SUN2000L-(2KTL-5KTL) and SUN2000-(2KTL-6KTL)-L1 Battery and Smart Power Sensor Quick Guide

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HUAWEI

1 Product Introduction

The SUN2000L-(2KTL-5KTL) (SUN2000L for short) and SUN2000-(2KTL-6KTL)-L1 (SUN2000 for short) can connect to LG RESU7H (Type-R) and LG RESU10H (Type-R) batteries as well as DDSU666-H, DTSU666-H, GAVAZZI-EM111-DIN AV8 1 X S1 X, GAVAZZI-EM112-DIN AV0 1 X S1 X, GAVAZZI-EM340-DIN AV2 3 X S1 X, CCS-WNC-3Y-400-MB, and CCS-WNC-3D-240-MB Smart Power Sensors.

For more information about Smart Power Sensors, see Chapter 3 Smart Power Sensor Cables Connection.
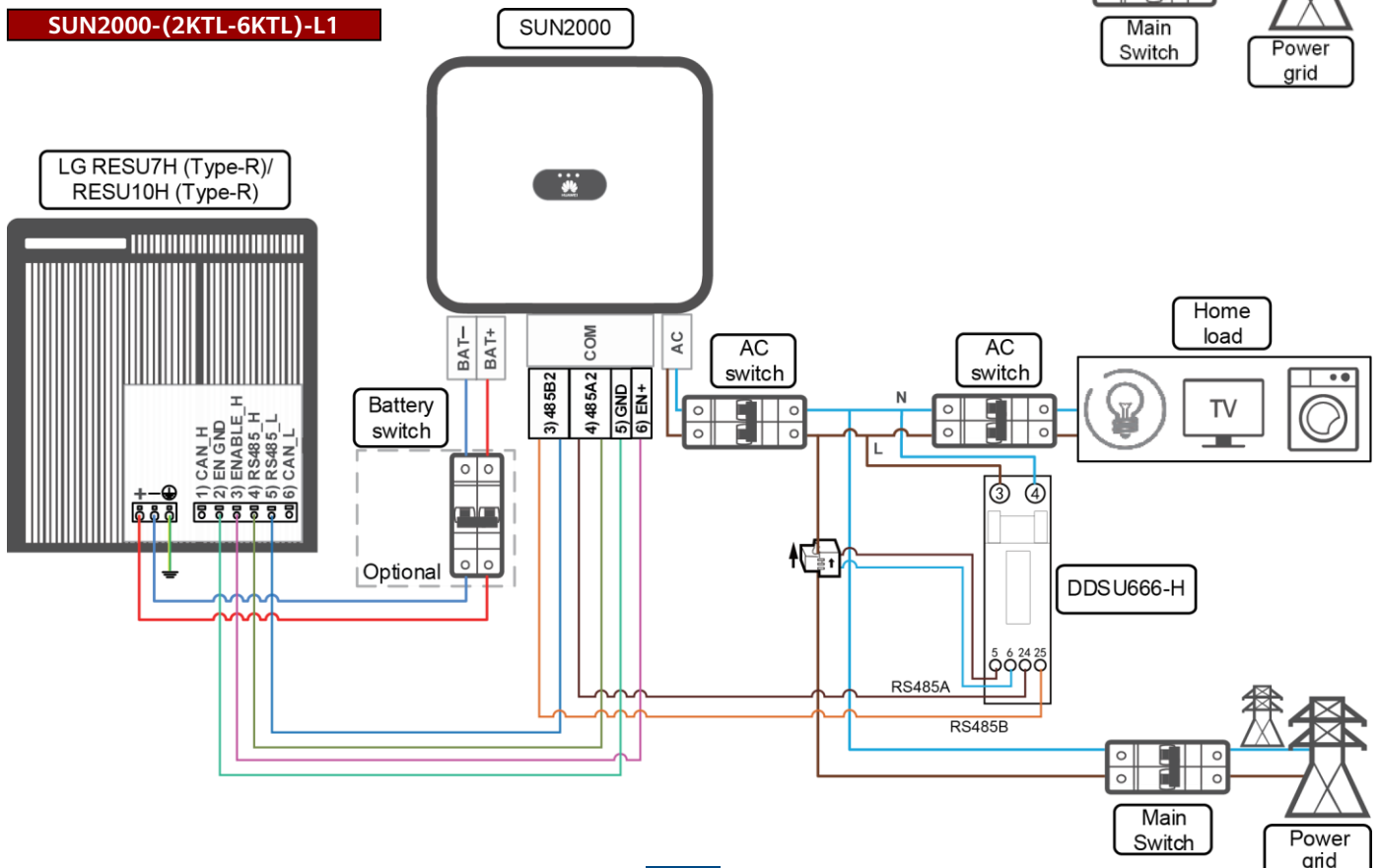
SUN2000L-(2KTL-5KTL)
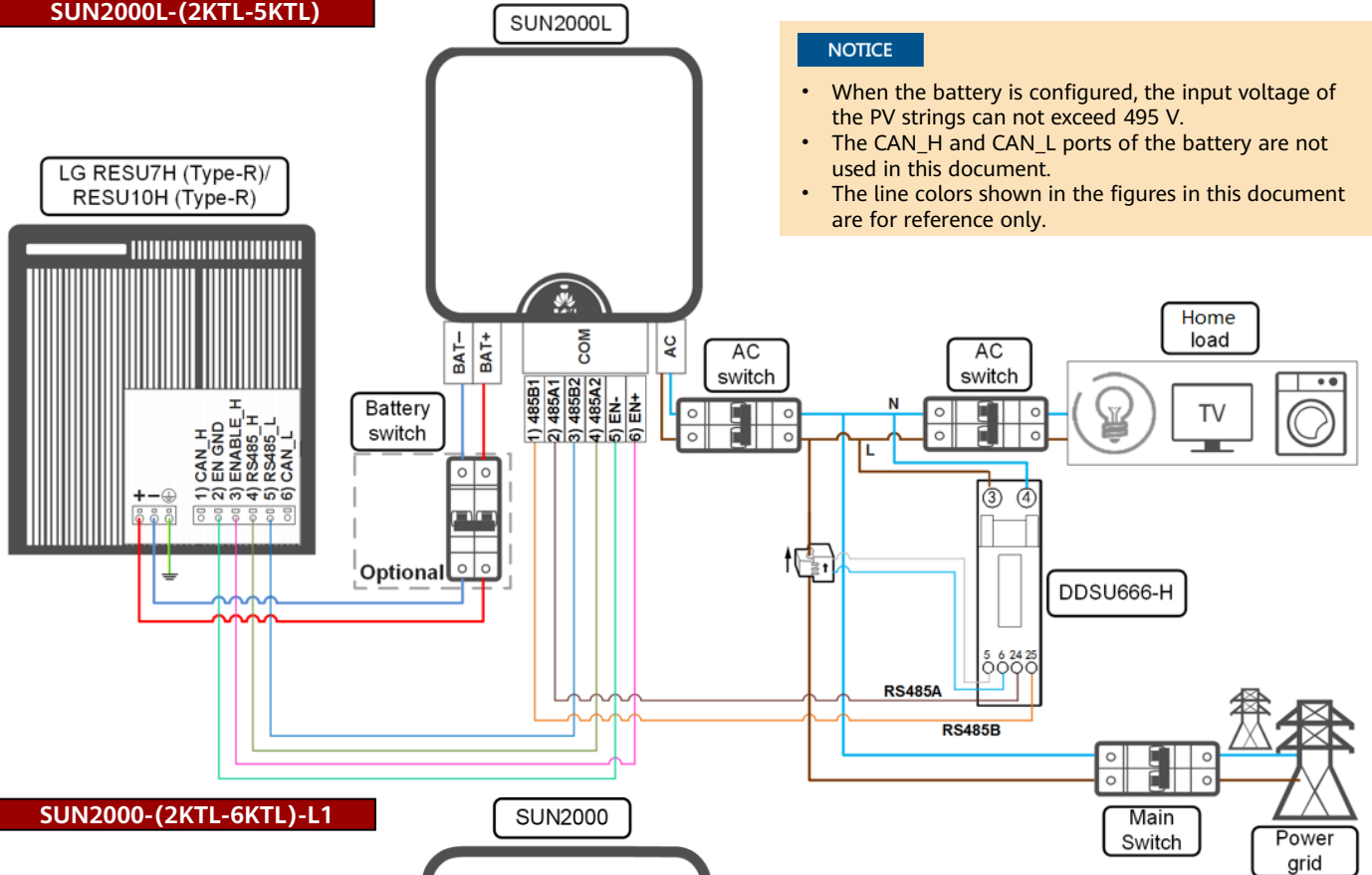
NOTICE

- When the battery is configured, the input voltage of the PV strings can not exceed 495 V.
- 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.

SUN2000-(2KTL-6KTL)-L1

Recommended switch specifications:

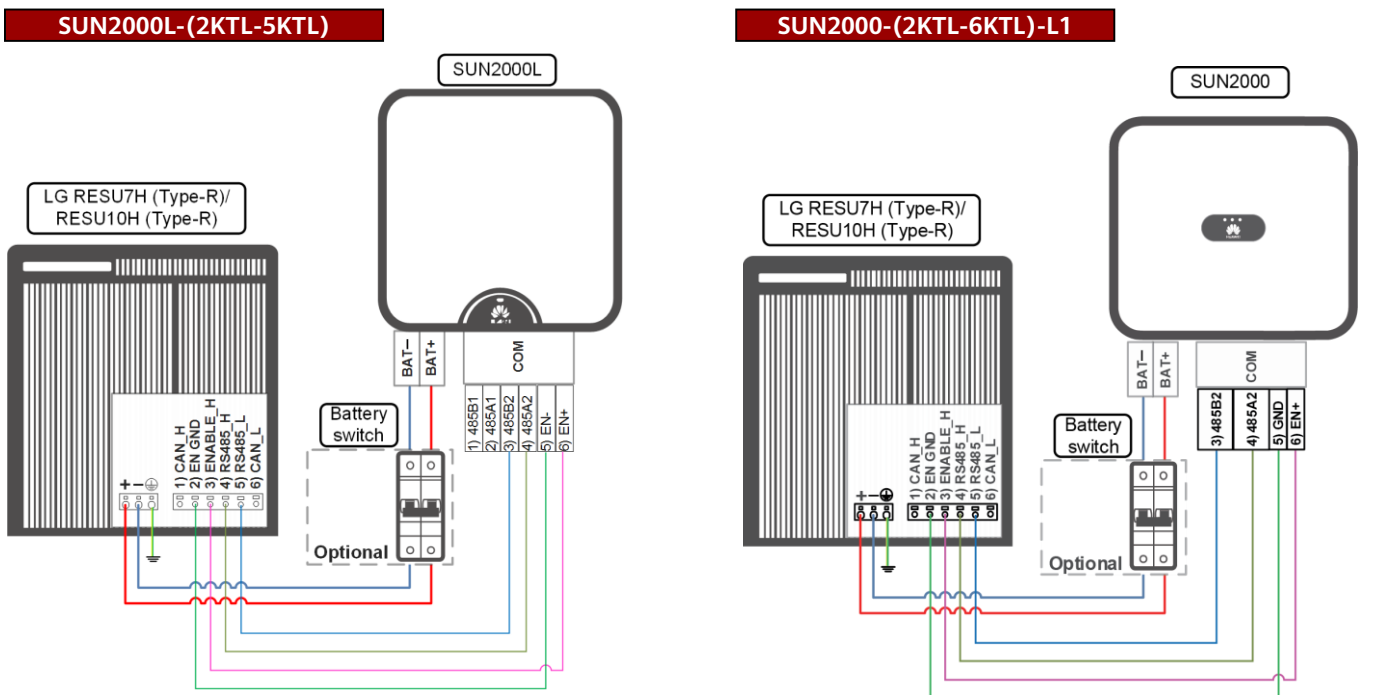| Component	Description	Source
Battery switch	Recommended: a DC circuit breaker with a rated voltage greater than or equal to 600 V DC and a rated current of 20 A.	Prepared by the customer
AC switch	Recommended: a single-phase AC circuit breaker with a rated voltage greater than or equal to 250 V AC and a rated current of • 16 A (SUN2000L-2KTL, SUN2000-2KTL-L1) • 25 A (SUN2000L-3KTL, SUN2000L-3.68KTL, SUN2000-3KTL-L1, and SUN2000-3.68KTL-L1) • 32 A (SUN2000L-4KTL, SUN2000L-4.6KTL, SUN2000L-5KTL, SUN2000-4KTL-L1, SUN2000-4.6KTL-L1, and SUN2000-5KTL-L1, SUN2000-6KTL-L1） Note: Different countries or regions have different output voltage of the power grid, please select a single-phase AC circuit breaker according to the actual output voltage of the power grid, and the rated voltage of the AC circuit breaker is greater than the actual output voltage of the power grid.	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	Solar Inverter Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
Ground cable	⏚	N/A	Single-core outdoor copper cable	4–6 mm²	N/A	Prepared by the customer
Negative line of the power cable	–	BAT–	Standard PV cable in the industry	4–6 mm²	• SUN2000L: 4.5–7.8 mm • SUN2000: 5.9–8.8 mm	Prepared by the customer
Positive line of the power cable	+	BAT+				

Cable	LG RESU7H/LG RESU10H Port	SUN2000L-(2KTL-5KTL) COM Port	SUN2000-(2KTL-6KTL)-L1 COM Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
Communications cable	2) EN GND	5) EN–	5) GND	Four-core outdoor shielded twisted pair	• When cables are crimped: 0.20–0.35 mm² • When cables are not crimped: 0.20–1 mm²	4–11 mm	Prepared by the customer
	3) ENABLE_H	6) EN+	6) EN+				
	4) RS485_H	4) 485A2	4) 485A2				
	5) RS485_L	3) 485B2	3) 485B2				

2.2 Connecting the Battery Cables to the Battery Pack

SUN2000L-(2KTL-5KTL)

SUN2000-(2KTL-6KTL)-L1

📖 NOTE

• For SUN2000-(2KTL-6KTL)-L1, when both battery and Smart Power Sensor are configured, they need be crimped to the 485B2 and 485A2 ports.
• The CAN_H and CAN_L ports of the battery are not used in this document.

> **NOTICE**
>
> - If the battery fails to connect to the solar inverter, 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 solar inverter is not powered on or the battery is not connected to the solar inverter, switch Auxiliary Power to OFF position. Otherwise the battery power will be exhausted and the battery cannot be charged.
> - Ensure that the AC and DC disconnections are turned off before connecting the power cable to the battery pack.

1. **Connect the power cable.**
a) Connect the ground cable.
b) Connect the negative line of the power cable.
c) 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.

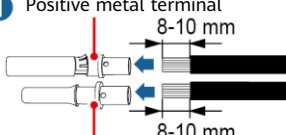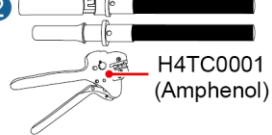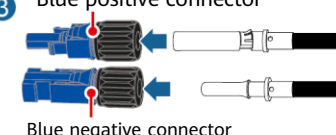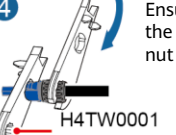## 2.3 Connecting the Battery Cables to the Solar Inverter

> ⚠ **DANGER**
>
> - Do not connect or disconnect battery cables when the solar inverter is running. Failing to do so may cause electric shocks.
> - Before connecting battery cables, ensure that the DC switch and all the switches connecting to the solar inverter are OFF, and the solar inverter has no residual electricity. Otherwise the high voltage of the solar inverter and battery may result in electric shocks.
> - If no battery is configured, do not remove the watertight cap from the battery terminal. Otherwise the solar inverter will not comply with its Ingress Protection Rating. If a battery is configured, 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.
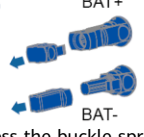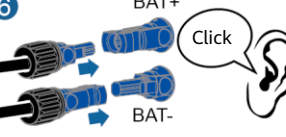
1. **Assemble the positive and negative connectors, and then connect the power cable.**

> 📖 **NOTE**
>
> The types of battery terminals used by SUN2000L-(2KTL-5KTL) and SUN2000-(2KTL-6KTL)-L1 are different.
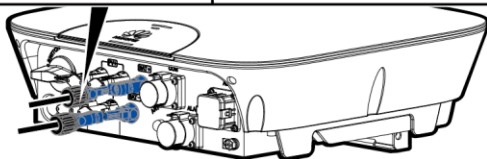
SUN2000L-(2KTL-5KTL)
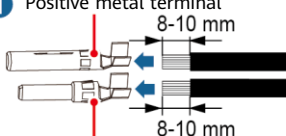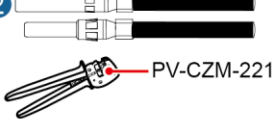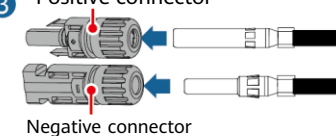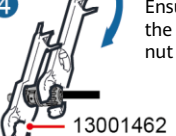
> 📖 **NOTE**
>
> Use the Amphenol positive and negative terminals and DC connectors supplied with the solar inverter. Using incompatible positive and negative terminals and DC connectors may result in serious consequences. The caused device damage is not covered under warranty.

SUN2000-(2KTL-6KTL)-L1

> 📖 **NOTE**
>
> Use the Staubli MC4 positive and negative terminals and DC connectors supplied with the solar inverter. Using incompatible positive and negative terminals and DC connectors may result in serious consequences. The caused device damage is not covered under warranty.

- Do not connect any load between the solar inverter and the battery.
- Ensure that the following conditions are met. Otherwise the solar inverter 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 solar inverter respectively.
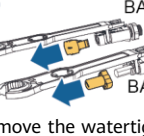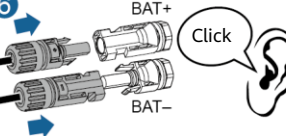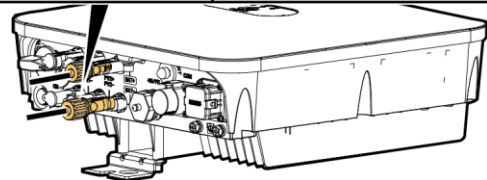- The cable between the battery and the solar inverter should be less than or equal to 10 meters, and within 5 meters is recommended.
- The battery voltage can result in fatal injury. Use dedicated insulation tools to terminate cables.

2. **Connect the communications cable.**

SUN2000L-(2KTL-5KTL)

Solar inverter	No.	Label	Definition
SUN2000L-(2KTL-5KTL)	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

SUN2000-(2KTL-6KTL)-L1

Solar inverter	No.	Label	Definition
SUN2000-(2KTL-6KTL)-L1	3	485B2	RS485B, RS485 differential signal–
	4	485A2	RS485A, RS485 differential signal+
	5	GND	Enable signal–
	6	EN+	Enable signal+

NOTICE

When laying out signal cables, separate them from power cables to avoid strong signal interference sources.

3   Smart Power Sensor Cables Connection

SUN2000L-(2KTL-5KTL) and SUN2000-(2KTL-6KTL)-L1 support the following Smart Power Sensors:

- DDSU666-H
- DTSU666-H
- GAVAZZI-EM111-DIN AV8 1 X S1 X
- GAVAZZI-EM112-DIN AV0 1 X S1 X
- GAVAZZI-EM340-DIN AV2 3 X S1 X
- CCS-WNC-3Y-400-MB/CCS-WNC-3D-240-MB

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

Scenario 1: DDSU666-H

1. **Prepare cables between the Smart Power Sensor and the solar inverter.**

Cable	DDSU666-H Port	SUN2000L-(2KTL-5KTL) Port	SUN2000-(2KTL-6KTL)-L1 Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
AC output power cable between the Smart Power Sensor and the solar inverter	3) L	L (AC port)	L (AC port)	Two-core (L and N) outdoor copper cable	4–6 mm^2	10–21 mm	Prepared by the customer
	4) N	N (AC port)	N (AC port)				
Communications cable	24) RS485A	2) 485A1 (COM port)	4) 485A2 (COM port)	Four-core outdoor shielded twisted pair	• When cables are crimped: 0.20–0.35 mm^2 • When cables are not crimped: 0.20–1 mm^2	4–11 mm	Prepared by the customer
	25) RS485B	1) 485B1 (COM port)	3) 485B2 (COM port)				
	N/A	8) PE	NA	Connects to the shield layer of the communications cable			

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

SUN2000L-(2KTL-5KTL)
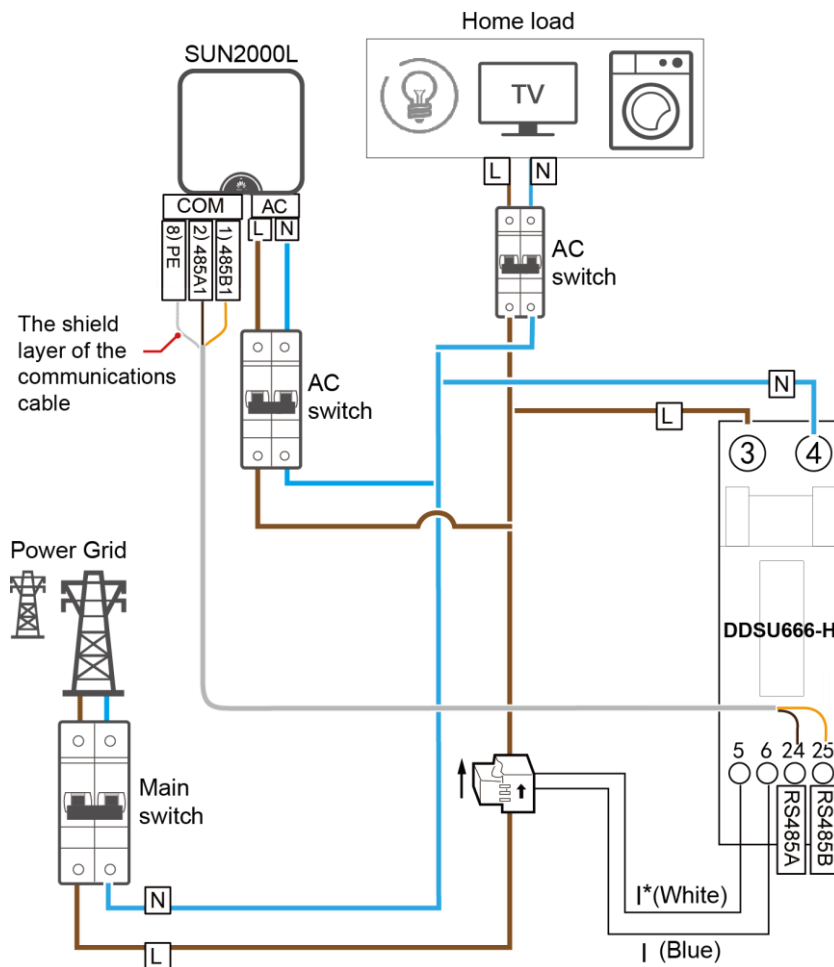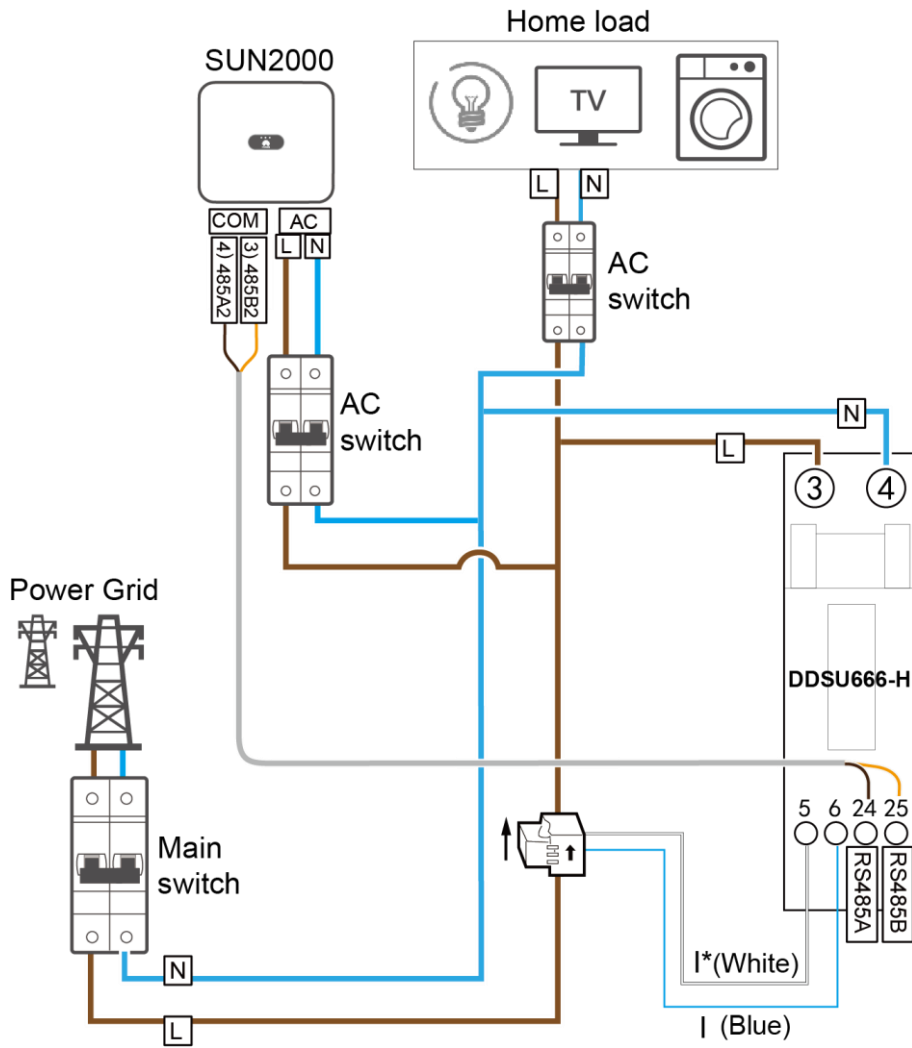
☐ NOTE

- 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.
- The L and N wires are different in color. Pay attention to the distinction when wiring to ensure that the wiring is correct.
- The cable colors shown in the figure are for reference only. Select appropriate cables according to local standards.
- For SUN2000-(2KTL-6KTL)-L1, when both battery and Smart Power Sensor are configured, they need be crimped to the 485B2 and 485A2 ports. Please select the proper cables based on the **Conductor Cross-sectional Area Range**.

### Scenario 2: DTSU666-H

1. **Prepare cables between the Smart Power Sensor and the solar inverter.**

Cable	DTSU666-H Port	SUN2000L-(2KTL-5KTL) Port	SUN2000-(2KTL-6KTL)-L1 Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
AC output power cable between the Smart Power Sensor and the solar inverter	3) L	L (AC port)	L (AC port)	Two-core (L and N) outdoor copper cable	4–6 mm^2	10–21 mm	Prepared by the customer
	10) N	N (AC port)	N (AC port)				
Communications cable	24) RS485A	2) 485A1 (COM port)	4) 485A2 (COM port)	Four-core outdoor shielded twisted pair	• When cables are crimped: 0.20–0.35 mm^2 • When cables are not crimped: 0.20–1 mm^2	4–11 mm	Prepared by the customer
	25) RS485B	1) 485B1 (COM port)	3) 485B2 (COM port)				
	N/A	8) PE	NA	Connects to the shield layer of the communications cable			

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

SUN2000L-(2KTL-5KTL)
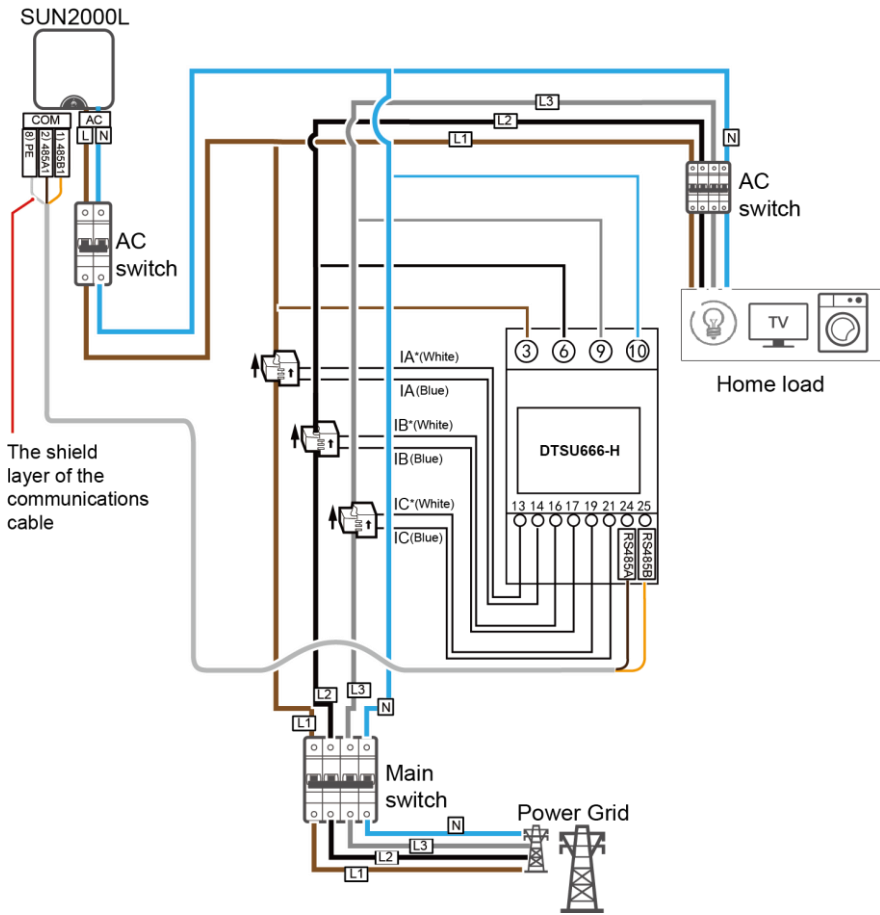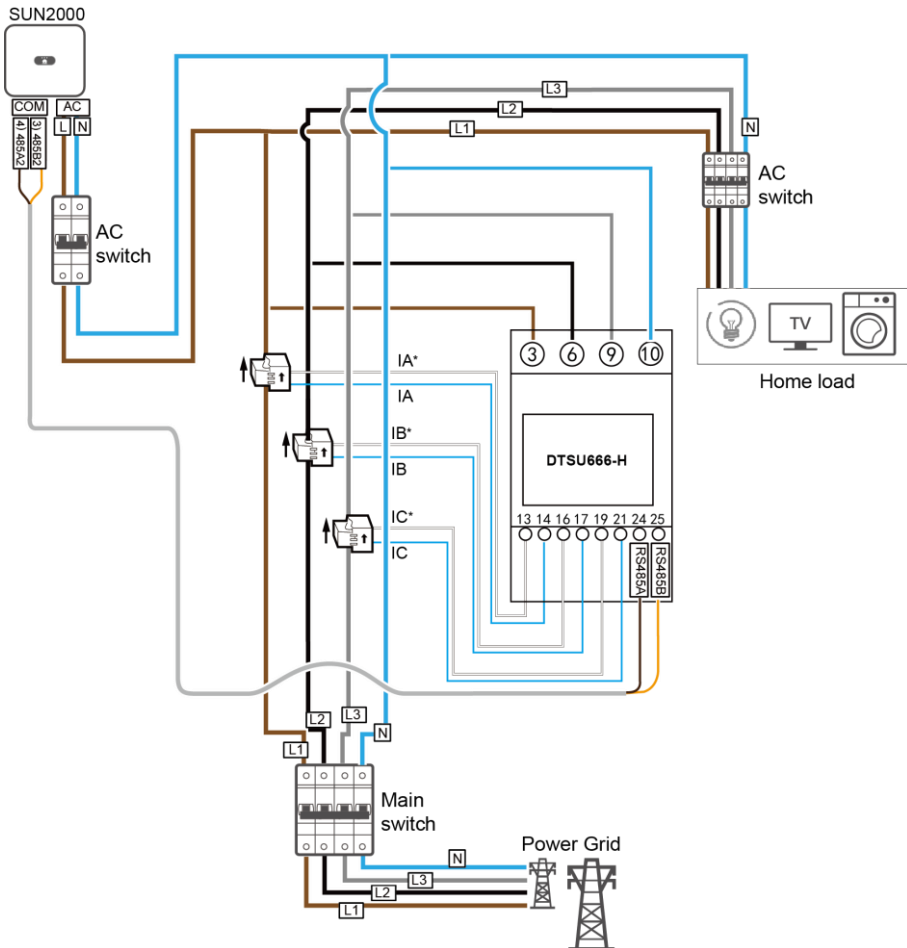
SUN2000-(2KTL-6KTL)-L1

> **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.
> - The L and N wires are different in color. Pay attention to the distinction when wiring to ensure that the wiring is correct.
> - The cable colors shown in the figure are for reference only. Select appropriate cables according to local standards.
> - For SUN2000-(2KTL-6KTL)-L1, when both battery and Smart Power Sensor are configured, they need be crimped to the 485B2 and 485A2 ports. Please select the proper cables based on the **Conductor Cross-sectional Area Range**.

Scenario 3: GAVAZZI-EM111-DIN AV8 1 X S1 X

1. **Prepare cables between the Smart Power Sensor and the solar inverter.**

Cable	GAVAZZI-EM111-DIN AV8 1 X S1 X Port	SUN2000L-(2KTL-5KTL) Port	SUN2000-(2KTL-6KTL)-L1 Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
AC output power cable between the Smart Power Sensor and the solar inverter	2) L	L (AC port)	L (AC port)	Two-core (L and N) outdoor copper cable	4–6 mm^2	10–21 mm	Prepared by the customer
	N	N (AC port)	N (AC port)				
Communications cable	6) B+	2) 485A1 (COM port)	4) 485A2 (COM port)	Four-core outdoor shielded twisted pair	• When cables are crimped: 0.20–0.35 mm^2 • When cables are not crimped: 0.20–1 mm^2	4–11 mm	Prepared by the customer
	8) A-	1) 485B1 (COM port)	3) 485B2 (COM port)				
	N/A	8) PE	NA	Connects to the shield layer of the communications cable			

2. **Open the front cover, and then connect the cables to the GAVAZZI-EM111-DIN AV8 1 X S1 X.**

SUN2000L-(2KTL-5KTL)

Power Grid

SUN2000

Main switch

EM111

AC switch

AC switch

Home load

TV

📖 **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.
- The L and N wires are different in color. Pay attention to the distinction when wiring to ensure that the wiring is correct.
- The cable colors shown in the figure are for reference only. Select appropriate cables according to local standards.
- For SUN2000-(2KTL-6KTL)-L1, when both battery and Smart Power Sensor are configured, they need be crimped to the 485B2 and 485A2 ports. Please select the proper cables based on the **Conductor Cross-sectional Area Range**.
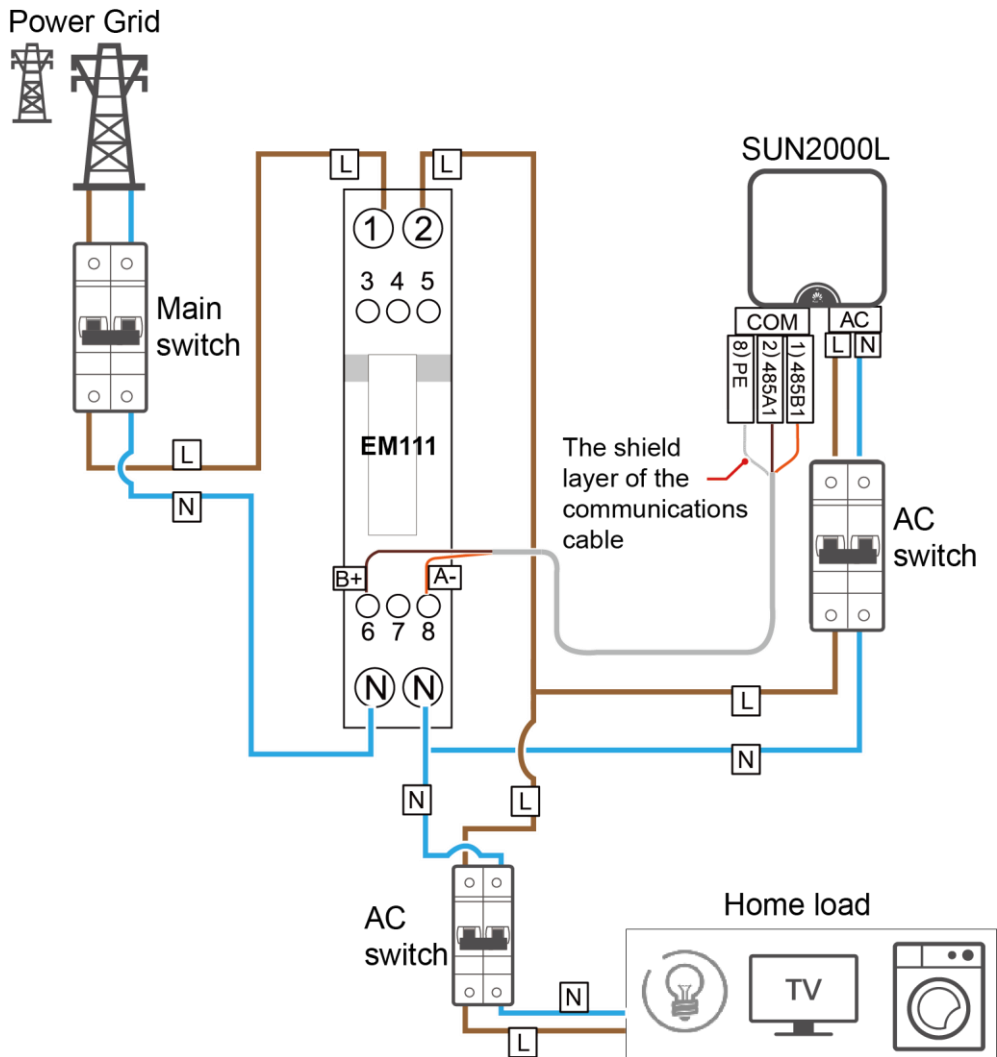
NOTICE

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 solar inverter requires B: Bidirectional mode. The setting method is as follows:

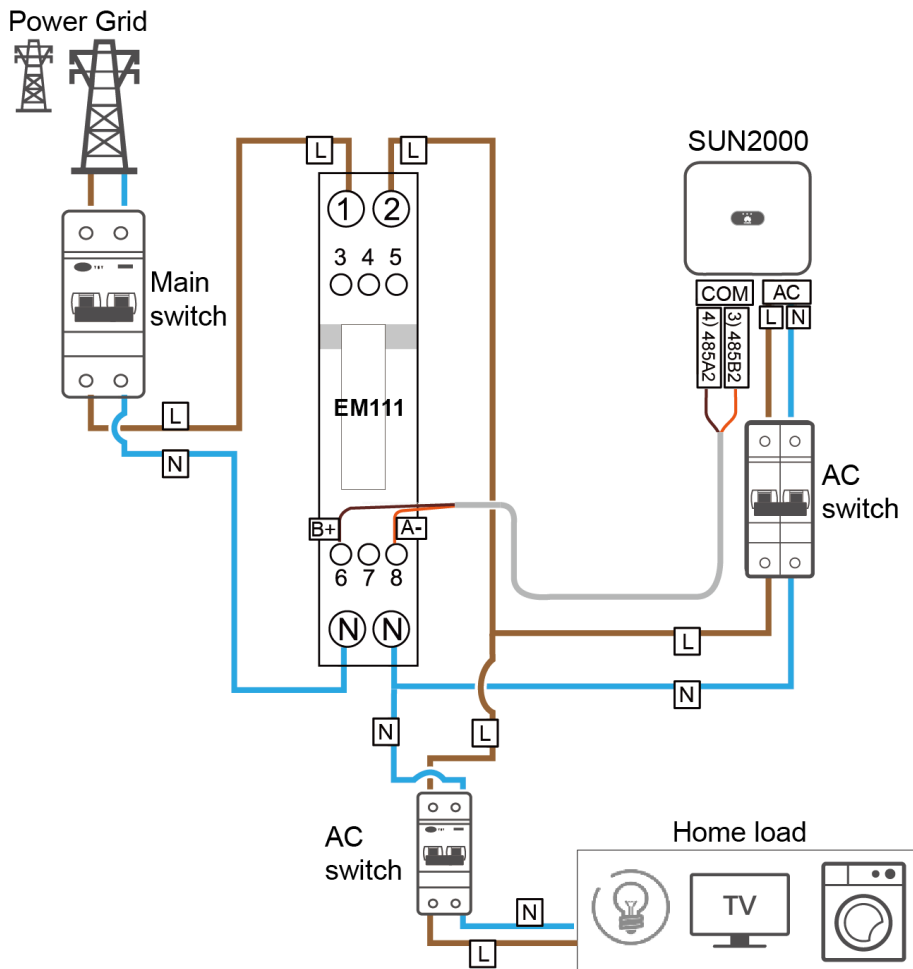| Symbol	Meaning
◄	View the previous page or decrease a parameter value.
►	View the next page or increase a parameter value.
⬆	Open the parameter menu or confirm a value (press for 1.5s)
◄ ►	Hold down both ◄ and ► for 1.5s to confirm the default password **0000**.
PASS	Enter current password. The preset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

1. **Prepare cables between the Smart Power Sensor and the solar inverter.**

Cable	GAVAZZI-EM112-DIN AV0 1 X S1 X Port	SUN2000L-(2KTL-5KTL) Port	SUN2000-(2KTL-6KTL)-L1 Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
AC output power cable between the Smart Power Sensor and the solar inverter	2) L	L (AC port)	L (AC port)	Two-core (L and N) outdoor copper cable	4–6 mm^2	10–21 mm	Prepared by the customer
	N	N (AC port)	N (AC port)				
Communications cable	4) B+	2) 485A1 (COM port)	4) 485A2 (COM port)	Four-core outdoor shielded twisted pair	• When cables are crimped: 0.20–0.35 mm^2 • When cables are not crimped: 0.20–1 mm^2	4–11 mm	Prepared by the customer
	5) A-	1) 485B1 (COM port)	3) 485B2 (COM port)				
	N/A	8) PE	NA	Connects to the shield layer of the communications cable			

2. **Open the front cover, and then connect the cables to the GAVAZZI-EM112-DIN AV0 1 X S1 X.**

SUN2000L-(2KTL-5KTL)

☐ **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.
- The L and N wires are different in color. Pay attention to the distinction when wiring to ensure that the wiring is correct.
- The cable colors shown in the figure are for reference only. Select appropriate cables according to local standards.
- For SUN2000-(2KTL-6KTL)-L1, when both battery and Smart Power Sensor are configured, they need be crimped to the 485B2 and 485A2 ports. Please select the proper cables based on the **Conductor Cross-sectional Area Range**.

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 solar inverter requires B: Bidirectional mode. The setting method is as follows:

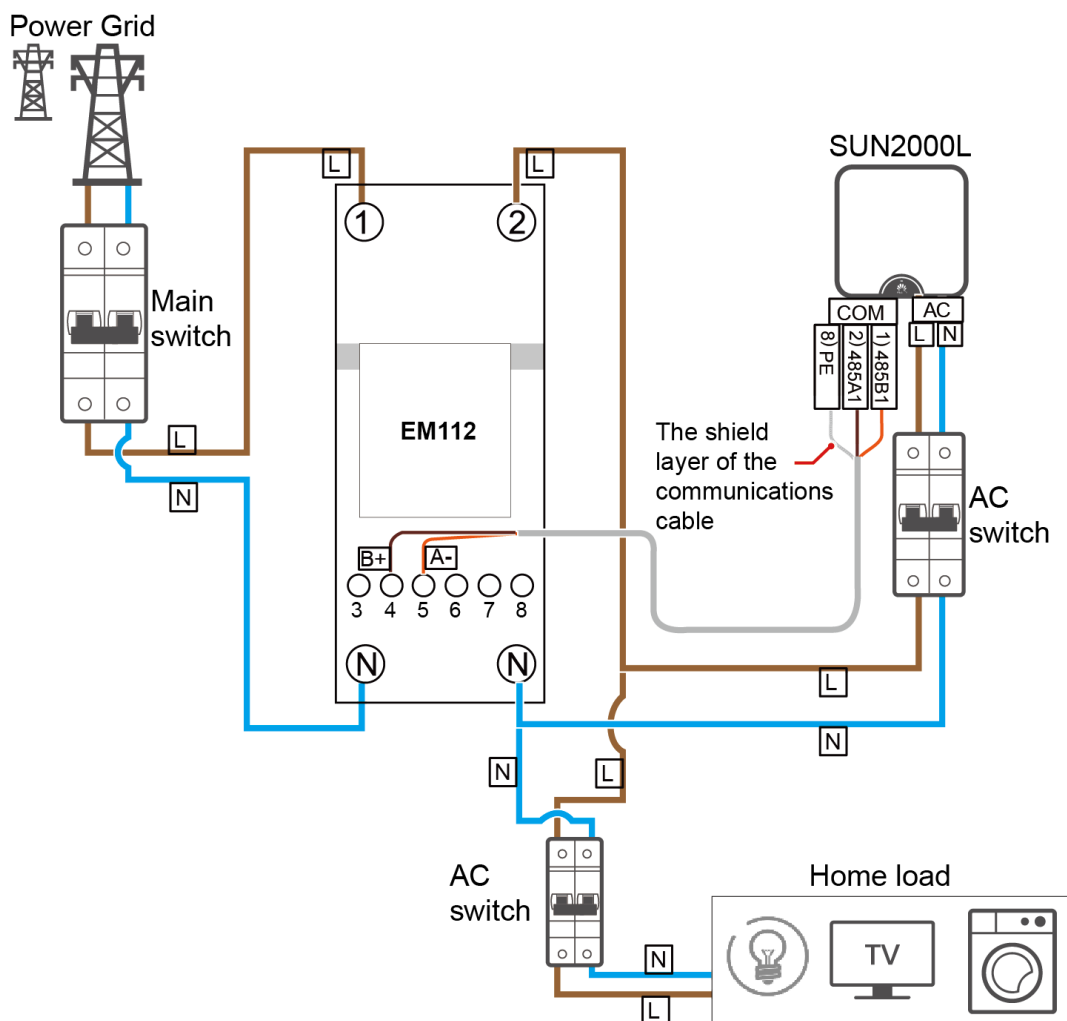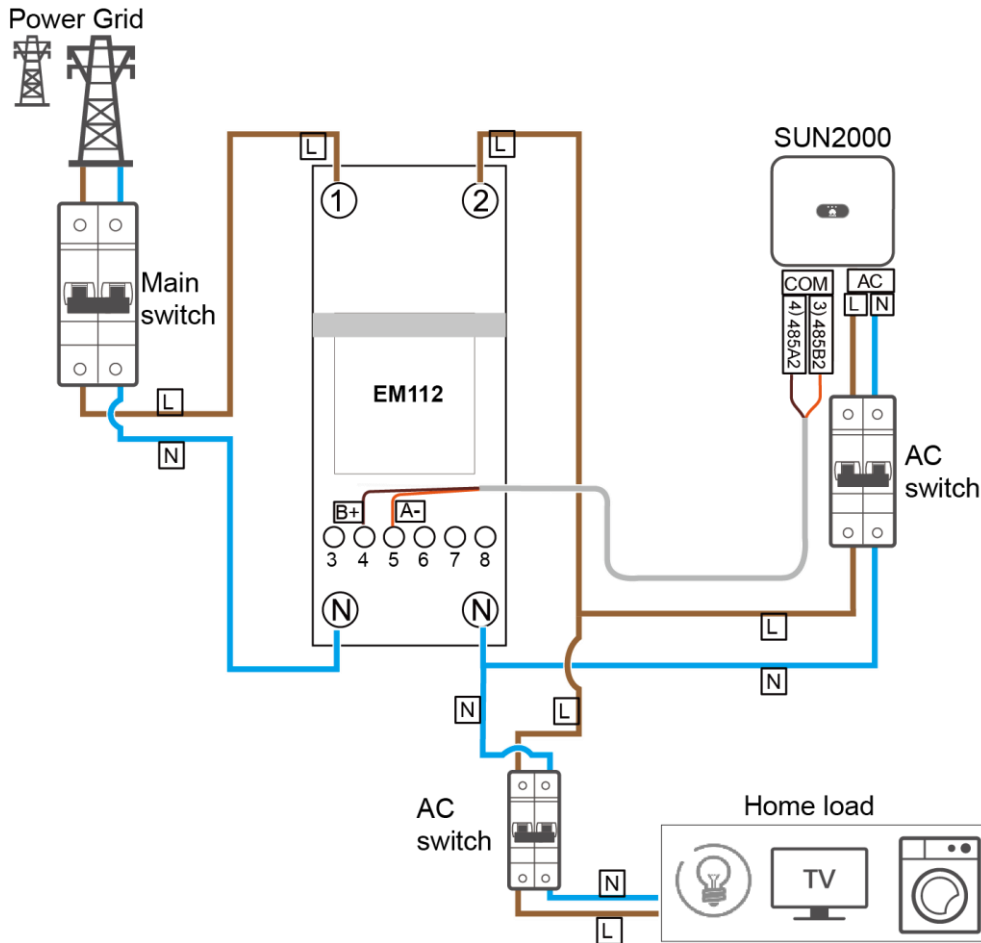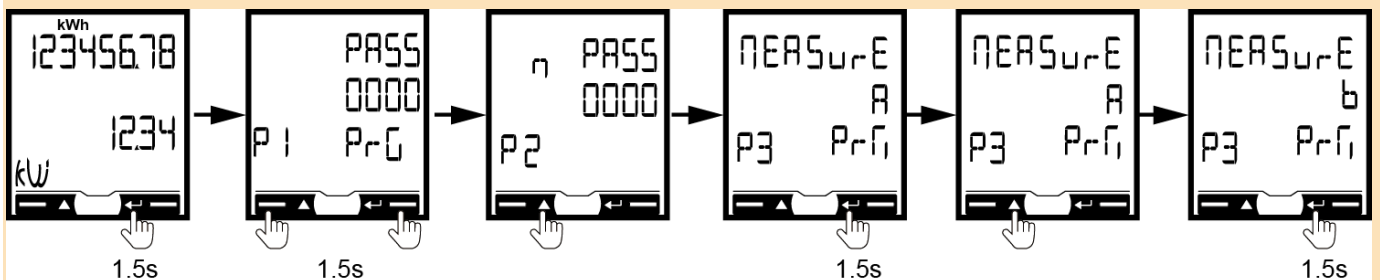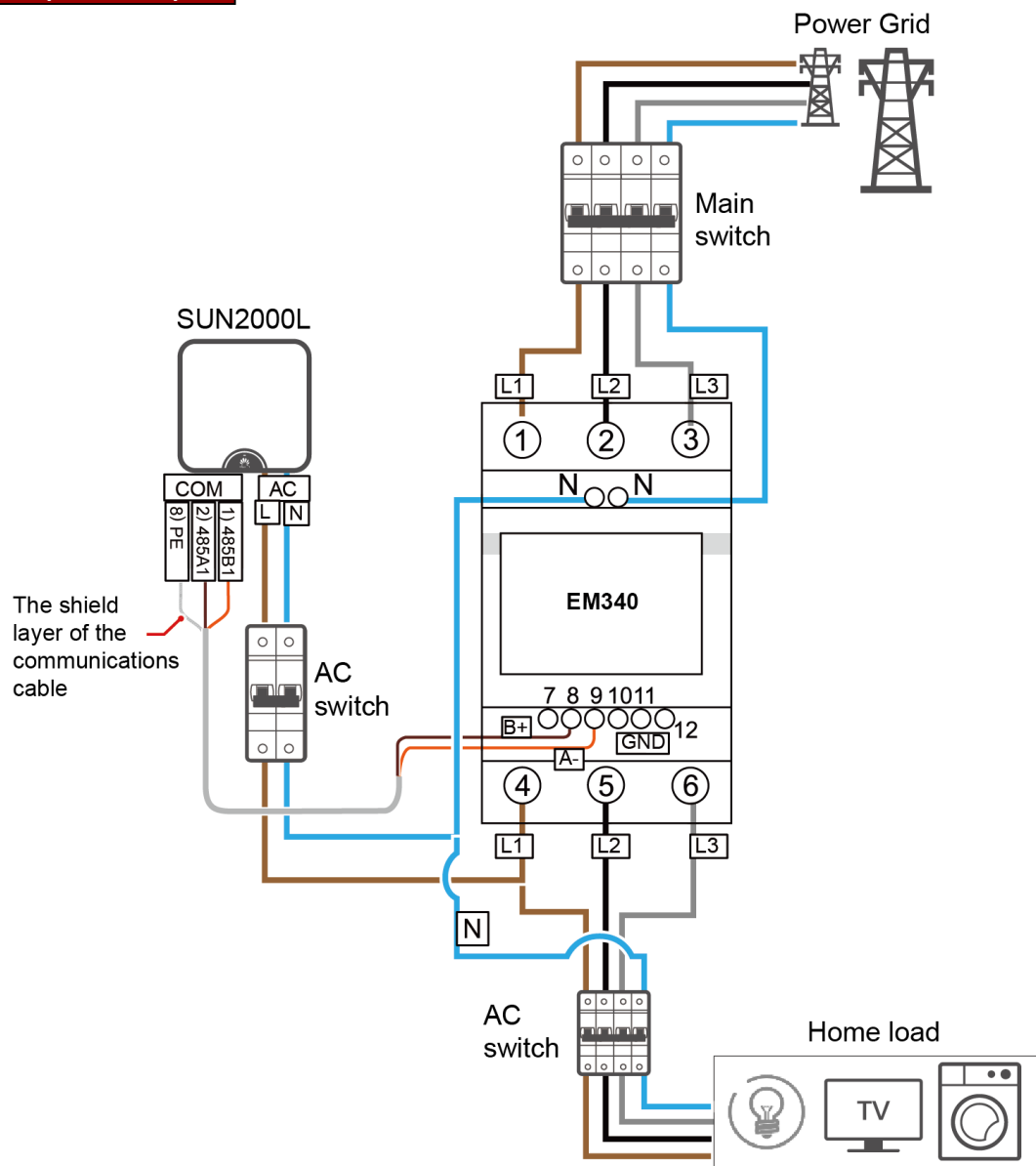| Symbol	Meaning
▲	View the next page or decrease a parameter value.
▼	View the previous page or increase a parameter value.
↵	Open the parameter menu or confirm a value (press for 1.5s)
▲ ▼	Hold down both ▲ and ▼ for 1.5s to confirm the default password **0000**.
PASS	Enter current password. The preset password is **0000**. 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.

1. **Prepare cables between the Smart Power Sensor and the solar inverter.**

Cable	GAVAZZI-EM340-DIN AV2 3 X S1 X Port	SUN2000L-(2KTL-5KTL) Port	SUN2000-(2KTL-6KTL)-L1 Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
AC output power cable between the Smart Power Sensor and the solar inverter	4) L	L (AC port)	L (AC port)	Two-core (L and N) outdoor copper cable	4–6 mm^2	10–21 mm	Prepared by the customer
	N	N (AC port)	N (AC port)				
Communications cable	8) B+	2) 485A1 (COM port)	4) 485A2 (COM port)	Four-core outdoor shielded twisted pair	• When cables are crimped: 0.20–0.35 mm^2 • When cables are not crimped: 0.20–1 mm^2	4–11 mm	Prepared by the customer
	9) A-	1) 485B1 (COM port)	3) 485B2 (COM port)				
	N/A	8) PE	NA	Connects to the shield layer of the communications cable			

2. **Open the front cover, and then connect the cables to the GAVAZZI-EM340-DIN AV2 3 X S1 X.**

SUN2000L-(2KTL-5KTL)

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.
- The L and N wires are different in color. Pay attention to the distinction when wiring to ensure that the wiring is correct.
- The cable colors shown in the figure are for reference only. Select appropriate cables according to local standards.
- For SUN2000-(2KTL-6KTL)-L1, when both battery and Smart Power Sensor are configured, they need be crimped to the 485B2 and 485A2 ports. Please select the proper cables based on the **Conductor Cross-sectional Area Range**.

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 solar inverter 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 **0000**.
PASS	Enter current password. The preset password is **0000**. Note*: The value settings page automatically opens after 3s.
n PASS	Change password.
SYStEn	System type: • 3Pn: three-phase system, 4-wire • 3P: three-phase system, 3-wire • 2P: two-phase system, 3-wire
nEASurE	Measurement type: • A: easy connection, measures total energy without considering the direction. • b: separately measures imported and exported energy.

Scenario 6: CCS-WNC-3Y-400-MB/CCS-WNC-3D-240-MB
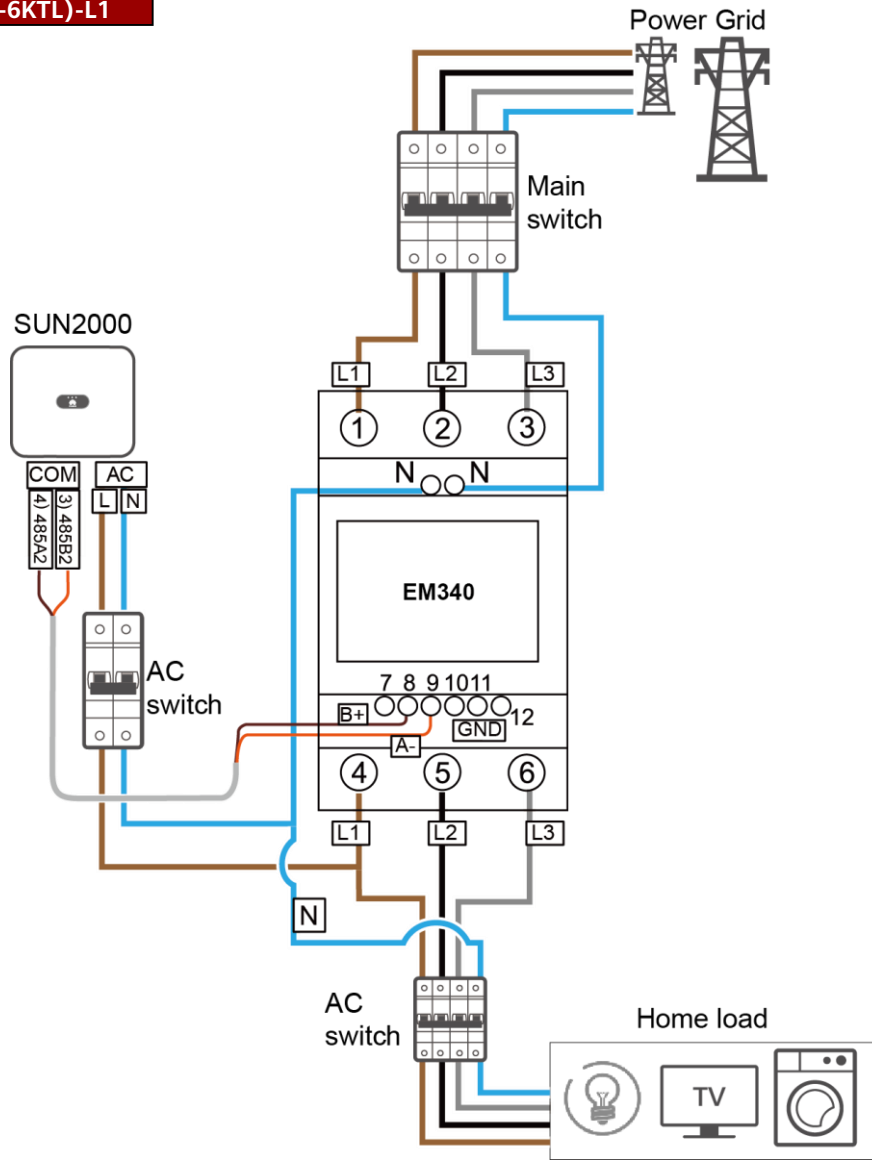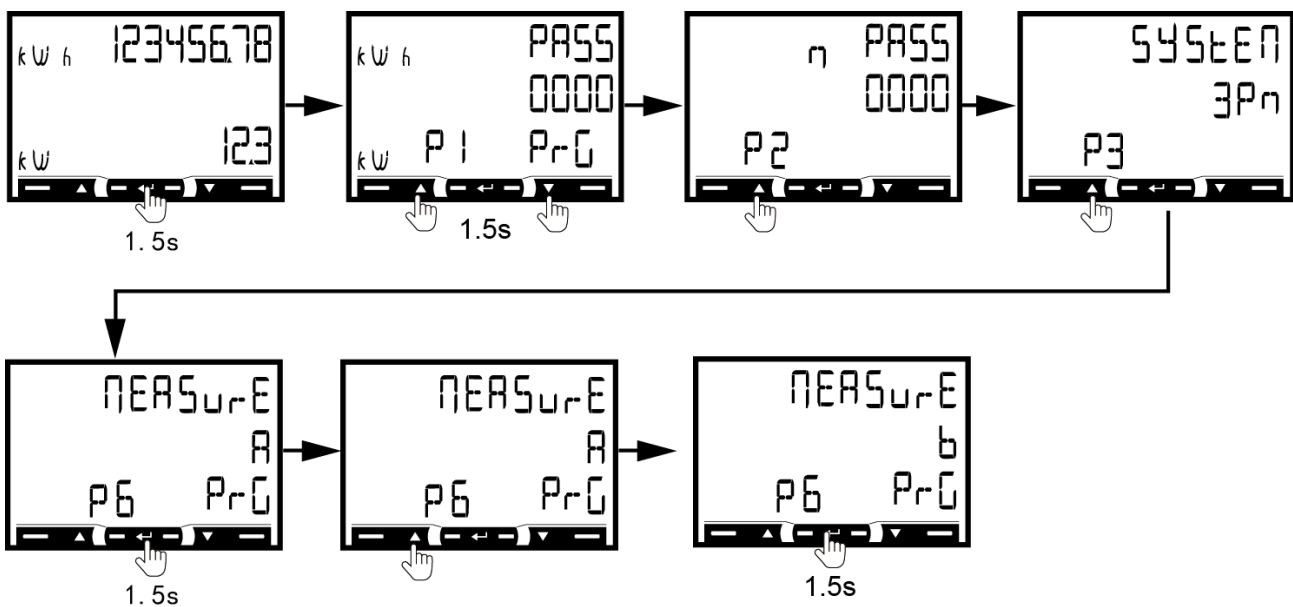
1. Prepare cables between the Smart Power Sensor and the solar inverter.

Cable	CCS-WNC-3Y-400-MB/CCS-WNC-3D-240-MB Port	SUN2000L-(2KTL-5KTL) Port	SUN2000-(2KTL-6KTL)-L1 Port	Type	Conductor Cross-sectional Area Range	Outer Diameter	Source
Communications cable	B+	2) 485A1 (COM port)	4) 485A2 (COM port)	Four-core outdoor shielded twisted pair	• When cables are crimped: 0.20–0.35 mm^2 • When cables are not crimped: 0.20–1 mm^2	4–11 mm	Prepared by the customer
	A-	1) 485B1 (COM port)	3) 485B2 (COM port)				
	N/A	8) PE	NA	Connects to the shield layer of the communications cable			

2. Connect the cables to the CCS-WNC-3Y-400-MB/CCS-WNC-3D-240-MB.

SUN2000L-(2KTL-5KTL)

The cable connections of CCS-WNC-3Y-400-MB and CCS-WNC-3D-240-MB are the same. Take CCS-WNC-3Y-400-MB as an example.
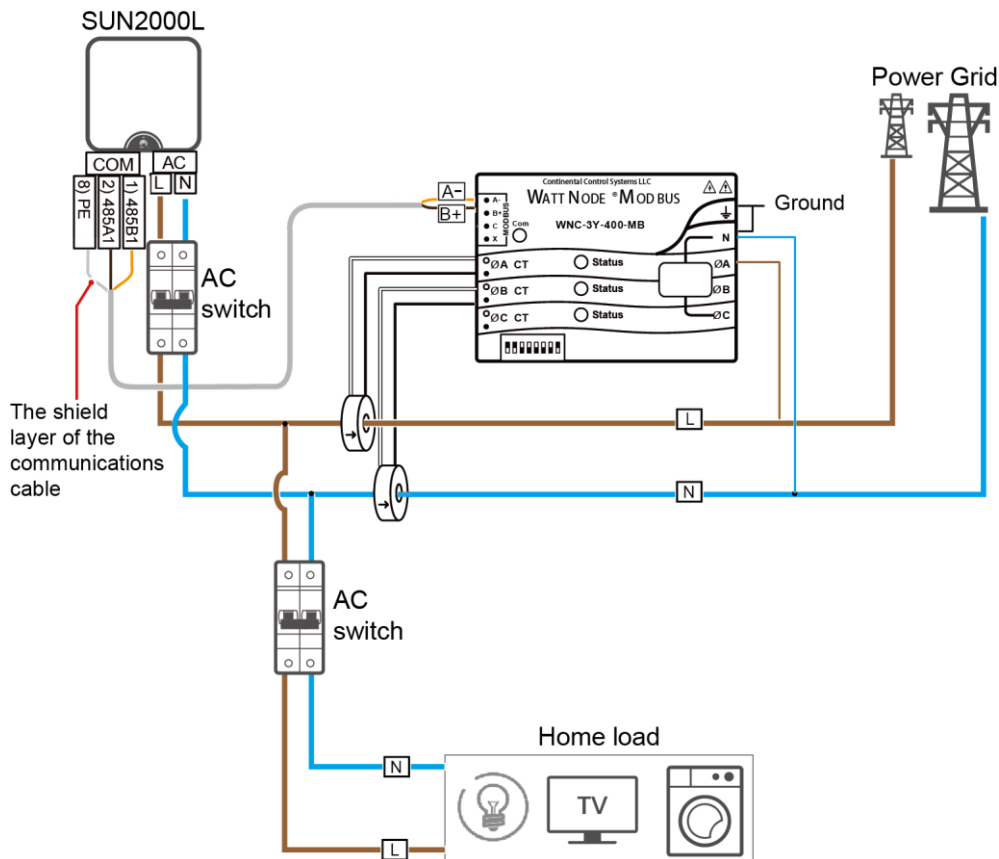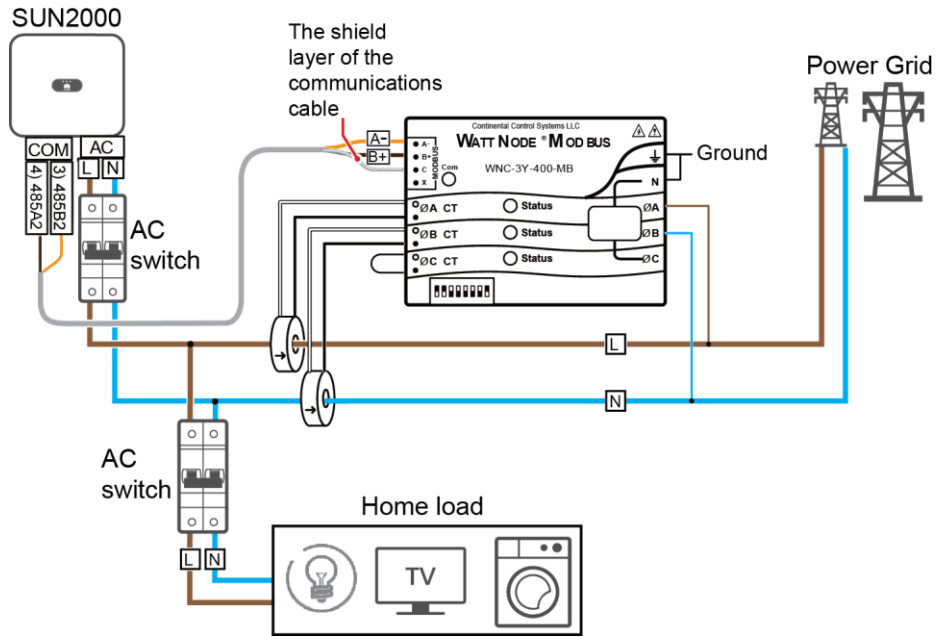
NOTE

- 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.
- The L and N wires are different in color. Pay attention to the distinction when wiring to ensure that the wiring is correct.
- The cable colors shown in the figure are for reference only. Select appropriate cables according to local standards.
- For SUN2000-(2KTL-6KTL)-L1, when both battery and Smart Power Sensor are configured, they need be crimped to the 485B2 and 485A2 ports. Please select the proper cables based on the **Conductor Cross-sectional Area Range**.

3. **Set the DIP switch of the Smart Power Sensor as the figures below to ensure that the communications address is 1.**

NOTE

If the Smart Power Sensor and inverter communicate successfully, the COM LED of the energy meter will be green.
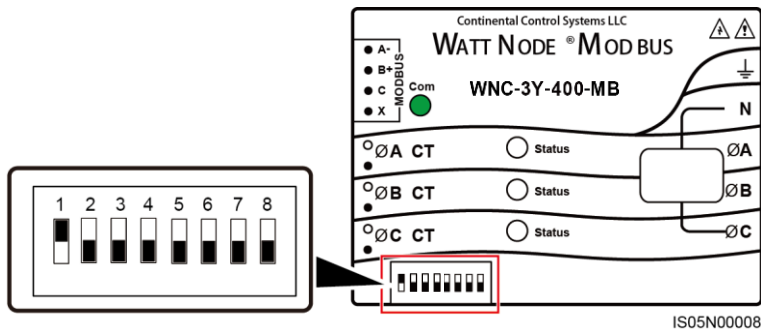
IS05N00008

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1. **Connect the AC output power cable to the solar inverter.**

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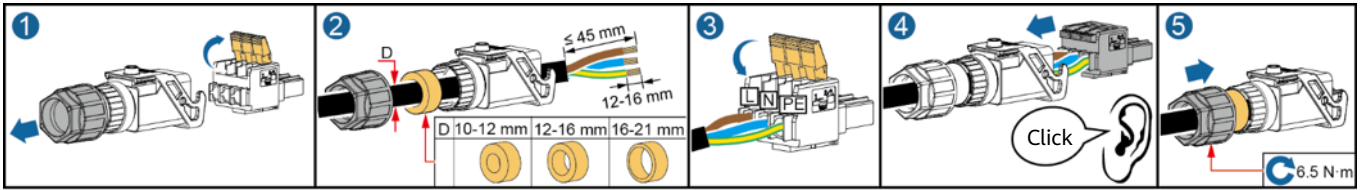
   b) Connect the AC connector to the AC output port.

   c) Check the route of the AC output power cable.
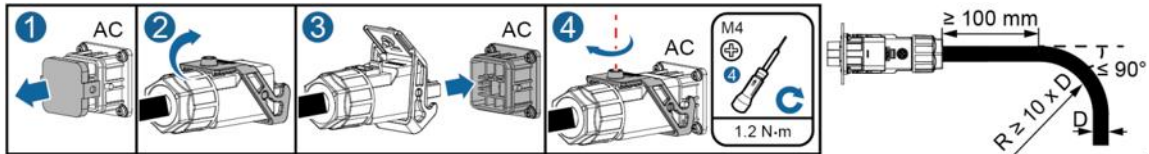
📖 **NOTE**

The method for connecting a two-core AC output power cable is the same except that the cable is not connected to PE.

2. **Connect the communications cable to the solar inverter.**

SUN2000L-(2KTL-5KTL)
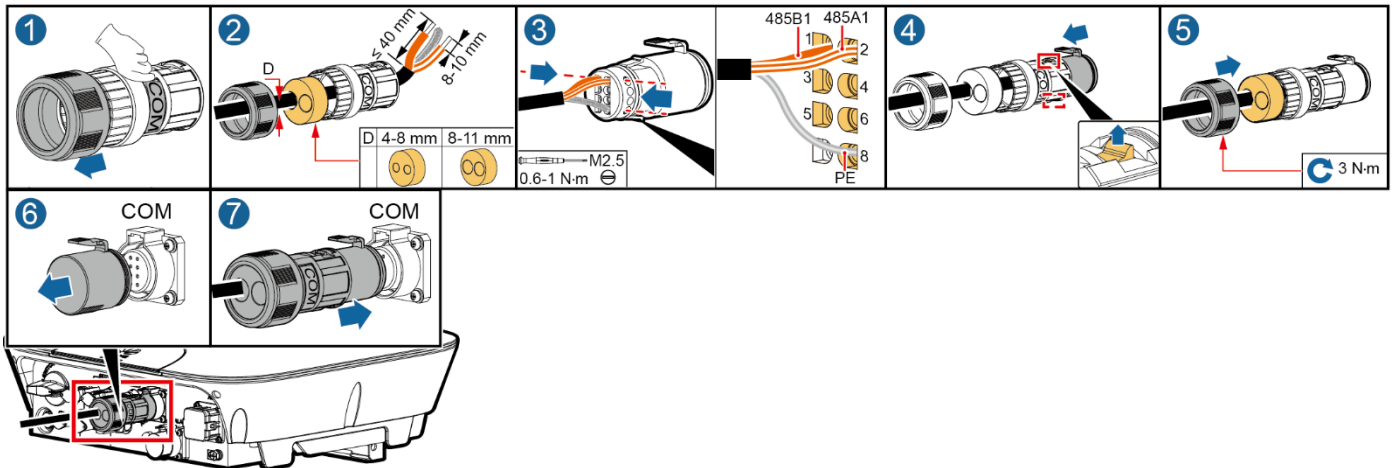
SUN2000-(2KTL-6KTL)-L1
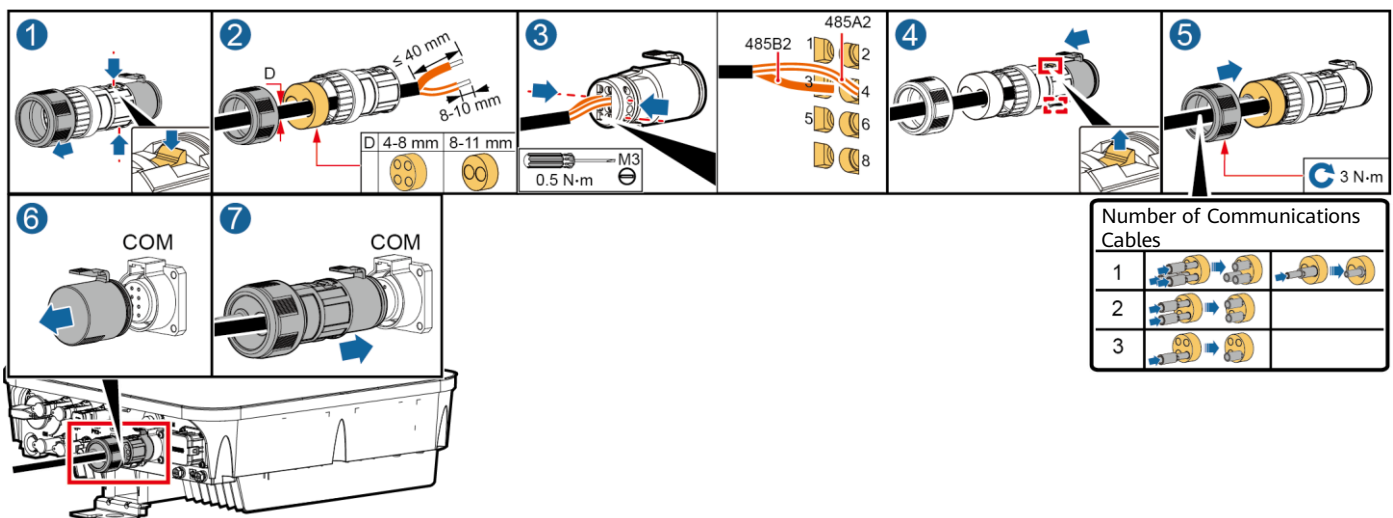
Number of Communications Cables		
1		
2		
3		

4 Commissioning

4.1 Powering On the System

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

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

b) 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 solar inverter, 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 solar inverter 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.
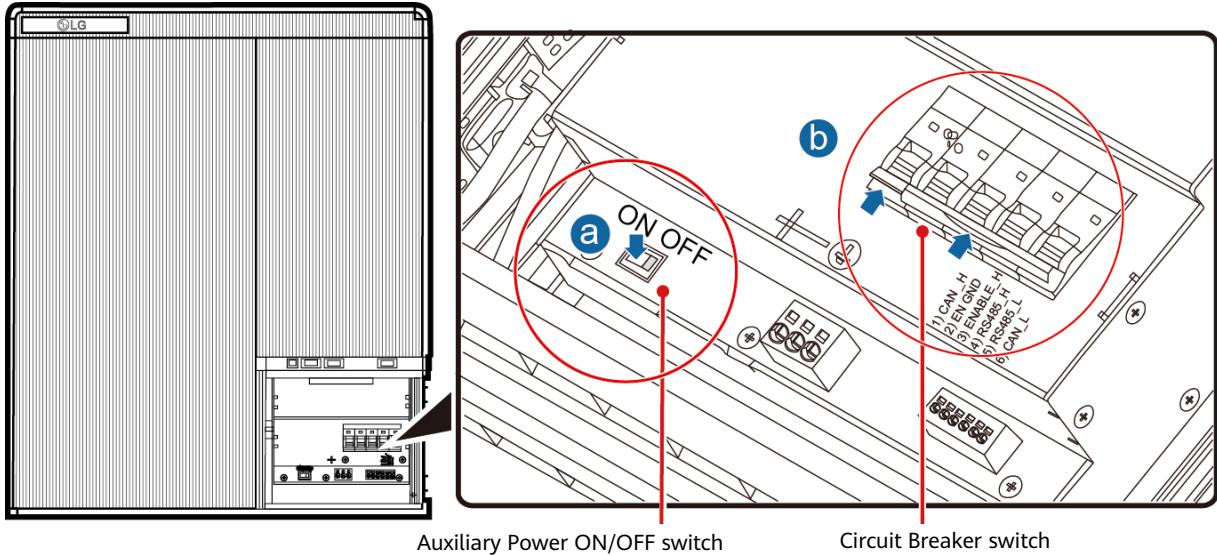
Auxiliary Power ON/OFF switch   Circuit Breaker switch

c) Several seconds after the Circuit Breaker switch is set to ON, four indicators will be on.

d) 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.

ON

e) Close the wiring box cover.

2. Power on the solar inverter.

> **NOTICE**
>
> · Before turning on the AC switch between the solar inverter 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 solar inverter reports a **Grid Loss** alarm. The solar inverter starts normally only after the fault is rectified.
> · If the AC is on and the battery is off, the solar inverter reports a **Battery Abnormal** alarm.
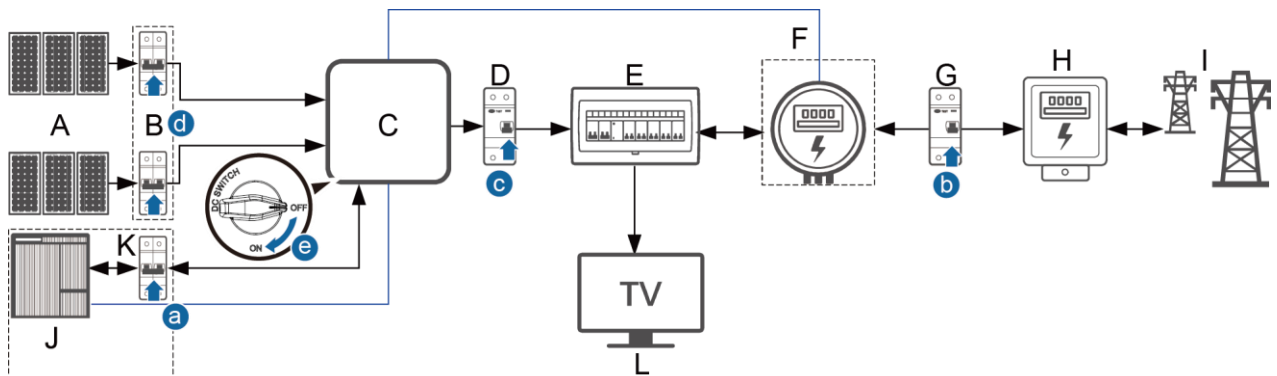
TV

(A) PV string	(B) DC switch	(C) solar inverter
(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) Home load

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

NOTICE

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

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

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

18
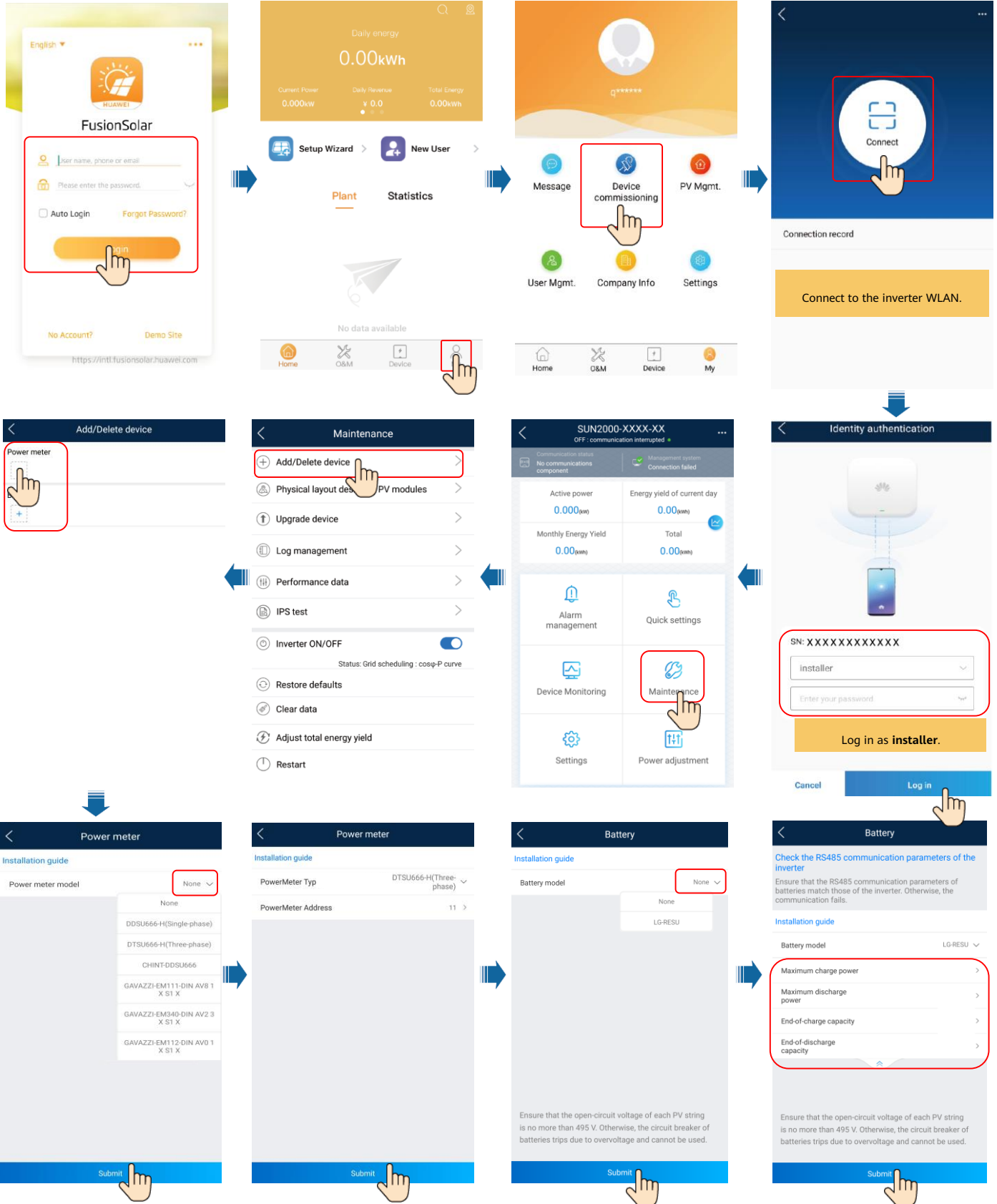
Model	Comm Address
DDSU666-H	11
DTSU666-H	11
GAVAZZI-EM111-DIN AV8 1 X S1 X	1
GAVAZZI-EM112-DIN AV0 1 X S1 X	1
GAVAZZI-EM340-DIN AV2 3 X S1 X	1
CCS-WNC-3Y-400-MB	1
CCS-WNC-3D-240-MB	1

| Smart Power Sensor Parameter	Description	Value Range
Comm. address	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 type	Specifies the model of the connected Smart Power Sensor. No Smart Power Sensors of other models can be connected.	• DDSU666-H • DTSU666-H • GAVAZZI-EM111-DIN AV8 1 X S1 X • GAVAZZI-EM112-DIN AV0 1 X S1 X • GAVAZZI-EM340-DIN AV2 3 X S1 X • CCS-WNC-3Y-400-MB • CCS-WNC-3D-240-MB

Battery Parameter	Description	Value Range
Battery model	Specifies the type of the connected battery. No batteries of other types can be connected.	LG-RESU
Maximum charge power	Specifies the maximum battery discharging power.	[0, maximum charge power]
Maximum discharge power	Specifies the maximum battery charging power. The maximum charging power is limited by the maximum output power of the solar inverter and whether the **Charge from grid** function is enabled.	[0, maximum charge power]
End-of-charge capacity	Specifies the battery charging cutoff capacity.	[90, 100]
End-of-discharge capacity	Specifies the battery discharging cutoff capacity.	[12, 20]

View the Smart Power Sensor or battery status by choosing **Device Monitoring** on the app.
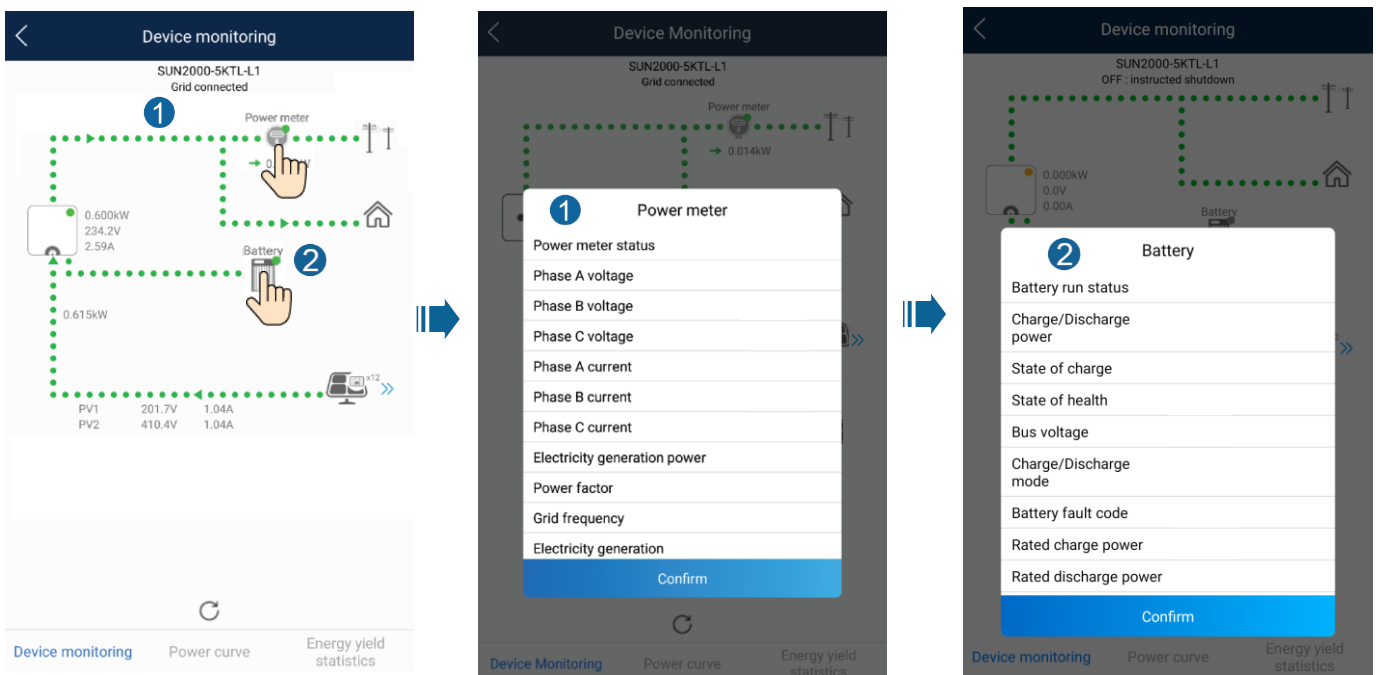
g) (Optional) Measure the temperatures at the joints between the DC terminals and the connectors using a point-test thermometer.

📖 NOTE

Under normal operation conditions of the solar inverter, the temperature rise at DC connectors should remain below 30°C at all time.

h) Observe indicators to check the solar inverter operating status.

4.2 Upgrade the Solar inverter and Battery

1. Download the solar inverter upgrade package from the FusionSolar app.

Method 1:Automatic firmware detection

Method 2:Manual firmware downloading

NOTICE

- The actual screens prevail.
- 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.

2. Upgrade the solar inverter. The solar inverter upgrade takes about 8 minutes. When the solar inverter is upgraded successfully, it will restart. Log in again after the restart.

Obtain the new installation package from **Internal storage/inverterapp/UpgradeDevice.**

3. Ensure that the battery cable connection and parameter settings (Battery type: LG-RGSU) are correct.

No.	Mismatch Case	Remarks
1	On the app, choose **Maintenance** > **Upgrade device** to view the battery version. • Upgrade the LG RESU10H if **DCDC Current version** is not **7kW-V5.2**. • Upgrade the LG RESU7H if **DCDC Current version** is not **5kW-V5.2**.	LG RESU10H: / LG RESU7H:
2	The battery is **Offline** and not working properly. View the battery status by choosing **Device Monitoring** on the app.	
3	The battery auxiliary power indicator is on but the battery charging and discharging indicators are off.	 Battery auxiliary power indicator — Battery charging indicator — Battery discharging indicator — Battery fault indicator

4. Upgrade the battery.

5. After completing the upgrade, check that the battery is working properly.
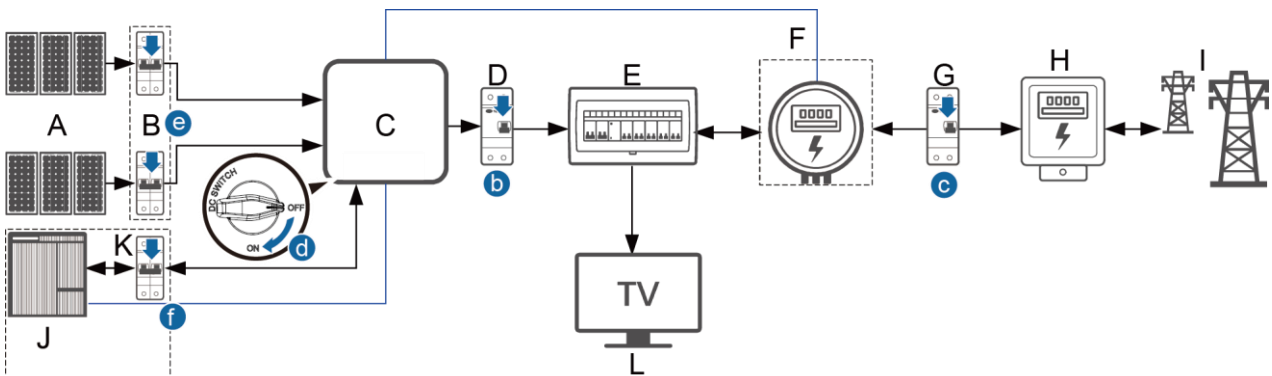
1. **Power off the solar inverter.**

> ⚠ WARNING
>
> - After the solar inverter 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 solar inverter 5 minutes after the power-off.
> - If the solar inverter is connected to the battery, ensure that a shutdown command is sent from the app. Power off the system after the solar inverter has shut down. If no shutdown command is sent from the app, the solar inverter will shut down after the power grid is powered off. Then the solar inverter 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 **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.
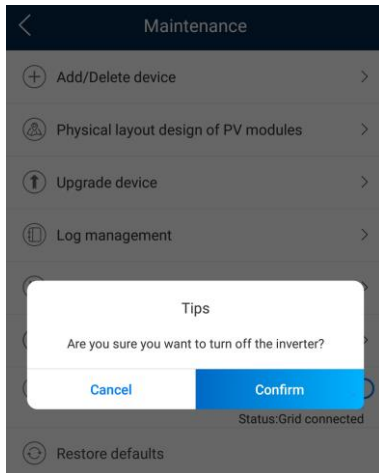
b) Turn off the AC switch between the solar inverter and the power grid.
c) Turn off the main switch between the solar inverter and the power grid.
d) Turn off the DC switch at the bottom of the solar inverter.
e) Turn off the DC switch between the PV string and the solar inverter if there is any.
f) If a battery connects to the battery port, turn off the battery switch.

(A) PV string   (B) DC switch   (C) solar inverter
(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) Home 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
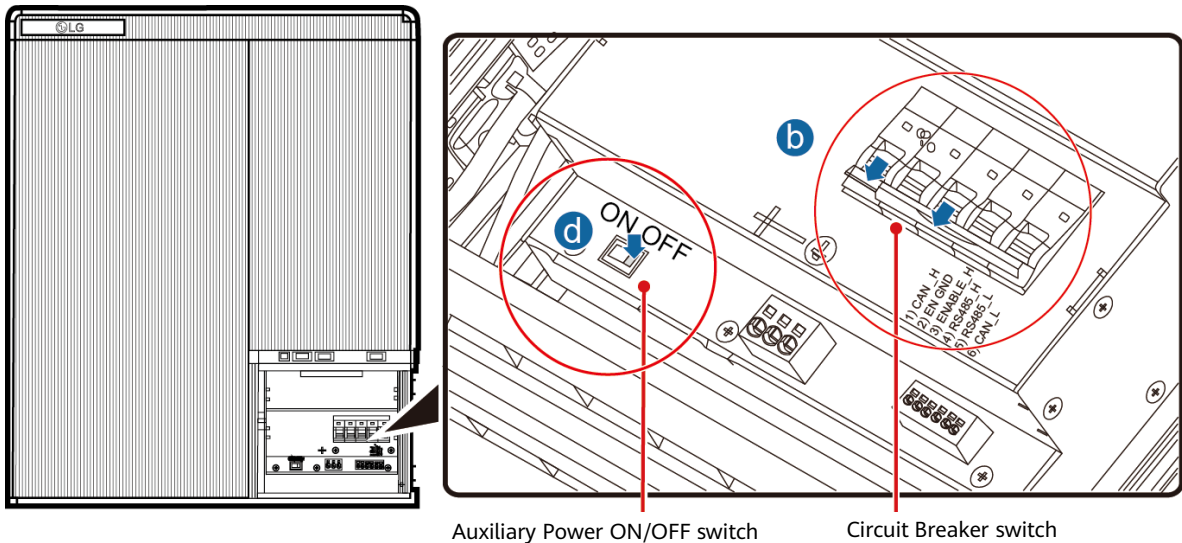
5 Troubleshooting

1. **Common alarms and troubleshooting measures.**

Alarm ID	Alarm Name	Possible Cause	Suggestion
2067	Faulty Power Collector	Cause ID = 1 The smart power sensor is disconnected.	1. Check that the configured power meter model is the same as the actual model. 2. Check that the communications parameters for the smart power sensors are the same as the SUN2000 RS485 configurations. 3. Check whether the smart power sensor is powered on and whether the RS485 communications cable is connected.
2068	Battery Abnormal	The battery is faulty, disconnected, or the battery circuit breaker is OFF when the battery is running.Cause ID = 1–4 1: The battery communication is abnormal. 2: The battery port experiences overcurrent. 3. The battery enabling cable is not properly connected. 4: The battery port voltage is abnormal.	1. If the battery fault indicator is steady on or blinking, contact the battery supplier. 2. Check that the battery enabling/power/communications cable is correctly installed, and that the communications parameters are the same as the SUN2000 RS485 configurations. 3. Check that the auxiliary power switch on the battery is set to ON. 4. Send a shutdown command on the app. Turn off the AC output switch, DC input switch, and battery switch. Then turn on the battery switch, AC output switch, and DC input switch in sequence after 5 minutes. 5. If the fault persists, contact your dealer or Huawei technical support.

2. **Fault Log Export**.
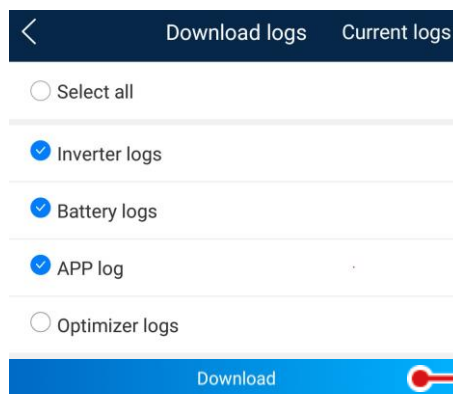
Tap **Download** to export the logs of **.zip** format.

Customer Service Contact			
Region	**Country**	**Service Support Email**	**Phone**
Europe	France	eu_inverter_support@huawei.com	0080033888888
	Germany		
	Spain		
	Italy		
	UK		
	Netherlands		
	Other countries	For details, see solar.huawei.com.	
Asia Pacific	Australia	au_inverter_support@huawei.com	1800046639
	Turkey	tr_inverter_support@huawei.com	-
	Malaysia	apsupport@huawei.com	0080021686868 /1800220036
	Thailand		(+66) 26542662 (charged by local call)
			1800290055 (free in Thailand)
	China	solarservice@huawei.com	4008229999
	Other countries	apsupport@huawei.com	0060-3-21686868
Japan	Japan	Japan_ESC@ms.huawei.com	0120258367
India	India	indiaenterprise_TAC@huawei.com	1800 103 8009
South Korea	South Korea	Japan_ESC@ms.huawei.com	-
North America	USA	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)
	Other countries		0052-442-4288288
Middle East and Africa	Egypt	mea_inverter_support@huawei.com	08002229000 /0020235353900
	UAE		08002229000
	South Africa		0800222900
	Saudi Arabia		8001161177
	Pakistan		0092512800019
	Morocco		0800009900
	Other countries		0020235353900