

Aoleaby BD6A20S10P

Aoleaby JK Smart BMS BD6A20S10P Battery Management System User Manual

Model: BD6A20S10P

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your Aoleaby JK Smart BMS BD6A20S10P Battery Management System. The JK Smart BMS is designed to protect and optimize the performance of Li-Ion, LiFePO₄, and LTO battery packs, ensuring safety and extending battery life through active balancing and comprehensive protection features.

Please read this manual thoroughly before using the product to ensure correct operation and to prevent damage.

2. PACKAGE CONTENTS

Upon opening the package, please verify that all the following components are included:

- JK Smart BMS unit (with built-in Bluetooth)
- Temperature Sensor (40cm)
- Balance Wires (75cm)
- Active Switch (15cm)
- Heating Cable (Only for BMS models with heat function)



Image 2.1: Contents of the Aoleaby JK Smart BMS package, including the main BMS unit, temperature sensor, active switch, and various connection cables.

3. KEY FEATURES

- **JK Own Development APP:** Monitor battery status and configure BMS settings via Bluetooth communication on your smartphone.
- **JK Active Balance:** Actively balances voltage differences between battery cells, improving battery usage efficiency up to 99% and extending battery life.
- **Comprehensive Protection:** Protects against over-charge, over-discharge, over-current, short circuit, and includes low-temperature charging cutoff.
- **Wide Compatibility:** Support 12V/4S, 24V/8S, 48V/16S, 72V/24S LiFePO4 battery systems with 100A-350A max current and 0.6-2A active balance current.

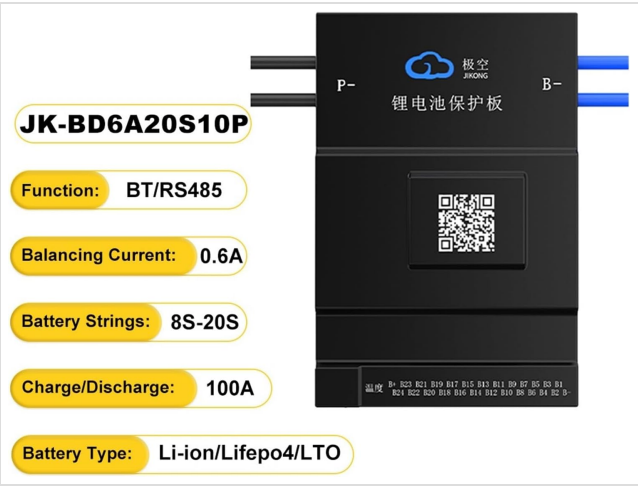


Image 3.1: Front view of the JK Smart BMS, illustrating its core features and specifications such as Bluetooth/RS485 communication, balancing current, supported cell configurations, and battery types.

4. SPECIFICATIONS

Feature	Specification
Model	BD6A20S10P
Battery Cell Composition	Lithium Ion, LiFePO4, LTO

Feature	Specification
Supported Cell Count	8S-20S (e.g., 12V/4S, 24V/8S, 48V/16S, 72V/24S)
Max Continuous Current	100A (up to 350A peak for some models)
Active Balance Current	0.6A - 2A (model dependent)
Communication	Bluetooth (BT), RS485 (optional CANBUS chip)
Protection Functions	Over-charge, Over-discharge, Over-current, Short Circuit, Low Temperature Charging Cutoff
Item Weight	2.2 pounds
Package Dimensions	1.18 x 0.79 x 0.39 inches



Image 4.1: Back view of the Smart Active Balance BMS, displaying its model type, supported battery chemistries, balancing method, and current ratings.

5. SETUP AND INSTALLATION

Safety First: Before beginning installation, ensure your battery pack is disconnected from any power sources and that all individual cells are at a safe voltage level. Wear appropriate personal protective equipment.

5.1. Wiring Diagram Overview

The JK Smart BMS requires careful connection of power terminals, balance wires, and sensors. Refer to the specific wiring diagram provided with your BMS model for precise connections. General steps are outlined below.



Image 5.1: Front view of the JK Smart BMS, showing the main power terminals (P- and B-) and the connection points for balance wires.

5.2. Connection Steps

1. **Connect B- Terminal:** Connect the main negative terminal of your battery pack to the B- terminal on the BMS.
2. **Connect Balance Wires:** Carefully connect the balance wires from each cell of your battery pack to the corresponding ports on the BMS. Ensure the correct order (B-, B1, B2, ..., Bmax) as per the BMS's pinout. Incorrect connection can damage the BMS or battery.
3. **Connect P- Terminal:** Connect the load/charger negative terminal to the P- terminal on the BMS. The main positive terminal of the battery pack connects directly to the load/charger positive.
4. **Connect Temperature Sensor:** Plug the temperature sensor into its designated port on the BMS and place the sensor securely on a battery cell or within the battery pack for accurate temperature monitoring.
5. **Connect Active Switch:** Connect the active switch to its port. This switch is typically used to activate/deactivate the BMS or for specific functions.
6. **Heating Cable (If applicable):** If your BMS has a heat function, connect the green 5PIN cable of the heating cable to the heating pad. The black and red cables of the heating cable should be linked to a smart charger. The smart charger, after linking with the BMS, will use the BMS's temperature data to automatically monitor and control the battery's charging status, including heating.



Image 5.2: Angled view of the BMS, highlighting the array of balance wire connection points, crucial for individual cell voltage

monitoring and balancing.



Image 5.3: Side profile of the BMS, providing a clear view of the balance wire interface and the robust construction.

5.3. App Installation and Bluetooth Connection

Download the official JK BMS app from your smartphone's app store (iOS/Android). Once installed, enable Bluetooth on your phone and open the app. The app should detect your JK Smart BMS. Follow the in-app instructions to pair and connect. This will allow you to monitor battery parameters and adjust settings.

6. OPERATION

6.1. Monitoring Battery Status

Use the JK BMS app to monitor real-time battery parameters, including:

- Total voltage and individual cell voltages
- Charge/discharge current
- Battery temperature
- State of Charge (SOC)
- Balancing status
- Protection status (e.g., over-voltage, under-voltage alarms)

6.2. Active Balancing

The JK Smart BMS features active balancing, which automatically works to equalize the voltage of individual cells within the battery pack. This process occurs continuously and helps maintain the health and capacity of the entire pack. You can observe the balancing activity through the app.

6.3. BMS Settings

The app allows you to configure various BMS parameters, such as:

- Over-voltage and under-voltage protection thresholds
- Over-current protection limits
- Temperature protection limits
- Charging and discharging parameters

Exercise caution when adjusting settings. Refer to your battery cell manufacturer's specifications for recommended values. Incorrect settings can lead to battery damage or safety hazards.

7. MAINTENANCE

7.1. Regular Checks

- Periodically check all wiring connections for tightness and corrosion.
- Monitor battery cell voltages via the app to ensure they remain balanced.
- Keep the BMS unit clean and free from dust and moisture.

7.2. Software Updates

Check the JK BMS app regularly for firmware updates for your BMS. Updates can improve performance, add features, or address bugs. Follow the in-app instructions for any update procedures.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
BMS not detected by app	Bluetooth off, BMS not powered, app issue	Ensure Bluetooth is enabled, BMS is powered on, restart app/phone. Check BMS wiring.
Cells out of balance	Initial imbalance, faulty cell, balancing current too low	Allow BMS more time to balance. Check individual cell health. Ensure balance wires are correctly connected.
BMS cuts off power unexpectedly	Over-voltage, under-voltage, over-current, or temperature protection triggered	Check app for protection alarms. Verify battery voltage, current draw, and temperature. Adjust BMS settings if necessary (with caution).
Heating function not working	Incorrect wiring, no heat function model, smart charger not linked	Verify heating cable connections (green 5PIN to pad, red/black to smart charger). Ensure your BMS model supports heating. Confirm smart charger is linked to BMS.

If problems persist, contact customer support for further assistance.

9. WARRANTY AND SUPPORT

9.1. Warranty Information

Aoleaby products are manufactured with high-quality standards. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official Aoleaby website. Typically, a standard manufacturer's warranty covers defects in materials and workmanship under normal use.

9.2. Customer Support

For technical assistance, troubleshooting, or warranty claims, please contact Aoleaby customer support through the following channels:

- **Email:** support@aoleaby.com (Example email, please refer to actual product documentation for correct contact)
- **Website:** www.aoleaby.com/support (Example website, please refer to actual product documentation for correct contact)

When contacting support, please have your product model (BD6A20S10P) and purchase information ready.

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

Email

you@example.com

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