Shenzhen Braun Power Energy Storage Co., Ltd.

48V Home Energy Storage Battery

User's Manual



Shenzhen Braun Power Energy Storage Co., Ltd.

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1 Important Safety Operation Instructions

Save these important security instructions

Important Notice: This product must not be used for any purpose other than those specified in this user manual.

The installation and maintenance of this battery pack require knowledge of high-voltage electricity and must be performed exclusively by qualified personnel. No liability shall be assumed for any injuries or property damage resulting from attempts by non-professionals to repair the device or failure to strictly adhere to these instructions. These warnings and precautions must be strictly observed during battery use.

The symbols in this document

This manual uses the following conventions to highlight important information:


warn It indicates a dangerous situation that, if not avoided, may result in death or severe injury.


prude This indicates that damage or injury may occur; if such situations are not avoided, they could result in minor injuries or property loss.


pour Indicates the risk that the product may be damaged.



warning message

● Battery installation must be performed by trained personnel with knowledge of high-voltage electricity or by licensed installers.

● In power regulation circuits, excessively high voltage poses a significant risk of electric shock or burns.

● The high voltage on AC and DC cables poses a risk of electric shock and severe burns.

● If you have not read or fully understood the appropriate safety precautions, this product may pose potential hazards such as death or severe injury caused by fire, high pressure, or explosion.

- Do not place flammable or explosive materials near the product.
- All operations related to photovoltaic systems, power regulation, and battery systems must be performed by qualified personnel.
- Electrical installations must comply with local and national electrical safety standards.
- Do not remove the product cover as it poses an electric shock hazard. If removal is necessary, seek service from your local distributor or a licensed technician. Do not touch uninsulated wires.
- If the product malfunctions and the system fails to start, repairs must be performed by qualified personnel or authorized support center staff.



warning message

- The battery and its accessories are included in this box; the total weight is excessive, so extra care must be taken during handling. Ensure that the package is transported and moved by two people.
- Do not use damaged, worn, or broken cables. Protect cables from physical and mechanical damage, such as twisting, entanglement, or trampling. Regularly inspect product cables; if any visible damage or deterioration is observed, cease using the product and contact authorized personnel for cable replacement.
- This product should not come into contact with water, nor should items filled with liquid be placed on the product.
- To prevent the risk of fire or electric shock, do not expose the product to rain or moisture.
- Keep out of reach of children or animals.
- Do not step on the product or its packaging, as this may cause damage.
- Do not discard batteries during a fire; they may explode.



Note Information

- Before connecting, ensure the open-circuit voltage of the photovoltaic array falls within the acceptable range for the inverter compatible with the product; otherwise, the product may be damaged.
- Do not use any solvents, abrasives, or corrosive substances to clean this product.
- Before connecting the product to the inverter terminals, ensure the product is disconnected, the inverter

is turned off, and both the mains power and photovoltaic circuit are disconnected.

- The product transportation process should be stable to avoid exposure to severe vibration environments.

2. Maintenance and Care

Environmental Requirements

The battery can be charged within the specified operating temperature range to extend its lifespan. Under extreme temperatures, the battery's power output may be limited during charging or discharging.

Battery pack operating temperature	Charging: 0°C–55°C Discharge: -20°C to 60°C
Battery pack storage temperature	-20℃-60℃

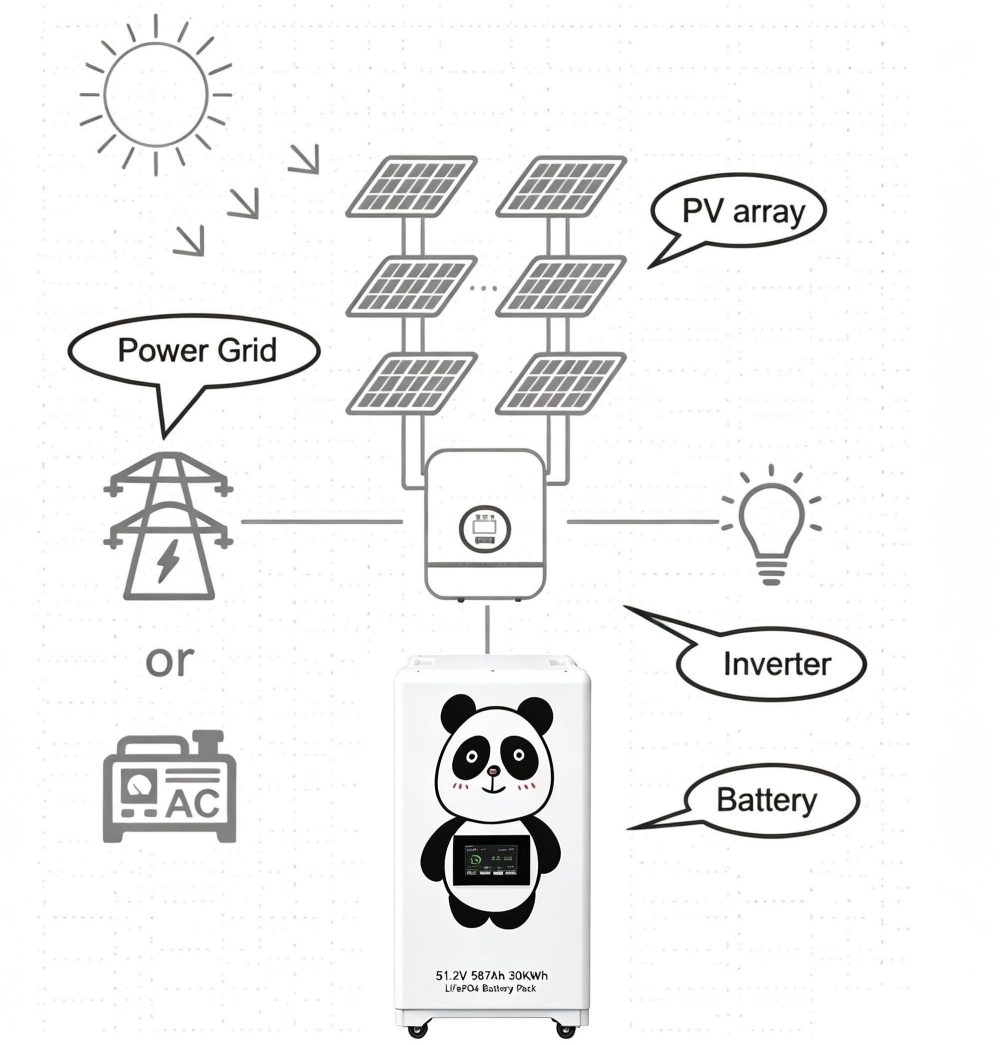
Nursing and Cleaning

- When cleaning the battery pack, use a soft, non-furrowed cloth; a dry, soft cloth is recommended.
- Do not use cleaning solvents to clean the powder, or expose it to flammable conditions.

In chemical substances or vapors.

3. Product Overview

This product is primarily designed to work in conjunction with inverters, photovoltaic (PV) systems, and related accessories to form an energy storage system. The system stores the electricity generated by PV panels into connected batteries, converts the direct current (DC) produced by these batteries into alternating current (AC), and supplies it to the household power grid.



This product is a lithium-ion battery capable of storing electrical energy and delivering direct current (DC). The battery remains electrically connected to an inverter, which converts the electricity generated by photovoltaic (PV) panels into DC and stores it in the connected battery. When electrical power is required, the battery's stored energy is converted from DC to alternating current (AC) by the inverter and fed into the household power grid to supply electricity to household appliances.

Basic Product Parameters

Project	Essential parameter
Product model	51.2V587AH
Rated voltage （V）	51.2
Working voltage range (V)	43.2-58.4
Rated capacity （Ah）	587

Rated energy （WH）	30054
Compound mode	1P16S
Charging cutoff voltage (V)	58.4
Discharge cutoff voltage (V)	43.2
Working temperature range (°C)	-20～60℃
Recommended charging current (A)	50
Maximum continuous charging current (A)	200
Maximum continuous discharge current (A)	200
Product size （mm）	800*630*345mm
Net weight of product (KG)	201.5KG

Functions of a Home Energy Storage System

● Independently produce and sell electrical energy

Use solar energy and batteries to reduce reliance on the power grid, storing electricity during the day for nighttime use.

● Back up power

When the power grid fails, it seamlessly switches to the battery as a backup power source, protecting your home from power outages.

● Sale of electrical energy

The electricity generated by the photovoltaic array is stored in the battery system or sold to energy companies in need.

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Product and Goods List





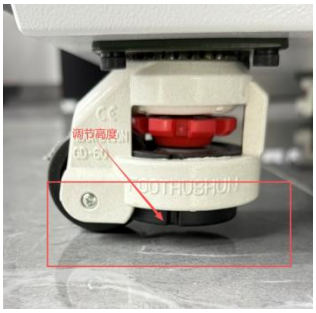



Battery pack, Positive and negative cable wires, Inverter communication wires, Parallel wires, Host computer wires, Certificate of Compliance

Name	Explain
Battery	Energy storage battery
Positive and negative cable wires X2	Cable for connecting to the inverter
Inverter communication line X1	Used for communication with the inverter
Parallel Line X1	Communication between batteries
Upper computer line X1	Communication between batteries and computers
User Manual X1	Customer Operation Manual
Certificate of Conformity X1	Product Compliance Certificate
Warranty Card X1	Guarantee

Product Installation

The installation of this product must meet the following requirements.



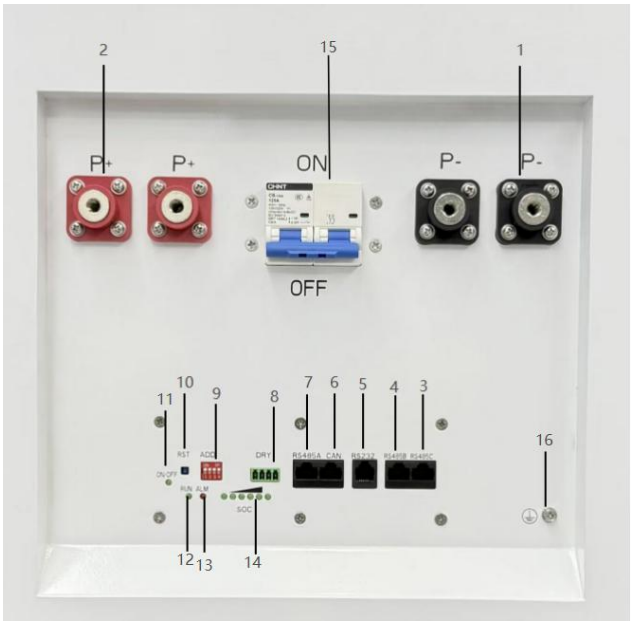


- Rotate this red nut to adjust the base height
- This product is recommended for indoor installation. If installed outdoors, ensure it is protected from direct sunlight, liquid exposure, or strong winds under all circumstances.
- This product is designed for vertical installation on floors or walls, with the product placed flat on the ground.
- The recommended operating temperature range for this product is-20°C to 60°C.
- Do not install this product in areas prone to frequent flooding.
- Do not install this product in areas with vibrations.
- Do not install this product in areas containing ammonia, corrosive vapors, acids, or salts.
- Do not install this product in environments with high dust levels.

4. Interface Definition

Battery Interface Panel Definition

LED status indicator



NO.	name	explain
1	P-	Battery negative terminal output
2	P+	Battery positive terminal output
3	RS485C	Parallel communication port C
4	RS485B	Parallel communication port B
5	RS232	232 Communication Port
6	CAN	Communicate with the inverter
7	RS485A	Communicate with the inverter
8	DRY	Dry contact point
9	ADD	Address Settings
10	RST	reset button
11	ON/OFF	power light
12	RUN	Operation indicator light
13	ALM	fault indicating lamp
14	SOC	Power indicator light
15	ON/OFF	Circuit breaker switch
16	GND	landing

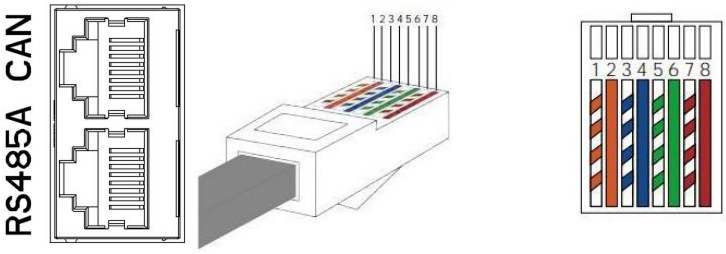
电量LED说明

(Power LED Description)

放电或静置时显示状态（★:闪烁, ●：亮, ◎：灭） Display status during discharge or static state (★: FLASH, ● : ON, ◎ : OFF)						
	SOC	LED1	LED2	LED3	LED4	LED5
	0%~9%	★	◎	◎	◎	◎
	10%~19%	★	◎	◎	◎	◎
	20%~39%	★	★	◎	◎	◎
	40%~59%	★	★	★	◎	◎
	60%~79%	★	★	★	★	◎
	80%~100%	★	★	★	★	★
充电时显示状态（★:闪烁, ●：亮, ◎：灭） Display status during charging (★: FLASH, ● : ON, ◎ : OFF)						
	SOC	LED1	LED2	LED3	LED4	LED5
	0%~19%	★	◎	◎	◎	◎
	20%~39%	★	★	◎	◎	◎
	40%~59%	★	★	★	◎	◎
	60%~79%	★	★	★	★	◎
	80%~100%	★	★	★	★	★

状态（status）	正常/告警/保护 (Normal, alarm, or Protection)	ON/OFF指示	RUN	ALM	L1	L2	L3	L4	L5	L6	说明 (Instructions)
关机 (Power Off)	正常(normal)	OFF									
Balance	正常(normal)	ON	闪烁 (flicker)	OFF	依据电量显示(Battery based display)					OFF	
充电 (charging)	正常(normal)	ON	闪烁 (flicker)	OFF	依据电量显示(Battery based display)					OFF	
	过流\过温\过压\充电失败(Over current, over temperature, over voltage, charging failure)	ON	闪烁 (flicker)	闪烁 (flicker)	依据电量显示(Battery based display)					OFF	
放电 (discharge)	正常(normal)	ON	闪烁 (flicker)	OFF	依据电量显示(Battery based display)					OFF	
	过流\过温\欠压\放电失败(Over current, over temperature, under voltage, discharge failure)	ON	闪烁 (flicker)	闪烁 (flicker)	依据电量显示(Battery based display)					OFF	
其他告警 (Other alarm)	密码未修改\短路\温度异常 (Password not changed \ short circuit \ temperature	ON	闪烁 (flicker)	闪烁 (flicker)	依据电量显示(Battery based display)					OFF	

RS485A/CAN Interface Pin Definitions

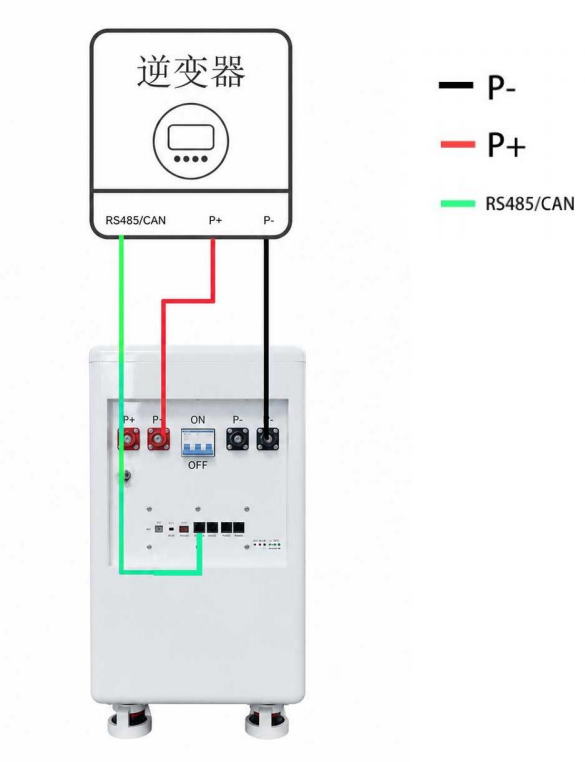


Pin Definition

RS485A		CAN	
Pin	Elucidate	Pin	Elucidate
1、8	RS485-B1	1、2、3、6、8	NC
2、7	RS485-A1	4	CAN-L
3、6	GND	5	CAN-H
4、5	NC	7	GND

5. Connect to the inverter

Schematic diagram of connection to the inverter – Connection method



Battery cable connection

The battery's positive and negative terminals utilize M8 locking screws, which can be distinguished by color (red or orange for the positive terminal, black for the negative terminal). Installation personnel must wear protective gloves when handling these terminals.

Connect the cable to the inverter's battery connection port, with the other end connected to the battery's positive and negative terminals. Ensure the screws securing the inverter and battery ends are tightened to a torque of 9–11 Nm.

Cable connection steps

① First, the battery is powered off, and the inverter is disconnected.

② The cable is connected to the positive and negative terminals of the inverter's DC port.

③ The negative electrode wire is connected to the battery's negative terminal.

④ The positive terminal wire is connected to the battery's positive terminal.


warn Before installing the power cable, the battery and inverter must be turned off.

Steps to disconnect the cable connection

① Port inverter switch.

② Use the button to power off the battery.

③ Remove the negative cable from the battery terminal.

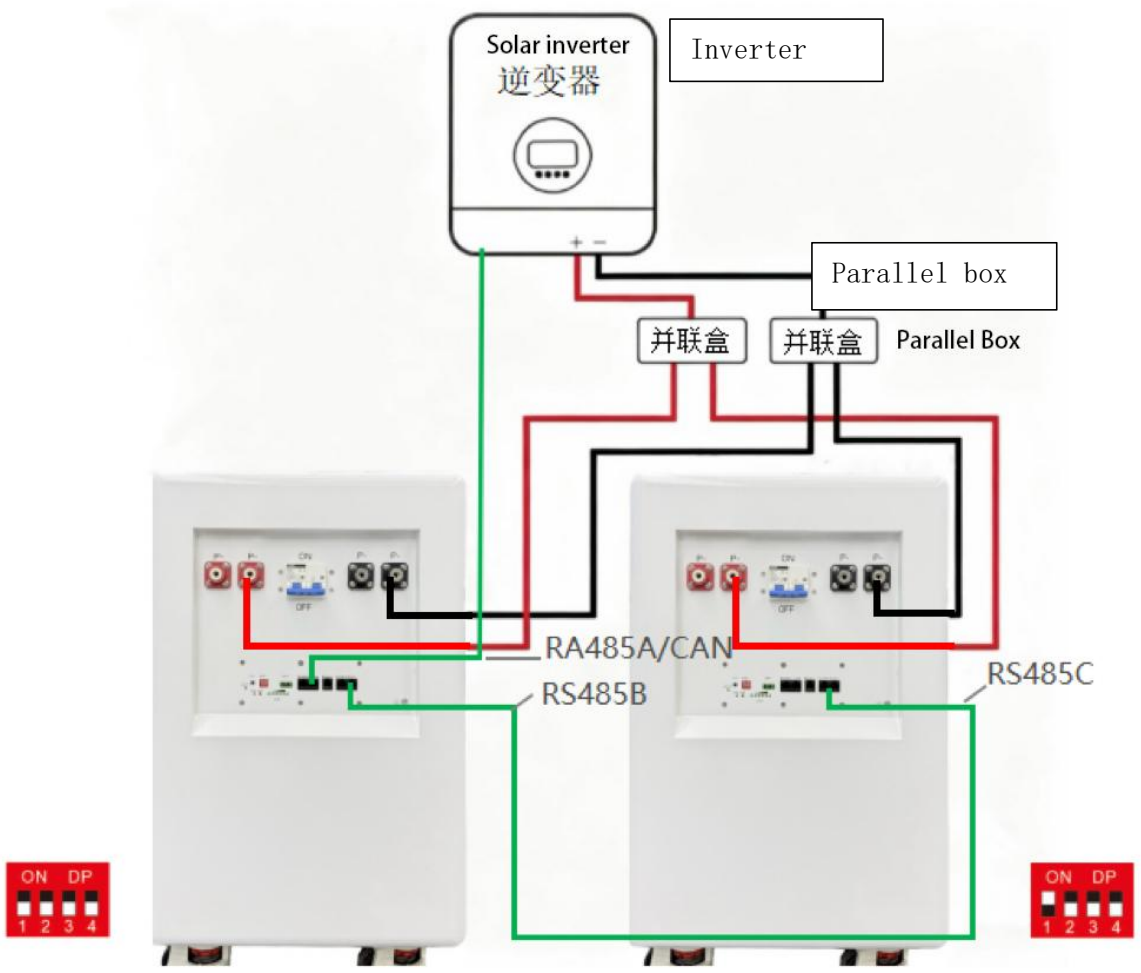
④ Unplug the battery's positive cable.

⑤ Disassemble the inverter's connecting wires.


warn The installation and disconnection of cable lines shall be performed by qualified installation personnel.


warn During use, ensure that children do not come into contact with the power cord.

Concurrent battery operation



Two batteries and one inverter

① Connect port RS485B on Battery 1 to port RS485C on Battery 2.

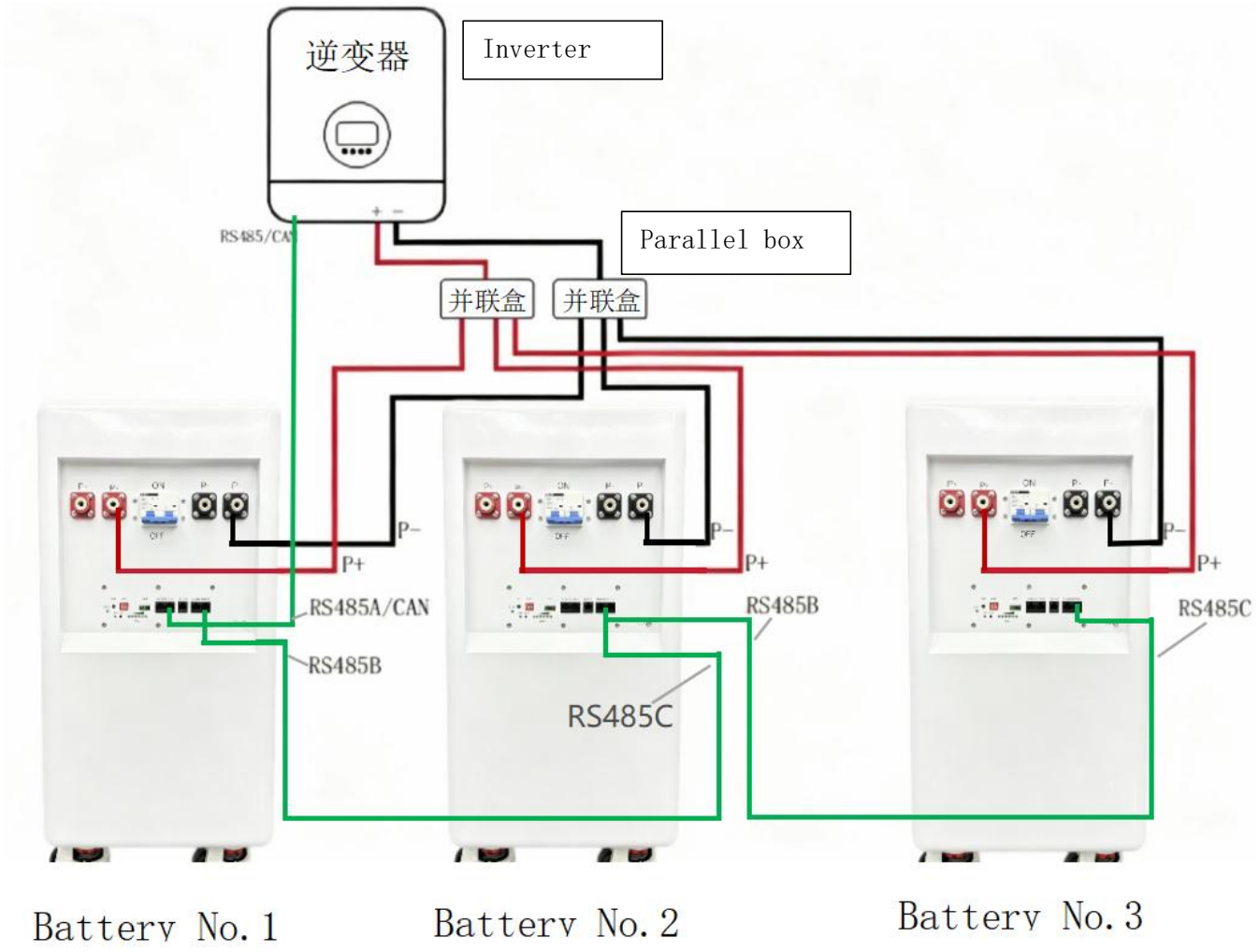
② Connect the RS485A/CAN port of Battery 1 to the RS485A/CAN port of the inverter.

③ The P-cable is connected to the parallel box and then to the negative DC terminal of the inverter.

④ The P+ cable is connected to the parallel box and then to the DC positive terminal of the inverter.

⑤ Set the digital switch of Battery 1 to "0".

⑥ Set the digital switch of Battery 2 to "1".



Three batteries and one inverter

① Connect port RS485B on Battery 1 to port RS485C on Battery 2.

② Connect port RS485B on Battery 2 to port RS485C on Battery 3.

③ Connect the RS485A/CAN port of Battery 1 to the RS485A/CAN port of the inverter.

④ The P-cable is connected to the parallel box and then to the negative DC terminal of the inverter.

⑤ Connect the P+ cable to the parallel box, then to the DC positive terminal of the inverter.

⑥ Set the digital switch of Battery 1 to "0".

⑦ Set the digital switch of Battery 2 to "1".

⑧ Set the digital switch of battery 3 to "2".

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And compatible with various inverter brands

The following inverter brands are compatible with the battery pack.

逆变器品牌		协议名称	通信接口	真机调试	匹配型号	协议在逆变器代码
德业 Deye	Deye 德业	低压储能CAN通信协议 Low-voltagehybridinverter CAN communication	CANBUS-500K	是	SUN-5K-SG03LP1-EU	1.BatterySetupMenu->Lithium 2.Advanced Function->BMS_Err_Stop
派能 PYLON	PYLONTECH	protocol 派能CAN总线协议V1.2 PYLON CANBUSProtocolV1.2	CANBUS-500K	否		
		派能低压RS485通信协议 PYLON low voltageRS485Protocol				
古瑞瓦特 Growatt	Growatt	古瑞瓦特低压CAN总线协议REV_05 GrowattBMS CAN-Bus-protocol-low-voltage_Rev_05	CANBUS-500K	是	SPF 3000TLHVM-48	1.在05中设LI 2.在36中设置为1，则为CAN通信
		储能机与电池PACK之间RS485通讯协议V2.01 GrowattxxSxxPESS ProtocolV2.01	RS485-9600	是	SPF 3000TLHVM-48	1.在05中设LI 2.在36中设置为51，则为RS485通信
维克多 Victron	victron energy	维克多CAN总线协议201707 CAB-BUS_BMS_Protocol_201707	CANBUS-500K	是	CerboGX	
英威腾 Invent	invt 英威腾	英威腾户用储能逆变器低压版BMS通信协议(V1.02) INVTBMS CAN Bus protocolV1.02	CANBUS-500K	是	BD5KTL-RL1	
固德威 GoodWe	固德威 GOODWE	固德威低压CAN总线协议V1.7 (ES/EM/S-BP/BP系列) GoodWeLV BMS Protocol(CAN)V1.7 (ForES/EM/S-BP/BPSeries)	CANBUS-500K	是	GW5000-ES-20	电池类型中选择GoodWe->SECU-A5.4L*1
SMA	SMA	SMA电池与逆变器通信协议 FSS-ConnectingBat-TI-en-10| Version1.0	CANBUS-500K	否		
日月元 Voltronic	Voltronic Power	日月元逆变器与BMS RS485通信协议 Voltronic Power Inverter and BMS 485 communication protocol	RS485-9600	否		1.长按SET键进入设置页面; 2.将05项设置成LIB;
硕日 SRNE	srne	硕日Modbus通信协议 PACE BMS Modbus Protocol for Rs485	RS485-9600	是	HF2430S60100	1.将39设置成BMS 2.将32设置成BMS 3.将33设置成WOW
美世乐 MUST	MUST 美世乐					
首航	SOFAR 首航新能源					

Turn on and off



POW

Startup Steps

① Ensure the cable connection is correct.

② Press the power switch of the battery pack to activate the circuit breaker.

③ The battery pack has started.

Power Off Steps

① Press the power switch of the battery pack to open the circuit breaker.

② Make sure the power cable is disconnected.

③ The battery pack is powered off.

Battery Communication Interface

The RS485A and CAN interfaces on the battery are used for communication with the inverter, with the specific interface determined by the type of inverter used. Different inverter brands have varying interface definitions; refer to the Interface Pin Definition Table for the pin specifications of the RS485A and CAN interfaces on the battery side.

move

Follow the inverter manual to configure the device. Once configured, it enables control and monitoring functions. During normal operation, the battery is controlled by the inverter, and its power button should remain turned on.



Do not warn use third-party tools or diagnostic tools for communication between the battery and the inverter.

troubleshooting

If the system is not working properly, follow these steps.

① Check whether the inverter settings are correct.

② Check whether the crimping method for the inverter terminal pin configuration is correct.

③ Check whether the baud rate address on the battery side is correct.

6. Connect via Bluetooth

The 48V battery features Bluetooth functionality, enabling users to monitor battery parameters via a mobile app—including charging status, voltage, current, temperature, and other operational data—all of which can be adjusted via Bluetooth.

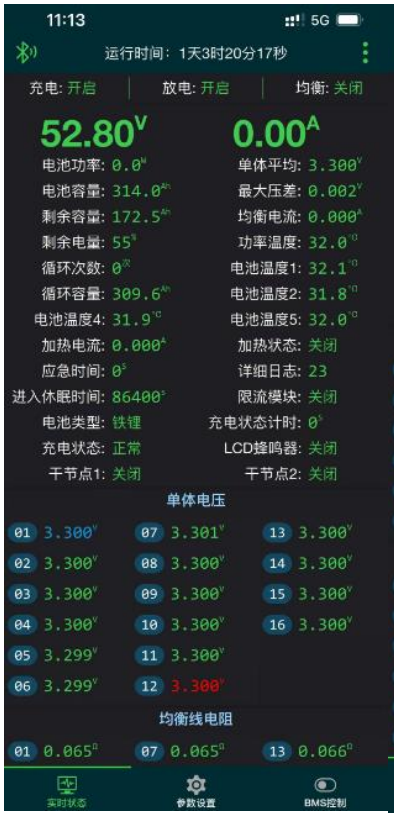
First enable Bluetooth, then open the Bluetooth app and click the icon in the upper-left corner to scan the device. After scanning is complete, select the device name you wish to connect, such as "JK-B1A24S". During the first connection, the app will prompt you to enter a password; the default pairing password is "1234". Once connected, the app automatically saves the password, so you won't need to enter it again. After launching the app, tap the device in the list to establish automatic connection. In the pairing password entry interface, simply enter your login password to complete the connection. You can then access the real-time status interface for queries, as shown below.



Device Scan



Pairing password input interface



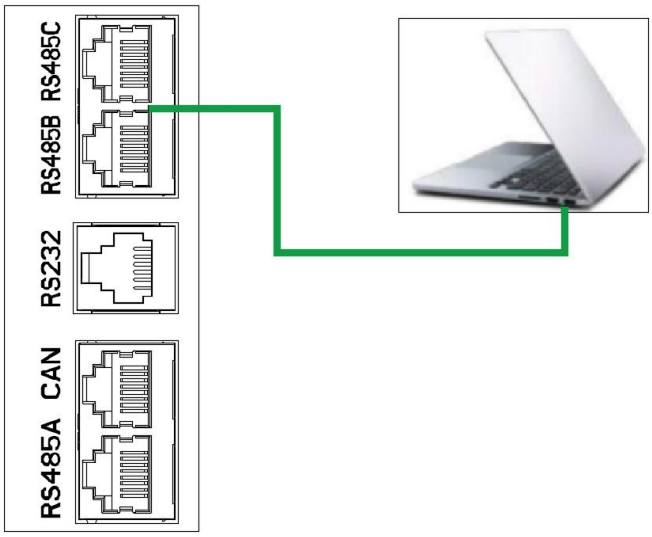
Real-time status display interface

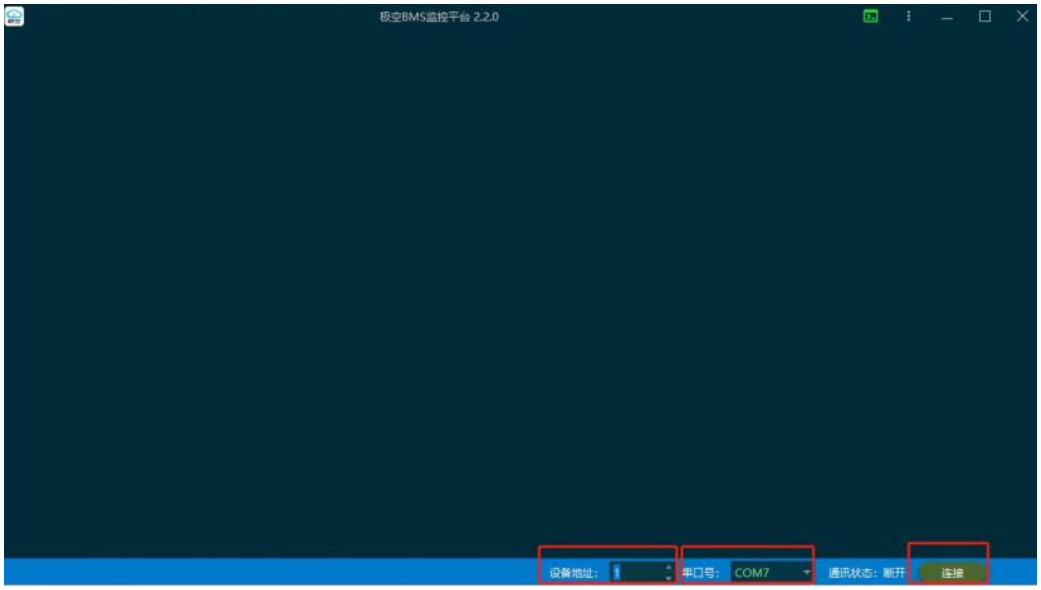


Real-time status display interface

7. Connect to the host computer

Open the host computer software. Connect one end of the host cable to the computer and the other end to the battery's RS485B or RS485C port. Set the device address to 1 (and also set the DIP switch to 1) along with the corresponding serial port number. Click Connect to establish the connection with the host computer and access the real-time status interface, as shown below.

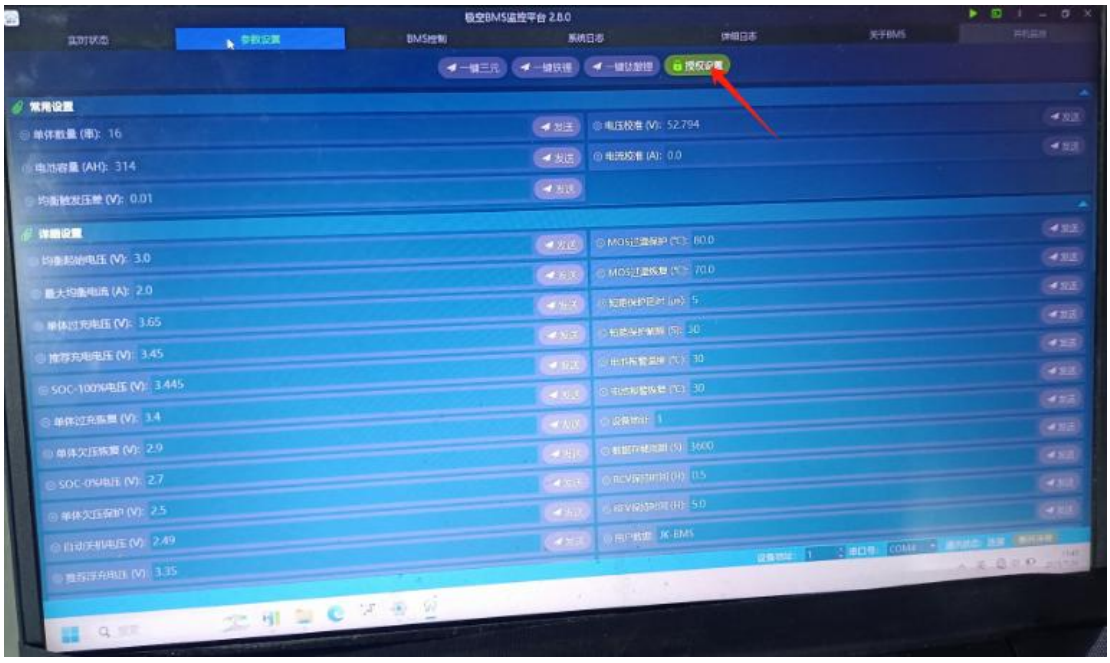






a. Real-time status page displaying battery voltage, charging current, abnormal alarms, battery status, and balancing line groups.

b. Parameter settings page: By default, no parameters can be modified; changes require access through "Authorization Settings." The factory default password for the protection board was "123456," which has now been changed to "888888."



8. How to handle emergencies

If your health or safety is at risk, it is recommended that you begin with the following two steps:

① First contact the fire department or another emergency response team.

② Inform all people who may be affected to evacuate the area promptly.


warn The following operations should only be performed under safe conditions.

In the event of a fire:

- Disconnect the inverter switch button.
- Press the power button switch of the battery pack and disconnect the circuit breaker switch.
- Cut off all inputs and outputs within the distribution panel.

Odorous or smoky:

- Disconnect the inverter switch button.
- Press the power button switch of the battery pack and open the circuit breaker switch.
- Cut off all inputs and outputs within the distribution panel.
- Ensure there is no electrical connection to the battery.
- Ventilate the room to eliminate odors and promptly contact the company's technical staff for assistance.

The battery is producing abnormal noise:

- Disconnect the inverter switch button.
- Press the power button switch of the battery pack and open the circuit breaker switch.
- Cut off all inputs and outputs within the distribution panel.
- Ensure there is no electrical connection to the battery.

9. When the product is turned off and not in use

This battery pack is a lithium-ion battery product and should not be stored for extended periods. If long-term storage is required, please adhere to the storage requirements specified in the table below.

Storage Temperature	Short-term storage for less than 1 month	-10°C to +45°C
	The long-term storage period should not exceed 3 months.	0°C to +45°C

If Tip the battery product has been stored for more than three months, recharge it every three months. If the battery becomes depleted or unusable due to prolonged disuse and failure to recharge, our company shall not be liable for after-sales service.

10. APP installation

Scan the QR code shown below to download the mobile app that comes with the product.

