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## DATOUBOSS TY-PSW-4000

# DATOUBOSS TY-PSW-4000 Pure Sine Wave Inverter User Manual

Model: TY-PSW-4000

## 1. INTRODUCTION

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Thank you for choosing the DATOUBOSS TY-PSW-4000 Pure Sine Wave Inverter. This device is designed to convert 12V/24V DC power from your battery into stable 220V/230V AC power, suitable for a wide range of electronic devices and appliances. Featuring an intelligent identification system, LCD display, and multiple protection functions, this inverter provides a reliable and efficient power solution for various applications, including home, office, RVs, boats, and emergency power needs.



Figure 1.1: DATOUBOSS TY-PSW-4000 Pure Sine Wave Inverter and accessories.

## 2. SAFETY INFORMATION

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Please read all safety instructions carefully before operating the inverter. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Ensure proper ventilation around the inverter to prevent overheating.
- Do not expose the inverter to water, rain, snow, or spray.
- Do not operate the inverter if it has been damaged in any way.
- Keep the inverter away from flammable materials and gases.
- Ensure all connections are secure and correctly polarized. Incorrect polarity can damage the inverter and connected devices.
- Do not attempt to open or modify the inverter. There are no user-serviceable parts inside.
- Disconnect the inverter from the battery before performing any maintenance or cleaning.

### Protection Features

The DATOUBOSS TY-PSW-4000 inverter is equipped with multiple protection functions to ensure safe operation:

- **Low Voltage Protection (E1):** Automatically shuts down when the input voltage drops below the minimum operating threshold.
- **Overload Protection (E2):** Protects against damage when the connected load exceeds the inverter's rated power.
- **High Voltage Protection (E3):** Activates if the input voltage exceeds the maximum safe limit.
- **High Temperature Protection (E4):** Shuts down the unit if internal temperature rises above safe operating levels.
- **Short-circuit Protection (E5):** Prevents damage in case of a short circuit in the output.

## Various Protection Functions



- ▶ **E1 Low voltage protection:** below the minimum voltage value for normal operation of the inverter.
- ▶ **E2 Overload protection:** the load exceeds the rated power.
- ▶ **E3 High voltage protection:** higher than the maximum voltage value for normal operation of the inverter.
- ▶ **E4 High temperature protection:** the temperature is higher than the maximum temperature that the inverter can bear.
- ▶ **E5 Short-circuit protection:** the load electrical short-circuit, the inverter stops output.

Figure 2.1: Inverter Protection Functions.

### 3. PRODUCT OVERVIEW

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Familiarize yourself with the components of your DATOUBOSS inverter:

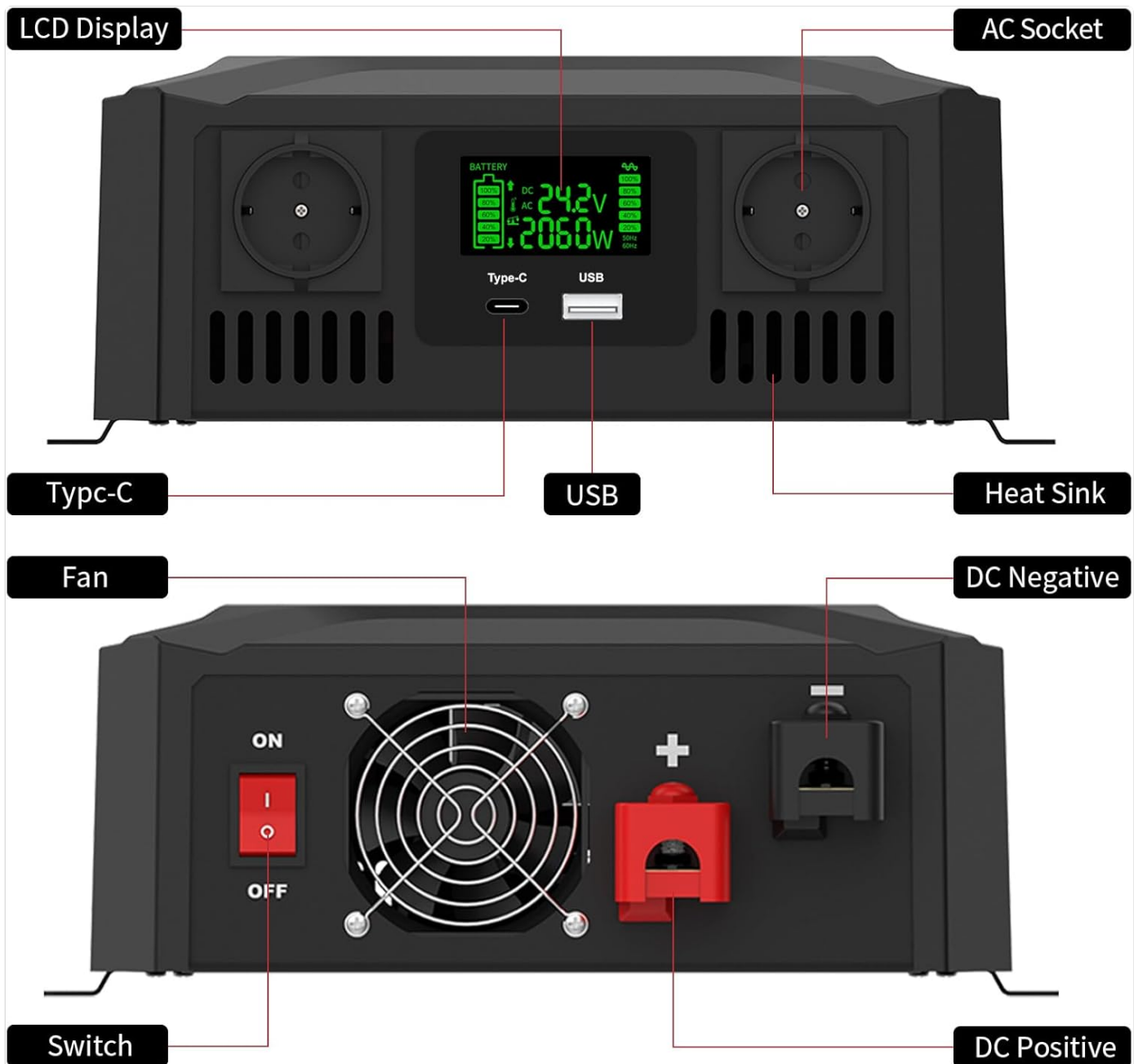


Figure 3.1: Front and Rear Panel Components.

- **LCD Display:** Shows input/output voltage, power, frequency, and protection modes.
- **AC Sockets:** Two EU standard outlets for connecting AC appliances.
- **USB Port:** 2.1A USB output for charging small electronic devices.
- **Type-C Port:** USB Type-C output for charging compatible devices.
- **Heat Sink:** Dissipates heat generated during operation.
- **Cooling Fan:** Automatically activates to maintain optimal operating temperature.
- **DC Input Terminals (+/-):** Connects to the 12V or 24V DC battery.
- **Power Switch (ON/OFF):** Turns the inverter on or off.

## 4. SETUP AND INSTALLATION

Follow these steps for safe and correct installation of your inverter:

1. **Choose a Location:** Select a cool, dry, and well-ventilated area for the inverter. Avoid direct sunlight, heat sources, and moisture. Ensure there is sufficient space around the unit for airflow.

2. **Prepare Battery Cables:** Use the included battery cables. Ensure the cables are of adequate gauge for your application and as short as possible to minimize voltage drop.
3. **Connect to Battery:**
  - Ensure the inverter's power switch is in the 'OFF' position.
  - Connect the RED (positive) battery cable to the positive (+) terminal of your battery.
  - Connect the BLACK (negative) battery cable to the negative (-) terminal of your battery.
  - Connect the other end of the RED cable to the positive (+) DC input terminal on the inverter.
  - Connect the other end of the BLACK cable to the negative (-) DC input terminal on the inverter.
  - Ensure all connections are tight and secure to prevent loose connections and sparking.
4. **Intelligent Voltage Identification:** The inverter features an intelligent 12V/24V identification system. It will automatically detect and adapt to the connected battery voltage (12V or 24V). When connected to a 12V battery, the rated power is 1200W (peak 2000W). When connected to a 24V battery, the rated power is 2300W (peak 4000W).



Figure 4.1: 12V and 24V Battery Connection Examples.

## 5. OPERATING INSTRUCTIONS

Once the inverter is properly installed, follow these steps to operate it:

1. **Power On:** Flip the 'ON/OFF' switch to the 'ON' position. The LCD display will illuminate, showing the current ambient temperature briefly, then displaying the input voltage, output voltage, output power, and frequency.
2. **Connect Appliances:** Plug your AC appliances into the EU outlets on the front of the inverter. For USB and Type-C charging, connect your devices to the respective ports.
3. **Monitor LCD Display:** The LCD provides real-time information about the inverter's status:
  - **Battery Icon:** Indicates battery charge level.
  - **DC Voltage:** Shows the input voltage from the battery.
  - **AC Voltage:** Displays the output AC voltage.

- **Wattage:** Shows the real-time power consumption of connected devices.
  - **Frequency:** Displays the output frequency (50Hz).
4. **Power Off:** When you are finished using the inverter, first turn off all connected appliances, then flip the 'ON/OFF' switch to the 'OFF' position.

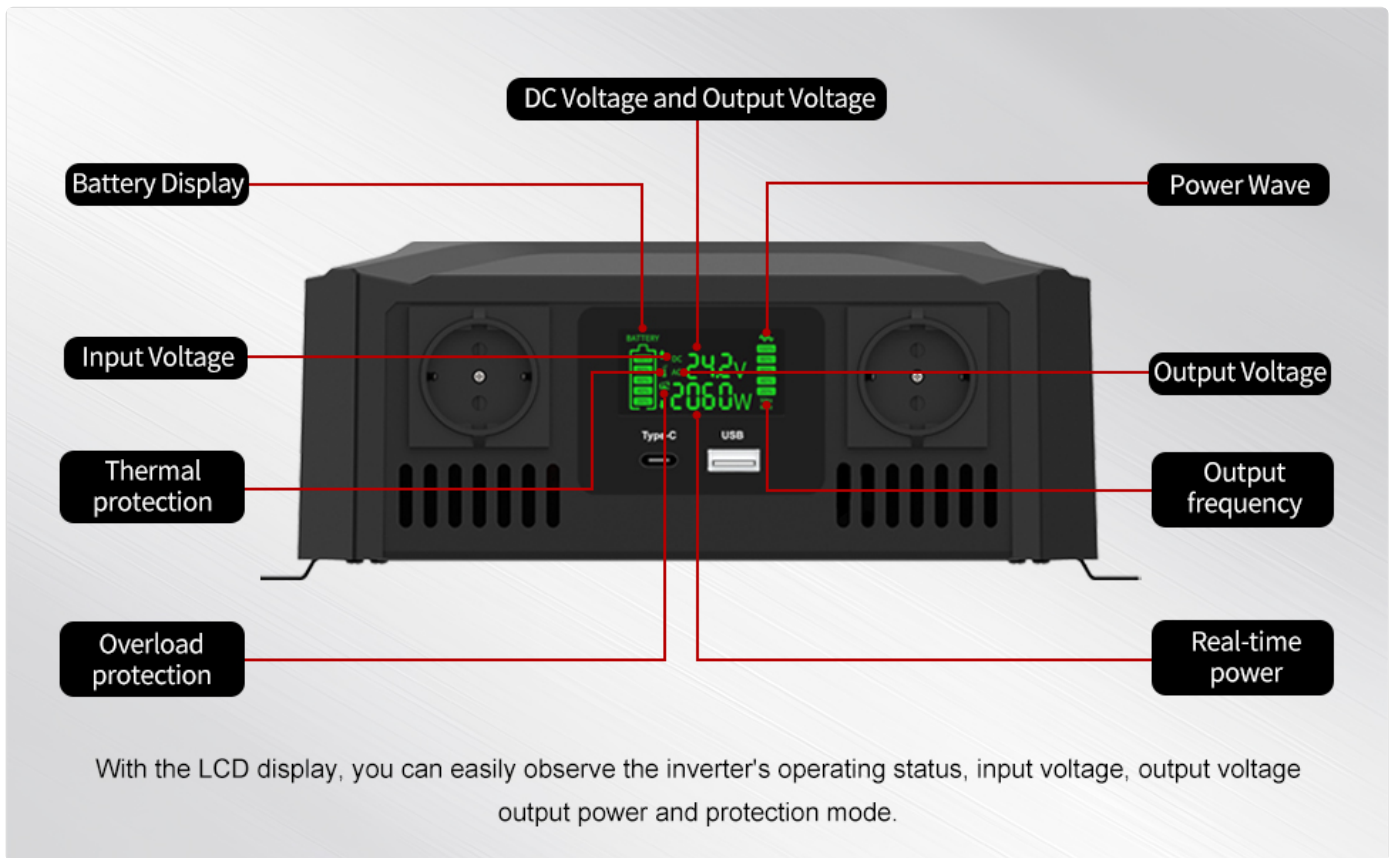


Figure 5.1: Intelligent LCD Display Details.

## 6. APPLICATIONS

The DATOUBOSS Pure Sine Wave Inverter is versatile and can be used for various applications, providing clean and stable power for sensitive electronics.

- **Household Appliances:** Power TVs, fans, refrigerators, and microwaves.
- **Entertainment Electronics:** Charge laptops, digital cameras, and drones.
- **Power Tools:** Operate drills and pumps (ensure total wattage does not exceed inverter capacity).
- **Mobile Use:** Ideal for RVs, caravans, boats, and outdoor work.
- **Emergency Power:** Provides backup power during outages.

# Protect and extend the life of your electronics



Figure 6.1: Wide Range of Applications.

**Important Note:** The maximum operating power of the device must not exceed 1200W when connected to a 12V battery and 2300W when connected to a 24V battery.

## 7. MAINTENANCE

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

- **Cleaning:** Periodically clean the exterior of the inverter with a dry, soft cloth. Do not use liquid cleaners or solvents.
- **Ventilation:** Ensure the cooling fan and ventilation openings are free from dust and debris. Blocked vents can lead to overheating.
- **Connections:** Regularly check all cable connections (battery and AC output) to ensure they are tight and free from corrosion.
- **Storage:** If storing the inverter for an extended period, disconnect it from the battery and store it in a cool, dry place.

## 8. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Inverter does not turn on	Loose battery connections Low battery voltage Blown fuse	Check and tighten battery cables Recharge or replace battery Contact customer support (do not replace fuse yourself)
No AC output	Overload protection (E2) Short-circuit protection (E5) High temperature protection (E4)	Reduce connected load Check for short circuits in appliances/cables Allow inverter to cool down, ensure ventilation
Low output power	Battery voltage too low Excessive cable length/gauge	Recharge battery Use shorter, thicker battery cables
Fan runs constantly or loudly	High internal temperature Dust in fan/vents	Ensure proper ventilation, reduce load Clean vents (with inverter off and disconnected)
LCD shows error code (E1, E3, E4, E5)	Specific protection activated	Refer to 'Protection Features' section for specific error meaning and corresponding action. Address the underlying cause (e.g., low voltage, overload, overheating).

If the problem persists after attempting these solutions, please contact customer support.

## 9. SPECIFICATIONS

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Technical specifications for the DATOUBOSS TY-PSW-4000 Pure Sine Wave Inverter:

Feature	Specification
Model	TY-PSW-4000
Input Voltage (DC)	12V / 24V (Intelligent Identification)
Output Voltage (AC)	220V / 230V
Rated Power (12V Input)	1200W
Peak Power (12V Input)	2000W
Rated Power (24V Input)	2300W
Peak Power (24V Input)	4000W
Output Waveform	Pure Sine Wave
Output Frequency	50Hz
Conversion Efficiency	> 92%
AC Outlets	2 x EU Outlets
USB Output	1 x USB 2.1A Port
Type-C Output	1 x Type-C Port
Display Type	LCD
Product Dimensions	29 x 20 x 8 cm (approx.)
Item Weight	3.43 kg (approx.)



Figure 9.1: Inverter Dimensions.

## 10. WARRANTY AND SUPPORT

DATOUBOSS is committed to product quality and customer satisfaction. This product comes with a standard manufacturer's warranty. For specific warranty terms and conditions, please refer to the documentation included with your purchase or contact your retailer.

If you have any questions, require technical assistance, or need to report an issue, please contact our friendly customer service team. We are dedicated to providing prompt and helpful support.

Please have your product model number (TY-PSW-4000) and purchase details ready when contacting support.