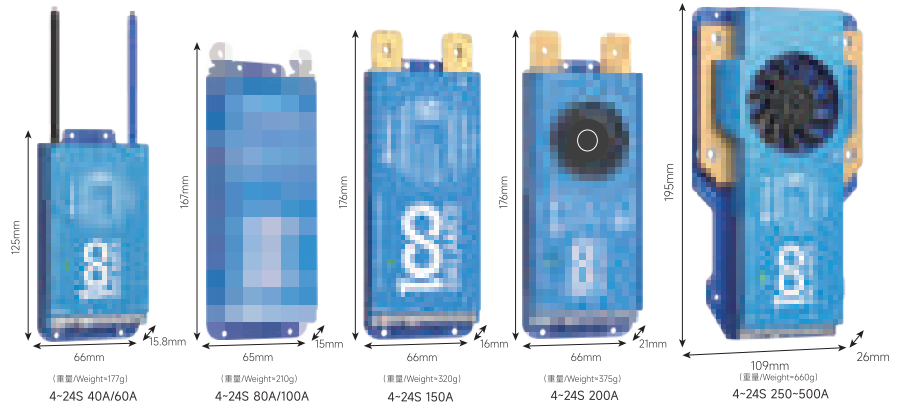




均衡宝 | 主动均衡保护板使用说明书

Smart Active Balance BMS User Manual

东莞市均衡宝技术有限公司
Dongguan Balanced Management Technology Co., Ltd.



温馨提示 Kind Reminder

感谢您选择均衡宝产品，在产品开始使用前，请核对产品及配件和您采购订单是否一致，有缺失或受损。无异常请按使用指引开始使用本产品。如有异常请及时联系客服为您处理。

Thank you for choosing 100balance BMS. Before using the product, please check whether the product and accessories are consistent with your purchase order and whether they are missing or damaged. If there is no abnormality, please use this product according to the instructions. If there is any abnormality, please contact customer service in time.

一、包装清单 Packing List

- ①主动均衡保护板
Smart active balance BMS
- ②硅胶导线 P-&B- Cable
标配/Standard: 7AWG*1 (80-100A)
4AWG*1(150-200A) 2AWG*1 (250A)
4AWG*2(300A) 1AWG*2 (400A-500A)
选配/Optional: 6AWG*1 (80-100A) 2AWG*1 (150-200A)
- ③螺丝 Screws
(TH40/60A 没有螺丝 TH40/60A No Screw)
(40-250A 2个螺丝 Screw*2Pcs)
(300-500A 4个螺丝 Screw*4Pcs)
- ④采集排线 Sampling cable
标配/Standard:450mm
选配/Optional:800mm
- ⑤B+线 B+ Cable
- ⑥温控线 NTC cable
(标配一根, 选配两根)
(One standard,two optional)
- ⑦产品说明书 User manual
- ⑧WiFi模块 WiFi module
(standard/package only for BT WiFi version bms)(仅适用于WiFi模块套餐)
- ⑨RS485/Can 端口线
(only for full-function board)
(仅适用于RS485/Can套餐)
- ⑩包装盒 Packaging box



Smart Active Balance BMS

智能兼申 主动均衡 内置蓝牙 安全并联

Intelligent Multiple Strings | Active Balancing 1A | Built-in Bluetooth | Safe paralleling



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。(请参考说明书背面接线示意图)。

注*: 焊接采样线时不可插着保护板, 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, 如不正常请检查接线是否有错接、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-线焊接电池总负极。

注*: 焊接B-线时请把P-线做好绝缘处理, 最后接输出端时再解除。

(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. 下载蓝牙APP

(1)通过扫描保护板上的二维码、应用商店搜索“BalanceBMS”或登录均衡宝官网 (https://www.100balancebms.com/download.asp) 下载、客服获取等方式下载并安装均衡宝手机APP。

(2)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。

2. Download and Install APP method

(1) Scan the QR code on the BMS.

(2) Search APP "Balance BMS" in the iOS store or Google store.

(3) Download APP from official website www.100balancebms.com.

(4) Contact with customer service of store.

3. Set parameters

When using BMS for the first time,the battery type and capacity need to be set in the APP or PC (the factory default is LFP parameters). The capacity of the battery pack needs to be set according to the actual capacity of the battery pack. The battery needs to be filled to 100% for calibration at the first time use. Other protection parameters can be set according to your own needs. The factory default password for modifying parameters on the APP is 123456, and the password for modifying parameters on the PC host is 20211115.

Note: When there is no charging or discharging, the BMS will sleep after 3600 seconds by default, and will wake up automatically when charging and discharging are detected. The sleep time can also be modified through the APP or PC. If set to 65535, it means no sleep.

4. Special instructions

(1) Cables from different manufacturers are not universal, please make sure to use our company's sampling cables;

(2) When testing, installing, contacting and using the BMS, anti-static measures must be taken;

(3) Do not let the heat dissipation surface of the BMS directly contact the battery cell, otherwise the heat will be transmitted to the battery cell and affect the safety of the battery;

(4) Do not disassemble or change the components of the BMS by yourself;

(5) The outer shell of BMS will still conduct electricity. Pls avoid contact with the battery cell and nickel strip during assembly operations due to the need for electrostatic protection design.

(6) All our products have undergone strict ex-factory inspection and testing to provide customers with the best quality products. Please make sure to use the BMS according to the parameter instructions, and avoid to use it in high temperature, ultra-low temperature environments (normal applicable temperature -40°C ~ 85°C) to prevent the failure of BMS.

三、规格参数 Specification parameter

1. 基础规格 Basic specification

指标 Index	检测内容 Specification	
电池组类型 Battery pack type	三元、铁锂、钛酸锂 Li-ion、LifePO4、LTO	
电池组串数 Number of battery strings	三元: 4-8串/8-17串/8-20串 铁锂: 4-8串/8-17串/8-24串 钛酸锂: 6-8串/8-17串/8-24串	Li-ion: 4-8S/8-17S/8-20S LifePO4: 4-8S/8-17S/8-24S LTO: 6-8S/8-17S/8-24S
单体采样电压范围 Cell sampling voltage range	1.5V-4.9V	1.5V-4.9V
工作电压范围 Operating voltage range	> 10V	> 10V
均衡方式 Balance method	主动均衡	Active Balance
工作功耗 Working power consumption	<1.25W	<1.25W
休眠功耗 Sleep current	<0.025W	<0.025W
工作温度 Working temperature	-40°C ~ 85°C	-40°C ~ 85°C
工作指示灯 Indicator light	绿色: 正常工作 红色: 告警或保护	Green: works properly Red: Alarm or protection
产品尺寸 Product size	40-60A: 125*66*115.8mm 150A: 176.7*66*16mm 200A: 176.7*66*21mm	80-100A: 167.5*65*115mm 200A: 176.7*66*21mm

2. 电流参数对应表 Current parameter correspondence table

产品型号 Model	支持串数 Compatible Strings	持续放电电流 Continuous Discharge current	最大放电电流 Max Discharge current (延时 delaytime:1±0.8s)	持续充电电流 Continuous charge current
R24TH1A-8S 40A	4-8	40A	60A	40A
R24TH1A-8S 60A	4-8	60A	90A	60A
R24TK1A-8S 80A	4-8	80A	120A	80A
R24TK1A-8S 100A	4-8	100A	150A	100A
R24TM1A-8S 150A	4-8	150A	225A	150A
R24TM1A-8S 200A	4-8	200A	300A	200A
R24TS1A-8S 250A	4-8	250A	375A	250A
R24TS1A-8S 300A	4-8	300A	450A	300A
R24TS1A-8S 400A	4-8	400A	600A	400A
R24TS1A-8S 500A	4-8	500A	750A	500A
R24TH1A-17S 40A	8-17	40A	60A	40A
R24TH1A-17S 60A	8-17	60A	90A	60A
R24TK1A-17S 80A	8-17	80A	120A	80A
R24TK1A-17S 100A	8-17	100A	150A	100A
R24TM1A-17S 150A	8-17	150A	225A	150A
R24TM1A-17S 200A	8-17	200A	300A	200A
R24TS1A-17S 250A	8-17	250A	375A	250A
R24TS1A-17S 300A	8-17	300A	450A	300A
R24TS1A-17S 400A	8-17	400A	600A	400A
R24TS1A-17S 500A	8-17	500A	750A	500A

4. 接口说明 Interface definition description



五、均衡开启条件 Equilibrium on condition

1. 主动均衡 Active balance

序号 No	检测内容 Test content	出厂默认参数 Factory default parameters	单位 Unit	备注 Remark
1	均衡开启电压 Balance ON voltage	3	V	默认值 Defaults
	均衡开启压差 Balance ON voltage difference	10	mV	默认值 Defaults
	均衡开启条件 Balance ON conditions	1、达到设定开启电压 2、达到设定开启压差 (以上两个条件需同时满足, 只要有一项不满足, 就会关闭) 1. Reach the set opening voltage 2. Reach the set opening voltage difference (The above two conditions must be met at the same time, if one of condition is not meet, balance will be closed)		
	均衡电流 Balance current	1100±200	mA	备注 Remark

六、联系我们 Contact Us



均衡宝官网

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*1:BMS V1.2增加一路Do2, NTC 1 BNTC2 更改为NTC-A & NTC-B
BMS V1.2: Add Do2 port, NTC-1 & NTC-2 change to NTC-A & NTC-B

· 常见串数接线示意图 ·

· Wiring Diagram ·

电池组接线注意事项:

1. 请留意保护板B-与P-的位置, 并严格按照B-接电池负极 P-接负载或充电器负极进行接线。
2. 在焊接排线时, 请确保排线焊接顺序正确后再插上保护板。
(错线保护仅限于接错线间隔6串以内, 超出6串会导致保护板损坏)。
3. 上电顺序: ①安装B-②插上采集排线③接上B+排线④安装P-。
4. 下电顺序: ①移除B+排线②移除采集排线③移除P-④移除B-。
5. NTC线优先插入NTC-1或者NTC-A 端口。
6. 根据电池组的串数把相应的采样线焊接到电池组上, 其他多余的采样线用绝缘胶单独封起来即可。比如买了8-17S 保护板用于10S电池组, 可以把剩下7根采样线用绝缘胶封起来即可。请严格按照接线顺序操作, 如接线先后顺序接反, 会导致保护板损坏。

电池组并联时注意事项:

1. 并联锂电池组时要确保电池组电压一致, 各组电池组, 总电压差 < 1V, 防止不同电池组并联时, 高压电池组向低压电池组大电流充电, 触发BMS短路保护功能。
2. 并联锂电池组时在蓝牙APP控制中心界面手动断开放电MOS再并联, 防止电池组并联时打火。

BMS应用环境:

1. 确保接线的准确性。
2. BMS采集线束、B+线束、B-与P-线束须固定牢靠, 防止振动等环境因素影响连接可靠性。
3. BMS使用工作温度: -40°C ~ 85°C。
4. 注意防水、防潮、绝缘。
5. 电池组, 总正或总负与外壳绝缘电阻 ≥ 10MΩ。

Battery pack wiring precautions:

1. Please pay attention to the position of B- and P- of the BMS, and connect the wires in strict accordance with B- to the negative terminal of the battery and P- to the negative terminal of the load or charger.
2. When soldering the wires, please make sure the wires are soldered in the correct order before plug into the BMS. (Miswiring protection is limited to 6 strings of miswiring interval, more than 6 strings will damage the BMS.)
3. Power-on sequence: ① install B- ② insert the collection line ③ connect the B+ line ④ install P- ① install the B+ line ④ install the P- line
4. Power-off sequence: ①remove B+ cable ②remove collection cable ③remove P- ④ remove B-.
5. NTC cable need to plug into NTC-1 or NTC-A port first.
6. Weld the sampling cables to the battery pack spec and seal the other excess sampling lines with insulation tape. For example, if you buy an 8-17S bms for the 10S battery pack, you can just seal the remaining 7 blue sampling cable with insulation tape. Please follow the wiring sequence strictly, if the wiring sequence is reversed, it will lead to the damage of the BMS.

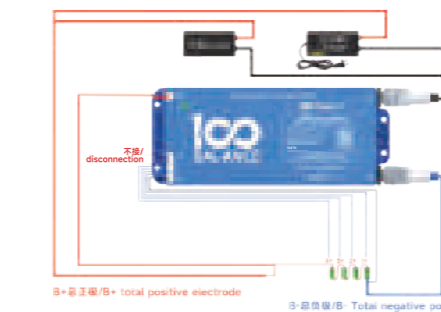
Battery pack parallel connection precautions:

1. parallel connection of lithium battery packs to ensure that the battery pack voltage is the same, each group of battery packs, the total pressure difference < 1V, to prevent the parallel connection of different battery packs, the high voltage battery pack to the low voltage battery pack high-current charging, triggering the BMS short-circuit protection function.
2. When paralleling lithium battery packs, manually disconnect the discharging MOS in the Bluetooth APP control center interface and then paralleling, preventing the battery packs from firing when paralleling.

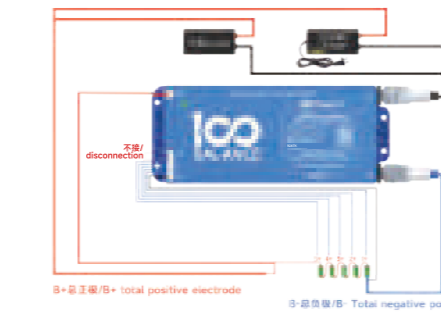
BMS application environment:

1. Ensure the accuracy of wiring.
2. BMS collection harness, B + harness, B- and P- harness must be fixed firmly to prevent vibration and other environmental factors affect the reliability of the connection.
3. BMS use working temperature: -40°C ~ 85°C.
4. Attention to waterproof, moisture-proof, insulation.
5. battery pack, total positive or negative and shell insulation resistance ≥ 10MΩ.

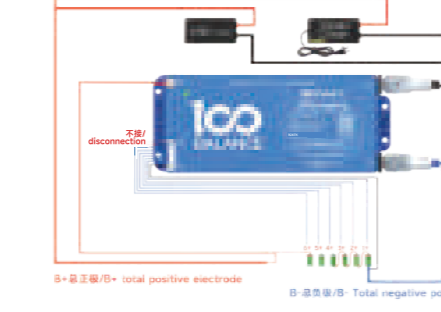
(4串接线示意图) (4S wiring diagram)



(5串接线示意图) (5S wiring diagram)

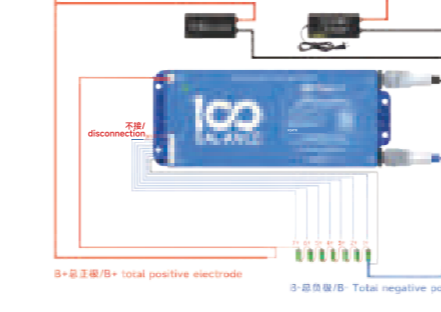


(6串接线示意图) (6S wiring diagram)

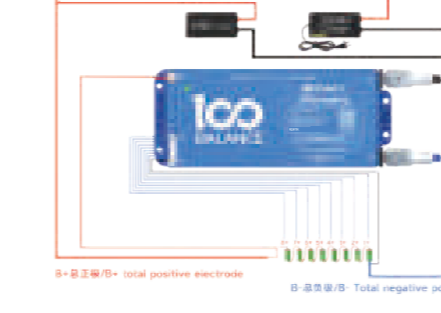


注: B+线是必接的
Remark: It's mandatory to connect B+ cable of BMS to battery B+ (total positive electrode).

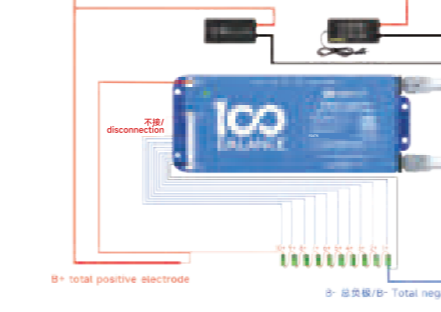
(7串接线示意图) (7S wiring diagram)



(8串接线示意图) (8S wiring diagram)

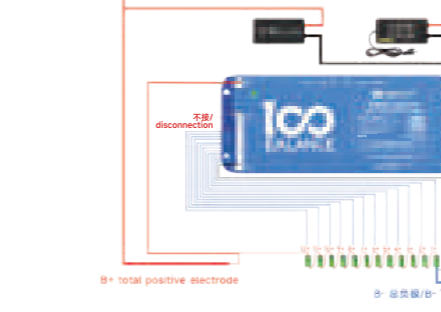


(10串接线示意图) (10S wiring diagram)

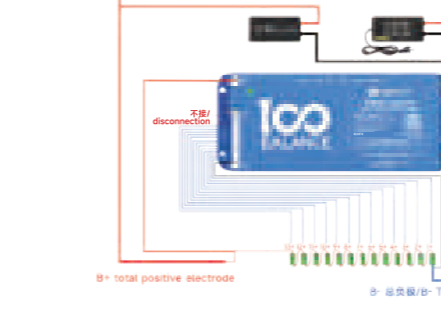


注: B+线是必接的
Remark: It's mandatory to connect B+ cable of BMS to battery B+ (total positive electrode).

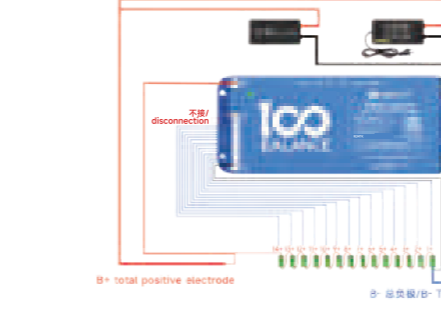
(12串接线示意图) (12S wiring diagram)



(13串接线示意图) (13S wiring diagram)

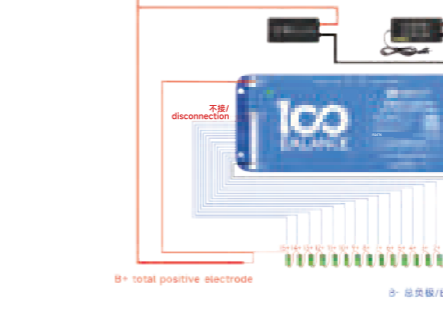


(14串接线示意图) (14S wiring diagram)

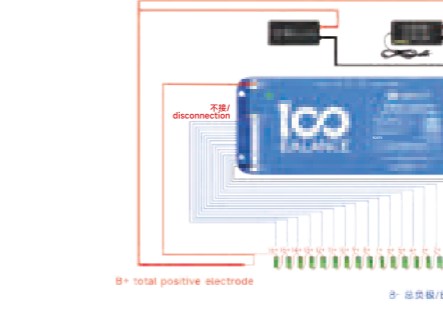


注: B+线是必接的
Remark: It's mandatory to connect B+ cable of BMS to battery B+ (total positive electrode).

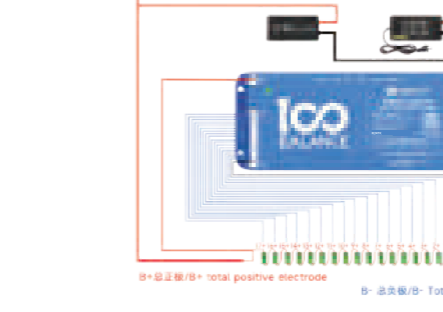
(15串接线示意图) (15S wiring diagram)



(16串接线示意图) (16S wiring diagram)

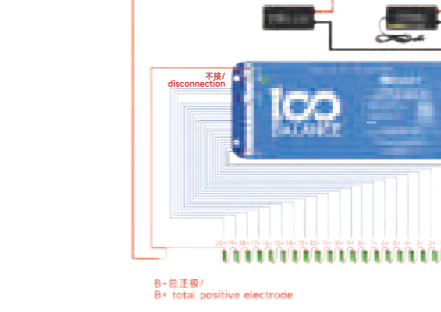


(17串接线示意图) (17S wiring diagram)

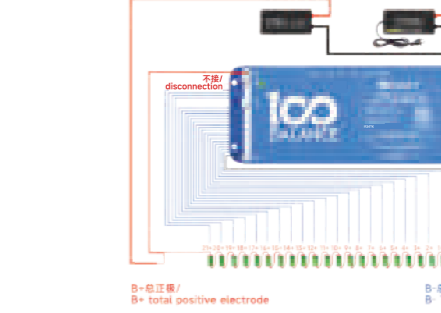


注: B+线是必接的
Remark: It's mandatory to connect B+ cable of BMS to battery B+ (total positive electrode).

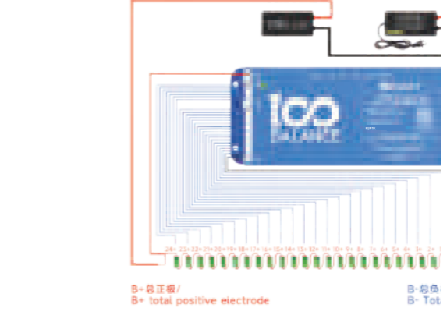
(20串接线示意图) (20S wiring diagram)



(21串接线示意图) (21S wiring diagram)



(24串接线示意图) (24S wiring diagram)



注: B+线是必接的
Remark: It's mandatory to connect B+ cable of BMS to battery B+ (total positive electrode).



产品图片仅作参考, 以购买的实物为准。
Product pictures are for reference only. Subject to the actual product purchased.