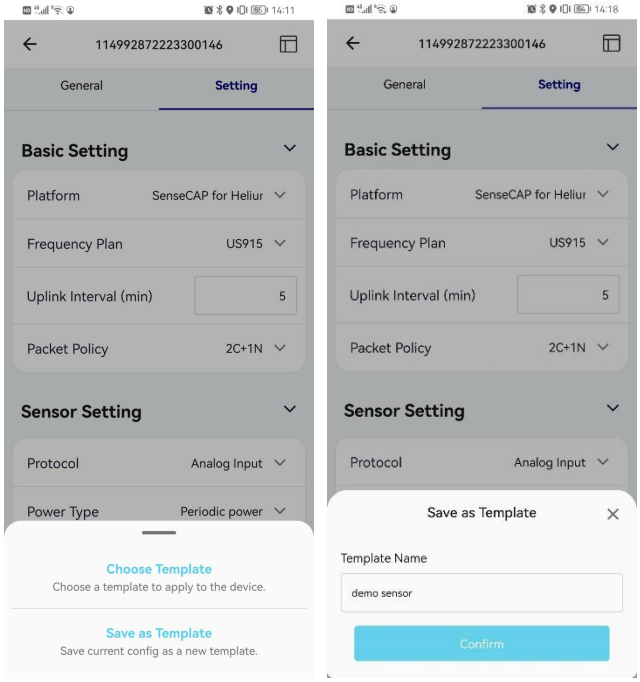


Using pre-set template set sensor via SenseCAP Mate App

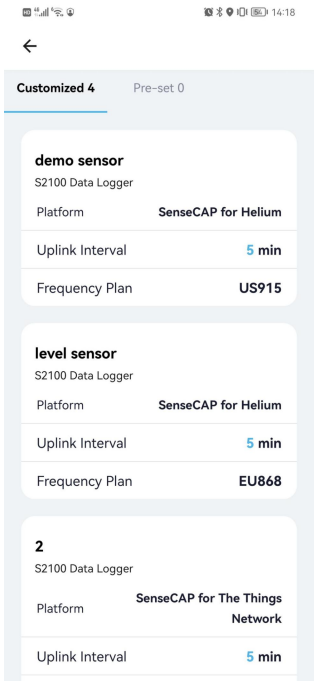
2. Customizing a Template

2.1 Save as Template

1) When you configure a new sensor, you can save the configuration parameters as a template.

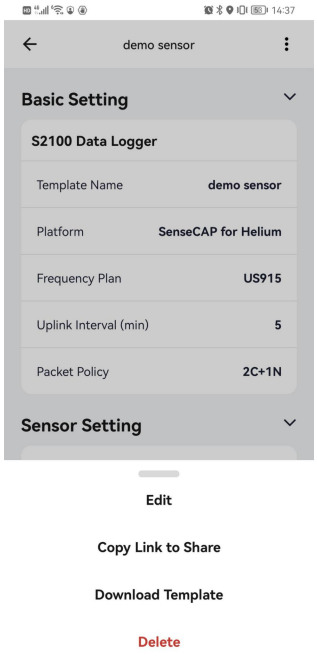


2) After naming the template, you can view it on the Custom template page.

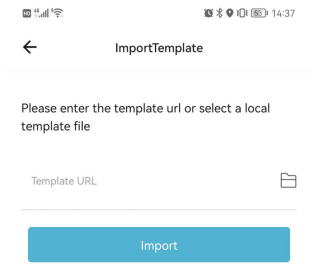


2.2 Import and Export a Template

1) When you want to share a template, you can choose to share the link or download the template file.



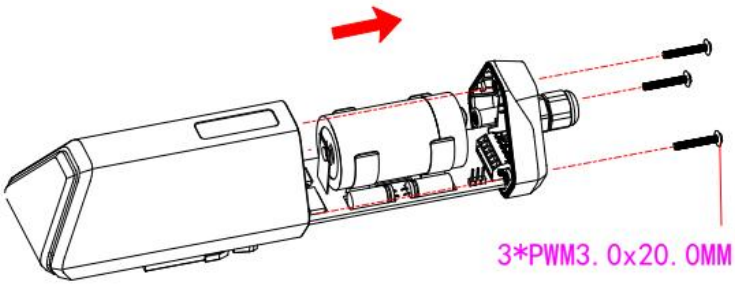
2) When you want to import a template, you can choose to paste the URL or import the file.



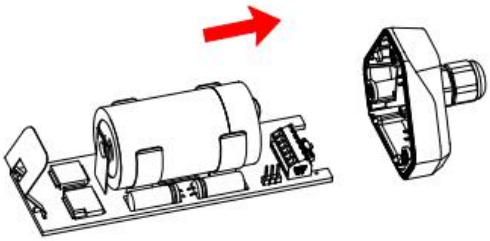
3. Hook up the Seeed Preset Sensor

3.1 Disassemble the Data Logger

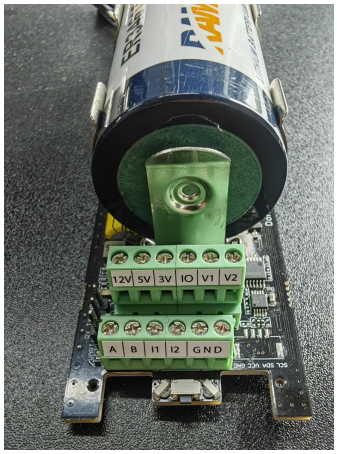
1. Unscrew three screws.



2. Take down the cover.



3. Remove the thread cap and pass it through the cable of the sensor, pass it through the bottom cover, and connect it to the wiring terminal.



No.	Pin	Description
1	12V	External 12V input voltage. The Data Logger can be powered by an external 12V DC power supply. When using 12V power supply, the battery will serve as backup power supply.
2	5V	5V output voltage, providing 5V voltage to the sensor.
3	3V	3V output voltage, providing 3V voltage to the sensor.
4	IO	Acquisition level or pulse input
5	V1	The voltage input of 0 to 10V is collected
6	V2	The voltage input of 0 to 10V is collected
7	A	RS485 A/+
8	B	RS485 B/-
9	I1	Collect the current input from 4 to 20mA
10	I2	Collect the current input from 4 to 20mA
11	GND	Ground pin
12	GND	Ground pin

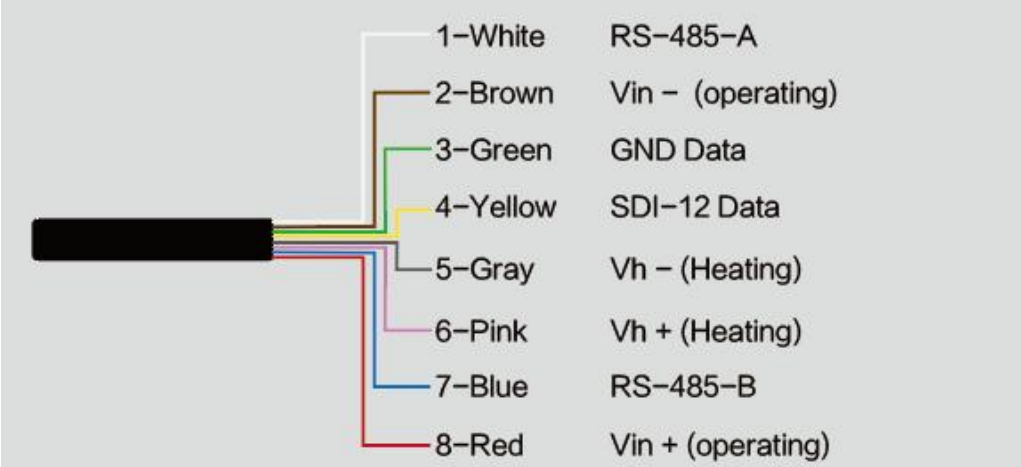
3.2 [01-Weather Station (S500/S700/S900/S1000)]

3.2.1 Preparation

Picture	Type	Quantity
	Data Logger	1
	ONE Compact Weather Station Sensor	1
	Junction box	1
	M12 Cable	1
	8 pin wire (40cm)	1

3.2.2 Connect to the junction box

Wire sequence of M12 cable:

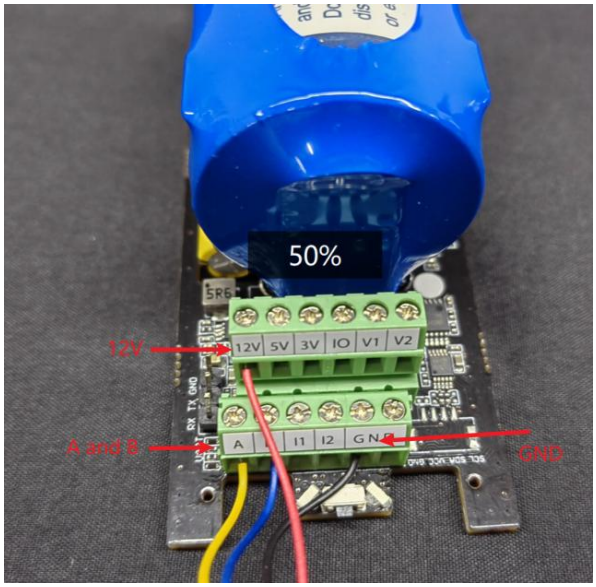


M12 8pin connector definition

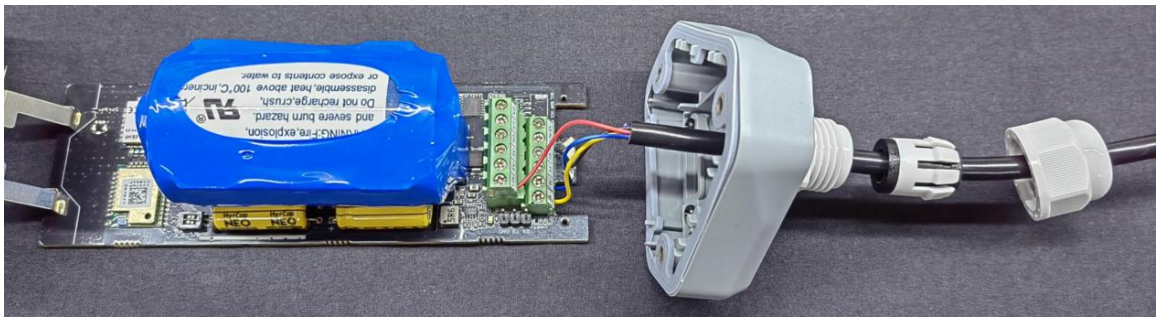
When your sensor needs 12V power, the battery will not be able to drive the sensor. Therefore, an external 12V power supply is required.

1) Prepare the following items: 12V DC adapter, Junction box, and 4-pin wire.

2) Wire to the terminal of the Data Logger.

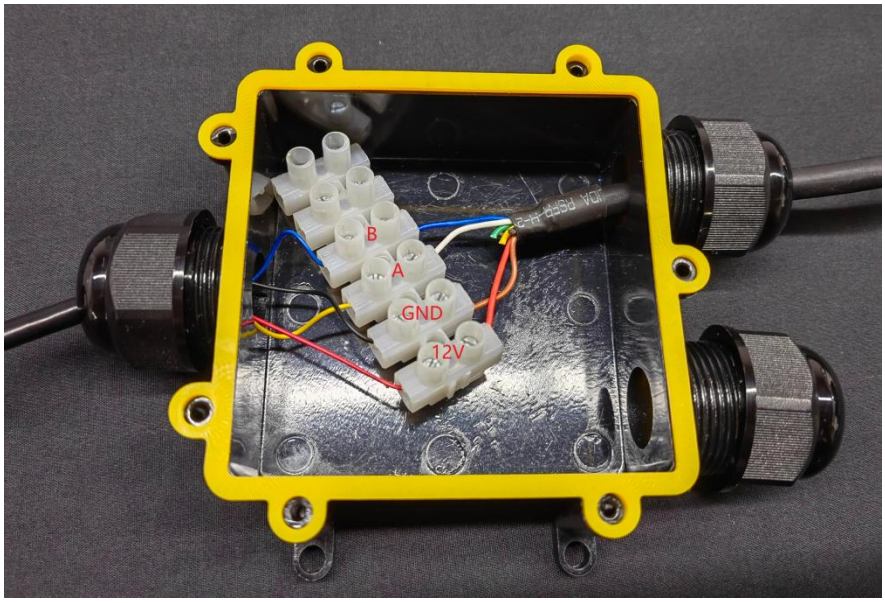


Connect the cover, rubber ring and screw cap in turn.



3) Wire to the terminal of the junction box.

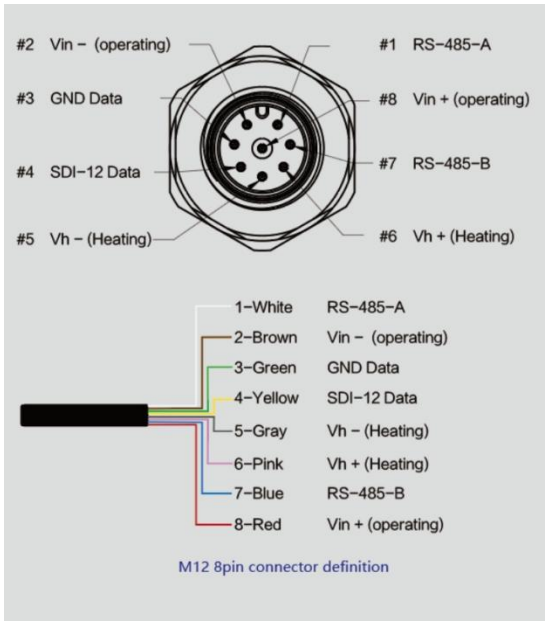
4) Connect the M12 sensor wire to the junction box.



5) Connect the 12V DC adapter to the power supply.

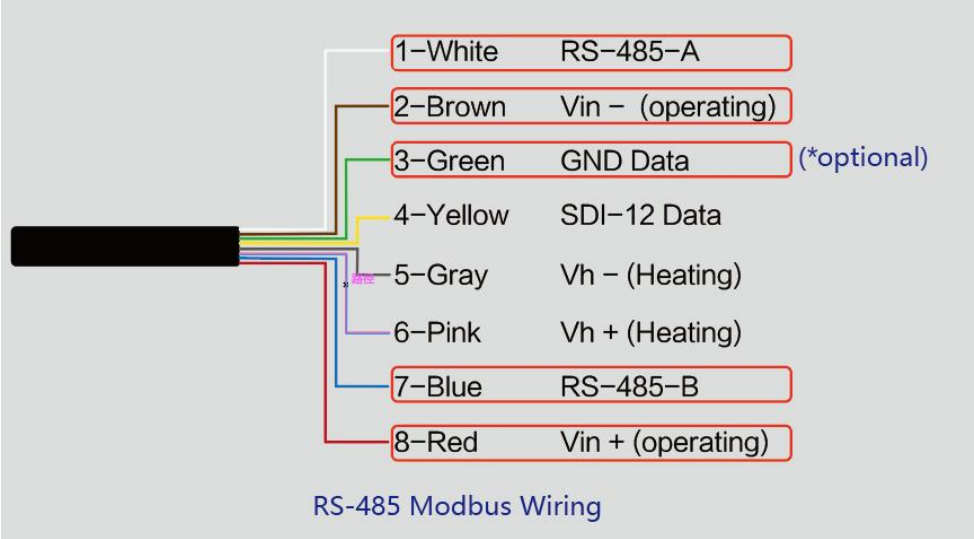
3.2.3 Connect to the sensor

Wire sequence of ONE Compact Weather Station Sensor:



The device adopts an M12 8-pin connector, the different colored pins provide power and data communication (as shown in the above diagram).

When working with the RS-485, you can connect only 4 wires (not using a heating function), and the rest can be individually wrapped with tape to prevent short circuit.

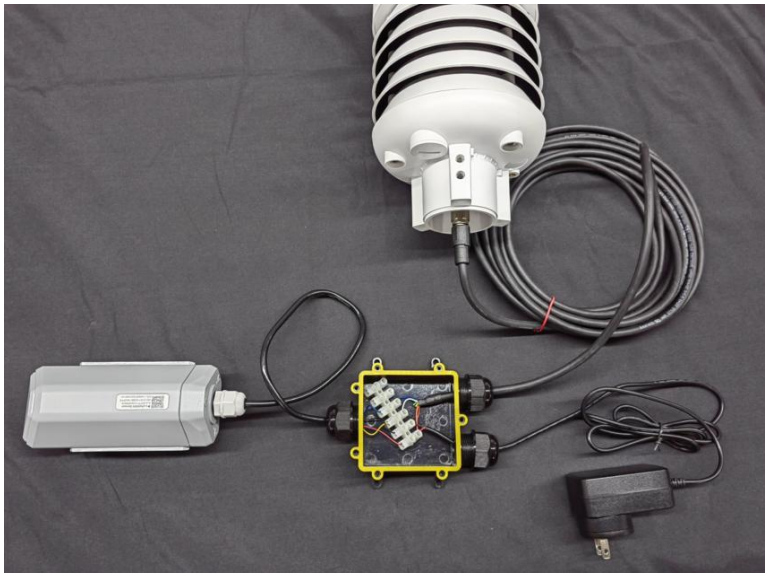


RS-485 Modbus Wiring

The holes of the cable and the pins of the device connector **must be aligned** when the cable is plugged in.

Plugin the cable and tighten it clockwise

To complete the assembly.



Tighten the screws and screw caps to check the waterproofing. If the wire diameter is too thin, add waterproof tape for winding.

*Note: When assembling the device, it is necessary to install the waterproof pad of the Data Logger and the adapter box, and tighten the screw cap and screw, otherwise the waterproof effect of the device may be affected!

If the wire diameter is too small, it can be wrapped with waterproof tape, as shown below:

3.3 [05-ORCH S4 T&H&Baro&Light Sensor]

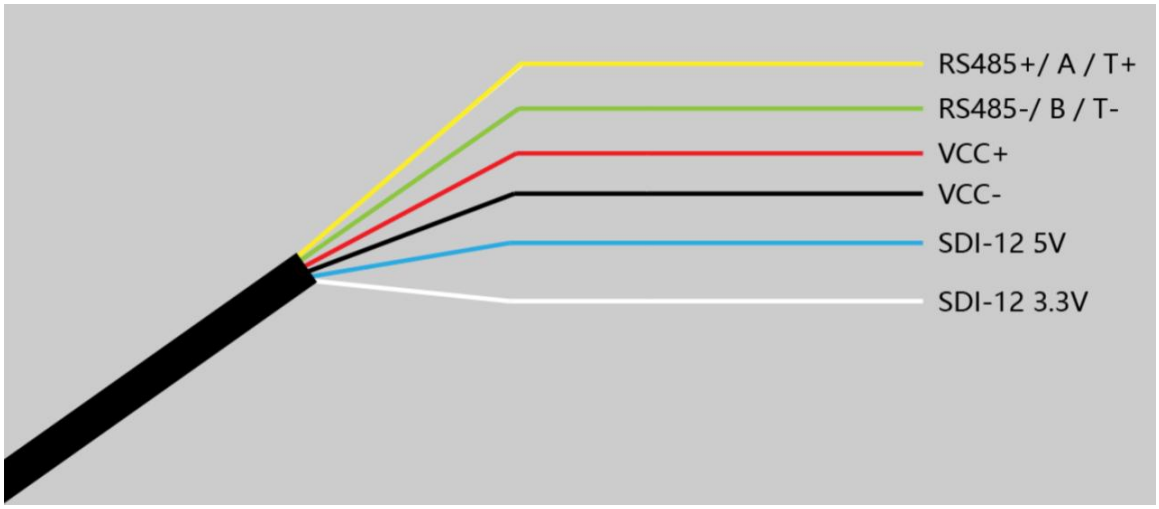
3.3.1 Preparation

Picture	Type	Quantity
	Data Logger	1
	ORCH S4 Sensor	1

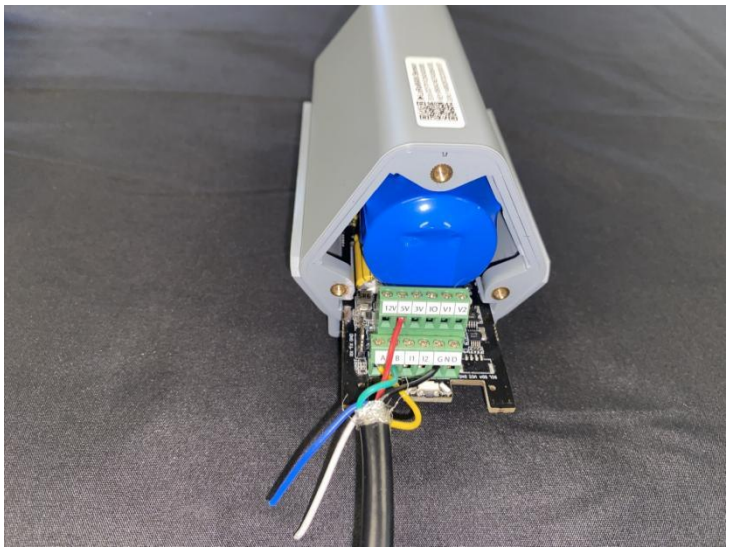
3.3.2 Connect to the Data Logger

Wire sequence of ORCH S4 sensor:

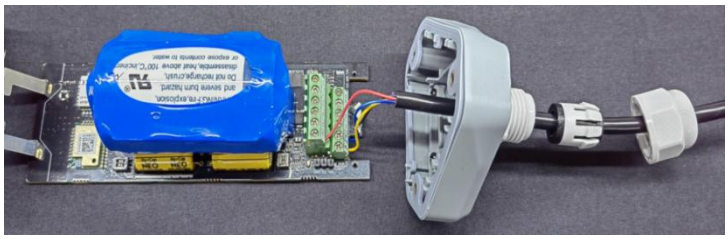
Wire Type	Description
Red Wire	5V
Black Wire	GND(Any port would be OK.)
Yellow Wire	RS485 A
Green Wire	PS485 B
Blue Wire	SDI-12 5V, ignore it here
White Wire	SDI-12 3.3V, ignore it here



1. Pass the S4 sensor cable through the bottom cover and connect it to the base of the Data Logger according to the wire sequence requirements;



2. Connect the upper cover, rubber ring and screw cap in sequence



3. **Tighten the screws and screw caps to check the waterproofing**. If the wire diameter is too thin, add waterproof tape for winding.

***Note:** When assembling the device, it is necessary to install the waterproof pad of the Data Logger and the adapter box, and tighten the screw cap and screw, otherwise the waterproof effect of the device may be affected!

If the wire diameter is too small, it can be wrapped with waterproof tape, as shown below:

3.4 [06-pH Sensor]

3.4.1 Preparation

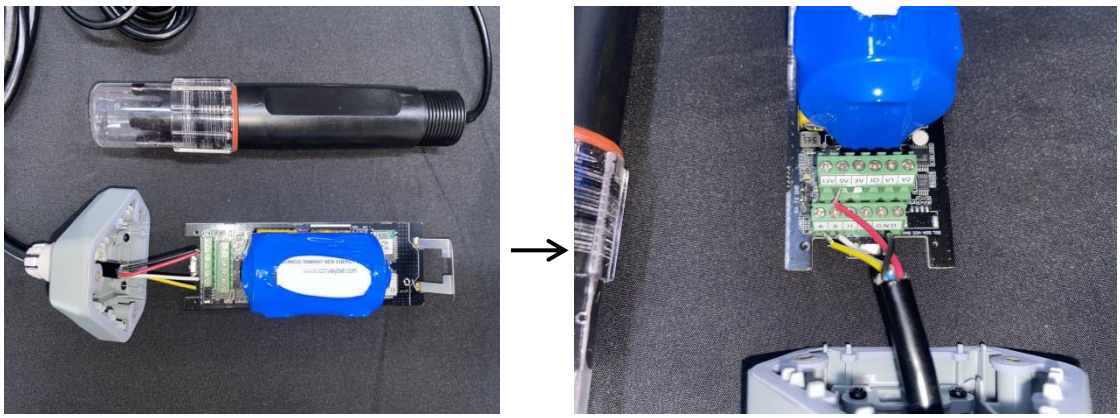
Picture	Type	Quantity
	Data Logger	1
	pH sensor	1

3.4.2 Connect to the Data Logger

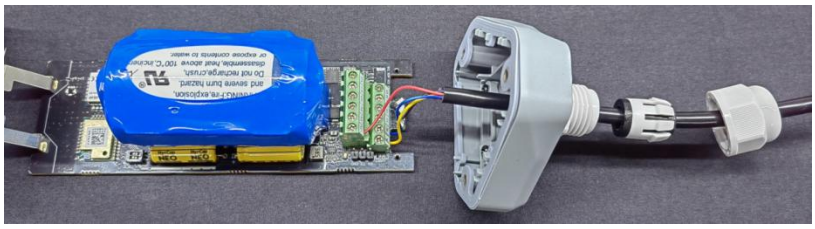
Wire sequence of pH sensor:

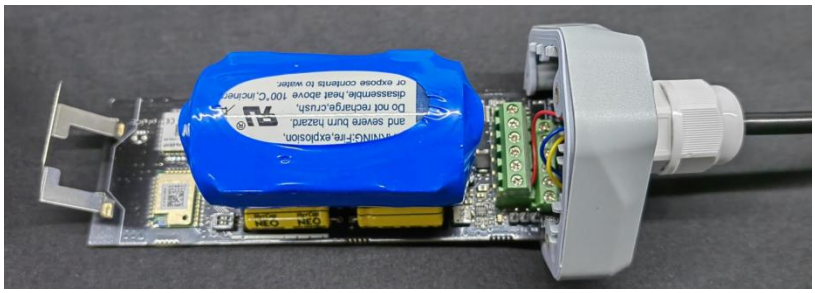
Wire Type	Description
Red Wire	5V
Black Wire	GND(Any port would be OK.)
Yellow Wire	RS485 A
White Wire	PS485 B

1. Pass the pH sensor cable through the bottom cover and connect it to the base of the Data Logger according to the wire sequence requirements;



2. Connect the upper cover, rubber ring and screw cap in sequence





3. **Tighten the screws and screw caps to check the waterproofing**. If the wire diameter is too thin, add waterproof tape for winding.

***Note:** When assembling the device, it is necessary to install the waterproof pad of the Data Logger and the adapter box, and tighten the screw cap and screw, otherwise the waterproof effect of the device may be affected!

If the wire diameter is too small, it can be wrapped with waterproof tape, as shown below:

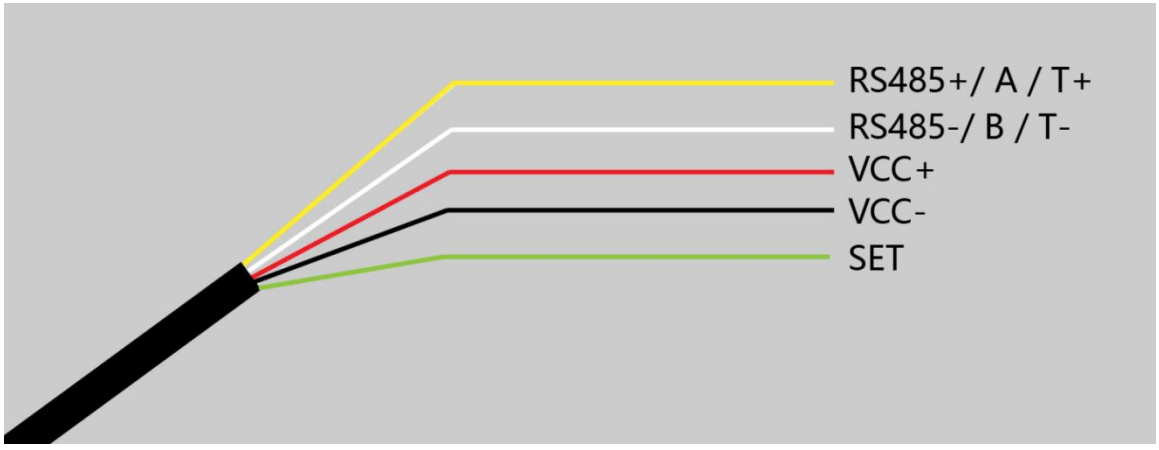
3.5 [07-EC&TDS Sensor]

3.5.1 Preparation

Picture	Type	Quantity
	Data Logger	1
	EC&TDS sensor	1

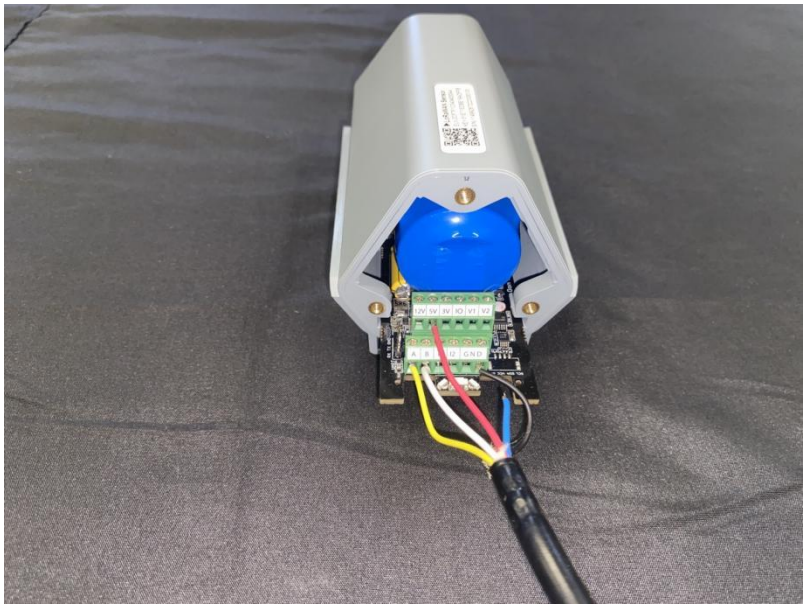
3.5.2 Connect to the Data Logger

Wire sequence of EC&TDS sensor:

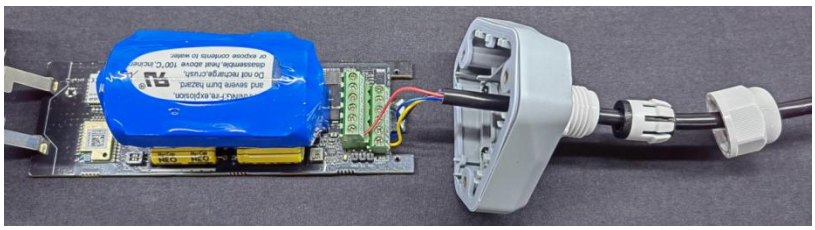


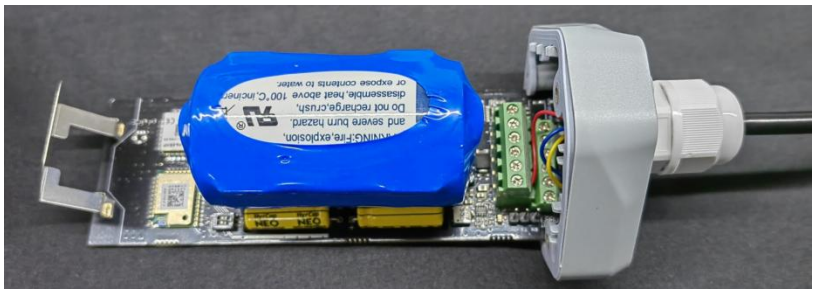
Wire Type	Description
Red Wire	5V
Black Wire	GND(Any port would be OK.)
Yellow Wire	RS485 A
White Wire	PS485 B
Green Wire	SET, V+ (power) when boot module into the "setting mode". Not connected or connected with the GNDwhen boot into "mode of operation", ignore it here.

1. Pass the EC&TDS sensor cable through the bottom cover and connect it to the base of the Data Logger according to the wire sequence requirements;

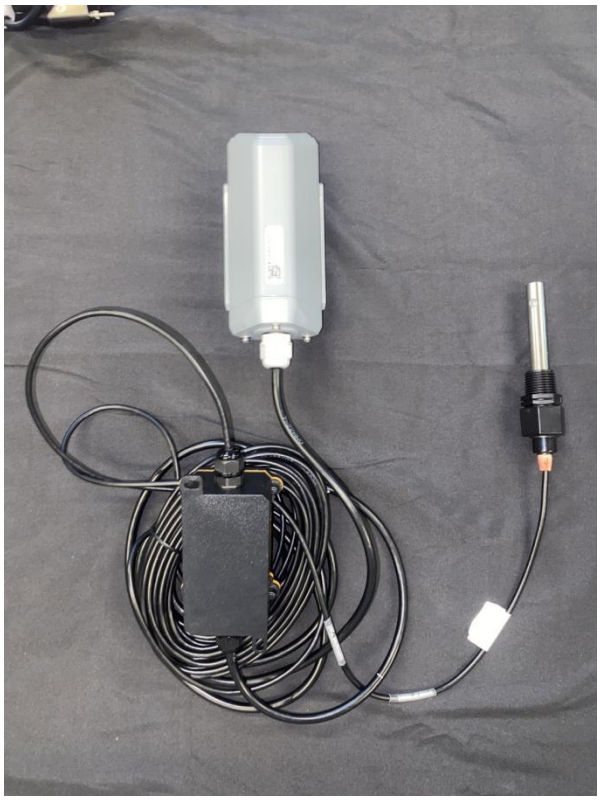


2. Connect the upper cover, rubber ring and screw cap in sequence





3. **Tighten the screws and screw caps to check the waterproofing**. If the wire diameter is too thin, add waterproof tape for winding.



***Note:** When assembling the device, it is necessary to install the waterproof pad of the Data Logger and the adapter box, and tighten the screw cap and screw, otherwise the waterproof effect of the device may be affected!

If the wire diameter is too small, it can be wrapped with waterproof tape, as shown below:

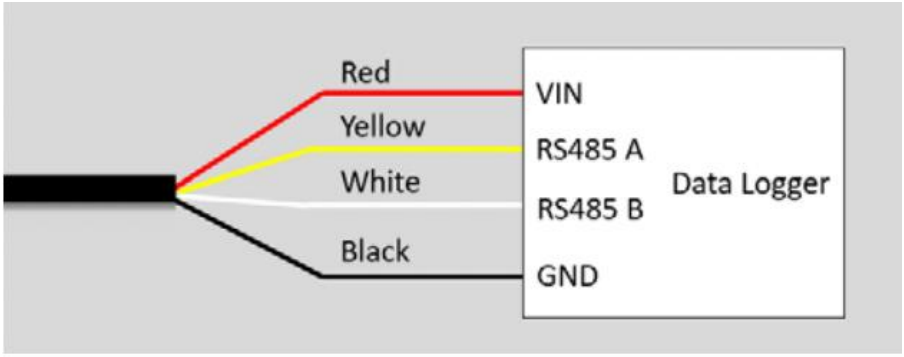
3.6 [08-PAR Sensor]

3.6.1 Preparation

Picture	Type	Quantity
	Data Logger	1
	PAR sensor	1

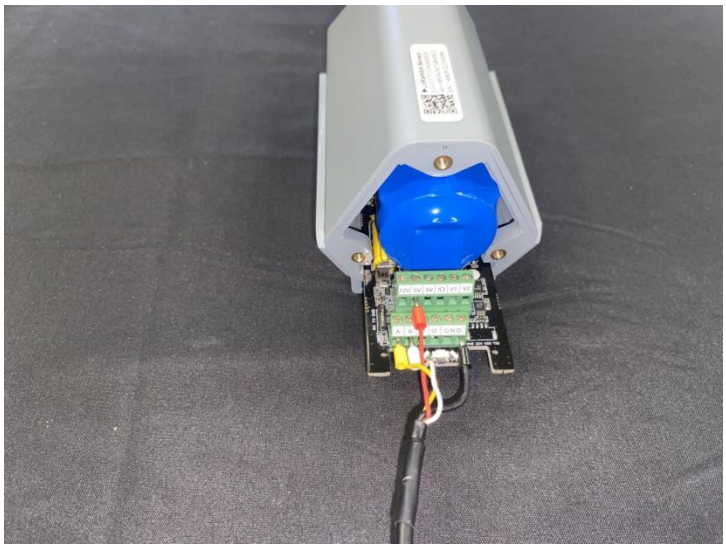
3.6.2 Connect to the Data Logger

Wire sequence of PAR sensor:



Wire Type	Description
Red Wire	5V
Black Wire	GND(Any port would be OK.)
Yellow Wire	RS485 A
White Wire	PS485 B

1. Pass the PAR sensor cable through the bottom cover and connect it to the base of the Data Logger according to the wire sequence requirements;



2. Connect the upper cover, rubber ring and screw cap in sequence

3. **Tighten the screws and screw caps to check the waterproofing**. If the wire diameter is too thin, add waterproof tape for winding.

*Note: When assembling the device, it is necessary to install the waterproof pad of the Data Logger and the adapter box, and tighten the screw cap and screw, otherwise the waterproof effect of the device may be affected!

If the wire diameter is too small, it can be wrapped with waterproof tape, as shown below:

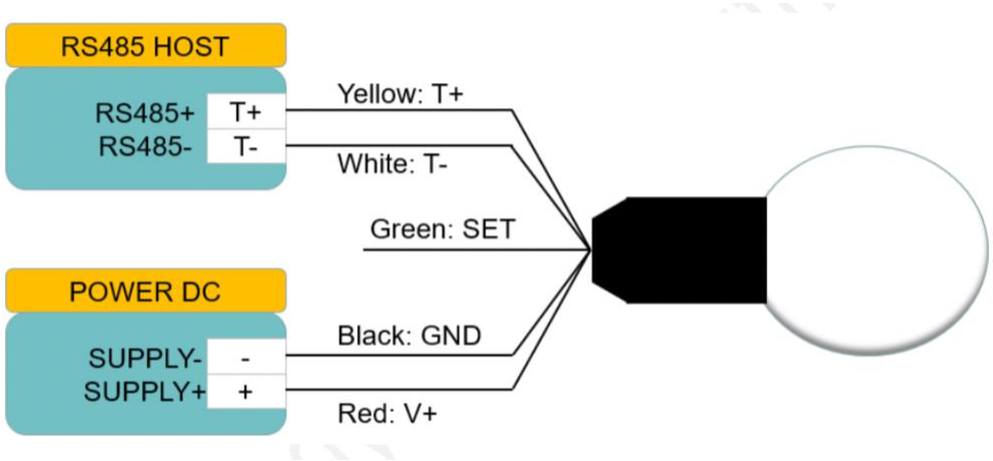
3.7 [09-Leaf Temp&Humi Sensor]

3.7.1 Preparation

Picture	Type	Quantity
	Data Logger	1
	Leaf Temp&Humi sensor	1

3.7.2 Connect to the Data Logger

Wire sequence of Leaf Temp&Humi sensor:



Wire Type	Description
Red Wire	5V
Black Wire	GND(Any port would be OK.)
Yellow Wire	RS485 A
White Wire	PS485 B

1. Pass the sensor cable through the bottom cover and connect it to the base of the Data Logger according to the wire sequence requirements;

2. Connect the upper cover, rubber ring and screw cap in sequence

3. **Tighten the screws and screw caps to check the waterproofing**. If the wire diameter is too thin, add waterproof tape for winding.

*Note: When assembling the device, it is necessary to install the waterproof pad of the Data Logger and the adapter box, and tighten the screw cap and screw, otherwise the waterproof effect of the device may be affected!

If the wire diameter is too small, it can be wrapped with waterproof tape, as shown below:

3.8 [10-Light Intensity Sensor]

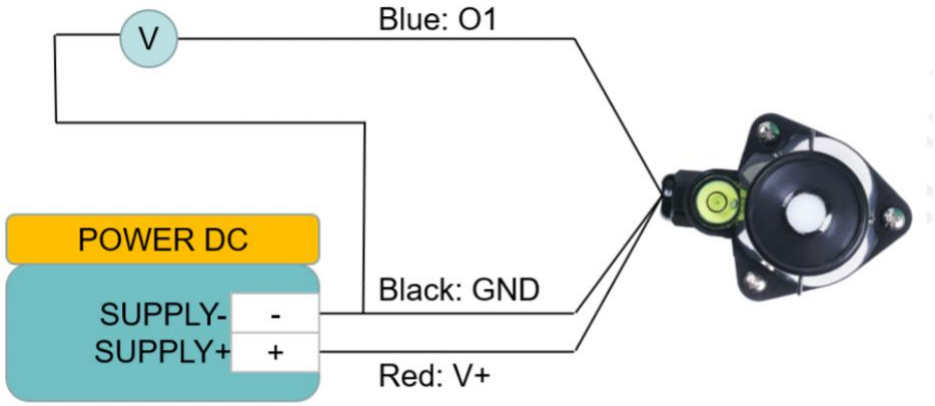
3.8.1 Preparation

Picture	Type	Quantity
	Data Logger	1

	Light sensor	1

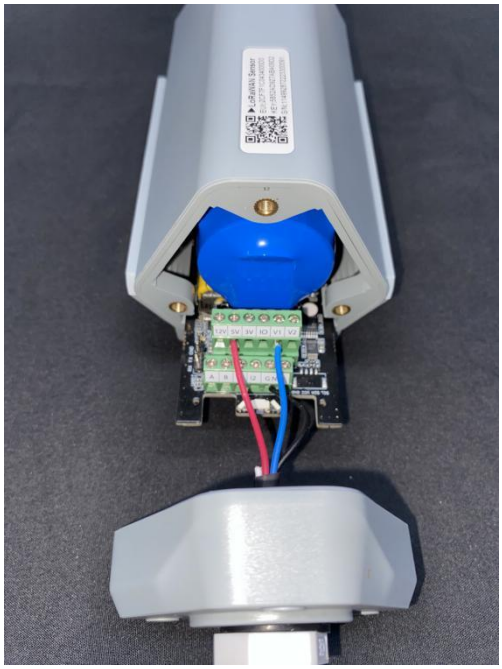
3.8.2 Connect to the Data Logger

Wire sequence of Light sensor:



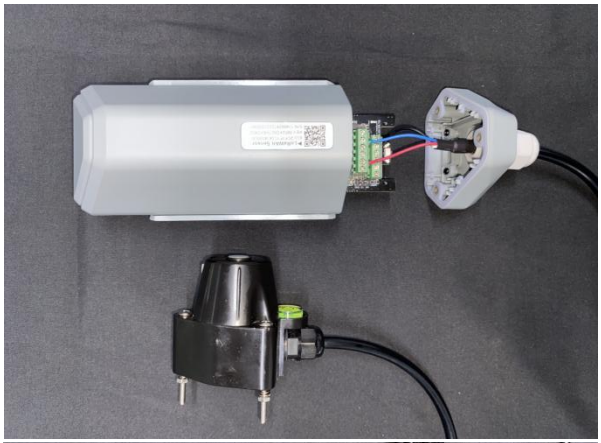
Wire Type	Description
Red Wire	5V
Black Wire	GND(Any GND port would be OK.)
Blue Wire	V1

1. Pass the 8 pin wire through the bottom cover and connect it to the base of the Data Logger according to the wire sequence requirements;



2. Connect the upper cover, rubber ring and screw cap in sequence

3. Tighten the screws and screw caps to check the waterproofing. If the wire diameter is too thin, add waterproof tape for winding.



*Note: When assembling the device, it is necessary to install the waterproof pad of the Data Logger and the adapter box, and tighten the screw cap and screw, otherwise the waterproof effect of the device may be affected!

If the wire diameter is too small, it can be wrapped with waterproof tape, as shown below:

3.9 [11-Rain Gauge RG-15]

3.9.1 Preparation

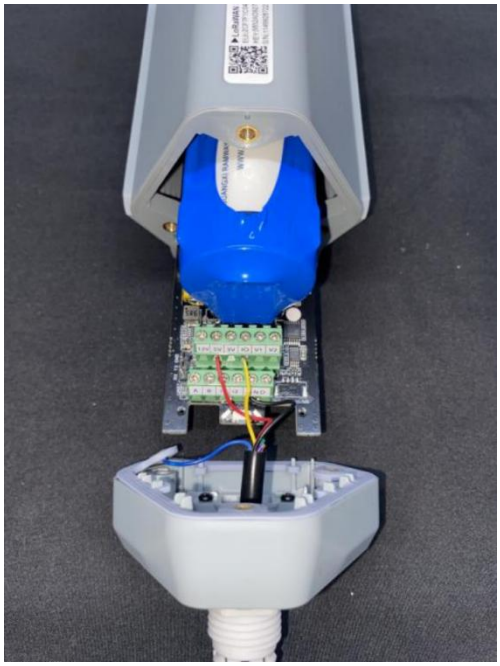
Picture	Type	Quantity
	Data Logger	1
	Rain Gauge RG-15 Rain sensor	1
	8 pin wire (40cm)	1

3.9.2 Connect to the Data Logger

Wire sequence of Data logger:

Wire Type	Description
Red Wire	5V
Black Wire	GND(Any port would be OK.)
Yellow Wire	IO

4. Pass the 8 pin wire through the bottom cover and connect it to the base of the Data Logger according to the wire sequence requirements;



5. Connect the upper cover, rubber ring and screw cap in sequence

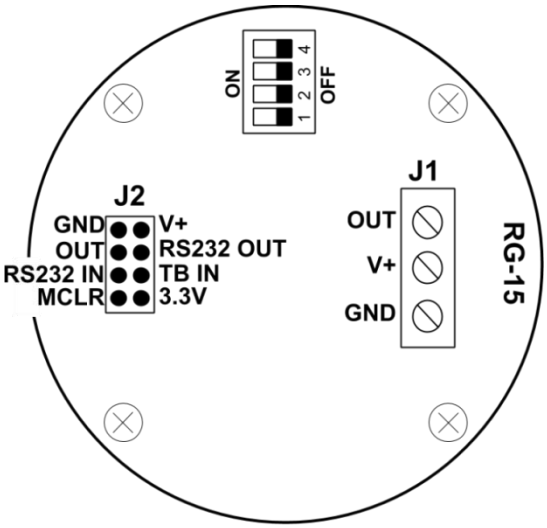
6. **Tighten the screws and screw caps to check the waterproofing**. If the wire diameter is too thin, add waterproof tape for winding.

***Note:** When assembling the device, it is necessary to install the waterproof pad of the Data Logger and the adapter box, and tighten the screw cap and screw, otherwise the waterproof effect of the device may be affected!

If the wire diameter is too small, it can be wrapped with waterproof tape, as shown below:

3.9.3 Connect to the Rain Gauge Sensor

Wire sequence of Rain Gauge sensor:

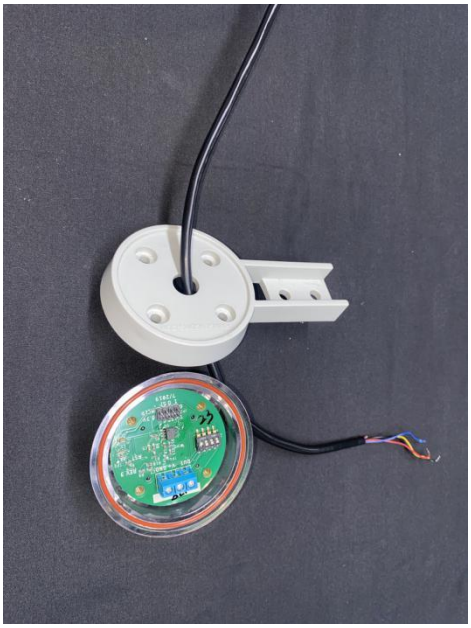


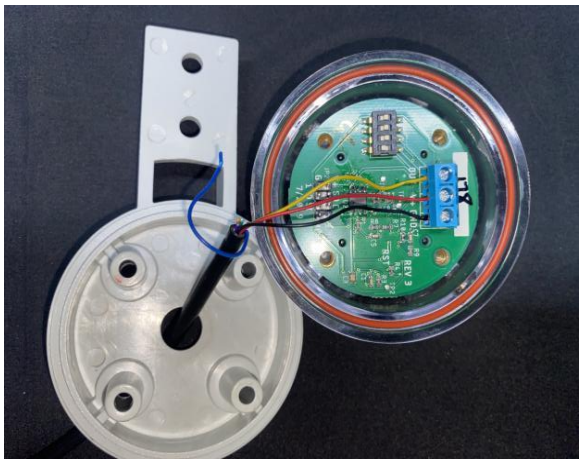
1. Unscrew four screws,take down the cover.Pass the 8 pin wire through the bottom cover and connect it to the base of the J1 according to the wire sequence requirements;

Red wire to V+;

Black wire to GND;

Yellow wire to OUT.





2. Turn the DIP Switches **1** of the rain sensor S1 base to the ON, turn the switch **2** to the OFF , and turn the **3** and **4** to the OFF;

3. Install the cover and tighten the screws. Complete the connection.

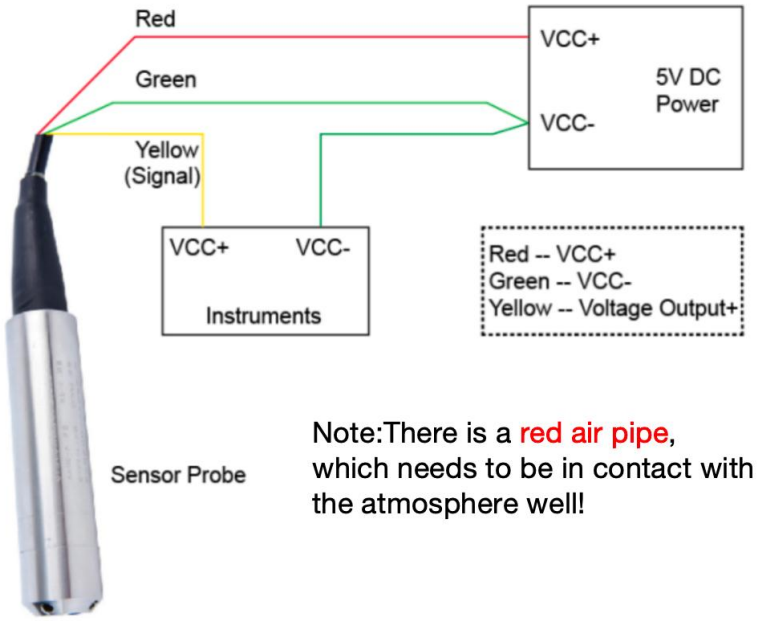
3.10 [12-Liquid Level Sensor]

3.10.1 Preparation

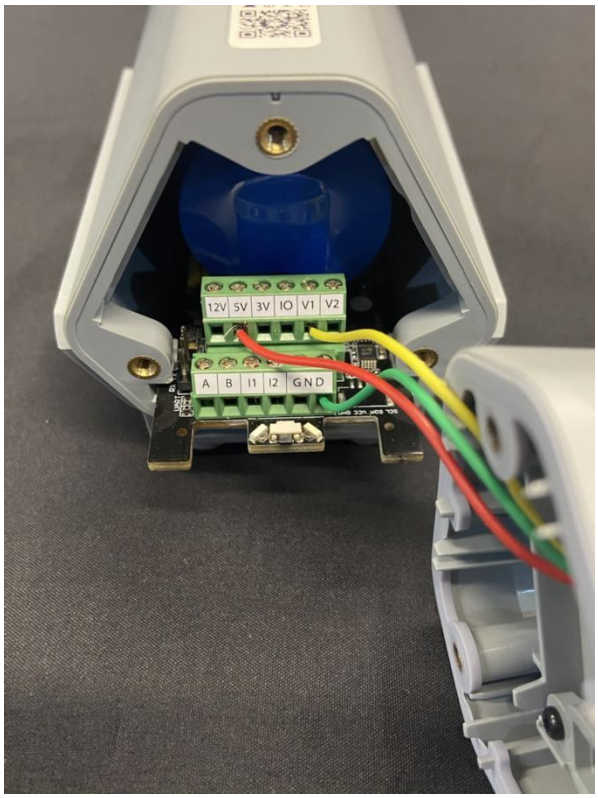
Picture	Type	Quantity
	Data Logger	1
	Liquid Level sensor	1

3.10.2 Connect to the Data Logger

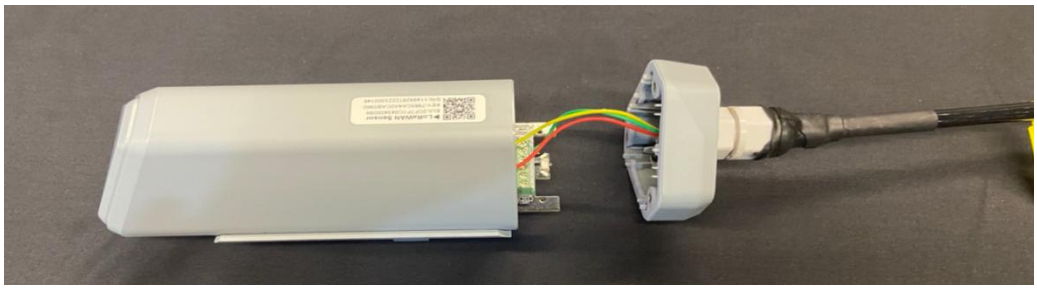
Wire sequence of Liquid Level sensor sensor:



1. Pass the sensor cable through the bottom cover and connect it to the base of the Data Logger according to the wire sequence requirements;



2. Connect the upper cover, rubber ring and screw cap in sequence



3. **Tighten the screws and screw caps to check the waterproofing**. If the wire diameter is too thin, add waterproof tape for winding.

***Note:** When assembling the device, it is necessary to install the waterproof pad of the Data Logger and the adapter box, and tighten the screw cap and screw, otherwise the waterproof effect of the device may be affected!

There is a red air pipe, which needs to be in contact with the atmosphere well!This is to keep air pressure balance.

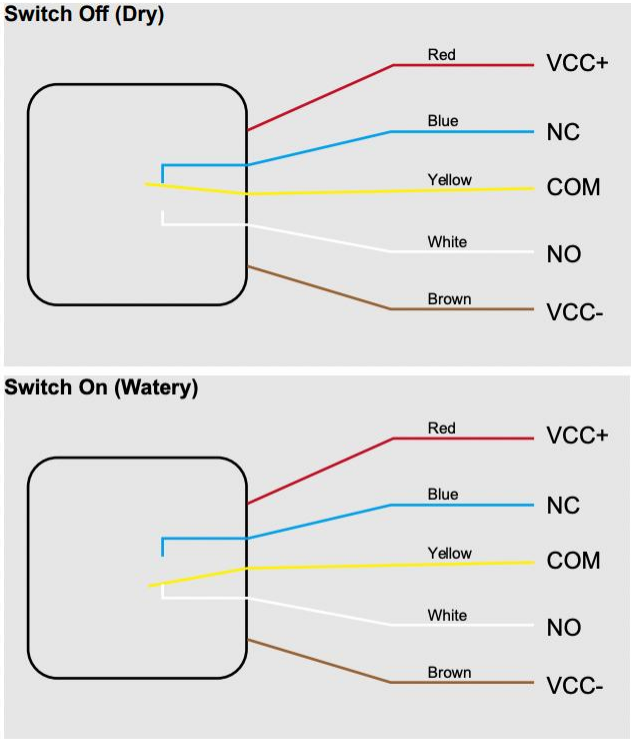
3.11 [13-Water Leak Sensor]

3.11.1 Preparation

Picture	Type	Quantity
	Data Logger	1
	Water Leak sensor	1

3.11.2 Connect to the Data Logger

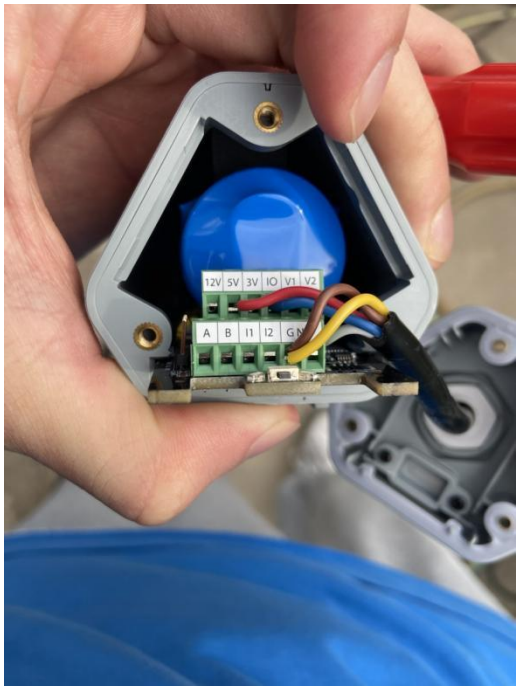
Wire sequence of Water Leak sensor:



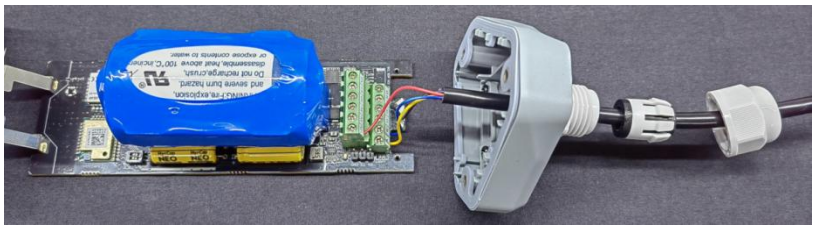
Red wire and brown wire ---- VCC+ and VCC-
Yellow wire ---- Relay common pin
Blue wire ---- Relay normal closed pin
White wire ---- Relay normal open pin

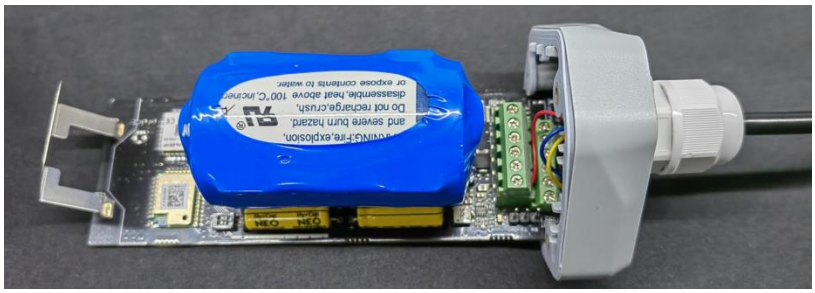
Wire Type	Description
Red Wire	5V
Yellow Wire	GND(Any port would be OK.)
Blue Wire	IO
Brown Wire	GND(Any port would be OK.)
White Wire	Ignore it here.

1. Pass the sensor cable through the bottom cover and connect it to the base of the Data Logger according to the wire sequence requirements;



2. Connect the upper cover, rubber ring and screw cap in sequence





3. **Tighten the screws and screw caps to check the waterproofing**. If the wire diameter is too thin, add waterproof tape for winding.

***Note:** When assembling the device, it is necessary to install the waterproof pad of the Data Logger and the adapter box, and tighten the screw cap and screw, otherwise the waterproof effect of the device may be affected!

If the wire diameter is too small, it can be wrapped with waterproof tape, as shown below:

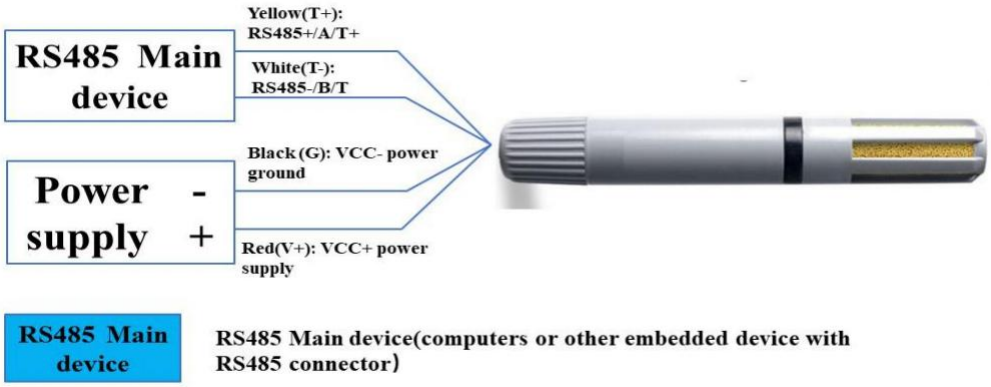
3.12 [14-Air Temp&Humi Sensor]

3.12.1 Preparation

Picture	Type	Quantity
	Data Logger	1
	Air Temp&Humi sensor	1

3.12.2 Connect to the Data Logger

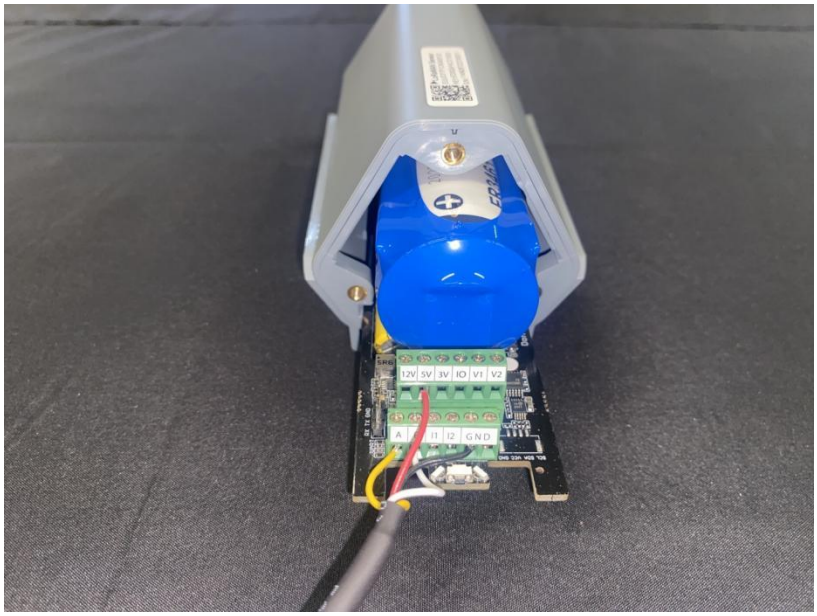
Wire sequence of Air Temp&Humi sensor:



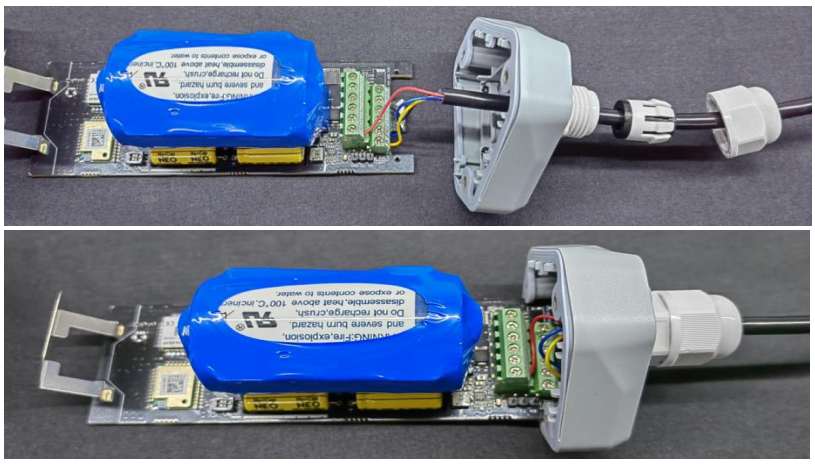
Wire Type	Description

Red Wire	5V
Black Wire	GND(Any port would be OK.)
Yellow Wire	RS485 A
White Wire	PS485 B

1. Pass the pH sensor cable through the bottom cover and connect it to the base of the Data Logger according to the wire sequence requirements;



2. Connect the upper cover, rubber ring and screw cap in sequence



3. **Tighten the screws and screw caps to check the waterproofing**. If the wire diameter is too thin, add waterproof tape for winding.

*Note: When assembling the device, it is necessary to install the waterproof pad of the Data Logger and the adapter box, and tighten the screw cap and screw, otherwise the waterproof effect of the device may be affected!

If the wire diameter is too small, it can be wrapped with waterproof tape, as shown below:

4. Support

Support is provided Monday to Friday, from 09:00 to 18:00 GMT+8. Due to different time zones, we cannot offer live support. However, your questions will be answered as soon as possible in the before-mentioned schedule.

Provide as much information as possible regarding your enquiry (product models, accurately describe your problem and steps to replicate it etc.) and send a mail to: sensecap@seeed.cc

4.1 Document Version

Version	Date	Description	Editor
V1.0.0	10/19/2022	First edition	Jenkin Lu
V1.0.1	8/16/2023	Update the App setting	Lee
V1.0.2	10/8/2023	Update the liquid level sensor	Lee