

STC-3028 Temperature and Humidity Controller User Manual

Model: STC-3028 | Brand: Shutao

Product Overview

The STC-3028 is a microcomputer intelligent digital display thermostat designed for precise temperature and humidity control. It features a dual digital display, showing both measured and set temperature/humidity simultaneously. This controller is capable of connecting to refrigeration/heating and humidifier/dehumidifier equipment, making it suitable for applications like incubators, greenhouses, and other environmental control systems.



Figure 1: STC-3028 Temperature and Humidity Controller with its integrated sensor. The main unit features a dual digital display for temperature (red) and humidity (blue), along with control buttons. The integrated sensor is connected via a cable.

Specifications

Parameter	Value
Input Voltage	AC 110~220V
Measuring Temperature Range	-50°C ~ +110°C
Measuring Humidity Range	00%RH ~ +100%RH
Temperature Accuracy	±1°C
Humidity Accuracy	±0.1%RH
Relay Output Contact Capacity	10A/240VAC
Display Type	LCD
Material	Plastic
Item Weight	4.6 ounces
Package Dimensions	4.33 x 3.5 x 2.28 inches

Setup and Wiring

Proper wiring is crucial for the safe and correct operation of the STC-3028 controller. Refer to the wiring diagram on the back of the unit and the instructions below.

Wiring Diagram Interpretation

- **Power Supply (110-220VAC):** Connect the main power input to the designated terminals. Ensure the correct voltage (110-220VAC) is used as indicated on the unit.

- **Humidity Sensor:** Connect the integrated humidity sensor to its dedicated terminals.
- **Relay Outputs (OUT):** The unit has two relay outputs, typically for heating/cooling and humidifying/dehumidifying. Connect your controlled devices (e.g., heater, fan, humidifier) to these output terminals. Each output has a contact capacity of 10A/240VAC.
- **Important Note:** Strictly distinguish the connections for the sensor, power supply, and relay outputs. Maintain a proper distance between the sensor down-lead and power wires to prevent interference.

Operating Instructions

Setting Startup Temperature (Humidity)

1. Press the "up" button once to display the current starting temperature or humidity setting.
2. Long press the "up" button for approximately 3 seconds until the displayed value flashes.
3. Use the "up" and "down" arrow keys to adjust the desired starting temperature or humidity value.
4. The setting will automatically save after a few seconds of inactivity or by pressing another button.

Setting Stop Temperature (Humidity)

1. Press the "down" button once to display the current stop temperature or humidity setting.
2. Long press the "down" button for approximately 3 seconds until the displayed value flashes.
3. Use the "up" and "down" arrow keys to adjust the desired stop temperature or humidity value.
4. The setting will automatically save after a few seconds of inactivity or by pressing another button.

Temperature and Humidity Correction (Calibration)

- To enter the calibration mode, press the "up" and "down" buttons simultaneously.
- Follow the on-screen prompts to adjust the temperature and humidity readings if they deviate from a known accurate reference.

The controller allows for separate heating/cooling and humidifying/dehumidifying functions, providing robust protection against violent environmental changes.

Maintenance

- **Cleaning:** Regularly wipe the unit with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Sensor Care:** Keep the integrated sensor clean and free from dust or debris to ensure accurate readings. Avoid exposing the sensor to extreme moisture or physical damage.
- **Ventilation:** Ensure the controller's vents are not obstructed to allow for proper heat dissipation.
- **Connections:** Periodically check all wiring connections to ensure they are secure and free from corrosion.

Troubleshooting

Common Issues and Solutions

- **Display Not Lighting Up:** Check the power supply connection. Ensure the input voltage is within the specified range (110-220V AC).
- **Inaccurate Readings:** Verify the sensor is clean and properly connected. Perform a temperature and humidity calibration if necessary. Ensure the sensor is not placed in an area with extreme air currents or direct heat/cold sources that do not represent the overall environment.
- **Controller Not Activating Devices:** Check the relay output connections to your heating/cooling or humidifying/dehumidifying devices. Ensure the set parameters (startup/stop temperatures/humidity) are configured correctly for your desired operation. Verify the devices themselves are functional.
- **Humidity Reading Stuck at 100%:** This could indicate a sensor issue or extreme environmental conditions. Ensure the sensor is dry and not exposed to condensation. If the issue persists, the sensor may need replacement.

Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact Shutao customer service through their official channels. Keep your purchase receipt as proof of purchase.