

Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

manuals.plus /

- › [Power Queen](#) /
- › [Power Queen 12.8V 100Ah Group 31 LiFePO4 Battery User Manual](#)

Power Queen P-12V-100AH

Power Queen 12.8V 100Ah Group 31 LiFePO4 Battery User Manual

Model: P-12V-100AH

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your Power Queen 12.8V 100Ah Group 31 LiFePO4 Battery. Please read this manual thoroughly before installation and use to ensure optimal performance and longevity of your battery. This battery is designed for deep cycle applications and is not intended for engine starting.

2. SAFETY INFORMATION

Observe the following safety precautions to prevent injury or damage to the battery and connected equipment:

- Always wear appropriate personal protective equipment (PPE), including safety glasses and gloves, when handling batteries.
- Do not short-circuit the battery terminals.
- Do not expose the battery to fire, excessive heat, or direct sunlight.
- Do not immerse the battery in water or other liquids.
- Ensure proper ventilation when charging or discharging the battery.
- Use only compatible LiFePO4 chargers with appropriate voltage and current settings (e.g., 14.6V 20A).
- Keep the battery away from children and pets.
- Do not attempt to open or disassemble the battery. Internal components are not user-serviceable.
- This battery is an energy storage battery, not a starting battery. Do not use it to start engines or golf carts.

3. PRODUCT OVERVIEW

The Power Queen 12.8V 100Ah LiFePO4 battery is a high-performance, lightweight, and durable power solution for various applications. It features a built-in Battery Management System (BMS) for enhanced safety and longevity.

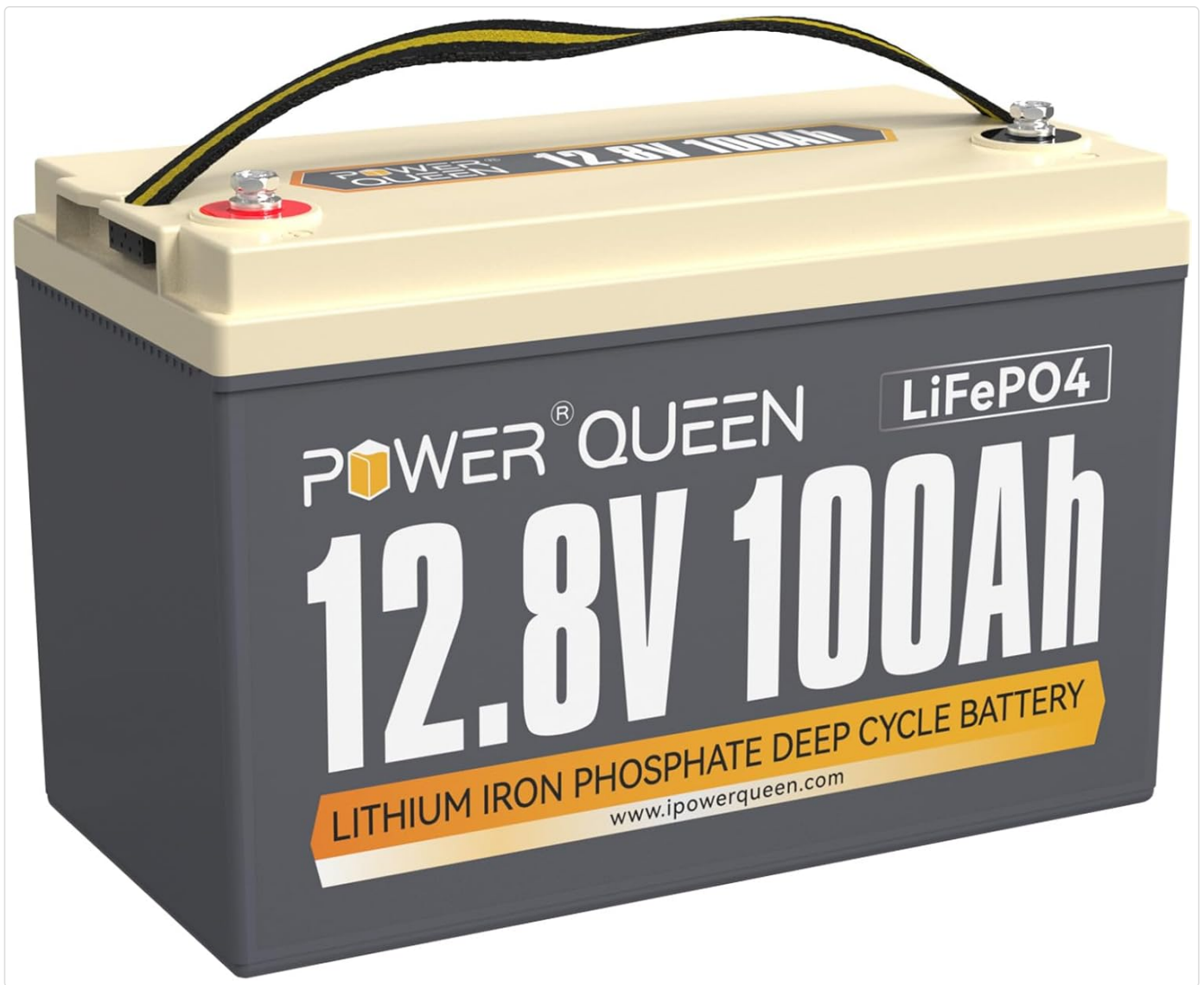


Image 3.1: Front view of the Power Queen 12.8V 100Ah LiFePO4 Battery.

Key Features:

- **Compact and Lightweight:** Weighs approximately 24.25 lbs, significantly lighter than traditional lead-acid batteries. Dimensions: L13 W6.77 H8.43 inches.
- **Built-in 100A BMS:** Protects against overcharge, over-discharge, over-current, and short circuits, ensuring battery safety and extending lifespan.
- **Long Cycle Life:** Offers 4000+ cycles at 100% Depth of Discharge (DoD), 6000+ cycles at 80% DoD, and 15000+ cycles at 60% DoD.
- **High Energy Density:** Provides 1280Wh of energy.
- **Expandable Capacity:** Supports series connections up to 4S (48V/51.2V) and parallel connections up to 4P (400Ah) for increased voltage or capacity.
- **Eco-Friendly:** Lithium Iron Phosphate (LiFePO4) chemistry is safer and more environmentally friendly.

DEEP CIRCULATION PERSISTENCE EXPERIENCE

Next Level Of BMS & EV-Grade A Cell

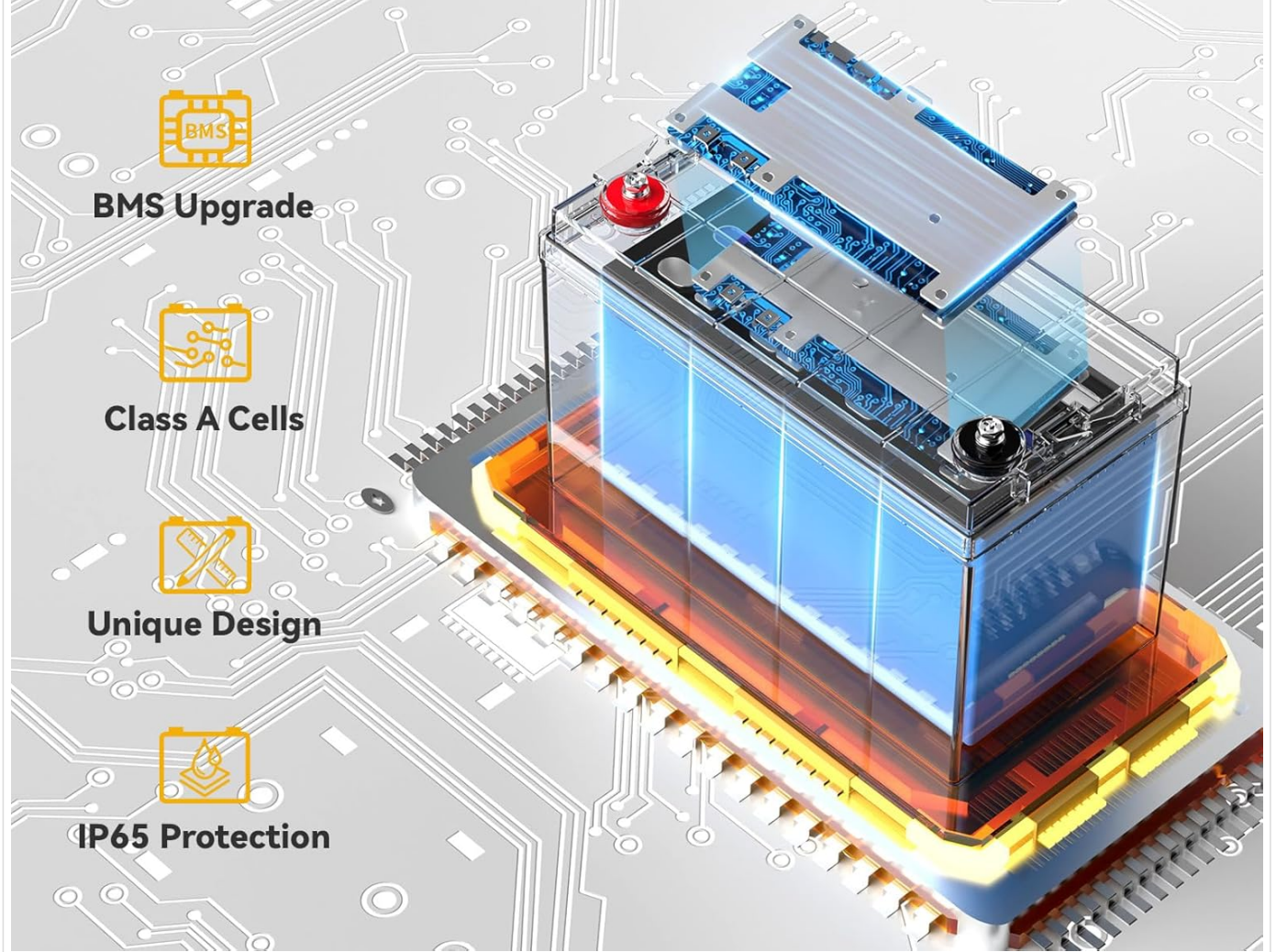


Image 3.2: Illustration of the internal Battery Management System (BMS) and EV-grade cells.

4. WHAT'S IN THE BOX

Upon unpacking, verify that all items are present and undamaged:

- 1 x Power Queen 12.8V 100Ah Group 31 LiFePO4 Battery
- M8 - 35/64" (14MM) Terminal Bolts
- 2 x Insulating Caps for Bolts
- Product Instruction Manual (this document)

5. SETUP

5.1 Initial Inspection

Before connecting, inspect the battery for any visible damage. Ensure terminals are clean and free of debris.

5.2 Terminal Connection

Connect the battery to your system using the provided M8 terminal bolts. Ensure connections are secure to prevent loosening or overheating. If using OT terminals directly with screws less than 2mm thick, add gaskets to ensure secure attachment.



Image 5.1: M8 terminal screw and battery dimensions.

5.3 Charging Instructions

For optimal performance and lifespan, charge the battery using a dedicated 14.6V 20A LiFePO4 battery charger. A full charge typically takes approximately 5 hours. Avoid using chargers designed for lead-acid batteries.

6. OPERATING INSTRUCTIONS

6.1 Series and Parallel Connections

The Power Queen 12.8V 100Ah battery can be connected in series or parallel to achieve higher voltage or capacity:

- **Parallel Connection (4P):** Connect up to four batteries in parallel to achieve a maximum capacity of 400Ah at 12.8V. This

increases the total available energy while maintaining the nominal voltage.

- **Series Connection (4S):** Connect up to four batteries in series to achieve a maximum voltage of 48V (51.2V nominal). This increases the system voltage while maintaining the nominal capacity of a single battery.
- **Series and Parallel (4P4S):** For advanced systems, batteries can be configured in both series and parallel to achieve higher voltage and capacity, up to 48V and 400Ah (20.48 kWh).

Always ensure all batteries in a series or parallel bank are of the same type, capacity, and state of charge before connecting. Consult a qualified electrician for complex configurations.



Image 6.1: Example of a solar home system utilizing multiple Power Queen batteries for flexible capacity expansion.

6.2 Recommended Applications

This battery is suitable for a wide range of deep cycle applications, including:

- Recreational Vehicles (RVs)
- Solar Energy Storage Systems
- Off-Grid Power Systems

- Marine Applications (e.g., trolling motors)
- Electric Scooters and Handicap Mobility Devices

ENRICH YOUR RV LIVING WHERE POWER MEETS ADVENTURE



1280Wh Energy



COFFEE MAKER (200W)

6.4Hours



TOASTER (750W)

1.7Hours



ELECTRIC KETTLE (800W)

1.6Hours



REFRIGERATOR (80W)

16Hours

Image 6.2: Battery providing power for various appliances in an RV setting.

EFFORTLESSLY LIGHT BRIMMING WITH BOUNDLESS ENERGY



Image 6.3: Battery providing power for a trolling motor on a kayak.

7. MAINTENANCE

LiFePO4 batteries require minimal maintenance compared to lead-acid batteries. Follow these guidelines for optimal performance:

- **Regular Inspection:** Periodically check battery terminals for corrosion or loose connections. Clean as necessary.
- **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.
- **Charging:** Always use a compatible LiFePO4 charger. Avoid overcharging or undercharging. The built-in BMS will manage these aspects, but using the correct charger is crucial.
- **Temperature:** Operate the battery within its specified temperature range. Avoid extreme hot or cold conditions.

8. TROUBLESHOOTING

The integrated 100A BMS (Battery Management System) is designed to protect the battery from common issues. If you experience problems, consider the following:

- **No Power Output:** Check all connections for tightness and proper polarity. Ensure the battery is adequately charged. The BMS may have activated a protection mode (e.g., over-discharge).
- **Charging Issues:** Verify that the charger is specifically designed for LiFePO4 batteries and that its voltage and current settings are correct (e.g., 14.6V 20A). Check the charger's indicator lights for error codes.
- **Overheating:** Ensure proper ventilation around the battery. If terminals or cables are hot, check for loose connections or undersized wiring. If OT terminals are attached directly with screws and their thickness is less than 2mm, add gaskets to ensure secure attachment and prevent loosening or overheating.
- **BMS Protection Activation:** The BMS protects against overcharge, over-discharge, over-current, and short circuits. If the battery stops functioning, it might be due to one of these protections. Disconnect the load/charger, wait a few minutes, and then attempt to reconnect or charge.

If issues persist, contact Power Queen customer service for assistance.

9. SPECIFICATIONS

Specification	Value
Model Number	P-12V-100AH
Nominal Voltage	12.8V
Nominal Capacity	100Ah
Energy	1280Wh
Battery Type	LiFePO4 (Lithium Iron Phosphate)
Built-in BMS	100A
Cycle Life (100% DoD)	4000+ cycles
Cycle Life (80% DoD)	6000+ cycles
Cycle Life (60% DoD)	15000+ cycles
Dimensions (L x W x H)	13 x 6.77 x 8.43 inches (330 x 172 x 214 mm)
Weight	24.25 lbs (11 kg)
Terminal Type	M8
Series/Parallel Capability	Up to 4S4P
Certification	UL2271

10. WARRANTY AND SUPPORT

The Power Queen 12.8V 100Ah LiFePO4 battery is designed for a long operational lifespan, with an expected service life of 10 years under typical usage conditions. For specific warranty details, technical support, or service inquiries, please contact Power Queen customer service directly. Refer to the official Power Queen website or your purchase documentation for contact information.

