



Aerospace, Defense, and Government Facilities Division

Thermostatic Valves

For Your Temperature Control Needs

Who We Are

- Manufacturer of self-actuating thermostatic control products
- Privately held Certified Small Business
- Established in 1983
- 40,000+ sq. ft. manufacturing and office facility headquartered near Philadelphia, PA
- 95% of our products are manufactured on site
- AS9100D Certified
- Worldwide distribution



What We Offer

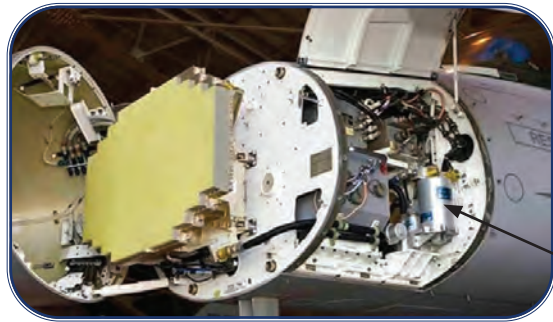
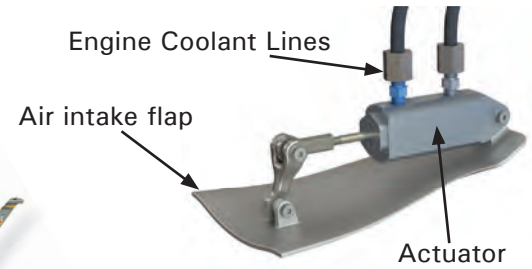
- Innovative temperature control solutions for the Aerospace & Defense, Railroad, Commercial Plumbing & Industrial markets
- Wide range of applications
- High quality manufacturing process, problem-solving approach and engineering expertise for customization
- R&D capability & engineering services for mechanical & electrical technologies and integrated solutions

ThermOmegaTech-ADG.com
1-877-379-8258

Airflow Control

Autonomous Aircraft

Our thermostatic actuator technology controls an unmanned jet's air intake mechanism to maintain engine coolant temperature within a specific range. Custom modifications included a large actuator, 2" piston stroke, high load and a wide temperature range.



Electronics Cooling

F-16 Fighting Falcons Aircraft

Our thermostatic diverter valve controls the avionics cooling system on F-16 Fighting Falcons. The valve either directs recirculating coolant to the heat exchanger or bypasses it back to the pump to minimize warm up times, depending on the coolant temperature.

Fluid Temperature Control

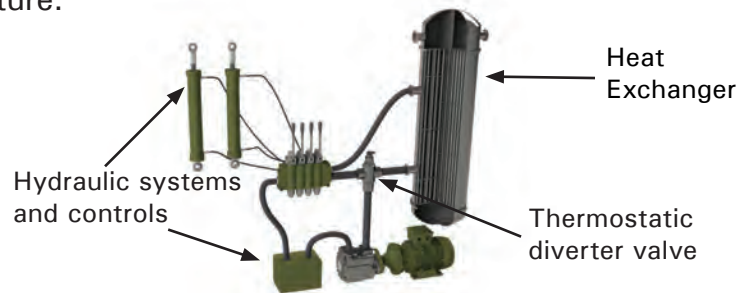
Self-Propelled Howitzer

Our 3-way thermal bypass valve controls the hydraulic oil cooling system on the self-propelled Howitzer.



Patriot Missile Radar Set

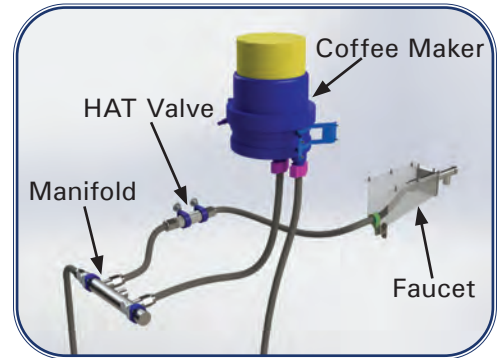
A customized thermostatic diverter valve controls hydraulic fluid coolant temperature on the Patriot Missile Launcher Radar Set. To meet application-specific needs, the override handle can be used to direct the inlet flow to the heat exchanger regardless of the fluid's temperature.



Scald Protection

Airplane Galleys

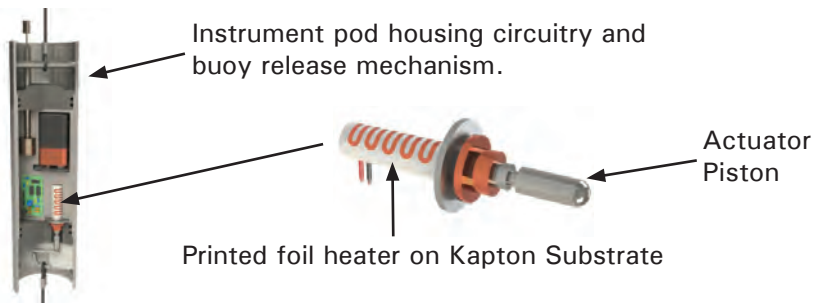
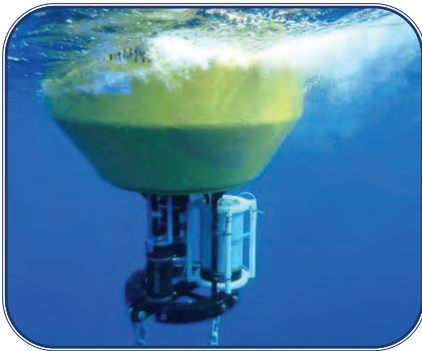
Our HAT thermostatic scald protection valve prevents back flow of potentially scalding water from an in-flight coffee maker to an airplane galley faucet.



Remote Activation

Linear (heated) Actuator - Buoy release

Our technology controls an instrumentation pod buoy release mechanism using a custom designed actuator. An ultrasonic signal from a surface ship activates a heater circuit which warms the printed foil heater and extends our thermal actuator to release the buoy, allowing it to float to the surface for retrieval.



Freeze Protection

Naval Shipyard

To prevent cold water supply lines to docked Navy ships from freezing in cold weather, our HAT/FP thermostatic freeze protection valve is installed on the dry-dock supply line. The valve automatically and continuously monitors either ambient air or water temperatures and drains cooled water before it can freeze. Once the freezing conditions have passed, the valve modulates closed to conserve water.



Balancing Hot Water Recirculation Systems

CircuitSolver[®], a thermostatic balancing valve, maintains a set temperature at the end of domestic hot water recirculation lines on each floor of a building by opening in response to heat loss due to demand fluctuations thereby automatically balancing the system.



DTV Installation

Drain Water Tempering

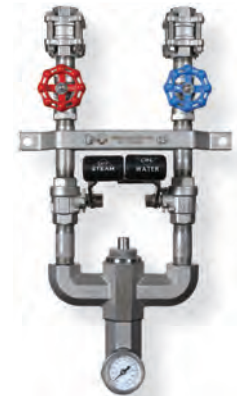
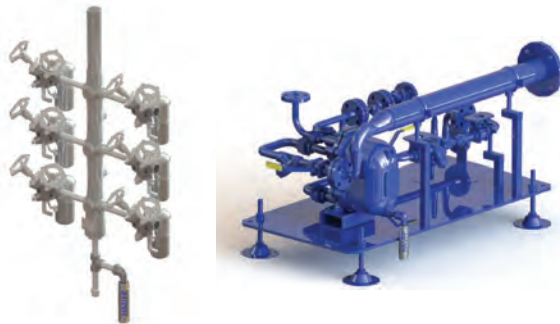
Commercial Dishwashers/Humidifiers/Sterilizers

Our DTV valve tempers down high temperature discharge flows to drains or sewers to comply with plumbing code drain effluent temperature regulations.

Washdown Equipment

Processing Machinery/Tanks & Equipment

STVM[®] Washdown Stations deliver a high temperature wash using our proprietary mixing valve that combines steam and water at a user-defined temperature.



Freeze Protection

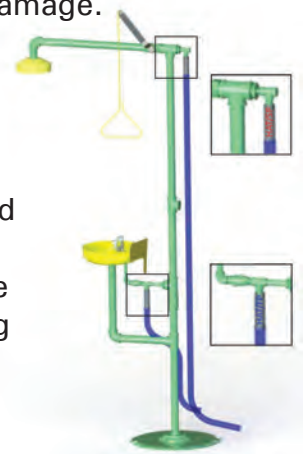
Float Traps & Condensate Systems

The HAT/FP valve monitors ambient or water temperatures in the system, bleeding off cold water and allowing warmer water to backfill to prevent freeze damage.

Freeze & Scald Protection

Safety Showers/Eyewash Stations

HAT/FP freeze protection valves & HAT/SP scald protection valves are installed on safety showers & eyewash stations to monitor ambient or water temperatures. The HAT/FP valve bleeds cold water to prevent freezing and the HAT/SP valve bleeds excessively hot water to prevent an individual from being scalded when they activate the safety station.



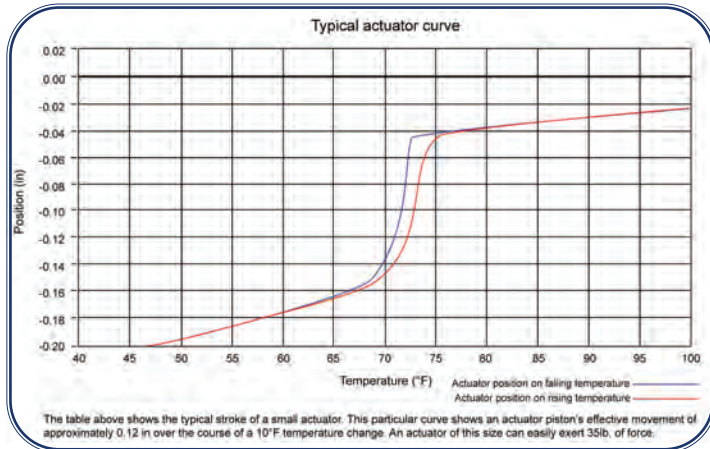
Other Applications

- Fluid mixing based on temperature
- Diverting fluid to a cooling or heating mechanism when temperature varies from target range
- Actuators applied to mechanisms for various temperature applications
- Freeze protection for airplane lavatories
- Thermal based permissive/latching mechanism
- Electro-mechanical solenoid replacement in various temperature control applications
- Pump seal over-temperature relief

How It Works

Thermal Actuator Technology

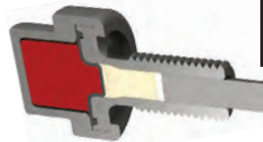
Our thermal actuators are made with highly refined paraffin wax that changes phase in response to temperature variations. The change in volume from a solid-to-liquid or liquid-to-solid phase change extends or retracts a piston in a very precise, repeatable manner. No external power or signal is required, and our actuator technology operates at temperatures ranging from -150°F to 300°F (-101°C to 149°C).



"Cold Position" - Solid State



Piston Retracted



Typical Stroke Range
0.1" to 0.5"

*Custom strokes available

Piston Extended

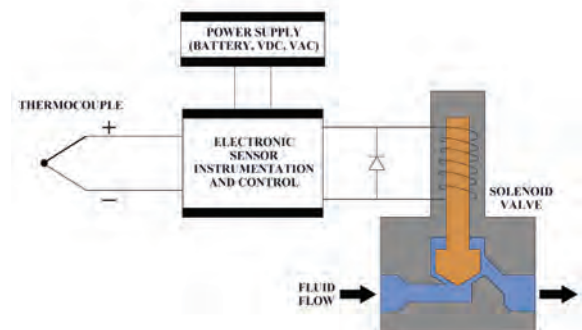
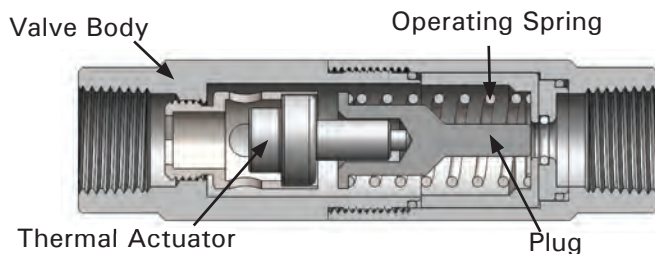
"Hot Position" - Liquid State

Benefits

- Self-actuating: no external power required
- Very high power to size and weight ratio, making for small, lightweight packages
- Maintenance free: no periodic calibration
- Excellent for applications in hazardous and extreme environments
- Highly repeatable position vs. temperature
- Few moving parts
- Long service life

Advantages of Thermostatic Valves Vs. Electronic Sensing/Solenoid Valves








Thermostatic valves provide temperature-sensing control (open or closed loop) & fluid modulation without wires & external power, in one compact package – highly reliable & cost effective, addressing many temperature control applications.



Quality Assurance Statement and Certification

ThermOmegaTech is AS9001D Certified

Our company invests in the latest technology and processes to ensure our standard and custom products meet our design, quality, safety, and environmental standards. Our quality assurance system is data driven and audited continually. Quality and continuous improvement, through our Lean Initiatives, are integral to our way of life as we always strive for 100% Customer Satisfaction.

PRODUCTS	APPLICATIONS
<p>THERMAL ACTUATORS</p> 	<p>The central element in each of our valves, our thermostatic actuators can be married with other mechanisms and used in custom applications such as safety latches, louver controls, trigger mechanisms, force generating devices and others.</p>
<p>MIXING/DIVERTING VALVES</p> 	<p>For Mixing, Diverting, or Thermal Bypass applications. Mixing: The M/D proportions flow from two inlet ports to produce a desired outlet temperature. Diverting/Thermal Bypass: The M/D diverts or switches the inlet flow to one of two outlet ports depending on the fluid temperature.</p>
<p>HAT/FP & IC/FP</p> 	<p>Freeze protection for airplane lavatories, water supply lines to docked ships, condensate systems, pumps, safety showers, and other similar applications.</p>
<p>HAT & TV/HAT</p> 	<p>Temperature control for tank coil heating, instrument enclosures & steam traps. Also used as scald protection for over-temperature flow to airplane galley faucets.</p>
<p>TV/SC-I & TV/SC-IR</p> 	<p>For enclosure heating and cooling applications. The TV/SC-I regulates heating medium supply and the TV/SC-IR regulates cooling medium supply to maintain a specified internal temperature.</p>
<p>ECONO/HAT-RA</p> 	<p>Thermal relief for pumps; controls the flow of water, glycol, or other cooling medium in applications requiring economical removal of heat from an equipment or process.</p>
<p>CIRCUITSOLVER®</p> 	<p>Automatic and continuous thermostatic balancing for domestic hot water recirculation systems; eliminates the need for manual balancing labor and equipment.</p>

Don't see exactly what you need?

ThermOmegaTech®'s ability to customize valves to suit our customers' needs is one of our greatest strengths, and we'll be here to provide you with ongoing and responsive customer service at all stages of the product's life cycle.

If one of our standard valve offerings does not meet your exact requirements, our in-house engineering team will work with you to design a custom solution.

Give us a call –we love a challenge!

