

Lithium-ion battery pack system

锂离子电池组系统

User Manual

用户手册

51.2V300Ah- 15.36KWh
51.2V320Ah- 16.384KWh

Version: 1.

Warning



Please comply with all warnings and operating instructions in this manual strictly. Save this manual properly and read carefully the following instructions before installing the unit. Do not operate this unit before reading through all safety information and operating instructions carefully.

请严格遵守本手册中的所有警告和操作说明。正确保存本手册，并在安装设备前仔细阅读以下说明。在仔细阅读所有安全信息和操作说明之前，请勿操作本装置。

1.Parameters of Battery 电池参数

1-1 Parameters of Battery Pack 单电池组参数

Model of battery pack 电池组型号	XDLP-51.2-300 XDLP-51.2-320
Nominal voltage 标称电压	51.2V
Rated capacity 额定容量	300AH 320AH
Rated reserved energy 额定瓦时	15.36KWH 16.384KWH
Standard charging current 标准充电电流	0.2C
Total charging cut-off voltage 充电截止电压	58.4
Cut - off voltage for cell charging 单体充电截止电压	3.65V
Active balancing current 主动均衡电流	3A
Maximum continuous discharging current 最大持续放电电流	200A
Cut-off voltage of discharging 放电截止电压	43.2V
Charging temperature range 充电温度范围	0°C~ 45°C
Discharging temperature range 放电温度范围	-20°C~ 60°C
Single module Size(W×L×H) 单模组尺寸	800*500*256mm (excluding base) (不含底座)
Weight 1PCS重量	Single module 单模组约115kg±5%

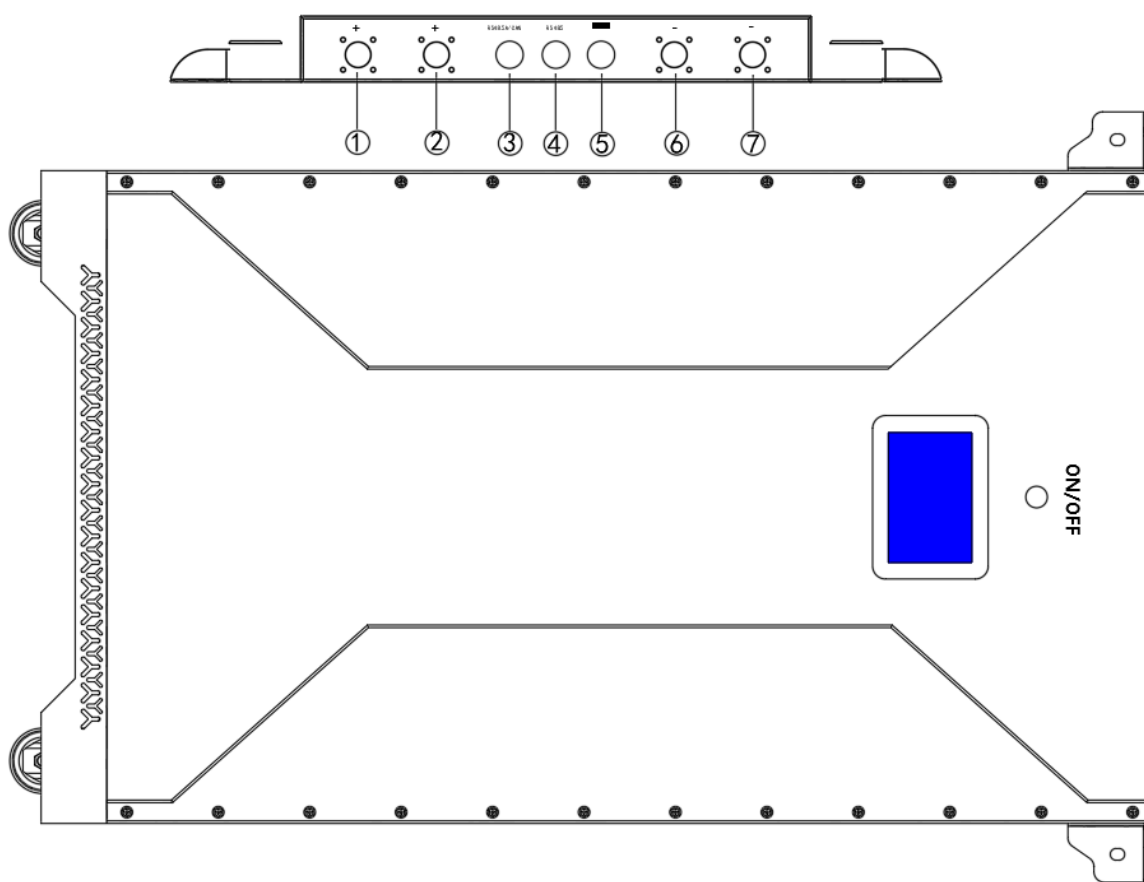
1-2 Technical Parameters of Battery Management System (BMS)

电池管理系统（BMS）技术参数

Items 项目	Details 详情细节	Standard 标准可设
Cell overcharge protection 电池过充电保护	Overcharge detection voltage 过充保护电压	3.65V
	Over charge detection delay time 过充保护延迟时间	Typical:1.0s
	Over charge release voltage 过充释放电压	3.35V
Cell over-discharge protection 电池过放电保护	Over discharge detection voltage 过放保护电压	2.50V
	Over discharge detection delay time 过放保护延迟时间	Typical:1.0s
	Over discharge release voltage 过放恢复电压	2.95V
Over-current protection 过流保护	Discharge over current protection current 放电过电流保护电流	210A
	Discharge over current detection delay time 放电过电流保护延迟时间	2S
	Discharge over current protection current 放电过电流保护电流	210±10A
	Discharge over current detection delay time 放电过电流保护延迟时间	≤500ms
	Over charge protection current 充电过流保护	210±10A
Short circuit protection 短路保护	Short-circuit protectio current 短路保护电流	≥2000A
	Protection condition 保护条件	External load short circuit 外部负载短路
	Detection delay time 检测延迟时间	≤500us
	Protection release condition 保护释放条件	Charge release or reset 充电释放或重置

Temperature(T) protection 温度保护	Charge high T protection 充电高温保护	55±5°C
	Charge high T recover 充电高温恢复	50±5°C
	Discharge high T protection 放电高温保护	60±5°C
	Discharge high T recover 放电高温恢复	60±5°C
	Charge low T protection 充电低温保护	-5±5°C
	Charge low T recover 充电低温恢复	0±5°C
	Discharge low T protection 放电低温保护	-20±5°C
	Discharge low T recover 放电低温恢复	-10±5°C
Balance 均衡	Equalizing start pressure difference均衡 开启电压	5mV
Communication 通讯	It has RS485 and CAN standard communication interface, it can real-time monitor the capacity of battery bank, the voltage, current, environment temperature, and charging/discharging current. 具有RS485和CAN标准通讯接口，可实时监测电池组容量、电压、电流、环境温度、充放电电流	
Alarm 报警	It has over-temperature, over charge, under-voltage, over-current, short circuit alarm Function. 具有超温、过充、欠压、过流、短路报警功能	

2. Panel operation instructions 面板操作说明



No. 序号	Description 说明	Silk-screen 丝印	Remark 备注
1	Battery + 电池正极	P+	Positive terminal 电池正极
2	Battery + 电池正极	P+	Positive terminal 电池正极
3	485A port 端口	485A	485connection port- 485连接口
4	CAN port CAN端口	CAN	CAN communication port CAN通讯口
5	485B port 485B端口	485B	485connection port- 485连接口
6	Battery - 电池负极	P-	Negative terminal 电池负极
7	Battery - 电池负极	P-	Negative terminal 电池负极
8	Output ON/OFF 电源开关	OFF/ON	BMS switch button BMS开关
9	LCD 屏幕		Display screen 显示屏
10			
11			
12			

3. Installation and Operation 安装操作

3-1. Single battery Installation 单电池安装

Installation and wiring must be performed in accordance with the local electric laws/regulations and execute the following instructions by professional personnel. 安装和布线必须按照当地电气法律/法规进行，并由专业人员执行以下指示

- 1) Make sure the mains wire and breakers in the building are in compliance with the standard of rated capacity of battery to avoid the hazards of electric shock or fire. 确保建筑物内的电源线和断路器符合蓄电池额定容量标准，避免触电或火灾危险
- 2) Switch off the mains switch in the building before installation 安装前关闭建筑物内的电源开关
- 3) Turn off all the connected devices before connecting to the battery 连接到电池前关闭所有连接的设备.
- 4) Prepare wires based on the following table 根据下表准备电线:

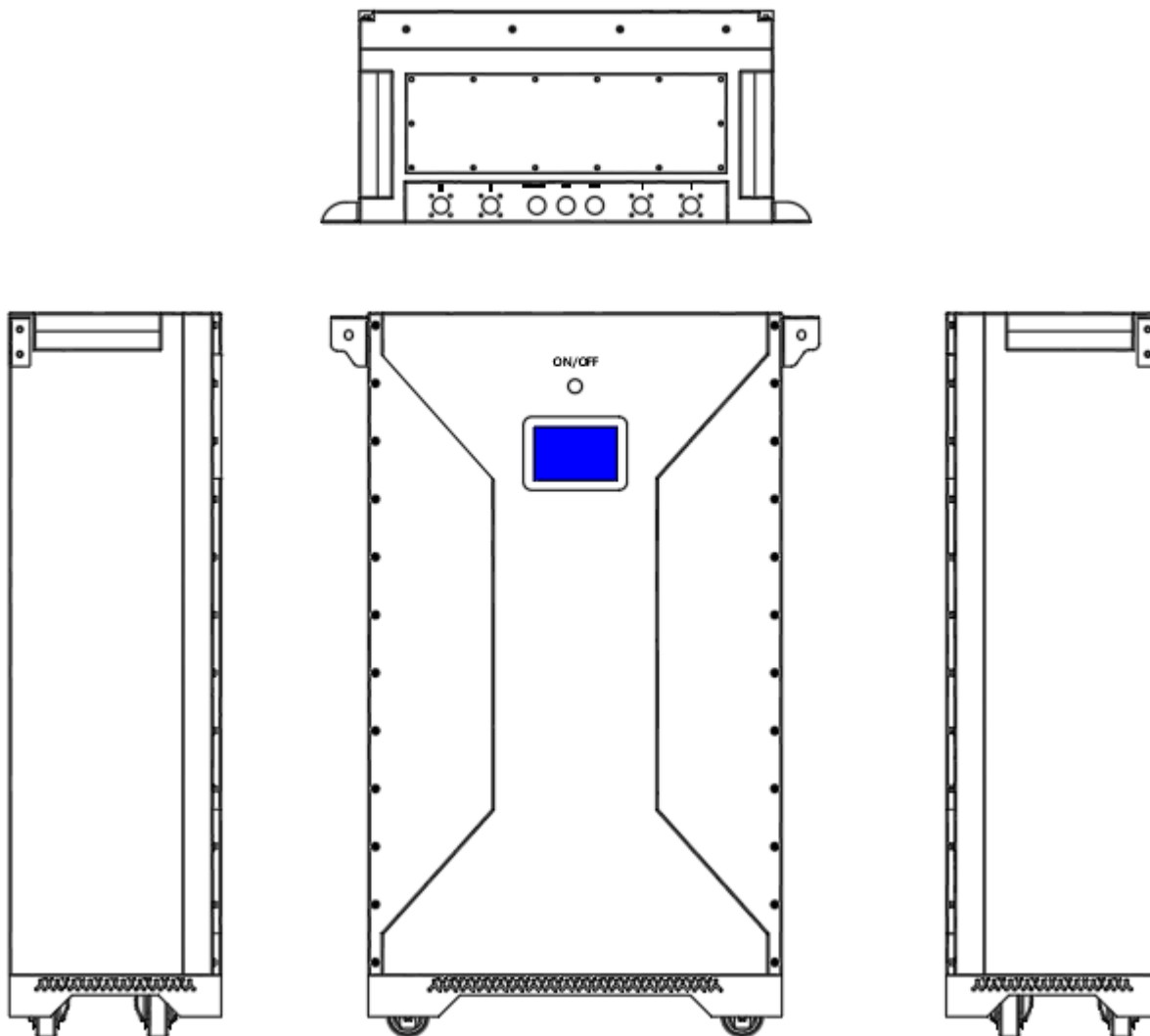
Model	Cables(AWG)	Cables(mm ²)
<50Ah	8	6
50Ah	6	16
100Ah	4	25
200/300AH	2	50

Table 1 Output Cables

NOTE : It is recommended to use suitable wire in above table or thicker for safety and efficiency.
注意：为了安全和高效，建议使用上表中的合适电线或更粗的电线

- 5) Set the battery pack breaker in “OFF” position and then install the battery pack.

3-2 Battery installation 电池安装



墙上按如图开2个孔，敲入膨胀螺丝，把电池两侧挂耳固定上面即可

Make 2 holes on the wall as shown, knock in the expansion screws, and fix the battery side hangers above.

电池安装示意图，具体情况按实际订单要求操作

Battery installation diagram, specific operation according to the actual order requirements.

3-3.Installation Precautions安装注意事项

(1) Prior to installation, unpacking to check the quantity of the parts and battery appearance.

安装前开箱检查零件数量和电池外观

(2) Measure the battery voltage with a multimeter. The general factory voltage of the

battery is 50V-53V . 用万用表测量电池电压。电池的出厂电压一般为50-53V.

(3)Prior to wiring, check the anode and cathode of the battery and the anode and cathode terminals shall not be connected reversely.接线前应检查蓄电池的正负极，正负极端子不得接反

(4)During battery connection, please wear the protective gloves. When using such metal tools as torque wrench, please perform insulating packaging for them and two end of the metal tools such as torque

wrench shall not contact the positive and negative terminals of the battery at the same time to avoid battery short-circuit.连接电池时，请戴上防护手套。使用扭矩扳手等金属工具时，请对其进行绝缘包装，扭矩扳手等金属工具的两端不得同时接触电池的正负极，以免电池短路。

(5)Before the battery is connected with the externally connected equipment, make the equipment in a disconnected state, check whether the connecting polarity of the battery and total voltage are correct,

connect the battery anode with the equipment anode and battery cathode with the equipment cathode and fix the connecting line. 电池与外接设备连接前，应先使设备处于断开状态，检查电池的连接极性和总电压是否正确，电池阳极与设备阳极、电池阴极与设备阴极连接，并固定连接线。

(6)During handling and placement, the battery must be handled gently. No dropping or impacting. The battery shall not be thrown or beaten to avoid damaging the battery or resulting in potential safety hazard. 在搬运和放置过程中，必须轻拿电池。无跌落或撞击。不得投掷或敲打电池，以免损坏电池或造成安全隐患。

(7)Do not touch the surface of the battery box with the sharp part of the tool to scratch or damage the battery box. 不要用工具的锋利部分接触电池盒表面，以免划伤或损坏电池盒。

(8)Do not disassemble the battery box without authorization. 未经授权，请勿拆卸电池盒。

(9)Do not put any article made of the metal conductive material together with the battery or assemble it into the battery box.

不要将任何由金属导电材料制成的物品与电池放在一起，也不要将其组装到电池盒中。

(10) Install it according to the selected installation mode根据所选安装模式进行安装:

Installation of standard cabinet (rack): Install the matching hanger for the battery pack and fix them in the standard cabinet and the tray protection is added for the battery box.标准柜（架）安装：安装匹配的电池箱和支架或托盘固定在内部，标准是为保护电池箱

Stacking battery box installation: first place the base in the plane area, then stack the battery box according to the outer label number sequence, then the screw holes reserved for the upper and lower chassis are locked and fixed with screws,

堆叠式电池箱安装：先将底座放在平面区域，然后将电池箱按外标识编号顺序安放堆叠，再将上下机箱预留的螺丝孔，用螺丝锁紧固定，

Installation of wall-mounted box: Prior to installation, please ensure that the wall complies with the wall-mounted requirements; according to the location in the design plan, install the special wall-mounted box of the lithium battery; the battery pack is fixed in the wall-mounted box in a hanger manner.壁挂箱安装：安装前，请确保壁挂符合壁挂要求；根据设计方案中的位置，安装锂电池专用壁挂箱；电池组以悬挂方式固定在壁挂箱中

Installation of integrated indoor and outdoor cabinets (boxes): Install them according to the installation specification for the customized integrated cabinet (box)室内外综合柜（箱）安装：按定制综合柜（箱）安装规范进行安装.

3-4 Operation Instruction for Installation 安装作业指导书

1) Prior to installation, please check whether the battery is normal.

安装前请检查电池是否正常？

1) Press the switch on the front panel for 1 second to start. The display screen should light up after the battery starts. Check if the display lights up normally. Then check the battery status information on the display to see if there is a low voltage warning. Newly installed batteries rarely trigger alarms. Common alarms are battery under-voltage alarms (caused by long-term non-use of the battery). In this case, charge the battery for 30 minutes. If the alarm cannot be cleared, open the top cover, press the internal reset key RST for 10 seconds to perform a battery reset operation, and confirm if the alarm is cleared. If the alarm is cleared, the battery can be used normally. Otherwise, the battery should be returned for repair.

2) 按前面板上的开关 1秒启动。启动电池后显示屏应该点亮。检查显示屏是否正常亮起。再检查显示屏电池状态信息，是否有低压有告警。新安装的电池很少有报警。常见报警为电池欠压报警（长时间不使用电池导致）这种情况可在电池充电30分钟，如果不能解除报警，请打开顶部盖板，按内部复位键RST 10秒，执行电池复位操作，确认是否解除报警。如果警报解除，电池可以正常使用。否则，应返修加工电池。

3) For batteries with abnormal detection and alarm, the top cover of the cabinet must be opened before maintenance, press the reset key RST of the internal communication board for 10 seconds, and perform the battery open/close reset operation.

3) 对于检测报警不正常的电池，检修前需打开机箱上盖，按内部通讯板复位键RST 10秒，执行电池开/关复位操作

Instructions of manual operation of the reset key RST 复位键RST的手动操作 说明	Startup 启动	In the OFF state of BMS, press the key for 1S for startup; 在BMS关闭状态下，按键1s启动
	Shutdown 关闭	In the non-standby state of BMS, press the key for 1S for shutdown; 在BMS的非待机状态下，按键1s关机
	Reset 重置	In the non-standby state of the BMS, press the button for 10 seconds until all the indicator lights come on to 在BMS的非待机状态下，按键10秒，直到所有指示灯亮起进行重置

4) Installation of the lithium battery, wiring and startup 锂电池安装, 布线和启动.

The specification of the connecting line is selected according to the load current, with the common specifications of the connecting line as follows

连接线的规格根据负载电流选择, 连接线的通用规格如下:

1) When the capacity of 200Ah or less when the series and parallel connection battery, it is recommended to choose 25 mm² copper wire.

1) 200Ah及以下电池组接入时串并联, 建议选用25mm²铜线.

2) When 200Ah ~ 300Ah batteries are connected in series and parallel, 35mm² or 50mm² copper wire is recommended.

2) 200Ah~300Ah蓄电池组串并联时, 建议选用35mm²或50mm²铜线.

3) It is recommended to select 50mm² ~ 70mm² copper wire when the battery pack with capacity of 300Ah and above is connected in series and parallel.

3) 容量

为300Ah及以上的电池组串并联时, 建议选用50mm²~70mm²铜线

Note: We do not equip with the battery connecting line by default, which shall be selected according to the total capacity of the battery pack.

注: 我们默认不配置电池连接线, 根据电池组总容量选择

Lithium battery 锂电池	Copper core cable 铜芯电 缆	Copper lug 铜鼻子	Remarks
48V50Ah	16mm ² /25mm ²	16-8/25-8	M8 copper lug is used for 48V50Ah
48V100Ah	16mm ² /25mm ²	16-10/25-10	M10 copper lug is used for48V100Ah
48v200AH	35mm ² /50mm ²	35-10/50-10	M10 copper lug is used for48V200Ah
48v300AH	50mm ² /70mm ²	50-10/70-10	M10 copper lug is used for48V300Ah

Introduction to operation steps in detail according to the capacity required

根据所需容量详细介绍操作步骤:

3-5. Battery pack in parallel, individual module current 200A (as shown in the wiring diagram):

电池组并联，单个模组电流200A（接线图所示）：

Step 1: The battery pack is in the shutdown state, and the battery is installed successively;

步骤1：使电池组处于关机状态，依次安装电池；

Step2: Disassemble the anode insulating cap of the neighboring batteries one by one, connect the anodes of up and own neighboring battery packs with the installation connecting line and screw on the anode insulating cap;

步骤2：逐个拆卸相邻电池的正极绝缘帽，将上下相邻电池组的正极与安装连接线连接，并拧上正极绝缘帽；

Step 3: According to step 2, connect the cathode of the battery pack.

步骤3：根据步骤2，连接电池组的负极

Step 4: Perform the cascade connection to RS485 communication interface of the battery module with the RS485 connecting line; lead to the collector of the monitoring platform from the CAN interface of the battery module with the address of 1000 with the CAN connecting line; (this step may be skipped if there is no need to access to the remote monitoring platform).

步骤4：用RS485连接线串接电池模块的RS485通信接口；用CAN连接线从地址为1000的电池模块的CAN接口引至监控平台的集电极；（如果不需要接入通讯，可跳过此步骤）监控平台）

Step 5: Two wires are pulled out from the positive and negative poles on the top of the battery pack, respectively, as the main parallel connection lines of the battery pack, connected to the switch power supply or UPS;

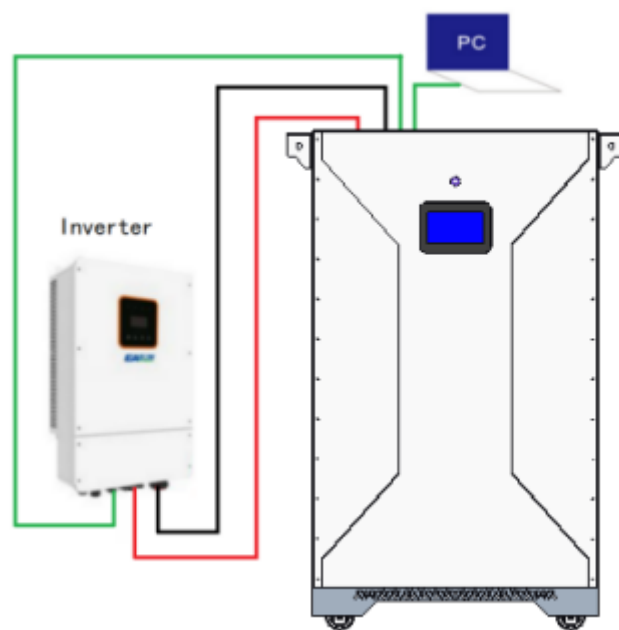
步骤5：从电池组顶部或中部的正极和负极分别抽出两根电线，作为电池组的并联主连接线，与开关电源或UPS连接；

Step 6: Press the battery pack's ON/OFF key, the battery pack starts and enters the working state.

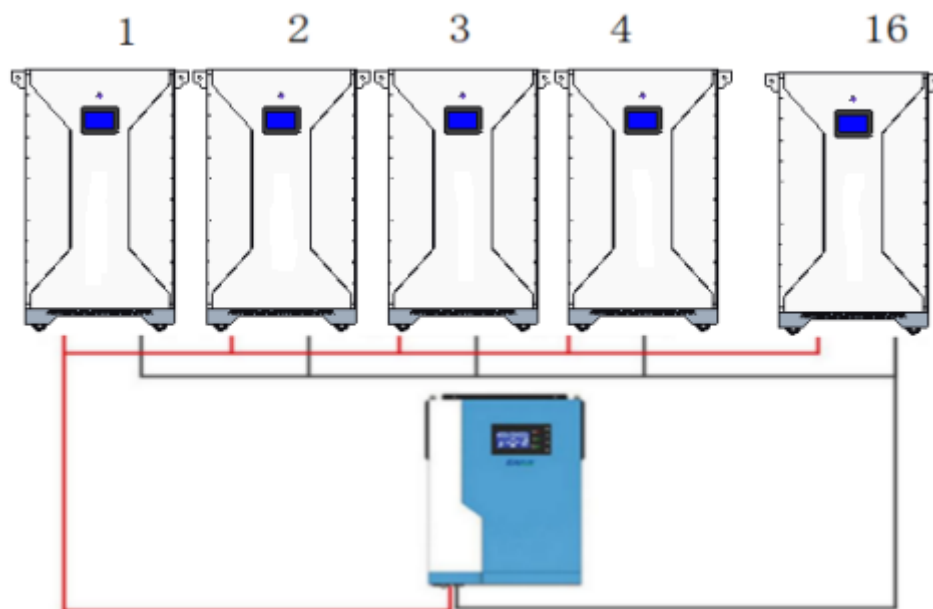
步骤6：按电池组的ON/OFF键，电池组启动进入工作

3-6. Battery system communication connection equipment

installation 电池系统通讯连接设备安装

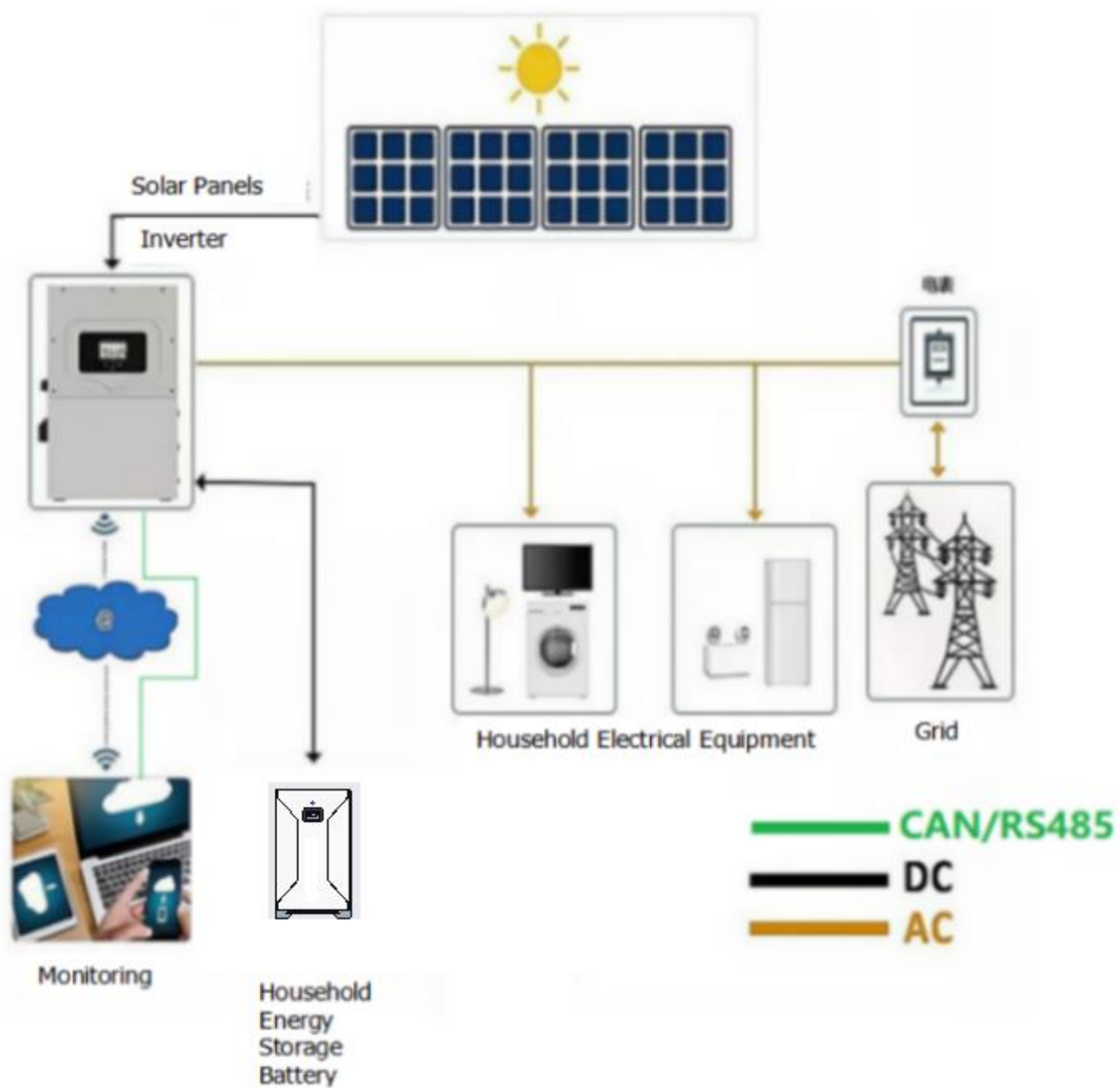


Stand-alone installation 单机安装



Parallel machine installation 并机安装

3-5. System integration link installation topology diagram
系统集成连接安装拓扑图



3-7Dial switch setting .自动拨码(Automatic dial)

	自动拨码开关: Automatic dial switch	所有并机BMS拨码开关需在“OFF”状态, 如图所示 All parallel BMS dip switches should be in the "OFF" state, as shown in the figure
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3.7.1.

将 RS485 并机按照正确的方式连接, 主机 BMS 网线一端插在 Link Port OUT 网口, 另一端插在第二台并机 Link Port IN 网口, 第二台并机网线一端插在 Link Port OUT 网口, 另一端插在第三台并机 Link Port IN 网口, 依次接入并机通讯线, 位置不得接错, 不然会导致地址分配不成功。
Connect correctly the RS485 in parallel. Connect one end of the main BMS network cable to the Link Port OUT network Port and the other end to the Link Port IN to the second parallel network port. Connect one end of the second parallel network cable to the Link Port OUT network port and the other end to the Link Port IN to third parallel network port. And connect parallel communication cables one by one. Please do not connect the cable to the wrong position; Otherwise, the address assignment fails

3.7.2.

将所有机器连接好后开机, 关闭主机弱电开关, 若并机线连接正常, 则所有的机器都会关机。打开主机弱电开关, 这时所有从机一起开机, 所有机器灯板上所有的灯开始闪烁, 等待约 20 秒, 主机显示所有机器的平均 soc, 从机只有运行灯闪烁。如果有发现有闪灯不正常的, 检查并机通讯线是否 OK。再按照以上步骤操作。
After connecting all BMS, turn all BMS on. Then turn off the on/off switch of the main BMS. If the parallel line is connected normally, all the BMS will be turned off. Turn on the on/off switch of the main BMS, and then all other BMS will turn on together. All the lights on the LED boards of all the BMS will start flashing. Wait for about 20 seconds, the main BMS will display the average soc of all battery packs, and only the running lights of the slave BMS will flash. If you find that there are abnormal flashing lights, please check whether the parallel communication line is OK or not. Then follow the above steps.

3.7.3.

自动拨码后, 当主机使用手动拨码开关, 其他从机可正常使用手动拨码功能, 当主机和从机拨码开关均为 OFF 状态时, BMS 地址会回归到自动拨码成功的地址。
After using the automatic DIP switch, if the manual DIP switch is used on the master BMS, the manual DIP switch can be used on other slaves. When the DIP switches of both the master BMS and slaves are OFF, the BMS address returns to the address where the automatic DIP switch is successful.

3.7.4

可以通过冗余监控并机数量与实际数量是否相符。
Redundancy can be used to monitor whether the number of parallel battery packs matches the actual number.

3-8 Instructions for using the host computer 上位机使用指导

(1) Check the specification of the protection board to select the corresponding connection method for the communication with the host computer (RS485 or RS23 or TTL). Please be aware of the corresponding wire sequence before wiring to ensure correct connection.

(1) 查阅保护板的规格书选择对应连接上位机通信方式 (RS485或RS232或TTL) , 接线前请悉知对应的线序, 以便正确连接。

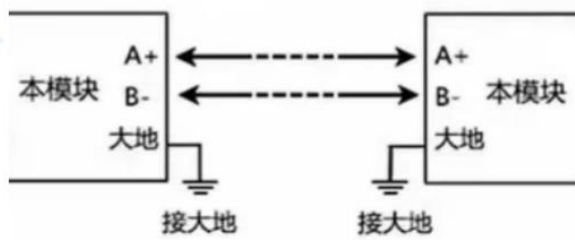
(2) RS232 communication connection diagram and tool diagram

(2) RS232通信连接示意图与工具图



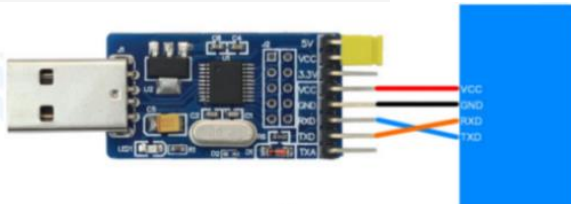
(1) RS485 communication connection diagram and tool diagram

(3) RS485通信连接示意图与工具图



(4) TTL communication connection diagram and tool diagram

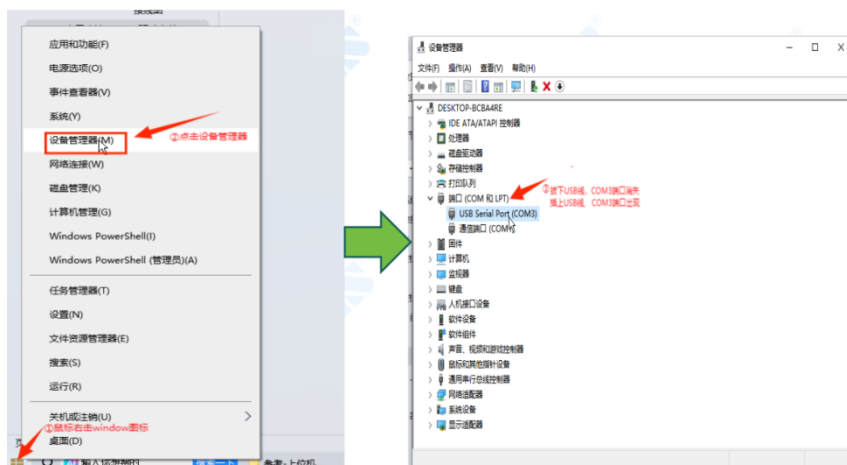
(4) TTL通信连接示意图与工具图



3.8.1 Port confirmation 端口确认

In the computer's device manager page, by plugging in the USB cable connected to the computer end (plug it in to show COMX, unplug it disappear COMX), check the port number inside the port (COM and LPT), so as to connect correctly.

在电脑的设备管理器页面，通过拔插连接电脑端的USB线束（插上去COMX显示，拔下来COMX消失），查看端口(COM和LPT)内端口号，以便正确连接



1、Communication function 通信功能

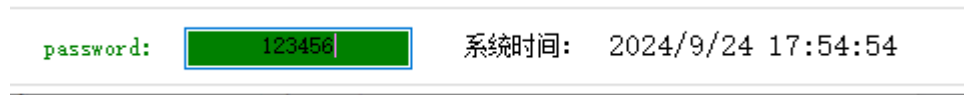
Double-click to open the host software, select the corresponding serial port number in the lower left corner, and click the RUN button. The page number data, the progress bar in the lower left corner keeps sliding and refreshing, and the communication is normal.

双击打开上位机软件，在左下角选择对应的串口号，点击RUN按钮即可，页面数字数据变化，左下方进度条不断滑动刷新，通信正常。



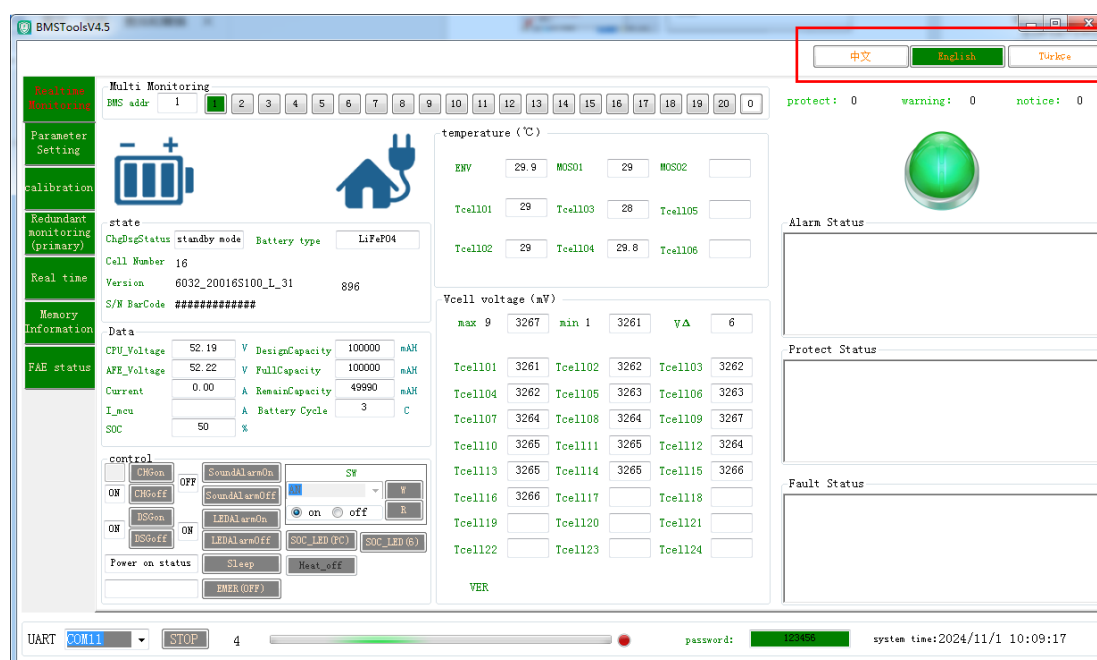
You must enter the password to perform various settings operations, the current default password is "123456".

输入密码才能进行各项设置操作，现默认密码为“123456”。



Click the top right corner to select language, default Chinese

右上角点击选择语言，默认中文



Display battery information: type, software version, cell voltage, cell temperature, alarms, protection, etc.

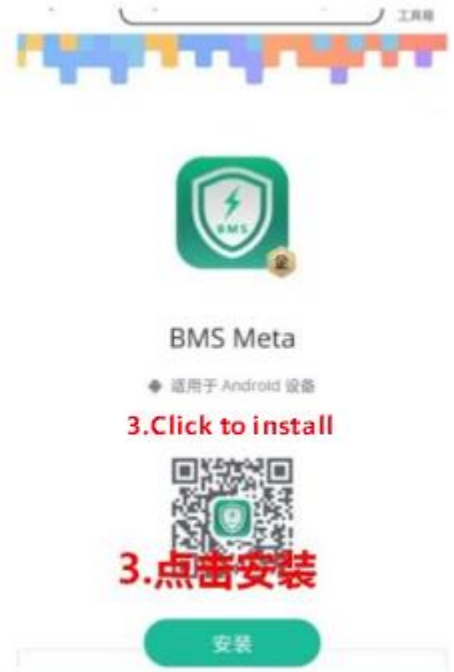
展示电池的信息：类型、软件版本、电芯电压、电芯温度、告警、保护等信息。

3-9.APP usage guide APP使用说明

3.9.1Scan the QR code to download the communication software ("BMS META" APP)

扫码下载通讯软件("BMS META"APP)

	
IOS	Android



3.9.2 Bluetooth operation steps

1. Open the downloaded "BMS Meta" app, select local monitoring.

1、打开下载的“BMS Meta”APP，选择本地监控

2、Turn on the Bluetooth of the phone.

3、打开手机的蓝牙

3、 In the interface of connected devices, you can see the Bluetooth serial number (which is consistent with the serial number on the Bluetooth device), click on Bluetooth serial number to enter the monitoring page;

4、在连接设备界面能看到蓝牙串号(和蓝牙实物上的串号一致),点击蓝牙串号进入监控页面；

Note: When there is no low-voltage switch or the low-voltage switch is in the on state, the Bluetooth connection can directly wake up the protection board view the battery data without waking up the protection board separately.

注:没有弱电开关或弱电开关为开启状态下，蓝牙连接可以直接唤醒保护板，查看电池数据，不用单独唤醒保护板。



3.9.3 WIFI operation steps

WIFI操作步骤

1、 Open the "BMS META" APP, select remote monitoring, register an account and log in after registration

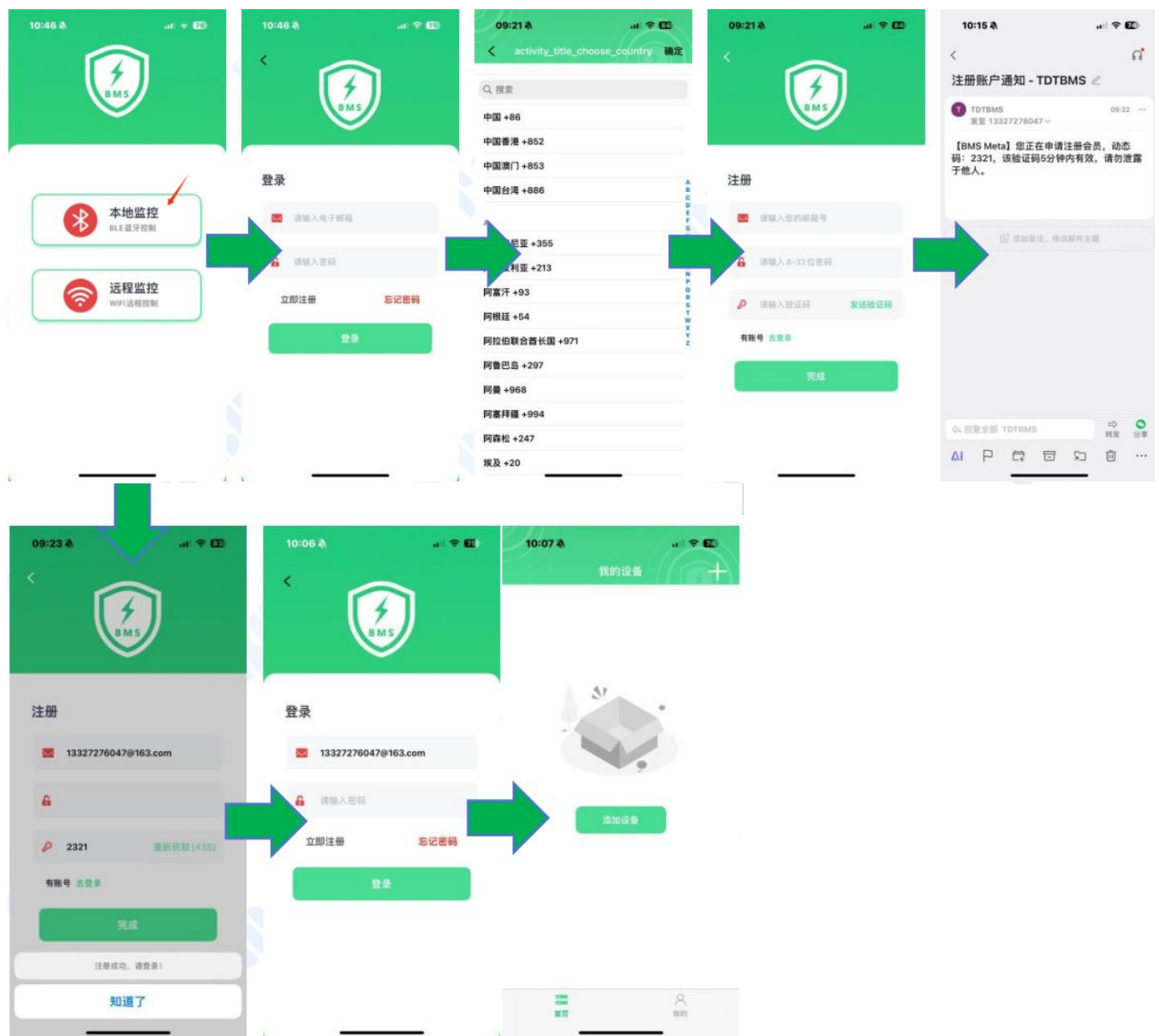
1、 打开“BMS META”APP，选择远程监控，注册账号后登录账号

2、 Sign up: select country → enter email account → enter custom password → click to send verification code, check the verification code in the login email account, enter verification code → registration successful, jump to the login page → enter the password, login successful, enter the my device page.

3、 注册账号：选择国家→输入邮箱账号→输入自定义密码→点击发送验证码，在登录邮箱账号查看验证码，输入验证码→注册成功，跳转到登录页面→输入密码，登录成功，进入我的设备页面。

Note: After logging in to the account, if you exit the app and re-enter, it will always default to automatic login, and there is no need re-login the account.

注:账号登录后，退出APP重进，会一直默认自动登录，无需重新登录账号。



Monitoring device: On the homepage of my device, display the custom device name, click on the online device to enter the monitoring page.

监控设备：在我的设备首页 显示自定义设备名称，点击在线设备进入监控页面

Note: 1. The device status is offline because the WIFI module has no network. Please check the network status. 2. The WiFi monitoring page refreshes every three minutes or pull down to refresh

注:1.设备状态离线，是因为WIFI模块没有网络，麻烦检查下网络状态。2.WiFi监控页面三分钟定时刷新或下拉刷新。

Bound device of distribution network

配网绑定设备

1、Open mobile phone positioning;

1、打开手机定位;

2、Mobile phone connection requires the WIFI to be configured;

2、手机连接需要配置的WIFI;

3、WIFI device pairing and binding: Click the "+" icon in the top right corner → Search for WIFI devices, display the MAC address in the device, select the MAC address of the corresponding device → Enter the WIFI password, wait for the progress to reach 100% → Enter a custom device name, configuration successful

4、WIFI设备配网绑定：点击右上角“+”图标→搜索WIFI设备，在设备列表显示MAC地址，选择对应设备的MAC地址→输入WIFI密码，待进度达到100%→输入自定义设备名称，配置成功；

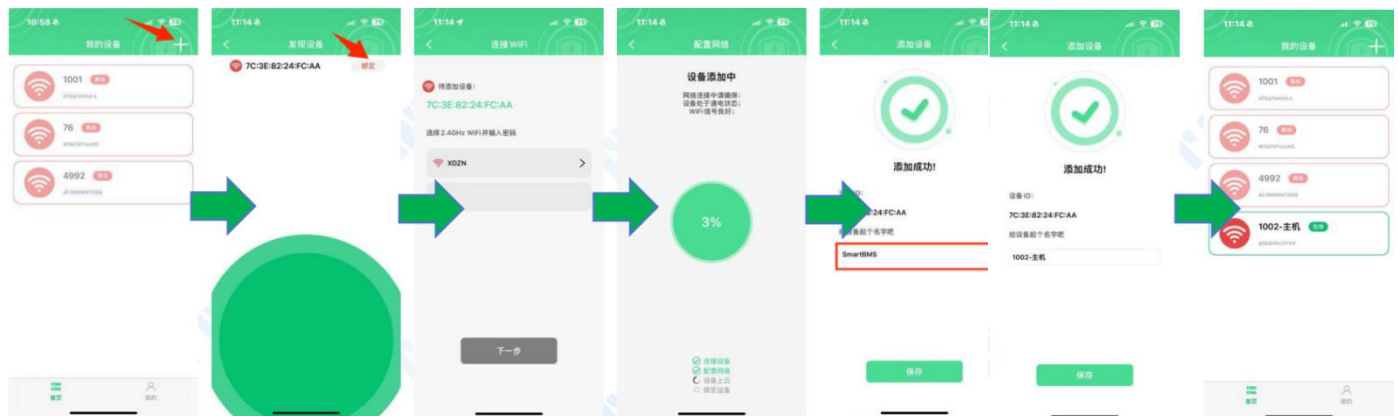
Note: 1. The configured network only supports 2.4GHz. 2. Configuration failed, please check the network status or whether the password correct. 3. WIFI module LED flashing definition: Double flash by default, continuous slow flash (1s on 1s off) in the state of no network, short off once every 5 seconds or always on three flashes in the state of normal communication. 4. After the device is bound, it needs to wait for about 2 to be able to be re-bound.

注：1.配置的网络只支持2.4GHz。2.配置失败，请检查网络状态或密码是否正确。3.WIFI模块 LED闪烁定义：默认状态下双闪，无网状态下连续慢闪（亮1s灭1s），联网正常通讯状态下亮5秒短灭一次或常亮三闪。4.设备绑定后，需要等待2分钟左右才能重新



WiFi模块配网.mp4

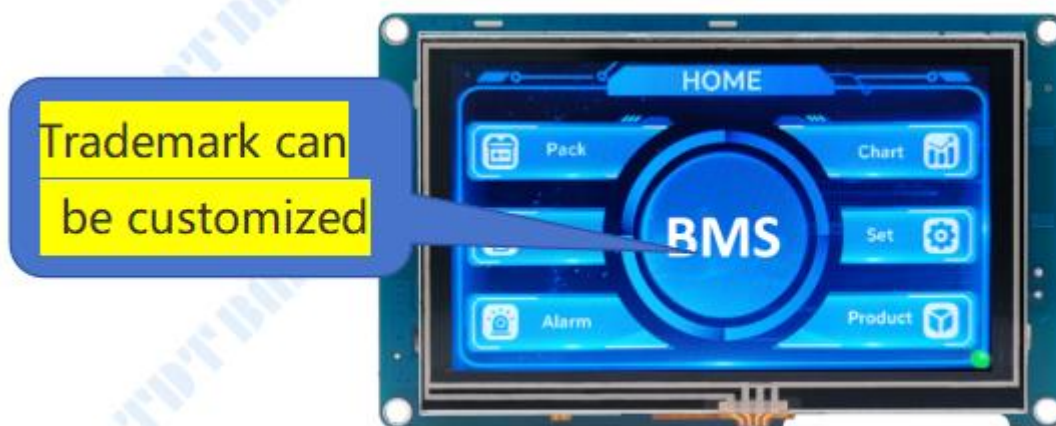
4



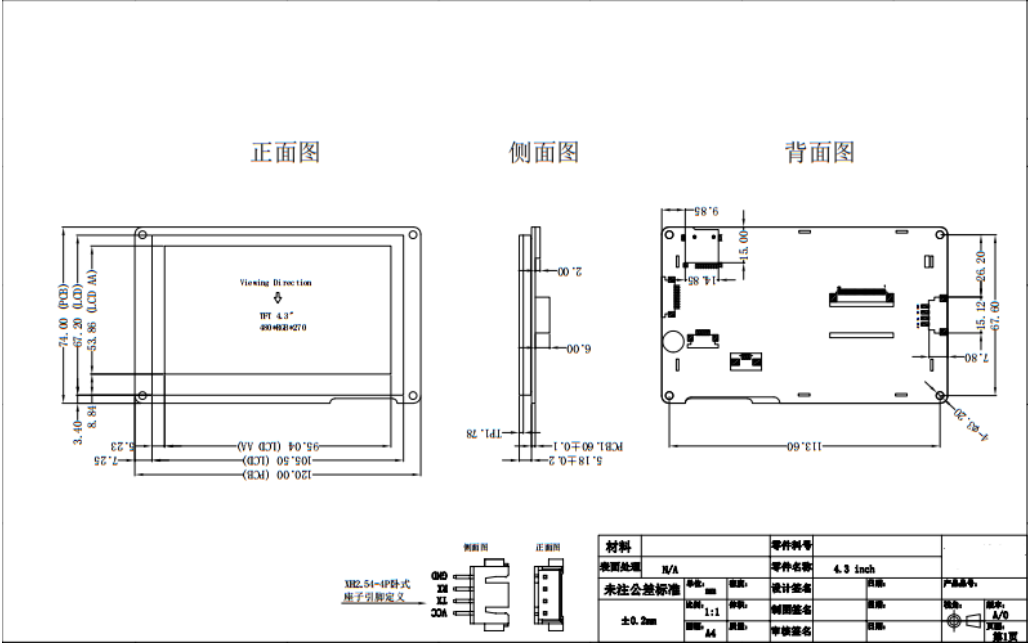
5、Display instructions for use 显示屏使用说明

5.1 Display appearance (for reference only)

1.显示屏外观（仅供参考）



2. Product size chart 产品尺寸图



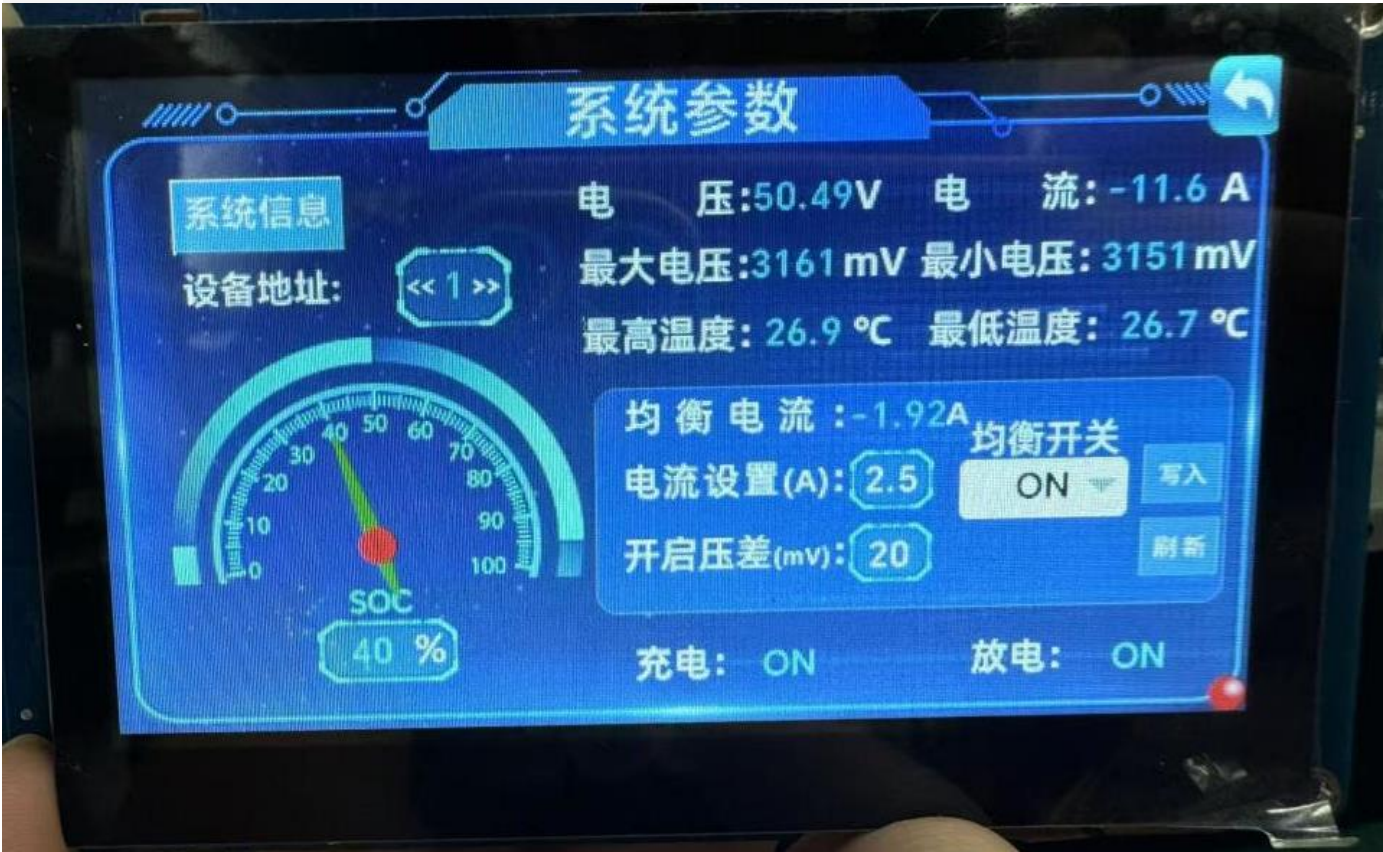
3. Display--Main interface 显示屏--主界面

Real-time display of battery information: SOC, total voltage, current, highest (lowest) individual cell voltage, highest (lowest) individual cell temperature charge (discharge) MOS status.

实时显示电池信息：SOC、总压、电流、最高（低）单体电压、最高（低）单体温度、充（放）电MOS状态

Note: Click the back key in the top right corner to return, or you can switch to other pages by swiping right on the system settings page

注：右上角点击返回键返回，也可在系统参数页面右滑切换至其他页面。



Active balancing setting: Pull-down select —OFF: Indicates that the active balancing function is turned off; —ON: Indicates that the active balancing is turned on; Forced —ON: Indicates that the active balancing function is forced to be turned on; Default balancing is turned on → Long press the number or touch number to set the balancing current (maximum current 3A), set the balancing turn-on voltage difference (maximum 50mV) → Write to take effect → refresh (confirm whether it is set successfully).

主动均衡设置：下拉选择—OFF:表示关闭主动均衡功能；—ON:表示开启主动均衡功能；

强制—ON：表示强制开启主动均衡功能；默认均衡开启→长按数字或触点数字，设置均衡电流（最大电流3A），设置均衡开启压差（最大50mV）→写入生效→点击刷新（确认是否设置成功）。

上位机中英文切换模式



Battery address communication switching: When the batteries are connected in parallel, click on the address number to switch addresses and view data from batteries at different addresses

电池地址通讯切换：电池并联时，点击地址数字，可以进行地址切换，查看不同地址电池的数据。

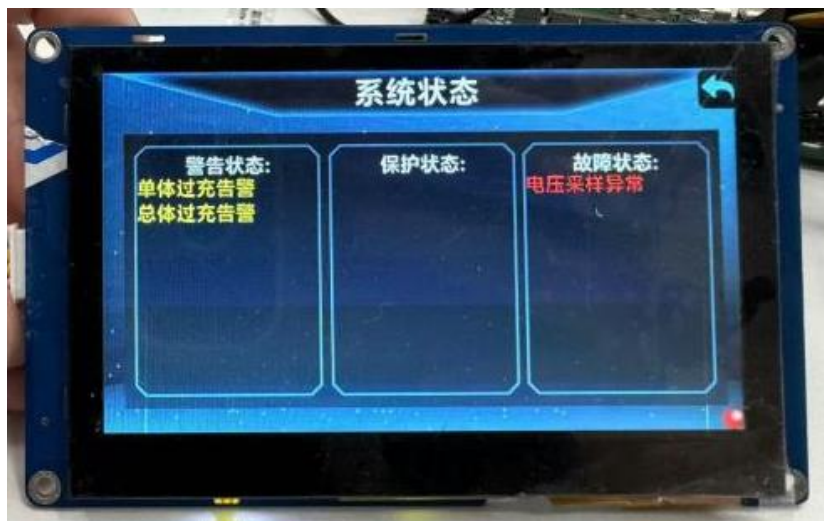


System information: display the SOC, total voltage, current of the parallel battery system.

系统信息：显示并联电池系统SOC、总压、电流。

When the battery has a warning, the corresponding item bar will display the warning name.

当电池有警告时，对应的项目栏内会显示警告名称。



5.2 Functions 功能

BMS--CAN/RS485 communication protocol switching, battery communication address switching; LCD--language switching, touch calibration, screen brightness

BMS--CAN/RS485通讯协议切换、电池通讯地址切换 LCD--语言切换、触摸校准、屏幕亮度。

1、Communication protocol setting: Click CAN_SET to select the type of external communication → Click the protocol name on the far right to pop up the selection window, to select, click the protocol name, and the setting is successful.

1、通讯协议设置：点击CAN_SET选择对外通信类型→最右侧点击协议名称弹出选择窗口，滑动选择，点击协议名称，设置成功。



2、Battery address communication switching: When batteries are connected in parallel, address switching can be performed to view data from batteries with different addresses

2、电池地址通讯切换：电池并联时，可以进行地址切换，查看不同地址电池的数据。

Note: Battery communication address PACK_OK_1, Ok represents the current address can be communicated, NG represents the current address cannot be switched to communicate, 1 represents the battery communication address.

注：电池通信地址PACK_OK_1，Ok代表当前地址可以进行通讯，NG代表当前地址无法进行切换通讯，1代表电池通讯地址。



3、Language setting: Click LCD in the left box → Click language in the rightmost box, slide to select, click language, set

3、语言设置：点击左侧框内LCD→点击最右侧框内语言，滑动选择，点击语言，设置成功



4、LCD brightness setting: Click LCD in the left box → Click Language, pop-up window, click Screen brightness → Slider or click the progress bar to brightness.

4、屏幕亮度设置：点击左侧框内LCD→点击Language,弹出窗口，点击屏幕亮度→滑动或点击进度条进行亮度调整。



5.3 Protocol name 协议名称

中文	English
派能	PYLON TECH /PY
固得威	GOODWE
迈格瑞能	MEGAREVO /MEG
德业	DEYE /DEY
索瑞德	SOROTEC
首航	SOFAR
古瑞瓦特	GROWATT
日月元	VOLTRONIC
沛城	PACE
三科	SAKO
艾伏	AFORE
英威腾	INVT
维克托	VICTRON
锦浪	GINLONG
艾罗	SOLAX
斯图特	STUDER

6.0 Safety Precaution 安全预防措施

5.2 When Using battery使用电池时



Danger of High Voltage高压危险

The high voltage power supply offer the equipment power, wet object contact high voltage power supply directly or indirectly , can cause fatal danger.

高压电源直接或间接为设备供电，湿物接触高压电源，会造成致命危险。



Using a special tool使用专用工具

Working in high voltage and ac power, be sure to use a special tool instead of individual tools.

在高压和交流电源下工作，一定要使用专用工具而不是单独的工具。



Static- free无静电

Static electricity would damage veneer on the electrostatic sensitive components, before touching the plug- in, circuit board or chips, be sure to use correct electrostatic prevention measures.

静电会损坏静电敏感部件上的贴面，在接触插头、电路板或芯片之前，请务必使用正确的静电防护措施。



Disconnect the power supply in operation断开运行电源

When operate the power supply, you must first cut off power supply, power operation is prohibited.

操作电源时，必须先切断电源，严禁带电操作。



Dc short circuit dangerous直流短路危险

Power system provides dc regulated power supply. Dc short circuit could cause fatal damage to the equipment.

电力系统提供直流稳压电源。直流短路会对设备造成致命的损坏

6.2 While Charging 电池充电时



CAUTION 注意

The temperature range over which the battery can be charged is 0°C to 45°C. Charging the battery at temperatures outside of this range may cause the battery to become hot or to break. Charging the battery outside of this temperature range may also harm the performance of the battery or reduce the battery's life expectancy.

可对蓄电池充电的温度范围为0°C至45°C。在此温度范围之外对蓄电池充电可能会导致蓄电池发热或断裂。在该温度范围之外对蓄电池充电也可能会损害蓄电池的性能或降低蓄电池的预期寿命。

5.3 When Discharging the Battery 电池放电时



DANGER 危险

Do not discharge the battery using any device except for the specified device. When the battery is used in devices aside from the specified device it may damage the performance of the battery or reduce its life expectancy, and if the device causes an abnormal current to flow, it may cause the battery to become hot and cause serious injury.

不要使用指定设备以外的任何设备放电。当电池用于指定设备以外的设备时，可能会损坏电池的性能或降低电池的预期寿命，如果设备导致异常电流流动，可能会导致电池发热并造成严重伤害



CAUTION 注意

The temperature range over which the battery can be discharged is -20°C to 60°C. Use of the battery outside of this temperature range may damage the performance of the battery or may reduce its life expectancy.

电池可放电的温度范围为-20°C至60°C。在此温度范围之外使用电池可能会损坏电池的性能或降低电池的预期寿命。

5.4 Safety Gear 安全防护装备

			
Insulated gloves 绝缘手套	Safety goggles 安全护目镜	Safety shoes 安全鞋	Safety Helmet 安全头盔

7.0 Troubleshooting故障排除

If the battery does not operate correctly, please solve the problem by using the table below.

如果电池不能正常工作，请使用下表解决问题

Symptom症状	Possible cause可能原因	Remedy处理方法
No indication and alarm in the front display panel前显示面板无指示和报警	Sleeping mode 休眠模式	Press Reset to normal mode 按RST键到正常模式
No indication and alarm in the front display panel even Reset still no reaction 前显示面板无指示和报警，即使复位仍无反应	Battery voltage too low 池电压过低	Charge battery immediately 立即给电池充电
Red LED Flashing when Standby 待机时红色运行灯闪烁	Battery cell low voltage 电池单节电压低	Charge battery immediately 立即给电池充电
Red LED Flashing when charging 充电时红色运行灯闪烁	Alarm for protection when charging 充电报警	BMS show alarm, protect and adjustment BMS显示警报、保护和调整
Red LED Flashing when Discharging放电时红色运行灯闪烁	Battery voltage too low and will shutdown 电池低电压告警即将保护	Charge battery immediately 立即给电池充电
RED LED Lighting continuous 红色运行灯一直常亮	Battery wrong 电池错误	Need to repair 需要维修

8.0 Storage and Maintenance储存维护

8-1. Storage存储

Before storing, charge the battery at least 7 hours. Store the Battery covered and upright in a cool, dry location. Recommend long-term storage temperature is 15°C -25°C . During storage, recharge the battery in accordance with the following table 储存前，请至少给电池充电7小时。将电池盖好直立存放在阴凉干燥的地方。建议长期储存温度为15°C-25°C。在存放期间，请按照下表对电池重新充电：

Storage Temperature	Recharge Frequency	Charging Duration
0°C - 40°C	Every 3 months	1-2 hours

8-2. Maintenance维护



The battery system operates with hazardous voltages. Repairs may be carried out only by



qualified maintenance personnel. 电池系统在危险电压下工作。维修只能由合格的维修人员进行。

Even after the unit is disconnected from the mains, components inside are still connected to the battery cells which are potentially dangerous 即使在装置与电源断开连接后，内部部件仍与可能存在危险的电池连接。



Before carrying out any kind of service and/or maintenance, disconnect the batteries and verify that no current is present and no hazardous voltage exists in the terminals. 在进行任何类型的维修和/或维护之前，断开电池并确认端子中没有电流和危险电压。



Only major persons are adequately familiar with batteries and with the required precautionary measures may replace batteries and supervise operations. Unauthorized persons must be kept well away from the batteries. 只有专业人员才能充分熟悉电池和所需的预防措施，可更换电池并监督操作，未经授权的

人员必须远离电池。



Verify that no voltage between the battery terminals and the ground is present before maintenance or repair. In this product, the battery circuit is not isolated from the input voltage. Hazardous voltages may occur between the battery terminals and the ground. 确认电池端子和接地之间没有电压，然后维护或修理。在本产品中，电池电路不与输入电压隔离。电池端子和接地之间可能会产生危险电压。



Batteries may cause electric shock and have a high short-circuit current. Please remove all wristwatches, rings and other metal personal objects before maintenance or repair, and only use tools with insulated grips and handles for maintaining or repairing. 电池可能会导致触电并产生高短路电流。在维护或修理前请全部取掉手表、戒指和其他金属个人物品，只能使用带绝缘握把和手柄的工具进行维护或修理。



When replace the batteries, install the same number and same type of batteries.

更换电池时，请安装相同数量和类型的电池



When replace the parallel batteries, make sure the new battery is full charged.

更换并联电池时，确保新电池充满电



Do not open or destroy batteries. Escaping electrolyte can cause injury to the skin and eyes.

不要打开或损坏电池。电解液溢出会对皮肤和眼睛造成伤害

9.Product Responsibilities and Consulting 产品责任和咨询

- 1) We will not be liable for the accidents resulting from operation breaking this specification and user manual.我们对因操作违反本规范和用户手册而导致事故不承担责任.
- 2) We will not send separate notice, provided that the contents of this specification are changed due to improvement of product quality or technological upgrading; provided that you want to understand the latest information of this product, please contact us.本说明书内容如因产品质量的提高或技术的升级而发生变化，恕不另行通知；如您想了解本产品的最新信息，请与我们联系.
- 3) The shelf life of this product is within 60 months after it is delivered; we will maintain the product, which is in the warranty period for free of charge, provided that it has any product quality problems within the specified operation range; we may replace the relevant parts, if we fail to maintain it, so as to achieve the purpose of sustainable use without performance reduction; our after-sales service personnel will propose the specific maintenance and troubleshooting methods.本产品的保质期为交货后60个月内，产品在保修期内，如有任何产品，我们将免费维修。在规定的操作范围内出现质量问题；如果我们不能维护，我们可以更换相关部件，以达到持续使用的目的而不降低性能；我们的售后服务人员将提出具体的维护和故障排除方法.

In case of any questions, please contact us: +86-13020256650

如有任何疑问，请联系我们：+86-13020256650

Appendix:附件

Tools工具

The following tools are required to install the battery pack 安装时请准备如下工具



Electric screw driver 电动螺丝刀



Phillips screwdriver bit
十字螺丝刀批头



M10 / M12 套筒



Forklift 叉车



M8开口扳手



液压钳



钳流表 Clamp meter



剥线钳 Stripper



斜口钳 Slanting pliers



卷尺 Tape measure



美工刀 Box Cutter



钉锤 Nail Hammer