3-21S 3A/5A Capacitor

Active Balancer Specifications

Heltec Energy

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1. Introduction

As the number of battery cycles increases, the rate of battery capacity decay is inconsistent, leading to a serious imbalance in battery voltage. The “battery barrel effect” will influence the service life of your battery. That’s why you need a active balancer for your battery packs.

Different from inductive balancer, capacitor balancer can achieve the whole group balance. It doesn’t need voltage difference between adjacent batteries to start balancing. After the device is activated, each battery voltage will reduce the capacity decay caused by the battery barrel effect and shorten the duration of the issue.

2. Specifications

- 3-4S 5A
- 3-4S 3A
- 4-6S 5A
- 6-8S 5A
- 9-14S 5A
- 12-16S 5A
- 17-21S 5A



3. Features

- All group balance
- Max balance current 5.5A
- Capacitive energy transfer
- Fast speed, not hot



4. Working Principle

The bigger the differential voltage, the bigger the equalization current; and the more balanced the battery, the smaller the working current. This active balancer can reach the maximum equalizing current of 5.5A and the balance voltage accuracy is

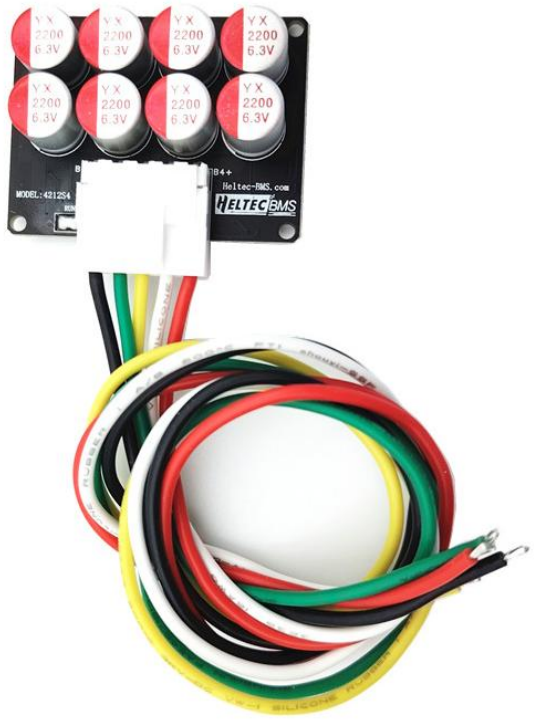
within 5mV. Meanwhile, it will only release less than 0.1mA current under sleep mode.

With under-voltage sleep protection, the voltage will stop automatically when the voltage is lower than 3.0V for NCM/LFP battery, and 1.8V for LTO battery. The standby power consumption is less than 0.1mA.

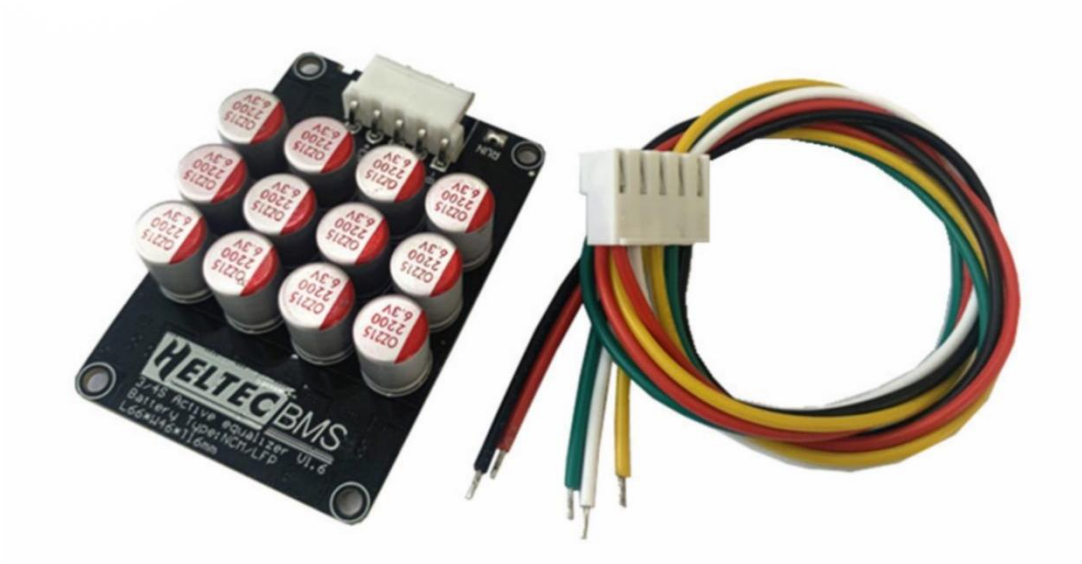
5. Model Selection

Technical Index	Product Model					
Applicable Battery Strings	3S-4S	4S-6S	6S-8S	9S-14S	12S-16S	17S-21S
Applicable Battery Type	NCM/LFP/LTO					
Working Range of Single Voltage	NCM/LFP: 2 . 7 V-4.2V LTO: 1.8V-3.0V					
Voltage Equalization Accuracy	5mv (typical)					
Balanced Mode	The whole group of battery participate in the active equalization of energy transfer at the same time					
Equalizing Current	0.08V differential voltage generates 1A balance current. The bigger the differential voltage, the bigger the balance current. The maximum allowable balance current is 5.5A.					
Static Working Current	13mA	8mA	8mA	15mA	17mA	16mA
Product Size (mm)	66*16*16	69*69*16	91*70*16	125*80*16	125*91*16	145*130*18
Working Environment Temperature	-10℃~60℃					
External Power	No need for external power supply, relying on the internal energy transfer of the battery to achieve the whole group balance					

6. Product Appearance



3-4S 3A Balancer



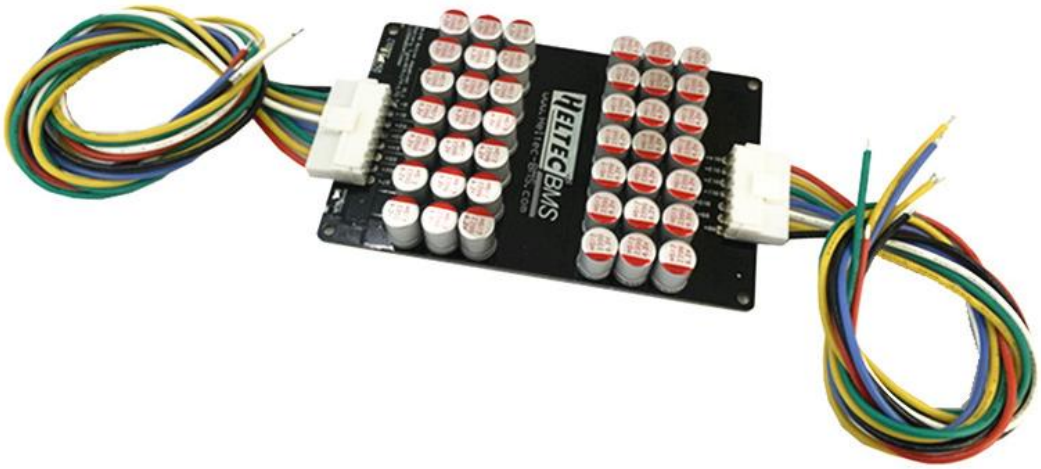
3-4S 5A Balancer



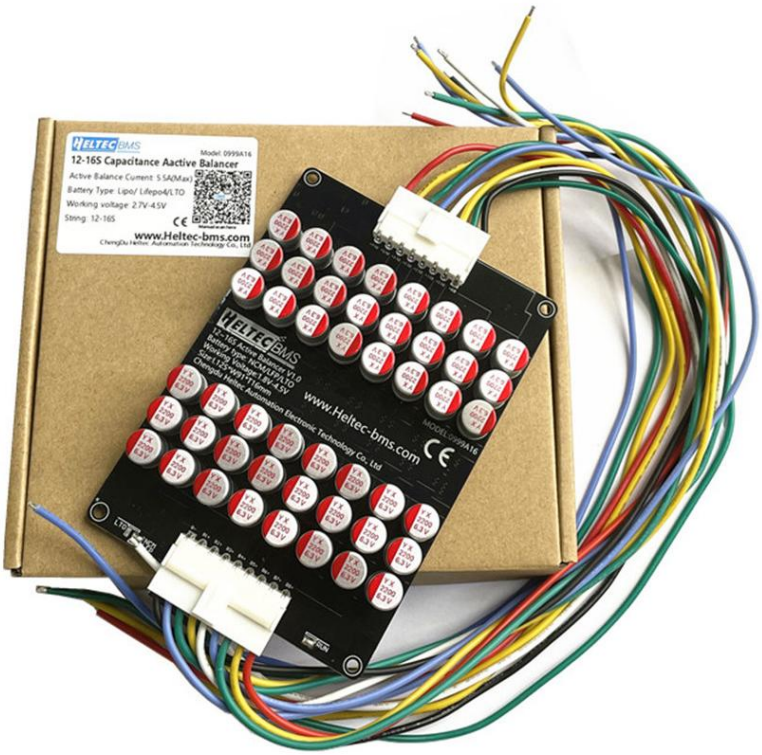
4-6S 5A Balancer



6-8S 5A Balancer



9-14S 5A Balancer



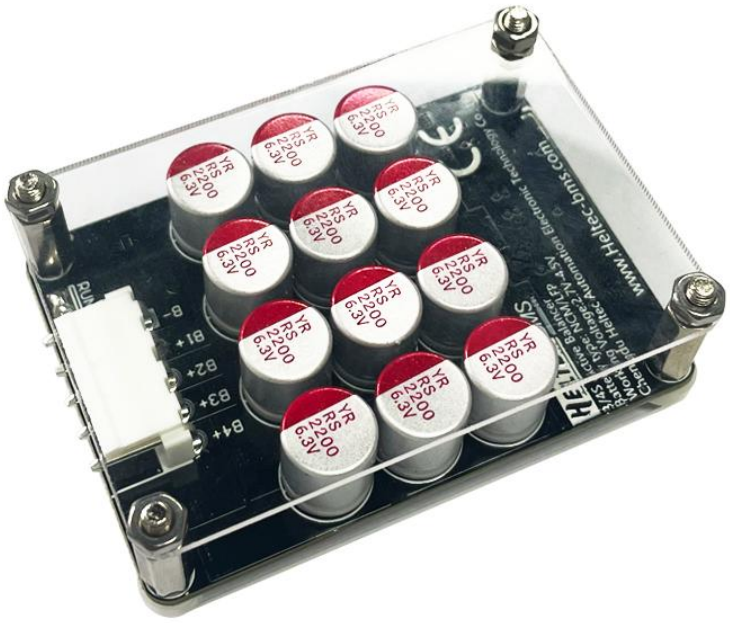
12-16S 5A Balancer

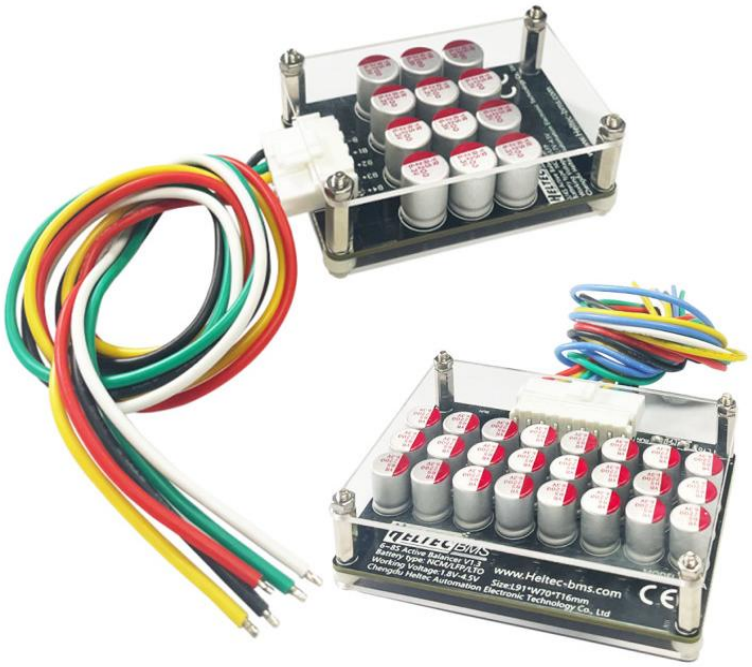


17-21S 5A Balancer

7. Accessory.

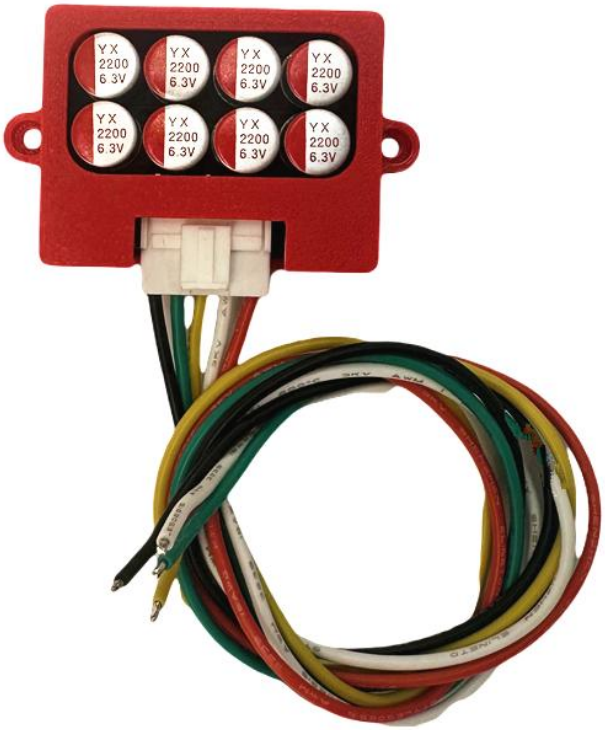
7.1 Acrylic Case



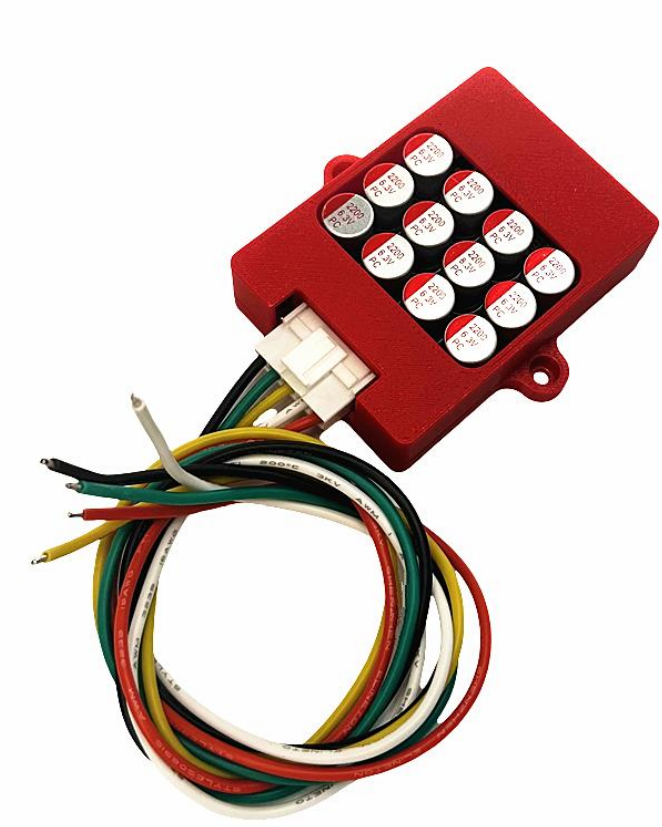


7.2 ABS BOX

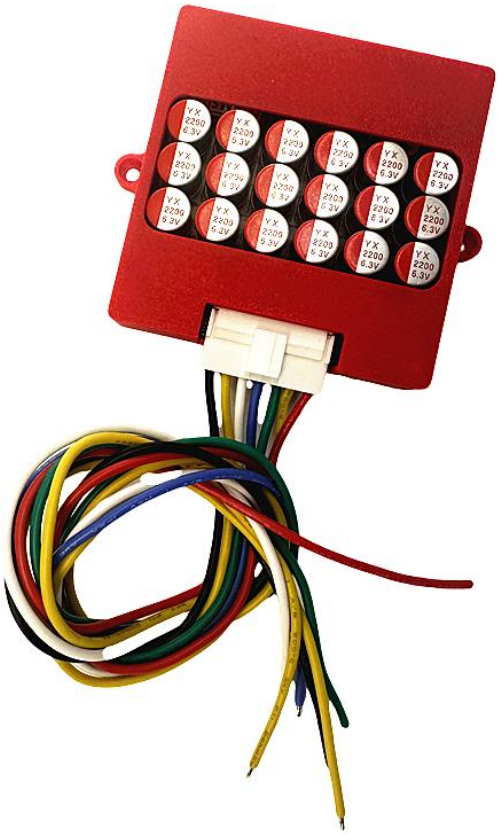




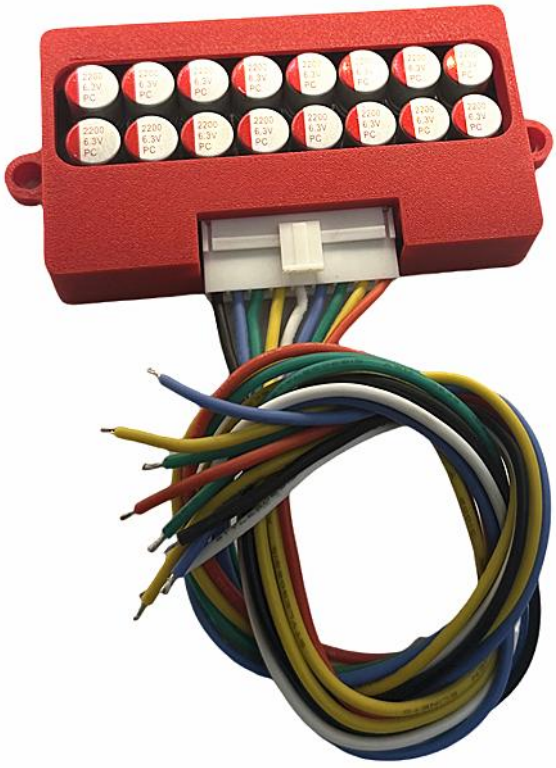
3-4S 3A balancer with ABS box



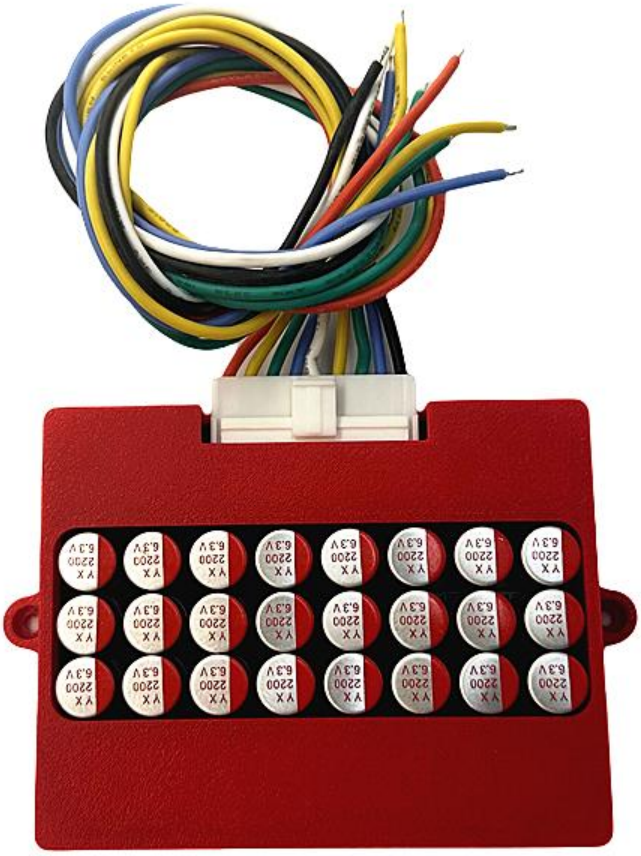
3-4S 5A balancer with ABS box



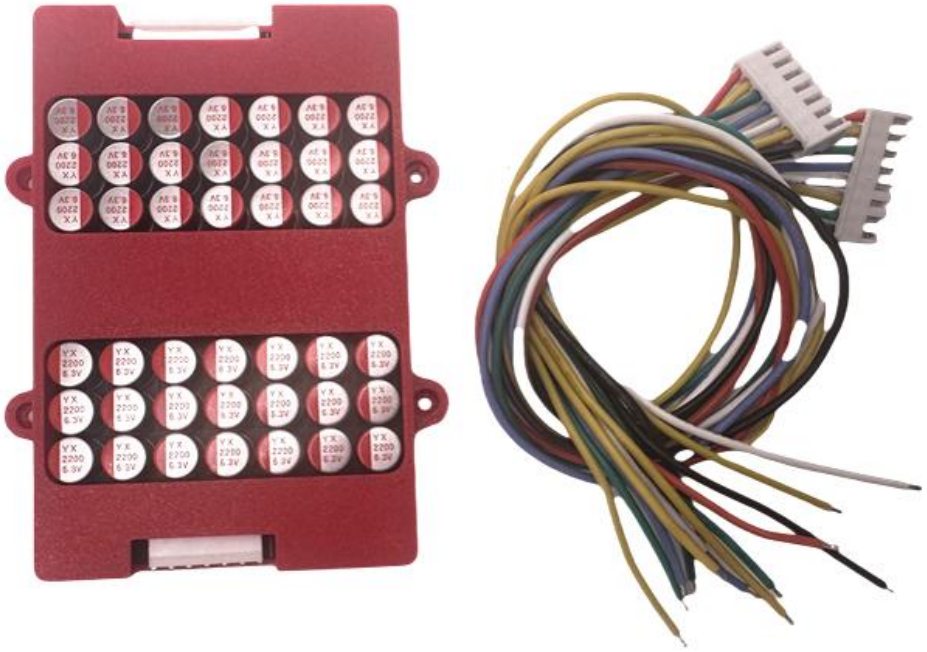
4-6S 5A balancer with ABS box



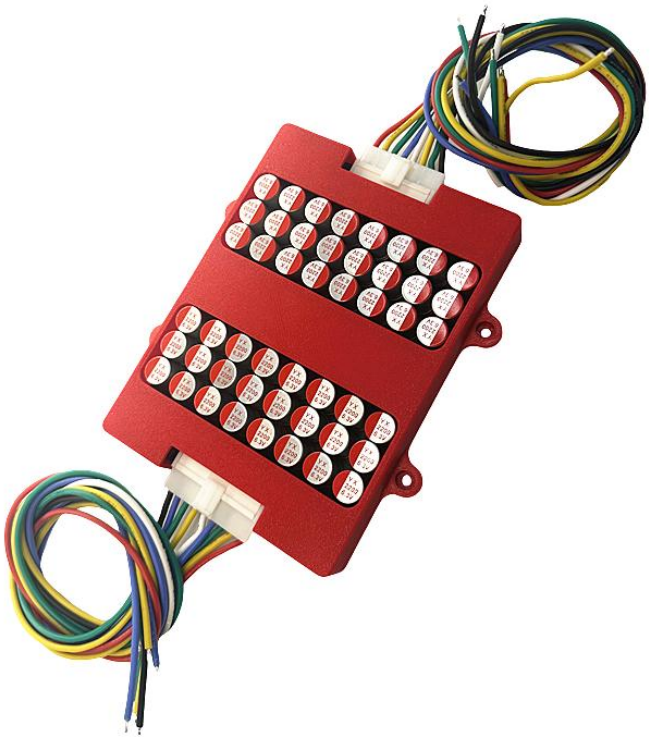
6-8S 3A balancer with ABS box



6-8S 5A balancer with ABS box



9-14S 5A balancer with ABS box



12-16S 5A balancer with ABS box