POWERWIN BT100 12V 100Ah LiFePO4 Deep Cycle Battery User Manual

Comprehensive guide for the setup, operation, and maintenance of your POWERWIN BT100 LiFePO4 battery.

1. Setup and Initial Connection

Before using your POWERWIN BT100 LiFePO4 battery, please follow these steps to ensure proper setup and safe operation. It is crucial to fully charge the battery before its first use to optimize performance and longevity.

1.1 Initial Inspection

Upon receiving your battery, carefully inspect it for any signs of physical damage. Ensure all terminals are clean and free from debris.

Figure 1: Front view of the POWERWIN BT100 LiFePO4 battery, showing its compact design and integrated handle.

1.2 Battery Preparation and Charging

It is recommended to fully charge the battery using an approved LiFePO4 charger before initial use. For 12V batteries, use a charger with a rated voltage of around 14.6V. For 24V batteries, use a charger with a rated voltage of around 29.2V. For 36V batteries, use a charger with a rated voltage of around 43.8V. For 48V batteries, use a charger with a rated voltage of around 58.4V.

Batteries cannot be charged below 0°C/32°F; please place the battery in a warm environment and warm up to 0°C/32°F before charging.

Do not short circuit, squeeze, disassemble, or incinerate the battery.

1.3 Connecting to a Solar Charge Controller (MPPT)

When connecting the battery to a solar charge controller (MPPT), ensure all fuses are open before making connections. Connect the positive terminal of the battery to the positive input of the MPPT controller, and the negative terminal to the negative input. Secure all connections tightly.

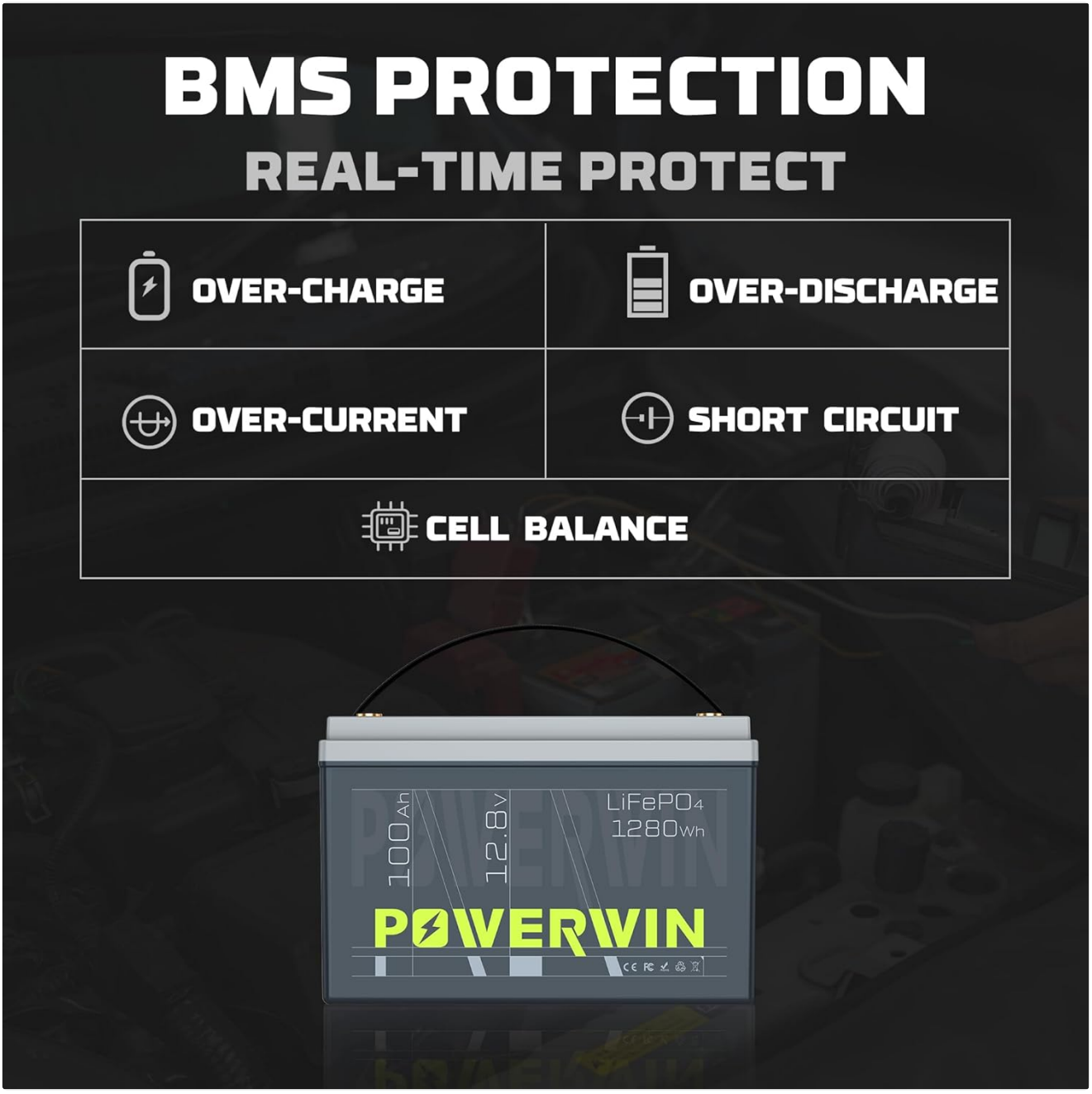

Figure 2: Diagram illustrating the connection of the BT100 battery to an MPPT solar charge controller.

1.4 Series and Parallel Connections

The BT100 Battery supports up to 4S (series) and 4P (parallel) configurations simultaneously, or individual setups of 4S or 8P, delivering higher power output for optimal performance and expanded capacity. Always ensure all batteries have the same specifications and capacity when connecting in series or parallel.

Figure 3: Visual guide for connecting multiple BT100 batteries in series for increased voltage or in parallel for increased capacity.

1.5 Setup Videos

How to connect MPPT?

Your browser does not support the video tag.

This video provides a detailed guide on how to properly connect your POWERWIN battery to an MPPT solar charge controller, ensuring efficient power transfer and battery health.

How to connect batteries in parallel

Your browser does not support the video tag.

Learn the correct procedure for connecting multiple BT100 batteries in parallel to increase your system's overall capacity.

BT100 batteries can be connected in series or in parallel

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This video demonstrates the versatility of BT100 batteries, showing how they can be configured for both series and parallel applications.

P20 charges the battery.

Your browser does not support the video tag.

A quick demonstration of how the P20 charger effectively charges the POWERWIN BT100 battery.

2. Operating the Battery

The POWERWIN BT100 LiFePO4 battery is designed for versatile applications, providing reliable power across various scenarios.

2.1 Versatile Applications

This 12V 100Ah LiFePO4 battery is ideal for solar power storage, RV camping, boating, marine, and off-grid systems. Its lightweight design allows for easy installation, portability, and flexibility to meet diverse power needs. Use it for fishing finders, ice fishing, camping trips, or as a backup power source for homes, offices, or solar-powered cabins.

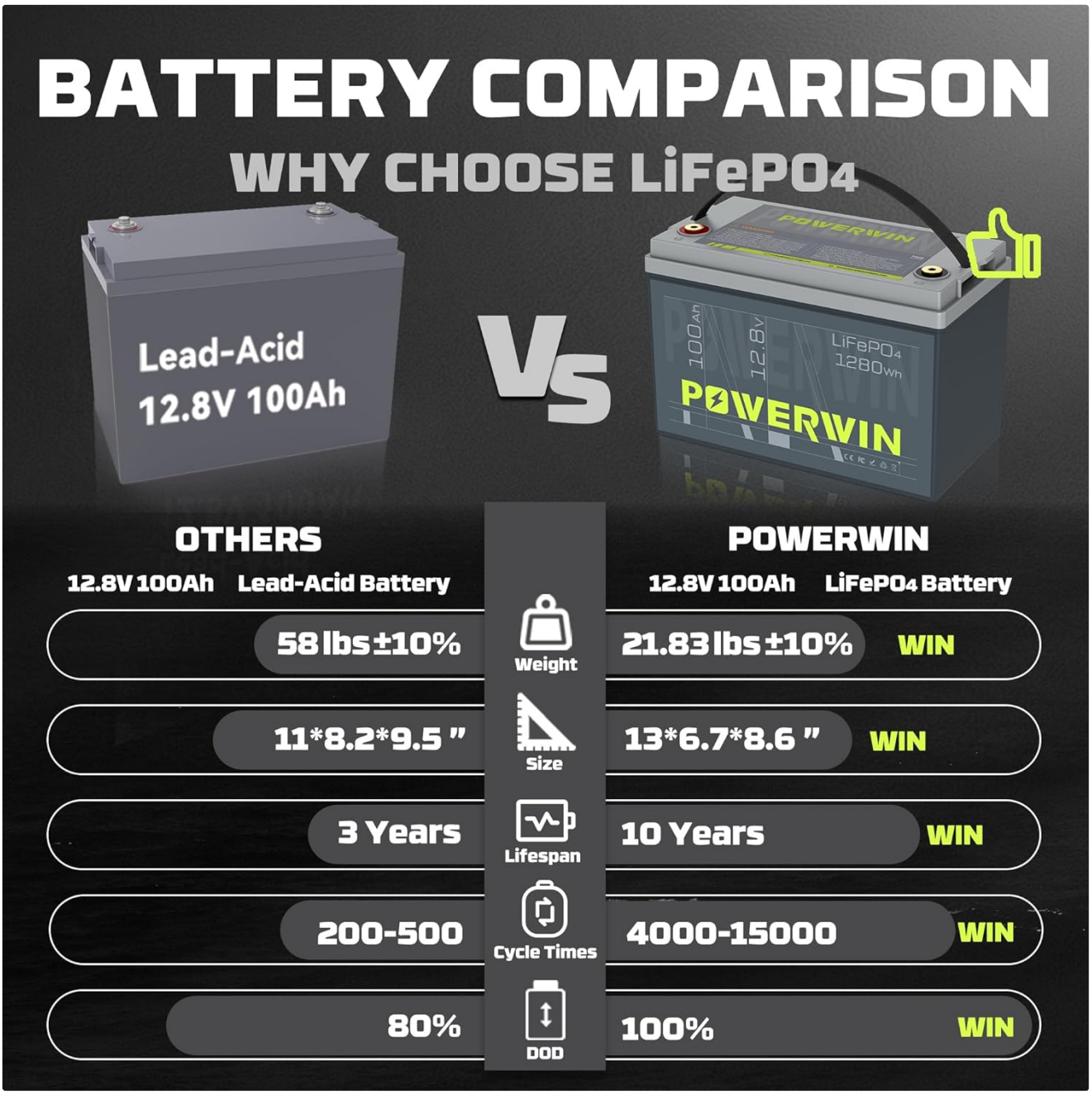

Figure 4: Examples of the BT100 battery being used in RVs, solar systems, marine applications, and for trolling motors.

2.2 Advanced Battery Management System (BMS)

The built-in 100A Battery Management System (BMS) ensures superior safety and optimal performance. It provides comprehensive protection against:

- **Overcharge Protection:** Prevents damage from excessive charging voltage.
- **Over-discharge Protection:** Protects the battery from being drained too low, extending its lifespan.
- **Short-circuit Protection:** Automatically cuts off power in case of a short circuit.
- **Overcurrent Protection:** Safeguards against excessive current draw.
- **Cell Balance:** Ensures all cells within the battery are balanced for consistent performance.

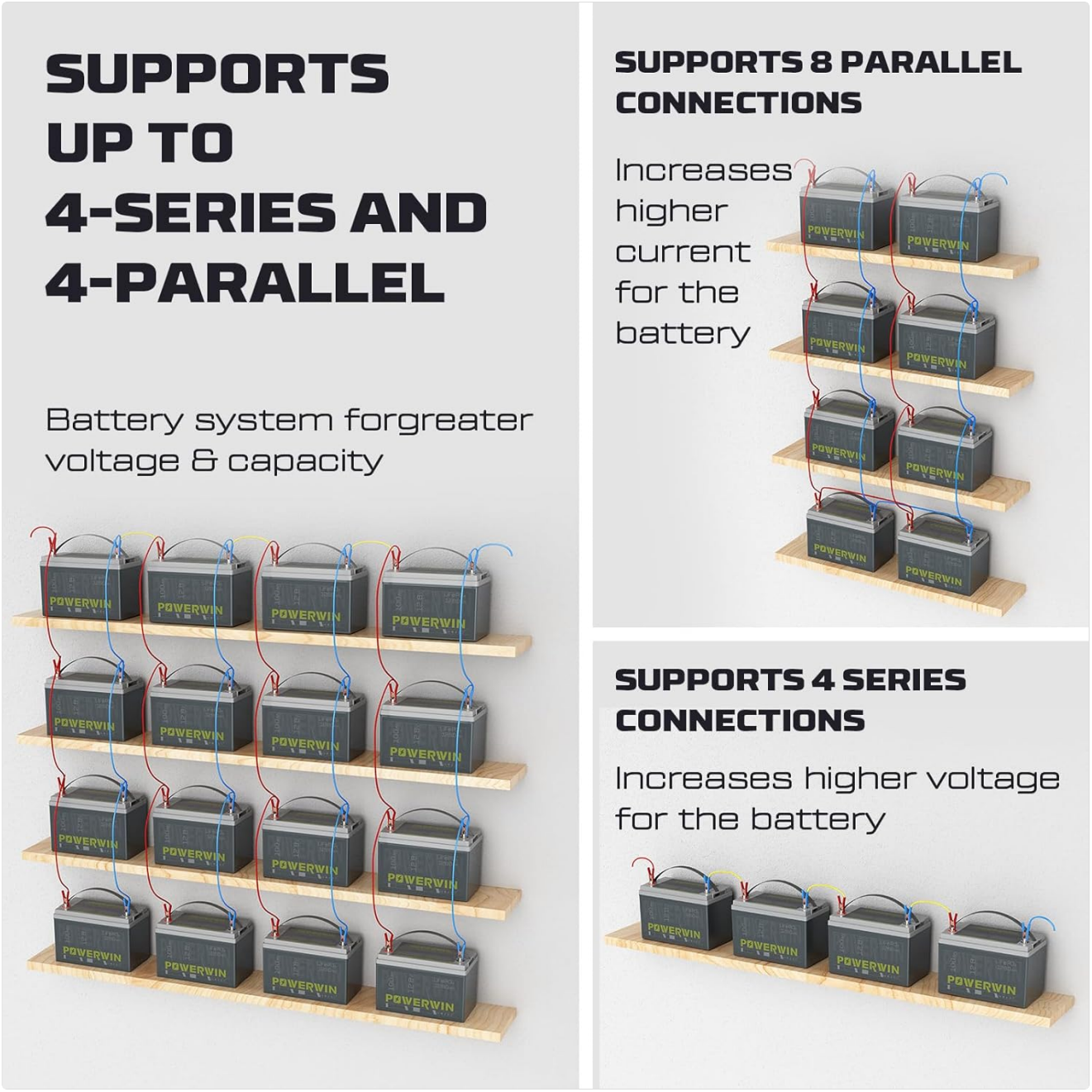

Figure 5: Visual representation of the various protection features offered by the integrated BMS.

2.3 Operational Videos

scenes to be used

Your browser does not support the video tag.

This video showcases the POWERWIN BT100 battery in various real-world usage scenarios, highlighting its adaptability.

3. Maintenance

Proper maintenance ensures the longevity and optimal performance of your LiFePO4 battery.

3.1 General Care

- Keep the battery terminals clean and free from corrosion.
- Ensure all connections are tight to prevent resistance and overheating.
- Store the battery in a cool, dry place when not in use.
- Avoid exposing the battery to extreme temperatures (below 0°C/32°F for charging, below -20°C/-4°F or above 60°C/140°F for operation).

Figure 6: Side view of the battery, useful for identifying terminal locations for cleaning and inspection.

3.2 Internal Structure and Protection

The BT100 battery is designed with internal fitted EVA foam to prevent modules from shifting inside, enhancing durability and safety during transport and use. This design helps mitigate issues like bulging, which can sometimes be a normal condition if the cells are placed flat, but a vertical bulge indicates a potential fault.

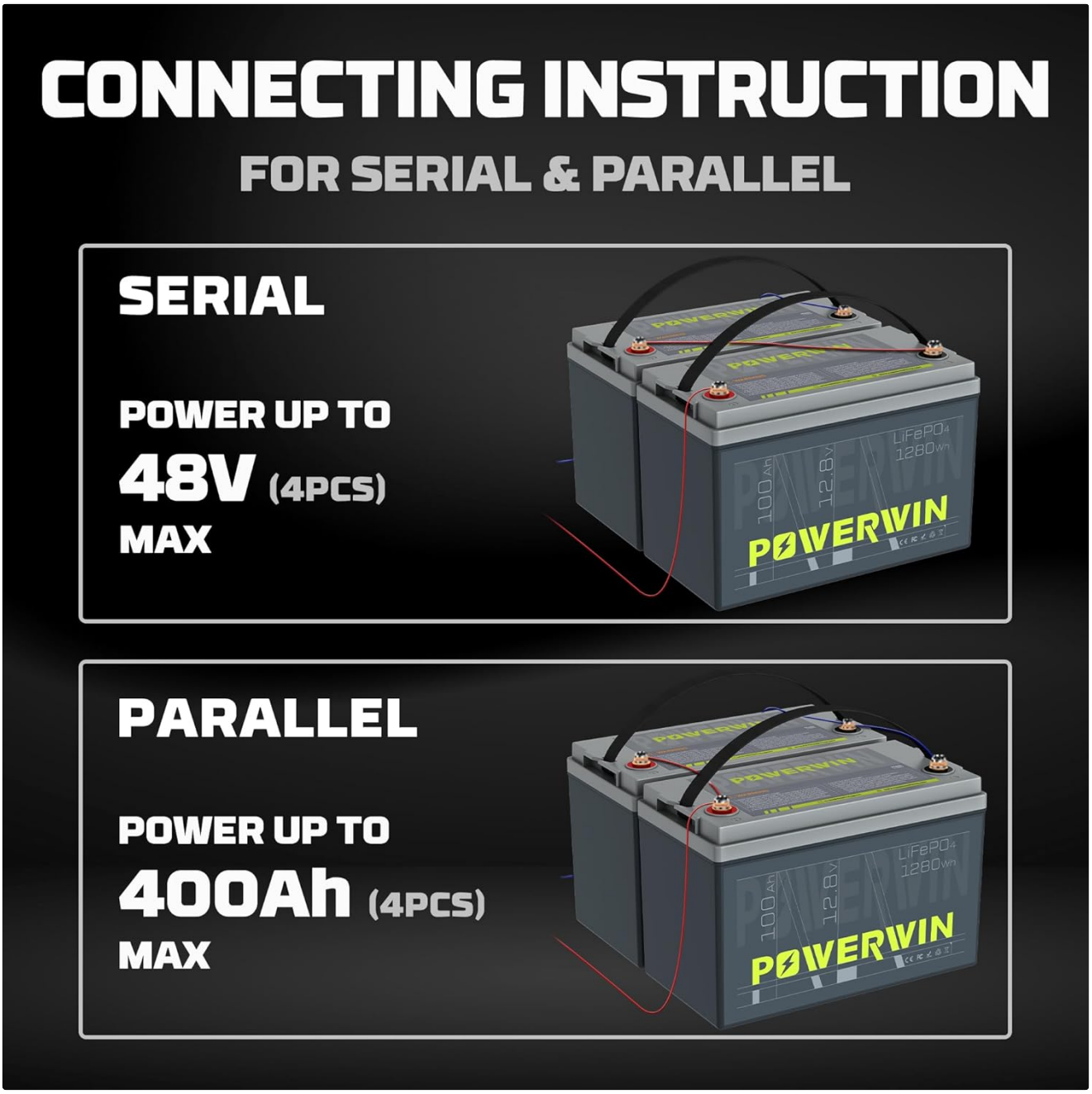

Figure 7: Diagram showing the internal EVA foam padding designed to protect the battery cells and BMS from movement and vibration.

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Battery Looks Bulgy

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This video explains what to look for if your battery appears bulgy and differentiates between normal conditions and potential faults requiring attention.

4. Troubleshooting

If you encounter issues with your POWERWIN BT100 battery, refer to the following common troubleshooting steps. For persistent problems, please contact customer support.

4.1 Common Issues and Solutions

- **Battery Not Charging:**
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  - Check all connections for tightness and proper polarity (positive to positive, negative to negative).
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- **Low Power Output:**
  - Confirm the battery is fully charged.
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  - If multiple batteries are in series/parallel, verify all connections are correct and secure.
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5. Specifications

Detailed technical specifications for the POWERWIN BT100 12V 100Ah LiFePO4 Deep Cycle Battery.

Specification	Value
Brand	POWERWIN
Model	BT100
Voltage	12.8V
Capacity	100Ah
Energy Storage	1280Wh
BMS	Built-in 100A

Specification	Value
Life Cycles	4,000-15,000 cycles (at 60% DOD)
Item Weight	22 pounds
Product Dimensions	13 x 6.7 x 8.6 inches
Operating Temperature	-20°C to 60°C (-4°F to 140°F)
Charge Temperature	0°C to 50°C (32°F to 122°F)
Terminal Type	Marine Terminal

6. Warranty and Support

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POWERWIN BT100

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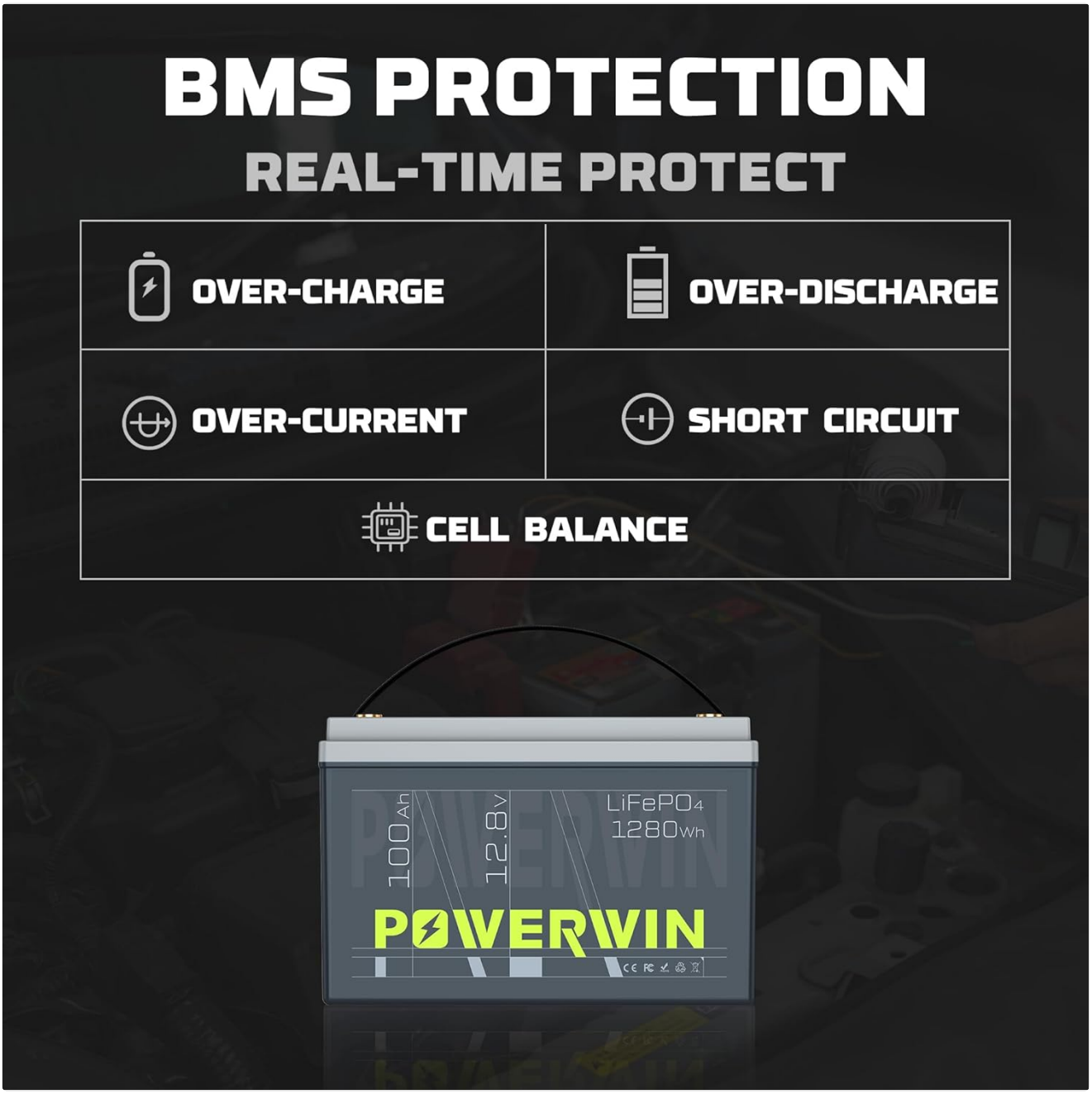

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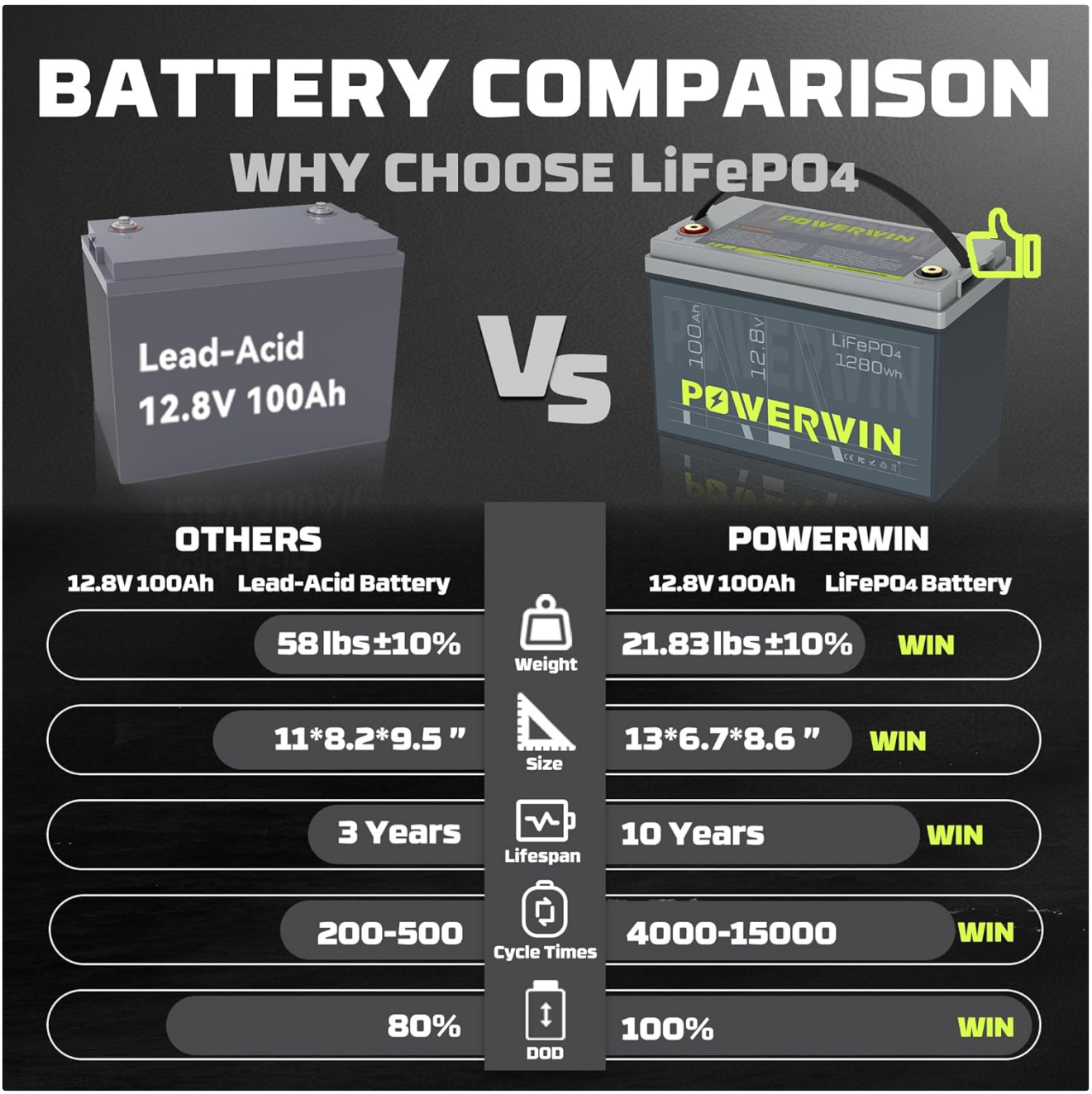

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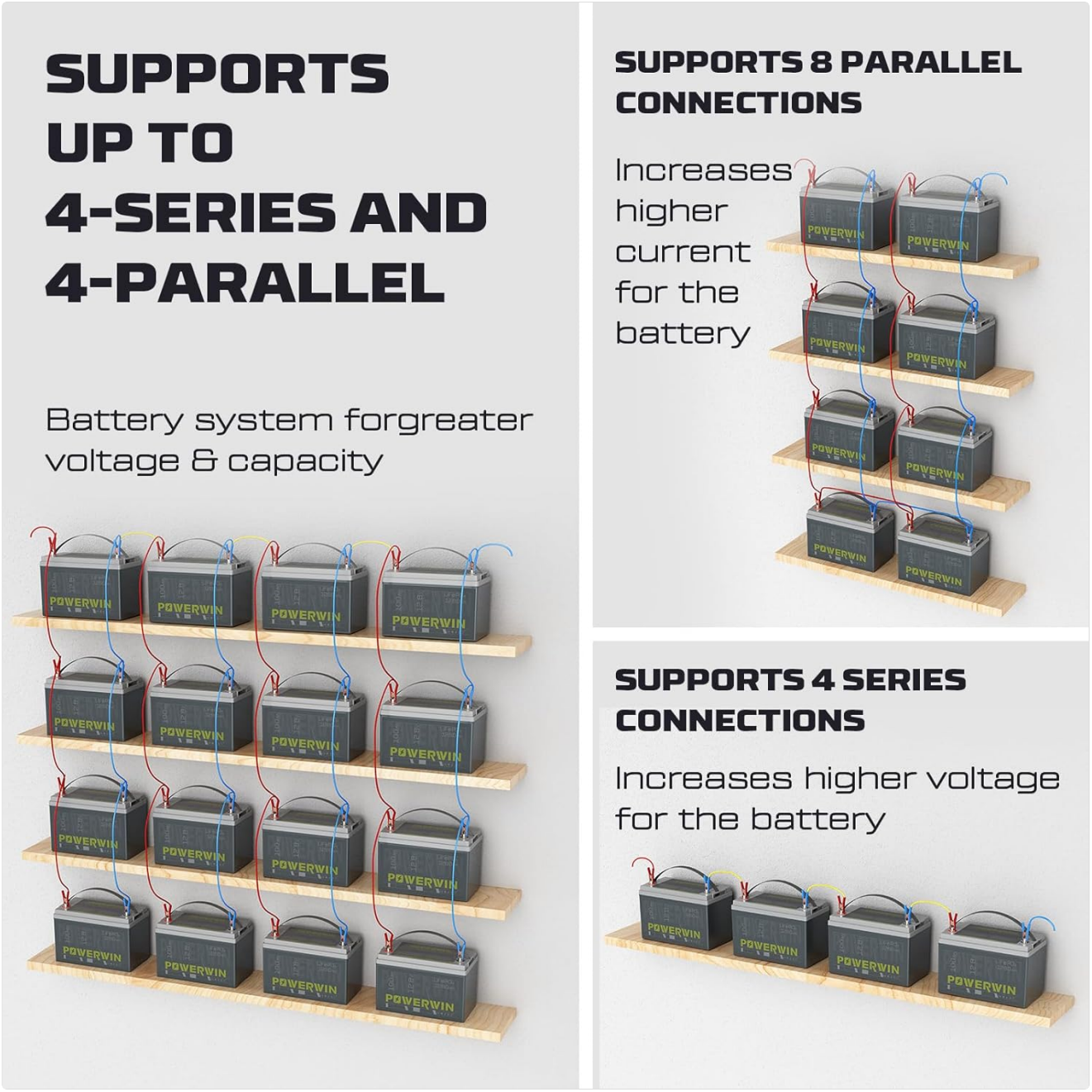

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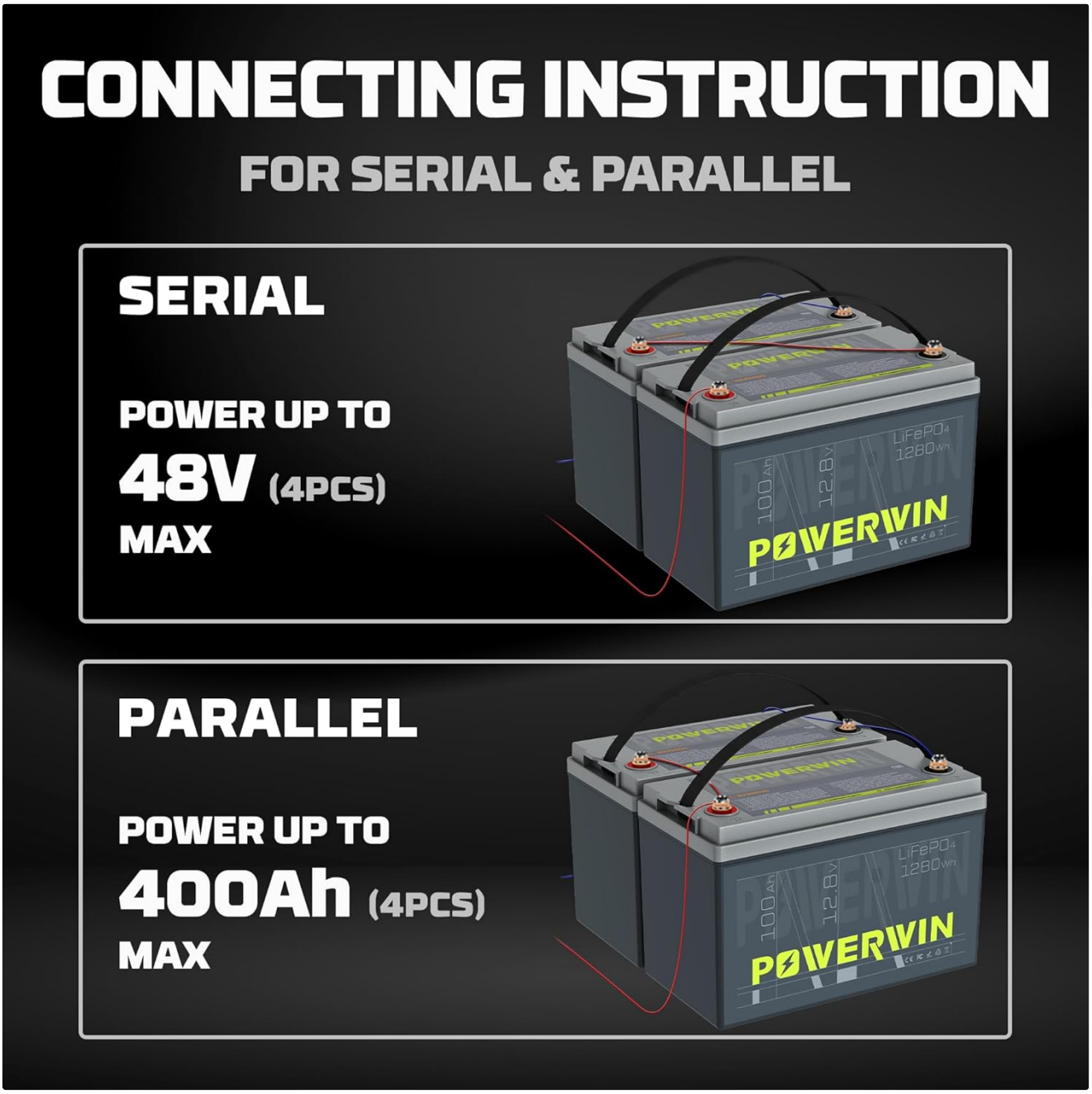

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[pdf] User Manual Specifications

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R User Manual 12.8V 100Ah LiFePO4 Battery 1. Technical Specification Model Name Single Battery Cell Connecting Type Rated Power Cycle Life Charging Current Charging Voltage Charging Mode Discharge current Max. Discharge current BMS Peak Current Operating Temperature Net Weight Size **BT100** 3.2V/10...

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[pdf] User Manual Specifications

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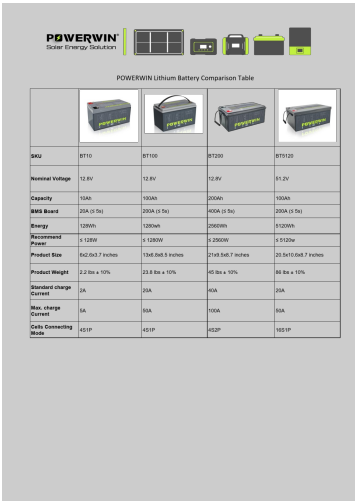

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IIT01 here Battery Comparison POWERWIN If you cannot see the table please click v 1715756154 cdn shopify s files 1 0732 0112 3634 |||

POWERWIN Lithium Battery Comparison Table SKU BT10 Nominal Voltage 12.8V Capacity BMS Board Energy Recommend Power Product Size 10Ah 20A 5s 128Wh 128W 6x2.6x3.7 inches Product Weight 2.2 lbs 10 Standard charge Current 2A Max. charge Current 5A Cells Connecting Mode 4S1P **BT100** 12.8...

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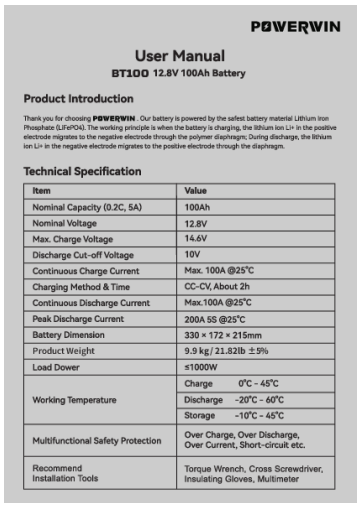

POWERWIN

User Manual

BT100 12.8V 100Ah Battery

Product Introduction

Thank you for choosing POWERWIN . Our battery is powered by the safest battery material Lithium Iron Phosphate (LiFePO4). The working principle is when the battery is charging, the lithium ion Li+ in the positive electrode migrates to the negative electrode through the polymer diaphragm; During discharge, the lithium ion Li+ in the negative electrode migrates to the positive electrode through the diaphragm.

Technical Specification

Item	Value
Nominal Capacity (0.2C, 5A)	100Ah
Nominal Voltage	12.8V
Max. Charge Voltage	14.6V
Discharge Cut-off Voltage	10V
Continuous Charge Current	Max. 100A @25°C
Charging Method & Time	CC-CV, About 2h
Continuous Discharge Current	Max.100A @25°C
Peak Discharge Current	200A 5S @25°C
Battery Dimension	330 × 172 × 215mm
Product Weight	9.9 kg / 21.82lb ±5%
Load Dower	≤1000W
Working Temperature	Charge 0°C ~ 45°C
	Discharge -20°C ~ 60°C
	Storage -10°C ~ 45°C
Multifunctional Safety Protection	Over Charge, Over Discharge, Over Current, Short-circuit etc.
Recommend Installation Tools	Torque Wrench, Cross Screwdriver, Insulating Gloves, Multimeter

[pdf] User Manual

BT100 UM POWERWIN 12V Battery v 1694426032 cdn shopifycdn net s files 1 0732 0112 3634 |||

BT100 Product Weight 9.9 kg/ 21.82lb 5 ...

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