DALY 4S-16S 40A-500A

DALY Smart BMS 4S-16S 40A-500A User Manual
For LifePO4 Lithium Battery Packs

1. PRODUCT OVERVIEW

The DALY Smart BMS (Battery Management System) is designed to provide comprehensive protection and intelligent management for LifePO4 lithium battery packs. This system ensures the safety and extends the lifespan of your battery by monitoring various parameters and offering advanced communication capabilities. This manual provides detailed instructions for the installation, operation, and maintenance of your DALY Smart BMS.

Figure 1: DALY Smart BMS with included WiFi module and connection cables.

2. KEY FEATURES

- **Enhanced Battery Safety:** Provides protection against overcharging, over-discharging, overcurrent, short circuits, and extreme temperatures.

- **2-in-1 Bluetooth/Wi-Fi Dongle:** Enables easy connection to a mobile application via Bluetooth for local monitoring, or Wi-Fi for long-distance remote control (requires connection to a Wi-Fi router).

- **Remote Monitoring:** Monitor battery status and adjust parameters via the mobile app or PC software from various locations.

- **Parallel Circuit Support:** Built-in parallel circuit supports the parallel use of multiple battery packs and 485/CAN Bus parallel communication, compatible with mainstream inverters.

- **High Current Resistance:** Designed for robust performance in high-current applications.

- **Waterproof Design:** Offers protection against moisture.

- **Integrated Indicator Light:** Provides visual feedback on working conditions.
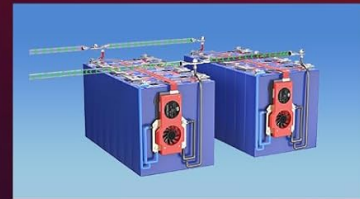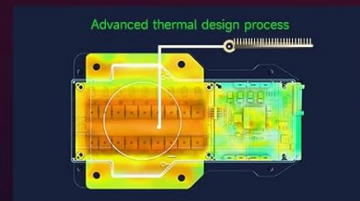
Figure 2: Visual representation of DALY Smart BMS key features.

3. PACKAGE CONTENTS
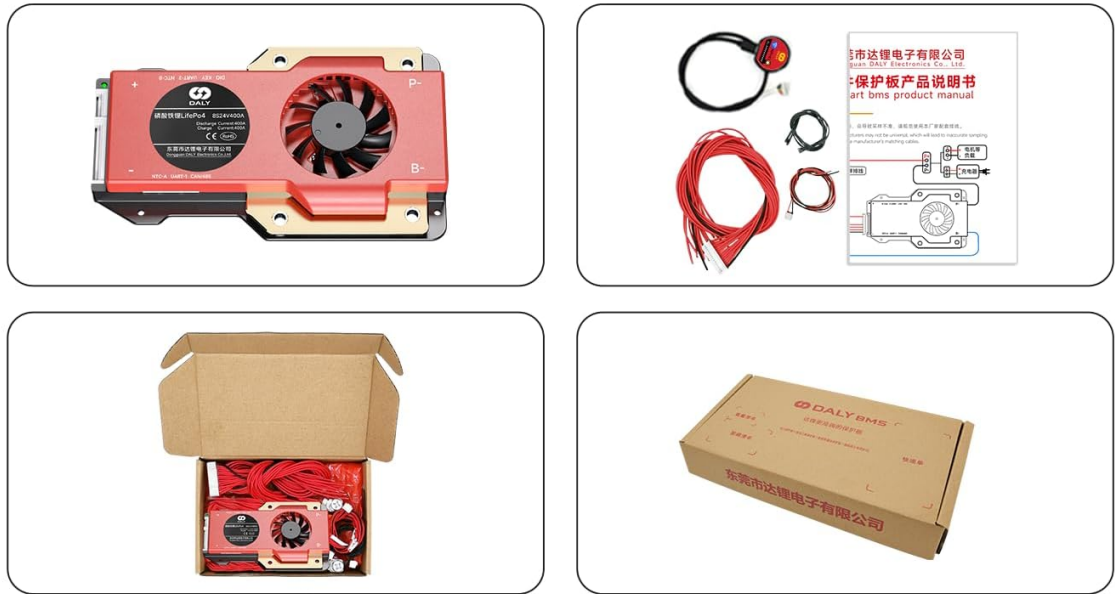
Verify that all items are present in your package:

- S-type Smart BMS (x1)
- B-P-Output Line (x1)
- 2-in-1 BT/Wi-Fi Dongle (x1)
- Sampling Cable (x1)
- NTC (x1)
- CAN/485 5-pin (x1)
- User Manual (x1)

Packing list

Product list	Quantity
① S-type Smart BMS	X 1
② Manual	X 1
③ B-P- Output line(Gift)	X 2
④ WIFI Module (Gift)	X 1
⑤ Cables	X 1
⑥ NTC	X 1
⑦ CAN/485 5pin	X 1
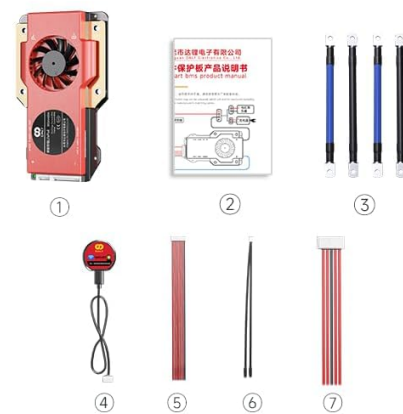
* Note: The packing list takes 24S 400A BMS as an example.

Figure 3: Contents of the DALY Smart BMS package.

4. SPECIFICATIONS

Parameter	Value (for 4S 250A model)
Product Type	LiFePO4 4S 250A common port with balance
Discharge Current	250A
Overdischarge Current	375±3A
Charging Current	250A
Overcharge Current	375±3A
Overcharge Voltage	3.75V±0.05V (Can be set)
Overdischarge Voltage	2.2V±0.05V (Can be set)

Parameter	Value (for 4S 250A model)
Charge Voltage	14.6V
Model	R10S (3~10S)
Size (L x W x H)	183 x 108 x 26 mm (7.2 x 4.25 x 1.02 inches)
Output Wire	2AWG/200mm
Cable	24AWG/300~450mm
Weight	600~700g (1.5 pounds)

Specification

Product: LiFePO₄ 4S 250A common port with balance

Discharge current: 250A

Overdischarge current: 375±3A

Charging current: 250A

Overcharge current: 375±3A

Overcharge voltage: 3.75V±0.05V (Can be set)

Overdischarge voltage: 2.2V±0.05V (Can be set)

Charge voltage: 14.6V

Model: R10S(3~10S)

Size: 183*108*26 (mm)/7.2*4.25*1.02(inch)

Output wire: 2AWG/200mm

Cable: 24AWG/300~450mm

Weight: 600~700g

Figure 4: Product specifications for the DALY Smart BMS.

5. INSTALLATION AND WIRING

Proper installation is crucial for the safe and effective operation of the BMS. Follow these steps carefully:

1. **Solder the Sampling Cables:**

   - The first black cable in the sampling cable set connects to the negative terminal of the battery.
   - The second red cable connects to the positive terminal of the first string of batteries.
   - Continue connecting subsequent red cables to the positive terminals of each successive battery string until all cables are connected.

2. **Check the Cables:** After connecting the cables, use a multimeter to measure the voltage between two adjacent cables starting from the header. Ensure there are no incorrect connections or missing connections. The voltage between B+ and B- should be consistent.

3. **Connect the Output Wires:** Connect the B- wire of the BMS to the total negative terminal of the battery pack. Then, plug the sampling cable to the BMS. After activating the BMS, confirm that the voltage (battery voltage) between B+ & B- and the voltage between P+ & P- are consistent.
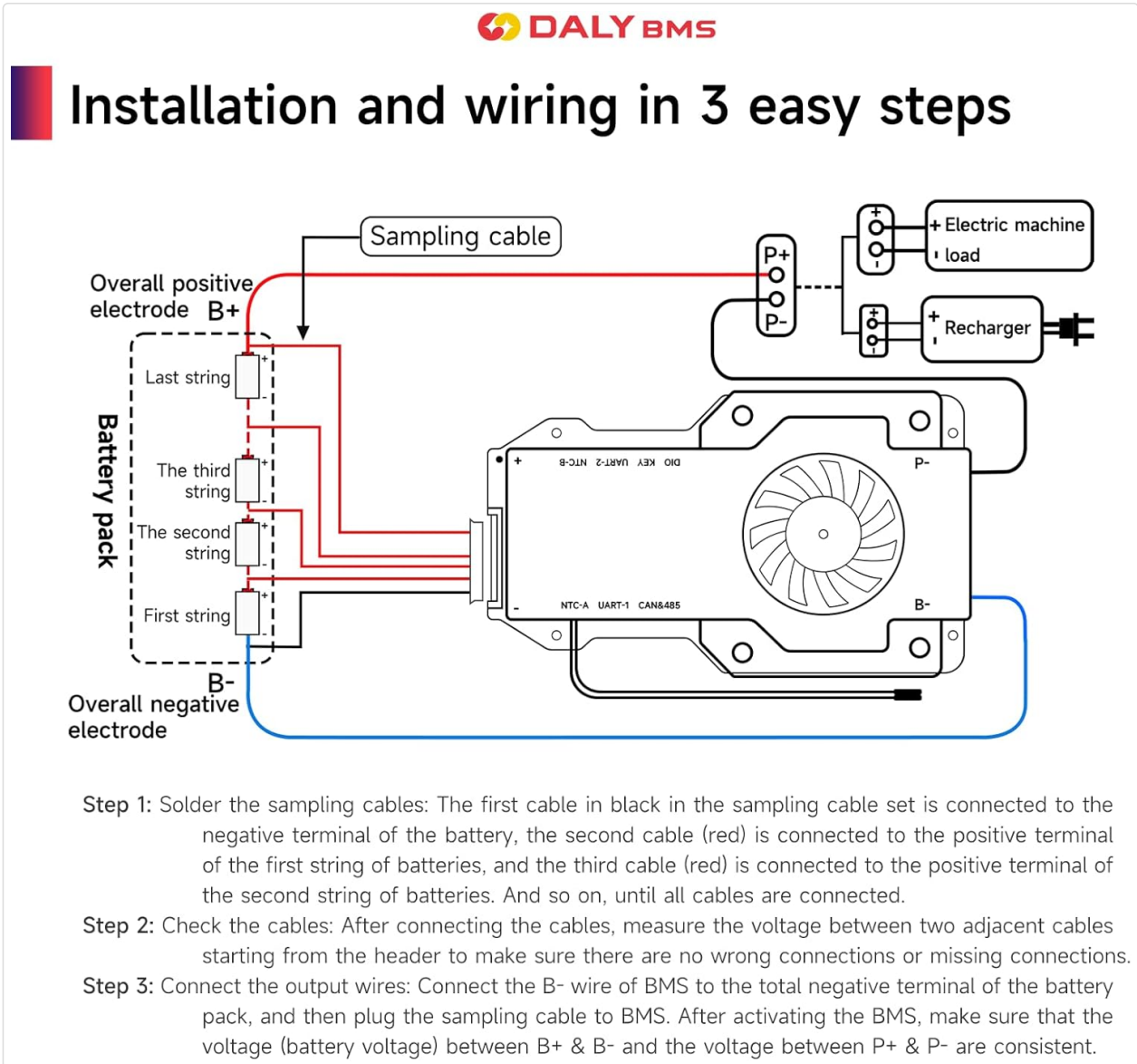
Figure 5: Detailed wiring diagram for DALY Smart BMS installation.

6. OPERATION

The DALY Smart BMS offers intelligent monitoring and control through its dedicated mobile application and PC software.

6.1. App Connectivity

The included 2-in-1 Bluetooth/Wi-Fi dongle allows for flexible connectivity:

- **Bluetooth:** For local monitoring and parameter adjustment, connect directly to the BMS via Bluetooth using the mobile app.

- **Wi-Fi:** For long-distance remote control, connect the dongle to a Wi-Fi router. This enables remote monitoring of battery status and adjustment of parameters from anywhere with internet access.

The mobile app supports both iOS and Android systems and can automatically switch with the system language. It provides real-time data on State of Charge (SOC), voltage, current, temperature, and cycle number, along with alarm notifications.

Figure 6: DALY Smart BMS mobile application interface.

6.2. Parallel Communication

The BMS supports 485/CAN Bus parallel communication, allowing multiple battery packs to operate in parallel. This feature is compatible with various mainstream inverters, facilitating scalable power solutions.

6.3. Video Overview

Watch this video for a comprehensive overview of the DALY S-Series Smart BMS features and capabilities:

Video 1: DALY S-Series Smart BMS Overview. This video highlights features such as parallel connection support, smart monitoring, waterproof design, high current resistance, and rapid heat dissipation.

7. APPLICATIONS

The DALY Smart BMS is suitable for a wide range of high-current scenarios, including but not limited to:

- RV energy storage systems
- Forklifts
- Golf carts
- Large sightseeing cars
- Low-speed scooters
- Industrial AGVs (Automated Guided Vehicles)

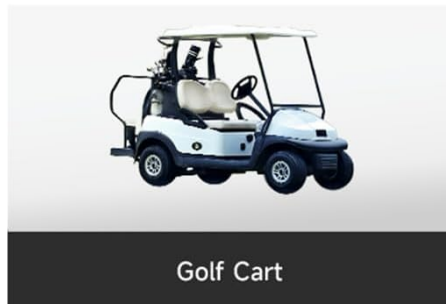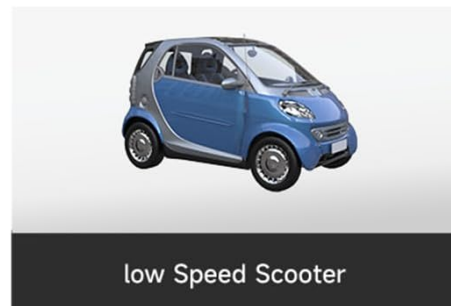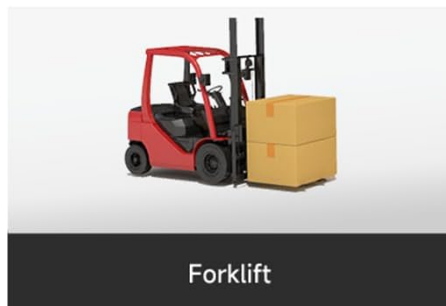Figure 7: Examples of high-current applications for the DALY Smart BMS.

8. SAFETY INFORMATION

Always adhere to safety precautions when working with lithium batteries and BMS systems:

- Ensure all connections are secure and correctly wired before applying power.
- Avoid short circuits at all times.
- Do not expose the BMS to extreme temperatures or moisture beyond its specified operating conditions.

- Consult a qualified professional if you are unsure about any installation or wiring steps.

- Keep the BMS away from flammable materials.

9. TROUBLESHOOTING

If you encounter issues with your DALY Smart BMS, consider the following general troubleshooting steps:

- **No Power/No Indication:** Check all power connections and ensure the battery pack is adequately charged. Verify the sampling cable is correctly plugged in.

- **App Connectivity Issues:** Ensure Bluetooth is enabled on your device and the BMS dongle. For Wi-Fi, confirm the dongle is connected to a stable Wi-Fi network and the router is functioning correctly. Restart the app and the BMS if necessary.

- **Incorrect Readings:** Double-check all wiring, especially the sampling cables, for proper connection and contact. Ensure the app or PC software is updated to the latest version.

- **Over-protection Triggered:** If the BMS triggers an over-protection (e.g., overcurrent, overvoltage), identify the cause (e.g., excessive load, faulty charger) and rectify it before resetting the BMS.

For persistent issues, refer to the detailed troubleshooting section in the full product manual or contact DALY customer support.

10. WARRANTY AND SUPPORT

The DALY Smart BMS comes with a **3-year warranty**. For warranty claims or technical support, please contact DALY customer service through their official channels. Ensure you have your purchase details and product model number available.
The product is ISO/FCC/RoHS/PSE/CE APPROVED, ensuring compliance with international quality and safety standards.

Related Documents - 4S-16S 40A-500A

[Daly Smart BMS 8-16S 100-200A Product Specification Approval and Manual](#)
Detailed product specification and user manual for the Daly Smart BMS 8-16S 100-200A, covering technical parameters, protection features, LED indicators, communication protocols, and installation instructions.

一、产品简介

随着物联网技术的飞速发展和智能设备的广泛应用，越来越多的设备需要更高效、更便捷的通信和控制方式，同时制国标对动力设备的智能化和兼容性也提出了更高要求。在这种背景下，采用蓝牙主控实现兼串及一线通功能的解决方案逐渐成为行业的热门选择。

产品			
产品型号	YH	YK	YM
产品尺寸（单位：毫米mm）	101*65.5*14.2mm	130*65.5*14.2mm	180*92.4*17.2mm
串数范围	4-8S 7-17S 7-24S		
持续电流	30A/40A/60A	80A/100A/120A	150A/200A

二、使用指引

1、焊接保护板

(1)焊接采样排线：
从细黑线连接电池B-（总负极）开始，第2根线连接第1串电池正极，后面依次连接每一串电池的正极；最后将B+线也焊接在最后一串（总正极）上（请参考说明书接线示意图）。

*注：焊接采样排时不可随意保护板，请根据电池实际串数进行焊接，多出的采样线无需焊接（多出的采样线请做好绝缘处理）。

(2)检测电压：
使用万能表或线序检测设备测量排线的针孔每串电压是否在正常范围内，如不正常请检查线是否有错接、虚焊、假焊、漏焊等情况。

(3)焊接输出线：
将B-连接线（蓝色粗线）、P-连接线（黑色粗线）用螺丝锁至保护板对应的B-、P-螺母上，建议扭矩为10N·m(牛米)；并把B-线焊接电池总负线。

*注：焊接采样排时不可随意保护板，请根据电池实际串数进行焊接，多出的采样线无需焊接（多出的采样线请做好绝缘处理）。

(4)接入保护板配件：
如温控、电量板、GPS、显示屏等，再把采样线插入保护板自动激活。

2、蓝牙APP下载及连接

(1)下载蓝牙APP
①通过扫描保护板上的二维码下载；
②应用商店搜索"Smart BMS"；
③登录达锂官网
(https://www.dalybms.com//)下载；
④联系客服获取下载方式并安装手机APP。

(2)连接蓝牙APP
打开蓝牙和手机位置信息并进入APP，APP会自动搜索蓝牙序列号，核对保护板上的序列号无误后点击序列号进入电池管理界面。

3、设置参数

首次使用时，需在APP或电脑上位机设置电池类型及容量（出厂默认为铁锂参数），电池组的容量是需要按电池组的实际容量进行设置。

首次使用时需充满100%作为标定，其他保护参数可以根据自身需求进行设置，APP修改参数的出厂默认认密码为123456，PC上位机修改参数密码为123456789。

*注：在没有充放电的状态下，保护板默认3600秒后休眠，检测到充放电时会自动唤醒，也可通过APP或PC上位机修改休眠时间，如设置65535则代表不休眠。

4、一线通使用说明

在APP或上位机选择对应协议，即可使用。

5、特别说明

(1) 不同厂家的排线不通用，请确保使用我们公司配套排线；
(2) 在测试、安装、接触和使用保护板时，要做好防静电措施；
(3) 不要使保护板的散热面直接接触电芯，否则热量会传送到电芯，影响电池的安全；
(4) 不可自行拆卸，更改保护板元器件；
(5) 本公司保护板外壳仍会导电，组装作业中避免与电芯、镍带接触，因导电保护设计需要，外壳与主板共地，测量时有电压属正常现象；
(6) 我司产品进行严格的出厂检验测试，但是因为客户使用的环境不同（特别是高温、超低温、太阳下、潮湿环境等），难免会出现保护板故障，所以请客户在选择和使用保护板时，需要在友好的环境下使用，及选择一定冗余容量的保护板进行备用。

三、接口定义说明

DO C-GND YXT GND 12V   NTC2 GND GND NTC1
              RX TX S1 12V/3.3V GND

接口名称	Pin脚	标号	定义说明
NTC	1	NTC1	1#温控线
	2	GND	地GND
	3	GND	地GND
	4	NTC2	2#温控线
UART	1	GND	地GND
	2	3.3V	供电源3.3V
	3	12V	供电电12V
	4	S1	激活开关
	5	TX	通讯发送端
	6	RX	通讯接受端
一线通/DO	1	12V	12V*500mA
	2	GND	地GND
	3	YXT	一线通接口
	4	C-GND	
	5	DO	3.3V*200mA DO

四、常见串数接线示意图

(4串接线示意图)

(5串接线示意图)
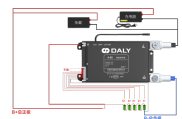
(6串接线示意图)
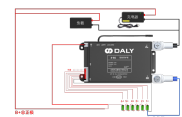
[DALY Y Series BMS Technical Specifications and Wiring Guide](#)

Detailed technical specifications, wiring diagrams, and interface descriptions for DALY Y Series Battery Management Systems (BMS), including models YH, YK, and YM. Covers cell counts from 4S to 24S and current ratings up to 200A, with information on the Smart BMS mobile application.

[DALY DL-R32U-F012S200ATJ-MM00-S4RV LiFePO4 BMS Technical Specifications](#)

Detailed technical specifications, wiring diagrams, and warranty information for the DALY DL-R32U-F012S200ATJ-MM00-S4RV LiFePO4 12S 36V 200A Battery Management System (BMS) with Balance, UART, and Bluetooth.

第五代卡车启动保护板
操作使用说明书

一、产品简介

随着锂电池的广泛应用，对电池管理系统也提出了高性能、高可靠性及高性价比等要求。

达锂第五代卡车启动保护板是专门针对货车、船舶启动和驻车空调及卡车启动电源电池组而研发设计的一款智能保护板，可承受3000A的瞬间大电流，内置加热模块可以直连加热膜，集成滤波模块收卡车电机脉冲高压，且具有一键强启、智能通讯等功能。集成4G远程通讯膜高精度北斗定位功能，可通过云平台、APP、小程序实现远程管理、查看实时定位、历史轨迹等智慧功能。

二、操作说明

* 请仔细阅读说明书、更改参数（如修改电池容量、电压、电流等）后请载后保存，方便后需开始数观。

1、保护板连接电池接线顺序：

特别注意：
- 不同厂家的排线不通用，请确保使用达锂配套排线；
  （注意：B- 线内阻在 0.5mR-0.8mR 范围）；
- 切记 !!! 焊接采样排线时，排线不要插入保护板；

1.1 排线从细黑线连接总负极 B- 开始连接，第 2 根线（红线）连接第 1 串电池正极，后面依次连接每一串电池的正极，直到最后一串总正极，B+ 线单独接入电池总正极；

1.2 排线连接好后插头不要直接插入保护板，先测量插头背面每两个相邻金属端子间的电压，如果是三元聚合物电池电压应该在3.0~4.15V 之间，铁锂电池应该在2.5~3.6V 之间，钛酸锂电池应该在1.8~2.8V 之间，确保电压无误后再进行下一 步操作；

1.3 插入NTC 线束（确保保护板NTC接口插入温控线）；

1.4 将保护板B-线（蓝色粗线）接到电池总负极；
1.5 将排线插入保护板；
1.6 将蓝牙开关模块插入UART接口，查看指示灯是否正常亮起（UART1、UART2 均可），
1.7 首次上电需要充电、或蓝牙开关按键激活。

2、测量电池B+,B-电压与B+,P-电压是否
相等（即：电池组本身电压和经过保护板之后的电压是否相等），相等即保护板正常工作，可以正常使用了。如不相等，请按照上面接线顺序重新检查一遍。

3、接负载和充电器：
3.1 将负载负极和充电器负极与P-连接。
3.2 将负载正极和充电器正极与电池组总正极连接。

4、下载通讯软件(手机端 DALY BMS
APP,电脑端上位机)，设置电池组的容量(AH)为正确的容量。
4.1 在手机应用市场搜索DALY BMS,下载并安装。
4.2 打开手机的定位和蓝牙及开关权限功能。
4.3 打开DALY BMS APP 在首界面选择4G设备，注册并绑定设备。
4.4 在界面的右下角有参数设置。点击打开，选择电芯参数,可以看到额定容量，输入自己电池组的实际容量XX,点击设置，默认密码123456。
4.5 容量设置置好，可以对电池组进行充电，充电触发了过充二级保护，SOC会自动校准为100%。

5、天线安装
特别注意：
- 外置天线切勿放置于密闭箱体内，需要将天线外置，注意固定安装，且防水点胶；
- 5.1 箱体合适位置开孔，开孔建议13-13.5 mm，最终需结合天线实物判断。

三、接口定义说明

LTE GNSS

NTC2 GND GND NTC1
NTC

RX TX SI 12V 3.3V GND   RX TX SI 12V 3.3V GND
UART2   UART1

B+

B8   B2 B1 B0
排线接口

序号	功能	Pin成	间距	接口描述	工艺方式
1	电压采集1	9	2.0	B0-B8	插针带扣
2	电压采集2	11	2.0	B0-B10	插针带扣
3	NTC	4	2.0	NTC1,GND,GND,NTC2	插针带扣
4	B+	2	/	B+	XT-30
5	H+	2	/	接加热片	XT-30
6	UART1	6	2.0	GND,3.3V,12V,SI,TX,RX	插针带扣
7	UART2	6	2.0	GND,3.3V,12V,SI,TX,RX	插针带扣
8	LTE	1	/	4G通讯天线	MCX母母头
9	GNSS	1	/	北斗定位天线	MCX母公头

四、远程管理、蓝牙开关模块使用说明

1、小程序/DALY APP远程管理
（1）"启动宝"小程序远程管理
"启动宝"微信小程序功能：可进行数据监控、一键强启、一键加热、预约加热、实时定位、历史轨迹查看等功能。
*连接方式一：通过扫描随货二维码，快速连接"启动宝"微信小程序，选择"远程设备"，注册绑定后即可连接保护板实现远程管理。

[DALY LiFePO4 8S24V200A BMS with 4G and GNSS - Datasheet](#)

Technical datasheet for the DALY LiFePO4 8S24V200A Battery Management System (BMS) featuring 4G connectivity, GNSS, UART, and NTC temperature sensing. Includes specifications, pinout, and LED status information.