Anern Anern_1500W_24V

Anern 1500W Hybrid Solar Inverter User Manual

Model: Anern_1500W_24V

1. Introduction

This manual provides essential information for the safe installation, operation, and maintenance of your Anern 1500W Hybrid Solar Inverter. This device integrates the functions of a solar inverter, MPPT solar charger, and battery charger to provide uninterrupted power support. It is designed for both on-grid and off-grid applications, supporting various battery types including lithium, lead-acid, and gel batteries.
Please read this manual thoroughly before installation and use to ensure optimal performance and safety.

2. Safety Instructions

Adherence to these safety guidelines is crucial to prevent injury and damage to the inverter or connected equipment.

- Installation must be performed by qualified personnel.
- Ensure all wiring is correctly polarized and securely connected.
- Do not disassemble the inverter; refer servicing to authorized personnel.
- Avoid exposing the inverter to rain, snow, or liquids.
- Ensure adequate ventilation around the inverter to prevent overheating.
- Always disconnect power before performing any maintenance or wiring.
- Use appropriate circuit breakers and fuses as specified in the electrical diagrams.

3. Product Overview

The Anern 1500W Hybrid Solar Inverter is a multi-functional device designed for efficient power management in solar energy systems. It features a pure sine wave output, ensuring compatibility with sensitive electronics.

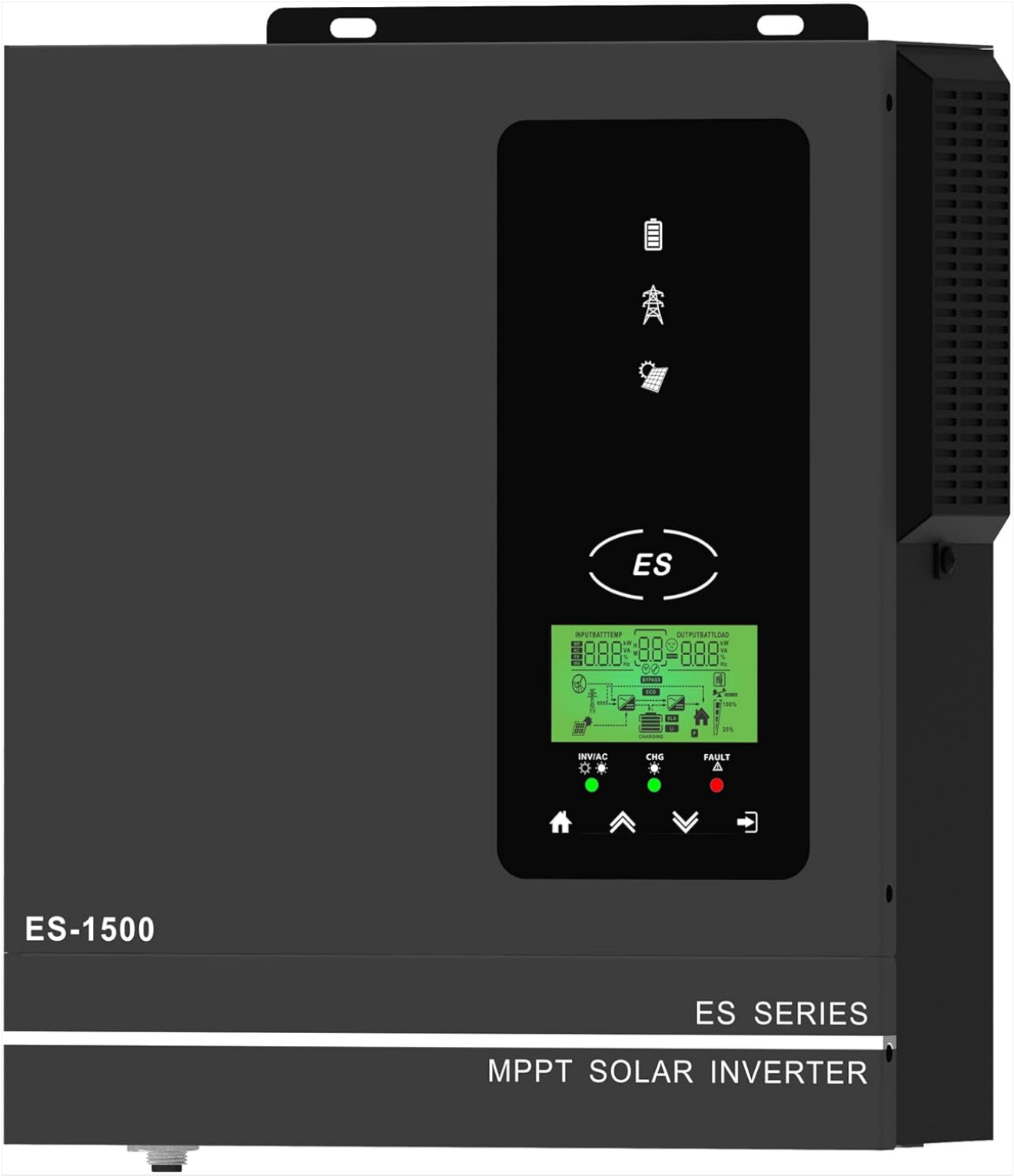

Figure 3.1: Front view of the Anern 1500W Hybrid Solar Inverter, showing the LCD display and control buttons.

Figure 3.2: Overview of the Anern 1500W Hybrid Solar Inverter highlighting nominal power, input voltage, and battery voltage.

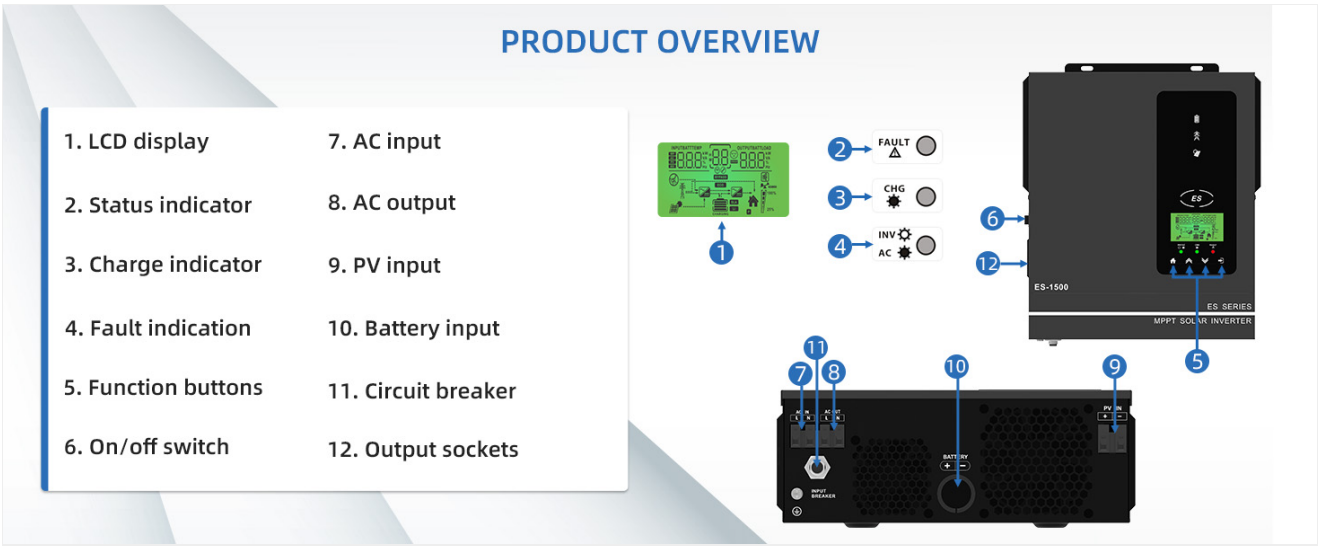

Figure 3.3: Detailed product overview illustrating the various components and their functions.

Key Features:

- **Pure Sine Wave Output:** Provides high-quality AC power suitable for all types of loads, including sensitive electronics.
- **Integrated MPPT Charge Controller:** Built-in 40A MPPT solar charge controller maximizes solar power harvesting.
- **Multiple Charging Modes:** Supports "Only Solar", "Mains First", "Solar First", and "Mains & Solar hybrid" charging modes.
- **Flexible Output Modes:** Offers "Solar First" and "SBU Priority" output modes for diverse application requirements.
- **Battery Compatibility:** Compatible with 24V lithium, lead-acid, and gel batteries.
- **LCD Display:** Provides dynamic display of system data and operating status, with configurable settings.
- **Battery-Independent Operation:** Capable of operating without a battery in certain configurations.

4. Technical Specifications

Below are the key technical specifications for the Anern 1500W Hybrid Solar Inverter (Model: Anern_1500W_24V).

Feature	Specification
Model	Anern_1500W_24V
Nominal Power	1500W
Surge Capacity	2000W
Output Voltage	230VAC
Output Frequency	50/60Hz (Auto sensing)
Battery Voltage	24VDC
Max. PV Input Power	1100W
PV Voltage Range	20-150VDC
Max. PV Input VOC	150VDC
Starting Voltage	>30VDC
MPPT Charge Controller	40A
Recommended PV Cable Size	12AWG
Max. Charge Current (AC + Solar)	40A
Efficiency	Up to 98%
Protection Rating	IP21

5. Installation

Proper installation is critical for the safe and efficient operation of your hybrid solar inverter. Ensure all local electrical codes and regulations are followed.

5.1 Site Selection

- Install the inverter indoors, away from direct sunlight, heat sources, and moisture.
- Ensure the mounting surface is strong enough to support the inverter's weight.

- Allow at least 20 cm (8 inches) of clearance around the inverter for proper airflow.
- Avoid areas with flammable materials or corrosive gases.

5.2 Wiring Diagram

The following diagram illustrates a typical system connection for the hybrid solar inverter, including solar panels, batteries, and AC loads.

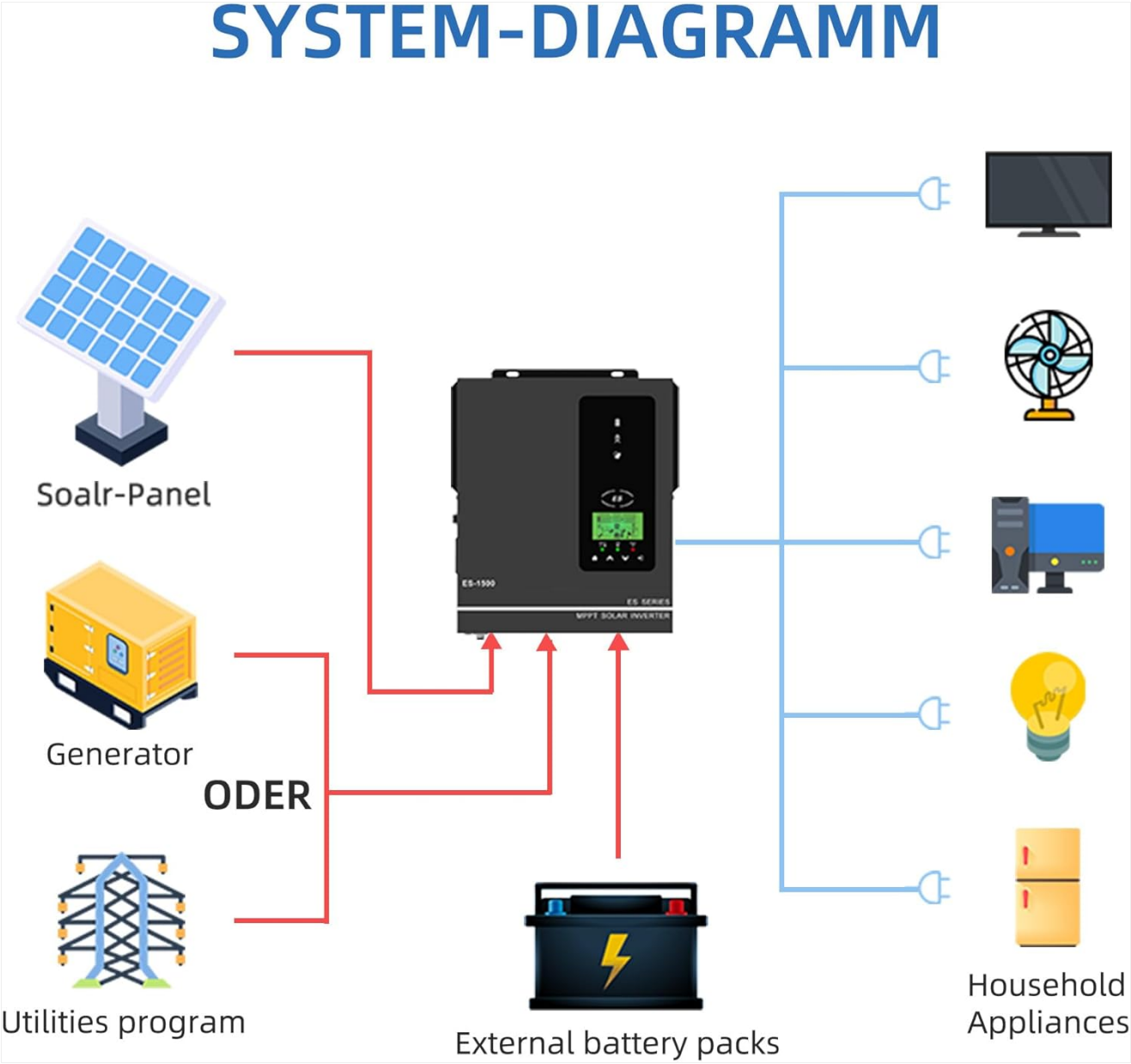

Figure 5.1: System diagram showing connections for solar panels, generator/utility, external battery packs, and household appliances.

1. **Battery Connection:** Connect the battery bank to the inverter's battery terminals. Ensure correct polarity.
2. **PV Array Connection:** Connect the solar panel array to the PV input terminals. Observe voltage and current limits.
3. **AC Input Connection:** Connect the AC utility grid or generator to the AC input terminals.
4. **AC Output Connection:** Connect your household loads to the AC output terminals.
5. **Grounding:** Ensure the inverter is properly grounded according to local electrical codes.

6. Operating Modes and Settings

The inverter offers various configurable settings via its LCD display and control buttons. These settings allow you to

optimize the system's performance based on your specific needs.

6.1 Charging Modes

- **Only Solar:** Prioritizes solar power for battery charging.
- **Mains First:** Prioritizes utility grid power for battery charging, using solar only when grid is unavailable.
- **Solar First:** Prioritizes solar power for battery charging, supplementing with grid power if solar is insufficient.
- **Mains & Solar Hybrid:** Utilizes both mains and solar power for charging, optimizing based on availability and load.

6.2 Output Modes

- **Solar First:** Prioritizes solar power to supply loads, then battery, then utility grid.
- **SBU Priority:** Prioritizes Solar, then Battery, then Utility grid for supplying loads.

6.3 LCD Display and Control

The LCD display provides real-time system data, including input/output voltage, battery status, and load levels. Use the function buttons to navigate menus and configure settings such as battery charging current, AC/solar charger priority, and load supply priority.

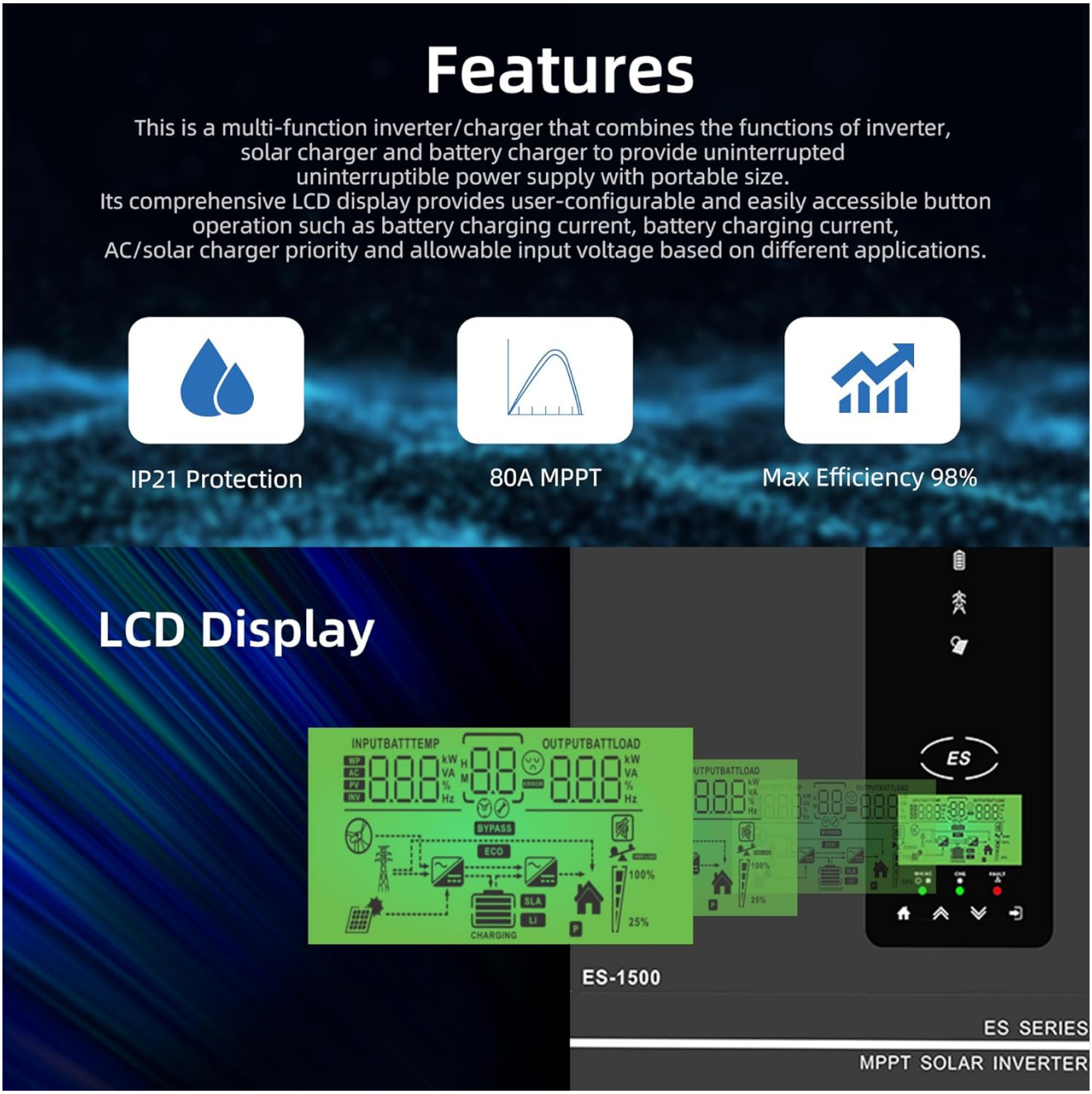

Figure 6.1: Close-up of the LCD display showing system status and indicators.

7. Maintenance

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

- **Cleaning:** Keep the inverter's exterior clean and free of dust. Use a dry cloth. Do not use liquid cleaners.
- **Ventilation:** Ensure ventilation openings are clear and not obstructed.
- **Connections:** Periodically check all electrical connections for tightness and signs of corrosion.
- **Battery Inspection:** If using lead-acid batteries, check electrolyte levels and terminal conditions as per battery manufacturer guidelines.
- **Environmental Check:** Ensure the operating environment remains within specified temperature and humidity ranges.

8. Troubleshooting

This section provides solutions to common issues you might encounter. For problems not listed here, contact technical support.

Problem	Possible Cause	Solution
Inverter not turning on	No battery connection; Battery voltage too low; Power switch off.	Check battery connections and voltage; Ensure power switch is on.
No AC output	Overload; Short circuit; Inverter fault; Battery low.	Reduce load; Check for short circuits; Check battery voltage; Restart inverter.
Solar charging not working	PV input voltage too low/high; PV array disconnected; MPPT controller fault.	Check PV connections and voltage; Ensure sufficient sunlight; Consult manual for error codes.
Abnormal noise	Loose components; Fan obstruction; Internal fault.	Inspect for loose parts; Clear fan obstructions; If persistent, contact support.

9. Warranty and Support

Anern provides a standard warranty for this product. Please refer to the warranty card included with your purchase for specific terms and conditions. For technical support, service, or warranty claims, please contact Anern customer service through their official channels or visit their website.

Manufacturer: Anern

Date First Available: March 3, 2025

You can find more information and support on the Anern Store on Amazon.

Related Documents - Anern_1500W_24V

	Anern Pure Sine Wave Hybrid Inverter User Manual: Installation, Safety, and Operation Guide This user manual provides comprehensive safety, installation, and operation guidelines for the Anern Pure Sine Wave Hybrid Inverter. It covers essential information on tools, wiring, and system setup for reliable power solutions.
	2.0KVA/3.2KVA Inverter MPPT SCC AC Charger User Manual Comprehensive user manual for the 2.0KVA/3.2KVA Inverter with MPPT SCC and AC Charger. Covers installation, operation, features, specifications, and troubleshooting. Includes safety instructions, system architecture, and detailed settings for optimal performance.
	MPPT Hybrid Solar Inverter User Manual This user manual provides detailed information on the features, installation, operation, and maintenance of the MPPT Hybrid Solar Inverter. It covers technical specifications, troubleshooting, and safety precautions for the AN-MPSG model.

	Посібник користувача Anern AN-SCI-EVO-2000 / AN-SCI-EVO-3200: Інвертор / MPPT SCC / AC Зарядний пристрій Детальний посібник користувача для інверторів Anern AN-SCI-EVO-2000 та AN-SCI-EVO-3200. Охоплює встановлення, експлуатацію, технічні характеристики та усунення несправностей для цих гібридних сонячних інверторів.
	AN-SCI-EVO-2000 & AN-SCI-EVO-3200 Inverter User Manual Comprehensive user manual for the Anern AN-SCI-EVO-2000 and AN-SCI-EVO-3200 Pure Sine Wave Solar Hybrid Inverters. Covers installation, operation, specifications, and troubleshooting.
	User Manual: Hybrid Inverter 3.6KW/4.2KW/6.2KW Comprehensive user manual for the Anern Hybrid Inverter models 3.6KW, 4.2KW, and 6.2KW. Covers installation, operation, specifications, troubleshooting, and system architecture for reliable power solutions.