

Aoleaby B2A24S15P

Aoleaby JK Smart BMS B2A24S15P Active Balance Battery Management System User Manual

Model: B2A24S15P

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of the Aoleaby JK Smart BMS B2A24S15P Active Balance Battery Management System. This device is designed to protect and manage various battery configurations, including Li-Ion, LiFePO4, and LTO chemistries, ensuring their longevity and safe operation.

2. KEY FEATURES

- **Smart APP Control:** Utilizes a dedicated mobile application for comprehensive BMS settings and real-time battery status monitoring via Bluetooth communication.
- **Active Balance Function:** Actively balances voltage differences between individual battery cells, enhancing battery usage efficiency up to 99% and extending battery lifespan.
- **Comprehensive Protection:** Offers protection against over-charge, over-discharge, over-current, short circuit, and includes a low-temperature charging cutoff.
- **Wide Compatibility:** Supports various battery string configurations from 8S to 24S (e.g., 12V/4S, 24V/8S, 48V/16S, 72V/24S) with a maximum current of 100A-350A and an active balance current of 0.6-2A.
- **Optional Heating Function:** Available with a heating function to prevent charging at low temperatures, which can be configured via the APP.

3. PACKAGE CONTENTS

The standard package includes the following components:

- JK Smart BMS (B2A24S15P model with built-in Bluetooth)
- Temperature Sensor (40cm)
- Balance Wires (75cm)
- Active Switch (15cm)
- Heating Cable (included only with BMS models featuring the heat function)



Image 3.1: Illustration of the JK Smart BMS package contents, showing the main unit, temperature sensor, active switch, and balance wires.

4. SPECIFICATIONS

Feature	Specification
Model	B2A24S15P
Battery Cell Composition	Li-Ion, LiFePO4, LTO
Battery Strings Supported	8S - 24S
Continuous Current	150A (Charge/Discharge)
Active Balance Current	0.6A - 2A
Communication	Bluetooth (BT), RS485 (optional CANBUS chip)
Heating Function	Optional (Max 200W, 100W for B2A8S20P)
Dimensions	1.18 x 0.79 x 0.39 inches (Package)
Item Weight	2.2 pounds



Image 4.1: Visual representation of the JK Smart BMS B2A24S15P highlighting its core specifications.

5. SETUP AND INSTALLATION

Careful installation is crucial for the safe and effective operation of your battery system. Always ensure power is disconnected before making any connections.

5.1 General Connection Overview

The BMS connects to your battery pack via the main power terminals (B- and P-) and individual cell balance wires. The B- terminal connects to the negative terminal of the battery pack, and the P- terminal is the negative output for load/charger. Ensure all balance wires are connected to their respective cell positive terminals in the correct order (B1, B2, ..., B24).



Image 5.1: Top view of the JK Smart BMS, illustrating the main power connections and balance port.



Image 5.2: Side view of the JK Smart BMS, detailing the balance wire connection ports.

5.2 Heating Cable Connection (If Applicable)

For BMS models equipped with the heating function:

1. Connect the green 5-PIN cable of the heating cable to the heating pad.
2. Connect the remaining black and red cables of the heating cable to a smart charger.

The smart charger, linked to the BMS, will detect the battery temperature via the BMS and automatically manage the heating function to ensure safe charging conditions, especially at low temperatures.

5.3 APP Installation and Bluetooth Pairing

The JK Smart BMS utilizes a proprietary APP for configuration and monitoring. Locate the QR code on the BMS unit or refer to the product packaging for instructions on downloading the official APP. Once installed, enable Bluetooth on your mobile device and follow the APP's instructions to pair with your BMS.



Image 5.3: Front view of the JK Smart BMS, showing the QR code for APP access.

6. OPERATING INSTRUCTIONS

The primary interface for operating and monitoring the JK Smart BMS is its dedicated mobile application.

6.1 Real-time Monitoring via APP

After successfully pairing the BMS with the APP, you can monitor various parameters in real-time, including:

- Individual cell voltages
- Total battery pack voltage
- Charge/discharge current
- Battery temperature
- State of Charge (SOC)
- Active balancing status

6.2 Parameter Configuration

The APP allows users to configure various protection parameters to suit their specific battery chemistry and application. These may include:

- Over-charge voltage threshold
- Over-discharge voltage threshold
- Over-current thresholds for charge and discharge
- Low-temperature charge protection threshold (for models with heating function)
- Balancing start voltage

Refer to the in-APP help or the official JK BMS documentation for detailed explanations of each parameter and recommended settings for your battery type.

6.3 Heating Function Operation

If your BMS includes the heating function, the APP allows you to set the cryogenic charge protection parameter. When the battery temperature falls below this set threshold, the BMS will automatically activate the heating function (if connected to a smart charger as described in Section 5.2) to warm the battery to a safe charging temperature. The heating power is determined by the battery voltage and the resistance of the heating film ($\text{Power} = U^2/R$, $\text{Current} = U/R$), with a maximum heating power of 200W (100W for B2A8S20P) and a maximum current of 3A.

7. MAINTENANCE

The Aoleaby JK Smart BMS is designed for reliable operation with minimal maintenance. However, periodic checks are recommended:

- **Visual Inspection:** Periodically inspect all wiring and connections for signs of wear, corrosion, or damage. Ensure all connections are secure.
- **Firmware Updates:** Check the official APP or manufacturer's website for any available firmware updates for your BMS. Updates can improve performance and add new features.
- **Environmental Conditions:** Ensure the BMS operates within its specified temperature and humidity ranges to prevent damage.
- **Cleanliness:** Keep the BMS unit clean and free from dust and debris.

8. TROUBLESHOOTING

If you encounter issues with your JK Smart BMS, consider the following troubleshooting steps:

- **No Power/No Communication:**
 - Verify all main power connections (B- and P-) are correctly wired and secure.
 - Check that the active switch is properly connected and engaged.

- Ensure Bluetooth is enabled on your mobile device and the APP has necessary permissions.
- Restart the APP and try reconnecting.

- **Cell Voltage Imbalance:**

- Confirm all balance wires are correctly connected to their respective cells. Incorrect wiring can lead to false readings or improper balancing.
- Allow the BMS sufficient time to perform active balancing, especially after initial setup or significant discharge.
- Check the APP for balancing status and any error codes.

- **Protection Triggered (Over-voltage, Under-voltage, Over-current):**

- Review the protection parameters in the APP to ensure they are set appropriately for your battery type and application.
- Check the battery pack for any faulty cells that might be triggering protection prematurely.
- Reduce the load or charging current if over-current protection is frequently triggered.

- **Heating Function Not Working:**

- Ensure the heating cable is correctly wired to both the heating pad and the smart charger.
- Verify the low-temperature charge protection threshold is set correctly in the APP.
- Confirm the smart charger is functioning and communicating with the BMS.

For persistent issues, consult the official Aoleaby support resources or contact customer service.

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or visit the official Aoleaby website. Keep your purchase receipt as proof of purchase for warranty claims.

Manufacturer: Aoleaby

ASIN: B0D3TKGQL4

Item Model Number: Aoleaby (B2A24S15P)

For further assistance, you may contact the seller directly through the platform where the product was purchased.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

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Details

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