DALY 40A LiFePo4 8S 24V BT

DALY Smart BMS LiFePo4 8S 24V 40A User Manual

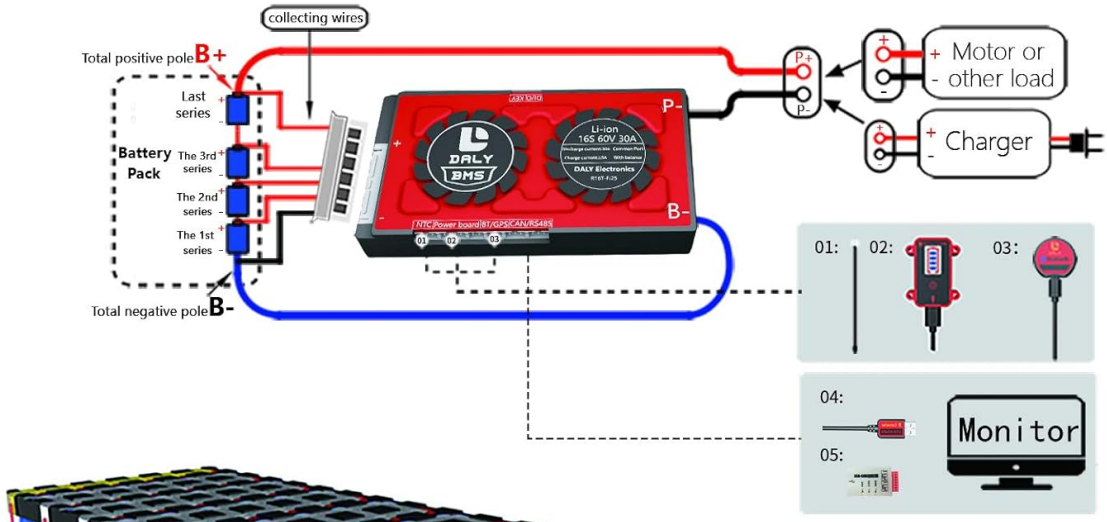
Model: 40A LiFePo4 8S 24V BT | Brand: DALY

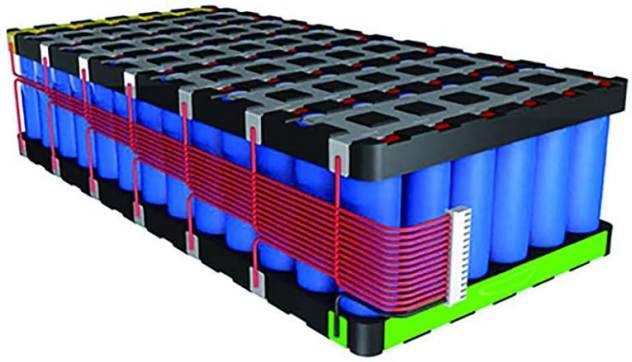
1. Introduction

This manual provides essential information for the safe and efficient operation of your DALY Smart Battery Management System (BMS) for LiFePo4 8S 24V 40A batteries. The BMS is designed to protect your battery pack from various electrical anomalies and allows for monitoring and parameter adjustment via Bluetooth-enabled mobile applications or PC software.

2. Product Features

- **Common Port Design:** Supports both charging and discharging through the same port.
- **High Current Capability:** Supports up to 40A continuous discharge and 20A charge current.
- **Programmable Protections:**
  - Over-charge protection
  - Over-discharge protection
  - Over-current protection (charge and discharge)
  - Over-voltage protection
  - Low temperature charging protection (down to -1°C)
  - NTC temperature protection
  - Short-circuit protection
- **Smart Functions:** Precise State of Charge (SOC) calculation with automatic learning, automatic charge battery function, and static balance function.
- **Bluetooth Connectivity:** Monitor battery status and adjust parameters wirelessly via Android or iOS mobile applications.
- **PC Software Support:** Manage and monitor the BMS via a PC interface using a UART cable.





Tools needed: soldering machine(suggest using 662 °F/350°C), 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.

Figure 1: Overview of the 12 protection functions integrated into the DALY Smart BMS.

3. Specifications

Feature	Value
Product Dimensions	5.04 x 2.6 x 0.71 inches
Item Weight	12.8 ounces
Brand	DALY
Connectivity Technology	Bluetooth
Power Source	Battery Powered
Wireless Communication Standard	Bluetooth
Compatible Devices	Mobile Phones
Discharge Current	40A (Continuous)

Feature	Value
Charge Current	20A (Continuous)
Over-discharge Current Protection	60A ± 6A (Configurable)
Overcharge Current Protection	60A ± 6A (Configurable)
Overcharge Voltage	3.75V ± 0.05V (per string, Configurable)
Over-discharge Voltage	2.2V ± 0.1V (per string, Configurable)
Charge Voltage	29.2V (Configurable)

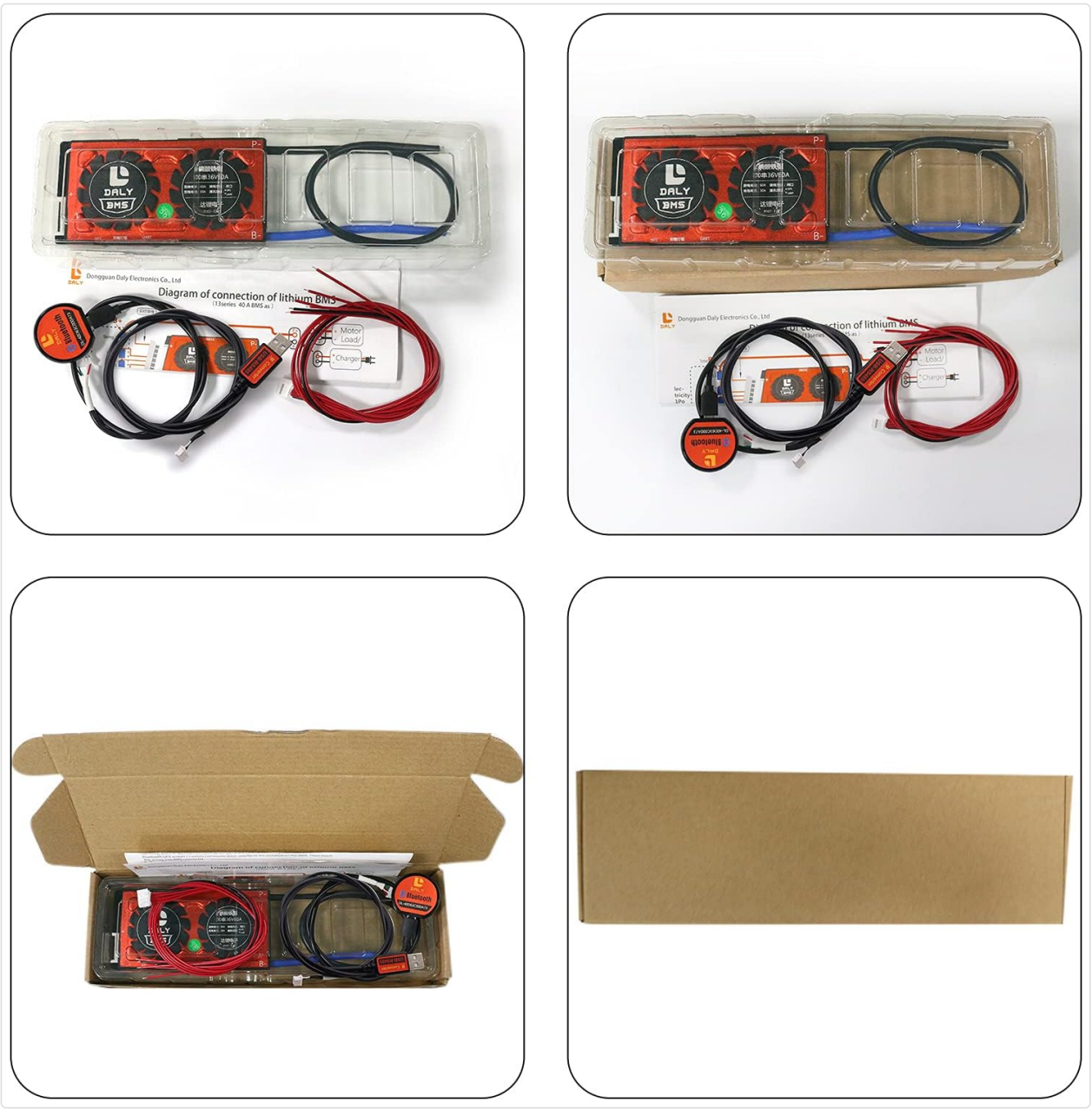


Figure 2: Physical dimensions and key specifications of the BMS unit.

4. Package Contents

Upon receiving your DALY Smart BMS, please verify that all components are included:

- SMART BMS Unit (1)

- Balance Wires (1 set)
- Bluetooth Module (1)
- UART Cable (for PC connection) (1)
- English Version Wiring Manual (1)

Figure 3: The DALY Smart BMS with its Bluetooth module and indications for mobile app compatibility.

5. Safety Information

WARNING: Improper installation or use of a BMS can lead to serious injury, fire, or damage to property. Always exercise caution when working with high-voltage battery systems.

- Ensure all connections are correct and secure before applying power.
- Always disconnect the power source before performing any maintenance or wiring changes.
- Wear appropriate personal protective equipment (PPE), including insulated gloves and eye protection.
- Do not short-circuit the battery terminals or BMS connections.
- Operate the BMS within its specified voltage and current limits.
- Keep the BMS away from water, moisture, and extreme temperatures.
- If you are unsure about any step, consult a qualified professional.

6. Setup

6.1. Wiring Diagram

Carefully follow the wiring diagram provided. Ensure that the balance wires are connected to the correct cell terminals in sequence, starting from the negative terminal of the first cell (B-) to the positive terminal of the last cell (B+).

Figure 4: Wiring diagram for connecting the DALY Smart BMS to a battery pack, charger, and load. Ensure correct polarity and sequence for balance wires.

6.2. Initial Activation and Connection

1. **Verify Wiring:** Before connecting the BMS, measure the voltage between adjacent balance cables to ensure the wiring is correct and matches the nominal voltage of a single string.
2. **Connect BMS:** Plug in the NTC temperature sensor and the Bluetooth module to the BMS.
3. **Activate BMS:** Press the button on the Bluetooth module to activate the smart BMS.
4. **Download App:** Download the "Smart BMS" application from your mobile device's app store (Huawei or Apple App Store).
5. **Connect via Bluetooth:** Open the Smart BMS APP and connect to the corresponding Bluetooth device

ID.

6. **Initial Parameter Setup:** 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**. Adjust other parameters as needed under the guidance of your battery manufacturer.

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Video 1: This video demonstrates the initial setup process, including wiring verification, BMS activation, and connecting to the mobile application for parameter configuration.

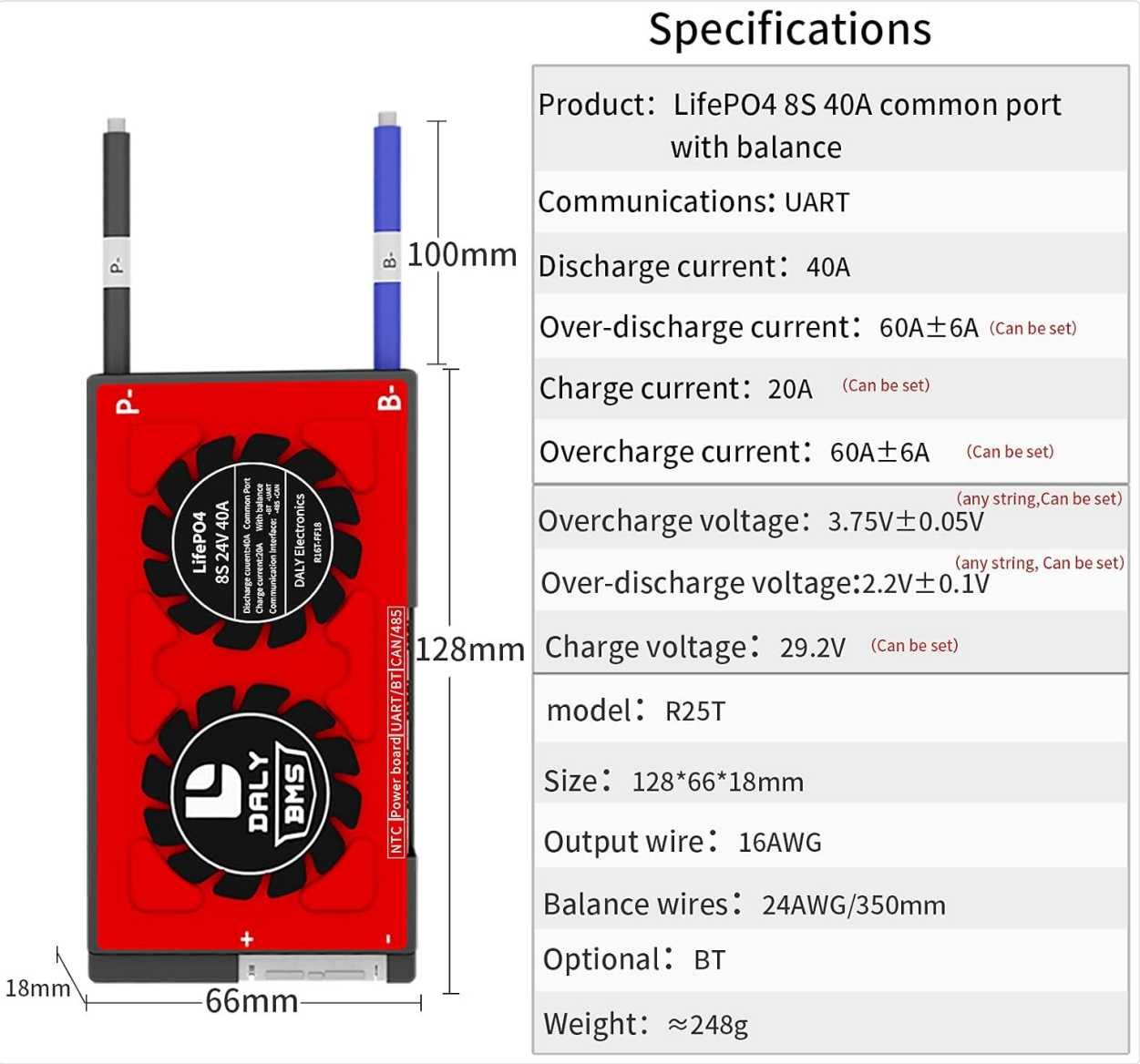

Figure 5: Screenshots of the mobile application interface for monitoring real-time battery data and accessing parameter settings.

7. Operation

Once the BMS is properly installed and configured, you can monitor its status and the battery pack's health using the Smart BMS mobile application or PC software.

- **Real-time Monitoring:** The app displays critical information such as total voltage, individual cell voltages, current, temperature, and State of Charge (SOC).
- **Parameter Adjustment:** Access the "Parameter Settings" section (password: 123456) to fine-tune protection thresholds for voltage, current, and temperature according to your battery specifications.
- **Automatic Calibration:** The battery is automatically calibrated when charged until the voltage reaches a

high level 2 alarm.

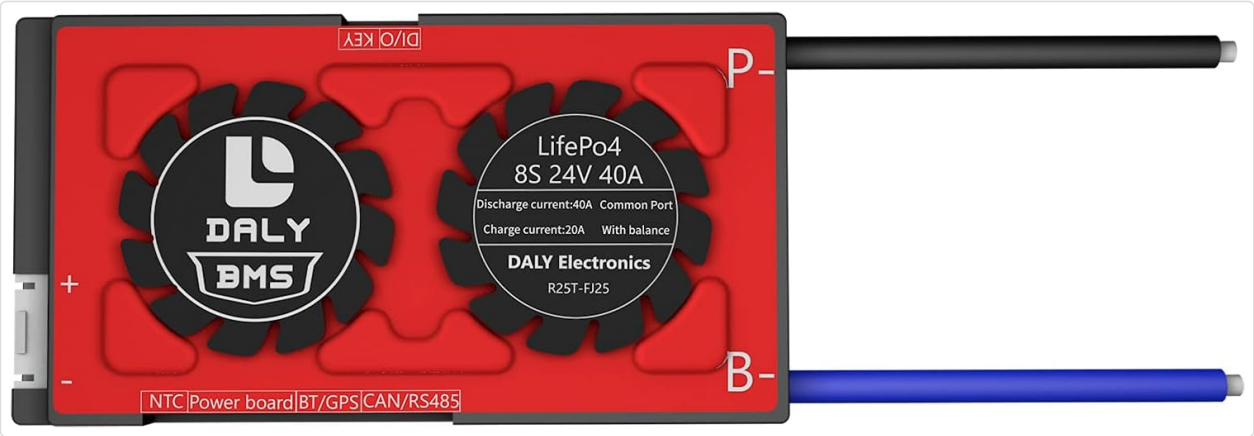

Figure 6: The DALY Smart BMS unit, ready for operation and monitoring.

8. Maintenance

Proper maintenance ensures the longevity and optimal performance of your battery pack and BMS.

- **Regular Inspection:** Periodically check all wiring connections for tightness and signs of corrosion or damage.
- **Software Updates:** Keep the Smart BMS mobile application and PC software updated to the latest version for improved features and bug fixes.
- **Environmental Conditions:** Ensure the BMS and battery pack are operated within recommended temperature and humidity ranges. Avoid direct sunlight or extreme cold.
- **Cleaning:** Keep the BMS unit clean and free from dust and debris. Use a dry, soft cloth for cleaning.

9. Troubleshooting

This section addresses common issues you might encounter with your DALY Smart BMS.

- **BMS Not Activating:** Ensure all balance wires are correctly connected and the main battery terminals (B- and P-) are properly wired. Press the activation button on the Bluetooth module.
- **Bluetooth Connection Issues:** Verify the Bluetooth module is securely plugged into the BMS. Ensure Bluetooth is enabled on your mobile device and the "Smart BMS" app has necessary permissions. Try restarting the app or your device.
- **Incorrect Voltage Readings:** Double-check all balance wire connections. Loose or incorrect connections can lead to inaccurate cell voltage readings.
- **BMS Shuts Down Unexpectedly:** This often indicates a protection trigger (e.g., over-current, over-voltage, under-voltage, or temperature). Check the alarm messages in the app for details. Address the underlying cause (e.g., reduce load, check charger, inspect battery cells).
- **Balancing Issues:** If cell voltages are consistently out of balance, ensure the balance wires are correctly installed. The BMS has a passive balancing function; for severely mismatched cells, external balancing might be required or cells may need replacement.
- **App/PC Software Not Displaying Data:** Confirm the Bluetooth module or UART cable is properly connected and the BMS is active. Ensure the app/software is the correct version and compatible with your BMS model.

For persistent issues not covered here, please refer to the detailed wiring manual included in your package or contact DALY customer support.

10. Warranty and Support

For warranty information, please refer to the documentation provided at the time of purchase or contact your vendor. DALY provides technical support for their products. For assistance, please visit the official DALY website or contact their customer service department with your product model and purchase details.