EDECOA 2.2KVA/1600W 12v 230v

EDECOA 12V 1600W Hybrid Inverter User Manual

Model: 2.2KVA/1600W 12v 230v

Brand: EDECOA

1. Introduction

This manual provides essential information for the safe and efficient operation of your EDECOA 12V 1600W Hybrid Inverter. This device integrates an inverter, a solar charger, and a battery charger into a single unit, designed for off-grid solar energy systems. Please read this manual thoroughly before installation and use, and retain it for future reference.

Key Features:

- **Hybrid Functionality:** Combines 12V off-grid solar inverter, 80A MPPT charge controller, and battery charger.
- **Pure Sine Wave Output:** Delivers stable 230V AC power suitable for sensitive electronics.
- **Versatile Battery Compatibility:** Supports FLD, AGM, Gel, and LiFePo4 battery types, configurable via LCD.
- **Efficient Solar Charging:** 80A maximum PV input with MPPT technology for optimized solar power extraction (up to 2000W PV).
- **Multiple Operating Modes:** Four optional charging modes and three output modes to suit various energy requirements.
- **Safety Protections:** Includes overload, over-temperature, and short-circuit protection, automatic restart, and cold start function.
- **ECO Mode:** Reduces standby power consumption to less than 15W, preserving battery life.

2. Safety Instructions

Always observe the following safety precautions to prevent injury and damage to the inverter or connected equipment.

- Installation must be performed by qualified personnel.
- Ensure all wiring is correctly sized and properly insulated.
- Do not expose the inverter to rain, snow, spray, or any liquids.

- Ensure adequate ventilation around the inverter to prevent overheating.
- Do not disassemble the inverter. There are no user-serviceable parts inside.
- Disconnect all power sources (solar, battery, AC grid) before performing any maintenance or wiring.
- Wear appropriate personal protective equipment (PPE) during installation and maintenance.

3. Package Contents

Verify that all items are included in your package:

- EDECOA 12V 1600W Hybrid Inverter
- Battery cables (1m * 25mm² DC Cable, Positive and Negative)
- USB cable (1.8m RJ45 to USB Cable for RS232 communication)
- User Manual (this document)

Image: The EDECOA Hybrid Inverter shown with its included battery cables (red and black) and a USB communication cable.

4. Product Overview

The EDECOA Hybrid Inverter is a compact and robust unit designed for efficient power management. It features a clear LCD display for monitoring and configuration, along with various connection ports for solar panels, batteries, AC input, and AC output.

Image: Front view of the EDECOA 12V 1600W Hybrid Inverter, showcasing the LCD screen and control buttons.

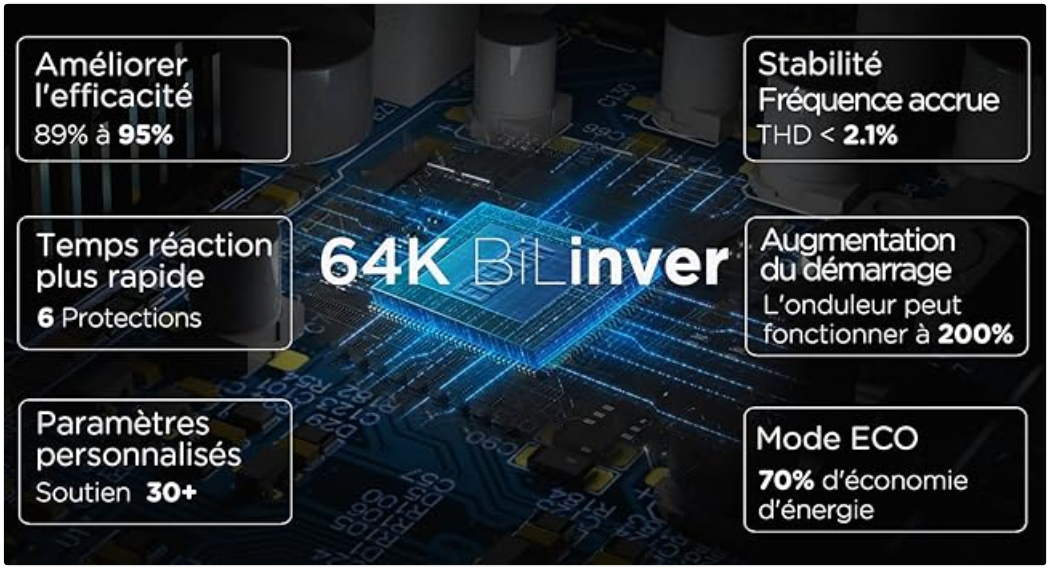

Image: Close-up of the inverter's LCD display, showing various operational parameters and settings.

5. Setup and Installation

5.1 Mounting the Inverter

- Choose a dry, well-ventilated area, away from direct sunlight and heat sources.
- Ensure the mounting surface is sturdy enough to support the inverter's weight.
- Allow sufficient clearance around the inverter for proper airflow (at least 20 cm on all sides).
- Mount the inverter vertically to optimize cooling.

5.2 Wiring Connections

Follow the wiring diagram carefully. All connections must be secure and properly terminated.

Image: Wiring connections for the EDECOA Hybrid Inverter, showing battery connections and compatible battery types (AGM, Gel, Li-ion, FLD).

1. **Battery Connection:** Connect the included battery cables to the inverter's DC input terminals and to your 12V battery bank. Ensure correct polarity (red to positive, black to negative).
2. **Solar Panel Connection:** Connect your solar panels to the PV input terminals. Ensure the total PV input voltage and current are within the inverter's specifications (Max 2000W PV, 55-450Vdc).
3. **AC Input Connection (Optional):** If connecting to a grid or generator, connect the AC input cable to the designated AC input terminal.

4. **AC Output Connection:** Connect your loads (appliances) to the AC output terminals.

5.3 Initial Power-Up

1. Double-check all wiring connections for correctness and security.
2. Turn on the battery breaker/switch.
3. Turn on the solar panel breaker/switch.
4. If using AC input, turn on the AC grid/generator breaker.
5. The inverter will power on and display its status on the LCD screen.

6. Operating the Inverter

6.1 LCD Display and Control Buttons

The LCD display provides real-time system status and allows for configuration changes. Use the control buttons (ESC, UP, DOWN, ENTER) to navigate menus and adjust settings.

6.2 Battery Type Configuration

It is crucial to configure the inverter for your specific battery type to ensure optimal charging and battery lifespan. Access the settings menu via the LCD to select between FLD, AGM, Gel, or LiFePo4.

6.3 Charging and Output Modes

The inverter offers flexible modes to manage power flow:

- **Four Charging Modes:** Select the mode that best suits your energy source availability and battery health requirements.
- **Three Output Modes:** Prioritize power from solar, battery, or grid based on your preferences.

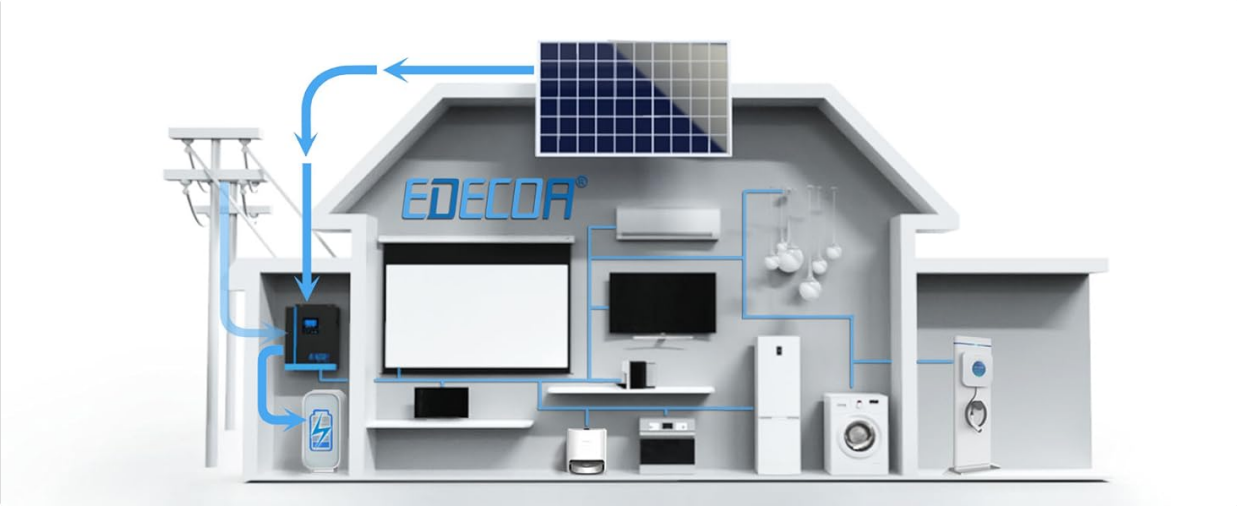

Image: Diagram illustrating the system operating in solar priority mode, where solar power directly feeds loads and charges batteries.

Image: Diagram illustrating the system operating in grid priority mode, where grid power is the primary source, with solar and battery as backup.

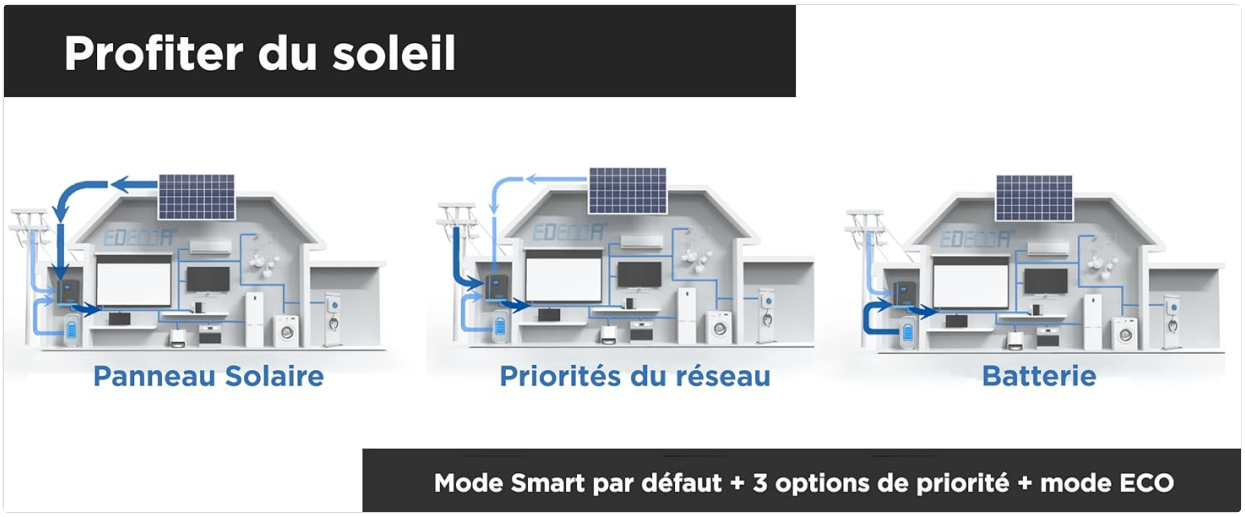

Image: Diagram illustrating the system operating in battery priority mode, where battery power is prioritized for loads.

6.4 ECO Mode

Activate ECO mode to minimize power consumption when loads are low. This feature helps conserve battery energy by reducing the inverter's standby power draw to less than 15W.

6.5 Off-Grid Functionality

This inverter is designed for off-grid applications, meaning it can operate independently of the utility grid. It will not feed power back into the grid.

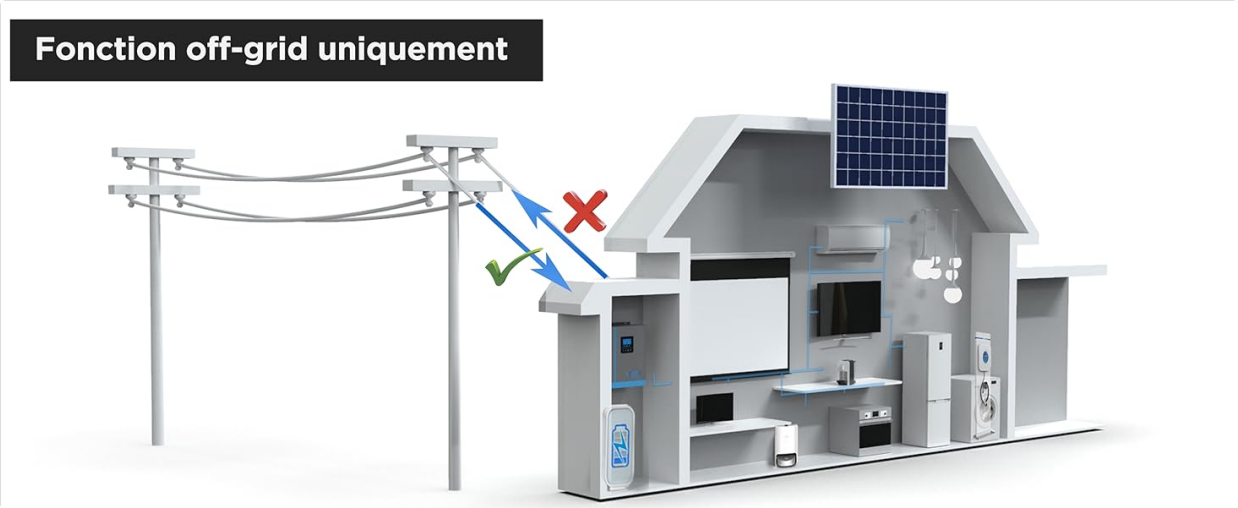

Image: Diagram illustrating the off-grid functionality, showing power flow from solar and battery to home loads without connection to the utility grid.

6.6 Monitoring and Communication

The inverter supports external monitoring via a USB connection (RS232) to a computer or a WiFi module (sold separately). This allows for detailed data logging and remote control of settings.

Image: Illustration of WiFi monitoring setup, showing the inverter connected to a WiFi module and accessible via a smartphone app.

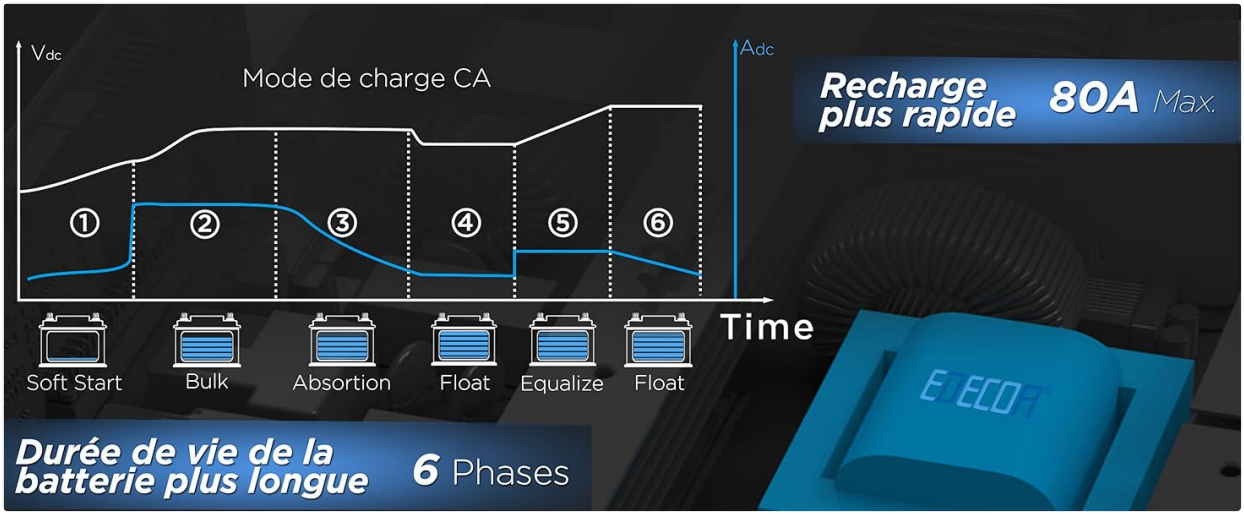

Image: Screenshot of the PC software interface for monitoring and managing the EDECOA inverter, displaying real-time data and settings.

7. 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.
- **Connection Checks:** Annually inspect all electrical connections for tightness and signs of corrosion.
- **Battery Health:** Monitor battery voltage and performance regularly. Follow your battery manufacturer's maintenance guidelines.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates to improve performance or add features.

8. Troubleshooting

This section addresses common issues you might encounter. For problems not listed here, contact EDECOA customer support.

Common Issues:

- **No Power Output:** Check battery connections, battery voltage, and AC output breaker. Ensure the inverter is turned on.
- **Inverter Overload:** Reduce the connected load. The inverter has overload protection and will automatically restart after recovery.
- **No Solar Charging:** Verify solar panel connections, ensure panels are clean and receiving sunlight. Check PV input voltage on the LCD.
- **Battery Not Charging:** Confirm correct battery type setting. Check AC input connection if charging from grid/generator.
- **Error Codes on LCD:** Refer to the specific error code in the full manual (if available) or contact support with the code displayed.

9. Specifications

Feature	Specification
Brand	EDECOA
Model Name	2.2KVA/1600W 12v 230v
Power	1600 Watts
Voltage	12 Volts (DC Input)
Output Voltage	230 Volts (AC Output)
Inverter Type	Pure Sine Wave Hybrid Inverter
MPPT Charge Controller	80A
Max PV Input Power	2000W
Max AC Charge Current	60A

Feature	Specification
Recommended Battery Capacity	200 Amp-hours (example)
Compatible Battery Types	FLD, AGM, Gel, LiFePo4
Product Dimensions (L x W x H)	28.2L x 10.5W x 34.8H centimeters
Color	Blue
Recommended Uses	Home, Vehicle

10. Warranty and Support

Warranty Information:

This EDECOA Hybrid Inverter comes with a**2-Year Limited Manufacturer Warranty**. Please retain your proof of purchase for warranty claims.

Spare Parts Availability:

Spare parts for this product are available for**2 years** from the date of purchase.

Customer Support:

For technical assistance, warranty claims, or further inquiries, please contact EDECOA customer support through the retailer where the product was purchased or visit the official EDECOA website for contact information.