

APPLICATION SOLUTION PAXT #01

CERAMIC TILE TEMPERATURE MONITOR WITH DELAY ALARM APPLICATION

The process for the manufacturing of ceramic tile requires the tile to be maintained at a certain glazing temperature. Presently, the operator views the temperature display to determine if the temperature is within the desired temperature range for the specific project. Defective product would sometimes be produced because the operators were performing other tasks and not watching closely.

PRODUCTS USED: PAXT0000, PAXCDS10

The solution to this application is the PAXT0000 Thermocouple Panel Meter. By inserting the PAXCDS10 setpoint card, a low alarm setpoint and high alarm setpoint may be configured as warnings.

HOW IT WORKS

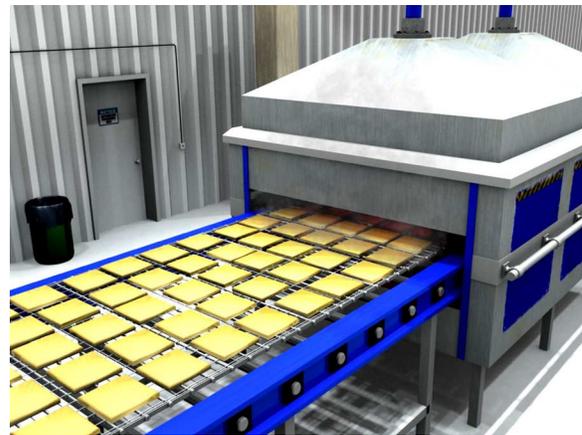
Since a J-type thermocouple infrared temperature sensor responds quickly to recognized temperature variations, the temperature detected at the spaces between the ceramic pads would constantly trigger the low alarm setpoint. To overcome the annoying false alarms, an on-delay time value is programmed which would delay triggering the alarm until the internal timer times out. If the temperature recovers before the timing cycle completes the alarm would not trigger and the internal timer would reset waiting for the next time it should start the timing cycle.

The high temperature alarm would not require an on-delay value since the alarm should trigger immediately if a high temperature is detected. The setpoint tracking feature, or deviation programming, is employed defining the acceptable temperature window between low and high setpoint alarms. This simplifies setpoint entry since the operator changes only one setpoint and the other setpoint automatically follows maintaining the acceptable temperature window.

All configuration parameters are protected from accidental mode changes with the exception of the low alarm setpoint, which will remain accessible to the operator. This is necessary since the acceptable temperature levels vary depending on the tile project.

DESIGN ADVANTAGES

With the setpoint values selected and the alarms in place, the ceramic tile glazing temperature was better monitored producing less waste. The operator was also free to leave the process panel and turn their attention towards other tasks, greatly improving operator productivity.



ADDITIONAL CAPABILITIES

The Maximum and Minimum displays of the PAXT could be enabled to record the highest and lowest reading for the specific project. Delay times could also be programmed for these displays to capture the tile readings.

DIP SWITCH OR JUMPER SETTINGS

All are at factory settings.

PROGRAMMING (Only non-factory settings shown)

2-FNC

USr-1 : PLoC

3-LoC

SP-1 : Ent

Pro 6-SPt

SPSEL : SP-1

Act-1 : AU-LO

SP-1 : xxx (low temp alarm value)

HyS-1 : 1

toN-1 : 1.5 (delay on time)

SPSEL : SP-2

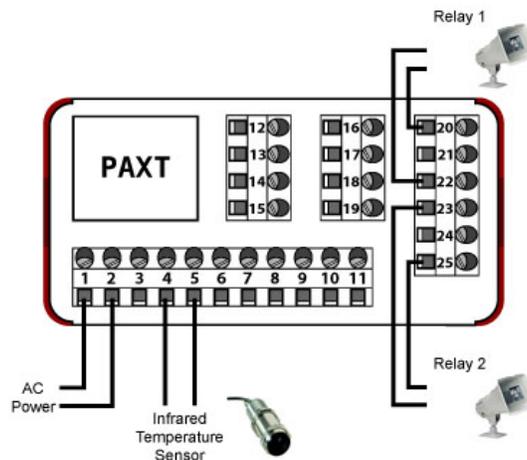
Act-2 : dE-HI

SP-2 : 25 (25 above the low temp value)

HyS-2 : 1

WIRING

All wiring must be according to the installation guidelines listed in the product's specifications. For the setpoint outputs to function an external isolated voltage source (not shown below) must be connected in series.



This application note is intended to be an example. Your specific application may require changes in products, programming and/or wiring. For specific assistance, you may contact your local Red Lion products supplier or Red Lion Controls Technical Support at 717-767-6511.