EcoSolLi 12000W 48V Hybrid Solar Charge Inverter

EcoSolLi 12000W 48V Split Phase Hybrid Solar Inverter Instruction Manual

Model: 12000W 48V Hybrid Solar Charge Inverter

1. Introduction

This manual provides essential information for the safe and efficient operation of your EcoSolLi 12000W 48V Split Phase Hybrid Solar Inverter. This all-in-one solar charge inverter is designed to convert DC power from solar panels and batteries into AC power for various applications, including homes, RVs, and industrial equipment. It features two independent MPPT solar controllers for high efficiency and supports both 120V and 240V AC input/output configurations.

2. Safety Information

WARNING: Read all instructions carefully before installation and operation. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Ensure all wiring is performed by qualified personnel and complies with local electrical codes.
- Do not attempt to open or repair the inverter yourself. Refer all servicing to authorized service personnel.
- Disconnect all power sources (solar, battery, and utility grid) before performing any maintenance or wiring.
- This product is an indoor product. It is forbidden to use it outdoors.
- Wear appropriate personal protective equipment (PPE) during installation and maintenance.

3. Product Overview

The EcoSolLi 12000W Hybrid Solar Inverter integrates a solar charger, inverter, and battery charger into a single unit. It is designed for optimal power distribution and energy saving.



Figure 3.1: Front view of the EcoSolLi 12000W Hybrid Solar Inverter.

Key Features:

- **All-in-One Design:** Integrates 2 independent MPPT solar controllers with up to 99% efficiency.
- **Flexible Output:** Supports split phase (120V/240V) or single phase (120V) output.
- **Intelligent Power Saving:** Reduces grid dependence and optimizes power distribution.
- **Comprehensive Protection:** Includes overcurrent, short circuit, over-voltage, undervoltage, backflow,

overheating, overload, and overcharge protection.

- **Scalable:** Up to 6 units can be paralleled for a maximum combined output of 72KW.
- **Battery Compatibility:** Compatible with AGM, Gel, Lead acid, Lithium-ion, and LiFePO4 batteries, and supports batteryless operation.
- **Remote Monitoring:** Supports WIFI/GPRS remote monitoring.



Figure 3.2: Overview of product characteristics including CT Sensor, MPPT, Energy-saving mode, Two Output Modes, Feed-in to the Grid, WiFi Remote Monitoring, and No Battery Mode.



Figure 3.3: Visual representation of the inverter's 360° protection features, including short circuit, over-voltage, overcurrent, undervoltage, backflow, overheating, overload, and overcharge protection.

4. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your inverter. Please follow these guidelines carefully. For a visual guide, refer to the installation video below.

Unboxing and Inspection:

Upon receiving your inverter, carefully unbox it and inspect for any signs of damage. Ensure all components listed in the packing list are present.

Mounting:

Mount the inverter in a well-ventilated, dry, and cool indoor location, away from direct sunlight and flammable materials. Ensure sufficient clearance around the unit for proper airflow.

Wiring Connections:

1. **Battery Connection:** Connect the battery cables to the BAT+ and BAT- terminals. Ensure correct polarity.
2. **PV Input Connection:** Connect the solar panel strings to the PV1 and PV2 inputs. Observe maximum voltage and current ratings.
3. **AC Input Connection:** Connect the utility grid AC input to the AC IN terminals.
4. **AC Output Connection:** Connect your loads to the AC OUT terminals.
5. **Grounding:** Ensure the inverter is properly grounded to prevent electrical hazards.
6. **Communication Connections:** Connect the WiFi/GPRS module for remote monitoring.

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Video 4.1: This video demonstrates the unboxing, component identification, and initial wiring steps for the EcoSolLi 12000W Hybrid Solar Inverter, including battery and AC connections, and powering on the unit.



Figure 4.2: Illustration of versatile design options for single-phase (up to 6 parallel units for 72KW) and split-phase series and parallel connections for 240V and 120V systems.



Figure 4.3: The inverter is compatible with various battery types including AGM, GEL, FLD, LI (Lithium-ion), SLD, and USER-defined settings, with a maximum battery charging current of 160A.

5. Operating Modes

The inverter offers flexible charging and output modes to optimize power allocation based on your needs.

Charging Modes:

- **Solar-Only:** Battery charges exclusively from solar power.

- **Grid-First:** Prioritizes grid power for charging, supplementing with solar if needed.
- **Solar-First:** Prioritizes solar power for charging, supplementing with grid if needed.
- **Hybrid Solar+Grid:** Utilizes both solar and grid power for charging based on availability and settings.

Output Modes:

- **Solar-First:** Prioritizes solar power to supply loads.
- **Grid-First:** Prioritizes utility grid power to supply loads.
- **Inverter First:** Prioritizes battery power (via inverter) to supply loads.
- **Hybrid Solar + Utility:** Dynamically uses solar, battery, and utility power to supply loads.

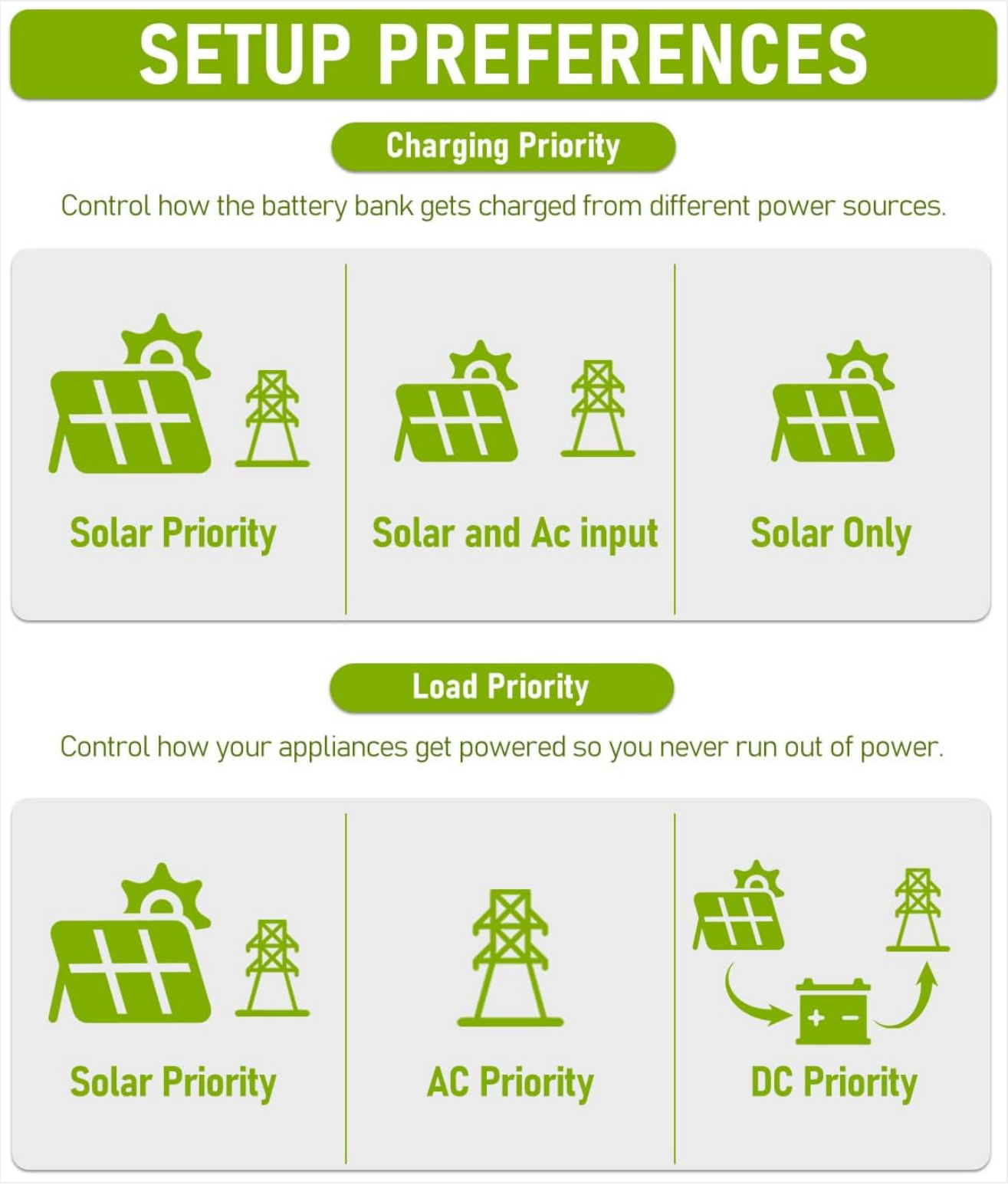


Figure 5.1: Visual guide to setting charging priority (Solar Priority, Solar and AC Input, Solar Only) and load priority (Solar Priority, AC Priority, DC Priority) to control power flow.

6. Monitoring

The EcoSolLi inverter supports remote monitoring via WiFi/GPRS. This feature allows you to track system performance, energy production, and consumption from a remote location using a dedicated application or web interface. Consult the separate WiFi/GPRS module manual for detailed setup and usage instructions.

7. Maintenance

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

- **Cleaning:** Periodically clean the exterior of the inverter and ventilation openings to prevent dust buildup, which can hinder cooling. Use a soft, dry cloth.
- **Connection Check:** Annually inspect all electrical connections (battery, PV, AC input/output) for tightness and signs of corrosion.
- **Environmental Check:** Ensure the installation environment remains within specified temperature and humidity ranges.
- **Firmware Updates:** Check for available firmware updates from EcoSolLi to ensure your inverter has the latest features and bug fixes.

8. Troubleshooting

This section provides solutions to common issues you might encounter. For complex problems, contact customer support.

Problem	Possible Cause	Solution
Inverter not powering on	No battery connection, low battery voltage, AC input breaker off.	Check battery connections and voltage. Ensure AC input breaker is ON.
No AC output	Overload, short circuit, inverter fault.	Reduce load. Check for short circuits. Restart inverter.
Low PV charging current	Insufficient sunlight, dirty solar panels, PV connection issue.	Ensure panels are clean and unobstructed. Check PV wiring.
Error code on display	Specific system fault.	Refer to the inverter's display manual for specific error code definitions and troubleshooting steps.

9. Specifications

Detailed technical specifications for the EcoSolLi 12000W 48V Hybrid Solar Charge Inverter.

Feature	Specification
Model Name	12000W 48V Hybrid Solar Charge Inverter
Wattage	12000 watts
Power Source	Solar and Battery Powered

Feature	Specification
Max. PV Input Current	22A x 2
Max. PV Open Circuit Voltage	500Vdc
Battery Voltage Range	40 - 58.6Vdc
Max Peak Power	18,000VA
Output Voltage	120V/240V AC (settable)
Parallel Capability	Max. 6 units (up to 72KW)
Item Weight	59 pounds
Package Dimensions	30 x 23 x 9 inches

10. Warranty and Support

EcoSolLi provides support for its products. For warranty information, please refer to the warranty card included with your product or visit the official EcoSolLi website. Standard protection plans are available for purchase to extend coverage.

Available Protection Plans:

- **3-Year Protection Plan:** One-time payment of $119.99.
- **Complete Protect:** Monthly payment of $16.99, covering eligible past and future purchases.

For technical assistance, troubleshooting, or service requests, please contact EcoSolLi customer support through their official channels.