

**Technical Bulletin # 59**

**To:** Coulometrics Support Personnel  
**From:** Applications/Engineering Dept.  
**Date:** August 19,2004  
**Subject:** CM5200 Over temperature protection circuit trip point adjustment

---

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 (front) is used to monitor the temperature for The PID temperature controller. The other (back) is used for the over temperature safety circuit.

Each over temperature safety circuit is calibrated to trip off if the temperature of its' Furnace (front or rear) exceeds 1150 Deg C.

Symptoms of an overtemp safety circuit problem are as follows: The PID temperature controllers will not power up. A buzzing noise (audio alarm) will be heard. Also an indicator light (LED) marked safety 1 or safety 2 on the CM110-045 PCB inside the instrument will be on. Turning the power off to the instrument is the only way to unlatch the overtemp circuit trip.

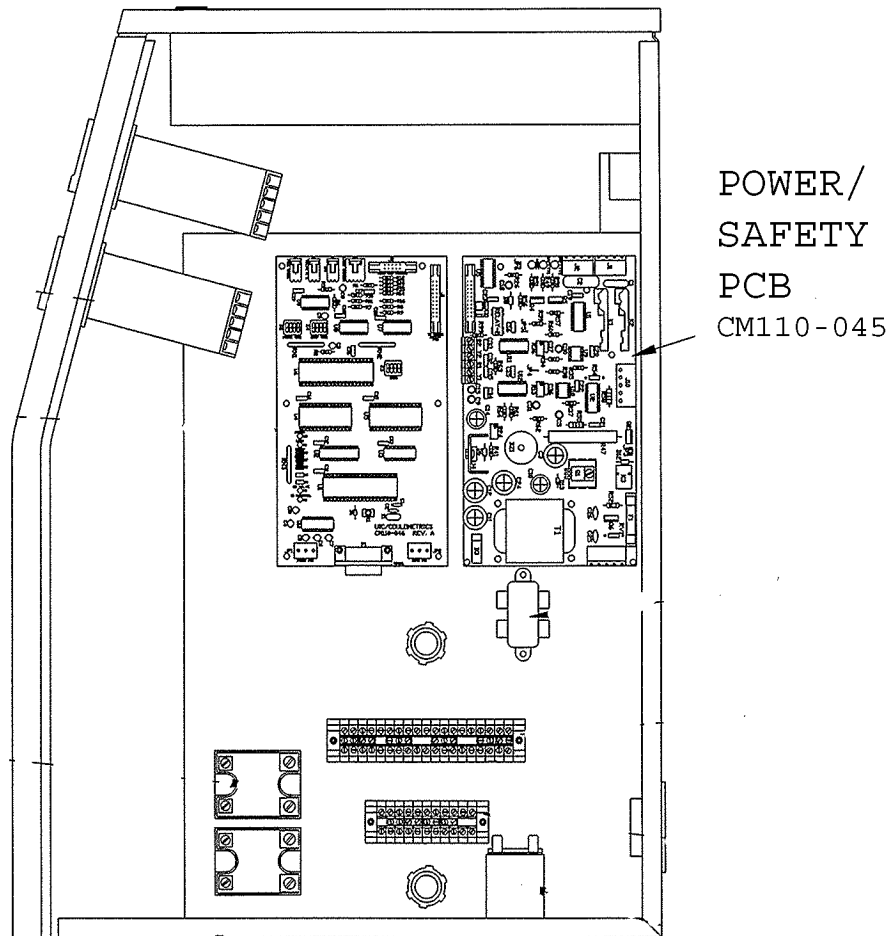
If the over temperature circuit is tripping and the temperature is not above 1150 C then the over temperature circuit needs adjustment or the overtemp TC is bad. If the over temperature TC is bad it will needed to be replaced. See technical bulletin number 49 for this procedure. After the thermocouple has been replaced or it is believed that an adjustment of the circuit is necessary the following procedure can be followed.

Procedure for adjusting the overtemp safety circuit:

1. Unplug the CM5200 power cord from the electrical power supply. If the instrument is warm, allow time for the unit to cool to a safe temperature.
2. Remove the right side panel and locate the CM110-045 Power safety PCB. It is the back PCB of the two PCB in the Autosampler. See figure 1.

Figure 1

CM5200 Right Side



3. The Rear furnace safety circuit adjustment potentiometer is R36. The Front is R13. These are 10 turn potentiometers.
4. To adjust the safety circuit turn the potentiometer counter clockwise to make the trip temperature higher.
5. One turn counter clockwise represents a 116 DEG C change. See Figure 2.

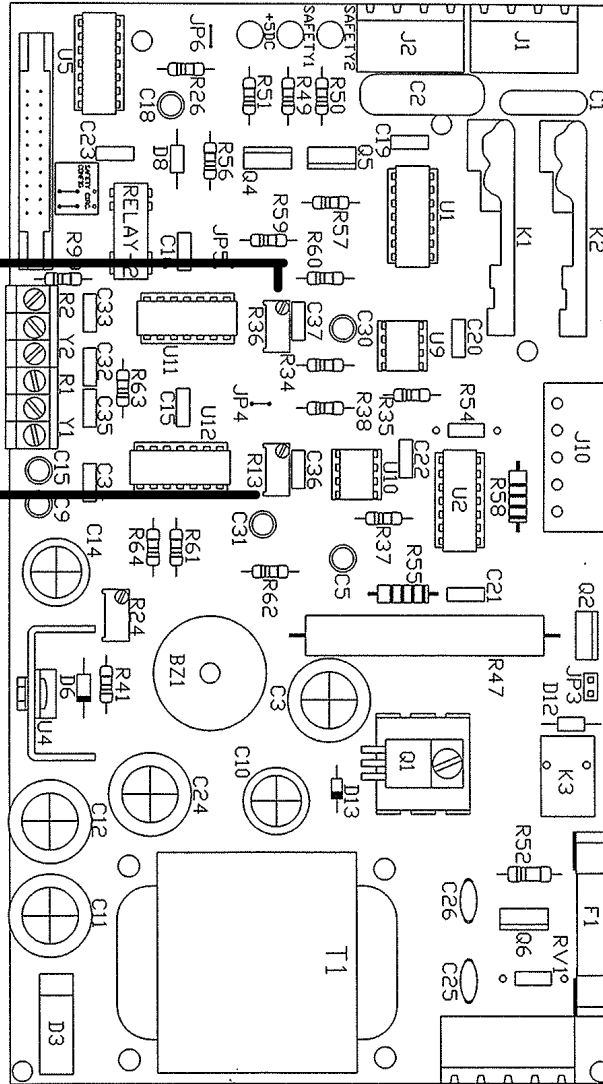
# CM110-045 POWER/SAFETY PCB

OVER TEMP TRIP  
LED'S

ADJUST R36  
FOR REAR OVER  
TEMP. SAFETY  
CIRCUIT

ADJUST R13 FOR  
FRONT OVER TEMP  
SAFETY CIRCUIT

NOTE- TURN CCW  
1 TURN TO RAISE  
TRIP TEMP 116  
DEG C



6. Plug the power cord into a power supply source and turn on the instrument power.
7. Run the Furnace temperature up to test the trip point. Repeat as necessary to get the correct trip temp of 1150 DegC.
8. Turn off the CM5200 and reassemble the unit in reverse order of disassembly.