ESSISH XH-W3001/W3002

ESSISH XH-W3001/W3002 Digital Temperature Controller User Manual

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the ESSISH XH-W3001 and XH-W3002 Digital LED Temperature Controllers. These microcomputer thermostats are designed for precise temperature control across various applications, offering both heating and cooling modes.

2. Product Overview

The XH-W3001 and XH-W3002 are versatile digital temperature controllers featuring a clear LED display for easy readability. They are equipped with a waterproof NTC10K probe for accurate temperature measurement and control. Users can freely set start and stop temperatures to manage heating or refrigeration systems.

Key Features:

- Digital LED display for clear temperature readings.
- Heating and refrigeration modes.
- Easy-to-use button interface for setting parameters.
- Waterproof NTC10K temperature sensor probe (1 meter length).
- Compact design for various applications.

Application Examples:

These controllers are suitable for a wide range of uses, including:

- Incubation temperature control
- Air conditioning systems
- Pet house temperature regulation
- Control cabinets

- Aquaculture and ornamental fish tanks

Image: Examples of typical applications for the XH-W3001/W3002 temperature controller.

3. Safety Information

Please read and understand all safety instructions before installing or operating this device. Failure to do so may result in electric shock, fire, or damage to the product.

- Ensure the power supply voltage matches the controller's specifications (12V DC, 24V DC, or 220V AC).
- All wiring should be performed by a qualified individual and conform to local electrical codes.
- Disconnect power before making any wiring connections or performing maintenance.
- Do not expose the controller unit to excessive moisture or extreme temperatures beyond its operating range.
- The waterproof probe is designed for liquid immersion; however, ensure the main controller unit remains dry.

4. Setup and Wiring

Proper wiring is crucial for the safe and correct operation of the temperature controller. Refer to the diagram below for connection details.

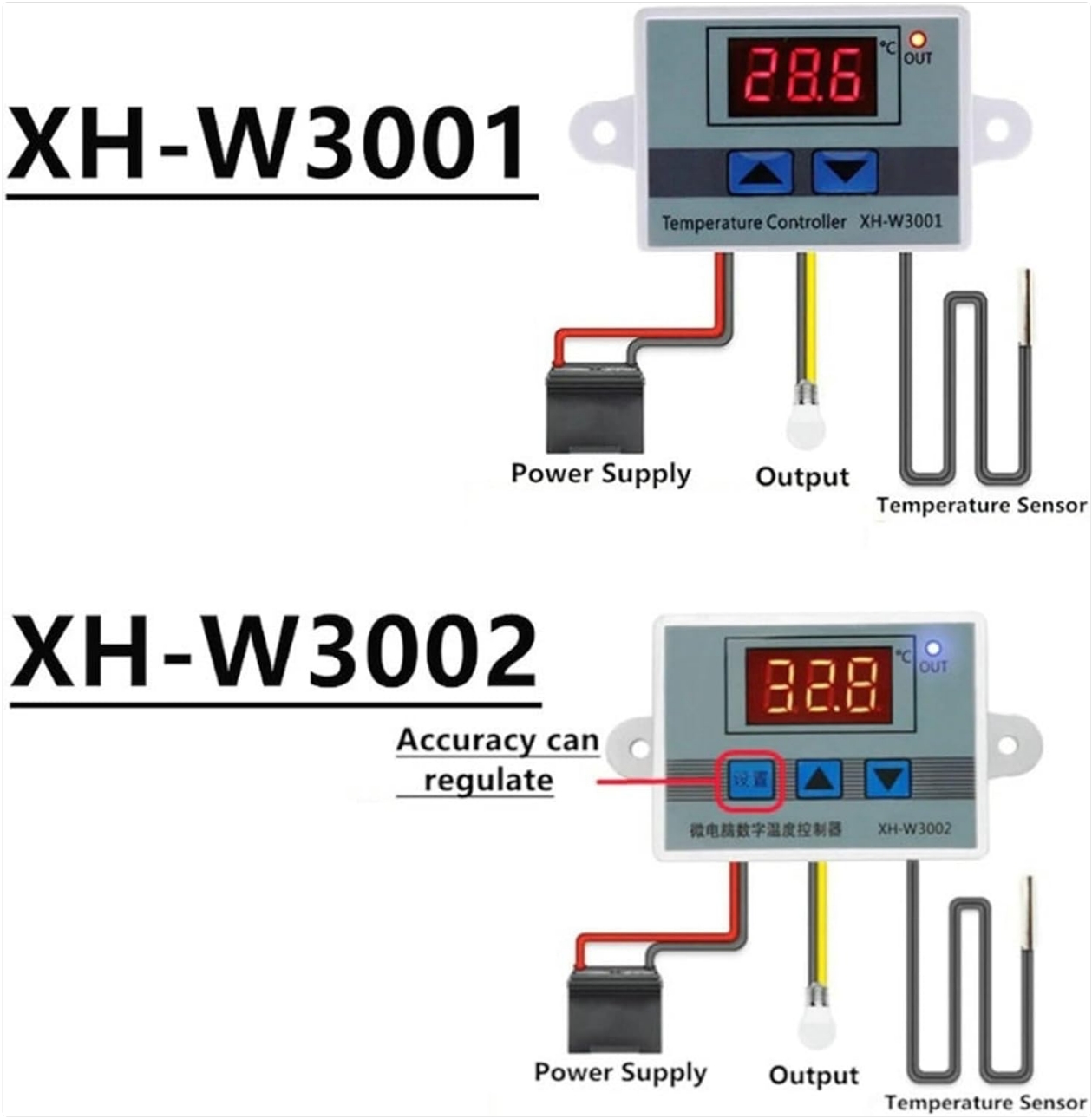

Image: Wiring diagram for XH-W3001 and XH-W3002 models.

Wiring Instructions:

1. **Power Supply:** Connect the power input wires (typically red and black for DC, or two wires for AC) to the designated 'Power Supply' terminals on the controller. Ensure correct polarity for DC models.
2. **Output:** Connect your heating or cooling device (e.g., heater, fan, compressor) to the 'Output' terminals. The controller acts as a switch, providing power to your device when activated.
3. **Temperature Sensor:** Plug the NTC10K waterproof temperature probe into the 'Temperature Sensor' port. The sensor is typically a 2-pin plug for easy connection.

After wiring, ensure all connections are secure before applying power.

5. Operating Instructions

The XH-W3001 and XH-W3002 controllers operate similarly, allowing you to set a start temperature and a stop

temperature to maintain a desired range.

Setting Start and Stop Temperatures (XH-W3001 & XH-W3002):

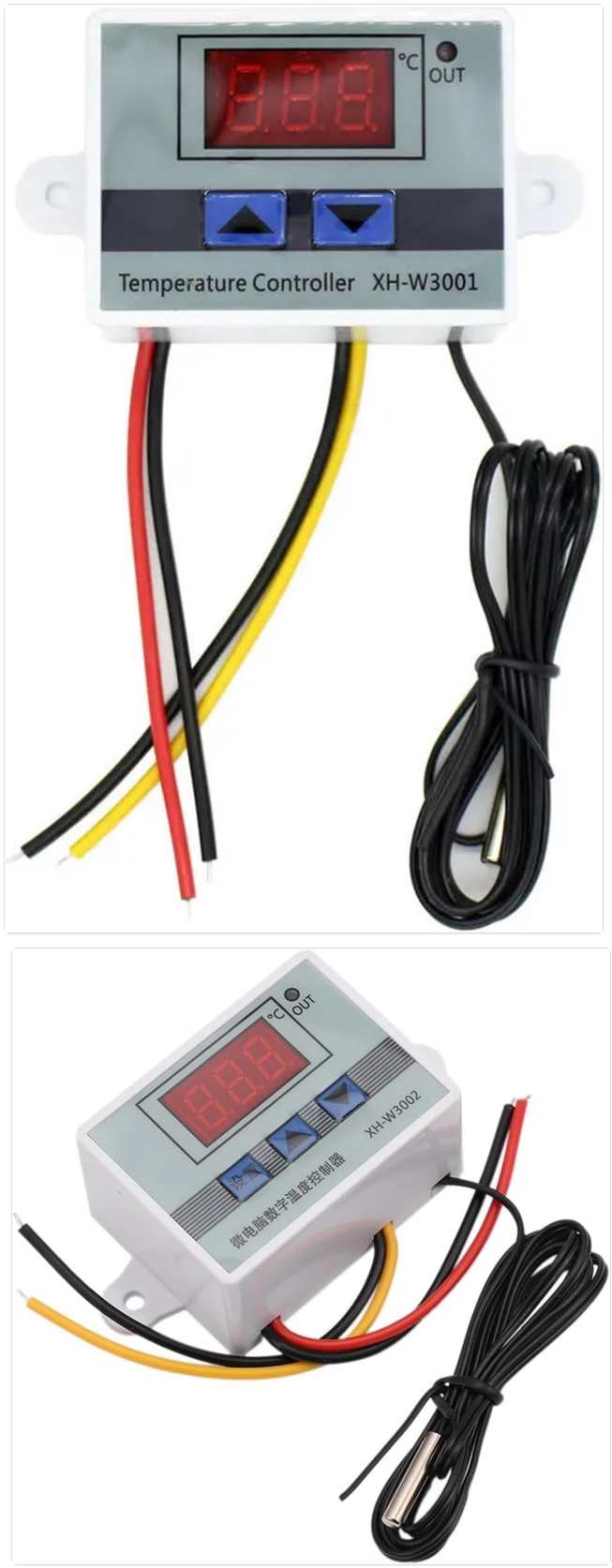

Image: XH-W3001 (left) and XH-W3002 (right) temperature controllers.

1. **Set Start Temperature:**
   a. Press the **UP** button once to display the current start temperature.
   b. Long press the **UP** button until the temperature display flashes.
   c. Use the **UP** or **DOWN** buttons to adjust the desired start temperature value.

d. Press any other button or wait a few seconds for the setting to save automatically.

2. **Set Stop Temperature:**
   a. Press the **DOWN** button once to display the current stop temperature.
   b. Long press the **DOWN** button until the temperature display flashes.
   c. Use the **UP** or **DOWN** buttons to adjust the desired stop temperature value.
   d. Press any other button or wait a few seconds for the setting to save automatically.

Working Modes:

- **Heating Mode:** If the **Start Temperature** is set **less than** the **Stop Temperature**, the controller operates in heating mode. The output will activate when the temperature drops below the start temperature and deactivate when it reaches the stop temperature.
- **Cooling Mode:** If the **Start Temperature** is set **greater than** the **Stop Temperature**, the controller operates in cooling mode. The output will activate when the temperature rises above the start temperature and deactivate when it drops to the stop temperature.

6. Maintenance

To ensure the longevity and accurate performance of your temperature controller, follow these simple maintenance guidelines:

- **Cleaning:** Wipe the controller's surface with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Sensor Care:** Keep the temperature probe clean. Avoid bending or damaging the probe cable.
- **Environment:** Store and operate the controller in a dry environment, away from direct sunlight and extreme temperatures.
- **Connections:** Periodically check all wiring connections to ensure they remain secure.

7. Troubleshooting

If you encounter issues with your ESSISH temperature controller, refer to the following common problems and solutions:

- **Display Not Working:**
  - Check power supply connections. Ensure the correct voltage (12V DC, 24V DC, or 220V AC) is applied.
  - Verify the power source is active.
- **Temperature Reading Incorrect:**
  - Ensure the temperature probe is properly connected to the controller.
  - Check if the probe is correctly positioned in the environment you wish to measure.
  - The probe itself might be damaged; consider replacing it if available.
- **Output Not Activating/Deactivating:**
  - Verify the start and stop temperatures are set correctly for your desired heating or cooling mode.
  - Check the wiring to your heating/cooling device. Ensure it is properly connected to the 'Output' terminals.
  - Confirm the load power of your device does not exceed the controller's maximum output capacity (10A max).
- **Display Flashing:**
  - This usually indicates the controller is in setting mode. Press a button or wait for a few seconds for the setting to save.

If problems persist, contact customer support for further assistance.

8. Specifications

Detailed specifications for the XH-W3001 and XH-W3002 models:

Feature	XH-W3001	XH-W3002
Output Type	Direct Output	Direct Output
Output Capacity	10A max	10A max
Power Supply Options	DC 12V, DC 24V, AC 220V	DC 12V, DC 24V, AC 220V
Load Power (Max)	120W (12V), 240W (24V), 1500W (220V)	120W (12V), 240W (24V), 1500W (220V)
Temperature Measurement Range	-50°C ~ 110°C	-50°C ~ 110°C
Temperature Control Range	-50°C ~ 110°C	-50°C ~ 110°C
Temperature Control Precision	0.1°C	±0.1°C
Temperature Measuring Accuracy	Not specified (typically ±0.2°C)	±0.2°C
Input Measurement	NTC10K waterproof probe (L=1 meter)	NTC10K waterproof probe (L=1 meter)
Appearance Size	Not specified (approx. 60x45x31 mm)	60 x 45 x 31 mm
Item Weight	Approx. 50 Grams (1.76 ounces)	Approx. 50 Grams (1.76 ounces)
Control Type	Button Control	Button Control
Backlight	Yes	Yes

9. Warranty and Support

For warranty information or technical support, please refer to the product packaging or contact your retailer. Keep your purchase receipt for warranty claims.
For general inquiries or further assistance, you may contact ESSISH customer support through their official channels, if available.