

ATO ATO 5 hp 3.7 kW

ATO 5 hp 3.7 kW 460V Three-Phase Variable Frequency Drive (VFD) User Manual

Model: ATO 5 hp 3.7 kW

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your ATO 5 hp 3.7 kW 460V Three-Phase Variable Frequency Drive (VFD). Please read this manual thoroughly before installation, operation, or maintenance to ensure proper usage and prevent potential hazards.

2. SAFETY INFORMATION

WARNING: Risk of electric shock.

- Read the manual and follow all safety instructions before operation.
- Do not remove the cover while power is applied.
- Wait for at least 10 minutes after disconnecting power supply to open the cover. This allows residual voltage to dissipate.
- Do not connect power to output terminals.
- The inverter must be securely grounded (earth).
- Only qualified personnel should perform installation and maintenance.



Figure 1: Angled view of the ATO VFD, highlighting the control panel and safety warning label.

3. PRODUCT OVERVIEW

The ATO 5 hp 3.7 kW Three-Phase VFD is designed for precise speed control of three-phase induction motors. It features adjustable output frequency, automatic energy-saving operation, automatic voltage regulation, and current limiting to prevent frequent over-current trips.



Figure 2: Front view of the ATO VFD, showing the digital operator panel with buttons and display.

4. SPECIFICATIONS

Parameter	Value
Model Name	5 hp 3.7 kW Three Phase VFD Inverter
Input Voltage	3 phase 460V AC $\pm 15\%$ (Optional: 220V/480V)
Input Frequency	50Hz/60Hz
Output Power	3.7kW/4kW (5 hp)
Output Voltage	3 phase AC 0~input voltage
Output Frequency	0.00~400.00Hz
Item Weight	6.6 pounds
Package Dimensions	11.4 x 9 x 7 inches
Recommended Uses	Fans, power tools, pumps, workshop equipment

5. SETUP AND INSTALLATION

Proper installation is crucial for the VFD's performance and safety. Consult a qualified electrician for wiring if you are unfamiliar with industrial electrical systems.

5.1 Wiring Connections

Connect the three-phase input power to the designated input terminals (R, S, T) and the motor to the output terminals (U, V, W). Ensure proper grounding of the VFD chassis.

- **Input Power:** Connect 3-phase 460V AC to the input terminals.
- **Motor Connection:** Connect your 3-phase induction motor to the output terminals.
- **Grounding:** Ensure the VFD is properly grounded to prevent electrical hazards.

5.2 Motor Compatibility

When selecting a VFD, ensure:

1. The rated current of the VFD is greater than the rated current of your motor.
2. The rated power of the VFD is greater than the rated power of your motor, preferably by at least one level.

If unsure, provide your motor nameplate photo, input power supply details, and requirements to customer support for assistance.

6. OPERATING INSTRUCTIONS

The VFD supports various control methods and programmable parameters.

6.1 Basic Operation

The digital operator panel allows for direct control and parameter adjustment.

- **MENU/ESC:** Access menu or exit current setting.
- **ENTER/DATA:** Confirm selection or enter data.
- **FWD/REV:** Control forward/reverse direction.
- **UP/DOWN Arrows:** Adjust frequency or navigate parameters.
- **JOG/REV:** Jog operation or reverse direction.
- **STOP/RESET:** Stop operation or reset errors.

6.2 Frequency Control Methods

The VFD offers several methods to control motor frequency:

1. **Switch Button Control:** Use external switch signals to start/stop the VFD and activate multi-speed settings.
2. **Analog Control:** Control frequency using a 5V or 0-20mA analog signal, in conjunction with switch control for start/stop.
3. **Potentiometer Control:** Direct frequency control using the VFD's built-in potentiometer input terminal.
4. **Modbus-RTU Control:** Utilize the RS485 interface for data transmission with Modbus-RTU protocol to monitor, modify frequency, start, and stop the VFD.
5. **DTU Wireless Remote Control:** Combine a DTU terminal with the VFD for wireless transmission, where the DTU outputs an analog quantity to control VFD frequency.

6.3 Programming Parameters

The VFD supports customization of various parameters, including acceleration/deceleration time, frequency settings, and motor protection. Refer to the detailed programming guide (if provided separately) for specific parameter codes and values.

7. MAINTENANCE

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

- Keep the VFD clean and free from dust and debris.
- Ensure adequate ventilation around the unit to prevent overheating.
- Periodically check all wiring connections for tightness and signs of wear.
- Inspect cooling fans for proper operation and clear any obstructions.

8. TROUBLESHOOTING

8.1 Common Issues and Solutions

- **Incorrect Output Voltage (e.g., 380V instead of 460V):** If the factory default output voltage is incorrect, adjust parameter **P0.08** to the desired voltage (e.g., P0.08 = 460V).
- **VFD Not Responding:** Check power connections, input voltage, and ensure no error codes are displayed.
- **Motor Not Running:** Verify motor wiring, VFD output frequency, and motor parameters.

8.2 Factory Reset


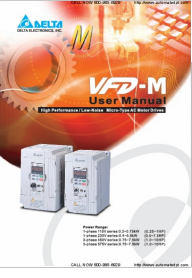
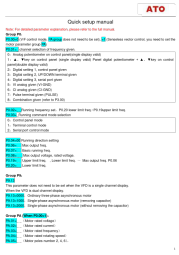
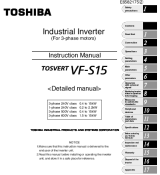

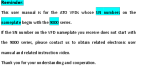
To restore the VFD to factory settings, set parameter **Pd.01 = 1**.

9. CUSTOMER SUPPORT

If you have any questions, encounter issues with the product, or require technical assistance, please do not hesitate to contact ATO customer support. Our professional technicians are available to help you.

We aim to respond to all inquiries within 12 hours.

Related Documents - ATO 5 hp 3.7 kW

 <p>Inverter Drives OPTIDRIVE E3 AC Variable Speed Drive IP66 (IP66A 41) 0.37kW to 22kW (0.5HP to 30HP) 200V to 480V 3-Phase Input 200V to 480V 3-Phase Output</p>	<p>Inverterk Optidrive E3 IP66 AC Variable Speed Drive Quick Start Guide</p> <p>A quick start guide for the Inverterk Optidrive E3 IP66 AC Variable Speed Drive, covering installation, wiring, operation, and troubleshooting for models ranging from 0.37kW to 22kW.</p>
 <p>DELTA VFD-M User Manual High Performance, Low Noise, Micro-type AC Motor Drives</p>	<p>Delta VFD-M Series User Manual: High Performance AC Motor Drives</p> <p>Comprehensive user manual for the Delta VFD-M Series AC Motor Drives. Covers installation, parameter settings, troubleshooting, maintenance, and specifications for high-performance, low-noise micro-type AC motor control.</p>
 <p>ATO Quick setup manual</p>	<p>ATO VFD Quick Setup and Application Guide</p> <p>A comprehensive guide to setting up and applying ATO Variable Frequency Drives (VFDs), covering quick setup, parameter configurations, and various control modes including panel control, three-wire system, external control, multi-stage operation, and constant pressure water supply systems.</p>
 <p>TOSHIBA Industrial Inverter Instruction Manual TOSVERT VF-S15 <Detailed manual></p>	<p>TOSHIBA TOSVERT VF-S15 Industrial Inverter Instruction Manual</p> <p>Comprehensive instruction manual for the TOSHIBA TOSVERT VF-S15 Industrial Inverter, designed for 3-phase motors. This guide covers safety precautions, installation, operation, parameter settings, and maintenance for industrial applications.</p>
 <p>TOSHIBA Industrial Inverter Quick Start Manual TOSVERT VF-S15</p>	<p>TOSHIBA TOSVERT VF-S15 Industrial Inverter Quick Start Manual</p> <p>This Quick Start Manual provides essential information for the safe and efficient installation, operation, and maintenance of the TOSHIBA TOSVERT VF-S15 Industrial Inverter. Designed for 3-phase induction motors, this inverter incorporates critical safety functions to ensure reliable performance in industrial applications.</p>
 <p>ATO GK3000 Variable Frequency Drive User Manual</p>	<p>ATO GK3000 Variable Frequency Drive User Manual: Installation, Operation & Maintenance Guide</p> <p>Comprehensive user manual for the ATO GK3000 Variable Frequency Drive (VFD). Covers installation, operation, parameter settings, fault diagnosis, and maintenance for industrial applications. Features sensorless vector control, RS485 communication, PID control, and multi-speed operation.</p>

