De-Mar & Associates, Inc.
Parker & Foster Division
Over 60 Years of Industrial Supply!

ENGINEERED SOLUTIONS *Issue NO. 3*

Application - A veterinary pharmaceutical company requires a multi-function temperature controller to maintain 25.0 °C with a ± 1.0 °C tolerance in a 1200 ft^3 media room.

Solution - De-Mar & Associates supplies a Eurotherm model #3504 dual-loop temperature control programmed for the specific job.

Report - The Eurotherm model #3504 controller is a 1/4 DIN size PID controller with the capacity for (6) different output and input boards. The unit is fully programmable with the ability to promote variables within the controller and to display them on accessible user pages.

The pharmaceutical media room application requires dual-loop temperature control based on (1) temperature set-point. The hot gas is controlled by Loop 1, the cool gas is controlled by Loop 2, and electric heat is controlled by a timed alarm output. Control programming is simplified by the Eurotherm advanced auto-tune feature. With auto-tune, the PID (Proportional, Integral, and Derivative) control settings are determined by the controller and set with virtually no overshoot! So, instead of seeing a sine wave of the process value at set-point with overshoot and undershoot, the system maintains the required room temperature at set-point! ***Quality control for the product in the 1200 ft^3 media room is achieved at ± 1.0 ℃ tolerance!***

The Eurotherm model # 3504 controller offers the user the ability to program up to (6) modules with output signals: Relay, Triac, VDC, mA, Logic, SSR Outputs, and transducer power supply. These modules can also be programmed for additional inputs offering: Thermocouple Input, RTD, VDC, mA, Logic Input, Contact Input, and Potentiometer Input. For the media room application the controller is measuring (4) corners of the room and taking the average reading to provide the process value. All (4) of the thermocouple inputs are displayed on one page so the customer can see if there is a major difference between any of the inputs that adversely affect the average.

The Eurotherm model #3504 controller is more than just a PID controller. It also provides a selection of programmable features including maths, timers, logic, alarms, and program events. These features can be promoted and displayed in the custom User Pages and programmed with specific text to scroll in the various menu pages. This allows the customer to personalize the controller and make it operator friendly with only the important information, alarm messages, or control values being displayed. The above examples show some advantages of being able to display your specific message!

The Eurotherm temperature controllers also offer various communication features including: Modbus RTU, Ethernet Modbus TCP, Profibus DP, and DeviceNet. These protocols allow the unit to communicate with other controllers, recorders, PLCs, or computers. Process values, set-point values, output percentages, and alarm times are all part of the expansive list of variables that can be shared with other supervisory systems.

Another important feature is the set-point programmer. The programmer function also allows up to a maximum of 50 programs with 500 segments with event outputs for ramp, soak, and end segment outputs. The dual loop 3504 has two programmers which can be configured as synchronized or independent programmers. The programer is ideal for dual zone ovens, environmental chambers, autoclaves, and heat treat furnaces.

The controller's configuration and setup is programed and easily saved in the Eurotherm Itools programming software. De-Mar & Associates offers free programming of any Eurotherm controllers for a customer's specific application. The pharmaceutical media room application is a prime example of the customer providing the operation/output/input requirements and De-Mar & Associates programming and testing the unit for optimum performance!

The Eurotherm model #3504 controller and the input/output boards are stock in our Overland Park, KS location! Additional information for temperature controllers and their applications can also be found on our website - **www.de-mar.com**

Does your application require an engineered solution? Call today: 913-381-6810