Redodo 12V300AH

Redodo 12V 300Ah LiFePO4 Lithium Battery User Manual

Model: 12V300AH | Brand: Redodo

1. Introduction

Thank you for choosing the Redodo 12V 300Ah LiFePO4 Lithium Battery. This manual provides essential information for the safe and efficient use of your battery. Our LiFePO4 batteries are designed for superior performance, offering a long cycle life, high energy density, and robust safety features, making them ideal for various applications including off-grid solar systems, RVs, and home backup power.

This battery features Automotive Grade A Cells and a built-in 200A Battery Management System (BMS) to ensure optimal performance and protection. With 3840Wh of energy and 2560W power output, it provides reliable and portable power. It is significantly lighter than traditional lead-acid batteries and offers a much longer lifespan.

Image 1.1: Two Redodo 12V 300Ah LiFePO4 Lithium Batteries, showcasing their compact design and integrated handles.

Image 1.2: Key features and benefits of the Redodo 12V 300Ah LiFePO4 battery, including energy capacity, power output, and cycle life.

2. Safety Information

WARNING: Please read all safety instructions carefully before installation and use. Failure to follow these instructions may result in electric shock, fire, serious injury, or death.

- **Do Not Disassemble:** Never attempt to open or disassemble the battery. There are no user-serviceable parts inside.
- **Proper Connections:** Ensure all connections are secure and correct polarity is observed (positive to positive, negative to negative) to prevent short circuits and damage.
- **Ventilation:** While LiFePO4 batteries do not produce explosive gases like lead-acid batteries, ensure adequate ventilation during charging and discharging to dissipate any heat.
- **Temperature Range:** Operate the battery within the specified temperature ranges for charging and discharging to prevent damage and ensure longevity.
- **Charging:** Use only LiFePO4 compatible chargers with appropriate voltage and current settings. Overcharging can damage the battery.
- **Short Circuit Protection:** The built-in BMS provides short-circuit protection, but always take precautions to avoid accidental short circuits during installation.
- **Handling:** Handle the battery with care. Avoid dropping or subjecting it to severe impacts.

Image 2.1: Illustration of the internal Battery Management System (BMS) and its protective functions against various electrical faults.

3. What's in the Box

Upon opening your Redodo 12V 300Ah LiFePO4 Lithium Battery package, you will find the following:

- Redodo 12V 300Ah LiFePO4 Battery (Quantity as per package, e.g., 2 Pack)

4. Specifications

The following table outlines the key specifications for your Redodo 12V 300Ah LiFePO4 Lithium Battery:

Specification	Value
Model	12V300AH
Item Weight	59.9 pounds
Product Dimensions (D x W x H)	9.45 x 20.55 x 8.58 inches
Amperage	200 Amps (BMS)
Energy Capacity	3840Wh
Max. Power Output	2560W
Cycle Life	4000-15000 cycles
Lifetime	10 Years

5. Setup

Proper setup is crucial for the performance and longevity of your Redodo LiFePO4 battery. Follow these steps for installation:

5.1 Pre-Installation Checks

- Inspect the battery for any visible damage during shipping.
- Ensure all connection terminals are clean and free of debris.
- Verify that your charging system (solar charge controller, dedicated LiFePO4 charger, inverter/charger) is compatible with LiFePO4 batteries and set to the correct charging profile (14.2V-14.6V).
- Gather necessary tools: insulated wrenches, battery cables of appropriate gauge, terminal covers.

5.2 Connecting Batteries (Series/Parallel)

Redodo 12V 300Ah batteries can be connected in parallel for increased capacity (up to 1200Ah) or in series for higher voltage (up to 51.2V). Always ensure all batteries are at a similar state of charge before connecting them in parallel or series.

- **Parallel Connection:** Connect positive terminals together and negative terminals together. This increases total amperage-hours (Ah) while maintaining 12V.
- **Series Connection:** Connect the positive terminal of one battery to the negative terminal of the next. This increases the total voltage (e.g., two 12V batteries in series make 24V) while maintaining the same Ah.
- Use appropriately sized cables for all connections to handle the expected current.

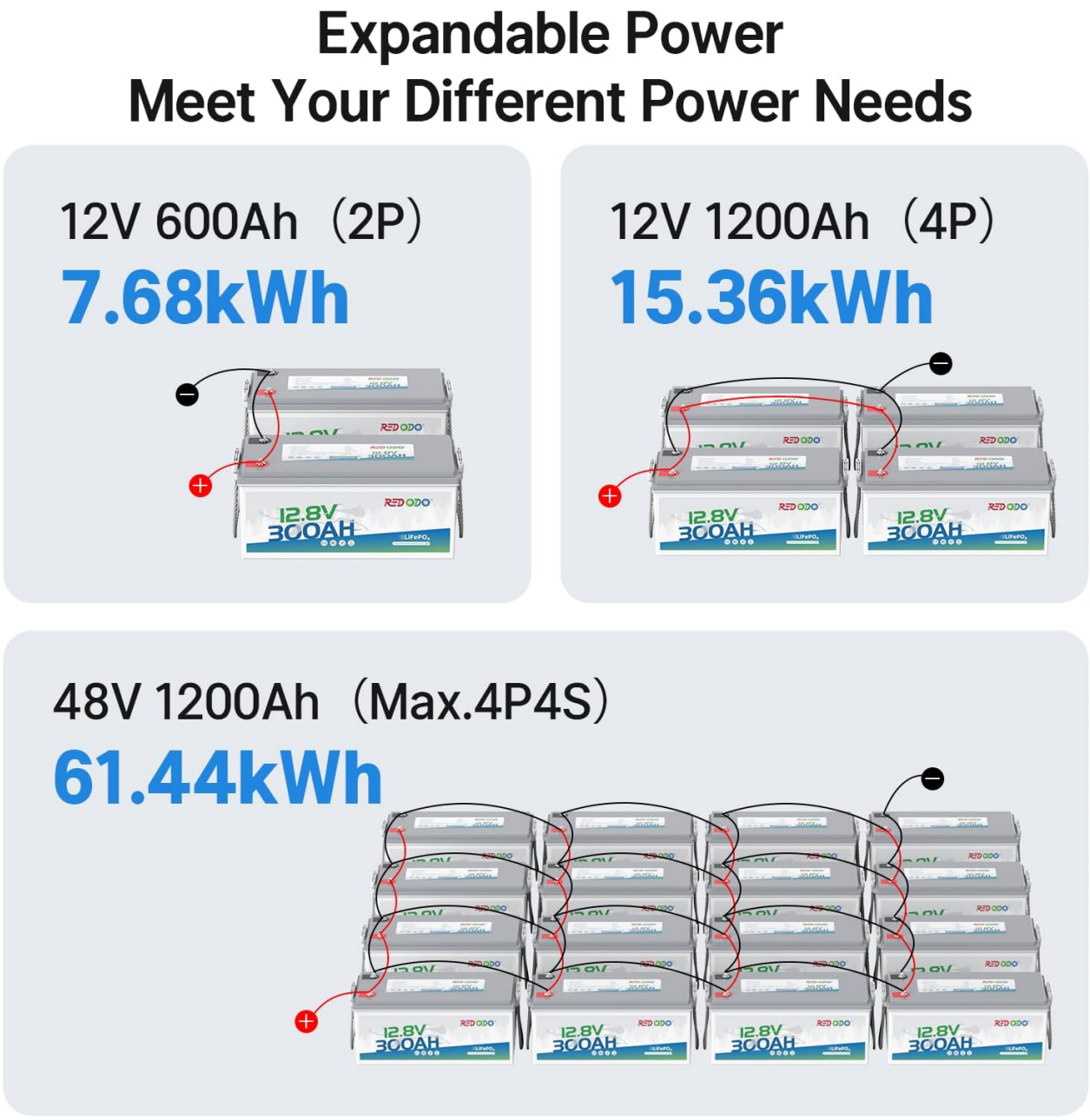


Image 5.1: Examples of battery configurations for expanded power, including parallel and series connections.

5.3 System Integration

For solar systems, connect the battery to a compatible MPPT or PWM solar charge controller. For RVs or home backup, integrate with your inverter/charger system. Always follow the wiring diagrams provided by your system's component manufacturers.

Image 5.2: Example wiring diagram for integrating the battery into a solar power system for an RV.

6. Operating

To maximize the performance and lifespan of your Redodo LiFePO4 battery, adhere to the following operating guidelines:

6.1 Charging

The Redodo 12V 300Ah battery can be charged using various methods:

- **Dedicated LiFePO4 Charger:** Recommended for optimal charging. Ensure the charger's voltage is set between 14.2V and 14.6V.
- **Solar Panel with MPPT/PWM Controller:** Connect your solar array through a compatible charge controller.
- **Generator with AC-DC Converter:** Use a generator with an appropriate AC-DC converter to charge the battery.
- **Alternator with DC-DC Charger:** For vehicle applications, a DC-DC charger is recommended to ensure proper charging from the alternator.

The battery supports fast charging, capable of being fully charged in approximately 5 hours at 60A (0.2C) or even faster at higher currents (e.g., 1.5 hours at 200A).

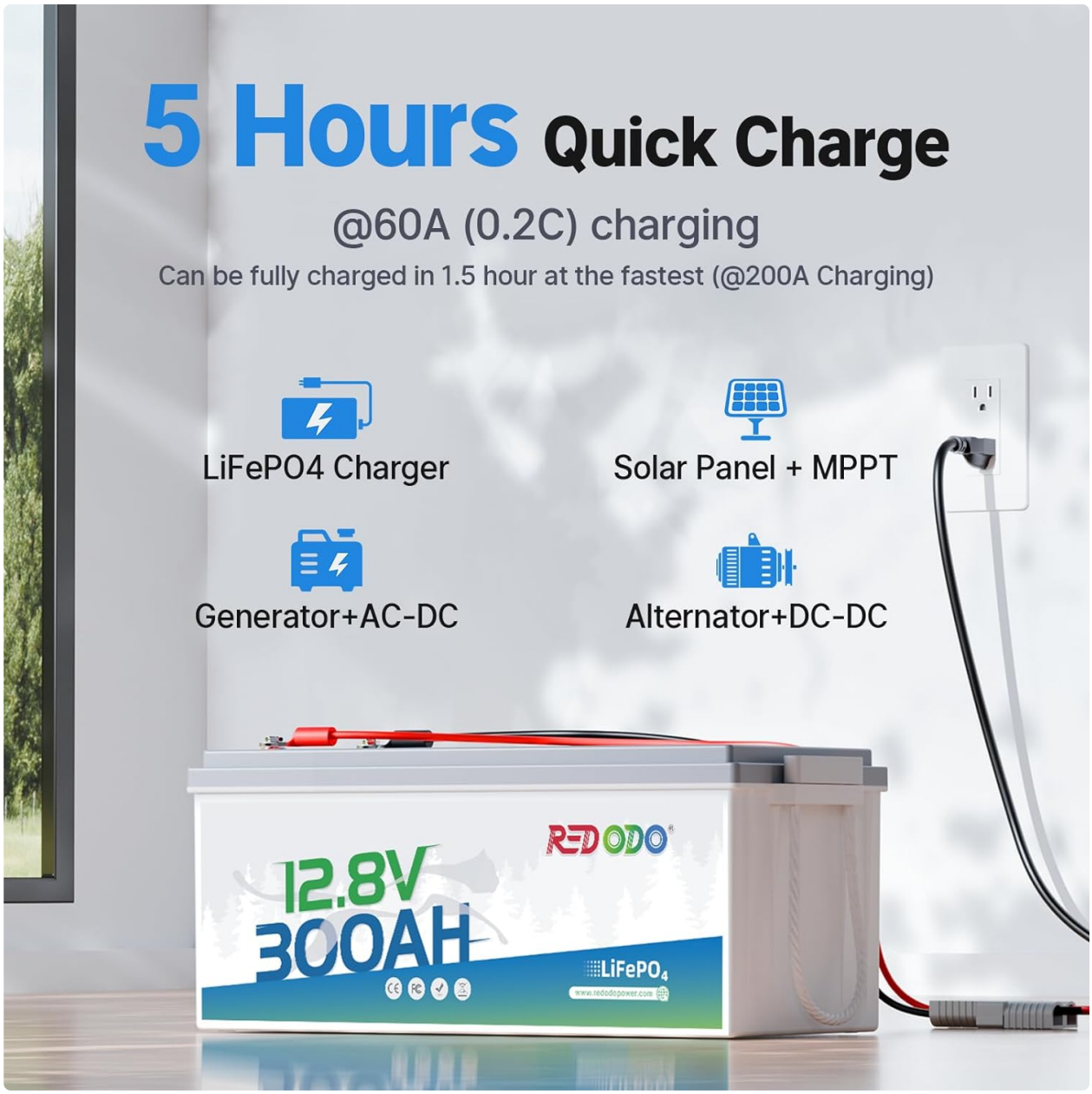


Image 6.1: Different methods for quickly charging your Redodo LiFePO4 battery.

6.2 Discharging and Power Output

The battery provides a maximum continuous power output of 2560W, capable of running a wide range of appliances. The built-in BMS protects against over-discharge, ensuring the battery's health.

Image 6.2: Examples of appliances and their power consumption that can be supported by the battery's 2560W output.

Image 6.3: Estimated runtimes for common household appliances when powered by the Redodo 12V 300Ah battery.

7. Maintenance

Redodo LiFePO4 batteries require minimal maintenance due to their robust design and integrated BMS. However, following these simple guidelines will ensure maximum lifespan:

- **Regular Inspection:** Periodically check the battery terminals for corrosion or loose connections. Clean terminals with a dry cloth if necessary.
- **Temperature Control:** Avoid operating or storing the battery in extreme temperatures. Optimal operating temperature is typically between 0°C to 45°C (32°F to 113°F) for charging and -20°C to 60°C (-4°F to 140°F) for discharging.
- **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. Recharge every 3-6 months to prevent self-discharge below critical levels.
- **No Watering Required:** Unlike lead-acid batteries, LiFePO4 batteries are sealed and do not require watering.

8. Troubleshooting

If you encounter issues with your Redodo LiFePO4 battery, refer to the following common problems and solutions:

8.1 Battery Not Charging

- **Check Connections:** Ensure all charging cables are securely connected and polarity is correct.
- **Charger Compatibility:** Verify that your charger is specifically designed for LiFePO4 batteries and its output voltage is within the recommended range (14.2V-14.6V).
- **BMS Protection:** The BMS may have activated due to over-discharge, over-current, or temperature extremes. Disconnect the load/charger, allow the battery to rest, and then attempt to reconnect. A low-current charge may be needed to reactivate the BMS if deeply discharged.
- **Temperature:** Ensure the ambient temperature is within the charging range (0°C to 45°C).

8.2 Low Power Output / Short Runtime

- **Battery State of Charge:** Ensure the battery is fully charged.
- **Load Exceeds Capacity:** Check if the connected load (total wattage of appliances) exceeds the battery's maximum continuous discharge power (2560W). The BMS will shut down if overloaded.
- **Cable Gauge:** Ensure battery cables are of sufficient gauge for the current draw. Undersized cables can lead to voltage drop and reduced performance.
- **Temperature:** Extreme cold can temporarily reduce battery performance.

8.3 Battery Overheating

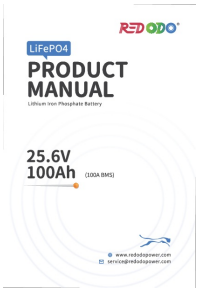
- **Ventilation:** Ensure adequate airflow around the battery.
- **Load/Charge Current:** Reduce the load or charging current if the battery is consistently running hot. While the BMS protects against high temperatures, prolonged operation at high temperatures can reduce lifespan.
- **Ambient Temperature:** If the ambient temperature is very high, consider relocating the battery to a cooler environment.

If troubleshooting steps do not resolve the issue, please contact Redodo customer support.

9. Warranty and Support

Redodo is committed to providing high-quality products and excellent customer service. Your 12V 300Ah LiFePO4 Lithium Battery comes with a **10-year lifetime** and we provide **lifetime technical support**.
For any technical assistance, warranty claims, or general inquiries, please do not hesitate to contact our support team. We are dedicated to ensuring your satisfaction and providing one-on-one service.
Please refer to your purchase documentation or the Redodo official website for the most current contact information and detailed warranty terms.

Related Documents

	Redodo 12.8V 300Ah LiFePO4 Battery Product Manual Comprehensive product manual for the Redodo 12.8V 300Ah LiFePO4 battery, detailing specifications, product overview, connection guidelines, and troubleshooting.
	Redodo 12.8V 280Ah LiFePO4 Low-Temp Battery Product Manual Comprehensive product manual for the Redodo 12.8V 280Ah LiFePO4 battery, featuring low-temperature charging capabilities (LTCP) and a 200A BMS. Includes specifications, connection guides, and troubleshooting tips.
	Redodo 25.6V 100Ah LiFePO4 Battery Product Manual Comprehensive product manual for the Redodo 25.6V 100Ah LiFePO4 battery, detailing specifications, operating instructions, troubleshooting, and series/parallel connection guidelines.

	Redodo 12.8V 100Ah Mini LiFePO4 Battery Product Manual Comprehensive product manual for the Redodo 12.8V 100Ah Mini LiFePO4 battery, covering specifications, parameters, capacity estimation, series/parallel connections, and troubleshooting.

Documents - Redodo – 12V300AH

Redodo 12.8V 300Ah LiFePO4 Battery Product Manual
Comprehensive product manual for the Redodo 12.8V 300Ah LiFePO4 battery, detailing specifications, product overview, connection guidelines, and troubleshooting.
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