Shenzhen Braun Power Energy Storage Co., Ltd.

48V Low-Voltage Home Energy Storage Batteries



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 expertise in high-voltage electrical systems 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 unit or failure to follow these instructions. These warnings and precautions must be strictly observed during battery use.

Symbols in this document

This manual uses the following conventions to highlight important information:


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


prude Indicates that damage or injury may occur; if not prevented, these situations 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 those holding a valid license.

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

burns.

- High voltages on AC and DC cables pose risks 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, contact your local distributor or a certified technician for service. Never handle uninsulated electrical 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 two people are involved in transporting and moving the package.
- Do not use damaged, worn, or broken cables. Protect cables from physical and mechanical damage (e.g., twisting, entanglement, or trampling). Regularly inspect product cables; if any visible damage or deterioration is observed, discontinue use immediately and contact authorized personnel for replacement.
- This product should not come into contact with water, nor should items filled with liquid be placed on the product.
- To prevent fire or electric shock risks, 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 it may be damaged.

● 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 corresponding inverter; 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 turned off, and both the mains power supply and photovoltaic circuit are disconnected.

● The transportation process of the product should be as stable as possible to avoid exposure to severe vibration environments.

2、Maintenance and Care

Environmental Requirements

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

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

Nursing and Cleaning

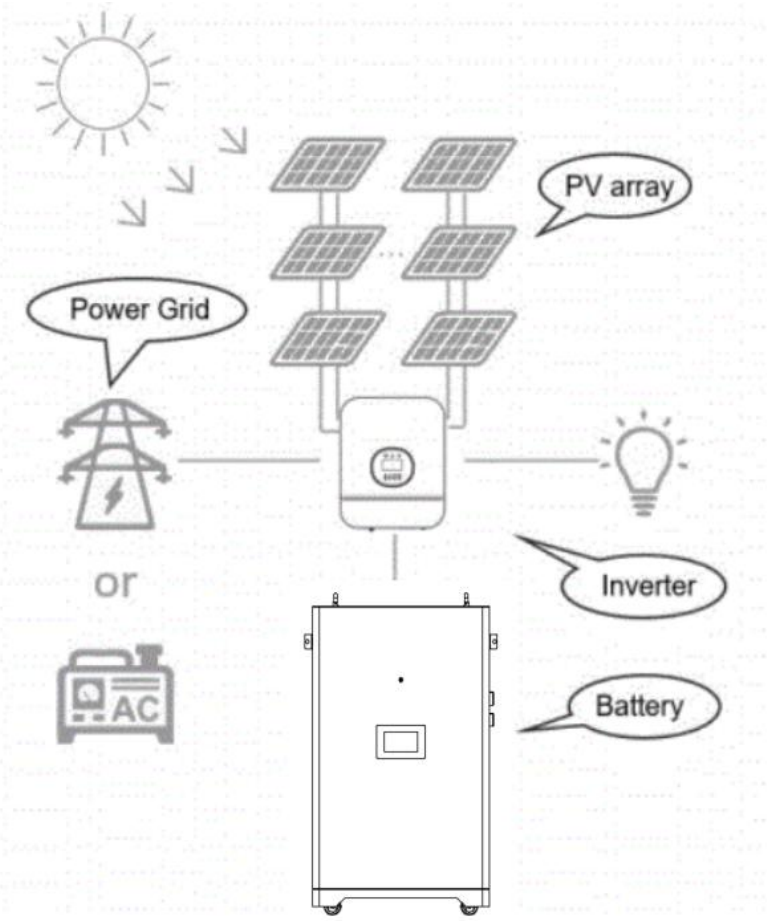
● When cleaning the battery pack, use a soft, non-flocked cloth; a dry, soft cloth is recommended.

● Do not use cleaning solvents to wash 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 components to form an energy storage system. This 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. It remains electrically connected to an inverter, which converts solar (PV)-generated electricity into DC power for storage in the connected battery. When power is required, the stored energy is converted from DC to AC via the inverter and supplied to the household grid to power home appliances.

Basic Product Parameters

project	essential parameter

product model	51.2V315AH
rated voltage （V）	51.2
Operating Voltage	43.2-58.4
rated capacity （Ah）	314
rated energy （WH）	16128
compound mode	1P16S
Charging cutoff	58.4
Discharge cutoff	43.2
Working Temperature	-20～60℃
Recommended	50
Maximum Continuous	200
Maximum continuous	200
product size （mm）	850*500*255mm
Net Weight of Product	124KG

Functions of Home Energy Storage Systems

● Independent production and sale of electrical energy

Utilize solar energy and batteries to reduce reliance on the power grid and store electricity during daytime for nighttime use.

● back up power

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

● Sale of electrical energy

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

Product Goods List





Battery pack: Wall mounting fixtures (X2), Expansion screws (X2); Positive and negative cable wires; Screws (M8X12 mm, X4 pieces).

name	explain
battery	Energy Storage Battery
Wall Mounting Component X2	For fixed battery packs
Expansion screw X2	Fixed battery on the wall
Positive and negative cable	Cable used to connect the inverter
Screw M8*12mm X4	Used to secure cable lines at the terminals.
Inverter Communication Line X1	Used for communication with the inverter
Parallel Line X1	Communication between batteries
Host Machine Line X1	Communication between batteries and
User Manual X1	Customer Operation Manual
Qualification Certificate X1	Product Quality Certificate
Warranty Card X1	guarantee

Product Installation

● Tools required for installation



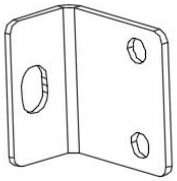




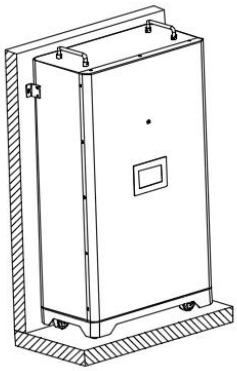
Impact drill, Electric wrench, Electric screwdriver, Iron hammer, Screwdriver

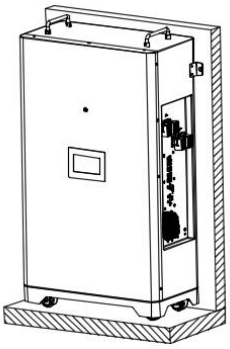
NO.	name	explain
1	churn drill	Drill holes in the wall
2	electric wrench	Locking expansion screw
3	Electric screwdriver	clamp screw
4	hammer	Knocking Tool
5	bolt driver	clamp screw

● Installation Assembly Instructions



wall space





wall space

Wall Mount Fixing

the earth's surface

the earth's surface

The following requirements must be met for installing this product.

- 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 installation on vertical walls or floors; do not place it flat on the ground.
- The recommended operating temperature range for this product is 0°C to 55°C.

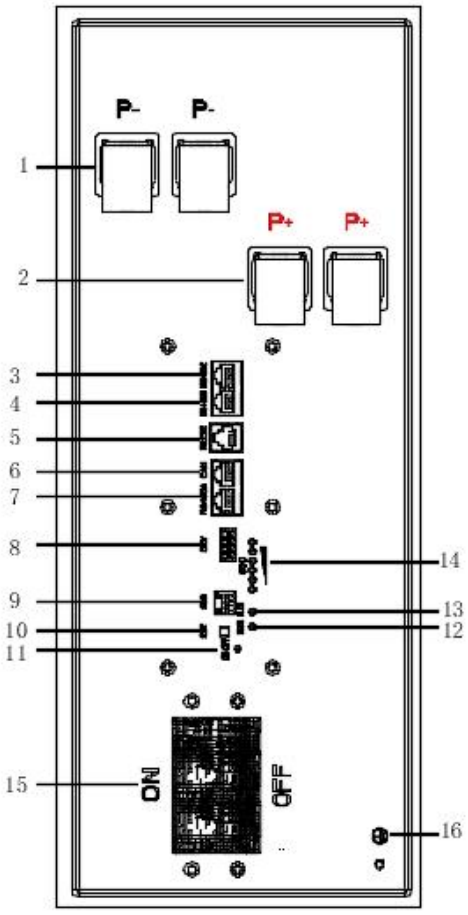
Do not install this product in areas prone to frequent flooding.

Do not install this product in areas with vibration.

- Do not install this product in locations 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



NO.	name	explain
1	P-	Battery Negative Terminal
2	P+	Battery Positive Terminal
3	RS485C	Parallel Communication Port
4	RS485B	Parallel Communication Port
5	RS232	232 Communication Port
6	CAN	Communicate with the
7	RS485A	Communicate with the
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

LED Status Indicator Light

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	

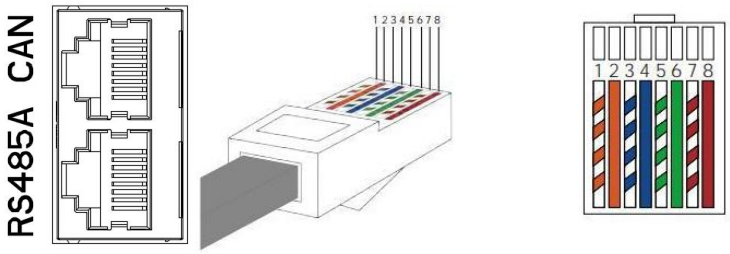
备注：当设备地址设置为0时做主机，最后一颗LED灯 L6闪烁。当设为其他值时做从机熄灭，从机和主机通信成功后闪烁

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 Definitions

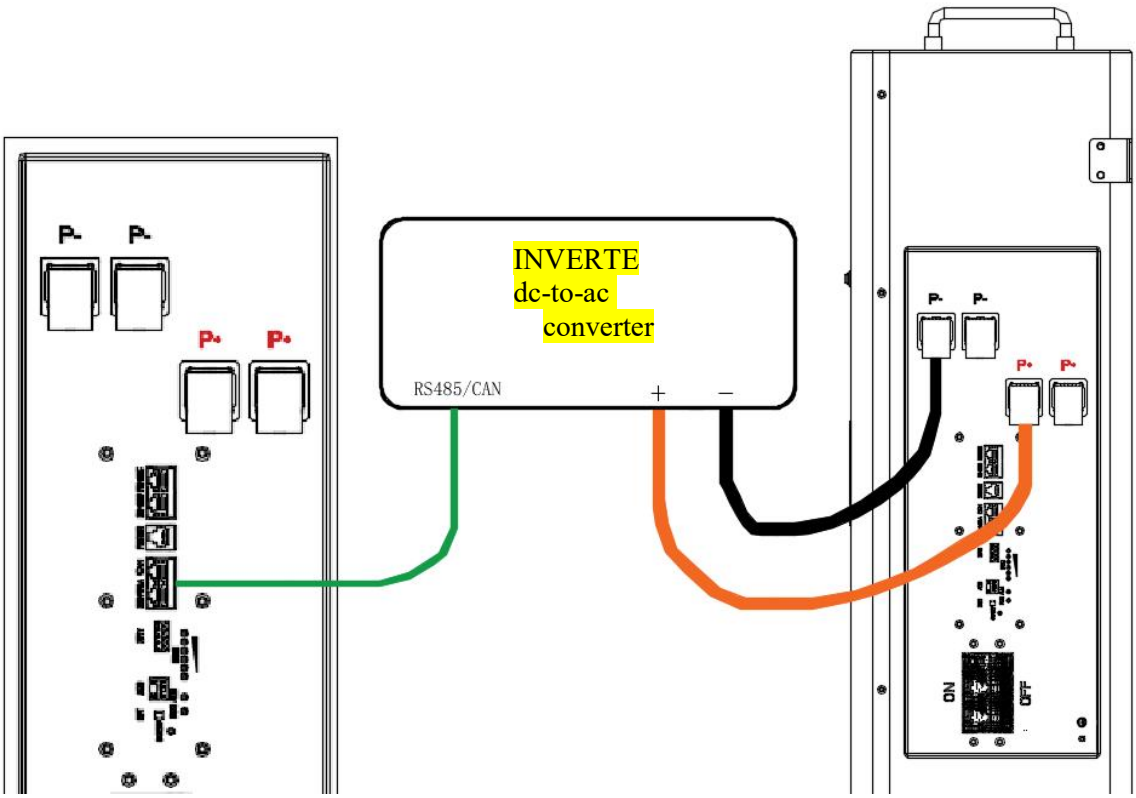


Pin Definitions

RS485A		CAN	
Pin	Elucidate	Pin	Elucidate
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 of connection to the inverter – Connection method



Battery cable connection

The battery's positive and negative terminals use M8 locking screw terminals, 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. Secure the screws between the inverter and battery terminals by applying 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 wire is connected to the battery's positive terminal.



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

Steps to disconnect a cable:

① Port Inverter Switch.

② Press the button to power off the battery.

③ Disassemble the negative cable of the battery terminal.

④ Disassemble the battery and connect the positive and negative cables.

⑤ Unplug the inverter's connection cables.

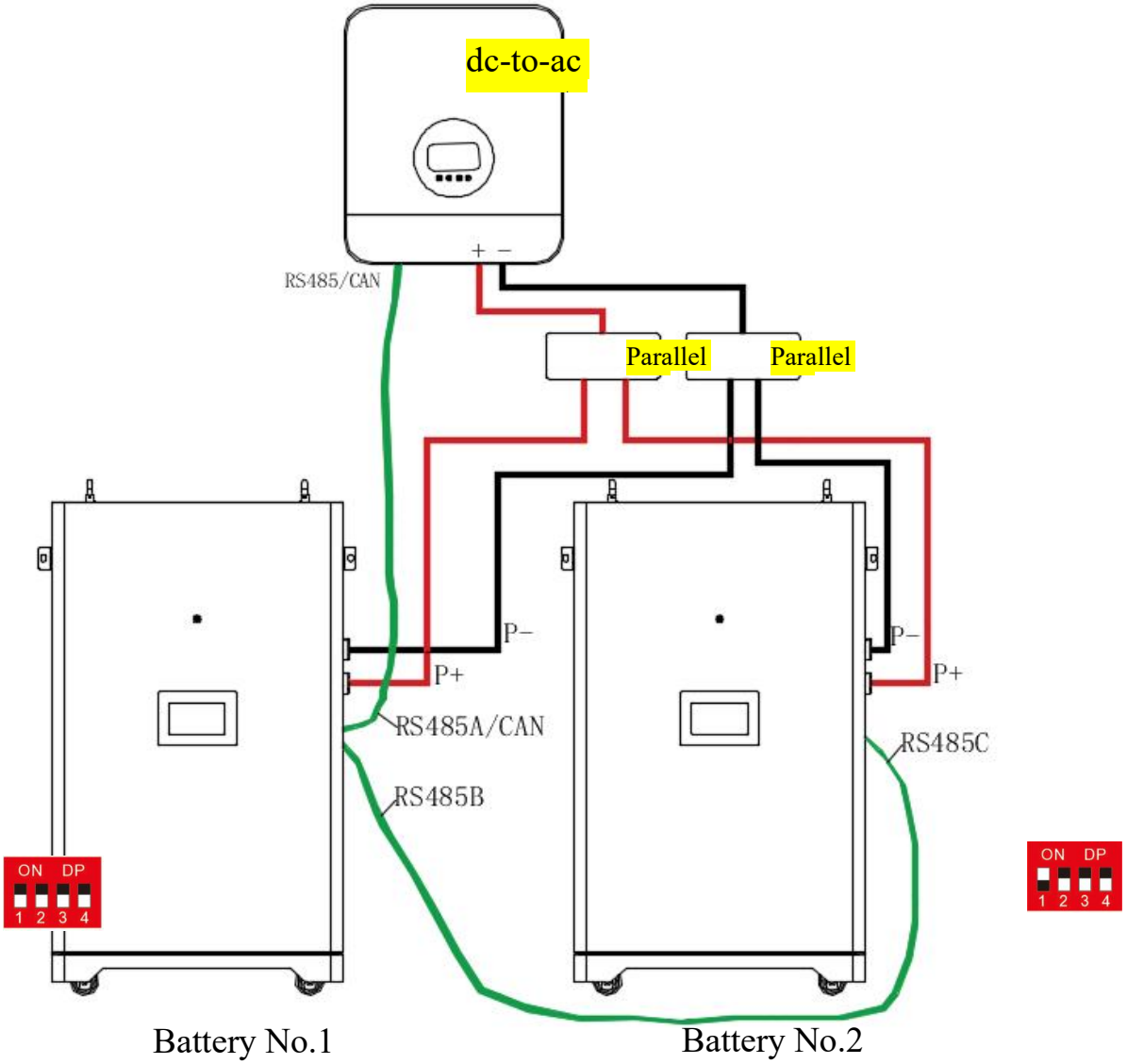


The installation and removal of cable lines shall be performed by qualified installers.



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

Battery Operation in Parallel Mode



Two batteries and one inverter.

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

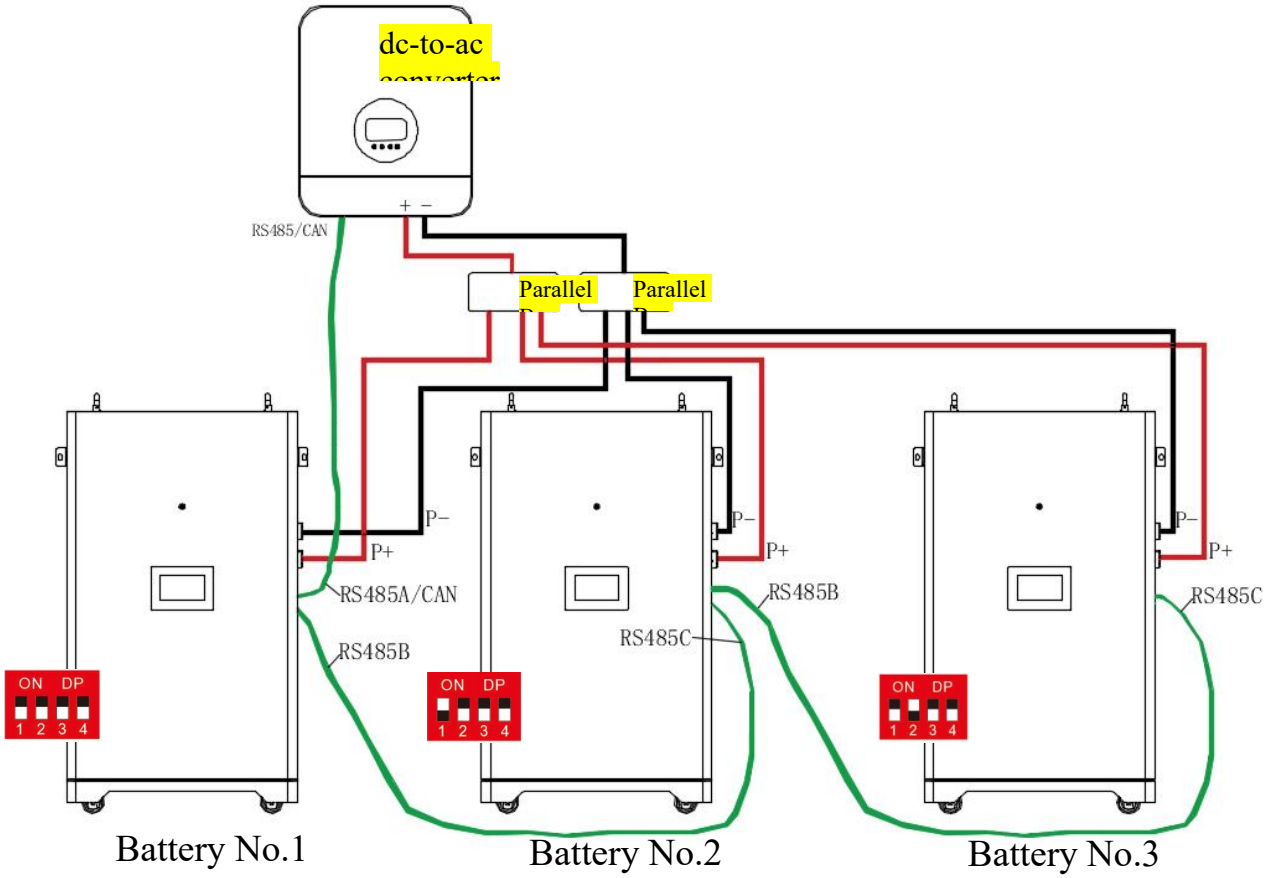
② Connect RS485A/CAN on Battery 1 to the inverter's RS485/CAN port.

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 dial switch of Battery 1 to "0".

⑥ Set the dial switch on 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 RS485A/CAN on Battery 1 to the inverter's RS485/CAN port.

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 dip switch of Battery 1 to "0".

⑦ Set the dial switch on Battery 2 to "1".

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

And compatible with various inverter brands.

The following inverter brands are 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					

Turn on and turn off



POWER

Startup Steps

① Ensure the cable is connected correctly.

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

③ Battery pack started.

Power Off Steps

① Turn on the battery pack's power switch and open the circuit breaker.

② Ensure 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 specific configurations determined by the model of inverter; different brands employ distinct interface definitions. Refer to the Interface Pin Definition Table for detailed pin specifications of these interfaces on the battery side.

move

Set the inverter according to its instruction manual. Once configured, it will provide control and monitoring capabilities. 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 to communicate with the battery and 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's terminal pin configuration is correct.

③ Check whether the dial code address on the battery is correct.

6. Connect via Bluetooth

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

First enable Bluetooth, then open the Bluetooth app and tap the icon in the top-left corner to scan a 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". The app will automatically save this password upon connection, so no re-entry is required for subsequent connections. Upon launching the app, tap the device in the list to initiate automatic pairing. In the pairing password entry interface, simply enter your login password to complete connection. You can then access the real-time status interface for monitoring, as shown below.



Device Scanning



Pairing Password Input Interface

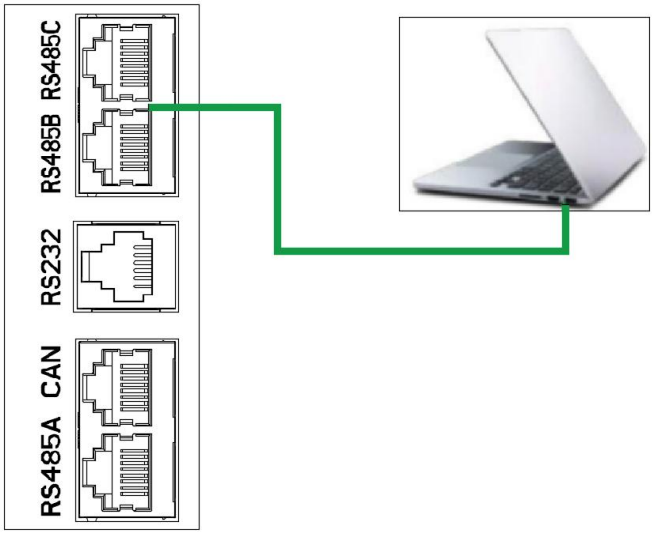


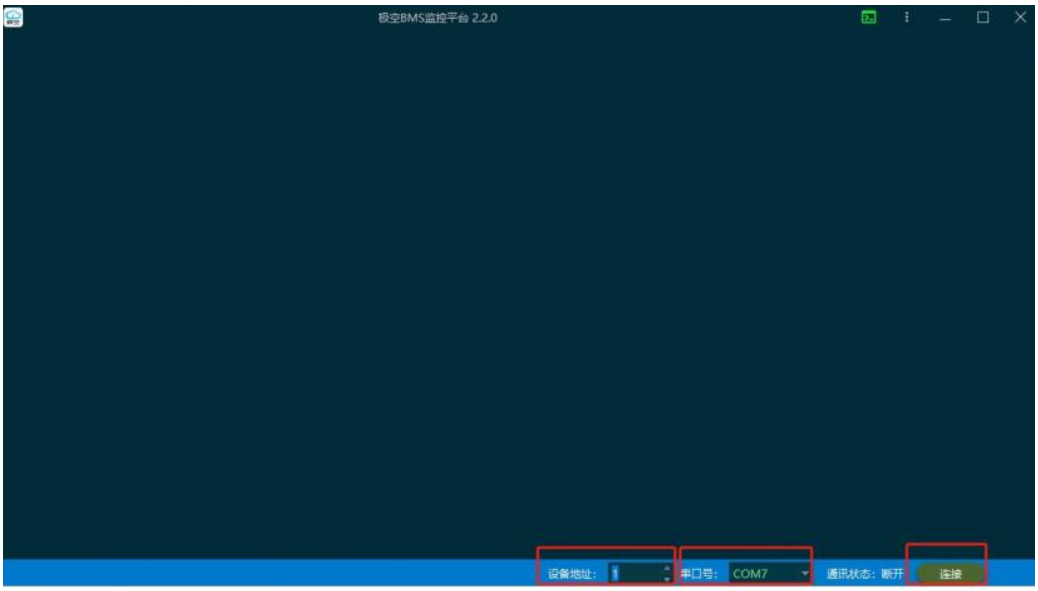
Real-time Status Display Interface

Real-time Status Display Interface

7. Connect to the host computer

Open the host 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 (also set the digital switch to 1) and select the corresponding serial port number, then click Connect to establish the connection and access the real-time status interface as shown below.

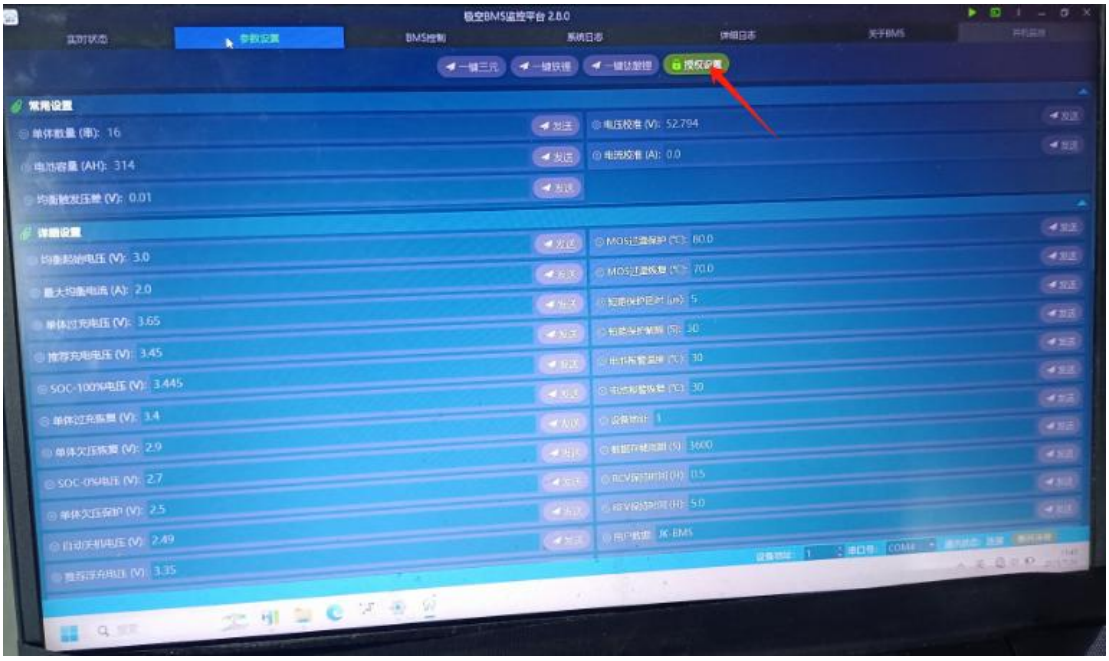

RS485C
RS485B
RS232
CAN
RS485A


极空BMS监控平台 2.2.0
设备地址:
串口号:
COM7
通讯状态: 断开
连接


实时状态
参数设置
BMS控制
系统日志
故障下载
关于BMS
极空BMS监控平台 2.2.0
主要参数
总电压 (27.58)
总电流 (0.0)
剩余电量
1.0%
运行时间
1时51分12秒
告警列表
1 请及时修改授权密码
2 温度传感器异常
电池状态
充电 开启
电池功率 0.0W
循环容量 0.0AH
功率温度 N/A
电池温度5 -200.0℃
应急时间 0S
放电 开启
电池容量 40.0AH
单体平均 3.448V
电池温度1 -200.0℃
加热电流 0.000A
故障记录 37
预充 关闭
剩余容量 0.4AH
最大压差 0.007V
电池温度2 N/A
加热状态 关闭
进入休眠时间 86400S
均衡状态 关闭
循环次数 0次
均衡电流 0.000A
电池温度4 -200.0℃
充电器状态 未插入
限流模块 关闭
单体电压
01 3.451V
03 3.448V
05 3.448V
07 3.448V
02 3.448V
04 3.448V
06 3.447V
08 3.445V
均衡线电阻
01 0.108Ω
03 0.206Ω
05 0.149Ω
07 0.154Ω
02 0.161Ω
04 0.143Ω
06 0.156Ω
08 0.127Ω
设备地址:
串口号:
COM7
通讯状态: 连接
断开连接

a. Real-time status page displaying battery voltage, charging current, abnormal alarms, battery status, and balancing cell 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"; it has now been changed to "888888".



8、How to handle emergencies

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

① First contact the fire department or other emergency services.

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



The following operations should only be performed under secure conditions.

In the event of a fire:

- Disengage the inverter switch button.
- Press the power button switch for the battery pack and open the circuit breaker.

- All input and output connections inside the power distribution box.

Odor or smoke:

- Disengage the inverter switch button.
- Press the power button switch for the battery pack and open the circuit breaker.
- All input and output connections inside the power distribution box.
- Ensure there is no electrical connection to the battery.
- Ventilate the room to eliminate odors and promptly contact company technical staff for assistance.

The battery is producing abnormal noise:

- Disengage the inverter switch button.
- Press the power button switch for the battery pack and open the circuit breaker.
- All input and output connections inside the power distribution box.
- Ensure 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 long-term storage is required, please refer to the storage requirements in the table below.

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

If Prompt the battery has been stored for more than 3 months, recharge it every 3 months. If the battery becomes depleted or unusable due to prolonged disuse and lack of charging, our company shall not provide after-sales support.

APP install

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