

Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

manuals.plus /

- › [DALY](#) /
- › [DALY Smart BMS Li-ion 3S 12V 100A User Manual](#)

DALY 100A FAN Li-ion 3S 12V BT

DALY Smart BMS Li-ion 3S 12V 100A User Manual

MODEL: 100A FAN LI-ION 3S 12V BT

Brand: DALY

1. Introduction

This manual provides detailed instructions for the installation, operation, maintenance, and troubleshooting of the DALY Smart Battery Management System (BMS) for Li-ion 3S 12V 100A battery packs. The DALY Smart BMS is designed to protect and manage lithium batteries, ensuring their safe and efficient operation. It features a programmable Bluetooth module for monitoring and parameter adjustment via a mobile application.

2. Safety Information

Working with lithium batteries and Battery Management Systems requires careful attention to safety. Failure to follow these instructions can result in serious injury, property damage, or damage to the BMS and battery pack.

- **Professional Installation Recommended:** Installation should be performed by qualified personnel with experience in battery systems and electrical wiring.
- **Electrical Hazard:** Battery packs can store significant energy. Always disconnect the battery pack from any loads or chargers before working on the BMS.
- **Short Circuit Prevention:** Ensure all wiring is correctly insulated and connections are secure to prevent short circuits.
- **Correct Polarity:** Double-check all positive and negative connections before applying power. Incorrect polarity can severely damage the BMS and battery.
- **Ventilation:** Ensure adequate ventilation around the battery pack and BMS, especially for models with cooling fans.
- **Temperature:** Operate the BMS and battery within specified temperature ranges. Avoid extreme heat or cold.
- **Water and Moisture:** Keep the BMS and battery away from water and high humidity to prevent electrical hazards and damage.

3. Product Features

The DALY Smart BMS offers advanced features for comprehensive battery management:

- **High Current Support:** Supports up to 100A continuous discharge and 50A charge current, suitable for

demanding applications.

- **Programmable Protection:** Features programmable temperature, over-charge, over-discharge, and over-current protection limits.
- **Voltage Balancing:** Includes voltage balancing to maintain cell health and extend battery lifespan.
- **Bluetooth Connectivity:** Integrated Bluetooth module for wireless monitoring and parameter adjustment via iOS and Android mobile applications.
- **SOC Calculation:** Precise State of Charge (SOC) calculation with automatic learning function.
- **Common Port Design:** Utilizes a common port for both charging and discharging.
- **Cooling Fan:** Equipped with a cooling fan for enhanced thermal management during high current operation.

4. Product Overview

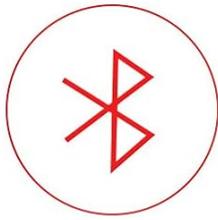
The DALY Smart BMS is a compact and robust unit designed for efficient battery management.



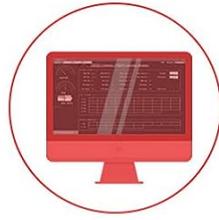
Figure 1: DALY Smart BMS with labeled functional interfaces including NTC, UART, Bluetooth, CAN/RS485, Key switch, and Soft switch.

12 PROTECTION FUNCTIONS

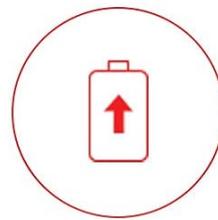
Our BMS has passed the authoritative safety inspection, all kinds of product qualifications are available, highly praised from all over the world



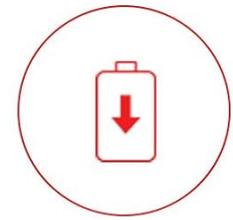
BT



Programmable



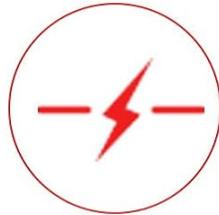
Over-charging protection



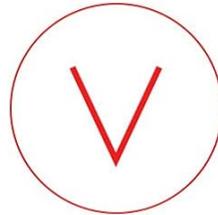
Over-discharging protection



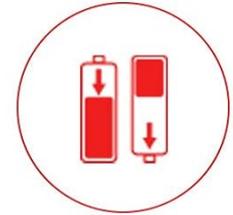
Over-current protection



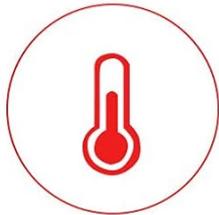
Short-circuit protection



Over-voltage protection



Balance function



NTC temperature protection



Waterproof
Moistureproof



Fireproof



Dustproof

Figure 2: Overview of the 12 protection functions integrated into the DALY Smart BMS, including over-charge, over-discharge, over-current, short-circuit, over-voltage, balance function, NTC temperature protection, waterproof, moistureproof, fireproof, and dustproof features.

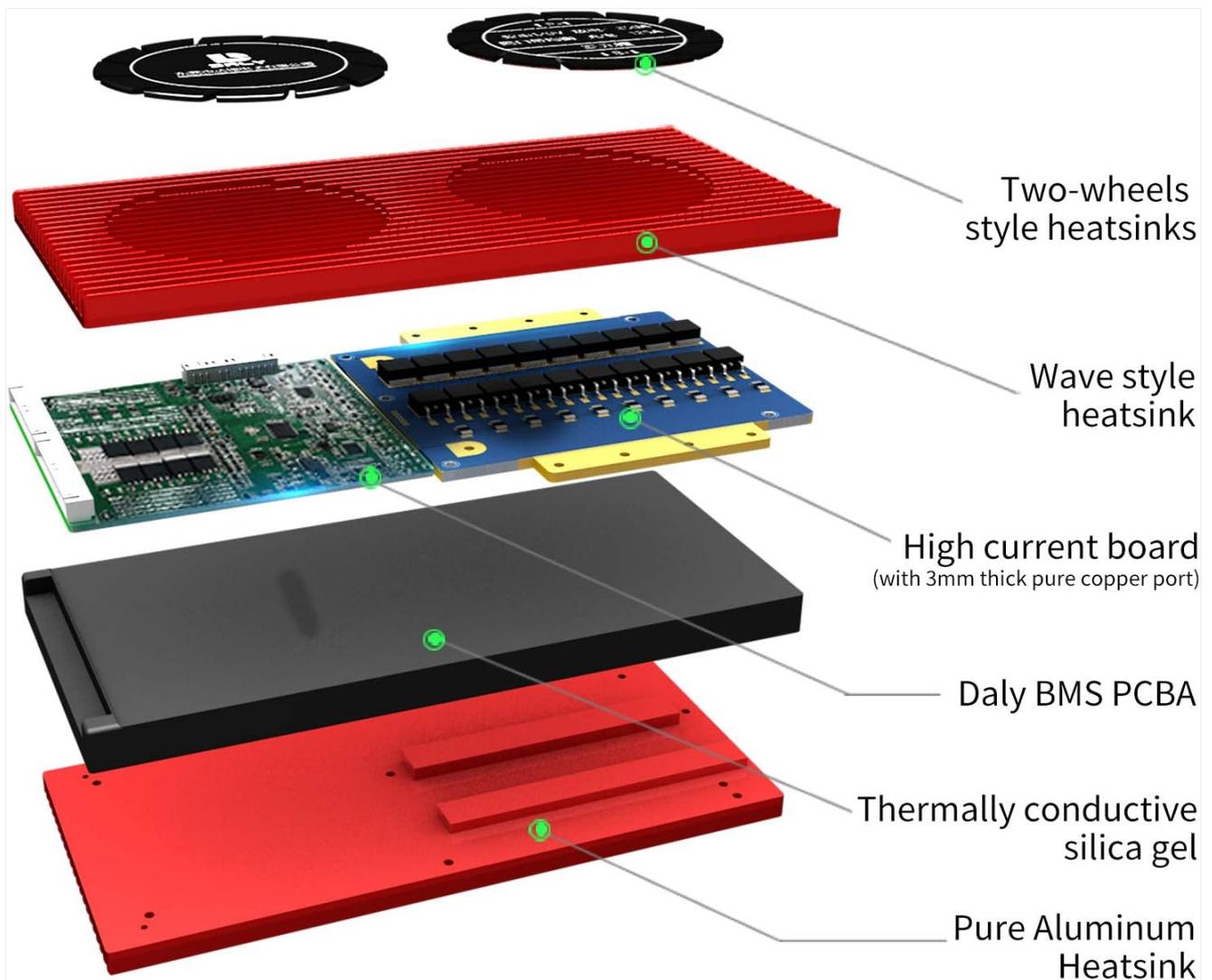


Figure 3: Exploded view detailing the internal structure of the DALY Smart BMS, highlighting components such as the two-wheel style heatsinks, wave style heatsink, high current board with thick copper port, BMS PCBA, thermally conductive silica gel, and pure aluminum heatsink.

5. Package Contents

Verify that all items are present in the package:

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



Figure 4: Typical package contents for the DALY Smart BMS.

6. Installation and Wiring

Proper wiring is critical for the safe and correct operation of the BMS. Refer to the wiring diagram and follow these steps carefully.

Required Tools:

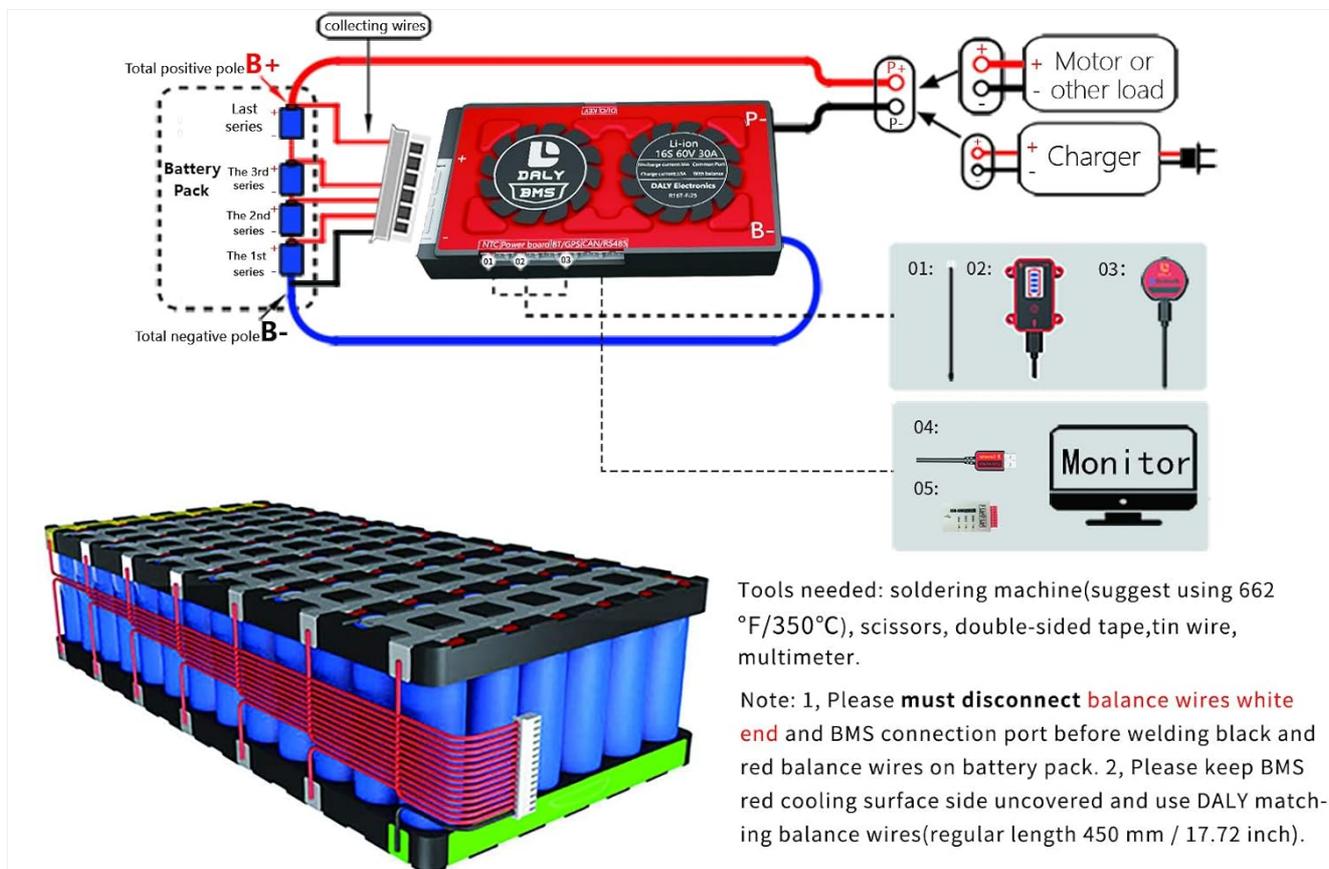
- Soldering machine (recommended 662 °F/350°C)
- Scissors
- Double-sided tape
- Tin wire
- Multimeter

Wiring Steps:

1. **Prepare Battery Pack:** Ensure your Li-ion 3S 12V battery pack is assembled and cells are balanced.

2. **Connect Balance Wires:** Carefully connect the balance wires to each cell in the correct sequence, starting from the negative terminal (B-) of the first cell.
3. **Connect Main Power Wires:** Connect the main negative (B-) and positive (P+) wires from the battery pack to the corresponding terminals on the BMS.
4. **Connect Load/Charger:** Connect your load and charger to the common port (P-) of the BMS.
5. **Connect BMS Balance Port: IMPORTANT:** Before connecting the balance wires to the BMS connection port, ensure the white end of the balance wires is disconnected from the BMS. Only after all black and red main wires are welded to the battery pack, connect the balance wires to the BMS port.
6. **Activate BMS:** Plug in the NTC temperature sensor and Bluetooth module. Press the button on the Bluetooth module to activate the Smart BMS.
7. **Verify Connections:** Use a multimeter to measure the voltage between adjacent balance cables. This voltage should be approximately the nominal voltage of a single cell string.

Note: Keep the BMS red cooling surface side uncovered to ensure proper heat dissipation. Use DALY matching balance wires (regular length 450 mm / 17.72 inch).



After confirming 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. Please refer to the DALY website link: <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 methods: ①: 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 5: Wiring diagram for connecting the DALY Smart BMS to a battery pack, motor, and charger. Ensure correct polarity and sequence for balance wires.

7. Operating Instructions (Bluetooth App & PC Software)

The DALY Smart BMS can be monitored and configured using a mobile application or PC software via Bluetooth or UART connection.

7.1 Mobile App Setup and Usage:

1. **Download App:** Search for "Smart BMS" in the Huawei App Store or Apple App Store and download the application.
2. **Connect to BMS:** Open the Smart BMS APP and connect to the corresponding Bluetooth device name (e.g., DL-XXXXXXXX).
3. **Initial Configuration:** 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**. Failure to set the correct capacity will result in inaccurate SOC readings.
4. **Monitor Parameters:** The app displays real-time battery parameters such as total voltage, current, individual cell voltages, temperature, and SOC.
5. **Adjust Settings:** Navigate to the "Parameter Settings" section to adjust protection thresholds for over-charge, over-discharge, over-current, and temperature.
6. **Automatic Calibration:** The BMS automatically calibrates when the battery is charged until the voltage reaches a high level 2 alarm.



MONITOR REAL-TIME DATA

Monitor batteries information by connecting bluetooth with Mobilephone, It is convenient for customers to manage the batteries status in real time base and provide intelligent, efficient and safe circumstance.



Figure 6: Smart BMS mobile application interface for monitoring battery data and adjusting parameters.

7.2 PC Software Usage:

Connect the BMS to a computer using the provided UART cable. Open the host computer software to view detailed battery status and configure advanced parameters. The PC software provides a comprehensive interface for data logging and fine-tuning BMS settings.

7.3 Instructional Video:

Your browser does not support the video tag.

Video 1: An official DALY video demonstrating the connection process and basic operation of the Smart BMS with the mobile application, including viewing battery parameters and initial setup.

8. Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your DALY Smart BMS and battery pack.

- **Regular Monitoring:** Periodically check battery parameters via the mobile app or PC software to identify any anomalies early.

- **Cleanliness:** Keep the BMS unit clean and free from dust and debris, especially around the cooling fan and heatsinks, to ensure efficient heat dissipation.
- **Connection Integrity:** Periodically inspect all wiring connections for tightness and corrosion. Loose connections can lead to resistance, heat buildup, and performance issues.
- **Firmware Updates:** Check the DALY website or app for any available firmware updates for your BMS model.

9. Troubleshooting

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

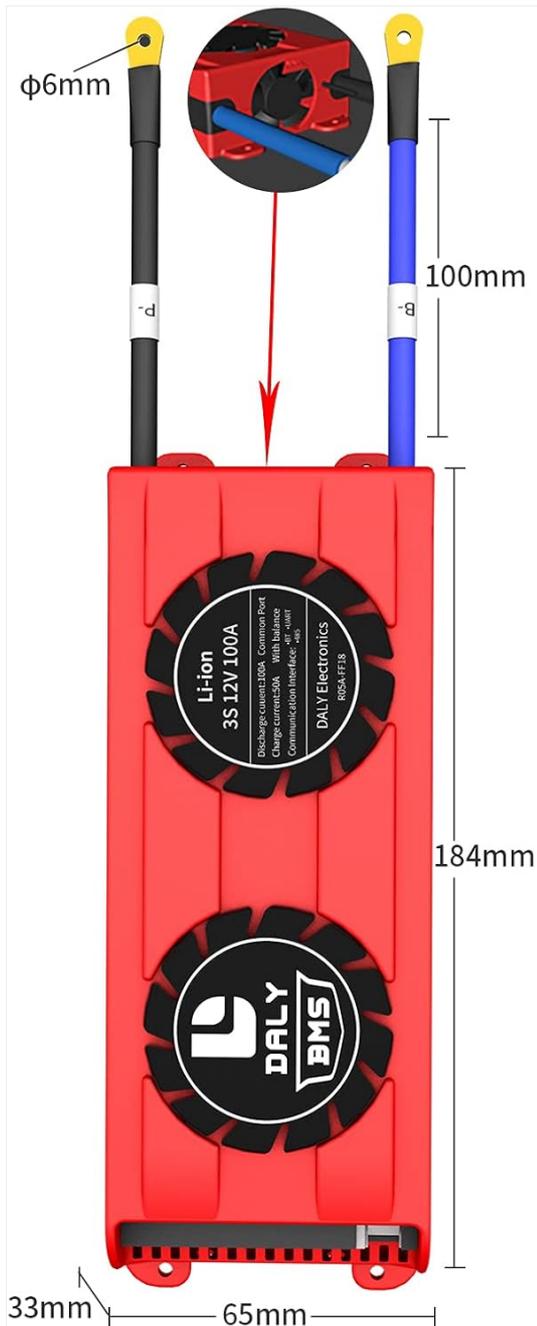
Problem	Possible Cause	Solution
BMS not activating / no power output	Bluetooth module button not pressed; incorrect wiring; battery voltage too low.	Press the button on the Bluetooth module. Verify all wiring connections, especially B- and P+. Check battery voltage; if too low, charge the battery.
Bluetooth app not connecting	Bluetooth module not activated; out of range; app issues.	Ensure the Bluetooth module button is pressed. Move closer to the BMS. Restart the app or phone. Check app permissions.
Inaccurate SOC reading	Incorrect battery capacity set in app; BMS not calibrated.	Set the correct battery capacity in the app (initial password: 123456). Fully charge the battery to allow the BMS to calibrate.
BMS shuts down randomly	Protection triggered (over-current, over-voltage, under-voltage, temperature); loose connection.	Check app for fault messages. Identify and resolve the cause of the protection trigger. Inspect all connections. Reset the BMS by disconnecting and reconnecting the main power.
Cells not balancing effectively	Significant cell mismatch; low balance current.	Ensure cells are closely matched before assembly. Allow sufficient time for balancing, especially during charging. For severe imbalances, external balancing may be required.

10. Specifications

Key technical specifications for the DALY Smart BMS Li-ion 3S 12V 100A:

- **Product Dimensions:** 7.24 x 2.56 x 1.3 inches
- **Item Weight:** 1.5 pounds
- **Brand:** DALY
- **Connectivity Technology:** Bluetooth
- **Power Source:** Battery Powered
- **Wireless Communication Standard:** Bluetooth
- **Compatible Devices:** Mobile Phones
- **Discharge Current:** Up to 100A continuous
- **Charge Current:** Up to 50A continuous
- **Over-discharge Current:** 150A \pm 15A (Can be set)
- **Overcharge Current:** 150A \pm 15A (Can be set)
- **Overcharge Voltage:** 4.25V \pm 0.05V (any string, can be set)

- **Over-discharge Voltage:** $2.7V \pm 0.1V$ (any string, can be set)
- **Charge Voltage:** 12.6V (Can be set)



Fan specifications

Product: Li ion 3S 100A common port with balance
Single communication: UART
Discharge current: 100A
Over-discharge current: $150A \pm 15A$ (Can be set)
Charge current: 50A (Can be set)
Overcharge current: $150A \pm 15A$ (Can be set)
Overcharge voltage: $4.25V \pm 0.05V$ (any string, Can be set)
Over-discharge voltage: $2.7V \pm 0.1V$ (any string, Can be set)
Charge voltage: 12.6V (Can be set)
model: R05A
Size: 184*64 *33mm
Output wire: 7AWG
Balance wires: 24AWG/350mm
Optional: BT
Weight: $\approx 661g$

Figure 7: Fan specifications and physical dimensions of the DALY Smart BMS.

11. Warranty and Support

For warranty information, technical support, or assistance with your DALY Smart BMS, please contact the seller, DalyElec, directly through your purchase platform. Ensure you have your product model and purchase details available when contacting support.