ThermOmegaTech®

APPLICATION PROFILE #1

INSTRUMENT ENCLOSURE VALVE (HEATING*)

Application: For the control of inside temperature of instrument enclosures or analyzer housings that are heated via steam or hot fluids.

Purpose & Background: Instruments/analyzers installed out-of-doors are exposed to adverse conditions and are customarily enclosed in insulated boxes to protect them from physical and weather damage. Many installations require a certain inside temperature be maintained to prevent freezing, control viscosity or to maintain instrument calibration. Two systems are commonly utilized to provide such protection:

Electrical Trace: Using an electrical heat tracing cable normally provides excellent temperature control with integral thermostatic control but is costly to operate. Not suitable in many hazardous locations and traced equipment is subject to freeze damage during power outages.

Steam/Hot Fluid Trace: This is normally accomplished by dressing a copper or stainless steel tube around the inside of an enclosure or by installing a coil or finned tube heating element inside an enclosure. Steam, heat transfer fluid, hot oil or water and even hot condensate from a steam main is circulated through the loop or heater providing the source of heat to protect the instruments. This normally provides excellent freeze protection but when uncontrolled can result in overheating of the instrumentation.

Our Instrument Enclosure valves are designed to provide safe and economical control of the heating medium to regulate the internal temperature of the enclosure.

The most common installation of the **TV-SC-I** valve is shown in **Fig. 1**: The actuator end of the valve is inserted through the enclosure wall utilizing the integral bulk-head fitting provided with the valve. In this arrangement supply connections are external to the enclosure.

Due to the increased use of tube bundles, where heat trace lines enter the enclosure with impulse or sample lines, a design is required to allow all connections to be within the enclosure. This can be accomplished using the Therm-Omega-Tech® **TV/SC-A** valve design as shown in **Fig. 2**.

The **ITCH** Assembly (Instrumentation Thermostatically Controlled Heater) comes complete with steam coil, mounting bracket, **TV/HAT** valves, and tubing bulkhead fittings, and may be mounted either internally as in **Fig. 2**, or with external steam supply connections as in **Fig. 3**.

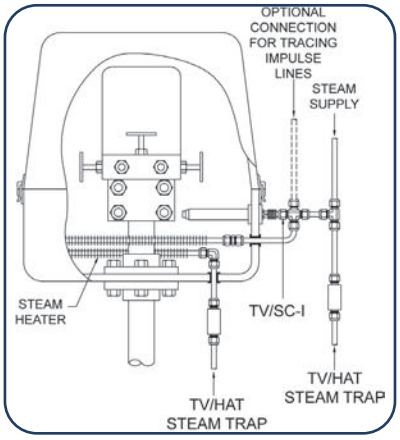

Fig. 1

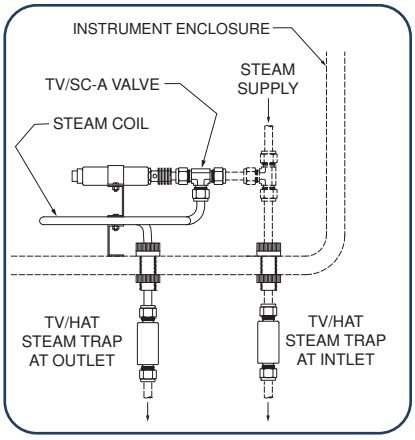

Fig. 2

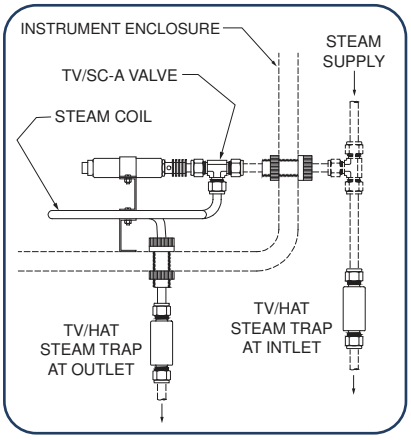

Fig. 3

*Therm-Omega-Tech® also has valves and vortex coolers for enclosure cooling applications as well as pass-thru seals, grommets and gaskets for instrument enclosures. Call for information.

Therm-Omega-Tech®, Inc.
353 Ivyland Road
Warminster, PA 18974

1-877-379-8258
www.ThermOmegaTech.com
valves@thermomegatech.com

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Because of continuous improvements, Therm-Omega-Tech®, Inc. reserves the right to change the design and specifications without notice