

# SUN2000L-(2KTL-5KTL) Battery & Smart Power Sensor Quick Guide

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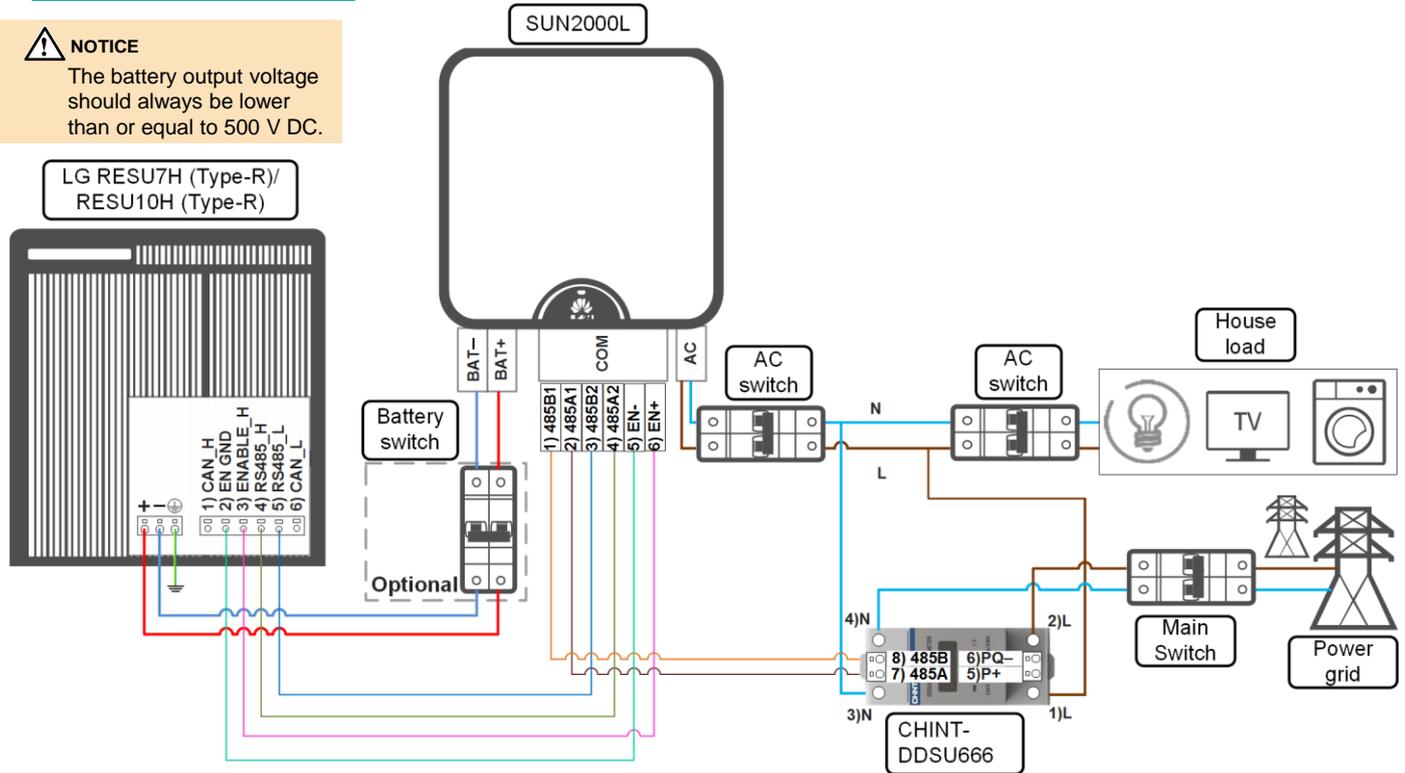
## 1 Product Introduction

The SUN2000L can connect to LG RESU7H (Type-R) and LG RESU10H (Type-R) batteries as well as Gavazzi-EM340DINAV23XS1X, Gavazzi-EM111DINAV81XS1X, Gavazzi-EM112DINAV01XS1X, DINAV01XS1XCHINT-DDSU666, DDSU666-H, and DTSU666-H, CCS-WNC-3Y-400-MB Smart Power Sensors.

This chapter describes the CHINT-DDSU666 Smart Power Sensor. For more information about Smart Power Sensors, see [Chapter 3 Smart Power Sensor Cables Connection](#).

### NOTICE

The battery output voltage should always be lower than or equal to 500 V DC.



### NOTE

- The CAN\_H and CAN\_L ports of the battery are not used in this document.
- The line colors shown in the figures in this document are for reference only.

Recommended switch specifications:

Component	Description	Source
Battery switch	Recommended: a DC circuit breaker with a rated voltage greater than or equal to 600 V DC and a rated current of 20 A	Prepared by the customer
AC switch	Recommended: a single-phase AC circuit breaker with a rated voltage greater than or equal to 250 V AC and a rated current of <ul style="list-style-type: none"> <li>16 A (SUN2000L-2KTL)</li> <li>25 A (SUN2000L-3KTL and SUN2000L-3.68KTL)</li> <li>32 A (SUN2000L-4KTL, SUN2000L-4.6KTL, and SUN2000L-5KTL)</li> </ul>	Prepared by the customer
Main switch	Customer's general switch. The specifications are selected by the customer.	Prepared by the customer

## 2 Battery Cables Connection

### 2.1 Preparing the Battery Cables

Cable	LG RESU7H/LG RESU10H Port	SUN2000L Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
Ground cable		N/A	Single-core outdoor copper cable	4–6 mm <sup>2</sup>	N/A	Prepared by the customer
Negative line of the power cable	-	BAT-	Standard PV cable in the industry (recommended model: PV1-F)	4–6 mm <sup>2</sup>	4.5–7.8 mm	Prepared by the customer
Positive line of the power cable	+	BAT+				

Cable	LG RESU7H/LG RESU10H Port	SUN2000L COM Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
Communications cable	2) EN GND	5) EN-	Four-core outdoor shielded twisted pair	0.25–1 mm <sup>2</sup>	4–11 mm	Prepared by the customer
	3) ENABLE_H	6) EN+				
	4) RS485_H	4) 485A2				
	5) RS485_L	3) 485B2				

## 2.2 Connecting the Battery Cables to the Battery Pack

### ! NOTICE

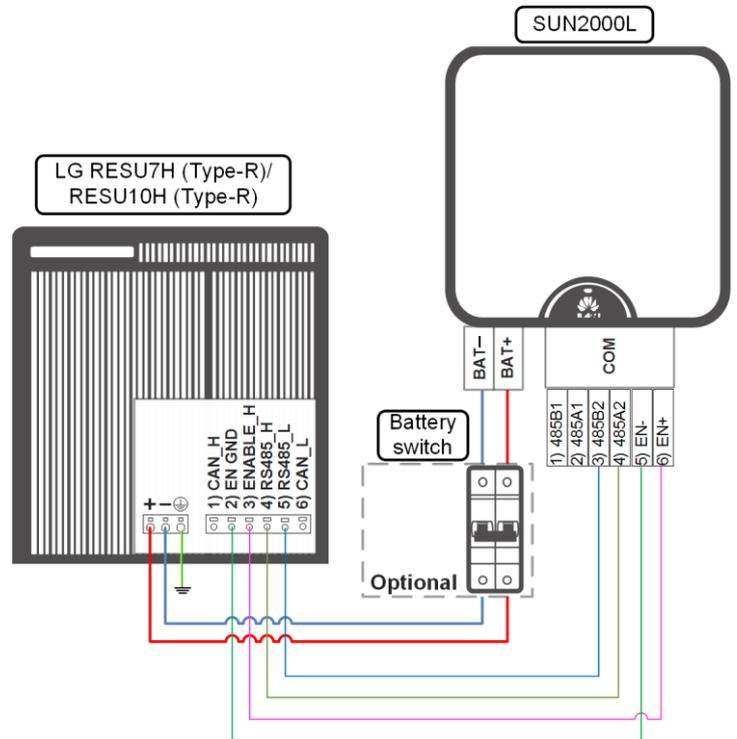
- If the battery fails to connect to the SUN2000L, contact Huawei customer service hotline and set the Auxiliary Power ON/OFF switch to OFF. Otherwise the battery power will be exhausted and the battery cannot be charged.
- If the SUN2000L is not powered on or the battery is not connected to the inverter, switch Auxiliary Power to OFF position. Otherwise the battery power will be exhausted and the battery cannot be charged.
- Ensure that the SUN2000L AC and DC disconnections are turned off before connecting the power cable to the battery pack.

#### 1. Connect the power cable.

- Connect the ground cable.
- Connect the negative line of the power cable.
- Connect the positive line of the power cable.

#### 2. Connect the communications cable.

At first, connect the wire to terminal 2) EN GND. Then, make connections to the 3) ENABLE\_H, 4) RS485\_H, and 5) RS485\_L terminals one after another.



### NOTE

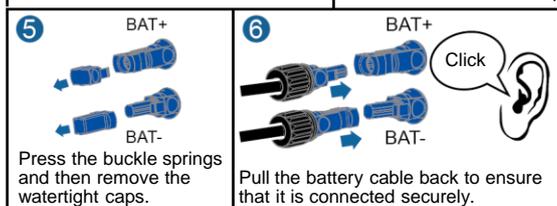
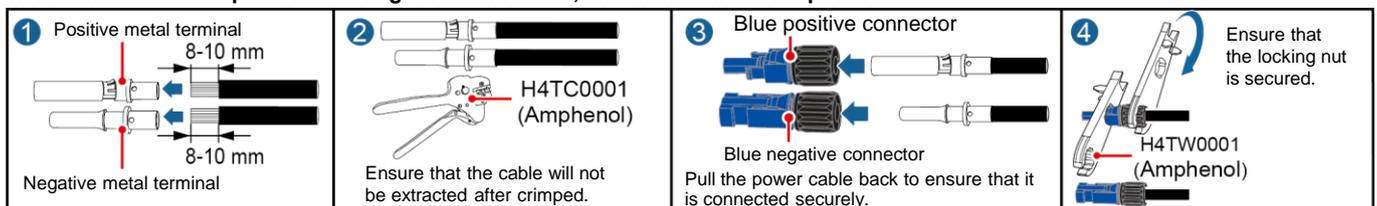
The CAN\_H and CAN\_L ports of the battery are not used in this document.

## 2.3 Connecting the Battery Cables to the SUN2000L

### ! DANGER

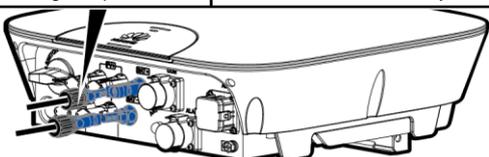
- Do not connect or disconnect battery cables when the SUN2000L is running. Failing to do so may cause electric shocks.
- Before connecting battery cables, ensure that the DC switch on the SUN2000L and all the switches connecting to the SUN2000L are OFF, and the SUN2000L has no residual electricity. Otherwise the high voltage of the SUN2000L and battery may result in electric shocks.
- If no battery connects to the SUN2000L, do not remove the watertight cap from the battery terminal. Otherwise the SUN2000L will not comply with its Ingress Protection Rating. If a battery connects to the SUN2000L, set aside the watertight cap. Reinstall the watertight cap immediately after removing the connector. The high voltage of the battery terminal may result in electric shocks.

#### 1. Assemble the blue positive and negative connectors, and then connect the power cable.



### ! WARNING

- Do not connect any load between the SUN2000L and the battery.
- Ensure that the following conditions are met. Otherwise the SUN2000L will be damaged, or even become a fire hazard. The battery cable is connected correctly. That is, the positive and negative terminals of the battery connect to the positive battery terminal and negative battery terminal on the SUN2000L respectively.
- The cable between the battery and the SUN2000L should be less than or equal to 10 meters, and within 5 meters is recommended.
- The battery voltage can result in fatal injury. Use dedicated insulation tools to terminate cables.
- Ensure that the battery cable is correctly connected. Avoid reverse polarity.



## 2. Connect the communications cable.

No.	Label	Definition
3	485B2	RS485B, RS485 differential signal-
4	485A2	RS485A, RS485 differential signal+
5	EN-	Enable signal-
6	EN+	Enable signal+
8	PE	Grounding the shield layer

**NOTICE**

- When laying out signal cables, separate them from power cables to avoid strong signal interference sources.
- The protection layer of the signal cable is in the connector. Surplus core wires are cut off from the protection layer. The exposed core wire is totally inserted into the cable hole and connected securely.

## 3 Smart Power Sensor Cables

The SUN2000L can connect to CHINT-DDSU666, Gavazzi-EM340DINAV23XS1X, and Gavazzi-EM111DINAV81XS1X Smart Power Sensors.

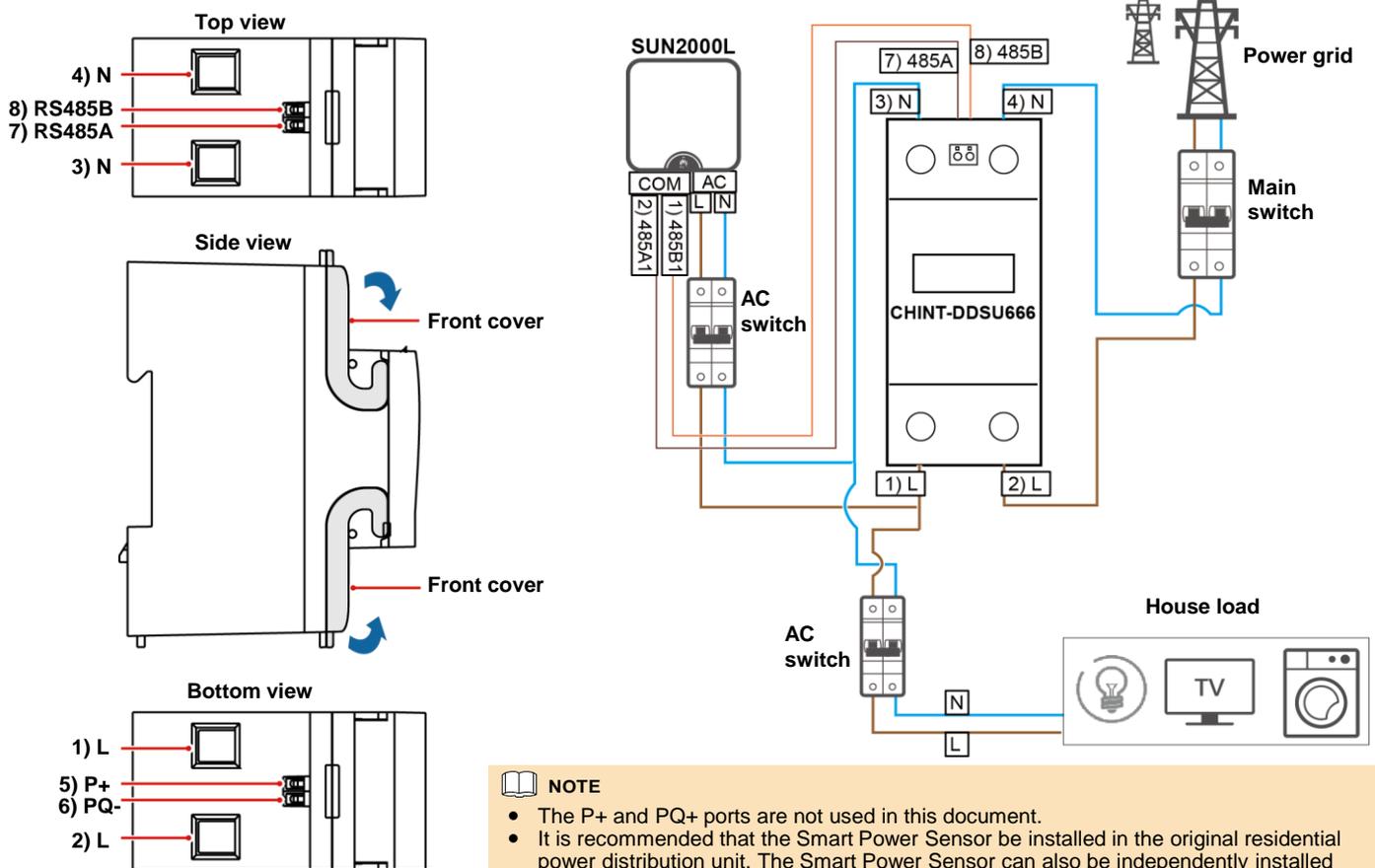
### 3.1 Connecting the Smart Power Sensor Cables to the Smart Power Sensor

#### Scenario 1: CHINT-DDSU666

##### 1. Prepare cables between the Smart Power Sensor and the SUN2000L.

Cable	CHINT-DDSU666 Port	SUN2000L Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
AC output power cable between the Smart Power Sensor and the SUN2000L	1) L	L (AC port)	Two-core (L and N) outdoor copper cable	4–6 mm <sup>2</sup>	10–21 mm	Prepared by the customer
	3) N	N (AC port)				
Communications cable	RS485A	2) 485A1 (COM port)	Four-core outdoor shielded twisted pair	0.25–1 mm <sup>2</sup>	4–11 mm	Prepared by the customer
	RS485B	1) 485B1 (COM port)				

##### 2. Open the front cover, and then connect the cables to the CHINT-DDSU666.



## Scenario 2: DDSU666-H

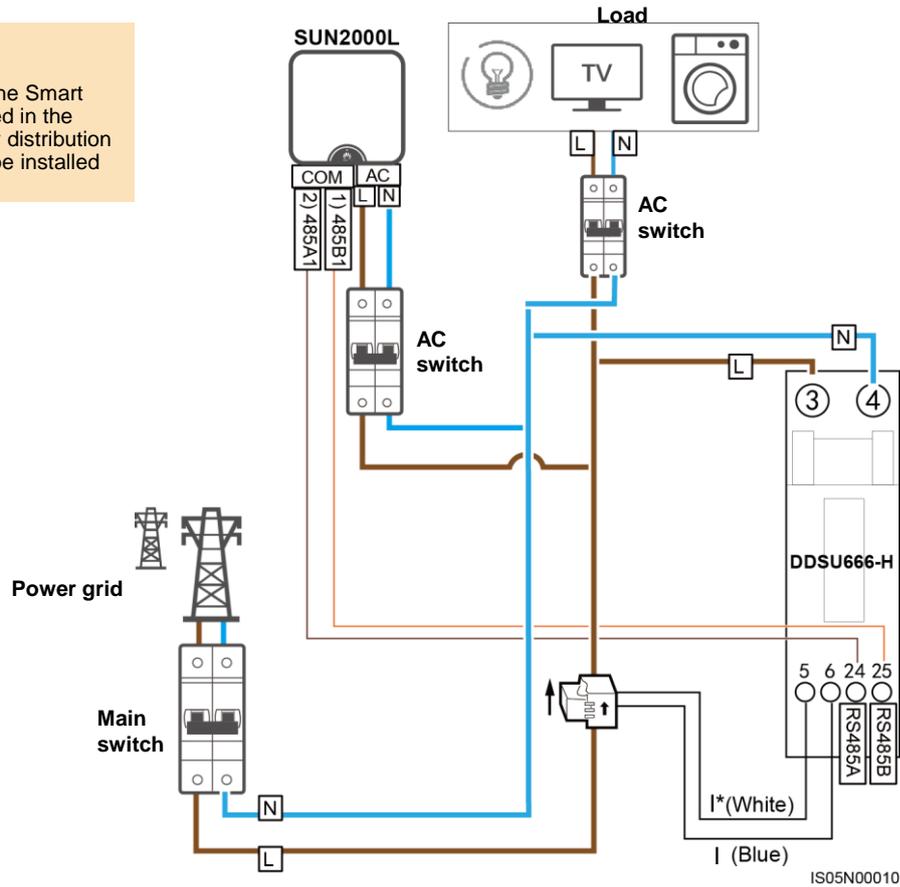
### 1. Prepare cables between the Smart Power Sensor and the SUN2000L.

Cable	DDSU666-H Port	SUN2000L Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
AC output power cable between the Smart Power Sensor and the SUN2000L	3) L	L (AC port)	Two-core (L and N) outdoor copper cable	4–6 mm <sup>2</sup>	10–21 mm	Prepared by the customer
	4) N	N (AC port)				
Communications cable	24) RS485A	2) 485A1 (COM port)	Four-core outdoor shielded twisted pair	0.25–1 mm <sup>2</sup>	4–11 mm	Prepared by the customer
	25) RS485B	1) 485B1 (COM port)				

### 2. Open the front cover, and then connect the cables to the DDSU666-H.

#### NOTE

It is recommended that the Smart Power Sensor be installed in the original residential power distribution unit. If must, it can also be installed independently outside.

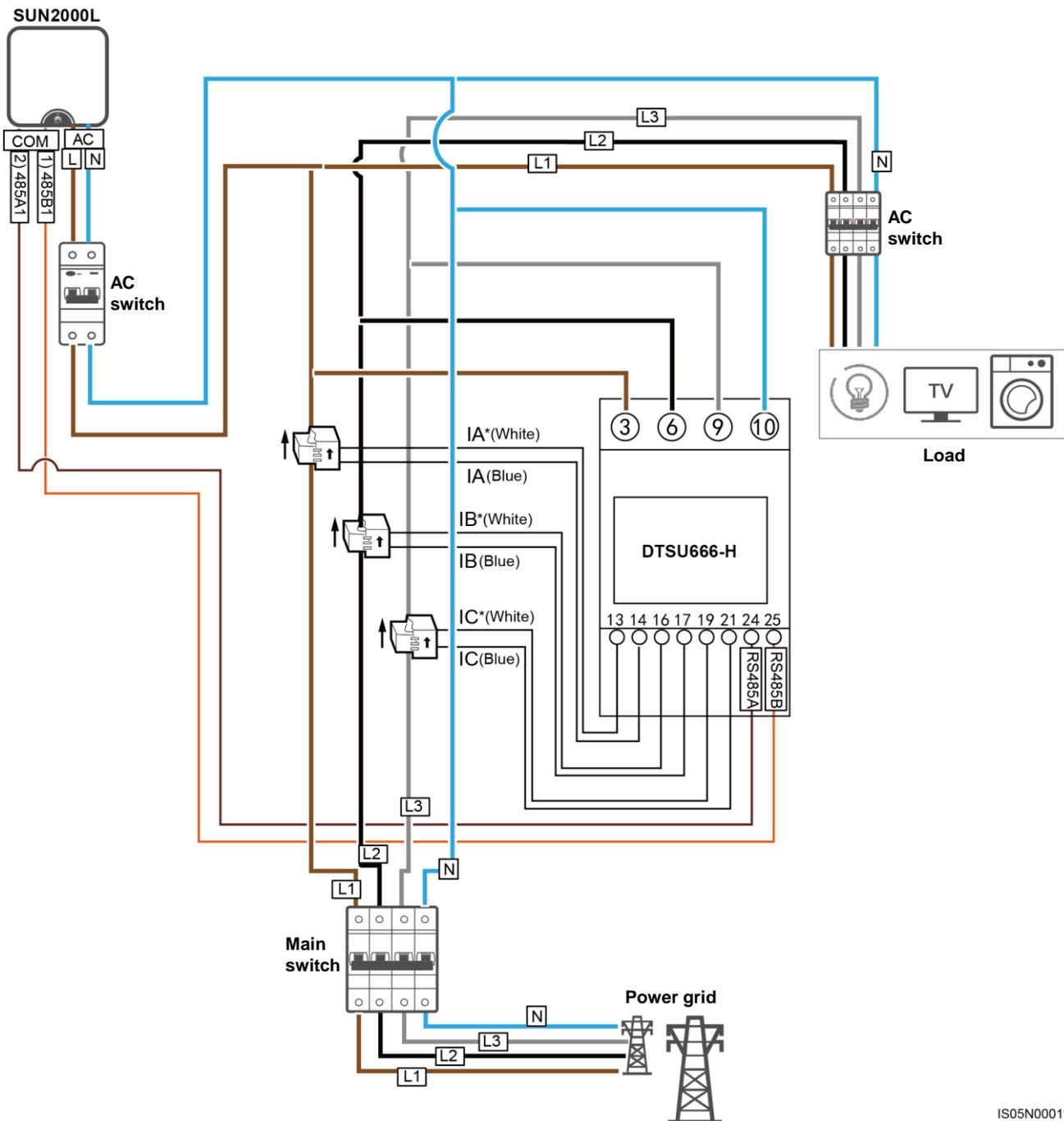


## Scenario 3: DTSU666-H

### 1. Prepare cables between the Smart Power Sensor and the SUN2000L.

Cable	DTSU666-H Port	SUN2000L Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
AC output power cable between the Smart Power Sensor and the SUN2000L	3) L	L (AC port)	Two-core (L and N) outdoor copper cable	4–6 mm <sup>2</sup>	10–21 mm	Prepared by the customer
	10) N	N (AC port)				
Communications cable	24) RS485A	2) 485A1 (COM port)	Four-core outdoor shielded twisted pair	0.25–1 mm <sup>2</sup>	4–11 mm	Prepared by the customer
	25) RS485B	1) 485B1 (COM port)				

2. Open the front cover, and then connect the cables to the DTSU666-H.



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**NOTE**

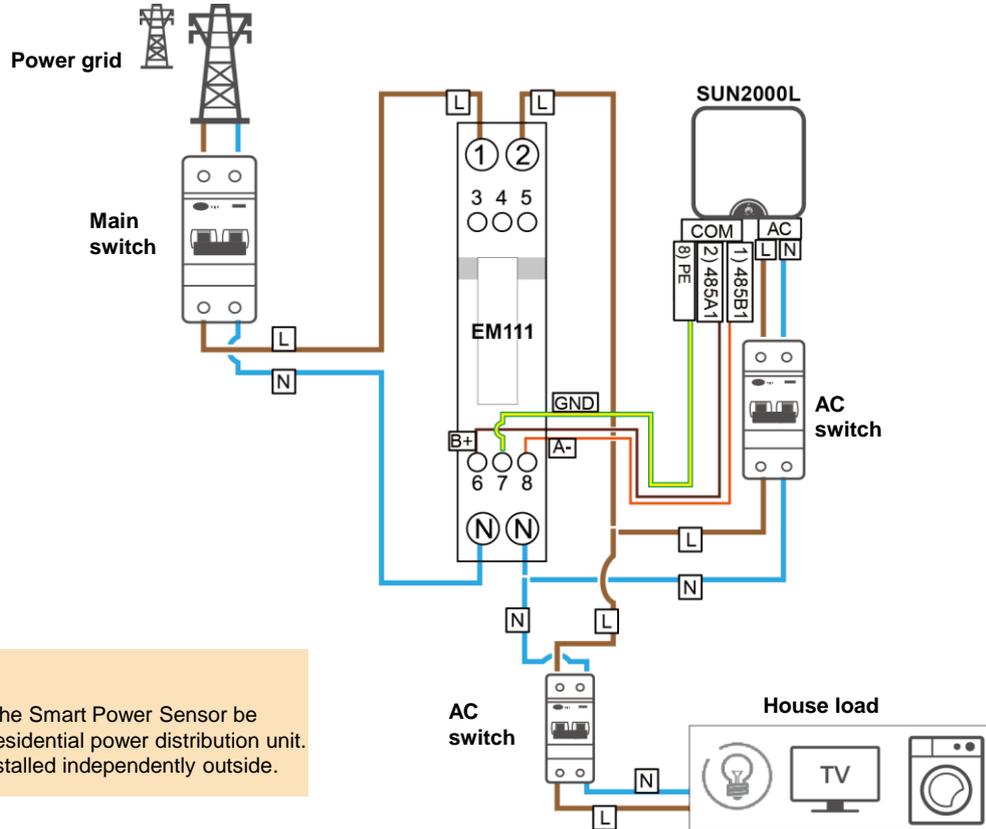
It is recommended that the Smart Power Sensor be installed in the original residential power distribution unit. If must, it can also be installed independently outside.

**Scenario 4: Gavazzi-EM111DINAV81XS1X**

1. Prepare cables between the Smart Power Sensor and the SUN2000L.

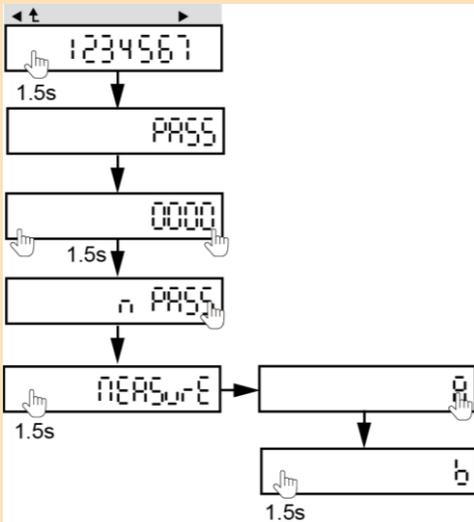
Cable	Gavazzi-EM111DINAV81XS1X Port	SUN2000L Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
AC output power cable between the Smart Power Sensor and the SUN2000L	2) L	L (AC port)	Two-core (L and N) outdoor copper cable	4-6 mm <sup>2</sup>	10-21 mm	Prepared by the customer
	N	N (AC port)				
Communications cable	6) B+	2) 485A1 (COM port)	Four-core outdoor shielded twisted pair	0.25-1 mm <sup>2</sup>	4-11 mm	Prepared by the customer
	8) A-	1) 485B1 (COM port)				
	7) GND	8) PE	Connects to the shield layer of the communications cable			

2. Open the front cover, and then connect the cables to the Gavazzi-EM111DINAV81XS1X.



**NOTE**  
It is recommended that the Smart Power Sensor be installed in the original residential power distribution unit. If must, it can also be installed independently outside.

**NOTICE**  
There are two measurement modes for the Smart Power Sensor:  
A: easy connection mode (preset), measures total energy without considering the direction.  
B: bidirectional mode, separately measures imported and exported energy.  
The connection between the Smart Power Sensor and SUN2000L requires B: Bidirectional mode. The setting method is as follows:



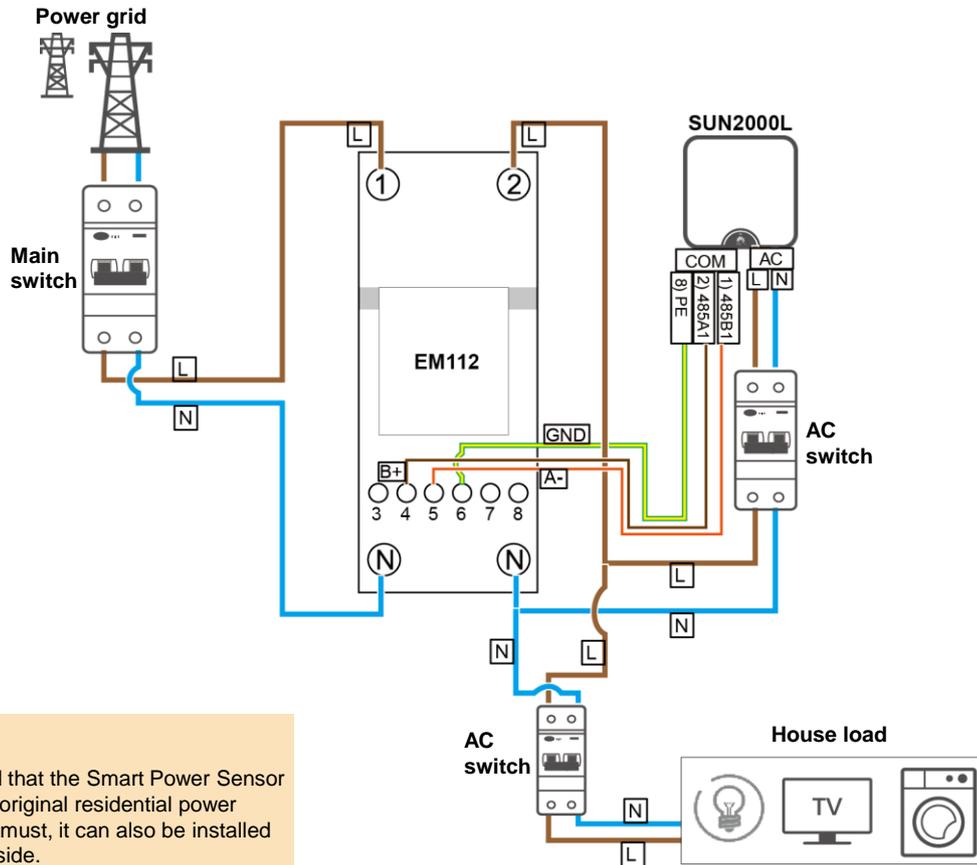
Symbol	Meaning
◀	View the previous page or decrease a parameter value.
▶	View the next page or increase a parameter value.
⬆	Open the parameter menu or confirm a value (press for 1.5s)
◀ ▶	Hold down both ◀ and ▶ for 1.5s to confirm the default password <b>0000</b> .
PASS	Enter current password. The preset password is <b>0000</b> .
n PASS	Change password.
nEASurE	Measurement type: • A: easy connection, measures total energy without considering the direction. • b: separately measures imported and exported energy.

**Scenario 5: Gavazzi-EM112DINAV01XS1X**

1. Prepare cables between the Smart Power Sensor and the SUN2000L.

Cable	Gavazzi-EM112DINAV01XS1X Port	SUN2000L Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
AC output power cable between the Smart Power Sensor and the SUN2000L	2) L	L (AC port)	Two-core (L and N) outdoor copper cable	4–6 mm <sup>2</sup>	10–21 mm	Prepared by the customer
	N	N (AC port)				
Communications cable	4) B+	2) 485A1 (COM port)	Four-core outdoor shielded twisted pair	0.25–1 mm <sup>2</sup>	4–11 mm	Prepared by the customer
	5) A-	1) 485B1 (COM port)				
	6) GND	8) PE	Connects to the shield layer of the communications cable			

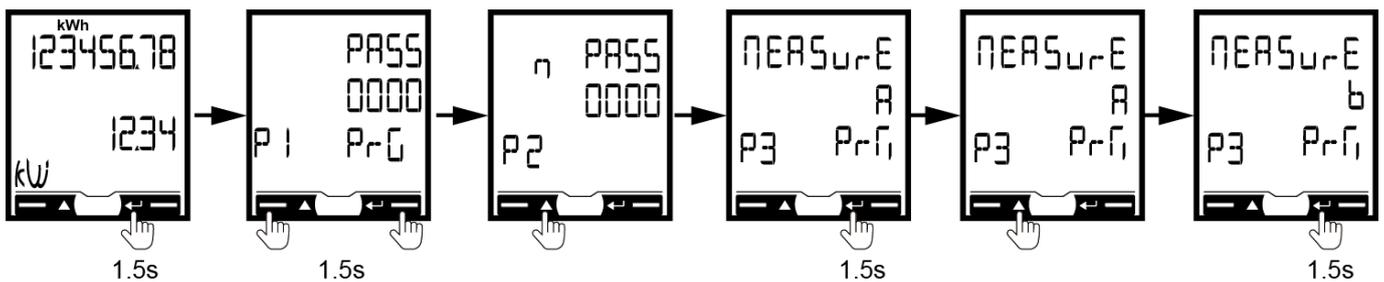
2. Open the front cover, and then connect the cables to the Gavazzi-EM112DINAV01XS1X.



**NOTE**  
It is recommended that the Smart Power Sensor be installed in the original residential power distribution unit. If must, it can also be installed independently outside.

**NOTICE**  
There are two measurement modes for the Smart Power Sensor:  
A: easy connection mode (preset), measures total energy without considering the direction.  
B: bidirectional mode, separately measures imported and exported energy.  
The connection between the Smart Power Sensor and SUN2000L requires B: Bidirectional mode. The setting method is as follows:

Symbol	Meaning
▲	View the next page or decrease a parameter value.
▼	View the previous page or increase a parameter value.
↶	Open the parameter menu or confirm a value (press for 1.5s)
▲ ▼	Hold down both ▲ and ▼ for 1.5s to confirm the default password <b>0000</b> .
PASS	Enter current password. The preset password is <b>0000</b> . Note*: The value settings page automatically opens after 3s.
n PASS	Change password.
nEASurE	Measurement type: • A: easy connection, measures total energy without considering the direction. • b: separately measures imported and exported energy.

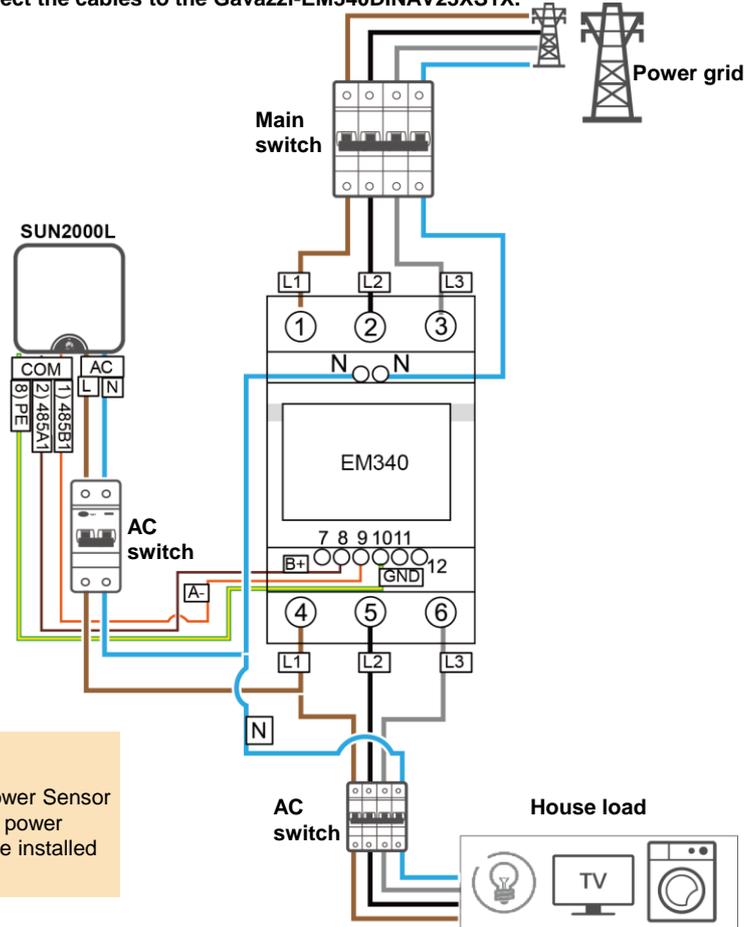


## Scenario 6: Gavazzi-EM340DINAV23XS1X

### 1. Prepare cables between the Smart Power Sensor and the SUN2000L.

Cable	Gavazzi-EM340DINAV23XS1X Port	SUN2000L Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
AC output power cable between the Smart Power Sensor and the SUN2000L	4) L	L (AC port)	Two-core (L and N) outdoor copper cable	4–6 mm <sup>2</sup>	10–21 mm	Prepared by the customer
	N	N (AC port)				
Communications cable	8) B+	2) 485A1 (COM port)	Four-core outdoor shielded twisted pair	0.25–1 mm <sup>2</sup>	4–11 mm	Prepared by the customer
	9) A-	1) 485B1 (COM port)				
	10) GND	8) PE	Connects to the shield layer of the communications cable			

### 2. Open the front cover, and then connect the cables to the Gavazzi-EM340DINAV23XS1X.



#### NOTE

It is recommended that the Smart Power Sensor be installed in the original residential power distribution unit. If must, it can also be installed independently outside.

#### NOTICE

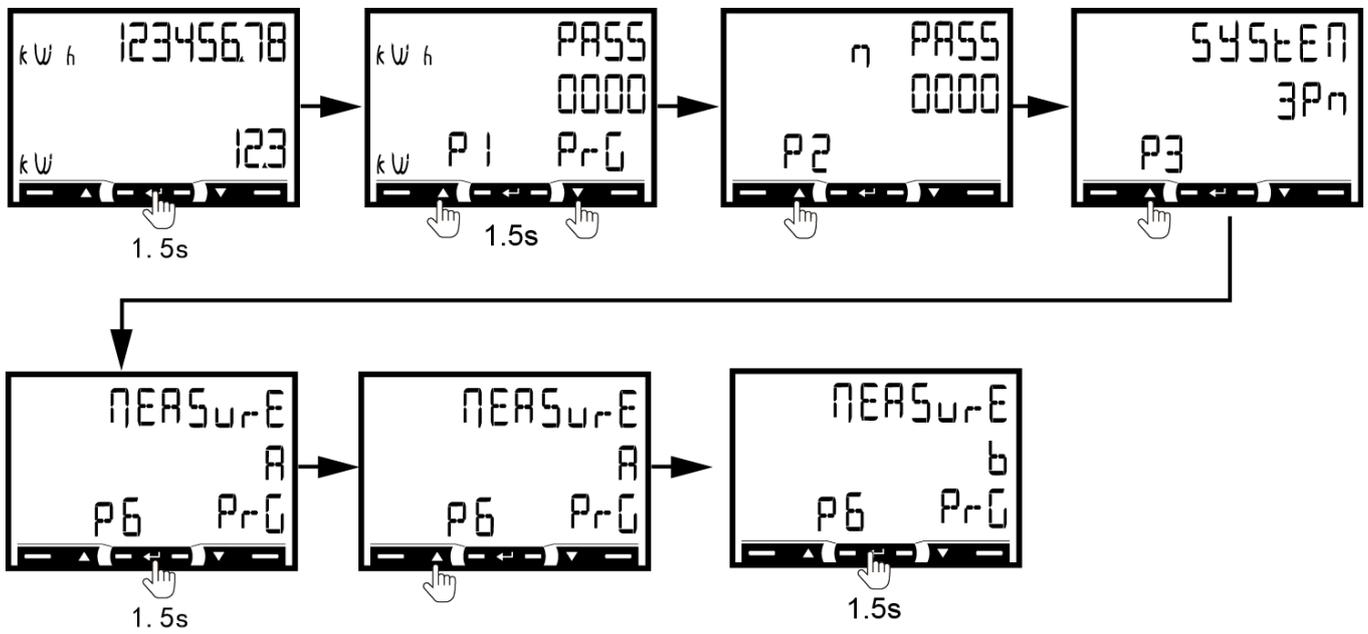
There are two measurement modes for the Smart Power Sensor:

A: easy connection mode (preset), measures total energy without considering the direction.

B: bidirectional mode, separately measures imported and exported energy.

The connection between the Smart Power Sensor and SUN2000L requires B: Bidirectional mode. The setting method is as follows:

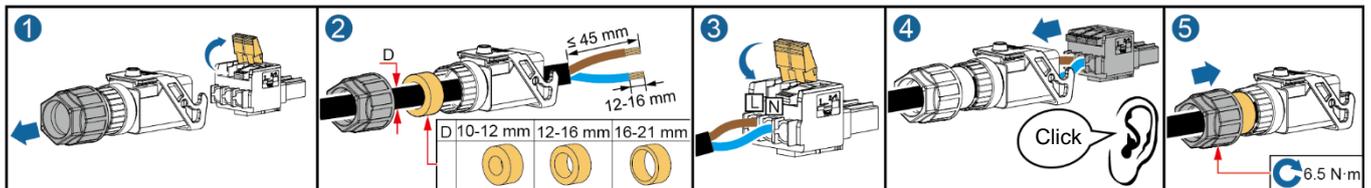
Symbol	Meaning
▲	View the next page or decrease a parameter value.
▼	View the previous page or increase a parameter value.
↩	Open the parameter menu or confirm a value (press for 1.5s)
▲ ▼	Hold down both ▲ and ▼ for 1.5s to confirm the default password <b>0000</b> .
PASS	Enter current password. The preset password is <b>0000</b> . Note*: The value settings page automatically opens after 3s.
n PASS	Change password.
SYStEn	System type: <ul style="list-style-type: none"> <li>• 3Pn: three-phase system, 4-wire</li> <li>• 3P: three-phase system, 3-wire</li> <li>• 2P: two-phase system, 3-wire</li> </ul>
nEASurE	Measurement type: <ul style="list-style-type: none"> <li>• A: easy connection, measures total energy without considering the direction.</li> <li>• b: separately measures imported and exported energy.</li> </ul>



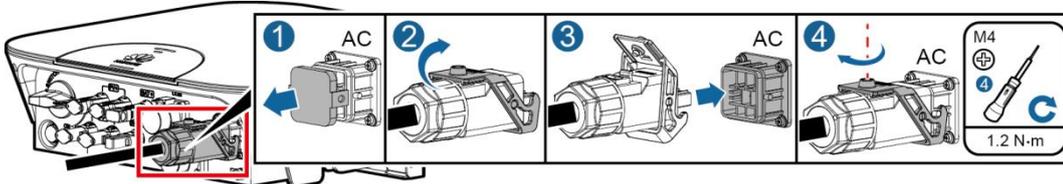
### 3.2 Connecting the Smart Power Sensor Cables to the SUN2000L

#### 1. Connect the AC output power cable to the SUN2000L.

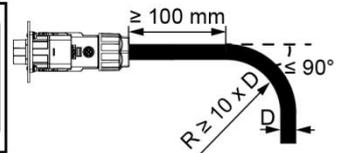
a) Connect the AC output power cable to the AC connector.



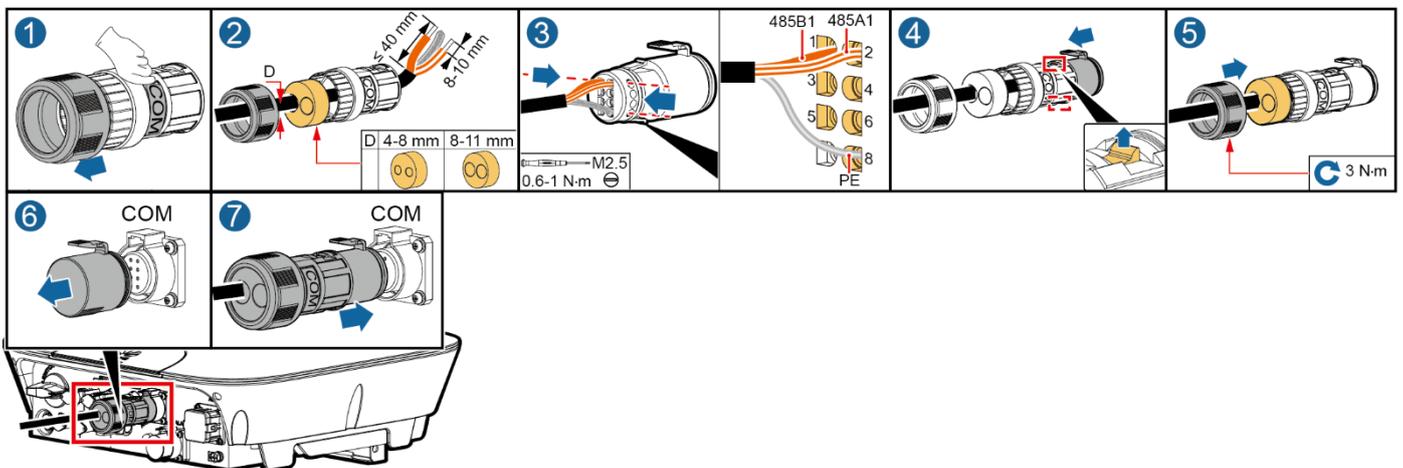
b) Connect the AC connector to the AC output port.



c) Check the route of the AC output power cable.



#### 2. Connect the communications cable to the SUN2000L.



## 4 Commissioning

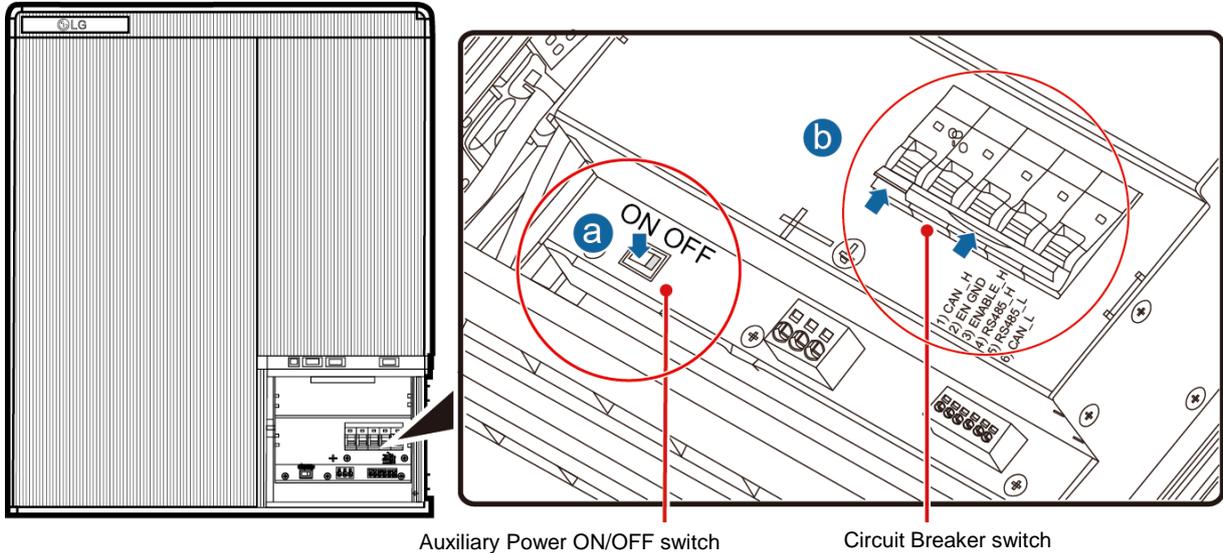
### 4.1 Powering On the System

#### 1. Put the battery pack in operation by taking the following steps.

- Set the Auxiliary Power ON/OFF switch to OFF after installing the battery pack. Ensure that the Circuit Breaker switch is in the OFF position (including the Trip position).
- Set the Circuit Breaker switch to ON.

#### NOTICE

- If the FAULT indicator on the front of the battery pack is ON or flashing, contact your installer.
- If the battery fails to connect to the SUN2000L, contact Huawei customer service hotline and set the Auxiliary Power ON/OFF switch to OFF. Otherwise the battery power will be exhausted and the battery cannot be charged by the inverter.
- If the SUN2000L is not powered on or the battery is not connected to it, set the Auxiliary Power to OFF. Otherwise the battery power will be exhausted and the battery cannot be charged by the inverter.



Auxiliary Power ON/OFF switch

Circuit Breaker switch

- Several seconds after the Circuit Breaker switch is set to ON, four indicators will be on.
- Ensure that the ON indicator is on and check whether the battery pack is successfully initialized. The power-on indicator on the front should turn green.

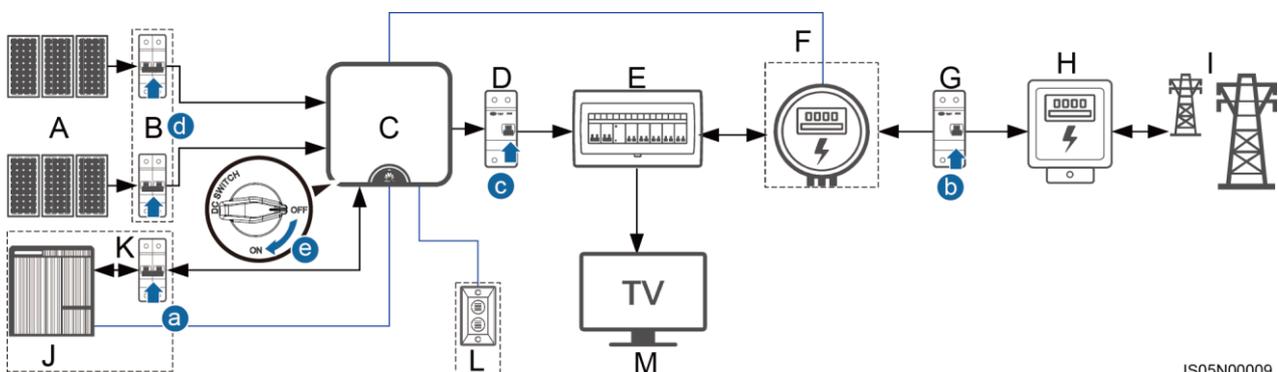


- Close the wiring box cover.

#### 2. Power on the SUN2000L.

#### NOTICE

- Before turning on the AC switch between the SUN2000L and the power grid, check that the AC voltage on the power grid side of the AC switch is within the specified range.
- If the DC is on and the AC is off, the SUN2000L reports a **Grid Failure** alarm. The SUN2000L starts normally only after the fault is rectified.
- If the AC is on and the battery is off, the SUN2000L reports a **Battery Abnormal** alarm.



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- |                      |   |                        |
|----------------------|---|------------------------|
| (A) PV string        | (B) DC switch                           | (C) SUN2000L           |
| (D) AC switch        | (E) Residential power distribution unit | (F) Smart Power Sensor |
| (G) Main switch      | (H) Residential power meter             | (I) Power grid         |
| (J) Battery          | (K) Battery switch                      | (L) Alarm beacon       |
| (M) Residential load |   |                        |

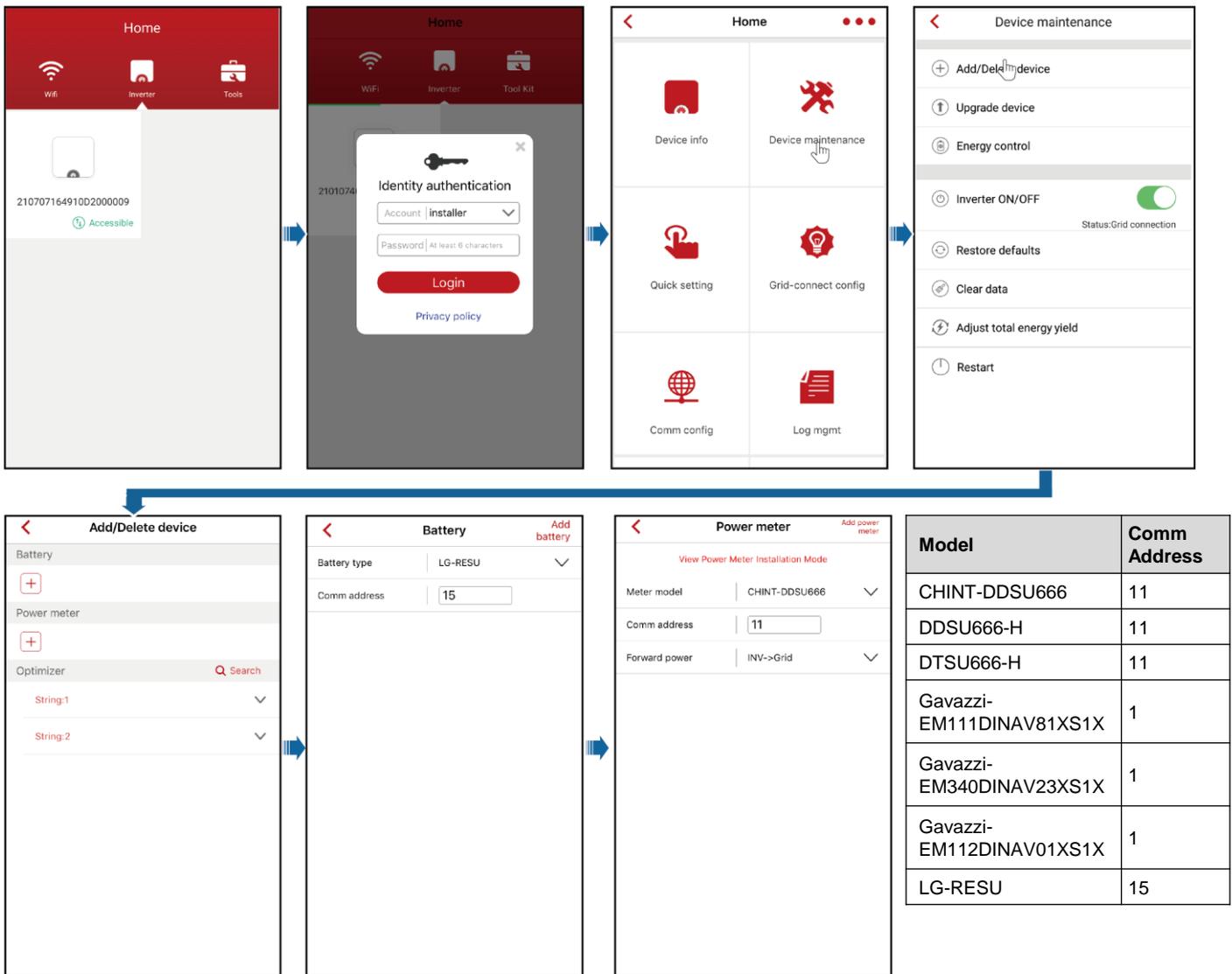
- a) Turn on the battery switch between the battery pack and the SUN2000L.
- b) Turn on the main switch between the SUN2000L and the power grid.
- c) Turn on the AC switch between the SUN2000L and the power grid.

**NOTICE**

If the SUN2000L is connected to the battery, after turning on the AC switch:

- If the DC switch is turned on within 1 minute, the SUN2000L will run properly in grid-tied mode.
- If the DC switch is not turned on within 1 minute, the SUN2000L will enter the nighttime grid-tied mode. Then, after the DC switch is turned on, the SUN2000L will shut down and then restart to run in grid-tied mode.

- d) Turn on the DC switch between the PV string and the SUN2000L if there is any.
- e) Turn on the DC switch at the bottom of the SUN2000L.
- f) Perform quick setting over the FusionHome app. There are two methods to add the device. Method 1: Add the device by quick setting.  
Method 2: On the **Home** screen, choose **Device maintenance > Add/Delete device**, and add the device according to actual conditions.



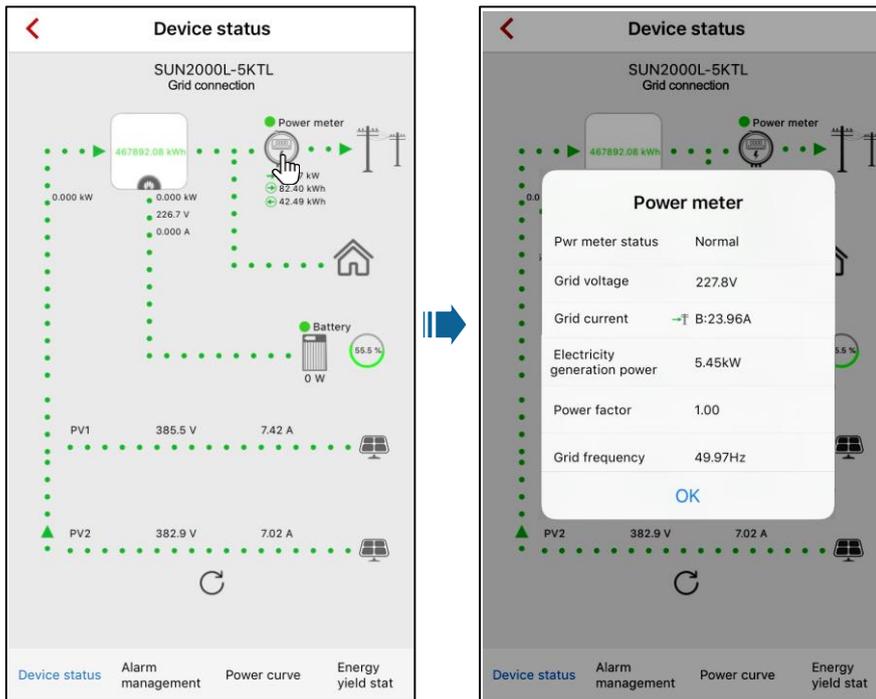
**NOTE**

The app screen snapshots provided in this document correspond to FusionHome 2.1.11.300. The figures are for reference only.

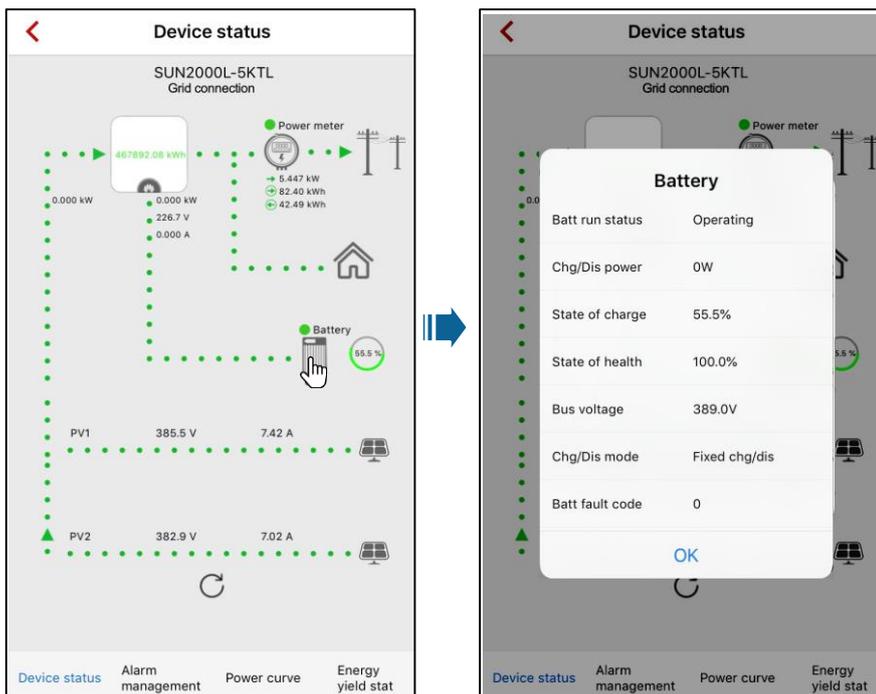
Smart Power Sensor Parameter	Description	Value Range
Comm addr	Specifies the RS485 address for the connected Smart Power Sensor. The address should be the same as the actual address for the Smart Power Sensor.	[1, 247]
Meter Mode	Specifies the model of the connected Smart Power Sensor. No Smart Power Sensors of other models can be connected.	<ul style="list-style-type: none"> <li>• CHINT-DDSU666</li> <li>• DDSU666-H</li> <li>• DTSU666-H</li> <li>• Gavazzi-EM111DINAV81XS1X</li> <li>• Gavazzi-EM340DINAV23XS1X</li> <li>• Gavazzi-EM112DINAV01XS1X</li> </ul>

Battery Parameter	Description	Value Range
Comm addr	Specifies the RS485 address for the connected battery. The address should be the same as the actual address for the battery.	[1, 247]
Battery type	Specifies the type of the connected battery. No batteries of other types can be connected.	LG-RESU
Maximum Discharging Power	Specifies the maximum battery discharging power. The maximum discharging power is limited by the maximum output power of the SUN2000L and whether the <b>Charge battery with grid power</b> function is enabled.	[0, 3.5]
Maximum Charging Power	Specifies the maximum battery charging power. The maximum charging power is limited by the maximum output power of the SUN2000L and whether the <b>Charge battery with grid power</b> function is enabled.	[0, 3.5]
Full Charging Capacity	Specifies the battery charging cutoff capacity.	[90, 100]
Full Discharging Capacity	Specifies the battery discharging cutoff capacity.	[12, 20]

View the power meter status by choosing **Device info > Device status** on the FusionHome app.



View the battery status by choosing **Device info > Device status** on the FusionHome app.



g) (Optional) Measure the temperatures at the joints between the DC terminals and the connectors using a point-test thermometer.

**NOTE**

Under normal operation conditions of the SUN2000L, the temperature rise at DC connectors should remain below 30°C at all time.  
h) Observe indicators to check the SUN2000L operating status.

### 4.2 Checking the Match between the SUN2000L and the Battery Protocol

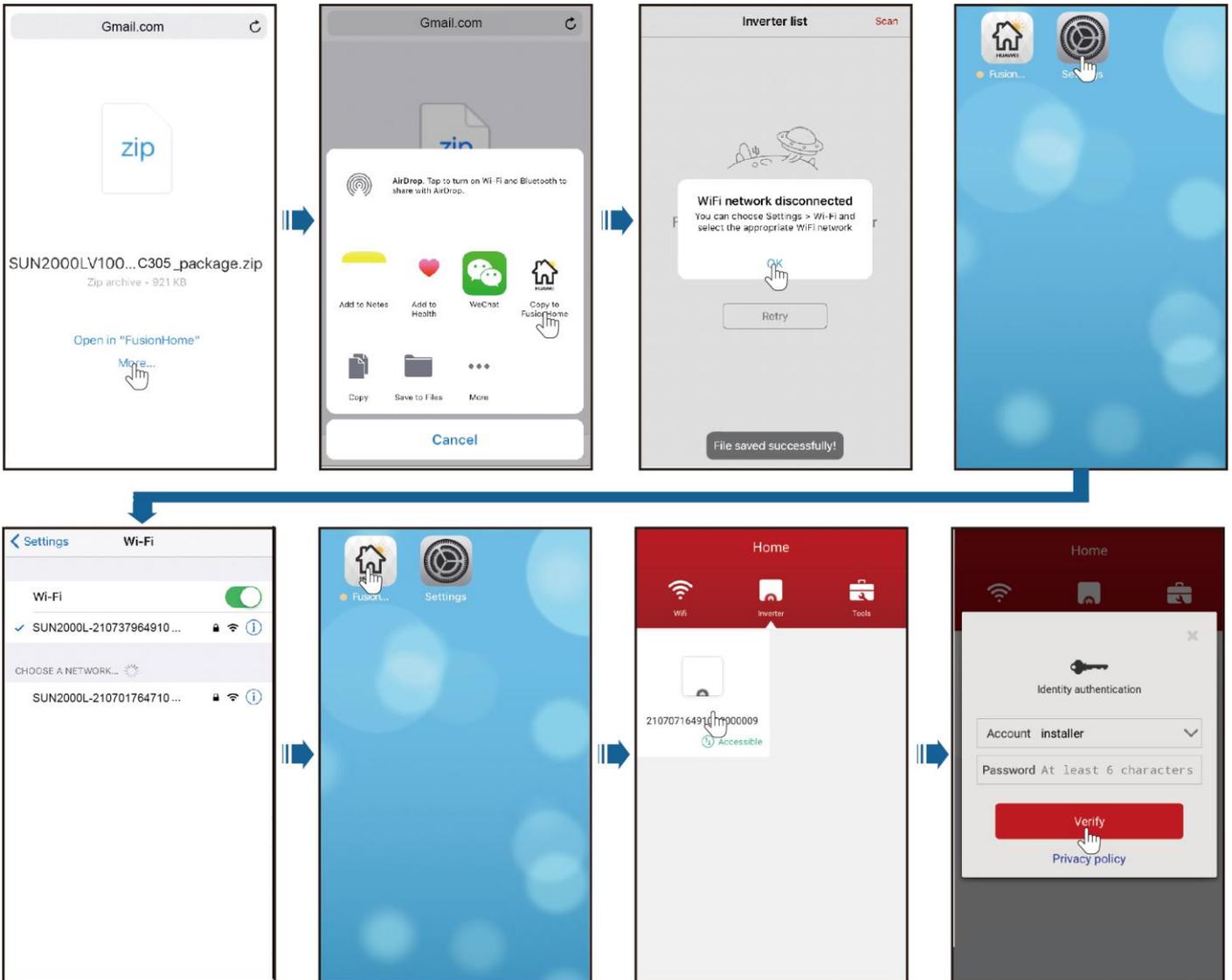
**NOTICE**

The following text describes the operations on iOS screens. The operations on Android screens are the same as those on iOS screens, except that the screens are somewhat different. The actual screens prevail.

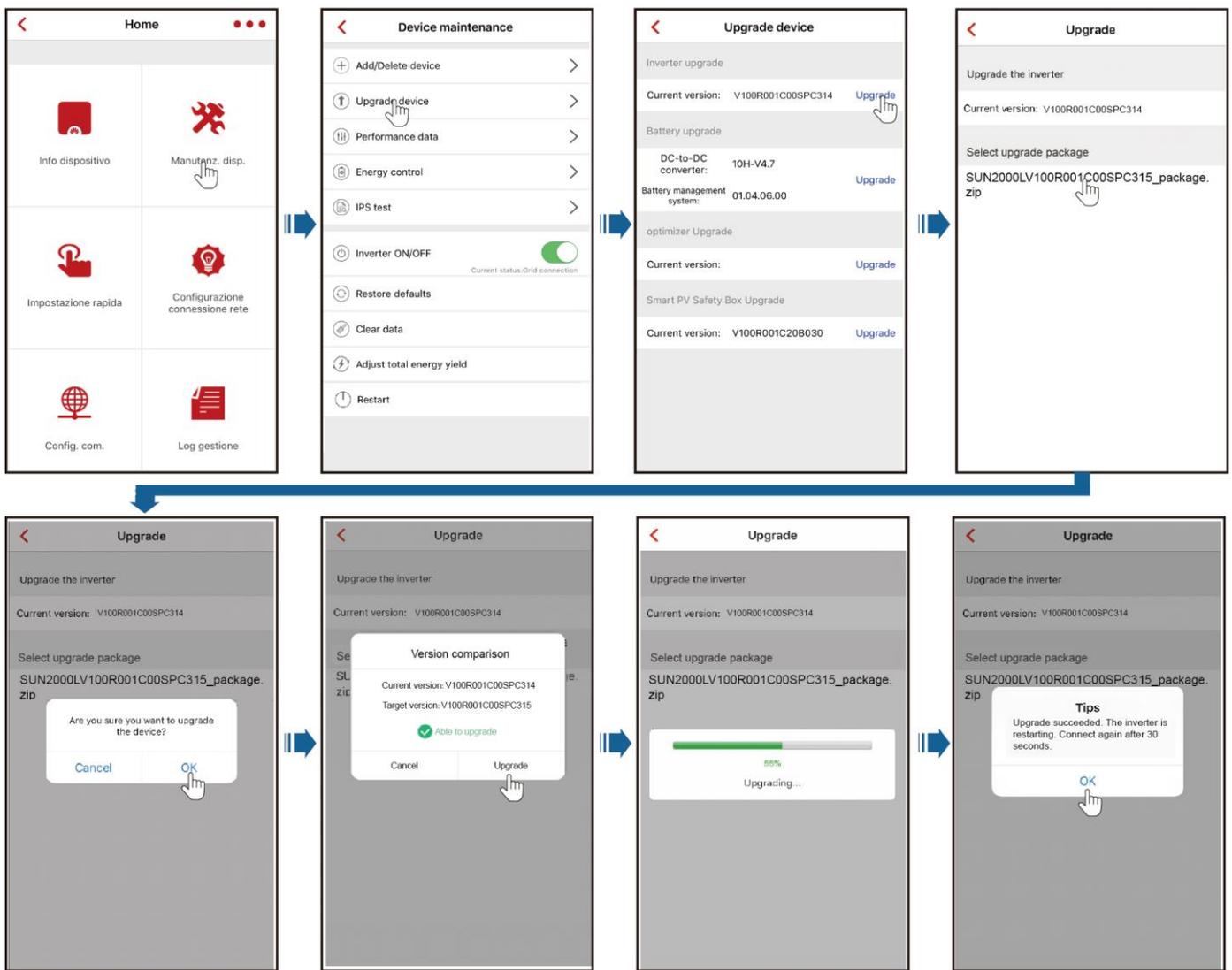
- In the iOS system, the upgrade file can be imported to the mobile phone over your mailbox. The upgrade file name extension must be **.zip**. **Manually select** is unavailable.
- In the Android system, the upgrade file can be copied to the mobile phone. The upgrade file name extension must be **.zip** and the file can be stored in your required directory. **Manually select** is available.

1. On the FusionHome app, and choose **Device maintenance > Upgrade device** to view the SUN2000L version. Upgrade the SUN2000L if its version is earlier than V100R001C00SPC305.

a) Import the SUN2000L upgrade package to the mobile phone over your mailbox, and then log in to the FusionHome app as **installer**.

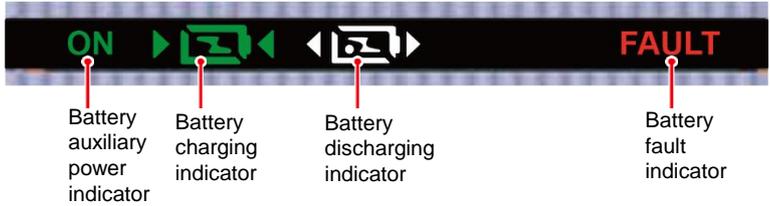


b) Upgrade the SUN2000L. The SUN2000L upgrade takes about 5 minutes. When the SUN2000L is upgraded successfully, it will restart. Log in again after the restart.



2. Ensure that the battery cable connection and parameter settings (Comm addr: 15, Battery type: LG-RGSU) are correct. Then in any one of the three following cases, upgrade the battery.

No.	Mismatch Case	Remarks
1	<p>On the FusionHome app, choose <b>Device maintenance</b> &gt; <b>Upgrade device</b> to view the battery version.</p> <ul style="list-style-type: none"> <li>Upgrade the LG RESU10H if <b>DCDC Current version</b> is not <b>7kW-V4.7</b>.</li> <li>Upgrade the LG RESU7H if <b>DCDC Current version</b> is not <b>5kW-V4.7</b>.</li> </ul>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;"> <p><b>LG RESU10H:</b></p> </div> <div style="border: 1px solid black; padding: 5px;"> <p><b>LG RESU7H:</b></p> </div> </div>
2	<p>The battery is <b>Offline</b> and not working properly. View the battery status by choosing <b>Device info</b> &gt; <b>Device status</b> on the FusionHome app.</p>	

No.	Mismatch Case	Remarks
3	The battery status is displayed on the <b>Device status</b> screen. The battery auxiliary power indicator is on but the battery charging and discharging indicators are off.	 <p>The diagram shows a horizontal bar with five indicators from left to right: 'ON' in green, a green battery icon with a plus sign, a green battery icon with a minus sign, a green battery icon with a double-headed arrow, and 'FAULT' in red. Red lines connect these indicators to labels below: 'Battery auxiliary power indicator', 'Battery charging indicator', 'Battery discharging indicator', and 'Battery fault indicator'.</p>

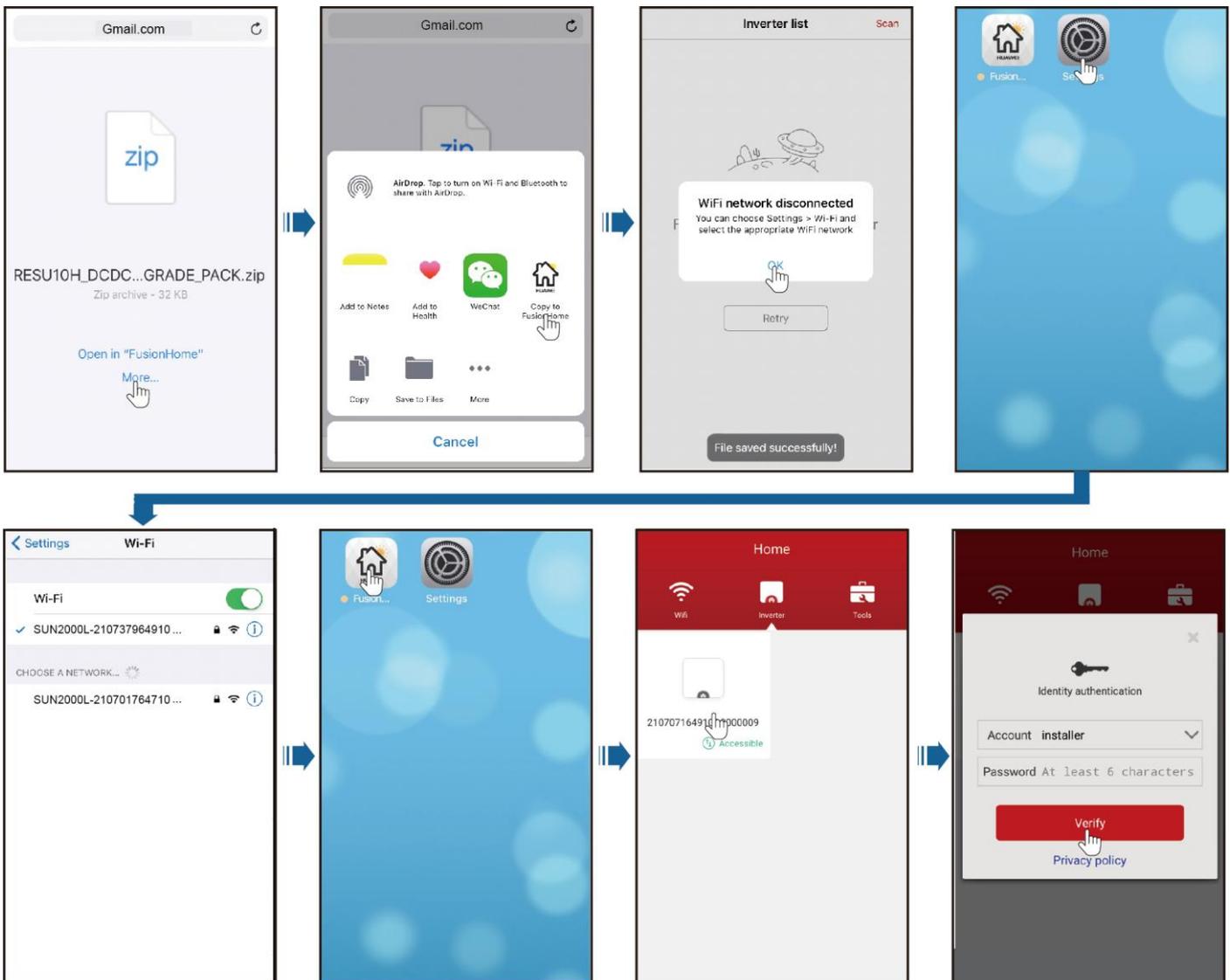


**NOTE**

In the iOS system, the upgrade file can be imported to the mobile phone over your mailbox. The upgrade file name extension must be **.zip**. **Manually select** is unavailable.

a) Import the battery upgrade package to the mobile phone over your mailbox, and then log in to the FusionHome app as **installer**.

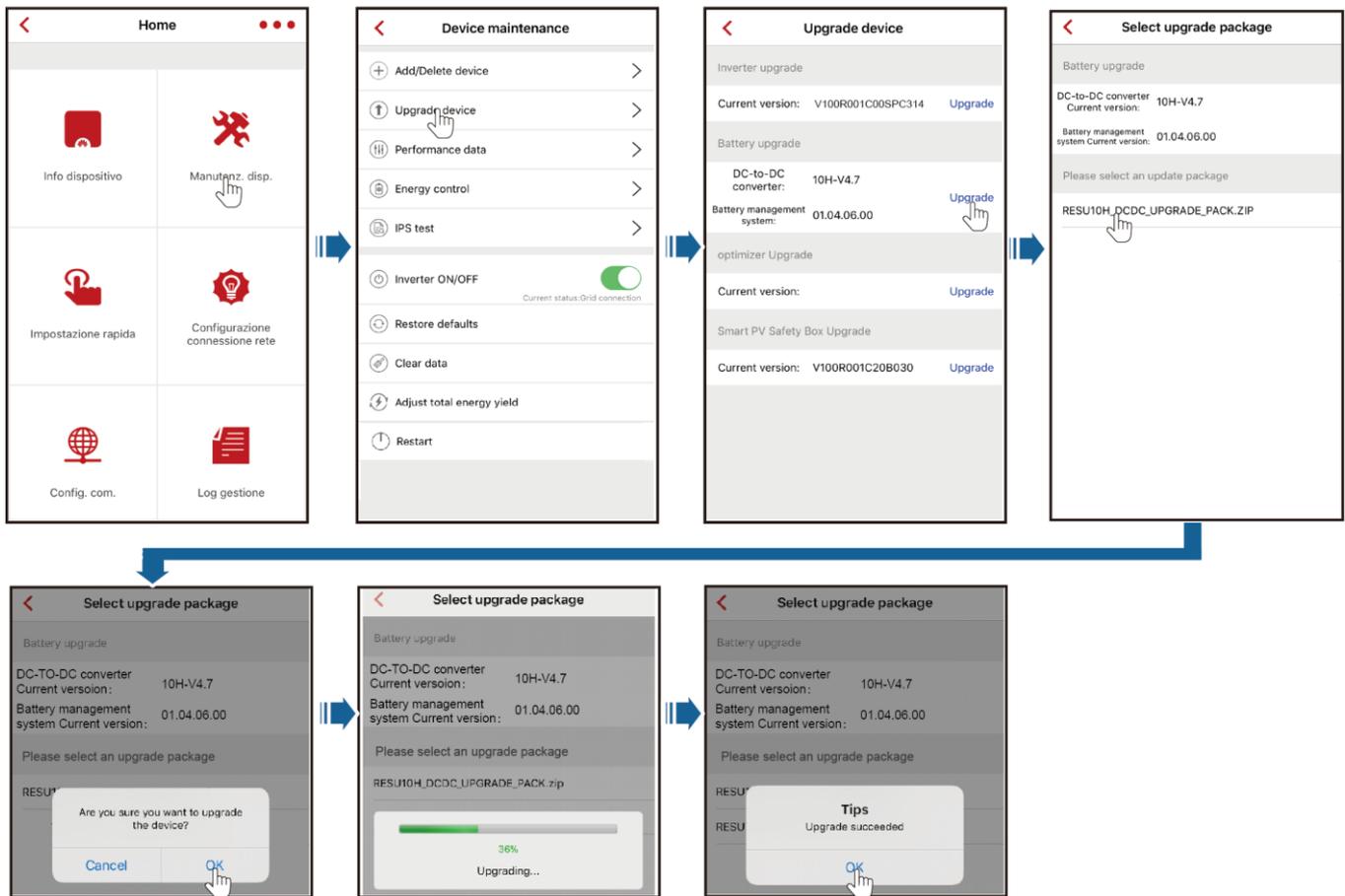
- The upgrade package for the LG RESU10H is **RESU10H\_DCDC\_UPGRADE\_PACK.ZIP**.
- The upgrade package for the LG RESU7H is **RESU7H\_DCDC\_UPGRADE\_PACK.ZIP**.



b) Select the upgrade package to upgrade the battery from V2.0 to V4.7. The upgrade takes about 5 minutes.

- The upgrade package for the LG RESU10H is **RESU10H\_DCDC\_UPGRADE\_PACK.ZIP**.
- The upgrade package for the LG RESU7H is **RESU7H\_DCDC\_UPGRADE\_PACK.ZIP**.

The following figure uses LG RESU10H upgrade as an example.



3. After completing the upgrade, check that the battery is working properly.

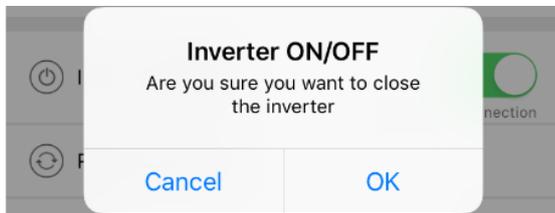
## 4.3 Powering Off the System

### 1. Power off the SUN2000L.

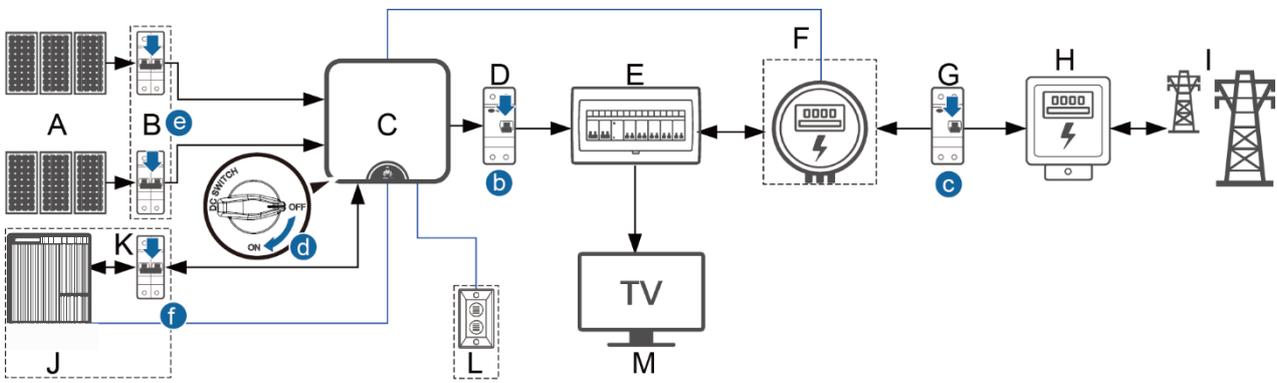
#### WARNING

- After the SUN2000L is powered off, the remaining electricity and heat may still cause electric shocks and body injury. Therefore, put on protective gloves and begin servicing the SUN2000L 5 minutes after the power-off.
- If the SUN2000L is connected to the battery, ensure that a shutdown command is sent from the app. Power off the system after the SUN2000L has shut down. If no shutdown command is sent from the app, the SUN2000L will shut down after the power grid is powered off. Then the SUN2000L will wait for 1 minute and restart (not grid-tied) to charge the battery, which poses the risk of turning off the DC switch with power.

a) Send a shutdown command on the app. If you log in as **installer**, on the **Home** screen, choose **Device maintenance** > **Inverter ON/OFF**, and perform operations as required; if you log in as **user**, on the main screen, choose > **Settings** > **Inverter ON/OFF**, and perform operations as required.



- Turn off the AC switch between the SUN2000L and the power grid.
- Turn off the main switch between the SUN2000L and the power grid.
- Turn off the DC switch at the bottom of the SUN2000L.
- Turn off the DC switch between the PV string and the SUN2000L if there is any.
- If a battery connects to the battery port, turn off the battery switch.



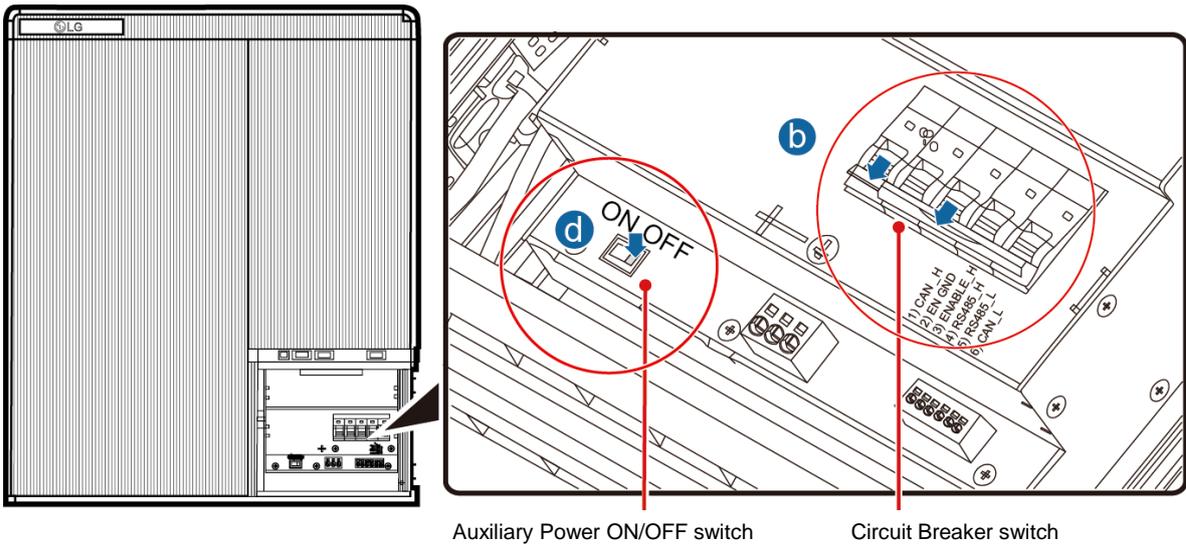
- (A) PV string
- (B) DC switch
- (C) SUN2000L
- (D) AC switch
- (E) Residential power distribution unit
- (F) Smart Power Sensor
- (G) Main switch
- (H) Residential power meter
- (I) Power grid
- (J) Battery
- (K) Battery switch
- (L) Alarm beacon
- (M) Residential load

## 2. Power off the battery pack.

### ⚠ WARNING

- Do not turn off the Auxiliary Power ON/OFF switch in normal operation mode such as charge and discharge mode.
- If the battery pack is not used for a long time or there is any fault on the battery pack, turn off the Circuit Breaker switch, and then turn off the Auxiliary Power ON/OFF switch.

- a) Remove the wiring box cover.
- b) Turn off the battery pack by setting the Circuit Breaker switch to the OFF position.
- c) Ensure that every indicator on the battery pack is off. It should take 60 seconds at most for the indicators to be off.
- d) Turn off the Auxiliary Power ON/OFF switch.
- e) Close the wiring box cover.

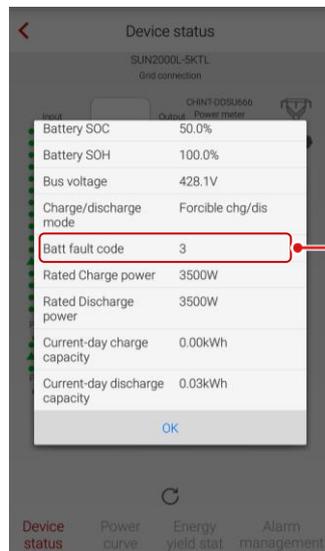


Auxiliary Power ON/OFF switch

Circuit Breaker switch

## 5 Troubleshooting

### 1. Tap the battery/meter icon in Device status display of FusionHome app to check the fault code of battery/meter.



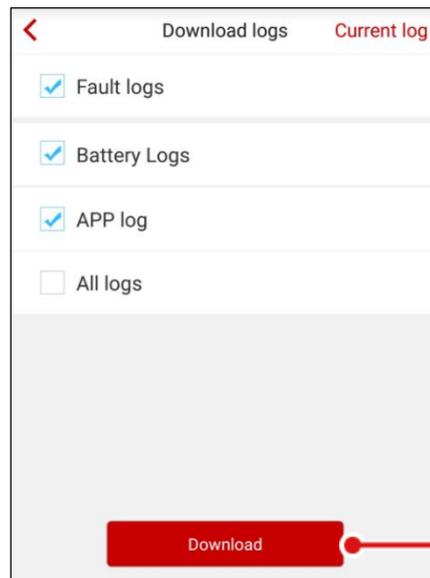
Check the fault code list and troubleshooting suggestion below.

## 2. Fault Code

Fault Code	Fault Name	Possible Cause	Suggestion
2067	Faulty Power Collector	Cause ID = 1 <ul style="list-style-type: none"> <li>In Grid Connection with Zero Power mode, the power collector communication is interrupted.</li> <li>In Maximum Use of Self-Produced Power mode, the power collector communication is interrupted.</li> </ul>	<ol style="list-style-type: none"> <li>Check that the preset power collector model is the same as the actual model.</li> <li>Check that the preset communications parameters for the power collector are the same as the actual configurations.</li> <li>Check that the power collector is powered on and the RS485 communications cable is correctly connected.</li> </ol>
2068	Battery Abnormal	Cause ID = 1 <ul style="list-style-type: none"> <li>Communication abnormal between the SUN2000L and battery.</li> <li>RS485 wire lost</li> </ul> Cause ID = 2 <ul style="list-style-type: none"> <li>Over current of the battery interface</li> </ul> Cause ID = 3 <ul style="list-style-type: none"> <li>Enable signal abnormal</li> <li>Enable wire lost</li> </ul> Cause ID = 4 <ul style="list-style-type: none"> <li>Power wiring abnormal (reverse or lost)</li> </ul>	<ol style="list-style-type: none"> <li>If the FAULT indicator on the front of the battery pack is ON or flashing, contact your installer.</li> <li>Check that the communications cable and power cable between the SUN2000 and the battery are properly connected.</li> <li>Check that the battery auxiliary power ON/OFF switch is turned on properly.</li> <li>Send a shutdown command on the app. Turn off the AC output switch, DC input switch, and battery switch in order, and then turn on the battery switch, AC output switch, and DC input switch in sequence after 5 minutes.</li> <li>If the alarm still exists, contact your installer.</li> </ol>
1	DDC_Battery Over Voltage	DCDC Converter_Battery Over Voltage	Contact LG Chem local customer service after setting the Aux switch to OFF.
2	DDC_Battery Over Current	DCDC Converter_Battery Over Current	Contact LG Chem local customer service after setting the Aux switch to OFF.
3	DDC_Link Over Voltage	DCDC Converter_Link Over Voltage	Contact LG Chem local customer service after setting the Aux switch to OFF.
4	DDC_Link Over Current	DCDC Converter_Link Over Current	Contact LG Chem local customer service after setting the Aux switch to OFF.
5	DDC_Over Temperature	DCDC Converter_Over Temperature	Contact LG Chem local customer service after setting the Aux switch to OFF.
6	DDC_BMS_Comm_Err	DCDC Converter_BMS_Comm_Err	Contact LG Chem local customer service after setting the Aux switch to OFF.
7	DDC_INV_Comm_Err	DCDC Converter_INV_Comm_Err	Contact LG Chem local customer service after setting the Aux switch to OFF.
8	DDC_Link Over Voltage_CB Open	DCDC Converter_Link Over Voltage_CB Open	Contact LG Chem local customer service after setting the Aux switch to OFF.
9	OVF	Over Voltage Fault	N/A
20	OVF2	Over Voltage Fault 2	Need to Contact LG Chem Local Customer service after Aux switch Off
10	UVF	Under Voltage Fault	N/A
21	UVF2	Under Voltage Fault 2	Contact LG Chem local customer service after setting the Aux switch to OFF.
11	DVF	Deviation Voltage Fault	N/A
12	OTF	Over Temperature Fault	N/A
22	OTF2	Over Temperature Fault 2	Contact LG Chem local customer service after setting the Aux switch to OFF.
13	UTF	Under Temperature Fault	N/A
23	UTF2	Under Temperature Fault 2	Contact LG Chem local customer service after setting the Aux switch to OFF.
14	DTF	Deviation Temperature Fault	N/A
15	OCCF	Over Charge Current Fault	N/A
24	OCCF2	Over Charge Current Fault 2	Contact LG Chem local customer service after setting the Aux switch to OFF.

Alarm ID	Alarm Name	Possible Cause	Suggestion
16	ODCF	Over Discharge Current Fault	N/A
25	ODCF2	Over Discharge Current Fault 2	Contact LG Chem local customer service after setting the Aux switch to OFF.
17	OCPLF	Over Charge Power Limit Fault	N/A
26	OCPLF2	Over Charge Power Limit Fault 2	Contact LG Chem local customer service after setting the Aux switch to OFF.
18	ODPLF	Over Discharge Power Limit Fault	N/A
27	ODPLF2	Over Discharge Power Limit Fault 2	Contact LG Chem local customer service after setting the Aux switch to OFF.
19	BMICLOCF	Battery Monitoring IC Loss of Communication Fault	N/A
28	PCSLOCF2	PCS Loss of Communication Fault 2	Contact LG Chem local customer service after setting the Aux switch to OFF.
29	BMICLOCF2	Battery Monitoring IC Loss of Communication Fault 2	Contact LG Chem local customer service after setting the Aux switch to OFF.
30	BMSF2	BMS Internal Fault 2	N/A
51	Reverse Polarity_PV charge	Reverse Polarity_PV Power Charge DC	Shut down the system (CB off, SUN2000L off), check the positive and negative power cables and ground cable, and re-connect them.
52	Reverse Polarity_Battery Precharge	Reverse Polarity_Battery Try to Precharge	Check the positive and negative power cables and ground cable, and re-connect them.

### 3. Fault Log Export



Tap **Download** to export the battery log of **.CSV** format.

Customer Service Contact Information			
Region	Country	Email	Hotline
Europe	France	eu_inverter_support@huawei.com	0080033888888
	Germany		
	Spain		
	Italy		
	United Kingdom		
	Netherlands		
	Others		
Asia Pacific	Australia	au_inverter_support@huawei.com	1800046639
	Turkey	tr_inverter_support@huawei.com	-
	Malaysia	apsupport@huawei.com	0080021686868 /1800220036
	Thailand		(+66) 26542662 (Local Call)
			1800290055 (Toll-free in Thailand)
	China	solarservice@huawei.com	4008785555
Others	apsupport@huawei.com	0060-3-21686868	
Japan	Japan	Japan_ESC@ms.huawei.com	0120258367
India	India	indiaenterprise_TAC@huawei.com	1800 103 8009
Korea	Korea	Japan_ESC@ms.huawei.com	-
North America	United States	na_inverter_support@huawei.com	1-877-948-2934
	Canada	na_inverter_support@huawei.com	1-855-482-9343
Latin America	Mexico	la_inverter_support@huawei.com	018007703456 /0052-442-4288288
	Argentina		0-8009993456
	Brazil		0-8005953456
	Chile		800201866 (Only for Fixed)
	Others		0052-442-4288288
The Middle East and Africa	Egypt	mea_inverter_support@huawei.com	08002229000 /0020235353900
	United Arab Emirates		08002229000
	South Africa		0800222900
	Saudi Arabia		8001161177
	Pakistan		0092512800019
	Morocco		0800009900
	Others		0020235353900