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CNEEL JK V5

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Model: JK V5

1. INTRODUCTION

This manual provides detailed instructions for the assembly, operation, and maintenance of your CNEEL EEL 48V JK V5 DIY Battery Box. This system is designed for various power storage applications, including off-grid, RV, solar systems, backup power, and home energy storage. Please read this manual thoroughly before proceeding with installation or operation to ensure safe and efficient use.

2. SAFETY INFORMATION

Always prioritize safety when working with electrical components and battery systems. Failure to follow these safety guidelines may result in property damage, serious injury, or death.

- Ensure all connections are secure and properly insulated.
- Wear appropriate personal protective equipment (PPE), including insulated gloves and eye protection.
- Do not short-circuit the battery terminals.
- Keep the battery box away from flammable materials and heat sources.
- Do not attempt to open or modify the battery cells.
- In case of fire, use a Class D fire extinguisher.
- Consult a qualified electrician for complex installations.

3. PRODUCT OVERVIEW

The EEL 48V JK V5 DIY Battery Box is a robust solution for managing and monitoring your battery cells. It features a high-quality stainless steel enclosure, a JK 200A Battery Management System (BMS) with 2A active balance, and a 4.3-inch touch display for real-time data. The integrated BMS provides comprehensive protection against over-charging, over-discharging, over-current, short-circuit, and extreme temperatures, further enhanced by a 250A fuse.



Figure 1: Front view of the EEL 48V JK V5 DIY Battery Box.

48V EEL V5-JK LIFEPO4 BATTERY DIY BOX KIT

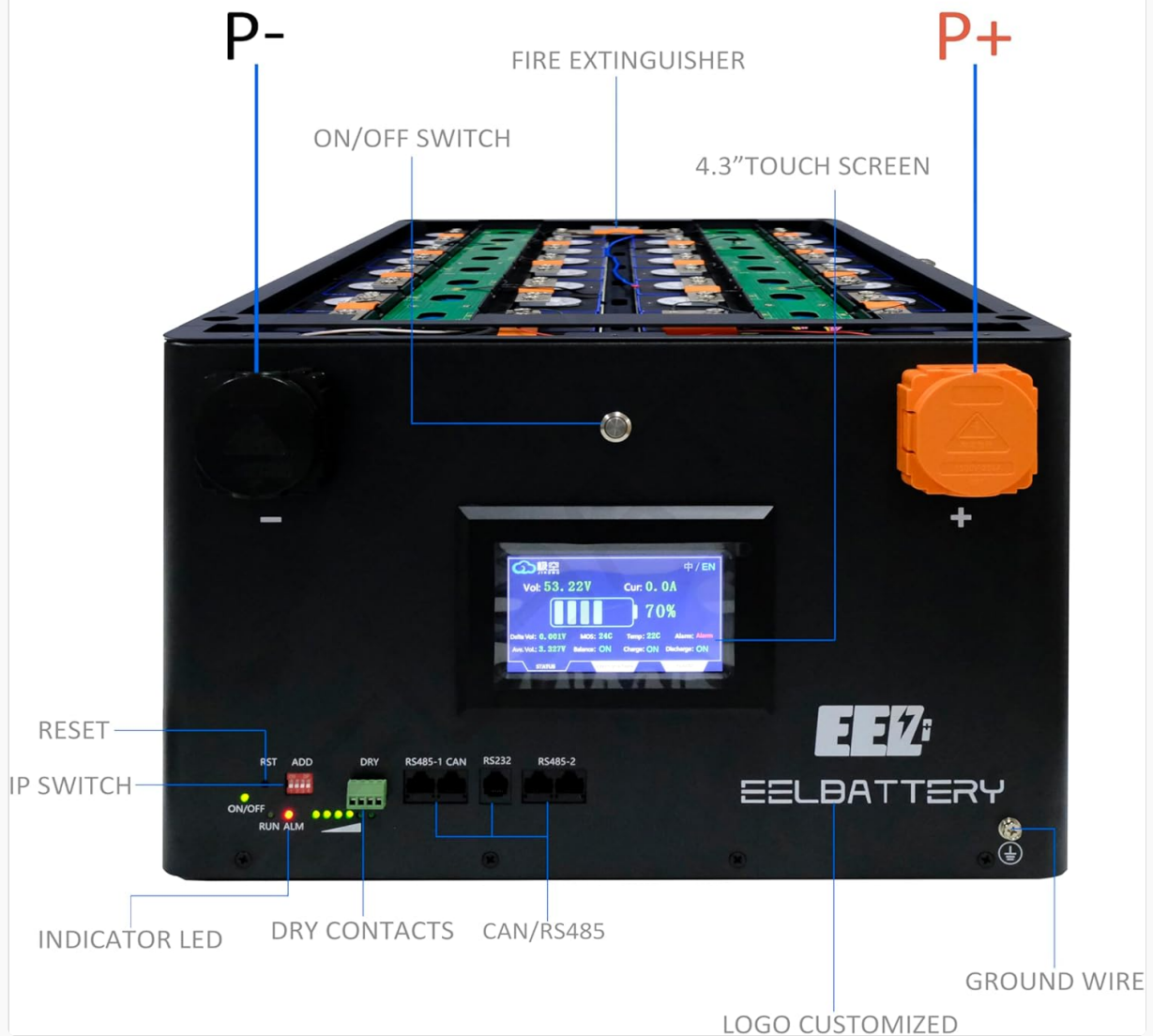


Figure 2: Labeled diagram of the EEL 48V JK V5 DIY Battery Box components, including P-, P+, ON/OFF switch, 4.3" touch screen, RESET, DIP switch, Indicator LED, Dry Contacts, CAN/RS485, RS232, and Ground Wire.

4. SETUP INSTRUCTIONS

Follow these steps carefully to assemble your EEL 48V JK V5 DIY Battery Box. The process involves preparing the battery cells, installing internal components, and connecting the BMS.

Video 1: EEL 48V V5 Battery Box with JK Inverter BMS Assembly Instruction.

4.1. Prepare Battery Cells

1. **Inspect Cells:** Ensure all LF280K EVE Original Studs (battery cells) are in good condition.
2. **Apply Insulation:** Stick PC strips and EVA insulation to the sides of each battery cell to prevent short circuits and provide cushioning.

4.2. Install Internal Components

3. **Disassemble Box:** Carefully remove the cover and any internal panels of the battery box to access the mounting areas.
4. **Install Communication Module:** Secure the communication module board to its designated position

using screws.

5. **Install Displays:** Mount the 4.3-inch touch display(s) into the front panel of the battery box and secure them.
6. **Install 300A Terminals:** Install the 300A positive and negative terminals (levels) onto the designated points on the box.
7. **Install 250A Fuse:** Integrate the 250A fuse into the main power path, typically near the positive terminal, ensuring it is securely fastened.
8. **Apply Epoxy Board:** Adhere the epoxy insulation boards to the interior surfaces of the battery box to provide additional electrical isolation.
9. **Mount Heating Pad:** If included, carefully mount the heating pad(s) at the bottom of the battery box.

4.3. Place Cells and Connect Busbars

10. **Place Cells:** Carefully place the prepared battery cells into the battery box, ensuring they are oriented correctly according to the series connection diagram (e.g., positive to negative).
11. **Install Clamping Plate:** Secure the clamping plate(s) over the cells to hold them firmly in place and prevent movement.
12. **Connect Busbars:** Connect the busbars between the battery cell terminals to establish the series connection. Use a torque wrench to tighten the busbar screws to **5 N/m**. Mark each tightened screw to indicate completion.

4.4. Wiring and Final Connections

13. **Connect Acquisition Lines:** Connect the individual cell voltage acquisition lines (balance leads) from the battery cells to the BMS board. Ensure each lead is connected to the correct cell terminal.
14. **Connect PCB to BMS Wires:** Connect the main PCB wires to the BMS board, including the positive and negative acquisition lines.
15. **Connect Negative Level:** Connect the main negative terminal of the battery pack to the BMS. Use a torque wrench to tighten the connection to the specified value.
16. **Connect Communication Line:** Connect the communication line from the display to the BMS board.
17. **Connect Heating Pad:** Connect the heating pad wires to the designated terminals on the BMS board.
18. **Connect Positive Electrode:** Connect the main positive terminal of the battery pack to the BMS. Use a torque wrench to tighten the connection to the specified value.
19. **Install Fire Extinguisher:** Secure the fire extinguisher (if included) in its designated location within the battery box.

4.5. Power-On Test and BMS Software Configuration

20. **Power-On Test:** Press the power button to turn on the battery box. Verify that the 4.3-inch touch display illuminates and shows battery information.
21. **BMS Software Connection:** Connect the battery box to a computer via the appropriate communication port (e.g., USB, RS485) and open the JK BMS Monitor software.
22. **Configure Settings:** In the BMS software, navigate to the 'Settings' tab. The default password for accessing settings is **123456**. Configure parameters such as Cell Count (16 for this model), Battery Capacity (e.g., 280Ah), and other advanced settings as required for your specific battery cells and application.
23. **Control Functions:** Use the 'Control' tab to enable/disable charge, discharge, and balance functions, or to calibrate the system.
24. **Monitor and Log:** Utilize the 'Realtime' tab to monitor live battery data and the 'Logging' tab to review historical events and data.

5. OPERATING INSTRUCTIONS

The EEL 48V JK V5 Battery Box offers convenient monitoring and control through its integrated display and Bluetooth connectivity.

- **Touch Display:** The 4.3-inch touch display provides real-time information on battery voltage, current, capacity, and other critical parameters. Navigate through the menus to view detailed status.
- **Bluetooth Connectivity:** Connect to the battery box via Bluetooth using a compatible mobile application or PC software. This allows for remote monitoring of battery voltage, current, capacity, and the ability to adjust various parameters.
- **BMS Protection:** The built-in BMS automatically protects the battery from over-charging, over-discharging, over-current, short-circuits, and extreme temperatures. In case of a protection event, the system will temporarily shut down or limit operation to prevent damage.
- **Parallel/Series Connection:** Multiple EEL battery packs can be connected in parallel or series to achieve larger capacity or higher voltage configurations. Refer to the specific wiring diagrams for such setups.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your battery system.

- **Regular Inspection:** Periodically inspect all connections for tightness and corrosion. Ensure the battery box is clean and free from dust or debris.
- **Temperature Monitoring:** Monitor battery temperature, especially during charging and discharging cycles. Ensure adequate ventilation around the battery box.
- **Software Updates:** Check for and apply any available firmware or software updates for the BMS to ensure optimal performance and access to new features.
- **Cell Balancing:** The 2A active balance function helps maintain cell voltage consistency. Monitor cell voltages via the display or software to ensure proper balancing.

7. TROUBLESHOOTING

If you encounter issues with your EEL 48V JK V5 Battery Box, refer to the following common troubleshooting steps:

- **No Power/Display Off:** Check the main ON/OFF switch. Verify all power connections are secure. Ensure the battery cells have sufficient charge.
- **BMS Protection Triggered:** The BMS may shut down due to over-voltage, under-voltage, over-current, or temperature extremes. Check the display or BMS software for specific error codes or warnings. Address the underlying cause (e.g., reduce load, check charger, allow cooling).
- **Bluetooth Connectivity Issues:** Ensure Bluetooth is enabled on your device and the battery box. Restart both devices. Check for interference from other wireless devices.
- **Unbalanced Cells:** If cell voltages are significantly different, ensure the active balance function is enabled in the BMS settings. Allow time for the balancing process to complete.
- **Unusual Noises or Smells:** Immediately disconnect power and investigate. This may indicate a serious fault.

For persistent issues, contact CNEEL customer support.

8. SPECIFICATIONS

Feature	Specification
Product Dimensions	10 x 22 x 16 inches (410 x 550 x 260 mm)
Item Weight	63.8 pounds
Material	Stainless Steel
BMS Current	200A
Active Balance Current	2A
Display	4.3" Touch Display
Fuse	250A
Connectivity	Bluetooth, RS485, RS232, CAN

9. WARRANTY AND SUPPORT

For warranty information, please refer to the product's purchase documentation or contact your vendor directly. For technical support, assistance with troubleshooting, or inquiries regarding your EEL 48V JK V5 DIY Battery Box, please contact CNEEL customer service through the details provided at the point of purchase or on the official CNEEL website.