

## Greluma STC-3008

# Greluma STC-3008 Digital Temperature Controller User Manual

Model: STC-3008

## 1. INTRODUCTION

The Greluma STC-3008 is a versatile digital temperature controller designed for precise temperature regulation in various applications. It features a dual display for simultaneous monitoring of two temperatures, dual NTC probe sensors for accuracy, and supports both heating and cooling modes. This manual provides detailed instructions for the safe and effective use of your STC-3008 controller.



Figure 1: Front view of the Greluma STC-3008 Digital Temperature Controller, showing its dual digital displays and two NTC probe sensors.

## 2. SAFETY INFORMATION

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**WARNING: Electrical shock hazard. Installation and wiring should only be performed by qualified personnel. Disconnect power before installation or maintenance.**

- Ensure the power supply voltage matches the controller's requirements (AC 110V-220V).
- Strictly distinguish between relay, sensor, and power interfaces during wiring.
- Maintain proper distance between sensor down-lead and power wires to prevent interference.
- Do not operate the device in environments with excessive moisture, dust, or corrosive gases.
- The ABS flame-retardant plastic shell provides safety, but proper ventilation should still be ensured.

## 3. PRODUCT OVERVIEW

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### 3.1 Key Features

- Dual screen dual digital display for clear temperature readings.
- Dual NTC probes for accurate temperature measurement (accuracy:  $\pm 1^\circ\text{C}$  from  $-50^\circ\text{C}$  to  $70^\circ\text{C}$ ).
- Adjustable dual temperature control for independent heating/cooling outputs.
- Automatic switching between heating and cooling modes.
- Programmable start/stop temperatures and delayed start function.
- Low/high temperature alarm for enhanced safety.
- Durable ABS flame-retardant plastic shell.

## Features



Figure 2: The STC-3008 controller highlighting its microcomputer control and icons representing cooling, heating, alarm, sensor type, and temperature calibration functions.

### 3.2 Component Identification

# Product Details



Figure 3: Detailed view of the STC-3008, illustrating key components such as precision components, sealed terminal blocks, anti-breakdown capacitors, clear digital displays, and durable control buttons.

The STC-3008 features a robust design with high-quality internal components for reliable performance. External features include:

- **Dual Digital Displays:** Two separate displays show measured temperatures for each channel.
- **Control Buttons:** Up and Down arrows for each channel (NO.1 and NO.2) for setting parameters.
- **NTC Probe Sensors:** Two external NTC sensors for accurate temperature detection.
- **Terminal Blocks:** Secure screw terminals for power input and load outputs.

# Structure Function

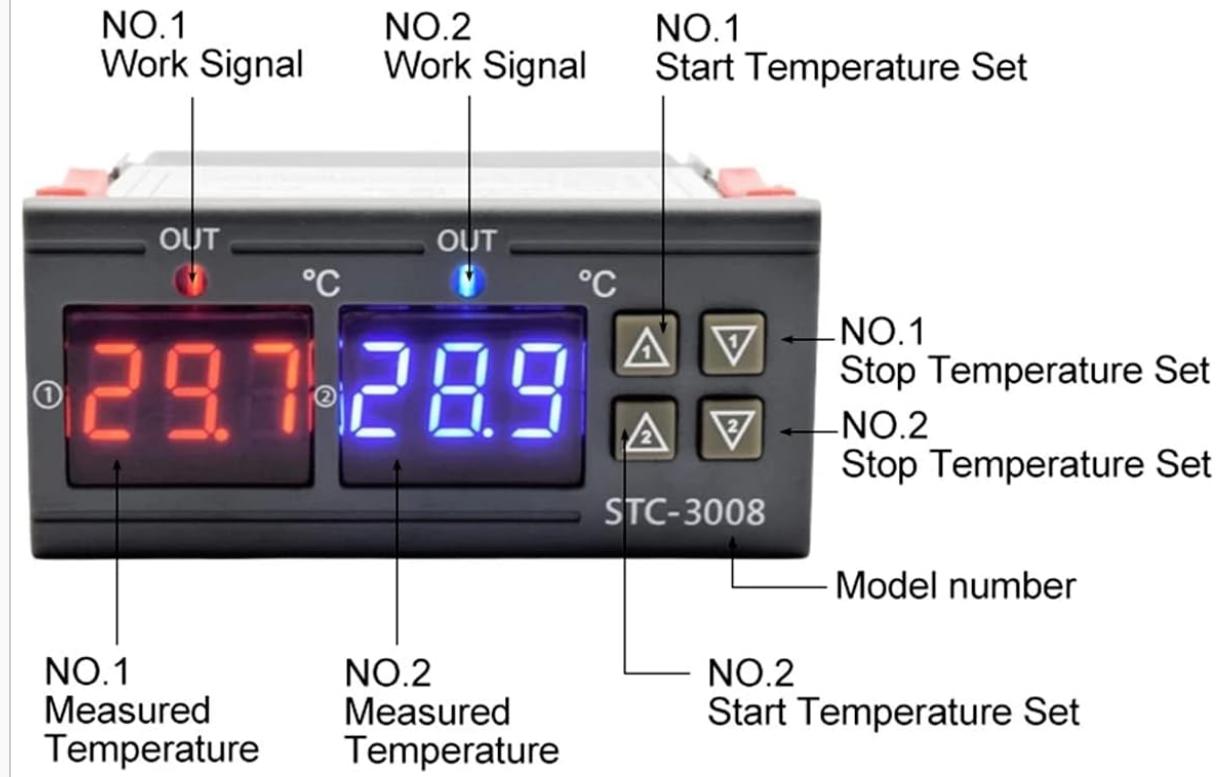


Figure 4: Diagram showing the functional structure of the STC-3008, labeling NO.1 and NO.2 measured temperatures, work signals, start/stop temperature set points, and the model number.

## 4. SPECIFICATIONS

Parameter	Value
Model	STC-3008
Power Supply	AC 110V-220V
Output Relay Contact Capacity	10A max
Temperature Control Range	-55°C to 100°C
Measurement Accuracy	±0.1°C
Temperature Control Accuracy	±1°C
Sensor Type	NTC Probe (10K/3435)
Probe Length	1 meter (approx. 3.28 feet)
Shell Material	ABS Flame Retardant Plastic
Dimensions (L x W x H)	Approx. 86mm x 75mm x 35mm (3.39" x 2.95" x 1.38")
Mounting Hole Size	Approx. 70mm x 27mm (2.76" x 1.06")

Parameter	Value
Item Weight	0.11 Kilograms

# Dimension



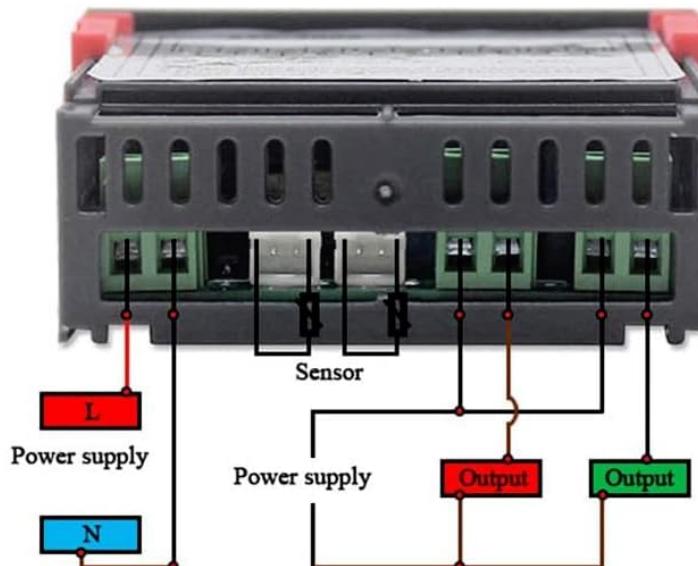
Figure 5: Dimensional drawing of the STC-3008 controller, showing its length, width, height, and probe dimensions for installation planning.

## 5. INSTALLATION AND WIRING

Proper wiring is critical for the safe and correct operation of the STC-3008. Refer to the diagrams below and ensure all connections are secure.

### 5.1 Wiring Diagram 1: Independent Power Supply for Load

## Connection 1:Independent power supply for load



## Connection 2:Same power supply for load

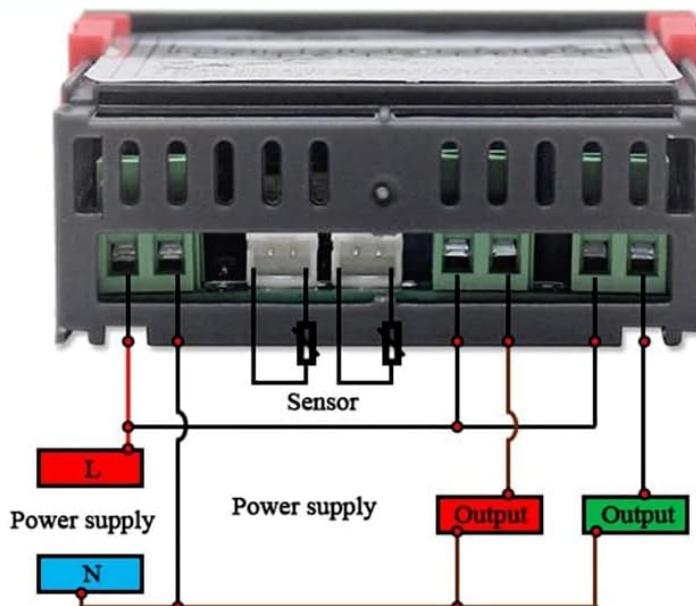


Figure 6: Wiring diagram for connecting the STC-3008 where the load (heating/cooling device) has its own independent power supply. This configuration isolates the controller's power from the load's power.

In this configuration, the controller's power supply is separate from the power supply for the connected heating or cooling load. This is suitable for applications where the load requires a different voltage or current than the controller's input.

### 5.2 Wiring Diagram 2: Same Power Supply for Load

# Applications



Figure 7: Wiring diagram for connecting the STC-3008 where the load shares the same power supply as the controller. This is a common setup for devices operating on the same voltage.

This diagram illustrates connecting the STC-3008 where both the controller and the heating/cooling load share a common power source. Ensure the total current draw does not exceed the controller's relay capacity (10A max).

## 5.3 General Wiring Notes

- Connect the NTC probes to the designated sensor terminals.
- Ensure all wire connections are tight and secure to prevent loose contacts and potential hazards.
- Verify correct polarity for power connections.
- Mount the controller in a location that is protected from moisture and excessive heat.

## 6. OPERATING INSTRUCTIONS

The STC-3008 allows for independent control of two temperature channels. Each channel (NO.1 and NO.2) has its own set of parameters.

### 6.1 Setting Start and Stop Temperatures

To set the desired temperature range for each channel:

- Power On:** Ensure the controller is powered on. The current measured temperatures will be displayed.
- Enter Setting Mode:** Press and hold the 'Up' button for NO.1 (or NO.2) for approximately 3 seconds until the display starts flashing. This is the Start Temperature setting.
- Adjust Start Temperature:** Use the 'Up' or 'Down' buttons for that channel to adjust the desired start temperature.
- Set Stop Temperature:** Press and hold the 'Down' button for NO.1 (or NO.2) for approximately 3 seconds until the display starts flashing. This is the Stop Temperature setting.
- Adjust Stop Temperature:** Use the 'Up' or 'Down' buttons for that channel to adjust the desired stop temperature.
- Save Settings:** The settings will automatically save after a few seconds of inactivity, or you can briefly press the 'Power' button (if available, otherwise wait for auto-save).

**Note:** For heating mode, the Start Temperature should be lower than the Stop Temperature. For cooling mode, the Start Temperature should be higher than the Stop Temperature.

## 6.2 Delayed Start Time (Compressor Protection)

This function protects refrigerating equipment by delaying the compressor start after power-on or a short cycle. The setting procedure is similar to temperature settings, typically accessed by holding a specific button combination or cycling through parameters.

- Consult the specific parameter codes (P-codes) usually printed on a label on the device or included in a quick-start guide for advanced settings like delayed start time or temperature calibration.
- A common method involves holding a 'Set' button (if present) and then using 'Up'/'Down' to navigate through P-codes (e.g., P0, P1, P2...).

## 6.3 Temperature Calibration

If the measured temperature deviates from a known accurate reference, you can calibrate the sensor. This is typically done via a parameter setting (e.g., P4 or P5) where you can add or subtract an offset value.

## 7. MAINTENANCE

- Cleaning:** Regularly wipe the controller's surface with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- Probe Care:** Ensure the NTC probes are clean and free from debris that could affect temperature readings. Avoid bending or damaging the probe cables.
- Connections:** Periodically check wiring connections to ensure they remain tight and secure.
- Environment:** Keep the controller in a dry, well-ventilated area, away from direct sunlight and extreme temperatures.

## 8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Display not working	No power, loose wiring, internal fault	Check power supply. Verify all wiring connections. If problem persists, contact support.

Problem	Possible Cause	Solution
Temperature reading inaccurate	Sensor fault, incorrect calibration, probe not properly placed	Check sensor connection. Calibrate temperature if necessary. Ensure probe is in the correct measurement environment.
Controller not switching load	Incorrect temperature settings, faulty relay, load wiring issue	Verify Start/Stop temperature settings. Check load wiring. Test load independently.
Display shows 'LLL' or 'HHH'	Sensor open circuit (LLL) or short circuit/over-range (HHH)	Check sensor connection. Replace sensor if damaged.

## 9. WARRANTY AND SUPPORT

Warranty information for the Greluma STC-3008 Digital Temperature Controller is typically provided at the point of purchase or can be found on the manufacturer's official website. For technical support, troubleshooting assistance, or warranty claims, please refer to the contact information provided with your product packaging or visit the Greluma official support channels.