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 Operating Instructions

Please save these important security instructions.

Important Note: This product must not be used for any purpose other than that described in this user manual.

The installation and servicing of this battery pack requires knowledge of high-voltage electricity and can only be performed by qualified personnel. We are not responsible for any injury or property damage caused by unqualified personnel attempting to repair the battery or failing to properly follow these instructions. These warnings and precautions must be followed when using the battery.

Symbols in this document

This manual uses the following symbols to highlight important information:


warn This indicates a dangerous situation that, if not avoided, could lead to death or serious injury.


cautio This indicates that damage or injury may occur, and if not avoided, it may result in minor injury or property damage.


Note: This indicates the risk that the product may be damaged.


Warning message

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

● In power regulation circuits, the possibility of electric shock or burns is very high due to excessive voltage.

● High voltage on AC and DC cables poses a risk of death from electric shock and severe burns.

● If you do not read or fully understand the appropriate precautions, this product may pose a potential hazard of death or serious injury from fire, high pressure, or explosion.

● Flammable and explosive materials must not be placed near the product.

● All work related to photovoltaic, 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 there is a risk of electric shock. If you need to remove it, please contact your local dealer or a licensed technician for service. Do not touch the uninsulated wires.
- If the product malfunctions and the system fails to start, product repair must be performed by qualified personnel or authorized support center personnel.



Warning message

- The battery and its accessories are included in this box, and the total weight is too heavy. Therefore, special care must be taken when handling it, and it is essential to have two people to carry and move the package.
- Do not use damaged, worn, or broken cables. Protect cables from physical and mechanical damage. If the cable is twisted, jammed, or trampled on, the product cable must be inspected regularly. If the appearance is damaged or deteriorated, stop using this product and contact a qualified person to replace the cable.
- This product should not come into contact with water, nor should any liquid-filled items be placed on it.
- To prevent the risk of fire or electric shock, do not expose the product to rain or moisture.
- Keep away from areas where children or animals may come into contact with them.
- Do not step on the product or its packaging, as this may damage the product.
- Do not discard batteries during a fire, as they may explode.



Remarks:

- Before connecting, ensure that the open-circuit voltage of the photovoltaic array is within the acceptable range of the inverter to which the product is compatible; 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 that the product is disconnected, the inverter is disconnected, and the mains and photovoltaic channels are disconnected.
- The product transportation process should be as stable as possible, avoiding environments with severe vibration.

2. Maintenance and upkeep

Environmental requirements

The battery can be charged within the following specified operating temperature range to improve battery life. Extreme temperature ranges may limit battery power during charging or discharging.

Operating temperature	Charging: 0℃-55℃ Discharging: -20℃-60℃
Storage temperature	-20℃-60℃

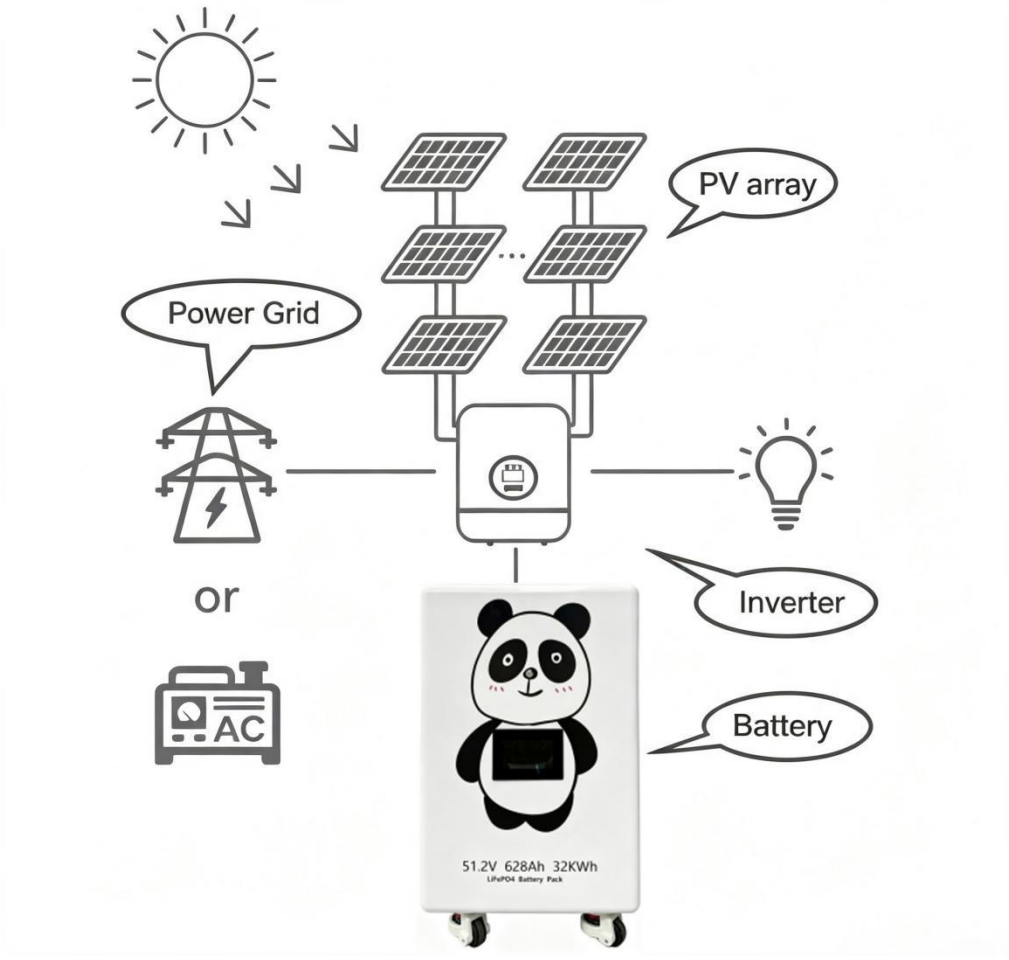
Nursing and cleaning

- When cleaning the battery pack, please use a soft, lint-free cloth; a dry, soft cloth is recommended.
- Do not use cleaning solvents to clean the powder or expose it to flammable materials.

  In chemicals or vapors.

3. Product Overview

This product is mainly combined with inverters, photovoltaic (PV) systems and related accessories to form an energy storage system. This system is used to store the electrical energy generated by the photovoltaic system into the connected battery and convert the direct current (DC) generated by the connected battery into alternating current (AC) to supply the home power grid.



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This product is a lithium-ion battery that can store electrical energy and output direct current. The battery is electrically connected to the inverter. The electrical energy generated by photovoltaic (PV) is converted into DC by the inverter and stored in the connected battery. When electrical energy is needed, the battery's electrical energy is converted into AC by the inverter and fed into the home grid to provide power for home appliances.

Basic Product Parameters

Project	Parameters
Product Model	51.2V628AH
protection board	300A
Rated voltage (V)	51.2
Operating voltage range (V)	43.2-58.4
Rated capacity (Ah)	628AH
Rated energy (WH)	32153
Combination method	1P16S
Charging cutoff voltage (V)	58.4
Discharge cutoff voltage (V)	43.2
Operating temperature range (°C)	-20 ～ 60 ℃
Recommended charging current (A)	50
Maximum continuous charging current (A)	195A
Maximum continuous discharge current (A)	195A
Product dimensions (mm)	800*630*430mm
Product net weight (KG)	236KG

Home energy storage system functions

- Self-produced and sold electricity

Using solar energy and batteries reduces dependence on the power grid and stores electrical energy during the day for use at night.

- Backup power

When the power grid fails, it can seamlessly switch to the battery as a backup power source to protect your home from power outages.

- Selling electricity

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The electricity generated by the photovoltaic array can be stored in battery systems or sold to energy companies that need it.

Product List:









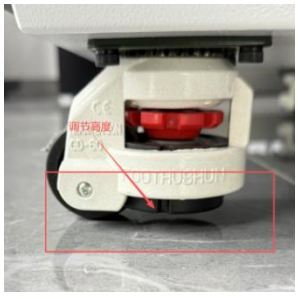
Battery pack positive and negative cables, inverter communication lines, parallel connection

Name	Illustrate
Battery pack	Energy storage battery
Positive and negative cables X2	Cables for connecting the inverter
Inverter communication line X1	Used for communicating with the inverter
Parallel line X1	Battery-to-battery communication
Host computer cable X1	Communication between battery and computer
User Manual X1	Customer Operation Manual
Certificate of Conformity X1	Product Certificate of Conformity
Warranty card X1	Warranty

lines, host computer lines, and qualification certificates.

Product Installation

The following requirements must be met for the installation of this product.





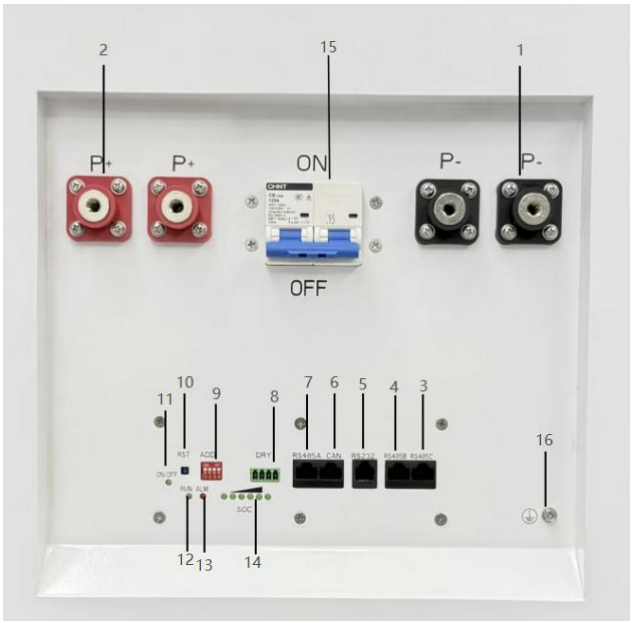
- Rotate this red nut to adjust the height of the base.
- This product is recommended for indoor installation. If the product is installed outdoors, it must be ensured that it is not exposed to direct sunlight, wet with liquids, or blown away by strong winds under any circumstances.
- This product is suitable for vertical installation on the ground or wall. Place the product flat on the ground.

- The applicable operating temperature range for this product is -20 ℃ to 60 ℃ .
- Do not install this product in areas prone to flooding.
- Do not install this product in areas subject to vibration.
- Do not install this product in places containing ammonia, corrosive vapors, acids, or salts.
- Do not install this product in places or environments with a lot of dust.

4. Interface Definition

Battery interface panel definition

LED status indicator



NO.	name	illustrate
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	Communicating with the inverter
7	RS485A	Communicating with the inverter
8	DRY	dry contact point
9	ADD	Address settings
10	RST	Reset button
11	ON/OFF	Power indicator light
12	RUN	Operation indicator light
13	ALM	Fault indicator light
14	SOC	Power indicator light
15	ON/OFF	Circuit breaker switch
16	GND	Grounding

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%	★	★	★	★	★

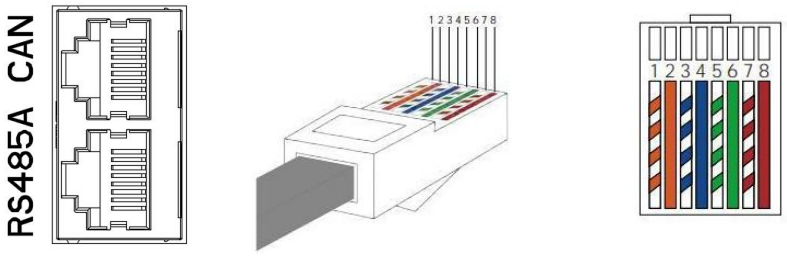
充电时显示状态（★:闪烁, ●：亮, ◎：灭）

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

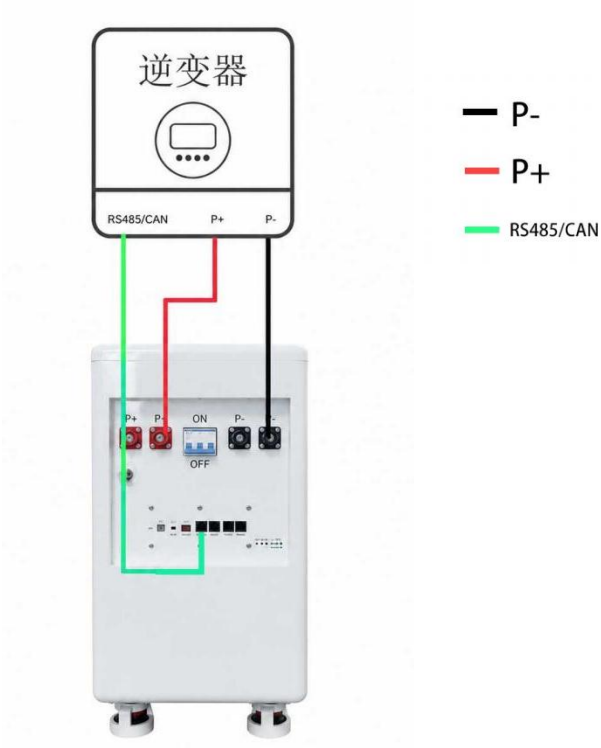


Pin Definitions

RS485A		CAN	
Pin	Explanation	Pin	Explanation
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

Inverter Connection Diagram - Connection Method



Battery cable connection

The battery uses M8 screw terminals for positive and negative terminals. The positive and negative terminals can be distinguished by color (red or orange for positive and black for negative). Installers must wear protective gloves to touch the positive and negative terminals of the product.

Connect the cable to the inverter battery connector, and connect the other end of the cable to the positive and negative terminals of the battery. Ensure that the screws on both the inverter and battery sides are tightened to a torque of 18~20Nm.

Cable connection steps

① First, the battery is in the off state, and the inverter is in the disconnected state.

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

③ The negative wire is connected to the negative terminal of the battery.

④ The positive wire is connected to the positive terminal of the battery.


warn

The battery and inverter must be switched off before installing the power cable.

Cable disconnection steps

① Port inverter switch.

② The button switch turns the power on and puts the battery off.

③ Disconnect the negative terminal cable of the battery.

④ Disconnect the positive terminal cable of the battery.

⑤ Disconnect the inverter's connection cables.

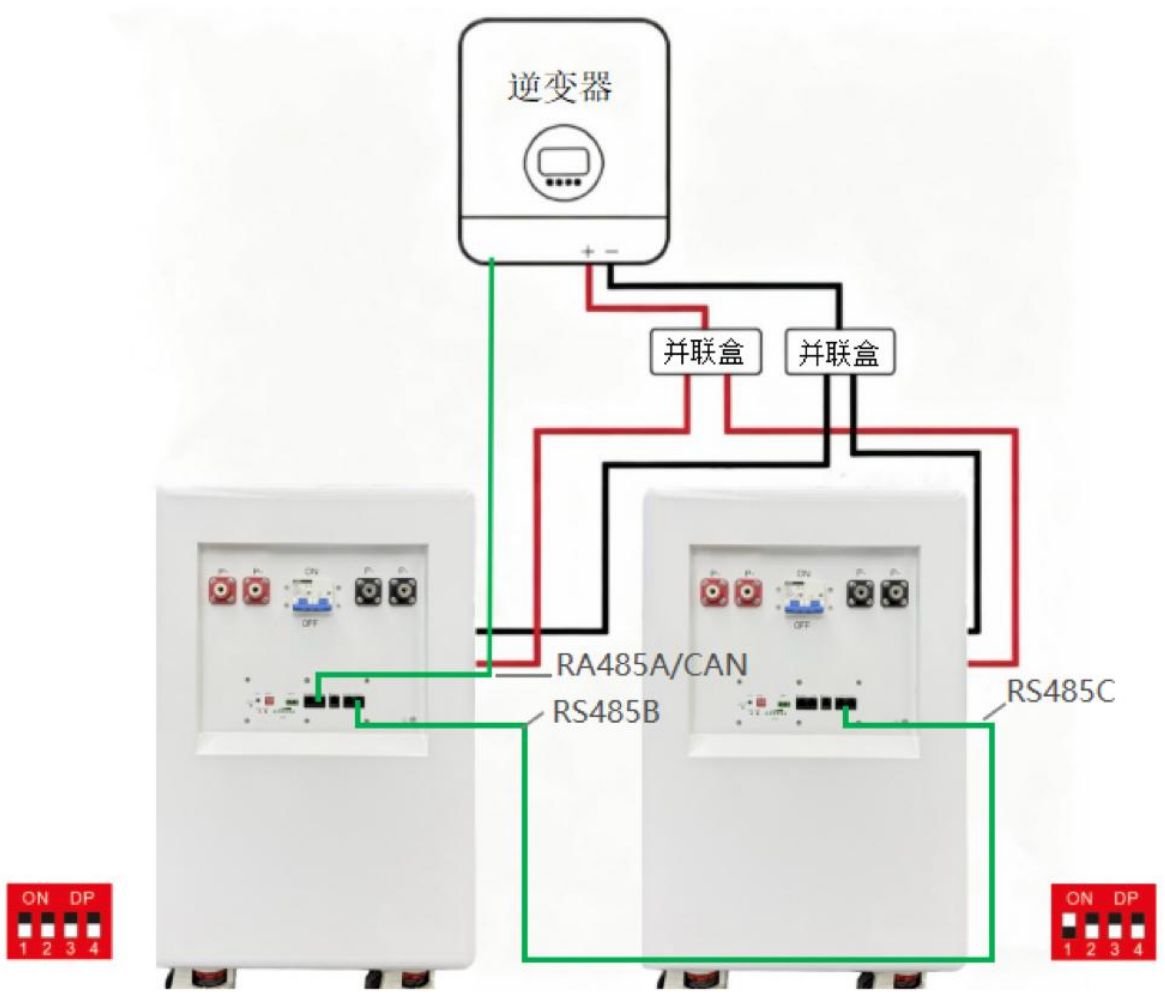

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The installation and disconnection of cables should be performed by qualified installers.


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

Battery parallel operation



Two batteries and one inverter

① Connect the RS485B port in battery 1 to the RS485C port in battery 2.

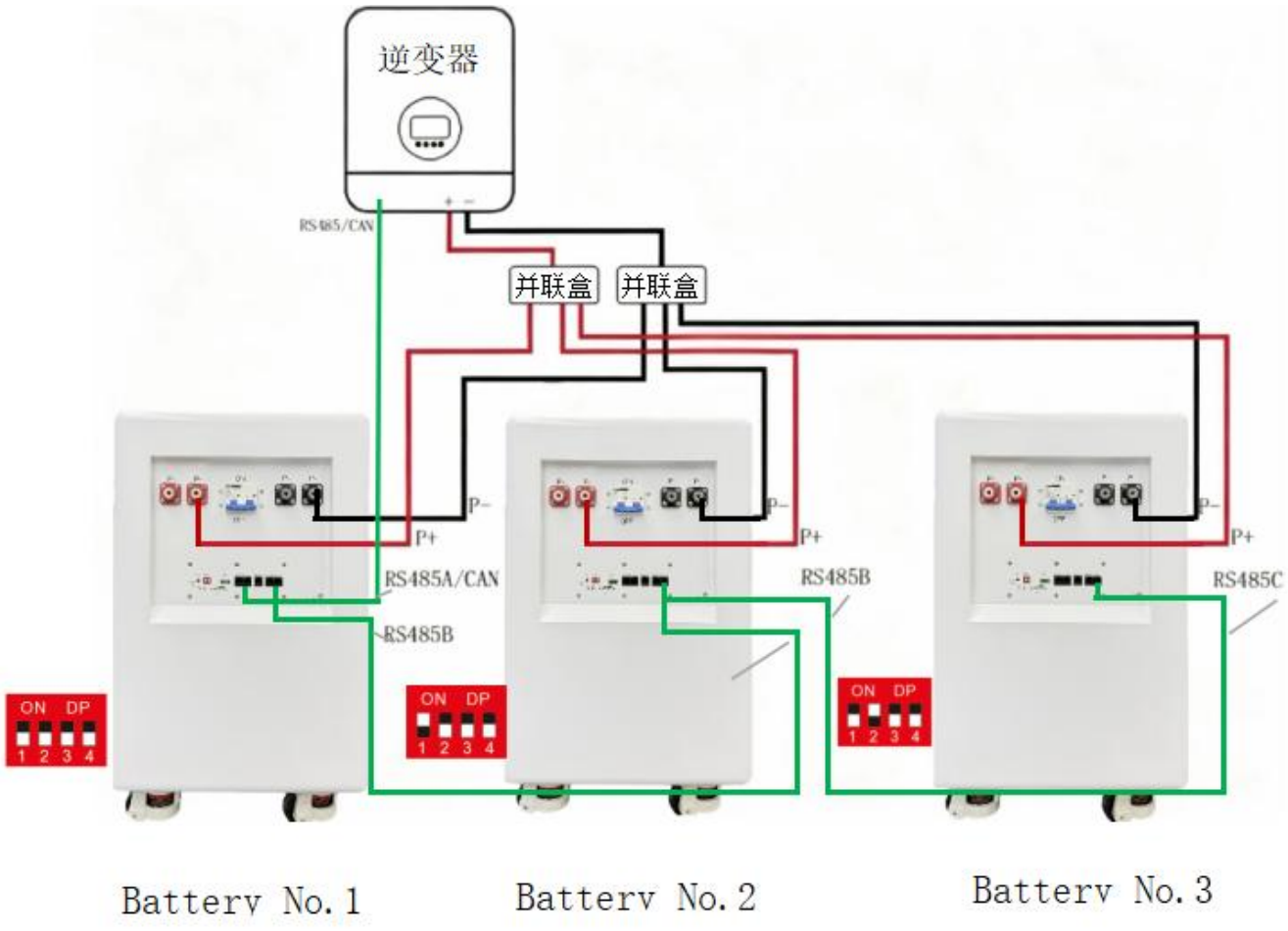
② Connect the RS485A/CAN connector in battery 1 to the RS485A/CAN port of the inverter.

③ The P-cable is connected to the parallel box and then to the DC negative 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 DIP switch of battery 1 to "0".

⑥ Set the DIP switch for battery 2 to "1".



Three batteries and one inverter

① Connect the RS485B port in battery 1 to the RS485C port in battery 2.

② Connect the RS485B port in battery 2 to the RS485C port in battery 3.

③ Connect the RS485A/CAN connector in battery 1 to the RS485A/CAN port of the inverter.

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

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

⑥ Set the DIP switch of battery 1 to "0".

⑦ Set the DIP switch for battery 2 to "1".

⑧ Set the DIP switch for battery 3 to "2".

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It is compatible with inverter brands.

The following inverter brands are all compatible with battery packs.

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-voltagehybridinverterCAN 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					

Power on and power off



POWER

Power-on steps

① Ensure the cable connections are correct.

② Press the power switch for the battery pack to turn on the circuit breaker switch.

③ The battery pack starts up.

Power off steps

① Press the power switch for the battery pack to disconnect the circuit breaker switch.

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 to communicate with the inverter. This is determined based on the compatible inverter. Different inverter brands have different interface definitions. Please refer to the interface pin definition table for the pin definitions of the RS485A and CAN interfaces on the battery side.

run

Refer to the inverter manual for inverter settings. Once set up, the inverter will provide control and monitoring capabilities. During normal operation, the battery is controlled by the inverter, and the battery power button should be kept on.


警告 Do not use third-party tools and diagnostic tools to communicate with the battery and inverter.

Troubleshooting

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

① Check if the inverter settings are correct.

② Check if the pin definitions and crimping methods of the inverter terminal interface are correct.

③ Check if the DIP switch address on the battery side is correct.

6. Connect via Bluetooth

The 48V battery is equipped with Bluetooth functionality, allowing users to monitor battery information via a mobile app, such as charging status, voltage, current, temperature, and other operating information. These parameters can be modified via Bluetooth.

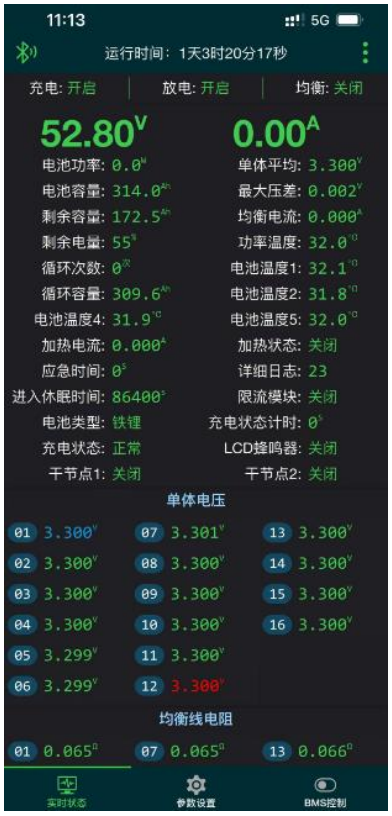
First, turn on Bluetooth. Then, open the Bluetooth app and tap the icon in the top left corner to scan the device. After scanning, tap the name of the device you want to connect to, such as "JK-B1A24S". The app will prompt you to enter a password the first time you connect. The default pairing password for this device is "1234". The app will automatically record the password after the device is connected, so you won't need to enter it next time. After opening the app, tap the device in the device list to connect automatically. On the pairing password input screen, enter your login password to successfully connect. You can then check the real-time status, as shown in the image below.



Equipment



Password input interface



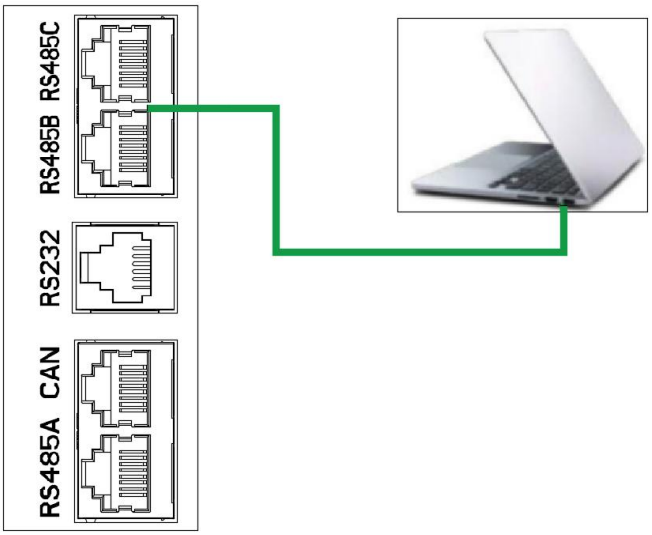
Real-time status display interface

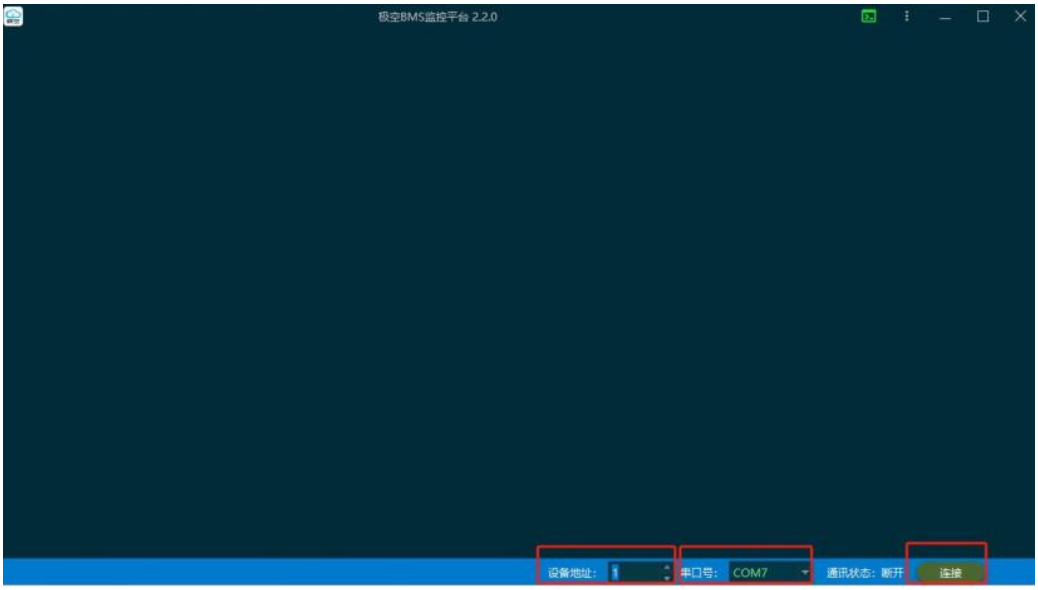


Real-time status display interface

7. Connect to the host computer

Open the host computer software, plug one end of the host computer cable into the computer, and the other end into the RS485B or RS485C port of the battery. Select device address 1 (if device address is selected as 1, the DIP switch should also be set to 1) and the corresponding serial port number. Click Connect to connect to the host computer and enter the real-time status page, as shown in the figure below.

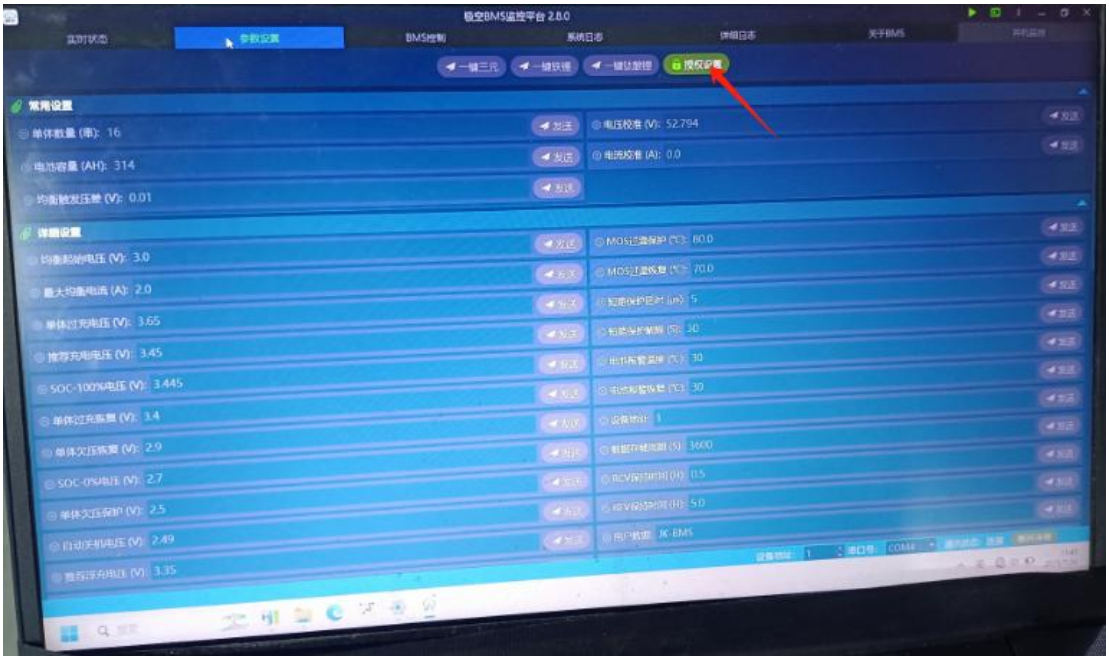






a. The real-time status page allows you to view battery voltage, charging current, abnormal alarms, battery status, equalization line group, etc.

b. Parameter settings page: By default, no parameters can be modified. You need to change them through "Authorization Settings". The factory default password for the protection board is "123456". The password has now been changed to "888888".



8. How to handle an emergency

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

① First, contact the fire department or other emergency response team.

② Notify all potentially affected individuals to evacuate the area immediately.


warn

It is recommended that the following operations be performed only under safe conditions.

In the event of a fire:

- Disconnect the inverter switch.
- Press the power button switch for the battery pack and turn off the circuit breaker switch.
- Disconnect all inputs and outputs inside the distribution box.

There is an odor or smoke:

- Disconnect the inverter switch.
- Press the power button switch for the battery pack and turn off the circuit breaker switch.
- Disconnect all inputs and outputs inside the distribution box.
- Ensure there is no electrical connection between the battery and the device .
- Ventilate the room to remove odors and contact the company's technical staff for assistance immediately.

The battery is making abnormal noise:

- Disconnect the inverter switch.
- Press the power button switch for the battery pack and turn off the circuit breaker switch.
- Disconnect all inputs and outputs inside the distribution box.
- Ensure there is no electrical connection between the battery and the device .

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

This battery pack is a lithium-ion battery product and should not be stored for extended periods. If you must store it for a long time, please refer to the storage requirements in the table below.

Storage temperature	Short-term storage less than 1 month	-10℃ to +45℃
	Long-term storage not exceeding 3 months	0℃ to +45℃


Note:

If the battery product has been stored for more than 3 months, please recharge it once every 3 months. If the battery is not used for a long time and is not recharged, resulting in the battery being depleted or unusable, our company will not be responsible for after-sales service.

10. APP installation

You can access the accompanying mobile app by scanning the QR code shown below.

