



# **TSV** **Thermal Shut-off Valve**

U.S. Patent No. 5,826,790

***Protect Instrumentation  
and Personnel***



**TSV THERMAL SHUT-OFF VALVE**

## ***Features***

- Protects analyzers and personnel
- Fully mechanical
- Visual trip indication
- Optional contact for remote alarm
- Flow shut down in less than 5 seconds

## ***Causes of High Temperature***

- Loss of cooling water
- Insufficient cooling water pressure or flow
- High cooling water temperature
- High sample flow rate
- Ruptured coil in the sample cooler
- Fouled or plugged sample cooler

## ***Description***

The Sentry TSV is a self-contained, mechanical device that requires no external source of electricity, air, or hydraulics. The sensor/actuator is directly exposed to the sample medium providing near instantaneous reaction to an upset.

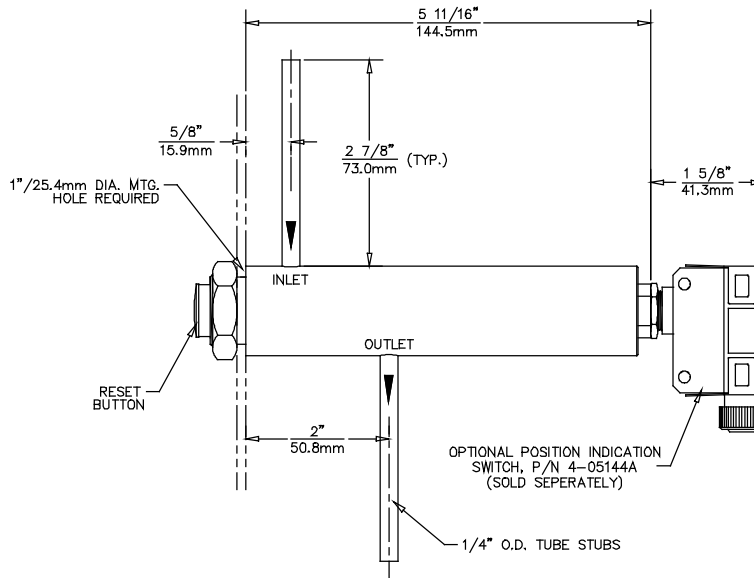
The standard trip temperature is 120°F (49°C). Other temperature settings are available upon request.

The TSV provides positive closure. It must be manually reset after a trip, which ensures that sample flow is not resumed before the cause of the upset has been corrected. A red indicator readily provides visual indication of valve position. An optional switch is available to provide a signal for a remote alarm.

Wetted materials are 316 stainless steel and elastomers which are compatible with boiler water and steam. Consult factory on other sample media if in doubt.

The Sentry TSV should be installed downstream of the pressure reducing device and upstream of analyzers, flowmeters, and other low pressure devices. After a trip, the upstream side of the TSV will be exposed to the full source pressure.

## TSV TECHNICAL DATA



## SPECIFICATIONS

Pressure Rating . . . . .	4400 psi (303 bar)
Downstream Pressure Rating . . . . .	.250 psi (17 bar) <sup>1</sup>
Temperature Rating . . . . .	.250°F (121°C)
Trip Temperature. . . . .	120°F (49°C); other temperature settings available
Pressure Drop . . . . .	Cv = 0.21
Wetted Materials . . . . .	.316 SS, Viton®, PEEK
Weight . . . . .	1.75 lbs (794 g)
Connections. . . . .	1/4" tube stubs
Shut Off Time. . . . .	Less than five seconds after temperature reaches setpoint
Reset Time. . . . .	Temperature must drop 2-3°F (1-2°C) below setpoint <sup>2</sup>
Part Number. . . . .	7-01137E

<sup>1</sup>TSV will not function properly if the downstream pressure exceeds 250 psi (17 barg). For Installation & Operating Instructions, see SPD 13.1.2.

<sup>2</sup>If the ambient temperature is above the setpoint, it may be necessary to hold the valve open for a few seconds until the sample flow cools the valve.

## OPTIONAL POSITION INDICATING DRY CONTACT SPECIFICATIONS

Configuration	Enclosure	Terminations	Contact Rating	Part Number
SPDT (form C) (NOHC as used)	NEMA 1, 2, 3, 4 & IEC IP-67	Screw Type	10 A at 125 and 250 VAC 0.5 A at 125 VDC 0.25 A at 250 VDC NEMA A300	4-05144A

### ⚠ WARNING

It is solely the responsibility of the end-user, through its own analysis and testing, to select products and materials suitable for their specific application requirements, ensure they are properly installed, safely applied, properly maintained, and limit their use to their intended purpose. Improper selection, installation, or use may result in personal injury or property damage.



### SENTRY EQUIPMENT CORP

966 Blue Ribbon Circle North  
Oconomowoc, WI 53066 USA  
Tel: 262-567-7256 • Fax: 262-567-4523

E-mail:  
sales@sentry-equip.com

Website:  
www.sentry-equip.com



For further information, contact: