Walfront STC-200

Walfront Digital Temperature Controller STC-200 Instruction Manual
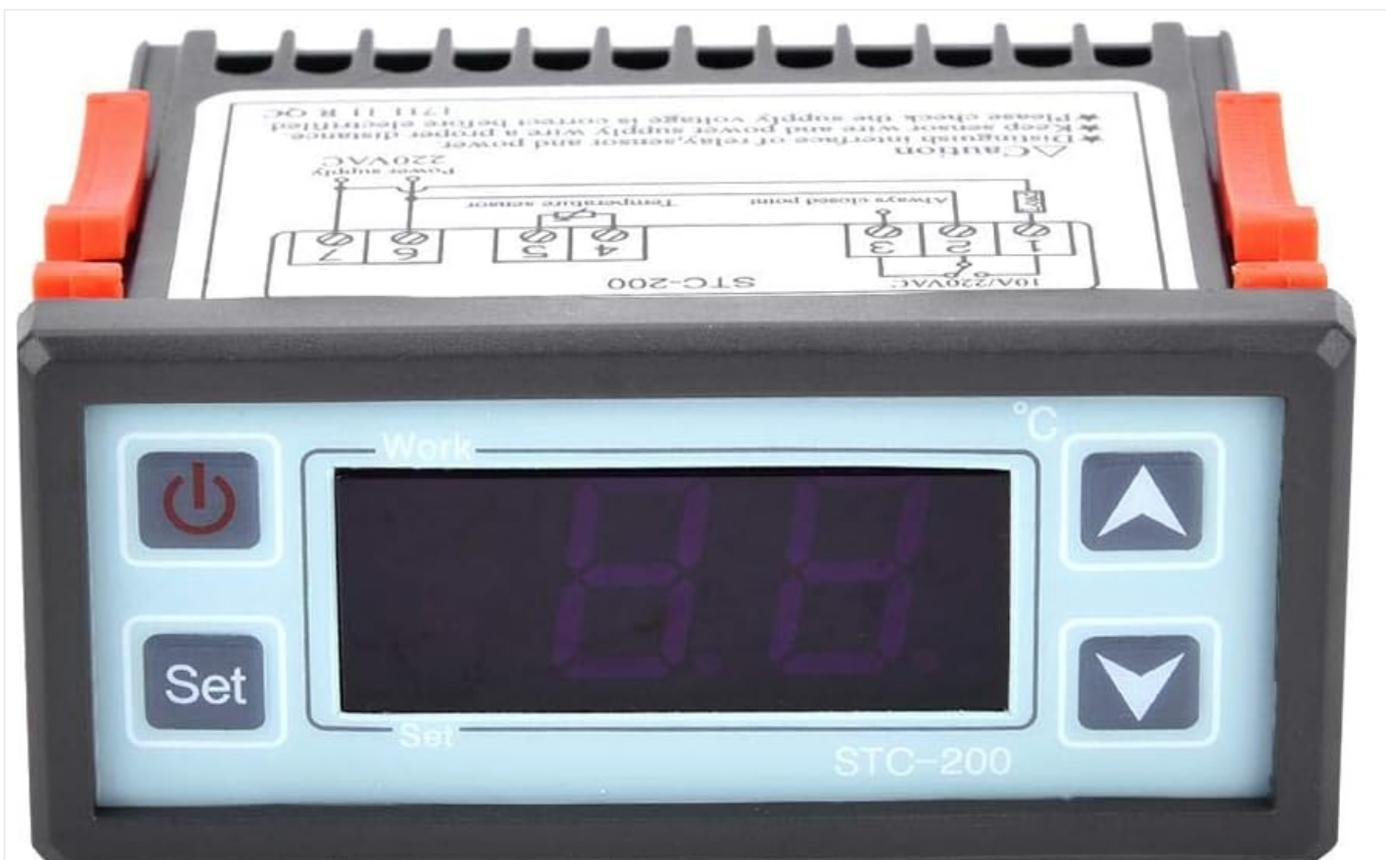
Model: STC-200

1. INTRODUCTION AND OVERVIEW

The Walfront Digital Temperature Controller STC-200 is a versatile microcomputer-controlled thermostat designed for precise temperature management in various applications. It supports both refrigeration and heating modes, making it suitable for homebrewing, fermenters, fridges, seafood machines, water heaters, and other equipment requiring accurate temperature regulation. This manual provides essential information for the safe and effective operation of your STC-200 controller.

2. PRODUCT FEATURES

- **Programmable Parameters:** User and administrator parameters are set separately for convenient operation.
- **Compressor Delay Protection:** Features adjustable compressor delay to protect connected equipment.
- **Digital Temperature Control Alarm:** Includes alarm output for temperature deviations.
- **Clear Digital Display:** Utilizes a digital tube display for clear and fast data reading.
- **Refrigeration & Heating Modes:** Equipped with mode conversion functions for cooling and heating.
- **Fault Alarm:** Alerts users to sensor failures.
- **Temperature Correction:** Allows for calibration of temperature readings.

It is equipped with refrigeration, heating, alarm output mode conversion function. User parameters and administrator parameters were set respectively, which is convenient for ordinary users to operate.

Figure 2.1: Front view of the STC-200 Digital Temperature Controller, showing the digital display, 'Set' button, power button, and up/down arrows. The display shows "8.8." indicating its digital tube nature. Text overlay highlights key features like refrigeration/heating modes and user-friendly parameter settings.

3. TECHNICAL SPECIFICATIONS

Parameter	Value
Condition	Brand New
Material	ABS (Acrylonitrile Butadiene Styrene)
Mounting Hole Size	Approx. 70.5 x 28.5 mm / 2.8 x 1.1 in
Operating Environment Temperature	-30 °C ~ 80 °C
Relative Humidity	No more than 85% (non-condensable)
Power Supply Voltage	220VAC ± 10%

Parameter	Value
Power Consumption	Less than 5W
Temperature Range	-40 °C ~ 99 °C
Temperature Control Range	-40 °C ~ 70 °C
Resolution	1 °C
Relay Capacity	10A/250VAC/30VDC
Net Weight	Approx. 161g / 5.7oz

Figure 3.1: Side view of the STC-200 Digital Temperature Controller illustrating its dimensions: approximately 70.5mm (2.8 inches) in

4. SETUP AND INSTALLATION

4.1 Mounting

The STC-200 is designed for panel mounting. Ensure the mounting hole dimensions (70.5 x 28.5 mm) are accurately cut. Secure the controller using the integrated clips on the sides.

Figure 4.1: Side view of the STC-200 controller, highlighting the orange mounting clips that secure the unit into a panel cutout.

4.2 Wiring Diagram and Connections

Caution: This unit operates on 220VAC. Ensure all wiring is performed by a qualified professional and that the power supply is disconnected before making any connections. Distinguish the interface of the relay, sensor, and power supply wires. Keep sensor

wires and power supply wires at a proper distance to avoid interference.

- **Terminals 1, 2, 3:** Load connection (10A/220VAC/30VDC).
- **Terminals 4, 5:** Temperature sensor connection.
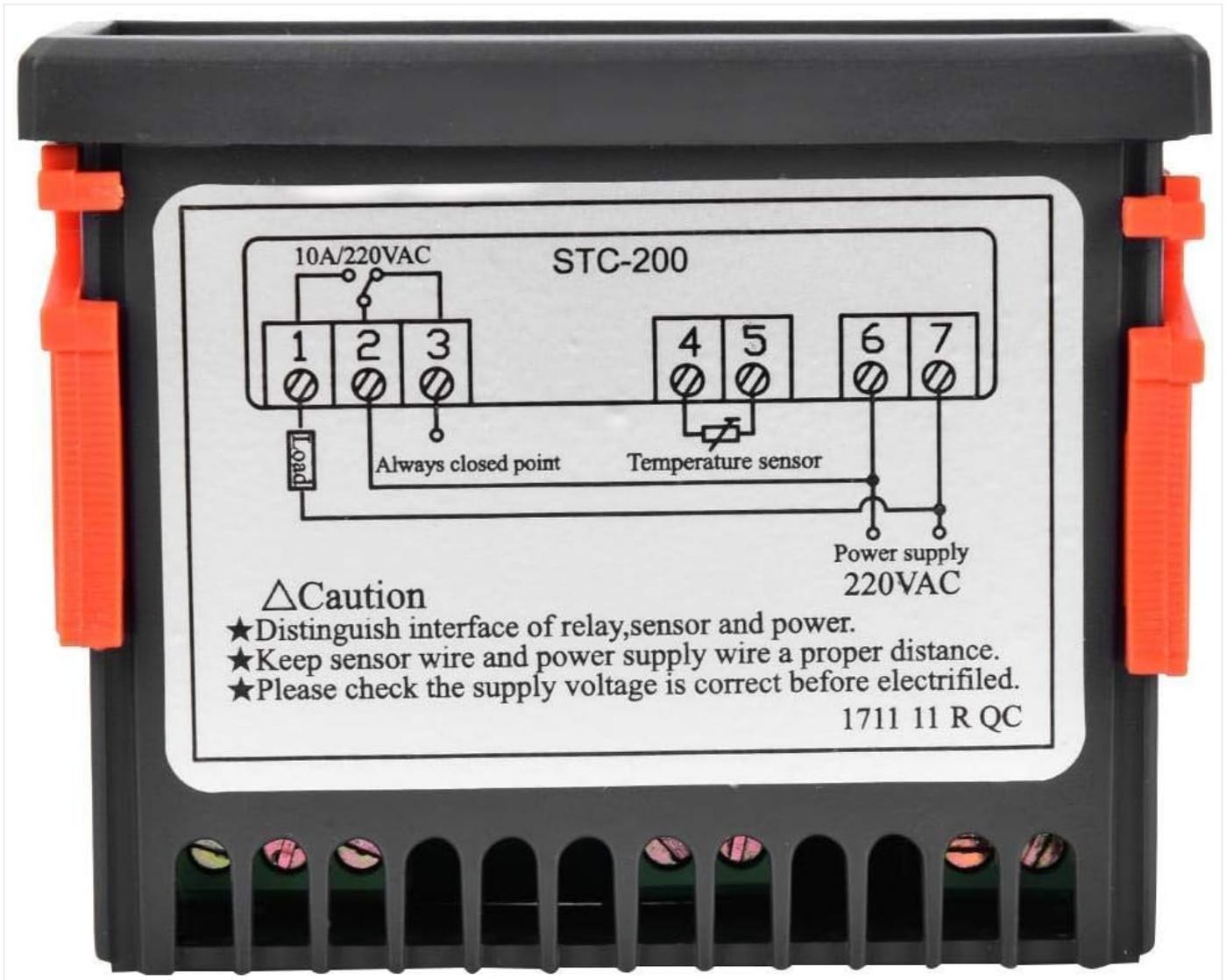- **Terminals 6, 7:** 220VAC Power Supply.

Figure 4.2: Rear view of the STC-200 controller, displaying the wiring diagram. It clearly labels terminals for load (1, 2, 3), temperature sensor (4, 5), and 220VAC power supply (6, 7). A caution note emphasizes proper wiring and voltage verification.
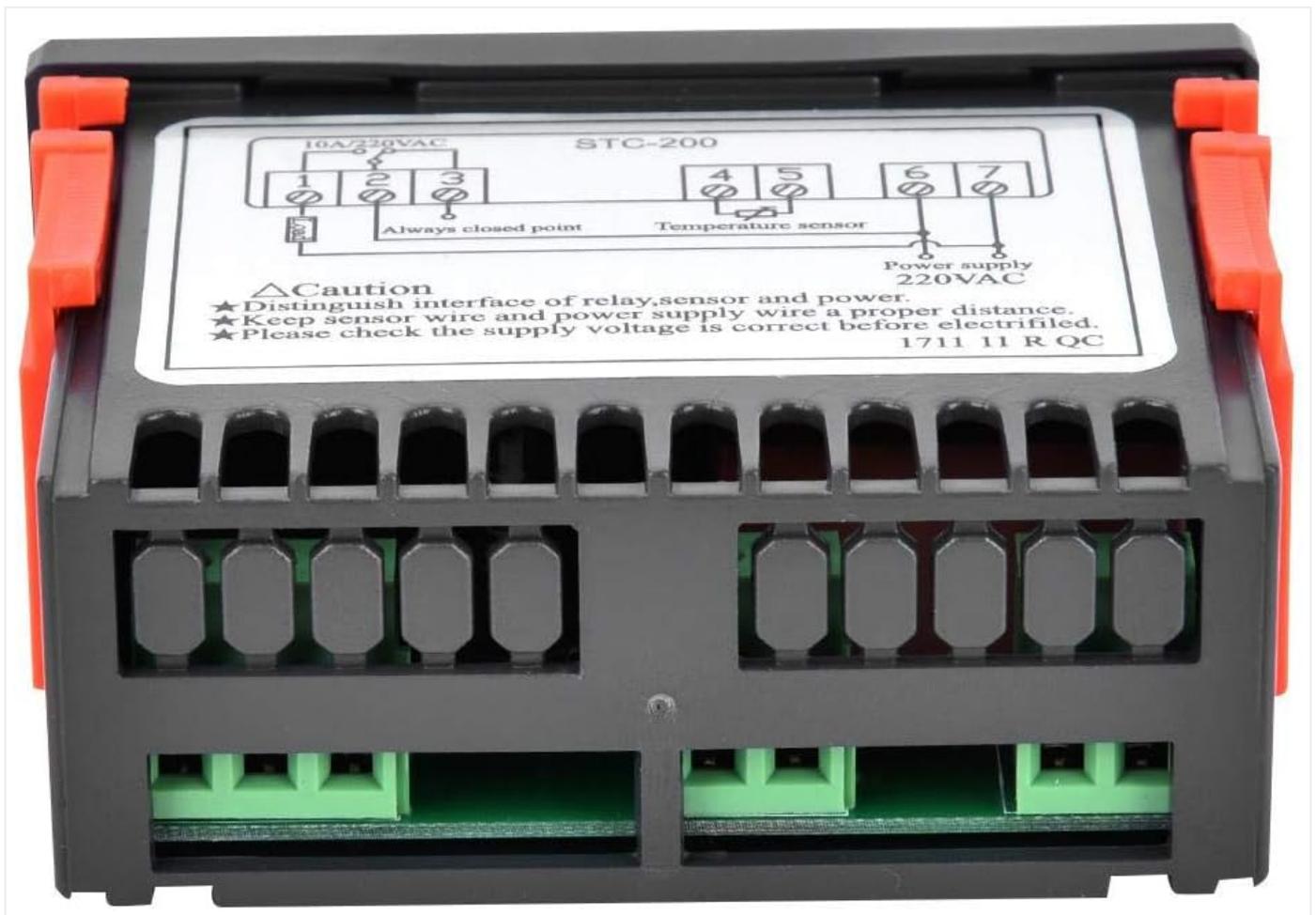
Figure 4.3: Close-up view of the rear terminal blocks on the STC-200 controller, showing the seven screw terminals for electrical connections.

5. OPERATING INSTRUCTIONS

5.1 Basic Operation

- **Power On/Off:** Press the power button ( ) to turn the unit on or off.
- **View Current Temperature:** The main display shows the current measured temperature.
- **Set Temperature:** Press the 'Set' button to enter temperature setting mode. Use the Up (▲) and Down (▼) buttons to adjust the desired temperature. Press 'Set' again to confirm and exit.

5.2 Parameter Settings (F-Codes)

To access advanced parameters (F-codes), press and hold the 'Set' button for approximately 3 seconds until 'F0' appears. Use the Up (▲) and Down (▼) buttons to navigate through the F-codes (F0, F1, F2, F3, F4, F5). Press 'Set' to view or modify the value of a selected F-code. Press 'Set' again to save changes and move to the next parameter, or press the power button to exit without saving.

- **F0:** Temperature Control Mode (0=Refrigeration, 1=Heating)
- **F1:** Temperature Hysteresis (Differential)
- **F2:** High Temperature Alarm Limit
- **F3:** Low Temperature Alarm Limit
- **F4:** Compressor Delay Time (in minutes)
- **F5:** Temperature Correction Value

5.3 Visual Guide: Setting Parameters

Video 5.1: This video demonstrates how to access and adjust the F-code parameters on the Walfront STC-200 Digital Temperature Controller. It shows the sequence of button presses to enter the setting menu, navigate through F0 to F5, and modify their values, such as setting the temperature control mode or compressor delay.

6. MAINTENANCE

- **Cleaning:** Regularly wipe the unit with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Sensor Care:** Ensure the temperature sensor is clean and free from debris. Avoid bending or damaging the sensor cable.
- **Environmental Conditions:** Operate the controller within the specified environmental temperature and humidity ranges to ensure longevity.

7. TROUBLESHOOTING

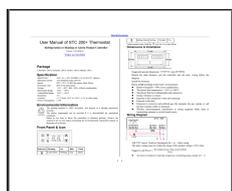| Problem	Possible Cause	Solution
Display is blank	No power supply; Incorrect wiring; Unit failure.	Check power connection (220VAC). Verify wiring according to diagram. If problem persists, contact support.
"E1" or "HHH" error on display	Sensor fault (open circuit, short circuit); Temperature exceeds range.	Check sensor connection and integrity. Ensure operating temperature is within -40°C to 99°C. Replace sensor if damaged.
Temperature reading is inaccurate	Sensor placement; Need for calibration.	Relocate sensor to a more representative area. Use F5 parameter to apply temperature correction.
Controller not switching load	Incorrect temperature setting; Relay failure; Load wiring issue.	Verify set temperature and hysteresis. Check load wiring (Terminals 1, 2, 3). Ensure F0 mode is correctly set (Refrigeration/Heating).

8. WARRANTY AND SUPPORT

Walfront products are manufactured to high quality standards. For warranty information, technical support, or service inquiries, please refer to the contact details provided with your purchase or visit the official Walfront website. Please retain your proof of purchase for warranty claims.
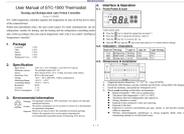
For further assistance, you may visit the Walfront Store on Amazon: Walfront Store

Related Documents - STC-200

STC-200+ Thermostat User Manual: Refrigeration, Heating, and Alarm Control
Comprehensive user manual for the STC-200+ thermostat, detailing its specifications, installation, configuration, and operation for refrigeration, heating, and alarm output control. Learn how to set temperature ranges, understand function codes, and troubleshoot common errors.

	STC-8080A+ Microcomputer Temperature Controller Instruction Manual
	Comprehensive instruction manual for the STC-8080A+ microcomputer temperature controller, detailing technical parameters, operation, settings, safety rules, and troubleshooting for refrigeration and defrost applications.
	Elitech STC-1000Pro/STC-1000WiFi Smart Temperature Controller User Manual
	User manual for the Elitech STC-1000Pro and STC-1000WiFi smart digital temperature controllers. Covers features, display, operation, parameter settings, installation, error codes, and app integration for precise temperature management.
	STC-1000 Thermostat User Manual: Heating and Refrigeration Auto Switch Controller
	User manual for the Haswill Electronics STC-1000 thermostat, a heating and refrigeration auto switch controller. Covers specifications, operation, dimensions, wiring, configurations, and error troubleshooting.
	STC-1000 Thermostat User Manual: Heating and Refrigeration Auto Switch Controller
	User manual for the STC-1000 thermostat, a heating and refrigeration auto switch controller by Haswill Electronics. Learn about its specifications, installation, operation, and configuration for optimal temperature regulation.
	STC-3008 Dual Display Two-Way Thermostat Operation Manual
	Comprehensive operation instructions for the DIY MORE STC-3008 dual display two-way thermostat. Covers main functions, technical specifications, panel layout, key operations, heating/cooling settings, wiring diagrams, indicator status, error handling, and safety guidelines.