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› FAUOSWUK AT5-1500X Variable Frequency Drive User Manual

## FAUOSWUK AT5-1500X

# FAUOSWUK AT5-1500X Variable Frequency Drive User Manual

Model: AT5-1500X

## 1. INTRODUCTION

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This manual provides detailed instructions for the installation, operation, maintenance, and troubleshooting of the FAUOSWUK AT5-1500X Variable Frequency Drive (VFD). The AT5-1500X is a 1500W inverter designed to convert single-phase 110VAC input to three-phase 220VAC output, enabling precise speed control for 3-phase motors. It features a digital display for easy parameter setting and monitoring, and incorporates multiple protection functions to ensure reliable and safe operation.

## 2. SAFETY PRECAUTIONS

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**WARNING: Improper installation or operation can lead to serious injury or equipment damage. Always follow these safety guidelines.**

- Do not operate the inverter if it appears damaged.
- Before wiring, ensure the power supply is disconnected to prevent electric shock.
- Connect the U, V, W output terminals to the AC power supply of the motor.
- The inverter must be properly grounded to prevent electric shock.
- Do not install the inverter in environments with explosive gases or flammable materials.
- Only qualified professionals should perform wiring and maintenance.
- Do not open the inverter shell while it is powered on or shortly after power-off due to residual high voltage.
- Confirm that your device is compatible with a 3-phase motor with a voltage of 220V before purchasing and connecting.

## 3. PRODUCT OVERVIEW

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The FAUOSWUK AT5-1500X Variable Frequency Drive is housed in a durable plastic casing, designed for robust

performance and longevity. It features a clear digital display and intuitive control buttons for easy operation.



# 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

Figure 3.1: Front view of the AT5-1500X VFD, showing the digital display, control knob, and buttons.

## 3.1 Key Features

- **Speed Management:** Wide speed regulation range for efficient motor operation.
- **Digital Display:** Clear readings for easy parameter setting and monitoring.
- **Durable Construction:** Made of plastic material designed to withstand shocks and ensure long-term safety.
- **Comprehensive Protection:** Includes overcurrent, overvoltage, undervoltage, module failure, overheating, short circuit, input/output phase loss, abnormal motor parameter adjustment, and electronic thermal relay.
- **Low Electromagnetic Interference:** Designed for improved reliability and safety.

## 3.2 Control Panel

The control panel consists of a digital display, a rotary knob, and several buttons for programming and operation.

- **Digital Display:** Shows current operating parameters, frequency, and error codes.

- **RUN Button:** Starts the motor.
- **STOP/RESET Button:** Stops the motor or clears error codes.
- **FWD/REV Buttons:** Controls forward and reverse rotation (if configured).
- **PROG Button:** Enters programming mode.
- **FUNC/DATA Button:** Navigates through parameters or confirms data entry.
- **Up/Down Arrows:** Adjust parameter values.
- **Rotary Knob:** Fine-tunes frequency or parameter values.

## 4. SPECIFICATIONS

Parameter	Value
Model	AT5-1500X
Power	1500W
Power Phase Number	Single phase input, Three phase output
Input Voltage	Single-phase 110VAC 50/60Hz
Output Voltage	3-phase 220VAC
Material	Plastic
Protection Modes	Overcurrent, overvoltage, undervoltage, module failure, overheating, short circuit, input/output phase loss, abnormal motor parameter adjustment, electronic thermal relay.
Package Dimensions	8.66 x 7.87 x 6.69 inches
Item Weight	2.86 pounds

## 5. SETUP AND INSTALLATION

Proper installation is critical for the safe and efficient operation of the VFD. Ensure all safety precautions are followed before proceeding.

### 5.1 Mounting

Mount the VFD in a clean, dry, and well-ventilated area, away from direct sunlight, excessive dust, corrosive gases, and flammable materials. Ensure sufficient clearance around the unit for proper heat dissipation. The VFD should be mounted vertically on a flat, stable surface using appropriate fasteners.



Figure 5.1: Side view of the AT5-1500X VFD, highlighting cooling vents and potential mounting locations.

## 5.2 Wiring

All wiring must be performed by a qualified electrician. Ensure power is disconnected before making any connections.

1. **Power Input (L, N):** Connect the single-phase 110VAC power supply to the designated input terminals (L and N).
2. **Motor Output (U, V, W):** Connect the three-phase 220VAC motor to the output terminals U, V, and W. Ensure correct phase sequence for desired motor rotation.
3. **Grounding (GND):** Connect the ground terminal of the VFD to a reliable earth ground. This is crucial for safety.
4. **Control Terminals (Optional):** If external control (e.g., potentiometer, external start/stop buttons) is desired, refer to the detailed wiring diagram in the full product manual for specific terminal assignments.



Figure 5.2: Rear view of the AT5-1500X VFD, indicating the heatsink and location of wiring terminals (under cover).

*Note: A detailed wiring diagram is typically provided in the physical user manual included with the product. Always consult that diagram for precise terminal identification.*

## 6. OPERATING INSTRUCTIONS

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Once the VFD is correctly installed and wired, you can proceed with basic operation.

### 6.1 Power On/Off

- **Power On:** Apply single-phase 110VAC power to the VFD. The digital display should illuminate.
- **Power Off:** Disconnect the main power supply to the VFD. Wait for the display to turn off completely before handling.

### 6.2 Basic Motor Control

1. **Start Motor:** Press the **RUN** button on the control panel. The motor should begin to accelerate to the set frequency.

2. **Stop Motor:** Press the **STOP/RESET** button. The motor will decelerate and stop.
3. **Adjust Speed/Frequency:** Use the rotary knob to increase or decrease the output frequency, thereby adjusting the motor speed. The digital display will show the current frequency.
4. **Change Direction:** If configured, use the **FWD** and **REV** buttons to change the motor's rotation direction.

## 6.3 Parameter Settings

The VFD allows for advanced configuration through its parameter menu.

1. Press the **PROG** button to enter programming mode.
2. Use the Up/Down arrow buttons to navigate through parameter groups and individual parameters.
3. Press **FUNC/DATA** to select a parameter for editing.
4. Use the Up/Down arrow buttons or the rotary knob to change the parameter value.
5. Press **FUNC/DATA** again to save the new value.
6. Press **PROG** to exit programming mode.

*Refer to the comprehensive parameter list in the full product manual for detailed descriptions and recommended settings for specific applications.*

## 7. MAINTENANCE

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Regular maintenance helps ensure the longevity and optimal performance of your VFD.

- **Cleaning:** Periodically clean the exterior of the VFD with a soft, dry cloth. Ensure cooling vents are free from dust and debris to prevent overheating. Do not use liquid cleaners.
- **Inspection:** Regularly inspect wiring connections for tightness and signs of damage or corrosion. Check for any unusual noises or smells during operation.
- **Environment:** Maintain the operating environment within specified temperature and humidity ranges.

*Always disconnect power before performing any maintenance or cleaning.*

## 8. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
VFD does not power on.	No input power; faulty wiring; internal fault.	Check power supply and connections. Verify input voltage. If problem persists, contact support.
Motor does not run.	Incorrect wiring; parameter settings incorrect; motor fault; VFD in fault state.	Check motor wiring (U, V, W). Verify parameter settings (e.g., run command source, frequency). Check motor for issues. Clear any VFD fault codes using STOP/RESET.
Motor speed is unstable.	Load fluctuations; incorrect PID settings; motor tuning issues.	Review motor parameters and tuning settings. Ensure stable load conditions.

Problem	Possible Cause	Solution
Overcurrent fault.	Motor overload; short circuit in motor wiring; rapid acceleration.	Reduce motor load. Check motor wiring for shorts. Adjust acceleration time parameter.
Overvoltage/Undervoltage fault.	Unstable input power; rapid deceleration (overvoltage).	Check input power supply stability. Adjust deceleration time parameter.

When a fault occurs, the VFD display will typically show an error code. Refer to the full product manual for a complete list of error codes and their specific troubleshooting steps.

## 9. WARRANTY AND SUPPORT

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FAUOSWUK products are designed for quality and reliability.

### 9.1 Product Warranty

Please refer to the warranty card included with your product or visit the official FAUOSWUK website for detailed warranty terms and conditions. The warranty typically covers manufacturing defects for a specified period from the date of purchase.

### 9.2 Technical Support

For technical assistance, troubleshooting beyond this manual, or inquiries regarding parts and service, please contact FAUOSWUK customer support.

- **Manufacturer:** FAUOSWUK
- **Contact Information:** Refer to the product packaging or the official FAUOSWUK website for the most current contact details.

When contacting support, please have your product model (AT5-1500X) and purchase information ready.

