

DALY 3S-24S

DALY 3S 12V 15A Li-ion Battery Management System (BMS) Instruction Manual

Model: 3S-24S

1. INTRODUCTION

This manual provides essential information for the safe and effective use of the DALY 3S 12V 15A Li-ion Battery Management System (BMS). This device is designed to protect lithium battery packs, ensuring their longevity and safe operation.

Key features of this DALY BMS include:

- Injection molding sealing process for dustproof, shockproof, waterproof, and anti-accumulation functions.
- Multi-function protection: Over-charging, Over-discharging, Over-current, Temperature, and Short-circuit protection.
- Compact size and low temperature rise.
- Easy installation with plug-and-play balance wires.



Figure 1: DALY 3S 12V 15A Li-ion BMS with included balance wires.

2. SAFETY INFORMATION

Please read and understand all safety instructions before installing or operating the DALY BMS. Failure to follow these instructions may result in electric shock, fire, serious injury, or property damage.

- **Qualified Personnel:** Installation and wiring should only be performed by qualified personnel with experience in battery systems.
- **Voltage Check:** Always verify the voltage of the battery pack and individual cells before connecting the BMS. Ensure compatibility with the BMS specifications.
- **Polarity:** Observe correct polarity when connecting the BMS to the battery pack. Incorrect connections can damage the BMS and battery.
- **Short Circuits:** Avoid short circuits during installation. Use insulated tools and protective gear.
- **Temperature:** Operate the BMS within its specified temperature range. Excessive heat can damage the unit.
- **Water and Moisture:** Although the BMS has some water resistance, avoid exposing it to excessive moisture or submersion.
- **Damage:** Do not use the BMS if it appears damaged.

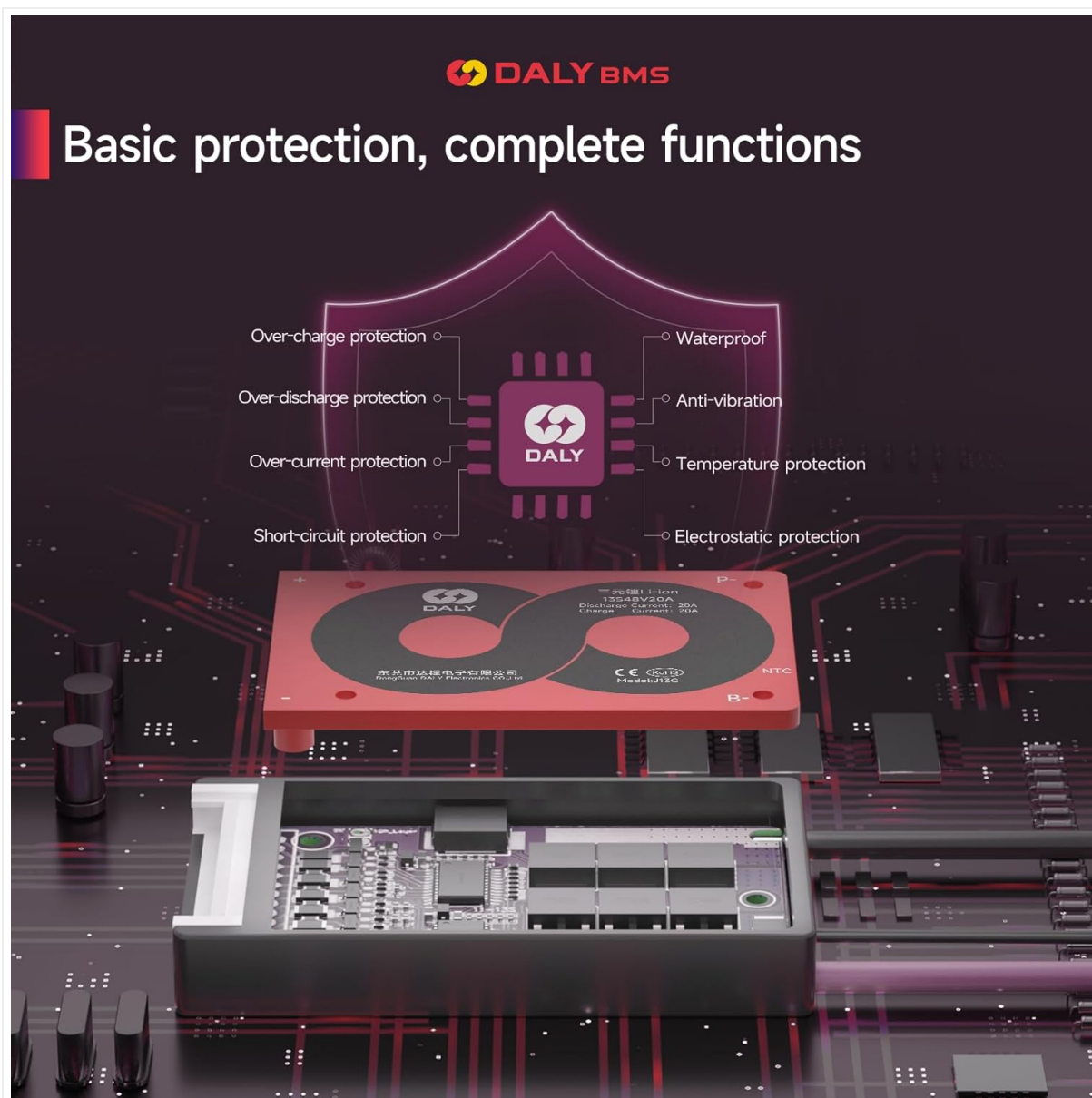


Figure 2: Overview of DALY BMS protection features.

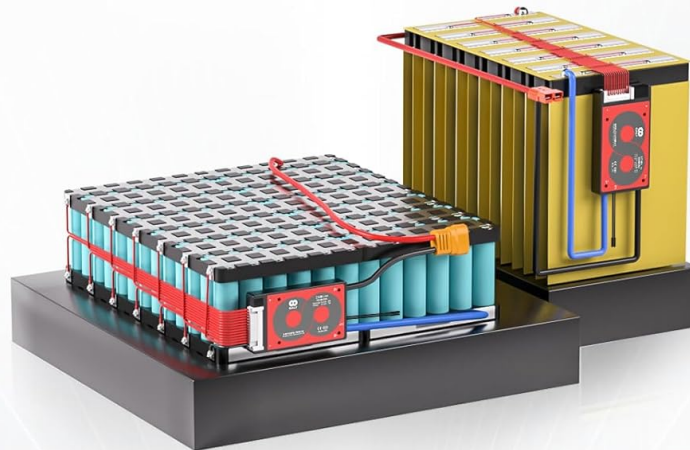
3. APPLICATIONS

The DALY BMS is versatile and suitable for various lithium battery applications, including large single cell battery packs, cylindrical cell battery packs, and soft cell battery packs. It can be integrated into a wide range of devices.



Suitable for a variety of scenarios lithium battery

It is suitable for large single cell battery pack, cylindrical cell battery pack and soft cell battery pack, which can meet the requirements of various application scenarios.



Electric bicycle



Electric two-wheeler



Electric wheelchair



Electric scooter



Hoverboard



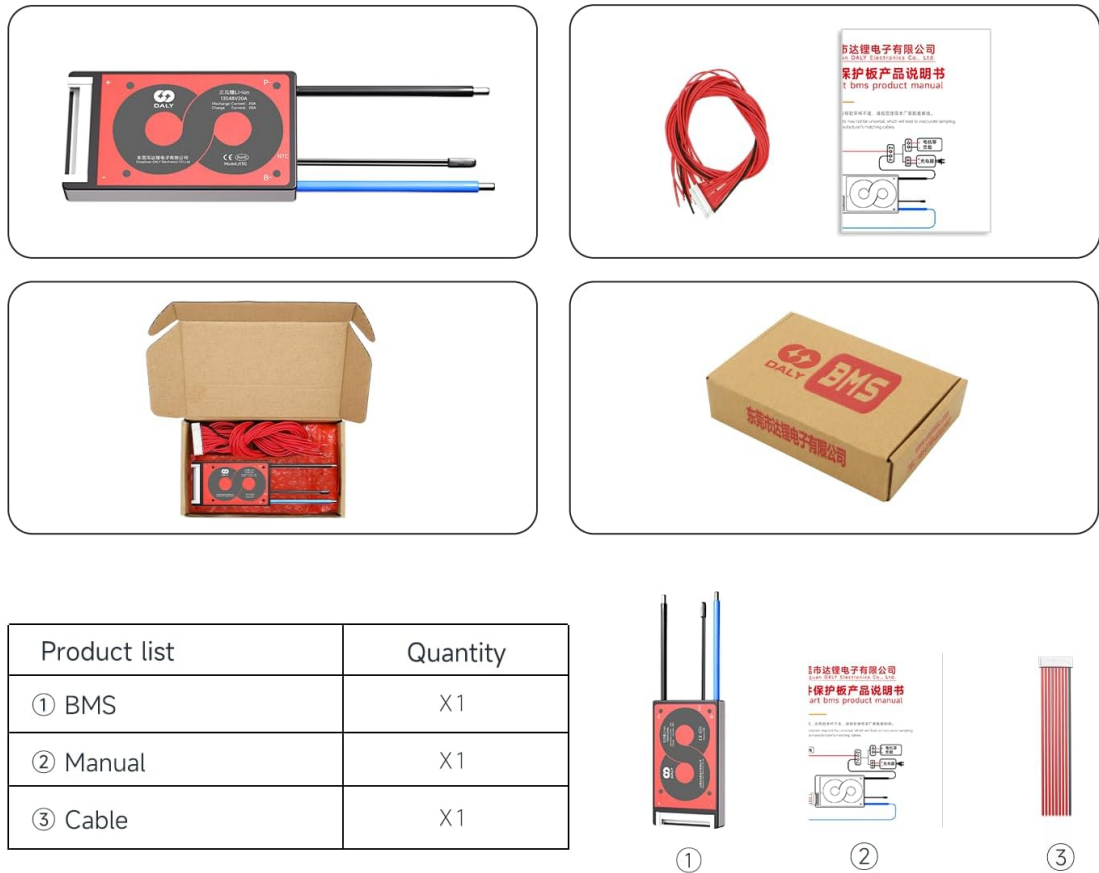
Solar street lamp

Figure 3: Common applications for DALY BMS.

4. SETUP AND INSTALLATION

Proper wiring is critical for the correct function of the BMS. Follow these steps carefully. The wiring diagram below illustrates the general connection process.

Packing list



* Note: The packing list takes 13S 20A BMS as an example.

Figure 4: DALY BMS wiring diagram (example based on G series 20A BMS).

Installation Steps:

- Solder the sampling cables:** The first cable (black) in the sampling cable set connects to the overall negative terminal of the battery pack (B-). Subsequent cables (red) connect to the positive terminal of each battery string in sequence (e.g., first red cable to the positive terminal of the first string, second red cable to the positive terminal of the second string, and so on, until all cells are connected).
- Check the cables:** After connecting the sampling cables, measure the voltage between two adjacent cables starting from the header. Ensure there are no wrong connections or missing connections. The voltage readings should be consistent with the nominal voltage of a single cell.
- 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, measure the voltage between B+ (overall positive of battery pack) and B- (BMS negative output) and the voltage between P+ (load/charger positive) and P- (BMS negative output) to ensure they are consistent.

Note: The specific wiring for your battery pack (e.g., 3S Li-ion) must match the BMS configuration. Always double-check all connections before applying power.

5. OPERATION

The DALY BMS operates automatically once correctly installed and connected to the battery pack. Its primary function is to monitor and protect the battery cells.

- **Charging:** The BMS will manage the charging process, preventing over-charging by disconnecting the charger if any cell voltage exceeds the over-charge protection threshold.
- **Discharging:** During discharge, the BMS monitors cell voltages and current. It will cut off discharge if any cell voltage drops below the over-discharge protection threshold or if the current exceeds the over-current limit.
- **Balancing:** The integrated balance function helps to equalize the voltage across individual cells in the battery pack, improving overall pack health and lifespan.
- **Temperature Protection:** The temperature sensor monitors the battery pack's temperature and will initiate protection if temperatures exceed safe operating limits.

No user intervention is typically required for the basic operation of this standard BMS model. For advanced features or communication functions, a smart BMS model would be required.

6. MAINTENANCE

The DALY BMS is designed for low maintenance. However, periodic checks can help ensure optimal performance and longevity.

- **Visual Inspection:** Periodically inspect the BMS and its connections for any signs of damage, corrosion, or loose wiring.
- **Cleanliness:** Keep the BMS free from dust and debris. Use a soft, dry cloth for cleaning.
- **Environmental Conditions:** Ensure the BMS is operating within its specified temperature and humidity ranges. Avoid extreme conditions.
- **Battery Health:** Monitor the overall health of your battery pack. A healthy battery pack contributes to the optimal performance of the BMS.

7. TROUBLESHOOTING

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

- **No Output Voltage:**
 - Check all wiring connections for looseness or incorrect polarity.
 - Verify the battery pack voltage is within the BMS's operating range.
 - Ensure no protection functions (over-discharge, short-circuit) have been triggered. Disconnect and reconnect the load/charger to reset if necessary.
- **Battery Not Charging:**
 - Check charger functionality and connections.
 - Verify individual cell voltages. If any cell is overcharged, the BMS will prevent further charging.
 - Ensure the temperature sensor is correctly installed and not indicating an over-temperature condition.
- **Battery Not Discharging (Load Cut Off):**
 - Check for short circuits in the load.
 - Verify individual cell voltages. If any cell is under-voltage, the BMS will cut off discharge.
 - Ensure the load current does not exceed the BMS's continuous discharge current rating.

- **Unbalanced Cells:**

- Allow the battery pack to sit for some time after charging to allow the balance function to work.
- Ensure all balance wires are correctly connected and making good contact.

If problems persist after following these steps, please contact DALY customer service for further assistance.

8. SPECIFICATIONS

The following table details the specifications for the DALY 3S 12V 15A Li-ion BMS.

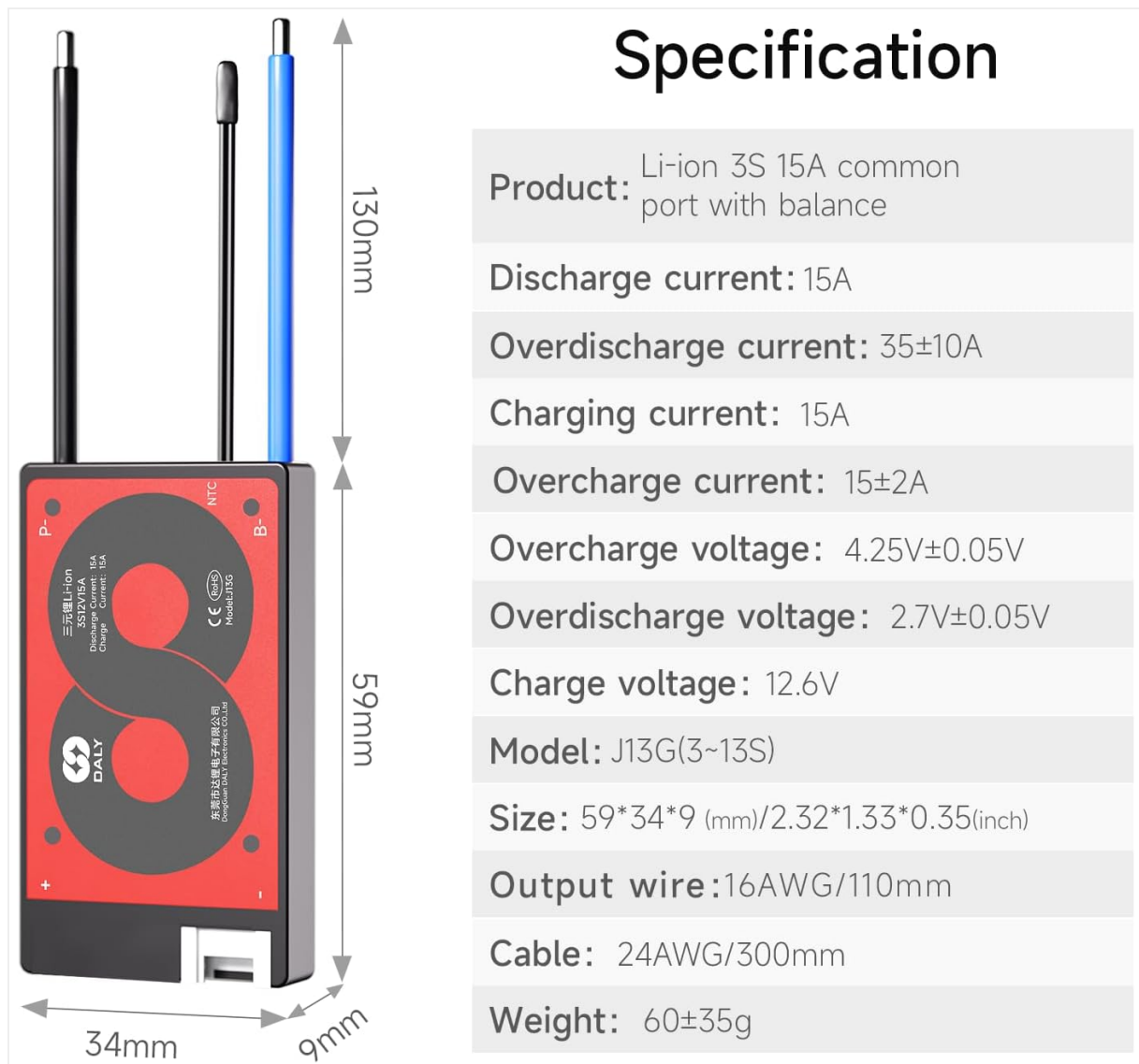


Figure 5: DALY 3S 15A Li-ion BMS Specifications.

DALY 3S 12V 15A Li-ion BMS Key Specifications

Feature	Value
Product Type	Li-ion 3S 15A common port with balance
Discharge Current	15A
Overdischarge Current	35±10A
Charging Current	15A

Feature	Value
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Overcharge Current	15±2A
Overcharge Voltage	4.25V±0.05V
Overdischarge Voltage	2.7V±0.05V
Charge Voltage	12.6V
Model	J13G (3-13S)
Dimensions (L x W x H)	59*34*9 mm (2.32*1.33*0.35 inches)
Output Wire	16AWG/110mm
Balance Cable	24AWG/300mm
Weight	60±35g

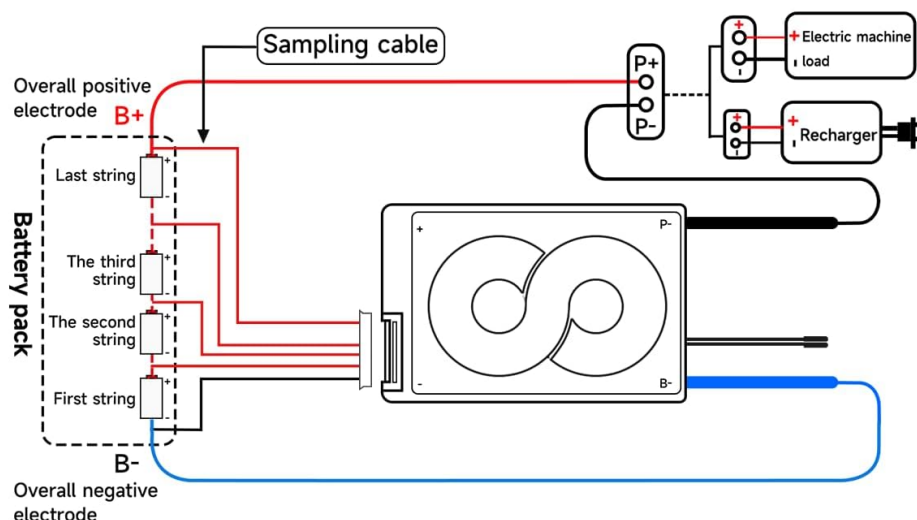
Additional product dimensions: 2.32 x 1.34 x 0.35 inches. Item Weight: 4.6 ounces.

9. PACKING LIST

Upon opening the package, please verify that all items listed below are present and undamaged.

Install wiring in 3 steps

The wiring diagram takes the G series 20A BMS as an example.



- Step 1: Solder the sampling cables: The first cable in black in the sampling cable set is connected to the negative terminal of the battery, the second cable (red) is connected to the positive terminal of the first string of batteries, and the third cable (red) is connected to the positive terminal of the second string of batteries. And so on, until all cables are connected.
- Step 2: Check the cables: After connecting the cables, measure the voltage between two adjacent cables starting from the header to make sure there are no wrong connections or missing connections.
- Step 3: Connect the output wires: Connect the B- wire of BMS to the total negative terminal of the battery pack, and then plug the sampling cable to BMS. After activating the BMS, make sure that the voltage (battery voltage) between B+ & B- and the voltage between P+ & P- are consistent.

Figure 6: Contents of the DALY BMS package.

Package Contents




Item	Quantity
BMS Unit	1
Instruction Manual	1
Balance Cable Set	1

10. WARRANTY AND SUPPORT

DALY is committed to providing high-quality products and customer satisfaction.

- **Technical Support:** We offer 24-hour one-on-one customer service and lifetime technical support for our products.
- **Contact:** For any inquiries, technical assistance, or warranty claims, please contact DALY customer service through the retailer or official channels.
- **Note:** Standard BMS models do not include communication functions. If you require a smart BMS, active balancer, parallel module, or other accessories, please contact customer service for options.

Related Documents - 3S-24S

<div><p>产品规格书 Product specification</p><p>锂电池主动均衡保护板 Lithium battery active balancing protection board</p><p>JK-B2A24S-30P</p><p>版本: V1.1.1</p><p>成都极安科技有限公司 Chengdu Jikan Technology Co., Ltd</p></div>	<p>JIKONG JK-B2A24S-30P Lithium Battery Active Balancing Protection Board Manual</p> <p>Comprehensive maintenance and user manual for the JIKONG JK-B2A24S-30P Lithium Battery Active Balancing Protection Board. Details product overview, functional characteristics, selection guides, detailed function descriptions, main parameters, interface definitions, installation methods, and APP operation instructions. Supports various lithium battery chemistries and configurations.</p>
<div><p>JK SMART ACTIVE BALANCE BMS</p><p>SMART ACTIVE BALANCE BMS</p><p>4S~24S 40A-200A</p><p>0.6A-2A Active Balance Current</p></div>	<p>JK Smart Active Balance BMS User Manual and Specifications</p> <p>This document provides a comprehensive user manual and technical specifications for the JK Smart Active Balance BMS, covering installation, operation, troubleshooting, and product details for various models.</p>
<div><p>JKBMS Smart Active Balance BMS</p><p>4S-24S 40A-300A</p><p>Active Balance Current: 0.6A to 2A</p></div>	<p>JKBMS Smart Active Balance BMS User Manual</p> <p>This user manual provides a comprehensive guide to the JKBMS Smart Active Balance BMS, covering product introduction, parameters, setup instructions, and troubleshooting. Learn about its features, specifications, and how to effectively use and maintain your JKBMS BMS.</p>
<div><p>产品规格书 Product specification</p><p>产品型号: Product Model: 8-16S 100-200A</p><p>产品描述: Product Description: 锂电池主动均衡保护板</p><p>客户名称: Customer Name: 极安科技</p><p>产品型号: Product Model: 8-16S 100-200A</p><p>产品描述: Product Description: 锂电池主动均衡保护板</p><p>客户名称: Customer Name: 极安科技</p><p>产品型号: Product Model: 8-16S 100-200A</p><p>产品描述: Product Description: 锂电池主动均衡保护板</p><p>客户名称: Customer Name: 极安科技</p></div>	<p>Daly Smart BMS 8-16S 100-200A Product Specification Approval and Manual</p> <p>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.</p>
<div><p>SUNKKO</p><p>D1524</p><p>Lithium Battery Pack Equalizer & Analyzer</p><p>User Manual</p></div>	<p>SUNKKO D1524 Lithium Battery Pack Equalizer & Analyzer User Manual</p> <p>This user manual provides detailed instructions for the SUNKKO D1524 Lithium Battery Pack Equalizer & Analyzer. It covers features, product parameters, equilibrium principles, wiring diagrams, precautions, and operational steps for both discharge and charge equalization modes. The device is designed for detecting, analyzing, and equalizing lithium battery packs up to 24 strings.</p>

Y系列保护板说明书

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。同时新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，采用蓝牙主控实现串率及一线路功能的解决方案逐渐成为行业的热门选择。

产品	YH	YK	YM
产品型号	YH	YK	YM
产品尺寸 mm(L*W*H)	107*65.5*14.2mm	107*65.5*14.2mm	180*70.4*12.2mm
串数范围	4-8S	7-17S	7-24S
持续电流	10A/10A/80A	10A/10A/120A	10A/200A

二、使用指引

1、焊接保护板

(1)焊接采样排线：

从正极线连接电池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+（总正极）接在最后一串（总正极）上（请参考说明书接线示意图）。

*注：焊接采样排线时不可碰量保护板，请根据电池实际串数进行焊接，多串的采样板无需焊接（多串的采样板请做好绝缘处理）。

(2)检测电压：

使用万能表或程序检测设备测量排线的针孔每串电压是否在正常范围内，如不正常请检查接线是否有错接、虚焊、虚焊、虚焊等情况。

(3)焊接输出线：

将B-（总负极）（蓝色粗线），P-（正极粗线）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+（总正极）接在输出线上。

*注：焊接输出线时不可碰量保护板，请根据电池实际串数进行焊接，多串的采样板无需焊接（多串的采样板请做好绝缘处理）。

(4)接入保护板配件：

如遥控、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搜索达德官网

④https://www.dalybms.com/ 下载；

⑤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或电脑上手机设置电池类型及容量（出厂默认为铁锂电池）；电池的容量设置会影响电池的充电保护设置。

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值为123456，PC上位机修改参数密钥为12345678。

*注：在没有充电放电的状态下，保护板默认3.600V后休眠，检测到放电时会自动唤醒，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、一线路使用说明

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、检测和使用时，要做好防静电措施；

(3)不要使保护板的散热面直接接触电池，否则热量会传导到电池，影响电池的安全；

(4)不可自行拆卸、更改保护板元器件；

(5)本公司保护板外壳会导电，组装作业中避免与电池、微带接触，因静电防护设计需要，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（特别是温度、湿度、太阳下、潮湿环境等），难免会出现保护板故障，所以客户在选择和使用保护板时，需要在良好的环境下使用，及选择一定冗余量的保护板进行备用。

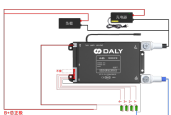
三、接口定义说明

接口名称	Pin脚	信号	定义说明
NTC	1	NTC1	1串温度线
	2	GND	接GND
	3	GND	接GND
UART	4	NTC2	2串温度线
	1	GND	接GND
	2	3.3V	供电电压3V
	3	12V	供电电压12V
	4	SI	通信开关
	5	TX	通信发送线
	4	RX	通信接收线
一线路DO	1	12V	12V/1000mA
	2	GND	接GND
	3	YXT	一线路接口
	4	C-KIND	
	5	DO	3.3V/200mA DO

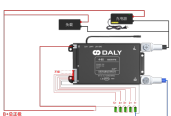
DO	C-KIND	YXT	GND	12V
RX	TX	12V/10V	GND	NTC2

四、常见串数接线示意图

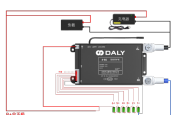
(4串接线示意图)



(5串接线示意图)



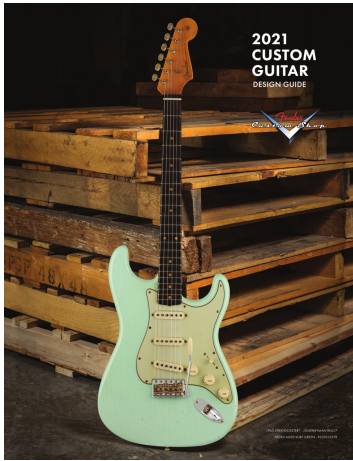
(6串接线示意图)



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.

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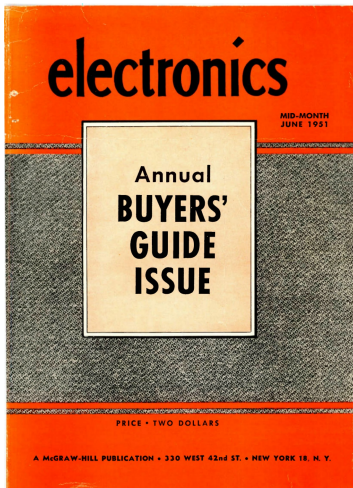
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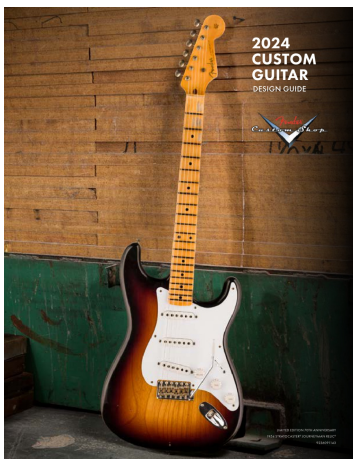
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[\[pdf\]](#) Specifications Guide

2023 CUSTOM GUITAR fmicassets Each base model includes specifications listed as period accurate but can be customized based on the player s playing style and taste STRATOCASTER Custom Shop Design Guide sites fender themes img customshop |||

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2025 CUSTOM GUITAR fmicassets Vintage bobbin construction Alnico 5 magnets flush mounted pole pieces and enamel wire provide warm tones enhanced dynamics even string response High Custom Shop Design Guide sites fender themes img customshop |||

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[\[pdf\]](#) User Manual Instructions

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