

Anern Anern 4200W

Anern 4200W Hybrid Inverter 24V User Manual

Model: Anern 4200W

Brand: Anern

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your Anern 4200W Hybrid Inverter 24V. This off-grid inverter integrates the functions of an inverter and a charger, featuring an integrated 120A MPPT photovoltaic charge controller. It delivers a pure sine wave AC output at 220V/230V. A 24V battery connection is required for operation. This inverter does not support split-phase or three-phase systems.

2. SAFETY INFORMATION

Important Safety Instructions: Read all instructions carefully before installation and operation.

- The starting power for inductive loads must be at least three times the inverter's rated power. Exceeding this limit can damage the inverter.
- Ensure all circuits are connected correctly according to the wiring diagrams and that a dedicated switch is installed for each circuit.
- Follow the correct startup sequence: first, connect the battery, then start the inverter, and finally, activate the PV, grid, and load switches. For shutdown, reverse this sequence.
- Always ensure proper grounding for all components, especially solar panels, to prevent electrical interference and ensure safety.

3. PACKAGE CONTENTS

Verify that all items are included in your package:

- Anern 4200W Hybrid Inverter (1 unit)
- English User Manual (1 unit)
- WiFi Module (1 unit)



Image: Contents of the Anern 4200W Hybrid Inverter package.

4. PRODUCT OVERVIEW

The Anern 4200W Hybrid Inverter is designed for efficient energy management in off-grid solar systems. It combines multiple functionalities into a single unit.



Image: Front view of the Anern 4200W Hybrid Inverter, showing the display and branding.

4.1 Key Features

- **All-in-One Design:** Integrates an inverter, MPPT solar charge controller, and AC charger.
- **Pure Sine Wave Output:** Ensures compatibility with a wide range of sensitive electronic devices.
- **Dual AC Output:** Features primary and secondary AC outputs for flexible load management. The secondary output can maintain power to essential loads during low battery or no PV/grid input conditions.
- **LCD Display:** An RGB LCD provides clear, high-resolution information on system status and allows for easy configuration.
- **Battery Compatibility:** Supports various battery types including Lead-Acid (GEL, AGM, FLD) and Lithium (LI, SLD). It can also operate without a battery.
- **Multiple Protections:** Includes overcurrent, low voltage, short circuit, overheating, and overload protection.
- **WiFi Monitoring:** Allows remote monitoring and control via a mobile phone application.



Image: Visual representation of the inverter's integrated functions: hybrid inverter, MPPT charge controller, AC charger, and 4200W inverter.



Image: Explanation of the dual AC output functionality and the high-resolution RGB LCD display.



Image: Illustration of the inverter's compatibility with different battery chemistries and the option to operate without a battery.

4.2 Component Identification



Image: Front panel diagram showing the LCD display, indicators, and function keys.

1. LCD Display
2. Status Indicator
3. Charge Indicator
4. Fault Indicator
5. Function Keys
6. On/Off Switch



Image: Bottom panel diagram detailing AC input/output, battery, PV, and communication ports.

1. AC Input
2. Main AC Output

3. Second AC Output
4. Battery Terminals
5. PV Input
6. RS-232 Communication Port / WiFi Port
7. BMS / RS-485 Port

5. SETUP AND INSTALLATION

Proper installation is crucial for the inverter's performance and safety. Consult a qualified electrician if you are unsure about any steps.

5.1 Wiring Diagram



Image: Detailed wiring diagram for connecting solar panels, battery, grid, and loads to the inverter.

Key Wiring Recommendations:

- **Battery Type:** Lead-acid/Lithium 24V.
- **Recommended Battery Cable Size:** 2 AWG / 25mm².
- **Recommended Battery Fuse:** 150A.
- **PV Input:** Max 8200W, Open Circuit Voltage 500VDC, MPPT Voltage Range 90-450VDC, Start-up Voltage 120VDC. Recommended PV Cable: 10AWG / 6mm². Connect solar modules in series.
- **AC Input:** 230VDC, Max AC Input Voltage 300VAC, Max AC Charge Current 160A. Recommended AC Cable: 10AWG / 6mm². Recommended Breaker: 63A.
- **AC Output:** 4200W, 220V/230V. Recommended AC Cable: 10AWG / 6mm². Recommended Breaker: 63A. Note: The inverter's output is 230V. A converter (not included) may be needed for 110V appliances.

6. OPERATING INSTRUCTIONS

The inverter offers various operating modes to optimize energy usage based on your preferences and available power sources.

6.1 Charge Modes

You can configure the battery charge current via the LCD display settings. The following charge modes are available:

- **Solar Priority (CSO):** Solar energy charges the battery first. Utility power charges the battery only when solar energy is unavailable.
- **Solar Only (OSO):** Solar energy is the sole charging source, regardless of utility availability.
- **Utility Priority (SNU):** Utility power and solar energy charge the battery simultaneously.
- **Solar and Utility Hybrid:** (Default) Solar and utility power charge the battery simultaneously.

6.2 Output Modes

The inverter supports different output priorities:

- **Utility Priority (USB):** Loads are primarily powered by the public grid. Solar and battery power are used only if the grid is unavailable.
- **Solar Priority (SUB):** Loads are primarily powered by solar energy. If solar energy is insufficient, the grid supplies power. The battery powers loads only when both solar and grid are unavailable.
- **SBU Priority (Default):** Loads are primarily powered by solar energy. If solar energy is insufficient, the battery supplies power. The grid is used only when both solar and battery power are insufficient or the battery voltage drops below a set warning level.

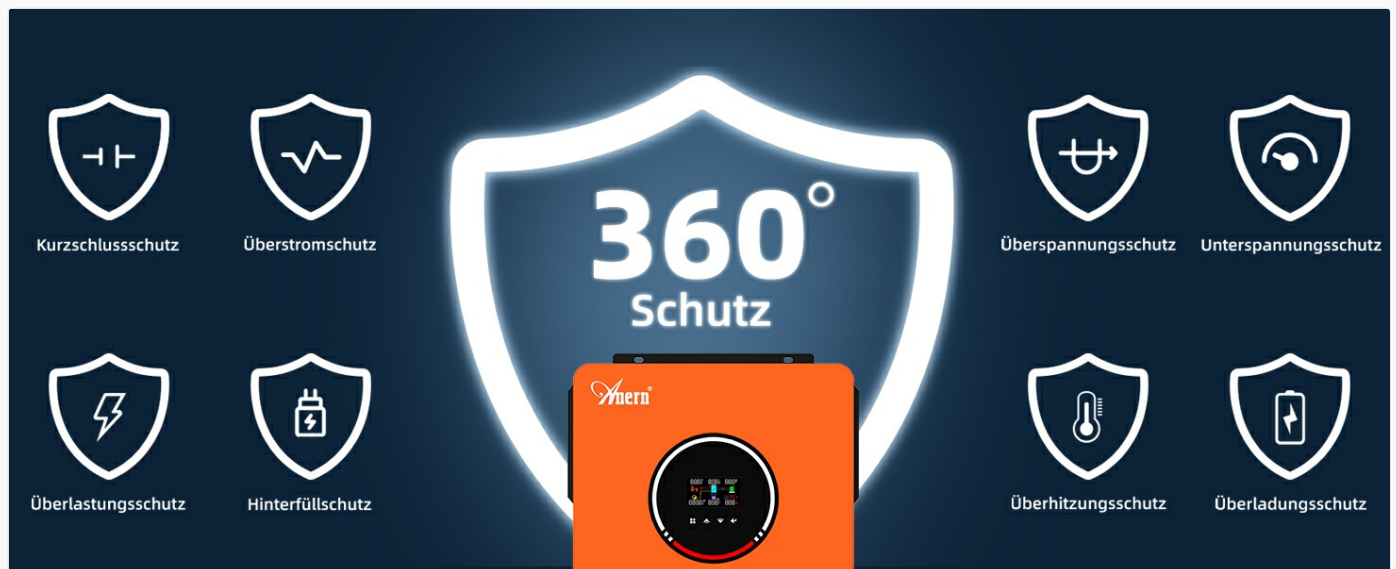


Image: Visual guide to the different charging and output priority modes.

7. BATTERY VOLTAGE SETTINGS (LITHIUM BATTERIES)

For lithium batteries, it is essential to set the charging and discharging protection voltages correctly. This video demonstrates how to configure these settings on the inverter's LCD display.

Your browser does not support the video tag.

Video: Instructions on how to set lithium battery voltage parameters (charging protection, float charge, discharge protection) on the inverter's display. This is a short preview video demonstrating the menu navigation.

Steps for Lithium Battery Voltage Setting:

1. From the main interface, press and hold the 'Return' button for approximately 3 seconds to enter the setting interface.
2. Use the 'Up' or 'Down' keys to navigate to item 05. This item is for battery type selection.
3. Press the 'Return' key to confirm entry into item 05.
4. Use the 'Down' key to change the setting to "USE" (User-Defined) mode.

5. Press the 'Return' key to confirm and save the battery type setting.
6. Use the 'Down' key to navigate to item**26**: "Set charging protection voltage".
7. Press the 'Return' key to enter the setting for item 26. Use the 'Up' or 'Down' keys to adjust the voltage value as needed.
8. Press the 'Return' key to confirm and save the charging protection voltage.
9. Use the 'Down' key to navigate to item**27**: "Set float charge voltage".
10. Press the 'Return' key to enter the setting for item 27. Use the 'Up' or 'Down' keys to adjust the voltage value.
11. Press the 'Return' key to confirm and save the float charge voltage.
12. Use the 'Down' key to navigate to item**29**: "Set discharge protection voltage".
13. Press the 'Return' key to enter the setting for item 29. Use the 'Up' or 'Down' keys to adjust the voltage value.
14. Press the 'Return' key to confirm and save the discharge protection voltage.
15. After completing all settings, press the 'Return' key to exit the setting interface and return to the main display.
16. To verify the settings, restart the inverter, then re-enter the setting interface (hold 'Return' for 3 seconds). Navigate to items 26, 27, and 29 and check if the displayed voltage values match your set values.

8. MAINTENANCE

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

- Keep the inverter clean and free from dust and debris. Ensure ventilation openings are not blocked.
- Periodically check all electrical connections for tightness and signs of corrosion.
- Inspect cables for any damage or wear. Replace damaged cables immediately.
- Monitor the inverter's display for any error codes or unusual readings.

9. TROUBLESHOOTING

If you encounter issues with your inverter, refer to the following general troubleshooting steps. For specific error codes, consult the full manual provided with the product.

- **No Power Output:** Check all input and output connections. Verify battery voltage and ensure the inverter is switched on. Check for tripped breakers or blown fuses.
- **Inverter Overload:** Reduce the connected load. Ensure the total power consumption does not exceed the inverter's rated capacity.
- **Battery Not Charging:** Check solar panel connections and output. Verify grid input if using utility charging. Ensure battery settings are correct for your battery type.
- **Unusual Noises:** Some noise from cooling fans is normal, especially under heavy load. Excessive or unusual noises may indicate a problem. Ensure proper ventilation.
- **WiFi Connection Issues:** Ensure the WiFi module is correctly installed and within range of your router. Check network settings and consult the WiFi module's specific instructions.

10. SPECIFICATIONS

Feature	Specification
---------	---------------

Feature	Specification
Brand	Anern
Model Name	Anern 4200W Inverter ibrido 24V
Product Dimensions	45 x 21 x 52 cm
Item Weight	16 Kilograms
Display	LCD
Voltage	24 Volt
Wattage	4200 watts
Power Source	Solar powered and battery powered
Frequency	50 Hz
Recommended Product Uses	Home use

11. WARRANTY AND SUPPORT

Anern provides a 12-month warranty for this product. For any technical assistance or warranty claims, please contact our professional technical support team. Online support is available to help you with any queries or issues you may encounter.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question