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› JK Smart BMS B1A20S15P / B1A24S15P User Manual

Aoleaby B1A20S15P / B1A24S15P

User Manual: JK Smart BMS B1A20S15P / B1A24S15P

Model: B1A20S15P / B1A24S15P | Brand: Aoleaby

1. INTRODUCTION

The JK Smart BMS (Battery Management System) models B1A20S15P and B1A24S15P are advanced battery equalizers designed for LiFePO4 and Li-ion battery systems. These intelligent systems provide comprehensive protection and management for battery packs ranging from 8S to 24S, ensuring optimal performance and extended battery life. Key functionalities include 1A active balancing, Bluetooth (BT) communication for real-time monitoring via a dedicated app, and RS485 communication for integration into larger systems. The BMS offers robust protection against over-charge, over-discharge, over-current, short circuits, and includes a low-temperature charging cutoff.



Figure 1: Front view of the JK Smart BMS unit.

2. PRODUCT FEATURES AND SPECIFICATIONS

The JK Smart BMS is equipped with several features to enhance battery safety and efficiency:

- **Active Balance:** Features 1A active balancing to equalize cell voltages, improving overall battery efficiency and longevity.

- **Bluetooth (BT) Communication:** Allows for real-time monitoring and parameter adjustment via the dedicated JK BMS mobile application.
- **RS485 Communication:** Provides an interface for advanced system integration and data communication.
- **Comprehensive Protection:** Includes safeguards against over-charge, over-discharge, over-current, short circuit, and low-temperature charging cutoff.
- **Wide Compatibility:** Supports 8S to 24S LiFePO4, Li-ion, and LTO battery types.
- **High Current Capacity:** Supports continuous charge/discharge currents up to 150A.



Figure 2: Key features of the JK Smart BMS.

Technical Specifications:

Model	B1A20S15P / B1A24S15P
Supported Cell Count	8S ~ 24S (Commonly 8S~20S for B1A20S15P)
Active Balance Current	1A

Continuous Charge/Discharge Current	150A
Supported Battery Types	LiFePO4, Li-ion, LTO
Communication Interfaces	Bluetooth (BT), RS485, CAN (optional)
Dimensions (L x W x H)	162mm x 102mm x 20mm (approx.)
Item Weight	2.2 pounds (approx. 1000 grams)

3. PACKAGE CONTENTS

Upon opening the package, please verify that all components are present and undamaged:

- JK Smart BMS Unit
- Balance Wires (70cm)
- NTC Temperature Sensor (40cm)
- Active Switch (50cm)
- Operating Manual (this document)

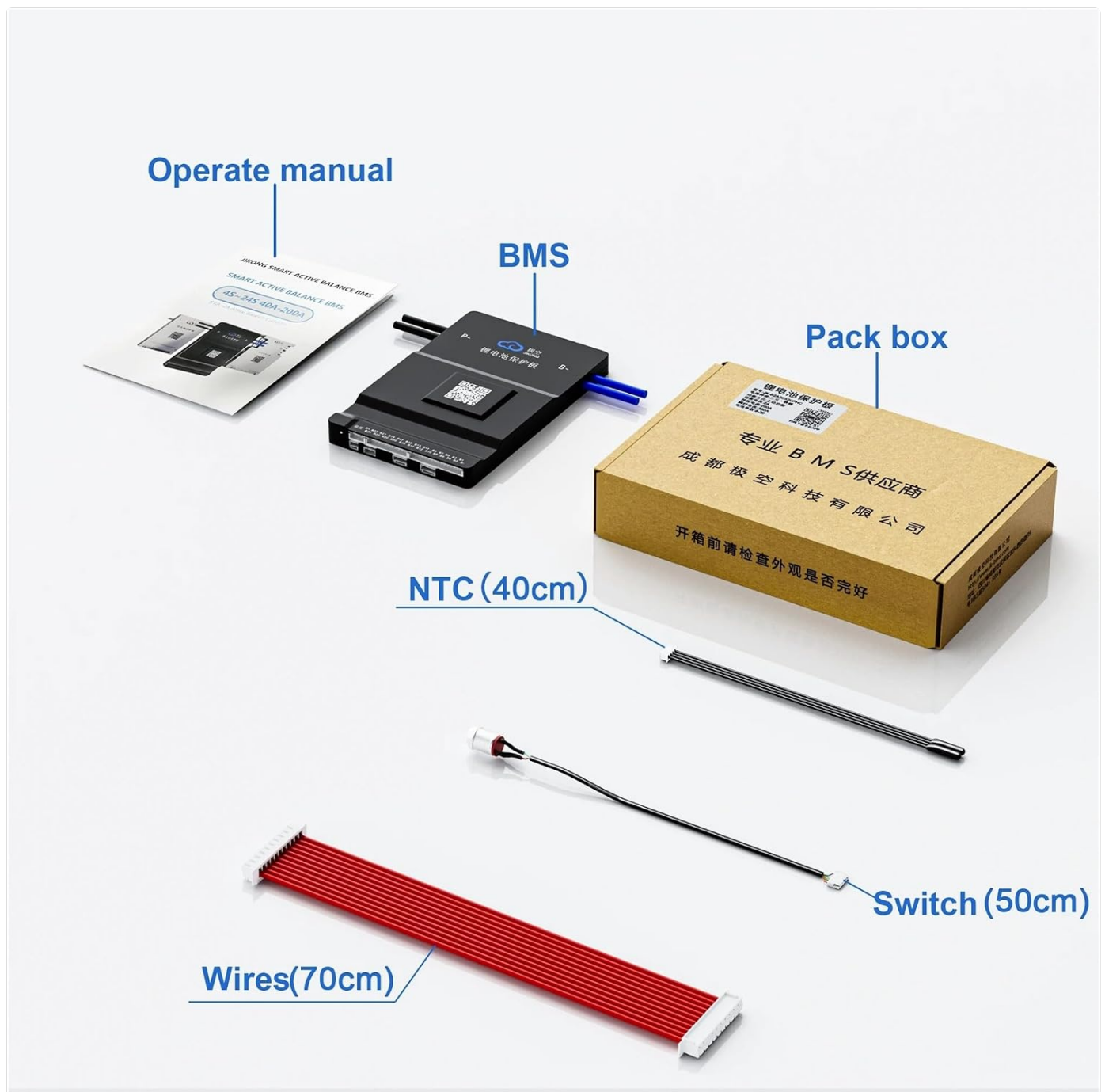


Figure 3: Typical package contents for the JK Smart BMS.

4. SETUP AND INSTALLATION

Proper installation is crucial for the safe and effective operation of your BMS. Please follow these steps carefully:

1. **Prepare Battery Pack:** Ensure your battery pack is assembled correctly with all cells at a similar state of charge.
2. **Connect Balance Wires:** Connect the balance wires from your battery pack to the corresponding ports on the BMS. Ensure the correct order from B- (total negative electrode) to the highest cell voltage. Refer to the wiring diagram below.
3. **Connect Main Power Wires:** Connect the main negative terminal of your battery pack to the B- terminal on the BMS. Connect the P- terminal of the BMS to the negative terminal of your load/charger. The total positive pole (B+) of the battery pack connects directly to the positive terminal of your load/charger.
4. **Connect NTC Temperature Sensor:** Plug the NTC sensor into its designated port on the BMS and place the sensor securely on a battery cell or within the battery pack to monitor temperature.
5. **Connect Active Switch:** Connect the active switch to its port. This switch is used to activate or deactivate the BMS.

6. **Initial Power-Up:** Once all connections are secure, activate the BMS using the active switch. The BMS should power on.
7. **Download and Install APP:** Download the official JK BMS APP to your smartphone (Android or iOS). You can scan the QR code on the product or refer to the manufacturer's website for download links. [Scan QR Code for APP Download](#)
8. **Pair via Bluetooth:** Open the APP and search for your BMS via Bluetooth. Follow the in-app instructions to pair your device.

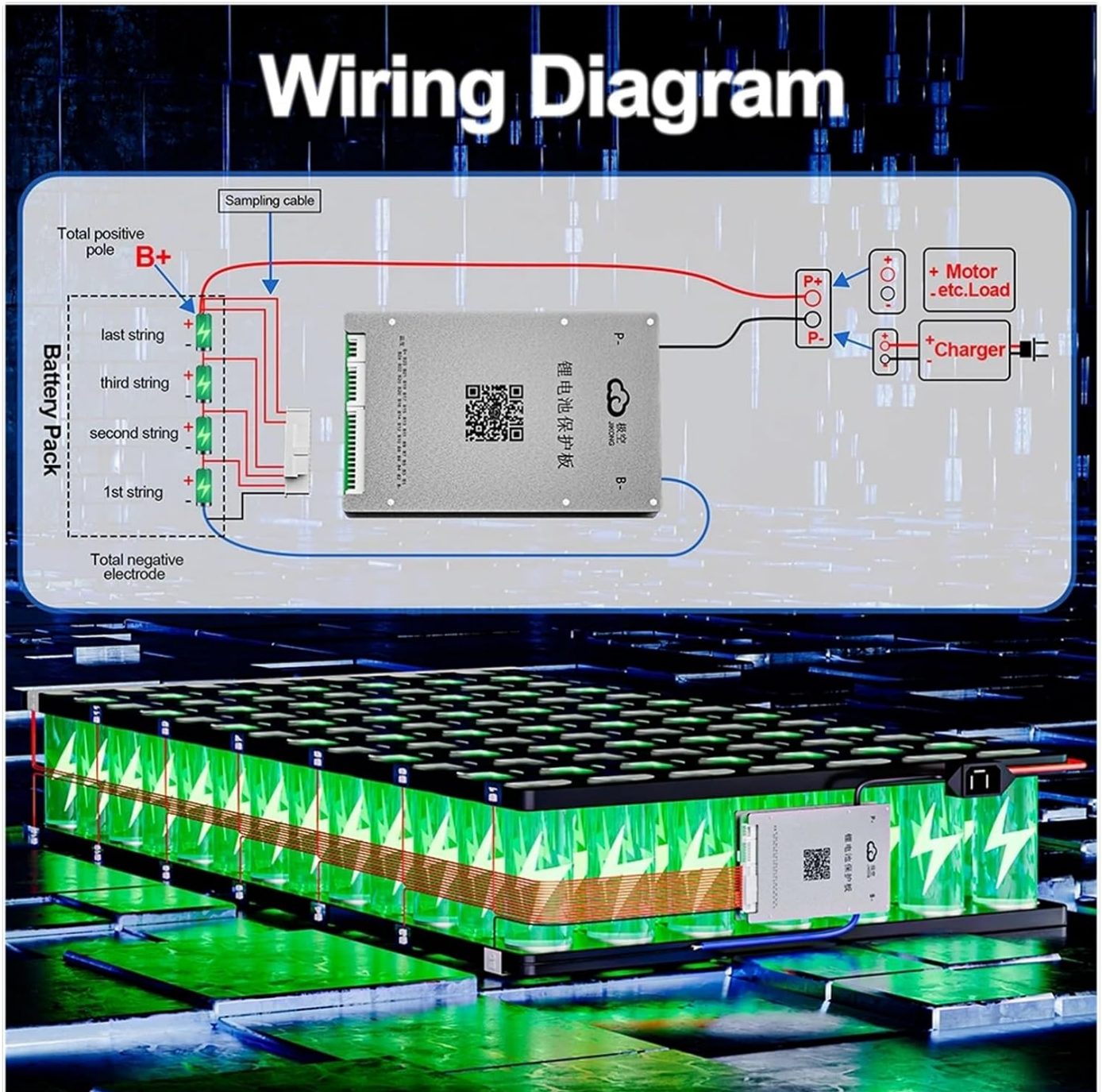


Figure 4: Detailed wiring diagram for the JK Smart BMS. Ensure all connections are made correctly before powering on.

5. OPERATING THE SMART BMS

The JK Smart BMS is primarily operated and monitored through its dedicated mobile application. After successful pairing via Bluetooth, you can access various functions:

- **Monitor Battery Data:** View real-time battery parameters such as total voltage, individual cell voltages,

charge/discharge current, temperature, state of charge (SOC), cycle count, and balance status.

- **Modify Parameters:** Adjust various BMS settings, including over-charge protection voltage, over-discharge protection voltage, over-current thresholds, and balancing parameters. *Exercise caution when modifying parameters to avoid damaging your battery pack.*
- **Control BMS Balance Switch:** Manually enable or disable the active balancing function if needed.
- **View Alarms and Warnings:** The app will display any active alarms or warnings related to battery health or protection events.



Figure 5: Overview of the Smart BT APP interface, showing monitoring and control capabilities.

For detailed instructions on each APP function, please refer to the in-app help section or the manufacturer's online resources.

6. MAINTENANCE

To ensure the longevity and optimal performance of your JK Smart BMS and battery pack, consider the following maintenance guidelines:

- **Regular Monitoring:** Periodically check battery parameters via the APP to identify any anomalies early.
- **Connection Integrity:** Annually inspect all wiring connections (balance wires, main power wires, sensor wires) for looseness, corrosion, or damage. Ensure they are securely fastened.
- **Cleanliness:** Keep the BMS unit clean and free from dust and debris. Avoid exposing it to excessive moisture or extreme temperatures.
- **Software Updates:** Check for any available firmware updates for the BMS or updates for the mobile application. Updates often include performance improvements and bug fixes.
- **Environmental Conditions:** Operate the battery system within recommended temperature ranges to prevent stress on the cells and BMS.

7. TROUBLESHOOTING

If you encounter issues with your JK Smart BMS, refer to the following common troubleshooting steps:

- **BMS Not Powering On:**
 - Verify that the active switch is connected and in the "ON" position.
 - Check all main power connections (B- and P-) for secure contact.
 - Ensure the battery pack voltage is within the operational range of the BMS.
- **Bluetooth Connection Issues:**
 - Ensure Bluetooth is enabled on your smartphone.
 - Restart the BMS (if possible) and your phone.
 - Make sure you are within close proximity to the BMS.
 - Check if the APP has necessary Bluetooth permissions.
- **Cells Not Balancing:**
 - Confirm that the active balance function is enabled in the APP.
 - Verify all balance wires are correctly connected and not damaged.
 - Allow sufficient time for balancing, especially if cell voltage differences are significant.
- **Over-Protection Alarms:**
 - **Over-Charge/Discharge:** Check individual cell voltages in the APP. Adjust charging/discharging parameters or reduce load if cells are consistently hitting limits.
 - **Over-Current:** Reduce the load on the battery or check for short circuits in the system.
 - **Low Temperature Cutoff:** Ensure the battery is not being charged below its recommended minimum temperature.

If the issue persists after attempting these steps, please contact Aoleaby customer support for further assistance. Provide detailed information about the problem and any error messages displayed in the APP.

8. WARRANTY AND SUPPORT

For warranty information and technical support regarding your JK Smart BMS, please refer to the purchase documentation or contact the seller directly. Aoleaby, as the manufacturer, provides support for product inquiries and technical assistance. Ensure you have your product model number (B1A20S15P or B1A24S15P) and purchase details ready when contacting support.

The JK BMS mobile application also serves as a primary tool for diagnostics and monitoring, which can assist in

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.

Name

Anonymous

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question