## Anern AN-SCI-EVO-2000

# Anern Hybrid Solar Inverter User Manual

Model: AN-SCI-EVO-2000

## 1. Introduction

This manual provides essential information for the safe and efficient operation of your Anern AN-SCI-EVO Hybrid Solar Inverter. Please read this manual thoroughly before installation and use, and keep it for future reference.
The Anern AN-SCI-EVO is a high-frequency, grid-connected hybrid inverter designed to integrate solar power with your electrical grid. It can operate without batteries but is compatible with lead-acid, gel, and lithium battery types. Its comprehensive LCD display allows for easy configuration of various functions, including battery charging current, AC/solar charger priority, and input voltage settings.

## 2. Safety Information

**Important Safety Instructions:**

- Read all instructions and cautionary markings on the unit and in this manual before operating the inverter.
- Installation must be performed by qualified personnel in accordance with all local electrical codes.
- Do not disassemble the inverter. There are no user-serviceable parts inside. Refer servicing to qualified service personnel.
- Ensure all connections are tight to avoid loose connections that can cause overheating.
- Do not connect the inverter to a power source that exceeds its rated input voltage.
- Always disconnect all power sources (PV, battery, AC) before performing any maintenance or cleaning.
- This inverter is designed for indoor use. Protect it from direct sunlight, rain, snow, and excessive dust.
- Ensure adequate ventilation around the inverter to prevent overheating.

## 3. Product Features

- **Hybrid Operation:** Grid-tied inverter capable of operating with or without batteries.
- **Pure Sine Wave Output:** Provides high-quality, stable AC power, protecting sensitive electronics and extending their lifespan.
- **Wide Battery Compatibility:** Supports lead-acid, gel, and lithium battery types.
- **Advanced MPPT Technology:** Maximum Power Point Tracking for efficient solar energy harvesting with a wide PV input voltage range of 30-400 VDC.
- **Comprehensive LCD Display:** User-friendly interface for monitoring system status and configuring settings such as battery charging current, AC/solar charger priority, and input voltage ranges.
- **Remote Monitoring:** Supports WIFI/GPRS remote monitoring for accessing data and controlling the inverter from anywhere (WiFi module included).
- **Multiple Protections:** Includes overcurrent, low voltage, short circuit, overheating, and overcharge protection.

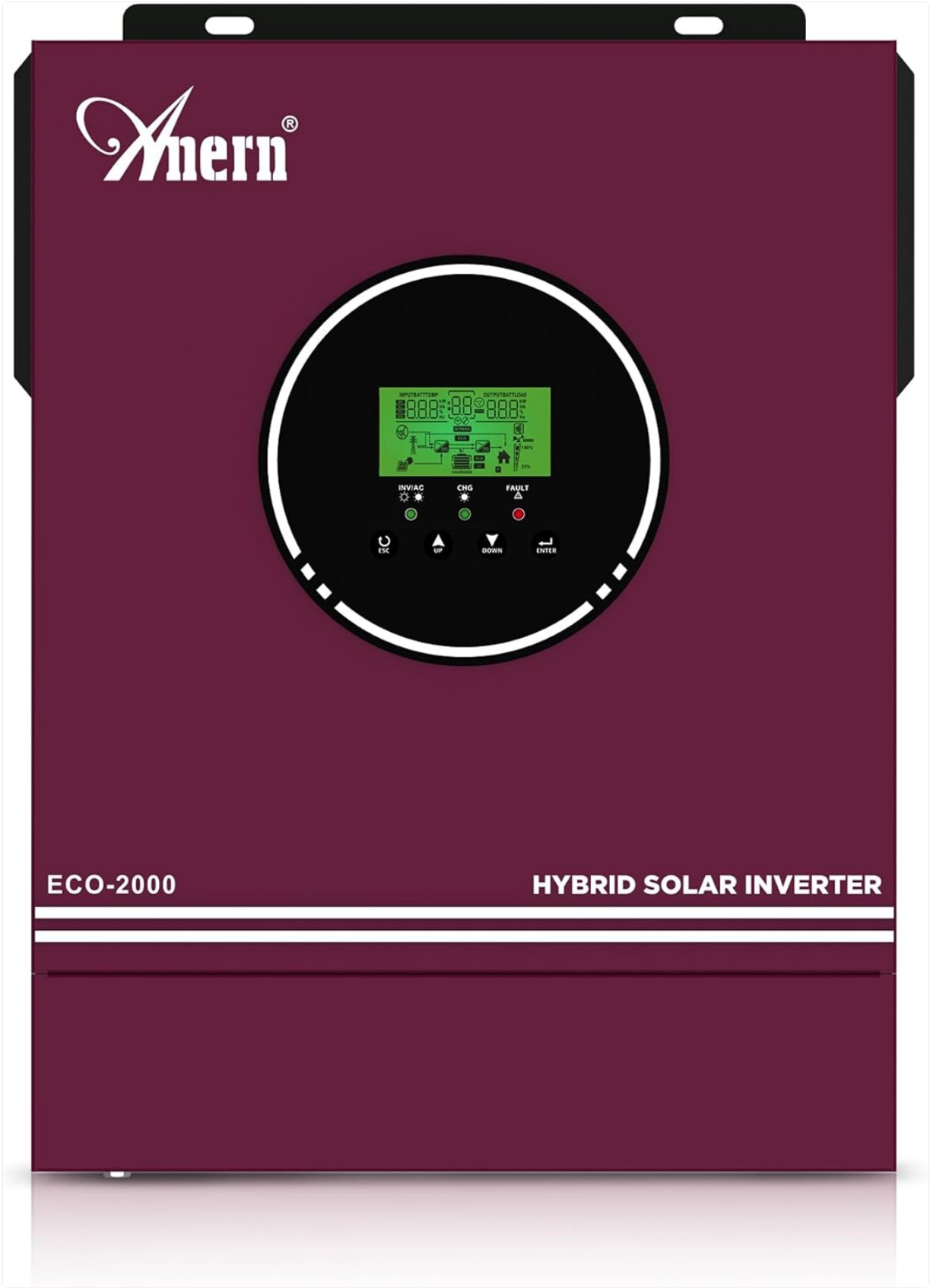



Figure 3.1: Front view of the Anern AN-SCI-EVO-2000 Hybrid Solar Inverter, showing the LCD display and control buttons.

## 4. Package Contents

Upon unpacking, please verify that all items are included and undamaged:

- Anern AN-SCI-EVO Hybrid Solar Inverter (1 unit)
- WiFi Module (1 unit)
- User Manual (this document)
- Mounting accessories (if applicable, not specified in detail)

## 5. Installation and Setup

Proper installation is crucial for the safe and efficient operation of the inverter. It is recommended that installation be performed by a certified electrician.

### 5.1 Site Selection

- Install the inverter indoors, away from direct sunlight, moisture, and corrosive substances.
- Ensure the ambient temperature is within the operating range (refer to specifications).
- Provide at least 20 cm of clearance around the inverter for proper ventilation.
- Mount the inverter vertically on a sturdy surface.

### 5.2 Wiring Connections

Before making any connections, ensure all power sources (PV array, battery, AC grid) are disconnected and secured against accidental re-connection.

1. **Battery Connection:** Connect the battery bank to the inverter's battery terminals. Ensure correct polarity (+ to + and - to -). The inverter requires a battery connection to operate.
2. **PV Array Connection:** Connect the solar panel array to the inverter's PV input terminals. Observe correct polarity and ensure the PV input voltage is within the specified MPPT range (30-400 VDC) and does not exceed the maximum PV VOC (400 VDC). Recommended PV cable size is 16 AWG.
3. **AC Output Connection:** Connect your household loads or distribution panel to the inverter's AC output terminals.
4. **AC Input Connection (Grid/Generator):** If connecting to the utility grid or a generator, connect it to the inverter's AC input terminals.
5. **Grounding:** Ensure the inverter is properly grounded according to local electrical codes.


Figure 5.1: System connection diagram illustrating various power sources and loads for the hybrid inverter.

### 5.3 WiFi Module Installation

The included WiFi module allows for remote monitoring. Connect the module to the designated communication port on the inverter. Follow the instructions provided with the WiFi module for network configuration and app setup.

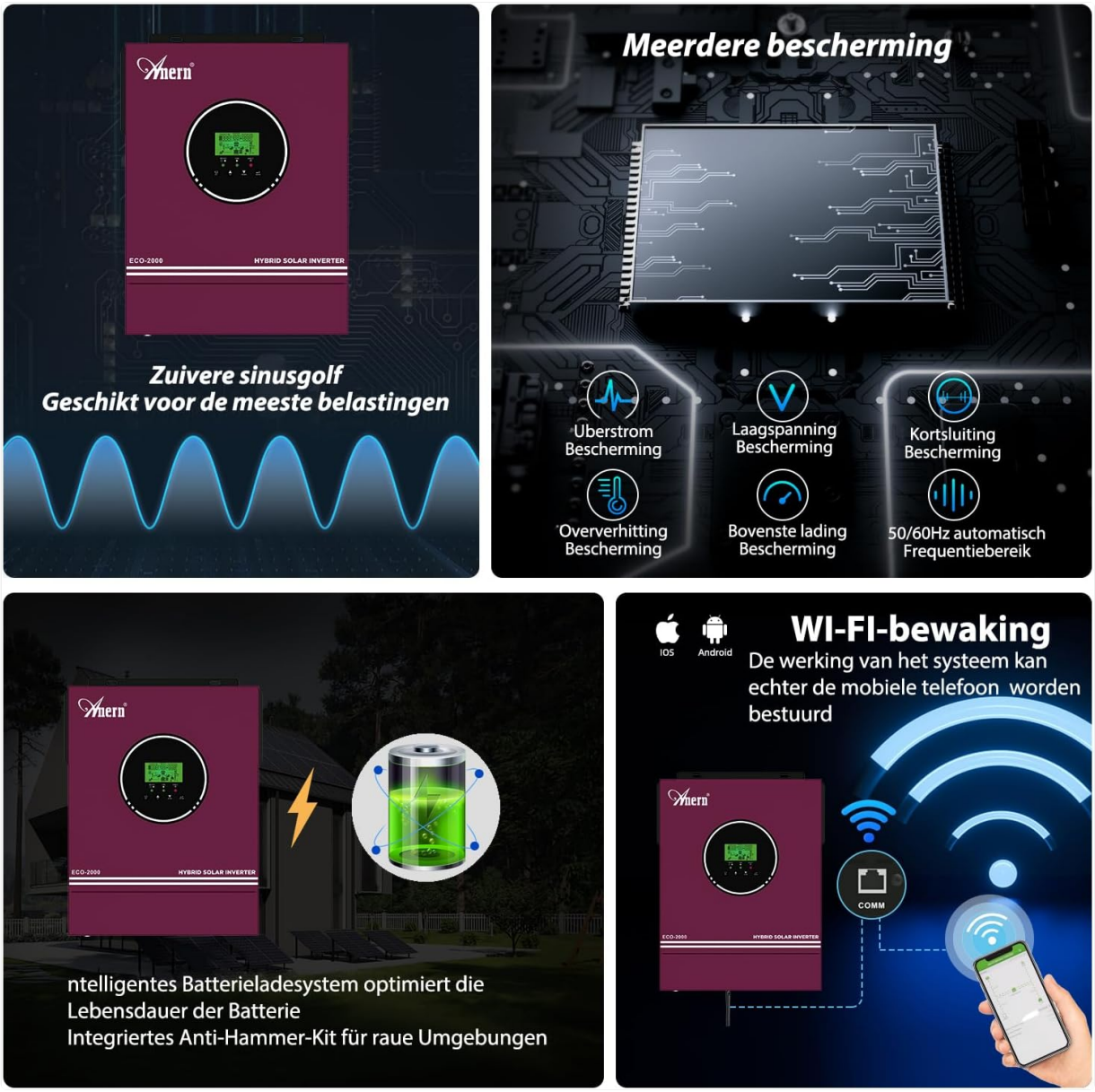



Figure 5.2: Overview of inverter protection features and WiFi monitoring capability.

## 6. Operating Instructions

### 6.1 Initial Power-Up

1. After all connections are secure, switch on the battery breaker.
2. Switch on the PV array breaker.
3. Switch on the AC input breaker (if connected to grid/generator).
4. The inverter will power on, and the LCD display will illuminate.

### 6.2 LCD Display and Settings

The LCD display provides real-time system information and allows for configuration of various parameters. Use the buttons below the display to navigate menus and adjust settings.

- **Monitoring:** View battery voltage, PV input voltage, AC output voltage, charging current, and load power.
- **Charging Current:** Adjust the battery charging current.
- **Charger Priority:** Set the priority for AC charger or solar charger.
- **Input Voltage Range:** Configure acceptable input voltage ranges for different applications.

### 6.3 Operating Modes

The inverter supports multiple charging and output modes to meet diverse user requirements:

- **Solar Energy Priority:** Solar power is primarily used to power loads and charge batteries. Utility power is used only when solar power is insufficient.
- **Solar Energy + Utility Simultaneously:** Solar power and utility power are used concurrently to power loads and charge batteries.
- **Battery Only Charging:** The inverter charges batteries from solar or utility, but does not directly power loads from these sources.


Figure 6.1: Available charging modes for the hybrid solar inverter.

### 6.4 Remote Monitoring

Once the WiFi module is configured, you can monitor the inverter's performance and adjust settings remotely via a mobile application. This allows for real-time data access and control.

## 7. Maintenance

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

- **Cleaning:** Periodically clean the inverter's exterior with a dry cloth. Ensure ventilation openings are free from dust and debris. Do not use liquid cleaners.
- **Connection Check:** Annually inspect all electrical connections (PV, battery, AC) for tightness and signs of corrosion. Tighten any loose connections.
- **Ventilation:** Ensure the area around the inverter remains clear to allow for proper airflow and heat dissipation.
- **Battery Inspection:** If using batteries, follow the battery manufacturer's maintenance guidelines.

## 8. Troubleshooting

This section provides solutions to common issues. If the problem persists, contact customer support.

| Problem | Possible Cause | Solution |
|---|---|---|
| Inverter does not power on. | No battery connection or low battery voltage. | Ensure battery is connected and charged. The inverter requires a battery to operate. |
| No AC output. | Overload, short circuit, or internal fault. | Reduce load. Check for short circuits in wiring. Restart inverter. If fault persists, contact support. |
| Inverter reports an error when load is connected. | Load exceeds inverter capacity, or specific load type incompatibility. | Ensure total load does not exceed 2000W. Some inductive loads (e.g., motors, refrigerators) have high startup currents; ensure the inverter's surge capacity (2000W) is sufficient. Try connecting a smaller, resistive load to test. |
| PV input not detected or low. | Insufficient sunlight, incorrect PV wiring, or PV voltage outside MPPT range. | Check solar panel connections and ensure adequate sunlight. Verify PV voltage is within 30-400 VDC. |
| Overheating warning. | Poor ventilation or excessive ambient temperature. | Ensure adequate clearance around the inverter. Clean ventilation openings. Reduce ambient temperature if possible. |

## 9. Specifications

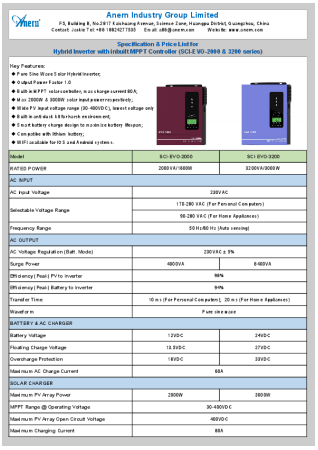
| Parameter | Value |
|---|---|
| Model | AN-SCI-EVO-2000 (ECO-2000) |
| Max. PV Input Power | 2000 W |
| PV Voltage Range | 30-400 V DC |
| Max. PV VOC (Open Circuit Voltage) | 400 V DC |
| Startup Voltage | >130 V |
| Recommended PV Cable Size | 16 AWG |
| Max. Charging Current | 80A |
| Nominal Input Frequency | 50/60 Hz |
| Output Power | 2000 W |
| Surge Capacity | 2000 W |
| Dimensions (L x W x H) | 45.5 x 35.5 x 20 cm |
| Weight | 6 kg |

## 10. Warranty and Support

**Warranty:** Anern provides a 3-year warranty for this inverter. Please retain your proof of purchase for warranty claims.
**Return Policy:** A 30-day, uncomplicated return policy is offered.
**Customer Support:** For technical assistance, troubleshooting, or to obtain a German language manual, please contact Anern customer service through the platform where you purchased the product.

## Related Documents - AN-SCI-EVO-2000

| | |
|---|---|
|  | AN-SCI-EVO-2000 & AN-SCI-EVO-3200 Inverter User Manual<br>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. |
|  | Anern AN-SCI-EVO Series Hybrid Inverter User Manual<br>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. |
|  | Посібник користувача гібридного інвертора Anern AN-SCI-EVO<br>Офіційний посібник користувача для гібридних інверторів Anern AN-SCI-EVO серії 3600, 4200 та 6200. Детальний опис встановлення, експлуатації та усунення несправностей для систем сонячної та акумуляторної енергії. |
|  | ANERN AN-SCI-EVO-3600/6200 Hybrid Inverter User Manual<br>Comprehensive user manual for the ANERN AN-SCI-EVO-3600 and AN-SCI-EVO-6200 Hybrid Solar Inverters, covering installation, operation, specifications, troubleshooting, and maintenance. |
|  | Anern Pure Sine Wave Hybrid Inverter User Manual: Installation, Safety, and Operation Guide<br>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<br>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. |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Specification & Price List for
Hybrid Inverter with inbuilt MPPT Controller (SCI-EVO-2000 & 3200 series)

| Model | SCI-EVO-2000 | SCI-EVO-3200 |
|---|---|---|
| RATED POWER | 2000VA/1600W | 3200VA/3000W |
| AC INPUT | | |
| AC Input Voltage | 230V AC | |
| Selectable Voltage Range | 170-280 VAC (For Personal Computers) | |
| | 90-280 VAC (For Home Appliances) | |
| Frequency Range | 50 Hz/60 Hz (Auto sensing) | |
| AC OUTPUT | | |
| AC Voltage Regulation (Batt. Mode) | 230 VAC ± 5% | |
| Surge Power | 4000VA | 6400VA |
| Efficiency ( Peak ) PV to Inverter | 98% | |
| Efficiency ( Peak ) Battery to Inverter | 94% | |
| Transfer Time | 10 ms (For Personal Computers), 20 ms (For Home Appliances) | |
| Waveform | Pure sine wave | |
| BATTERY & AC CHARGER | | |
| Battery Voltage | 12VDC | 24VDC |
| Floating Charge Voltage | 13.5VDC | 27VDC |
| Overcharge Protection | 16VDC | 32VDC |
| Maximum AC Charge Current | 60A | |
| SOLAR CHARGER | | |
| Maximum PV Array Power | 2000W | 3000W |
| MPPT Range @ Operating Voltage | 30-460VDC | |
| Maximum PV Array Open Circuit Voltage | 460VDC | |
| Maximum Charging Current | 60A | |

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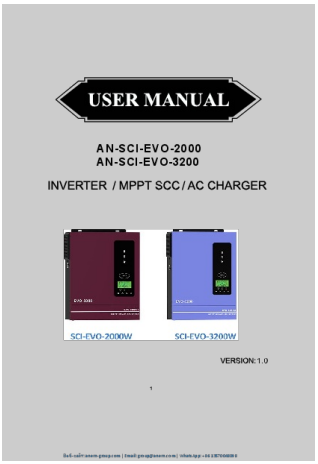


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AN-SCI-EVO-2000 & AN-SCI-EVO-3200 Inverter User Manual

Comprehensive user manual for the Anern AN-SCI-EVO-2000 and AN-SCI-EVO-3200 Pure Sine Wav Solar Hybrid Inverters. Covers installation, operation, specifications, and troubleshooting.

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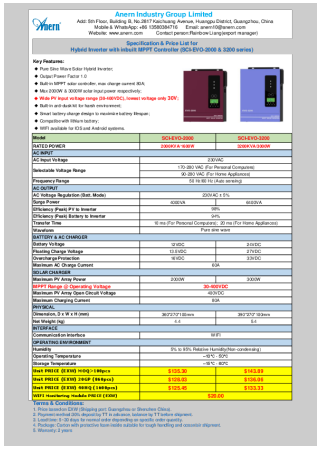


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[pdf] Catalog

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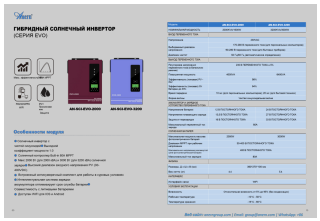


Anern EVO Series Hybrid Solar Inverters: Technical Specifications and Features

Comprehensive overview of Anern's EVO Series hybrid solar inverters, detailing technical specifications, key features, and model information for units including AN-SCI-EVO-2000, AN-SCI-EVO 3200, AN-SCI-EVO-3600, AN-SCI-EVO-6200, AN-SCI-EVO-7200, AN-SCI-EVO-8200, and AN-SCI-EVO-10200.

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