ExpertPower EP12100BT

ExpertPower 12V 100Ah Lithium LiFePO4 Deep Cycle Rechargeable Battery Instruction Manual

Model: EP12100BT

1. Product Overview

The ExpertPower 12V 100Ah Lithium LiFePO4 Deep Cycle Rechargeable Battery is designed for various applications requiring reliable and long-lasting power. This battery utilizes advanced Grade A+ prismatic cells and features a built-in Battery Management System (BMS) for optimal performance and safety.
Key features include:

- **High Energy Density:** Stores significantly more energy compared to traditional lead-acid batteries.
- **Eco-Friendly:** Uses more abundant and non-toxic materials, easier to recycle.
- **Powerful:** Approximately 4 times more powerful than conventional SLA batteries.
- **Long Service Life:** Provides 2500 to 7000 cycles and an expected 10-year lifetime.
- **Lightweight:** Conveniently light, making it versatile for various uses.
- **Built-in BMS:** Protects against overcharge, deep discharge, overloading, overheating, low-temperatures, and short circuits.
- **Bluetooth Connectivity:** Allows easy monitoring of battery level and BMS status via a smartphone app.

Figure 1: ExpertPower 12V 100Ah Lithium LiFePO4 Deep Cycle Rechargeable Battery.

2. Safety Guidelines

Always adhere to safety precautions when handling batteries. Improper use can lead to damage, injury, or fire. Ensure proper ventilation during charging and operation. Do not short-circuit the battery terminals. Use only compatible chargers and controllers designed for LiFePO4 batteries.

The prismatic cells used in this battery undergo rigorous testing for resilience against various types of damage, including puncture, fire, short circuit, impact, and liquid exposure, ensuring enhanced safety and reliability.

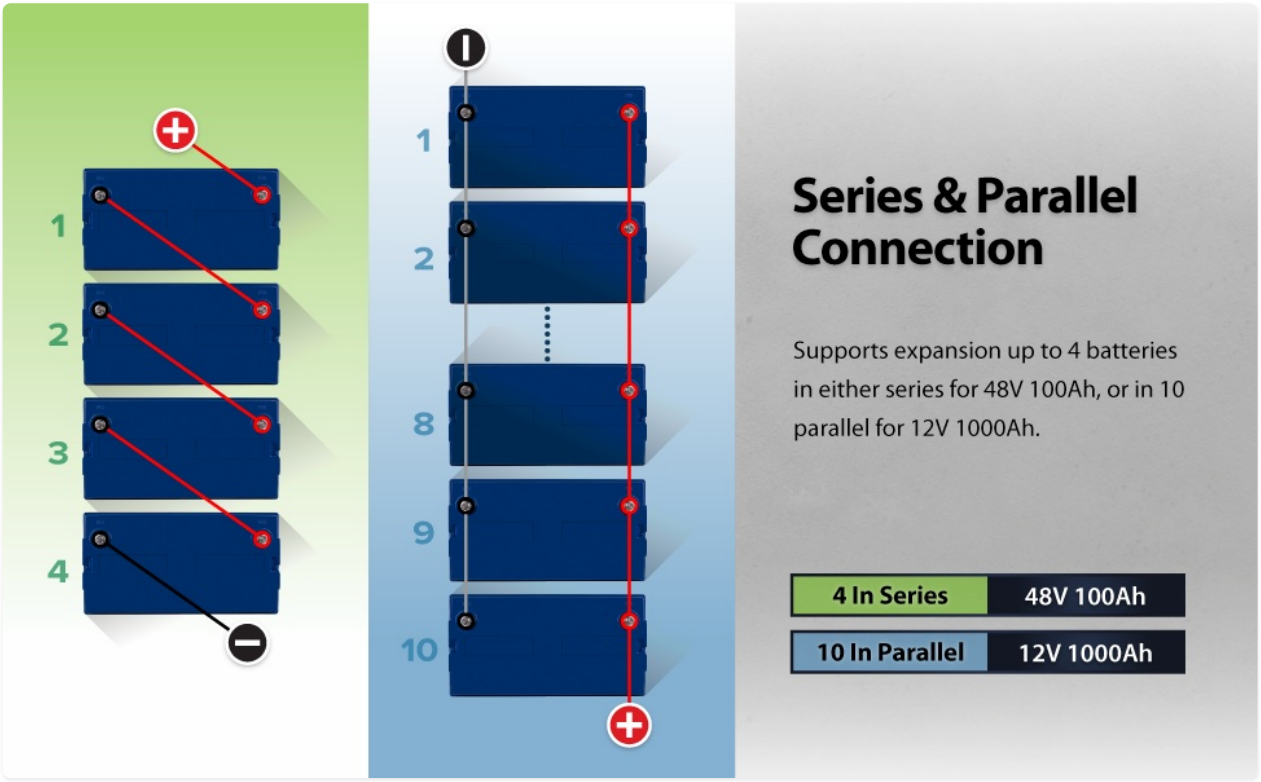

Figure 2: Rigorous testing ensures battery cell resilience.

3. Components and Features

3.1 Intelligent Battery Design with BMS

The battery incorporates an industry-leading Battery Management System (BMS) that provides accurate battery monitoring and over 20 protection parameters. These include protection against overcharge, deep discharge, overloading, overheating, low-temperatures, and short circuits. The BMS also features auto cell balancing and resistance against high currents.

Figure 3: Intelligent battery design with integrated BMS.

3.2 Bluetooth Connectivity

The built-in Bluetooth feature allows users to easily track the battery level and BMS status on their smartphone using the dedicated app. This provides real-time data for optimal management.

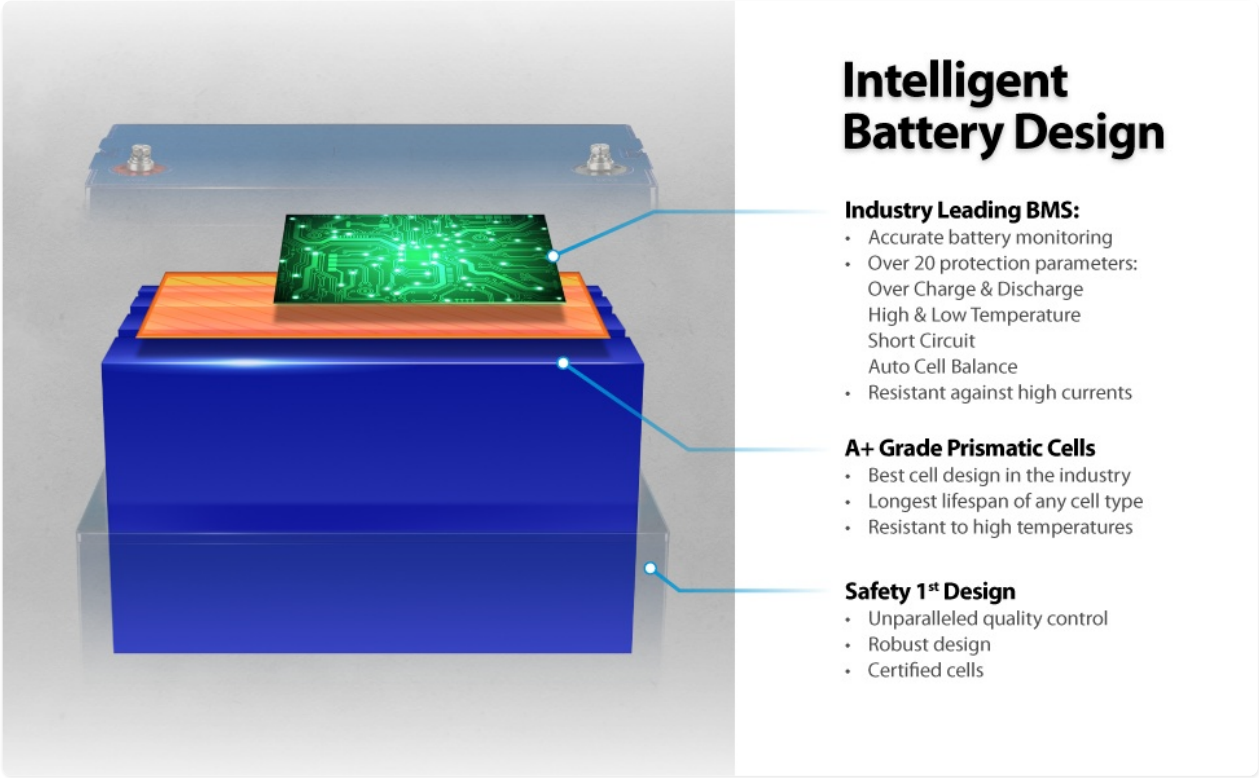

Figure 4: Monitor battery status with the Bluetooth app.

4. Setup and Installation

4.1 Series and Parallel Connection

The ExpertPower LiFePO4 battery supports expansion for increased voltage or capacity. Up to 2 batteries can be connected in series for a 24V 100Ah system, or a maximum of 10 batteries can be connected in parallel for a 12V 1000Ah system. Always ensure proper wiring and consult a professional if unsure.

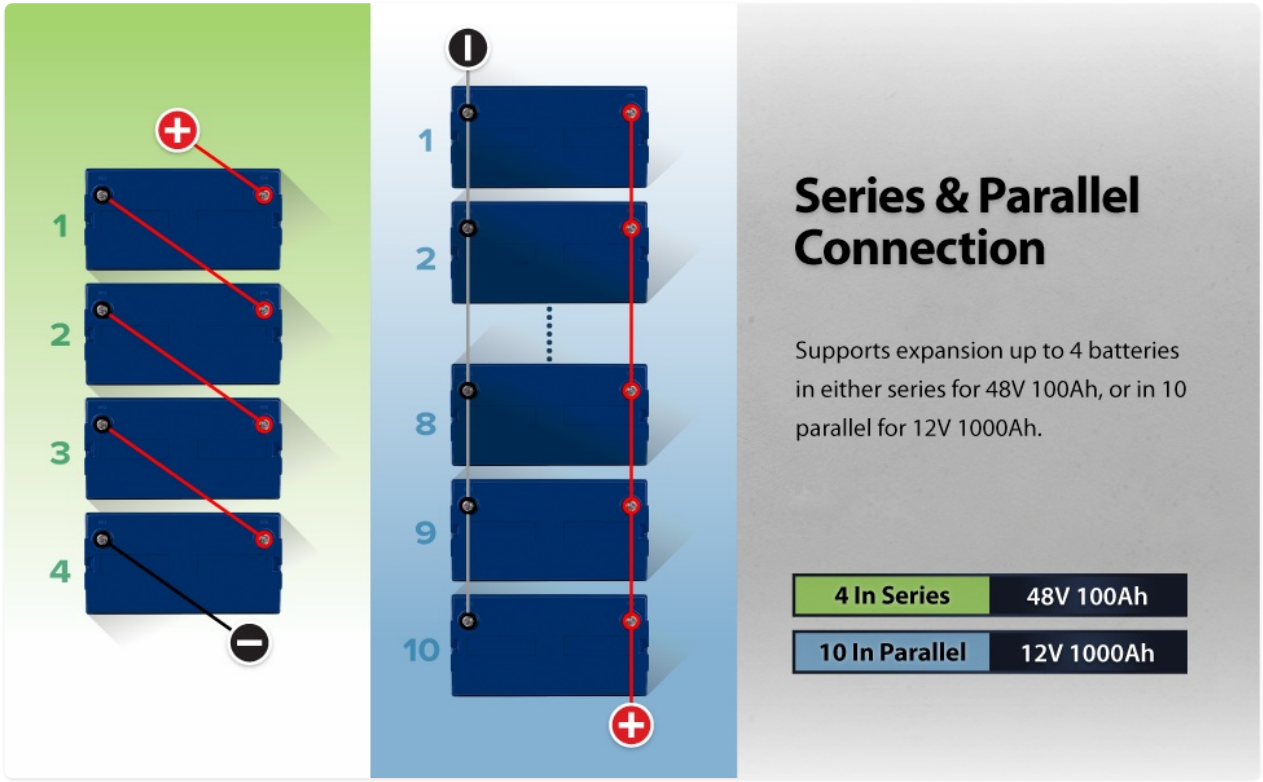

Figure 5: Series and Parallel Connection Options.

4.2 Charging Methods

The battery can be charged using solar power or an AC adapter. Ensure that any charging equipment used is compatible with LiFePO4 batteries.

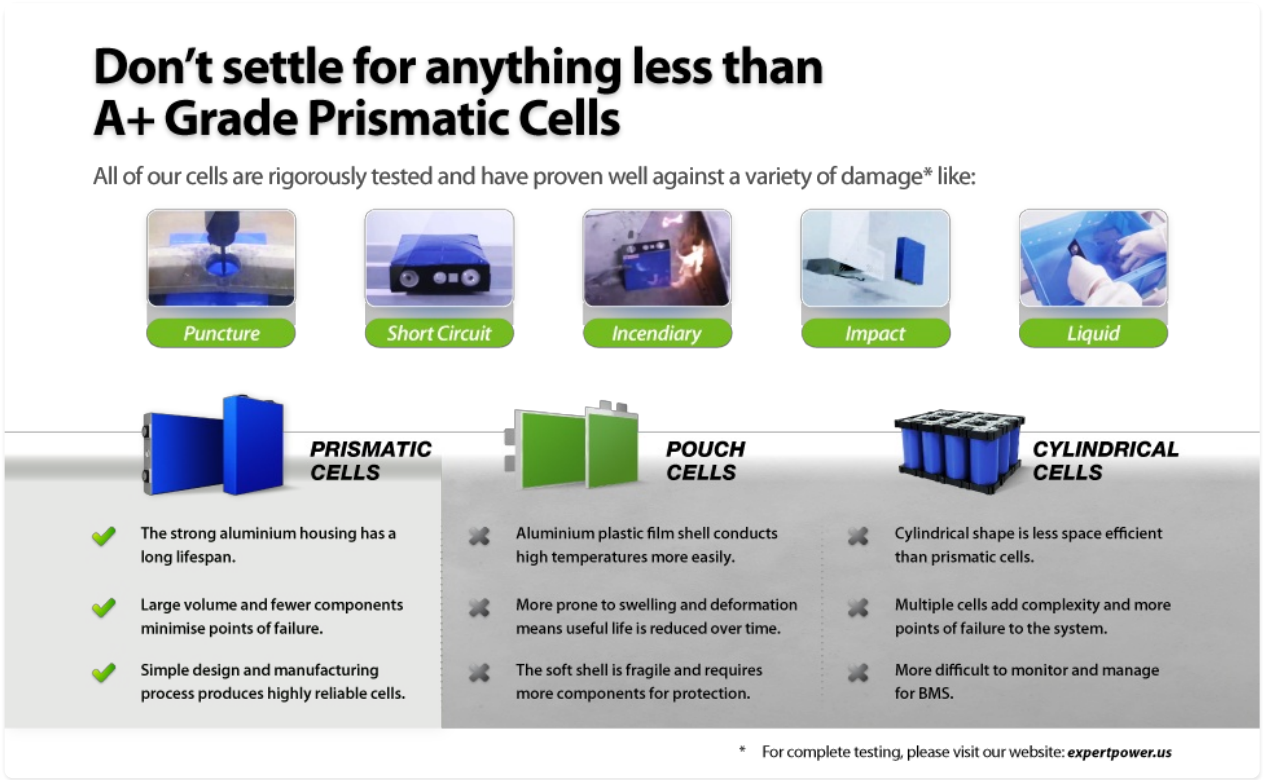

Figure 6: Solar Charging Setup.

Figure 7: AC Adapter Charging Setup.

4.3 Connection Diagram Example (RV/Camper Solar System)

For RV, camper, solar, overland, or off-grid applications, a typical setup involves connecting the battery to a solar panel via a solar charge controller, and potentially an inverter charger for AC loads. Shore power can also be used to charge the battery through the inverter charger.

Your browser does not support the video tag.

Video 1: ExpertPower Solar Kits - This video demonstrates a typical connection diagram for a solar power system in an RV or similar setup, showing how the battery integrates with solar panels, charge controllers, and inverter chargers.

5. Operation

Once installed and charged, the battery is ready for use. Monitor its status using the Bluetooth app to ensure optimal performance and to track charge levels, voltage, current, and cell health. The battery is suitable for various applications including trolling motors, home backup, RV/camper power, and DIY solar projects.

Figure 8: Versatile applications of the ExpertPower LiFePO4 battery.

6. Maintenance and Storage

LiFePO4 batteries require minimal maintenance. They have a low self-discharge rate, losing approximately 2% charge per month. A fully charged LiFePO4 battery can potentially hold a charge for up to 1 year when stored properly. Store the battery in a cool, dry place away from direct sunlight and extreme temperatures.

Figure 9: Low Self-Discharge Rate of LiFePO4 Batteries.

7. Troubleshooting

If you encounter issues with your ExpertPower LiFePO4 battery, consider the following:

- **No Power Output:** Check all connections for tightness and corrosion. Ensure the battery is adequately charged. Verify that the BMS has not activated a protection mode (e.g., due to over-discharge or over-current) using the Bluetooth app.
- **Charging Issues:** Confirm that your charger is compatible with LiFePO4 batteries and is functioning correctly. Check charging cables and connections. Ensure the ambient temperature is within the recommended charging range.
- **Bluetooth Connectivity Problems:** Ensure Bluetooth is enabled on your device and the battery is within range. Restart the app or your device if necessary.
- **Reduced Performance:** Over time, battery capacity may slightly decrease. Ensure the battery is not consistently over-discharged or exposed to extreme conditions.

For persistent issues, refer to the detailed specifications or contact ExpertPower customer support.

8. Specifications

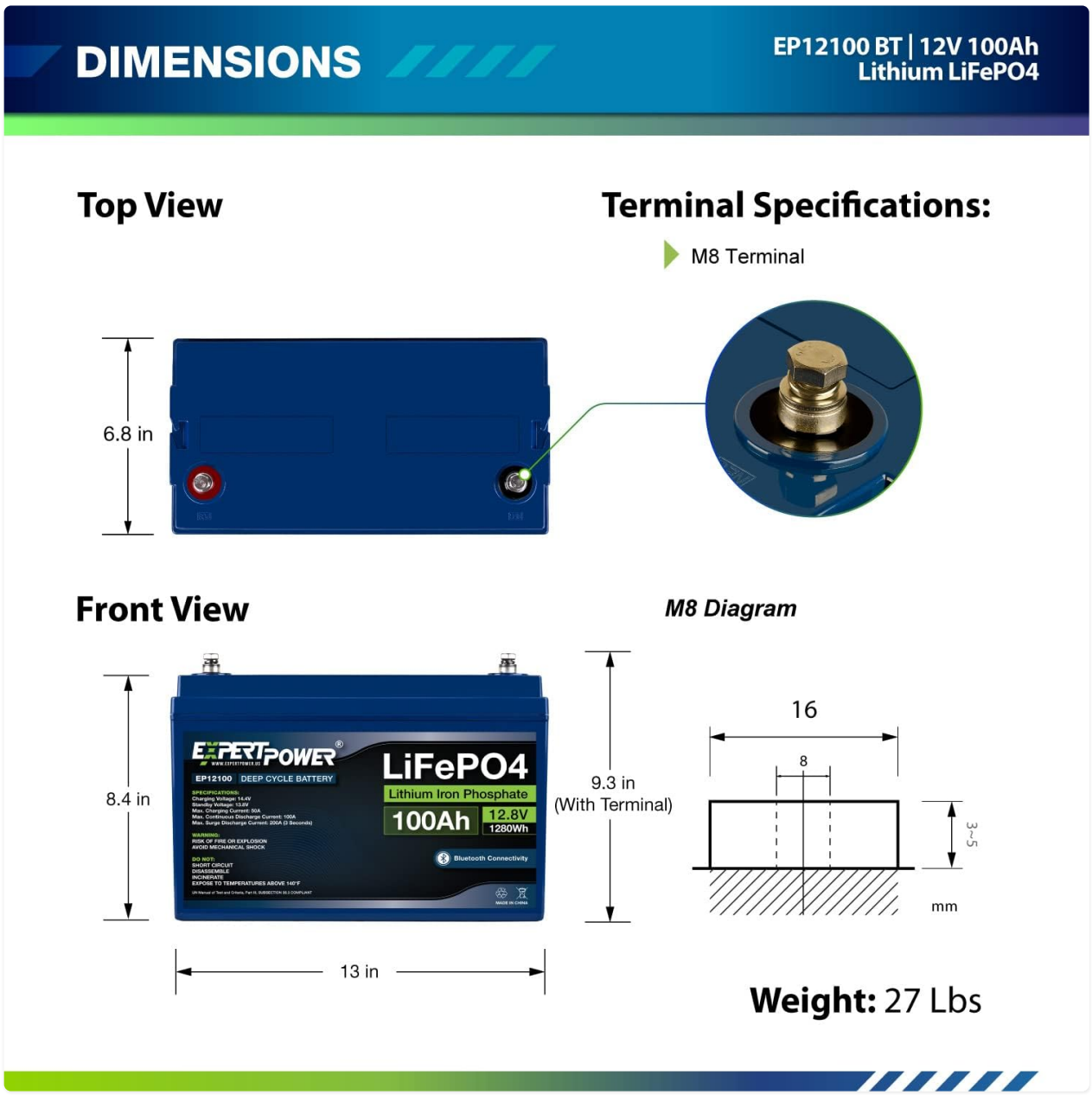

Figure 10: Product Dimensions and Terminal Specifications.

Specification	Value
Brand	ExpertPower
Model	EP12100BT
Battery Cell Composition	Lithium Iron Phosphate (LiFePO4)
Voltage	12.8 Volts (DC)
Battery Capacity	100 Amp Hours
Amperage	50 Amps
Product Dimensions	6.8"D x 13"W x 8.4"H
Terminal Type	M8

Specification	Value
Item Weight	25 lbs (approx. per battery)
Life Cycles	2500-7000
Expected Lifetime	10 Years
UPC	840140941937

9. Warranty and Support

ExpertPower offers an unwavering warranty and world-class technical support for their LiFePO4 batteries. For specific warranty details and to access technical assistance, please refer to the official ExpertPower website or contact their customer service directly. The seller, ExpertPower Direct, provides 30-day easy returns and customer support.
For further information or assistance, please visit theExpertPower Store on Amazon.