# Cooling Water Flow Monitor

## Applications:

- Cooling Water Flow Monitor
- Cooling Water Flow Switch
- Cooling Water Flow Confirmation Indicator
- Cooling Water Flow Detector

## Application Background:

Cooling towers and chillers are in operation to remove heat from a process fluid, mainly water. These systems all have in common the flow of water through pipes in various arrangements to achieve the heat removal process. Industries like oil refining, chemical, petrochemical, and power all have needs for excess process heat removal. Building HVAC systems also have needs to remove excess heat to provide cool conditioned air. Throughout these heat removal systems there are many locations where having confirmation of the fluid flow is necessary to provide for proper system operation.

## Application Solution:

There are many liquid flow monitoring technologies including: paddle/flapper types, turbine, site glass, capacitance, and conductance probes. All have proven to work with varying degrees of success. Some rely on operator's time and attention, while some have mechanical parts and are prone to wear, hang-up, and failure. Still other electronic type probes require conductive fluids or fluids of specific capacitance.

A better solution for liquid flow detection at a specific point in the cooling system is the Thermal Differential Switch. The TD switch has two thermal sensing devices (RTD's) encased in stainless steel tips. One sensor detects the temperature of the liquid while the second has a small current applied to create a thermal differential above the liquid temperature. The differential temperature between air and liquid is different. Therefore detection of an uncovered sensor probe and a probe covered by the liquid is a simple, reliable technique for a point flow monitor.

With a single process connection into a pipe line either through a MNPT or flange fitting, a TD probe can be strategically located to monitor for flow of the process fluid. When the probe detects the liquid, the TD switch activates a relay output to confirm that flow is occurring.

Any of the Delta M Corporation microtuf® and Versa-Switch® flow switch product models can provide the solution in this application. The dual channel Versa-Switch® has the added feature of a second relay contact for a Failure Alarm (FA) option to watchdog the unit for power failure or interrupt, sensor failure, electronics failure, etc. This combination provides for the best security and assurance that the point flow switch is ready at all times to provide for the cooling water flow confirmation.

See the products section to select your model and configuration to meet your specific needs.