Anern AN-SCI-MAX 10,2kW 48V

Anern 10200W Hybrid Solar Inverter

INSTRUCTION MANUAL

1. Product Overview

The Anern 10200W Hybrid Solar Inverter is a high-performance device designed to efficiently convert solar energy into usable AC power for your home or business. It integrates a pure sine wave inverter, a 160A MPPT solar charge controller, and a battery charger into one compact unit. This inverter is compatible with various battery types and offers flexible operating modes to optimize energy usage.

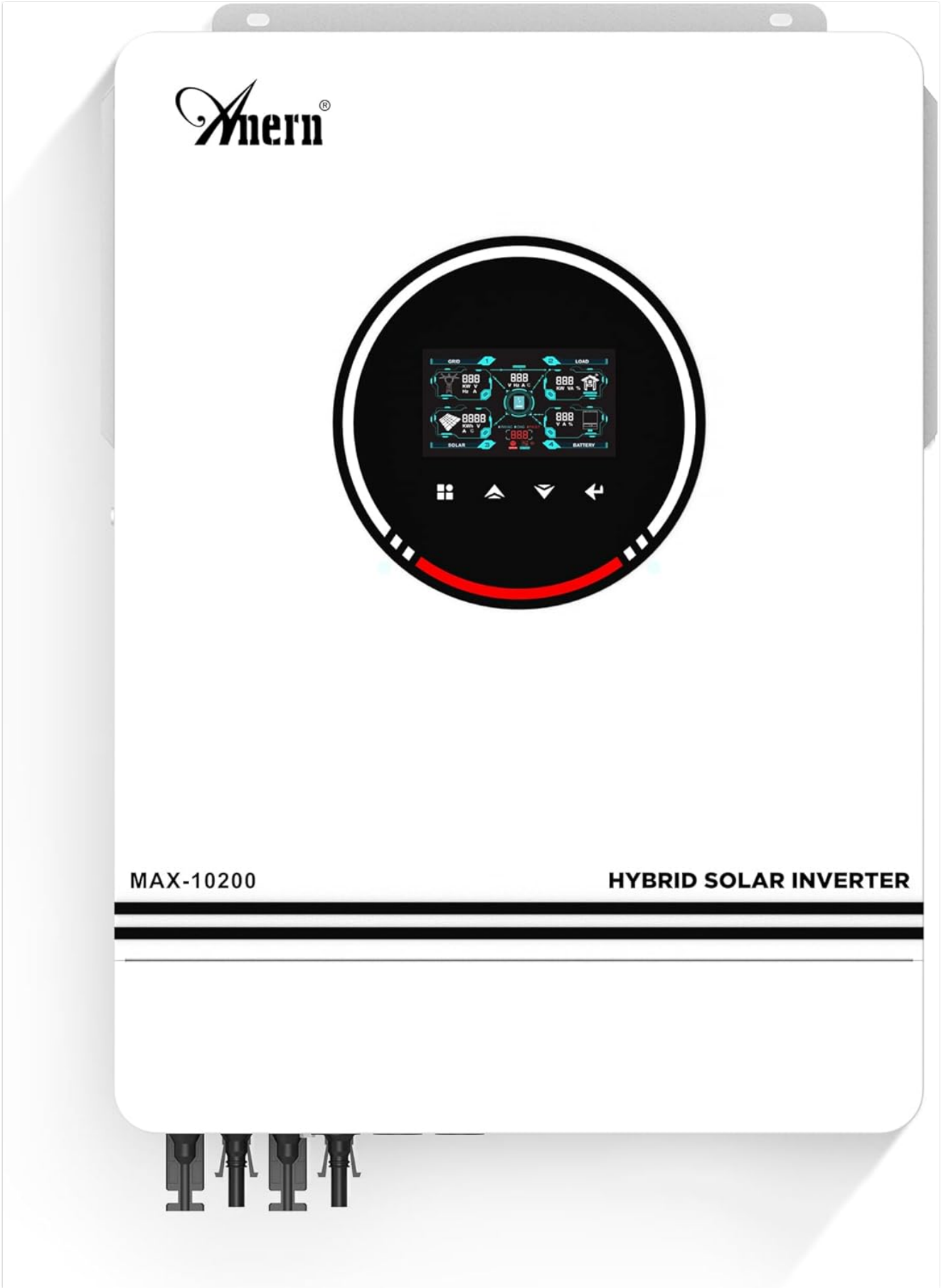

Figure 1: Anern 10200W Hybrid Solar Inverter

This image displays the front view of the Anern 10200W Hybrid Solar Inverter, showcasing its sleek design and integrated display panel.

2. Safety Information

Please read all instructions and warnings carefully before installation and operation. Failure to follow these instructions may result in electric shock, fire, or severe injury.

- Installation must be performed by qualified personnel.
- Ensure all wiring is correctly sized and properly connected.
- Do not attempt to disassemble or repair the inverter. Contact qualified service personnel.
- Keep the inverter away from flammable materials, moisture, and direct sunlight.
- Ensure proper ventilation around the inverter to prevent overheating.
- Always disconnect all power sources (PV, battery, and AC) before performing any maintenance or wiring.

3. Product Features

- **10200W Solar Inverter 48VDC:** 10.2KW Off Grid Solar Inverter 48Vdc to 230Vac with 160A MPPT Solar Charge Controller. Max PV input power: 10200W; PV operating voltage range: 90Vdc-450Vdc; Max.PV Array Open Circuit Voltage: 500Vdc; Max PV charging current: 130Amp; Rated output current: 44.3Amp; Max.PV Array Power: PV1 Channel: 5400W; PV2 Channel: 5400W; IMax.PV: PV1 Channel: 18A; PV2 Channel: 18A.
- **Dual PV Input / Dual AC Output:** The MAX 10.2kw dual input has two independent MPPTs, two circuits with a total of 36A, capable of connecting higher power solar modules. Dual Output - If there is no PV and grid feed-in and the battery voltage is too low, the primary circuit switches off and only the secondary output is maintained, similar to super power saving mode.
- **Compatible with all types of batteries:** The solar inverter is compatible with AGM, Gel, Lead-acid, Lithium, and Lithium Iron Phosphate batteries and supports battery-less operation mode. It supports solar, grid, or generator power for charging batteries. The inverter's charging and discharging time can be flexibly set.
- **4 Output Modes 3 Charging Modes:** The solar inverter can set the battery charging current via the LCD display; 4 output modes: Solar Priority (SUB), Utility Priority (USB) and SBU mode, MKS. 3 charging modes to choose from: Solar First (CSO), Solar Only (OSO), Solar Mixed and Utility (SNU) for various applications.
- **Safe Charging Protection:** Features short circuit protection, overcurrent protection, overvoltage protection, undervoltage protection, overload protection, backfill protection, overtemperature protection, and overload protection. Comprehensive protection for safer and more secure charging.

4. Package Contents

Verify that all items are included in your package:

- Instruction Manual
- WiFi Module

5. Product Components

Familiarize yourself with the main components and connection points of the inverter:

Figure 2: Inverter Components Overview

This diagram illustrates the various components of the inverter, highlighting the LCD display for monitoring, touch buttons for control, and connection points for AC input, main and secondary AC outputs, PV inputs, battery connections, and the communication port for the WiFi module.

6. Setup and Installation

6.1. Unboxing and Initial Setup (WiFi Module)

This video demonstrates the unboxing process and how to connect the WiFi module to your inverter for remote monitoring.

Video 1: MAX WIFI Connection

This video guides you through the process of unboxing your new Anern Hybrid Solar Inverter and connecting the included WiFi module. It shows how to attach the WiFi module to the inverter's communication port.

6.2. Wiring Connections

Follow these steps for proper and safe wiring of the inverter:

Figure 3: Inverter Wiring Diagram

This image provides a visual guide for connecting the solar panels to the PV input, the 48V battery bank, and the AC loads to the inverter's output. It also highlights recommended cable sizes and fuse ratings.

Video 2: Inverter Wiring

This video provides a step-by-step guide for wiring the inverter. It covers connecting the battery terminals, solar PV panels, the essential ground wire, and the AC input and output connections. Proper wiring is crucial for safe and efficient operation.

6.3. Starting the Inverter

Follow the correct sequence to power on your inverter:

- Ensure all wiring connections are secure and correct.
- Turn on the battery switch first.
- Then, turn on the inverter's power switch.
- Allow the inverter to initialize. Once operational, you can connect AC and PV inputs.

Video 3: How to Start the Inverter

This video demonstrates the correct sequence for starting the Anern Hybrid Solar Inverter, including turning on the battery and then the inverter. It also provides important attention points regarding AC and PV inputs.

7. Operating Instructions

7.1. Understanding Display and Controls

The inverter features an intuitive LCD display and touch buttons for monitoring and configuration.

Figure 4: RGB Working Modes

The inverter features an RGB light indicator that changes color based on its operating mode: red for battery mode, blue for utility mode, and purple for PV mode. This provides a quick visual status of the inverter's power source.

7.2. Battery Voltage Settings (Lithium)

To optimize performance and battery lifespan, you can adjust specific voltage parameters for lithium batteries:

- **Item 05: "User-Defined"** - Select this option for custom lithium battery settings.
- **Item 26: Set charging protection voltage** - Define the maximum voltage for charging.
- **Item 27: Set float charge voltage** - Configure the voltage for maintaining a full charge.
- **Item 29: Set discharge protection voltage** - Set the minimum voltage before discharge cutoff.

Video 4: Lithium Battery Setting

This video demonstrates how to configure the lithium battery voltage settings directly on the inverter's LCD panel. It covers setting the charging protection voltage (item 26), float charge voltage (item 27), and discharge protection voltage (item 29) for optimal battery health and performance.

7.3. Output and Charging Modes

The inverter offers various modes to suit different energy management strategies:

Figure 5: Output and Charging Modes

The inverter offers flexible operation with four output modes: Solar Priority (SUB), Utility Priority (USB), SBU mode, and MKS. It also provides three charging modes: Solar First (CSO), Solar Only (OSO), and Solar Mixed and Utility (SNU), allowing users to optimize energy flow based on their needs.

8. Maintenance Guidelines

Regular maintenance ensures optimal performance and longevity of your inverter:

- Keep the inverter clean and free from dust.
- Ensure adequate airflow around the unit.
- Periodically check all connections for tightness and signs of wear.
- Inspect the cooling fans for obstructions and proper operation.

Figure 6: Removable Dust Filter and Cooling Fans

The inverter is equipped with a removable dust filter to prevent dust-induced short circuits and intelligent cooling fans for efficient heat dissipation, ensuring long-term reliability. Regular cleaning of the dust filter is recommended.

9. Troubleshooting Common Issues

If you encounter issues, refer to the following common problems and solutions:

- **No Power Output:** Check battery connections, input voltage, and ensure the inverter is turned on.
- **Overload Alarm:** Reduce the connected load. Ensure the total power consumption does not exceed the inverter's rated output.
- **High Temperature Alarm:** Check for proper ventilation, clean dust filters, and ensure ambient temperature is within operating limits.
- **Battery Low Voltage:** Check battery charge level and charging sources (solar/utility).

Figure 7: Comprehensive Protection Features

The inverter incorporates comprehensive protection mechanisms such as short-circuit, overcurrent, overvoltage, undervoltage, overload, backfill, and overtemperature protection to ensure safe and reliable operation.

10. Technical Specifications

Specification	Value
Model Number	AN-SCI-MAX 10,2kW 48V
Wattage	10200 Watts
Power Source	Solar & Battery Powered
Product Dimensions	53 x 26 x 69 cm; 17 Kilograms
Max. PV Array Power (PV1/PV2)	5400W / 5400W
PV Operating Voltage Range	90Vdc-450Vdc
Max. PV Array Open Circuit Voltage	500Vdc
Max. PV Charging Current	130Amp
Rated Output Current	44.3Amp
AC Input Voltage	230V
AC Output Voltage	220V/230V

11. Warranty and Customer Support

Anern provides a 1-year warranty for this product. For technical support, troubleshooting, or warranty claims, please

contact Anern customer service through the official channels. When contacting support, please provide your product model number and purchase details for faster assistance.

For more information, visit the Anern Store.

Related Documents - AN-SCI-MAX 10,2kW 48V

	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.
	Manuale Utente Inverter Solare Ibrido AN-SCI-MAX-10200 Questo manuale utente fornisce istruzioni complete per l'installazione, il funzionamento e la risoluzione dei problemi dell'Inverter Solare Ibrido AN-SCI-MAX-10200. Copre linee guida di sicurezza, architettura del sistema, procedure di connessione, modalità operative, specifiche e manutenzione.
	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.
	Anern Hybrid Inverter User Manual: 3.6KW, 4.2KW, 6.2KW - Installation & Operation Guide Comprehensive user manual for the Anern Hybrid Inverter models 3.6KW, 4.2KW, and 6.2KW. Learn about installation, operation, specifications, and troubleshooting for reliable power solutions.

	Anern AN-SCI-EVO Series Hybrid Inverter User Manual User manual for the Anern AN-SCI-EVO series hybrid inverters, including models AN-SCI-EVO-4200 and AN-SCI-EVO-6200. Provides information on installation, operation, and specifications for powering home and office appliances.