

## Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

manuals.plus /

› [Aoleaby](#) /

› [Aoleaby JK Smart BMS 8S-24S Active Balance Battery Protection Board with 4.3 inch Display User Manual](#)

## Aoleaby JK Smart BMS 8S-24S

# Aoleaby JK Smart BMS 8S-24S Active Balance Battery Protection Board with 4.3 inch Display User Manual

Model: JK Smart BMS 8S-24S

## INTRODUCTION

---

Welcome to the user manual for the Aoleaby JK Smart BMS 8S-24S Active Balance Battery Protection Board. This device is designed to manage and protect your LiFePO<sub>4</sub>, Li-ion, or Lithium battery packs, ensuring optimal performance and longevity. It features active balancing, comprehensive protection functions, and Bluetooth communication for real-time monitoring via a mobile application. This manual provides essential information for safe installation, operation, and maintenance of your BMS.

## IMPORTANT SAFETY INFORMATION

---

**Please read all safety instructions carefully before installation and operation. Failure to follow these instructions may result in property damage, serious injury, or death.**

- Always disconnect the battery pack before performing any wiring or maintenance on the BMS.
- Ensure correct polarity when connecting the BMS to the battery cells and load. Incorrect wiring can cause irreversible damage to the BMS, battery, or connected equipment.
- This device should only be installed by qualified personnel with experience in battery management systems and electrical safety.
- Do not expose the BMS to water, moisture, or extreme temperatures outside its specified operating range (-20°C to 70°C).
- Verify all connections are secure and properly insulated to prevent loose contacts, short circuits, and potential fire hazards.
- Use appropriate personal protective equipment (PPE), such as insulated gloves and eye protection, during installation and handling.

## PACKAGE CONTENTS

---

The standard package for the Aoleaby JK Smart BMS 8S-24S with 4.3 inch display typically includes:

- 1x JK Smart BMS 8S-24S Active Balance Battery Protection Board
- 1x 4.3 inch Display
- Necessary connection cables (e.g., balance wires, temperature sensor)

*Note: The RS485 module is an optional accessory and is sold separately.*

## PRODUCT OVERVIEW

---

### Key Features

- **Active Balance:** Actively balances voltage differences between battery cells, significantly improving battery usage efficiency (up to 99%) and extending overall battery life.
- **Wide Cell Compatibility:** Supports 8S to 24S configurations for various battery chemistries including Li-ion, Lipo, LiFePO4, LTO, Lithium Cobaltate, and Lithium Manganate battery packs.
- **Comprehensive Protection:** Integrates multiple protection functions including overcharge, over-discharge, overcurrent, short circuit, low temperature charging cutoff, and under-voltage protection.
- **Bluetooth Communication:** Enables wireless connection to the dedicated JK BMS mobile application for real-time monitoring, parameter adjustment, and diagnostic information.
- **Optional Communication:** Features reserved RS485/CAN communication interfaces for advanced system integration (modules sold separately).
- **Integrated Display:** Includes a 4.3 inch display for direct, local monitoring of critical battery parameters without needing a mobile device.

### Component Identification

Refer to the image below for a visual guide to the main components of the JK Smart BMS unit with the 4.3 inch display.



**Figure 1:** Aoleaby JK Smart BMS 8S-24S with 4.3 inch display. This image illustrates the main BMS unit and its connected 4.3 inch display, showcasing the compact design and integrated screen for monitoring battery parameters.

## SETUP AND INSTALLATION

---

### Wiring Diagram Overview

Proper wiring is critical for the safe and correct operation of the BMS. Always follow the detailed wiring diagram provided with your specific BMS model. The general steps involve connecting the balance wires, main power cables,

and optional communication modules.

## General Wiring Steps:

1. **Prepare Battery Pack:** Ensure all individual cells within your battery pack are balanced to a similar voltage before connecting the BMS. This is crucial for optimal performance and safety.
2. **Connect Balance Wires:** Start by connecting the lowest cell voltage wire (B-) to the first cell's negative terminal. Then, sequentially connect each balance wire to its corresponding cell positive terminal (B1, B2, ..., Bn). Double-check the order and ensure each wire is connected to the correct cell.
3. **Connect Main Power Cables:** Connect the main negative battery terminal (B-) to the BMS's designated B- port. Connect the main positive battery terminal (P+) to the BMS's P+ port (if applicable, or directly to the load/charger if the BMS only manages the negative side).
4. **Connect Load/Charger:** Connect your load and charger to the appropriate terminals on the BMS (typically P- and P+ or C- and P- depending on the specific model's design).
5. **Connect Display:** Plug the 4.3 inch display into the designated communication port on the BMS.
6. **Connect Temperature Sensor:** Attach the temperature sensor to a central cell or a representative location within the battery pack to monitor its temperature accurately.
7. **Initial Power-Up:** After all connections are securely made and verified, power on the BMS. Observe the display for initial readings and status indicators.

### Warning:

Incorrect wiring can lead to severe damage to the BMS, battery, and connected equipment, as well as potential safety hazards including fire or explosion. If you are unsure about any wiring step, consult a professional or contact customer support before proceeding.

## OPERATING INSTRUCTIONS

---

### Using the 4.3 inch Display

The 4.3 inch display provides real-time information about your battery pack directly on the unit. You can typically view the following parameters:

- Total battery voltage
- Individual cell voltages
- Current (indicating charge or discharge)
- State of Charge (SOC) percentage
- Battery temperature
- Protection status and active alerts

Navigate through the display menus using the physical buttons (if present) or the touch interface to access detailed information and adjust basic settings.

### Using the JK BMS Mobile Application (Bluetooth)

The JK BMS mobile application offers advanced monitoring, configuration, and diagnostic capabilities via Bluetooth communication.

### Pairing with the App:

1. Download the official "JK BMS" app from your mobile device's app store (available for Android and iOS).
2. Ensure Bluetooth is enabled on your mobile device.
3. Open the JK BMS app and initiate a search for available devices.

4. Select your BMS from the list of discovered devices to establish a connection.
5. Once connected, you can view detailed battery parameters, adjust protection thresholds, monitor active balancing, and access historical data.

The app provides a user-friendly interface for comprehensive management of your battery system remotely.

## MAINTENANCE

---

### General Care

- **Regular Inspection:** Periodically inspect all wiring connections for tightness, signs of corrosion, or physical damage. Loose connections can lead to poor performance or safety hazards.
- **Cleanliness:** Keep the BMS unit clean and free from dust, dirt, and debris. Use a dry, soft cloth for cleaning. Avoid using liquid cleaners or solvents.
- **Environmental Conditions:** Ensure the BMS operates within its specified temperature range (-20°C to 70°C) and avoid exposure to excessive humidity or direct sunlight.
- **Firmware Updates:** Check the manufacturer's website or the JK BMS app for any available firmware updates. Keeping your BMS firmware up-to-date ensures optimal performance, bug fixes, and access to new features.

## TROUBLESHOOTING

---

### Common Issues and Solutions

Problem	Possible Cause	Solution
BMS not powering on / No display	Incorrect main power connection, battery voltage too low, faulty wiring.	Check main B- and P+ connections. Verify battery voltage is above the minimum operating threshold. Inspect all wires for damage or loose connections.
Individual cell voltage imbalance	Initial cell imbalance, active balance not yet fully engaged, faulty balance wire connection.	Allow sufficient time for active balancing to work. Check all balance wire connections for continuity and correct order. Pre-balance cells if the imbalance is severe.
Overcharge/Over-discharge protection triggered	Battery voltage exceeded/fell below set thresholds, charger/load issue.	Check charger output voltage. Ensure load is not drawing excessive current. Adjust protection parameters in the app if necessary (exercise caution).
Bluetooth connection issues	BMS out of range, Bluetooth disabled on phone, app malfunction, interference.	Move closer to the BMS. Ensure Bluetooth is enabled on your mobile device. Restart the app and/or the BMS. Avoid strong electromagnetic interference.
Overcurrent protection triggered	Load current exceeds BMS limit, short circuit in the system.	Reduce the load on the battery. Check for any short circuits in the system wiring. Verify that the BMS current rating matches your application requirements.

For issues not listed here, or if the troubleshooting steps do not resolve the problem, please contact Aoleaby customer support for further assistance.

## SPECIFICATIONS

---

### Technical Data

Parameter	Value
Supported Cell Count	8S-24S
Battery Types	Li-ion, Lipo, LiFePO4, LTO, Lithium Cobaltate, Lithium Manganate
Continuous Current (Max)	60A / 80A (model dependent)
Active Balance Current	0.6A (for 60A/80A models)
Single Battery Acquisition Range	1V-5V (Accuracy 5mV)
Operating Temperature	-20°C to 70°C
Power Requirements	24V-100V
Power Consumption (Balanced)	10mA @ 100V
Power Consumption (Unbalanced)	6mA @ 100V
Communication	Bluetooth (Standard), RS485/CAN (Optional)
Display Size	4.3 inch
Dimensions (BMS Unit)	115mm x 78mm x 17.6mm (approx.)
Weight	Approximately 2.2 pounds (including display and accessories)

## WARRANTY AND SUPPORT

---

### Warranty Information

Aoleaby products are designed for reliability and performance. This product comes with a standard manufacturer's warranty against defects in materials and workmanship. Please refer to the warranty card included with your purchase or visit the official Aoleaby website for detailed warranty terms and conditions, as warranty periods and coverage may vary.

### Customer Support

If you encounter any issues or have questions regarding your JK Smart BMS, please do not hesitate to contact Aoleaby customer support. When contacting support, please provide your product model and a detailed description of the issue for prompt and efficient assistance.

For the latest information, frequently asked questions (FAQs), and additional support resources, please visit the official Aoleaby website.