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› **diymore W3002 Digital Temperature Controller AC 110V-220V User Manual**

diymore W3002

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Model: W3002

1. INTRODUCTION

The diymore W3002 is a versatile digital temperature controller designed for precise temperature management in various applications. It supports both heating and cooling modes, making it suitable for incubators, aquariums, greenhouses, livestock farming, and other environments requiring stable temperature control. This manual provides detailed instructions for installation, operation, and troubleshooting.

2. PRODUCT OVERVIEW

The W3002 temperature controller features a clear digital LED display, intuitive control buttons, and comes with a waterproof NTC10K temperature probe for accurate readings.

Figure 1: diymore W3002 Digital Temperature Controller
This image shows the diymore W3002 Digital Temperature Controller, a compact white unit with a blue faceplate, a red LED display, and three control buttons (SET, Up, Down). It has input and output wires, and a black waterproof NTC10K temperature probe connected.

Product Details

Precise digital LED
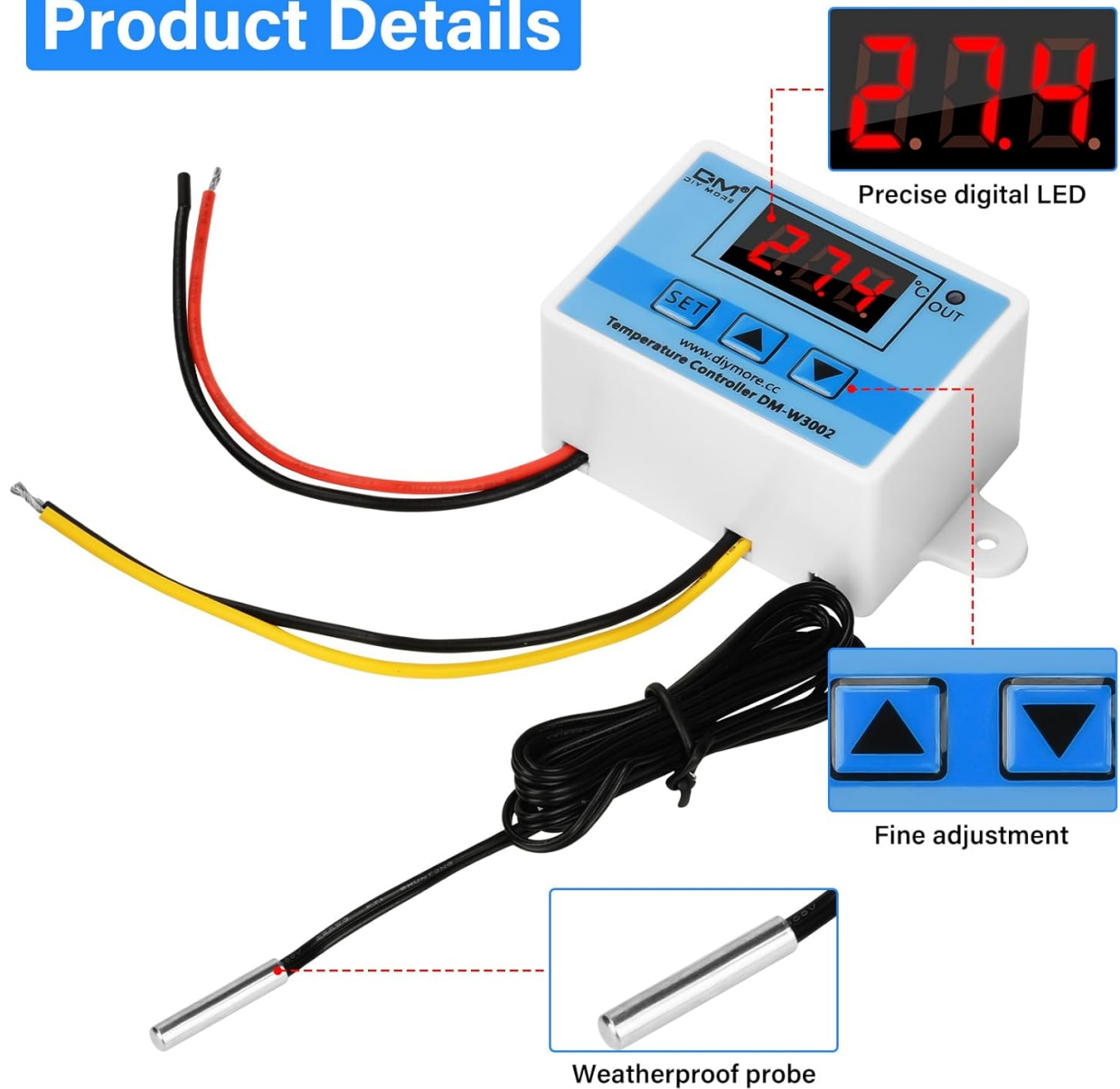
Fine adjustment

Weatherproof probe

Figure 2: Product Details
A detailed view of the W3002 controller highlighting the precise digital LED display, the 'SET' button, the 'Up' and 'Down' adjustment buttons, and the weather-proof temperature probe.

3. SPECIFICATIONS

- **Model:** W3002
- **Input Voltage:** AC 110V-220V
- **Output Power:** 1500W
- **Temperature Measurement Range:** -50°C to 110°C
- **Temperature Measurement Accuracy:** ±0.2°C
- **Temperature Control Accuracy:** ±0.1°C
- **Measuring Input:** NTC10K waterproof probe (1 meter length)
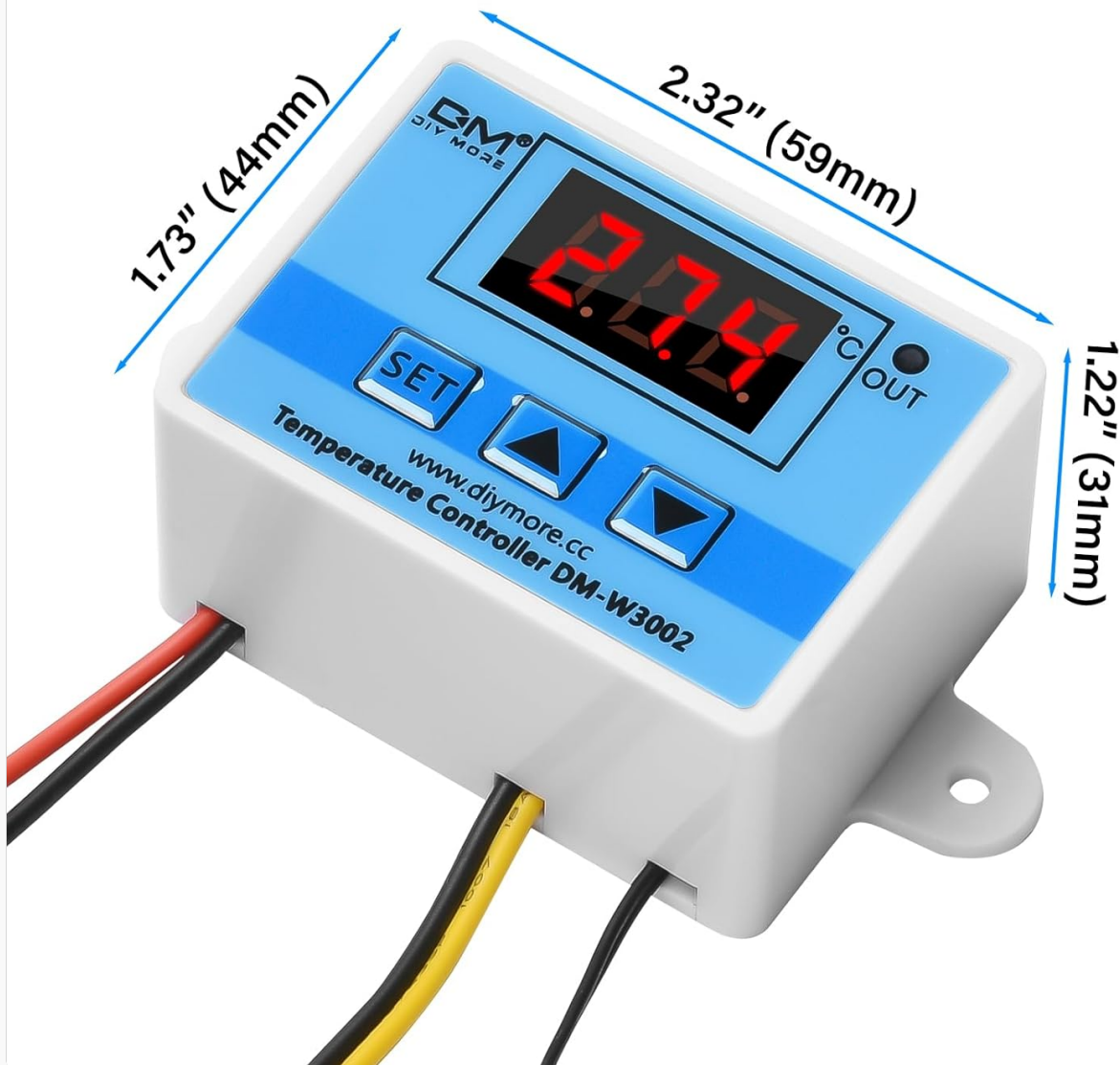- **Dimensions:** Approximately 59mm (L) x 44mm (W) x 31mm (H)

Figure 3: Product Dimensions
This image illustrates the physical dimensions of the W3002 controller, showing its length (59mm), width (44mm), and height (31mm).

4. SAFETY INSTRUCTIONS

- Ensure all wiring is performed by a qualified individual and adheres to local electrical codes.
- Disconnect power before performing any wiring or maintenance.
- Do not expose the controller unit (excluding the probe) to water or excessive moisture.
- Verify the input voltage matches the product specifications (AC 110V-220V).
- Do not exceed the maximum output power of 1500W.

5. SETUP AND WIRING

Proper wiring is essential for the safe and correct operation of the W3002 controller. The AC 110V-220V wiring requires distinguishing between the live wire (typically yellow) and the neutral wire (typically black).
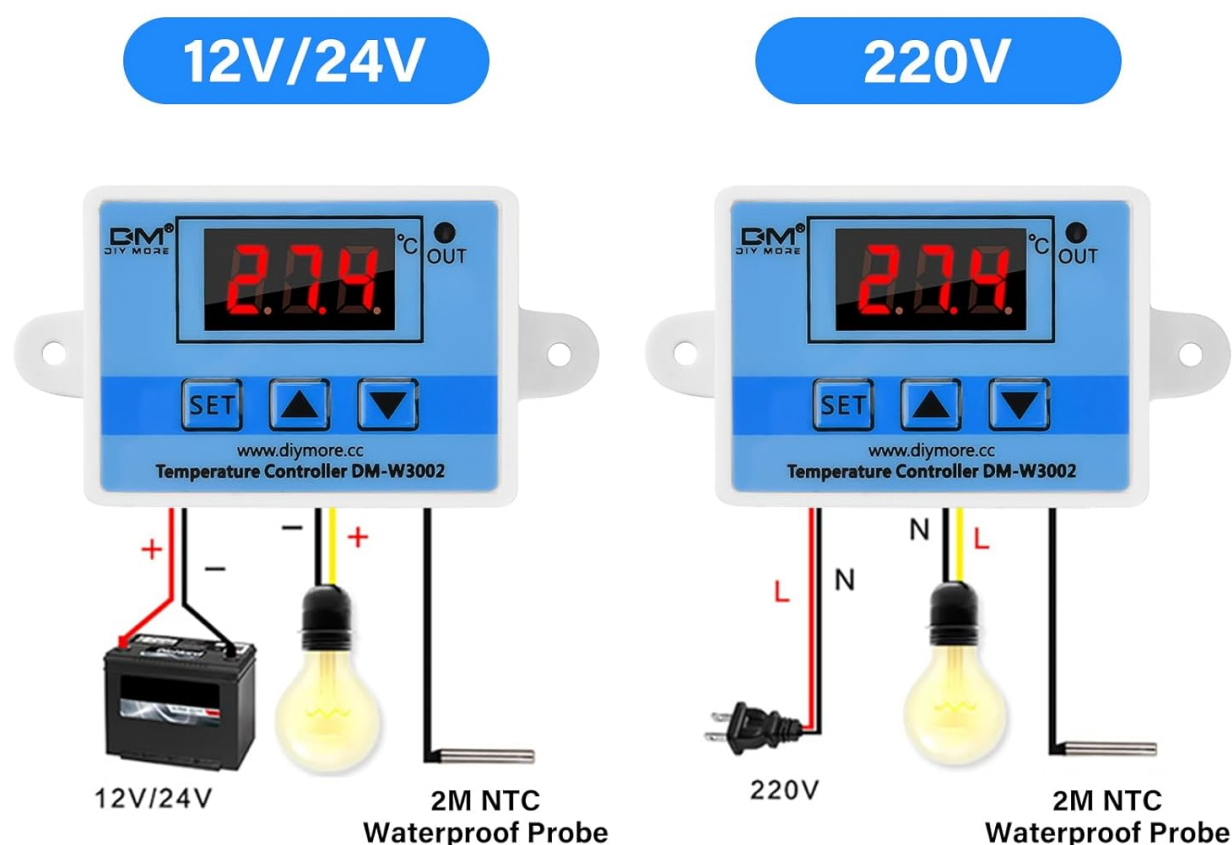
Precautions

The 12V/220V wiring method is actually the same, except that the 12V DC wiring should distinguish between the positive and negative poles, and the 220V AC wiring should distinguish between the live wire (yellow wire) and the neutral wire (black)

Figure 4: Wiring Diagram

This image displays wiring instructions for both 12V/24V DC and 220V AC versions of the W3002. For the AC 220V model, connect the live wire (L) to the input terminal and the neutral wire (N) to the other input terminal. The output terminals connect to your heating or cooling device, ensuring correct polarity for AC connections.

5.1. Wiring Steps (AC 110V-220V)

1. Ensure the power supply is disconnected before wiring.
2. Connect the AC 110V-220V power input to the designated input terminals on the controller. The yellow wire is typically Live (L) and the black wire is Neutral (N).
3. Connect your heating or cooling device (load) to the output terminals of the controller.
4. Insert the NTC10K waterproof temperature probe into the environment where temperature needs to be measured.
5. Once all connections are secure, you can connect the power supply.

6. OPERATING INSTRUCTIONS

The W3002 controller is operated using the 'SET' button and the 'Up' and 'Down' arrow buttons.

Control Panel Parameters

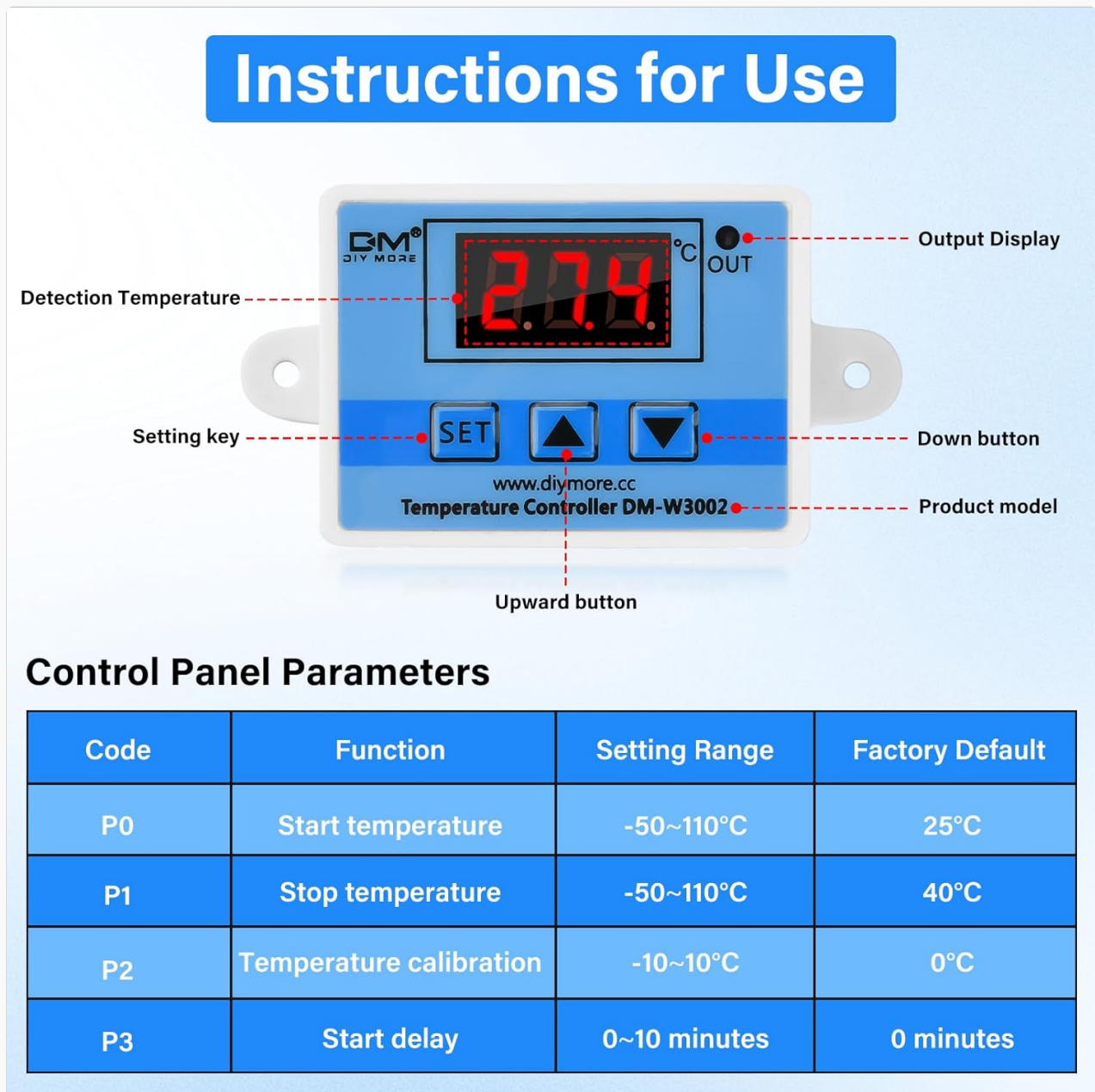| Code	Function	Setting Range	Factory Default
P0	Start temperature	-50~110°C	25°C
P1	Stop temperature	-50~110°C	40°C
P2	Temperature calibration	-10~10°C	0°C
P3	Start delay	0~10 minutes	0 minutes

Figure 5: Control Panel and Parameters

This diagram labels the components of the W3002 control panel, including the detection temperature display, output indicator, setting key, and up/down buttons. It also presents a table of control panel parameters (P0-P3) with their functions, setting ranges, and factory default values.

6.1. Basic Operation

- Upon powering on, the controller will display the current temperature measured by the probe.
- The 'OUT' indicator light will illuminate when the output is active (heating or cooling device is on).

6.2. Setting Parameters

To access and modify parameters:

1. Press the 'SET' button for approximately 3 seconds to enter the parameter setting menu. The display will show 'P0'.
2. Use the 'Up' and 'Down' buttons to navigate between parameters (P0, P1, P2, P3).

3. Once the desired parameter is displayed, press 'SET' briefly to view its current value.

4. Use the 'Up' and 'Down' buttons to adjust the value.

5. Press 'SET' again to confirm the new value and exit the parameter setting, or wait a few seconds for it to automatically save and exit.

Parameter Descriptions:

- **P0: Start Temperature**
  Sets the temperature at which the device will turn on.

- **P1: Stop Temperature**
  Sets the temperature at which the device will turn off.

- **P2: Temperature Calibration**
  Allows for fine-tuning the temperature reading if there is a discrepancy with a known accurate thermometer. Range: -10°C to 10°C.

- **P3: Start Delay**
  Sets a delay (in minutes) before the device starts operating after the temperature condition is met. This can protect compressors in cooling systems. Range: 0 to 10 minutes.

6.3. Heating and Cooling Modes

The W3002 automatically determines whether to operate in heating or cooling mode based on the relationship between P0 (Start Temperature) and P1 (Stop Temperature).

Heating Mode	Cooling Mode
Start temperature < Stop temperature (program automatically detects heating mode)	**Start temperature > Stop temperature** (program automatically detects cooling mode)

Configuration Method:	Configuration Method:
Press SET button to access menu:	Press SET button to access menu:
Set start temperature using parameter P0	Set start temperature using parameter P0
Set stop temperature using parameter P1	Set stop temperature using parameter P1
Use Case: Water Heater Control	**Use Case: Electrical Cabinet Cooler**
Goal: Heat to 50°C, reactivate heating at 40°C	Goal: Cool to 26°C, reactivate cooling at 30°C
Confirm heating mode is active (P0 < P1)	Confirm cooling mode is active (P0 > P1)
Press SET → Select P0 →Set to 40°C	Press SET → Select P0 → Set to 30°C
Press SET → Select P1 → Set to 50°C	Press SET → Select P1 → Set to 26°C

Figure 6: Heating and Cooling Mode Configuration

This image provides examples for configuring the W3002 for both heating and cooling applications. It shows that if the start temperature (P0) is less than the stop temperature (P1), the controller operates in heating mode. If P0 is greater than P1, it operates in cooling mode. Specific use cases for a water heater and an electrical cabinet cooler are detailed.

Heating Mode Configuration:

- Set **P0 (Start Temperature) < P1 (Stop Temperature)**.
- *Example:* To heat to 50°C and reactivate heating at 40°C:
- Set P0 = 40°C
- Set P1 = 50°C

Cooling Mode Configuration:

- Set **P0 (Start Temperature) > P1 (Stop Temperature)**.
- *Example:* To cool to 26°C and reactivate cooling at 30°C:
- Set P0 = 30°C
- Set P1 = 26°C

7. TROUBLESHOOTING

The W3002 controller can display error codes to indicate specific issues.

How to Restore Factory Settings?

While powered on, press and hold both the ▲ (Up) and ▼(Down) keys simultaneously for approximately 3 seconds. After "888" appears on the digital display, the system will automatically return to temperature detection mode, indicating successful restoration of factory settings.

Error Code: LLL

When "LLL" appears on the display during operation, it indicates an open-circuit sensor fault. Repair or replace the temperature probe.

Error Code: HHH

When "HHH" appears on the display during use, it indicates a short-circuit sensor fault.

Figure 7: Error Codes and Factory Reset

This image illustrates the display for restoring factory settings ('888') and common error codes: 'LLL' for an open-circuit sensor fault and 'HHH' for a short-circuit sensor fault.

7.1. Error Codes

- **LLL:** Indicates an open-circuit sensor fault. The temperature probe may be disconnected or damaged. Repair or replace the probe.
- **HHH:** Indicates a short-circuit sensor fault. The temperature probe may be shorted or damaged. Repair or replace the probe.

7.2. Restoring Factory Settings

To restore the controller to its factory default settings:

1. While powered on, press and hold both the 'Up' and 'Down' arrow buttons simultaneously for approximately 3 seconds.

2. The display will show '888', indicating successful restoration of factory settings.

3. The system will then automatically return to temperature detection mode.

8. Maintenance

- Keep the controller unit clean and free from dust. Use a dry, soft cloth for cleaning.

- Regularly inspect the wiring for any signs of damage or loose connections.

- Ensure the temperature probe is clean and free from debris that could affect its accuracy.

- Avoid exposing the controller to extreme temperatures or direct sunlight for prolonged periods.

9. Applications

The diymore W3002 Digital Temperature Controller is suitable for a wide range of applications where precise temperature control is required.

Applications

Figure 8: Typical Applications
This image displays various environments where the W3002 controller can be effectively used, including incubation rooms, aquariums, greenhouses, and livestock farming facilities.

10. WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the product packaging or contact diymore customer service directly through their official website or the platform where the product was purchased. Keep your purchase receipt for warranty claims.

[Diymore STC-3008 Digital Temperature Controller - Dual Display NTC](#)

Detailed specifications and user manual for the Diymore STC-3008 digital thermostat controller. Features dual display, NTC sensors, AC 110V/230V compatibility, and instructions for heating/cooling setup, operation, and safety.

[diymore DC 5V/12V 4 Channel Bluetooth Relay Module - Smart Home Control](#)

Detailed overview of the diymore DC 5V/12V 4-channel Bluetooth relay module for smart home automation. Features remote control via mobile APP, JDY-31 Bluetooth module, and 10A relays.

[Operating Instructions for Diymore Adjustable Voltage Regulator](#)

Detailed operating instructions and parameter settings for the Diymore Adjustable Voltage Regulator DC Buck Boost Converter, covering voltage and current adjustment, protection settings, and calibration.

[DIYMORE DSO 138 Oscilloscope Case DIY Kit Installation Guide](#)

Step-by-step installation guide for the DIYMORE DSO 138 Oscilloscope Case DIY Kit. Learn how to assemble the acrylic case for your DSO 138 oscilloscope.

[DIYMORE 6DOF Robotic Arm Assembly Guide](#)

A comprehensive guide for assembling the DIYMORE 6DOF Robotic Arm kit, detailing parts identification, step-by-step assembly instructions, and tips for successful construction.

[diymore Robot Arm Assembly Guide: Step-by-Step Instructions](#)

A comprehensive guide to assembling the diymore 6DOF Robotic Arm Kit. This manual provides detailed step-by-step instructions, a complete parts list, and helpful tips for building your own robotic arm using MG996 servos and compatible with Arduino and Raspberry Pi.