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Ingeosolly IE-12v100Ah

Ingeosolly 12V 100Ah LiFePO4 Battery User Manual

Model: IE-12v100Ah

1. Introduction

This manual provides essential information for the safe and efficient use of your Ingeosolly 12V 100Ah LiFePO4 Battery. Please read this manual thoroughly before installation, operation, or maintenance to ensure optimal performance and longevity of your battery.
The Ingeosolly 12V 100Ah LiFePO4 battery is a lightweight, high-performance lithium iron phosphate battery designed for various applications including solar energy storage, RVs, boats, backup power, and off-grid systems. It features a robust Battery Management System (BMS) and Grade-A cells for enhanced safety and durability.

2. Safety Information

WARNING: Failure to follow these safety instructions may result in electric shock, fire, serious injury, or death.

- Always wear appropriate personal protective equipment (PPE), including safety glasses and insulated gloves, when handling batteries.
- Do not short-circuit the battery terminals. This can cause severe damage to the battery and pose a fire hazard.
- Do not disassemble, puncture, or modify the battery. Internal components are hazardous.
- Keep the battery away from open flames, heat sources, and flammable materials.
- Ensure proper ventilation when charging or discharging the battery.
- Do not immerse the battery in water or expose it to excessive moisture.
- Use only chargers specifically designed for LiFePO4 batteries with the correct voltage and current ratings.
- Keep out of reach of children.
- In case of fire, use a Class D fire extinguisher or sand. Do not use water.

3. Product Features

- **Lightweight Portability:** Approximately 1/3 lighter than traditional lead-acid batteries, featuring integrated handles

for easy transport.

- **Grade-A Cells:** Utilizes automotive-grade LiFePO4 cells for stable performance and high energy density.
- **Smart Battery Management System (BMS):** Integrated 100A BMS provides comprehensive protection:
  - Overcharge Protection
  - Overdischarge Protection
  - Overcurrent Protection
  - Short Circuit Protection
  - High Temperature Protection
  - Low Temperature Protection
- **Long Service Life:** Designed for up to 8000+ deep cycles at 100% Depth of Discharge (DOD), offering a lifespan of up to 10 years.
- **Expandable Capacity:** Can be wired in series (up to 48V) or parallel (up to 4P) to achieve a maximum capacity of 20.48kWh.
- **Wide Operating Temperature Range:** Operates effectively in various environmental conditions.



Figure 1: Key features of the Ingeosolly LiFePO4 battery, highlighting its long service life, cycle count, and robust construction.



Figure 2: Illustration of the integrated Smart BMS providing multi-level protection for the battery.

4. Installation and Connection

4.1 Physical Installation

The Ingeosolly 12V 100Ah LiFePO4 battery has dimensions of L10.2*W6.6*H8.46 inches (L26*W16.8*H21.5 CM). Its lightweight design and integrated handles facilitate easy placement and installation. Ensure the battery is secured in a well-ventilated area, protected from direct sunlight, extreme temperatures, and moisture.



Figure 3: Battery dimensions and nominal capacity (1280Wh).

4.2 Series and Parallel Connections

The battery supports both series and parallel connections to meet various power requirements:

- **Parallel Connection:** Connect batteries in parallel to increase total Amp-hour (Ah) capacity while maintaining the same voltage (e.g., two 12V 100Ah batteries in parallel yield 12V 200Ah). Up to 4 batteries can be connected in parallel.
- **Series Connection:** Connect batteries in series to increase total voltage while maintaining the same Amp-hour (Ah) capacity (e.g., two 12V 100Ah batteries in series yield 24V 100Ah). The battery supports configurations up to 48V (4 batteries in series).

Important: When connecting batteries in series or parallel, ensure all batteries are of the same model, capacity, and state of charge. Use appropriate cables and fuses for your system's current requirements.

5. Charging Instructions

The Ingeosolly LiFePO4 battery can be charged using several methods. Always use a charger compatible with LiFePO4 batteries.

5.1 Recommended Charging Methods

- **Solar Power:** Connect to a solar charge controller compatible with LiFePO4 batteries and a solar panel array.
- **LiFePO4 Charger:** Use a dedicated LiFePO4 battery charger. A 14.6V 7A charger is included with the battery.
- **Generator:** Connect through a compatible charger or inverter/charger system.

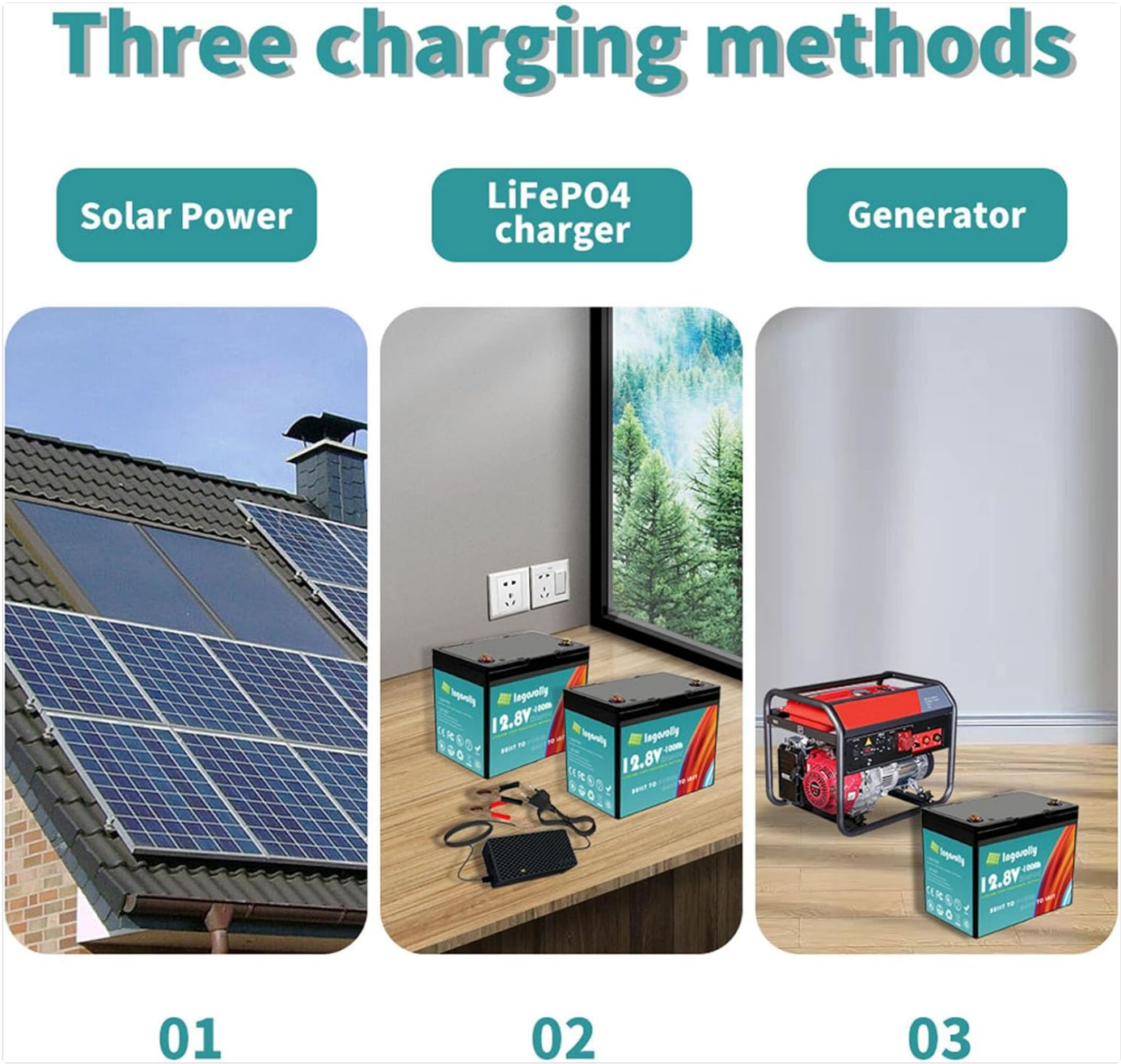


Figure 4: Visual representation of the three primary charging methods for the battery.

5.2 Charging Parameters

- **Recommended Charge Voltage:** 14.4V - 14.6V
- **Maximum Charge Current:** 100A (continuous)
- **Included Charger:** 14.6V 7A

6. Operation and Applications

The Ingeosolly 12V 100Ah LiFePO4 battery is versatile and suitable for a wide range of applications requiring reliable 12V power.

6.1 General Usage

Connect the battery to your system using appropriate terminals and wiring. Ensure all connections are secure and correctly polarized (positive to positive, negative to negative). The integrated BMS will manage charge and discharge parameters, protecting the battery from common electrical faults.

6.2 Example Applications

This battery is ideal for:

- Recreational Vehicles (RVs)
- Marine applications (boats, trolling motors)
- Solar energy storage systems
- Backup power systems
- Off-grid cabins
- Electric vehicles (e.g., golf carts)



Figure 5: Application examples and estimated run times for common appliances with the 12V 100Ah battery.

7. Maintenance and Storage

7.1 Maintenance

LiFePO4 batteries require minimal maintenance compared to lead-acid batteries. Periodically inspect the battery terminals for corrosion and ensure connections are tight. Keep the battery clean and free of debris.

7.2 Storage

If storing the battery for an extended period, ensure it is charged to approximately 50-70% of its capacity. Store in a cool,

dry place, away from direct sunlight and extreme temperatures. Disconnect the battery from any loads during storage to prevent self-discharge.

8. Troubleshooting

If you encounter issues with your Ingeosolly LiFePO4 battery, consider the following common troubleshooting steps:

- **Battery Not Charging:**
  - Check all connections to ensure they are secure and correctly polarized.
  - Verify the charger is functioning correctly and is compatible with LiFePO4 batteries.
  - Ensure the charging voltage and current are within the specified range.
  - The BMS may have activated a protection mode (e.g., low temperature, over-discharge). Allow the battery to warm up if cold, or attempt a low-current charge to reactivate the BMS if deeply discharged.
- **Low Power Output:**
  - Check the battery's State of Charge (SOC). The battery may need recharging.
  - Inspect wiring and connections for any loose or corroded points that could cause voltage drop.
  - Ensure the load does not exceed the battery's continuous discharge current (100A) or peak discharge current (300A for 5 seconds). The BMS may have triggered overcurrent protection.
- **Unusual Odor or Swelling:**
  - Immediately disconnect the battery from all loads and charging sources.
  - Move the battery to a safe, well-ventilated area away from flammable materials.
  - Do not attempt to use or repair the battery. Contact customer support.

For issues not resolved by these steps, please contact Ingeosolly customer support.

9. Specifications

Specification	Value
Brand	Ingeosolly
Model Number	IE-12v100Ah
Voltage	12 Volts
Battery Capacity	100 Amp Hours
Battery Cell Composition	Lithium Iron Phosphate (LiFePO4)
Continuous Charge Current	Up to 100 Amps
Continuous Discharge Current	Up to 100 Amps
Peak Discharge Current	300 Amps (for 5 seconds)
Energy Density	1.28 kWh
Cycle Life	8000+ cycles (at 100% DOD)

Lifespan	Up to 10 years
Dimensions (L*W*H)	10.2 x 6.6 x 8.46 inches (26 x 16.8 x 21.5 cm)
Expandability	Up to 4P4S (Max 20.48 kWh)

10. Warranty and Support

10.1 Warranty

The Ingeosolly 12V 100Ah LiFePO4 Battery comes with a**FIVE-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.

10.2 Customer Support

Ingeosolly provides professional technical support and online customer service. For any questions, technical assistance, or warranty inquiries, please contact our support team. We aim to provide fast feedback within 24 hours.
Local warehouses and a maintenance team are available in the US for support.

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