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Yunir UX 52 100 400W

Yunir Mini Variable Frequency Drive Controller

Model: UX 52 100 400W

1. Introduction

This manual provides essential instructions for the safe and efficient operation, installation, and maintenance of your Yunir Mini Variable Frequency Drive (VFD) Controller. This device is designed to convert single-phase input power (176-264V) into three-phase output power (0-220V) for controlling the speed of AC motors, pumps, and automated machine tools. Please read this manual thoroughly before installation and operation.

2. Safety Information

Warning: Improper installation or operation can result in serious injury or equipment damage. Always follow safety guidelines.

- Ensure all power is disconnected before installation, wiring, or maintenance.
- Only qualified personnel should perform installation and wiring.
- Verify input voltage matches the VFD's specifications (176-264V single phase).
- Properly ground the VFD and the motor to prevent electrical shock.
- Do not touch internal components immediately after power-off, as residual voltage may be present.
- Install the VFD in a clean, dry, well-ventilated area, away from direct sunlight, corrosive gases, and excessive vibration.

3. Product Features

- **Excellent Copper Core Coil:** Ensures strong resistance, superior performance, and robust load capacity.
- **Mini and Compact Design:** Facilitates flexible placement and portability.
- **LED Digital Display Panel:** Provides clear and convenient reading of operational parameters.
- **Multiple Control Modes:** Supports V/F control and output torsion control for versatile applications.
- **Wide Application:** Suitable for motors, fans, pumps, automated machine tools, and engraving machines.

4. Specifications

Parameter	Value

Model Number	UX 52 100 400W
Input Voltage	176-264V Single Phase
Output Voltage	0-220V Three Phase
Rated Power	400 Watts
Frequency Range	0.1 - 400 Hz
Item Weight	13.4 ounces (approx. 380g)
Package Dimensions	6.85 x 5 x 3.43 inches
Manufacturer	Yunir

5. Setup and Wiring

Before proceeding, ensure the VFD is mounted securely in a suitable environment as described in the safety section.

5.1 Wiring Terminals Overview





Figure 1: Side view of the VFD with clearly labeled wiring terminals for input, output, and control signals.

The VFD features clearly labeled terminals for power input, motor output, and control signals. Refer to Figure 1 for a visual guide.

5.2 Power Wiring

- **Input Power (AC):** Connect your single-phase 176-264V AC power supply to the 'AC' input terminals. Ensure correct polarity if applicable, though for AC, typically L and N can be interchanged.
- **Ground (FG):** Connect the protective earth ground wire to the 'FG' terminal. This is crucial for safety.
- **Motor Output (U, V, W):** Connect the three-phase motor wires to the 'U', 'V', and 'W' output terminals. The rotation direction can be changed by swapping any two of these output wires if needed.

5.3 Control Wiring (Optional)

The VFD includes terminals for external control signals (e.g., RS+, RS-, GND, V+, COM, X1, X2, X3). Consult the detailed wiring diagram provided with your specific VFD unit for advanced control connections such as external potentiometers, switches, or communication interfaces.

6. Operating Instructions

The VFD features an intuitive control panel for easy operation.



Figure 2: Front control panel of the VFD, showing the LED display, control buttons, and frequency adjustment knob.

6.1 Control Panel Functions

- **LED Digital Display:** Shows current frequency, output voltage, current, and various parameter settings.
- **PROG Button:** Enters/exits parameter setting mode.
- **▲ (Up) / ▼ (Down) Buttons:** Used to navigate menus and adjust parameter values.
- **OK Button:** Confirms selections and saves parameter changes.
- **RUN Button:** Starts the motor.
- **STOP Button:** Stops the motor.
- **FWD/REV Indicators:** Indicate forward or reverse rotation direction.
- **Frequency Adjustment Knob (0-10):** Allows for manual adjustment of the output frequency, thereby controlling motor speed. Turn clockwise to increase frequency, counter-clockwise to decrease.

6.2 Basic Operation Steps

1. **Power On:** After completing all wiring, apply single-phase AC power to the VFD. The LED display will illuminate.
2. **Set Frequency:** Use the frequency adjustment knob to set the desired output frequency. The display will show the

current frequency setting.

3. **Start Motor:** Press the **RUN** button to start the motor. The motor will accelerate to the set frequency.
4. **Adjust Speed:** While the motor is running, you can adjust its speed by turning the frequency adjustment knob.
5. **Stop Motor:** Press the **STOP** button to stop the motor. The motor will decelerate and come to a halt.

6.3 Parameter Settings (PROG Mode)

To access advanced settings and customize VFD behavior (e.g., acceleration/deceleration times, control modes, motor parameters), press the **PROG** button. Use the Up/Down buttons to navigate through parameters and the OK button to select and confirm values. Refer to the detailed parameter list in the full technical manual for specific parameter codes and their functions.

7. Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of your VFD.

- **Cleaning:** Keep the VFD clean and free from dust and debris. Use a soft, dry cloth for cleaning. Do not use liquid cleaners.
- **Ventilation:** Ensure adequate airflow around the VFD. Regularly check that cooling fan vents are not obstructed.
- **Connections:** Periodically check all wiring connections for tightness. Loose connections can cause overheating or intermittent operation.
- **Environment:** Verify that the operating environment remains within specified temperature and humidity ranges.

8. Troubleshooting

This section addresses common issues you might encounter.

Problem	Possible Cause	Solution
Motor does not run	No power, incorrect wiring, VFD in stop mode, parameter error.	Check power supply, verify wiring, press RUN, check parameter settings.
Motor runs at incorrect speed	Frequency knob setting, parameter error, external control issue.	Adjust frequency knob, check speed-related parameters, verify external control signals.
VFD displays an error code	Overcurrent, overvoltage, undervoltage, overload, overheating.	Note the error code and consult the full technical manual for specific error definitions and troubleshooting steps. Address the underlying cause (e.g., reduce load, check input voltage).
Motor makes unusual noise	Motor issue, VFD parameter mismatch, grounding issue.	Inspect motor, check VFD motor parameters (e.g., V/F curve), ensure proper grounding.

If problems persist after attempting these solutions, contact customer support or a qualified technician.

9. Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact Yunir customer service. Keep your purchase receipt as proof of purchase.

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