ETREPOW MP35PEU24

ETREPOW 3500W Hybrid Inverter User Manual

Model: MP35PEU24

1. Product Overview

The ETREPOW 3500W Hybrid Inverter is a versatile power solution designed to provide reliable electricity for various applications, including homes, vehicles, and offices. This multifunctional inverter integrates the capabilities of a pure sine wave inverter, a 100A MPPT solar charge controller, and a battery charger into a single unit. It efficiently converts 24V DC power from batteries or solar panels into stable 220V/230V AC power, suitable for a wide range of appliances.

Key features include a maximum rated power of 3.5 kW, support for up to 5000W of solar panel input, and compatibility with both 24V lead-acid and lithium battery types. The inverter is equipped with comprehensive protection mechanisms to ensure the safety and longevity of your power system.

Figure 1.1: Front view of the ETREPOW 3500W Hybrid Inverter, showcasing its compact design and user interface.

2. Features

- **Integrated 100A MPPT Solar Charge Controller:** Maximizes power harvest from solar panels with a maximum PV input power of 5000W and a PV input voltage range of 120-450V DC.
- **Pure Sine Wave Output:** Provides clean and stable AC power (220V/230V) suitable for sensitive electronics.
- **Battery Compatibility:** Supports a variety of 24V battery types, including lead-acid (AGM, GEL, FLD, SLD) and lithium batteries, offering flexibility for different energy storage needs.
- **Multiple Operating Modes:** Features 4 charging modes (Solar Priority, Grid Priority, Solar Only, Hybrid Charging) and 3 load output modes (Grid Priority, Solar Priority, Inverter Mode) to adapt to diverse application requirements.
- **Comprehensive Protection:** Built-in safeguards against overload, over-temperature, and short-circuit conditions. Includes battery cold start function and automatic restart when AC power is restored.
- **Low Standby Consumption:** Designed for efficiency with a maximum standby power consumption of 35W, minimizing energy waste.

Figure 2.1: Overview of the 3500W Solar Inverter's key specifications and capabilities.

Figure 2.2: The inverter is compatible with 98% of battery types, including AGM, GEL, FLD, SLD, and Lithium.

3. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your ETREPOW Hybrid Inverter. It is highly recommended that installation be performed by a qualified electrician or solar professional.

3.1 Safety Precautions

- Ensure all power sources (AC grid, solar panels, batteries) are disconnected before installation.
- Wear appropriate personal protective equipment (PPE), including insulated gloves and safety glasses.
- Verify correct polarity for all DC connections (battery and PV).
- Mount the inverter in a well-ventilated area, away from flammable materials and direct sunlight.

3.2 Connection Steps

1. **Mounting:** Securely mount the inverter to a vertical surface using appropriate fasteners.
2. **Battery Connection:** Connect the 24V battery bank to the inverter's battery terminals. Ensure correct polarity (+ to + and - to -).

3. **PV Input Connection:** Connect your solar panel array to the PV input terminals. Observe the maximum PV input voltage (500V DC) and current (100A).
4. **AC Input Connection (Grid/Generator):** Connect the AC grid or generator input to the designated AC input terminals.
5. **AC Output Connection (Loads):** Connect your household or office appliances to the AC output terminals.
6. **Grounding:** Ensure the inverter is properly grounded according to local electrical codes.

Figure 3.1: Detailed diagram showing the input and output connections for the ETREPOW Hybrid Inverter, including AC input, AC output, battery input, and PV input.

4. Operating Instructions

The ETREPOW Hybrid Inverter offers various operating modes to optimize power usage based on your specific needs and available power sources.

4.1 Charging Modes

The inverter supports four distinct charging modes:

- **Only Solar Charging:** Prioritizes charging batteries solely from solar panels.

- **PV Priority:** Solar power is the primary source for charging, with the grid as a backup.
- **Utility Priority:** Grid power is the primary source for charging, with solar as a backup.
- **Hybrid Charging:** Utilizes both solar and grid power for charging, optimizing based on availability and settings.

4.2 Load Output Working Modes

The inverter provides three load output modes to manage power delivery to your appliances:

- **Solar Priority:** Loads are primarily powered by solar energy, then by batteries, and finally by the grid.
- **Inverter Mode:** Loads are powered by the inverter (from batteries or solar), with the grid as a backup.
- **Utility Priority:** Loads are primarily powered by the AC grid, with the inverter (from batteries/solar) as a backup.

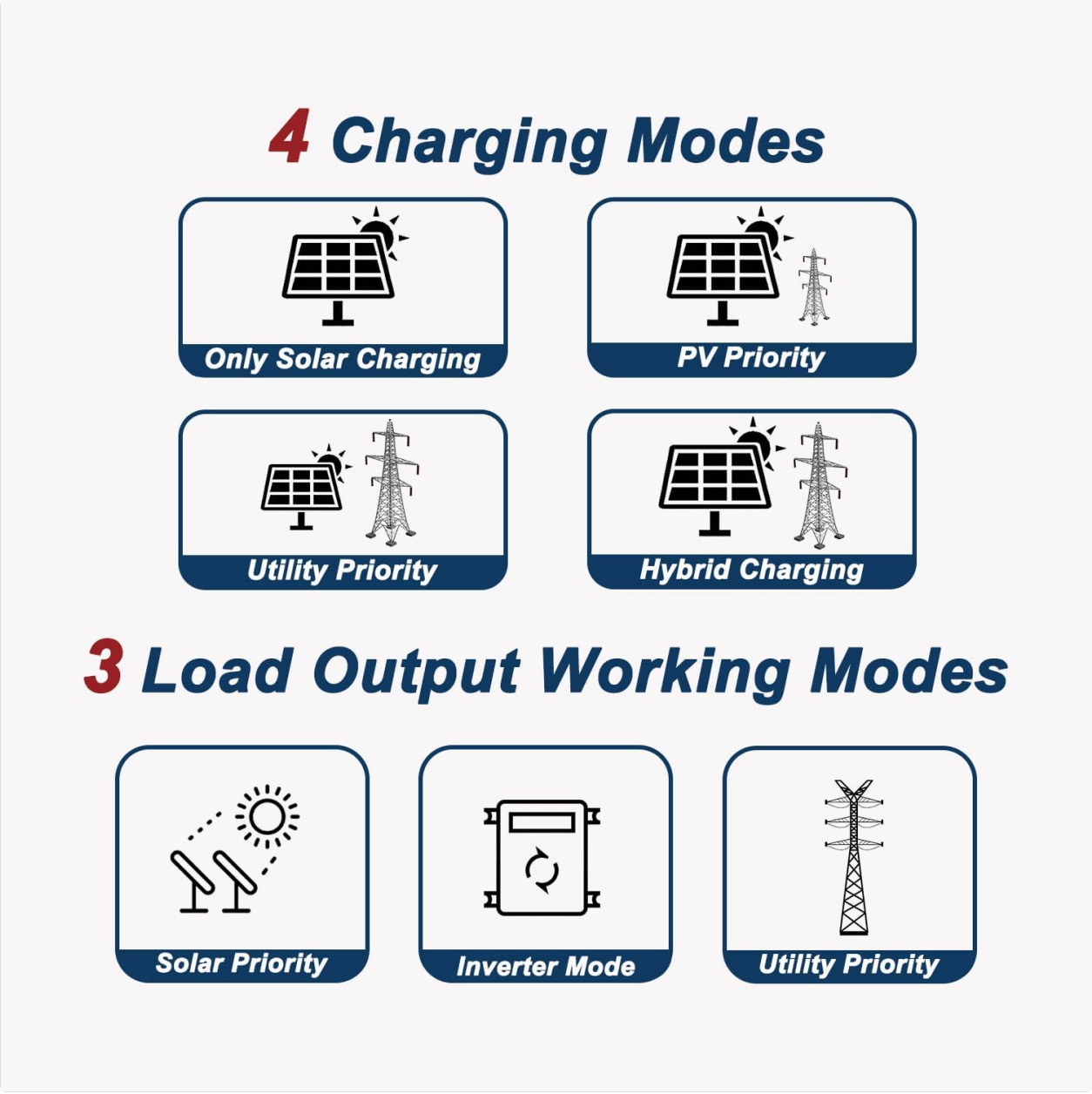

Figure 4.1: Visual representation of the four charging modes and three load output working modes available on the inverter.

4.3 Display and Controls

The inverter features an intuitive display and control buttons (ESC, UP, DOWN, ENTER) for monitoring system status, adjusting settings, and selecting operating modes. Refer to the detailed instructions in the full manual for navigation and parameter configuration.

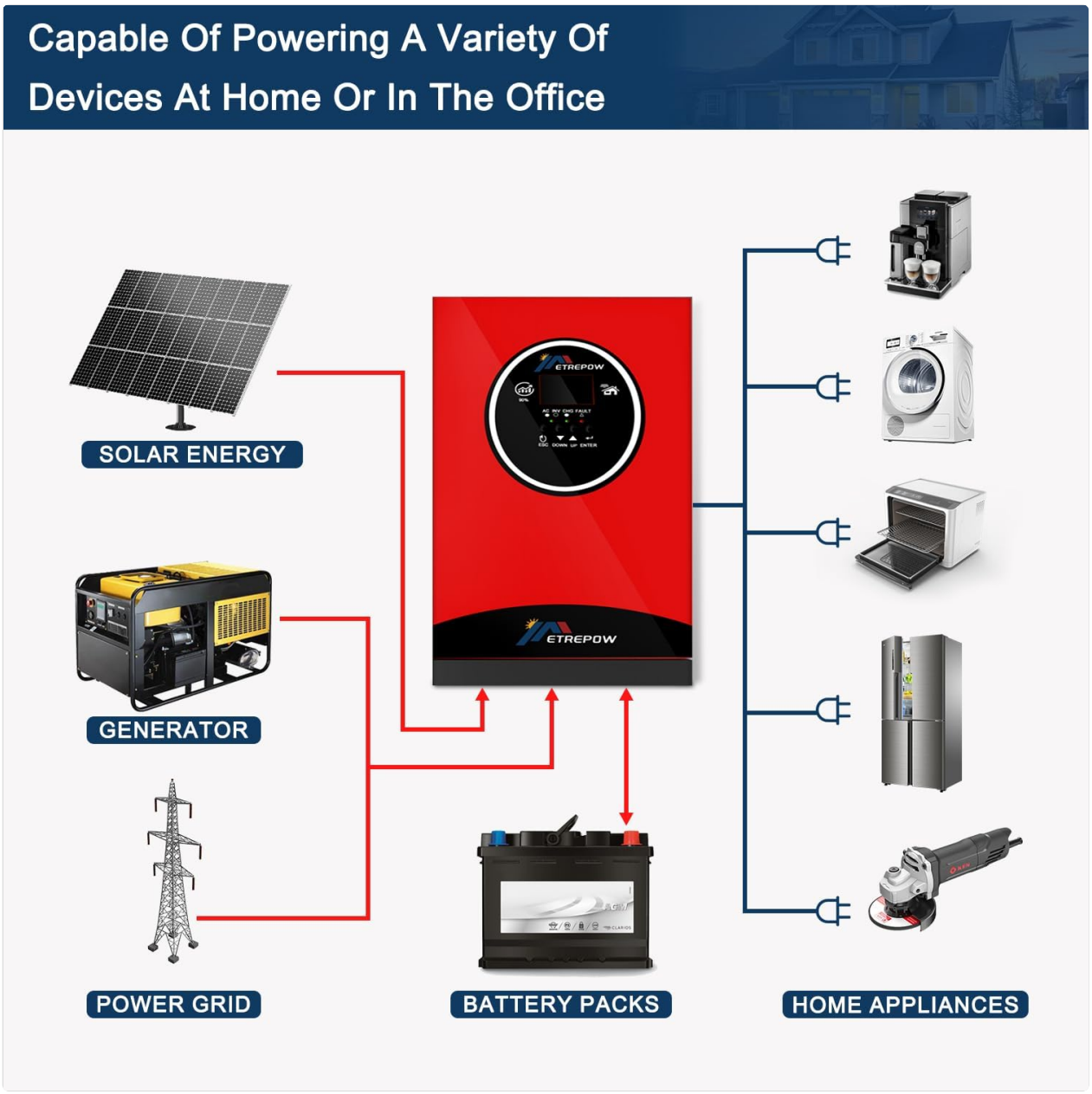

Figure 4.2: Diagram illustrating how the ETREPOW inverter connects solar energy, generator, power grid, and battery packs to power various home appliances.

5. Maintenance

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

- **Cleaning:** Periodically clean the inverter's exterior and ventilation openings to prevent dust buildup, which can impede cooling. Use a soft, dry cloth. Do not use liquid cleaners.
- **Connection Check:** Annually inspect all electrical connections (battery, PV, AC input/output) for tightness and signs of corrosion. Tighten any loose connections.
- **Battery Inspection:** If using lead-acid batteries, check electrolyte levels and terminal cleanliness as per battery manufacturer guidelines. For all battery types, monitor battery health and performance.
- **Environmental Check:** Ensure the installation environment remains within the specified temperature and humidity ranges. Verify that ventilation is not obstructed.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates that may improve performance or add new features.

6. Troubleshooting

This section provides general guidance for common issues. For detailed troubleshooting steps and error codes, refer to the complete product manual.

Problem	Possible Cause	Solution
Inverter not turning on	No battery power; loose battery connection; DC breaker open	Check battery voltage; secure connections; close DC breaker
No AC output	Overload; short circuit; AC breaker open; inverter fault	Reduce load; check for short circuits; close AC breaker; restart inverter
Batteries not charging	No PV input; PV input voltage too low/high; charging mode incorrect; battery fault	Check solar panels; verify PV voltage; select correct charging mode; inspect batteries
Over-temperature warning	Poor ventilation; ambient temperature too high; fan obstructed	Ensure adequate airflow; reduce ambient temperature; clean fan/vents

7. Specifications

Parameter	Value
Brand	ETREPOW
Model Number	MP35PEU24
Rated Power	3500 Watts
DC Input Voltage	24 Volts
AC Output Voltage	220V/230V AC Pure Sine Wave
Max PV Array Power	5000 Watts
PV Input Voltage Range	120-450V DC
Max PV Charge Current	100 Amperes
Battery Capacity (Supported)	Up to 400 Ampere-hours (typical)
Dimensions (L x W x H)	59 x 39 x 21 centimeters
Recommended Uses	Vehicle, Home, Office
Power Source	Solar and Battery powered

8. Warranty and Support

ETREPOW is committed to providing high-quality products and customer satisfaction. This product comes with a standard manufacturer's warranty. Please refer to the warranty card included with your purchase for specific terms and conditions.

For technical support, troubleshooting assistance, or any questions regarding the use of your ETREPOW 3500W Hybrid Inverter, please contact our customer service team. We aim to respond to all inquiries within 24 hours.

Contact Information: Please refer to the contact details provided in your product packaging or visit the official ETREPOW website for support.