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ZYWUOY UX-52/003

ZYWUOY UX-52/003 AC220V Motor Speed Controller Instruction Manual

Model: UX-52/003 | Brand: ZYWUOY

1. Introduction

Thank you for choosing the ZYWUOY UX-52/003 AC220V Multifunction Digital Motor Speed Controller. This device utilizes advanced MCU digital control technology to provide precise and stable motor speed regulation. This manual provides essential information for the safe installation, operation, and maintenance of your speed controller. Please read it thoroughly before use and retain it for future reference.

2. Safety Information

To ensure safe operation and prevent damage, observe the following precautions:

- **Electrical Safety:** Always disconnect power before installation, wiring, or maintenance. Ensure all wiring is performed by qualified personnel and complies with local electrical codes.
- **Voltage Compatibility:** This controller is designed for AC 110-240V input. Verify your power supply matches the controller's requirements.
- **Proper Grounding:** Ensure the device is properly grounded to prevent electrical shock.
- **Environment:** Do not operate the controller in wet, dusty, or corrosive environments. Maintain adequate ventilation to prevent overheating.
- **Load Capacity:** Do not exceed the rated power of the controller (60W, 120W, 300W, 400W depending on model variant). Overloading can cause damage or fire.
- **Emergency Stop:** Ensure an accessible emergency stop mechanism is in place for the motor system.

3. Product Features

The ZYWUOY UX-52/003 Motor Speed Controller offers the following key features:

- Utilizes MCU digital control technology for rich functions and excellent performance.
- Digital display menu for convenient and quick parameter modification.
- Display magnification can be adjusted according to user needs, with automatic conversion of the target display value.
- Supports slow acceleration and slow deceleration functions.
- Operable via the panel and controllable by an external switch.

- Panel knob automatically corresponds to the maximum speed, providing convenient and safe adjustment and control. This function helps protect against locked rotor overload.
- Operate cycle addition function.

4. Package Contents

The package includes:

- 1 x ZYWUOY UX-52/003 Motor Speed Controller

5. Specifications

Parameter	Value
Model	UX-52/003
Operating Voltage	AC 110-240V
Frequency	50Hz / 60Hz
Rated Power Options	60W, 120W, 300W, 400W
Adjustment Range	90-1400 r/min
Dimensions (L x W x H)	100 x 60 x 78 mm (approx. 3.94 x 2.36 x 3.07 inches)
Opening Size for Panel Installation	80 x 52 mm (approx. 3.15 x 2.05 inches)
Installation Method	Panel screw installation
Weight	230 g (approx. 0.51 lbs)

6. Product Overview and Dimensions

The ZYWUOY UX-52/003 is a compact and robust motor speed controller designed for panel mounting. It features a digital display, control buttons, and a rotary knob for speed adjustment.



Figure 6.1: Front view of the ZYWUOY UX-52/003 Motor Speed Controller, showing the digital display, control buttons, speed knob, and included wiring harness.

Careful consideration of the controller's dimensions is crucial for proper panel installation.



Figure 6.2: Detailed dimensions of the UX-52/003 controller, indicating overall size (100mm height, 60mm width, 78mm depth) and panel opening size (80mm height, 52mm width).

7. Installation and Wiring

7.1 Panel Installation

The UX-52/003 controller is designed for panel screw installation. Refer to Figure 6.2 for the required panel opening size (80mm x 52mm). Secure the controller using appropriate screws through the mounting holes.

7.2 Wiring Diagram

Before wiring, ensure the main power supply is disconnected. Connect the motor and power supply to the designated terminals as shown in the diagram below. Pay close attention to the input voltage and motor connections.



Figure 7.1: Rear view of the controller showing terminal block connections. L, N are for 220V AC input. U1 is the main line, U2 and Z1 are for starting the capacitor. S1, S2 are for speed detection. OV is internal ground. FED/REV are for external function control bits.

- **L, N:** AC 220V Input (Main Power Supply)
- **U1:** Main line connection for the motor.
- **U2, Z1:** Connections for the motor's starting capacitor (if applicable to your motor).
- **S1, S2:** Speed detection terminals.
- **OV:** Internal ground.
- **FED/REV:** External function control bits for forward/reverse or other external control signals.

Ensure all connections are secure and insulated to prevent short circuits.

8. Operating Instructions

8.1 Control Panel Overview

The front panel provides all necessary controls and a digital display for monitoring and adjusting motor speed.




MODE
ENTER
Speed Control
REV
STOP
FWD
Intelligent
PID1.2
Digital Technology
0
2
4
6
8
10
SPEED

Figure 8.1: Close-up of the control panel, showing the digital display, MODE, UP, DOWN, ENTER buttons, REV, STOP, FWD buttons, and the SPEED adjustment knob.

- **Digital Display:** Shows current speed, parameters, and menu options.
- **MODE Button:** Used to enter and navigate through the menu options.
- **UP/DOWN Buttons:** Used to adjust parameter values or navigate menu items.
- **ENTER Button:** Confirms selections or saves parameter changes.
- **REV Button:** Initiates reverse rotation of the motor.
- **STOP Button:** Stops the motor.
- **FWD Button:** Initiates forward rotation of the motor.
- **SPEED Knob:** Rotary potentiometer for fine-tuning motor speed. The knob automatically corresponds to the maximum speed setting.

8.2 Basic Speed Adjustment

1. Ensure the controller is powered on and the motor is connected.
2. Press the **FWD** or **REV** button to start the motor in the desired direction.
3. Rotate the **SPEED** knob clockwise to increase speed and counter-clockwise to decrease speed. The digital display will show the current speed.
4. Press the **STOP** button to halt the motor.

8.3 Digital Display Menu Operation

The digital display menu allows for advanced configuration:

1. Press the **MODE** button to enter the menu interface.
2. Use the **UP** and **DOWN** buttons to navigate through different menu parameters.
3. Press **ENTER** to select a parameter for modification.
4. Use **UP** and **DOWN** to change the parameter value.
5. Press **ENTER** again to confirm and save the new value.
6. Press **MODE** to exit the menu or return to the previous level.

8.4 Slow Acceleration and Deceleration

This feature allows for a gradual increase or decrease in motor speed, reducing mechanical stress. This function can be configured through the digital display menu. Refer to the menu options for setting acceleration and deceleration times.

8.5 External Control

The controller supports external switch control. Connect an external switch to the designated terminals (e.g., FED/REV for direction control, or other specific terminals for start/stop) as per your application requirements. Consult the wiring diagram (Figure 7.1) and specific menu settings for external control configuration.

9. Maintenance

Regular maintenance ensures optimal performance and longevity of your speed controller:

- **Cleaning:** Keep the controller clean and free from dust and debris. Use a soft, dry cloth for cleaning. Do not use liquid cleaners or solvents.
- **Inspection:** Periodically inspect wiring connections for tightness and signs of wear or damage.
- **Ventilation:** Ensure that the ventilation openings are not obstructed to prevent overheating.

- **Storage:** If storing the controller, do so in a dry, cool environment away from direct sunlight and corrosive substances.

10. Troubleshooting

If you encounter issues with your ZYWUOY UX-52/003 controller, refer to the following common problems and solutions:

- **No Power/Display Off:**
  - Check the main power supply connection.
  - Verify the input voltage is within the specified range (AC 110-240V).
  - Inspect the power cable for damage.
- **Motor Not Starting:**
  - Ensure the motor is properly wired to the controller (U1, U2, Z1 terminals).
  - Check if the STOP button is engaged.
  - Verify that the FWD or REV button has been pressed.
  - Confirm the motor is not overloaded or jammed.
- **Incorrect Speed/Unstable Operation:**
  - Check the SPEED knob position.
  - Ensure the motor's rated power is compatible with the controller's variant.
  - Verify speed detection (S1, S2) connections if used.
  - Check for any loose wiring connections.
- **Overload Protection Triggered:**
  - Reduce the motor load.
  - Ensure the motor is not experiencing a locked rotor condition.
  - Verify the controller's rated power matches the motor's requirements.

If the problem persists after attempting these solutions, please contact customer support.

11. Warranty and Customer Support

ZYWUOY products are manufactured to high-quality standards. For warranty information or technical assistance, please refer to the purchase documentation or contact your retailer. When contacting support, please provide your product model (UX-52/003) and a detailed description of the issue.

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