FEATURES

- Large stainless steel bellows used for long life, extra power and corrosion resistance.
- From the bulb head through the regulator frame, all parts exposed to the atmosphere are made of 18-8 stainless steel.
- Over-temperature protection is standard feature.
- Chevron "Lifetime" stem packing made of Teflon* or EPT Rubber U-Cup for water service.
- Quick-detach valve stem construction permits easy valve change.
- Sturdy construction with stainless steel frame.
- Variety of sensing bulb forms and materials (See inside pages).
- Valves in wide range of sizes, actions, styles, materials, etc. for many types of service. (See inside pages).
- Capillary selection (See inside pages).
- All components from a single source.

* Registered Trademark of DuPont Company.

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.

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 & invoicing instructions
RT-1011-BI SERIES

The RT-1011-B1 series is an extension of the workhorse RT-1003-D1 series. It is the design result of trying to make the non-indicating RT-1003-D1 series with all exposed parts of the upper works in 18-8 SS. This series extends the service life of SATR units installed where the bellows and other relatively thin parts are subjected to corrosive attack from fumes, vapors, etc. from plating or process vats, tanks, etc.

The RT-1011-B1 is available with any of the ranges listed below. The range should be selected so that the setpoint falls within the upper third of the range span.

<table>
<thead>
<tr>
<th>Temperature Range</th>
<th>RT</th>
<th>RT</th>
</tr>
</thead>
<tbody>
<tr>
<td>10°F - 55°F</td>
<td>115°F - 175°F</td>
<td>225°F - 280°F</td>
</tr>
<tr>
<td>30°F - 80°F</td>
<td>155°F - 210°F</td>
<td>245°F - 300°F</td>
</tr>
<tr>
<td>50°F - 105°F</td>
<td>165°F - 215°F</td>
<td>265°F - 315°F</td>
</tr>
<tr>
<td>75°F - 130°F</td>
<td>190°F - 240°F</td>
<td></td>
</tr>
<tr>
<td>105°F - 165°F</td>
<td>200°F - 250°F</td>
<td></td>
</tr>
</tbody>
</table>

**ALTERNATES INCLUDE**

**Capillary:**
- Length: 1 ft. to 50 ft. or more
- Material: 304 stainless steel tube (standard) or 304 stainless steel tube with SS braid.

**Sensing Bulbs:**
- Type 12B................. 316 stainless steel (standard)
- Type 12BP................ Copper
- Type 12B or 12BP.............. with "dead extension"
- Type 54................ Copper, externally finned, Plain (54A), Bushed (54J), Flanged (54K)

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

**Separable Wells (For sensing bulb protection or ease of removal):**
- Material: 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, CSS, FA, MA, MAS, WA, WCSS, WD as illustrated.

For cataloging and pricing purposes, the RT-1011-B1 series is detailed with direct-acting valves for heating service, 8 ft. plain 304 stainless steel tube capillary, 12BP type (threaded bushing) in stainless steel with stainless steel sensing bulb, cast stainless steel frame and non-listed parts in stainless steel. Alternate specifications are available.

**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 can frequently be satisfied by a smaller sized 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, CSS, WA, WCSS - 0.05% of full open valve capacity; single-seated balanced Types MA, MAS - 0.01% of full open valve capacity; double-seated Type FA - 0.5% of full open valve capacity; single seated Type WD - 1% of full open valve capacity. This leakage will usually increase somewhat as the valve seats wear in service.

**NOTE 2 - IMPORTANT**
- Damage to or failure of the thermal element with loss of charge will ordinarily result in the regulator going to the "cold" position. The valve stem moves "up" (toward the bellows) - thus a "direct-acting" valve will fully open, a "reverse-acting" valve will close, and a 3-way valve will open the bottom port.
### DIMENSIONS, SHIPPING WEIGHTS AND SENSING BULB SIZES

#### Dimensions

<table>
<thead>
<tr>
<th>Valve Size, Inches</th>
<th>1/4</th>
<th>3/8</th>
<th>1/2</th>
<th>3/4</th>
<th>1</th>
<th>1-1/4</th>
<th>1-1/2</th>
<th>2</th>
<th>2-1/2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct-Acting Valve Type</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>MA</td>
<td>MA</td>
<td>MA</td>
<td>MA</td>
<td>MA</td>
<td>MA</td>
<td>FA</td>
<td>FA</td>
</tr>
<tr>
<td>Reverse Acting: 2&quot;</td>
<td>13-1/2</td>
<td>13-1/2</td>
<td>13-1/2</td>
<td>13-1/2</td>
<td>13-1/2</td>
<td>13-1/2</td>
<td>13-1/2</td>
<td>13-1/2</td>
<td>13-1/2</td>
<td>13-1/2</td>
<td>13-1/2</td>
</tr>
<tr>
<td>Reverse Acting: 2&quot;</td>
<td>1-9/16</td>
<td>1-9/16</td>
<td>1-9/16</td>
<td>3-7/16</td>
<td>3-7/16</td>
<td>3-5/8</td>
<td>4-1/8</td>
<td>4-15/16</td>
<td>4-3/4</td>
<td>4-3/4</td>
<td>5-13/16</td>
</tr>
<tr>
<td>Reverse Acting: 2&quot;</td>
<td>4-3/4</td>
<td>4-3/4</td>
<td>4-3/4</td>
<td>6-15/16</td>
<td>7-1/8</td>
<td>7-1/2</td>
<td>8-1/2</td>
<td>7</td>
<td>7-3/4</td>
<td>8-5/8</td>
<td>10-1/4</td>
</tr>
</tbody>
</table>

#### Regulator No. | Shipping Weight, Lbs.
| RT-1011-B1 | 28 | 28 | 29 | 30 | 34 | 40 | 45 | 80 | 100 | 125 | 155 |

---

**NOTE:** Bronze valves subjected to corrosive atmospheric attack quickly form a protective shell which prevents any further deterioration. Stainless steel valve is only needed when medium passing through the valve is corrosive.