JK-PB BMS Manual

JKBMS

2024年1月10日

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Catalog

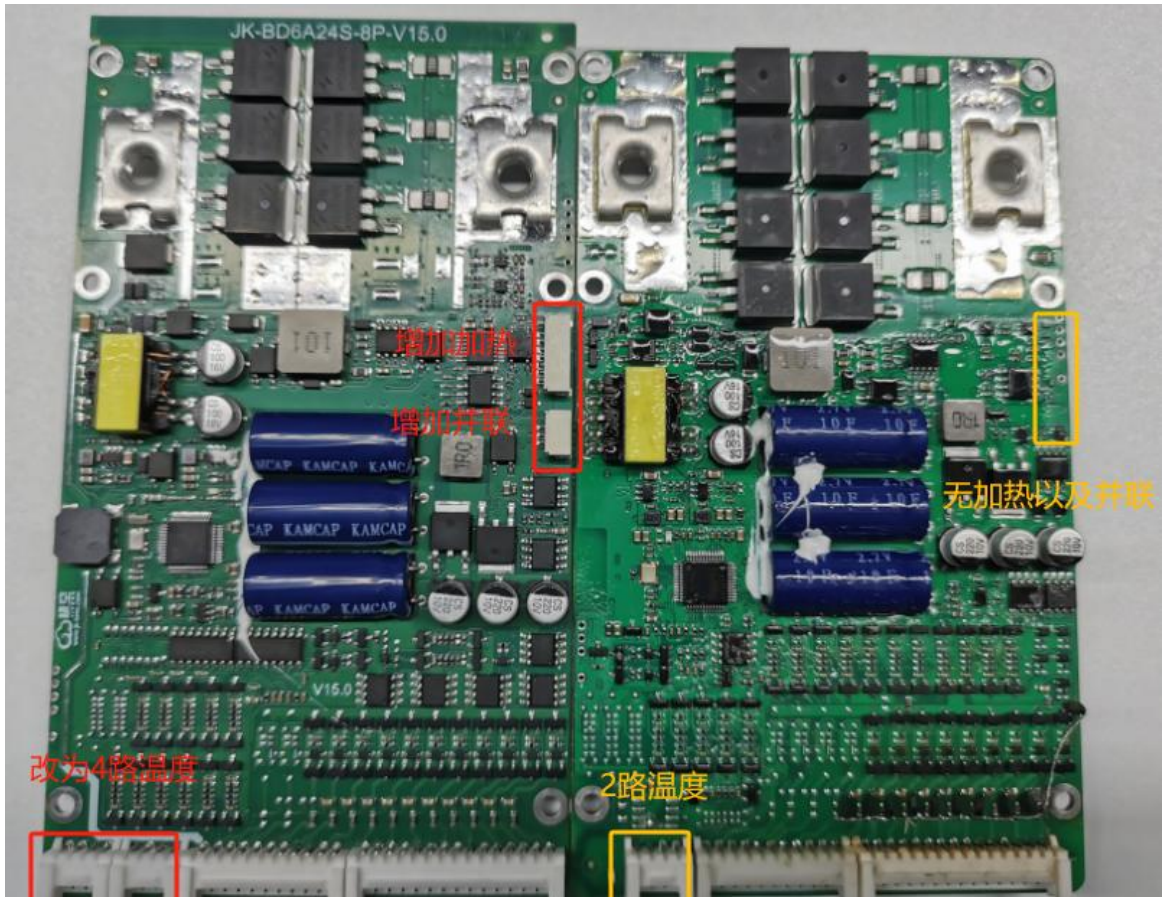
1

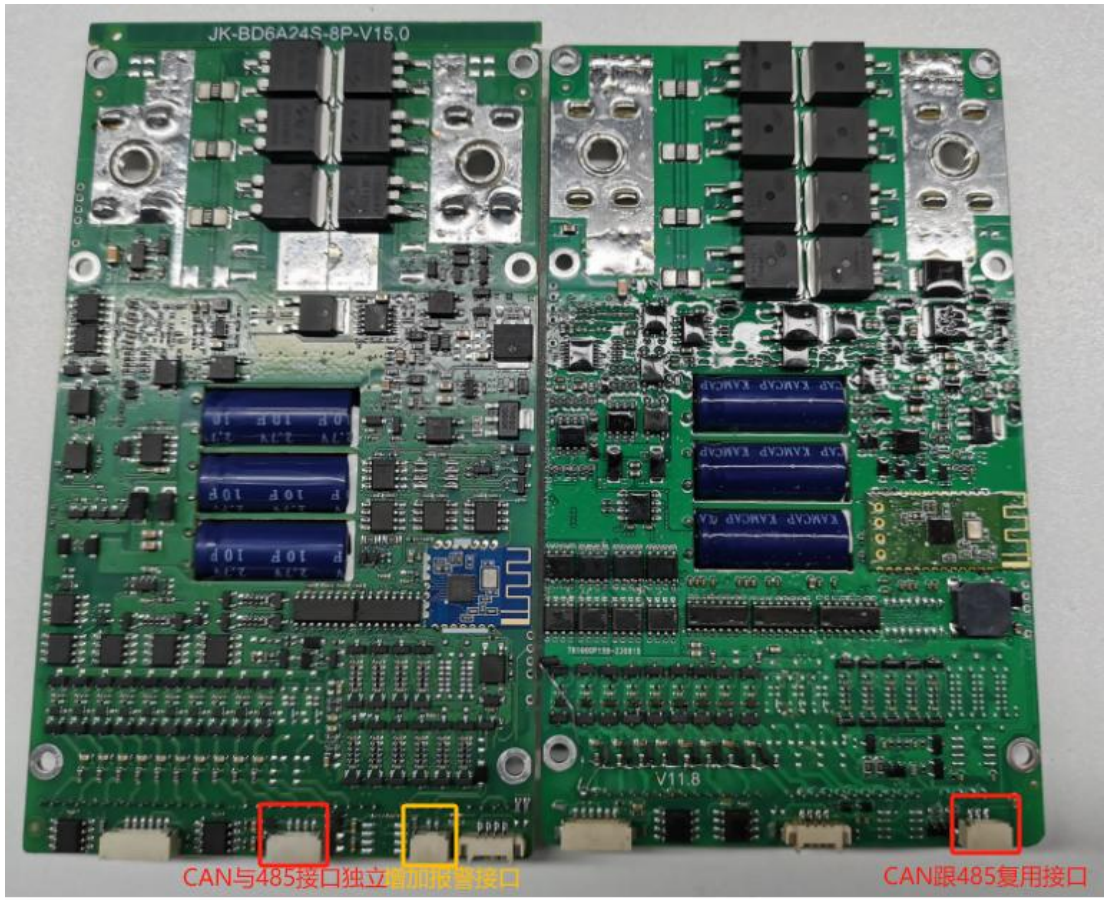
V15 New Features

❖ Upgrade items of V15 BMS compared to V11 BMS

Version	GPS interface	Temperature collection	LCD interface	Heating function	CAN&RS485	Alarm function	Parallel function
V11	support	2cable	support	some have	pick one of two	not support	not support
V15	support	4cable	support	all support	all can be use in same time	all support	all support

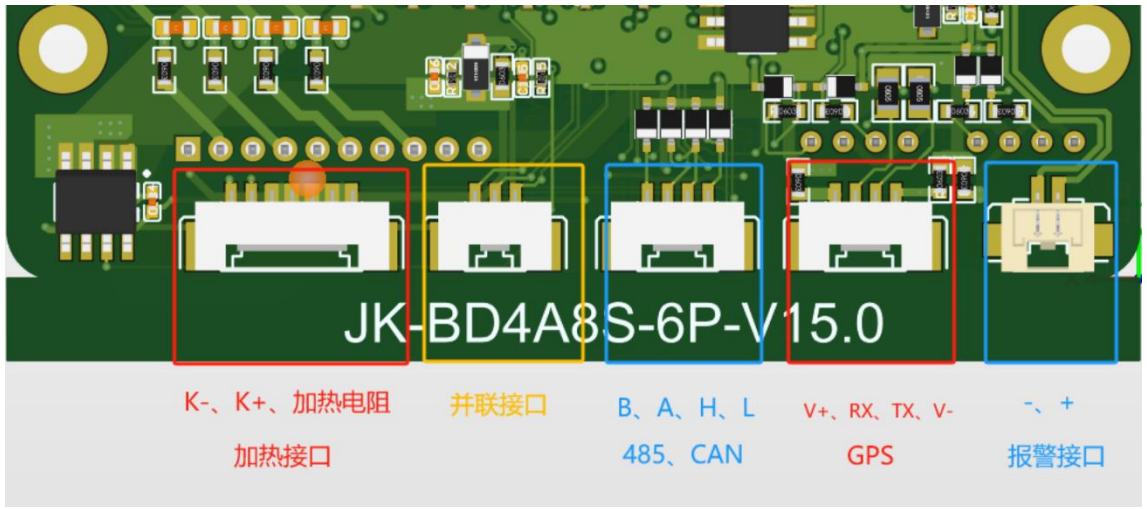
❖ Upgrade items of V15 BMS compared to V11 BMS（sample by 6P）



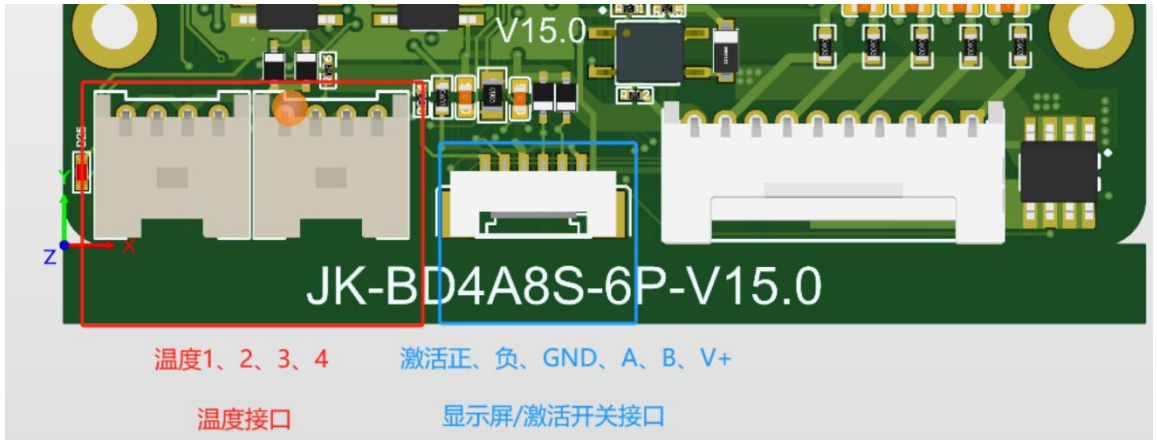


❖ Interface definition comparison

V15背面



V15正面



V11

2

ESS BMS

1.ESS BMS Wiring

2.Communication RS485 CAN

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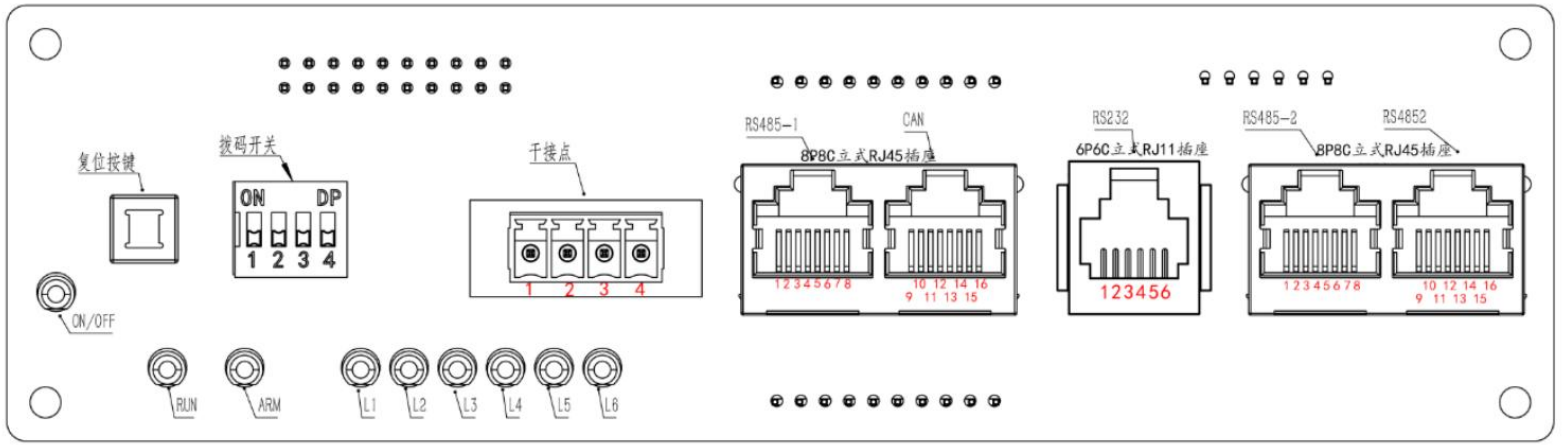
❖ Adpater board definition



干接点接口定义

引脚序号	引脚定义	备注
1	COM1	有告警状况下 S1 和 COM1 导通
2	S1	
3	COM2	低电量状况下 S2 和 COM2 导通
4	S2	

CAN 和 RS485-1 接口定义

RS485-采用 8P8C 立式 RJ45 插座		CAN-采用 8P8C 立式 RJ45 插座	
引脚序号	引脚定义	引脚序号	引脚定义
1、8	RS485- B1	9、10、11、14、16	NC
2、7	RS485-A1	12	CANL
3、6	GND	13	CANH
4、5	NC	15	GND

RS232 接口定义

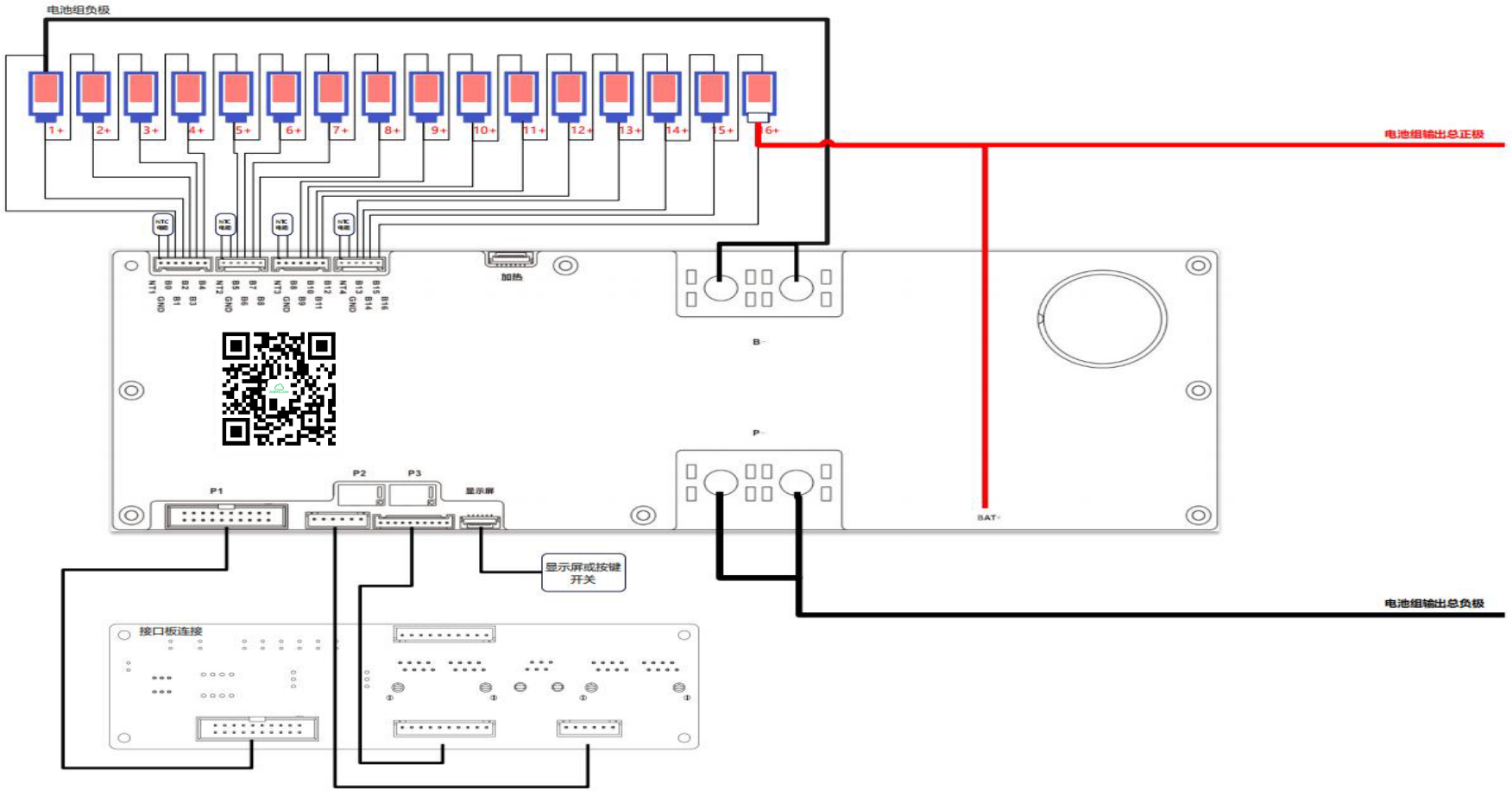
RS232-采用 6P6C 立式 RJ11 插座		
引脚序号	引脚定义	备注
1、2、6	NC	
3	RS232_TX	
4	RS232_RX	
5	GND	

RS485-2 并联接口定义

RS485-采用 8P8C 立式 RJ45 插座		RS485-采用 8P8C 立式 RJ45 插座	
引脚序号	引脚定义	引脚序号	引脚定义
1、8	RS485- B2	9、16	RS485-B2
2、7	RS485-A2	10、15	RS485-A2
3、6	GND	11、14	GND
4、5	NC	12、13	NC

ESS BMS WIRING

JK-PBxA16S-10P/15P/20P Active balance BMS Wiring Diagram



❖ Batteries in parallel

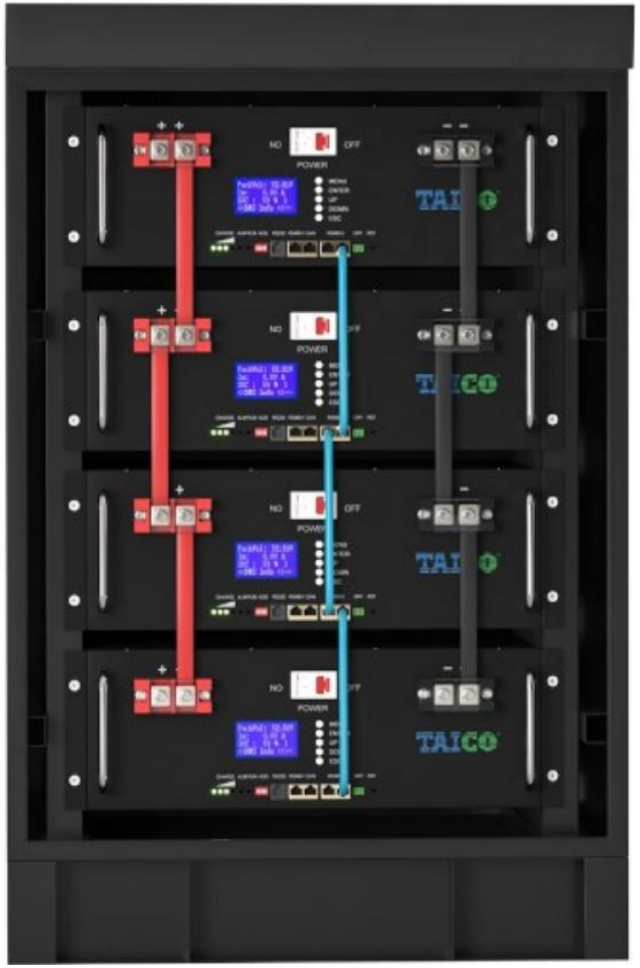


图1

1.Batteries in parallel， + to +， - to -；

2.Each battery pack previously communicated through the RS485-2 interface， In a parallel battery pack system, one and only one master is required (the device address is set to 0), the rest are slaves and the addresses of the slaves cannot be the same.

ESS BMS Address settings

ESS BMS Address settings：

1.ESS BMS adpater broad（picture 1）have 4 DIP switches for setting device address；

2.ON means open， OFFmeans close；

3.The actual corresponding address values of 1, 2, 3, and 4 on the DIP switch are 1, 2, 4, and 8; then add the values dialed to the ON position to calculate the device address.， picture2；

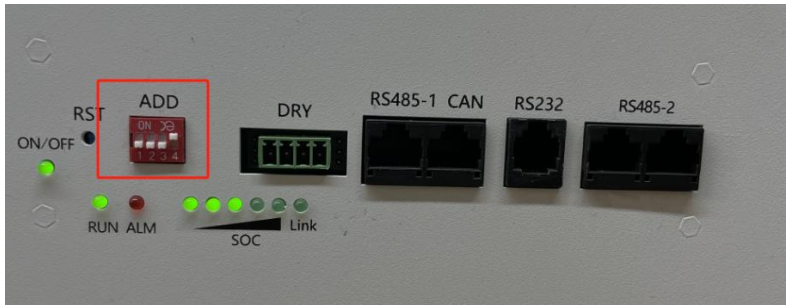
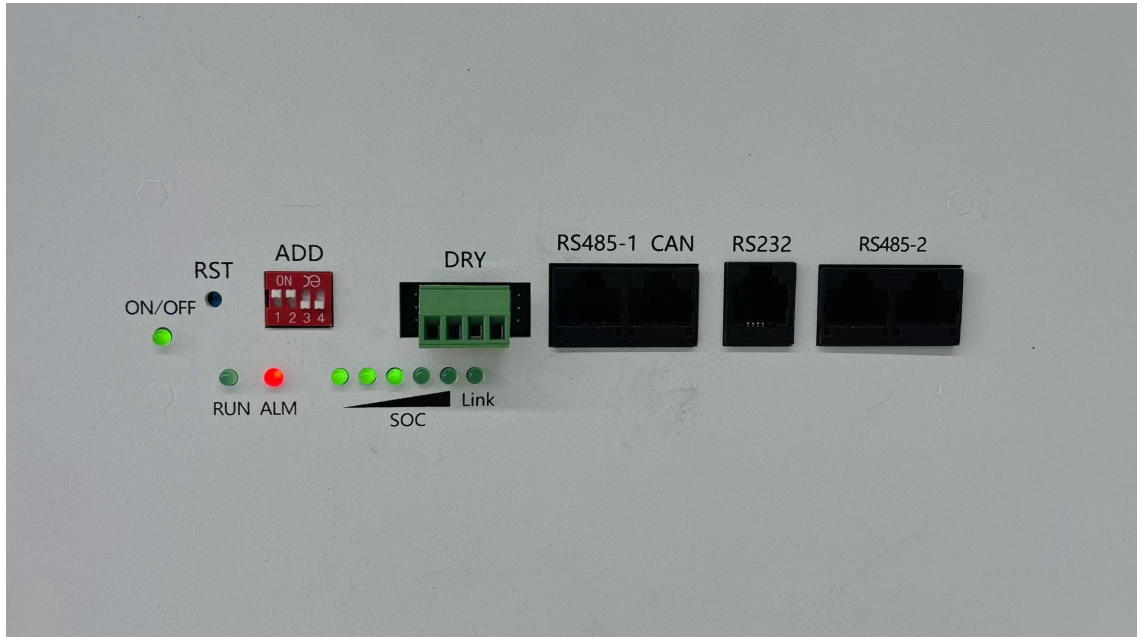


图1

地址	拨码开关位置			
	1	2	3	4
0	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	OFF	ON	OFF
5	ON	OFF	ON	OFF
6	OFF	ON	ON	OFF
7	ON	ON	ON	OFF
8	OFF	OFF	OFF	ON
9	ON	OFF	OFF	ON
10	OFF	ON	OFF	ON
11	ON	ON	OFF	ON
12	OFF	OFF	ON	ON
13	ON	OFF	ON	ON
14	OFF	ON	ON	ON
15	ON	ON	ON	ON

图2

❖ Adpater broad



ON/OFF： Power Indicator；

RST： Reset button, after clicking, BMS will restart；

ADD： BMS address setting；

RUN： Indicates that the BMS is running normally；

ALM： Fault indicator light, only system faults do not include user-defi

SOC： Light up the indicator light；

Link： When connected in parallel, the host and slave will flash after successful communication；

DRY： Dry node, used by customers to connect some external alarm equipment；

CAN： CAN communication interface；

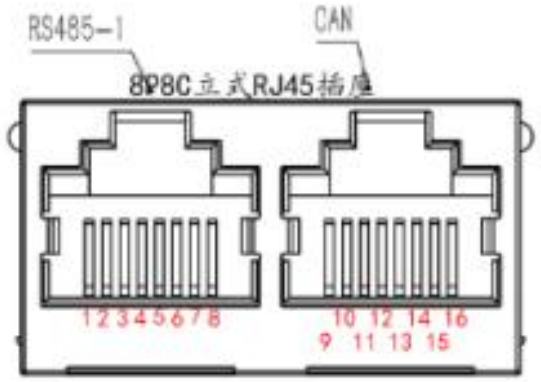
RS232： RS232 communication interface；

RS485-1： RS485 interface to communicate with the inverter, optional

RS485-2： RS485 interface, communication interface during parallel op

ESS BMS COMMUNICATION

BMSCommunication interface definition：



CAN 和 RS485-1 接口定义

RS485-采用 8P8C 立式 RJ45 插座		CAN-采用 8P8C 立式 RJ45 插座	
引脚序号	引脚定义	引脚序号	引脚定义
1、8	RS485- B1	9、10、11、14、16	NC
2、7	RS485-A1	12	CANL
3、6	GND	13	CANH
4、5	NC	15	GND


14:15
运行时间：48天18时35分59秒
一键三元
一键铁锂
一键钛酸锂
修改设置密码
设备地址: 0
数据存储周期(S): 864000 设置
RCV保持时间(H): 12.0 设置
RFV保持时间(H): 12.0 设置
用户数据: Input Userdat 设置
用户数据2: Input Userdat 设置
串口1协议: 0 设置
串口2协议: 11
CAN协议: 10 设置
显示器报警触发源: 0 设置
显示器报警触发值: 0 设置
显示器报警恢复值: 0 设置
干节点1触发源: 0 设置
干节点1触发值: 0 设置
实时状态
参数设置
BMS控制


14:15
运行时间：48天18时35分59秒
一键三元
一键铁锂
一键钛酸锂
修改设置密码
设备地址: 0
选择串口协议
000 - 4G-GPS远程模组通用协议V2.4
001 – 极空BMS RS485 Modbus通用协...
002 – 小牛U系列通用协议
003 – 铁塔换电柜通用协议V1.1
004 – 沛城RS485 Modbus V1.3
005 – 派能低压储能RS485协议V3.3
006 – 古瑞瓦特RS485通信协议_1xSxx...
007 – 日月元逆变器与485通信协议20...


14:16
运行时间：48天19时35分11秒
一键三元
一键铁锂
一键钛酸锂
修改设置密码
数据存储周期(S): 864000 设置
RCV保持时间(H): 12.0 设置
选择CAN协议
000 – 极空BMS CAN接口协议(250K)V...
001 – 德业低压储能CAN通信协议 V1.0
002 – 派能低压CAN通信协议V1.2
003 – 古瑞瓦特低压CAN通信协议REV...
004 – 维克多_CAN通信协议I_20170717
005 - SEPLOS_CAN通信协议_V1.0
006 – 极空BMS CAN接口协议(500K)V...
007 – 英威腾低压版BMS通信协议V1.02

❖ Current limiting module

ESS BMS Current limiting function：

1.The current limiting function is mainly used to balance the voltage between battery packs when connected in parallel；

2.The current limit is 10A；

3.The triggering conditions of the current limiting module (the charging prohibition current limiting needs to be turned off, as shown in Figure 1) are charging overcurrent and charging short circuit protection.；

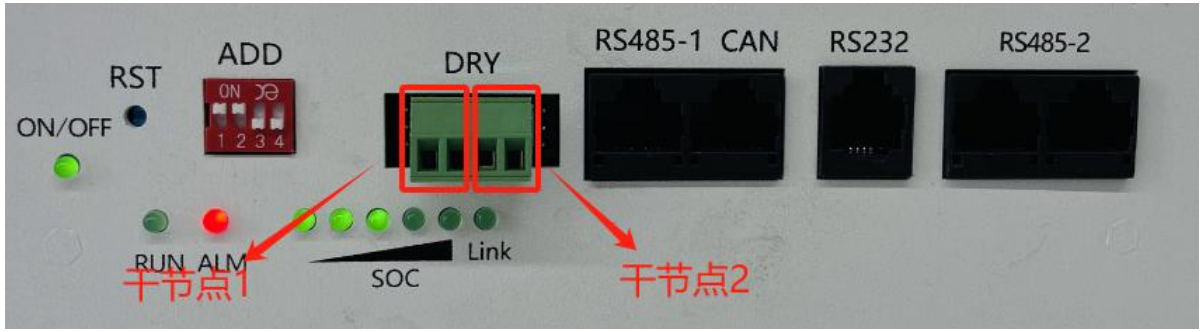
4.The end condition is that the current limit size is less than 5A；

图1

❖ Dry contact trigger source and display alarm

图1

图2



Dry contact function：

1.Users can connect external alarm equipment (picture 3), such as LEDs, buzzers, etc；

2.Some alarm function settings can be customized (such as low battery, battery overvoltage, cell overvoltage, etc， picture2）；

Monitor alarm：

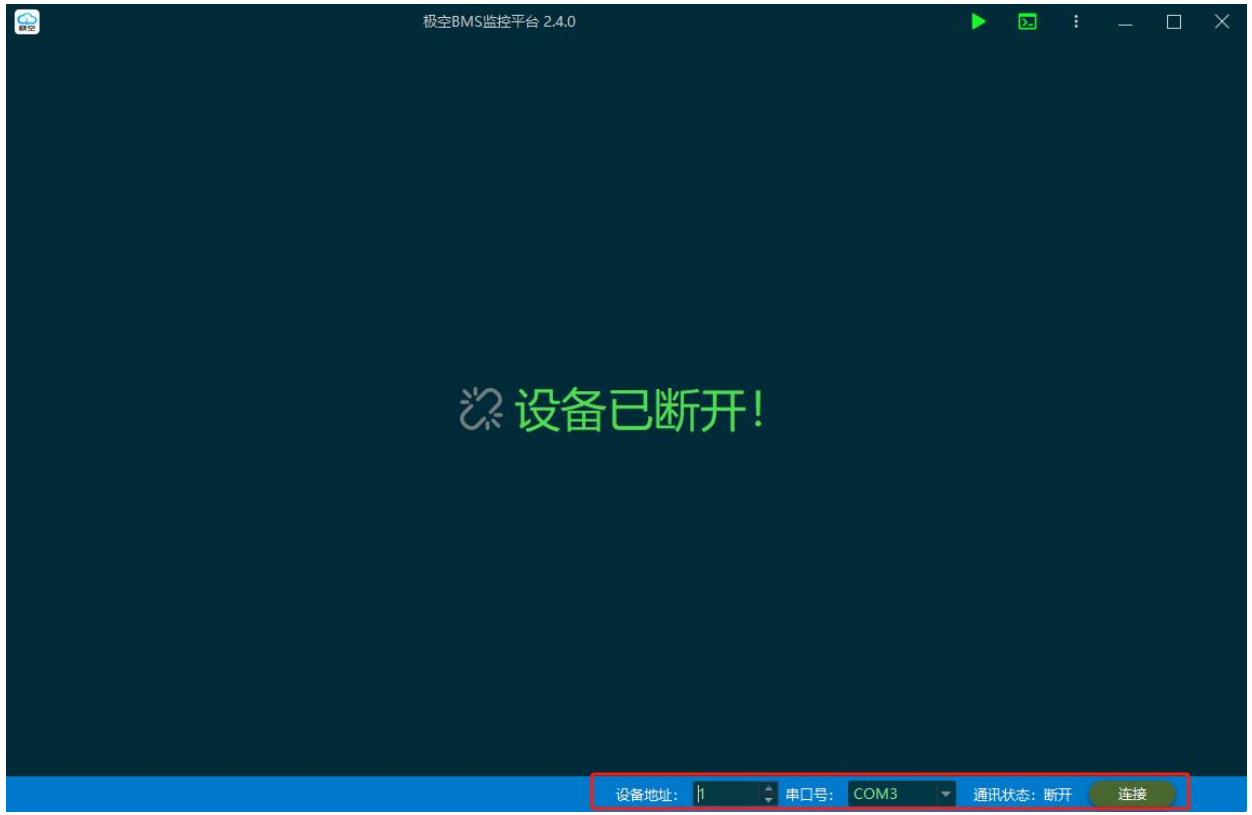
The display alarm is similar to the dry node, and the user can define the alarm function by himself， Then alarm through the buzzer on the display；

3

PC SOFTWARE

- Use of PC software
- BMS firmware upgrade

❖ pc software connect



Steps to Connect Devices：

1.Use USB to RJ45 cable to connect ESS BMS and computer；

2.

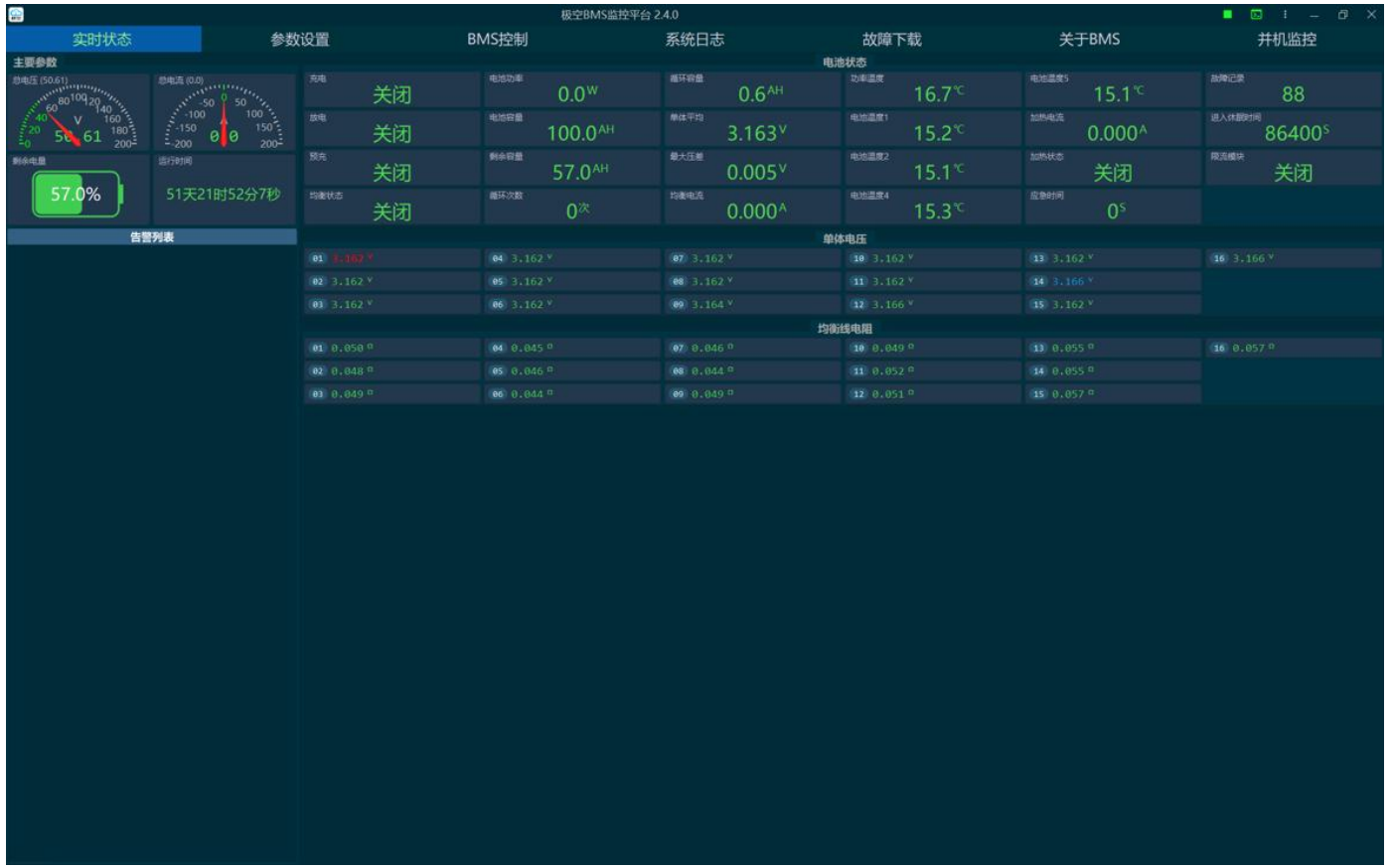
Set the upper computer device address to the energy storage BMS dialing address；

3.Select the corresponding port number；

4.Just click to connect；

❖ Real time status

In the real-time status interface, you can see real-time information related to the battery, such as battery voltage, current, SOC, cell voltage, etc.（as the picture show）；



Parameter settings

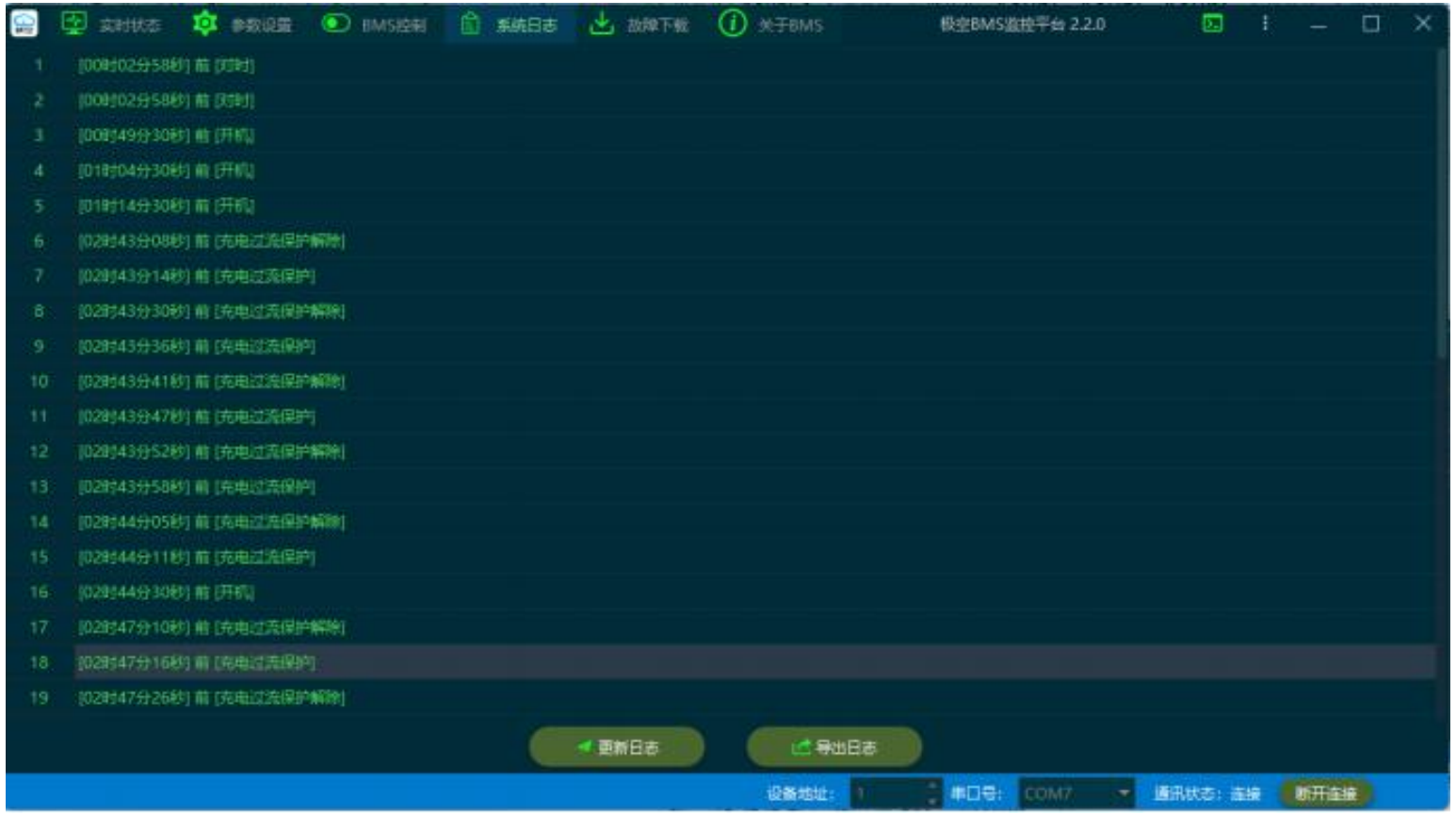
In the parameter setting interface, parameters such as the number of battery strings, cell overvoltage, cell undervoltage, charging overcurrent, and discharging overcurrent can be set, but an authorization password is required. The default is 123456；

BMS control

In the control interface, you can control the battery charging switch, discharge switch and other control operations. The default authorization password is 123456；

❖ System log

On the system log page, the "Update Log" button can update the BMS internal logs to the host computer for display. The Export Log button can export all current logs to a designated folder on the computer in the format of xlsx, which can be viewed using excel and other software.。

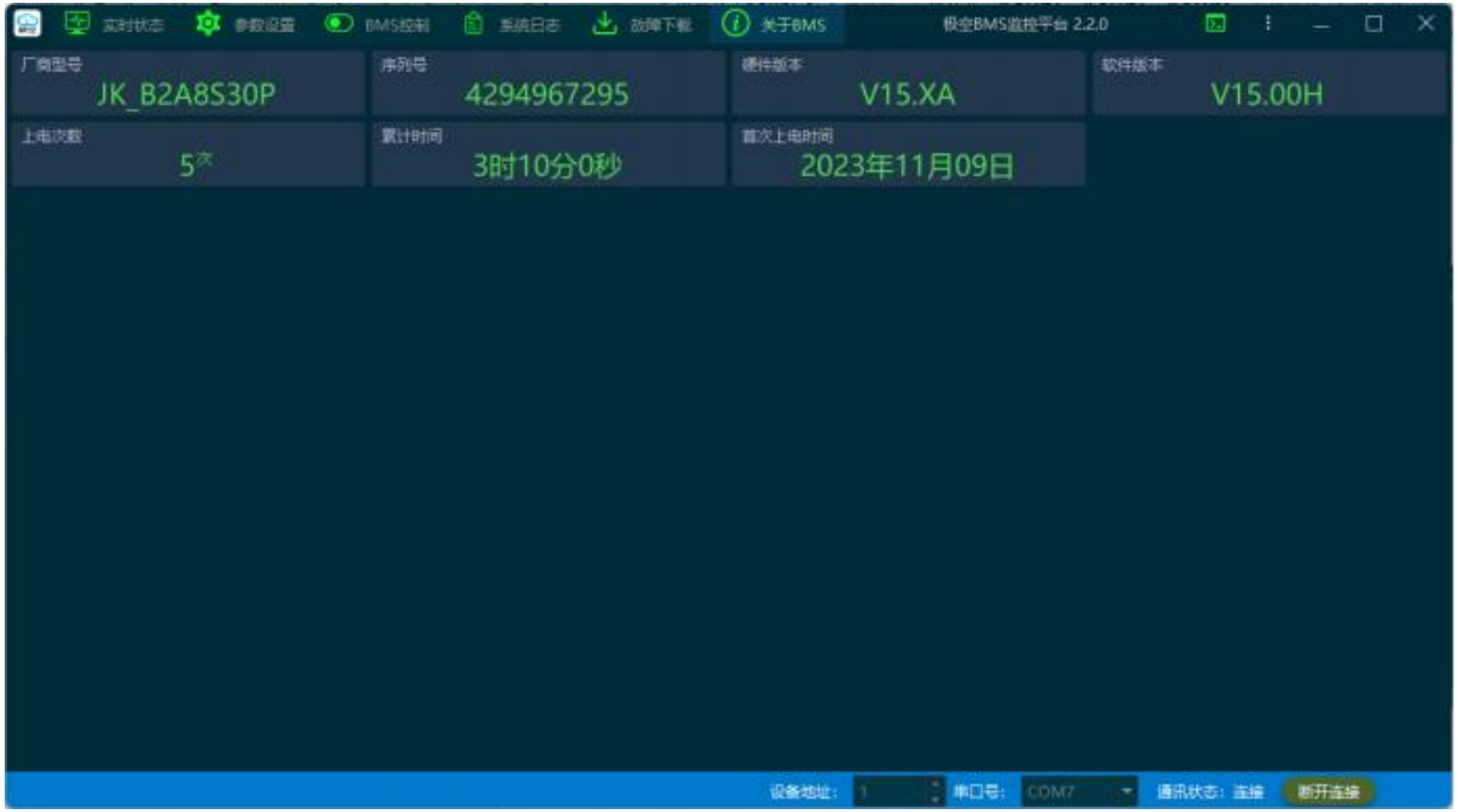


❖ Faulty download

On the fault download page, the "Fault Download" button can update the BMS internal fault log to the host computer for display. The "Export Fault" button can export all currently displayed fault logs to a designated folder on the computer in the format of xlsx, using software such as excel. Available to view。

About BMS

About BMS page, showing basic information of the product: model, hardware version, software version, power-on time and other information。



❖ Parallel monitoring

On the parallel monitoring page, you can view relevant information such as real-time parameters and configuration parameters of the host and each slave.；

Real-time data logging

1.Click the triangle icon in the upper right corner. If it changes to a square, it will start to save real-time information and generate an Excel file.;

❖ Real-time data logging

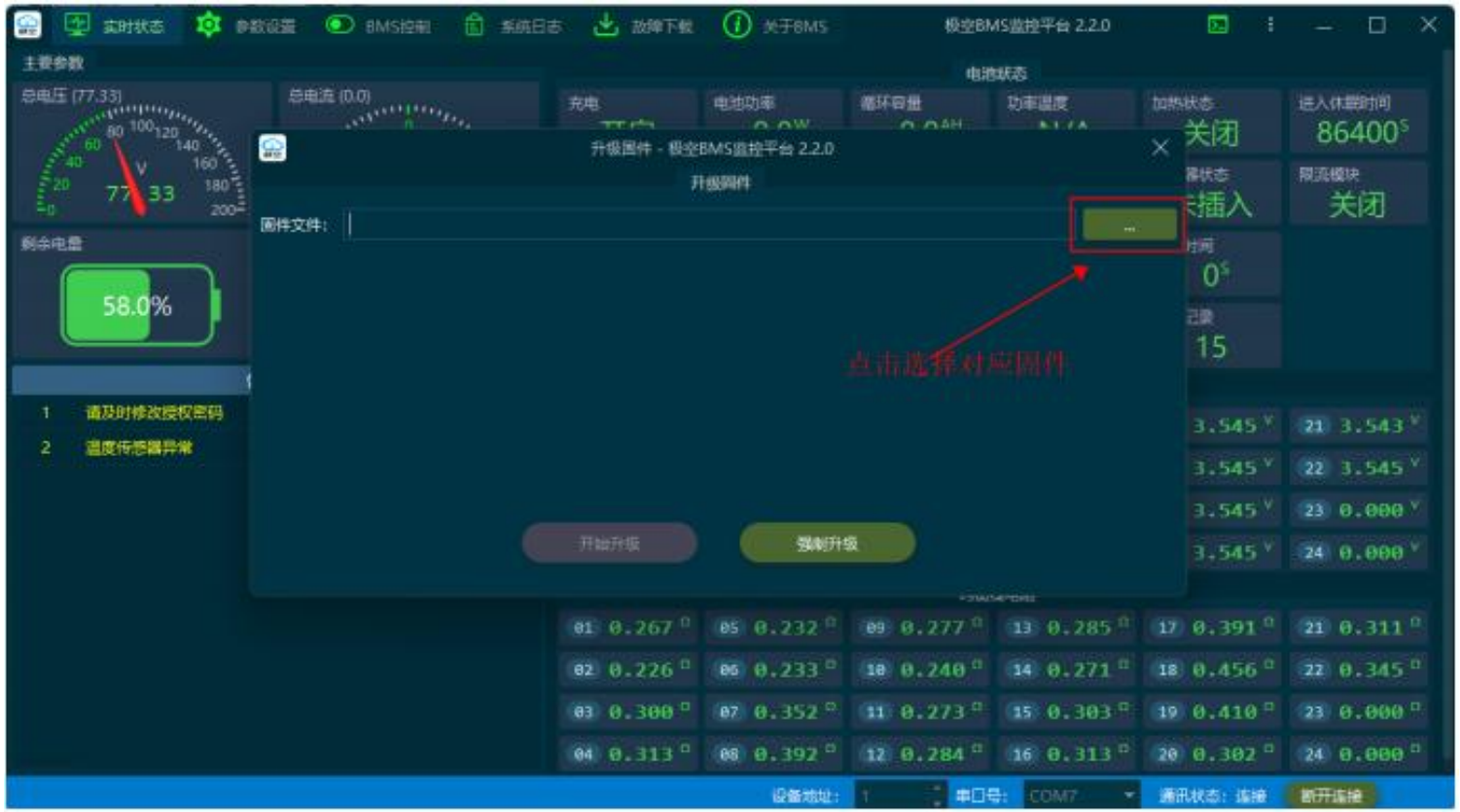
2.The save path can be set in the picture below. Click the three dots in the upper right corner and then set the button to see；

❖ Upgrade firmware

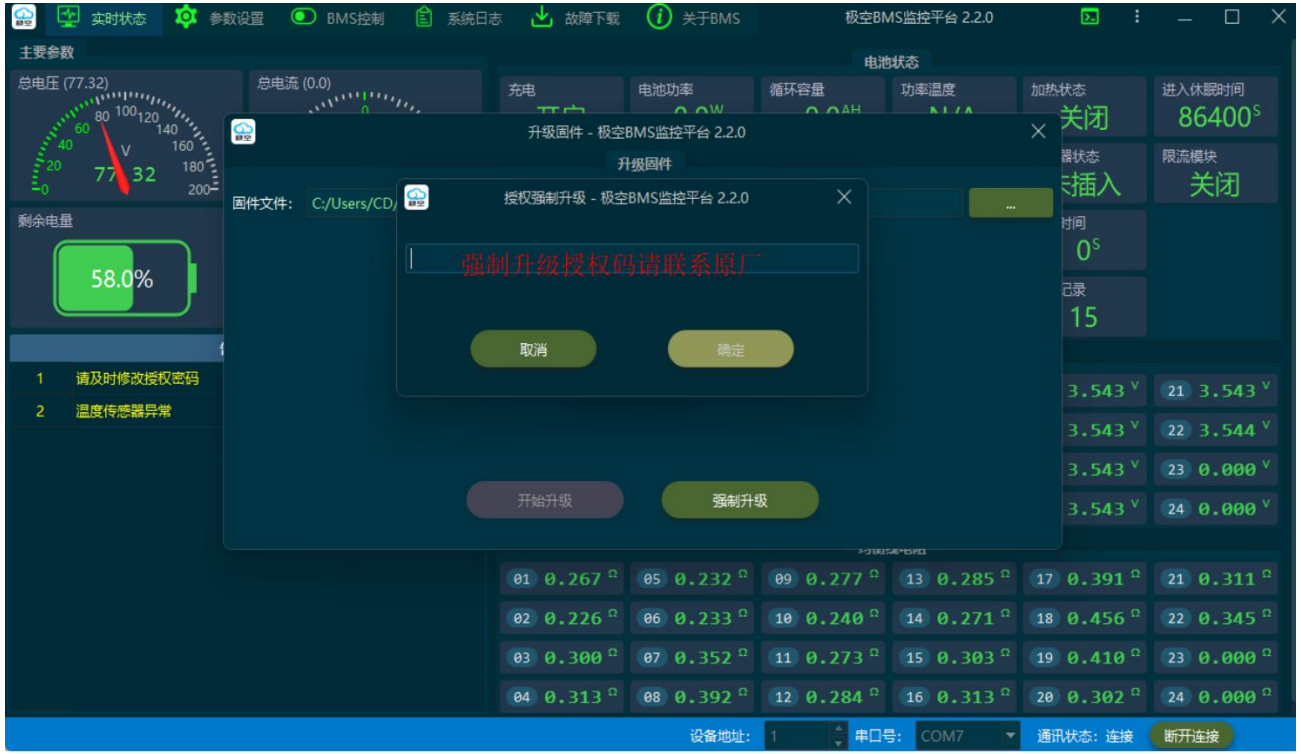
1.Firmware upgrade function. When upgrading firmware, BMS needs to be set as a slave (the address cannot be 0) and cannot communicate with other BMS hosts.；

❖ Upgrade firmware

2.Then click on the three-point mutation in the upper right corner of the host computer, click "Upgrade Firmware", select the corresponding firmware, click Start Upgrade to start the upgrade normally, and the end of the progress bar indicates that the upgrade is completed.。



❖ Forced upgrade



1.Click on the three point mutations in the upper right corner of the host computer ;

2.Click "Upgrade Firmware", select the corresponding firmware, and click Force Upgrade;

3. Fill in the authorization code (please contact the original manufacturer if you need an authorization code);

4.The end of the progress bar indicates that the upgrade is completed.

❖ Upgrade failed

What to do after an upgrade fails：

1.Repeat the forced upgrade operation；

2.Keep pressing the activation switch (as shown in Figure 1) or the display switch (as shown in Figure 2)；

3.Press the reset switch RST (as shown in Figure 3) and release it；

4.Wait for the progress bar to end, indicating that the upgrade is complete.；

图1

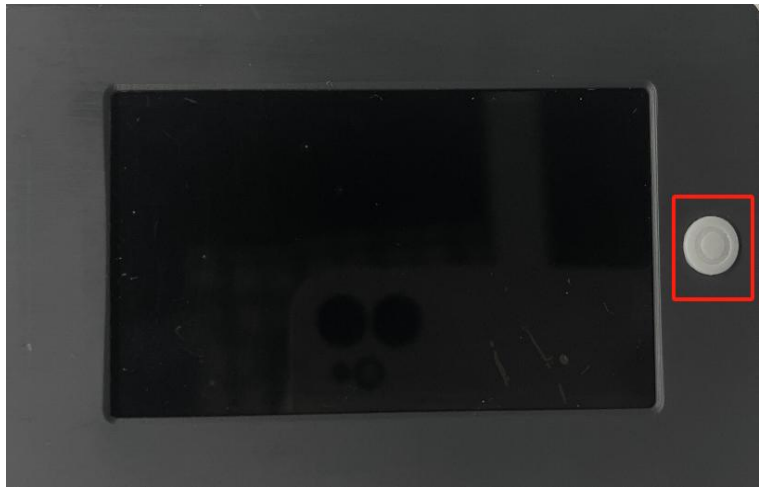


图2

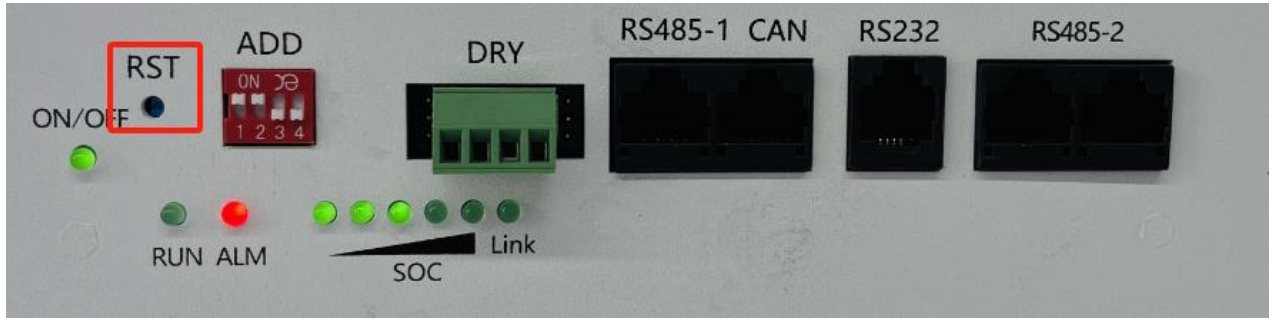


图3

3

Inverter

Inverter wiring

Inverter settings

❖ Inverter introduction

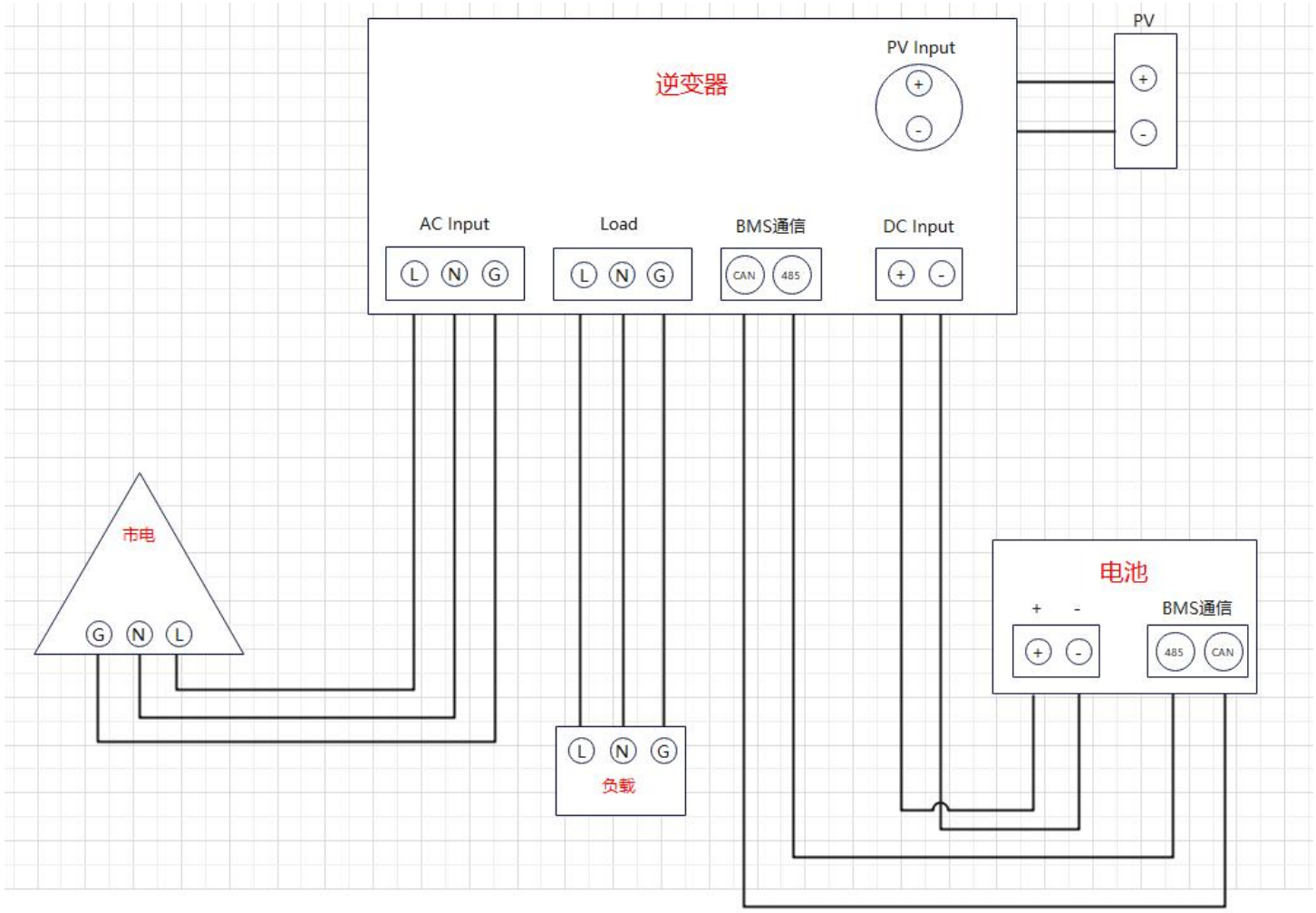
The main function of inverter wiring:

1.Alternating current (AC) to direct current (DC), convert the mains power into direct current through the inverter and store it in the battery;

2.Direct current (DC) to alternating current (AC), convert the direct current stored in the battery into alternating current for household electricity consumption;

3.Direct current (DC) to direct current (DC), storing the electrical energy generated by photovoltaics into batteries;

❖ Inverter wiring



Main components of inverter wiring：

1.Battery

2.load

3.photovoltaic

4.Mains power

Inverter settings

目前适配的逆变器需要设置的品牌：

1.德业 (Deye)

2.古瑞瓦特(Growatt)

3.日月元(Voltronic)

4.硕日(SRNE)

5.美世乐(MUST)

6.固德威(GoodWe)

目前适配的逆变器不需要设置的品牌：

1.英威腾(INVT)

2. 维克托(Victron)

不确定：

1.SMA

2.派能(Pylon)

❖ 德业 (Deye)parameter settings

Inverter setup steps：

1.Go to the settings page (Figure 1)

2.Click on Battery Setting and set it to Lithium (Figure 2)；

3.Click Advanced Function and set BMS _Err_Stop (Figure 3);

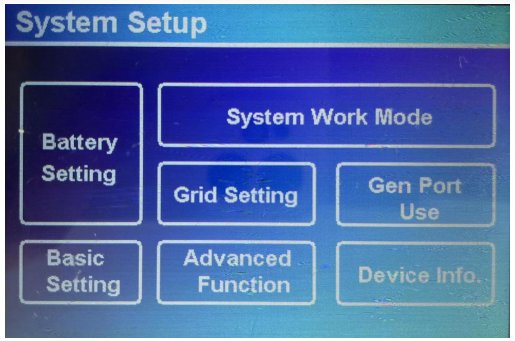


图1

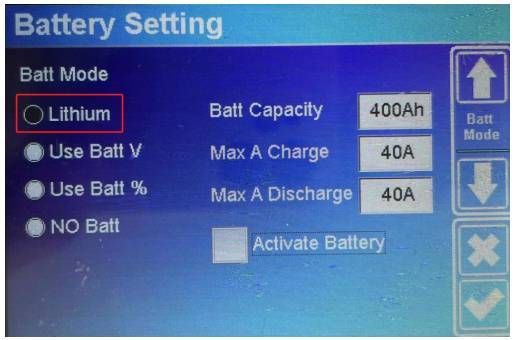


图2

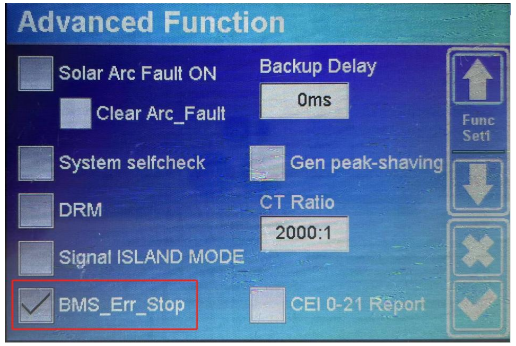


图3

❖ 古瑞瓦特(Growatt)parameter settings

Inverter setup steps:

1. Press and hold the Enter key to enter setting mode

2. Set item 05 to LI (as shown in Figure 1);

2. After successful setting, it will jump to item 36;

3. If RS485 communication is used, set item 36 to L01 (as shown in Figure 2); if CAN communication is used, set item 36 to L51 (as shown in Figure 3);

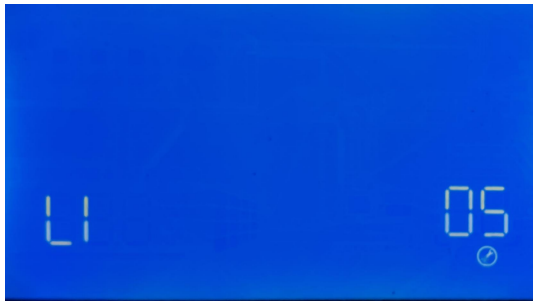


图1

图2

图3

❖ 日月元(Voltronic)parameter settings

Inverter parameter settings:

1. Press and hold the SET button to enter the setting page;

2. Set item 05 to LIB, as shown in Figure 1

图1

- 固德威(Goodwe)参数设置

❖ 硕日(SRNE)parameter settings

Inverter parameter settings:

1. Press and hold the SET button to enter the setting page;

2. Set 32 items into BMS, as shown in Figure 1;

3. Set item 33 to WOW, as shown in Figure 2;

4. Set 39 items to BMS, as shown in Figure 3；

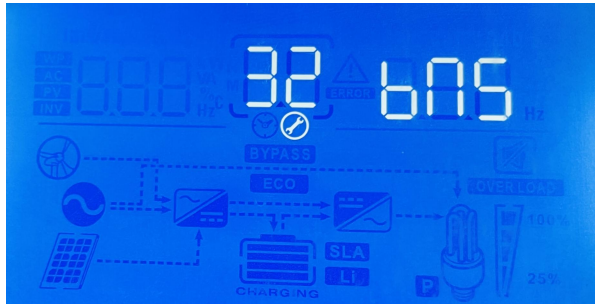


图1

图2

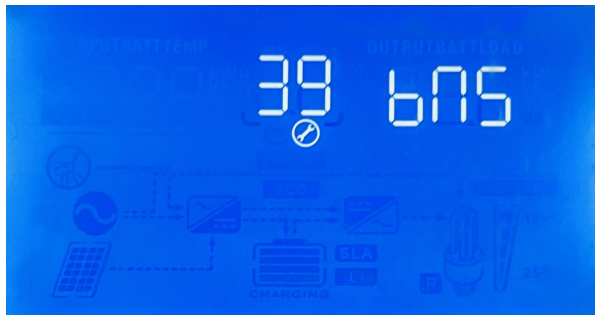


图3

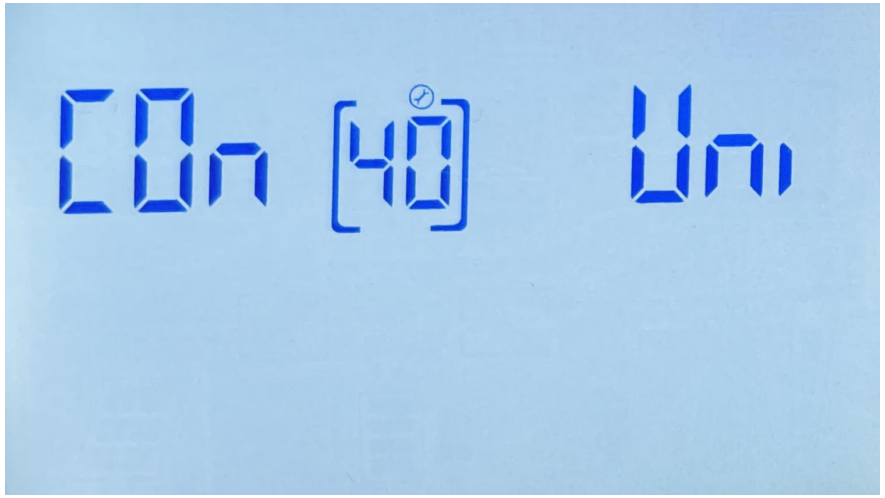
❖ 美世乐(MUST)parameter settings

Inverter setup steps:

1. Press and hold the Enter key to enter the settings page

2. Use the Enter key to switch between 40 items;

3. Set the setting items as shown in the picture, otherwise blind charging will be performed according to the inverter settings;



Thank you