ETREPOW MP30PEU24

ETREPOW MP30PEU24 3000W Hybrid Inverter User Manual

Model: MP30PEU24 | Brand: ETREPOW

1. Introduction

This manual provides essential information for the safe and efficient operation of your ETREPOW MP30PEU24 3000W Hybrid Inverter. This device integrates an inverter, an 80A MPPT solar charger, and a battery charger into a single unit, designed to provide reliable power for various applications. It supports both lead-acid and lithium batteries and offers multiple charging and output modes.
Key features include:

- Integrated 80A MPPT solar charge controller.
- Maximum rated power of 3kW with a 6000W surge capacity for 5 seconds.
- PV input voltage range: DC 50-430V, with a maximum PV disconnect voltage of 450V.
- Compatibility with 24V lead-acid (AGM, GEL, FLD, SLD) and lithium batteries (LI, USERT).
- Multiple charging modes: Only Solar, PV Priority, Utility Priority, and Hybrid Charging.
- Multiple output modes: Solar Priority, Inverter Mode, and Utility Priority.
- Comprehensive protection functions: overload, overheat, short circuit, cold start, and auto-restart.

2. Safety Instructions

Please read and understand all safety instructions before installation and operation. Failure to follow these instructions may result in electric shock, fire, severe injury, or death.

- **Qualified Personnel:** Installation and maintenance must be performed by qualified personnel.
- **High Voltage:** The inverter operates with high voltages. Do not open the unit or attempt repairs unless specifically instructed.
- **Proper Grounding:** Ensure the inverter is properly grounded according to local electrical codes.
- **Battery Safety:** Batteries can produce explosive gases. Ensure adequate ventilation and avoid sparks or flames near batteries. Wear appropriate personal protective equipment (PPE).
- **Ventilation:** Install the inverter in a well-ventilated area to prevent overheating. Maintain clear space around

the unit.

- **Environmental Conditions:** Do not expose the inverter to rain, snow, spray, or any liquids. Avoid direct sunlight and ensure the operating temperature is within specified limits.
- **Disconnect Power:** Always disconnect all power sources (PV, battery, AC input) before performing any wiring or maintenance.

3. Product Overview

The ETREPOW MP30PEU24 Hybrid Inverter features a robust design with clear indicators and connection points for easy integration into your power system.


ETREPOW
90%
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ETREPOW

Figure 3.1: Front view of the ETREPOW MP30PEU24 Hybrid Inverter, showing the display panel and ventilation.

The front panel includes an LCD display and control buttons for monitoring system status and configuring settings. The side features ventilation grilles for heat dissipation. The bottom panel houses all input and output terminals.

Figure 3.2: Rear/Bottom view illustrating the connection ports for AC input, AC output, battery input, and PV input. This diagram also highlights the peak efficiency of 94% and a surge capacity of 6000W for 5 seconds.

Key Connection Points:

- **AC Input:** 230Vac connection from the utility grid or generator.
- **AC Output:** 230Vac ±5% output for connecting loads.
- **Battery Input:** 24V DC connection for lead-acid or lithium battery banks.
- **PV Input:** DC input from solar panels, supporting up to 3000W and 430Vdc.
- **Input Breaker:** For AC input protection.

4. Setup and Installation

Proper installation is crucial for the inverter's performance and safety. Follow these steps carefully.

4.1 Mounting the Inverter

- Choose a vertical, non-flammable surface for mounting.
- Ensure adequate clearance (at least 20 cm) around the inverter for proper airflow and heat dissipation.
- Mount the inverter in a dry, cool, and well-ventilated area, away from direct sunlight, water, and corrosive substances.

4.2 Wiring Connections

All wiring must comply with local electrical codes and standards. Use appropriate wire gauges for all connections.

1. **Battery Connection:**
    - Connect the 24V battery bank to the 'BATTERY INPUT' terminals. Ensure correct polarity (positive to positive, negative to negative).
    - Use appropriate DC circuit breakers or fuses between the battery and the inverter.
    - The inverter is compatible with 24V lead-acid (AGM, GEL, FLD, SLD) and lithium batteries. Select the correct battery type in the inverter settings.
2. **PV Array Connection:**
    - Connect the solar panel array to the 'PV INPUT' terminals. Observe correct polarity.
    - Ensure the total open-circuit voltage of the PV array does not exceed 450Vdc and the maximum power is within 3000W.
    - Install a DC disconnect switch or circuit breaker between the PV array and the inverter.
3. **AC Input Connection:**
    - Connect the utility grid or generator to the 'AC INPUT' terminals.
    - Ensure the AC input voltage is 230Vac.
    - Install an AC circuit breaker for protection.
4. **AC Output Connection:**
    - Connect your AC loads (appliances) to the 'AC OUTPUT' terminals.
    - Do not exceed the inverter's rated output power of 3000W.
5. **Grounding:**
    - Connect the inverter's chassis ground terminal to a reliable earth ground.

4.3 Initial Power-Up

1. Double-check all wiring connections for correctness and tightness.
2. Turn on the battery breaker/fuse.
3. Turn on the PV array disconnect switch.
4. Turn on the AC input breaker (if connected).
5. Turn on the inverter's power switch.
6. Observe the display for normal operation and any error codes.

5. Operating Modes

The ETREPOW MP30PEU24 offers flexible operation with various charging and output modes to suit different energy management strategies.

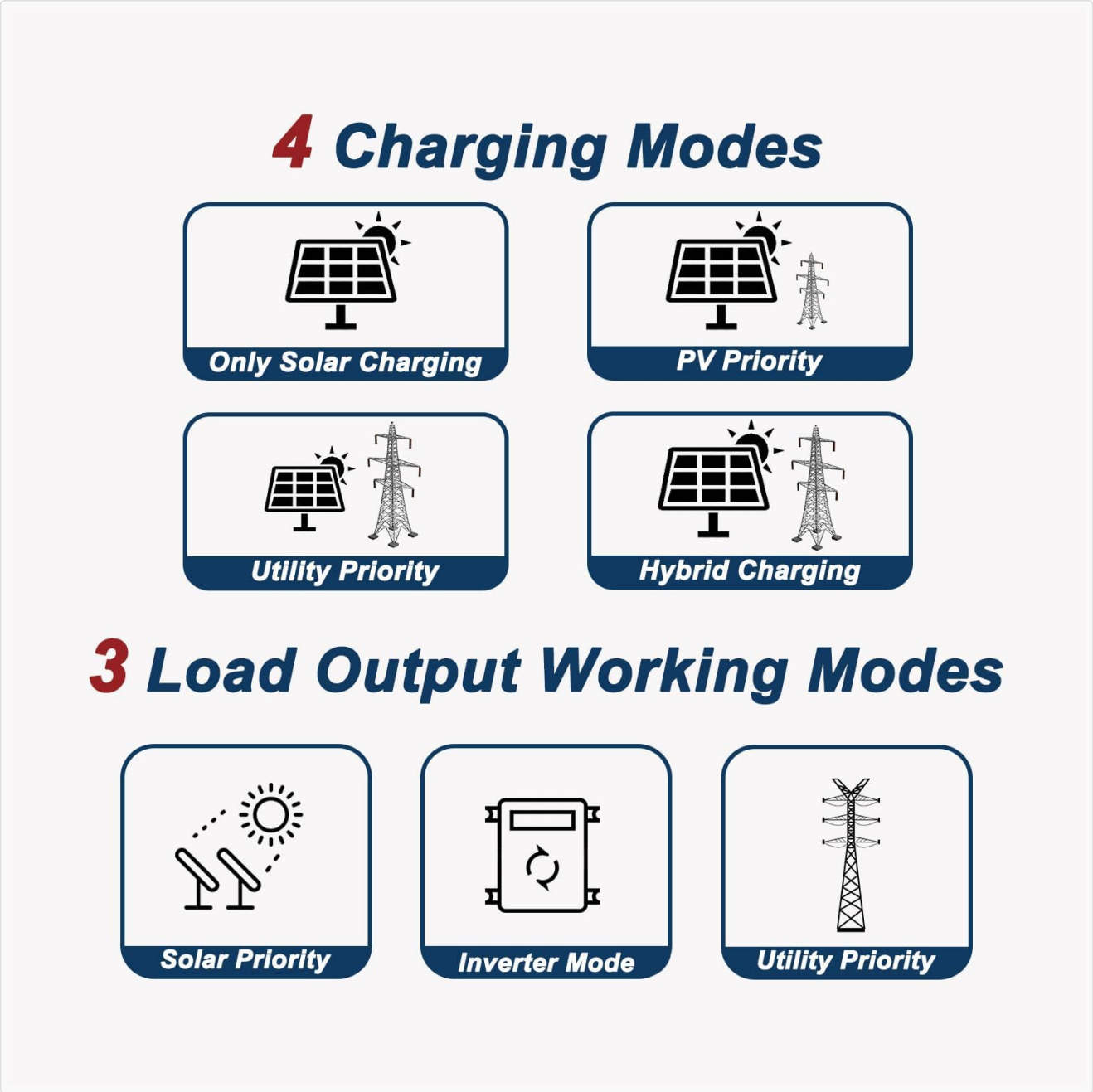

Figure 5.1: Visual representation of the four charging modes and three load output working modes available on the ETREPOW MP30PEU24 Hybrid Inverter.

5.1 Charging Modes

These modes determine how the inverter charges the battery bank.

- **Only Solar Charging:** The inverter uses only solar power to charge the batteries.
- **PV Priority Charging:** Solar power is the primary source for charging. If solar power is insufficient, the utility grid supplements the charging.
- **Utility Priority Charging:** The utility grid is the primary source for charging. Solar power supplements only if the grid is unavailable or insufficient.
- **Hybrid Charging:** The inverter intelligently combines solar, utility, and battery power to optimize charging based on availability and system settings.

5.2 Load Output Working Modes

These modes determine the power source for your connected AC loads.

- **Solar Priority:** Loads are primarily powered by solar energy. If solar is insufficient, battery power is used. If both are insufficient, the utility grid provides power.
- **Inverter Mode:** Loads are powered by the inverter, drawing from batteries. If batteries are low, the inverter may switch to utility power (if available) to charge batteries and power loads.
- **Utility Priority:** Loads are primarily powered by the utility grid. If the grid fails, the inverter switches to battery power.

Refer to the inverter's display and control buttons to select and configure these operating modes according to your energy requirements.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your ETREPOW Hybrid Inverter.

- **Cleaning:** Periodically clean the inverter's exterior and ventilation openings with a dry, soft cloth. Ensure no dust or debris obstructs airflow.
- **Connection Checks:** Annually inspect all electrical connections (PV, battery, AC input/output) for tightness and signs of corrosion. Tighten any loose connections.
- **Battery Inspection:** For lead-acid batteries, check electrolyte levels and terminal condition as per battery manufacturer guidelines. For all battery types, monitor battery voltage and health.
- **Environmental Check:** Ensure the installation environment remains within specified temperature and humidity ranges. Verify that ventilation is unobstructed.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates that may improve performance or add features.

Warning: Always disconnect all power sources before performing any maintenance or cleaning.

7. Troubleshooting

This section provides solutions for common issues you might encounter. For problems not listed here or if issues persist, contact technical support.

Problem	Possible Cause	Solution
Inverter not turning on	No battery power; loose battery connections; inverter switch off.	Check battery voltage; ensure battery connections are secure; turn on inverter switch.
No AC output	Overload; short circuit; low battery voltage; AC output breaker tripped.	Reduce load; check for short circuits; charge batteries; reset AC output breaker.
No solar charging	PV array disconnected; insufficient sunlight; PV input voltage too low/high.	Check PV connections; ensure clear sky; verify PV voltage is within 50-430Vdc range.
Overload warning	Connected loads exceed inverter capacity.	Disconnect some loads to reduce total power consumption.
Overheat warning	Insufficient ventilation; high ambient temperature.	Ensure clear ventilation paths; move to a cooler environment if possible.

8. Specifications

Detailed technical specifications for the ETREPOW MP30PEU24 Hybrid Inverter.

Figure 8.1: Summary of key specifications for the 3000W Solar Inverter, including 80A MPPT, 3000W Max PV Array Power, 450VDC Max PV Array Open Circuit Voltage, Pure Sine Wave output, less than 25W standby power, and support for lithium and lead-acid batteries.

Feature	Specification
Model Name	MP30PEU24
Wattage	3000 W (3 KW)
Output Power	3000 Watts
Input Voltage	50 Volts (PV Input Range: 50-430V DC)
Output Voltage	230 Volts AC
Max PV Input Power	3000W

Feature	Specification
Max PV Disconnect Voltage	450V DC
Max PV Charging Current	80A
Battery Voltage	24V DC
Battery Compatibility	Lead-Acid (AGM, GEL, FLD, SLD), Lithium (LI, USERT)
Product Dimensions	35 x 27 x 9.5 cm
Item Weight	5.4 Kilograms
Power Source	Solar Powered
Total Power Outlets	1
Standby Power Consumption	Less than 35W

9. Warranty and Support

ETREPOW products are designed for reliability and performance. For warranty information, please refer to the documentation included with your purchase or contact ETREPOW customer service.
If you have any questions or require technical assistance during use, please contact ETREPOW support. We aim to respond to inquiries within 24 hours.
For the most up-to-date support information, please visit the official ETREPOW website or contact your local distributor.