

Pro-16 Application Note

Air-cooled heat exchangers

Application

Air-cooled heat exchangers

The Challenge

To meet the application's high demands for inputs and outputs in a compact temperature controller.

The Solution

Offering up to 4 digital inputs and 6 outputs the Pro-16 temperature controller provides an advanced level of I/O in a small 1/16 DIN size unit (48 x 48 x 72mm).



The Pro-16 temperature controller from West Control Solutions can be used for controlling multiple fans in air cooled heat exchangers, offering flexibility, reliability and functionality in a wide range of heat exchange applications.

Air-cooled heat exchangers

Air-cooled heat exchangers provide an extremely effective method of reducing the temperature of cooling fluids and process liquids.

They are used in a number of applications and can often be found in processes using industrial furnaces and welding to name a couple.

Air-cooled heat exchangers typically use a series of fans to draw cooling air over a sequence of vessel, pipes or finned tubes containing the fluid being cooled. This system is efficient and cost effective, as it does not depend on an additional cooling water supply or the use of treatment chemicals.



The challenge

Typically an air-cooled heat exchanger will use three to four fans, including one for the primary control as well as fans to manage any temperature deviations.

Although the configuration and flow patterns of air cooled heat exchangers vary considerably, depending on the system size, temperature of fluids and type of application, there is a common requirement throughout: the need to control the operation of each cooling fan, to maximise the rate and consistency of temperature losses, while minimising the consumption of energy.

Why choose a Pro-16 controller?

West Control Solutions has developed the Pro-16 temperature controller to help manufacturers of air-cooled heat exchangers meet these requirements. The controller provides up to 4 digital inputs and up to 6 digital outputs

which are typically used for relay outputs for the fans (although the Pro-16 also supports SSRs, logic and linear outputs). An additional benefit with the Pro-16 temperature controller is the option to use separate PID parameters for heating and cooling strategies, optimising temperature control and stability for the full application.

The controller is small and compact, fitting a standard 1/16 DIN enclosure, yet offers a wide range of features designed to make setup, operation and diagnostics quick and simple. This flexibility is extended still further by the use of West Control Solutions' Blue Control programming software, which allows new configurations to be quickly and easily set up, tested and optimised, and then cloned to multiple controllers, saving time for OEMs.

The Pro-16 includes plug-in terminal blocks. These can be pre-wired allowing the blocks to be easily plugged in during assembly, simplifying and speeding up the overall manufacturing process. The plug-in blocks also help to make repair and maintenance easier when supporting end-customers in the field.

Combined, these features make the Pro-16 PID temperature controller the ideal choice for OEMs of air-cooled heat exchangers. By comparison with traditional controllers in the same price range, the PRO-16 offers far



greater levels of I/O whilst offering an advanced level of control functionality, meeting the specific demands of this. The results include greater control of cooling fans and fluid temperatures to reduce energy consumption, as well as offering significant time-saving benefits during the machine assembly and controller configuration.



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