

## Gugxiom 9600D-1T-00150D

# Gugxiom 9600D-1T-00150D Variable Frequency Drive (VFD) Solar Inverter User Manual

Model: 9600D-1T-00150D

## 1. SAFETY INFORMATION AND IMPORTANT WARNINGS

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### **⚠ WARNING: Electrical Hazard**

- **Read the user's manual before installing.** Improper installation or operation can lead to serious injury or equipment damage.
- **Do not open the cover while connecting power supply.** Ensure the power supply is disconnected for at least 10 minutes after use before opening the cover to avoid electric shock from residual voltage.
- **AC input and DC input switches cannot be closed at the same time.** Doing so will damage the inverter or solar panel.
- **Avoid Overload:** Do not use the inverter with an overload. The inverter's power must be greater than the motor's power. Running an ordinary motor above 50Hz with an undersized inverter can cause frequent overload faults, damage to the inverter, or motor burnout.
- **Voltage Requirements for Solar Panels:**
  - For a 220V motor, the total series voltage of solar panels must be between 200V and 400V.
  - For a 380V motor, the total series voltage of solar panels must be between 400V and 700V.
- **Solar Panel Power:** The total power of several groups of solar panels connected in parallel should be at least 1.2 times larger than the power of the inverter.
- **Submersible Pumps:** If the water depth of a submersible pump exceeds 30 meters, it is recommended to select an inverter one or two stages larger than typically required, and add a reactor between the inverter and the pump to extend inverter service life.

national electrical codes.

## 2. PRODUCT OVERVIEW

The Gugxiom 9600D-1T-00150D Variable Frequency Drive (VFD) is a specialized solar inverter designed to efficiently control motor loads such as fans and pumps using power generated from solar photovoltaic panels. It features a robust design with an ABS shell and aluminum components for durability and effective heat dissipation.

### 2.1 Key Features

- Solar Inverter Functionality:** Converts DC power from solar panels (200-400V input) to AC power (0-220V, 0-650Hz output) for motor control.
- Clear Digital Display:** Features an easy-to-read red digital tube display for monitoring parameters.
- Robust Construction:** Double-layer board design and ABS fire-resistant shell ensure reliability and safety.
- Enhanced Safety:** Fully enclosed terminals prevent electric shock.
- Efficient Cooling:** Equipped with a DC 24V cooling fan and an external aluminum cooling base for rapid heat dissipation.

### 2.2 Package Contents

- 1 x Gugxiom Variable Frequency Drive (Model: 9600D-1T-00150D)
- 1 x User Manual (this document)

## 3. TECHNICAL SPECIFICATIONS

Parameter	Value
Item Type	Variable Frequency Drive
Material	ABS + Aluminium
Model	9600D-1T-00150D
Input Voltage	DC 200-400V
Output Voltage	AC 0-220V
Output Frequency	0-650Hz
Rated Power	1.5KW
Rated Current	7A
Dimensions (Approx.)	82 x 145 x 155mm / 3.23 x 5.71 x 6.1in
Display Type	Digital

## 4. SETUP AND INSTALLATION

Proper installation is critical for the safe and efficient operation of the VFD. Ensure all power is disconnected before proceeding with any wiring.

### 4.1 Mounting

Mount the VFD in a well-ventilated area, away from direct sunlight, excessive dust, moisture, or corrosive gases. Ensure sufficient clearance around the unit for proper airflow and heat dissipation, especially around the cooling fins and fan.



Figure 4.1: Side view of the VFD, highlighting the cooling fins for heat dissipation.



Figure 4.2: Rear view of the VFD, showing the integrated cooling fan and aluminum cooling base.

## 4.2 Wiring Connections

Refer to the terminal block on the VFD for correct wiring. Ensure all connections are secure and properly insulated. Observe polarity for DC input.

- **DC Input (Solar Panels):** Connect the positive and negative terminals of your solar panel array to the designated DC input terminals on the VFD. Ensure the total voltage of the series-connected panels meets the specified range (200-400V for 220V motors, 400-700V for 380V motors).
- **AC Output (Motor):** Connect the motor's power leads to the AC output terminals.
- **Grounding:** Ensure the VFD and motor are properly grounded according to local electrical codes.

**⚠ IMPORTANT:**

Do not connect both AC and DC power sources simultaneously. This will cause severe damage to the inverter.



Figure 4.3: Angled view of the VFD, illustrating the various terminal blocks for input and output connections.

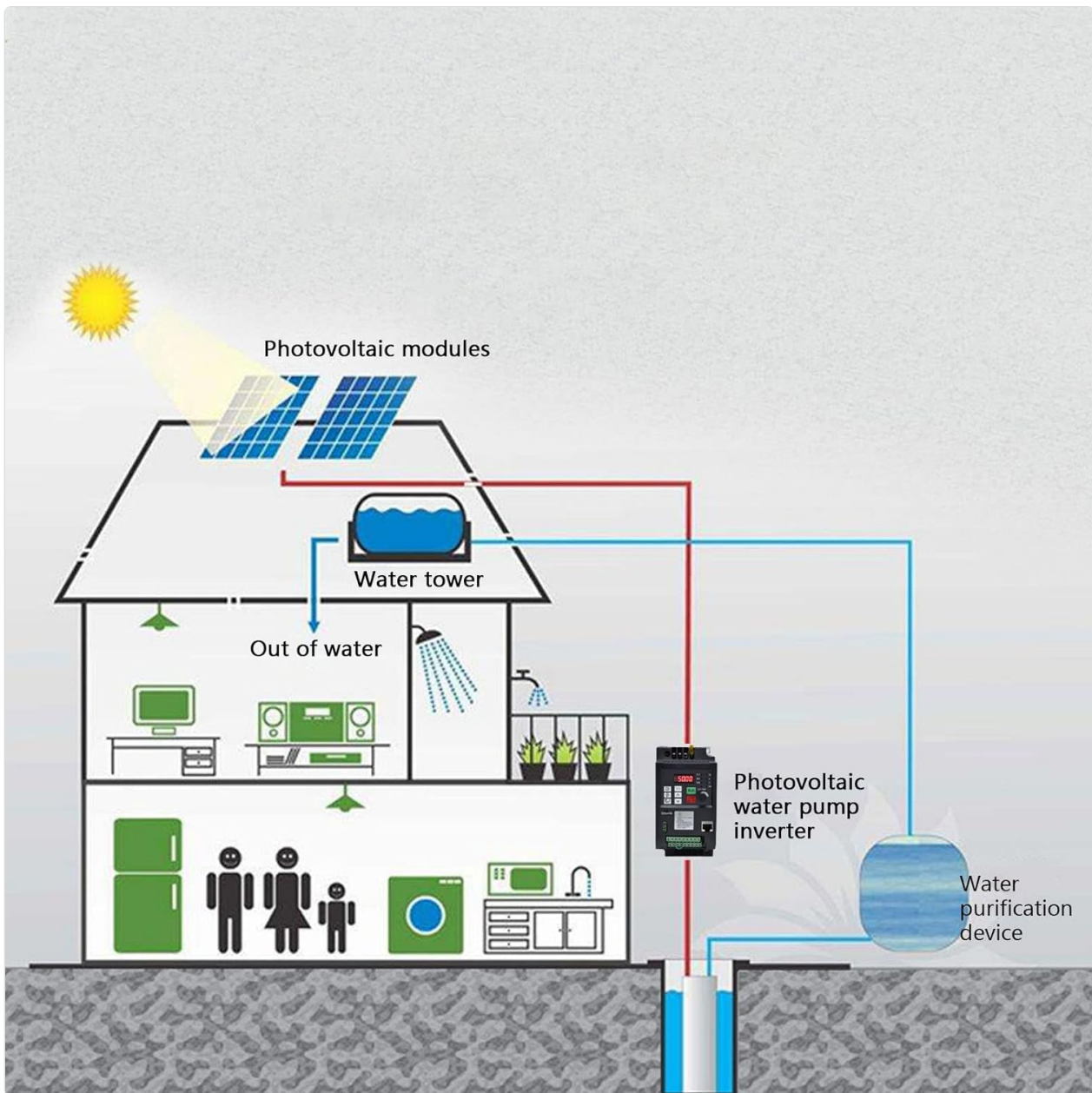


Figure 4.4: Illustrative diagram of a typical solar-powered water pump system, showing the connection of photovoltaic modules to the VFD and then to a water pump.

## 5. OPERATING INSTRUCTIONS

The VFD features a user-friendly control panel for easy operation and monitoring.

### 5.1 Control Panel Layout



Figure 5.1: Close-up view of the VFD's control panel, showing the digital display, function buttons, and rotary knob.

- **Digital Display:** Shows operating frequency, voltage, current, and fault codes.
- **PRG/ESC:** Program/Escape button. Used to enter/exit programming mode.
- **RD/WT:** Read/Write button. Used to read or write parameter values.
- **MF.K/REV:** Multi-function key / Reverse button.
- **Arrow Buttons (Up/Down):** Used to navigate menus or adjust parameter values.
- **RUN:** Starts the motor.
- **STOP/RESET:** Stops the motor or resets fault conditions.
- **LOC/REM:** Local/Remote control switch.
- **Rotary Knob:** Used for fine adjustment of frequency or other parameters.

## 5.2 Basic Operation

1. **Power On:** Ensure all wiring is correct and secure. Apply DC power from the solar panels. The digital display should illuminate.
2. **Set Frequency (if applicable):** Use the arrow buttons or rotary knob to set the desired output frequency.
3. **Start Motor:** Press the **RUN** button to start the motor.
4. **Stop Motor:** Press the **STOP/RESET** button to stop the motor.
5. **Parameter Adjustment:** Refer to the detailed programming manual (if provided separately) for advanced parameter settings using the PRG/ESC and RD/WT buttons.

## 6. MAINTENANCE

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

- **Cleaning:** Periodically clean the exterior of the VFD and ensure the cooling fan and fins are free from dust and debris. Use a soft, dry cloth. Do not use liquid cleaners.
- **Inspections:** Regularly check all wiring connections for tightness and signs of wear or damage. Inspect the VFD for any visible damage or discoloration.
- **Environment:** Ensure the operating environment remains within the specified temperature and humidity ranges.

**⚠ CAUTION:**

Always disconnect all power sources and wait for at least 10 minutes before performing any maintenance or inspection to allow capacitors to discharge.

## 7. TROUBLESHOOTING

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This section provides solutions to common issues you might encounter. For complex problems, contact qualified service personnel.

Problem	Possible Cause	Solution
VFD does not power on	No DC input from solar panels; incorrect wiring; faulty solar panels.	Check solar panel connections and output voltage. Verify VFD input wiring.
Motor does not start	Incorrect frequency setting; motor wiring issue; VFD in fault state; STOP/RESET button pressed.	Check frequency setting. Verify motor wiring. Press STOP/RESET to clear faults, then RUN.
Frequent overload faults	Motor power exceeds VFD capacity; motor running above 50Hz for extended periods; mechanical overload on motor.	Ensure VFD power is greater than motor power. Reduce motor load or operating frequency. Consider a higher capacity VFD.
Reduced solar energy conversion rate	DC input voltage not within recommended range.	Adjust solar panel configuration to meet the recommended DC input voltage (200-400V).
VFD or solar panel damaged	AC and DC input switches closed simultaneously.	Ensure only one power source (DC from solar) is connected at a time. This damage is typically irreversible.

## 8. WARRANTY AND SUPPORT

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For warranty information and technical support, please refer to the documentation provided at the time of purchase or contact Gugxiom customer service. Keep your purchase receipt as proof of purchase. For further assistance, visit the [Gugxiom Store on Amazon](#).

