

Self-Actuated Temperature Regulator RT-1007-AI "Fail-Safe" Series

Prevents Overheating when
Thermal System is inoperative

FEATURES

1. Safety type. Failure due to loss of thermostatic charge automatically moves direct-acting (heating) valve to fully closed position or reverse-acting valve (cooling) valve to fully-open position to prevent overheating.
2. Extra large, two-ply, seamless bellows used for long life and extra power.
3. Chevron "Lifetime" stem packing made of Teflon or EPT Rubber U-cup for water service.
4. Quick-detach valve stem construction permits easy valve change.
5. Sturdy construction with cast iron frame.
6. Variety of sensing bulb forms and materials. (See inside pages)
7. Valves in wide range of sizes, actions, styles, materials, etc. for many services. (See inside pages).
8. Capillary selection (See inside pages).
9. Setpoint Adjustment Wheel

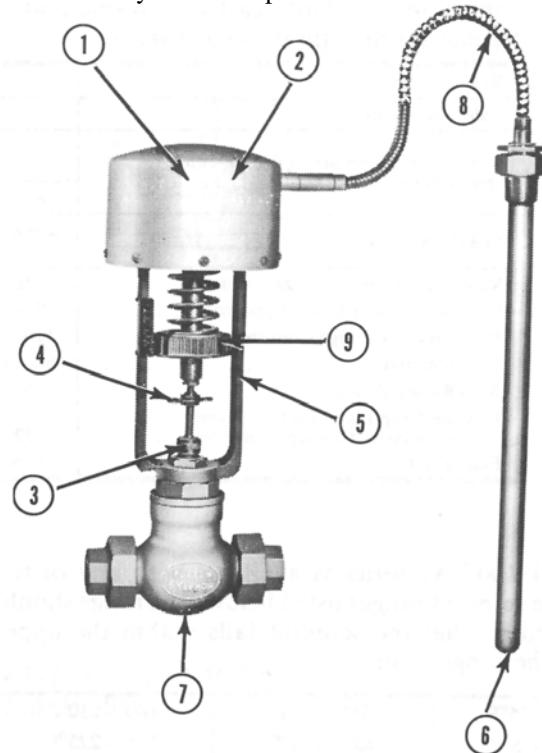
GENERAL

Without need for external power, Robertshaw Self-Actuated Temperature Regulators (SATR) offer final control of the temperature of a liquid, an air space or flow, or gas flow for domestic, equipment, process, space, etc. on heating or cooling service.

The SATR sensing bulb is installed in the medium being controlled while the SATR valve is located on the supply line of the medium used as the heating (steam, hot water) or cooling (water, ethylene glycol, brine) agent. The SATR regulates the heating or cooling medium flow to maintain the desired temperature at the sensing bulb location. Robertshaw SATR are usually cataloged to detail the two-way direct acting (close on temperature rise) type valves for heating service. Two-way reverse-acting (open on temperature rise) and three-way valves are equally available for cooling service.

The cataloged Robertshaw SATR series offers a selection of: Throttling bands, Temperature Indication, Fail-safe to prevent overheating, Manual Positioning in addition to automatic control, Corrosive atmosphere resistant type, Small overall size and instantaneous heat exchanger service.

Most cataloged Robertshaw SATR specifications are starting points from which many alternates to cataloged capillary, sensing bulb, separable well and valve may be FURNISHED TO MEET YOUR SPECIFIC application's needs.



*Cataloged Sizes: Direct-acting, 1-1/4" - 4"
Reverse-acting, 2-1/2 - 4"*

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HOW TO ORDER

1. Quantity
2. Size
3. Series number
4. Setpoint and/or setpoint range
5. Capillary specs
6. Sensing bulb specs
7. Valve type, action, ends, etc.
8. Other features
9. Shipping and invoicing instructions

RT-1007-AI Series

The RT-1007-AI series is a non-indicating design suited to heating or cooling applications where temperature overheating is of basic concern. This series is designed and constructed to push the stem downward in the event of a loss of thermal charge. It will close a direct-acting valve or open a reverse-acting valve, on charge loss, to prevent the

overheating associated with other temperature regulators.

The RT-1007-AI series can be supplied with small valve sizes; however, the more economical RT-1006-BI is normally used with the advantage of smaller bulb size, etc.

For cataloging and pricing purposes, the RT-1007-AI series is detailed with direct acting valves for heating service, 8 ft. capillary (copper with brass armor), 12 type (threaded bushing) copper sensing bulb, cast iron frame and other non-listed parts of non-ferrous metals. Alternate specifications are available.

Regulator No.	RT-1007-AI					
Valve size, Inches	1-1/4	1-1/2	2	2-1/2	3	4
Valve Type, Direct-acting (closes with rising temperature at bulb)	Single seated, Balanced			Double seated, Semi-balanced		
	MA	MA	MA	FA	FA	FA
End Connections	Screwed unions			Flanged (125 lb. ANSI)		
Valve Trim (poppet and seats), material	S.S.	S.S.	S.S.	S.S.	S.S.	S.S.
Valve Stem (highly finished), material	S.S.	S.S.	S.S.	S.S.	S.S.	S.S.
Stem Packing (spring loaded chevrons)	Teflon	Teflon	Teflon	Teflon	Teflon	Teflon
Body Material	Bronze	Bronze	Cast iron	Cast iron	Cast iron	Cast iron
Body Rating, Pounds	250	250	175	175	175	175
Pressure Drop Limit, psi (For higher pressures, consult our representative)	250	250	100	45	35	25
Full open Cv	18.6	26.0	47.8	82.5	130.0	226.0

The RT-1007-AI series is available with any of the adjustable setpoint ranges listed below. The range should be selected so that the setpoint falls within the upper third of the range span.

-50° - -25°F	45° - 75°F	160° - 190°F
-35° - -5°F	85° - 115°F	180° - 210°F
-15° - 15°F	105° - 135°F	195° - 225°F
10° - 40°F	125° - 155°F	
35° - 65°F	135° - 165°F	

ALTERNATES INCLUDE

Capillary:

Length 1 ft. to 50 ft. or more

Materials Copper tube with brass armor (standard)
or 304 stainless steel tube with SS braid

Sensing Bulbs:

Type 12B Copper (standard)

Type 12BP 316 stainless steel

Type 12B or 12BP with "dead extension"

Type 54 Copper, externally finned,
Plain (54A)
Bushed (54J)
Flanged (54K)

Type 6 Plain for open vessels,
Copper with copper tube and brass armor (6A)
316 SS with 304 SS tube and no braid (6AP)

Separable Wells (for sensing bulb protection or ease of removal):

Materials 316 SS

Type GA or GA with lagging extension
Mounting thread one size larger than bulb size

Type GB Mounting thread same size as bulb size

Valves: Types A, FA, MA, MAS, WA, WD
as illustrated

VALVE SIZING

Valve sizing is critical to control and life of regulator. Use Robertshaw's "Flo-Rule" Valve Sizing Slide Rule and valve Cv chart, or contact our representative or factory. The application requirement can frequently be satisfied by one or two sizes smaller valve than the supply pipeline size.

NOTE 1 - IMPORTANT - If valve seat leakage can cause a problem or a hazard, the following should be taken into account. Maximum leakage of new valves: single-seated Types A, WA - 0.05% of full open valve capacity; single-seated balanced Types MA, MAS - 0.01% of full open valve capacity; single seated Type WD - 1% of full open valve capacity; double-seated Type FA - 0.5% of full open valve capacity. This leakage will usually increase somewhat as the valve seats wear in service.

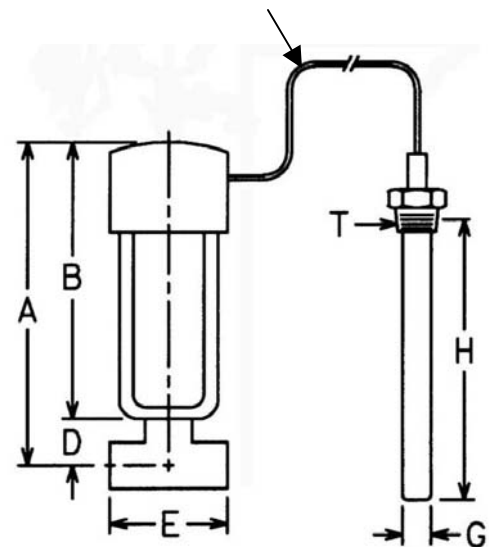
**DIMENSIONS, SHIPPING WEIGHTS
AND SENSING BULB SIZES**

Regulator No.	RT-1007-AI					
Valve Size, Inches	1-1/4	1-1/2	2	2-1/2	3	4
Direct-Acting Valve, Type	MA	MA	MA	FA	FA	FA
Shipping Wt., Lbs.	37	43	48	100	130	160
A	15-13/16	16-5/16	17-1/8	16-15/16	16-15/16	18
B	12-3/16	12-3/16	12-3/16	12-3/16	12-3/16	12-3/16
D	3-5/8	4-1/8	4-15/16	4-3/4	4-3/4	5-13/16
E	7-1/2	8-1/2	7	7-3/4	8-5/8	10-1/4
Standard bulb for temperature ranges beginning at 120° F. or above						
G	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4
H	18	18	24	18	18	24
T*	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4
**Standard bulb for temperature ranges beginning below 120° F.						
G	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2
H	28	28	32	28	28	32
T*	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2

* Standard pipe thread.

** Bulb sizes for ranges beginning below 120° F. are necessary to provide "Cross-ambient" charge. This assures operation with ambient temperatures either above or below the control setting. Under some conditions smaller bulbs may be used with lower ranges. If the larger bulb cannot be used, consult the factory or nearest representative.

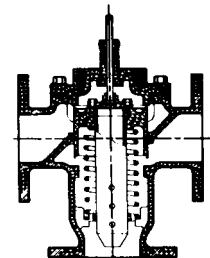
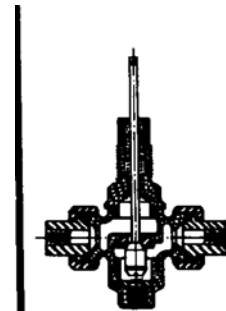
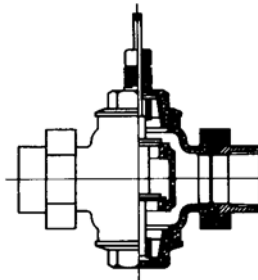
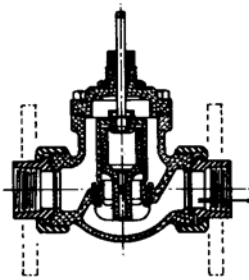
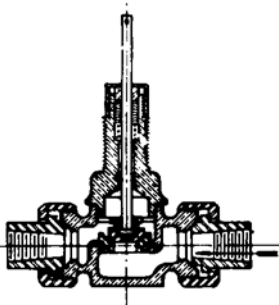
8 FT CATALOGED



SATR VALVES FOR RT-1007-AI SERIES
(See Valve spec sheets for full details)

TWO WAY

THREE WAY



Style A
Union Ends
Single Stated
Unbalanced
Bronze Body
SS Trim
Direct Acting
Sizes 1/4" – 1"
Reverse Acting
Sizes 1/4" – 1-1/2"

Style MA
Single Seated
Fully Balanced
Direct Acting only
SS Trim
MA Sizes 3/4" – 1-1/2"
Union Ends
Bronze Body
MA Size 2"
Flanged
Bronze or Cast Iron Body
MAS Sizes 1" – 2"
Flanged
Steel Body
MAS Sizes 3/4" – 1-1/2"
Threaded Ends
Steel Body

Style FA
Double Seated
Semi-Balanced
Reverse Acting: 3/4" – 1-1/2"
Bronze Unions, Bronze Body
Bronze or Monel Trim
Reverse Acting: 2"
Flanged, Bronze Body
Bronze or Monel Trim
Reverse Acting: 2"
Flanged, Cast Iron Body
Bronze or SS Trim
Reverse Acting: 2-1/2" – 4"
Flanged, Bronze Body
Monel Trim
Reverse Acting: 2-1/2" – 4"
Flanged, Cast Iron Body
SS Trim
Direct Acting: 2-1/2" – 4"
Flanged, Cast Iron Body
SS Trim

Style WA
Union Ends (2)
Threaded End (Bottom)
Unbalanced
Sizes 1/2" – 1-1/2"
Bronze Body
SS Trim

Style WD
Balanced
Sizes 2" – 2-1/2"
Flanged
Bronze Body
Bronze Trim



U.S.A. & Canada

Robertshaw Industrial Products
1602 Mustang Drive
Maryville, Tennessee 37801
Phone: (865) 981-3100 Fax: (865) 981-3168
<http://www.robertshawindustrial.com>

Exports

Invensys Appliance Controls
1701 Byrd Avenue
P.O. Box 26544
Richmond, Virginia 23261-6544
Phone: (804) 756-6500 Fax: (804) 756-6561

Invensys®

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