

JKBMS JK-B2A8S

JKBMS 2A Active Balancer (JK-B2A8S) User Manual

Model: JK-B2A8S | Brand: JKBMS

[Introduction](#)[Safety](#)[Overview](#)[Features](#)[Setup](#)[Operation](#)[Maintenance](#)[Troubleshooting](#)[Specifications](#)[Warranty & Support](#)

1. INTRODUCTION

This manual provides essential instructions for the safe and effective use of your JKBMS 2A Active Balancer, model JK-B2A8S. Please read this guide thoroughly before installation and operation to ensure optimal performance and longevity of your battery system.

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent injury or damage to the device and battery pack:

- Ensure all connections are correct and secure before applying power. Incorrect wiring can cause damage.
- Do not exceed the specified voltage and current ratings of the balancer.
- Work in a well-ventilated area.
- Avoid short-circuiting battery terminals or balancer connections.
- Keep the device away from water, moisture, and flammable materials.

- If the device shows signs of damage or malfunction, disconnect it immediately.
- This device is intended for use with LiFePO₄, Li-ion, and LTO battery chemistries only.

3. PRODUCT OVERVIEW

The JKBMS 2A Active Balancer (JK-B2A8S) is a smart equalizer module designed to maintain cell voltage balance in lithium battery packs ranging from 2S to 8S. It features a 2A active equalization current and built-in Bluetooth for real-time monitoring via a dedicated mobile application. This balancer is suitable for various applications, including solar energy storage, e-bikes, and custom battery packs.



This image displays the JKBMS 2A Active Balancer module, a compact black rectangular device. A white label on the top surface details its specifications: Model JK-B2A8S, Balance Current 0.1-2A, Sampling Accuracy 3mV, Number of Battery Strings 2-8, and Supply Voltage 10-36V. A connector port for battery strings is visible on the side, along with a small red indicator light.

4. KEY FEATURES

- **Smart Active Balancing:** Features 2A active equalization for 2S–8S lithium battery packs, improving battery health and extending cycle life.
- **Built-in Bluetooth Monitoring:** Monitor real-time cell voltage and balance status through the JK app, compatible with iOS and Android.
- **Precise Voltage Detection:** Supports cell voltage range 1V–4.5V with $\pm 5\text{mV}$ accuracy, ideal for LiFePO₄, NCM (Li-ion), and LTO batteries.
- **Plug-and-Play DIY Ready:** Compact and easy to install, perfect for custom battery packs used in solar, e-bikes, or energy storage.
- **Wide Compatibility:** Supports LiFePO₄, NCM (Li-ion), and LTO chemistries, with an input voltage range of 10V–40V.



This diagram highlights the core features of JKBMS Smart BMS products, including Active Balancing, Wireless Transmission, Functional Safety, and Capacity Management.



This image focuses on the advantages of JKBMS Active Balancing technology, listing Energy transfer balance, Less heat generation, and Low energy consumption.



This image illustrates the Bluetooth communication capabilities of JKBMS devices, showing app features like

5. SETUP AND INSTALLATION

Careful wiring is crucial for the correct operation of the active balancer. Follow these steps for installation:

5.1. Pre-Installation Checks

- Verify that your battery pack configuration (2S-8S) matches the balancer's specifications.
- Ensure all battery cells are within a safe voltage range before connecting the balancer.
- Gather necessary tools: wire strippers, crimpers, multimeter, and appropriate safety gear.

5.2. Wiring Instructions

1. **Identify Battery Terminals:** Locate the positive (+) and negative (-) terminals of each individual cell in your battery pack.
2. **Connect B0:** Connect the B0 wire from the balancer to the negative terminal of the first cell (the overall negative terminal of the battery pack).
3. **Connect B1 to Bn:** Connect the B1 wire to the positive terminal of the first cell (and negative of the second), B2 to the positive of the second cell, and so on, up to Bn, which connects to the positive terminal of the last cell in your series.
4. **Connect V- and V+:** Connect the V- wire to the overall negative terminal of the battery pack (same as B0). Connect the V+ wire to the overall positive terminal of the battery pack (same as Bn).
5. **Double-Check Connections:** Carefully review all connections to ensure they are correct and secure. Incorrect wiring can lead to damage.

Note: The balancer's input voltage range is 10V-40V. Ensure your battery pack's total voltage falls within this range.

6. OPERATING INSTRUCTIONS

6.1. Initial Power-Up

Once all wiring is complete and verified, the balancer will automatically begin its operation. A small red indicator light on the module may illuminate, indicating power. The active balancing process will start to equalize cell voltages.

6.2. Bluetooth App Usage (JK App)

The JKBMS 2A Active Balancer features built-in Bluetooth for real-time monitoring and configuration via the JK app. The app is compatible with both iOS and Android devices.

1. **Download the App:** Search for 'JK BMS' or 'JKBMS' in your device's app store (Google Play Store for Android, Apple App Store for iOS) and install it.
2. **Enable Bluetooth:** Ensure Bluetooth is enabled on your smartphone or tablet.
3. **Open the App:** Launch the JK app. It should automatically scan for nearby JKBMS devices.
4. **Connect to Device:** Select your JKBMS device from the list of available devices. The device name typically includes 'JK' followed by a series of characters.
5. **Monitor Data:** Once connected, you can view real-time data such as individual cell voltages, total

pack voltage, balance status, and other relevant parameters.

Note: For detailed app functionalities and advanced settings, refer to the in-app help or the official JKBMS website.

7. MAINTENANCE

The JKBMS 2A Active Balancer is designed for minimal maintenance. However, periodic checks can help ensure its continued optimal performance:

- **Visual Inspection:** Periodically inspect the balancer and its wiring for any signs of physical damage, corrosion, or loose connections.
- **Cleaning:** If necessary, gently clean the exterior of the balancer with a dry, soft cloth. Do not use liquids or abrasive cleaners.
- **Firmware Updates:** Check the JKBMS official website or app for any available firmware updates. Follow the provided instructions carefully if an update is recommended.

8. TROUBLESHOOTING

If you encounter issues with your JKBMS 2A Active Balancer, refer to the table below for common problems and solutions:

Problem	Possible Cause	Solution
Balancer not active / No indicator light	Incorrect wiring; Insufficient battery voltage; Damaged unit.	Double-check all wiring connections (B0-Bn, V-, V+). Ensure battery pack voltage is within 10V-40V. If wiring is correct and voltage is sufficient, contact support.
Bluetooth connection issues	Bluetooth disabled on phone; App permissions; Interference; Balancer not powered.	Ensure Bluetooth is enabled on your device. Grant necessary permissions to the JK app. Move closer to the balancer. Verify the balancer is powered on. Restart the app or your phone.
Cells not balancing effectively	Significant cell voltage difference; Faulty cell; Balancer capacity exceeded.	Allow more time for balancing, especially with large initial differences. Check individual cell health. Ensure the balancer is appropriate for your battery pack size and current requirements.
Device gets warm during operation	Normal operation during active balancing; High balancing current.	Some warmth is normal. Ensure adequate ventilation around the device. If it becomes excessively hot, disconnect and check for short circuits or overcurrent conditions.

9. TECHNICAL SPECIFICATIONS

Specification	Value
Model	JK-B2A8S

Specification	Value
Product Dimensions	5.38 x 3.36 x 0.81 inches
Item Weight	15.8 ounces (0.99 Pounds)
Battery Cell Count	2S–8S
Balance Current	0.1A–2A (Active)
Sampling Accuracy	±5mV
Cell Voltage Range	1V–4.5V
Input Voltage Range	10V–40V
Supported Chemistries	LiFePO4, NCM (Li-ion), LTO
Communication	Built-in Bluetooth (iOS/Android App)
Manufacturer	JKBMS

10. WARRANTY AND SUPPORT

JKBMS products are manufactured to high-quality standards. For specific warranty details, please refer to the product packaging or the official JKBMS website. In case of technical issues or questions not covered in this manual, please contact JKBMS customer support. You can find more information and support resources by visiting the official [JKBMS Store](#).