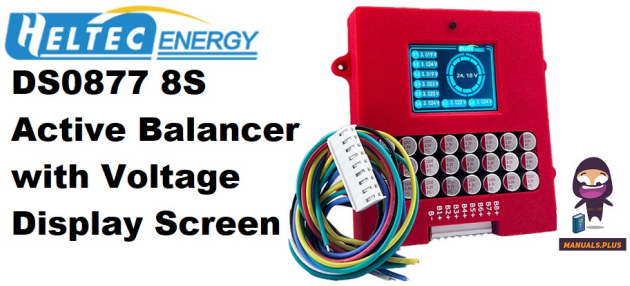


HELTIC Energy DS0877 8S Active Balancer with Voltage Display Screen User Guide

Contents

HELTIC Energy DS0877 8S Active Balancer with Voltage Display Screen

Specifications

Name	Number of strings	Battery type	Single string voltage range	Measurement accuracy
Main Parameters of the Display	8S	NCM/LFP/LTO	1.0V-4.5V	2.2 Main Parameters of the Active Balancer

Main Technical Indicators for Active Balancer

Technical indicators	Product model	Applicable string number	Applicable battery type	Operating voltage range	Balance voltage accuracy	Balance mode	Balance current	Undervoltage protection sleep voltage	Static working current
DS0877	8S	NCM/LFP/LTO	NCM/LFP: 2.7-4.2V LTO:1.8V-2.7V	5mV (typical)	Active balance in which the entire battery group participates in energy conversion at the same time.	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 NCM/LFP: 2.7V LTO:1.8V	20mA	-10-60

Installation and Assembly

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

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.

FAQs

- **Q: Do I need an external power supply for the active balancer?**
  - **A:** No, no external power supply is required for the active balancer. The whole battery group is balanced by relying on the internal energy transfer of the battery.
- **Q: What is the working environment temperature range for the product?**
  - **A:** The working environment temperature range is -10°C to 60°C.
- **Q: What is the balance current when the voltage difference is about 1V?**
  - **A:** The maximum balance current is 5A when the voltage difference is about 1V.

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 enters sleep, and has an 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.

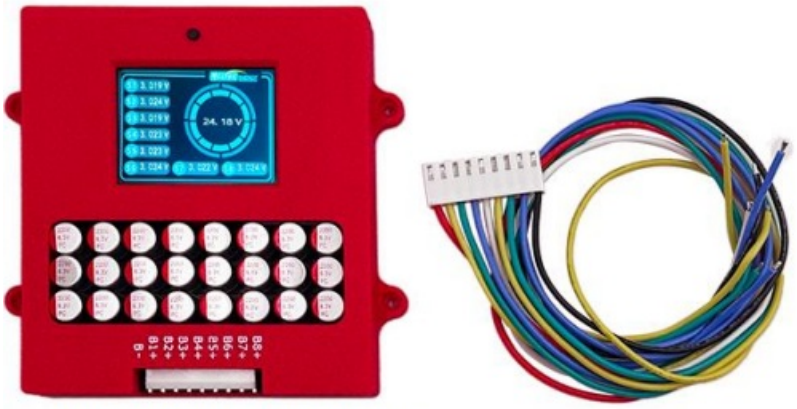


Figure 1 Product Appearance

Technical Specifications

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

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.

Installation and Assembly

Description of the Connection Position

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

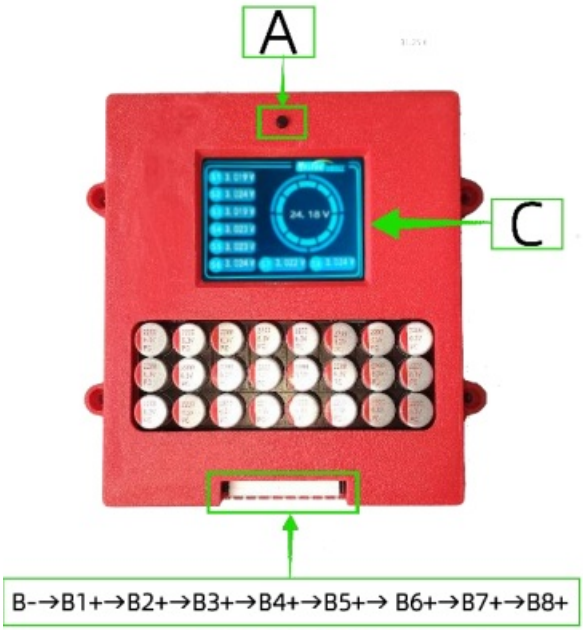


Figure 2 Physical picture

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-	The negative pole of the first battery string
	B1+	The positive pole of the first battery string
	B2+	The positive pole of the second battery string
	B3+	The positive pole of the third battery string
	B4+	The positive pole of the fourth battery string
	B5+	The positive pole of the fifth battery string
	B6+	The positive pole of the sixth battery string
	B7+	The positive pole of the seventh battery string
	B8+	The positive pole of the eighth battery string
C	Screen display are a	Left: Single battery voltage; Right: Total voltage

Connection Diagram

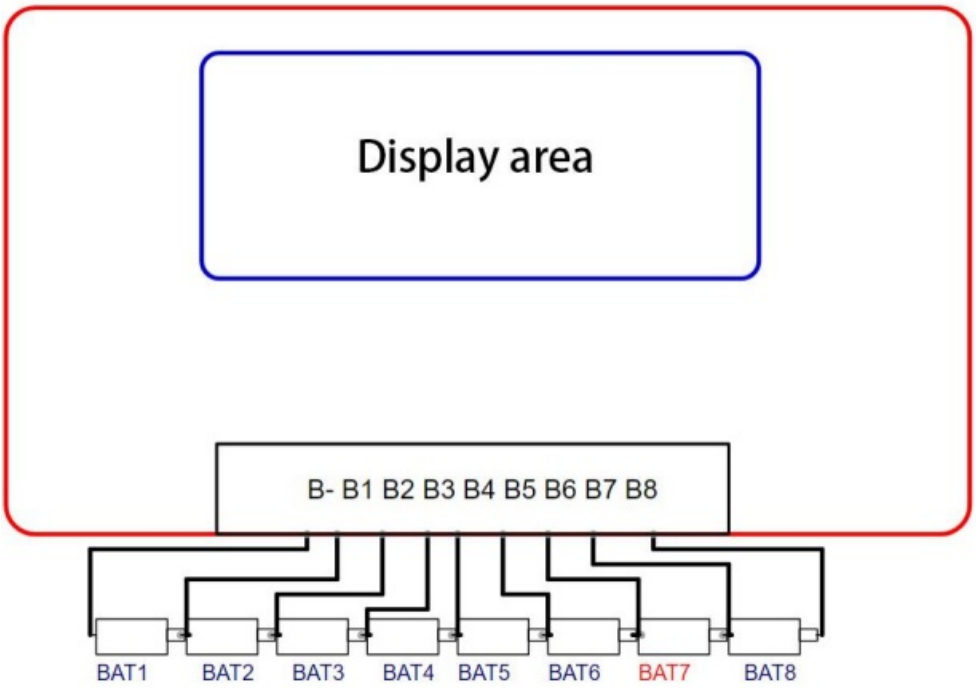


Figure 3 Circuit Connection Diagram

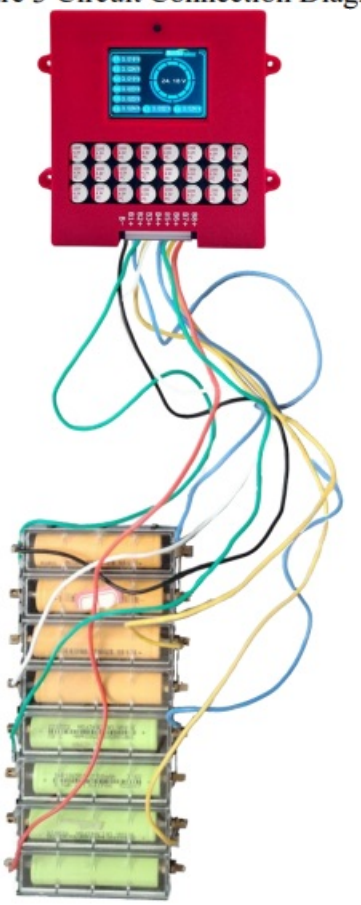


Figure 4 Physical Diagram

Precautions for Use

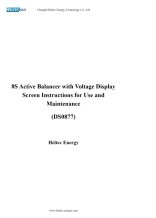
- During use, the design parameters and usage conditions must be followed. The parameters of this specification must not be violated. Otherwise, the instrument may be damaged and the battery pack may be damaged.
- During use, the cables must be connected to the battery in the order of the instructions. 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 used, a redundant design is adopted to avoid abnormal heating, smoke, and even personal accidents, fire accidents, social damage, etc. caused by overload.
- **www.heltec-energy.com**
- **Chengdu Heltec Energy Technology Co., Ltd**

Documents / Resources

	**HELTIC Energy DS0877 8S Active Balancer with Voltage Display Screen** [pdf] User Guide DS0877, DS0877 8S Active Balancer with Voltage Display Screen, DS0877, 8S Active Balancer with Voltage Display Screen, Active Balancer with Voltage Display Screen, Voltage Display Screen, Display Screen, Screen

References

- **Heltec Energy - Battery Energy Storage and Power Management Solutions Provider with BMS, Active Balancer and Battery Spot Welder**
- **User Manual**