8S-24S,100A SMART

Generic JBD 8S-24S, 100A Smart BMS User Manual

Model: 8S-24S,100A SMART (SMART BMS 24-72V -100A)

1. Introduction

This manual provides essential information for the safe and effective use of the Generic JBD 8S-24S, 100A Smart Battery Management System (BMS). This BMS is designed for LiFePO4 and LFP prismatic battery packs, supporting configurations from 8S to 24S (24V to 72V) with a continuous discharge current of up to 100 Amperes and a charge current of up to 50 Amperes. It features an active balancer and Bluetooth connectivity for monitoring and control.
The Smart BMS protects your battery pack from overcharge, over-discharge, overcurrent, and over-temperature conditions, ensuring optimal performance and extending battery life.

2. Safety Information

WARNING: Improper installation or use can lead to serious injury, fire, or damage to the battery pack and BMS. Always follow safety guidelines.

- **High Voltage and Current:** Battery packs operate at high voltages and currents. Exercise extreme caution to avoid short circuits.
- **Professional Installation:** Installation should be performed by qualified personnel with experience in battery systems.
- **Insulation:** Ensure all connections are properly insulated to prevent accidental contact.
- **Ventilation:** Install the BMS in a well-ventilated area.
- **Water and Moisture:** Keep the BMS dry and away from water or high humidity.
- **Correct Polarity:** Always connect wires with correct polarity. Reversing polarity can cause irreversible damage.
- **Protective Gear:** Wear appropriate personal protective equipment (PPE), including insulated gloves and eye protection.

3. Package Contents

Verify that all items are present in the package:

- JBD Smart BMS Unit
- Balance Connector Wires (P- and B- leads)
- NTC Temperature Sensors
- Bluetooth Module (or communication module)
- External Switch

Figure 3.1: JBD Smart BMS unit with included balance wires, NTC sensors, and switch.

4. Setup and Installation

Follow these steps carefully for proper installation of the BMS. Refer to the wiring diagrams provided with your specific unit for exact pinouts.

1. **Prepare the Battery Pack:** Ensure your LiFePO4/LFP battery cells are balanced and at a safe voltage level before connecting the BMS.
2. **Connect Balance Wires:**
    - Start by connecting the **B- (negative)** wire of the balance harness to the negative terminal of the first cell (Cell 1).
    - Connect the next wire to the positive terminal of Cell 1 (which is also the negative of Cell 2), and continue this sequence until all cell positive terminals are connected to the corresponding balance wires.
    - Ensure the last balance wire connects to the positive terminal of the last cell (Cell N).
    - Double-check the voltage of each balance wire against the B- terminal to confirm correct sequencing. The voltage should increase incrementally.
3. **Connect Balance Harness to BMS:** Once all balance wires are connected to the battery cells and verified, plug the balance harness connector into the designated port on the BMS.
4. **Connect NTC Temperature Sensors:** Attach the NTC sensors to appropriate locations on the battery pack to monitor cell temperatures. Plug the sensor wires into the NTC ports on the BMS.
5. **Connect Main Power Wires:**
    - Connect the main **B- (Battery Negative)** wire from the battery pack's overall negative terminal to the B- terminal on the BMS.
    - Connect the main **P- (Load/Charge Negative)** wire from the BMS to your load/charger negative terminal. The battery pack's overall positive terminal connects directly to the load/charger positive terminal, bypassing the BMS.
6. **Connect External Switch:** If your BMS includes an external switch, connect it to the designated switch port. This switch can be used to activate/deactivate the BMS.
7. **Connect Bluetooth Module:** Plug the Bluetooth module into its dedicated port on the BMS.

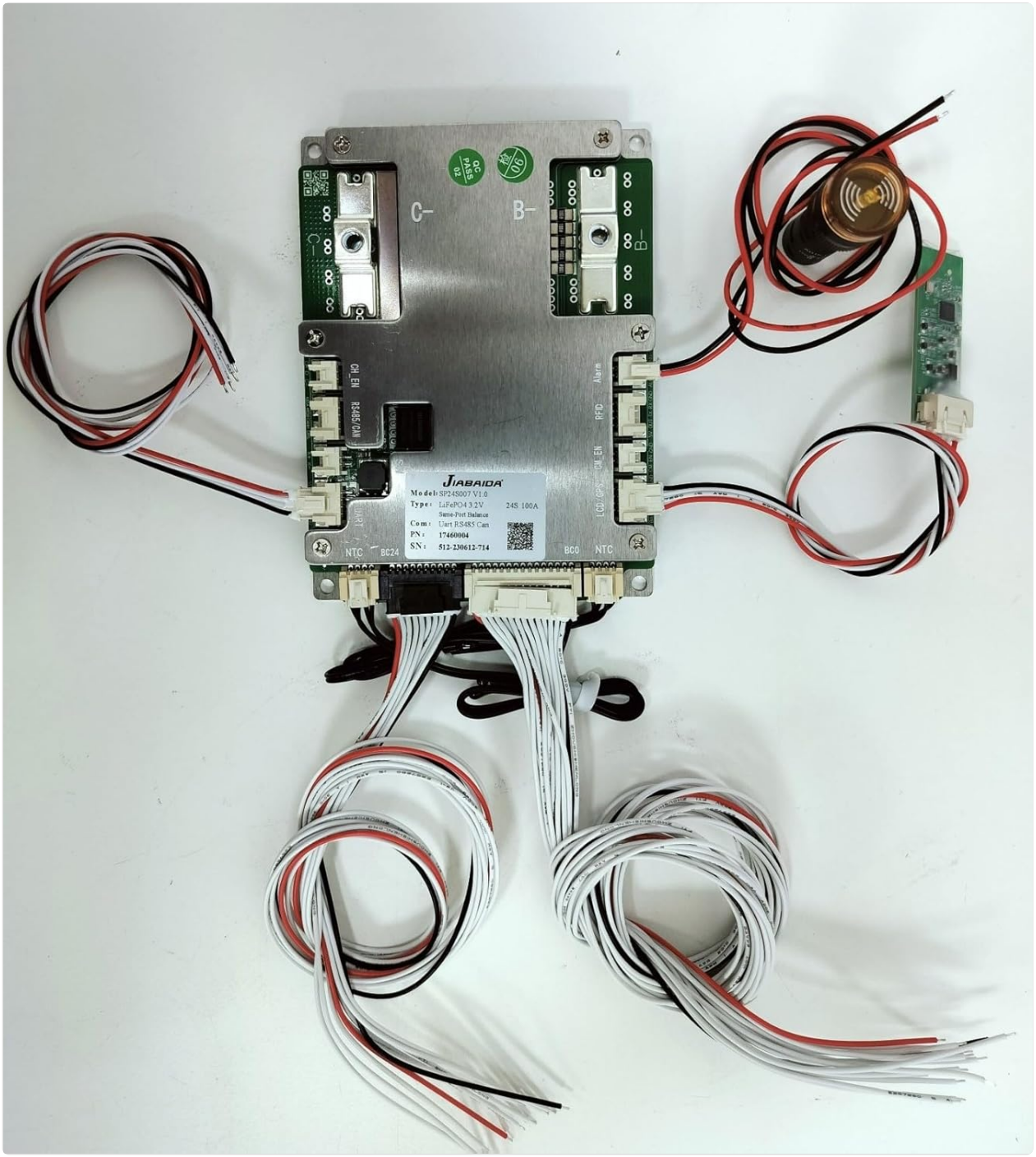

Figure 4.1: JBD Smart BMS with balance wires, NTC sensors, and main power connections.

Figure 4.2: Close-up view of the JBD Smart BMS board, showing connection points.

5. Operating Instructions

The JBD Smart BMS utilizes Bluetooth connectivity for monitoring and configuration via a dedicated mobile application.

1. **Download the App:** Search for the official JBD BMS application on your smartphone's app store (e.g., "Xiaoxiang BMS" or similar, as specified by the manufacturer).
2. **Connect via Bluetooth:**
    - Ensure Bluetooth is enabled on your smartphone.
    - Open the JBD BMS app. The app should automatically scan for nearby BMS devices.
    - Select your BMS from the list of available devices. You may need to enter a default password (refer to the app's instructions or manufacturer documentation).
3. **Monitoring Battery Status:** Once connected, the app will display real-time data, including:
    - Overall battery pack voltage
    - Individual cell voltages

- Charge/discharge current
- Battery temperature (from NTC sensors)
- State of Charge (SOC)
- BMS status (protection triggers, balancing status)

4. **Active Balancing:** The BMS features an active balancer to equalize cell voltages. This process typically occurs automatically when cell voltage differences exceed a set threshold. You can monitor the balancing status through the app.
5. **Configuration (Advanced Users):** The app may allow configuration of various parameters such as over-voltage, under-voltage, overcurrent thresholds, and temperature limits. Exercise extreme caution when modifying these settings, as incorrect values can damage the battery or BMS.

6. Maintenance

Regular maintenance ensures the longevity and reliable operation of your BMS and battery pack.

- **Visual Inspection:** Periodically inspect the BMS and all wiring for any signs of damage, corrosion, or loose connections.
- **Cleanliness:** Keep the BMS unit clean and free from dust and debris. Use a dry, soft cloth for cleaning.
- **Environmental Conditions:** Ensure the BMS operates within its specified temperature and humidity ranges. Avoid extreme conditions.
- **Firmware Updates:** Check the manufacturer's website or app for any available firmware updates for the BMS. Follow update instructions carefully.

7. Troubleshooting

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

- **BMS Not Powering On:**
  - Check all main power connections (B- and P-) for secure contact and correct polarity.
  - Verify the battery pack voltage is within the BMS operating range.
  - Ensure the external switch (if present) is in the 'ON' position.
- **No Bluetooth Connection:**
  - Confirm the Bluetooth module is correctly plugged into the BMS.
  - Ensure Bluetooth is enabled on your smartphone and the app has necessary permissions.
  - Try restarting the app or your phone.
  - Move closer to the BMS unit.
- **Incorrect Voltage Readings:**
  - Recheck all balance wire connections to ensure they are in the correct sequence and securely attached to each cell.
  - Inspect balance wires for damage or breaks.
- **BMS Triggering Protection (e.g., Over-discharge, Overcurrent):**
  - Identify the specific protection triggered via the app.
  - **Over-discharge:** Recharge the battery pack.

- **Overcurrent:** Reduce the load or check for short circuits in the system. Ensure your load does not exceed the BMS's continuous current rating.
- **Over-voltage/Under-voltage:** Check charger settings and cell balance.
- **Over-temperature:** Ensure adequate ventilation and check NTC sensor placement.

If problems persist after attempting these solutions, contact technical support.

8. Specifications

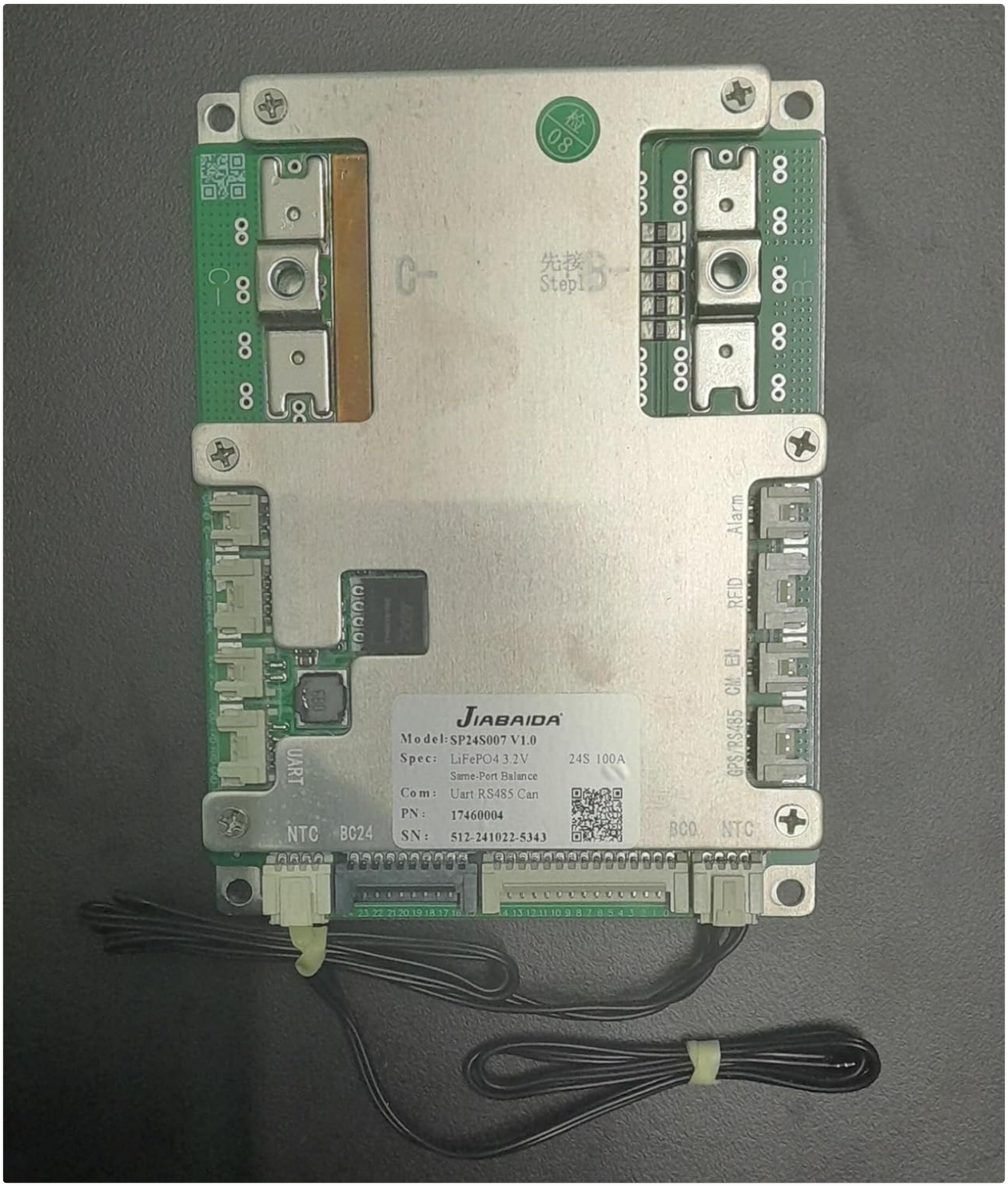

Figure 8.1: JBD Smart BMS board showing model and specification details.

Feature	Specification

Feature	Specification
Brand	Generic (Manufacturer: JBD -Jaibada)
Model Name	SMART BMS 24-72V -100A
Model Number	8S-24S,100A SMART
Battery Cell Composition	Lithium-Phosphate (LiFePO4, LFP)
Cell Count Range	8S-24S
Voltage Range	24V - 72V (Nominal)
Maximum Continuous Discharge Current	100 Amps
Maximum Charge Current	50 Amps
Balancing Type	Active Balancer
Connectivity	Bluetooth
Dimensions (L x W x H)	15 x 6 x 3 Centimeters
Item Weight	500 Grams
Country of Origin	China

9. Warranty Information

This product is sold without an explicit warranty. Please refer to your point of purchase for any return or exchange policies.

10. Support

For technical assistance or inquiries, please contact:
OLEIO SHOPZ
Phone: 8137035522