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› Aoleaby JK Smart BMS B2A20S20P Active Balance Battery Management System User Manual

Aoleaby B2A20S20P

Aoleaby JK Smart BMS B2A20S20P Active Balance Battery Management System User Manual

Model: B2A20S20P

1. INTRODUCTION

This manual provides essential instructions for the safe and efficient operation of your Aoleaby JK Smart BMS B2A20S20P Active Balance Battery Management System. This advanced BMS is designed to protect and optimize the performance of Li-ion, LiFePO4, and LTO battery packs, ensuring longevity and reliability. Please read this manual thoroughly before installation and use.



Image 1.1: The Aoleaby JK Smart BMS B2A20S20P unit, showcasing its compact design and robust construction, positioned on its packaging.

2. KEY FEATURES

- **Smart APP Control:** Utilize the dedicated JK BMS APP for comprehensive settings and real-time battery status monitoring via Bluetooth communication.
- **Active Balance Function:** Features an active balancing mechanism to equalize voltage differences between battery cells, enhancing battery usage efficiency up to 99% and extending battery lifespan.
- **Comprehensive Protection:** Offers robust protection against over-charge, over-discharge, over-current, short circuit, and includes a low-temperature charging cutoff.
- **Versatile Compatibility:** Supports a wide range of LiFePO4 battery systems, including 12V/4S, 24V/8S, 48V/16S, and 72V/24S configurations, with a maximum current capacity of 100A-350A and an active balance current of 0.6-2A.
- **Enhanced Safety:** Designed for reliable battery protection, crucial for the longevity and safe operation of your

battery packs.



B2A20S20P

Function: BT/RS485

Balance Current:2A

Battery Strings:8S-20S

Charge/Discharge:200A

162*102*20mm

Battery Type: Li-ion/Lifepo4/LTO

Image 2.1: An overview of the B2A20S20P model's specifications and functionalities, highlighting its communication protocols, balancing capabilities, and supported battery configurations.

3. SAFETY INFORMATION

Always prioritize safety when working with battery systems. Improper installation or handling can lead to serious injury or damage.

- Ensure all connections are secure and correctly polarized before applying power.
- Wear appropriate personal protective equipment (PPE), including safety glasses and insulated gloves.
- Do not short-circuit battery terminals or BMS connections.
- Avoid exposing the BMS to water, excessive heat, or direct sunlight.
- Only use the BMS with compatible battery types (Li-ion, LiFePO₄, LTO) and cell configurations as specified.

- If you are unsure about any step, consult a qualified professional.

4. PACKAGE CONTENTS

Verify that all items listed below are present in your package.

- JK Smart BMS Unit (B2A20S20P)
- Operating Manual
- NTC Temperature Sensor (40cm)
- Control Switch (50cm)
- Balance Wires (70cm)

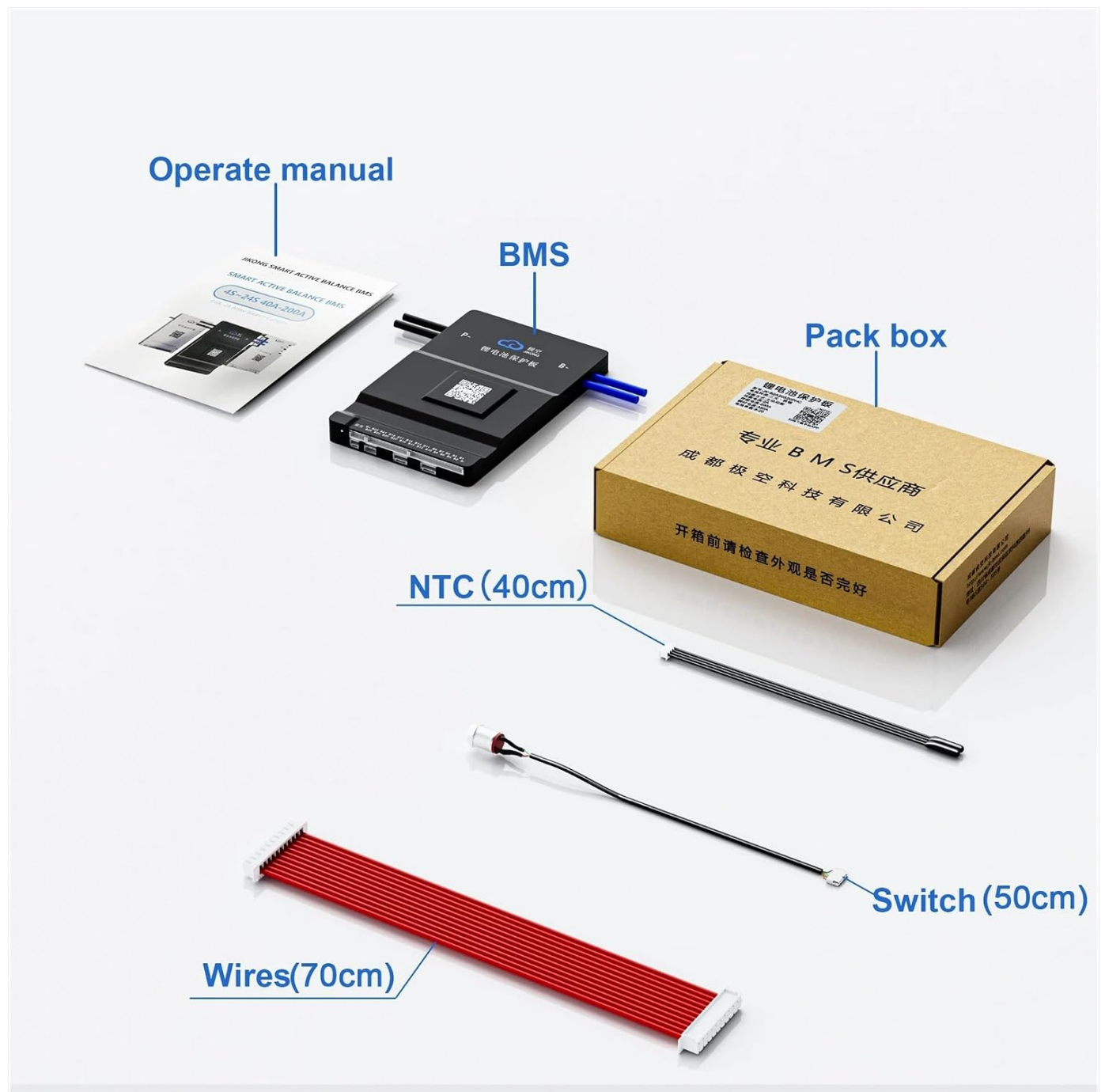


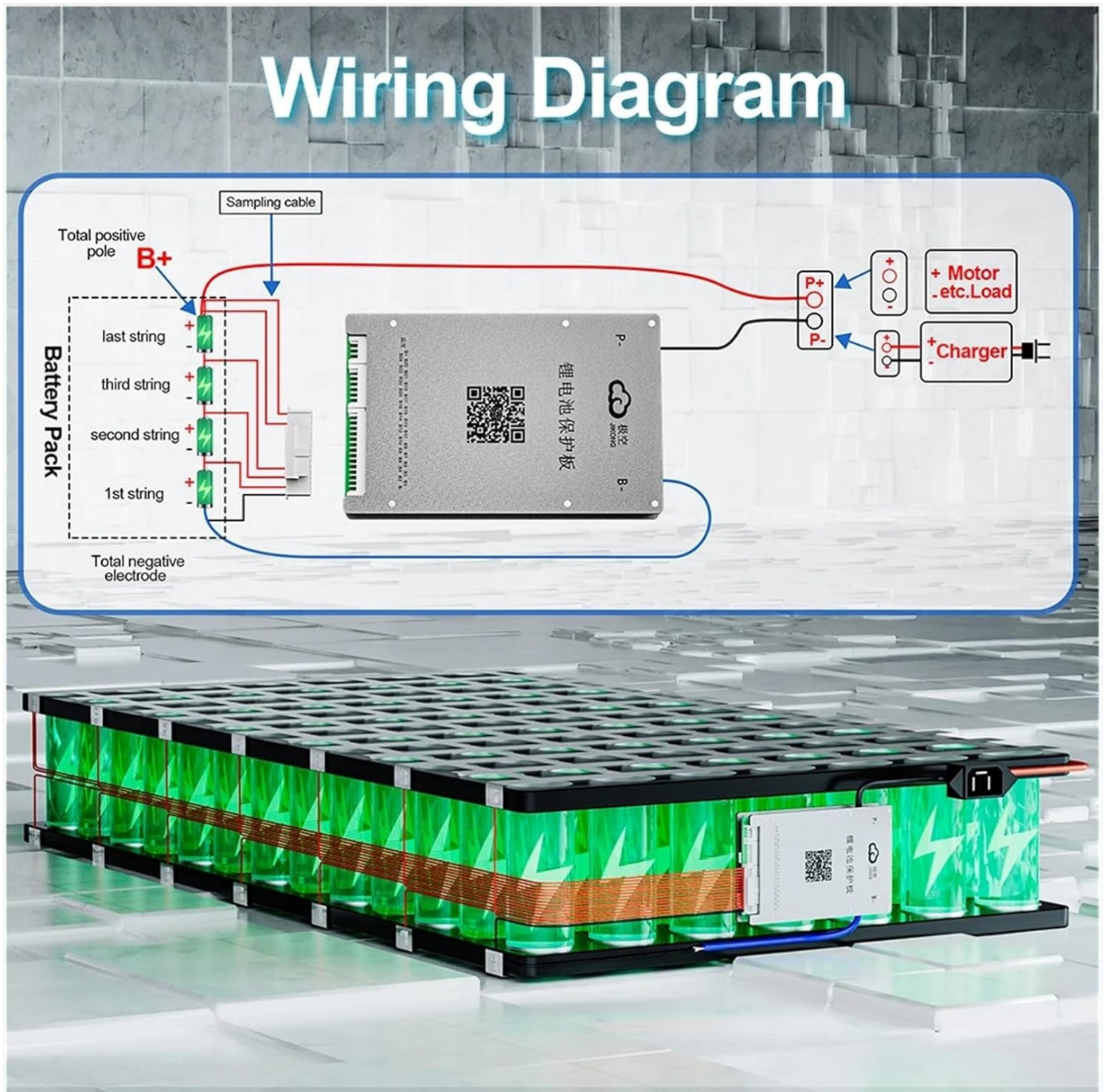
Image 4.1: All components included in the Aoleaby JK Smart BMS package, laid out for verification.

5. SETUP AND INSTALLATION

5.1. Wiring Diagram

Follow the wiring diagram carefully to ensure correct installation. Incorrect wiring can damage the BMS, battery, or connected devices.

1. Connect the main negative terminal of the battery pack to the B- terminal on the BMS.
2. Connect the balance wires from each cell string to the corresponding pins on the BMS balance port, starting from B1 (first string positive) up to B+ (total positive pole). Ensure the order is correct.
3. Connect the load/charger negative terminal to the P- terminal on the BMS. The positive terminals of the load/charger connect directly to the total positive pole of the battery pack.
4. Connect the NTC temperature sensor to the designated port on the BMS and place the sensor securely on the battery pack for accurate temperature monitoring.
5. Connect the control switch to its designated port. This switch can be used to activate/deactivate the BMS.



5.2. Initial Power-Up

After completing all wiring, double-check connections. Then, activate the BMS using the control switch. The BMS should power on, indicated by any status lights or audible cues.

6. OPERATING INSTRUCTIONS

6.1. JK Smart APP Usage

The JK Smart BMS features a dedicated mobile application for advanced monitoring and control.

1. **Download the APP:** Scan the QR code on the BMS unit or product label (refer to Image 6.1) to download the official JK BMS APP for Android or iOS devices. Alternatively, visit <http://qr17.cn/BApbC0>.
2. **Connect via Bluetooth:** Enable Bluetooth on your mobile device. Open the JK BMS APP and search for your BMS unit. Select it to establish a connection.
3. **Monitor Real-time Data:** The APP displays critical battery data, including individual cell voltages, total voltage, charge/discharge current, temperature, and state of charge.
4. **Modify Parameters:** Access settings within the APP to adjust various BMS parameters, such as over-voltage protection, under-voltage protection, over-current limits, and balancing thresholds. Exercise caution when modifying these settings.
5. **Control Balance Switch:** The APP allows you to control the active balance function, enabling or disabling it as needed.



Image 6.1: The JK Smart BT APP interface, demonstrating its capabilities for real-time monitoring and control of battery parameters. The QR code for the app can be found on the BMS unit itself.

7. SPECIFICATIONS

Feature	Specification
Model	B2A20S20P (also available in B2A24S20P, B2A24S15P variants)
Battery Type Compatibility	Li-ion, LiFePO4, LTO
Supported Cell Configurations	8S-20S (for B2A20S20P), up to 24S for other variants
Continuous Charge/Discharge Current	200A (up to 350A for other variants)
Active Balance Current	2A (0.6-2A range for various models)

Feature	Specification
Communication	Bluetooth (BT), RS485
Protection Features	Over-charge, Over-discharge, Over-current, Short Circuit, Low Temperature Charging Cutoff
Dimensions (Approx.)	162 x 102 x 20 mm (for B2A20S20P)
Item Weight	Approximately 2.2 pounds (1000 grams)



Image 7.1: The product label on the BMS unit, detailing specific model information and technical specifications.

8. TROUBLESHOOTING

If you encounter issues with your BMS, refer to the following common problems and solutions.

Problem	Possible Cause	Solution
BMS not powering on	Incorrect wiring, faulty switch, discharged battery.	Verify all wiring connections. Check the control switch functionality. Ensure the battery pack has sufficient charge.
APP not connecting via Bluetooth	Bluetooth off, BMS not active, APP permissions, distance.	Ensure Bluetooth is enabled on your device. Confirm the BMS is powered on. Grant necessary APP permissions. Reduce distance between device and BMS.
Battery cells unbalanced	Balancing function disabled, significant cell voltage difference.	Enable active balancing via the APP. Allow sufficient time for balancing to occur. If differences are extreme, manually balance cells before connecting to BMS.
Over-current/Over-voltage protection trips frequently	Load exceeds BMS limits, incorrect APP settings.	Reduce the load on the battery. Review and adjust protection parameters in the APP to match your system's requirements, ensuring they are within safe limits.

For further assistance, please refer to the official JK BMS support resources or contact Aoleaby customer service.

9. MAINTENANCE

Regular maintenance helps ensure the longevity and optimal performance of your BMS and battery system.

- **Periodic Inspection:** Regularly inspect all wiring and connections for signs of wear, corrosion, or looseness. Tighten any loose connections.
- **Cleanliness:** Keep the BMS unit clean and free from dust, dirt, and moisture. Use a dry, soft cloth for cleaning.
- **Temperature Monitoring:** Ensure the NTC temperature sensor is securely attached to the battery pack and functioning correctly to prevent overheating.
- **Software Updates:** Check the JK BMS APP periodically for any available firmware updates for your BMS to ensure you have the latest features and bug fixes.
- **Battery Health Check:** Use the APP to monitor individual cell voltages and overall battery health. Address any significant imbalances promptly.

10. WARRANTY AND SUPPORT

Aoleaby products are manufactured to high-quality standards. For warranty information, technical support, or service inquiries, please refer to the documentation included with your purchase or contact Aoleaby customer support directly through their official website or the retailer where the product was purchased.

Please have your product model number (B2A20S20P) and purchase details 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