

Contents

01

Products

02

Installation

03

Commissioning

04

Maintenance and
Troubleshooting

2.1 Installation Videos

The battery can be installed on the floor or wall. It is recommended that the battery be installed on the floor. For floor-mounted installation, the base is 50 mm high. If waterproofing requirements cannot be met, the battery can be installed on a wall. The mounting kits need to be purchased separately. Ensure that the wall and floor meet the load-bearing requirements (one battery expansion module weighs 50 kg).



SUN2000-2/3/3.68/4/4.6/5/6KTL-L1

(Single-phase inverter)

Website:

<https://support.huawei.com/enterprise/en/doc/EDOC1100148146?idPath=22892350|21439560|7921563|21102413|22027611>

QR code:



SUN2000-3/4/5/6/8/10KTL-M1

(Three-phase inverter)

Website:

<https://support.huawei.com/enterprise/en/doc/EDOC1100066737>

QR code:



Battery

LUNA2000-(5-30)-S0

Website:

<https://support.huawei.com/enterprise/en/doc/EDOC1100182356?idPath=22892350|21439560|7921563|21102413|23448309>

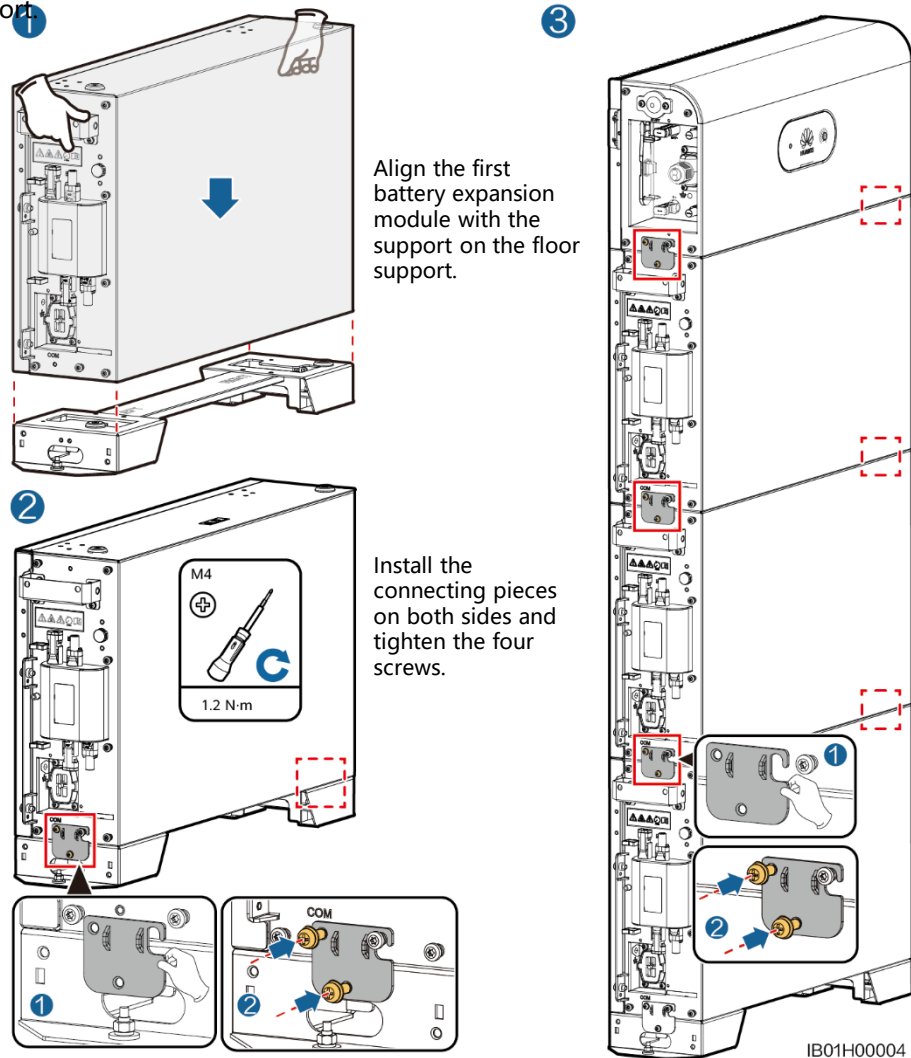
QR code:



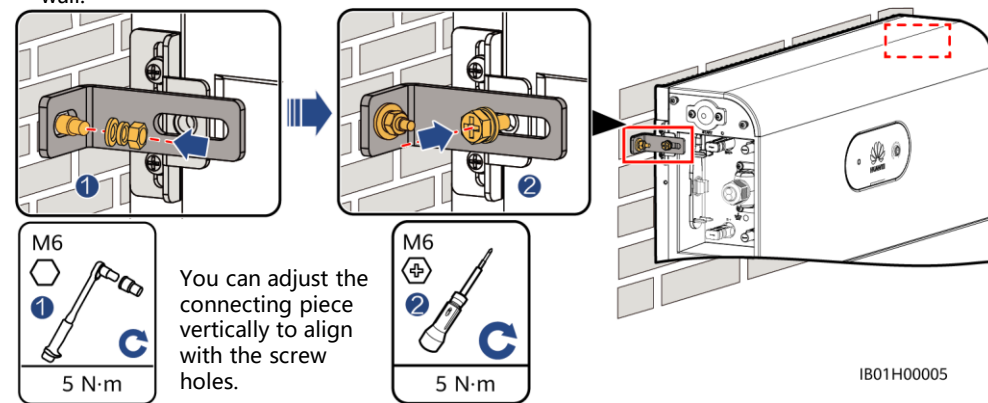
2.2 Installing the Battery

Installing the Floor Support

1. Install the battery expansion modules and power control module on the support

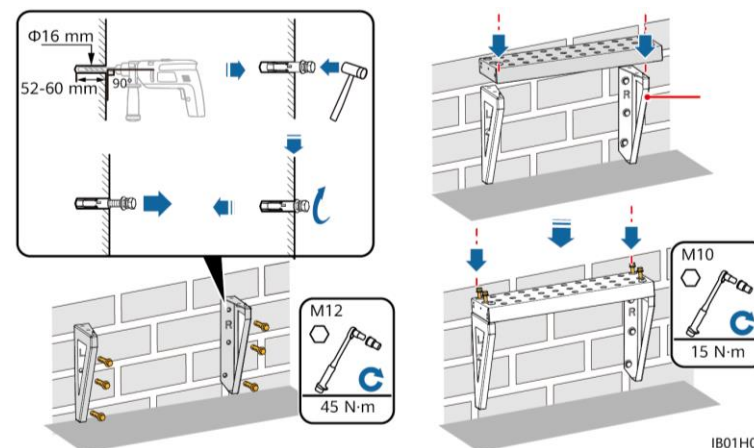


2. Secure the power control module to the wall.

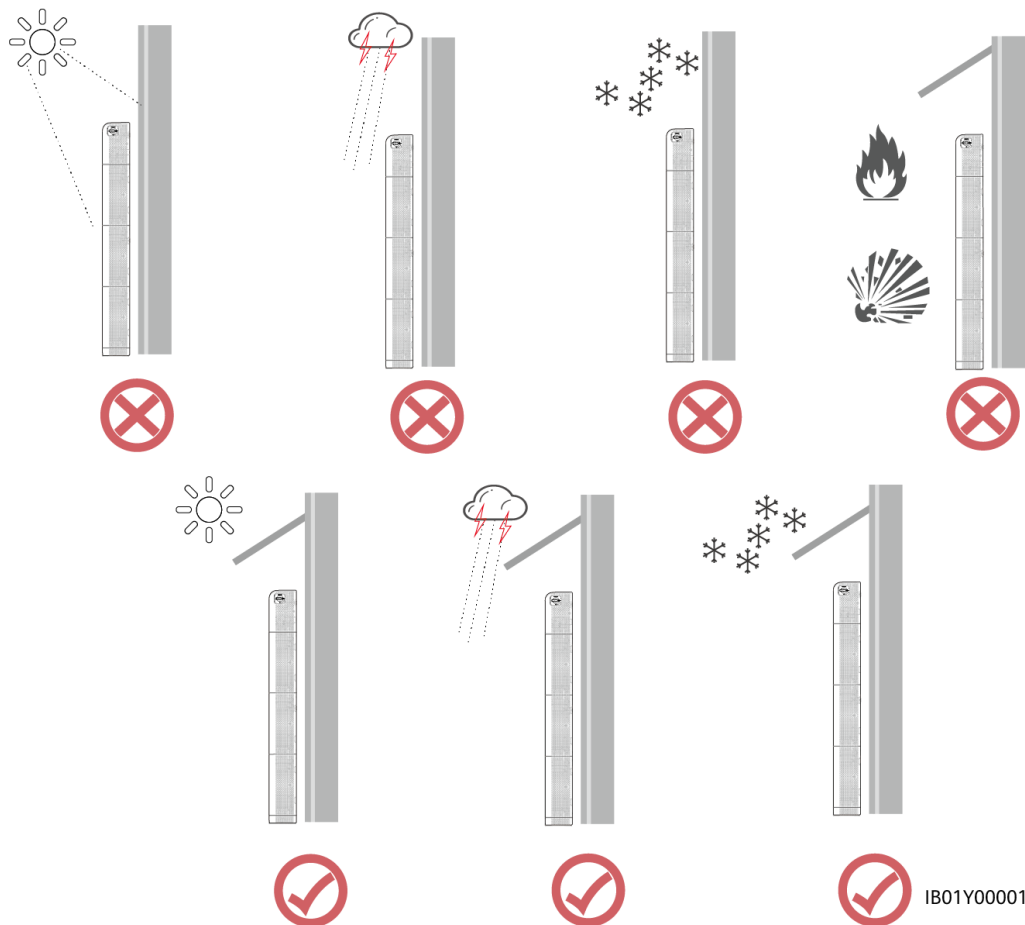


Wall-mounted Installation

For floor-mounted installation, the base is 50 mm high. If waterproofing requirements cannot be met, the battery can be installed on a wall. The mounting kits need to be purchased separately. Ensure that the wall and floor meet the load-bearing requirements (one battery expansion module weighs 50 kg).



2.2 Installation Environment Requirements



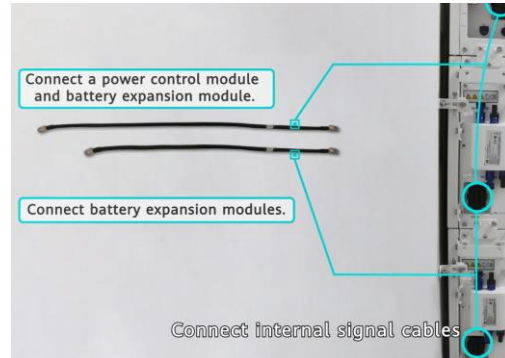
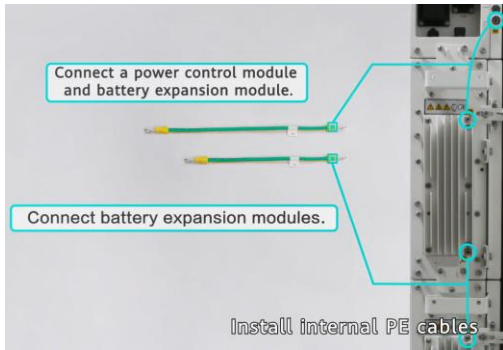
- Install the battery in a dry and well-ventilated environment to ensure good heat dissipation.
- You are advised to install the battery in a sheltered place or install an awning over it.
- Install the battery in a clean environment that is free from sources of strong infrared radiation, organic solvents, and corrosive gases. Avoid exposing the battery to direct sunlight or water.
- The installation position must be far away from fire sources.
- The installation position must be far away from water sources such as taps, sewer pipes, and sprinklers to prevent water seepage.
- The battery must be placed on a solid and flat supporting surface.
- Do not place any flammable or explosive materials around the battery.
- To prevent fire due to high temperature, ensure that the ventilation vents or heat dissipation system are not blocked when the battery is running.
- Do not expose the battery to flammable or explosive gas or smoke. Do not perform any operation on the battery in such environments.
- The battery system site must be equipped with qualified fire extinguishing facilities, such as fire extinguishing sands and powder fire extinguishers.

2.2 Installation Tips

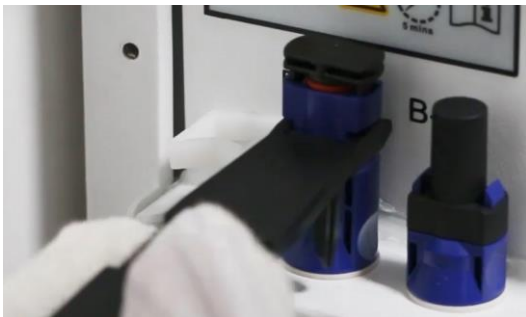
1、 Ensure that the floor is level when the cabinet is installed on the ground.



2、 Cable lengths between modules are different.

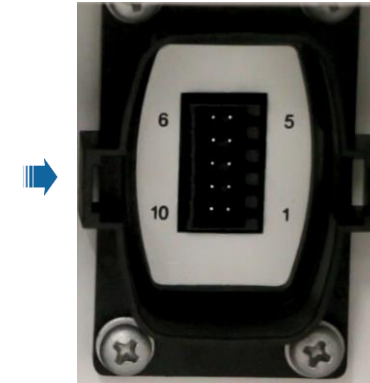
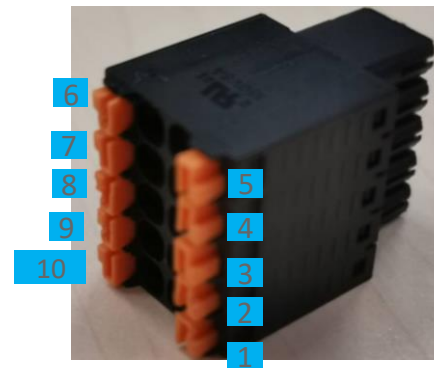
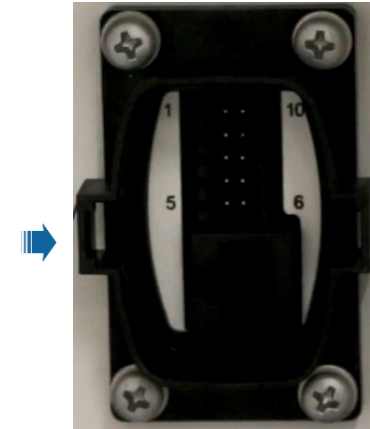
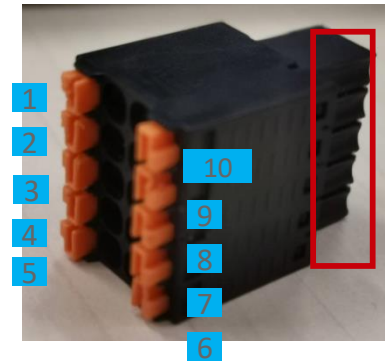


3、 When you use the tool delivered with the box to obtain the dustproof caps, the following figure shows the B+ \ B- and BAT+ \ BAT modes:



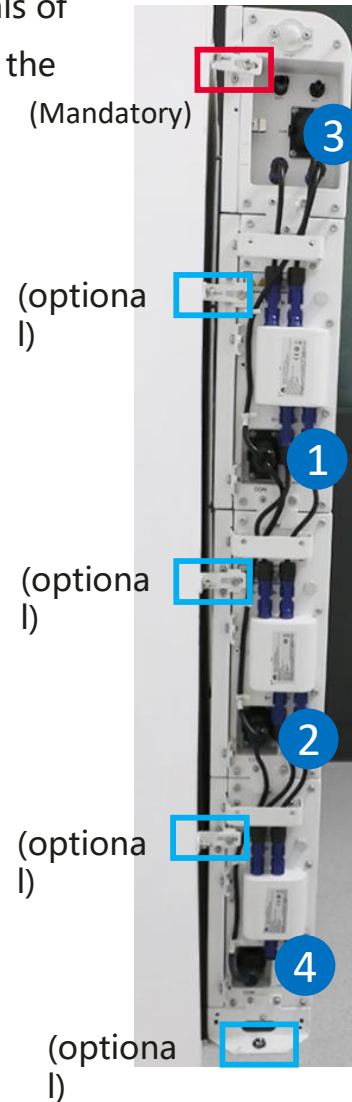
4、 Identify the pins according to the figure. The silkscreens of the communication ports on both sides of the DC-DC converter are different. Insert the pins according to the figure.

6 - 10 pins close to the groove



2.2 Installation Tips

5、 When connecting the signal cables between the DCDC and battery modules, install the terminals of the two communications cables first, and then the terminals of the single communications cable. (Mandatory)

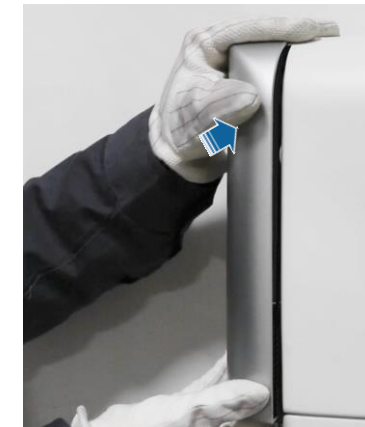
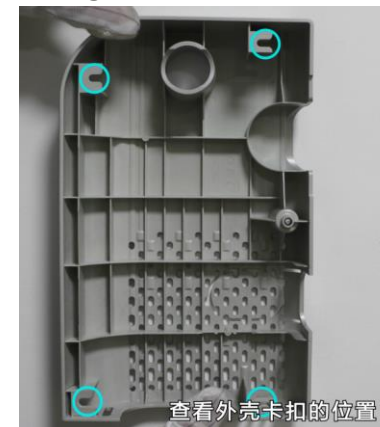


6、 The power control module (DCDC) must be fixed on the wall using expansion bolts. The expansion bolts for the floor mounting bracket and battery expansion modules are optional. If the device is installed in an area prone to earthquakes or vibration, it is recommended that you use expansion bolts to secure the floor mounting bracket and battery expansion modules to ensure that the device is securely installed.

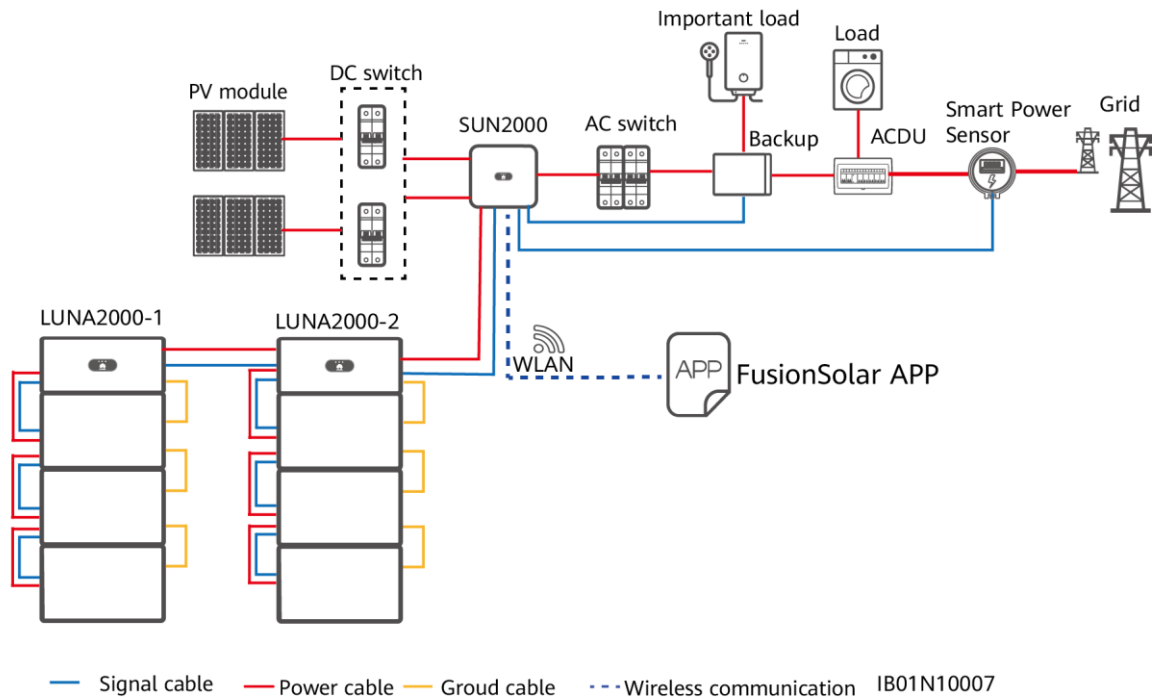
7、 The terminals connected to the BAT+ and BAT-sides of the ESS inverter are the same.



8、 Place the protective housing close to the module edge, move the protective housing outwards slightly, align it with the buckles, and push the housing inward.



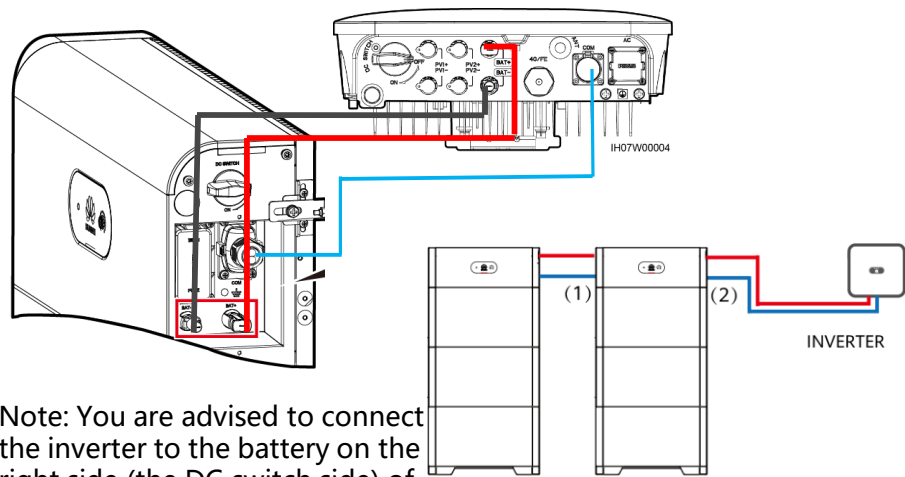
2.3 Installing Cables



No.	Cable	Cable	Type	Number	Source
1	DC input power cable	(inverter to battery and cascading batteries)	Common outdoor PV cable in the industry	2	Prepared by the customer
2	Signal cable	(inverter to battery and cascading batteries)	Outdoor shielded twisted pair cable (8 cores)	2	Prepared by the customer
3	Ground cable	Battery grounding	Single-core outdoor copper cable	1	Prepared by the customer

No.	Cable	Cable	Type	Number	Source
1	DC input power cable	Between power control modules and battery expansion modules	Common outdoor PV cable in the industry	3	Delivered with the product
2	Signal cable	Between power control modules and battery expansion modules	Outdoor shielded twisted pair cable	3	Delivered with the product
3	Ground cable	Between power control modules and battery expansion modules	Single-core outdoor copper cable	3	Delivered with the product

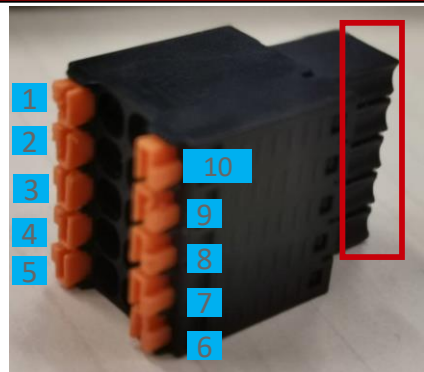
Connecting the Battery to the Inverter



Note: You are advised to connect the inverter to the battery on the right side (the DC switch side) of the battery.

1. Communications terminal for cascaded batteries
2. Communications terminal connected to the inverter

Battery Communications Port Definitions



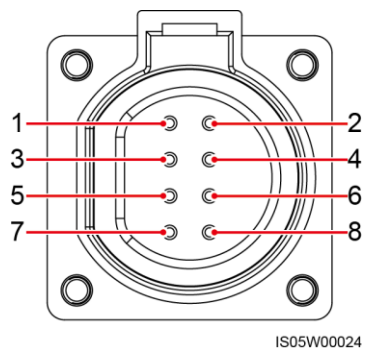
6 - 10 pins close to the groove

The communications terminals on the inverter side need to connect to RS485+, RS485-, EN+, EN-, and PE. The communications terminals on the cascading side need to connect to RS485+, RS485-, EN+, EN-, CANH\CANL, and PE.

No	Label	Definition	Description
1	PE	Shield layer grounding	Shield layer grounding
2	Enable-	Enable signal GND	Connects to the enable signal GND of the inverter.
3	Enable+	Enable signal+	Connects to the enable signal of the inverter.
4	485A1	RS485A, RS485 differential signal+	Connects to the RS485 signal port + of the inverter or cascaded batteries.
5	485A2	RS485A, RS485 differential signal+	Connects to the RS485 signal port + of the inverter or cascaded batteries.
6	485B2	RS485B, RS485 differential signal-	Connects to the RS485 signal port - of the inverter or cascaded batteries.
7	485B1	RS485B, RS485 differential signal-	Connects to the RS485 signal port - of the inverter or cascaded batteries.
8	CANL	Extended CAN bus port	Used for signal cable cascading in battery cascading scenarios.
9	CANH	Extended CAN bus port	Used for signal cable cascading in battery cascading scenarios.
10	PE	Shield layer grounding	Shield layer grounding

Battery to inverter (pins 1-6)
Cascaded batteries (pins 7-10)

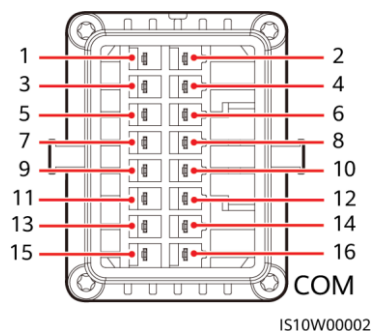
SUN2000-(2KTL-6KTL)-L1 Communications Port Definition



IS05W00024

No	Label	Definition	Description
3	485B2	RS485B, RS485 differential signal-	Connects to the RS485 signal port of the battery.
4	485A2	RS485A, RS485 differential signal+	
5	GND	GND	Connects to the enable signal GND of the battery.
6	EN+	Enable signal+	Connects to the enable signal of the battery.

SUN2000-(3KTL-12KTL)-M1 Communications Port Definition

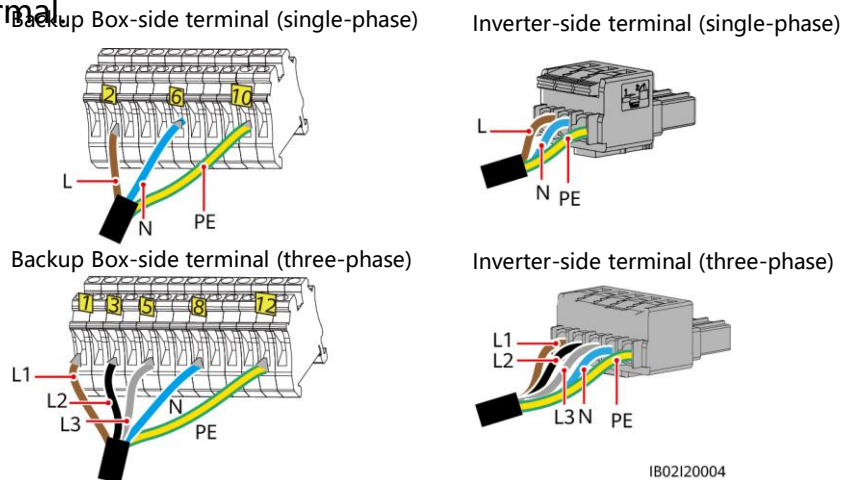


IS10W00002

No.	Label	Definition	Description
7	485A2	RS485A, RS485 differential signal+	Connects to the RS485 signal port of the battery.
9	485B2	RS485B, RS485 differential signal-	
11	EN	Enable signal+	Connects to the enable signal of the battery.
13	GND	GND	Connects to the enable signal GND of the battery.

Backup Box Installation Tips

1、 The sequence of connecting the cables to Backup Box and to the AC terminals **must be same**. Otherwise, the off-grid function is abnormal.



2、 Backup Box Alarms and Recovery Measures

Category	Status (Blinking orange at long intervals , On for 1s and then Off for 1s)		Definition
Running indication			N/A
	Steady green	Steady green	On-grid
	Steady orange	Steady orange	Backup
	Blinking orange at long intervals	Off	Standby in backup mode
	Blinking orange at long intervals	Blinking orange at long intervals	Overload in backup mode

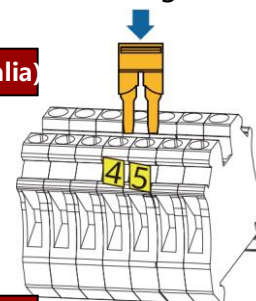
NOTE

If the off-grid load is overloaded, indicators and on the inverter blink orange slowly. Reduce the off-grid load power and manually clear the alarm or until the inverter is recovered. The inverter attempts to restart at an interval of 5 minutes. If the inverter fails to restart for three times, the interval changes to 2 hours. If the inverter is standby in off-grid mode, check the inverter alarms and rectify the fault.

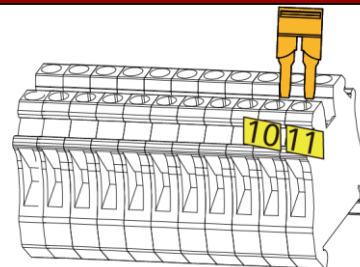
3、 Installing a Short-Circuiting Plate。 (The short-circuiting bar is bound to the ground cable along with the container.)

Neutral Wire Connected to Grid N (such as in Australia)

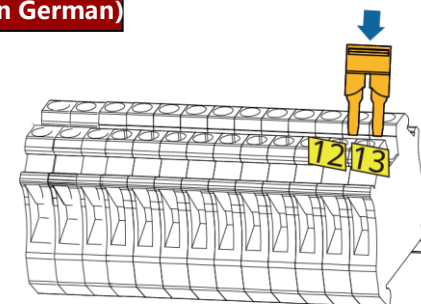
Power grid AC terminal X2
(Single-Phase/Three-Phase)



Neutral Wire Connected to Grid PE (such as in German)



Inverter AC terminal X3 (single-phase)



Inverter AC terminal X3 (three-phase) IB02H00004

ID	Name	Cause	Solution
2077	Off-grid output overload	ID1:The output is overloaded or short-circuited. ID2:The illumination is weak, and the battery power is low.	1.Check whether the device output is short-circuited. 2.Check whether the device load configuration exceeds the rated value. 3. If the illumination is weak or the battery level is low, remove some loads. 4. After the preceding problems are rectified, manually clear the alarm.
2082	Grid-tied/Off-grid Controller Abnormal	ID1:The inverter fails to communicate with the Smart Backup Box. ID2:The Backup Box is faulty or the connection between the Backup Box and the inverter is faulty.	1. If there is a switch between the inverter and Backup Box, check whether the switch is ON. If yes, turn on the switch. 2. Send a shutdown command on the app. Turn off the AC output switch, DC input switch, and battery switch. 3. Check whether the power cable and signal cable between the Smart Backup Box and the inverter are normal. 4. After 5 minutes, turn on the battery switch, AC output side, AC output switch, and DC input switch. 5. If the alarm persists, contact your dealer or Huawei technical support.

Documentation Links

Category	Document	Link (Support-E)								
Installation Video	(Video) SUN2000-(2KTL-6KTL)-L1 Installation Video	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	
	(Video) SUN2000-(3KTL-10KTL)-M Installation Video	Chinese	English	German	French	Dutch	Italian		Spanish	Polish
	(Video) SUN2000-450W-P Smart PV Optimizer Installation Video	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	
	(Video) LUNA2000-(5-30)-S0 Installation Video	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	
User Manual	SUN2000-(2KTL-6KTL)-L1 User Manual	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	
	SUN2000-(3KTL-10KTL)-M0 User Manual	Chinese	English	German	French	Dutch	Italian		Spanish	Polish
	SUN2000-(3KTL-10KTL)-M1 User Manual	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	Polish
	LUNA2000-(5-30)-S0 User Manual	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	Polish
Quick Guide	SUN2000-(2KTL-6KTL)-L1 Quick Guide	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	
	SUN2000-(3KTL-10KTL)-M0 Quick Guide	Chinese	English	German	French	Dutch	Italian		Spanish	Polish
	SUN2000-(3KTL-10KTL)-M1 Quick Guide Guide	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	Polish
	SUN2000-450W-P Smart PV Optimizer Quick Guide	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	
	LUNA2000-(5-30)-S0 Quick Guide	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	Polish
	BackupBox-(B0, B1) Quick Guide	Chinese	English	German (2021.Q1)	French (2021.Q1)	Dutch (2021.Q1)	Italian (2021.Q1)	Portuguese (2021.Q1)	Spanish (2021.Q1)	

Category	Document	Link (Support-E)								
Commissioning Video	(Video) FusionSolar App Commissioning Video	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	
User Manual	FusionSolar App and SUN2000 App User Manual	Chinese	English							
	DDSU666-H Smart Power Sensor User Manual		English							
	DTSU666-H and DTSU666-H 250 A (50 mA) Smart Power Sensor User Manual		English							
Quick Guide	SDongleA-03 Quick Guide (4G)	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	Polish
	SDongleA-05 Quick Guide (WLAN-FE)	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	Polish
	FusionSolar App Quick Guide	Chinese	English	German	French	Dutch	Italian	Portuguese	Spanish	Polish
	SUN2000L-(2KTL-5KTL) and SUN2000-(2KTL-6KTL)-L1 Battery & Smart Power Sensor Quick Guide		English	German	French	Dutch	Italian	Portuguese	Spanish	

2.5 Connecting a Battery and Grid Meter

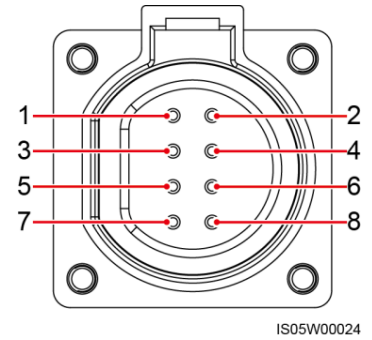
SUN2000-2-6KTL-L1

The cable colors are for reference only.

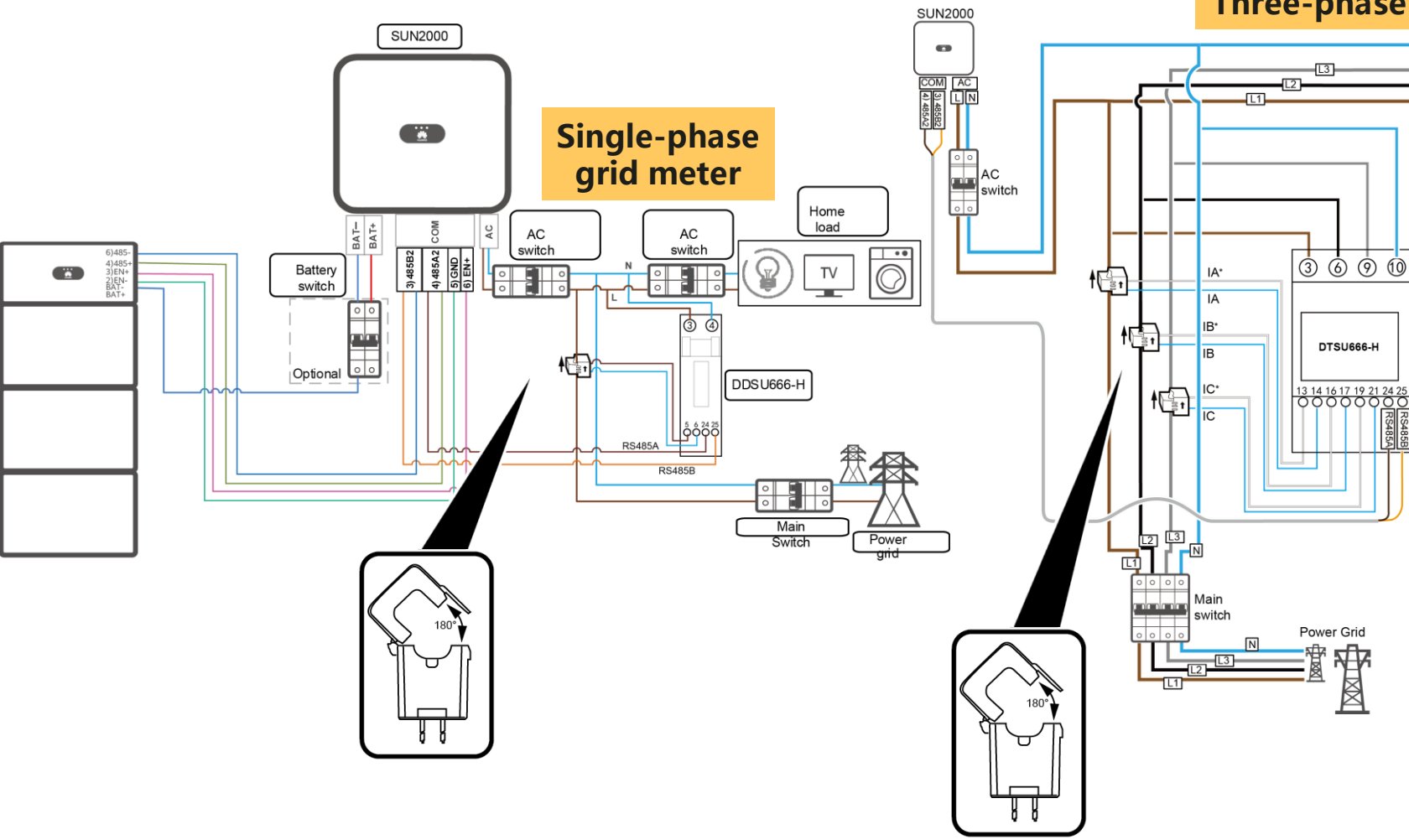
Only DDSU666-H, DTSU666-H 250A, DTSU666-H 250A are compatible with LUNA2000

Three-phase grid meter

Single-phase grid meter



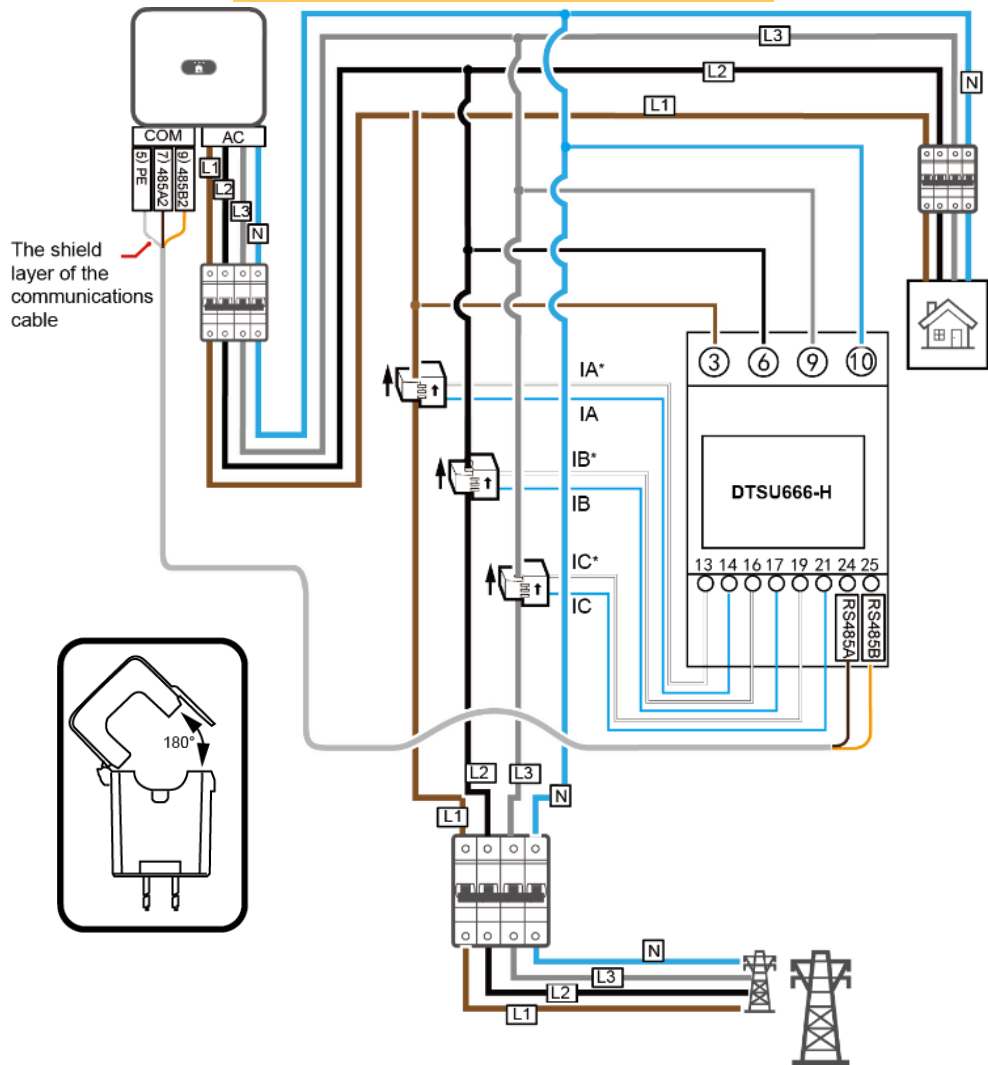
No.	Label	Definition	Description
1	485B 1	RS485B, RS485 differential signal-	Connects to an inverter in the inverter cascading scenario.
2	485A 1	RS485A, RS485 differential signal+	
3	485B 2	RS485B, RS485 differential signal-	Connects to the RS485 signal port of the battery or power meter. When batteries and power meters coexist, they share the 485B2 and 485A2 ports.
4	485A 2	RS485A, RS485 differential signal+	
5	GND	GND of the enable signal/12V/DI1/DI2	Connects to GND of the enable signal/12V/DI1/DI2 for the battery.
6	EN+	Enable signal+/12V+	Connects to the enable signal of the battery or the 12V positive signal.
7	DI1	Digital input signal 1+	Connects to the positive terminal of DI1. Connects to the DRM0 scheduling signal or serves as a reserved port for the rapid shutdown signal.
8	DI2	Digital input signal 2+	Connects to the positive terminal of DI2 and serves as a reserved port for feedback signals of the Smart Backup Box.



Three-phase Inverter

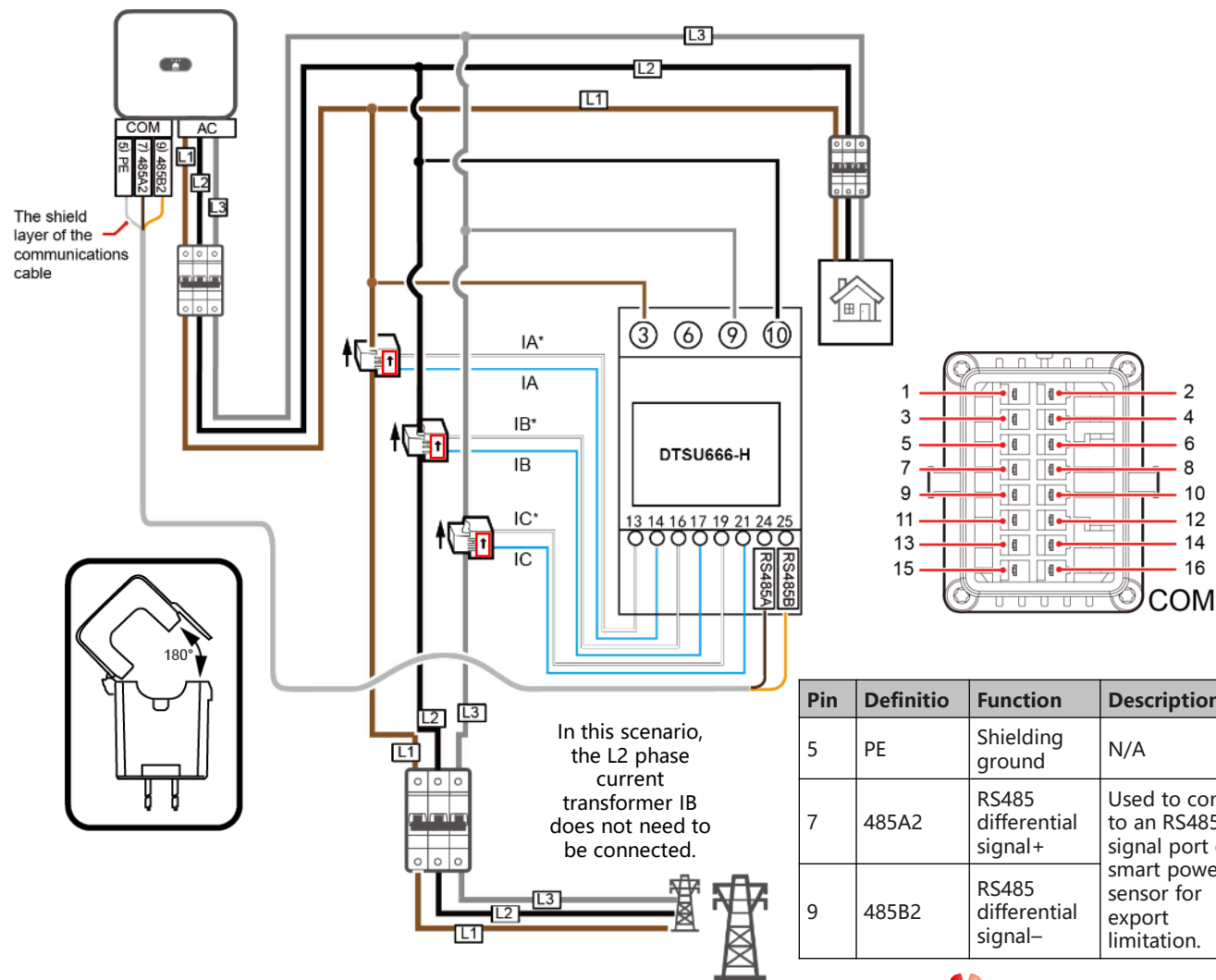
Only DDSU666-H, DTSU666-H 250A, DTSU666-H 250A are compatible with LUNA2000

Three-phase Four-wire



IH05N00001

Three-phase Three-wire



IH05N00005