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Pylontech US3000C

Pylontech US3000C LiFePO4 Battery User Manual

Model: US3000C

1. Introduction

The Pylontech US3000C is a high-performance, scalable Lithium Iron Phosphate (LiFePO4) battery module designed for energy storage systems. Each module provides 3.5 kWh of energy at 48V and supports a 95% Depth of Discharge (DoD), ensuring efficient and reliable power delivery. This manual provides essential information for the safe and effective installation, operation, and maintenance of your US3000C battery system.

2. Safety Information

Read all safety instructions carefully before installation and operation. Failure to follow these instructions may result in electric shock, fire, or other serious injury or damage.

- The US3000C features an integrated Battery Management System (BMS) within each module. This BMS actively monitors and balances individual cells to prevent overvoltage, excessive overheating, and other potential hazards, ensuring a high level of safety.
- Do not open, disassemble, or modify the battery module. There are no user-serviceable parts inside.
- Keep the battery away from fire, water, and corrosive substances.
- Ensure proper ventilation around the battery during operation.
- Use only specified charging equipment and follow recommended charging parameters.
- Wear appropriate personal protective equipment (PPE), including insulated gloves and eye protection, during installation and maintenance.
- In case of fire, use a Class D fire extinguisher (for metal fires) or a large amount of water.

3. Product Overview

3.1 Battery Module

The Pylontech US3000C module is designed for easy integration into energy storage systems. It features a robust casing and clearly labeled ports for power and communication.



Figure 1: Front panel of the Pylontech US3000C battery module. Key components include the ON/OFF power switch, POWER and RUN/ALM LED indicators, ADD switch, CONTACT, CAN, RS485, and LinkPort communication interfaces, and the positive (+) and negative (-) battery terminals.

3.2 Included Accessories

The US3000C battery module typically includes the necessary cables and hardware for basic connection and installation.

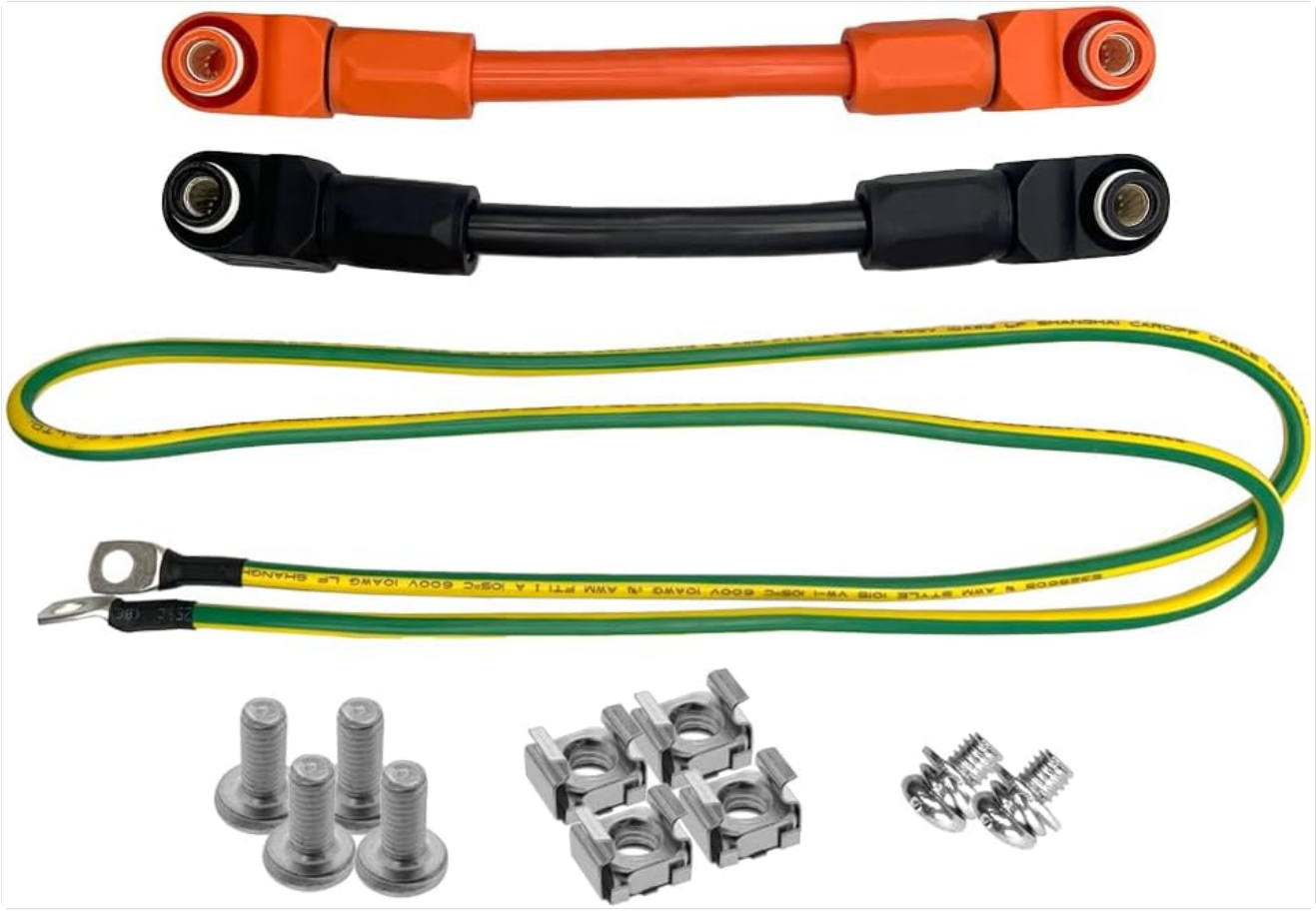


Figure 2: Included accessories for the Pylontech US3000C, typically comprising power connection cables (orange for positive, black for negative), a ground cable, and mounting hardware (bolts and cage nuts).

4. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your Pylontech US3000C battery system.

1. **Unpacking and Inspection:** Carefully unpack the battery module and inspect it for any signs of damage during transit. Report any damage to your supplier immediately.

2. **Mounting:** The US3000C is designed for rack mounting. Ensure the rack is sturdy enough to support the weight of the battery (32 kg per module). Maintain adequate clearance for ventilation.
3. **Connecting Multiple Modules:** If connecting multiple US3000C modules in parallel, use the provided connection cables. The system supports automatic address setting when connected in groups, simplifying configuration.
4. **Inverter Connection:** Connect the battery system to a compatible inverter. The US3000C features a built-in soft start function to reduce inrush current when the inverter is connected to the battery, protecting both devices. Pylontech batteries are compatible and certified with many leading inverter brands such as Victron Energy, OutBack Power, IMEON Energy, and Solax.
5. **Communication Setup:** Connect the communication cables (CAN/RS485) between the battery master module and the inverter for proper system monitoring and control.
6. **Wake-Up Function:** The battery supports WakeUp via a 5~12V signal from the RJ45 port, allowing for remote activation.
7. **Grounding:** Ensure the battery system is properly grounded according to local electrical codes.

5. Operating Instructions

5.1 Powering On/Off

- **To Power On:** Ensure all connections are secure. Press the ON/OFF power switch on the front panel. The POWER and RUN LEDs should illuminate, indicating normal operation.
- **To Power Off:** Disconnect the load from the battery. Press and hold the ON/OFF power switch until the LEDs turn off.

5.2 Charging and Discharging

The US3000C is designed for deep cycling with a 95% DoD. The integrated BMS manages charging and discharging parameters to optimize battery life and performance.

- **Charging:** The battery should be charged using a compatible LiFePO4 charger or inverter with appropriate charging profiles. The BMS will protect against overcharging.
- **Discharging:** The battery will supply power to connected loads. The BMS will protect against over-discharging.

5.3 LED Indicators

Monitor the LEDs on the front panel for operational status:

- **POWER LED:** Indicates the power status of the module.
- **RUN LED:** Indicates the operational status (e.g., blinking during normal operation).
- **ALM (Alarm) LED:** Illuminates to indicate a fault or warning condition. Refer to the troubleshooting section or contact support if this LED is active.

6. Maintenance

The Pylontech US3000C battery requires minimal maintenance due to its robust design and integrated BMS. However, regular checks can help ensure optimal performance and longevity.

- **Visual Inspection:** Periodically inspect the battery module and all connections for any signs of damage, corrosion, or loose wiring.

- **Cleaning:** Keep the battery module clean and free from dust and debris. Use a dry, soft cloth for cleaning. Do not use solvents or abrasive cleaners.
- **Ventilation:** Ensure that the ventilation openings are not obstructed to prevent overheating.
- **Firmware Updates:** Check with Pylontech or your supplier for any available firmware updates for the battery or BMS.
- **Storage:** If storing the battery for an extended period, ensure it is charged to approximately 50% State of Charge (SoC) and stored in a cool, dry place away from direct sunlight.

7. Troubleshooting

This section provides guidance on common issues. For more complex problems, contact technical support.

- **Battery Not Powering On:**
  - Check if the ON/OFF switch is in the 'ON' position.
  - Verify all power cables are securely connected.
  - Ensure the battery has sufficient charge.
- **ALM LED is On:**
  - The ALM LED indicates a fault or warning. This could be due to overvoltage, undervoltage, overcurrent, or temperature issues, all managed by the BMS.
  - Check the system for any obvious issues (e.g., extreme temperatures, incorrect connections).
  - Consult the inverter's display or monitoring software for more specific error codes.
  - If the issue persists, power off the battery and contact support.
- **Inverter Not Recognizing Battery:**
  - Verify communication cables (CAN/RS485) are correctly connected between the battery master and the inverter.
  - Ensure the inverter's firmware is up-to-date and compatible with Pylontech batteries.
  - Check the inverter's settings for proper battery type and communication protocol configuration.
  - Remember the built-in soft start function; allow a moment for the inverter to establish connection.
- **Reduced Performance/Capacity:**
  - Ensure the battery is operating within its specified temperature range.
  - Verify that the charging parameters are correctly set by the inverter/charger.
  - Over time, all batteries experience some degradation. The US3000C is designed for over 6000 cycles at 95% DoD, but extreme operating conditions can affect lifespan.

8. Specifications

Specification	Value
Brand	Pylontech
Model Number	US3000C
Battery Cell Composition	Lithium Iron Phosphate (LiFePO4)

Specification	Value
Nominal Voltage	48 Volts (DC)
Nominal Capacity	3.5 kWh
Maximum Power	3.5 kW
Amperage	74 Amperes
Depth of Discharge (DoD)	95%
Cycle Life	More than 6000 cycles (at 95% DoD)
Dimensions (L x W x H)	44.2 x 42 x 13.2 cm
Weight	32 Kilograms
Reusability	Rechargeable
Recommended Uses	Energy Storage Systems, UPS, Off-grid applications

9. Warranty and Support

For specific warranty terms and conditions, please refer to the documentation provided with your purchase or contact your authorized Pylontech dealer. Pylontech offers technical support for their products. If you encounter issues that cannot be resolved using this manual, please contact your installer or Pylontech customer service for assistance.

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