

# How to Test a SURE CURE Cylinder Controller

The information provided here describes an easy way to test your SURE CURE Cylinder Controller.

## 1. Make Two Thermocouples

Using Type T thermocouple wire, make two short (less than a foot) thermocouples as described in our instruction sheet "How to Make a Thermocouple." (For testing a controller, it is not necessary to solder or insulate the thermocouple.)

## 2. Connect Thermocouple to 2-Pole Plug

Connect one of the thermocouples to a 2-pole plug (male connector) as described in our instruction sheet "How to Connect Thermocouple Wires to Plugs." (For testing a controller, a cable clamp is not needed.)

## 3. Connect Thermocouple to 2-Pole Jack

Connect the other thermocouple to a 2-pole jack (female connector) in the same manner.

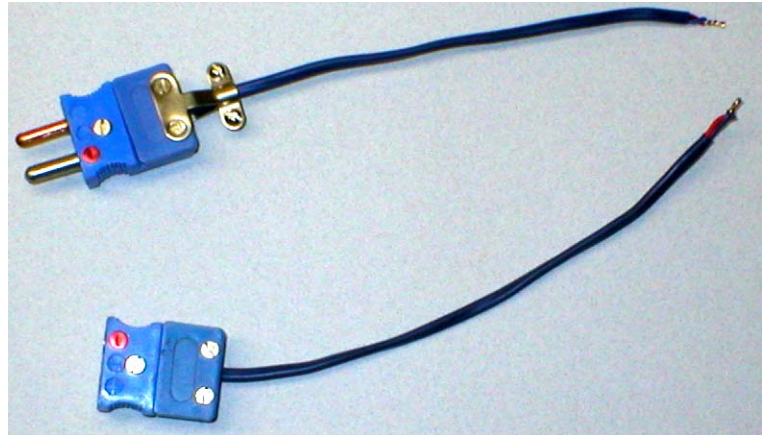
## 4. Plug Thermocouples into Controller

Once the two thermocouples have connectors attached, insert the thermocouple plug (male connector) into the controller jack labeled "REF." Attach the female thermocouple (with the jack) to the plug on the controller cord labeled "CYLINDER."

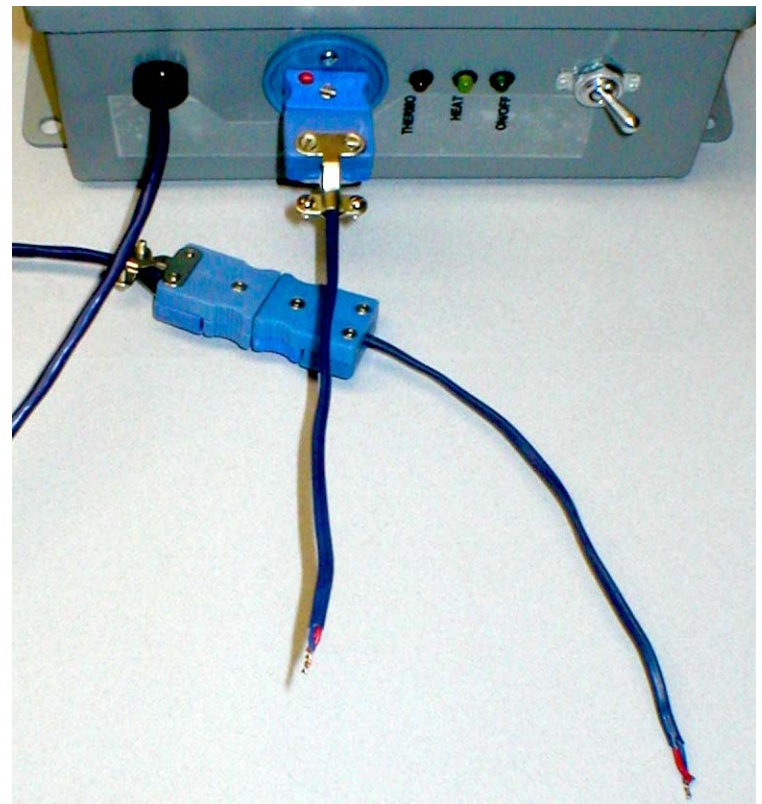
## 5. Activate Controller

With the controller plugged into a 120-volt power source, turn the power switch to the "ON" position. The controller's green light should come on. Sometimes the red and/or yellow lights may come on as well. If the red light comes on, wait for it to turn off. If the red light has not turned off after two minutes, check your thermocouple connectors for corrosion and clean them with steel wool if needed.

If all thermocouple connectors are corrosion-free, check the controller's thermocouple cable for breaks and kinks that could indicate damage to the wires inside the cable. Finally, check inside the connectors to make sure that the wires are making contact with the terminal screws. If the red light stays on after the thermocouple components have been cleaned and inspected, there is a problem somewhere on the circuit board, and the controller should be returned to Products Engineering for repair.



*Thermocouples attached to a 2-pole plug and a 2-pole jack.*



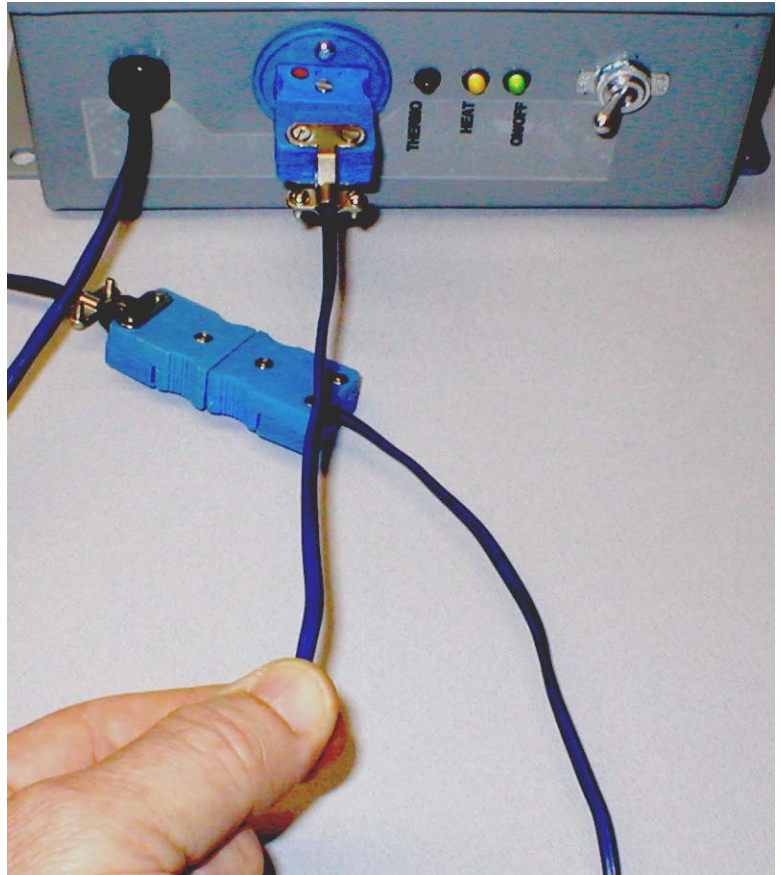
*Thermocouples plugged into cylinder controller for testing.*

## 6. Test Controller

When the green light is on and the red light is off, the controller is ready to test. The yellow light comes on to indicate that the reference (REF) thermocouple is warmer than the cylinder thermocouple and that the cylinder heat has been turned on.

If the yellow light is off, warm the reference thermocouple by grasping it at the end (where the wires are twisted) between two fingers. If the yellow light comes on, let go of the reference thermocouple and grasp the cylinder thermocouple. When the cylinder thermocouple is warmer than the reference thermocouple, the yellow light should go off.

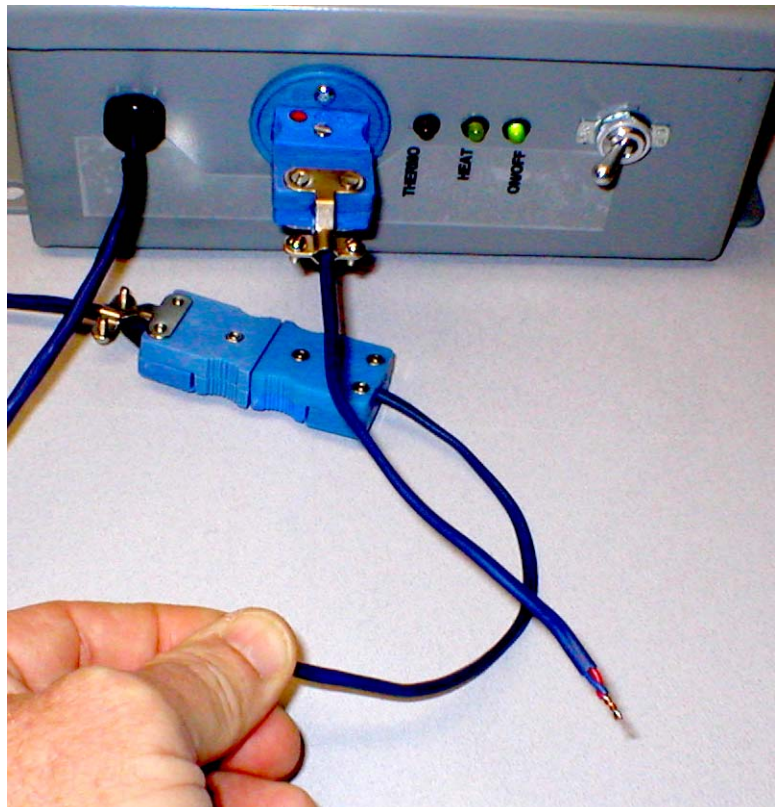
If the yellow light turns on and off as described, the controller is functioning properly. If the yellow light fails to turn on and off, the controller should be returned to Products Engineering for repair.



*If the controller is functioning properly, the yellow light will come on when the reference thermocouple is warmer than the cylinder thermocouple.*



*If the red light comes on and stays on, there is a problem with a thermocouple component.*



*If the controller is functioning properly, the yellow light will turn off when the cylinder thermocouple is warmer than the reference thermocouple.*