

[Manuals.plus](#) /

› [Aoleaby](#) /

› JK Smart BMS BD4A20S4P User Manual

Aoleaby Bd4a20s4p

JK Smart BMS User Manual

Model: BD4A20S4P

1. INTRODUCTION

The JK Smart BMS (Battery Management System) is an advanced active balance system designed to optimize the performance and longevity of your battery pack. This manual provides essential information for the proper installation, operation, and maintenance of your JK Smart BMS model BD4A20S4P.

For detailed settings and real-time monitoring, please download the official JK BMS APP by scanning the QR code provided on the product or via the link: <http://qr17.cn/BApbC0>.



Figure 1: JK Smart BMS unit with its retail packaging.

2. PACKAGE CONTENTS

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

- 1 x JK Smart BMS unit (with built-in Bluetooth)
- 1 x Temperature Sensor (approximately 40cm in length)
- 1 x Set of Balance Wires (approximately 75cm in length)
- 1 x Active Switch (approximately 15cm in length)
- 1 x Heating Cable (only for BMS models with heat function)



Figure 2: The JK Smart BMS unit along with its standard accessories.

3. SPECIFICATIONS

The JK Smart BMS BD4A20S4P offers robust features for battery management. Key specifications are detailed below:

Feature	Description
Model	JK-BD4A20S4P
Functionality	Bluetooth (BT) / RS485 Communication
Active Balancing Current	0.4A
Supported Battery Strings	8S - 20S
Charge/Discharge Current	40A
Supported Battery Types	Li-ion / LiFePO4 / LTO
Package Dimensions	1.18 x 0.79 x 0.39 inches
Item Weight	2.2 pounds (approximately 1000 grams)

JK-BD4A20S4P

Function: BT/RS485

Balancing Current: 0.4A

Battery Strings: 8S-20S

Charge/Discharge: 40A

Battery Type: Li-ion/Lifepo4/LTO



Figure 3: Key specifications for the JK-BD4A20S4P model.

JK SMART ACTIVE BALANCE BMS

4S-24S 40A-200A

0.6A-2A Active Balance Current



Figure 4: Overview of different JK Smart Active Balance BMS models.

4. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your BMS. Always ensure the battery pack is disconnected before beginning installation.

4.1. Wiring Connections

1. Connect the balance wires to each cell of your battery pack, ensuring correct polarity and sequence as indicated on the BMS board.
2. Connect the main positive (B+) and negative (B-) terminals of the battery pack to the corresponding terminals on the BMS.
3. Connect the load/charger positive (P+) and negative (P-) terminals to the corresponding output terminals on the BMS.
4. Connect the temperature sensor to the designated port on the BMS and place the sensor in a location that accurately reflects the battery temperature.
5. If your BMS has a heating function, connect the green 5-PIN cable of the heating cable to the heating pad. The black and red cables of the heating function should be linked to a smart charger. The smart charger will monitor the battery temperature via the BMS and automatically manage the charging status and heating.

Warning: Incorrect wiring can damage the BMS, battery, or connected equipment. If unsure, consult a qualified professional.

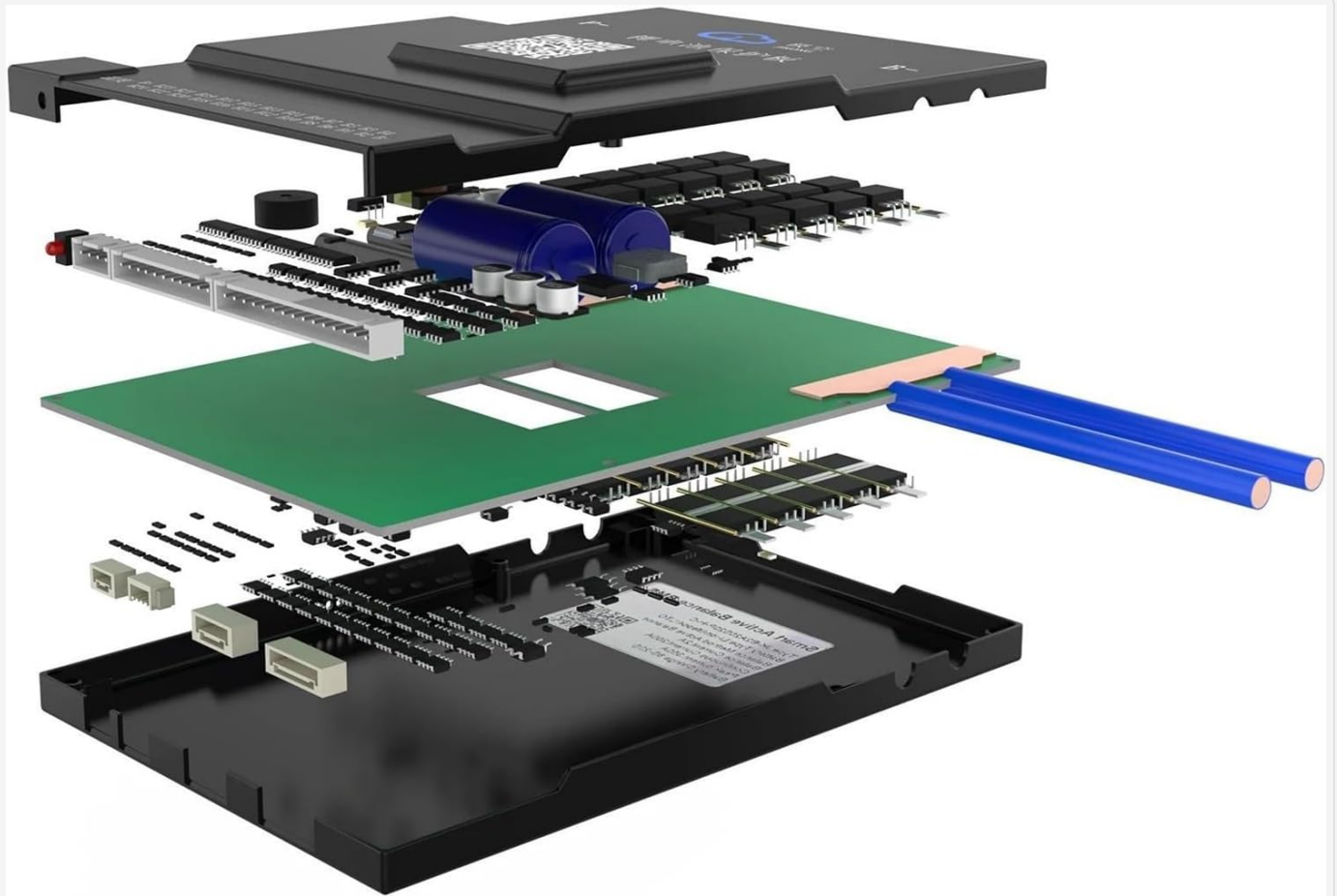


Figure 5: Exploded view illustrating the internal structure and connection points of the BMS.

5. OPERATING INSTRUCTIONS

5.1. APP Connectivity and Monitoring

The JK Smart BMS features a dedicated APP for comprehensive monitoring and control. Once the BMS is powered on, enable Bluetooth on your smartphone and open the JK BMS APP. The APP will allow you to:

- View real-time battery cell voltages.
- Monitor total battery voltage and current.
- Check battery temperature.
- Access charge/discharge status.
- Configure various BMS parameters, including over-charge/discharge protection, over-current protection, and low-temperature charging cutoff.

5.2. Active Balance Function

The JK Smart BMS actively balances the voltage differences between individual battery cells. This process significantly improves battery usage efficiency, extending the overall lifespan of your battery pack. The 0.4A active balancing current ensures effective cell equalization.

5.3. Heating Function (If Applicable)

For BMS models equipped with the heating function, the system automatically activates heating when the battery temperature falls below the set low-temperature charge protection threshold. This prevents charging at dangerously low temperatures, which can damage the battery.

- The cryogenic charge protection parameter can be adjusted within the APP.
- Heating power is determined by the battery voltage and the resistance of the heating film ($\text{Power} = U^2 / R$).

- The maximum heating current for this board design is 3A, with a maximum heating power of 200W (for B2A8S20P, it is 100W).

6. MAINTENANCE

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

- Regularly check all wiring connections for tightness and corrosion.
- Monitor battery cell voltages and overall pack health via the JK BMS APP. Address any significant cell imbalances promptly.
- Keep the BMS unit clean and free from dust and moisture.
- Ensure the BMS is installed in a well-ventilated area to prevent overheating.
- Periodically review and adjust BMS parameters in the APP to match your battery's specific requirements and usage patterns.

7. TROUBLESHOOTING

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

- **No Power/No APP Connection:** Verify all main power and balance wire connections are secure and correctly polarized. Ensure the battery pack has sufficient voltage.
- **Cell Imbalance:** The active balance function should manage this. If significant imbalance persists, check individual cell voltages and balance wire connections. Ensure the BMS is correctly configured for your battery string count.
- **Over-Protection Triggered:** If the BMS frequently triggers over-charge, over-discharge, or over-current protection, review your battery's specifications and the BMS settings in the APP. Adjust parameters if necessary, or reduce load/charging current.
- **Heating Function Not Working:** Ensure the heating cable is correctly connected to both the heating pad and the smart charger. Verify that the low-temperature charge protection setting in the APP is configured appropriately.
- **Unusual Behavior:** Disconnect the battery pack from the BMS, wait a few minutes, and then reconnect to perform a soft reset. If issues persist, consult the APP for error codes or diagnostic information.

For complex issues not resolved by these steps, please contact customer support.

8. SAFETY INFORMATION

Always prioritize safety when working with battery systems and the BMS. Adhere to the following guidelines:

- Wear appropriate personal protective equipment (PPE), including safety glasses and insulated gloves.
- Ensure the battery pack is disconnected from any power sources before performing installation or maintenance.
- Avoid short-circuiting battery terminals or BMS connections.
- Install the BMS in a dry, well-ventilated area, away from flammable materials.
- Do not attempt to disassemble or repair the BMS unit yourself. Refer to qualified personnel for service.
- Choosing the correct protection board and applying it appropriately is vital to the longevity and safety of your batteries. Ensure the BMS specifications match your battery pack's requirements.

9. WARRANTY AND SUPPORT

Specific warranty details for this product were not provided in the available product information. For warranty claims, technical support, or service inquiries, please contact your original point of purchase or the manufacturer, Aoleaby,

directly.

Please have your product model number (BD4A20S4P) and purchase date ready when contacting support.

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

Open the live page

<https://manuals.plus/asin/B0CZHQB3R2>

More documents and user manuals: <https://manuals.plus/>