SGPWOSAY SG48100M

SUNGOLDPOWER 5.12KWH 100Ah Power Wall 48V LiFePO4 Lithium Battery User Manual

Model: SG48100M

1. Introduction

This manual provides essential information for the safe and efficient operation of your SUNGOLDPOWER 5.12KWH 100Ah Power Wall 48V LiFePO4 Lithium Battery. Please read this manual thoroughly before installation and use to ensure proper functionality and longevity of the product. This battery is designed for various energy storage applications, including solar, marine, overland, and off-grid systems.

2. Safety Information

Always adhere to the following safety guidelines to prevent injury or damage to the battery and connected equipment:

- Do not disassemble, modify, or attempt to repair the battery. Refer to qualified personnel for service.
- Ensure proper ventilation around the battery during operation.
- Avoid exposing the battery to extreme temperatures, direct sunlight, or moisture.
- Use only compatible chargers and inverters as specified by SUNGOLDPOWER.
- Always wear appropriate personal protective equipment (PPE) when handling the battery.
- Keep out of reach of children and pets.
- In case of fire, use a Class D fire extinguisher. Water can exacerbate LiFePO4 battery fires.

3. Product Overview

The SUNGOLDPOWER 5.12KWH 100Ah Power Wall LiFePO4 Lithium Battery is a high-performance energy storage solution. It features automotive-grade battery cells, an intelligent Battery Management System (BMS), and a modular design for expandability.

Key Features:

- **Grade A Battery Cells:** Manufactured with automotive grade battery cells for reliability.
- **Intelligent BMS:** Manages and monitors cell information (voltage, current, temperature) and protects against overcharge, deep discharge, overloading, overheating, and short circuit.
- **Long Cycle Life:** Provides 7000+ deep cycles and up to 15-year lifetime.
- **Flexible & Expandable:** Modular design allows for easy expansion, with a maximum of 16 units in parallel for a total capacity of 81.9kWh.
- **Wide Compatibility:** CAN/RS485/RS232 Communication Protocol ensures compatibility with most inverters on the market (e.g., Growatt, Deye, SunGoldPower, Luxpower, Victron energy, Schneider, Phocos, SMK).
- **IP65 Protection:** Rated enclosure provides protection against low-pressure water jets and condensation, suitable for most outdoor installations.

Components Included:

- Power Wall Battery Unit
- Positive and Negative Output Cables
- Battery Parallel Cables
- RS485 Cascade Communication Cable
- RS485 USB/RS232 USB (optional)
- Composite Bolt and Expansion Bolt
- Hanging Ear Screw
- Dry Contact Terminal

Figure 3.1: Front view of the SUNGOLDPOWER Power Wall Battery with LED monitor.

Figure 3.2: Key features including 100A BMS, 5.12KWH energy, and 7000+ deep cycles.

Figure 3.3: Product dimensions (5.5 x 16.5 x 24 inches) and a list of included accessories such as cables and mounting hardware.

Figure 3.4: Detailed diagram showing the LCD display, function buttons, battery terminals, DIP switch, RS485, RS232, CAN ports, and ground screw.

4. Setup

4.1 Installation Location

Choose a dry, well-ventilated area for installation, away from direct sunlight, heat sources, and flammable materials. The battery is IP65 rated, offering protection against low-pressure water jets and condensation, making it suitable for many outdoor environments. Ensure the mounting surface can support the battery's weight of 114.6 pounds.

4.2 Mounting the Battery

The SUNGOLDPOWER Power Wall battery is designed for wall mounting. Use the provided hanging ear screws, composite bolts, and expansion bolts to securely fasten the unit to a sturdy wall. Ensure sufficient clearance for ventilation and cable connections.

4.3 Wiring and Connection

The battery comes with all necessary wiring for connection. Connect the positive and negative output cables to your inverter or charge controller. For parallel connections, use the provided battery parallel cables to link multiple units. Ensure all connections are tight and secure to prevent arcing or overheating.

Figure 4.1: Illustration of parallel connection for increased capacity, supporting up to 32 modules.

For communication with compatible inverters, connect the RS485, RS232, or CAN communication cables. Refer to your inverter's manual for specific communication settings and protocols. The battery supports multiple communication protocols for broad compatibility.

4.4 Initial Power-On

After all physical connections are made and verified, switch the battery's ON/OFF button to the 'ON' position. The LED monitor will illuminate, displaying system information. Ensure the DIP switches are set correctly according to your system configuration (e.g., for parallel addressing).

5. Operating

5.1 LED Monitor and Controls

The integrated LED monitor provides real-time data and allows for system configuration. Use the 'MENU', 'ENTER', 'DOWN', and 'ESC' buttons to navigate through the display options:

- **Analog Info:** Displays real-time values such as pack voltage (PackV), current (Im), and temperature (T1-T4).
- **BMS Status:** Shows the current status of the Battery Management System, including idle, record, and protection states (OT: Over Temperature, OTP: Over Temperature Protection, OVP: Over Voltage Protection).
- **Para Setting:** Allows adjustment of various parameters. *Caution: Only modify settings if you fully understand their implications. Incorrect settings can damage the battery or system.*
- **Sys Setting:** System-level configurations.

The 'RUN' and 'ALM' LEDs indicate operational status and alarms, respectively. The 'SOC' (State of Charge) LEDs provide a quick visual reference of the battery's charge level.

5.2 System Integration

This battery is designed to integrate seamlessly with various inverter brands. Ensure your inverter's charging parameters are set correctly to match the battery's specifications (e.g., maximum charge voltage, float voltage, charge current). Incorrect settings can lead to reduced battery life or damage.

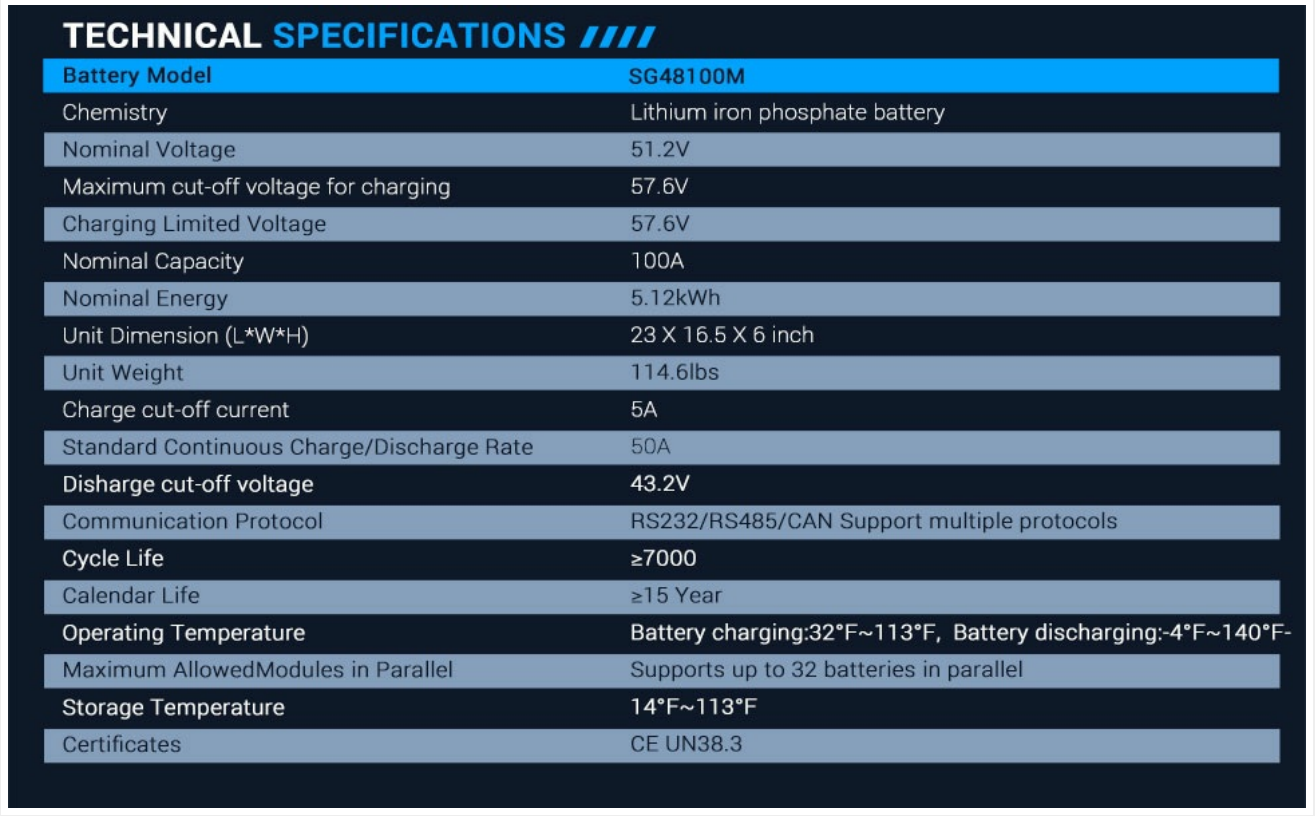

Figure 5.1: Illustration of the SUNGOLDPOWER battery integrated into a home solar system, powering household appliances.

6. Maintenance

The SUNGOLDPOWER LiFePO4 battery requires minimal maintenance due to its advanced design and intelligent BMS. However, regular checks are recommended:

- **Visual Inspection:** Periodically inspect the battery for any signs of physical damage, loose connections, or corrosion.
- **Cleanliness:** Keep the battery surface clean and free from dust and debris. Use a dry, soft cloth for cleaning.
- **Temperature Monitoring:** Ensure the operating temperature remains within the specified range (Battery

charging: 32°F~113°F; Battery discharging: -4°F~140°F).

- **Firmware Updates:** Check the manufacturer's website for any available firmware updates for the BMS to ensure optimal performance and compatibility.
- **Long-Term 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 within the specified storage temperature range (14°F~113°F).

7. Troubleshooting

This section provides solutions to common issues you might encounter. For problems not listed here, or if solutions do not resolve the issue, please contact SGPWOSAY customer support.

Problem	Possible Cause	Solution
Battery not powering on/no display	ON/OFF switch is off; loose power cables; low battery voltage.	Ensure ON/OFF switch is 'ON'. Check all power cable connections. If voltage is too low, connect to a compatible charger.
Battery not charging	Inverter/charger settings incorrect; BMS protection activated; loose communication cable.	Verify inverter/charger settings match battery specifications. Check BMS status on the display for active protections (e.g., OVP, OTP). Ensure communication cables are securely connected.
Communication error with inverter	Incorrect communication protocol/settings; loose communication cable.	Check communication cable connections. Verify DIP switch settings and communication protocol (CAN/RS485/RS232) on both battery and inverter.
Reduced capacity or runtime	Aging battery; frequent deep discharges; high operating temperature.	Ensure battery is not consistently deep discharged. Optimize charging parameters. Verify proper ventilation and operating temperature. Consider adding more parallel units if capacity needs are higher.

8. Specifications

The following table outlines the technical specifications for the SUNGOLDPOWER 5.12KWH 100Ah Power Wall LiFePO4 Lithium Battery (Model SG48100M):

Attribute	Value
Battery Model	SG48100M
Chemistry	Lithium iron phosphate battery (LiFePO4)
Nominal Voltage	51.2V
Maximum Cut-off Voltage for Charging	57.6V
Charging Limited Voltage	57.6V
Nominal Capacity	100A
Nominal Energy	5.12kWh
Unit Dimension (L*W*H)	23 x 16.5 x 5 inch

Attribute	Value
Unit Weight	114.6 lbs
Charge Cut-off Current	5A
Standard Continuous Charge/Discharge Rate	50A
Discharge Cut-off Voltage	43.2V
Communication Protocol	RS232/RS485/CAN (Support multiple protocols)
Cycle Life	≥7000
Calendar Life	≥15 Year
Operating Temperature (Charging)	32°F~113°F (0°C~45°C)
Operating Temperature (Discharging)	-4°F~140°F (-20°C~60°C)
Maximum Allowed Modules in Parallel	Supports up to 32 batteries in parallel
Storage Temperature	14°F~113°F (-10°C~45°C)
Certificates	CE UN38.3

Figure 8.1: Visual representation of the technical specifications table.

9. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the official SGPWOSAY website or contact their customer service department. It is recommended to keep your purchase receipt for warranty claims.

- **Official User Guide:** A detailed PDF user guide is available for download at https://manuals.plus/m/73ba3dd5a20224602965a36e8d0090db980c1f1b07ae3c8c1f082058ddd2a4a4.

- **Protection Plans:** Additional protection plans may be available for purchase. Please check with your retailer for details.