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Lilytech ZL-7903A

Lilytech ZL-7903A Automatic Temperature and Humidity Incubator Controller User Manual

Model: ZL-7903A with ZL-SHr05J Sensor

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the Lilytech ZL-7903A Automatic Temperature and Humidity Incubator Controller. The ZL-7903A is a multifunctional PID controller designed for precise environmental management in incubators, ensuring optimal conditions for various applications. It integrates temperature control, humidity control, egg turning, ventilation, and alarm functions.

2. PRODUCT OVERVIEW

The ZL-7903A controller features a clear digital display and intuitive button interface for easy programming and monitoring. It comes equipped with a ZL-SHr05J temperature and humidity sensor for accurate environmental readings.



Figure 2.1: The ZL-7903A controller unit shown alongside the ZL-SHr05J combined temperature and humidity sensor. The controller features a digital display and control buttons.



Figure 2.2: The ZL-7903A controller with its sensor cable and a protective cover for the sensor element. This image illustrates the complete package including the wiring.



Figure 2.3: A detailed view of the ZL-7903A controller's digital display, showing current temperature (14.8°C) and humidity (64.3%), along with set points (37.8°C, 50%) and a countdown timer.

3. SPECIFICATIONS

- **Model:** ZL-7903A
- **Input Voltage:** 100-240Vac
- **Control Type:** PID (Proportional-Integral-Derivative) for Temperature and Humidity
- **Display Type:** Digital
- **Sensor:** ZL-SHr05J (Combined Temperature and Humidity Sensor)
- **Max Measuring Temperature:** 70°C - 99°C
- **Style:** Embedded
- **Sensor Cable Length:** 2 meters
- **Functions:** Temperature Control, Humidity Control, Egg Turning, Ventilation, Illumination, Alarms, Door Switch Input

4. INSTALLATION AND SETUP

The ZL-7903A is designed for embedded installation. Ensure proper ventilation around the unit when mounting. All wiring should be performed by a qualified professional to prevent electrical hazards and ensure correct functionality.

4.1 Wiring Diagram

Refer to the following diagrams for correct electrical connections. The controller requires a 100-240Vac power input. Connect all external components such as heaters, fans, egg-turning motors, and sensors according to the specified terminals.



Figure 4.1: Rear view of the ZL-7903A controller, showing the terminal block and an integrated wiring diagram for various connections including power, sensors, and output devices.

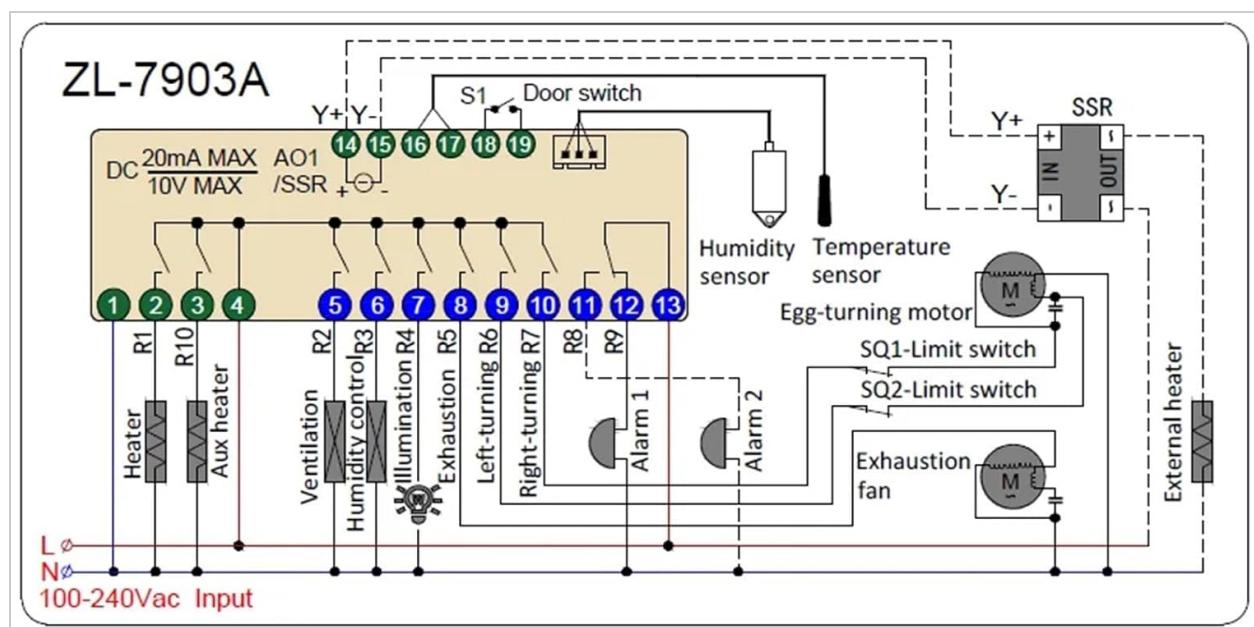


Figure 4.2: A detailed schematic of the ZL-7903A wiring. This diagram illustrates connections for 100-240Vac input, heater (R1, R10), auxiliary heater, ventilation (R2), humidity control (R3), illumination (R4), egg turning (R5, R6, R7), alarms (R8, R9),

door switch (S1), humidity sensor, temperature sensor, SSR, egg-turning motor, and exhaustion fan.

4.2 Sensor Connection

The ZL-SHr05J sensor connects to the dedicated sensor port. Ensure the connector is securely seated. The sensor provides both temperature and humidity readings to the controller.

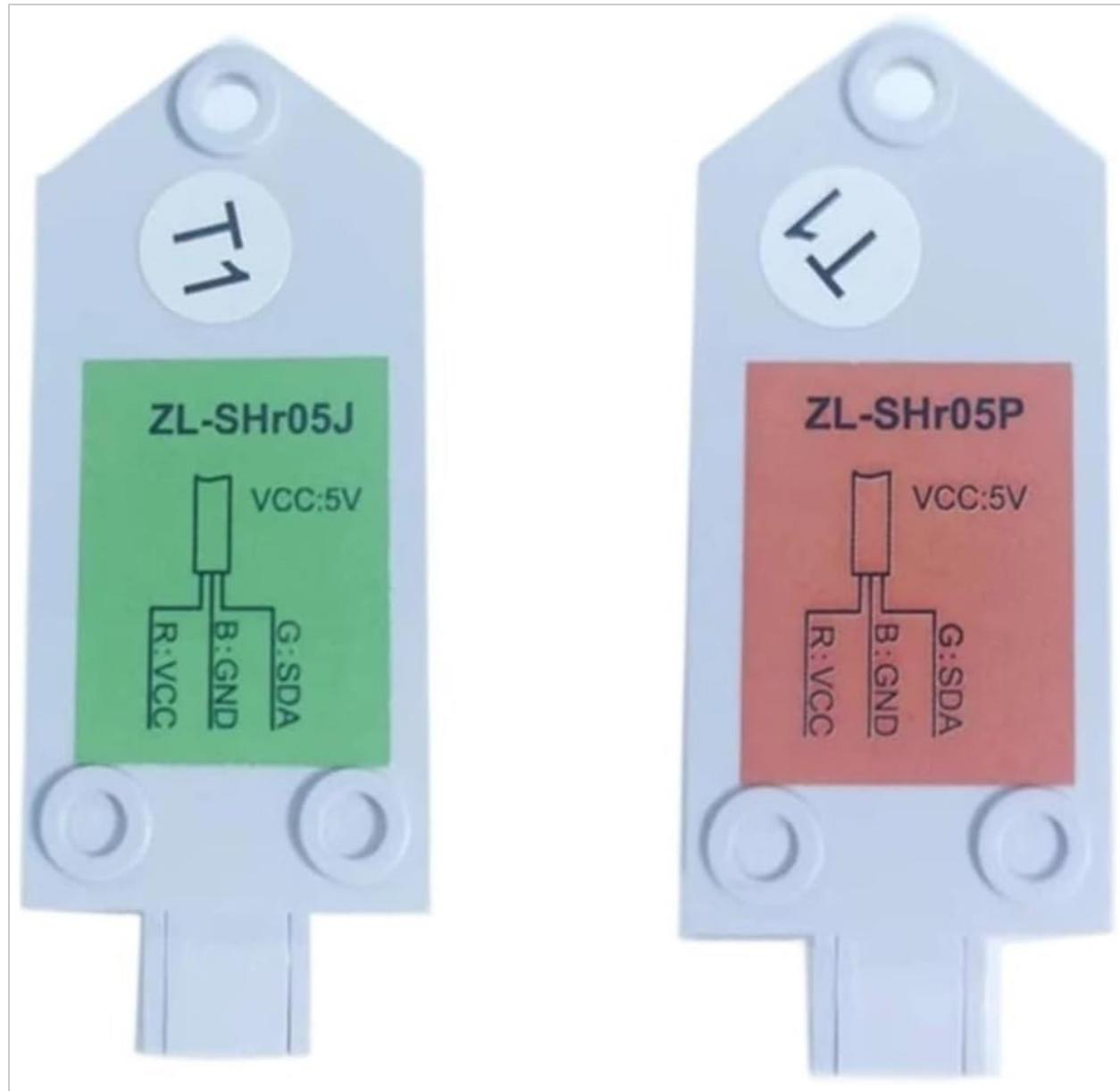


Figure 4.3: Comparison of ZL-SHr05J (green label) and ZL-SHr05P (red label) sensors. The ZL-SHr05J is included with this model and features VCC (5V), GND, and SDA connections.

5. OPERATION

The ZL-7903A controller features a user-friendly interface with dedicated buttons for various functions:

- **Power Button:** Turns the unit on or off.
- **Set Button:** Enters parameter setting mode.
- **Up/Down Arrows:** Adjusts values or navigates menus.
- **Fn (Function) Button:** Accesses additional functions or confirms selections.

Detailed programming instructions for setting temperature, humidity, egg-turning intervals, ventilation cycles, and alarm thresholds are provided in the full user manual (not included here). Consult the manufacturer's comprehensive guide for specific parameter adjustments.

6. MAINTENANCE

To ensure the longevity and accuracy of your ZL-7903A controller:

- **Cleaning:** Wipe the display and casing with a soft, dry cloth. Avoid abrasive cleaners or solvents.
- **Sensor Care:** Keep the temperature and humidity sensor clean and free from dust or debris. Do not immerse the sensor in liquids.
- **Environmental Conditions:** Operate the controller within its specified environmental limits (temperature, humidity) to prevent damage.

7. TROUBLESHOOTING

If you encounter issues with your ZL-7903A controller, consider the following common troubleshooting steps:

- **No Power:** Check the power supply connection and ensure the unit is properly plugged into a 100-240Vac source.
- **Incorrect Readings:** Verify that the ZL-SHr05J sensor is correctly connected and free from obstructions or damage.
- **Outputs Not Activating:** Check wiring for heaters, fans, and motors. Ensure set points are correctly configured and not in an alarm state.
- **Display Errors:** Refer to the full user manual for specific error codes and their meanings.

For persistent issues, contact customer support or a qualified technician.

8. WARRANTY AND SUPPORT

Warranty information for the Lilytech ZL-7903A controller is typically provided by the seller or manufacturer at the time of purchase. Please retain your proof of purchase for warranty claims.

For technical support, product inquiries, or to obtain a complete version of the user manual, please contact the manufacturer or your authorized distributor.