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Model: STC-1000 | Brand: Marhynchus

1. INTRODUCTION

The Marhynchus STC-1000 is an all-purpose digital temperature controller designed for precise temperature management in various applications. It features automatic conversion between cooling and heating modes, ensuring your equipment operates within an ideal temperature range. This manual provides essential information for the safe and effective use of your STC-1000 controller.

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 product.

- Ensure the power supply voltage matches the controller's specified voltage (24V for this model).
- All wiring should be performed by a qualified professional to prevent electrical hazards.
- Strictly distinguish between relay, sensor, and power interfaces during wiring.
- Keep sensor leads and power wires separated to avoid interference.
- Do not operate the device in environments with excessive moisture or corrosive gases.
- Disconnect power before performing any maintenance or wiring changes.

3. PRODUCT OVERVIEW

The STC-1000 is a compact and reliable temperature controller with a clear LCD display and intuitive controls. Its flame-retardant ABS shell ensures durability and safety.

Key Features:

- Automatic conversion between cooling and heating modes.
- Wide temperature control range: -50°C to 110°C.
- High accuracy: $\pm 1^{\circ}\text{C}$.
- Audible and visual alarm function for high temperature and sensor failure.
- Suitable for various applications including homebrewing, fermenters, fridges, incubators, and greenhouses.

Components:

The controller features a digital display, control buttons, and wiring terminals on the rear. An NTC temperature sensor is included.



Figure 3.1: Front view of the STC-1000 Digital Temperature Controller with the NTC sensor cable.



Figure 3.2: Close-up of the STC-1000's digital display showing '83.9°F' and control buttons (Set, Power, Up, Down).

4. SPECIFICATIONS

Parameter	Value
Model	STC-1000
Voltage	24V
Temperature Control Range	-50°C to 110°C
Temperature Measurement Accuracy	±1°C
Sensor Type	NTC Sensor
Sensor Cable Length	Approx. 1 meter (3.3 ft)
Display Type	LCD
Shell Material	Flame-retardant ABS
Dimensions (L x W x H)	100mm x 80mm x 30mm (approx.)
Item Weight	3.87 ounces



Figure 4.1: Approximate dimensions of the STC-1000 controller.

5. SETUP AND WIRING

Proper wiring is crucial for the safe and correct operation of the STC-1000. Refer to the wiring diagram below and ensure all connections are secure.

Wiring Diagram:



Figure 5.1: Wiring diagram for the STC-1000 (24V version). Note the distinction between power, sensor, heating, and cooling connections.

Wiring Instructions:

1. **Power Supply (Terminals 1 & 2):** Connect your 24V DC power supply to terminals 1 and 2. Ensure correct polarity if applicable for DC.
2. **NTC Sensor (Terminals 3 & 4):** Connect the NTC temperature sensor to terminals 3 and 4. The sensor is non-polarized.
3. **Heating Output (Terminals 5 & 6):** Connect your heating device (e.g., heater, heating pad) to terminals 5 and 6. This is a relay output.
4. **Cooling Output (Terminals 7 & 8):** Connect your cooling device (e.g., fan, refrigerator compressor) to terminals 7 and 8. This is also a relay output.

Important Note:

- Always ensure that the load connected to the heating and cooling outputs does not exceed the relay's maximum current rating.
- Maintain proper distance between power wires and sensor wires to prevent electrical interference and ensure accurate temperature readings.

6. OPERATING INSTRUCTIONS

The STC-1000 is designed for straightforward operation. The display shows the current temperature, and buttons allow for setting parameters.

Power On/Off:

- Press the **Power** button (



) to turn the device on or off.

Setting Temperature Parameters:

1. Press the **Set** button (



-) once to view the current set temperature.
2. Press and hold the **Set** button for approximately 3 seconds to enter the parameter setting mode. The display will show 'F1'.
 3. Use the **Up** (



) and Down (



) buttons to navigate through parameters (F1-F4).

4. Press **Set** again to view the value of the selected parameter. Use **Up** and **Down** to adjust the value.

5. Press the **Power** button to save changes and exit parameter setting mode, or wait for 10 seconds for it to auto-save and exit.

Parameter Definitions:

- **F1: Temperature Set Point:** The desired temperature for your application.
- **F2: Hysteresis (Differential):** The temperature difference between the set point and when the heating/cooling output switches off. For example, if F1=25°C and F2=2°C, in cooling mode, the compressor turns on at 25°C and off at 23°C. In heating mode, the heater turns on at 23°C and off at 25°C.
- **F3: Compressor Delay:** A time delay (in minutes) before the cooling compressor starts, protecting the compressor from rapid cycling.
- **F4: Temperature Calibration:** Allows for fine-tuning the temperature reading if there's a discrepancy with a known accurate thermometer.

Note: This model displays temperature in Celsius only, despite some product images showing Fahrenheit. Please disregard Fahrenheit readings if they appear on promotional materials.

7. MAINTENANCE

Regular maintenance ensures the longevity and accuracy of your STC-1000 controller.

- **Cleaning:** Wipe the unit with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure no liquids enter the device.
- **Sensor Care:** Keep the NTC sensor clean and free from debris. Avoid bending or damaging the sensor cable.
- **Connections:** Periodically check all wiring connections to ensure they are tight and secure. Loose connections can lead to intermittent operation or damage.

8. TROUBLESHOOTING

If you encounter issues with your STC-1000, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Display shows "EE" or "HHH"	Sensor error or open circuit. Temperature exceeds measurement range.	Check sensor connection. Replace sensor if damaged. Ensure ambient temperature is within range.
Display shows "LLL"	Temperature below measurement range.	Ensure ambient temperature is within range.
Controller not powering on	No power supply, incorrect voltage, or faulty wiring.	Verify 24V power supply is connected correctly. Check all wiring connections.
Heating/Cooling output not activating	Incorrect temperature settings, hysteresis, or compressor delay. Faulty wiring to load.	Review F1, F2, and F3 parameters. Check wiring to heating/cooling devices.
Inaccurate temperature reading	Sensor placement, interference, or calibration needed.	Ensure sensor is in the correct location. Check for electrical interference. Adjust F4 (Temperature Calibration) if necessary.
Loose wiring terminals	Terminals not tightened sufficiently or damaged.	Ensure all terminal screws are securely tightened. If terminals are damaged, professional repair or replacement may be required.

If the problem persists after attempting these solutions, please contact customer support.

9. WARRANTY AND SUPPORT

Marhynchus products are manufactured to high-quality standards. For warranty information or technical support, please refer to the documentation provided with your purchase or contact your retailer. Keep your purchase receipt as proof of purchase.

For further assistance, you may visit the Marhynchus store on Amazon: [Marhynchus Store](#)