8S Active Balancer with Voltage Display Screen Instructions for Use and Maintenance

(DS0877)

Heltec Energy

1. Product Overview

The 8S balancer has the function of full-disk equalization without distinction and automatic low-voltage sleep. **The minimum voltage difference can be balanced to about 0.01V, and the maximum equalization current can reach 5A.** When the voltage difference is 0.1V, the current is about 0.5A (actually it will be related to the capacity and internal resistance of the battery). When the battery is lower than 2.7V (ternary lithium/lithium iron phosphate), it stops working and enters sleep, and has over-discharge protection function. The battery voltage display supports real-time display of the voltage of the entire battery group and the voltage of a single string, and the numerical accuracy can reach about 5mV. This product is suitable for ternary lithium and lithium iron phosphate batteries.

The circuit board is sprayed with three-proof paint, which has excellent insulation, moisture-proof, leakage-proof, shock-proof, dust-proof, corrosion-proof, anti-aging, corona-resistant and other properties, which can effectively protect the circuit and improve the safety and reliability of the product. The actual object is shown in Figure 1.

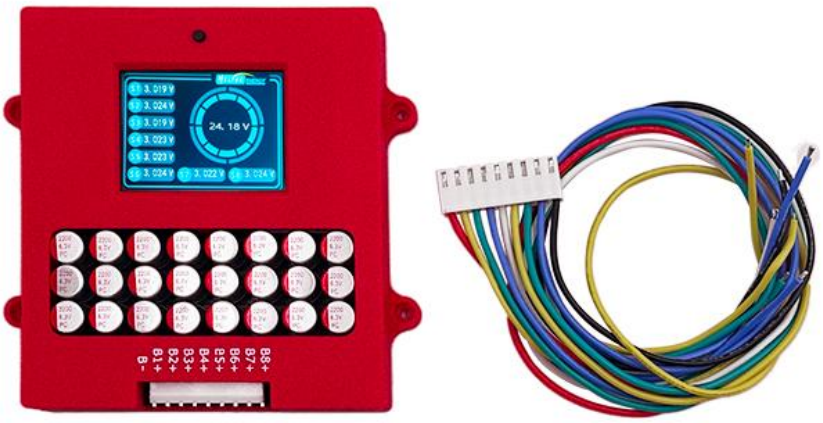


Figure 1 Product Appearance

2. Technical Specifications

2.1 Main Parameters of the Display

Table 1. Main Technical Indicators for Display

Name	Parameters
Number of strings	8S
Battery type	NCM/LFP/LTO
Single string voltage range	1.0V-4.5V
Measurement accuracy	0.5% / ±5mV

2.2 Main Parameters of the Active Balancer

Table 2. Main Technical Indicators for Active Balancer

Technical indicators	Indicator content
Product model	DS0877
Applicable string number	8S
Applicable battery type	NCM/LFP/LTO
Operating voltage range	NCM/LFP: 2.7-4.2V LTO:1.8V-2.7V
Balance voltage accuracy	5mV (typical)
Balance mode	Active balance in which the entire battery group participates in energy conversion at the same time.
Balance current	When the voltage difference is about 1V, the maximum balance current is 5A, and the balance current decreases as the voltage difference decreases. The minimum balance start voltage difference of the instrument is 0.01V
Undervoltage protection sleep voltage	NCM/LFP: 2.7V LTO:1.8V
Static working current	20mA

Working environment temperature	-10℃-60℃
External power	No external power supply is required, and the whole battery group is balanced by relying on the internal energy transfer of the battery.

3. Installation and Assembly

3.1 Description of the Connection Position

The display connection definition is shown in Figure 2, and its definition is shown in Table 3.

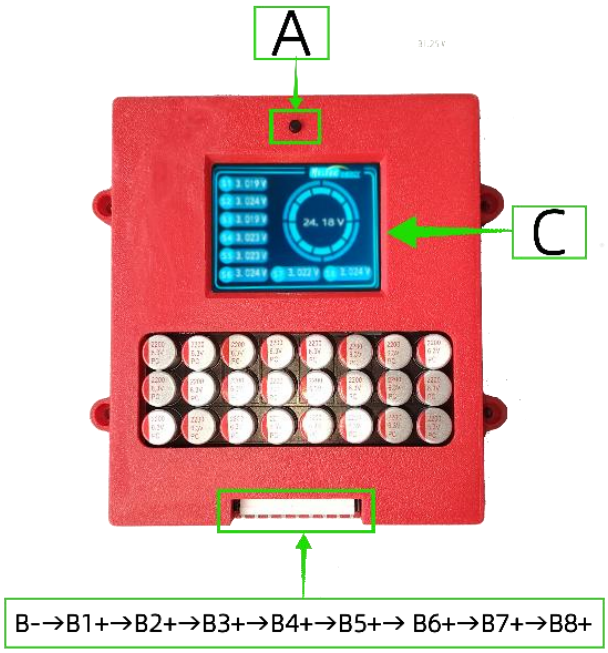


Figure 2 Physical picture

Table 3. Connection Definition Table

Number	Name	Definition
A	Black button	Screen sleep button (sleep/always on)

B- →B1+→B2+→B3+→B4+ →B5+→B6+→B7+→B8+	B-	Negative pole of the first battery string
	B1+	Positive pole of the first battery string
	B2+	Positive pole of the second battery string
	B3+	Positive pole of the third battery string
	B4+	Positive pole of the fourth battery string
	B5+	Positive pole of the fifth battery string
	B6+	Positive pole of the sixth battery string
	B7+	Positive pole of the seventh battery string
	B8+	Positive pole of the eighth battery string
C	Screen display area	Left: Single battery voltage; Right: Total voltage

3.2 Connection Diagram

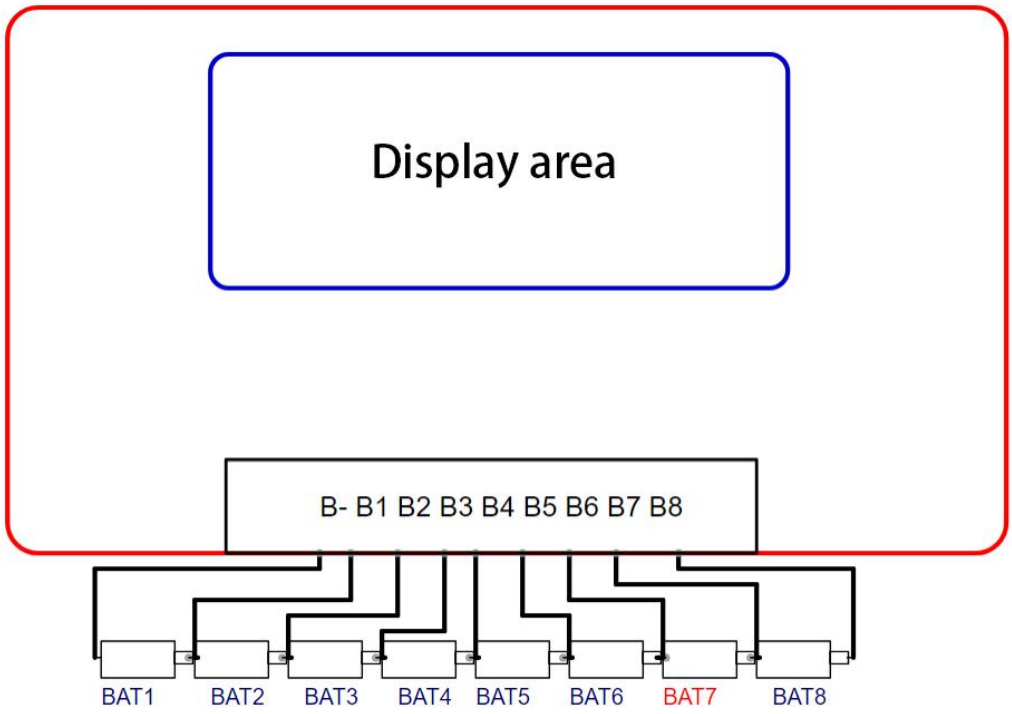


Figure 3 Circuit Connection Diagram

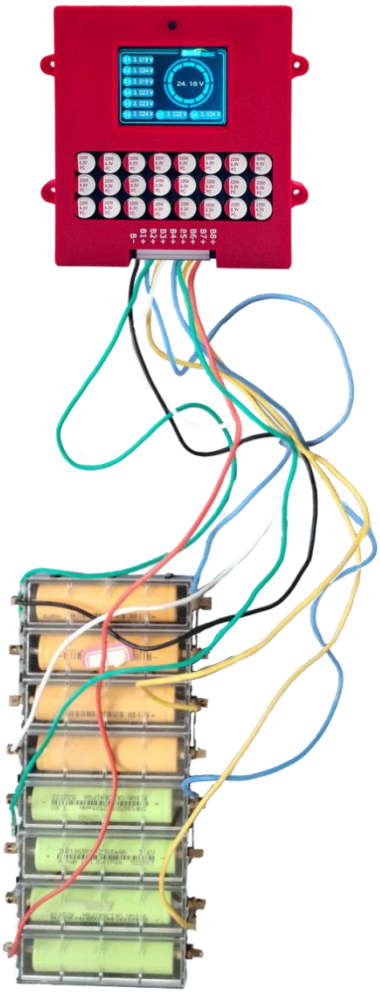


Figure 4 Physical Diagram

4. Precautions for Use

- During use, the design parameters and usage conditions must be followed. The parameters of this specification must not be violated. Otherwise, the instrument may be damaged and the battery pack may be damaged.
- During use, the cables must be connected to the battery in the order of the instructions. After checking, connect the instrument.
- The product will generate a certain amount of heat during use. Avoid using the product in a high temperature environment.
- If any abnormality occurs during use, please stop using it immediately, return it to the original factory or ask a professional maintenance person to repair it.

- This balancer has undergone a lot of reliability tests, and its reliability is much higher than that of general equalizers on the market. At the same time, the process of the battery cell must be guaranteed to minimize the occurrence of combustion.

*Safety Precautions:

Our company is committed to improving quality and reliability, but generally speaking, electrical products have a probability of failure. Depending on the use environment and conditions, the durability will also vary to a certain extent. When using, a redundant design is adopted to avoid abnormal heating, smoke, and even personal accidents, fire accidents, social damage, etc. caused by overload.