

temperature control systems

The following controllers and programmers are offered.

301

A PID controller with a large display mounted behind a smooth wipe-clean membrane. It has a single ramp to setpoint facility, and incorporates a process timer function. RS232 comms is available as an option at time of order.

Made by Eurotherm exclusively for Carbolite.



3216P1

An 8 segment-pair programmer, in which each segment pair is a ramp followed by a dwell (the dwell can be of zero time).

RS232 or RS485 comms may be fitted as an option.

This programmer is specially made by Eurotherm for Carbolite.



3216P5

Like the 3216P1, except that 5 different programs may be stored for later retrieval. The programs cannot be linked. Also specially made for Carbolite.

3508P1

The 3508 range comprises enhanced programmers with more display information, and other additional features.

The P1 version has a single program with 20 segments each of which may be a ramp, a step, or a dwell.

RS232 or RS485 comms may be fitted as an option.



3508P10 & 3508P25

These versions are like the 3508P1, but have 10 programs with a total of 50* available segments, and 25 programs with 100*, respectively. For example a single program of 50 segments could be created. The programs may be linked.

* the numbers of segments in the multi-program models is to be increased at some time in 2005.

2132

This is fitted as the basic controller option in certain models where the 301 would be too large. It is a PID controller with ramp-to-setpoint, and a process timer facility.

The 2132 also has uses as an overtemperature controller and as an end-zone controller for tube furnaces.



Cascade Control

The standard control system senses the temperature close to the heating elements: the temperature of the load is usually slightly lower. To correct this a second controller can be added: one senses the load, the other the elements. The load controller sends signals to the element controller, which adjusts the element temperature accordingly. Faster warm up is achieved by boosting the element temperature when the load is cold, and by reducing it as the load approaches the desired temperature.

For cascade control the main controller must be one of the 3508 models. The secondary (element) controller usually fitted is the 3216CC, a non-programmer version from the 3216 range.

Overtemperature Protection

An independent overtemperature protection system is often justifiable to protect expensive heating elements or valuable furnace contents. When ordered with 301 we supply a unit integrated into the main controller but with an independent control circuit. When ordered with other controllers we fit a separate Eurotherm 2132 24x48mm digital controller.

The additional control unit uses a separate thermocouple and operates a contactor to shut down the furnace in the event of the set temperature being exceeded. The adjustability of the limiting temperature means that the system may be set to protect either the furnace itself or, at a lower temperature, the valuable load inside.

Furnaces without Controls

Because each furnace is tested individually, requiring a controller to be configured, fitted and removed, the full saving of omitting a controller cannot be passed on to the customer. Because the controller setting and performance is critical to the life of the furnace, no warranty can be offered where a controller is omitted.

