seeed studio S700 SenseCAP ONE 7 in 1 Compact Weather Sensor User Guide

Contents

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Product Information

The product is a Package 1S700/S800/S1000+4G Sensor Hub + PV-12W Solar Panel. It includes the following parts:

- ONE Compact Weather Station Sensor – 1

- High-efficiency Waterproof PV-12W Solar Panel – 1
- Sensor Hub – 1
- Antenna – 1
- Power Adapter – 1
- USB Serial Tool – 1
- Allen Hex Key and M5 Self-drilling Screw – 1/8
- Mounts – 4
- Ferrules – 2
- Aluminum Mounts – 2

Package

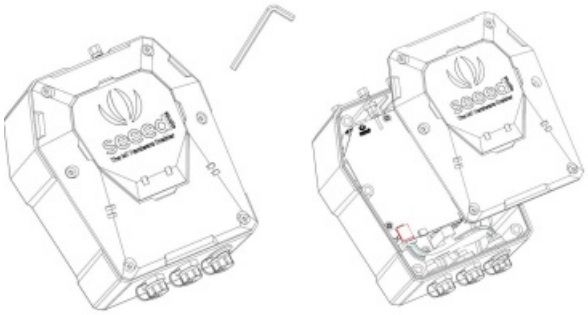
- S700/S800/S1000+4GSensorHub+PV-12WSolarPanel

Preparation

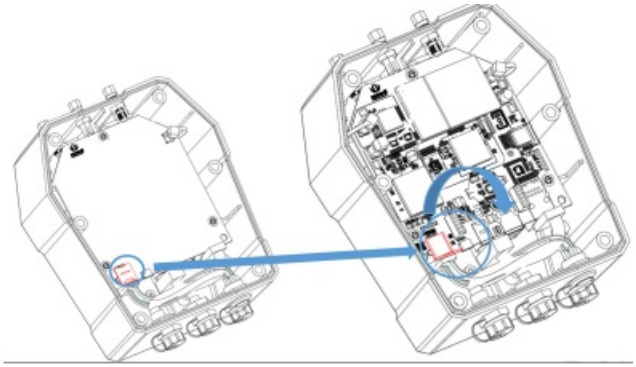
Picture	Parts	Number
	ONE Compact Weather Station Sensor	1
	High-efficiency Waterproof PV-12W Solar Panel	1
	Sensor Hub	1
	Antenna	1
	Power Adapter	1
	USB Serial Tool	1
	Allen Hex Key and M5 Self-drilling Screw	1/8
	Mounts	4
	Ferrules	2
	Aluminum Mounts	2

Step1: InstalltheSIMcard

1. RemovethesixscrewsfromthetopcoverwiththeAllenHex Key(included in the package)and openthelid.



2. SwipedownwardtoopentheSIMcardsocket,insert the MicroSIMcardandswipeupwardtolocktheSIMcardsocket. Makesureitisinstalledcorrectlyandclosethelidwiththescrews.

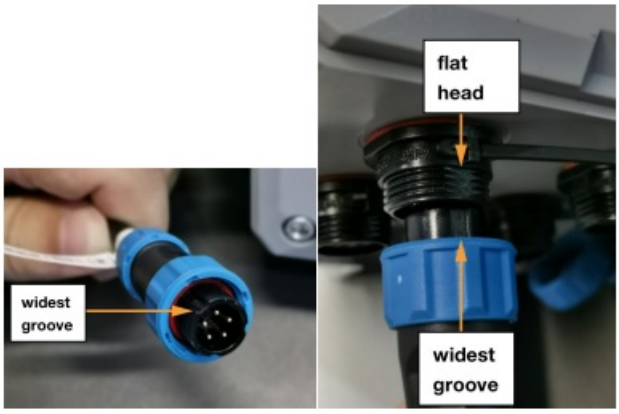


Note: When installing the cover screws, be sure to lock the screws tight, or it may affect the water resistance of the device!

Step 2 Install the Antenna
Remove the plastic cap from the antenna connector and screw the antenna clockwise.

Note: Do NOT connect the power supply when installing the antenna, as this may cause damage to the antenna circuit!
Step 3 Connect the Sensors Unscrew the protective cover of the connector and plug the sensor into the RS-485 connector.

When connecting the aviation connectors, align the widest groove on the male head to the position of the flat head, insert and tighten

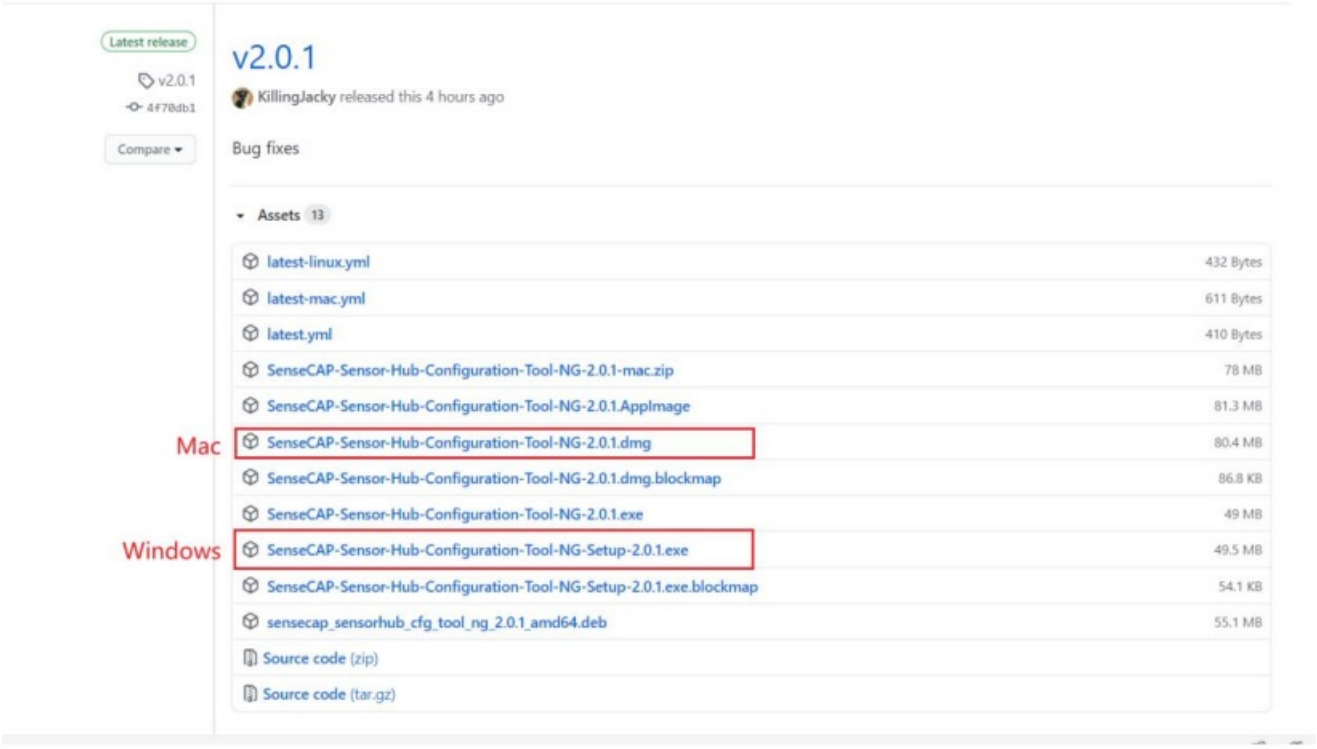


Note:

- It is recommended that you connect the sensors before connecting to the power supply. Or it the device might not recognize the sensors and requires a restart.
- When using a splitter, each RS-485 interface cannot connect to sensors with the same Modbus address.
- Each interface must be connected to sensors of the same voltage. For example, you can connect four 5V sensors to B1 port, while connecting four 12V sensors to B2 port, but do NOT connect both 5V and 12V sensors to the same port

Step 4 Configure APN

1. (1) Create an account Create your account at SenseCAP Portal
2. (2) Prepare Sensor Hub Configuration Tool
   Download the Sensor Hub Configuration Tool from GitHub:
   Releases · Seeed-Solution/SenseCAP-Sensor-Hub-Configuration-Tool-NG · GitHub
3. For MacOS, please install:
   SenseCAP-Sensor-Hub-Configuration-Tool-X.X.X dmg
4. For Windows, please install:
   SenseCAP-Sensor-Hub-Configuration-Tool-X.X.exe

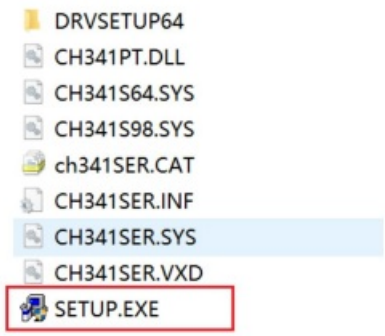


Note: The software may be updated, please download the latest version of the software

USB-to-TTL Cable and Driver Installation

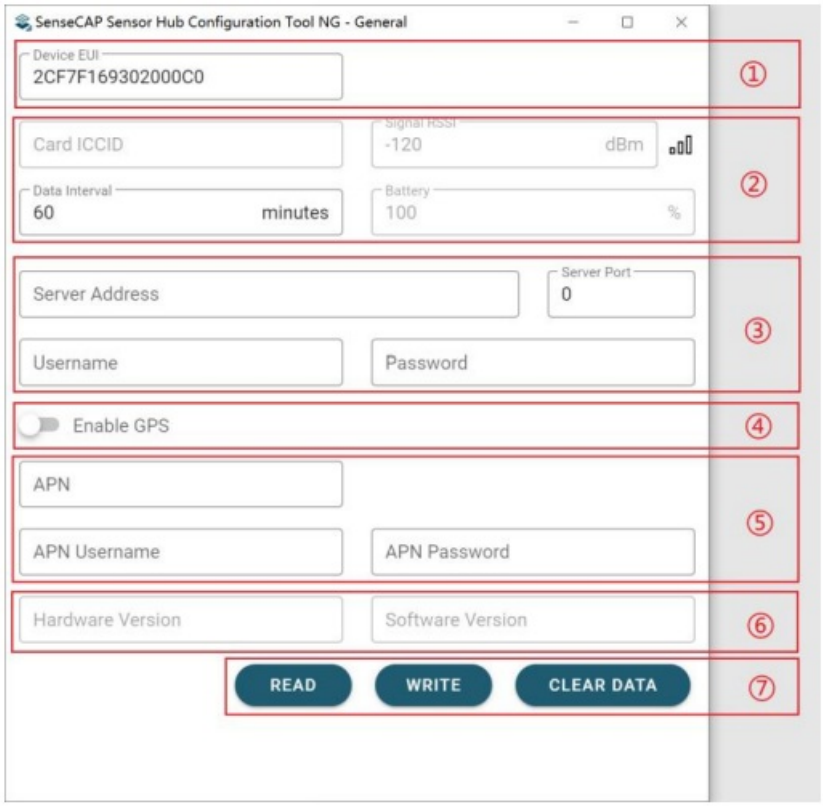
The aviation connect (blue part) is connected to the power port (B6) of Sensor Hub Data Logger and the USB port is connected to the computer.

Install the driver:
https://github.com/Jenkinlu001/SenseCAP/tree/master/Drivers



- Follow this path on your PC“Manage–Control Panel–Port”, and you can see the port number of the device you are using.
- Press the power switch to turn on the device. After booting, the “General Settings” button will light up, and the device’s information will be shown on the right side of the interface.

- Click “General Settings” and the configuration interface will pop up.



- APN, APN username, APN password: Type in your SIM Card’s APN information.
  Note: After completing the parameters, make sure to click “Write”.
  Enabling “Enable GPS” will result in a longer connection time. After configuring the server information, if you want to use the SenseCAP Cloud again, follow the similar method: In the main interface, type the command line: enter b => enter 1, and select SenseCAP Cloud Platform.

Step 5: Power on the Device

- Install antenna and SIM card, configure APN.
- Ensure the device is turned off when installing the antenna to avoid damage.
- Connect to the power adapter and turn on the device using the power switch.
  - **Initiation process:** Up to 5 minutes, depending on sensor type\ and quantity.

- **Data view:** Check on the cloud platform.

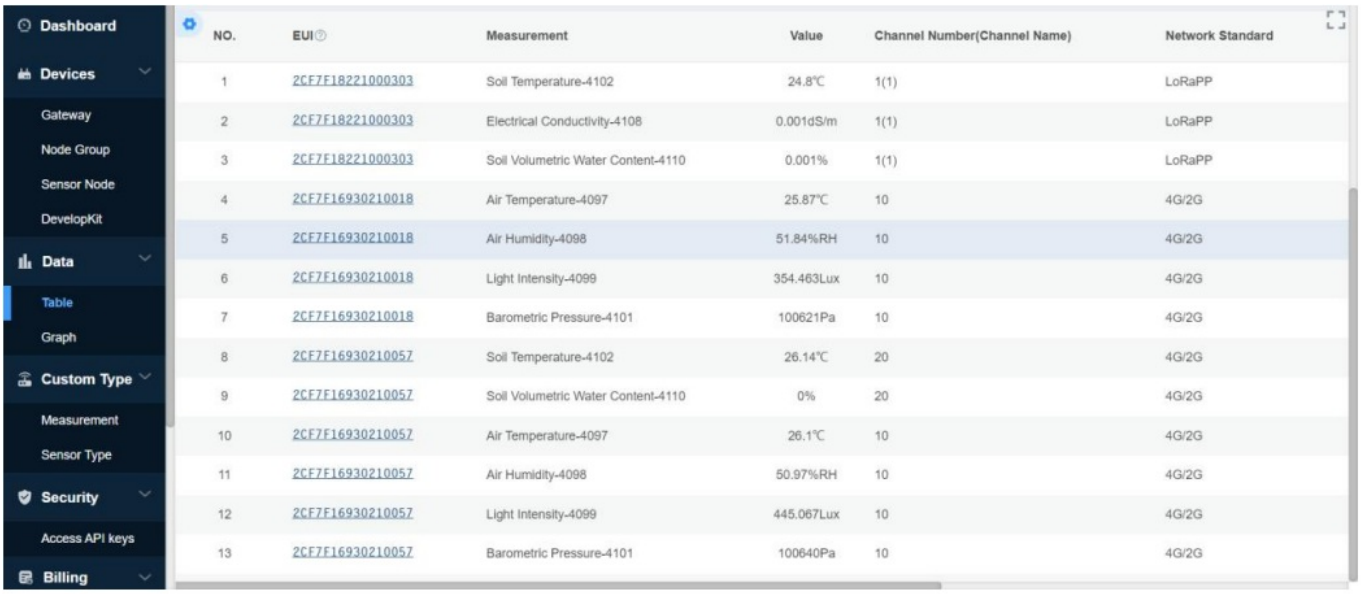
Step 6 Connect the Power Cord

Unscrew the protective cover of the power supply connector, plug one end of the power extension cord into the power connector and tighten it, plug the other end of the power extension cord directly into the power adapter.

Step 7 View Data and Device Status on

SenseCAP Cloud Platform

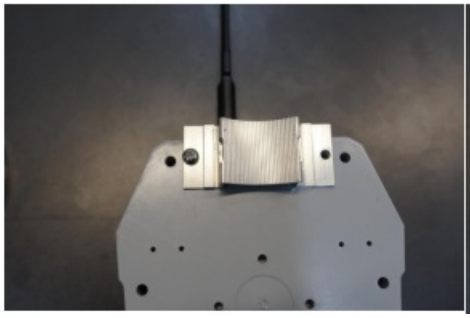
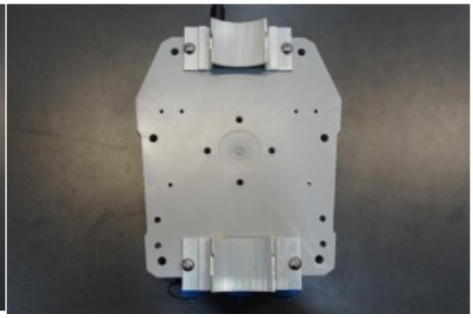
Sign in to your account at SenseCAP Portal Click on the “Table” to see if the data has been uploaded normally. ded normally.



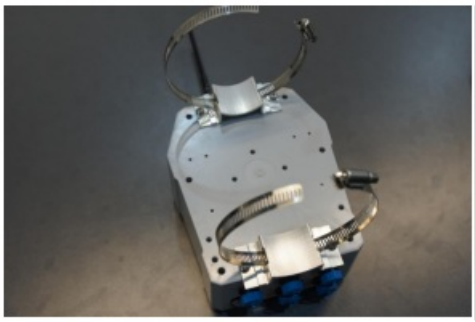
NO.	EUI	Measurement	Value	Channel Number(Channel Name)	Network Standard
1	2CF7F18221000303	Soil Temperature-4102	24.8℃	1(1)	LoRaPP
2	2CF7F18221000303	Electrical Conductivity-4108	0.001dS/m	1(1)	LoRaPP
3	2CF7F18221000303	Soil Volumetric Water Content-4110	0.001%	1(1)	LoRaPP
4	2CF7F16930210018	Air Temperature-4097	25.87℃	10	4G/2G
5	2CF7F16930210018	Air Humidity-4098	51.84%RH	10	4G/2G
6	2CF7F16930210018	Light Intensity-4099	354.463Lux	10	4G/2G
7	2CF7F16930210018	Barometric Pressure-4101	100621Pa	10	4G/2G
8	2CF7F16930210057	Soil Temperature-4102	26.14℃	20	4G/2G
9	2CF7F16930210057	Soil Volumetric Water Content-4110	0%	20	4G/2G
10	2CF7F16930210057	Air Temperature-4097	26.1℃	10	4G/2G
11	2CF7F16930210057	Air Humidity-4098	50.97%RH	10	4G/2G
12	2CF7F16930210057	Light Intensity-4099	445.067Lux	10	4G/2G
13	2CF7F16930210057	Barometric Pressure-4101	100640Pa	10	4G/2G

Step 8 Installation Guide – Sensor Hub Data Logger

1. Install the aluminum pads on the back of the data collector.

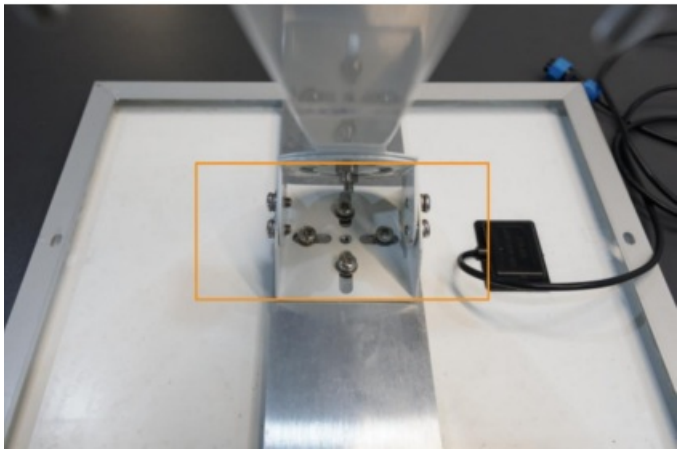



2. Install the hoops and mount the collector to the pole.

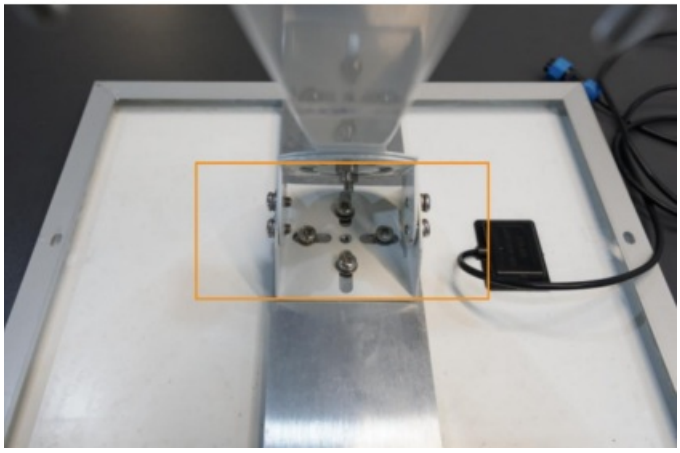



Step 9: Installation Guide – Solar Panels

Mount the bracket to the solar panel.



Install the solar panel through the U-hoop of the bracket to the pole (recommended pole diameter 76mm).



Package 2: 200/S500/S700/S800/S1000 +S2100 LoRaWAN Data Logger + Junction Box Kit + M2 Multi-Platform

Preparation

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

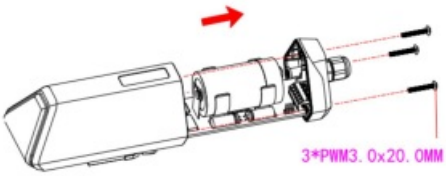
Step 1 Configure the gateway
There are two ways to connect to the Internet. Choose the one that worksfor you.

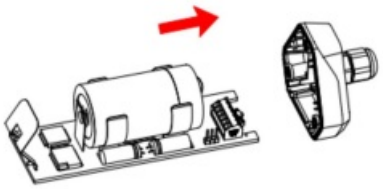
1. Connect to Ethernet Cable. Connect the Ethernet cable to the device, and the indicator on the topwill show solid green if the gateway is successfully connected to theinternet.
2. Connect to WIFI via Luci.
   Note If you have purchased Seeed's gateway, you can perform detailed configuration according to the documentation below.
   https://files.seeedstudio.com/products/SenseCAP/M2_Multi-

Platform_Gateway/Quick%20Start%20for%20SenseCAP%20M2%20Gateway%20&%20Sensors.pdf

Step 2 Disassemble the Data Logger

1. Loosen the three screws of the Data Logger and remove the front cover.





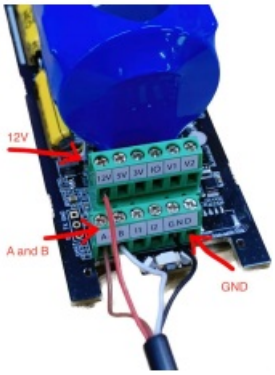
2. The appearance diagram and pin correspondence table are as follows:

No.	Pin	Description
1	12V	External 12V input voltage. The Data Logger can be powered by an external 12V D C 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. Remove the threaded cap from the front cover, thread the sensor cable through it, pass it through the front cover, and connect it to the terminal

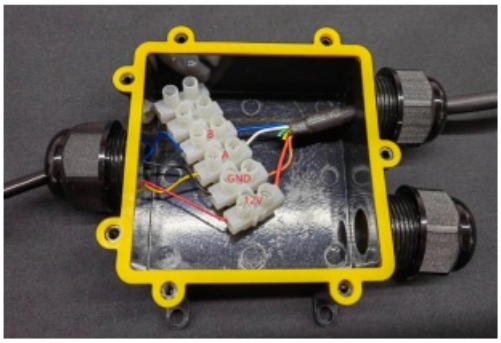
Step 3: Connect to the junction box

1. Prepare the following items: 12V DC adapter, Junction box, and 4-pin wire.
2. Wire to the terminal of the Data Logger



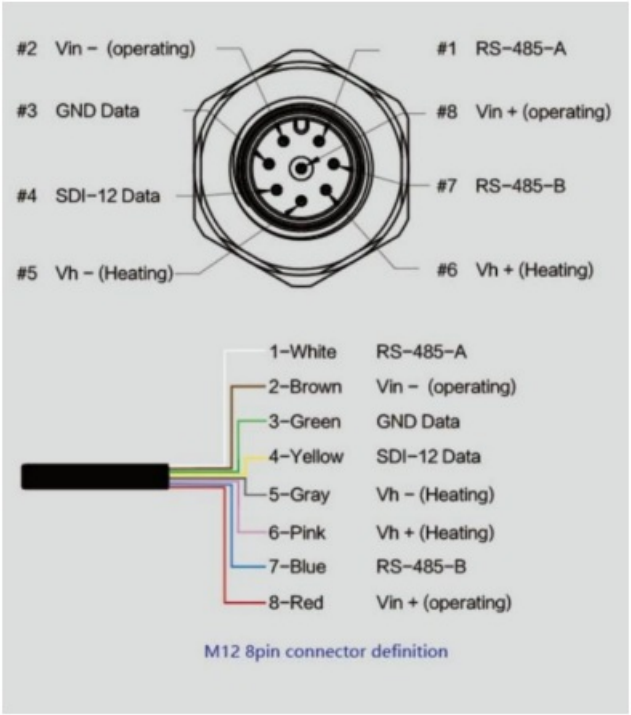
3. Connect the wires to the terminals of the junction box.

4. Attach the multi-function weather station’s cables to the junction box.



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

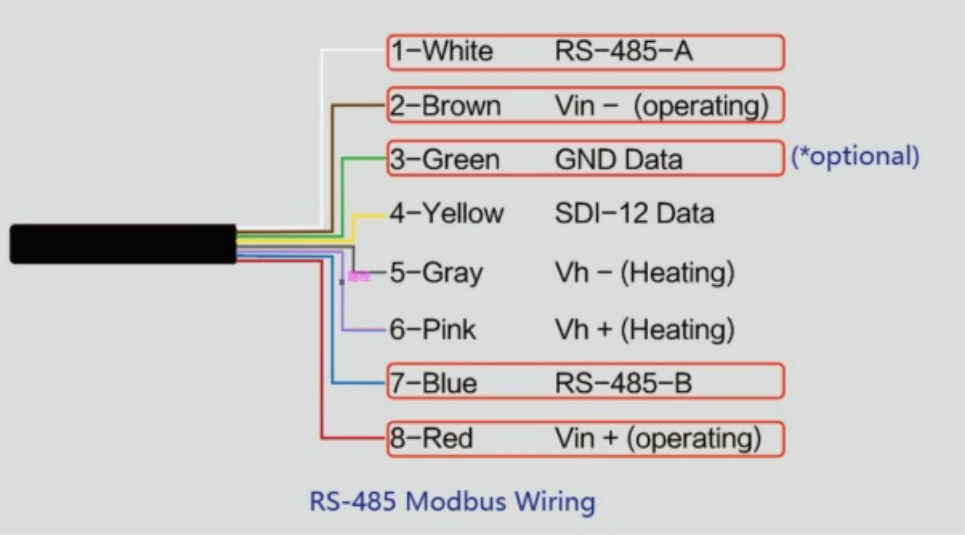
Step 4 Connect to the Sensor



1. 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).

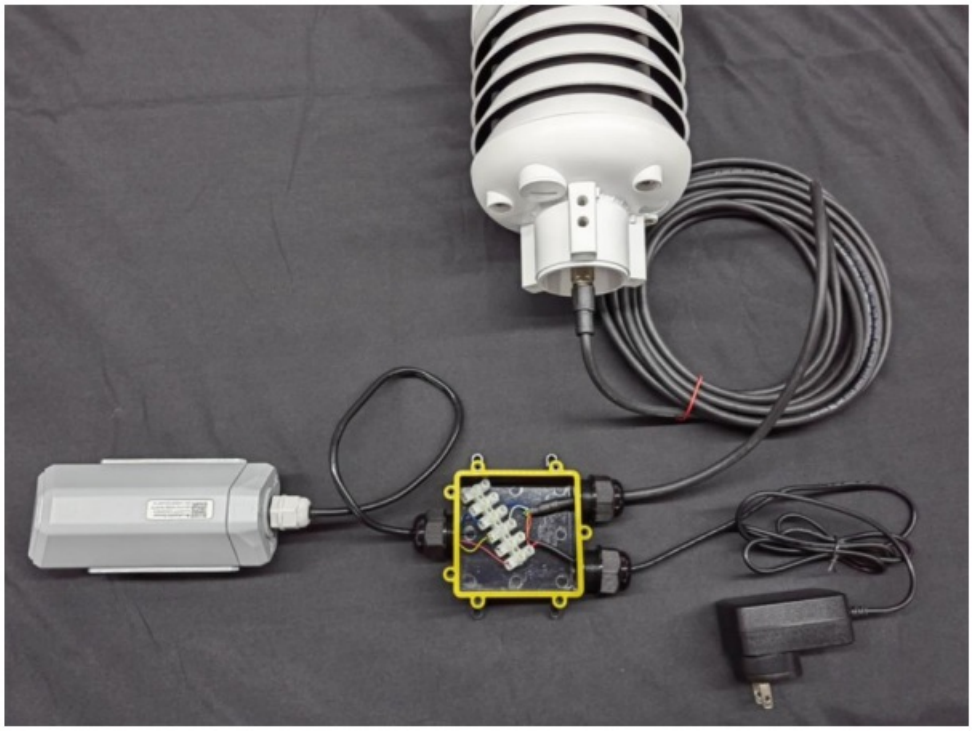
1. When working with the RS-485, you can connect only 4 wires (not using a heating function), and the rest can be individually wrapped with tape to prevent short circuit.



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

3. Plugin the cable and tighten it clockwise

4. To complete the assembly.



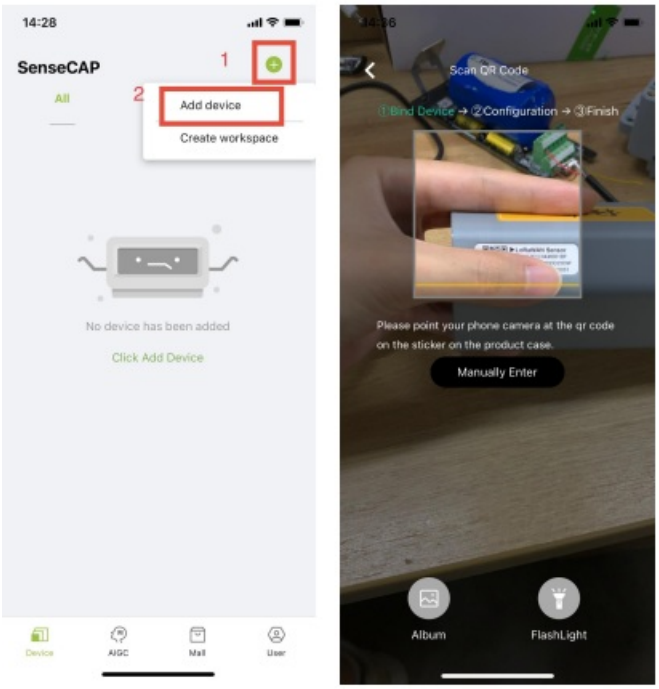
5. Tighten the screws and screw caps to check the waterproofing. If the wire diameter is too thin, add waterproof tape for winding

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!

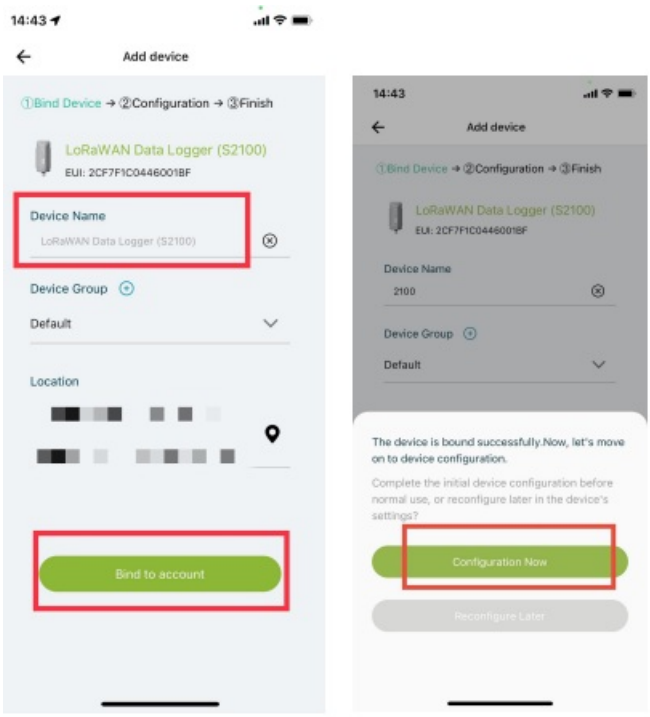
6. If the wire diameter is too small, it can be wrapped with waterproof tape, as shown below:

Step 5: Setup the S2100 — Connect to Sensor to App

1. Please click on the top right corner ” + “, select “Add device”, then enter the scanning interface to scan the QR code on the S2100 Data Logger

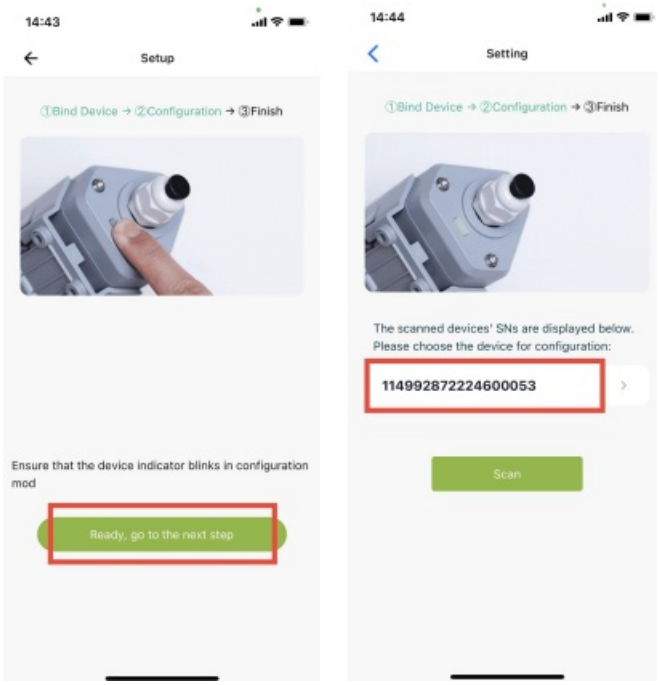


2. After successful scanning, fill in the “Device Name”, click “Bind to account” ”Configuration Now

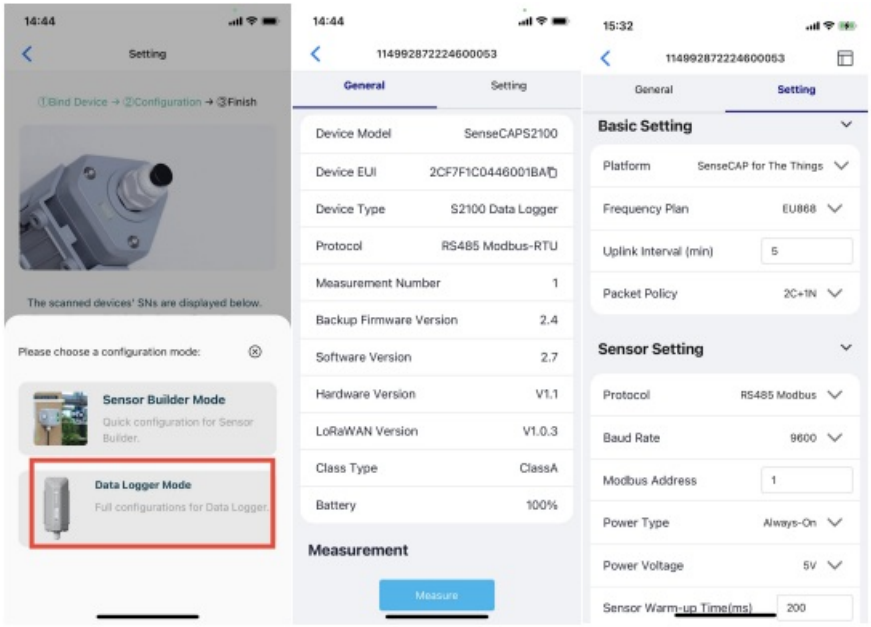


3. Press button and hold for 3 seconds, the LED will flash at 1s frequency.

4. At the same time, click “Ready, go to the next step”, and wait for the device to appear.

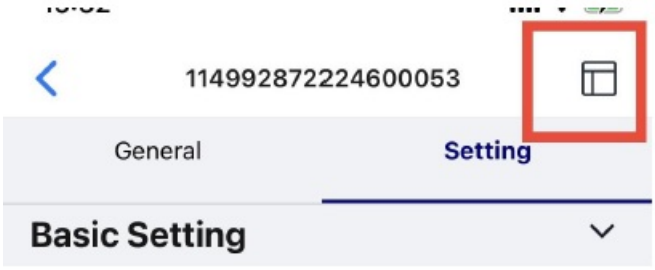


5. Select the corresponding device, click “Data Logger Mode”, and enter the settings interface

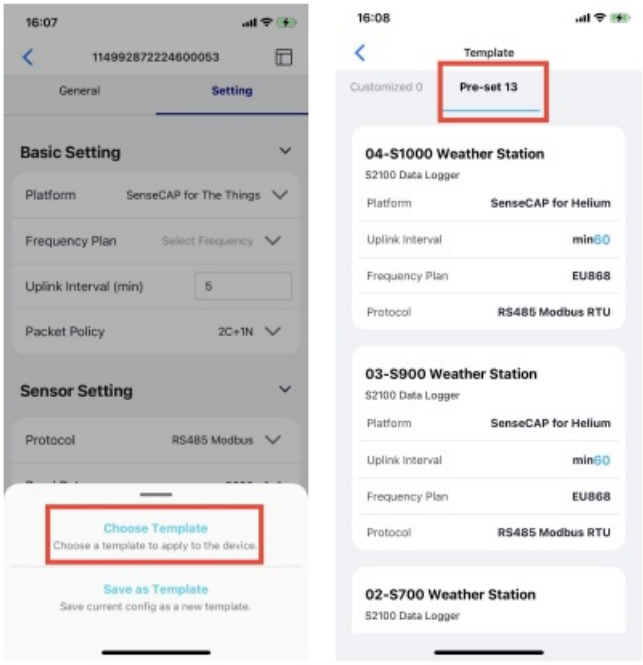


Step 6: Configure basic parameters through App

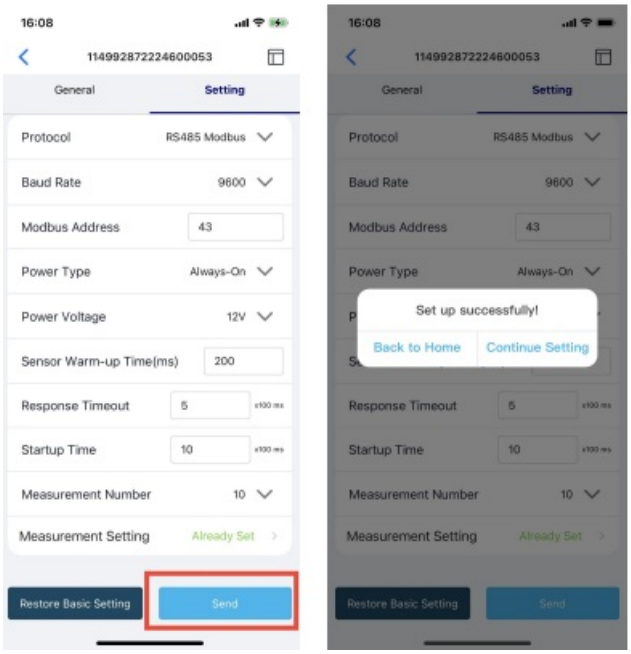
1. Click on the icon in the top right corner.



2. Select “Choose Template” ”Pre-set 13”, and choose the corresponding weather station from the list.

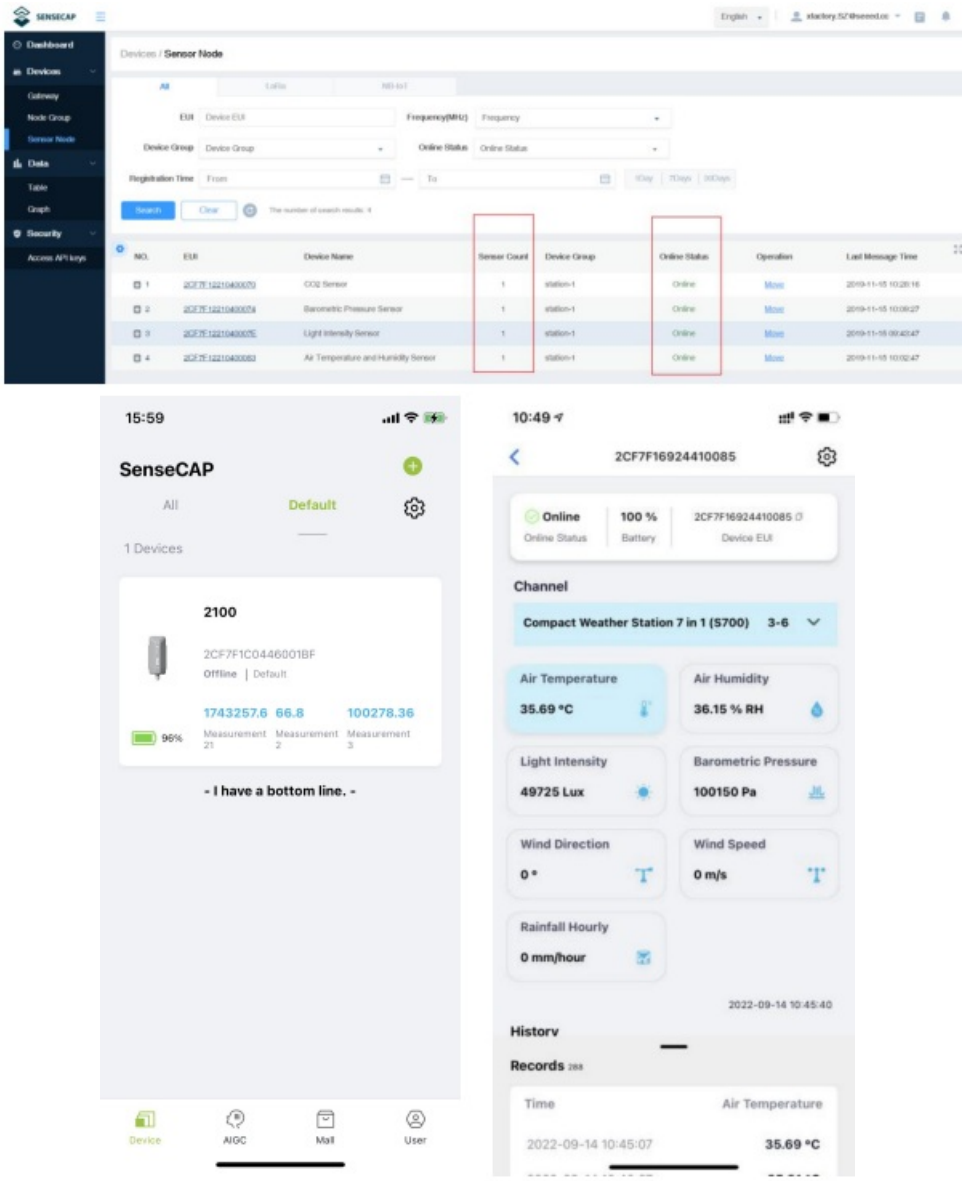


3. After making the selection, click “Send”, and you will receive a prompt saying “Set up successfully!”

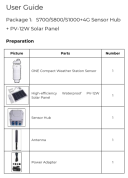


Step 7: Check Data on SenseCAP Portal

On the SenseCAP App or the website SenseCAP Portal , you can check the device online status and the latest data. In the list for each Sensor, you can check its online status and the time of its last data upload.



Documents / Resources

	seeed studio S700 SenseCAP ONE 7 in 1 Compact Weather Sensor [pdf] User Guide S700 SenseCAP ONE 7 in 1 Compact Weather Sensor, S700, SenseCAP ONE 7 in 1 Compact Weather Sensor, Compact Weather Sensor, Weather Sensor, Sensor

References

- SENSECAP
- SenseCAP/Drivers at master · Jenkinlu001/SenseCAP · GitHub
- Releases · Seeed-Solution/SenseCAP-Sensor-Hub-Configuration-Tool-NG · GitHub
- SENSECAP