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DATOUBOSS SP-48V10200W

DATOUBOSS 10.2KW Pure Sine Hybrid Inverter

Model: **SP-48V10200W**

User Manual

1. Introduction

This manual provides essential information for the safe and efficient operation of your DATOUBOSS 10.2KW Pure Sine Hybrid Inverter. Please read this manual thoroughly before installation and use, and keep it for future reference. This inverter is designed to provide reliable power for various applications, integrating inverter, solar charger, and battery charger functions into a single unit.



Figure 1: Front view of the DATOUBOSS 10.2KW Hybrid Solar Inverter.

2. Product Features

The DATOUBOSS 10.2KW Hybrid Solar Inverter offers a range of advanced features for optimal performance and user convenience:

- **High Power Output:** Provides 10.2KW of pure sine wave AC power, suitable for sensitive electronics.
- **Integrated System:** Combines inverter, MPPT solar charger (160A), and battery charger functions.
- **LCD Display:** Equipped with a comprehensive LCD display for real-time system data and operational status.
- **Pure Sine Wave Technology:** Delivers high-quality, stable AC power to protect connected devices.
- **Multi-functional Protection:** Includes short circuit, overcurrent, overvoltage, undervoltage, overtemperature, and overload protection.
- **Wide Application Range:** Ideal for RVs, camping boats, home emergency power, and various off-grid or hybrid systems.
- **Configurable Settings:** Allows adjustment of input voltage range, battery charging current, and AC/solar charger priority via LCD.

- **Parallel Connection:** Supports parallel operation for increased power output, up to 9 units.

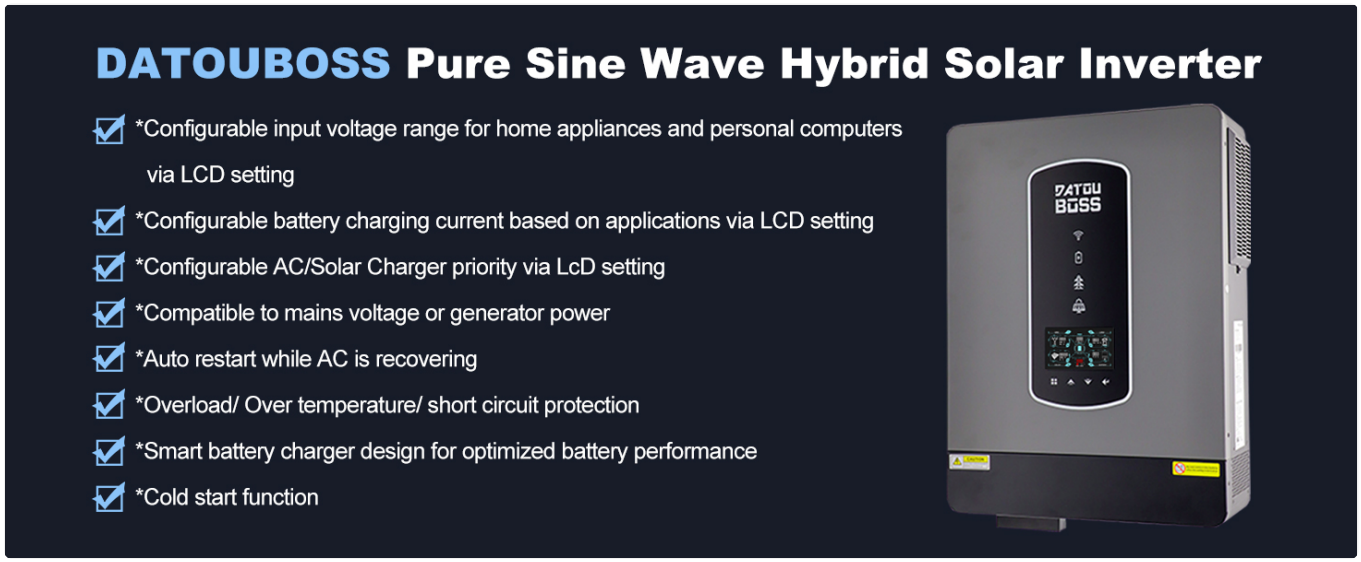


Figure 2: Key features of the DATOUBOSS Hybrid Solar Inverter.

3. Product Overview and Components

Familiarize yourself with the inverter's external components and connection ports:

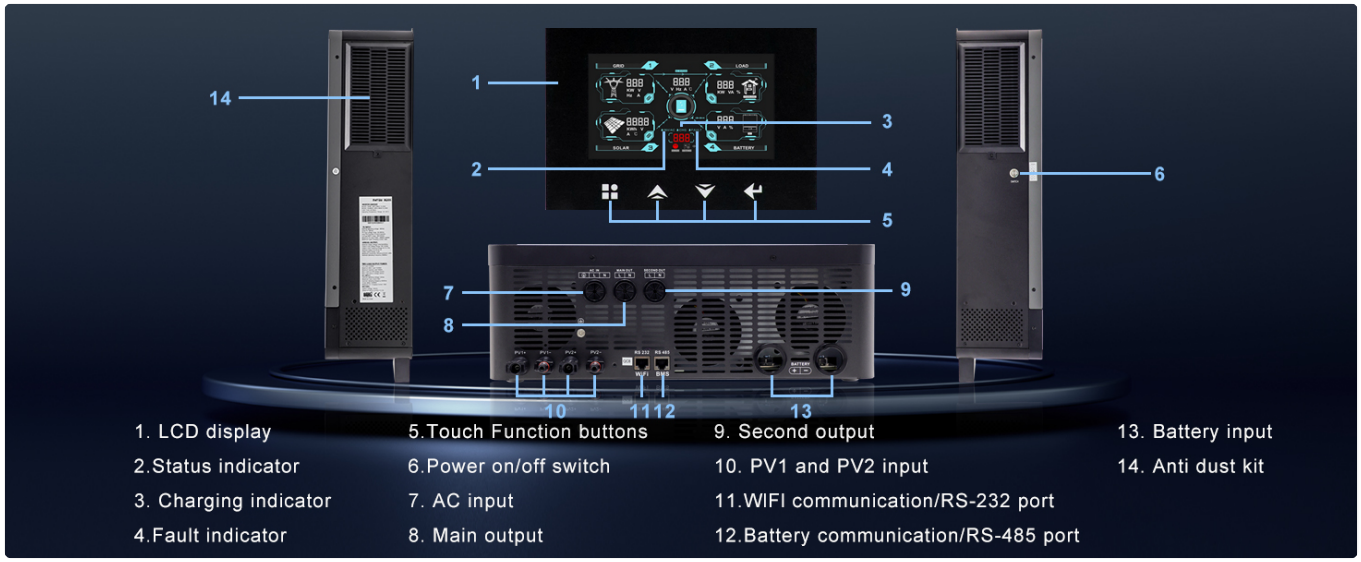


Figure 3: Detailed view of the inverter's external components.

1. **LCD Display:** Shows system status and data.
2. **Status Indicator:** LED indicating operational status.
3. **Charging Indicator:** LED indicating battery charging status.
4. **Fault Indicator:** LED indicating system faults.
5. **Touch Function Buttons:** For navigating and setting parameters on the LCD.
6. **Power On/Off Switch:** Main power control.
7. **AC Input:** Connection for grid or generator AC power.
8. **Main Output:** Primary AC output for loads.
9. **Second Output:** Secondary AC output for loads.
10. **PV1 and PV2 Input:** Connections for solar panel arrays.
11. **WIFI Communication/RS-232 Port:** For monitoring and communication.

12. **Battery Communication/RS-485 Port:** For communication with compatible battery management systems.
13. **Battery Input:** Connections for external battery bank.
14. **Anti-dust Kit:** For protecting internal components from dust accumulation.



Figure 4: Rear view of the inverter showing connection ports.

4. Setup and System Architecture

The DATOUBOSS Hybrid Solar Inverter is designed for flexible integration into various power systems. Below is a basic system architecture diagram:

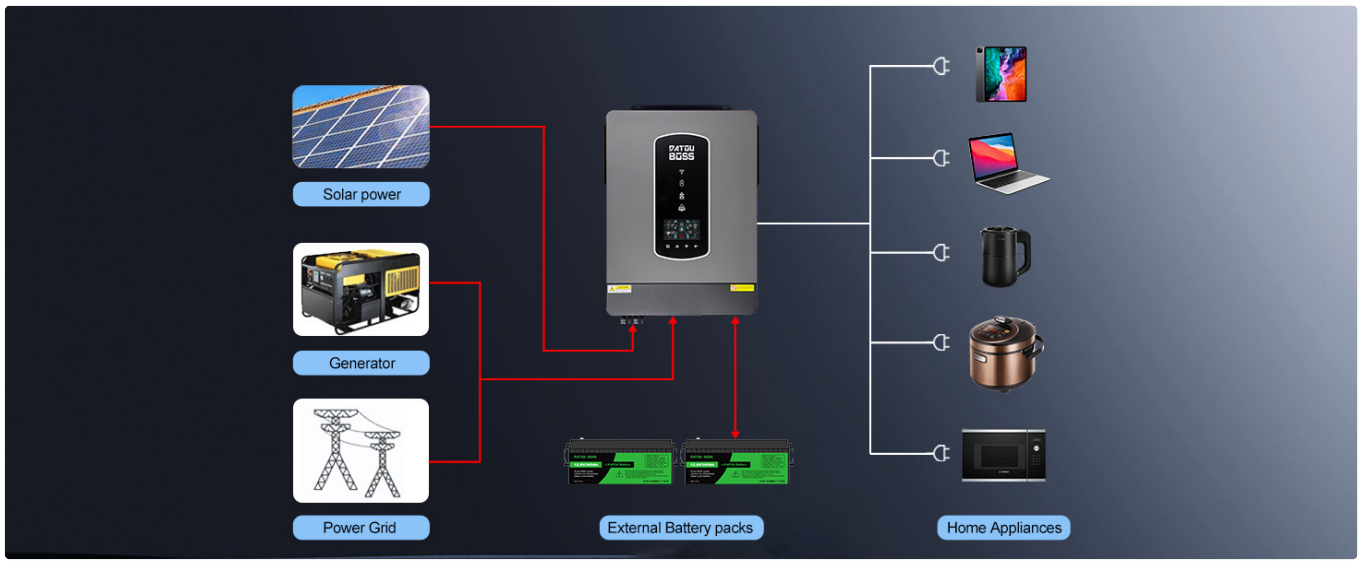


Figure 5: Basic System Architecture.

Connection Guidelines:

- **Solar Power:** Connect your solar panel arrays to the PV1 and PV2 inputs. Ensure correct polarity and voltage within specified limits.
- **External Batteries:** Connect a 48V DC battery bank to the battery input terminals. Ensure proper sizing and type (lead-acid or lithium).
- **AC Input (Grid/Generator):** Connect the main AC power source (utility grid or generator) to the AC input.
- **AC Output (Loads):** Connect your household or office appliances to the Main Output and Second Output terminals. The inverter can power a wide range of devices up to 10.2KW.
- **Communication:** Utilize the RS-232, RS-485, or WIFI ports for monitoring and advanced control, especially with compatible BMS systems for lithium batteries.

For detailed wiring diagrams and safety precautions, refer to the separate installation guide provided with the product. Always ensure all connections are secure and correctly polarized before powering on the unit.



Figure 6: Inverter powering household appliances.

Parallel Operation

The DATOUBOSS 10.2KW Hybrid Solar Inverter supports parallel connection, allowing you to combine multiple units to achieve higher power output. Up to 9 units can be connected in parallel.



Figure 7: Parallel connection setup for multiple inverters.

Refer to the dedicated parallel connection manual for detailed instructions and wiring diagrams for multi-unit setups.

5. Operating Instructions

The inverter's LCD display and touch buttons provide an intuitive interface for monitoring and configuring the system.



Figure 8: LCD Display Interface.

LCD Display and Navigation

The LCD displays real-time information such as input voltage, output voltage, battery status, load percentage, and charging/discharging status. Use the touch function buttons to navigate through menus and adjust settings.

Charging and Discharge Modes

The inverter offers various configurable charging and discharge modes to optimize energy usage and reduce electricity bills:



Figure 9: Charging and Discharge Modes.

Charging Modes:

- **Priority of Mains Supply:** Grid power is prioritized for charging.
- **Solar Priority:** Solar power is prioritized for charging.
- **Mixed Loading:** Combines solar and grid power for charging.
- **Solar Only:** Only solar power is used for charging.

Discharge Modes:

- **SUB Solar First (Default):** Solar power is used first, then battery, then utility.
- **USB Utility First:** Utility power is used first, then solar, then battery.
- **SBU Priority:** Solar power is used first, then battery, then utility.

Detailed instructions for setting these modes can be found in the full operation manual.

6. Protection Functions

The DATOUBOSS Hybrid Solar Inverter is equipped with multiple protection features to ensure safe and reliable operation of both the inverter and connected devices:



Figure 10: Multiple Protection Functions.

- **Short Circuit Protection:** Automatically shuts down in case of a short circuit to prevent damage.
- **Overcurrent Protection:** Protects against excessive current draw.
- **Overvoltage Protection:** Safeguards against input or output voltages exceeding safe limits.
- **Undervoltage Protection:** Prevents damage from insufficient voltage.
- **Overload Protection:** Shuts down if the connected load exceeds the inverter's capacity.
- **Backfill Protection:** Prevents reverse current flow.
- **Over-Temperature Protection:** Activates if the internal temperature rises too high, preventing overheating.
- **Overcharge Protection:** Prevents battery overcharging, extending battery life.

7. Maintenance

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

- **Cleaning:** Periodically clean the inverter's exterior with a dry, soft cloth. Ensure ventilation openings are free from dust and debris. The anti-dust kit helps in this regard.
- **Connections:** Regularly check all electrical connections (PV, battery, AC input/output) for tightness and corrosion. Loose connections can cause overheating and poor performance.
- **Environment:** Ensure the inverter is installed in a well-ventilated area, free from direct sunlight, moisture, and corrosive substances. Maintain the recommended operating temperature range.
- **Battery Health:** Monitor battery voltage and health, especially for lead-acid batteries. Follow battery manufacturer's maintenance guidelines.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates that may improve performance or add features.

8. Troubleshooting

This section provides solutions to common issues you might encounter. For more complex problems, contact technical support.

Problem	Possible Cause	Solution
Inverter not turning on	No battery connection; Battery voltage too low; Power switch off; Loose wiring.	Check battery connections; Charge battery; Turn on power switch; Secure all wiring.
No AC output	Overload; Short circuit; Over-temperature; Battery low; AC input fault.	Reduce load; Check for short circuits; Allow inverter to cool; Charge battery; Check AC input source.
Battery not charging	PV input too low; AC input not present; Charging mode incorrect; Faulty battery.	Check solar panel output; Verify AC input; Adjust charging mode settings; Test battery.
LCD display blank or erratic	Power issue; Internal fault; Loose display cable.	Check power supply; Restart inverter; Contact support if issue persists.

9. Specifications

Detailed technical specifications for the DATOUBOSS 10.2KW Hybrid Solar Inverter:

Detailed parameters



Figure 11: Detailed Parameters.

Category	Parameter	Value
General	Model Name	MPS-VMAX 10.2KW
	Model Number	SP-48V10200W
	Color	Grey and Black
	Operating Temperature Range	-10 ~ 50 °C
PV Input	Nominal Operating Voltage	360Vdc
	Max PV Voltage	500Vdc
	PV Input Voltage Range	90-450Vdc

Category	Parameter	Value
	Max PV Input Current	18.6A (2 Channels)
	Full Load MPPT Range	360-450Vdc
	Maximum PV Input Power	5400W + 5400W
	Maximum Solar Charging Current	160A
Grid Output	Nominal Output Voltage	220/230/240Vac
	Feed-in Grid Voltage Range	195-253Vac
	Feed-in Grid Frequency Range	49-51Hz
	Nominal Output Current	44.3A
	Power Factor Range	>0.99
	Maximum Conversion Efficiency (DC/AC)	98%
Load Output	PV Max Output Power	10200W
	Maximum Main Load	10200W
	Maximum Second Load	3400W
	Max Load for Off Voltage	54VDC
	Main Load Return Voltage	54VDC
AC Input	Nominal Operating Voltage	230Vac
	Maximum Input Current	50A
	Nominal Operating Frequency	50/60Hz
	Surge Power	20400VA
Battery	Battery Voltage	48VDC
	Maximum Battery Current	212.5A

10. Warranty and Support

For warranty information, please refer to the warranty card included with your product or contact DATOUBOSS customer support directly. Keep your purchase receipt as proof of purchase for any warranty claims.

For technical assistance, troubleshooting beyond this manual, or spare parts inquiries, please contact DATOUBOSS customer service through their official website or the contact information provided with your product packaging.

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