



Smart Active Balance BMS User Manual

Dongguan Balanced Management Technology Co., Ltd



Smart Active Balance BMS 4~24S 40~100A

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



Official Quality Assurance



Professional Team Core Technology



In-stock & Fast delivery



1 year warranty

Kind Reminder

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.

I Packing List

- 1、 Smart Active Balance BMS
- 2、 P- & B- Cable
- 3、 Screw*2Pcs
- 4、 Sampling Cable
- 5、 B+ cable
- 6、 Key Switch cable
- 7、 NTC cable
- 8、 User manual
- 9、 Packaging box



II User Manual

1. Welding

(1) Welding sampling cable: Start with the thin black wire connecting battery B- (total negative electrode), the second wire connects the positive electrode of the first string of batteries, and then connects the positive electrode of each string of batteries in turn; finally, weld the B+ wire on the last string (total positive pole). (Please refer to the wiring diagram on the back of the manual).

Note: Do not insert the bms when welding the sampling cable. Please weld according to the actual number of battery strings. The extra sampling cable do not need to be welded. Please insulate them.

(2) Detection voltage: Use a multimeter or line sequence detection equipment to measure whether the voltage of each string of pinholes in the cable is within the normal range. If not, please check whether there are misconnections, false soldering, missing soldering, etc. in the wiring.

(3) Welding P- & B- cable: Screw the B- cable (blue one) and P- cable (black one) to the corresponding B- and P- nuts of the BMS; recommended torque 10N·m. And weld the B- cable to the total negative terminal of the battery. **Note: Please insulate the P- cable when welding the B- cable, and then remove it when connecting the output terminal.**

(4) Connect the BMS accessories: such as temperature control, power board, GPS, LCD display, etc., and then insert the sampling cable into the BMS to activate automatically.

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) The shell and the motherboard share the same ground, and it is normal to appear voltage during measurement;
- (7) 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.

III Specification parameter

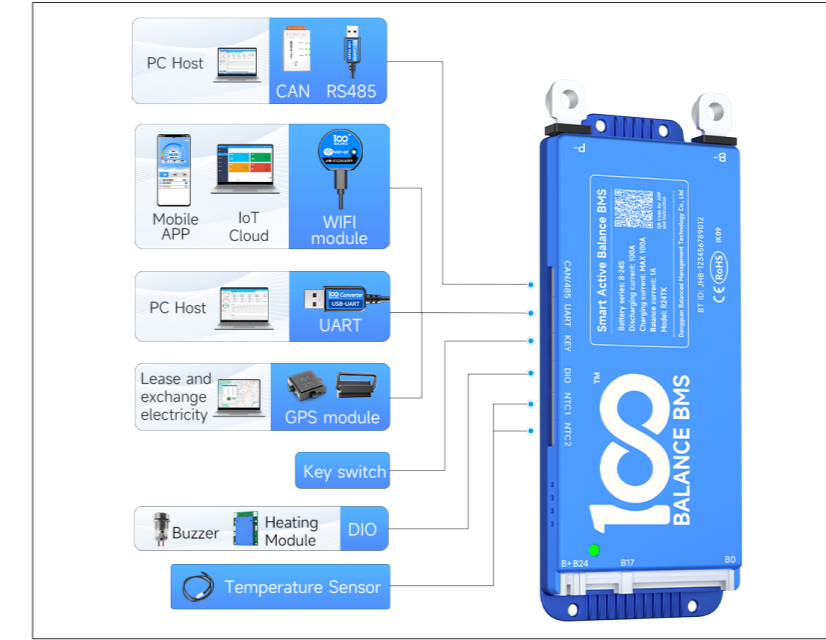
1. Basic specification

Index	Specification
Battery pack type	Li-ion, LifePO4, LTO
Number of battery strings	Li-ion: 4-8S/8-17S/8-20S LifePO4: 4-8S/8-17S/8-24S LTO: 6-8S/8-17S/8-24S
Cell sampling voltage range	1.5V-4.9V
Operating voltage range	> 10V
Balance method	Active Balance
Working power consumption	≤1W
Sleep current	≤1.5mA
Working temperature	-40°C ~ 85°C
Indicator light	Green: works properly Red: Alarm or protection
Product size	167.5*65.5*15mm

2. Current parameter correspondence table

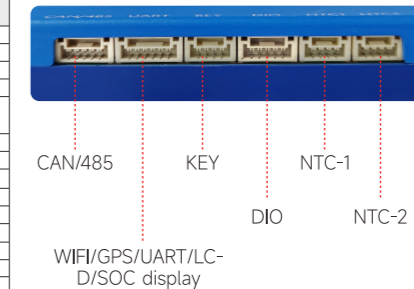
Model	Compatible Strings	Continous Discharge current	Max Discharge current	Continous charge current	Max charge current
R24TK1A-8S 40A	4-8	40A	60A	20A	40A
R24TK1A-8S 60A	4-8	60A	90A	30A	60A
R24TK1A-8S 80A	4-8	80A	120A	40A	80A
R24TK1A-8S 100A	4-8	100A	150A	50A	100A
R24TK1A-17S 40A	8-17	40A	60A	20A	40A
R24TK1A-17S 60A	8-17	60A	90A	30A	60A
R24TK1A-17S 80A	8-17	80A	120A	40A	80A
R24TK1A-17S 100A	8-17	100A	150A	50A	100A
R24TK1A-24S 40A	8-24	40A	60A	20A	40A
R24TK1A-24S 60A	8-24	60A	90A	30A	60A
R24TK1A-24S 80A	8-24	80A	120A	40A	80A
R24TK1A-24S 100A	8-24	100A	150A	50A	100A

IV Interface definition description



From NTC-2 port to CAN/485 port:

Interface name	Pin	Label	Definition description
NTC1	1	GND	GND
	2	NTC-1	1# Temperature cable
	3	GND	GND
	4	NTC-2	2# Temperature cable
NTC2	1	GND	GND
	2	NTC-3	3# Temperature cable
	3	GND	GND
	4	NTC-4	4# Temperature cable
DO/DI parallel interface	1	DO	/
	2	GND	GND
	3	DI	/
	4	GND	GND
	5	/	/
KEY interface	1	KEY+	Key switch positive
	2	/	/
	3	/	/
	4	KEY-	Key switch negative
UART	1	GND	GND
	2	3.3V	Power supply is 3.3V
	3	12V	Power supply is 8-12V
	4	SI	Activate button
	5	RXD1	Communication sending end
	6	TXD1	Communication receiving end



Interface name	Pin	Label	Definition description
CAN/485	1	485B	485 communication sender
	2	485A	485 communication receiver
	3	GND	Isolation ground GND
	4	CanH	CAN communication high
	5	CanL	CAN communication low

V Contact Us



(Official website)

Dongguan Balanced Management Technology Co., Ltd

Email: jhbbms@100balancebms.com

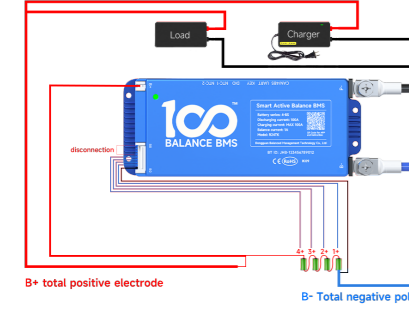
Official website: www.100balancebms.com

WhatsApp: +8613352780411

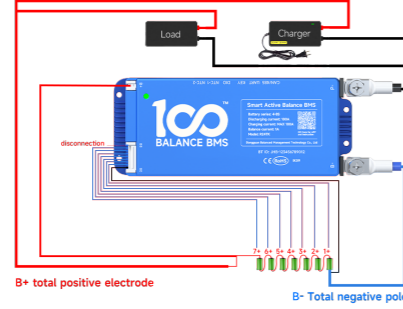
Company Address: Room 2010, Building 7, No. 14 Industrial South Road, Dongguan, Guangdong, China 523800

Wiring Diagram

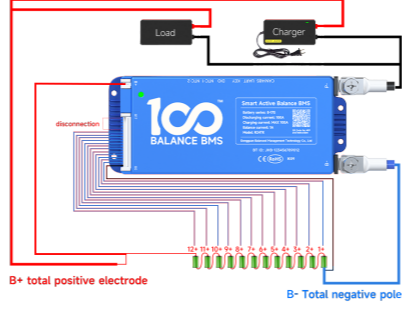
(4S wiring diagram)



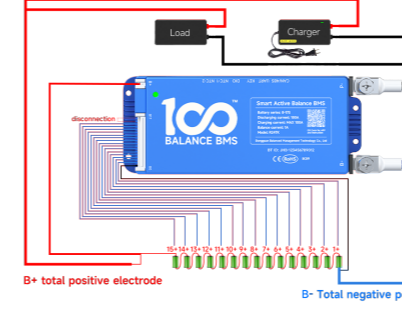
(7S wiring diagram)



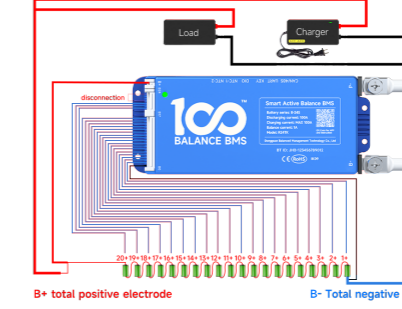
(12S wiring diagram)



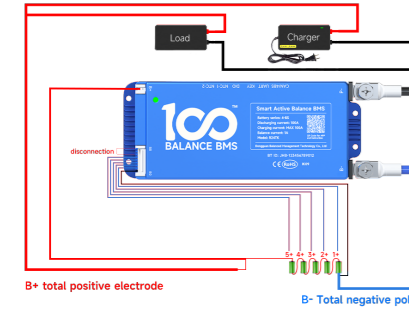
(15S wiring diagram)



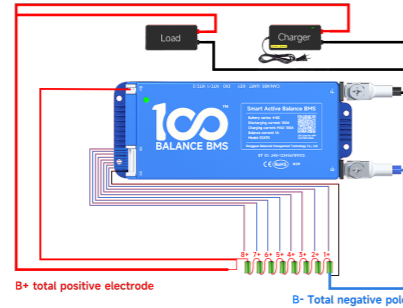
(20S wiring diagram)



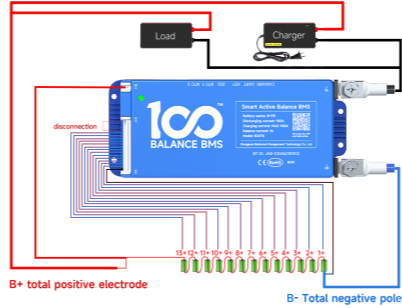
(5S wiring diagram)



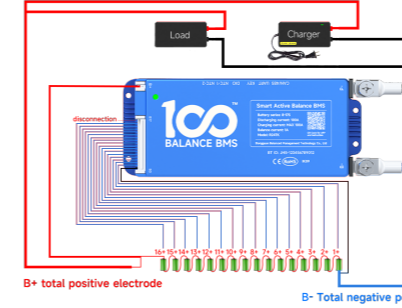
(8S wiring diagram)



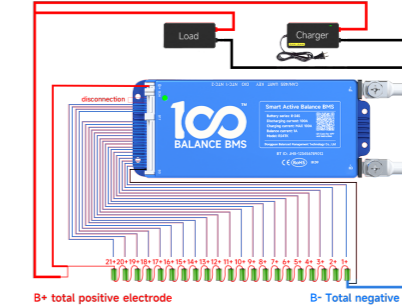
(13S wiring diagram)



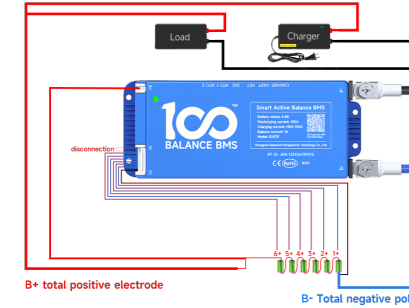
(16S wiring diagram)



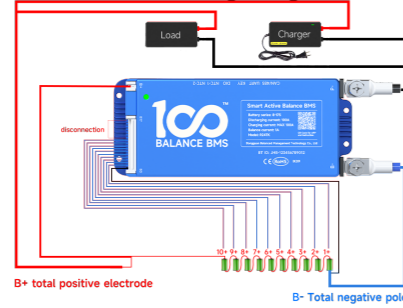
(21S wiring diagram)



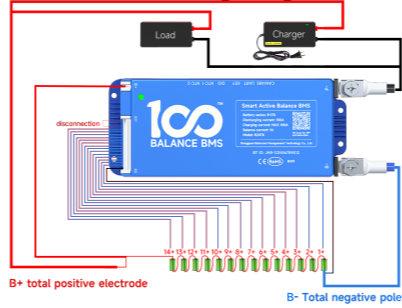
(6S wiring diagram)



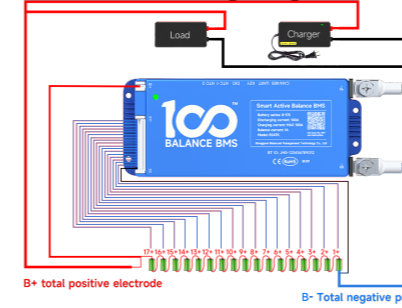
(10S wiring diagram)



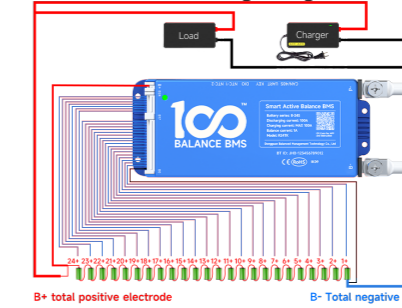
(14S wiring diagram)



(17S wiring diagram)



(24S wiring diagram)



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

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