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- › [Lilytech](#) /
- › [Lilytech ZL-6210A+ 30A Temperature Controller User Manual](#)

Lilytech ZL-6210A+

Lilytech ZL-6210A+ 30A Temperature Controller User Manual

Model: ZL-6210A+

1. INTRODUCTION

The Lilytech ZL-6210A+ is a high-performance temperature controller designed for precise temperature management. Featuring a robust 30A relay output, it is suitable for a wide range of heating or cooling applications. This manual provides essential information for the safe installation, operation, and maintenance of your ZL-6210A+ controller.



Figure 1: Front view of the ZL-6210A+ Temperature Controller, showing the display and control buttons.

2. SAFETY INFORMATION

Please read all safety instructions carefully before installation and operation. Failure to follow these instructions may result in electric shock, fire, or damage to the device.

- **Electrical Hazard:** This device operates with high voltage (185-245Vac). Installation should only be performed by qualified personnel.
- **Disconnect Power:** Always disconnect power to the circuit before performing any wiring or maintenance.
- **Proper Grounding:** Ensure the device is properly grounded according to local electrical codes.
- **Environmental Conditions:** Do not expose the controller to excessive moisture, dust, or corrosive environments beyond its specified working conditions.
- **Load Capacity:** Do not exceed the maximum current rating of the relay (30A for R1, 5A for R2).

3. SPECIFICATIONS

Parameter	Value
Power Supply	185 ~ 245Vac, 50/60Hz
Sensor Type	NTC (2 meters long)
Output Relay R1	30A / 250Vac (resistive load)

Parameter	Value
Output Relay R2	5A / 250Vac (resistive load)
Setting Range	-40 ~ 120°C
Display Range	-40 ~ 130°C
Working Environment	-10 ~ 45°C, 5 ~ 90%RH (non-condensing)
Dimensions (W x H x D)	78 x 34.5 x 71 mm
Installation Drilling (W x H)	71 x 29 mm
Case Materials	PC + ABS fire proof
Protection Level	IP65 (Front side only)
Item Weight	1.76 ounces (approx. 50g)

NTC Sensor Selection

The ZL-6210A+ uses NTC sensors. Different sensor types are available, varying in seal material, wire length, resistance, and B-value. Ensure the correct sensor type is used for your application.

<i>NTC Sensor Selection</i>			
Sensor Photo			
Seal	Metal (copper nickle coated)	TPE	Water (long life in water)
Wire Length	2.5 meters	2 meters	5 meters
Resistance (ohm)	5.00K at 25°C 3%	5.00K at 25°C 2%	5.00K at 25°C 3%
B	3470K 2% (25°C/50°C)	3470K 1% (25°C/50°C)	3470K 2% (25°C/50°C)

Figure 2: NTC Sensor Selection table, detailing specifications for Metal, TPE, and Water sealed sensors.

4. INSTALLATION

4.1 Mounting

The ZL-6210A+ is designed for panel mounting. Create an opening in your panel with the dimensions of 71 mm (width) x 29 mm (height). Insert the controller into the opening and secure it using the provided clips.

4.2 Wiring

Refer to the wiring diagrams below for proper connection. Ensure all connections are secure and comply with local electrical codes. The main power input is 185-245Vac. The primary temperature output (R1) is rated for 30A.

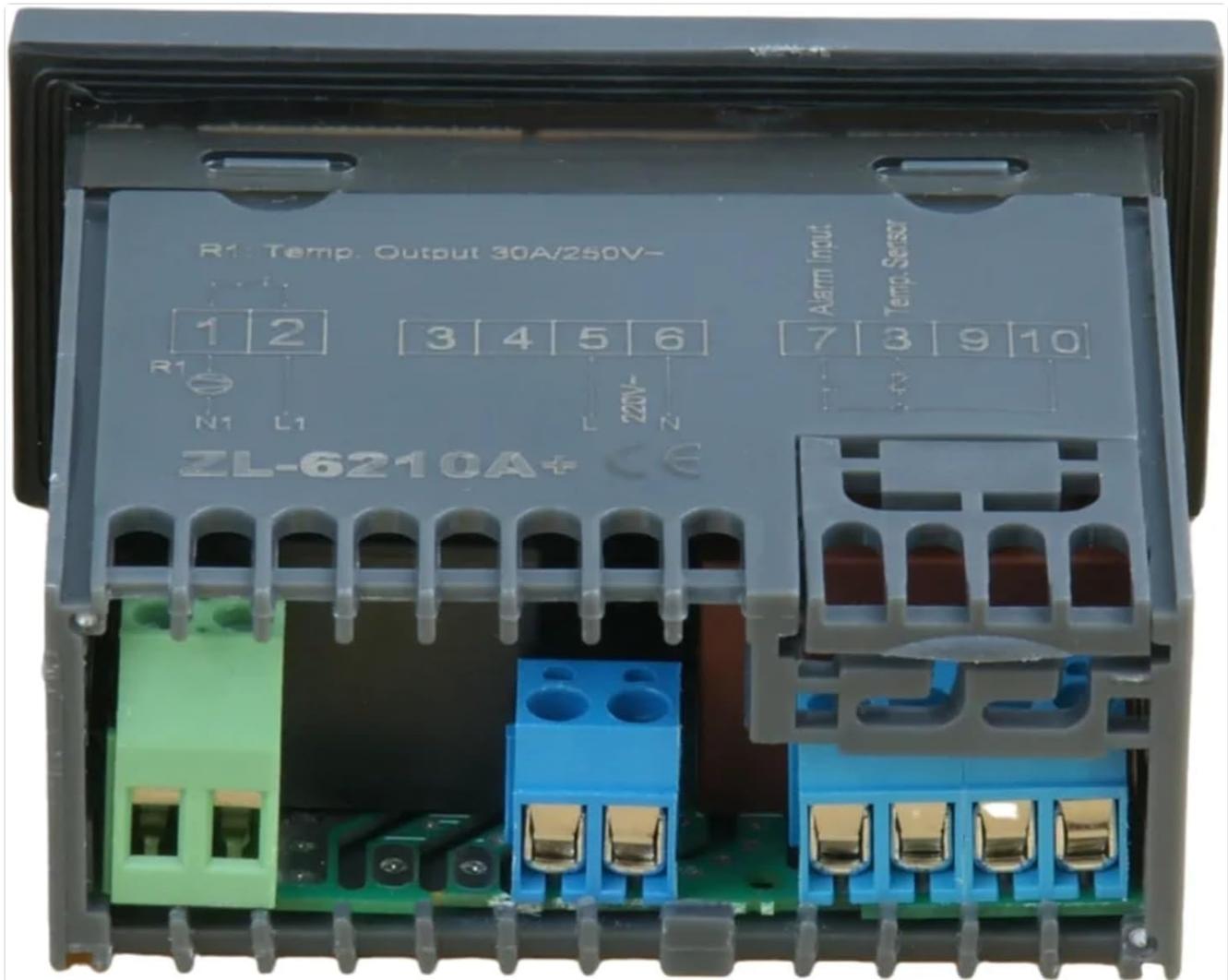


Figure 3: Rear view of the ZL-6210A+ showing the terminal block layout. Terminals 1-2 are for R1 Temp. Output, 3-6 for 220V~ power (L, N), and 7-10 for Alarm Input and Temp. Sensor.

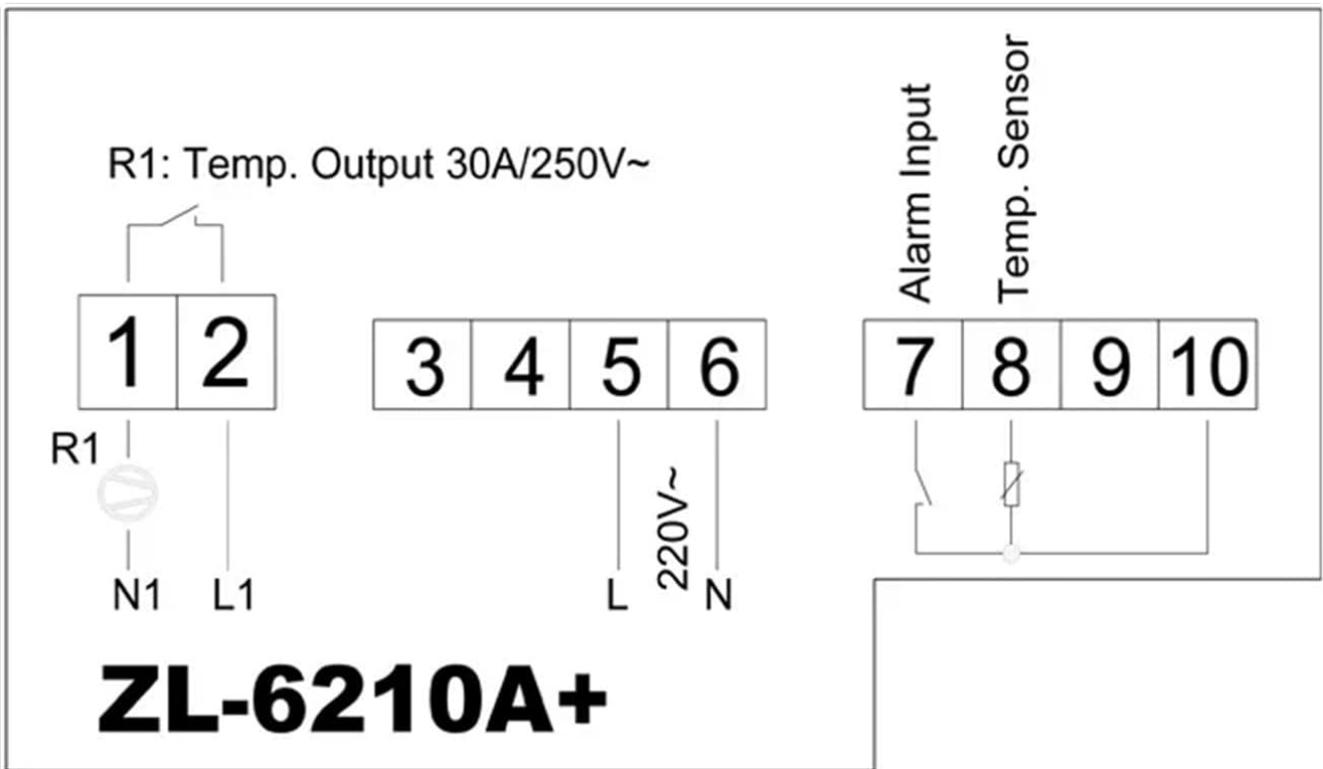


Figure 4: Simplified wiring diagram. Connect power to terminals 5 (L) and 6 (N). Connect the temperature sensor to terminals 9 and 10. The main relay output (R1) is connected to terminals 1 and 2. An alarm input can be connected to terminals 7 and 8.

Terminal Connections:

- 1, 2: R1 Temperature Output (30A / 250V~)
- 3, 4: (Not explicitly labeled in diagram, often for auxiliary functions or R2 if present)
- 5 (L), 6 (N): Power Supply Input (220V~)
- 7, 8: Alarm Input
- 9, 10: Temperature Sensor Input (NTC)

5. OPERATION

The ZL-6210A+ features a digital display and control buttons for setting parameters. Specific operational details, including setting the desired temperature, hysteresis, and alarm functions, are typically accessed via a menu system. Refer to the detailed manual available from the manufacturer for complete programming instructions.

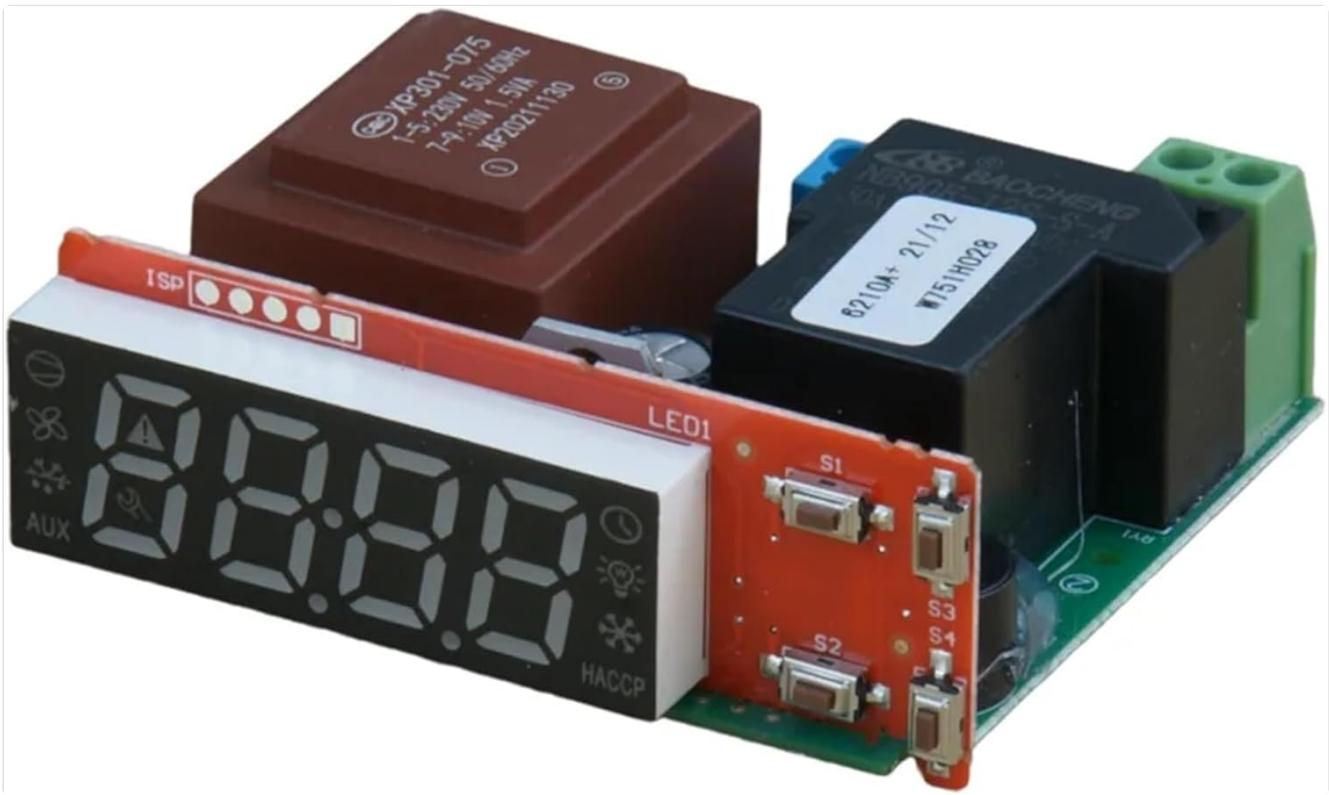


Figure 5: Internal view showing the digital display and buttons (S1, S2, S3, S4) used for parameter setting and navigation.

Basic Functions:

- **Temperature Display:** Shows the current measured temperature.
- **Set Point Adjustment:** Allows users to set the desired target temperature.
- **Mode Selection:** Typically allows selection between heating and cooling modes.
- **Alarm Settings:** Configures high/low temperature alarms.

6. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your temperature controller.

- **Cleaning:** Clean the front panel with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure no liquid enters the device.
- **Environmental Check:** Periodically inspect the installation environment to ensure it remains within the specified temperature and humidity ranges.
- **Wiring Inspection:** Check all wiring connections periodically for tightness and signs of wear or corrosion.
- **Sensor Condition:** Ensure the temperature sensor is clean and free from damage.

7. TROUBLESHOOTING

If you encounter issues with your ZL-6210A+, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Controller does not power on	No power supply; Incorrect wiring; Blown fuse	Check power connections; Verify wiring against diagram; Check for internal fuse (if accessible, consult professional)

Problem	Possible Cause	Solution
Incorrect temperature reading	Faulty sensor; Sensor not connected properly; Sensor placed incorrectly	Check sensor wiring; Replace sensor if damaged; Relocate sensor to a representative area
Output relay (R1) not switching	Temperature not within set range; Incorrect parameter settings; Faulty relay	Verify set point and hysteresis; Check operating mode (heating/cooling); Consult professional for relay replacement
Display shows error code	Sensor error; Internal fault	Refer to the full manufacturer's manual for specific error code meanings and solutions.

8. WARRANTY AND SUPPORT

For warranty information, please refer to the terms provided by your retailer or the manufacturer at the time of purchase. For detailed technical support, additional documentation, or specific programming instructions, please visit the official Lilytech website or contact their customer service.

A comprehensive manual can be found at: [www.suzhoulily.com/pdf/ZL-62x0A\(plus\)_en_2.0d.pdf](http://www.suzhoulily.com/pdf/ZL-62x0A(plus)_en_2.0d.pdf)