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› LiebeWH 14S 52V 45A Lithium Battery Protection Board User Manual

LiebeWH LiebeWHnarb0xgzt6

LiebeWH 14S 52V 45A Lithium Battery Protection Board User Manual

Model: LiebeWHnarb0xgzt6

1. INTRODUCTION

The LiebeWH 14S 52V 45A Lithium Battery Protection Board (BMS) is designed to manage and protect 14 series Li-ion battery cells. This board ensures the safe and efficient operation of your battery pack by providing essential protection features and cell balancing. This manual provides comprehensive instructions for the proper installation, operation, and maintenance of your protection board.

2. SAFETY INFORMATION

- Always handle battery components with care.
- Ensure all connections are correct before applying power. Incorrect wiring can cause damage to the board, battery, or connected devices.
- Do not expose the board to moisture or extreme temperatures.
- Keep out of reach of children.
- If you are unsure about any step, consult a qualified professional.

3. PRODUCT FEATURES

This 14S 52V 45A Lithium Battery Protection Board offers the following key features:

- **Overcharge Protection:** Prevents battery cells from being charged beyond their safe voltage limit.
- **Over-discharge Protection:** Protects battery cells from being discharged below their safe voltage limit.
- **Short-circuit Protection:** Automatically cuts off power in case of a short circuit to prevent damage.

- **Balance Function:** Equalizes the voltage characteristics of each battery cell, extending the overall battery life and performance.
- **Precision Integrated Circuit:** Utilizes advanced circuitry for reliable and efficient battery management.
- **Quality Assurance:** Each product undergoes rigorous quality and aging tests.

4. PACKAGE CONTENTS

Upon opening the package, you should find:

- 1 x LiebeWH 14S 52V 45A Lithium Battery Protection Board

Note: Connection cables for battery cells are typically not included with the protection board and must be acquired separately.

5. SETUP AND INSTALLATION

Proper installation is crucial for the safe and effective operation of the BMS. Please follow these steps carefully:

1. **Prepare Your Battery Pack:** Ensure your 14 series Li-ion battery cells are properly assembled and balanced before connecting the BMS.
2. **Identify Connections:** The board has specific terminals for B- (negative terminal of the battery pack), P- (negative terminal for discharge/charge), and a multi-pin connector for individual cell voltage monitoring. Refer to the label on the board for precise identification.
3. **Connect Balance Wires:** Carefully connect the balance wires from each battery cell to the multi-pin connector on the BMS. Start from the lowest voltage cell (B1) and proceed sequentially up to B14. Ensure the wires are connected in the correct order and polarity.
4. **Connect B- Terminal:** Connect the main negative terminal of your battery pack to the B- terminal on the BMS.
5. **Connect P- Terminal:** Connect the negative terminal of your load/charger to the P- terminal on the BMS. The positive terminal of your load/charger should connect directly to the positive terminal of your battery pack.
6. **Verify Connections:** Double-check all connections for correct polarity and secure attachment before applying power. Loose connections can lead to overheating or malfunction.



Figure 1: Top view of the LiebeWH 14S 52V 45A Lithium Battery Protection Board, showing the multi-pin connector and main terminals.



Figure 2: Internal view of the protection board, illustrating the precision integrated circuits and power components.

6. OPERATING INSTRUCTIONS

Once the BMS is correctly installed, it operates automatically to protect your battery pack. Here are general operating guidelines:

- **Charging:** Connect your 52V compatible charger to the battery pack (via the P- terminal on the BMS for negative, and directly to the battery positive). The BMS will monitor cell voltages and prevent overcharging.
- **Discharging:** Connect your load to the battery pack (via the P- terminal on the BMS for negative, and directly to the battery positive). The BMS will monitor cell voltages and prevent over-discharging.
- **Balancing:** The integrated balance function will automatically work to equalize the voltage of individual cells, especially during charging, to maintain overall pack health.
- **Protection Activation:** If an overcharge, over-discharge, or short-circuit event occurs, the BMS will temporarily cut off power to protect the battery. Normal operation should resume once the fault condition is removed.

7. MAINTENANCE

The LiebeWH 14S 52V 45A BMS requires minimal maintenance. Follow these recommendations to ensure its longevity:

- **Regular Inspection:** Periodically check all wiring connections to ensure they are secure and free from corrosion.

- **Cleanliness:** Keep the board free from dust and debris. Use a soft, dry brush or compressed air for cleaning.
- **Environmental Conditions:** Store and operate the battery pack and BMS in a dry environment, away from direct sunlight and extreme temperatures.
- **Avoid Physical Damage:** Protect the board from impacts or physical stress.

8. TROUBLESHOOTING

If you encounter issues with your BMS, refer to the following common problems and solutions:

- **No Power Output:**
 - Check all wiring connections, especially the B- and P- terminals, and individual cell balance wires.
 - Verify that the battery pack voltage is within the operational range (e.g., not over-discharged).
 - Ensure no short circuit is present on the output.
- **Charging Not Working:**
 - Confirm the charger is functioning correctly and provides the correct voltage (52V nominal).
 - Check for overcharge protection activation (if cells are already full).
 - Inspect balance wire connections for any disconnections or incorrect order.
- **Uneven Cell Voltages:**
 - Ensure the balance wires are correctly connected to each cell.
 - Allow the BMS sufficient time to balance cells, especially during charging. Severely unbalanced cells may take longer.
- **Missing Connection Cables:**
 - As noted in the package contents, connection cables are typically not included. Please ensure you have acquired the necessary cables for installation.

9. SPECIFICATIONS

Feature	Specification
Brand	LiebeWH
Model Number	LiebeWHnarb0xgzt6
Battery Type Compatibility	3.7V Ternary Cell, Lithium Manganate Cell, Lithium Cobalt Cell
Series Configuration	14S (14 Series)
Input Voltage	52 Volts (Nominal)
Discharge Current	45 A

Feature	Specification
Current Rating	45 A
Amperage	45 A
Number of Ports	15 (for balance wires and main terminals)
Weight	Approx. 73 g / 2.6 oz
Color	Green

10. WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the retailer where you purchased this product or visit the official LiebeWH brand store. Keep your proof of purchase for any warranty claims.

LiebeWH Brand Store: <https://www.amazon.fr/stores/LiebeWH/page/FE084EE1-AE6B-4141-AAED-05087C4FDB1F>