Mollom G75-220V

MOLLOM VFD 7.5KW 10HP Variable Frequency Drive Instruction Manual

Model: G75-220V

1. Introduction

This instruction manual provides essential information for the safe and efficient installation, operation, and maintenance of your MOLLOM 7.5KW 10HP Variable Frequency Drive (VFD). The VFD is designed to control the speed of three-phase AC motors, commonly used in applications such as CNC routers, milling machines, and other industrial equipment. Please read this manual thoroughly before installation and operation to ensure proper usage and to prevent damage to the unit or connected equipment.

2. Safety Information

Warning: Improper installation or operation can lead to serious injury or death, and damage to equipment. Only qualified personnel should perform installation, wiring, and maintenance procedures.

- Always disconnect power before performing any work on the VFD or motor.
- Ensure proper grounding of the VFD and motor.
- Do not touch electrical components while power is applied.
- Verify input voltage and motor specifications match the VFD's ratings.
- Protect the VFD from moisture, dust, and corrosive environments.
- Allow at least 10 minutes after power disconnection for capacitors to discharge before touching terminals.

3. Product Overview

The MOLLOM VFD provides precise speed control for various motor applications. It features a user-friendly interface and robust design for reliable performance.

3.1. VFD Unit

Figure 3.1: Front view of the MOLLOM VFD unit.

3.2. Dimensions

Figure 3.2: MOLLOM VFD dimensions (5.9 x 7.3 x 10.2 inches).

3.3. Control Panel

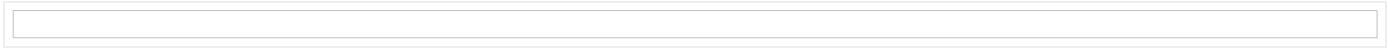

Figure 3.3: VFD Control Panel layout and functions.

The VFD features a user-friendly keyboard design with a digital display for intuitive operation. The control panel is detachable for convenient remote control applications.

Figure 3.4: Detachable control panel feature.

4. Key Features

- **High Performance:** Power: 7.5kw; Input voltage: AC 220V(±15%); Output voltage: AC 220V; Maximum output current: 32A; Input frequency: 50/60 Hz; Output frequency: 0-3000 Hz; Input phase: Supports Single or Three phase; Output phase: Three-phase.
- **Versatile Control:** Rich digital and analog control terminals, RS485 communication port with standard international MODBUS main circuit control.
- **Smart Digital Display:** User-friendly keyboard design and reasonable layout for easy operation. Digital display provides intuitive and clear feedback.
- **Broad Application:** Suitable for CNC routers, CNC machines, milling machines, drilling machines, winding machines, mixers, extruders, slitters, winders, compressors, ventilators, pumps, grinders, conveyors, elevators, centrifuges, and other speed control machines.
- **External Resistor Support:** This VFD supports external resistors for heavy load applications.
- **Anti-Jamming Capability:** Designed with strong anti-jamming capabilities for safe operation.

5. Technical Specifications

Specification	Value
Model Number	G75-220V
Power	7.5 KW (10 HP)
Input Voltage	AC 220V (±15%)
Output Voltage	AC 220V (Three-phase)
Maximum Output Current	32A
Input Frequency	50/60 Hz
Output Frequency	0-3000 Hz
Input Phase	Single or Three Phase
Output Phase	Three Phase

Specification	Value
Product Dimensions (L x W x H)	7.44 x 9.06 x 11.97 inches (189 x 230 x 304 mm)
Item Weight	7.04 pounds (3.19 kg)
Display Type	LCD
Material	Acrylonitrile Butadiene Styrene (ABS)

6. Installation and Wiring

Proper installation and wiring are crucial for the safe and correct operation of the VFD. Ensure all connections are secure and comply with local electrical codes.

6.1. Mounting

Mount the VFD in a clean, dry, and well-ventilated area, away from direct sunlight, excessive heat, moisture, and corrosive substances. Ensure adequate clearance around the unit for proper airflow and heat dissipation.

6.2. Wiring Connections

Refer to the wiring diagram below for connecting the VFD to your power supply and motor. The VFD supports both single-phase and three-phase 220V input. For single-phase input, connect to any two of the R, S, T terminals. For three-phase input, connect to R, S, T terminals. The motor connects to U, V, W terminals. A braking resistor can be connected to P+ and BR terminals if required for heavy loads or rapid deceleration.

Figure 6.1: VFD Wiring Diagram.

Figure 6.2: VFD power and motor terminal connections.

Figure 6.3: VFD control terminal connections.

For control devices requiring power, connect GND and 24V. For RS485 communication, connect RS485+ and RS485-.

6.3. Wiring and Parameter Setting Demonstration

The following video demonstrates the wiring process and initial parameter settings for the VFD. This video is a preview and provides a concise overview of these steps.

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Video 6.1: MOLLOM VFD wiring and parameter setting demonstration.

7. Parameter Setting

After wiring, configure the VFD parameters to match your motor's specifications. Incorrect parameters can lead to motor damage or improper operation. Always refer to your motor's nameplate for accurate values.

Basic Parameter Settings (Example for a 380V motor, adjust for 220V as per your motor's nameplate):

- **F1-01 (Power):** Set to the motor's rated power in KW (e.g., 2.2 for a 2.2KW motor).
- **F1-02 (Voltage):** Set to the motor's rated voltage (e.g., 380V or 220V).
- **F1-03 (Current):** Set to the motor's rated current in Amps (e.g., 7A).
- **F1-04 (Frequency):** Set to the motor's rated frequency in Hz (e.g., 60 Hz).
- **F1-05 (RPM):** Set to the motor's rated RPM (e.g., 3450 RPM).

To access and change parameters:

1. Press the **PRG** button to enter the parameter menu (Display F0.00).
2. Use the **UP**/**DOWN** arrows to navigate to the desired parameter group (e.g., F1-00).
3. Press **ENTER** to select the group.
4. Use **SHIFT** to move the cursor and **UP**/**DOWN** to change the value.
5. Press **ENTER** to save the new value.
6. Press **PRG** to exit the parameter setting.

If you are unsure about specific parameter settings for your motor, it is recommended to contact technical support with the motor's nameplate details.

Figure 7.1: Example parameter table and technical support information.

8. Operating Instructions

Once the VFD is correctly installed and parameters are set, you can begin operation.

- **Start:** Press the **RUN** button on the control panel or activate via external control (if configured).
- **Speed Control:** Adjust the potentiometer on the control panel or use external analog input (if configured) to change the motor speed.
- **Stop:** Press the **STOP**/**RST** button on the control panel or activate via external control.
- **Reset:** If an error occurs, pressing **STOP**/**RST** can clear the fault after addressing the cause.

Important Note: The frequency converter must be directly connected to the motor. The start and stop of the motor must be controlled by the frequency converter. Bypassing the VFD for motor control can cause damage to the unit.

9. Maintenance

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

- **Cleaning:** Periodically clean the VFD's exterior and cooling fins to prevent dust buildup, which can impede heat dissipation. Use a soft, dry cloth. Do not use liquids or solvents.
- **Airflow:** Ensure that the cooling fan and ventilation openings are clear and unobstructed. The VFD relies on proper airflow for cooling.

Figure 9.1: VFD airflow for cooling.

- **Connection Checks:** Regularly inspect all electrical connections for tightness and signs of corrosion or damage.
- **Environmental Conditions:** Avoid operating the VFD in environments with high humidity, water mist, water droplets, or where metal objects could fall into the unit, as this can cause short circuits.

10. Troubleshooting

If you encounter issues with your VFD, consider the following general troubleshooting steps:

- **No Power:** Check the input power supply and all connections. Ensure circuit breakers are not tripped.
- **Motor Not Running:** Verify that the VFD is receiving a run command, parameters are correctly set for the motor, and motor wiring is secure. Check for any fault codes on the display.
- **Motor Overheating:** Check motor load, ensure VFD parameters (current, voltage, frequency) match the motor, and verify proper motor cooling.
- **VFD Fault Codes:** Consult the VFD's detailed manual (if provided separately) for specific fault code meanings and corrective actions.
- **Noise:** If the motor is noisy, increasing the carrier frequency (parameter F0-15) may reduce it. Refer to the detailed manual for specific parameter adjustments.

If problems persist after attempting these steps, contact technical support.

11. Support and Warranty

MOLLOM is committed to providing excellent customer support. Many users have reported positive experiences with our technical support team, noting quick response times and helpful guidance for parameter settings and troubleshooting. For technical assistance, warranty claims, or any product-related inquiries, please refer to the contact information provided with your product packaging or visit the official MOLLOM website. Keep your purchase receipt and product model number (G75-220V) handy when contacting support.