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DATOUBOSS 24V 3000W

DATOUBOSS 24V 3000W Hybrid Solar Inverter User Manual

Model: 24V 3000W

1. INTRODUCTION

Thank you for choosing the DATOUBOSS 24V 3000W Hybrid Solar Inverter. This device is a versatile power solution designed to provide reliable power for various applications, including homes, RVs, and trucks. It integrates a solar charge controller, an inverter, and a battery charger into one compact unit, offering a pure sine wave output for sensitive electronics.

This manual provides essential information for the safe and efficient operation of your inverter. Please read it thoroughly before installation and use.



Image: Front view of the DATOUBOSS 24V 3000W Hybrid Solar Inverter, showcasing its compact design and LCD display.

2. SAFETY INFORMATION

WARNING: Electrical shock hazard. Installation and maintenance should only be performed by qualified personnel.

- Do not open or disassemble the unit while it is in operation.

- Ensure all connections are secure and properly insulated to prevent short circuits.
- Keep the inverter away from water, moisture, and flammable materials.
- Ensure adequate ventilation around the unit to prevent overheating.
- Always disconnect power before performing any maintenance or wiring.



Image: The inverter highlighting its comprehensive 360-degree protection features, including short circuit, overcurrent, overvoltage, undervoltage, overload, backfill, and over-temperature protection.

3. PRODUCT FEATURES

The DATOUBOSS 24V 3000W Hybrid Solar Inverter is equipped with advanced features for optimal performance and safety:

- **High Efficiency:** Rated power of 3000W with a maximum PV array open circuit voltage of 500V DC and an MPPT voltage range of 40-500V DC.
- **Integrated Charging:** Hybrid charging with a maximum charge current of 100A (AC charger + PV charger).
- **Real-time Monitoring:** Features an LCD display for system data and operational status, including error codes for

easy troubleshooting. Three LED indicators provide dynamic system status at a glance.

- **Advanced Battery Management:** Includes a BMS (Battery Management System) protection system to monitor battery status and prevent overcharge and deep discharge, extending battery lifespan.
- **Multiple Operating Modes:** Supports four charging modes (Solar, Utility Priority, Solar Priority, Utility-Hybrid) and three output modes (PV Priority, Utility Priority, Inverter Priority) to meet diverse application requirements.
- **Intelligent Cooling:** Features intelligent heat dissipation that adjusts based on the device's temperature.
- **Comprehensive Protection:** Built-in protections against short circuit, overcurrent, overvoltage, undervoltage, overload, backfill, and over-temperature.
- **Wide Compatibility:** Compatible with 24V lead-acid batteries (sealed, AGM, Gel, Flooded) and lithium batteries. Can power various home and office appliances, including motor-driven devices like lamps, fans, refrigerators, and air conditioners.

3000W Hybrid Solar Inverter 24VDC



- 100A MPPT**
Solar Charge Controller
MAX.Charge Current:100A
- 3000W**
MAX.PV Array Power
- 500VDC**
MAX.PV Array Open
Circuit Voltage
- 40-500VDC**
Solar Voltage Range(Vmp)



Pure Sine Wave 50/60Hz Auto Support Lithiumbattery

Image: The inverter displayed with its key technical specifications: 100A MPPT Solar Charge Controller, 3000W Max PV Array Power, 500VDC Max PV Array Open Circuit Voltage, and 40-500VDC Solar Voltage Range (Vmp).

DATOUBOSS Reiner Sinuswellen-Hybrid-Solarwechselrichter

- ✓ Konfigurierbarer Eingangsspannungsbereich für Haushaltsgeräte und Personal Computer über LCD-Einstellung
- ✓ Konfigurierbarer Batterieladestrom basierend auf Anwendungen über LCD-Einstellung
- ✓ Konfigurierbare AC/Solar Ladegerät Priorität über LCD Einstellung
- ✓ Kompatibel mit Netzspannung oder Generatorleistung
- ✓ Automatischer Neustart während der Wiederherstellung des AC
- ✓ Überlast/ Übertemperatur/ Kurzschlusschutz
- ✓ Intelligentes Batterieladegerät für optimierte Batterieleistung
- ✓ Kaltstartfunktion



Image: A detailed list of features for the DATOUBOSS Pure Sine Wave Hybrid Solar Inverter, including configurable input voltage, charge current, AC/solar charger priority, grid/generator compatibility, auto-restart, and various protections.

4. PACKAGE CONTENTS

Upon opening the package, please verify that all items are present and undamaged:

- DATOUBOSS 24V 3000W Hybrid Solar Inverter Unit
- User Manual
- Mounting Hardware (bolts, nuts)
- Fuse



Image: The inverter shown with its dimensions (39cm x 11cm x 30.5cm) and a visual representation of the included accessories: mounting bolts, a fuse, and the user manual.

5. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your hybrid inverter. Follow these guidelines:

5.1 Mounting

Mount the inverter in a well-ventilated area, away from direct sunlight, heat sources, and moisture. Ensure there is sufficient clearance around the unit for airflow. Use the provided mounting hardware to secure the inverter to a stable surface.

5.2 Wiring Connections

Refer to the wiring diagram for correct connections. All wiring should be performed by a qualified electrician.

- **Battery Connection:** Connect 24V batteries (lead-acid or lithium) to the designated battery terminals. Ensure correct polarity. Recommended cable size for batteries is 2 AWG (25mm²).
- **PV Input:** Connect your solar panels to the PV input terminals. Solar power is recommended to be connected in series for optimal performance. Max. PV power is 3000W. Recommended cable size for solar is 6mm².
- **AC Input:** Connect the AC input from the utility grid or a generator. Max. AC input voltage is 300Vac. Recommended cable size for AC input is 10 AWG (6mm²).
- **AC Output:** Connect your loads (appliances) to the AC output terminals. Max. AC output power is 3000W. Recommended cable size for AC output is 10 AWG (6mm²).
- **Communication Ports:** The inverter includes RS232 and BMS/RS485 communication ports for monitoring and integration with battery management systems.

Always install appropriate circuit breakers and fuses on all input and output lines for safety.

System Connection

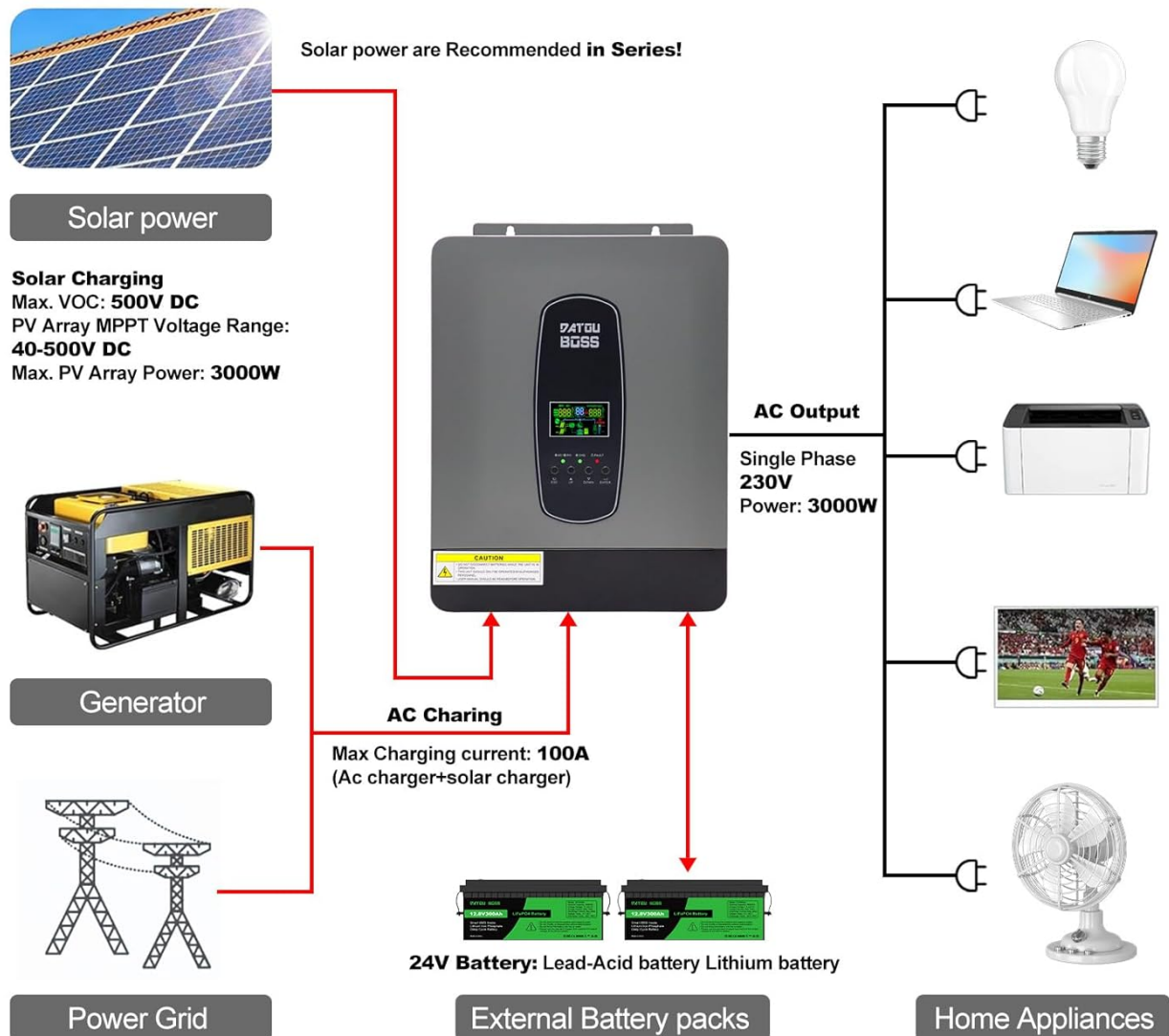


Image: A detailed system connection diagram showing how to connect solar panels, batteries, generator, power grid, and home appliances to the DATOU BOSS Hybrid Solar Inverter.

Verkabelung und Technische Spezifikationen

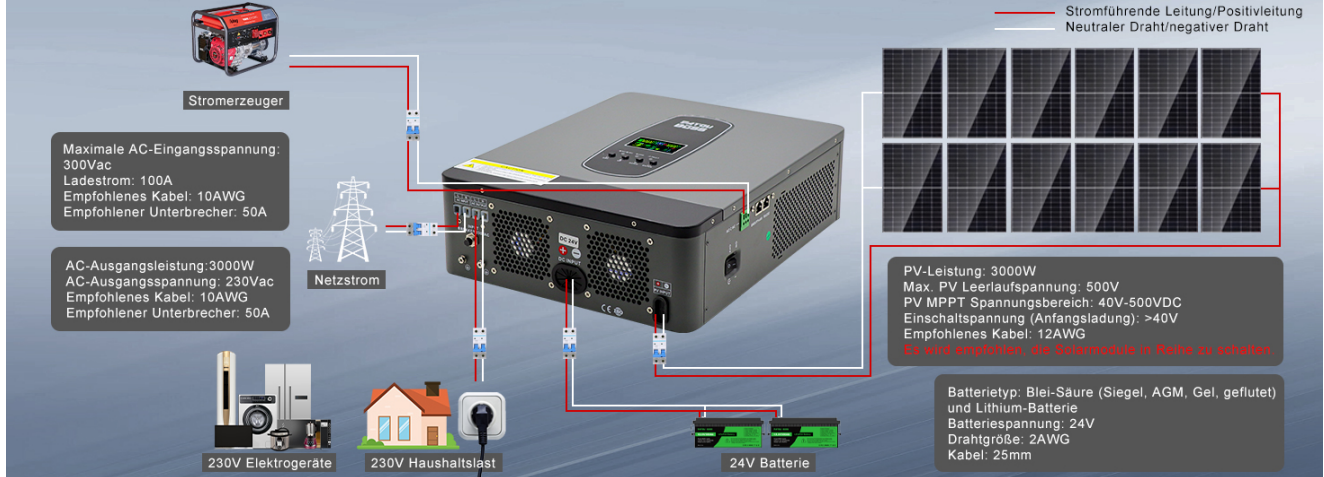
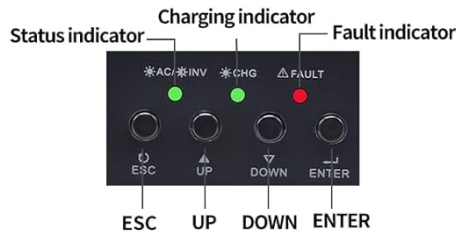


Image: A comprehensive diagram illustrating the wiring connections and technical specifications for the DATOUBOSS Hybrid Solar Inverter, including recommended cable sizes and breaker ratings.

Appearance Description



LCD display



- RS232 Communication Port
- BMS/RS485 Communication Port
- Dry Contact
- Power ON/OFF Switch

DATOUBOSS
Model: DT2430
CAPACITY 3000VA/3000W
OPERATING TEMPERATURE RANGE: -10~50°C
PROTECTION DEGREE: IP21
INVERTER MODE
DC INPUT 24VDC 138.9A
AC OUTPUT 230VAC, 50/60HZ, 13A, 1φ
AC MODE
AC CHARGER 27VDC 80A
AC INPUT 230VAC, 50/60HZ, 20.1A, 1φ
AC OUTPUT 230VAC, 50/60HZ, 13A, 1φ
SOLAR MODE
SOLAR PANEL POWER 3000W
MAX CHARGING CURRENT: 100A
SOLAR VOLTAGE RANGE(V_{mp}): 40-500VDC
BEST VOLTAGE RANGE(V_{mp}): 300-400VDC
MAX SOLAR VOLTAGE 500VDC
CODE: 9534-015-001
Serial: 20240909 0120



Image: Detailed view of the inverter's appearance, labeling the LCD display, status indicators, charging indicator, fault indicator, function keys, power ON/OFF switch, dry contact, RS232, BMS/RS485 communication ports, AC input/output, input breaker, battery input, fan, and PV input.

6. OPERATING INSTRUCTIONS

The inverter features an intuitive LCD display and control buttons for easy operation and configuration.

6.1 LCD Display and Indicators

The LCD display shows real-time system data such as input/output voltage, battery status, load percentage, and operational mode. Three LED indicators provide quick status updates:

- **AC/INV LED:** Indicates AC input or inverter operation.
- **CHG LED:** Indicates charging status.
- **FAULT LED:** Indicates a system fault or error.

6.2 Operating Modes

The inverter offers flexible charging and output modes:

Charging Modes:

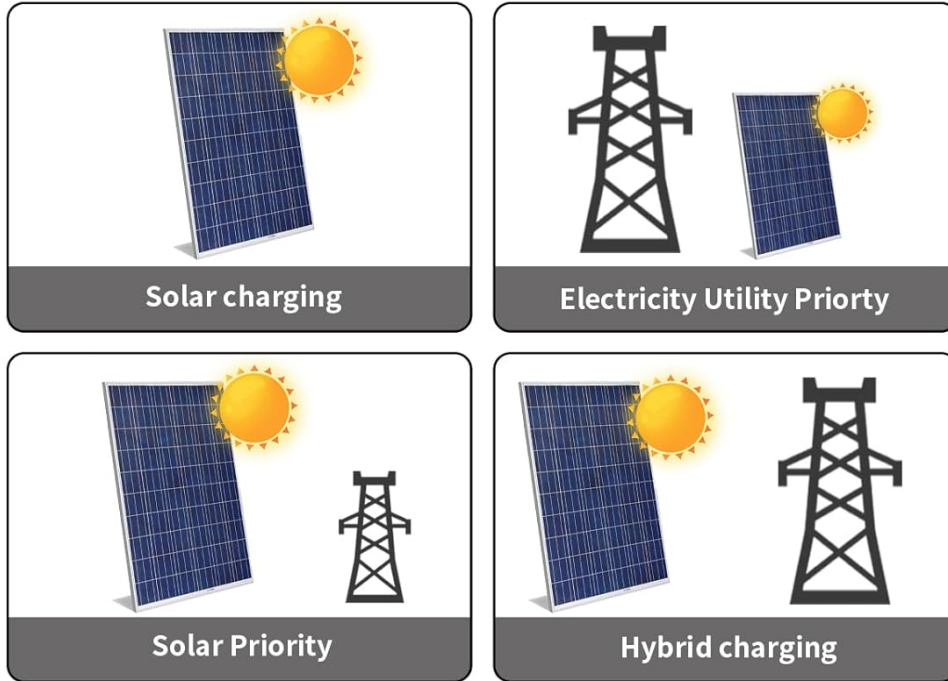
- **Solar Charging:** Prioritizes solar power for battery charging.
- **Utility Priority:** Uses utility power for charging when available; otherwise, switches to solar.
- **Solar Priority:** Prioritizes solar charging; if solar is insufficient, utility power supplements.
- **Hybrid Charging:** Combines solar and utility power to charge the battery simultaneously.

Load Output Modes:

- **PV Priority:** Prioritizes solar power for loads; switches to battery/utility if solar is insufficient.
- **Utility Priority:** Prioritizes utility power for loads; switches to inverter/battery if utility is unavailable.
- **Inverter Priority (SBU):** Prioritizes battery power for loads; switches to utility when battery voltage is low.

Maximize energy use and reduce electricity bills

Four Charging Mode



Three Load Output Modes



Image: Visual representation of the four charging modes (Solar, Electricity Utility Priority, Solar Priority, Hybrid charging) and three load output modes (PV Priority, Utility Priority, SBU priority).



Image: A close-up of the inverter's LCD display showing various real-time system parameters and a diagram of the power flow.

7. MAINTENANCE

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

- **Cleaning:** Keep the inverter clean and free from dust. Use a dry cloth to wipe the exterior. Do not use liquid cleaners.
- **Ventilation:** Ensure that the ventilation openings are not blocked. Periodically check for dust accumulation in the fan area and clean if necessary.
- **Connections:** Periodically check all electrical connections for tightness and signs of corrosion. Loose connections can lead to overheating and poor performance.
- **Battery Health:** If using lead-acid batteries, regularly check their electrolyte levels and specific gravity. For all battery types, monitor their overall health and performance.



Image: The rear view of the inverter, highlighting its powerful cooling fans, which are essential for maintaining optimal operating temperature.

8. TROUBLESHOOTING

If you encounter issues with your inverter, the LCD display will often show an error code. Refer to the full user manual for a complete list of error codes and their solutions. Below are some common issues and general troubleshooting steps:

Problem	Possible Cause	Solution
Inverter not turning on	No battery connection, low battery voltage, power switch off	Check battery connections, ensure battery voltage is within operating range, turn on power switch
No AC output	Overload, short circuit, high temperature, AC output breaker tripped	Reduce load, check for short circuits, ensure proper ventilation, reset AC output breaker
Battery not charging	PV input issue, AC input issue, charge controller fault, battery fault	Check PV connections and voltage, check AC input, consult manual for charge controller settings, check battery health
Error code displayed	Specific system fault	Note the error code and refer to the detailed troubleshooting section in the complete user manual for specific instructions.

If the problem persists after following these steps, please contact customer support.

9. SPECIFICATIONS

Parameter	Value
Model Name	Hybrid Wechselrichter 24V 3000W
Rated Power	3000W
Max. PV Array Open Circuit Voltage	500V DC
MPPT Voltage Range	40~500V DC
Max. Charge Current (AC+PV)	100A
Product Dimensions (L x W x H)	39 x 29 x 9 cm
Weight	5.6 Kilogram
Power Source	Solar Powered/Battery Powered
Recommended Applications	Home, RV, Truck

10. WARRANTY AND SUPPORT

DATOUBOSS is committed to providing high-quality products and excellent customer service.

- **Warranty:** This product comes with a **24-month warranty** from the date of purchase.
- **Return Policy:** Enjoy a **30-day unconditional return guarantee**.
- **Customer Support:** We offer **lifelong customer consultation** and **24/7 customer support**. If you have any questions or encounter issues, please do not hesitate to contact us.



24 Hours 7x24 customer support



30 Days unconditional return guarantee



24 Months warranty