

TL™ Ambient Sensing Control Valve



Eliminates Steam Waste
...by Automatically Controlling
Steam Flow in Response to
Ambient Temperature



The Ogontz TL Ambient Sensing Control Valve

Minimizes steam consumption by automatically controlling flow as needed in steam-traced lines, instrumentation enclosures, unit heaters and other applications

The Ogontz TL valve is a fully self-contained, temperature-actuated control valve. It effectively eliminates steam waste by automatically regulating the supply of steam in response to changes in ambient temperature. As a result, the TL valve achieves dramatic reductions in the amount of steam consumed, with annual savings averaging eight times its installed cost.

High reliability, low maintenance and long service life are assured by the state-of-the-art, precision thermal actuator. The TL valve completely eliminates the use of hazardous, chemically filled diaphragms, delicate capillaries or thin-walled bellows.

The TL valve continuously monitors ambient temperature, and regulates steam flow on an as needed basis. This eliminates steam waste and substantially reduces the possibility of overheating.

The TL valve is ideal for steam-traced lines of all types, protecting temperature sensitive instrumentation, winterizing product lines, conserving energy in unit heaters, and other applications requiring control of heat transfer media (i.e. glycol, hot oil, water, etc.) based on ambient temperature change.

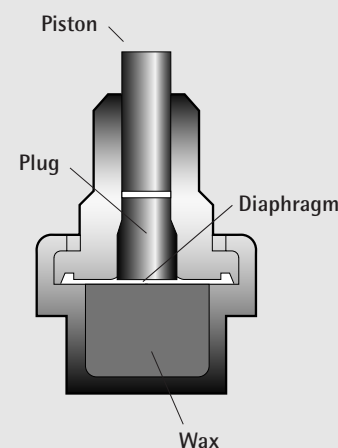
The TL ambient sensing valve is the key to positive, year-round protection of your systems and equipment at the lowest cost.

Design Features

- Direct acting (no pilot valve)
- Self-contained, solid-liquid thermal actuator requires no external power or operating signal
- High repeatability – no set point drift
- Valve port opens gradually, preventing system shock
- Fail safe (valve opens)
- Temperature set points from 35°F to 240°F
- In-line serviceable
- Line sizes 1/2" through 2"
- 100% factory tested

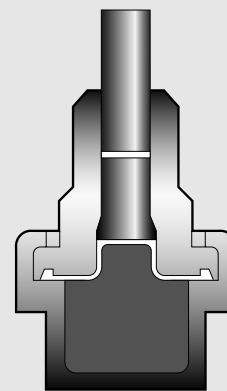
Self-Contained Thermal Actuator

The heart of the TL valve is the unique, solid-liquid phase thermal actuator. This hydrocarbon wax-filled device actuates the valve in response to changes in ambient temperature. The transition from solid to liquid phase causes a large change in volume, exerting a tremendous force over a narrow temperature band.



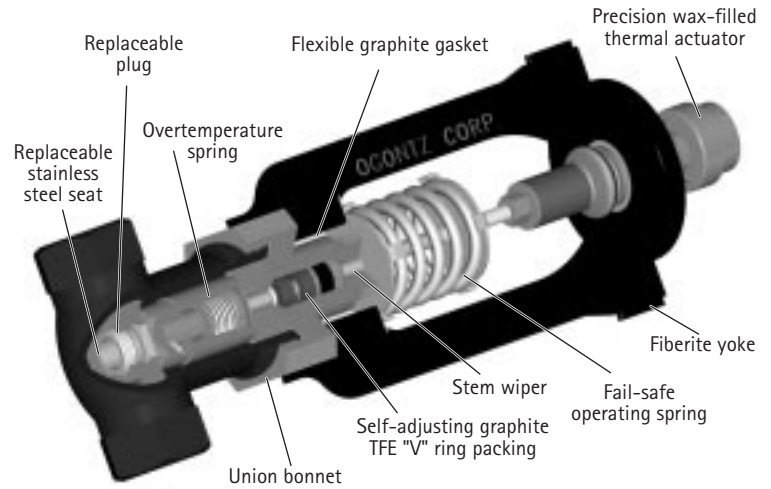
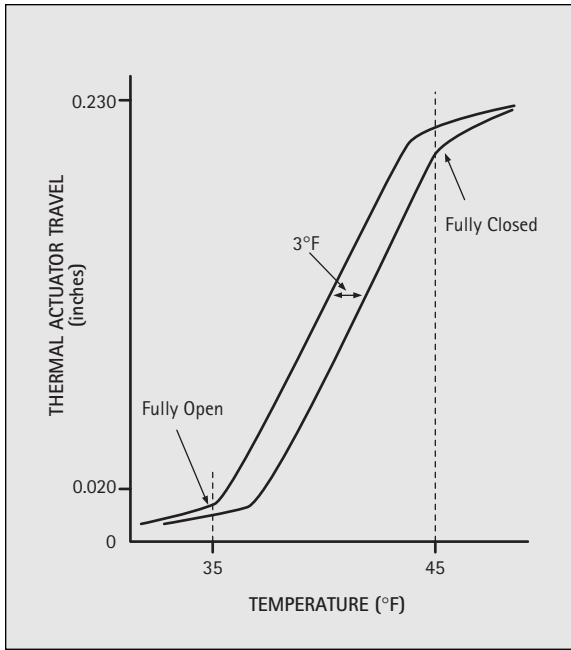
Cold Position

As the ambient temperature drops below the set point, the wax contracts, relieving the force exerted by the piston on the operating spring, and allowing the valve to open. The valve remains open until the temperature rises, at which time the valve begins to close.



Hot Position

As the ambient temperature rises above the set point, the wax starts to expand, exerting force on the piston and operating spring to close the valve. The valve remains closed until the temperature drops, at which time the valve begins to open.



As shown at left, the limited hysteresis of the wax during changes in state from solid to liquid results in a narrow temperature dead band, providing very close control around the temperature set point.

Self-Contained Temperature-Actuated TL Valve Controls Steam As Needed.

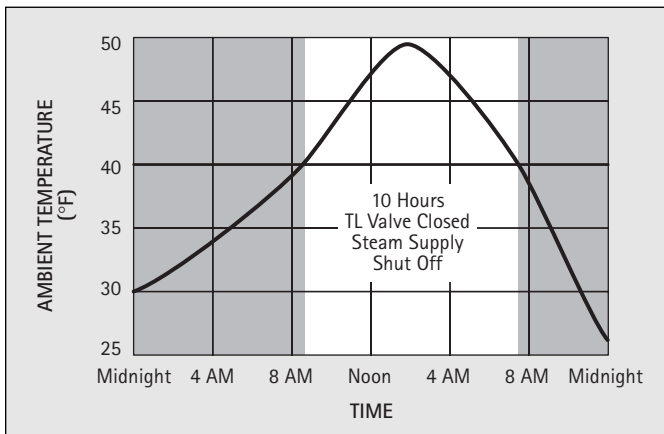


Table I: Steam is automatically shut off when temperature rises above 40°F.

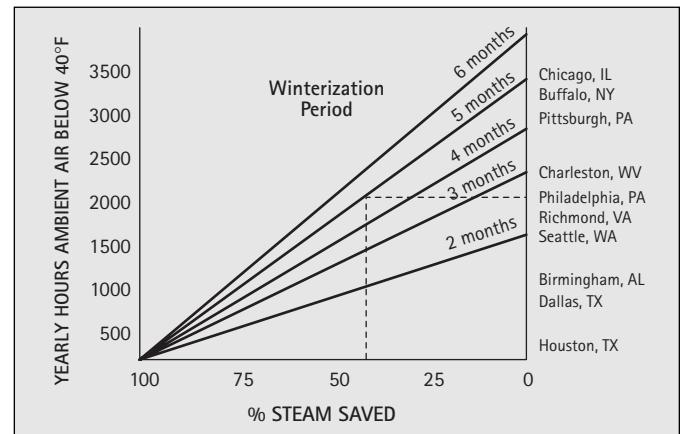
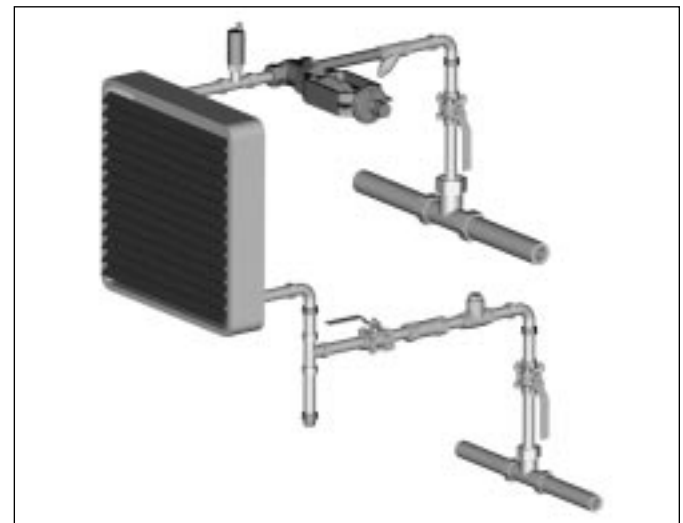


Table II: Percentage of steam saved using Ogontz TL valves on steam-traced lines.

Significant savings in steam-traced lines are achieved with Ogontz TL Control valves by only using steam as needed for freeze protection. For example, over a 10 year period, the Philadelphia area averaged about 1900 hours of temperatures below 40°F. Using a typical five-month winter, operation of a steam-traced line was required only 53% of the time. This means that a savings of 47% in steam usage could have been achieved with a TL Control Valve. Even greater savings can be realized in areas with higher average temperatures.

Table II shows the percentage of steam saved in various locations by automatically controlling steam flow in traced lines during the winterization period.

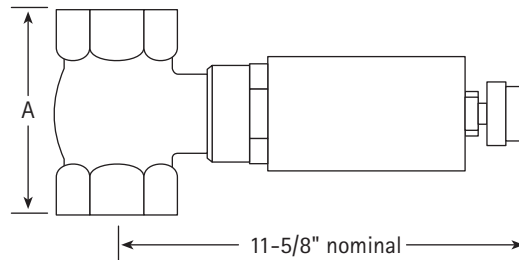


TL valve on a horizontal draft unit heater. Steam supply is automatically shut off when desired ambient temperature is reached. This minimizes steam consumption.

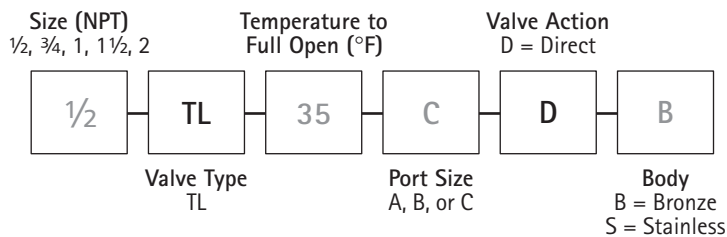
Specifications and Ordering Information

| Valve Size NPT | Max Operating (psig) | Port Size | Body Rating | Orifice Size (in.) | Cv ±10% | Maximum Capacity Lbs/Hr. Saturated Steam at inlet pressure psig | | | | | |
|----------------|----------------------|-----------|--------------------|--------------------|---------|---|------|------|------|------|------|
| | | | | | | 15 | 30 | 50 | 100 | 150 | 200 |
| 1/2 | 200 | C | ANSI 300 lb. class | 1/2 | 3.4 | 186 | 280 | 405 | 718 | 1030 | 1343 |
| 3/4 | 200 | C | | 1/2 | 3.8 | 208 | 313 | 452 | 802 | 1152 | 1501 |
| 1 | 200 | C | | 3/4 | 5.5 | 301 | 452 | 655 | 1161 | 1667 | 2173 |
| 1 1/2 | 200 | A | | 3/4 | 5.8 | 317 | 477 | 690 | 1224 | 1758 | 2291 |
| 1 1/2 | 150 | B | | 1 | 8.3 | 454 | 683 | 988 | 1752 | 2515 | - |
| 1 1/2 | 50 | C | | 1 1/2 | 13.8 | 754 | 1135 | 1643 | - | - | - |
| 2 | 200 | A | | 3/4 | 6.4 | 350 | 526 | 762 | 1351 | 1940 | 2528 |
| 2 | 150 | B | | 1 | 8.8 | 481 | 724 | 1048 | 1857 | 2667 | - |
| 2 | 50 | C | | 1 1/2 | 14.1 | 771 | 1160 | 1679 | - | - | - |

| Valve Size NPT* | Inches A | Weight (lbs) | Body Material |
|-----------------|----------|--------------|---------------|
| 1/2 | 3 1/2 | 6 1/2 | Bronze |
| 1/2 | 4 | 7 1/2 | Stainless |
| 3/4 | 3 1/2 | 6 1/2 | Bronze |
| 3/4 | 4 | 7 1/2 | Stainless |
| 1 | 4 1/2 | 8 | Bronze |
| 1 | 4 1/2 | 8 1/2 | Stainless |
| 1 1/2 | 6 | 16 | Bronze |
| 1 1/2 | 6 | 17 | Stainless |
| 2 | 6 | 15 | Bronze |
| 2 | 6 | 16 | Stainless |



How To Order (Example)



Example: To obtain a 1/2" valve with a bronze body and a set point temperature of 35°F, specify Model 1/2 TL-35-CDB

Note: Specify the desired full open set point temperature between 35°F and 240°F in 5°F increments. Differential from full open to full closed is typically 10° to 15°F (50C - 59C). Valve opens/closes gradually.

The Ogontz Guarantee

We will repair or replace on a no-charge basis, F.O.B. Willow Grove, PA, any valves or traps returned to us within 18 months, if found to be defective in material or workmanship.

2835 Terwood Road • Willow Grove, PA 19090 USA
800/523-2478 • 215/657-4770 • Fax: 215/657-0460
www.ogontz.com • info@ogontz.com

North America • South America • Europe • Asia
Copyright Ogontz Corporation, 2003 • Bulletin #TL-04-03

