



### **PTC03 Temperature Controller user instructions.**

Please read before use.

1. Connect the chamber heater to the 3 pole connector on the front panel.
2. Connect the chamber sensors to the 7 pole connector on the front panel.
3. Turn the setting temperature knob down (rotate left).
4. Switch the "monitor/control/set" switch to "control".
5. Connect the equipment to the mains supply and switch on at the rear IEC connector.
6. The "line on" LED should light.
7. The readout should read the temperature of the chamber. This will probably be a room temperature initially.
8. Switch the monitor/control/set switch to "set".
9. The "set on" LED should light.
10. The readout should read a set temperature of around 10 degrees C.
11. Rotate the "set temperature" knob to the right. As the readout passes the reading seen in [7], that is the temperature of the chamber, the "heater on" LED should light. This shows that the equipment is now heating the chamber.
12. If the "heater on" LED does not light, switch off the equipment, check the connections to the chamber and repeat the instructions from [1].
13. If the LED does light, continue turning the "set temperature" knob until the desired chamber temperature shows on the readout.
14. Return the "monitor/control/set" switch to "control".
15. The readout will now show the temperature increasing from the room temperature to the desired "set" temperature.
16. The equipment will now heat up the chamber and control it at the desired temperature.
17. When the chamber approaches/reaches the required temperature as shown on the readout, the "heater on" LED will reduce in brightness. This indicates that the unit is now controlling the temperature, that is, supplying just enough current to maintain the temperature against the heat losses. When the temperature is first reached it is possible for the "heater on" LED to go off initially as there may be a slight overshoot. This depends on the thermal dynamics of the chamber.
18. The "monitor" position will read the temperature of a second sensor if supplied. This sensor has no control capability.
19. The "V out" socket on the rear panel can be used to externally monitor the temperature of the chamber. The output voltage is 100mV per 1 degree C.

If the unit fails to function correctly please follow the fault diagnosis procedure on a separate sheet.

#### **Fuses:**

The IEC connector on the rear panel incorporates two fuses for line and neutral. They should be replaced if needed using 5x20mm HRC fuses of 3A rating.

**F1** is a F250mA 5x20mm HRC fuse. This fuse protects the encapsulated PSU that supplies the stabilised +/-15 Volts to the electronics circuitry. Persistent failure of this fuse will require attention by a service engineer.

**F2** is a F6.3A 5x20mm fuse. This protects the secondary winding of the transformer supplying the heating current. Persistent failure of this fuse will need the attention of a service engineer if it is not connected with a problem in the external heating connections as detailed under Fuse 3.

**F3** is a F6.3A 5x20mm fuse. This fuse protects the output circuitry and is in the line to the heater. If this fuse blows a problem with the wiring to the heating element should be investigated. The heating element and it's wiring should present a resistance of approx 5 ohms.

There are no user adjustments or fuses inside the case and the covers should not be removed except by a repair engineer.