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SGPWATT SG48100P

SUNGOLDPOWER 48V LiFePO4 Lithium Battery User Manual

Model: SG48100P

1. Product Overview

The SUNGOLDPOWER 48V 100Ah LiFePO4 Lithium Battery is a high-performance, deep-cycle rechargeable battery designed for various applications including RV, solar, marine, overland, and off-grid server rack systems. It features a built-in 100A Battery Management System (BMS) and an LED monitor for efficient operation and protection.

- **Grade A Battery Cells:** Manufactured with automotive-grade battery cells, providing 7000+ deep cycles and an estimated 15-year lifetime.
- **Intelligent BMS:** Manages and monitors cell information (voltage, current, temperature) and protects against overcharge, deep discharge, overloading, overheating, and short circuits.
- **Flexible and Expandable:** Modular design allows for easy expansion, supporting up to 16 units in parallel for a total capacity of 81.9 kWh.
- **Wide Compatibility:** Features CAN/RS485/RS232 communication protocols, making it compatible with most inverters on the market, including Growatt, Deye, SunGoldPower, Luxpower, Victron Energy, Schneider, and Phocos.



Figure 1.1: SUNGOLDPOWER 48V 100Ah LiFePO4 Lithium Battery (Model SG48100P).

2. Safety Guidelines

Please read and understand all safety instructions before installing or operating the battery. Failure to follow these instructions may result in electric shock, fire, serious injury, or death.

- Always wear appropriate personal protective equipment (PPE), including insulated gloves and eye protection, when handling batteries.
- Do not short-circuit the battery terminals.
- Do not disassemble, puncture, or damage the battery.
- Keep the battery away from open flames, heat sources, and flammable materials.
- Ensure proper ventilation during charging and discharging.
- Connect the battery only to compatible inverters and charging systems.
- Do not immerse the battery in water or other liquids.
- In case of fire, use a Class D fire extinguisher. Water or foam extinguishers are not suitable for lithium battery fires.
- Dispose of the battery according to local regulations.

3. Package Contents

Verify that all items listed below are included in your package. If any items are missing or damaged, please contact customer support.

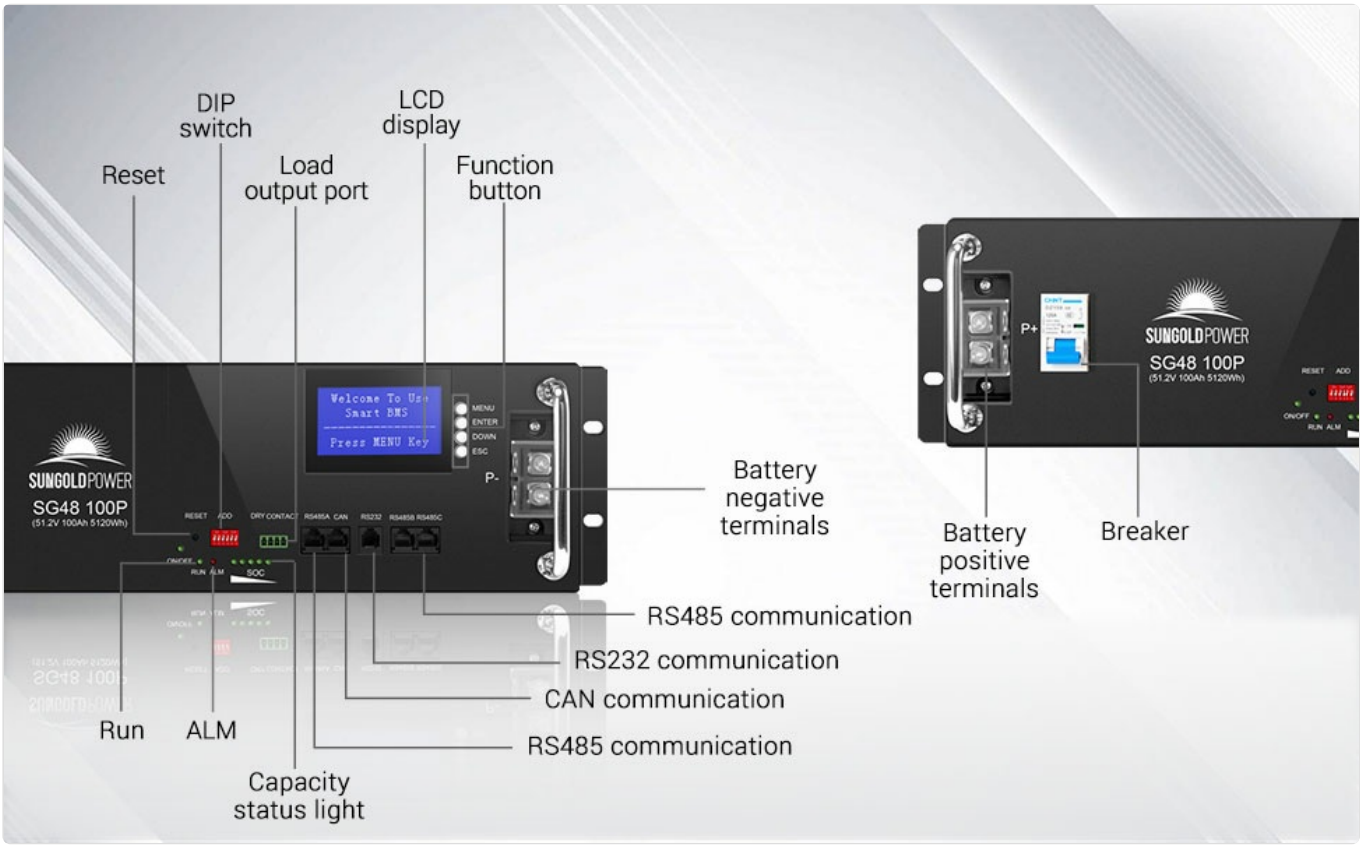


Figure 3.1: Package Contents.

- 1 x SUNGOLDPOWER 51.2V 100Ah Server Rack Battery (SG48100P)
- 1 Set x Battery Cables (Positive and Negative Output Lines)
- 1 x RS485 Communication Cable (Battery-Battery or Battery-Inverter)
- 1 x RS232 Communication Cable to PC for Monitoring (Optional, may vary by package)

- Hanging Ear Screws
- Dry Contact Terminal
- User Manual (this document)

4. Product Components

Familiarize yourself with the various components and interfaces of the SUNGOLDPOWER 48V 100Ah LiFePO4 Lithium Battery.



Figure 4.1: Front Panel Components.

- **Battery Positive Terminals (P+):** For connecting the positive cable.
- **Battery Negative Terminals (P-):** For connecting the negative cable.
- **Breaker:** Circuit breaker for protection.
- **LCD Display:** Shows battery voltage, State of Charge (SOC), and other operational parameters.
- **Function Buttons (MENU, ENTER, DOWN, ESC):** For navigating the LCD menu and settings.
- **DIP Switch (ADD):** Used for setting the battery address when connecting multiple units in parallel.
- **Reset Button:** For resetting the battery system.
- **Communication Ports (RS485A, CAN, RS232, RS485B/C):** For communication with inverters and monitoring systems.
- **Dry Contact Port:** For external control or signaling.
- **ON/OFF Switch:** Main power switch for the battery.
- **Run/ALM Indicator:** Indicates operational status (Run) or alarm conditions (ALM).
- **Capacity Status Lights (SOC):** LED indicators showing the approximate State of Charge.

5. Installation and Connection

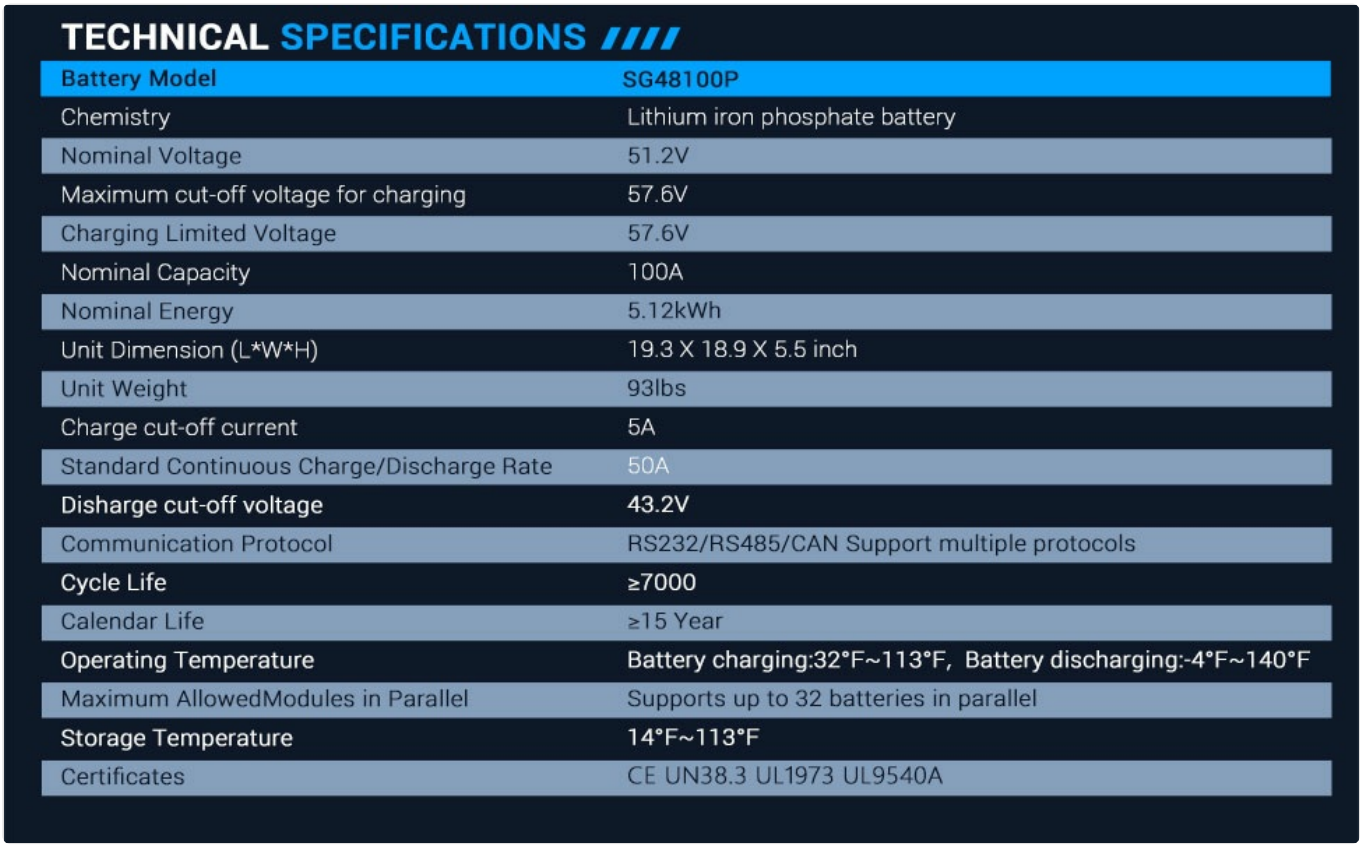
Follow these steps for proper installation and connection of your SUNGOLDPOWER LiFePO4 battery.

5.1 Single Battery Installation

1. **Mounting:** Securely mount the battery in a well-ventilated area using the provided wall mount bracket or within a server rack. Ensure the mounting surface can support the battery's weight (93 lbs).
2. **Cable Connection:** Connect the positive battery cable (red) to the P+ terminal and the negative battery cable (black) to the P- terminal. Ensure connections are tight and secure.
3. **Inverter Connection:** Connect the other end of the battery cables to the appropriate battery input terminals on your inverter. Observe correct polarity.
4. **Communication (Optional):** If connecting to an inverter for communication, use the appropriate RS485 or CAN cable between the battery and the inverter.

5.2 Parallel Connection (Multiple Batteries)

The SG48100P battery supports parallel connection of up to 16 units for increased capacity. For optimal performance, it is recommended to connect batteries of the same model and charge level.



TECHNICAL SPECIFICATIONS

Battery Model	SG48100P
Chemistry	Lithium iron phosphate battery
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)	19.3 X 18.9 X 5.5 inch
Unit Weight	93lbs
Charge cut-off current	5A
Standard Continuous Charge/Discharge Rate	50A
Disharge cut-off voltage	43.2V
Communication Protocol	RS232/RS485/CAN Support multiple protocols
Cycle Life	≥7000
Calendar Life	≥15 Year
Operating Temperature	Battery charging:32°F~113°F, Battery discharging:-4°F~140°F
Maximum AllowedModules in Parallel	Supports up to 32 batteries in parallel
Storage Temperature	14°F~113°F
Certificates	CE UN38.3 UL1973 UL9540A

Figure 5.1: Parallel Connection and Communication Setup.

1. **Physical Connection:** Connect the positive terminals of all batteries together and the negative terminals of all batteries together using appropriate bus bars or cables. Ensure all cables are of sufficient gauge for the combined current.
2. **DIP Switch Setting:** For parallel operation, each battery must have a unique address set via the DIP switches. Refer to the specific DIP switch configuration table in the full user manual for correct settings.
3. **Communication Connection:** Use the provided RS485 communication cables to daisy-chain the batteries for inter-battery communication. Connect the first battery to the inverter via RS485 or CAN.
4. **Power On Sequence:** After all connections are secure, turn on the main breaker for each battery, then turn on the ON/OFF switch. Finally, power on your inverter.

6. Operation

Once installed, the battery is ready for operation. The integrated LCD display provides real-time information about the battery's status.

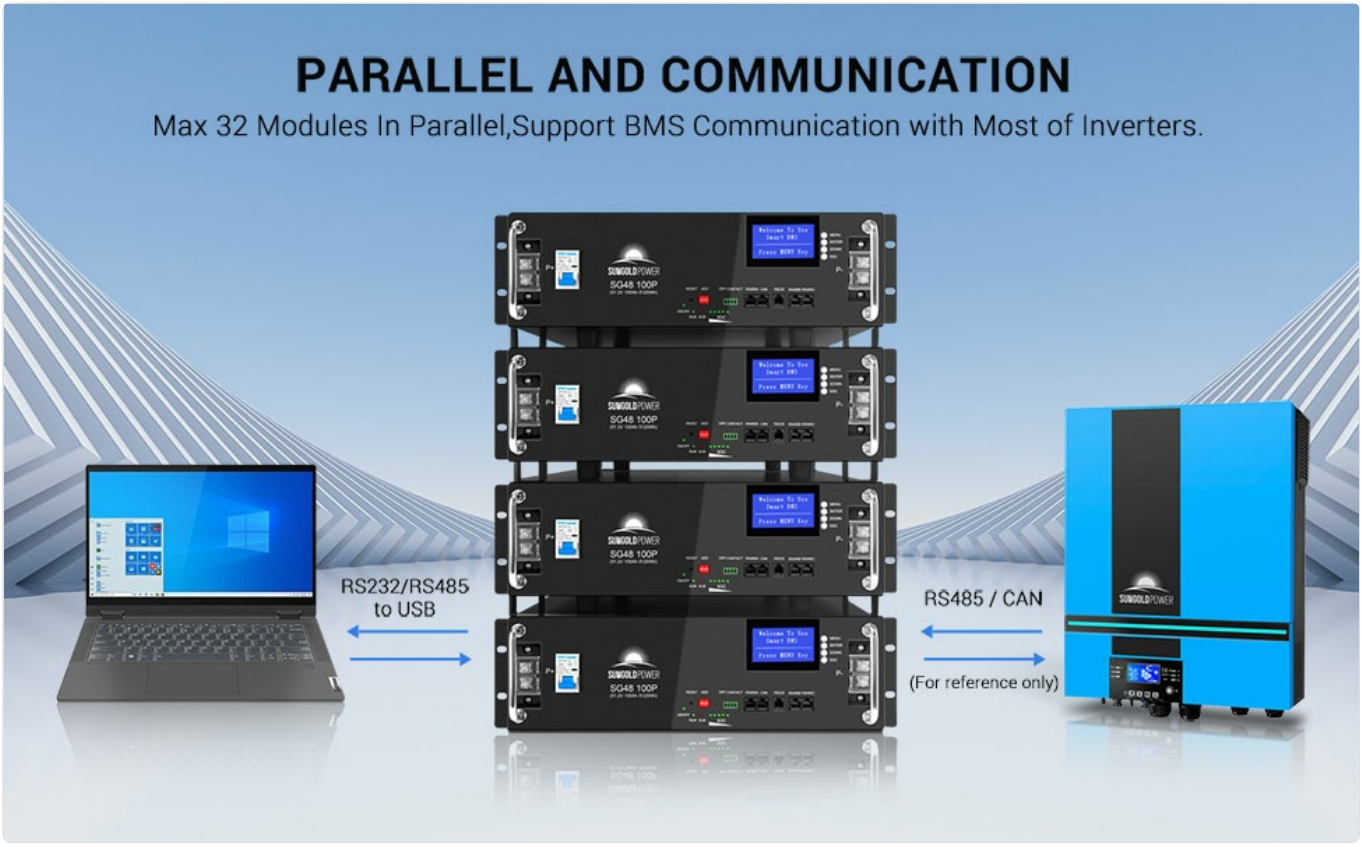


Figure 6.1: LCD Display.

6.1 LCD Display and Navigation

The LCD display shows critical information such as:

- Battery Voltage
- Current (Charge/Discharge)
- State of Charge (SOC) Percentage
- Temperature
- Alarm/Error Codes

Use the MENU, ENTER, DOWN, and ESC buttons to navigate through the display screens and access settings. Refer to the detailed user manual for specific menu options and parameter adjustments.

6.2 Charging and Discharging

The battery will automatically manage charging and discharging based on the connected inverter/charger. The intelligent BMS ensures optimal performance and protection.

- **Charging:** Ensure your charger/inverter is configured for LiFePO4 batteries with the correct voltage and current settings (Nominal Voltage: 51.2V, Maximum cut-off voltage for charging: 57.6V, Charging Limited Voltage: 57.6V).
- **Discharging:** The battery will provide power as required by your load. The BMS will protect against over-discharge (Discharge cut-off voltage: 43.2V).

7. Maintenance and Storage

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

- **Regular Inspection:** Periodically check battery terminals and cables for corrosion or loose connections. Clean as necessary.
- **Environmental Conditions:** Ensure the battery operates within the recommended temperature ranges (Charging: 32°F~113°F; Discharging: -4°F~140°F).
- **Cleaning:** Keep the battery clean and free of dust. Use a dry cloth for cleaning. Do not use solvents or abrasive cleaners.
- **Long-Term Storage:** If storing the battery for an extended period, ensure it is charged to approximately 50% State of Charge (SOC). Store in a cool, dry place with a temperature range of 14°F~113°F. Recharge every 3-6 months to prevent self-discharge.

8. Troubleshooting

This section provides solutions to common issues you might encounter. For more complex problems, contact customer support.

Problem	Possible Cause	Solution
Battery not turning on	Main breaker off; ON/OFF switch off; Low voltage cutoff	Check main breaker and ON/OFF switch. If low voltage, connect to a compatible charger.
No power output	Overload protection; Short circuit; BMS fault	Reduce load. Check for short circuits in wiring. Reset battery if possible. Contact support if fault persists.
Battery not charging	Charger/inverter issue; Over-voltage protection; Temperature too high/low	Verify charger operation and settings. Ensure battery is within charging temperature range.
LCD display blank or erratic	Loose connection; Internal fault	Check power connections. Try resetting the battery. Contact support.
Alarm indicator (ALM) on	Various protection triggers (e.g., over-temp, under-voltage)	Check LCD for specific error code. Address the underlying issue (e.g., adjust temperature, reduce load).

9. Technical Specifications

Detailed specifications for the SUNGOLDPOWER 48V 100Ah LiFePO4 Lithium Battery (Model SG48100P).



Figure 9.1: Technical Specifications.

Parameter	Value
Battery Model	SG48100P
Chemistry	Lithium Iron Phosphate (LiFePO4)
Nominal Voltage	51.2V
Maximum Cut-off Voltage for Charging	57.6V
Charging Limited Voltage	57.6V
Nominal Capacity	100Ah
Nominal Energy	5.12kWh
Unit Dimension (L*W*H)	19.3 x 18.9 x 5.5 inches
Unit Weight	93 lbs
Charge Cut-off Current	5A
Standard Continuous Charge/Discharge Rate	50A
Discharge Cut-off Voltage	43.2V
Communication Protocol	RS232/RS485/CAN (Supports multiple protocols)
Cycle Life	≥7000 cycles
Calendar Life	≥15 Years
Operating Temperature (Charging)	32°F~113°F (0°C~45°C)

Parameter	Value
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, UL1973, UL9540A

10. Warranty and Support

SUNGOLDPOWER LiFePO4 batteries are designed for long-term reliability, offering an estimated 15-year calendar life and over 7000 deep cycles. For specific warranty terms and conditions, please refer to the official warranty statement provided with your purchase or contact SGPWATT customer service.

For technical assistance, troubleshooting, or warranty claims, please contact SHENZHEN SPECIAL TECHNOLOGY CO.,LTD, the seller, or SGPWATT customer support. You can often find contact information on the seller's Amazon page or the official SGPWATT website.

A Certificate of Compliance is available for this product. You can access it via this link: Certificate of Compliance (PDF).

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