



In today's Water Treatment Programs, there are many different types of controllers and a wide variety of system control enhancing options that improve treatment control and effectiveness. Here is a brief explanation of some of the more common controllers and accessories that are in use today.

Feed and Bleed Controllers

This type of controller monitors the system conductivity through an in-line sensing probe, and when the unit senses the conductivity of the system is at the predetermined control point, it activates two circuits. One circuit energizes to open the system bleed valve to allow for conductivity reduction.

Simultaneously, a second electrical circuit activates the treatment pump to replace the inhibitor that is lost during bleed and thereby maintain inhibitor in the prescribed control range. This type of system is by far the most common cooling tower controller in use today. One draw back to this controller is that it does not account for uncontrolled water loss from the system.



Proportional Feed Controllers

This type of controller controls the conductivity and inhibitor levels independently. The conductivity is monitored through an in-line sensor and when the conductivity is at the predetermined control point, activates the system bleed valve for conductivity control. The inhibitor level is maintained by receiving a signal from a water meter in the make up water line. Inhibitor feed is initiated through a timing circuit on the controller panel for a preset amount of time based on the quantity of make up water delivered to the system. This is a very common controller and provides consistent inhibitor control even when there is uncontrolled water loss.

pH Controller

pH controllers are designed to monitor the system pH and initiate the addition of acid, and in some cases caustic, to maintain the system pH and control the scaling or corrosive tendencies of the treated water. This type of controller is used in conjunction with conductivity and control and in some cases is incorporated on either type of controller described above. A flow switch is mandatory on this type of controller.



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Flow Switch

This device is placed in either the controller sensing line or in the recirculating water line to monitor system water flow. When there is system flow, the switch allows for bleed and inhibitor feed, but when flow has been lost or secured, the flow switch prevents controlling actions from taking place. Many newer controllers have flow switches integrated into the sensor plumbing assemblies, but virtually any system can be retrofitted. Besides preventing controlling action during no flow or idle system situations, another benefit to a flow switch is that it allows the electronics in the controller to remain energized, reducing wear and tear on the electrical components.

Biocide Timers

These devices are sometimes built into your controller and are adjustable timers that will automatically feed biocide to the system on selected days for a specific amount of time to provide a consistent microbiocide control program. The timer is set based on your system's specific biocide retention time. A biocide timer may be as simple as a timer that is completely independent of the conductivity controller. Timers may also be incorporated in the controller to accomplish biocide treatment. Timers may also lock out controller operation while biocides are being added, alternate biocide feed automatically, and lock out bleed for a predetermined amount of time and to increase biocide contact time for more effective control.

The styles and types of control equipment utilized in Water Treatment are varied. The level of automation that is available using these systems has become extremely reliable and can be used to free up man hours while still providing consistent and accurate control. If you have any questions or would like additional information on any of these controllers or accessories, ask your Water Treatment Consultant.