

## Vbestlife AT5-2200X

# Vbestlife AT5-2200X Variable Frequency Drive

## USER MANUAL

Model: AT5-2200X | Brand: Vbestlife

### 1. Introduction

The Vbestlife AT5-2200X Variable Frequency Drive (VFD) is an advanced device designed for precise control of three-phase AC motors. It converts single-phase AC power into three-phase AC power with variable frequency and voltage, allowing for adjustable motor speed and torque. This VFD is suitable for applications requiring fine-tuned motor control, energy efficiency, and enhanced operational stability.

This manual provides essential information for the safe and effective installation, operation, and maintenance of your AT5-2200X VFD. Please read it thoroughly before use.

### 2. Safety Precautions

**WARNING: Improper installation or operation can lead to electric shock, fire, or equipment damage. Always follow these safety guidelines.**

- Ensure the power supply is disconnected before any wiring or maintenance.
- Only qualified personnel should install, operate, and maintain this device.
- Connect the VFD to a proper ground.
- Do not connect the VFD output (U, V, W) to the AC power supply.
- Do not open the VFD casing while power is applied or shortly after power-off, as residual voltage may be present.
- Avoid installing the VFD in environments with high temperature, humidity, dust, or corrosive gases.
- Ensure proper ventilation around the unit.



Image: Top view of the Vbestlife AT5-2200X Variable Frequency Drive, highlighting the control panel and a visible safety warning label on the side.

### 3. Product Features

- Adjusts motor speed with high torque and wide speed regulation capabilities.
- Equipped with a digital display for clear readings and convenient parameter configuration.
- Comprehensive protection features: overcurrent, overvoltage, undervoltage, module failure, overheating, short circuit, input/output phase loss, abnormal motor parameter adjustment, and electronic thermal relay.
- Provides low electromagnetic interference for stable operation.
- Single-phase 110V AC input and three-phase 220V AC output, suitable for 2.2kW three-phase motors.
- Controls motor start, stop, speed adjustment, and forward/reverse rotation to meet diverse equipment requirements.

### 4. Product Overview and Components

The Vbestlife AT5-2200X VFD consists of a main unit with a control panel, cooling vents, and terminal blocks for electrical connections. The digital display and buttons on the control panel allow for monitoring and adjusting operational parameters.



## Motor Inverter

High torsion, high accuracy and wide speed regulation  
Adapt to harsh power grid, temperature, dust interference  
Low noise and low electromagnetic interference  
Equipped with digital panel, clear reading  
Single-phase input and 3-phase output, suitable for 3-phase motors

Image: Front-side view of the Vbestlife AT5-2200X Variable Frequency Drive, labeled as a 'Motor Inverter'.



Image: Side view of the Vbestlife AT5-2200X VFD, showing the cooling fans at the bottom for heat dissipation.

## 5. Specifications

Parameter	Value
Item Type	Variable Frequency Inverter
Model	AT5-2200X
Rated Power	2200W (2.2kW)
Power Phase Number	Single-phase input
Input Voltage	Single-phase 110V AC (50/60Hz)
Output Voltage	Three-phase 220V AC
Display	Digital

Protection Mode	Overcurrent, Overvoltage, Undervoltage, Module Failure, Overheating, Short Circuit, Input/Output Phase Loss, Abnormal Motor Parameter Adjustment, Electronic Thermal Relay
Recommended Uses	Speed control of three-phase motors and powering equipment with 220V input requiring precise motor speed control.
Material	Plastic
Country of Origin	China

**Note:** This inverter is specifically designed for use with three-phase 220V motors. Please verify compatibility with your motor before installation.

## 6. Setup and Installation

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Proper installation is crucial for the safe and efficient operation of the VFD. Refer to the wiring diagram provided with your unit for specific connection points. The general steps are as follows:

- Mounting:** Securely mount the VFD in a well-ventilated area, away from direct sunlight, excessive heat, moisture, and vibrations. Ensure adequate clearance for airflow around the cooling vents.
- Power Input (L, N, G):** Connect the single-phase 110V AC power supply to the designated input terminals (L for Line, N for Neutral). Connect the ground wire to the ground terminal (G).
- Motor Output (U, V, W):** Connect the three-phase motor wires to the VFD's output terminals (U, V, W). Ensure correct phase sequence for desired motor rotation.
- Control Wiring (Optional):** If using external control signals (e.g., potentiometer for speed, external start/stop buttons), connect them to the appropriate control terminals as per the detailed wiring diagram in the full user manual.
- Initial Check:** Before applying power, double-check all wiring connections for tightness and correctness.



Image: Side view of the Vbestlife AT5-2200X VFD, showing its compact design and cooling fins.

## 7. Operating Instructions

The VFD's control panel allows for basic operation and parameter adjustments. Familiarize yourself with the buttons and digital display.

### 7.1 Basic Operation

- **Power On:** After verifying all connections, apply power to the VFD. The digital display will light up.
- **Start:** Press the **RUN** button to start the motor. The motor will accelerate to the set frequency.
- **Stop:** Press the **STOP/RESET** button to stop the motor.
- **Speed Adjustment:** Use the rotary knob or the UP/DOWN arrow buttons to adjust the output frequency, thereby changing the motor speed.
- **Forward/Reverse:** Use the **FWD/REV** button or corresponding control terminals to change the motor's direction of rotation.

### 7.2 Parameter Setting

The VFD has various parameters that can be configured to optimize performance for specific applications. These parameters control aspects such as acceleration/deceleration times, motor characteristics, and

protection thresholds. Refer to the detailed parameter list in the complete user manual for specific codes and their functions.

To enter parameter setting mode, typically press the **PROG** or **FUNC/DATA** button. Use the UP/DOWN arrows to navigate through parameters and the rotary knob or ENTER button to modify values. Always save changes before exiting the parameter setting mode.

Your browser does not support the video tag.

Video: An overview of a Variable Frequency Drive, demonstrating its general appearance and basic functions. This video is provided by a seller.

Your browser does not support the video tag.

Video: Demonstration of setting parameters on a Variable Frequency Drive, including voltage and current settings. This video is provided by a seller and shows a similar VFD model.

## 8. Maintenance

Regular maintenance ensures the longevity and reliable operation of your VFD.

- **Cleaning:** Periodically clean the VFD's exterior and cooling vents to prevent dust accumulation, which can hinder heat dissipation. Use a soft, dry cloth. Do not use liquid cleaners.
- **Inspection:** Regularly inspect all wiring connections for tightness and signs of wear or damage. Check for any unusual noises or odors during operation.
- **Environment:** Ensure the operating environment remains within the specified temperature and humidity ranges.
- **Capacitor Life:** Electrolytic capacitors have a finite lifespan. If the VFD is used continuously for many years, consider professional inspection or replacement of capacitors.

## 9. Troubleshooting

This section provides solutions for common issues. For complex problems, contact technical support.

Problem	Possible Cause	Solution
VFD does not power on	No input power, faulty wiring, internal fuse blown	Check power supply, verify wiring, inspect fuses (by qualified personnel)
Motor does not run	Incorrect wiring, parameter settings, motor fault, VFD in fault state	Check motor and VFD wiring, verify parameter settings (e.g., FWD/REV), check motor for issues, clear VFD fault (STOP/RESET)
Overcurrent fault (OC)	Motor overload, short circuit in motor wiring, rapid acceleration/deceleration	Reduce motor load, check motor wiring, increase acceleration/deceleration times in parameters
Overvoltage fault (OV)	High input voltage, rapid deceleration, regenerative braking	Check input voltage, increase deceleration time, consider braking resistor if necessary
Undervoltage fault (UV)	Low input voltage, power supply instability	Check input voltage, ensure stable power supply

## 10. Warranty and Support

For warranty information, please refer to the terms and conditions provided at the time of purchase or contact your retailer. Vbestlife is committed to providing quality products and support.

If you encounter issues not covered in this manual or require technical assistance, please contact Vbestlife customer support or your authorized dealer. When contacting support, please have your product model (AT5-2200X) and a detailed description of the issue ready.