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Ingeosolly IE-48v-100ah

Ingeosolly 48V 100AH LiFePO4 Battery User Manual

Model: IE-48v-100ah

1. Safety Instructions

Please read and understand all safety instructions before installing or operating the Ingeosolly 48V 100AH LiFePO4 Battery. Failure to follow these instructions may result in serious injury, property damage, or voiding the warranty.

- **Do Not Disassemble:** Never attempt to open, disassemble, or modify the battery. This can expose you to hazardous materials and electrical components.
- **Avoid Short Circuits:** Ensure all connections are secure and properly insulated. Do not allow metal objects to come into contact with the battery terminals.
- **Proper Charging:** Use only a compatible LiFePO4 charger designed for 48V lithium batteries. Charging temperature range is 0°C to 55°C.
- **Operating Temperature:** The battery is designed for discharge temperatures from -20°C to 60°C. Avoid operating outside this range.
- **Ventilation:** While LiFePO4 batteries are generally safe, ensure adequate ventilation during charging and discharging to prevent heat buildup.
- **Water and Dust Protection:** The battery features an IP65 protection class, making it resistant to dust and water ingress. However, avoid submerging the battery or exposing it to high-pressure water jets.
- **Overload Protection:** The built-in 200A Battery Management System (BMS) protects against overcharge, over-discharge, over-current, and short-circuit. If the battery shuts down due to under-voltage, recharge it immediately.
- **Handling:** The battery weighs approximately 78.48 lbs. Use proper lifting techniques or assistance when moving to prevent injury.

2. Product Overview

The Ingeosolly 48V 100AH LiFePO4 Battery is a high-performance lithium iron phosphate battery designed for various deep cycle applications. It offers superior energy density, longer cycle life, and advanced safety features compared to traditional lead-acid batteries.



Figure 2.1: Ingeosolly 48V 100AH LiFePO4 Battery with included charger and Bluetooth app interface.

Key Features:

- **Advanced LiFePO4 Technology:** Offers 1/3 the weight, 2 times the energy release, and 4 to 10 times the cycle life of lead-acid batteries.
- **Grade A Cells:** Manufactured with high-quality Grade A cells for stable performance and greater power.
- **Integrated 200A BMS:** Provides comprehensive protection against overcharge, over-discharge, over-current, and short-circuit, ensuring battery longevity and safety.
- **Bluetooth APP Monitoring:** Real-time monitoring of battery power, voltage, current, capacity, and temperature via a mobile application.
- **Long Cycle Life:** Boasts 8,000+ deep cycles at 100% Depth of Discharge (DOD) at 25°C.
- **Durable Design:** ABS flame-retardant plastic housing with IP65 protection for various environments.
- **Wide Application:** Ideal for 48V golf carts, RVs, boats (trolling motors), marine, and off-grid solar applications.

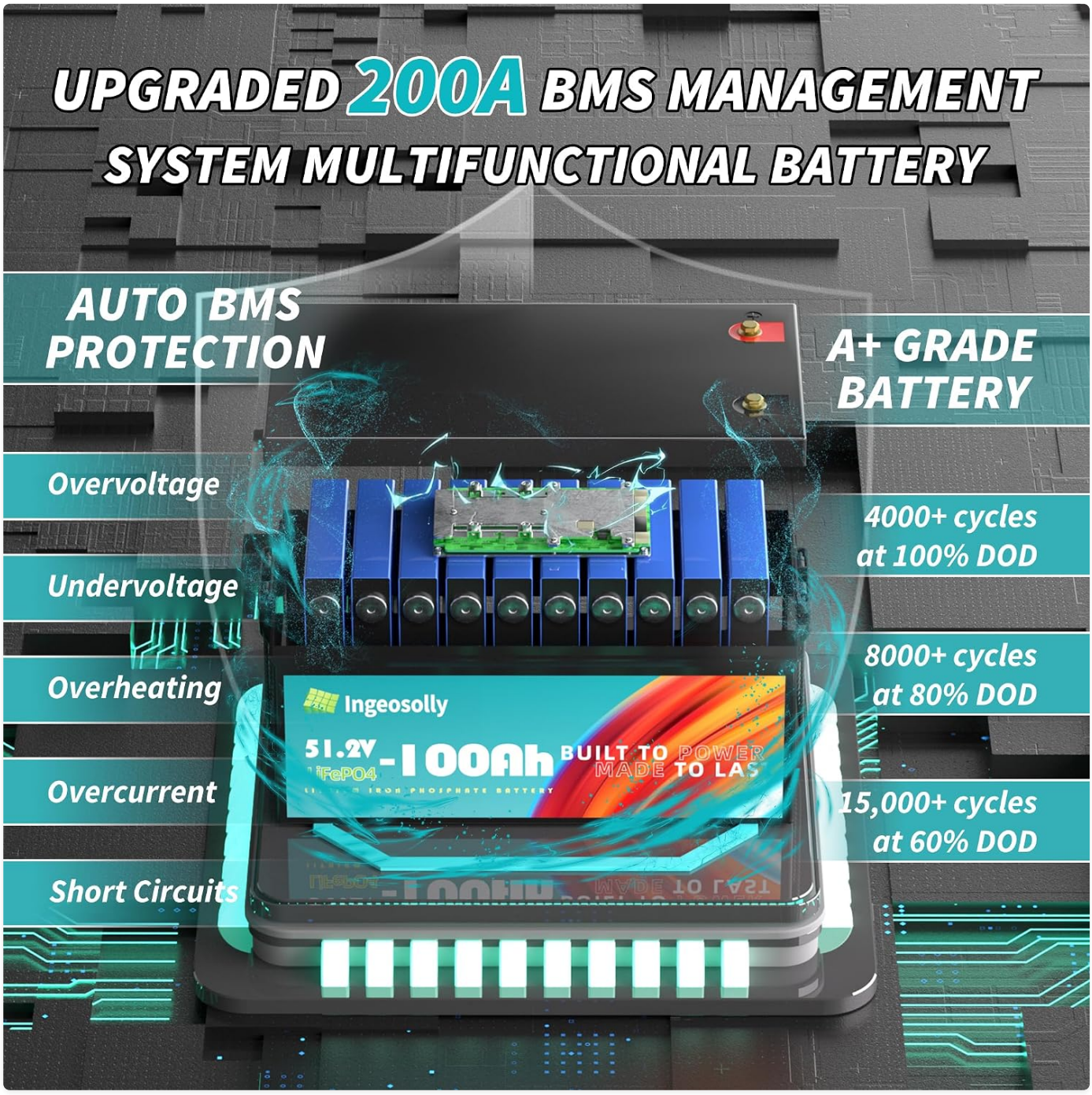


Figure 2.2: Internal structure highlighting the 200A BMS and Grade A cells.

3. Setup and Installation

Proper installation is crucial for optimal performance and safety. Ensure all connections are tight and secure.

3.1 Initial Charging

For safe transportation, the battery is shipped with 30%-50% capacity. It is recommended to fully charge the battery before its first use and performance testing.

3.2 Parallel Connection

This 48V lithium battery supports parallel connection to increase total capacity (e.g., 100A, 200A, 300A, 400A scenarios). It is suggested to connect no more than 8 batteries in parallel (Max 1200Ah). **Series connection is NOT supported.**

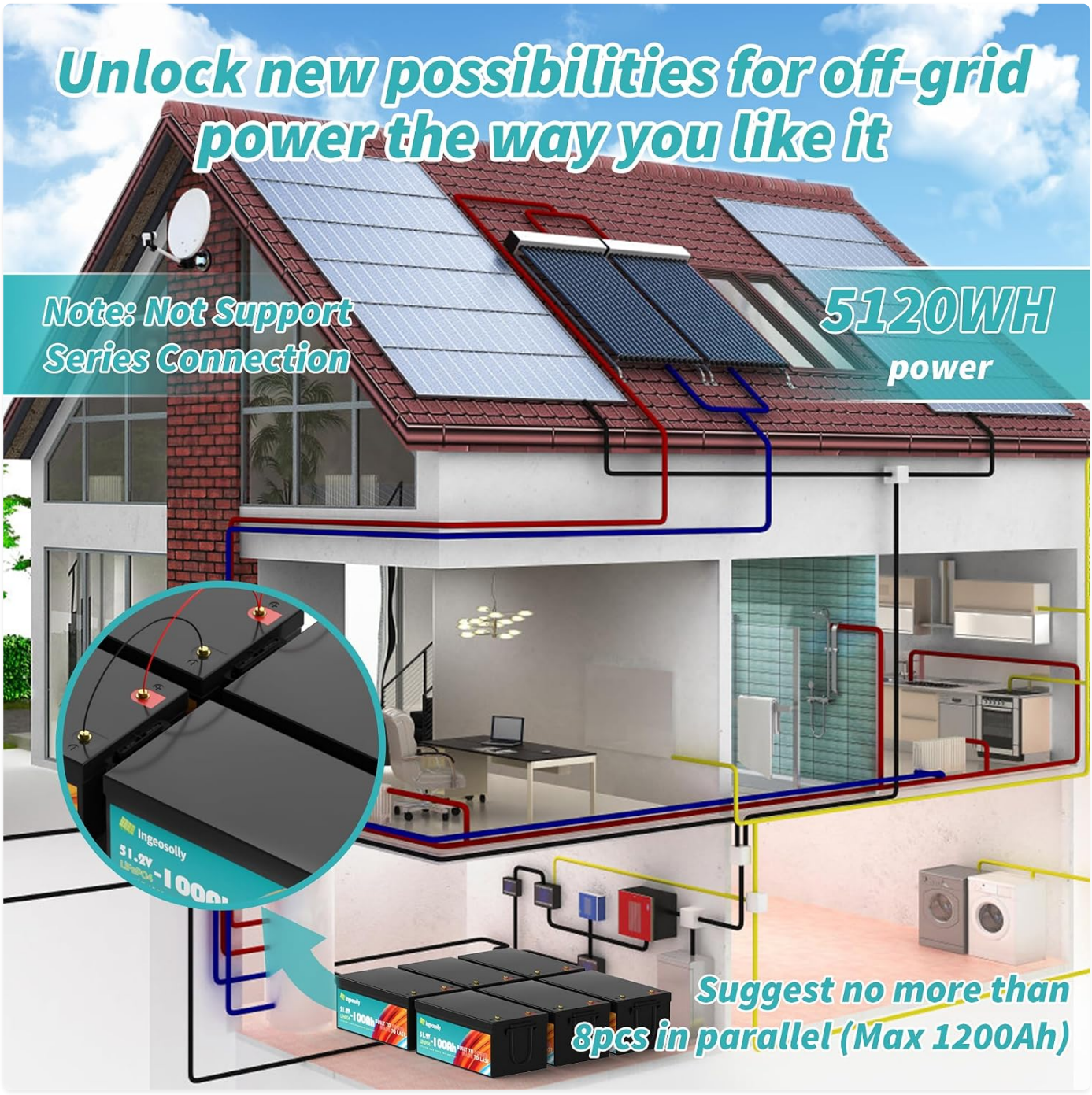


Figure 3.1: Illustration of parallel battery connection in an off-grid solar setup.

3.3 Wiring Connections

When connecting cables and wires to the battery terminals, ensure they are stacked largest to smallest, with the largest cable closest to the battery terminal. The positive and negative wiring operations are consistent.

Your browser does not support the video tag.

Video 3.1: This video demonstrates the physical installation process of a 48V lithium battery in a golf cart, including securing the battery, connecting the charger, and attaching power lines to the terminals.

1. Secure the battery in its intended location using appropriate straps or mounting hardware.
2. Connect the charger's DC OUT connectors to the battery's charging port.
3. Connect the charger's AC IN connectors to a power source.
4. Pass the power line and charging line through the insulating protective cover.
5. Use the terminal connection to fix the cables onto the battery terminals (M8 type).

6. Pull up the protective cover to protect the terminal connections.

4. Operating Instructions

4.1 Bluetooth APP Monitoring

The Ingeosolly battery features a convenient Bluetooth app for real-time monitoring of battery information. This allows you to stay informed about your battery's status anytime, anywhere.



Figure 4.1: Screenshots of the Bluetooth app displaying home page, data page, and fault page for battery monitoring.

1. **Download APP:** Scan the QR code provided in the product manual or search for the designated app in your mobile app store.
2. **Enable Bluetooth:** Turn on Bluetooth on your smartphone or tablet.
3. **Connect to Battery:** Open the app and connect to your Ingeosolly battery via Bluetooth.
4. **Monitor Data:** The app will display real-time data such as battery power level, voltage, current, capacity, and temperature. It also provides anomaly notifications for quick troubleshooting.

Your browser does not support the video tag.

Video 4.1: This video showcases the features of a 48V golf cart battery, including various charging methods (Anderson interface, copper sheet lock terminal, alligator clips), an LCD display for real-time data, and Bluetooth app monitoring.

5. Maintenance

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

- **Regular Charging:** For prolonged storage, it is recommended to charge the battery to approximately 50% capacity every 3-6 months.
- **Temperature Control:** Store the battery in a cool, dry place away from direct sunlight and extreme temperatures. The recommended storage temperature is between 10°C to 35°C (50°F to 95°F).
- **Terminal Inspection:** Periodically check battery terminals for corrosion or loose connections. Clean and tighten as necessary.
- **Physical Inspection:** Inspect the battery casing for any signs of damage, swelling, or leaks. If any damage is observed, discontinue use and contact customer support.
- **Avoid Deep Discharge:** While the BMS protects against over-discharge, consistently running the battery to 0% can reduce its overall lifespan. Try to recharge before it reaches critically low levels.

6. Troubleshooting

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

- **Battery Not Charging:**
  - Ensure the charger is properly connected to both the battery and the power outlet.
  - Verify that the charger is functioning correctly (check indicator lights).
  - Check the charging temperature. Charging is only permitted between 0℃ and 55℃.
- **Battery Shuts Down Unexpectedly:**
  - The built-in BMS may have triggered protection due to over-voltage, over-current, under-voltage, or over-temperature.
  - If due to under-voltage, recharge the battery immediately.
  - If due to over-current or over-temperature, reduce the load or allow the battery to cool down.
- **Bluetooth APP Connectivity Issues:**
  - Ensure Bluetooth is enabled on your mobile device.
  - Make sure the battery is within Bluetooth range.
  - Restart the app and try reconnecting.
  - Check if the app requires an update.
- **Reduced Performance/Range:**
  - Ensure the battery is fully charged.
  - Verify that all connections are secure and free from corrosion.
  - Operating in extremely cold temperatures can temporarily reduce capacity.

If the issue persists after following these steps, please contact Ingeosolly customer support for further assistance.

7. Specifications

Specification	Details
Model	IE-48v-100ah (48100-520)
Battery Type	LiFePO4 (Lithium Iron Phosphate)
Nominal Voltage	48V (51.2V)
Rated Capacity	100AH
Energy	5.12kWh
BMS	200A Smart BMS
Cycle Life	8,000+ cycles (at 25°C, 100% DOD)
Charging Temperature	0°C to 55°C
Discharging Temperature	-20°C to 60°C
Protection Class	IP65
Terminal Type	M8
Dimensions (L x W x H)	20.47in x 10.59in x 8.66in
Weight	78.48 lbs ±1%

8. Warranty and Support

For warranty information, please refer to the official documentation included with your product or visit the Ingeosolly website. If you require technical support or have any questions regarding your battery, please contact Ingeosolly customer service.

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