

Ranco ETC-112000

Ranco ETC-112000 Single Stage Temperature Control User Manual

Model: ETC-112000

1. INTRODUCTION

The Ranco ETC-112000 is a single-stage electronic temperature control designed for precise temperature management in various applications. This device features a digital display and a user-friendly keypad for easy setup and adjustment of temperature settings. It is equipped with diagnostic capabilities and a remote temperature sensing feature, making it a versatile solution for maintaining desired temperature conditions.

This manual provides essential information for the safe and effective installation, operation, and maintenance of your Ranco ETC-112000 temperature control.

2. KEY FEATURES

- **Digital Display and Keypad:** Allows for easy programming and constant readout of sensor temperature.
- **Adjustable Settings:** Setpoint temperature, differential, and mode of operation (heating or cooling) are user-selectable.
- **Remote Temperature Sensing:** Capable of sensing temperatures up to 400 feet away using standard 22 gauge sensor wire.
- **Built-In Diagnostics:** Features diagnostic programs to identify hardware, software, or system issues with error code display.
- **Keyword Lockout:** An internal switch prevents unauthorized tampering with control settings.
- **Annunciators:** Liquid crystal display indicators show when the relay is energized.

3. SAFETY INFORMATION

Please read and understand all safety instructions before installing or operating the Ranco ETC-112000. Failure to follow these instructions may result in property damage, personal injury, or death.

- **Electrical Hazard:** Ensure power is disconnected before performing any installation, wiring, or maintenance. Only qualified personnel should perform electrical work.
- **Voltage:** This device requires a 24 VAC input. Verify your power source matches this requirement.
- **Environmental Conditions:** Do not expose the control to conditions outside its specified operating and storage ambient temperatures or humidity ranges.

- **Enclosure:** The NEMA 1 enclosure provides basic protection. Ensure it is installed in an appropriate environment.

4. SETUP AND INSTALLATION

The ETC-112000 is designed for straightforward installation. Follow these steps carefully:

1. **Mounting:** Securely mount the control unit in a suitable location, ensuring it is within the specified ambient temperature and humidity ranges. The enclosure dimensions are 6.52" high x 2.7" wide x 2.48" deep.
2. **Wiring Power:** Connect the 24 VAC input power to the designated terminals on the control unit. Refer to the wiring diagram (typically found inside the control's cover or in a separate wiring guide) for correct connections. **Ensure power is OFF before wiring.**
3. **Sensor Installation:** Connect the thermistor sensor to the control. The sensor is 2" long x 1/4" diameter with an 8' cable. It can be extended up to 400 feet using standard 22 gauge sensor wire. Position the sensor in the area where temperature measurement is required.
4. **Load Wiring:** Connect the device(s) to be controlled (e.g., heater, cooler) to the SPDT relay output terminals. Ensure the load's power requirements are within the control's relay specifications.
5. **Power On:** Once all connections are secure and verified, restore power to the unit. The digital display should illuminate.



Figure 1: Ranco ETC-112000 Single Stage Temperature Control unit with attached thermistor sensor. The unit features a digital display and control buttons on the front panel.

5. OPERATING INSTRUCTIONS

The ETC-112000 features a digital display and a keypad for easy operation. When not in programming mode, the display shows the current sensor temperature. Annunciators on the LCD indicate when the relay is active.

5.1. Display Readout

The primary display shows the real-time temperature measured by the sensor. Look for indicators on the display that signal the status of the control relay (e.g., heating or cooling active).

5.2. Keypad Functions

The keypad allows access to programming parameters. Typically, there are buttons for navigating menus, increasing/decreasing values, and confirming selections. Refer to the specific button labels on your unit for exact functions.

6. PROGRAMMING SETTINGS

To adjust the control's operational parameters, use the keypad to enter programming mode. The ETC-112000

allows adjustment of the setpoint temperature, differential, and mode of operation (heating or cooling).

6.1. Setting Temperature Setpoint

- Enter programming mode (consult your unit's specific button sequence, often a 'SET' or 'PROG' button).
- Navigate to the setpoint temperature parameter.
- Adjust the value using the up/down arrows. The range is 30 to 220 Degrees F.
- Confirm the setting.

6.2. Setting Differential

- In programming mode, navigate to the differential parameter.
- Adjust the value using the up/down arrows. The range is 1 to 30 Degrees F.
- Confirm the setting. The differential prevents rapid cycling of the controlled device.

6.3. Selecting Mode of Operation (Heating or Cooling)

- Access the mode selection parameter in programming mode.
- Choose between 'Heating' or 'Cooling' based on your application.
- Confirm your selection.

6.4. Keyword Lockout Switch

To prevent unauthorized changes to settings, the ETC-112000 includes a keyword lockout switch located inside the enclosure. Activating this switch disables the keypad functions. To enable keypad access, deactivate the switch.

7. MAINTENANCE

The Ranco ETC-112000 is designed for reliable operation with minimal maintenance. Regular inspection and cleaning can help ensure its longevity and accuracy.

- **Cleaning:** Periodically clean the exterior of the control unit with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Sensor Inspection:** Ensure the temperature sensor is free from debris and properly positioned. Check the sensor cable for any signs of damage.
- **Connections:** Occasionally verify that all electrical connections are secure and free from corrosion.

8. TROUBLESHOOTING

The ETC-112000 is equipped with diagnostic programs to help identify and display issues. If a problem occurs, the unit will display an error code.

8.1. Error Codes

The control displays different error codes to indicate specific problems related to hardware, software, or the system. Consult the following table for common error codes and their resolutions:

Error Code	Description	Possible Solution
(Specific error codes not provided in source data)	Indicates a general system fault or sensor issue.	Check sensor connections. Power cycle the unit. If the error persists, contact Ranco support.

Error Code	Description	Possible Solution
No Display / Unit Not Powering On	The unit is not receiving power or has an internal fault.	Verify 24 VAC power supply. Check wiring connections. Ensure circuit breaker is not tripped.
Incorrect Temperature Reading	Sensor is faulty or improperly installed.	Inspect sensor for damage. Ensure sensor is correctly connected and positioned.

For specific error code definitions and advanced troubleshooting, refer to the full technical documentation or contact Ranco customer support.

9. SPECIFICATIONS

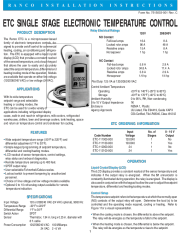

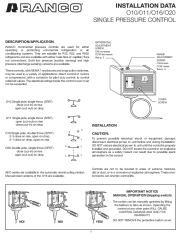
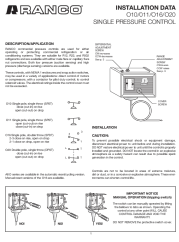
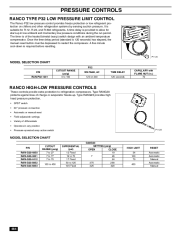

Parameter	Value
Model	ETC-112000
Temperature Setpoint Range	30 to 220 Degrees F
Differential Range	1 to 30 Degrees F
Input Power Requirements	24 VAC
Sensor Type	Thermistor, 2" long x 1/4" Diameter, with 8' cable
Remote Sensing Capability	Up to 400 feet with 22 gauge sensor wire
Operating Ambient Temperature	20 to 140 Degrees F
Storage Ambient Temperature	40 to 176 Degrees F
Ambient Humidity	0 to 95% RH, non-condensing
Enclosure Type	NEMA 1
Dimensions (H x W x D)	6.52" x 2.7" x 2.48"
Agency Approvals	UL Listed, CSA Certified
Switch Action	SPDT (Single Pole Double Throw)
Display Type	LCD

10. WARRANTY AND SUPPORT

Information regarding the specific warranty terms for the Ranco ETC-112000 was not provided in the product data. For warranty details, technical support, or service inquiries, please contact Ranco directly or refer to the documentation included with your purchase.

It is recommended to keep your purchase receipt as proof of purchase for warranty claims.

Related Documents - ETC-112000

	<p>Ranco ETC Single Stage Electronic Temperature Control Installation Instructions</p> <p>Comprehensive installation, operation, and troubleshooting guide for the Ranco ETC Single Stage Electronic Temperature Control. Covers product details, applications, features, specifications, ordering, programming, lockout switch, wiring diagrams, and sensor information for HVAC and refrigeration systems.</p>
	<p>Ranco ETC Two Stage Electronic Temperature Control - NEMA Type 4X Installation Data</p> <p>Installation data, specifications, operation, and troubleshooting for the Ranco ETC Two Stage Electronic Temperature Control, NEMA Type 4X. This control is designed for commercial HVAC and refrigeration, offering dual-stage temperature control, LCD display, keypad programming, and a NEMA 4X watertight enclosure for outdoor use.</p>
	<p>Ranco Single Pressure Control Installation Data</p> <p>Installation data for Ranco single pressure controls (010, 011, 016, 020). Covers description, application, installation, wiring, and control settings for various refrigerants and pressure ranges.</p>
	<p>Ranco O10/O11/O16/O20 Single Pressure Control Installation Data</p> <p>Comprehensive installation data, wiring, settings, and specifications for Ranco O10, O11, O16, and O20 single pressure controls used in commercial refrigeration and air conditioning systems. Includes mounting instructions, capillary care, control wiring, adjustment procedures, and detailed specifications.</p>
	<p>Ranco, Johnson Controls, and Danfoss Refrigeration Controls Catalog</p> <p>Comprehensive catalog of Ranco, Johnson Controls, and Danfoss temperature and pressure controls, including low pressure limit controls, high-low pressure controls, electronic controls, defrost controls, and accessories for refrigeration systems.</p>
	<p>Ranco Bottom Dump Trailer Operation, Maintenance & Parts Manual</p> <p>Comprehensive guide for Ranco Bottom Dump Trailers covering operation, maintenance, parts, electrical, air brake, and suspension systems. Essential for proper use and upkeep.</p>