Shenzhen Braun Power Energy Storage Co., Ltd.

CK-48324AH Battery Pack

User Manual



Shenzhen Braun Power Energy Storage Co., Ltd.

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1. Important Safety Operating Instructions

Please save these important safety instructions.

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

The installation and servicing of this battery pack require knowledge of high voltage; installation may therefore be carried out only by personnel qualified in this area. The installer assumes no responsibility for any injury or property damage resulting from attempts by non-professionals to perform repairs or from failure to properly follow these instructions. These warnings and precautions must be observed when using the battery.

Symbols in this document

This manual uses the following formatting to highlight important information:


warn Indicates a hazardous condition that, if not avoided, may result in death or serious injury.


prudent Indicates that damage or injury may occur; if not prevented, such circumstances may result in minor injuries or property damage.


pour: Indicates the risk that the product may be damaged.



warning message

● Battery installation must be performed by trained personnel who possess knowledge of high-voltage electricity or hold a relevant license.

● In power-regulation circuits, excessively high voltage significantly increases the risk of electric shock or burns.

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

● If you have not read or have not fully understood the appropriate protective measures, this product may pose potential hazards, including death or serious injury, resulting from fire, high pressure, or explosion.

● Do not place flammable or explosive materials near the product.

● All work involving 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 this poses a risk of electric shock. If removal is necessary, contact a local distributor or request service from a licensed technician; do not touch uninsulated wires.
- If the product malfunctions and the system cannot be started, 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 high; therefore, special care must be taken when handling the package, and two people should be used to transport and move it.
- Do not use damaged, worn, or ruptured cables; protect the cables from physical and mechanical damage. If a cable becomes twisted, becomes entangled, or is trampled upon by others, inspect the product cables regularly. If any damage or deterioration is observed in their appearance, stop using the product immediately and contact qualified personnel to replace the cable.
- This product should not come into contact with water, nor should any liquid-filled object be placed on it.
- To prevent the risk of fire or electric shock, do not expose the product to rainwater or moisture.
- Keep away from children or animals.
- Do not step on the product or its packaging; the product may be damaged.
- Do not discard batteries during a fire; batteries may explode.



Notes

- Before connecting, ensure that the open-circuit voltage of the photovoltaic array falls 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 both the utility power and photovoltaic circuits are disconnected.
- The product should remain stable during transportation, and the product should be protected from environments with severe vibration.

2、Maintenance and Care

Environmental Requirements

The battery may be charged within the following specified operating temperature range to extend its service life; within extreme temperature ranges, the battery's power 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℃

Care and Cleaning

- When cleaning the battery pack, use a soft, non-fleece cloth; a dry, soft cloth is recommended.
- Do not clean the powder with cleaning solvents, nor expose it to flammable

In chemical substances or vapors.

3、Product Overview

This product is primarily integrated with an inverter, photovoltaic (PV) systems, and related accessories to form an energy storage system. The system stores electricity generated by the PV system in the connected battery, converts the DC electricity produced by the connected battery into AC electricity, and supplies it to the household grid.



This product is a lithium-ion battery capable of storing electrical energy and supplying direct current. The battery remains electrically connected to an inverter; the electrical energy generated by photovoltaic (PV) systems is converted by the inverter into direct current and stored in the connected battery. When electrical energy is required, the battery's stored energy is converted by the inverter from direct current into alternating current and supplied to the household power grid to provide power for household appliances.

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Basic Product Specifications

Item	Essential parameter
Product model	51.2V324AH
Rated voltage(V)	51.2V
Operating voltage range (V)	43.2-58.4
Rated capacity(Ah)	324
Rated energy(WH)	16588
Compound mode	1P16S
Charging cutoff voltage (V)	58.4
Discharge cutoff voltage (V)	43.2
Operating temperature range (℃)	-20～60℃
Recommended charging current (A)	100
Maximum continuous charging current (A)	195
Maximum continuous discharge current (A)	195
Product size(mm)	850*500*255mm
Net product weight (kg)	118KG

Functions of Home Energy Storage Systems

● Independently produce and sell electrical energy

Use solar energy and storage batteries to reduce dependence on the power grid and store electrical energy during the day for use at night.

●Back up power

When the power grid is interrupted, it can seamlessly switch to battery power 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 a battery system or sold to energy companies with demand.

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Product and Goods List







Battery pack; wall-mounted bracket X2; expansion bolts X2; positive and negative terminal cables; M8×12 mm screws X4PCS







Host computer cable, parallel communication cable, inverter communication cable, certificate of conformity, warranty card

Name	Explain
Battery	Energy storage battery
Wall-mounted fixtures X2	For securing the battery pack
Expansion bolts X2	Mount the battery to the wall
Positive and negative cable wires X2	Cable for connecting to the inverter
M8×12 mm screws, x4	Used for securing the cable to the terminals
Inverter communication cable X1	Used for communication with the inverter
Parallel wiring X1	Battery-to-battery communication
Host computer line X1	Communication between the battery and the computer
User Manual X1	Customer Operating Manual
Certificate of Conformity X1	Product Certificate of Conformity
Warranty Card X1	Guarantee

Product Installation

- Tools required for installation



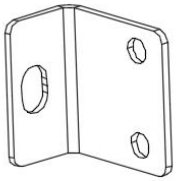




Impact drill, electric wrench, electric screwdriver, hammer, screwdriver Impact drill, electric wrench, electric screwdriver, hammer, screwdriver Impact drill, electric wrench, electric screwdriver, hammer, screwdriver Impact drill, electric wrench, electric screwdriver, hammer, screwdriver

NO.	name	explain
1	churn drill	Drill holes in the wall
2	electric wrench	Tighten the expansion bolts
3	Electric screwdriver	clamp screw
4	hammer	Hammering tool
5	bolt driver	clamp screw

- Installation Accessories Instructions



Wall fasteners



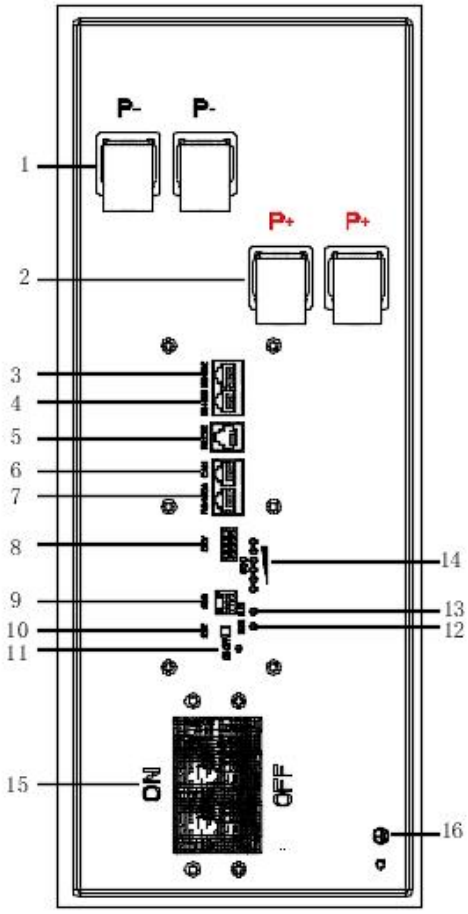
The installation of this product must comply with the following requirements.

- This product is recommended for indoor installation. If installed outdoors, ensure that the product is not exposed to direct sunlight, wetted by liquids, or blown away by strong winds under any circumstances.
- This product is intended for installation on vertical floor surfaces; placing the product flat on the floor is prohibited.
- The applicable operating temperature range for this product is 0°C–55°C.

- Do not install this product in areas where flooding occurs frequently.
- Do not install this product in areas subject to vibration.
- Do not install this product in locations where ammonia, corrosive vapors, acids, or salts are present.
- Do not install this product in locations or environments with excessive dust.

4. Interface Definition

Battery Interface Panel Definition



NO.	name	explain
1	P-	Battery negative terminal output
2	P+	Battery positive 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	Battery indicator light
15	ON/OFF	Circuit breaker switch
16	GND	landing

LED status indicator

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%	★	★	★	★	★

LED Light Specifications

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 abnormal)	ON	闪烁(flicker)	闪烁(flicker)	依据电量显示(Battery based display)					OFF	

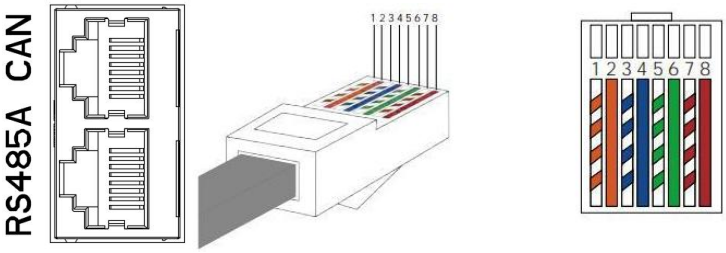
备注：当设备地址设置为0时做主机，最后一颗LED灯 L6闪烁。当设为其他值时做从机熄灭，从机和主机通信成功后闪烁

Note: When the device address is set to 0, the last LED indicator L6 blinks. If the value is set to other values, the slave is off and blinks after the communication between the slave and the host is successful.

备注：ON代表LED状态为亮，OFF代表LED状态为熄灭。

Note: ON indicates that the LED is on,OFF indicates that the LED is off.

RS485A/CAN Interface Pin Definition

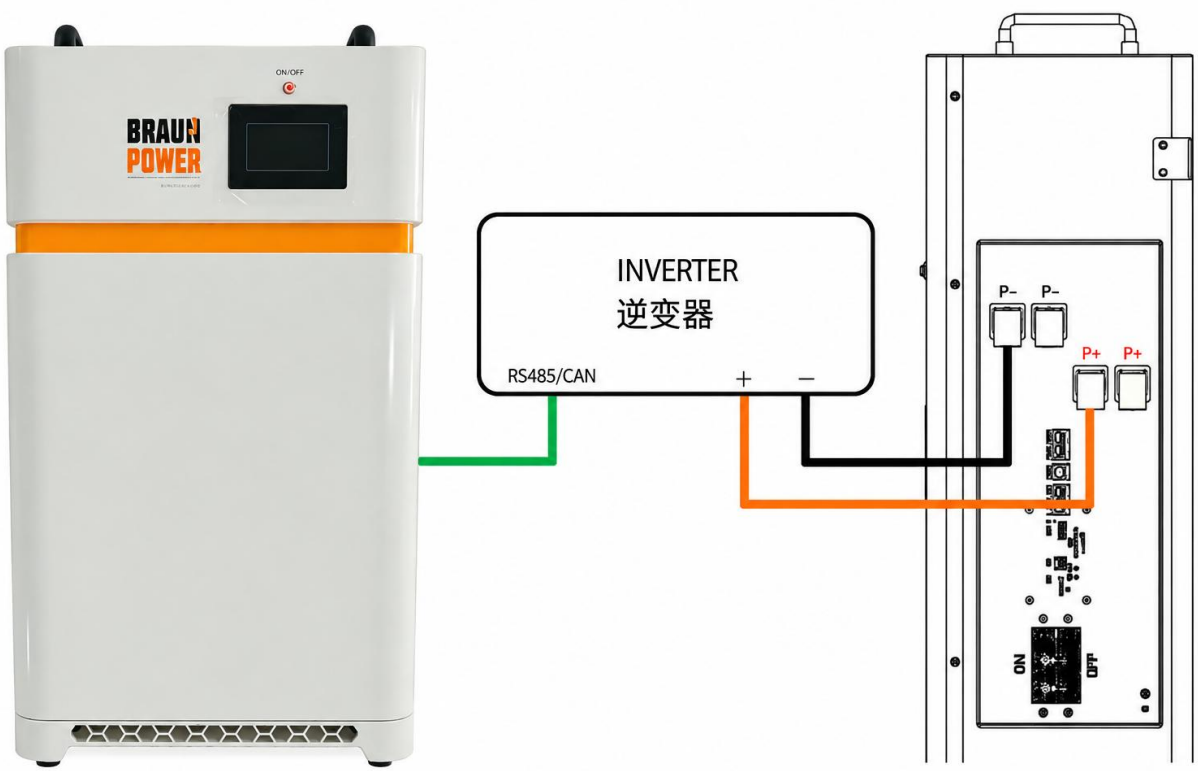


Pin Definitions

RS485A		CAN	
Pin	Explain	Pin	Explain
1、8	RS485-B	1、2、3、6、8	/
2、7	RS485-A	4	CAN-H
3、6	GND	5	CAN-L
4、5	/	7	GND

5. Connect to the inverter

Schematic diagram for connection to the inverter – Connection method



Battery cable connection

The positive and negative terminals of the battery use M8 lock screw terminals; the terminals can be distinguished by color (red or orange indicates the positive terminal, while black indicates the negative terminal). Installation personnel must wear protective gloves before touching the product's positive and negative terminals.

Connect the cable to the inverter's battery connection port, and connect the other end of the cable to the battery's positive and negative terminals. Ensure that the screws at both the inverter and battery ends are tightened to a torque of 18–20 Nm.

Cable connection steps

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

② Connect the cable to the positive and negative terminals of the inverter's DC terminals.

③ Connect the negative lead to the negative terminal of the battery.

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


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

Steps for disconnecting the cable connection

① Port inverter switch.

② The push-button switching power supply places the battery in a powered-off state.

③ Disassemble the negative terminal cable connected to the battery.

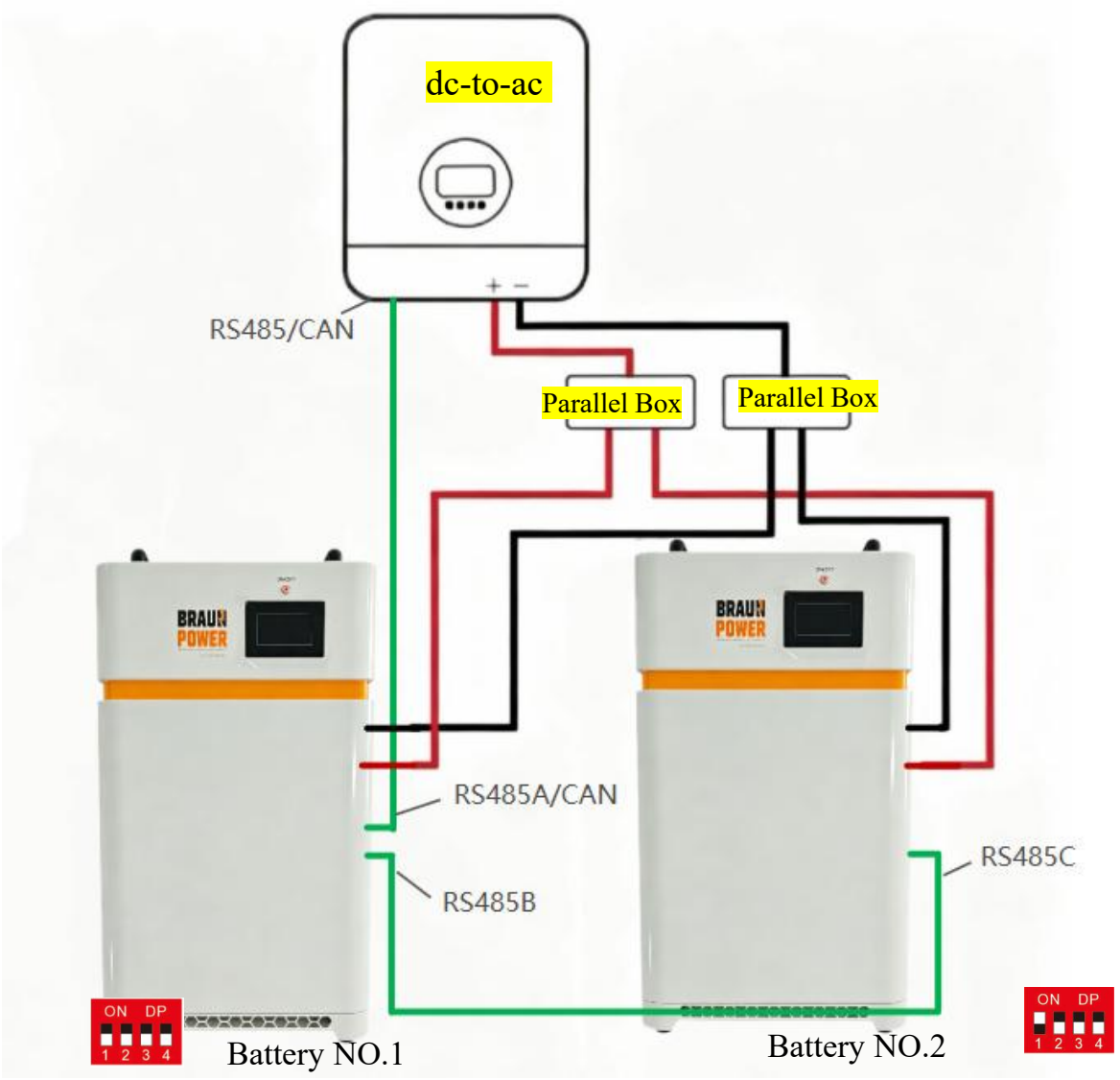
④ Disassemble the battery and disconnect the positive cable.

⑤ Disassemble the inverter's connection cables.


warn Cable installation and disconnection shall be performed by qualified installation personnel.


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

Parallel battery operation



Two batteries and one inverter

① Connect the RS485A port on Battery 1 to the RS485B port on Battery 2.

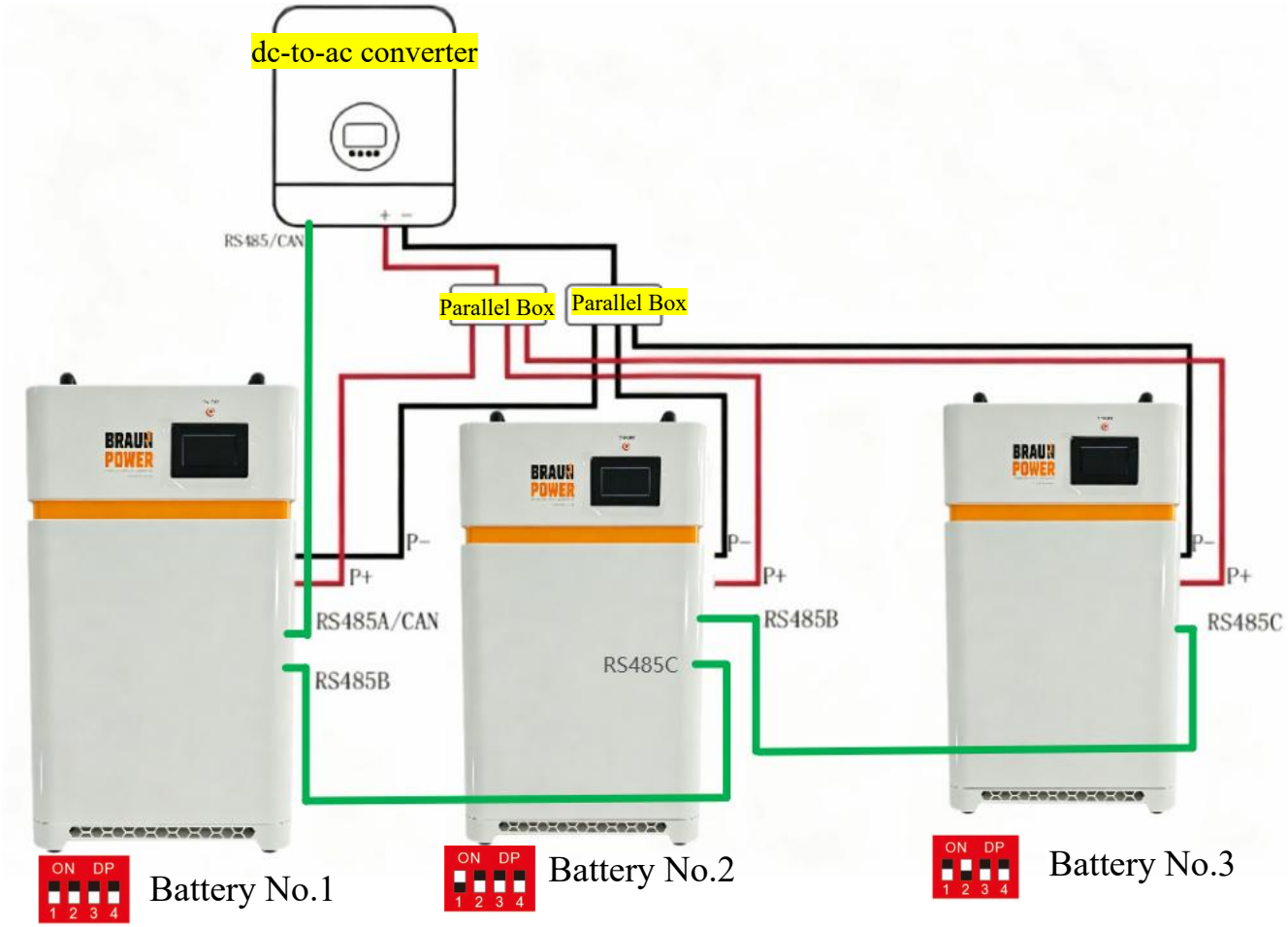
② Connect RS485/CAN from Battery 1 to the RS485/CAN port of the inverter.

③ Connect the P-cable to the parallel box, then connect it to the negative DC terminal of the inverter.

④ Connect the P+ cable to the parallel box, then connect it to the DC positive terminal of the inverter.

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

⑥ Set the DIP switch on Battery 2 to "1".



Three batteries and one inverter

① Connect the RS485A port on Battery 1 to the RS485B port on Battery 2.

② Connect the RS485A port on Battery 2 to the RS485B port on Battery 3.

③ Connect RS485/CAN from Battery 1 to the RS485/CAN port of the inverter.

④ Connect the P-cable to the parallel box, then connect it to the negative DC terminal of the inverter.

⑤ Connect the P+ cable to the parallel box, 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 on Battery 2 to "1".

⑧ Set the DIP switch on Battery 3 to "2".

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Compatible with various 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-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					

Power On and Power Off



POWER

Power-On Procedure

① Ensure that the cable connections are correctly made.

② Press the power switch of the battery pack and turn on the circuit breaker switch.

③ Battery pack startup.

Power-off procedure

① Press the power switch of the battery pack and disconnect the circuit breaker switch.

② Ensure that the power cable has been disconnected.

③ The battery pack has been powered off.

Battery communication interface

The RS485A and CAN interfaces on the battery are used for communication with the inverter; the specific configuration depends on the compatible inverter model. Interface definitions vary across different inverter brands; for the pinout definitions of the RS485A and CAN interfaces on the battery side, please refer to the interface pinout definition table.

move

Configure the inverter in accordance with the inverter manual. Once configured, the system will provide control and monitoring capabilities; during normal operation, the battery will be controlled by the inverter, and the battery power button should remain turned on.

Do not 

use third-party or diagnostic tools for communication between the battery and the inverter.

troubleshooting

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

① Check that the inverter settings are correct.

② Verify that the crimping method for the pin definitions at the inverter terminal interface is correct.

③ Check that the DIP address at the battery end is correct.

6. Connect via Bluetooth

The 48V battery incorporates Bluetooth functionality, enabling users to check the battery's status via a mobile app, including charging status, voltage, current, temperature, and other operational data; these parameters can also be adjusted via Bluetooth.

First, enable Bluetooth, then open the Bluetooth app and tap the icon in the upper-left corner to scan the device's QR code. Once the scan is complete, tap the name of the device you wish to connect to, such as "JK-B1A24S". During the first connection, the app will prompt you to enter a password; the device's default pairing password is "1234". After the device is connected, the app will automatically save the password, so you do not need to enter it again on subsequent connections. When you open the app, tap the device in the device list to connect automatically; once you reach the pairing password entry screen, enter your login password to complete the connection. You can then access the real-time status interface to view the connection status, as shown in the figure below.



Equipment scanning



Pairing password input interface



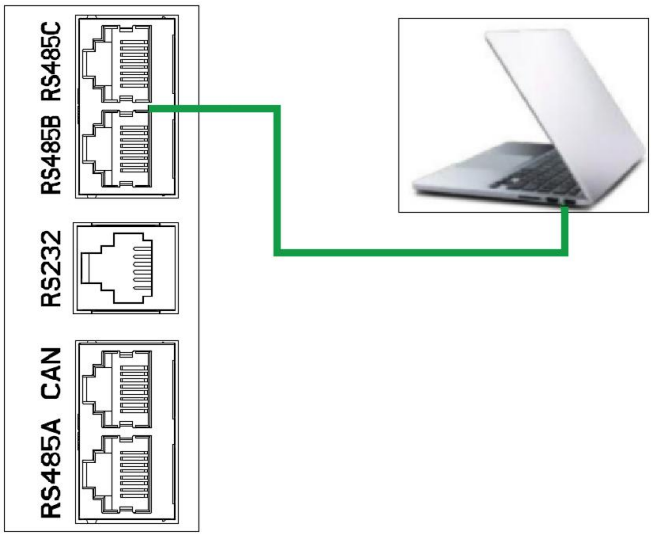
Real-time status display interface

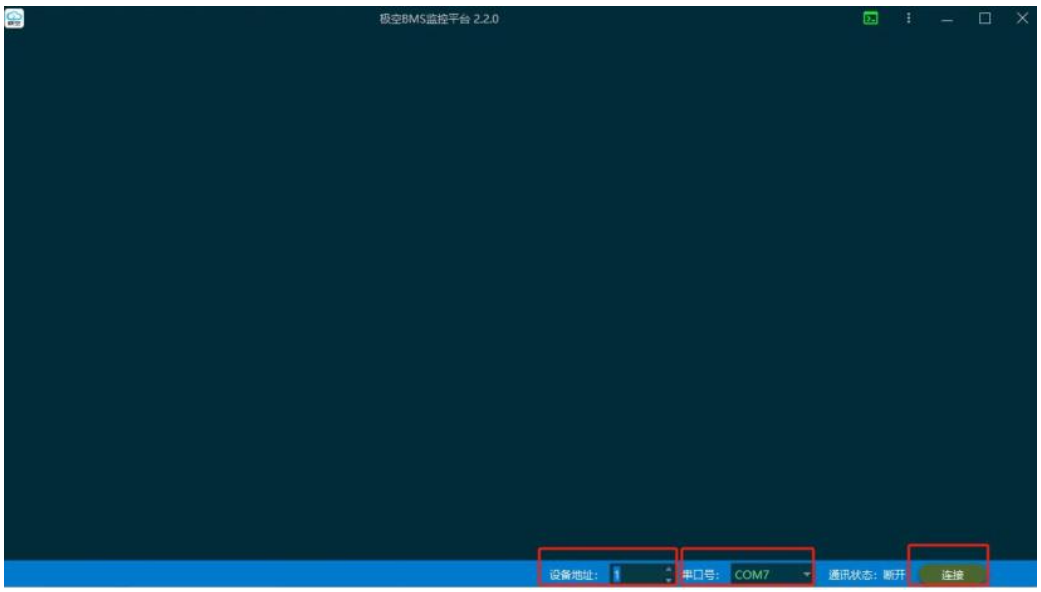


Real-time status display interface

7. Connect to the host computer

Open the host computer software. Connect one end of the host cable to the computer and insert the other end into the RS485B or RS485C port of the battery. Select device address 1 (for device address 1, the DIP switch must also be set to 1), then enter the corresponding serial port number and click "Connect." The device will then connect to the host computer and enter the real-time status page, as shown in the figure below.

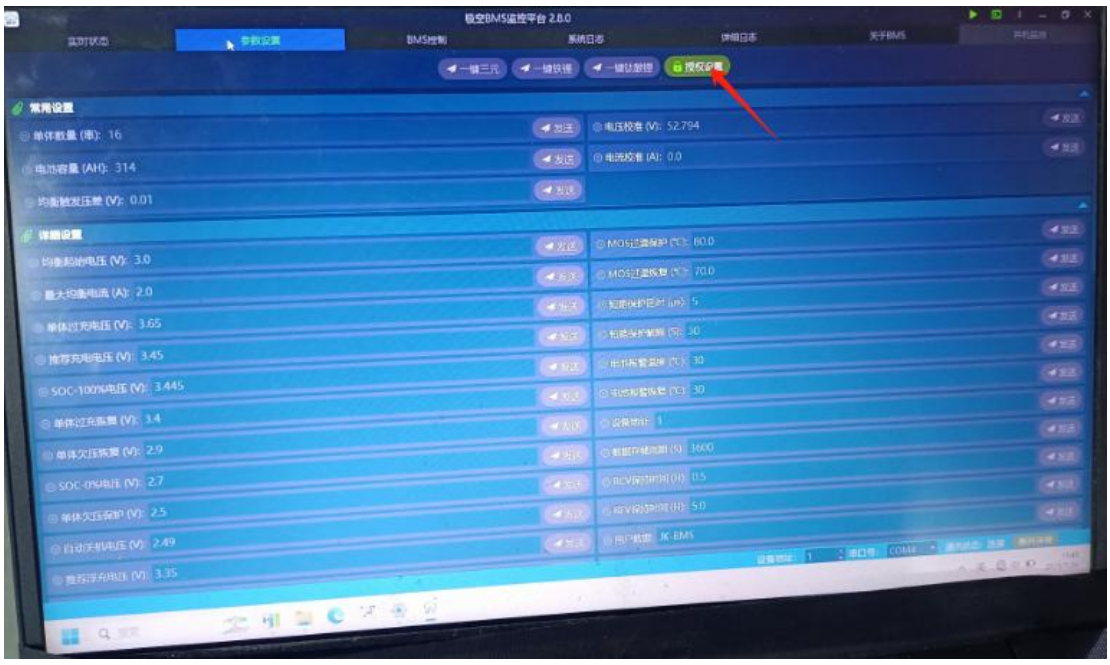






a. Real-time status page, where you can view battery voltage, charging current, abnormal alerts, battery status, balance lines, and other information.

b. Parameter configuration page: Under the default settings, no parameters can be modified; changes must be made via "Authorization Settings." The default factory password for the protection board is "123456"; this password has now been changed to "888888."



8. How to handle emergencies

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 another emergency response team.

② Notify all individuals who may be affected and promptly evacuate the area.


warn It is recommended that the following procedures be carried out only under safe conditions.

In the event of a fire:

- Press the inverter switch button to disconnect.
- Press the power button switch on the battery pack and disconnect the circuit breaker switch.
- Disconnect all input and output circuits within the distribution box.

Odor or smoke present:

- Press the inverter switch button to disconnect.
- Press the power button switch on the battery pack and disconnect the circuit breaker switch.
- Disconnect all input and output circuits within the distribution box.
- Ensure that there is no electrical connection to the battery.
- Ensure proper ventilation in the room to eliminate odors, and promptly contact the company's technical personnel for assistance.

The battery is producing abnormal noise:

- Press the inverter switch button to disconnect.
- Press the power button switch on the battery pack and disconnect the circuit breaker switch.
- Disconnect all input and output circuits within the distribution box.
- Ensure that there is no electrical connection to the battery.

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 it is to be stored for a prolonged period, please observe the storage requirements listed in the table below.

Storage temperature	Short-term storage of less than	-10°C to +45°C
	Long-term storage shall not exceed	0°C to +45°C

Tip

If a battery product has been stored for more than 3 months, please recharge it once every 3 months. If the battery is left unused for an extended period without being recharged, resulting in a depleted battery or rendering it unusable, the Company shall not provide after-sales service.

APP install

Scan the QR code shown below to obtain the mobile app that complements the product.