

## LMYYDES asdfwe-896362

# LMYYDES 5500W Hybrid Solar Inverter User Manual

Model: asdfwe-896362

## 1. INTRODUCTION

This manual provides essential information for the safe installation, operation, and maintenance of the LMYYDES 5500W Hybrid Solar Inverter. This device integrates a 120A MPPT charge controller, a pure sine wave inverter, and an AC battery charger, designed for various applications including home, RV, and off-grid power systems. Please read this manual thoroughly before installation and operation.

### 1.1 Key Features

- **5500W Pure Sine Wave Inverter:** Converts 48V DC to 110V/120V AC.
- **Integrated 120A MPPT Charge Controller:** Maximizes solar power harvesting.
- **Versatile Charging:** Supports solar, utility, and generator charging.
- **Multiple Operating Modes:** Four charging modes and three output modes for flexible power management.
- **Real-Time Monitoring:** Built-in LCD and WiFi remote monitoring capability.
- **Battery Compatibility:** Works with various 48V battery systems, including lead-acid and lithium.
- **Seamless Backup Power:** Provides power for critical loads with fast transfer speeds.

## 2. SAFETY INFORMATION

Please observe the following safety precautions during installation, operation, and maintenance of the inverter. Failure to comply may result in electric shock, fire, or severe injury.

- **Qualified Personnel:** Installation and maintenance must be performed by qualified personnel.
- **Disconnect Power:** Always disconnect all power sources (solar, battery, utility) before performing any wiring or maintenance.
- **Proper Grounding:** Ensure the inverter is properly grounded according to local electrical codes.
- **Ventilation:** Install the inverter in a well-ventilated area to prevent overheating.

- **Avoid Moisture:** Do not expose the inverter to rain, snow, or liquids.
- **Correct Voltage:** Verify that the battery voltage and AC input/output voltages match the inverter's specifications.
- **Battery Safety:** Wear protective eyewear and gloves when working with batteries. Do not short-circuit battery terminals.

### 3. PRODUCT OVERVIEW

The LMYIDES 5500W Hybrid Solar Inverter is an all-in-one unit designed for efficient power conversion and management.

#### 3.1 Inverter Components

The inverter features a robust casing, an intuitive LCD display, and various connection ports for solar panels, batteries, AC input, and AC output.



Figure 3.1: Front view of the LMYIDES 5500W Hybrid Solar Inverter. The image displays the wall-mounted unit with its central LCD screen and various indicators. Key specifications like 5.5KW Hybrid Inverter and 48V Input Voltage are highlighted. Icons for Pure Sine Wave, RS232/RS485/CAN communication, Monitor & Control, and MPPT Controller are also shown.

#### 3.2 LCD Display and Indicators

The built-in LCD screen provides real-time operational data and system status. Indicators show the current charging mode, output mode, battery status, and fault conditions. Communication interfaces include BMS, RS232, RS485, CAN, USB, and Dry Contact for advanced monitoring and control.

## 4. INSTALLATION

Proper installation is crucial for the safe and efficient operation of the inverter. Follow these steps carefully.

### 4.1 Mounting the Inverter

1. Choose a suitable location: The inverter should be mounted indoors, in a dry, well-ventilated area, away from direct sunlight, heat sources, and flammable materials.
2. Ensure adequate clearance: Allow sufficient space around the inverter for proper airflow and heat dissipation.
3. Secure mounting: Use appropriate hardware to securely mount the inverter to a sturdy wall or surface.

### 4.2 Wiring Connections

All wiring must comply with local electrical codes and standards. Use appropriately sized cables for all connections.

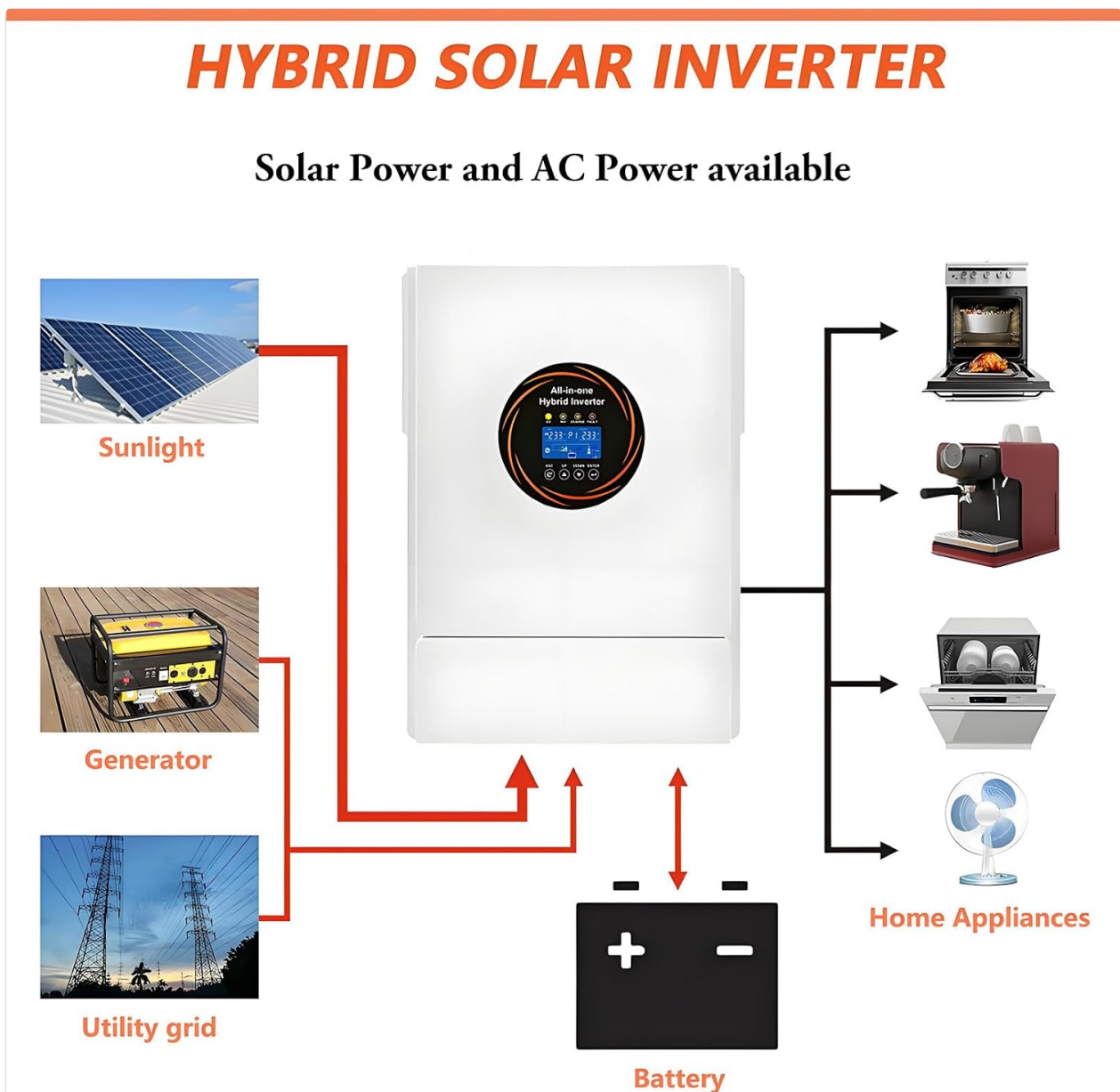


Figure 4.1: Hybrid Solar Inverter System Diagram. This diagram illustrates how sunlight (solar panels), a generator, and the utility grid can provide power input to the inverter. The inverter then charges a battery and supplies AC power to home appliances.

### 4.2.1 Battery Connection

- Connect the positive (+) terminal of the 48V battery bank to the positive (+) battery terminal on the inverter.
- Connect the negative (-) terminal of the 48V battery bank to the negative (-) battery terminal on the inverter.
- Ensure connections are tight and secure.

### 4.2.2 Solar PV Connection

- Connect the positive (+) and negative (-) leads from your solar panel array to the corresponding PV input terminals on the inverter.
- Verify that the PV input voltage (120-500Vdc) and current are within the inverter's specifications. Optimal operating voltage range is 300-400Vdc.

### 4.2.3 AC Input Connection (Utility/Generator)

- Connect the AC input from the utility grid or a generator to the AC input terminals on the inverter.
- The rated input voltage is 220/230/240VAC.

### 4.2.4 AC Output Connection (Loads)

- Connect your AC loads (appliances) to the AC output terminals on the inverter.
- The output voltage is 220/230/240VAC  $\pm 5\%$ .

### 4.2.5 Grounding

Connect the inverter's ground terminal to a reliable earth ground.

## 5. OPERATION

Once installed, the inverter can be configured and operated using its LCD display and control buttons, or via remote monitoring.

### 5.1 Powering On/Off

1. **Power On:** Ensure all connections are secure. Turn on the battery breaker first, then the AC input breaker (if used), and finally the solar PV breaker. Press the power button on the inverter.
2. **Power Off:** Reverse the power-on sequence. Turn off the solar PV breaker, then the AC input breaker, and finally the battery breaker. Press the power button to shut down the inverter.

### 5.2 Charging Modes

The inverter offers four selectable charging modes:

- **Solar Priority:** Solar power is the primary source for charging batteries and supplying loads. Utility/generator is used only when solar is insufficient.
- **Utility Priority:** Utility/generator power is the primary source for charging batteries and supplying loads. Solar is used only when utility/generator is unavailable.
- **Solar Only:** Only solar power is used to charge the batteries.
- **Utility Hybrid Charging:** A combination of utility and solar power is used for charging.

### 5.3 Output Modes

The inverter offers three selectable output modes:

- **PV Priority:** Solar power is the primary source for loads. Battery and utility/generator are used as backup.
- **Utility Priority:** Utility/generator power is the primary source for loads. Solar and battery are used as backup.

- **Inverter Priority:** Battery power (charged by solar) is the primary source for loads. Utility/generator is used as backup.

## 5.4 Real-Time Monitoring

The LCD display provides real-time data such as input/output voltage, current, power, battery status, and operating mode. WiFi remote monitoring is available via a mobile app or web interface, allowing users to track solar performance and system status from anywhere.

## 6. BATTERY COMPATIBILITY

The LMYIDES Hybrid Solar Inverter is designed to work with various 48V battery systems.

# FOR MULTIPLE BATTERY TYPES

### Lithium Batteries Activation,



### Works with 48V battery system

SLD

FLD

AGM

GEL

LI

SUER

- ✓ Support Batteryless Mode
- ✓ Activation function when the battery is dormant
- ✓ Utility/Photovoltaic access triggers battery activation

*Figure 6.1: Battery Type Compatibility. This image illustrates that the inverter supports various 48V battery types, including SLD (Sealed Lead Acid), FLD (Flooded Lead Acid), AGM (Absorbent Glass Mat), GEL, LI (Lithium), and SUER. It also highlights support for batteryless mode and battery activation functions.*

- **Supported Types:** SLD, FLD, AGM, GEL, Lithium (LI), and SUER batteries.
- **Batteryless Mode:** The inverter supports operation without a battery in certain configurations.
- **Activation Function:** Features an activation function for dormant batteries, triggered by utility or photovoltaic access.

## 7. PARALLEL FUNCTION

For increased power output or three-phase systems, multiple inverters can be operated in parallel.

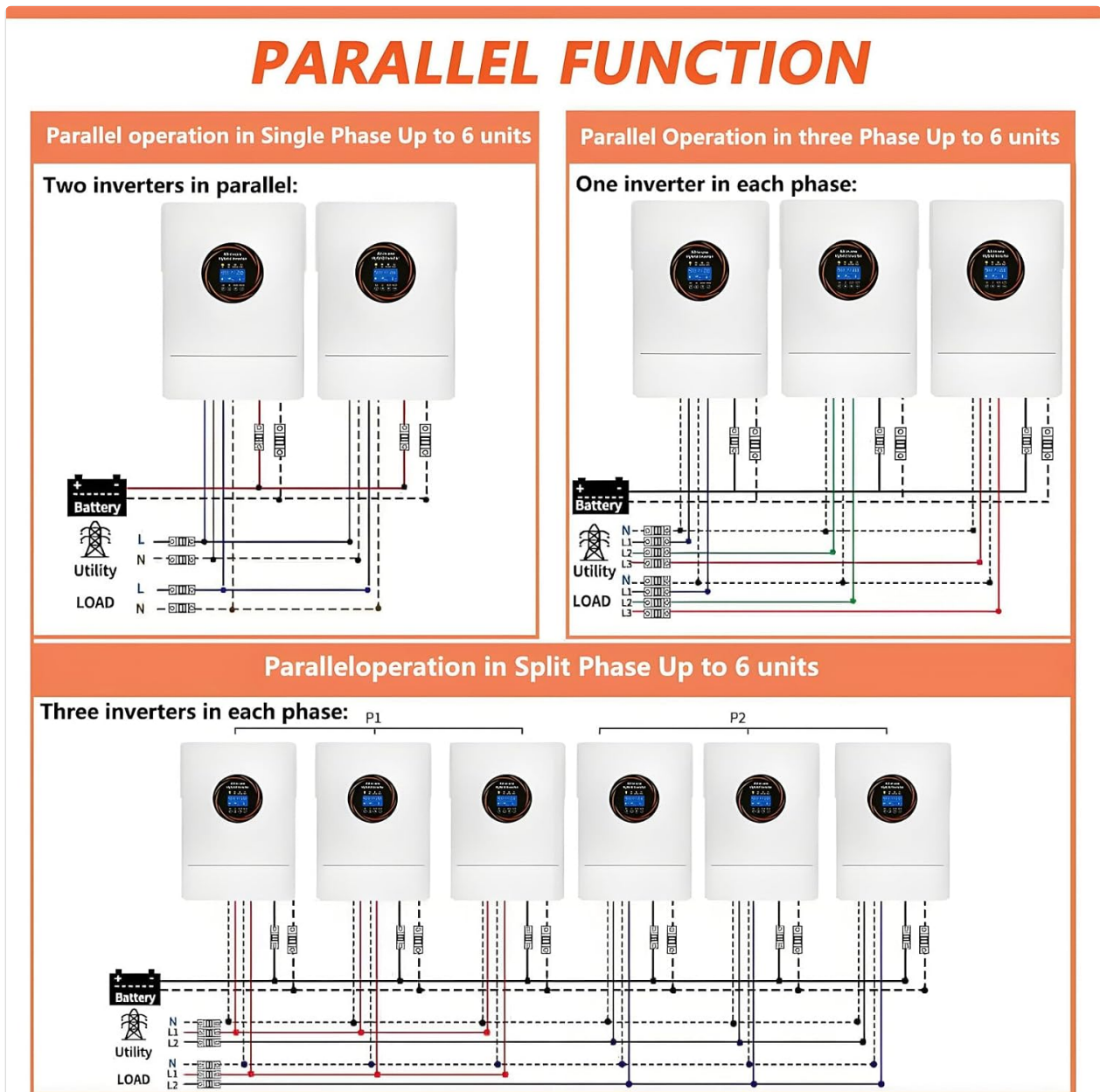


Figure 7.1: Parallel Operation Configurations. This image displays three parallel operation scenarios: two inverters in single-phase parallel, one inverter per phase in a three-phase system, and three inverters per phase in a split-phase system. Each diagram shows the battery, utility, and load connections for up to 6 units.

- **Single Phase Parallel:** Up to 6 units can be connected in parallel for increased single-phase power.
- **Three Phase Parallel:** Up to 6 units can be configured for three-phase output, with one or more inverters assigned to each phase.
- Refer to the detailed parallel installation guide (if provided separately) for specific wiring and configuration instructions.

## 8. APPLICATIONS

The LMYIDES 5500W Hybrid Solar Inverter is suitable for a variety of power needs.



Figure 8.1: Typical Applications. This image illustrates the inverter's use in powering RV electronic devices such as notebooks, coffee makers, and RV air conditioners. It also shows the inverter integrated into a home energy storage system with solar panels.

- **Home Backup Power:** Provides seamless backup for critical loads during power outages.
- **RV and Mobile Applications:** Powers electronic devices and appliances in recreational vehicles.
- **Off-Grid Systems:** Ideal for remote locations without access to the utility grid.

## 9. TROUBLESHOOTING

This section provides guidance for common issues. For complex problems, contact technical support.

| Problem                    | Possible Cause                                                                          | Solution                                                                                         |
|----------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Inverter does not power on | No battery connection or low battery voltage; DC breaker off; Power button not pressed. | Check battery connections and voltage; Ensure DC breaker is on; Press and hold the power button. |
| No AC output               | Overload; Short circuit; Inverter fault; AC output breaker off.                         | Reduce load; Check for short circuits; Restart inverter; Check AC output breaker.                |

| Problem              | Possible Cause                                                                         | Solution                                                                                       |
|----------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Battery not charging | Solar PV input too low or disconnected; AC input not present; Charging mode incorrect. | Check solar panel connections and sunlight; Verify AC input; Select appropriate charging mode. |
| Overheat warning     | Insufficient ventilation; Ambient temperature too high; Fan malfunction.               | Ensure clear airflow around inverter; Move to cooler location; Clean fan vents.                |

## 10. SPECIFICATIONS

Detailed technical specifications for the LMYIDES 5500W Hybrid Solar Inverter.

| Feature                               | Specification                                         |
|---------------------------------------|-------------------------------------------------------|
| Rated Output Power                    | 5500W                                                 |
| Output Voltage                        | 220/230/240VAC $\pm 5\%$                              |
| Output Frequency                      | 50/60Hz $\pm 0.1\%$                                   |
| Waveform                              | Pure Sine Wave                                        |
| Peak Power                            | 11000VA                                               |
| Peak Efficiency                       | > 94%                                                 |
| Switching Time                        | 10ms (typical)                                        |
| Rated Input Voltage (AC)              | 220/230/240VAC                                        |
| Voltage Range (AC)                    | 90-280VAC $\pm 3V$ (normal mode), 170-280VAC $\pm 3V$ |
| Frequency Range (AC)                  | 50Hz/60Hz (auto-adaptive)                             |
| Battery Rated Voltage                 | 48Vdc                                                 |
| Constant Voltage Charging Voltage     | 56.4Vdc                                               |
| Float Charge Voltage                  | 54Vdc                                                 |
| PV Charging Method                    | MPPT                                                  |
| PV Maximum Input Power                | 5500W                                                 |
| MPPT Input Voltage Range              | 120-500Vdc                                            |
| Optimal Operating Voltage Range (PV)  | 300-400Vdc                                            |
| Maximum PV Input Voltage              | 500Vdc                                                |
| Maximum PV Input Current              | 20A                                                   |
| Maximum AC Charging Current           | 100A                                                  |
| Maximum AC Input Current              | 60A                                                   |
| Maximum Charging Current (AC + Solar) | 120A                                                  |

| Feature                  | Specification                       |
|--------------------------|-------------------------------------|
| Communication Interfaces | BMS/RS232/RS485/CAN/USB/Dry Contact |
| Parallel Port            | Yes                                 |
| Noise Level              | Less than 50dB                      |
| Dimensions (L*W*H)       | 536*352*135mm                       |

## 11. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your inverter.

- **Cleaning:** Periodically clean the inverter's exterior with a dry cloth. Ensure ventilation openings are free from dust and debris. Do not use liquid cleaners.
- **Connection Check:** Annually inspect all electrical connections for tightness and signs of corrosion. Retighten if necessary.
- **Battery Inspection:** Check battery terminals for corrosion and ensure proper ventilation around the battery bank.
- **Environmental Check:** Ensure the installation environment remains within specified temperature and humidity ranges.

## 12. WARRANTY AND SUPPORT

For warranty information, please refer to the documentation provided with your purchase or contact LMYDES customer service. For technical support, troubleshooting assistance, or spare parts, please contact your vendor or the manufacturer directly.

*Note: Warranty terms may vary by region and retailer. Keep your purchase receipt for warranty claims.*