ThermOmegaTech®

Instrument & Process Temperature Control Valves



Compact and reliable thermostatic valves used for heating, cooling, or control/ activation applications. 100% mechanical these valves rely solely on fluid or ambient temperature to operate.

ThermOmegaTech's QMS is certified to the AS9100D Standards

www.ThermOmegaTech.com
877-379-8258

ThermOmegaTech®

TEMPERATURE CONTROL VALVES

Industrial Facility Temperature Control

ThermOmegaTech® manufactures thermostatic temperature control valves for various industries including Pulp and Paper, Power Generation, Oil and Gas, and Chemical/Petroleum.

HAT (Heat Actuated Trap)

The HAT thermostatic valves control fluid temperature in dozens of applications to keep systems warm and prevent freeze damage. The thermal actuator inside the valve continuously senses the temperature in the line and will modulate open to initiate flow if the temperature falls below the valve's set-point. Then when the temperature rises back above the set-point, the HAT valve modulates closed to maintain constant discharge temperatures and minimize waste.

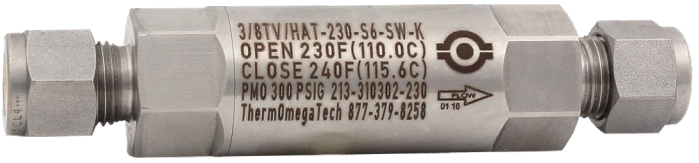
Applications

- Steam traps - *see Application #5*
- Glycol heat tracing
- Freeze protection for condensate systems, float traps, and tank heating coils



TV/HAT (Tube Valve/Heat Actuated Trap)

TV/HAT temperature control valves operate the same as HAT valves but are used in conjunction with tubing and tracing systems using pre-traced tubing bundles. These versatile valves are ideal for replacing conventional steam traps on winterization tracing, instrument tracing, condensate system freeze protection, process tracing and other applications requiring in-line flow control based on temperature.



Applications

- Steam traps - *see Application #5*
- Glycol heat tracing
- Freeze protection for condensate systems, float traps, and tank heating coils

HST (High Sample Temperature)

HST thermal shutoff valves protect electronics in sample analyzers from over-temperature in the event of a sample cooler failure. Installed after the sample cooler in a sampling system, the HST continuously senses the media temperature and will automatically close if the desired sample temperature is exceeded to prevent damage to expensive sensors and analyzers. Once the temperature cools to 10°F below the valve's set-point, the HST will open and resume flow.

Applications

- High temperature shut off
- Sample cooler temperature control
- High pressure thermal shutoff applications - rated for 3000 PSIG (207 BAR)



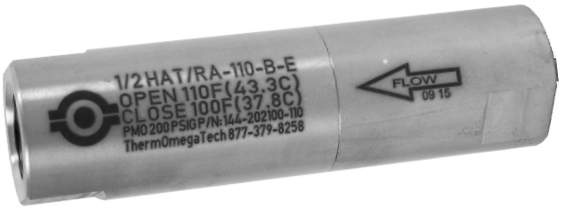
For product dimensions and specifications, visit www.ThermOmegaTech.com

HAT/RA (Heat Actuated Trap/Reverse Acting)

HAT/RA thermostatic valves are used to regulate the flow of cooling water, glycol, or other cooling media in applications requiring economical removal of heat from equipment or a process. The valve modulates between open and closed to maintain a constant fluid temperature in a system, even as operating conditions vary.

Applications

- Cooling water control
- Thermal relief for piping and systems
- Scald protection



HAT/RA-LP (Heat Actuated Trap/ Reverse Acting-Leak Port)

HAT/RA-LP valves are designed to leak when closed at a set rate to monitor process temperature efficiently and facilitate air bleed off. The thermal actuator constantly senses the fluid temperature via the leak port and modulates the valve between open and closed to maintain a constant fluid temperature. Typical leak port rates range from 1/8 to 1 GPM at 60 PSIG.

Applications

- Cooling water control - ideal for compressors, engines, heat exchangers, and welding, electrical, and molding equipment

TV/HAT-RA (Tube Valve/Heat Actuated Trap-Reverse Acting)

TV/HAT-RA valves operate the same as HAT/RA valves, but they are installed in systems via tube compression fittings rather than pipe thread connections to regulate coolant flow to maintain a constant fluid temperature.

Applications

- Cooling water control
- Thermal relief for piping and systems
- Scald protection



TV/HAT-RA-LP (Tube Valve/ Heat Actuated Trap/Reverse Acting-Leak Port)

These valves operate the same as HAT/RA-LP valves, but they are installed in applications where tubing rather than piping is used to monitor the changing equipment temperature via a controlled leakage continuously.

Applications

- Cooling water control - ideal for compressors, engines, heat exchangers, and welding, electrical, and molding equipment

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TEMPERATURE CONTROL VALVES

TV/SC-I (Tube Valve/Steam Control-Instrument Enclosure)

TV/SC-I valves maintain the temperature in instrument enclosures to protect instrumentation from freezing or overheating from an uncontrolled heating element. The TV/SC-I valve is installed into the wall of the enclosure with the thermal element inside the enclosure to sense the ambient temperature and regulate the steam supply to maintain the desired temperature in the enclosure accurately.

Applications

- Freeze protection
- Instrument enclosure heating control - *see Application #1*



TV/SC-IR (Tube Valve/Steam Control-Instrument Enclosure-Reverse-Acting)

TV/SC-IR valves are installed in instrument enclosures for cooling instead of heating. These valves open on rising temperatures to regulate the flow of glycol, water, and other cooling media to keep the instrument enclosure from over-heating.

Applications

- Instrument enclosure cooling control

TV/SC-A (Tube Valve/Steam Control-Ambient Sensing)

TV/SC-A valves can be used in hundreds of freeze protection applications to control steam, gas, or fluid flow based on ambient temperatures. The TV/SC-A senses the air temperature and will open to initiate flow when the temperature drops below the valve's set-point. It then automatically turns off the heating media when air temperatures rise back above the valve's set-point, saving thousands of dollars in operating cost.



Applications

- Steam tracing control
- Instrument enclosure heating control
- Operation of pneumatically operated pumps for injection of antifreeze liquids

ITCH (Instrument Temperature Control Heater)

ITCH assemblies are ThermOmegaTech's complete solution for instrument enclosure heating control. This assembly maintains the optimal temperature in an enclosure, protecting the instrumentation from freezing and providing steam control to avoid overheating. It comes complete with a steam coil, mounting brackets, TV/SC/A, two TV/HAT valves, and tubing bulk-head fittings.



Applications

- Instrument enclosure heating control

For product dimensions and specifications, visit www.ThermOmegaTech.com

ThermOmegaTech®

TEMPERATURE CONTROL VALVES

US/S-X (Ultra Sense Control Valve)

The US/S-X valves regulate the flow of heating media in closed-loop systems in response to the process temperature or the pipe's surface temperature.These valves are either installed with the sensing end immersed in the process fluid or mounted non-invasively via a hose clamp onto the pipeline to sense the fluid temperature and control heat trace lines.

Applications

- Steam tracing control
- Any closed loop system that requires temperature control for steam, Dowtherm®, hot water, hot oil, or glycol



US/S-XR (Ultra Sense Control Valve-Reverse Acting)

US/S-XR valves control cooling media to economically remove heat from equipment or a process. These valves sense the process temperature and open on rising temperatures to allow cooling fluid to keep a process from overheating.

Applications

- Cooling system control
- Controlling air flow to a vortex cooling device
- Sample cooling control

TV/US-X (Tube Valve/Ultra Sense Control Valve)

The TV/US-X valves operate the same as the US/S-X valves where the sensing end is immersed in the process fluid to prevent overheating, but the heating media is connected with tube compression fittings instead of pipe fitting.



Applications

- Steam tracing control
- Any closed loop system that requires temperature control for steam, Dowtherm®, hot water, hot oil, or glycol

TV/US-XR (Tube Valve/Ultra Sense Control Valve-Reverse Acting)

TV/US-XR valves operate the same as the US/S-XR valves where the sensing end is immersed in the process fluid, but the cooling media is connected via tube compression fittings rather than pipe thread connections.

Applications

- Cooling system control
- Controlling air flow to a vortex cooling device
- Sample cooling control

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Benefits of Thermostatic Steam Control

Thermostatic Steam Tracing Control

Steam has a high latent heat, is an effective heating medium, and does not create electrical sparks like its alternative, electric heat tracing, making it the ideal solution for explosion-proof environments. Properly controlling steam tracing is critical to effectively utilizing the heating media and minimizing overall expenses throughout the freeze season. *See Application #2 for ROI.*

Thermostatic valves can sense the ambient or surface temperature and will regulate the steam on and off based on the specified set-point of the valve. By relying on an automatically operated system to manage steam tracing, you can save thousands of dollars and eliminate errors associated with manual operations.

Thermostatic Steam Traps

Steam traps are an essential component of steam tracing systems to purge condensate and non-condensable gas that form in steam lines.

Utilizing thermostatic valves to bleed off condensate from the traced system only once it has fallen well below the saturated steam temperature to the valve's set-point temperature reduces steam usage, improves heating efficiency, and saves end users a significant amount of money.

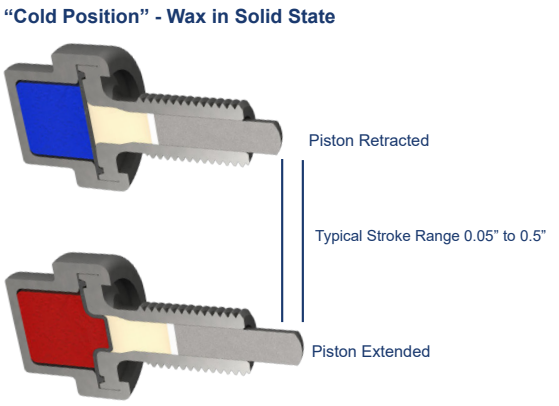
Our Technology

Inside each of our thermostatic valves is a paraffin wax valve actuator filled with our proprietary Thermoloid® blend of precisely mixed ingredients. The actuator blend is designed to give a controlled volume change, hence known stroke response, within a narrow range of temperature variation.

When the actuator is in its "cold position", the Thermoloid® wax is solid, and the piston is retracted. Once the temperature increases to within the wax's active range, the wax changes into its liquid phase, undergoing thermal expansion and increasing in volume.

This expansion extends the piston, putting the actuator into its "hot position." The piston can then act upon a valve stem, lever, or any other mechanical device requiring this type of movement.

This thermal phase change in the active region and resulting piston motion occurs over a narrow and customizable temperature range – typically within 10-20°F.



Benefits

- Self-actuating: No need for external power source
- Maintenance-free: No periodic calibration required
- Predictable: Piston moves in relation to specific temperature
- Simplistic Design: Increases service life and minimizes part failures
- Low SWaP: High power to size and weigh ratio
- No Electric Power: Ideal for explosion-proof environments