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Dyness AR1.2-MINI TM

Dyness 12V 100Ah Mini LiFePO4 Battery Instruction Manual

INTRODUCTION

This manual provides essential information for the safe and efficient use of your Dyness 12V 100Ah Mini LiFePO4 Deep Cycle Lithium Battery (Model AR1.2-MINI TM). This compact and lightweight battery is engineered with premium A+ Grade LiFePO4 cells, offering superior energy density, a long lifespan, and reliable performance across various applications. It features advanced safety mechanisms including a built-in 100A Battery Management System (BMS) and low-temperature protection.

The Dyness LiFePO4 battery is designed for durability and versatility, making it an ideal power solution for outdoor adventures and everyday use in demanding environments.

WHAT'S IN THE Box

Upon opening your Dyness 12V 100Ah Mini LiFePO4 Battery package, you should find the following items:

- Dyness 12V 100Ah Mini LiFePO4 Battery (Model AR1.2-MINI TM)
- User Manual
- Terminal Bolts (M8*16mm) x2

Please inspect all components for any signs of damage. If any items are missing or damaged, please contact Dyness customer support immediately.



Image: Dyness 12V 100Ah Mini LiFePO4 Battery showing its compact dimensions (10.23 x 6.61 x 8.22 inches) and included M8 terminal bolts.

Video: An unboxing and introduction to the Dyness LiFePO4 battery, demonstrating its contents and initial setup.

SETUP

Proper setup is crucial for the safe and optimal performance of your battery. Always ensure you wear insulating gloves during installation and wiring.

Connecting Terminals

1. Remove the protective caps from the positive (+) and negative (-) terminals.
2. Place the cable lug onto the terminal post.
3. Secure the connection using the provided M8 terminal bolts, ensuring they are properly tightened to prevent loose connections.
4. Ensure correct polarity: connect the positive (+) terminal to the positive lead and the negative (-) terminal to the negative lead.

Series-Parallel Combination

The Dyness 12V 100Ah Mini LiFePO4 battery supports both series and parallel connections to achieve higher voltage or capacity. For optimal performance and safety, ensure all batteries in a series or parallel bank are of the same model, capacity, and age.

- **Parallel Connection (4P):** Connect up to 4 batteries in parallel to increase total capacity (e.g., 12.8V 400Ah, 5120Wh total power).
- **Series Connection (4S):** Connect up to 4 batteries in series to increase total voltage (e.g., 51.2V 100Ah, 5120Wh total power).
- **Series-Parallel Connection (4P4S):** For maximum power, combine up to 4 batteries in series and 4 in parallel (e.g., 51.2V 400Ah, 20.48kWh total power).

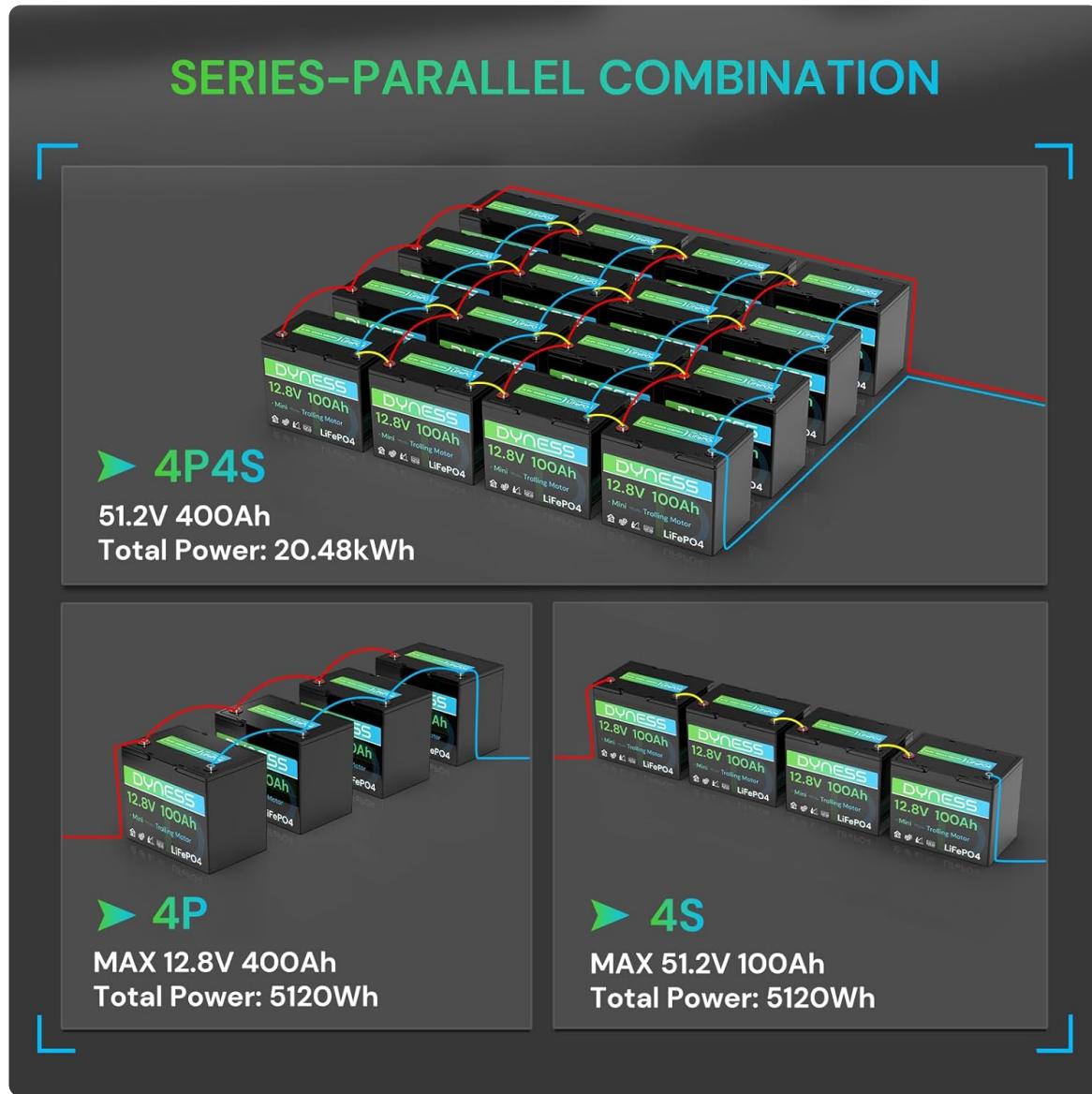


Image: Diagram illustrating various series and parallel connection configurations for Dyness LiFePO4 batteries to achieve different voltage and capacity requirements.

Video: A detailed overview of the Dyness 12V 100Ah Mini LiFePO4 Battery, including its features and potential applications in various setups.

OPERATING

The Dyness 12V 100Ah Mini LiFePO4 battery is designed for a wide range of deep cycle applications,

providing stable and long-lasting power.

Recommended Applications:

- **Trolling Motors:** Ideal for powering trolling motors on boats, offering extended runtime and lightweight portability.
- **RVs and Campers:** Provides reliable power for recreational vehicles, ensuring comfort and convenience on the go.
- **Solar Off-Grid Systems:** Excellent for storing energy generated by solar panels in remote or off-grid setups.
- **Home Energy Storage:** Can be integrated into home backup power systems.
- **Small Golf Carts:** Suitable for powering small electric golf carts.

This battery is not intended for use as a starting battery for internal combustion engines.

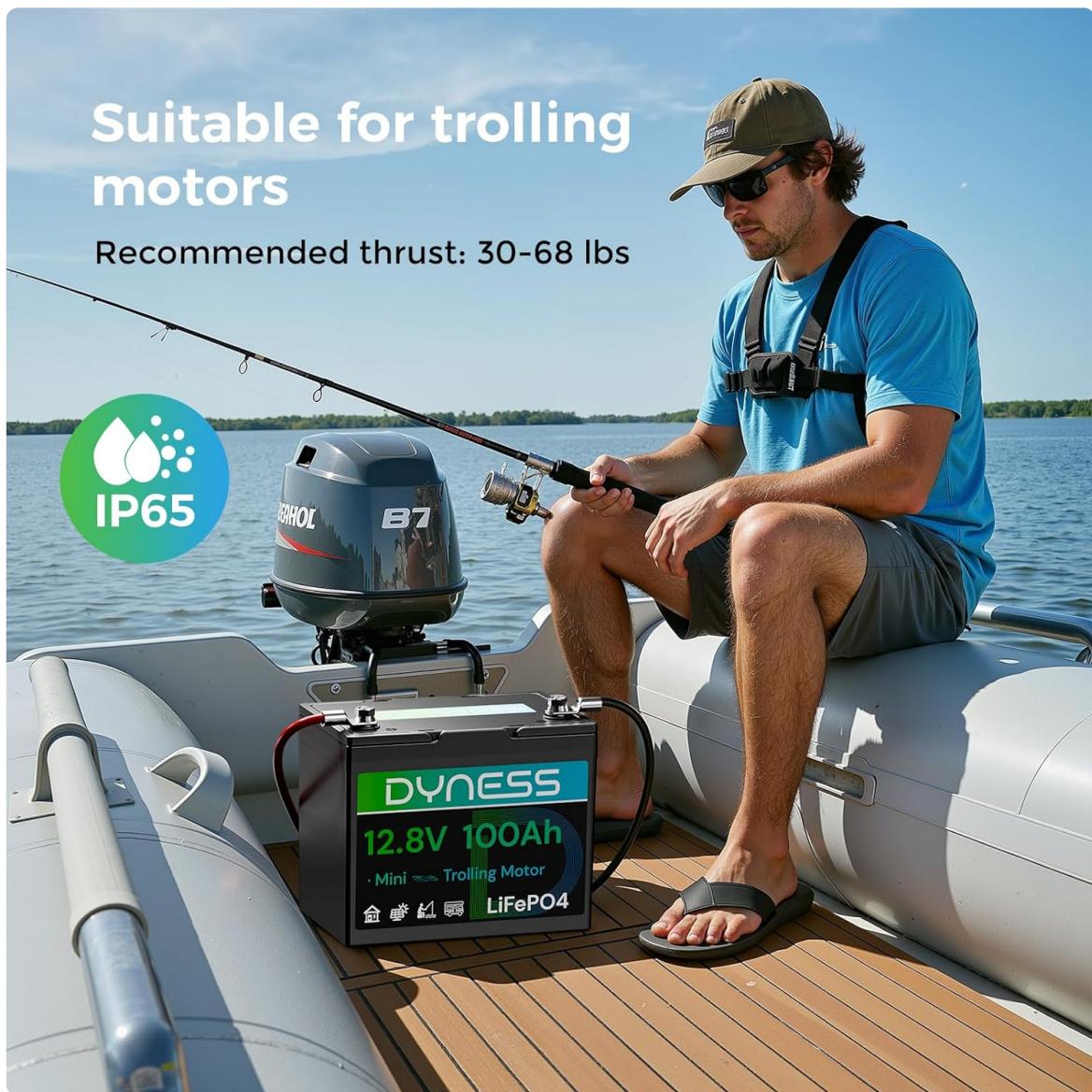


Image: The Dyness 12V 100Ah Mini LiFePO4 Battery installed in a boat, providing power to a trolling motor, highlighting its suitability for marine applications.

COMPACT 12V 100Ah LiFePO4 BATTERY:

Lightweight, Space-Saving for RVs



Image: The compact Dyness 12V 100Ah Mini LiFePO4 Battery fits easily into an RV storage compartment, demonstrating its space-saving design for recreational vehicles.

Video: Demonstrates the Dyness 12V 100Ah Mini Lithium Battery in action, powering a trolling motor, showcasing its performance and ease of use in a marine setting.

MAINTENANCE

To ensure the longevity and optimal performance of your Dyness LiFePO4 battery, follow these maintenance guidelines:

Low-Temperature Protection

The battery is equipped with an intelligent low-temperature protection system:

- **Charging Cut-off:** Automatically disconnects from charging when the cell temperature drops below 32°F (0°C).
- **Discharging Cut-off:** The discharging cut-off temperature is -4°F (-20°C).
- **Charging Recovery:** Charging resumes automatically when the temperature rises to 41°F (5°C).

Advanced BMS Protection

The built-in Battery Management System (BMS) provides comprehensive protection against:

- Overcharging
- Over-discharging
- Over-current
- Overheating
- Short circuits

Additionally, the battery is designed to be Dustproof, IP65 Waterproof, and Salt spray proof, making it suitable for harsh environments.

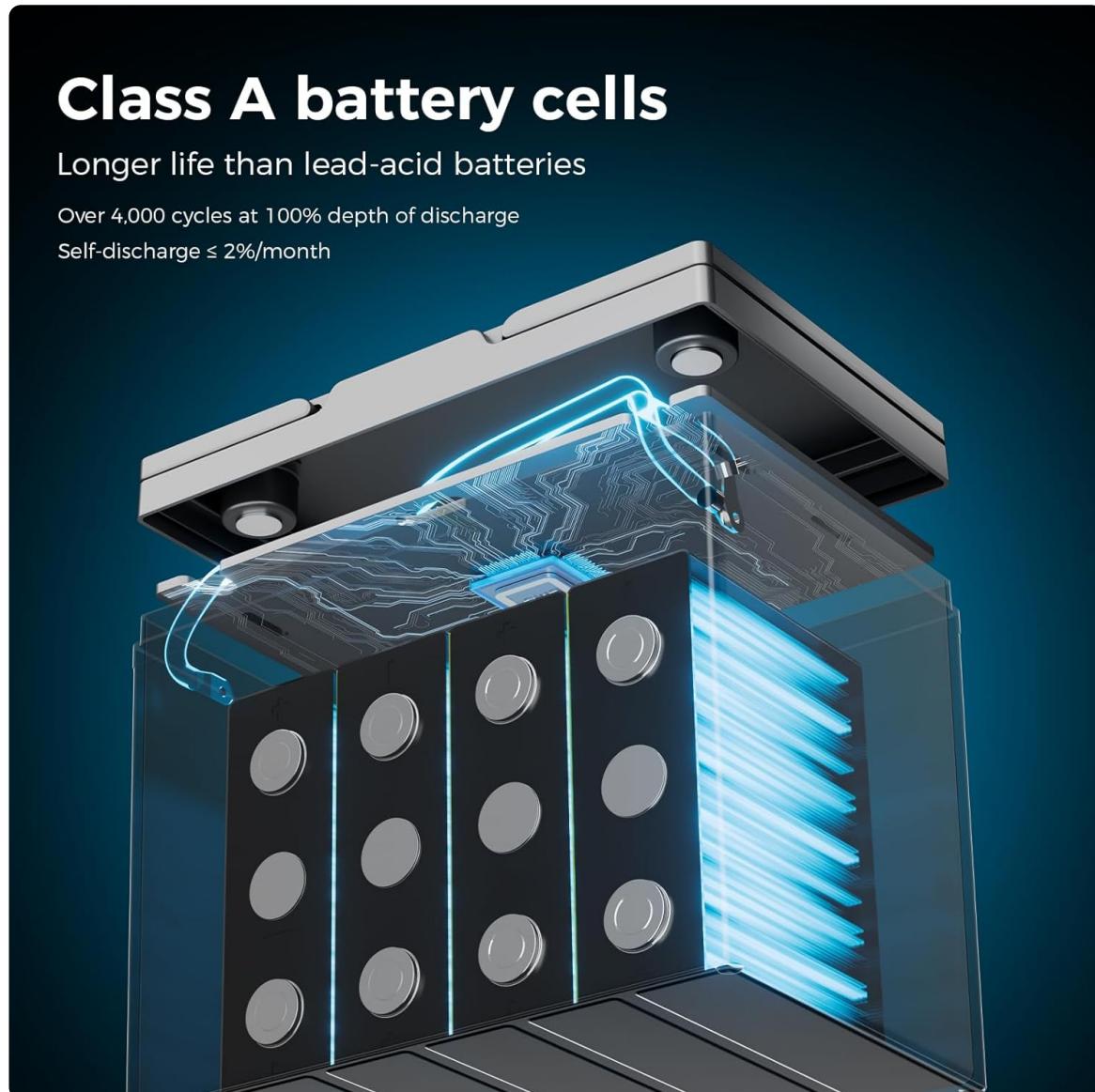


Image: Graphic illustrating the low-temperature protection features of the Dyness LiFePO4 battery, including charging and discharging cut-off temperatures.

TROUBLESHOOTING

The Dyness LiFePO4 battery's advanced BMS is designed to prevent most common issues. If the battery unexpectedly stops functioning, check the following:

- **No Output:** The BMS may have activated a protection mode (e.g., over-discharge, over-current,

short circuit). Disconnect the load and attempt to recharge the battery with a compatible LiFePO4 charger.

- **No Charging:** The BMS may have activated overcharge protection or low-temperature charging cut-off. Ensure the charger is compatible and the ambient temperature is above 32°F (0°C).
- **Reduced Performance:** Check all connections for tightness and corrosion. Ensure the battery is not operating outside its recommended temperature range.

If issues persist after basic troubleshooting, please contact Dyness customer support for assistance.

SPECIFICATIONS

Specification	Value
Model	AR1.2-MINI TM
Nominal Voltage	12.8 Volts
Rated Capacity	100Ah
Rated Energy	1280Wh
Item Weight	21.3 pounds
Product Dimensions	10.23 x 6.61 x 8.22 inches
Battery Cell Composition	Lithium Iron Phosphate (LiFePO4)
BMS	Built-in 100A
Low-Temp Protection	Yes
Deep Cycles	Up to 6000+ (at 80% DoD)
Lifespan	Up to 10 years

WARRANTY

The Dyness 12V 100Ah Mini LiFePO4 Battery is engineered for a long lifespan of up to 10 years and supports over 6000+ deep cycles at 80% Depth of Discharge (DoD).

Dyness provides a 5-year post-sales service for this product. For detailed warranty terms and conditions, please refer to the warranty card included in your product packaging or contact customer support.

SUPPORT

For any product-related issues, technical assistance, or questions, the Dyness support team is available to help. We provide professional technical support and online customer service with fast responses within 24 hours.

Please do not hesitate to contact us directly through the provided contact information in your user manual or via the Dyness official website.