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› Luminous Solarverter PRO PCU 3.5KVA / 48V Hybrid Solar Inverter Instruction Manual

## Luminous Solarverter PRO PCU 3.5KVA / 48V

# Luminous Solarverter PRO PCU 3.5KVA / 48V Hybrid Solar Inverter Instruction Manual

Model: Solarverter PRO PCU 3.5KVA / 48V

## 1. INTRODUCTION AND OVERVIEW

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The Luminous Solarverter PRO PCU 3.5KVA / 48V is a hybrid solar inverter designed for efficient power management in homes, offices, and small businesses. This device intelligently integrates solar, battery, and grid power sources to ensure uninterrupted power supply and optimize energy consumption.

Key features include:

- **Smart Hybrid Operation:** Automatically switches between solar, battery, and grid power for maximum efficiency.
- **Pure Sine Wave Output:** Provides stable and clean power, safe for sensitive electronic appliances.
- **48V System:** Supports high load capacity, suitable for various applications.
- **MPPT Charge Controller:** Maximizes solar energy harvesting from solar panels.
- **BIS Certified:** Ensures product quality and safety standards.
- **User-Friendly LCD Display:** Provides informative status and operational data.
- **Comprehensive Protection:** Includes safeguards against short-circuit, reverse polarity, and battery overload.

# SEAMLESS POWER, MAXIMUM SAVINGS

Reliable Solar Inverter for Homes



Figure 1: Front view of the Luminous Solarverter PRO PCU 3.5KVA / 48V Hybrid Solar Inverter, highlighting its design and display.

## 2. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your Luminous Solarverter PRO PCU. It is highly recommended that installation be performed by a qualified electrician or certified solar technician.

### 2.1 Unpacking and Inspection

- Carefully unpack the inverter and inspect for any signs of physical damage during transit.
- Verify all components listed in the packing list are present.

### 2.2 Mounting Location

- Choose a cool, dry, and well-ventilated area, away from direct sunlight, moisture, and flammable materials.
- Ensure adequate clearance around the inverter for proper airflow and heat dissipation.
- Mount the inverter vertically on a sturdy wall capable of supporting its weight (approximately 31.5 kg).

## 2.3 Electrical Connections

All electrical connections must comply with local electrical codes and standards.

1. **Battery Connection:** Connect the 48V battery bank to the designated battery terminals. Ensure correct polarity.
2. **Solar Panel Connection:** Connect the solar panel array to the MPPT charge controller input terminals. Observe the specified input voltage range ( $V_{mp}$ : 110V-180V,  $V_{oc}$ : 130V-220V).
3. **Grid Connection:** Connect the AC grid input to the inverter's grid input terminals.
4. **Load Connection:** Connect your household or office loads to the AC output terminals of the inverter.
5. **Grounding:** Ensure the inverter is properly grounded to prevent electrical hazards.

## 2.4 Initial Power-Up

1. Before powering on, double-check all connections for tightness and correct polarity.
2. Switch on the battery breaker first.
3. Then, switch on the solar panel breaker.
4. Finally, switch on the AC grid input breaker.
5. Press the power button on the inverter. The LCD display should illuminate, indicating system startup.

# UNINTERRUPTED POWER FOR EFFORTLESS LIVING

Power Through Every Outage With Ease



Figure 2: Example installation of the Luminous Solarverter PRO PCU 3.5KVA / 48V in a residential setting with solar panels.

## 3. OPERATING INSTRUCTIONS

The Luminous Solarverter PRO PCU is designed for automated operation, but understanding its display and settings is essential for optimal performance.

### 3.1 LCD Display

The informative LCD display provides real-time data on system status, including:

- Input voltage (solar, grid)
- Output voltage and frequency
- Battery charge level and voltage
- Load percentage
- Operational mode (Solar, Grid, Battery)
- Error codes and warnings

### 3.2 User Selectable Source Priority

The inverter allows users to prioritize power sources based on their preferences. This setting can typically be adjusted via the buttons adjacent to the LCD display.

- **Solar Priority:** The system will primarily use solar power, then battery, and finally grid power as a last resort. This mode maximizes solar utilization and reduces electricity bills.
- **Battery Priority:** The system will prioritize battery power, then solar, and finally grid. This is useful for maximizing backup time during outages.
- **Grid Priority:** The system will primarily use grid power, charging batteries from solar or grid as needed. This mode ensures batteries are always charged for backup.

### 3.3 System Monitoring

Regularly monitor the LCD display for system status and any alerts. Some models may offer remote monitoring capabilities through a dedicated application or interface, allowing you to track performance and settings from a distance.



Figure 3: The Luminous Solarverter PRO PCU 3.5KVA / 48V highlighting its user-friendly LCD display and MPPT technology.

## 4. MAINTENANCE

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Regular maintenance ensures the longevity and optimal performance of your Luminous Solarverter PRO PCU.

- **Cleaning:** Periodically clean the inverter's exterior with a dry, soft cloth. Ensure ventilation openings are free from dust and debris. Do not use liquid cleaners.
- **Connection Checks:** Annually, or as recommended by a technician, inspect all electrical connections (solar, battery, grid, load) for tightness and corrosion. Loose connections can lead to poor performance or safety hazards.
- **Ventilation:** Ensure the area around the inverter remains clear to allow for proper heat dissipation. Blocked vents can lead to overheating and reduced efficiency.
- **Battery Health:** If using lead-acid batteries, check electrolyte levels periodically and top up with distilled water as needed. Keep battery terminals clean and free of corrosion.
- **Professional Inspection:** Consider scheduling a professional inspection every 1-2 years to ensure all components are functioning correctly and to identify any potential issues.

## 5. TROUBLESHOOTING

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This section provides guidance on common issues. For complex problems, contact qualified service personnel.

### 5.1 No Power Output

- **Check Battery:** Ensure batteries are charged and properly connected.
- **Check Breakers:** Verify all AC and DC breakers (battery, solar, grid) are in the ON position.
- **Inverter Switch:** Confirm the inverter's power switch is ON.

### 5.2 No Solar Charging

- **Check Solar Panels:** Ensure panels are clean and not shaded.
- **Solar Connections:** Verify solar panel connections to the inverter are secure and correct.
- **Input Voltage:** Check if the solar input voltage is within the specified operating range ( $V_{mp}$ : 110V-180V,  $V_{oc}$ : 130V-220V).

### 5.3 Overload Indication

- **Reduce Load:** Disconnect non-essential appliances to reduce the total load on the inverter.
- **Check Appliance Ratings:** Ensure the total power consumption of connected appliances does not exceed the inverter's rated capacity (3.5KVA / 3500 Wp).

### 5.4 Error Codes

Refer to the inverter's LCD display for specific error codes. Consult the detailed user manual provided with the product for a comprehensive list of error codes and their corresponding solutions. If an error persists, contact Luminous customer support.

## 6. SPECIFICATIONS

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Feature	Specification
Model Number	Solarverter PRO PCU 3.5KVA / 48V
Rated AC Power	230V (single phase)
Max Supported Panel Power	3500 Wp
Input Voltage Range (Vmp)	110V-180V
Input Voltage Range (Voc)	130V-220V
Charge Controller Type	MPPT
Nominal Battery Bank Voltage	48V
Product Dimensions (LxWxH)	43.3 x 52.3 x 59 cm
Item Weight	31.5 kg
Generic Name	Inverter

## 7. WARRANTY AND SUPPORT

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### 7.1 Product Warranty

The Luminous Solarverter PRO PCU 3.5KVA / 48V comes with a 2-year manufacturer's warranty. This warranty covers defects in materials and workmanship under normal use and service conditions. Please retain your purchase receipt for warranty claims.

### 7.2 Extended Warranty Options

Extended warranty plans are available for purchase to provide additional coverage beyond the standard manufacturer's warranty. Options include:

- 1 Year Extended Warranty Plan by Onsitego
- 2 Year Extended Warranty Plan by Onsitego

For details on pricing and terms, please refer to the product's purchase page or contact your retailer.

### 7.3 Customer Support

For technical assistance, troubleshooting, or warranty claims, please contact Luminous customer support. The manufacturer is Luminous Power Technologies Pvt. Ltd.

You can find contact information on the official Luminous website or through your product documentation.