DALY Li-ion 17S 60V 60A

DALY Smart BMS Li-ion 17S 60V 60A Instruction Manual

Model: Li-ion 17S 60V 60A

1. PRODUCT OVERVIEW

The DALY Smart BMS (Battery Management System) is designed for Li-ion 17S 60V 60A battery packs. It features a programmable Bluetooth module and a common port for both charging and discharging. This BMS provides essential protection functions and allows for real-time monitoring and parameter adjustments via a mobile application.

Figure 1: DALY Smart BMS with Bluetooth module and smartphone app interface.

Key Features:

- Supports up to 60A continuous discharge and 30A charge current. Suitable for high current applications.
- Programmable temperature protection: Stops current if battery temperature limits are exceeded.
- Programmable over-charge and over-discharge protection: Stops charging/discharging when voltage limits are reached.
- Programmable over-current protection: Stops charging/discharging if current exceeds limits.
- Integrated Bluetooth module for mobile app (iOS & Android) connectivity.
- UART cable for PC monitoring and parameter setting.
- SOC (State of Charge) calculation with automatic learning function.
- Automatic battery charge function or static balance function.

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
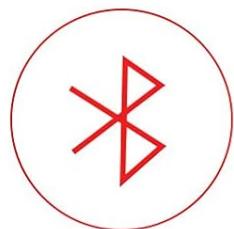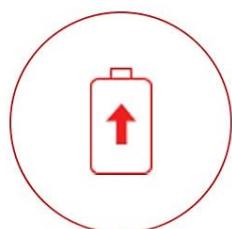

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BT	Programmable
Over-charging protection	Over- discharging protection
Over-current protection	Short- circuit protection
Over-voltage protection	Balance function
NTC temperature protection	Waterproof Moistureproof
Fireproof	Dustproof
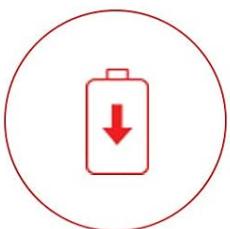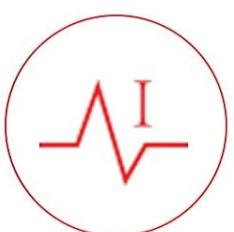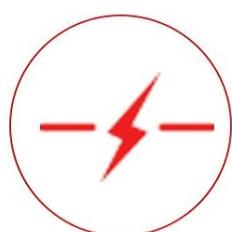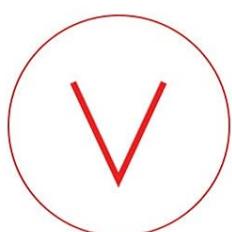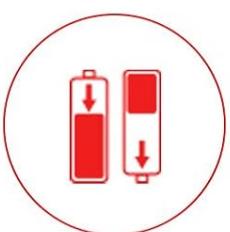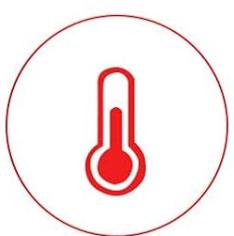
Figure 2: The DALY Smart BMS offers 12 protection functions including Bluetooth, programmable settings, over-charging, over-discharging, over-current, short-circuit, over-voltage, balance, NTC temperature, waterproof, moistureproof, fireproof, and dustproof features.

2. SAFETY INFORMATION

Adherence to safety guidelines is crucial for the proper and safe operation of the DALY Smart BMS. Failure to follow these instructions may result in damage to the product, battery, or personal injury.

- Do not charge the battery pack at temperatures below -1°C.
- Always follow battery management guidelines to prevent over-charge, over-discharge, and voltage imbalance.
- Keep the BMS and battery pack away from extreme temperatures and humidity.
- Ensure all wiring connections are secure and correct before operation. Incorrect wiring can cause damage.
- Only use the specified balance wires and cables provided with the BMS.
- Consult a qualified professional if you are unsure about any installation or operation steps.

3. SETUP AND INSTALLATION

Careful installation is essential for the correct functioning of your DALY Smart BMS. Please follow these steps precisely.

3.1 Wiring Connection

1. **Preparation:** Ensure all power sources are disconnected. Tools needed include a soldering machine (suggested 662°F/350°C), scissors, double-sided tape, tin wire, and a multimeter.
2. **Balance Wires:** Disconnect balance wires from the BMS connection port. Connect the balance wires to your battery pack, ensuring correct polarity and sequence.
3. **BMS Connection:** Connect the main negative (B-) and positive (P+) wires from the battery pack to the BMS.
4. **Balance Wire Reconnection:** After confirming all balance wires are correctly welded and installed, connect them to the BMS connection port.
5. **NTC and Bluetooth Module:** Plug in the NTC (temperature sensor) and Bluetooth module into their respective ports on the BMS.
6. **Activation:** Press the button on the Bluetooth module to activate the smart BMS.

Total positive pole **B+**

Last series +

Battery Pack The 3rd series +

The 2nd series −

The 1st series −

Total negative pole **B−**

collecting wires

Li-ion
16S 60V 30A

P−

B−

P+
P−

+ Motor or
− other load

+ − Charger

01: 02: 03:

04:
05:

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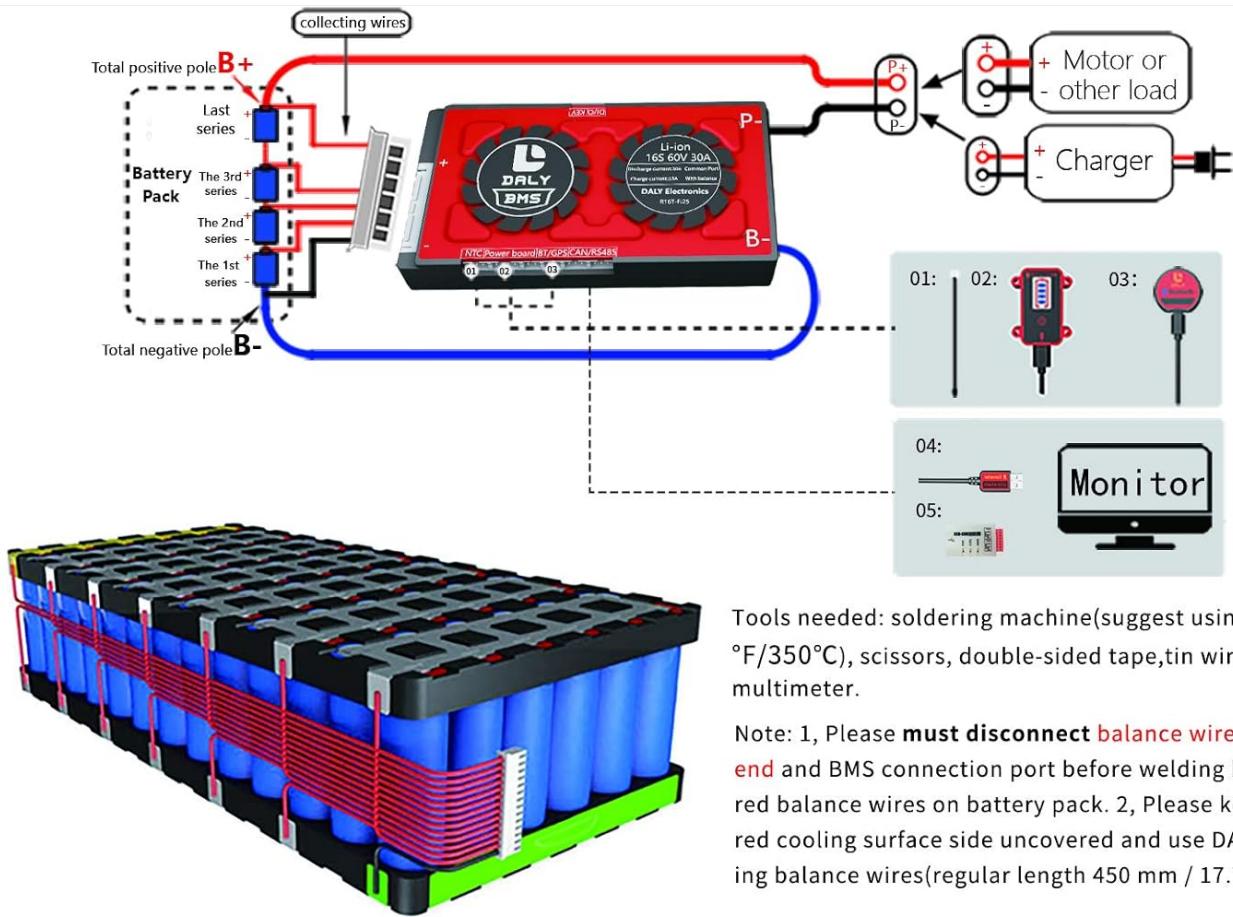
Tools needed: soldering machine(suggest using 662 °F/350°C), scissors, double-sided tape,tin wire, multimeter.

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 match- ing 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 cor- rectly, 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 3: Wiring diagram showing connections for the DALY Smart BMS, battery pack, charger, and motor/load. Ensure balance wires are connected correctly from the last series to the first series of the battery cells.

3.2 Mobile App Setup

1. **Download App:** Search for "Smart BMS" in the Huawei App Store or Apple App Store and download the application.
2. **Connect via Bluetooth:** Open the Smart BMS app and connect to the corresponding Bluetooth device listed.
3. **Initial Parameter Setting:** For the first power-on, the battery capacity must be set to the actual capacity of your battery pack. The initial password for parameter changes is **123456**.

Your browser does not support the video tag.

Video 1: Official DALY Smart BMS setup and app connection guide. This video demonstrates the wiring process, activating the BMS, connecting to the mobile app, viewing battery parameters, and setting initial battery capacity.

4. OPERATING INSTRUCTIONS

The DALY Smart BMS allows for comprehensive monitoring and control of your battery pack.

4.1 Real-time Monitoring

Use the "Smart BMS" mobile application to monitor battery status in real-time. This includes:

- State of Charge (SOC)
- Current (charge/discharge)
- Voltage (total and individual cell voltages)
- Temperature
- Warning and fault messages
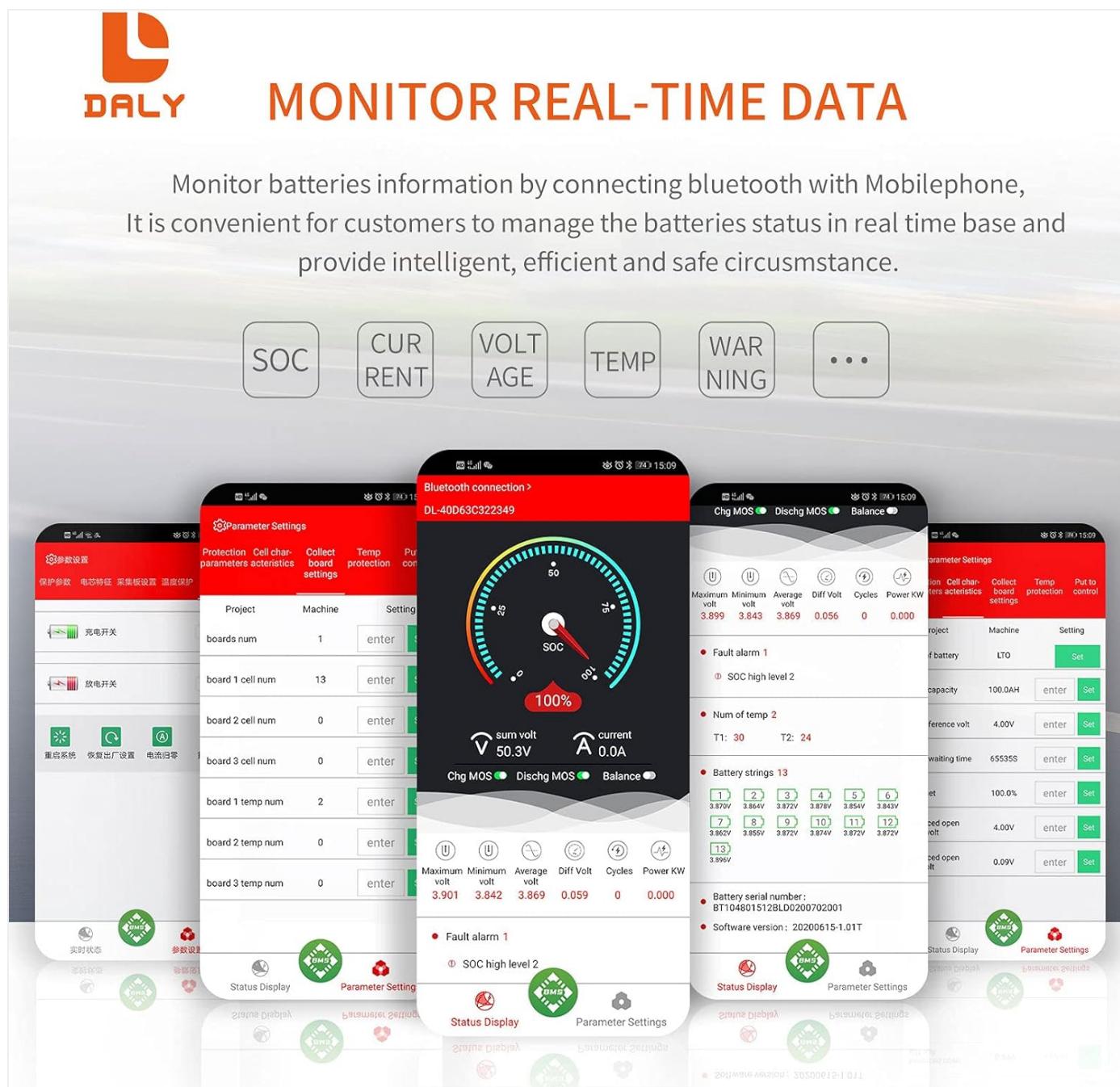
Figure 4: Real-time data monitoring via the DALY Smart BMS mobile application, showing SOC, current, voltage, and temperature.

4.2 Parameter Settings

The app allows you to adjust various protection parameters to suit your battery type and application. Always ensure you understand the implications of changing these settings.

- Cell voltage high/low protection limits.
- Total voltage high/low protection limits.
- Charge/discharge over-current protection limits.
- High/low temperature protection limits for charging and discharging.
- Balance start voltage and differential voltage.

The BMS also supports PC monitoring via the UART cable, providing a detailed interface for advanced users to view and adjust parameters.

5. MAINTENANCE

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

- **Connection Checks:** Periodically inspect all wiring connections for tightness and corrosion. Loose connections can lead to poor performance or safety hazards.
- **Firmware Updates:** Check the DALY website or app for any available firmware updates for your BMS model. Updates can improve performance and add new features.
- **Environmental Conditions:** Ensure the BMS is operated within its specified temperature and humidity ranges. Avoid exposure to direct sunlight, water, or excessive dust.
- **Cleaning:** Keep the BMS clean and free from dust and debris. Use a soft, dry cloth for cleaning. Do not use liquid cleaners.
- **Battery Calibration:** The BMS features automatic SOC calibration. For accurate readings, ensure the battery is fully charged periodically until the voltage reaches the high protection limit, allowing the BMS to recalibrate.

6. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
BMS not activating / no power output	- Incorrect wiring. - BMS not activated after connection. - Battery voltage too low.	- Double-check all wiring against the diagram (Figure 3). - Press the button on the Bluetooth module to activate the BMS. - Charge the battery pack to a safe voltage level.
Bluetooth app not connecting	- Bluetooth module not properly connected or activated. - Incorrect app version or phone compatibility. - Interference.	- Ensure the Bluetooth module is securely plugged in and its button has been pressed. - Verify you have the correct "Smart BMS" app from the official store. - Restart the app and phone. Try connecting in a location with less wireless interference.
BMS shuts down unexpectedly	- Triggered protection (over-current, over-voltage, under-voltage, over-temperature). - Faulty connection.	- Check the app for alarm messages. Address the underlying cause (e.g., reduce load, check charger). - Inspect all wiring for loose connections. - A reset via the app may reactivate the BMS after addressing the fault.

Problem	Possible Cause	Solution
Inaccurate SOC or cell voltage readings	- Incorrect battery capacity set in the app. - BMS requires calibration. - Faulty balance wires or connections.	- Verify the "rated capacity" in the app matches your battery pack's actual capacity. - Allow the battery to fully charge until the high voltage protection is triggered for automatic calibration. - Inspect balance wire connections for integrity.

7. SPECIFICATIONS

Detailed technical specifications for the DALY Smart BMS Li-ion 17S 60V 60A.

Feature	Detail
Product Type	Li-ion 17S 60A Common Port with Balance
Communications	UART, Bluetooth (Optional: CAN/RS485)
Discharge Current	60A (Continuous)
Over-discharge Current	90A ± 9A (Programmable)
Charge Current	30A (Continuous)
Overcharge Current	90A ± 9A (Programmable)
Overcharge Voltage	4.25V ± 0.05V (per string, Programmable)
Over-discharge Voltage	2.7V ± 0.1V (per string, Programmable)
Charge Voltage	71.4V (Programmable)
Model	R25T
Dimensions	128 x 66 x 18 mm (5.04 x 2.6 x 0.71 inches)
Output Wire Gauge	16AWG
Balance Wires	24AWG/350mm
Weight	~333g (12.8 ounces)
Material	Polycarbonate (PC)
Connectivity Technology	Bluetooth
Power Source	Battery Powered

Specifications
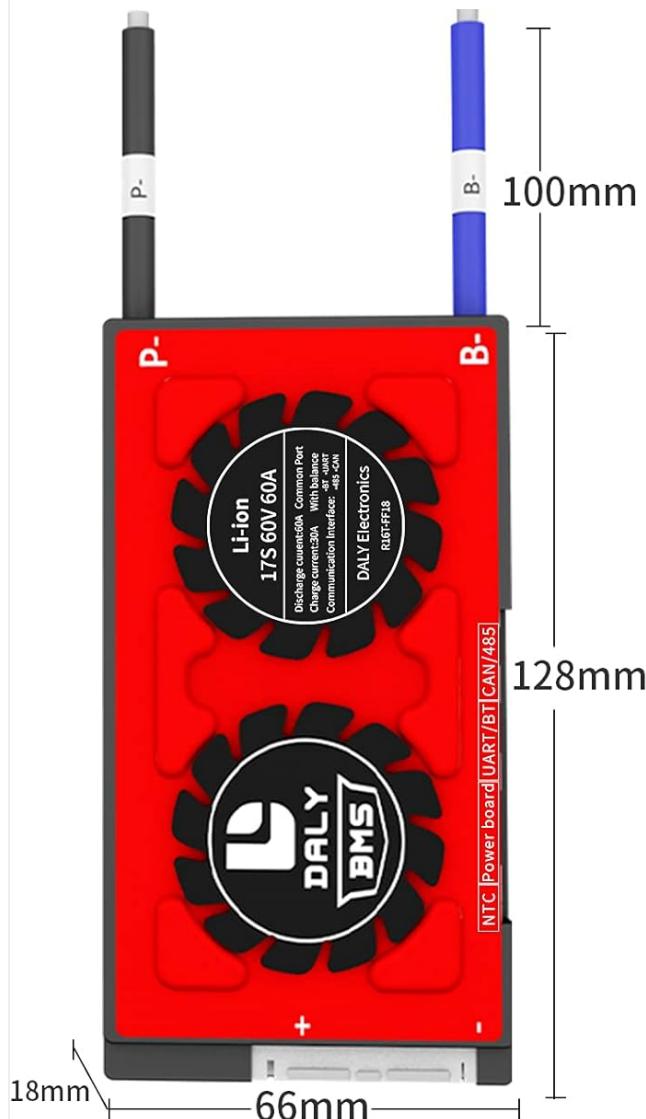
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Product:	Li ion 17S 60A common port with balance
Communications:	UART
Discharge current:	60A
Over-discharge current:	90A±9A (Can be set)
Charge current:	30A (Can be set)
Overcharge current:	90A±9A (Can be set)
Overcharge voltage:	4.25V±0.05V (any string,Can be set)
Over-discharge voltage:	2.7V±0.1V (any string, Can be set)
Charge voltage:	71.4V (Can be set)
model:	R25T
Size:	128*66 *18mm
Output wire:	16AWG
Balance wires:	24AWG/350mm
Optional:	BT
Weight:	≈333g

Figure 5: Physical dimensions and key electrical specifications of the DALY Smart BMS.

8. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the official DALY website or contact your retailer.

- **Protection Plans:** Optional 2-Year and 3-Year protection plans may be available for purchase. Refer to your purchase documentation for details.
- **Return Policy:** A 30-day refund/replacement return policy typically applies. Consult your seller for specific terms.
- **Manufacturer:** DALY
- **Contact:** For further assistance, visit the DalyBMS Store on Amazon or the official DALY website.