

THERMOSTAT WIRING AND INSTALLATION GUIDE

CNS, CK, CKT, CK TREND, ALL MODELS

1. Thermostat Wiring Options

There are a number of different options available if you wish to control your Stiebel Eltron CNS/CK heater with a room thermostat. There is a limited variety of line voltage thermostats available to which you can directly wire your heater. You can also use a transformer/relay unit so that you can utilize the much wider variety of low voltage thermostats that are available, including some of the WiFi capable ones such as Venstar and Nest. There are also wireless kits available, which eliminate the need to physically wire the thermostat to the heater.

When using any type of external thermostat to control the CK/CNS line of heaters, set the internal thermostat of the heater to its highest setting, as the cycling of the heater will now be controlled by the external thermostat. Do **not**, however, disable the CK/CNS heater's internal thermostat, as even when set to its highest setting, it must still cycle off occasionally to prevent the external parts of the heater from reaching hazardous temperatures.

1.1 Line Voltage Thermostats

A line voltage thermostat simply takes the high voltage signal that is used to power the heater, closes a switch when the room temperature falls below the setpoint, which turns the heater on, and opens a switch when

the room reaches the setpoint, turning the heater off. A line voltage thermostat should not be used when controlling more than one heater with the same thermostat.

When wiring this type of thermostat, the line voltage thermostat is connected to the circuit breaker on the load panel (breaker box), and the CK/CNS heater is connected to the line volt thermostat. If using a digital thermostat, always use a 4-wire model, because the

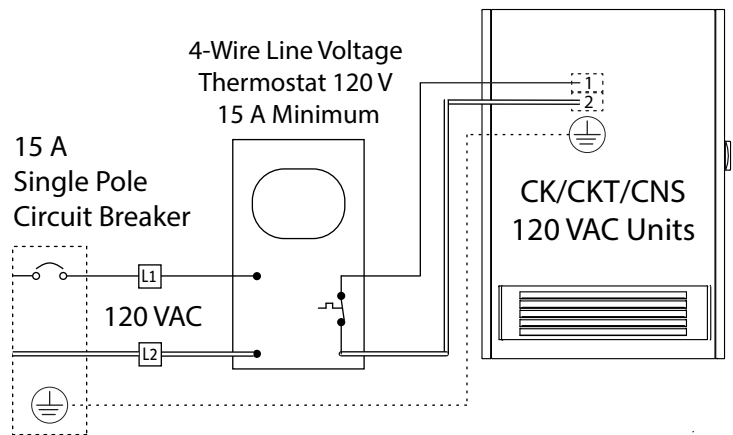


Fig. 2: 120 V heater with line voltage thermostat.

internal thermostat of the CK/CNS heaters will turn off occasionally, even at their highest setting. See figures 1 and 2 for wiring diagrams illustrating the manner in which to hook up both the 120 V and 240 V heaters to a line voltage thermostat.

1.2 Low Voltage Thermostats

A low voltage thermostat is the industry standard for most types of heat sources other than electric resistance heaters. These devices are typically connected to the control board of a boiler or furnace, and they operate on a 24 VAC signal. To utilize this type of thermostat, it is necessary to use a transformer/relay device such as the RC840T. A low voltage thermostat can be safely used to control more than one heater, provided that it is wired correctly. As is the case with the line voltage thermostat installation, the internal thermostat of the heater should be set to its maximum temperature when

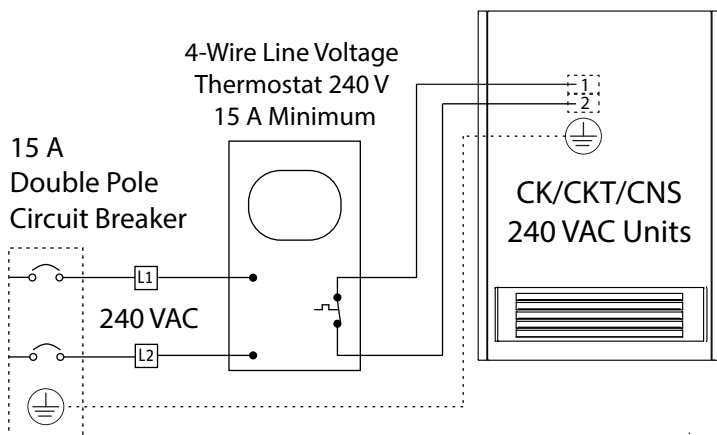


Fig. 1: 240 V heater with line voltage thermostat.

wiring the unit in this manner.

To install one or more CK/CNS heaters to a low voltage thermostat, each heater must have its own transformer/relay device. This device will be connected at a junction box near the heater and wired both to the heater and to the load panel. Please see figures 3, 4, and 5 for wiring diagrams illustrating the manner in which to hook up a

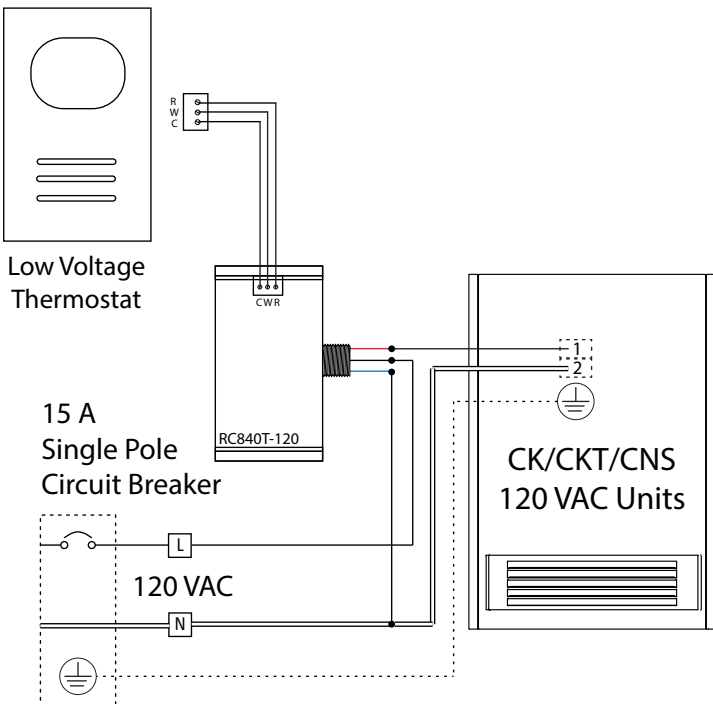


Fig. 3: 120 V heater with low voltage thermostat.

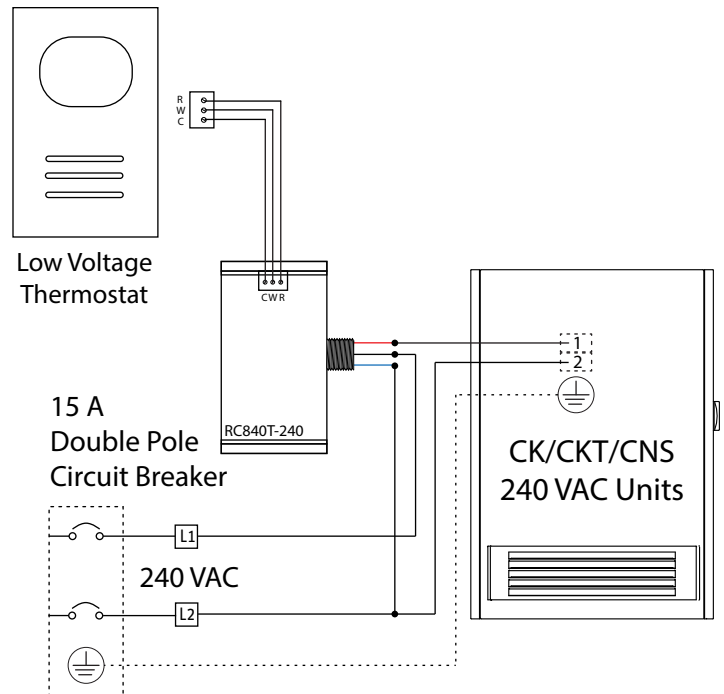


Fig. 4: 240 V heater with low voltage thermostat.

single 120 V heater, a single 240 V heater, and multiple heaters, to a low voltage thermostat. Be aware that, as with most transformer/relay devices, there are both 120 V and 240 V versions of the RC840T, so be sure to select the appropriate device for your application.

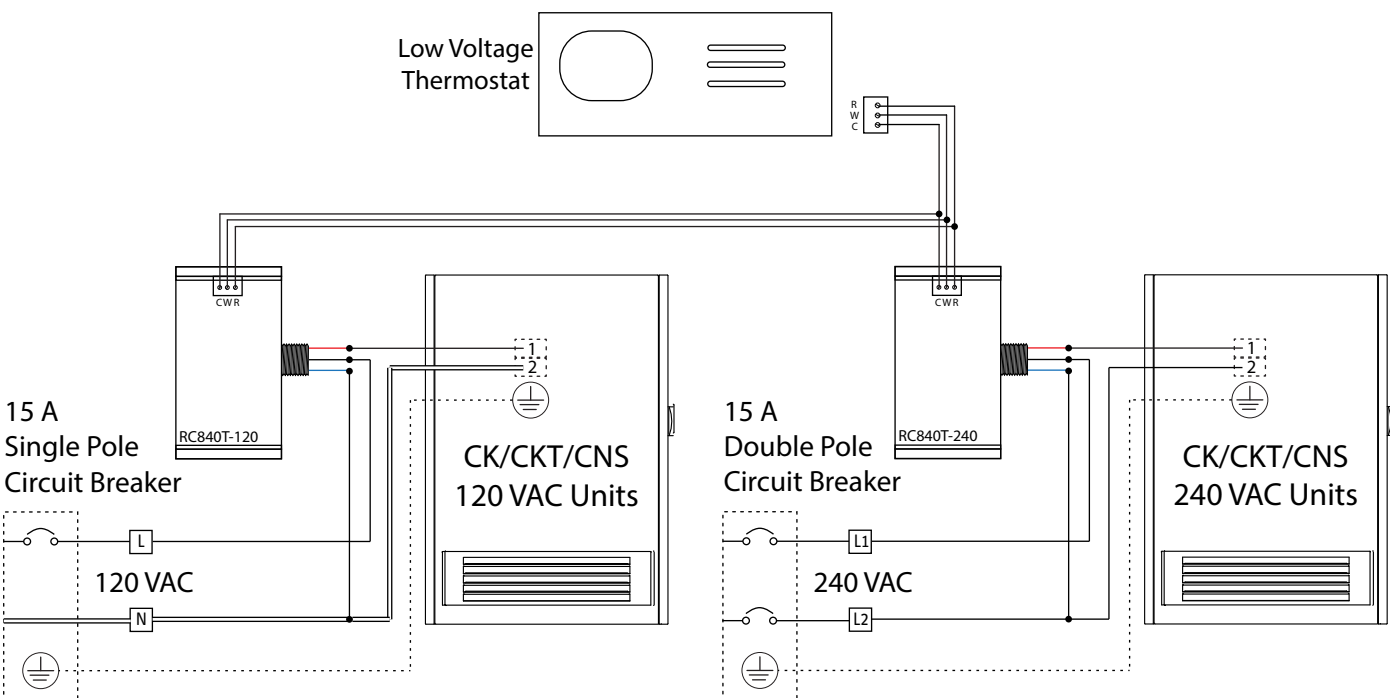


Fig. 5: Multiple heaters, both 120 V and 240 V, connected to single low voltage thermostat.

1.3 Wireless Thermostat Kits

There are several manufacturers offering wireless thermostat kits for electric heaters. One popular model is the EConnect Wireless Kit, which we will use in the diagrams to illustrate the wiring of such devices. To connect a wireless thermostat to an electric heater you need a relay/transformer, an antenna, and the wireless thermostat. Please see figures 6 and 7 for wiring diagrams for the wireless thermostat relays for 120 and 240 V heaters. For information on any other aspect of the wireless thermostat installation, consult the manufacturer's documentation.

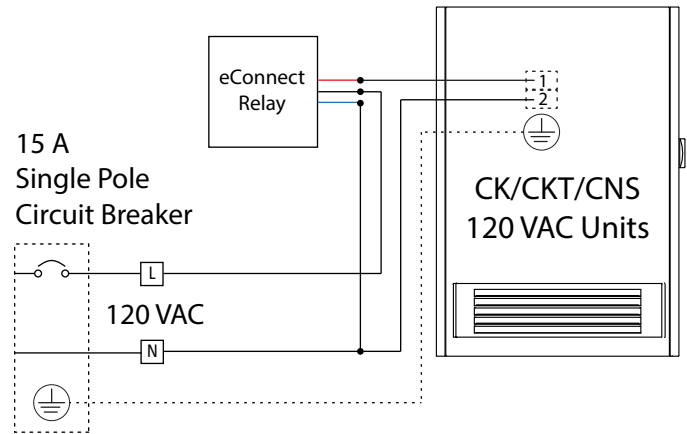


Fig. 6: 120 V heater with wireless relay.

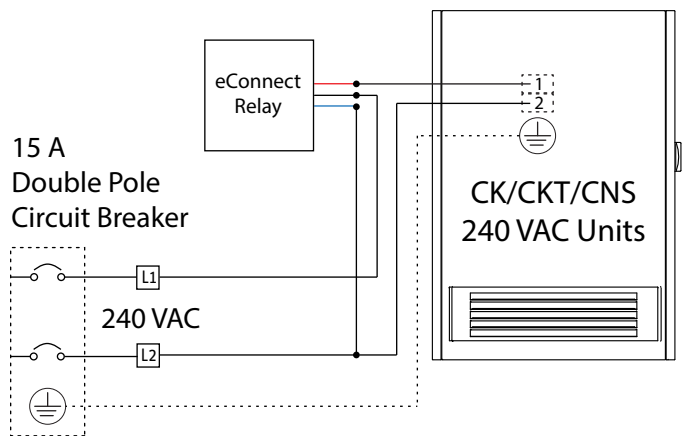


Fig. 7: 240 V heater with wireless relay.