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› DATOUBOSS 11KW Hybrid Solar Inverter User Manual

## DATOUBOSS DT4811B

# DATOUBOSS 11KW Hybrid Solar Inverter User Manual

Model: DT4811B | Brand: DATOUBOSS

## 1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the DATOUBOSS 11KW Hybrid Solar Inverter. This advanced inverter is designed to convert 48V DC power from solar panels or batteries into 220/230V AC power for various applications. It features a built-in 150A MPPT solar charge controller and supports both on-grid and off-grid operations, including battery-less mode and parallel connection for increased capacity.

Please read this manual thoroughly before installation and operation to ensure safe and efficient use of the inverter.

## 2. SAFETY INSTRUCTIONS

Always adhere to the following safety precautions to prevent injury and damage to the inverter or connected equipment:

- Installation must be performed by qualified personnel in accordance with local electrical codes.
- Ensure all power sources are disconnected before performing any wiring or maintenance.
- Do not attempt to disassemble or repair the inverter yourself. Contact qualified service personnel.
- Keep the inverter away from water, moisture, and flammable materials.
- Ensure proper ventilation around the inverter to prevent overheating.
- This inverter is equipped with multiple protection functions including short-circuit, overcurrent, overvoltage, undervoltage, overtemperature, and overload protection. However, proper system design and installation are crucial.



Image: Overview of the inverter's comprehensive 360-degree protection features, including short circuit, overcurrent, overvoltage, undervoltage, overload, over-temperature, and backfill protection.

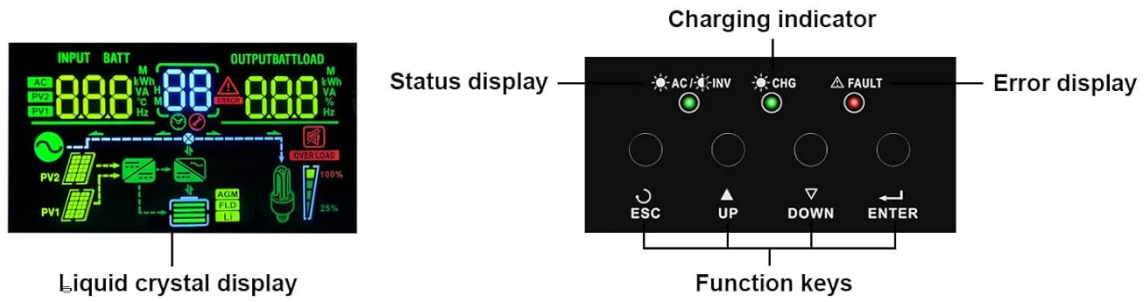
### 3. PRODUCT OVERVIEW

The DATOUBOSS 11KW Hybrid Solar Inverter is a versatile power solution combining the functions of an inverter, solar charger, and battery charger. It provides uninterruptible power supply and features a pure sine wave output to protect sensitive electronics.

#### Key Features:

- 11KW Pure Sine Wave Hybrid Inverter (48V DC to 230V AC).
- Built-in 2 MPPT, bidirectional MPPT module with a maximum PV open circuit voltage of 500VDC.
- Supports parallel operation of up to 9 units for increased power capacity.
- LCD display for real-time system data and operating status.
- Configurable input voltage range and AC/solar charger priority via LCD settings.
- Supports power statistics and analysis, even without Wi-Fi connection.
- Three priority modes: Grid priority, Solar priority, and Battery priority.
- Multi-function protection: Short-circuit, overcurrent, overvoltage, undervoltage, overtemperature, overload.
- Integrated parallel lines and current balancing lines for dynamic monitoring.
- Lithium battery activation function.
- Fuse reverse connection protection.
- Two output ports: one common output and one backup output.

# Appearance Description



Liquid crystal display

Function keys

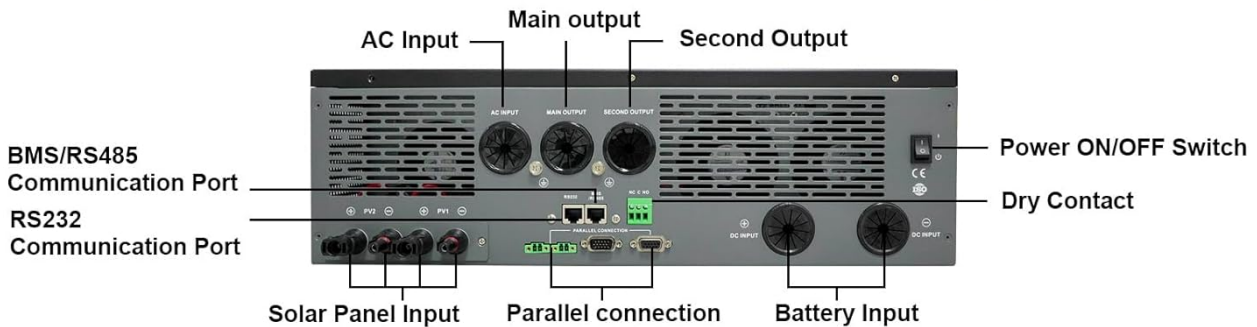


Image: Front, side, and rear views of the DATOU BOSS 11KW Hybrid Solar Inverter, highlighting the LCD display, function keys, charging indicator, error display, and various connection ports including AC input/output, solar panel input, battery input, parallel connection, BMS/RS485, RS232 communication ports, and power switch.



Image: Detailed labeled diagram of the inverter's ports and controls. Key components include: 1. LCD display, 2. Status display, 3. Charging indicator, 4. Error display, 5. Function keys, 6. AC Input, 7. Main Output, 8. Second Output, 9. BMS/RS485 Communication Port, 10. RS232 Communication Port, 11. Solar Panel Input, 12. Parallel connection, 13. Dry Contact, 14. Battery Input, 15. Power ON/OFF Switch.

## 4. SETUP

### 4.1 Installation Environment

Install the inverter in a clean, dry, and well-ventilated area. Avoid direct sunlight, high temperatures, and excessive humidity. Ensure sufficient clearance around the unit for proper airflow.

### 4.2 Wiring Connections

Refer to the port diagram in Section 3 for connection points. Ensure all connections are secure and correctly polarized. Use appropriate cable gauges for all connections to prevent overheating and power loss.

- **Battery Connection:** Connect the 48V battery bank to the Battery Input terminals. Observe correct polarity (+ to + and - to -).
- **Solar Panel Input:** Connect your solar array to the Solar Panel Input terminals. Ensure the total open circuit voltage of the PV array does not exceed 500VDC.
- **AC Input/Output:** Connect the grid AC power to the AC Input and your loads to the Main Output and Second Output terminals.
- **Parallel Connection:** For parallel operation (up to 9 units), connect the parallel communication cables and power balancing lines between the inverters.



RS-232 port, can be connected to WIFI module, realize wireless communication, and monitor the data of inverter

Note: WiFi module can provide remote viewing of inverter data monitoring information, but does not support remote modification of inverter parameters or remote control.

The RS485 interface of the hybrid inverter can realize communication with the battery. There are many thin wires in it, commonly known as pins. Connect the communication pins of the battery and the hybrid inverter accordingly.

The RS485 pins of our hybrid inverter correspond to:

1 corresponds to 485B

2 corresponds to 485A

Check which two pins of the battery correspond to 485A and 485B. Just connect the battery and 485A and 485B of the hybrid inverter to communicate successfully.

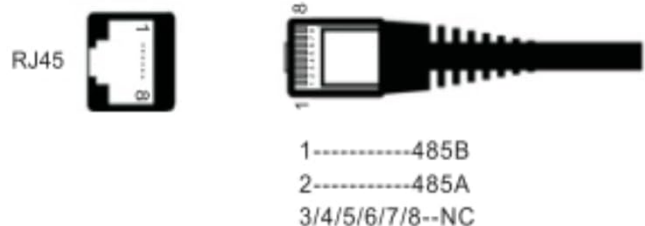


Image: Diagrams illustrating parallel operation configurations for two and three DATOUBOSS 48V 11KW Hybrid Inverters, showing connections for solar panels, batteries, grid, and load, along with communication connections between units.


### 4.3 Communication Interface

The inverter features RS232 and BMS/RS485 communication ports.

- **RS232 Port:** Can be connected to a Wi-Fi module for wireless communication and monitoring of inverter data. Note: The Wi-Fi module provides remote viewing but does not support remote modification of parameters or remote control.
- **BMS/RS485 Port:** Used for communication with compatible batteries. Ensure correct pin mapping (1 to 485B, 2 to 485A) when connecting to the battery's communication pins.

**Advantages:**

- Reduce initial costs: Users can run the system without batteries first, and can directly convert direct current from photovoltaic (PV) modules into alternating current for power supply to homes or other loads. Reduce initial investment costs. Batteries can be added later as needed.
- Improve system flexibility: During the peak period of photovoltaic power generation during the day, there is no need to rely on batteries, and solar power can be directly used for power supply, reducing dependence on the grid or completely off-grid operation, improving solar energy utilization efficiency.
- Reduce battery loss: When the battery life is short or the cost is high, users can temporarily skip the battery and postpone the investment and use of the battery.
- Flexible upgrade: Users can add batteries according to power demand later to improve the system's energy storage capacity and off-grid self-sufficiency.



**Limitations and precautions:**

No power supply at night:  
In the battery-free mode, when there is no photovoltaic power generation at night or on cloudy days, if there is no grid access, the system will not be able to power the load.

Impact of photovoltaic power generation fluctuations:  
Photovoltaic power generation depends on sunlight. If solar power generation is unstable (such as cloudy weather), load power supply may be affected.

**Applicable:**

Daytime peak electricity users:  
Suitable for occasions with high electricity demand during the day, making full use of photovoltaic power generation and reducing dependence on the power grid.

Initial users with limited budget:  
There is no budget to buy batteries in the initial stage, but they hope to install a photovoltaic system first, and then add batteries to expand the energy storage function in the future.

Photovoltaic-dominated power supply scenarios:  
For example, industrial and agricultural pumping stations in areas with sufficient sunlight, equipment is operated during the day and no power supply is required at night.

Image: Detailed view of the RS232 and BMS/RS485 communication ports, with instructions for connecting to a Wi-Fi module and battery BMS, including RJ45 pinout for RS485 communication.

### 4.4 Battery-less Operation

This inverter supports battery-less operation, allowing it to directly power loads from photovoltaic (PV) modules. In this mode, the inverter converts DC power from PV directly to AC power for homes or other loads. If PV generation is insufficient, the system can draw energy from the grid to ensure continuous power supply.



Image: Explanation of battery-free operation, detailing how the inverter can supply power without connecting batteries, directly converting DC power from PV modules to AC power for loads, and integrating with the grid when PV power is insufficient.



Image: Table outlining the advantages (reduced initial costs, improved system flexibility, reduced battery loss, flexible upgrade) and limitations (no power supply at night, impact of PV generation fluctuations) of battery-less operation, along with applicable scenarios.

## 5. OPERATING

### 5.1 LCD Display and Function Keys

The LCD display provides real-time system data, including input/output voltage, battery status, power statistics, and operating mode. Use the function keys (ESC, UP, DOWN, ENTER) to navigate menus and configure settings.

# DATOU BOSS

# 11000W

## HYBRID SOLAR INVERTER

- 48V DC TO 220V/230V AC
- Support parallel operation and grid connection
- With 160A MPPT controller and parallel connection support
- DATOUBOSS pure sine wave hybrid inverter adds a BMS battery management system, and supports multiple machines in parallel.



Image: Close-up of the inverter's LCD display, showing various real-time data points such as input voltage (AC, PV1, PV2), battery status, output load, and indicators for AC/Inverter, Charging, and Fault. The display also shows the system's energy flow.

### 5.2 Charging Modes

The inverter supports four charging modes:

1. **Priority of the Mains Power Supply:** If no mains power is available, the battery is charged using solar energy.

2. **Solar Priority:** Charging with solar energy has priority. If no solar power is available, the battery is charged via the power grid.
3. **Mixed Loading:** Solar and mains power can charge the battery at the same time.
4. **Solar Only:** The battery can only be recharged using solar energy.

### 5.3 Charge Output Working Modes

The inverter offers three charge output working modes:

1. **Netz (Utility Priority - Default):** The mains current has priority over the load.
2. **Solar:** Solar power has priority, then battery, then grid for power consumption.
3. **SBU (Solar-Battery-Utility):** Solar power has priority, then battery, then utility (grid) in order of priority.

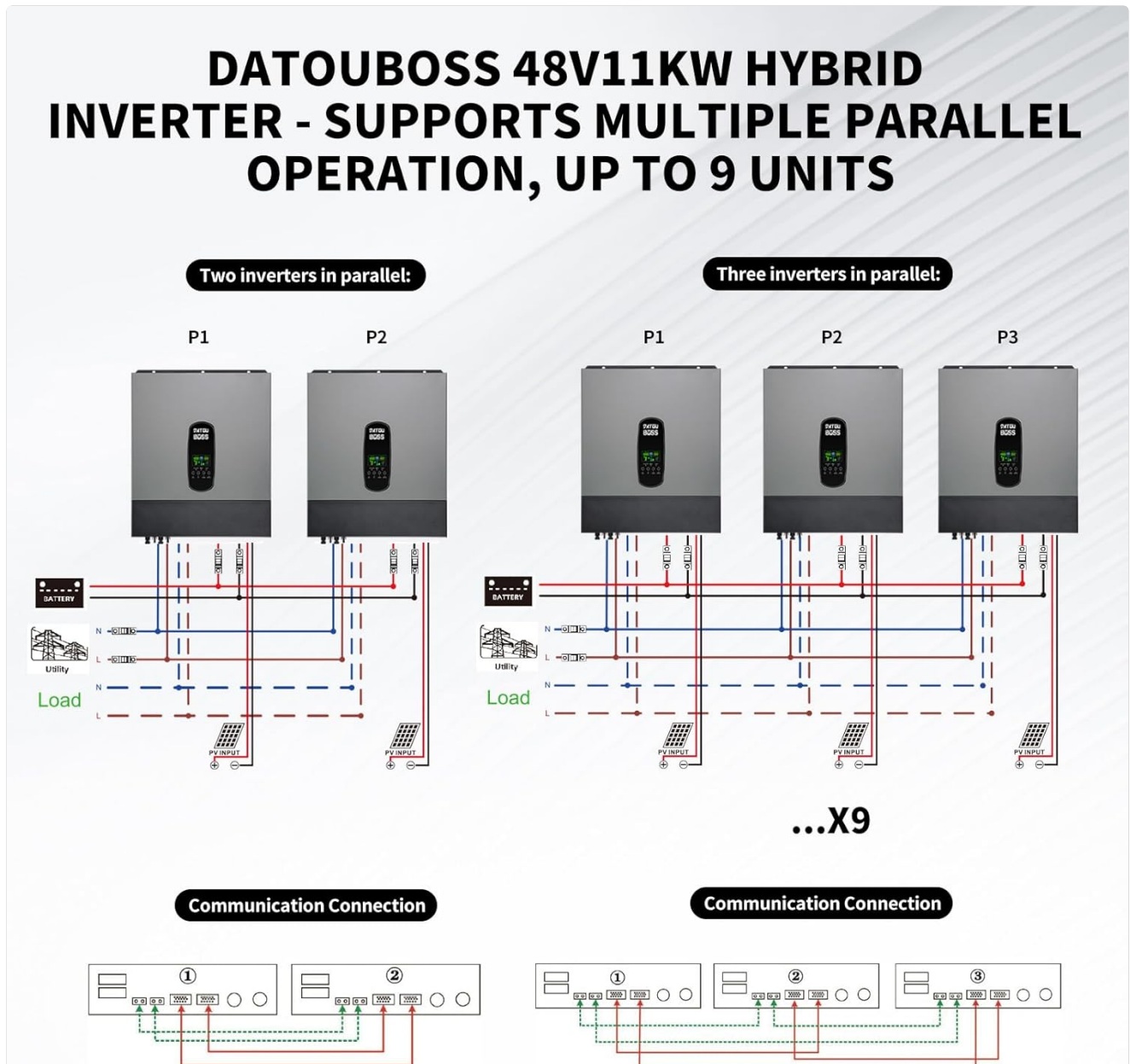


Image: Visual representation of the four charging modes (Priority of Mains Power Supply, Solar Priority, Mixed Loading, Solar Only) and three charge output working modes (Netz/Utility, Solar, SBU), illustrating the power flow and priority settings for each mode.

## 6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your DATOUBOSS Hybrid Solar Inverter.

- **Cleaning:** Periodically clean the inverter's exterior with a dry cloth. Ensure ventilation openings are free from dust and debris.
- **Connections:** Annually check all electrical connections for tightness and signs of corrosion. Loose connections can lead to overheating and poor performance.
- **Environment:** Ensure the installation environment remains within the specified temperature and humidity ranges.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates to improve performance or address issues.
- **Battery Health:** If using batteries, monitor their health and charge/discharge cycles regularly to extend their lifespan. The inverter can be configured for regular charging and discharging to prolong battery life.

## 7. TROUBLESHOOTING

If you encounter issues with your inverter, refer to the following common troubleshooting steps. For persistent problems, contact customer support.

Problem	Possible Cause	Solution
Inverter not turning on	No DC input from battery/solar; Power switch off; Blown fuse.	Check battery connections and voltage; Ensure solar input is present; Turn on power switch; Check and replace fuses if necessary.
No AC output	Overload; Short circuit; Over-temperature; Input voltage out of range.	Reduce load; Check for short circuits in wiring; Allow inverter to cool down; Verify input voltage is within specifications.
Error code on LCD	Specific system fault.	Refer to the inverter's detailed error code list (not provided in this manual, consult full product manual or manufacturer).
Poor charging performance	Insufficient solar input; Battery issues; Incorrect charging settings.	Check solar panel output; Inspect battery health; Adjust charging current/priority settings via LCD.

## 8. SPECIFICATIONS

The following table outlines the key technical specifications for the DATOUBOSS 11KW Hybrid Solar Inverter (Model DT4811B).

Parameter	Value
Model Number	DT4811B
Capacity	11000VA / 11000W
Operating Temperature Range	-10 to 50 °C
Protection Degree	IP21
DC Input (Inverter Mode)	48VDC
AC Output (Inverter Mode)	230VAC, 50/60Hz, 47.8A, 1Φ
AC Charger	54VDC, 150A
AC Input (AC Mode)	230VAC, 50/60Hz, 60A, 1Φ
AC Output (AC Mode)	230VAC, 50/60Hz, 47.8A, 1Φ
Solar Panel Power	2 x 5500W
Max Charging Current	150A
Solar Voltage Range (Vmp)	300-400VDC
Best Voltage Range (Vmp)	300-400VDC
Max Solar Voltage	500VDC
Product Dimensions	70.8 x 57 x 24.1 cm
Product Weight	19.19 Kilograms
Serial Number	20241020 0476

# Detailed parameters



## DATOUBOSS

DT4811B

CAPACITY: 11000VA/11000W

OPERATING TEMPERATURE RANGE: -10~50°C

PROTECTION DEGREE: IP21

### INVERTER MODE

DC INPUT: 48VDC, 254.6A

AC OUTPUT: 230VAC, 50/60HZ, 47.8A, 1Φ

### AC INPUT

AC CHARGER: 54VDC, 150A

AC INPUT: 230VAC, 50/60HZ, 60A, 1Φ

AC OUTPUT: 230VAC, 50/60HZ, 47.8A, 1Φ

### SOLAR MODE

SOLAR PANEL POWER: 2×5500W

MAX CHARGING CURRENT: 150A

SOLAR VOLTAGE RANGE(V<sub>mp</sub>): 90-500VDC

BEST VOLTAGE RANGE(V<sub>mp</sub>): 300-400VDC

MAX SOLAR VOLTAGE: 500VDC

CODE: 95111-075-001



Serial: 20241020 0476

Image: A close-up of the product label on the DATOUBOSS 11KW Hybrid Solar Inverter, displaying detailed technical specifications such as capacity, operating temperature, protection degree, inverter mode parameters, AC charger details, solar mode parameters, and the serial number.

## 9. WARRANTY AND SUPPORT

DATOUBOSS is committed to product quality and customer satisfaction.

- **Warranty:** This product comes with a 5-year warranty.
- **Customer Service:** Professional 24-hour customer service is available to assist with any product-related questions or issues.
- **Contact:** For support, please refer to the contact information provided with your purchase or visit the official DATOUBOSS website.



Image: Icons representing key aspects of DATOUBOSS customer support: 10 Years Lifespan (product design target), 5 Years Guarantee (warranty period), 24 Hrs Response (customer service availability), and Local Warehouses (for distribution and service).