

**THERMOSTATIC  
RADIATOR VALVES  
ENGINEERING MANUAL  
2000 SERIES**



**FLOW MEASUREMENT & CONTROL SOLUTIONS**

## **PRODUCT OVERVIEW**

The Istec 2000 Series Radiator Valve is a self-contained, non-electric temperature-regulating device. The rugged and reliable construction provides years of service in hot water or steam heating systems.

The wax type temperature sensor expands or contracts based on room temperature changes. This movement adjusts the valve opening which increases or decreases the flow through the radiator. Continual modulation of the valve reduces energy consumption and provides even temperature levels in each heating zone.

The Valve's innovative design pattern minimizes expansion noise and flow sound levels. All valve sizes and patterns utilize the same insert and accommodate any Istec temperature controller.

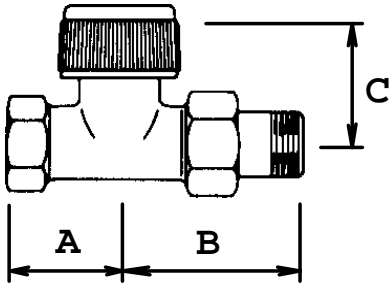
## **TECHNICAL SPECIFICATIONS**

Body	Nickel Plated Brass
Stem & Spring	Stainless steel
Seat	EPDM
Maximum Temperature	250°F
Maximum Pressure	
Hot Water	150 PSI
Steam	15 PSI
Maximum Pressure Drop	15 PSI

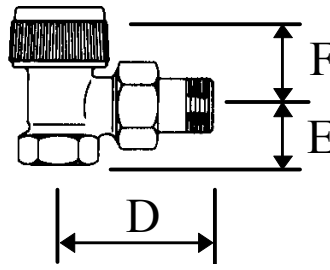
<b>C<sub>v</sub> VALUES</b>			
Size	Straight	Angle	Horizontal Angle
1/2"	2.1	4.0	2.1
3/4"	3.2	4.0	2.1
1"	4.0	4.0	N/A
1-1/4"	4.7	4.7	N/A

# DIMENSIONS

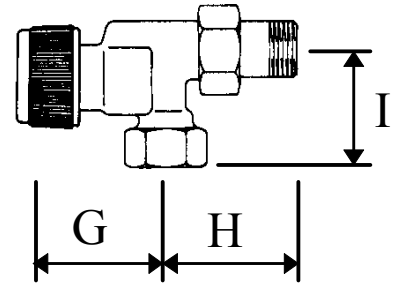
<b>VALVE BODY</b>															
SIZE	A	As	B	Bs	C	D	Ds	E	Es	F	G	H	Hs	I	Is
1/2"	1-7/16"	2-3/16"	2-5/16"	1-3/16"	1-1/8"	2-3/8"	1-7/8"	1"	1-3/4"	1"	1-5/8"	2-5/16"	1-7/8"	1-1/8"	1-3/4"
3/4"	1-5/8"	2-7/8"	2-1/2"	2-1/8"	1-1/8"	2-5/8"	2-1/4"	1-1/8"	2-3/8"	1"	1-1/2"	2-5/8"	2-1/4"	1-3/4"	3"
1"	1-3/4"	3-1/4"	3-1/8"	2-3/4"	1-1/8"	3"	2-5/8"	1-3/8"	2-7/8"	1-1/16"	1-1/2"	3"	2-5/8"	2-1/8"	3-5/8"
1-1/4"	2-3/8"	N/A	3-1/2"	N/A	1-5/16"	3-3/8"	N/A	1-9/16"	N/A	1-3/16"	N/A	N/A	N/A	N/A	N/A



**Straight**

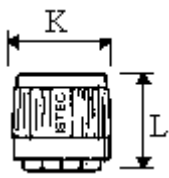


**Angle**

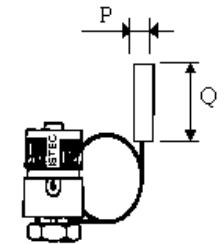


**Horizontal Angle**

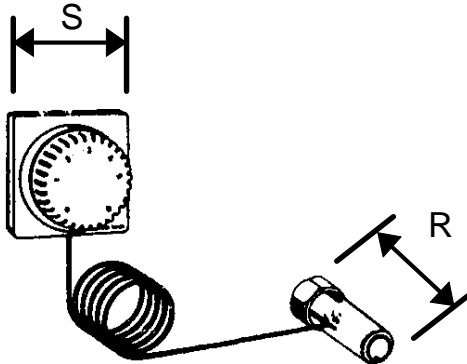
<b>CONTROLS</b>									
K	L	M	N	P	Q	R	S	T	U
1-1/2"	1-1/2"	1-5/8"	3"	1-1/4"	3-1/4"	2-5/8"	3-1/8"	1-3/4"	2-1/8"



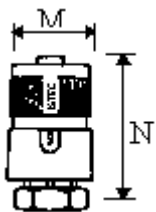
**Manual**



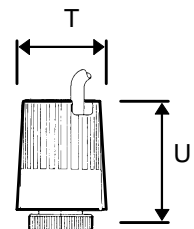
**Remote Sensor**



**Remote Sensor/Controller**



**Self-Contained**



**24 Volt**

# **THERMOSTATIC RADIATOR VALVE SPECIFICATION:** **2000 SERIES**

**AS MANUFACTURED BY ISTECH CORPORATION**  
**415 HOPE AVENUE, ROSELLE, NJ 07203**

The contractor shall furnish and install as shown on the plan, Thermostatic Radiator Valves. The Thermostatic Radiator Valves shall be factory assembled, calibrated and tested in accordance with their strict quality standards. The Valve and Control must meet or exceed ASHRAE Standard 102-1983. They shall incorporate the following features:

## **VALVE BODY**

The valve body shall be constructed of nickel-plated cast brass. It shall have a union connection available in a NPT or Sweat type fitting. The valve shall be designed for use on hot water (150 PSI) or low-pressure steam (15 PSI) systems up to a maximum temperature of 250° Fahrenheit. The valve pattern shall be designed to minimize noise from flow and expansion. The valve shall be available in ½", ¾", 1" and 1-¼" line sizes with straight, angle or horizontal angle body configurations as well as in ⅛" NPT for 1-pipe steam systems. All sizes and body configurations shall be compatible with all styles of Thermostatic Controls.

## **VALVE INSERT**

The valve insert shall be identical for all valve body sizes and configurations. The valve insert shall be interchangeable under pressure without draining or stopping the heating system. It shall contain three (3) O-Rings for added leak protection and a stainless steel stem and spring. The valve seat material shall be EPDM (Ethylene-Propylene-Dienemonomer). An optional low Cv valve insert shall be available for reversed flow applications.

## **THERMOSTATIC CONTROLS**

All thermostatic controls shall be the non-electric type capable of full modulation of the valve without an outside power source. They shall have a temperature setpoint range of 48° to 84° Fahrenheit as well as a freeze protection setting of 42° Fahrenheit. All the thermostatic controls shall incorporate a feature to internally limit or lock the temperature setting. They shall all be capable of regulating the temperature to within +/- 1° Fahrenheit. An extension piece shall be available to move the control 1" away from the valve. The thermostatic controls shall be available in the following styles:

### **Self-Contained**

Shall include a wax-type integral sensor incorporating a positive shut off setting and memory indicator feature. They shall contain an insulated push rod and stainless steel balancing spring.

### **Remote Sensor**

Shall include a wax-type remote bulb sensor with protective cover. It shall be available in 6', 10' and 15' lengths. An armored cable version of the 6' length shall be available.

### **Remote Sensor/Control**

Shall include a wax-type combination remote sensor/control incorporating a positive shutoff feature. It shall be available in 6' and 15' lengths.

### **Remote Sensor & Remote Control**

Shall include a wax-type remote bulb sensor with protective cover and a separate remote control incorporating a positive shutoff feature. It shall be available in 6' and 15' lengths.

### **MANUAL CONTROL**

A manual control knob shall be available for all valve sizes and configurations. It shall be capable of being internally set to allow full flow through the valve, limited full flow through the valve or minimum flow for freeze protection.

### **ELECTRIC ACTUATOR**

An electric actuator shall be available for all valve sizes and configurations. It shall allow for operation of the valve by a remote electric thermostat. It shall be the normally closed type (power to open) requiring 0.2 amps at 24 volts to operate.