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› NOVOPAL 3KW Hybrid Inverter 24V User Manual

NOVOPAL 3000W 24V

NOVOPAL 3KW Hybrid Inverter 24V User Manual

Model: 3000W 24V

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your NOVOPAL 3KW Hybrid Inverter. This device is designed to efficiently convert 24V DC power to 220V/230V AC, integrating a solar charger, inverter, and battery charger for off-grid solar applications. Please read this manual thoroughly before installation and use to ensure optimal performance and safety.



Figure 1: Front view of the NOVOPAL 3KW Hybrid Inverter, showcasing its compact design and integrated LCD display.

2. SAFETY INSTRUCTIONS

Always observe the following safety precautions to reduce the risk of electric shock, fire, or injury:

- Ensure all wiring is performed by qualified personnel.

- Do not disassemble the inverter. There are no user-serviceable parts inside.
- Keep the inverter away from flammable materials and moisture.
- Ensure proper ventilation around the inverter to prevent overheating.
- Disconnect all power sources (AC, DC, PV) before performing any maintenance or wiring.
- Use appropriate personal protective equipment (PPE) during installation and maintenance.

3. PRODUCT FEATURES

The NOVOPAL 3KW Hybrid Inverter offers a range of advanced features:

- **3000W Continuous Power:** Efficiently converts 24V DC to 220V/230V AC.
- **80A MPPT Solar Charge Controller:** Maximizes solar panel efficiency with a PV input voltage range of 30-400V DC.
- **Integrated Charger:** Combines solar charger, inverter, and battery charger functions.
- **Advanced SPWM Technology:** Ensures high charging efficiency, reaching up to 95%.
- **Four Charging Modes:** Supports FLD, AGM, Gel, and LiFePo4 battery types.
- **Three Output Modes:** Provides flexibility for various electrical devices and applications.
- **LCD Display:** Real-time monitoring of system status, performance, and error codes.
- **Automatic UPS Switching:** Ensures uninterrupted power supply.

ALL-IN-ONE SOLAR POWER INVERTER

3000 W

Continuous Power

80A

MPPT Solar Charge

60A

Combined Battery
Charger



Figure 2: Overview of key features including 3000W continuous power, 80A MPPT solar charge, and 60A combined battery charger.

4. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of the inverter. Consult a qualified electrician for installation if you are unsure.

4.1 Site Selection

- Install the inverter in a cool, dry, and well-ventilated area.
- Avoid direct sunlight, high temperatures, and humidity.
- Ensure sufficient clearance around the inverter for airflow.
- Mount the inverter vertically on a non-flammable surface.

4.2 Wiring Connections

Follow these steps for wiring. Always ensure all power sources are disconnected before making connections.

1. **Battery Connection:** Connect the battery bank (24V) to the inverter's battery terminals. Ensure correct polarity (+ to + and - to -).
2. **PV Array Connection:** Connect the solar panels to the PV input terminals. Observe the correct voltage and current limits (30-400V DC).
3. **AC Input Connection:** Connect the AC utility grid (if used) to the AC input terminals.
4. **AC Output Connection:** Connect your AC loads to the AC output terminals.
5. **Grounding:** Ensure the inverter is properly grounded according to local electrical codes.



Figure 3: Illustration of the inverter's compatibility with various 24V battery types (AGM, FLD, GEL, Lithium) and connection points.

5. OPERATING INSTRUCTIONS

The inverter features an intuitive LCD display and control buttons for easy operation.

5.1 LCD Display and Control Panel

POWER VISUALIZATION LCD DISPLAY

Equipped with high-resolution display
Real-time data to see everything you want

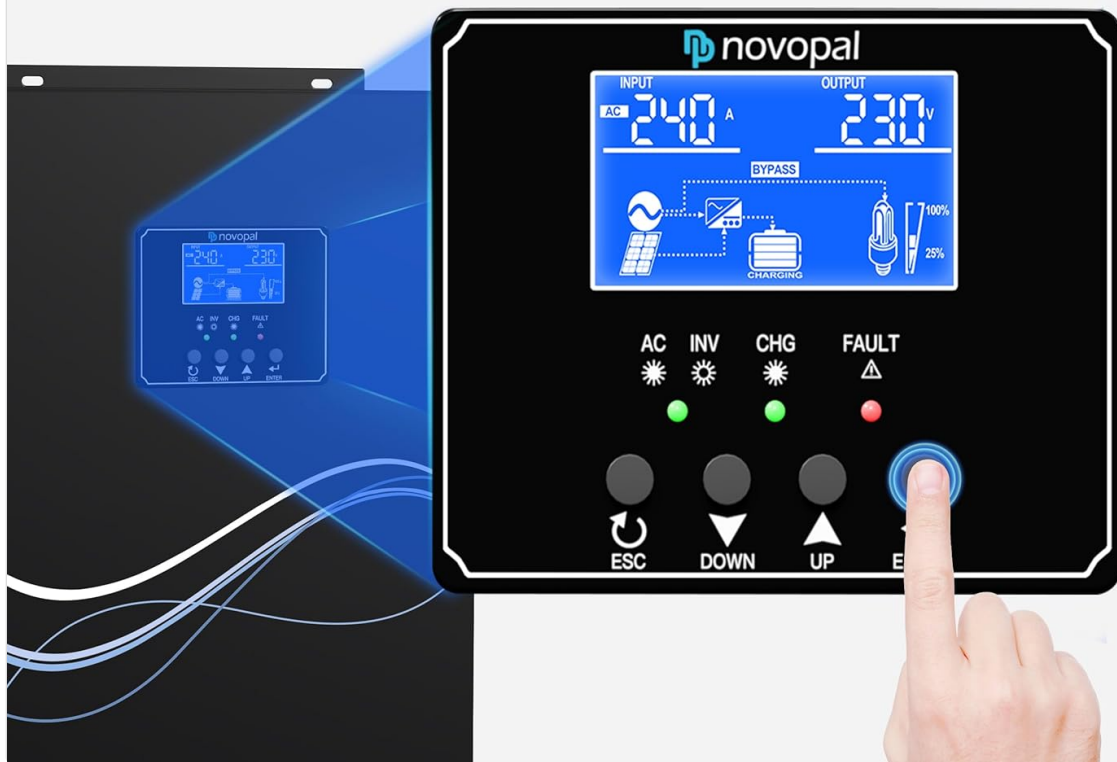


Figure 4: Close-up of the inverter's LCD display showing real-time power visualization and control buttons (ESC, DOWN, UP, ENTER).

The LCD displays real-time data such as input voltage, output voltage, battery status, and charging/discharging information. Use the ESC, DOWN, UP, and ENTER buttons to navigate menus and adjust settings.

5.2 Charging Modes

The inverter supports four distinct charging modes:

- **PV Priority:** Solar energy is prioritized for charging batteries and powering loads. Utility grid is used as a backup.
- **Utility Priority:** Utility grid is prioritized for charging and loads. Solar energy is used when the grid is unavailable.
- **Hybrid Charging:** Combines solar and utility power for charging and loads, optimizing energy use.
- **Only Solar Charging:** Batteries are charged exclusively by solar power.

5.3 Load Output Working Modes

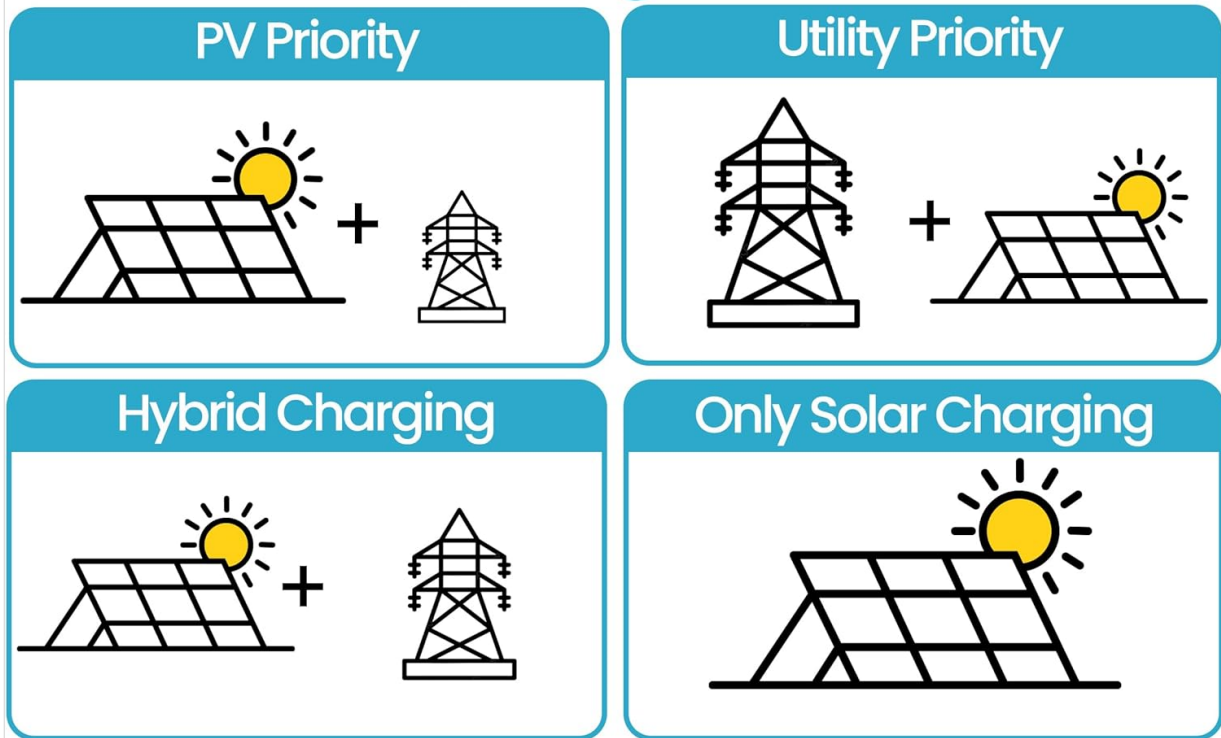
The inverter offers three load output modes:

- **PV Priority:** Loads are powered primarily by solar energy.

- **Utility Priority:** Loads are powered primarily by the utility grid.
- **Inverter Mode:** Loads are powered by the inverter from battery storage.

Bring You the Ultimate Control

4 Charging Modes



3 Load Output Working Modes



Figure 5: Visual representation of the four charging modes (PV Priority, Utility Priority, Hybrid Charging, Only Solar Charging) and three load output working modes (PV Priority, Utility Priority, Inverter Mode).

6. MAINTENANCE

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

- **Cleaning:** Keep the inverter clean and free from dust. Use a dry cloth to wipe the exterior.
- **Ventilation:** Ensure ventilation openings are not blocked. Periodically check for dust accumulation in fan areas.
- **Connections:** Periodically check all electrical connections for tightness and signs of corrosion.
- **Battery Health:** Monitor battery voltage and health, especially for lead-acid batteries.
- **Firmware:** Check the manufacturer's website for any available firmware updates.

The inverter's fans operate based on load or temperature. If loads are less than 500W, fans activate when the internal temperature reaches 45°C. For loads exceeding 500W, fans start immediately.

7. TROUBLESHOOTING

The LCD display will show error codes to assist in troubleshooting. Refer to the following general guidance:

- **No Power Output:** Check battery connections, AC input, and ensure the inverter is turned on. Verify battery voltage is within operating range.
- **Overload Warning:** Reduce the connected load. The inverter may shut down to protect itself from damage.
- **Over-temperature Warning:** Ensure adequate ventilation. Clean any dust blocking air vents. Allow the unit to cool down.
- **Battery Low Voltage:** Charge the batteries. Check solar panel connections and output, or AC input if using grid charging.
- **Error Code Displayed:** Note the specific error code and consult the full product manual or manufacturer's support for detailed resolution steps.

8. SPECIFICATIONS

Feature	Specification
Model Number	3000W 24V
Rated Power	3000 Watts
Input Voltage (DC)	24 Volts
Output Voltage (AC)	220V/230V
MPPT Solar Charge Controller	80A
Max. PV Input Voltage	450V
Battery Capacity (Internal)	180 Milliamp Hours <i>(Note: This likely refers to internal control power, not main battery bank capacity)</i>
Product Dimensions	34.8L x 24.6W x 19.5H cm
Weight	5.4 kg
Recommended Uses	Office, Home, Vehicle
Included Components	Hybrid inverter

9. WARRANTY AND SUPPORT

NOVOPAL offers a limited one-year warranty for this product. This warranty excludes damage caused by reverse polarity. For any product issues, please contact NOVOPAL customer support for assistance. Free support is offered for product-related problems.

For further assistance or technical inquiries, please refer to the official NOVOPAL website or contact their customer service department.

