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› [ExpertPower EP48100 48V 100Ah LiFePO4 Deep Cycle Battery User Manual](#)

ExpertPower EP48100

ExpertPower EP48100 48V 100Ah LiFePO4 Deep Cycle Battery User Manual

Model: EP48100 | Brand: ExpertPower

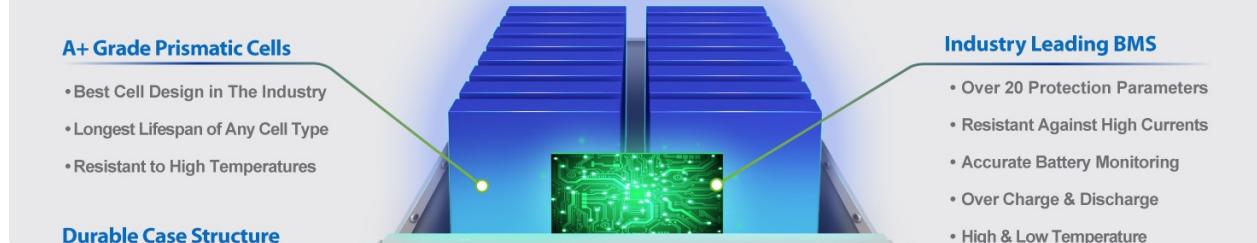
1. PRODUCT OVERVIEW

The ExpertPower EP48100 is a UL1973 certified 48V 100Ah 5KWh Lithium LiFePO4 Deep Cycle Battery designed for various applications including home, cabin, off-grid, and solar energy systems. This battery features advanced prismatic cell technology, a built-in Battery Management System (BMS), and an LED monitor for efficient and safe operation. It offers a long lifespan of 2500 to 7000 cycles and an expected 10-year lifetime.

Key Features:

- UL1973 Certified:** Both the EP48100 rack battery and its cells are UL1973 certified for stationary energy storage, ensuring compliance with North American safety standards.
- Prismatic Cell Technology:** Utilizes Grade A+ prismatic cells, which are lighter, safer, and more efficient than cylindrical cells, offering superior performance and longevity.
- Advanced Battery Management System (BMS):** Features a proprietary BMS optimized for maximum useful life and comprehensive protection against overcharge, deep discharge, overloading, overheating, low-temperatures, and short circuits.
- Rigorous Testing:** Prismatic cells undergo extensive testing for puncture, fire, short circuit, and high impact damage, ensuring high resilience.
- Expandable System:** Supports expansion by connecting up to 10 batteries in parallel, achieving a total capacity of 48V 1000Ah.

Intelligent Battery Design



This image illustrates the intelligent battery design of the ExpertPower EP48100, highlighting A+ Grade Prismatic Cells and the industry-leading Battery Management System (BMS).

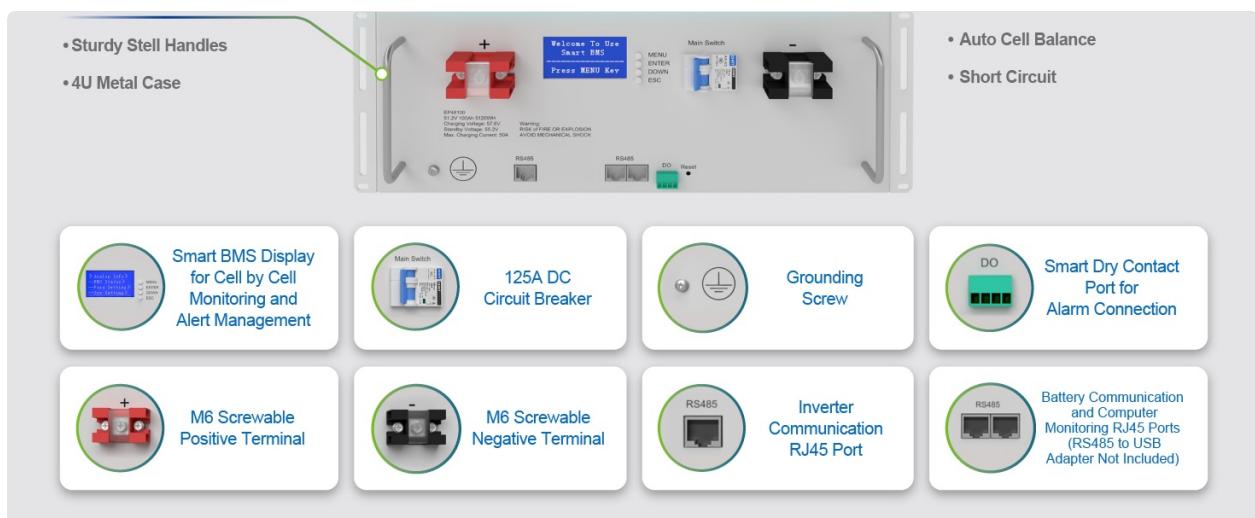
2. SETUP AND INSTALLATION

Mounting the Battery:

The battery can be mounted using a mounting bracket (sold separately or included in some packages). The bracket typically comes with expansion screws for secure attachment to a wall. Ensure the mounting surface is capable of supporting the battery's weight (approximately 196 pounds per unit).

Parallel Connection:

The EP48100 battery supports parallel connection for increased capacity. Up to 10 batteries can be sequenced in parallel to achieve a total of 48V 1000Ah. Follow proper wiring diagrams and safety guidelines when connecting multiple units. Ensure all connections are secure and correctly polarized.



This diagram shows how to connect up to 10 ExpertPower EP48100 batteries in parallel for a 48V 1000Ah system.

System Integration:

The ExpertPower EP48100 is designed for seamless integration into 48V systems, including those with hybrid solar inverters and solar panels. Consult the inverter and solar panel manuals for specific connection requirements. Ensure all components are compatible and correctly configured for optimal performance and safety.

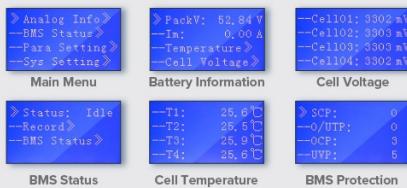
Monitoring Display



No Monitoring Capabilities

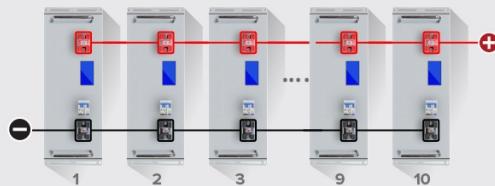
Monitoring Display

Monitor your battery's different parameters and history like cell by cell health, temperature and flowing current with the convenient and smart LCD display.



Parallel Connection

Max. 10 in Parallel - 48V 1000Ah



This illustration demonstrates a complete 48V system setup with ExpertPower batteries, a hybrid solar inverter, and solar panels.

Internal Components and Assembly:

For advanced users or maintenance, understanding the internal layout is beneficial. The battery cells and wiring are neatly arranged and securely assembled to ensure safety and performance.

Your browser does not support the video tag.

This video demonstrates the internal components and rack-mounting capabilities of the ExpertPower 48V 100Ah LiFePO4 Lithium Battery, highlighting its robust construction and ease of integration into a system.

3. OPERATING INSTRUCTIONS

Integrated LCD Display:

The EP48100 battery features an integrated LCD display for monitoring various parameters. This display provides real-time information on cell health, temperature, and current flow. Use the menu buttons (MENU, ENTER, DOWN, ESC) to navigate through different screens and view detailed battery information, BMS status, cell temperatures, cell voltages, and BMS protection data.

Don't settle for anything less than A+ Grade Prismatic Cells

All of our cells are rigorously tested and have proven well against a variety of damage* like:



Puncture



Short Circuit



Incendiary



Impact



Liquid



PRISMATIC CELLS

- ✓ The strong aluminium housing has a long lifespan.
- ✓ Large volume and fewer components minimise points of failure.
- ✓ Simple design and manufacturing process produces highly reliable cells.



POUCH CELLS

- ✗ Aluminium plastic film shell conducts high temperatures more easily.
- ✗ More prone to swelling and deformation means useful life is reduced over time.
- ✗ The soft shell is fragile and requires more components for protection.



CYLINDRICAL CELLS

- ✗ Cylindrical shape is less space efficient than prismatic cells.
- ✗ Multiple cells add complexity and more points of failure to the system.
- ✗ More difficult to monitor and manage for BMS.

* For complete testing, please visit our website: expertpower.us

This image displays the integrated LCD monitor, showing various parameters such as analog info, BMS status, cell temperature, cell voltage, and BMS protection status.

Charging and Discharging:

Ensure the battery is connected to a compatible LiFePO4 charger or inverter system. The BMS will manage the charging and discharging processes to prevent overcharge, deep discharge, and other potential issues. Monitor the LCD display for charging status and battery health. Adhere to the specified charging voltage and current limits as outlined in the specifications section.

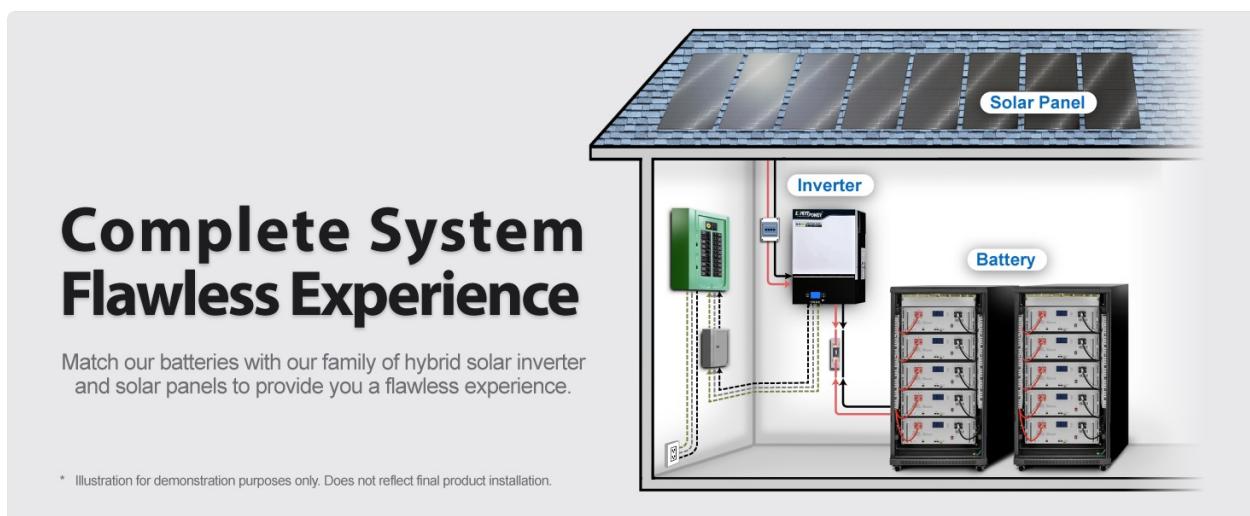
4. MAINTENANCE

General Care:

LiFePO4 batteries are generally maintenance-free. However, regular visual inspections are recommended to check for any physical damage, loose connections, or corrosion on the terminals. Keep the battery clean and free from dust and debris.

Storage:

When storing the battery for extended periods, ensure it is charged to approximately 50-70% of its capacity. Store in a cool, dry place away from direct sunlight and extreme temperatures. The LiFePO4 chemistry offers a low self-discharge rate, allowing the battery to retain a significant charge for up to one year.



This chart illustrates the low self-discharge rate of the LiFePO4 battery, indicating it can hold a charge for up to one year when stored.

5. TROUBLESHOOTING

Common Issues and Solutions:

- Battery Not Charging:** Check all connections to the charger and battery. Ensure the charger is compatible and functioning correctly. Verify the main switch on the battery is in the ON position.
- No Power Output:** Confirm that the battery is adequately charged. Check for any tripped circuit breakers on the battery or in the system. Inspect all cables for damage or loose connections.
- BMS Protection Activated:** The BMS protects the battery from various conditions (overcharge, deep discharge, over-current, over-temperature, low-temperature, short circuit). If the BMS activates, the battery may shut down. Identify the cause of the protection event (e.g., excessive load, extreme temperature) and rectify it.

The battery should reset automatically once the condition is resolved.

- **LCD Display Not Working:** Ensure the battery has power. If the display remains off, contact customer support.

For persistent issues or complex problems, refer to the detailed troubleshooting guide available on the ExpertPower website or contact technical support.

6. SPECIFICATIONS

Specification	Value
Brand	ExpertPower
Model Name	EP48100-2
Battery Cell Composition	Lithium (LiFePO4)
Battery Capacity	100 Amp Hours
Voltage	48V (51.2V nominal)
Energy Capacity	5KWh
Life Cycles	2500-7000 cycles
Expected Lifetime	10 Years
Item Weight	196 pounds
Product Dimensions	19 x 18.9 x 7 inches
Amperage	50 Amps
Reusability	Rechargeable
Certifications	UL1973, UL1642 (cells), UN38.3 (transport)

Make the Expert Choice



VS.



Max. 10 Batteries in Parallel

16 Cells & 5120 Wh

Max 51.2 kWh



Max. 4 Batteries in Parallel

15 Cells & 4800 Wh



Max 19.2 kWh

This image provides the dimensions of the ExpertPower EP48100 battery and highlights its safety features, including rigorous testing against puncture, short circuit, incendiary, impact, and liquid damage.

7. WARRANTY AND SUPPORT

Warranty Information:

ExpertPower provides a comprehensive warranty for its LiFePO4 batteries. Details regarding the warranty period and coverage are typically included with your product documentation or available on the official ExpertPower website. Please retain your proof of purchase for warranty claims.

Technical Support:

ExpertPower offers world-class technical support to assist with any questions or issues you may encounter. For assistance with setup, operation, troubleshooting, or general inquiries, please contact ExpertPower customer service. Contact information can be found on the product packaging or the ExpertPower official website.

The product is also backed by a 30-day easy returns policy, and customer support is available for further assistance.