

Technical Bulletin # 49

To: Coulometrics Support Personnel
From: Applications/Engineering Dept.
Date: February 2, 2004
Subject: Installing new CM115-008 Thermocouple in the CM5200.

The CM5200 Autosampler Furnace has four CM115-008 thermocouples located in the Furnace assembly. The front heater has two and the rear heater has two. One thermocouple is used to monitor the temperature for The PID temperature controller. The other is used for the over temperature safety circuit.

Symptoms of a failure of the PID thermocouple are as follows. The PID temperature controller will flash “ SnSr Fail” or “Inpt Fail” depending on the model of the temperature controller.

Symptoms of an overtemp safety circuit thermocouple failure will be as follows: The PID temperature controllers will not power up. A buzzing noise (audio alarm) will be heard.

The procedure for replacing a defective TC is:

1. Unplug the CM5200 power cord from the electrical power supply. If the instrument is warm, allow time for the unit to cool to room temperature.
2. Remove all ball joint thumbscrew clamps from the combustion train.
3. Carefully lower the combustion tube from the sample valve ball joint.
4. Loosen the latch plate thumbscrews below the furnace assembly and, while pushing the furnace assembly toward the rear of the CM5200 lower the latch plate.
5. Slide the furnace assembly forward.
6. Remove the combustion tube(s) from The CM5200 furnace assembly.
7. Remove the top cover of the furnace assembly.
8. Locate the defective thermocouple. There are 4 TCs, One for the front Heater PID, one for the front heater over temp safety circuit, one for the rear heater PID and one for the rear heater safety circuit. The thermocouple that is defective will depend on which furnace has a problem. (See figure 1)
9. Using a straight blade screwdriver, loosen the terminals strip screws holding the defective thermocouple wires.
10. Disconnect the wires. Note the color code of the wires. Is important that the red wire and the yellow wire go in the proper orientation.

11. Extract the defective thermocouple from the ceramic TC well. (See Figure 2)
12. Insert the new Thermocouple into the TC well.
13. Connect the red and yellow wires of the TC to the terminal strip. Tighten with the straight blade screwdriver.
14. Plug the power cord into a power supply source and turn on the instrument power.
15. Check to make sure the affected PID is now working properly.
16. Turn off the CM5200 and reassemble the unit in reverse order of disassembly.

FIGURE 1. Heater Assembly with top cover removed.
FURNACE ASSEMBLY TOP VIEW

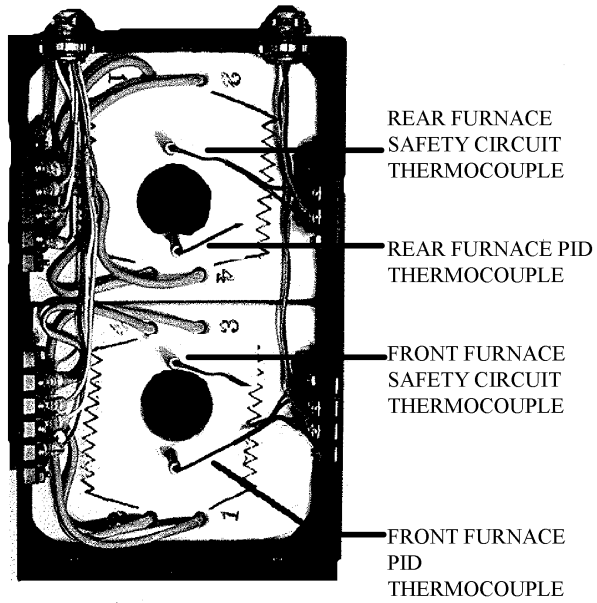


FIGURE 2: Installation of TC in well and wiring to Terminal strip.

