

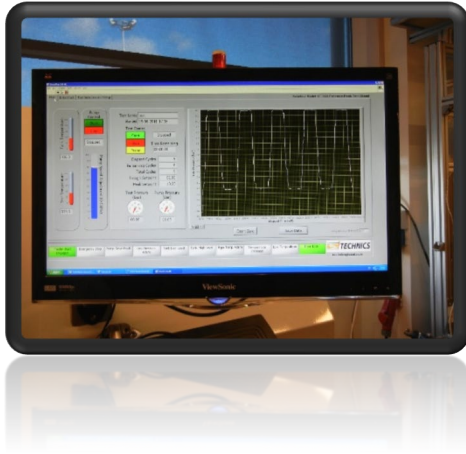


Water Quality and Thermal Management Systems for Healthcare Applications

**Adapting high performance solutions
From particle research to critical equipment in healthcare**

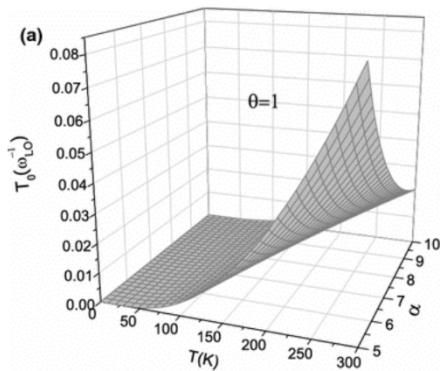


Our Foundation



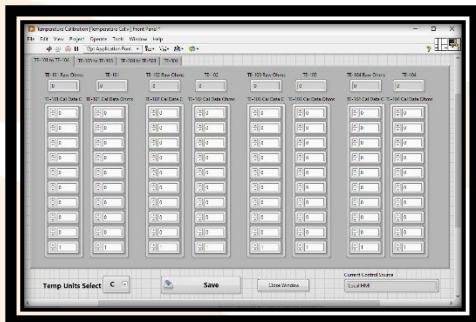
Beginning in 1995, Technics has designed and built equipment for the conditioning of fuels, coolants, and lubricants used by researchers in the aerospace and ground vehicle applications. Later we developed applications for thermal management in particle accelerators that required treatment of radioactive water. These applications required a level of precision in control and measurement that is extraordinary in general and unprecedented in commercial buildings.

Thermal Management Enhances Performance



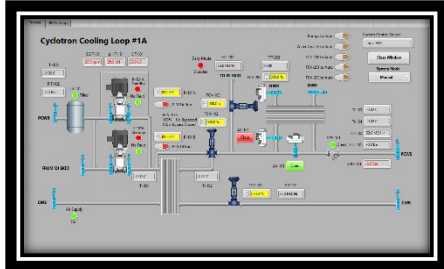
Every mechanical engineering student quickly learns that temperature changes everything. It effects combustion and engine efficiency. It makes everything expand and contract effecting the performance of the device.

Our systems are providing flow and pressure control to ensure consistent heat transfer from the equipment given a particular ΔT . We do this using valves and instruments not normally known to commercial contractors.



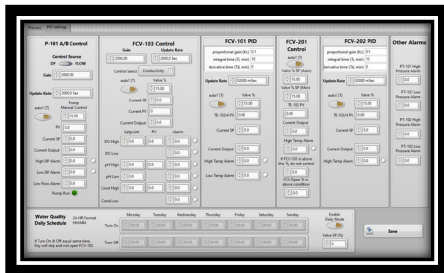
Our systems maintain temperatures within 0.2 °C and while that might be a normal display shown on a controller it is not necessarily a real number given the accuracy of the best devices is 0.15°C. That accuracy in no way would allow a controlled temperature within our specifications, so we utilize 4-wire 1000Ω sensors connected to 24-Bit input cards. Further, we directly read the resistance and interpolate the temperature from the calibration tables.

Protecting Your Investment



These treatment facilities are huge investments to say the least and they are long term investments.

Unanticipated cooling shutdowns can mean at the least a loss of revenue and at worst damaged equipment. Our systems are redundant and failsafe. We use only the highest performing equipment normally only found in refinery applications.



Poor water quality or even less than ideal characteristics of the water can shorten the life of this equipment jeopardizing the long term investment.

Real-Time Monitoring and Adjustment



The Technics system is modular with independent closed loops providing the prescribed temperature, flow, pressure, and water quality to the individual sub-systems such as the cyclotron, RF, and magnets.

A separate system is used for water treatment and automatically connects to the closed loops, to adjust for conductivity with mixed-beds; dissolved oxygen content through a membrane scavenger; and chemical injection for pH.

