SaiJiaoYang 51.2V 300Ah

SaiJiaoYang 15kWh 48V 300Ah LiFePO4 Lithium Battery User Manual

Model: 51.2V 300Ah | Brand: SaiJiaoYang

1. Introduction

Welcome to the user manual for your SaiJiaoYang 15kWh 48V 300Ah LiFePO4 Lithium Battery. This manual provides essential information for the safe and efficient operation, installation, and maintenance of your battery system. Please read this manual thoroughly before installation and use to ensure proper functionality and safety.

The SaiJiaoYang 15kWh LiFePO4 battery is suitable for diverse applications including home, industrial, commercial energy storage, and UPS backup power systems.

2. Safety Instructions

Adherence to these safety guidelines is crucial for preventing injury and damage to the battery and surrounding equipment. Failure to follow these instructions may result in serious injury or property damage.

- Always wear appropriate personal protective equipment (PPE), including insulated gloves and eye protection, during installation and maintenance.

- Do not disassemble, puncture, crush, heat, or modify the battery. This can lead to fire, explosion, or chemical leakage.
- Keep the battery away from heat sources, open flames, flammable materials, and direct sunlight.
- Ensure proper ventilation around the battery during operation to prevent overheating.
- Avoid short-circuiting the battery terminals. Use insulated tools when working with the battery.
- In case of fire, use a Class D fire extinguisher. Water can exacerbate lithium battery fires.
- Consult a qualified electrician or certified installer for installation if you are unsure about any steps.
- Keep out of reach of children and pets.

3. Product Overview

The SaiJiaoYang 15kWh LiFePO4 battery is a high-capacity energy storage solution designed for various applications including home energy systems, RVs, solar installations, and off-grid power. It features a built-in 200A Battery Management System (BMS) and supports CAN/RS485 communication for intelligent integration.

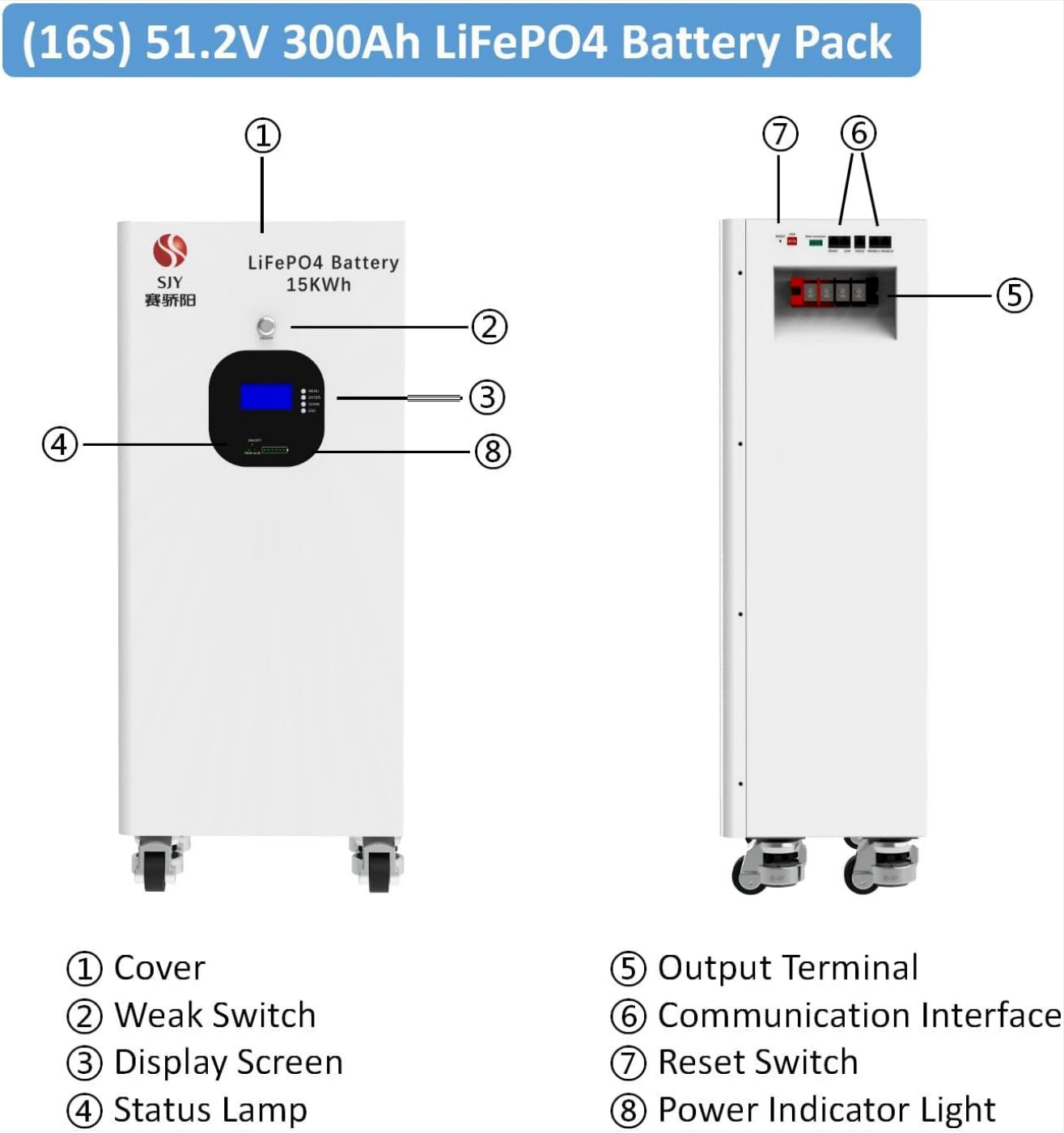
3.1 Key Features

- **High-Quality A-Cells:** Utilizes advanced A-grade prismatic LiFePO4 cells for superior performance and an extended cycle life of 3,000 to 15,000 cycles.
- **Integrated 200A BMS:** Features a built-in 16S 200A Smart Battery Management System to protect against overcharge, over-discharge, over-current, and overheating, while also managing charge/discharge data and parameters.
- **Scalable Energy Capacity:** Up to 15 batteries can be connected in parallel to achieve a massive 225kWh energy storage capacity, suitable for both domestic and industrial needs.
- **Communication Interface:** Equipped with CAN and RS485 communication protocols for seamless compatibility with various inverter brands such as Growatt, Victron, SMA, Pylontech, and Lux Power Tek.
- **Durable Design:** Housed in a robust stainless steel case with integrated rollers for easy mobility and placement.

Key features of the SaiJiaoYang 15kWh LiFePO4 battery, including its cycle life, BMS, cell quality, and communication capabilities.

3.2 Components and Interface

Familiarize yourself with the external components and interfaces of the battery unit:



This diagram illustrates the main components and interface points of the battery unit.

1. **Cover:** The main protective casing of the battery.
2. **Weak Switch:** The primary power button for turning the battery ON/OFF.
3. **Display Screen:** Provides real-time operational data and status indicators.
4. **Status Lamp:** LED indicators showing various operational statuses (e.g., charging, discharging, fault).
5. **Output Terminal:** Positive (+) and Negative (-) connection points for power output.
6. **Communication Interface:** Ports for CAN and RS485 communication with external devices like inverters.
7. **Reset Switch:** Used to reset the battery management system if necessary.
8. **Power Indicator Light:** Indicates the overall power status of the unit.

4. Setup and Installation

This section outlines the steps for safely installing your SaiJiaoYang LiFePO4 battery. Ensure all safety precautions are followed.

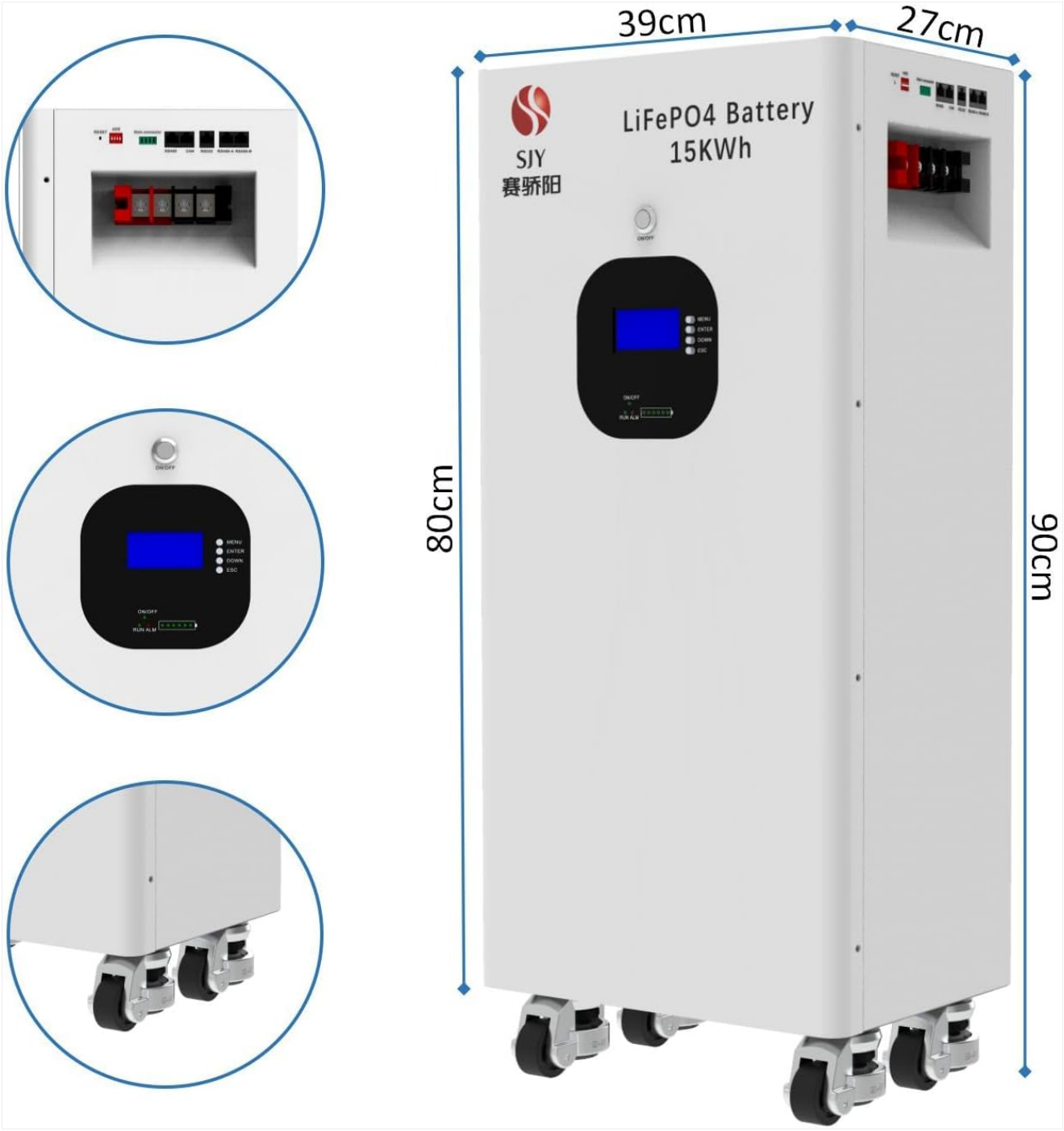
4.1 Unpacking

Carefully unpack the battery from its wooden case. Inspect the battery for any signs of damage during transit. Ensure all components listed in the packing list are present before proceeding.

The image displays the contents of the package: the 51.2V 300Ah LiFePO4 battery, battery power cables, parallel cables, and the user manual with unpacking instructions. The bottom section shows the battery securely packed in wooden cases for transport.

4.2 Physical Placement

Place the battery on a stable, level surface in a well-ventilated area. The integrated rollers allow for easier positioning. Ensure adequate clearance around the battery for air circulation and access to terminals. Avoid placing the battery in direct sunlight or areas with extreme temperatures.



This image provides the physical dimensions of the battery unit, including its width, depth, and height, both with and without the integrated rollers.

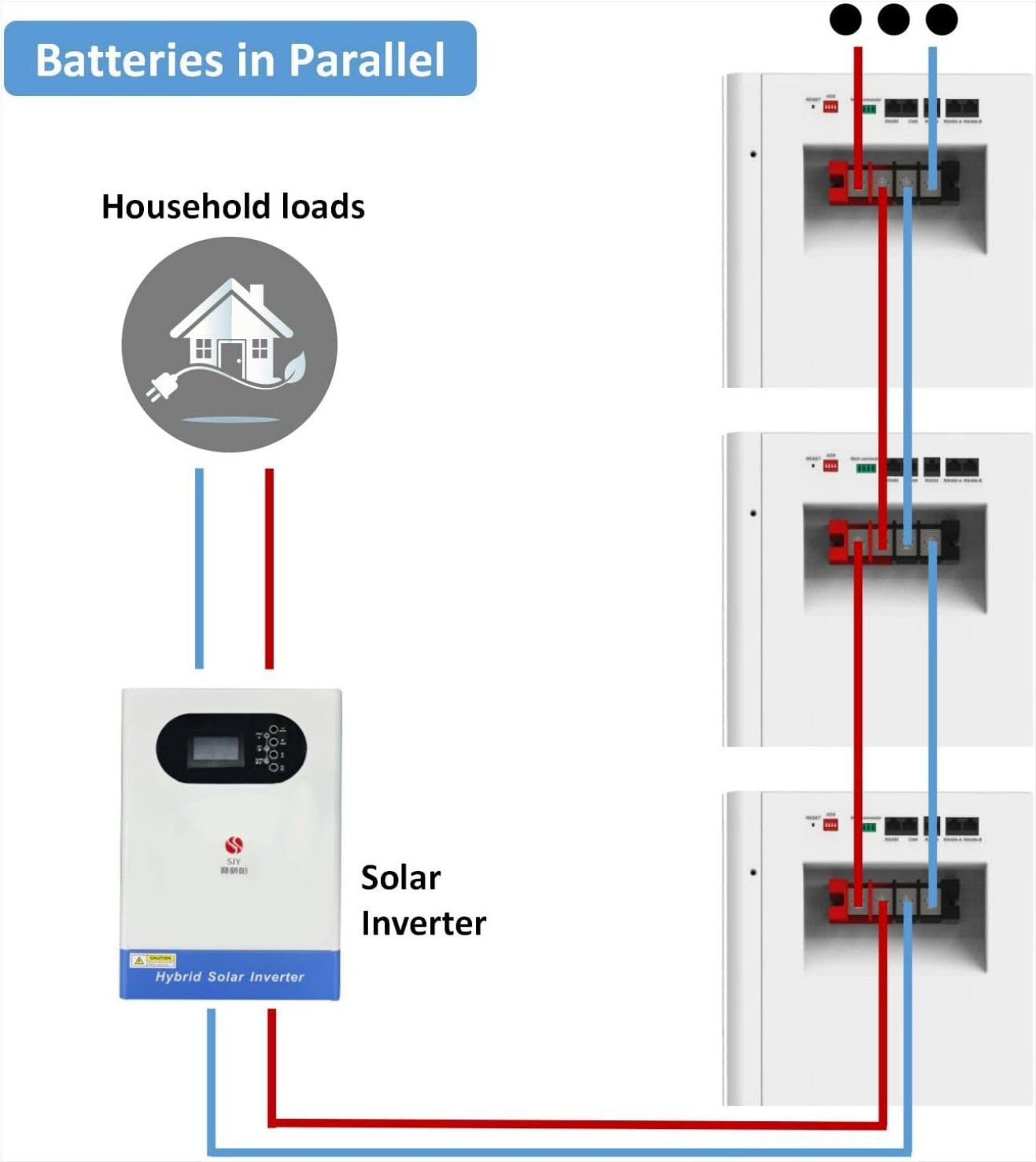
4.3 Electrical Connections

Important: Before making any electrical connections, ensure all power sources are disconnected and the battery's weak switch is in the OFF position. Use appropriate gauge cables for your application.

- Connect the positive (+) terminal of the battery to the positive input of your inverter/charge controller.
- Connect the negative (-) terminal of the battery to the negative input of your inverter/charge controller.
- Use the provided battery power cables and parallel cables as needed. Ensure all connections are secure and tight.

4.4 Parallel Connection (Optional)

For increased energy capacity, multiple SaiJiaoYang batteries can be connected in parallel. Up to 15 batteries can be connected to achieve a total energy of 225kWh. Follow the diagram below for proper parallel wiring.



This diagram illustrates how to connect multiple battery units in parallel to a hybrid solar inverter to power household loads, demonstrating system scalability.

4.5 Communication Interface

The battery supports CAN and RS485 communication protocols for seamless integration with compatible inverters. Connect the appropriate communication cable between the battery's communication interface and your inverter.

- The battery is compatible with inverters from brands such as Growatt, Victron, SMA, Pylontech, and Lux Power Tek.
- Refer to your inverter's manual for specific communication setup instructions and pin configurations.

A typical solar energy system setup showing the integration of solar panels, the SaiJiaoYang 15kWh battery, an inverter, and household loads, with grid connection.

5. Operating Instructions

This section details how to operate your SaiJiaoYang LiFePO4 battery.

5.1 Powering On/Off

- **To Power On:** Press the "Weak Switch" (power button) located on the front panel. The display screen will illuminate, and status lamps will indicate operational status.
- **To Power Off:** Press and hold the "Weak Switch" until the display turns off and all indicators are extinguished.

5.2 Monitoring

The integrated display screen provides real-time information about the battery's State of Charge (SoC), voltage, current, and temperature. For more detailed monitoring, data logging, and parameter adjustments, utilize the proprietary mobile application. The app allows for remote oversight of your battery system.

The battery unit shown with its mobile application interface, demonstrating remote monitoring capabilities including charge level, voltage, current, and temperature.

5.3 Charging and Discharging

The built-in BMS intelligently manages charging and discharging cycles to ensure optimal performance, safety, and longevity of the battery.

- **Charging Temperature Range:** The battery can be charged within a temperature range of 0°C to 55°C (32°F to 131°F).
- **Discharging Temperature Range:** The battery can be discharged within a temperature range of -20°C to 55°C (-4°F to 131°F).
- Ensure the battery operates within these specified temperature limits to prevent damage and maintain efficiency.

6. Maintenance

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

- **Cleaning:** Keep the battery clean and free from dust, dirt, and debris. Use a dry, soft cloth for cleaning. Do not use liquid cleaners directly on the battery.
- **Connection Checks:** Periodically inspect all cable connections for tightness and signs of corrosion. Loose connections can lead to poor performance or safety hazards.
- **Performance Monitoring:** Regularly monitor the battery's performance through the integrated display or the mobile application. Pay attention to any unusual readings or warnings.
- **Storage:** Avoid prolonged storage in a fully discharged state. If storing for an extended period, charge the battery to approximately 50% State of Charge (SoC) and store it in a cool, dry place away from direct sunlight and extreme temperatures.
- **Ventilation:** Ensure that the area around the battery remains well-ventilated to prevent heat buildup.

7. Troubleshooting

This section addresses common issues you might encounter with your SaiJiaoYang LiFePO4 battery. For problems not listed here, please contact customer support.

Problem	Possible Cause	Solution
Battery not powering on	Weak switch is off; Battery is fully discharged; Internal fault.	Press the weak switch to turn on; Connect to a charger; If issue persists, contact support.
No power output	Overload protection activated; BMS in protection mode; Loose cable connections; Inverter fault.	Reduce the load; Check BMS status on display/app and reset if needed; Inspect and tighten all electrical connections; Check inverter status.
Communication error with inverter	Incorrect communication cable; Wrong protocol settings on battery or inverter; Inverter not compatible.	Verify communication cable type and connection; Check and adjust communication protocol settings on both battery and inverter; Consult inverter manual for compatibility.
Battery overheating	Poor ventilation; Excessive load; High ambient temperature; Internal fault.	Ensure adequate airflow around the battery; Reduce the connected load; Move the battery to a cooler environment; If issue persists, contact support.
Battery not charging	Charger not connected; Charger fault; BMS protection activated (e.g., low temperature); Charging source issue.	Verify charger connection and functionality; Check BMS status for temperature or other protection triggers; Ensure charging source is active and providing correct voltage/current.

If the issue persists after attempting these solutions, please contact SaiJiaoYang customer support or your authorized dealer for further assistance.

8. Specifications

Detailed technical specifications for the SaiJiaoYang 15kWh LiFePO4 Battery.

Feature	Specification
Model	51.2V 300Ah

Feature	Specification
Energy Capacity	15kWh (15360Wh)
Battery Type	LiFePO4 (Lithium Iron Phosphate)
Cell Type	A Grade Prismatic Battery Cell
BMS	Built-in 16S 200A Smart BMS
Cycle Life	>10,000 Cycles
Nominal Voltage	51.2V
Nominal Capacity	300Ah
Max Continuous Charge Current	200A
Max Continuous Discharge Current	200A
Communication Interfaces	CAN, RS485
Charging Temperature Range	0°C to 55°C (32°F to 131°F)
Discharging Temperature Range	-20°C to 55°C (-4°F to 131°F)
Dimensions (L x W x H)	39cm x 27cm x 90cm (with rollers)
Case Material	Stainless Steel
Parallel Connection	Up to 15 units

This image provides a summary of the battery's key specifications, including model, energy, case material, BMS type, cycle life, and temperature limits for charging and discharging. It also highlights the use of A Grade Prismatic Battery Cells and a JBD 16S 200A compatible BMS.

9. Warranty and Support

For warranty information and technical support, please refer to the official SaiJiaoYang website or contact your authorized dealer. Keep your purchase receipt as proof of purchase for warranty claims.

- **Protection Plans:** Optional extended protection plans may be available for purchase to provide additional coverage beyond the standard warranty. Please inquire with your retailer or the manufacturer for details.
- **Contact:** For technical assistance, troubleshooting, or warranty inquiries, please use the contact information provided with your purchase or visit the official SaiJiaoYang website.