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› User Manual: ZL-6231A Incubator Controller Thermostat with Timer

mc-toolparts ZL-6231A

User Manual: ZL-6231A Incubator Controller Thermostat with Timer

Model: ZL-6231A | Brand: mc-toolparts

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the ZL-6231A Incubator Controller Thermostat with Timer. This device is designed to precisely control temperature and timing functions, making it suitable for various applications requiring accurate environmental regulation, such as incubators.

2. PRODUCT OVERVIEW

The ZL-6231A is a robust and reliable replacement part for incubator systems. It integrates temperature control and timing capabilities into a single unit, featuring a clear digital display for current temperature readings and intuitive buttons for parameter adjustment. Its design emphasizes durability and high quality for consistent performance.



Figure 2.1: Front view of the ZL-6231A Incubator Controller, showing the digital display, control buttons (P, Up, Down, S), and the attached temperature sensor cable.

3. KEY FEATURES

- Precise temperature control and timing functions.
- Clear digital display for easy monitoring.
- Intuitive button interface for parameter settings.
- Durable construction for long-term reliability.
- Designed as a direct replacement part for compatible systems.
- Includes a temperature sensor for accurate readings.

4. PACKAGE CONTENTS

Upon opening the package, verify that all components are present and undamaged:

- 1 x ZL-6231A Incubator Controller Thermostat with Timer
- 1 x Temperature Sensor (integrated or separate, as pictured)

Note: The real color of the item may be slightly different from the pictures shown on the website due to monitor brightness and light conditions.

5. SETUP AND INSTALLATION

Before installation, ensure the power supply is disconnected from the incubator system. Always compare the replacement part with your original unit to confirm compatibility.



Figure 5.1: Rear view of the ZL-6231A Incubator Controller, detailing the wiring terminals (1-12) and the integrated schematic diagram for electrical connections.

5.1 Wiring Instructions

Refer to the wiring diagram located on the back of the ZL-6231A unit (Figure 5.1) for correct electrical connections. Ensure all connections are secure and comply with local electrical codes.

- **Power Input:** Connect the main power supply (e.g., 110V or 220V as indicated on the unit) to the designated terminals (L1, N1).
- **Output Relays (R1, R2):** These terminals (1-6) are for connecting heating elements, fans, or other controlled devices. R1 and R2 are typically rated for 10A/250V.
- **Temperature Sensor:** Connect the temperature sensor cable to the "Temp. Sensor" terminals (10, 11). Ensure correct polarity if specified.
- **Warning Input:** If applicable, connect external warning signals to the "Warning Input" terminals (8, 9).

WARNING: Incorrect wiring can cause damage to the unit or pose electrical hazards. If you are unsure about wiring, consult a qualified electrician.

6. OPERATING INSTRUCTIONS

Once installed and powered on, the ZL-6231A will display the current temperature. Use the control buttons to set desired parameters.

6.1 Button Functions

- **P (Program/Set):** Enters programming mode to adjust settings. Pressing it repeatedly cycles through parameters.
- **▲ (Up Arrow):** Increases the value of the selected parameter.
- **▼ (Down Arrow):** Decreases the value of the selected parameter.
- **S (Save/Confirm):** Confirms the selected value and saves the setting.

6.2 Setting Temperature

1. Press the **P** button to enter the temperature setting mode. The display will likely show a flashing set point.
2. Use the **▲** or **▼** buttons to adjust the desired temperature.
3. Press the **S** button to confirm and save the new temperature setting.

6.3 Setting Timer (if applicable)

The ZL-6231A includes a timer function. Specific timer settings (e.g., delay, duration) will be accessible through the programming mode.

1. Press the **P** button multiple times until the timer parameter (e.g., 't1', 't2') is displayed.
2. Use the **▲** or **▼** buttons to adjust the timer value (e.g., hours, minutes).
3. Press the **S** button to confirm and save the timer setting.

Consult the original equipment manual or specific ZL-6231A programming guide for detailed parameter codes and advanced settings.

7. MAINTENANCE

Regular maintenance ensures the longevity and accurate operation of your ZL-6231A controller.

- **Cleaning:** Gently wipe the unit's exterior with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the unit is powered off before cleaning.
- **Sensor Care:** Keep the temperature sensor clean and free from debris. Avoid bending or damaging the sensor cable.
- **Connections:** Periodically check all electrical connections to ensure they remain secure.

8. TROUBLESHOOTING

This section addresses common issues you might encounter with the ZL-6231A controller.

Problem	Possible Cause	Solution
No power/Display off	No power supply; Loose wiring; Blown fuse (external)	Check power source; Verify all wiring connections; Check external fuse.
Incorrect temperature reading	Sensor faulty; Sensor not properly connected; Sensor placed incorrectly	Check sensor connection; Replace sensor if faulty; Ensure sensor is in the correct measurement environment.
Controller not heating/cooling	Output relay issue; Wiring to heating/cooling element faulty; Set temperature not reached	Verify output wiring; Check heating/cooling element; Adjust set temperature.
Buttons unresponsive	Temporary software glitch; Physical button damage	Power cycle the unit; If issue persists, contact support.

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

9. SPECIFICATIONS

Parameter	Value
Model Number	ZL-6231A
Manufacturer	mc-toolparts
Part Number	TPS-TNH-240321-25676
Item Package Quantity	1
ASIN	B0948VB8MK
Date First Available	May 6, 2021
Output Relay Rating	10A/250V (R1, R2)
Type	Hand Tool Parts (Black)

10. WARRANTY AND SUPPORT

This product is manufactured by mc-toolparts. For specific warranty information, please refer to the terms provided at the time of purchase or contact the seller directly. As a replacement part, warranty terms may vary.

For technical support, troubleshooting assistance beyond this manual, or inquiries regarding replacement parts, please contact your original point of purchase or the manufacturer, mc-toolparts, through their official channels.