DALY 13S BMS 48V 60A

DALY Smart 13S BMS 48V 60A User Manual

For Li-ion Lithium Battery Packs with WiFi Module and CAN 485 Communication

1. INTRODUCTION

This manual provides essential information for the safe and effective operation of your DALY Smart 13S BMS 48V 60A. Please read these instructions carefully before installation and use to ensure optimal performance and longevity of your battery system. This Battery Management System (BMS) is designed to protect and manage 13-series Li-ion lithium battery packs, offering advanced monitoring and communication capabilities.

2. KEY FEATURES

- **Multiple Protection:** Includes overcharge, overdischarge, overcurrent, short circuit, and temperature protection, along with waterproof protection.

- **Enhanced Design:** Features a smaller size, parallel protection, pre-charging function, 100mA passive equalization current, low temperature rise, working condition indicator, and consistent charge/discharge current.

- **Smart Monitoring:** Integrated WiFi module allows remote monitoring of lithium batteries via the Internet. The smartphone app provides alerts for any detected abnormalities.

- **Versatile Communication:** Equipped with CAN, RS485, and dual UART communication interfaces for rich expansion applications.

3. SPECIFICATIONS

The following table details the key specifications for the DALY Smart 13S BMS 48V 60A.

DALY BMS

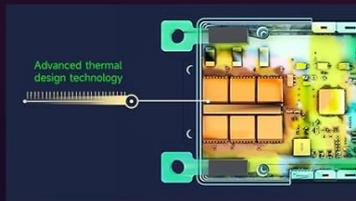# Born powerful · Comprehensive upgraded
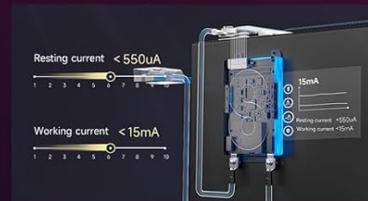
- Smarter solutions
- Upgraded waterproof function
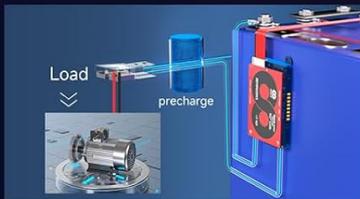- Supports parallel connection of various battery pack
- Small size
- Low temperature rise
- Low power consumption
- Making load easy to start
- Battery pack temperature protection
- 100mA passive balancing

Image: Detailed specifications for the DALY Smart 13S 60A BMS, including discharge current, overcharge/overdischarge parameters, and physical dimensions.

Specification	Value
Product Dimensions	4.84 x 2.56 x 0.55 inches (123 x 65 x 14 mm)
Item Weight	12.3 ounces (170-210g)
Item Model Number	13S BMS 48V 60A
Input Voltage	48 Volts
Output Voltage	12 Volts (for auxiliary functions)
Discharge Current	60A
Overdischarge Current	90 ± 1.8A
Charging Current	60A
Overcharge Current	90 ± 1.8A

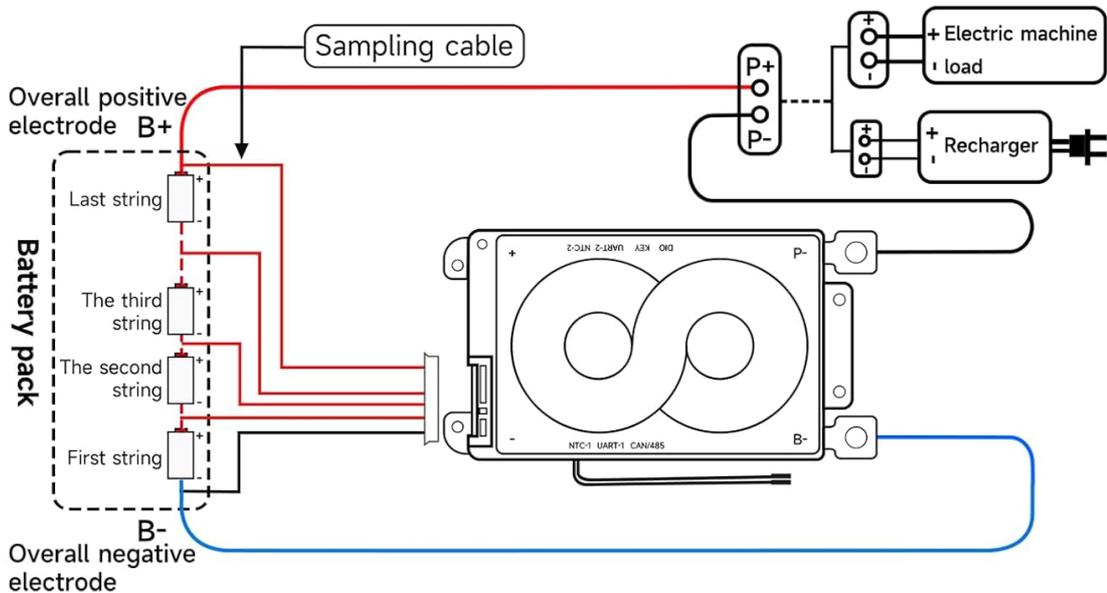| Overcharge Voltage	4.25 ± 0.05V (Can be set)
Overdischarge Voltage	2.7 ± 0.05V (Can be set)
Charge Voltage	54.6V
Output Wire	10AWG/100mm
Cable	24AWG/450mm

4. INSTALLATION AND WIRING

Proper installation and wiring are crucial for the safe and correct operation of the BMS. The following steps outline the process, using the K series 60A BMS as an example.

Image: A detailed wiring diagram illustrating the connection points for the DALY Smart BMS to a battery pack, load, and charger.

1. **Step 1: Solder Sampling Cables.** The first black cable in the sampling cable set connects to the negative terminal of the battery (B-). Subsequent red cables connect to the positive terminal of the first string, then the second string, and so on, until all cell positive terminals are connected.

2. **Step 2: Check Cables.** After connecting the cables, use a multimeter to measure the voltage between two adjacent cells, starting from the header. Ensure there are no wrong connections or missing

connections.

3. **Step 3: Connect Output Wires.** Connect the B- wire of the BMS to the total negative terminal of the battery pack. Then, plug the sampling cable to the BMS. After activating the BMS, verify that the voltage (battery voltage) between B+ & B- and the voltage between P+ & P- are consistent.

Important: Incorrect wiring can damage the BMS and/or the battery pack. If you are unsure, seek professional assistance.

5. SMART APP USAGE

The DALY Smart BMS features a dedicated mobile application for convenient monitoring and parameter adjustment. With the WiFi module, you can remotely access your battery's data.

Image: A screenshot of the DALY Smart BMS mobile application, displaying battery State of Charge (SOC), voltage, current, temperature, alarm status, and cycle number. The app supports iOS and Android, multiple languages, and remote monitoring via WiFi.

The "SMART BMS" app allows you to view and set various battery parameters quickly and easily. When the BMS detects any abnormality in the battery pack, it will send an alert directly to your smartphone app, enabling proactive management of your battery system.

- **Remote Monitoring:** Monitor your lithium batteries from anywhere via the Internet using the WiFi module.
- **Real-time Data:** View critical parameters such as State of Charge (SOC), voltage, electric current, and temperature.
- **Alerts:** Receive immediate notifications on your smartphone if any abnormalities are detected.
- **Compatibility:** Supports both iOS and Android operating systems.

6. APPLICATION SCENARIOS

The DALY Smart BMS is suitable for various lithium battery applications, providing reliable protection and management.

Image: An illustration showing the DALY BMS integrated into different battery pack configurations, including large cell, cylindrical cell, and soft-packed cell battery systems, highlighting its versatility.

This BMS can be integrated into diverse battery systems, including those for electric vehicles, energy storage, and other high-power applications requiring precise battery management.

7. PACKAGE CONTENTS

Upon receiving your DALY Smart 13S BMS, please verify that all items listed below are included in the

package.

Packing list

Product list	Quantity
① K series BMS	1
② Manual	1
③ B-P- Output line(gift)	1
④ WIFI Module(gift)	1
⑤ Cables	1
⑥ NTC	1
⑦ CAN/485 5pin	1

* Note: The packing list takes 24S 60A BMS as an example.

Image: A visual representation of the DALY BMS package contents, including the BMS unit, manual, output line, WiFi module, cables, NTC temperature sensor, and CAN/485 5-pin connector.

Item	Quantity
K series BMS	1
Manual	1
B-P- Output line	1
WiFi Module	1
Cables	1 set
NTC Temperature Sensor	1
CAN/485 5pin Connector	1

8. SAFETY INFORMATION

Always adhere to safety precautions when working with battery management systems and high-voltage battery packs.

- Ensure all connections are secure and correctly polarized before applying power.
- Do not short-circuit the battery terminals or BMS connections.
- Avoid exposing the BMS to extreme temperatures, moisture, or corrosive environments.
- Only use the BMS with compatible battery chemistries and cell counts as specified.
- In case of smoke, unusual odors, or excessive heat, immediately disconnect the power source and consult a professional.
- Keep out of reach of children.

9. OPERATING GUIDELINES

To ensure proper operation of your DALY Smart BMS, follow these guidelines:

- **Initial Power-Up:** After wiring, connect the main battery terminals. The BMS should power on automatically. If not, check all connections.
- **Monitoring:** Regularly check battery parameters via the smartphone app or connected display. Pay attention to cell voltages, temperatures, and overall pack voltage.
- **Charging:** Use a charger compatible with your Li-ion battery pack's voltage and current requirements. The BMS will manage overcharge protection.
- **Discharging:** Ensure your load does not exceed the continuous discharge current rating of the BMS. The BMS will provide overcurrent and overdischarge protection.
- **Equalization:** The BMS performs passive equalization to balance cell voltages. Allow sufficient time for balancing, especially after deep cycles.

10. MAINTENANCE

Minimal maintenance is required for the DALY Smart BMS. However, periodic checks are recommended:

- **Visual Inspection:** Periodically inspect the BMS and all wiring for any signs of damage, corrosion, or loose connections.
- **Software Updates:** Keep the smartphone app updated to the latest version to benefit from new features and bug fixes.
- **Cleaning:** If necessary, gently clean the exterior of the BMS with a dry, soft cloth. Do not use liquids or abrasive cleaners.
- **Temperature:** Ensure the BMS operates within its specified temperature range to prevent overheating.

11. TROUBLESHOOTING

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

- **BMS Not Powering On:** Check all main power connections (B- and P-) and the balance lead connections. Ensure the battery pack voltage is within the BMS's operating range.
- **App Connection Issues:** Verify the WiFi module is correctly installed and powered. Ensure your smartphone's WiFi is enabled and connected to the correct network, or that Bluetooth is active if using a Bluetooth module. Restart the app and/or the BMS.

- **Overcharge/Overdischarge Protection Triggered:** This indicates that a cell or the entire pack has reached its voltage limit. Check individual cell voltages. Ensure your charger/load settings are appropriate for your battery type.
- **Overcurrent Protection Triggered:** The load current exceeded the BMS's limit. Reduce the load or ensure the BMS current rating matches your application.
- **Temperature Protection Triggered:** The battery or BMS temperature is outside the safe operating range. Allow the system to cool down and ensure adequate ventilation.
- **Unbalanced Cells:** If cell voltages are significantly different, ensure the balance leads are correctly connected. The passive balancing function will work to equalize cells over time, especially during charging.

For persistent issues, refer to the detailed troubleshooting section in the full product manual or contact DALY customer support.

12. OFFICIAL PRODUCT VIDEO

Watch this video for an overview of the DALY K-series Smart BMS features and capabilities.

Your browser does not support the video tag.

Video: An official DALY BMS video showcasing the K-series Smart BMS, highlighting its smart features, comprehensive protection, and various applications.

13. WARRANTY AND SUPPORT

DALY provides a quality guarantee for its products. We offer 24-hour one-on-one customer service and technical support. All products are ISO/FCC/RoHS/PSE/CE approved.
If you have any questions or require assistance, please do not hesitate to contact DALY customer service. Please have your product model number (13S BMS 48V 60A) and purchase details ready when contacting support.