## DALY LiFePo4 4S 12V 200A BT

# DALY Smart BMS LiFePo4 4S 12V 200A Instruction Manual

Model: LiFePo4 4S 12V 200A BT

## INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your DALY Smart BMS (Battery Management System) for LiFePo4 4S 12V 200A battery packs. The BMS features a programmable Bluetooth module for monitoring and parameter adjustment via a mobile application. It is designed to protect lithium batteries from various conditions including over-charge, over-discharge, over-current, and temperature extremes, while also providing cell balancing.

Image: DALY Smart BMS unit with its Bluetooth module and a smartphone displaying the monitoring application. This image illustrates the main components and the digital interface.

## SAFETY PRECAUTIONS

- Always wear appropriate personal protective equipment (PPE) when working with batteries.
- Ensure all connections are secure and correctly polarized to prevent damage to the BMS or battery.
- Do not short-circuit the battery terminals.
- Avoid exposing the BMS to water or extreme temperatures beyond its operating range.
- Consult a qualified professional if you are unsure about any installation or operation steps.

## SETUP

### Components Included:

- Smart BMS unit
- Balance wires
- Bluetooth module (for Mobile APP IOS & Android)

- UART cable (for PC screen)
- English version wiring manual (refer to this for detailed diagrams)

## Wiring Instructions:

Follow the wiring diagram carefully. Incorrect wiring can damage the BMS and battery. It is crucial to connect the balance wires correctly to each cell in the battery pack.
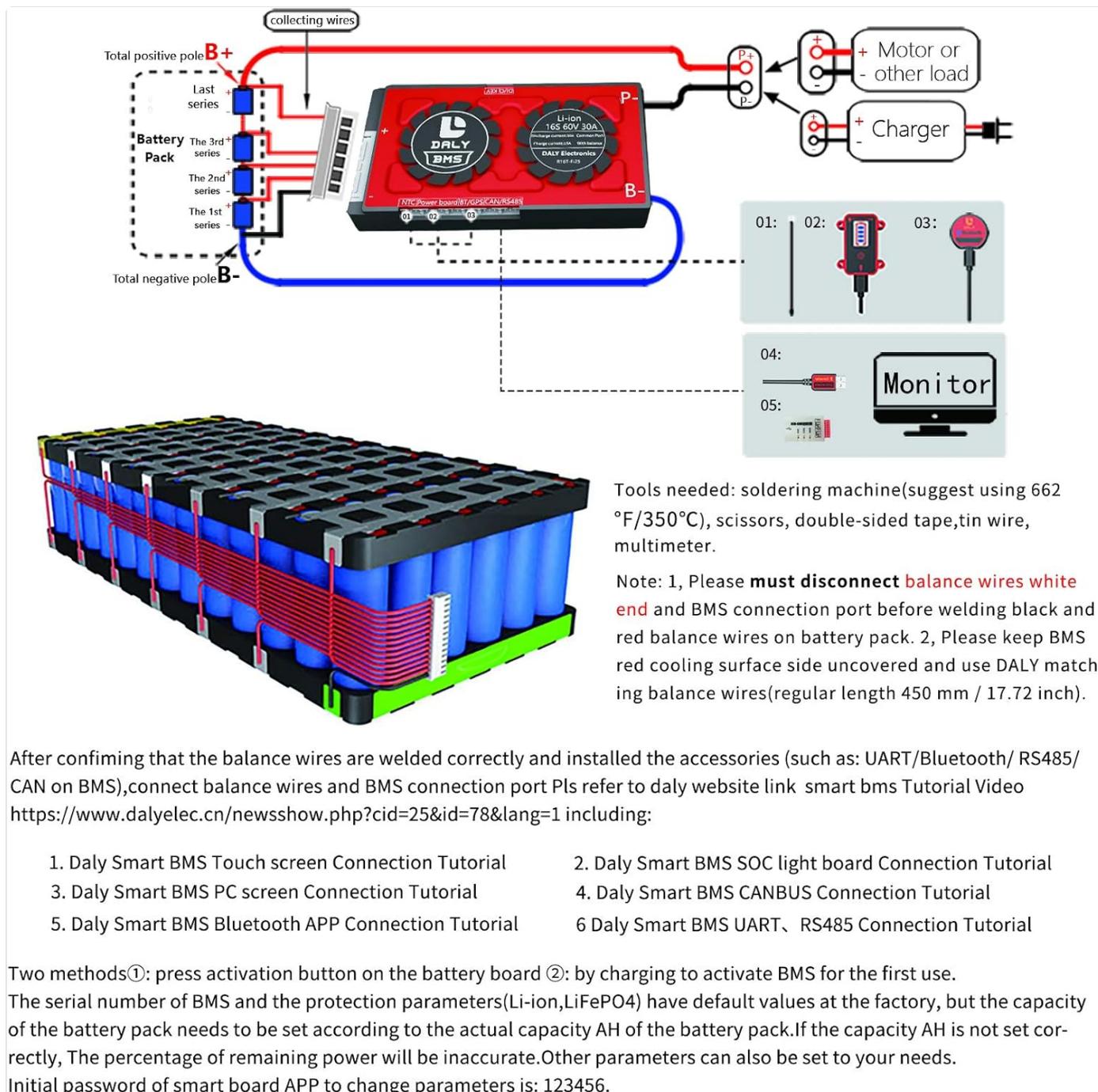


Tools needed: soldering machine(suggest using 662 °F/350℃), scissors, double-sided tape, tin wire, multimeter.

Note: 1, Please **must disconnect** balance wires white end and BMS connection port before welding black and red balance wires on battery pack. 2, Please keep BMS red cooling surface side uncovered and use DALY matching balance wires(regular length 450 mm / 17.72 inch).

After confiming that the balance wires are welded correctly and installed the accessories (such as: UART/Bluetooth/ RS485/ CAN on BMS),connect balance wires and BMS connection port Pls refer to daly website link  smart bms Tutorial Video https://www.dalyelec.cn/newsshow.php?cid=25&id=78&lang=1 including:

1. Daly Smart BMS Touch screen Connection Tutorial
2. Daly Smart BMS SOC light board Connection Tutorial
3. Daly Smart BMS PC screen Connection Tutorial
4. Daly Smart BMS CANBUS Connection Tutorial
5. Daly Smart BMS Bluetooth APP Connection Tutorial
6 Daly Smart BMS UART、RS485 Connection Tutorial

Two methods①: press activation button on the battery board ②: by charging to activate BMS for the first use.
The serial number of BMS and the protection parameters(Li-ion,LiFePO4) have default values at the factory, but the capacity of the battery pack needs to be set according to the actual capacity AH of the battery pack.If the capacity AH is not set correctly, The percentage of remaining power will be inaccurate.Other parameters can also be set to your needs.
Initial password of smart board APP to change parameters is: 123456.

Image: Detailed wiring diagram showing connections from the battery cells to the BMS, and then to the motor/load and charger. This diagram is essential for correct installation.

1. **Prepare the Battery Pack:** Ensure all individual cells in your LiFePo4 4S 12V battery pack are at a similar voltage level before connecting the BMS.
2. **Connect Balance Wires:** Connect the balance wires from the BMS to each cell of the battery pack in the correct sequence (B-, B1, B2, B3, B+). Double-check the voltage between adjacent cables using a multimeter to confirm the wiring is normal and matches the nominal voltage of a single string.
3. **Connect Main Power Cables:** Connect the main negative (B-) and positive (P+) cables from the BMS to the battery pack and the load/charger respectively.

4. **Activate the BMS:** Plug in the NTC (temperature sensor) and Bluetooth module. Press the activation button on the Bluetooth module to activate the smart BMS.

**Important:** Disconnect balance wires and the BMS connection port before welding black and red balance wires on the battery pack. Keep the red cooling surface side uncovered and use DALY matching balance wires (regular length 450 mm / 17.72 inch).

## Mobile App Connection:

1. Download the "Smart BMS" application from the Huawei App Store or Apple App Store.
2. Open the Smart BMS APP on your mobile phone.
3. Connect to the corresponding Bluetooth device number displayed in the app.
4. Upon successful connection, you can view battery parameters and adjust settings.

Your browser does not support the video tag.

Video: This video demonstrates the initial setup process, including measuring cell voltages, connecting the BMS, activating it, and connecting to the Smart BMS mobile application to view battery parameters and adjust settings. It highlights the steps for first-time power-on and setting battery capacity.

## OPERATING INSTRUCTIONS

## Monitoring Real-Time Data:

The Smart BMS app allows you to monitor various battery parameters in real-time via Bluetooth. This includes State of Charge (SOC), current, voltage, temperature, and individual cell voltages.
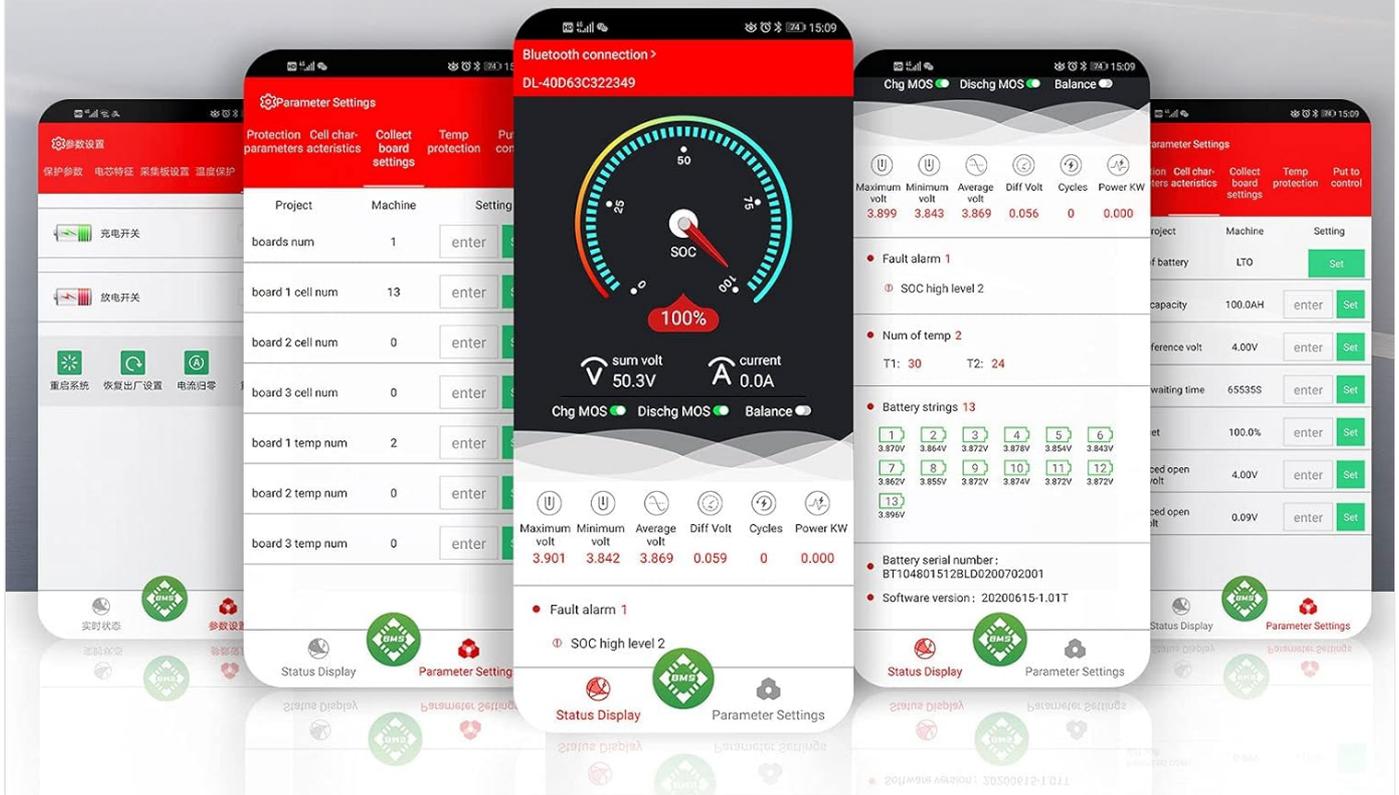
Image: Screenshot of the DALY Smart BMS mobile application interface, showing real-time monitoring of battery parameters such as SOC, current, voltage, and individual cell voltages. This interface provides comprehensive data for battery management.

## Parameter Settings:

For the first power-on, the battery capacity must be set to the actual capacity of your battery pack. The initial password for parameter settings is **123456**. You can adjust various protection parameters such as:

- Over-charge voltage protection
- Over-discharge voltage protection
- Over-current protection (charge and discharge)
- Temperature protection (high and low for charge/discharge)
- Voltage balancing settings

Always modify parameters under the guidance of the battery manufacturer or a qualified expert to prevent damage to the battery or BMS.
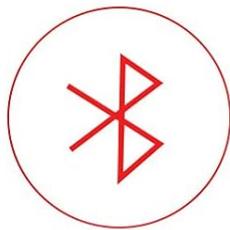
## Protection Functions:

The DALY Smart BMS is equipped with multiple protection features to ensure the safety and longevity of your LiFePo4 battery

pack:

- **Over-charge Protection:** Stops charging when cell voltage reaches a set limit.
- **Over-discharge Protection:** Stops discharging when cell voltage drops to a set limit.
- **Over-current Protection:** Stops charging or discharging if current exceeds programmed limits.
- **Short-circuit Protection:** Protects against short-circuit events.
- **Over-voltage Protection:** Prevents overall battery voltage from exceeding safe levels.
- **Balance Function:** Actively balances cell voltages to maintain pack health.
- **NTC Temperature Protection:** Monitors battery temperature and stops current if limits are reached.
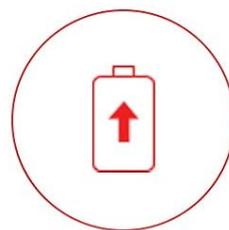
# 12 PROTECTION FUNCTIONS

Our BMS has passed the authoritative safety inspection, all kinds of product qualifications are available, highly praised from all over the world
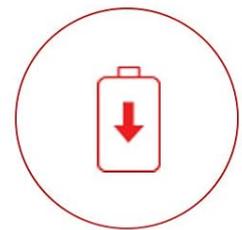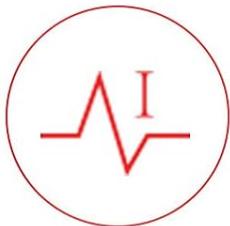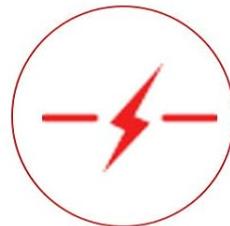
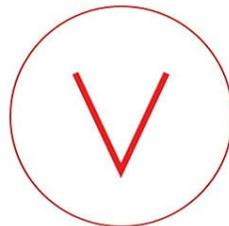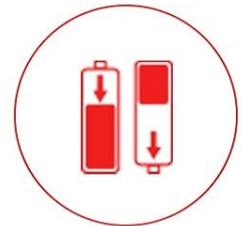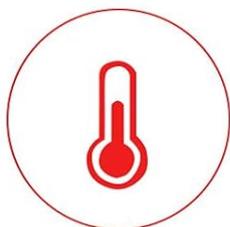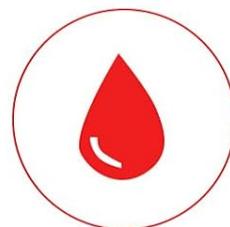| | | | |
|---|---|---|---|
| BT | Programmable | Over-charging protection | Over-discharging protection |
| Over-current protection | Short-circuit protection | Over-voltage protection | Balance function |
| NTC temperature protection | Waterproof Moistureproof | Fireproof | Dustproof |
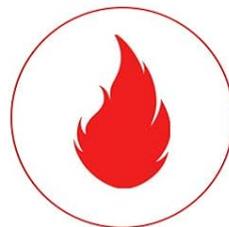
Image: Visual representation of the 12 protection functions integrated into the DALY Smart BMS, including Bluetooth connectivity, programmability, various over-voltage/current protections, balancing, and environmental resistances.

## MAINTENANCE

- **Regular Inspection:** Periodically check all wiring connections for tightness and signs of corrosion or damage.

- **Cleanliness:** Keep the BMS unit clean and free from dust and debris. Ensure cooling surfaces are not obstructed.
- **Software Updates:** Check the DALY website or app store for any available firmware or app updates to ensure optimal performance and security.
- **Environmental Conditions:** Operate the BMS within its specified temperature and humidity ranges to prevent premature failure.
- **Battery Health Monitoring:** Regularly monitor battery parameters via the app to detect any anomalies early.

## TROUBLESHOOTING

| Problem | Possible Cause | Solution |
|---|---|---|
| BMS randomly shuts off. | • Protection triggered (over-voltage, under-voltage, over-current, temperature).<br>• Loose connections.<br>• Software glitch. | • Check app for alarm messages to identify triggered protection. Address the underlying issue (e.g., reduce load, check charger).<br>• Inspect all wiring for secure connections.<br>• Try resetting the BMS via the app or by disconnecting and reconnecting the main battery leads. |
| Bluetooth connection issues. | • Bluetooth module not activated.<br>• Incorrect app or device selection.<br>• Interference. | • Ensure the activation button on the Bluetooth module has been pressed.<br>• Verify you are selecting the correct BMS device in the app.<br>• Move closer to the BMS or away from other wireless devices.<br>• Restart the app and phone's Bluetooth. |
| Battery cells are not balancing effectively. | • Significant cell voltage difference.<br>• Balancing only active during charging. | • Ensure the battery pack is fully charged to allow the BMS to perform balancing.<br>• For large imbalances, individual cell charging may be required before BMS balancing can be effective.<br>• Check balancing settings in the app. |

## SPECIFICATIONS

| Feature | Detail |
|---|---|
| Product Type | LiFePo4 4S 200A Common Port with Balance |
| Communication | UART (Single communication) |
| Discharge Current | 200A |
| Over-discharge Current | 300A ± 30A (Configurable) |
| Charge Current | 100A (Configurable) |
| Overcharge Current | 300A ± 30A (Configurable) |
| Overcharge Voltage | 3.75V ± 0.05V (per string, Configurable) |
| Over-discharge Voltage | 2.3V ± 0.1V (per string, Configurable) |
| Charge Voltage | 14.6V (Configurable) |
| Model | R05W |

| Feature | Detail |
|---|---|
| Dimensions | 221 x 130 x 32 mm (8.66 x 4.72 x 1.42 inches) |
| Output Wire Gauge | 6AWG |
| Balance Wires | 24AWG/350mm |
| Optional Features | Bluetooth (BT) |
| Weight | ~1733g (3.82 pounds) |
| Connectivity Technology | Bluetooth |
| Power Source | Battery Powered |
| Compatible Devices | Mobile Phones (IOS & Android) |



# Specifications
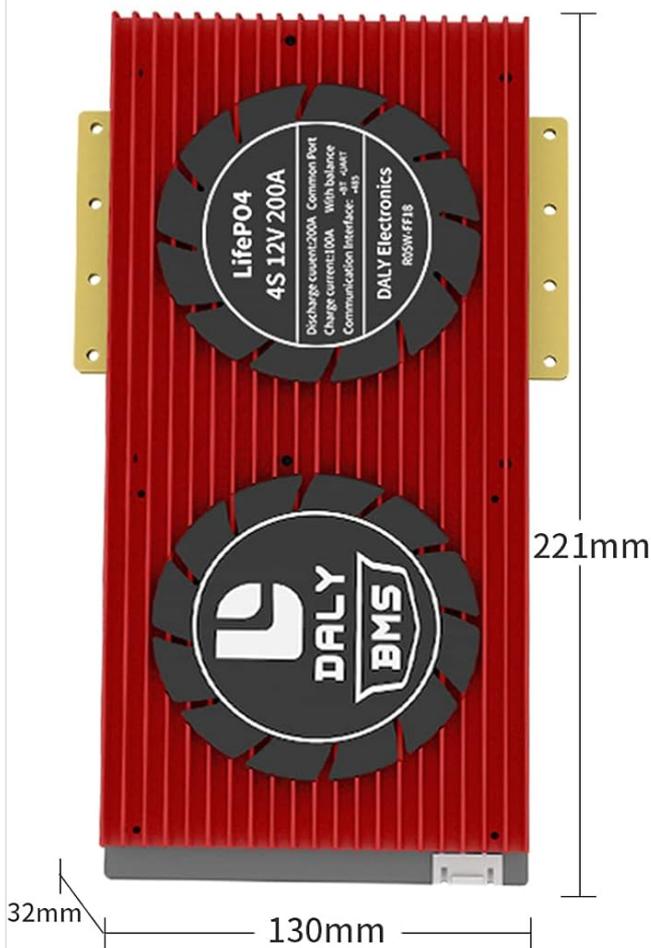
Product： LifePO4 4S 200A common port with balance

Single communication： UART

Discharge current： 200A

Over-discharge current： 300A±30A (Can be set)

Charge current： 100A (Can be set)

Overcharge current： 300A±30A (Can be set)

Overcharge voltage： 3.75V±0.05V (any string,Can be set)

Over-discharge voltage:2.3V±0.1V (any string, Can be set)

Charge voltage： 14.6V (Can be set)

model： R05W

Size： 221*130 *32mm

Output wire： 6AWG

Balance wires： 24AWG/350mm

Optional： BT

Weight： ≈1733g

Image: A table detailing the technical specifications of the DALY Smart BMS, such as product type, communication protocols, current ratings, voltage protections, dimensions, and weight.

WARRANTY

Specific warranty details are typically provided with the product packaging or on the manufacturer's official website. Please refer to the documentation included with your purchase for precise warranty terms and conditions. Generally, DALY products are covered by a manufacturer's warranty against defects in materials and workmanship for a specified period from the date of purchase.

## SUPPORT

For technical assistance, product inquiries, or support, please visit the official DALY website or contact their customer service. You can often find additional resources, FAQs, and contact information on the manufacturer's website. For general information, you may visit the DALY Store on Amazon.