



Rockwall Brewers Association

Quick Tips

Electronic Temperature Controllers (ETC)

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The Ranco ETC is a microprocessor based temperature controller capable of regulating temperatures in both heating and cooling modes.

Industrial Quality
used in many Craft
Breweries.



Applications in Home Brewing

- 1) Fermentation Temperature Control
- 2) Kegeerator Temperature Control
- 3) Brew Stand to control gas valves and solenoids, pumps for HERMS, and Electric Heating Elements used in RIMS and Electric Brewing setups.

Choosing a Model

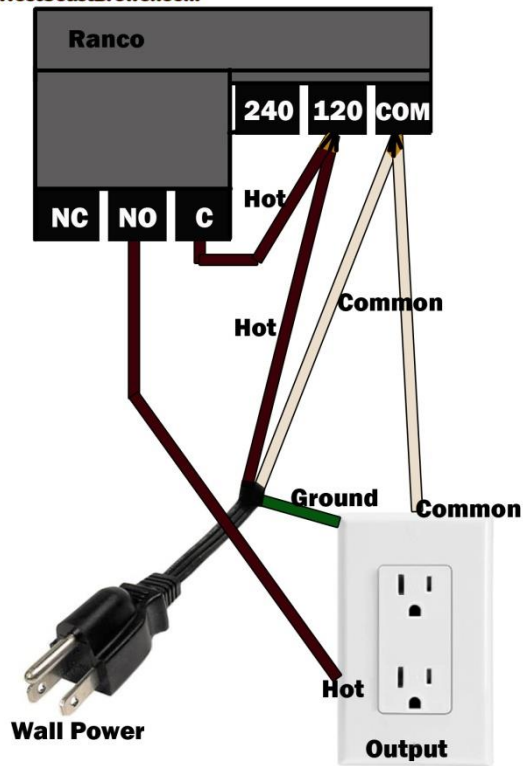
Model Data				
Model #	Number of Stages	Enclosure Type	Voltage Input	0-10V Output
ETC-1110000	One	NEMA 1	120/240 VAC	No
ETC-1111000				Yes
ETC-1120000			24 VAC	No
ETC-1121000				Yes
ETC-1410000		NEMA 4	120/240 VAC	No
ETC-2110000		NEMA 1		Yes
ETC-2111000	24 VAC			No
ETC-2120000				Yes
ETC-2121000	NEMA 4			120/240 VAC
ETC-2410000				

Basic Wiring Single Stage 120 VAC

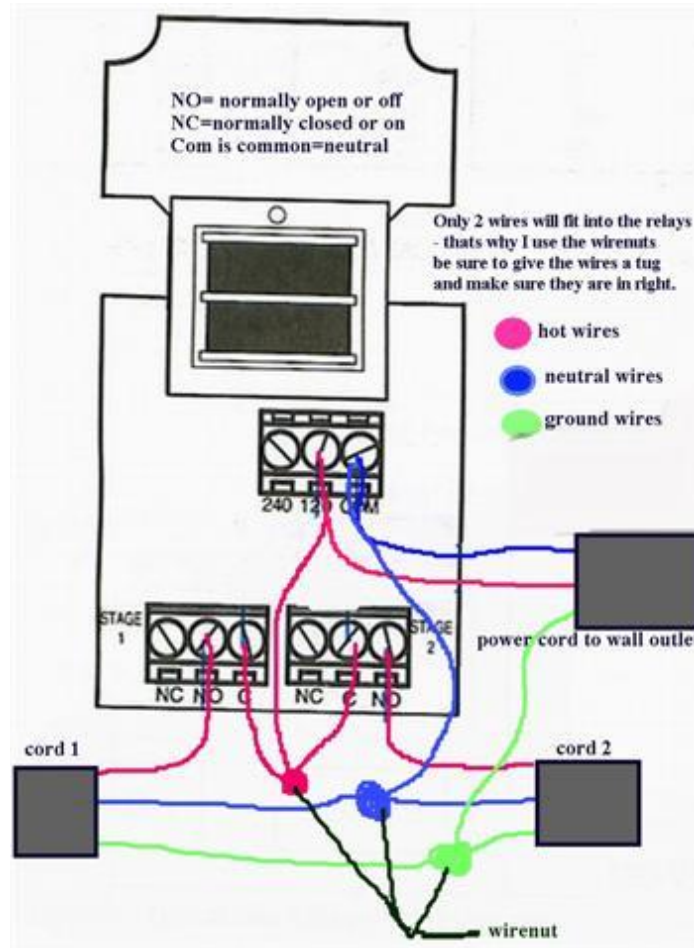
Ranco Temp Controller

Wiring Diagram ETC-111000-000

WestCoastBrewer.com



Basic Wiring Two Stage 120 VAC



2-Stage Controller for Fermentation

- Stage 1 used for cool control (freezer)
- Stage 2 used for heat control (high wattage light bulb, belly band heater)
- Each stage is capable of operating independently, so a minimum “DeadBand” temperature of 3°F between Cooling & Heating set points to prevent both from operating at the same time.
- Differential settings also need to be set to 1°F for both heating & cooling

Dead band Programming

For a 65°F Fermentation Set point:

Set C1 to 66°F, DIFF to 1°F

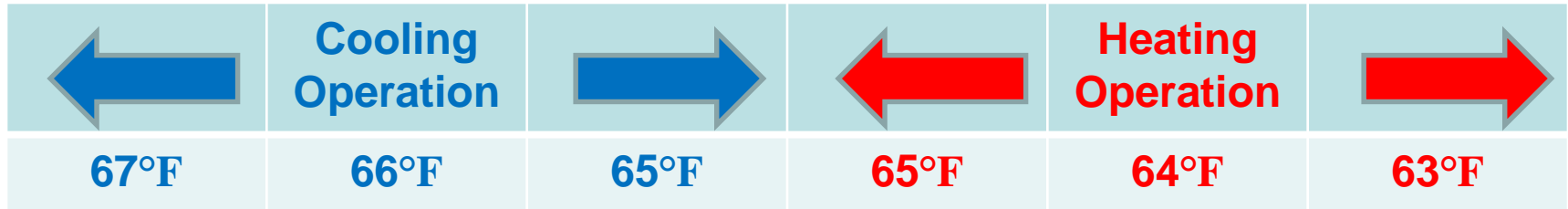
Set H1 to 64°F, DIFF to 1°F

Cooling will turn on @ 67°F and shutoff @ 65°F

Heating will turn on @ 63°F and shutoff @ 65°F

* For tighter fermentation temperature control only program heating when ambient temperatures are low enough to drop below fermentation set point.

Dead Band Illustration



Programming Controller Step 1

- 1. The default reading on the ETC is for the current temperature that its temperature probe is reading (55°F). To change settings on the ETC, press the 'SET' button.



Programming Controller Step 2

- 2. Press the 'SET' button one time to choose between Celsius ('C') or Fahrenheit ('F'). Push the up or down arrow one time to switch between Celsius and Fahrenheit. As seen in Step 4, the ETC can control to within one degree of set point, so Fahrenheit will give more precision than Celsius since there are approximately two degrees Fahrenheit in each degree Celsius.



Programming Controller Step 3

- 3. Press the 'SET' button a second time to program the target temperature. Press the up or down arrow to move the target temperature up and down. In this example, we have target temperature set to 40°F as we want to cool the fermenter.



Programming Controller Step 4

- 4. Press the 'SET' button a third time to program how many degrees of difference from target temperature to allow before the ETC turns on. In most brewing situations, 1° is desired as this keeps the temperature most consistent. When set to 1°, the ETC will only allow the temperature to rise or fall by 1° before turning on and off. So if the target temperature is 40°F during chilling, when the temperature rises to 41°F the ETC will turn the TCV or chiller on to bring the temperature back down to 40°F.



Programming Controller Step 5

- 5. Press the 'SET' button again to tell the controller whether it should be heating or cooling. Press the up or down arrow to 'H1' for heating (e.g. turning on as the temperature drops to bring the temperature back up) or to 'C1' for cooling (e.g. turning on as the temperature rises to bring the temperature back down). During mashing 'H1' is most typically used, and during fermentation (at least for ales) 'C1' is most typically used.



Programming Controller Step 6

- 6. Press the 'SET' button one more time to return to the display showing the current temperature (55°F).



Sensor Probe Placement

- It's best to have the sensor installed into a thermowell.
Fermentation
Temperature will be controlled by the wort temperature and not air in the chamber.



Safety

- Never exceed Rated Full Load Amps
- Always plug into GFCI protected circuit
- Properly ground plug ends
- Use nylon strain relief cord-grip connectors