Series 38R Self-Acting Temperature Control Valves require no external power sources and are ideal for regulating the temperature of tanks, process streams and various types of industrial equipment. The actuators are made with a rugged die-cast aluminum housing with a fully enclosed bellow assembly and internal over-range protection. Valves are offered in 1/2” through 6” connection sizes and 1/8” through 6” port sizes. The valve bodies are available in single-seated direct or reverse-acting, double-seated direct or reverse-acting, and 3-way designs with four choices of body material: bronze, cast-iron, cast-steel, and 316 stainless steel. Actuators are available with or without indicating dials or in Fail-Safe. Non-indicating actuators feature a lower profile and should be implemented where space constraints may be an issue while the indicating actuator allows the operator to verify the process temperature and aid in temperature adjustment. Fail-Safe actuators are designed to cause the valve to fail in the safe control position (open in cooling application, closed in a heating application) should some accidental damage occur to the terminal system, resulting in loss of pressure charge. Also available with the Series 38R are a wide range of capillaries, bulbs, and thermowells.

**HOW TO ORDER:**

1. Select valve body by specifying valve action, connection/port size, valve seat configuration, body material, and trim material.  
   38R-XXXXAXX-XXXXXX-RXX

2. Select actuator by specifying the actuator type.  
   38R-XXXXXXX-XXXXXX-RXX

3. Select bulb by specifying bulb/capillary type.  
   38R-XXXXXXX-XXXXXX-RXX

4. Select capillary length.  
   38R-XXXXXXX-XXXXXX-RXX

5. Select without thermowell, or specify thermowell material.  
   38R-XXXXXXX-XXXXXX-RXX

6. Select nominal temperature range for control valve.  
   38R-XXXXXXX-XXXXXX-RXX
**Series 38R**

**2-Way Bronze Valve Body**

**Single Seat 1/2˝ - 2˝**

**Direct Acting for Heating**

**Reverse Acting for Cooling**

---

**SPECIFICATIONS**

**Wetted Materials:**
- Body: Bronze;
- Trim: 316 stainless steel;
- Packing: PTFE;
- Union: Iron.

**Trim Style:** Modified linear.

**Connection:** Threaded, malleable iron union ends.

**Pressure and Temperature Limits:** 250 psi (17.24 bar) @ 410°F (210°C).

---

**Double Seat 3/4˝ - 2˝**

**Valve Body Number**

**Size**

**Connection (NPT)**

**Nominal Port**

**Capacity (Cv)**

**Dimensions in (mm)**

**Approximate Shipping Wt.**

---

**CONTACT US**
- U.S. 219/879-8000
- U.K. (+44) (0)1494-461707
- A.U. (+61) (0) 2 4272 2055
- China +852-23181007

---

**SPECIFICATIONS**

**Wetted Materials:**
- Body: Bronze;
- Trim: 316 stainless steel;
- Packing: PTFE;
- Union: Iron.

**Trim Style:** Modified linear.

**Connection:** Threaded, malleable iron union ends.

**Pressure and Temperature Limits:** 250 psi (17.24 bar) @ 410°F (210°C).
**Series 38R**

**2-Way Cast Iron Valve Body**

**Double Seat 2-1/2” - 6”**

**Direct Acting for Heating**

**Reverse Acting for Cooling**

**SPECIFICATIONS**

- **Wetted Materials:**
  - Body: cast iron;
  - Trim: 316 stainless steel;
  - Packing: PTFE.

- **Trim Style:** Modified linear.

- **Connection:** Class 125 flanged.

- **Pressure and Temperature Limits:** 125 psi (8.62 bar) @ 350°F (149°C).

<table>
<thead>
<tr>
<th>Valve Body Number</th>
<th>Size</th>
<th>Connection</th>
<th>Nominal Port (NPT)</th>
<th>Capacity (CV)</th>
<th>Maximum Close-Off Pressure psid (bar)</th>
<th>Dimensions in (mm)</th>
<th>Approximate Shipping Wt. lb (kg)</th>
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</thead>
<tbody>
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<td>2-1/2&quot;</td>
<td>2-1/2&quot;</td>
<td>99</td>
<td>50</td>
<td>65 (4.5)</td>
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<td>45 (20)</td>
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<td>3&quot;</td>
<td>30</td>
<td>50 (3.4)</td>
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<td>5.0 (46)</td>
<td>5.6 (142)</td>
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<tr>
<td>D08WA12</td>
<td>4&quot;</td>
<td>4&quot;</td>
<td>196</td>
<td>40 (2.8)</td>
<td>11.4 (290)</td>
<td>6.3 (46)</td>
<td>6.5 (165)</td>
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<td>D09WA12</td>
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<td>5&quot;</td>
<td>248</td>
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<td>12.0 (305)</td>
<td>6.9 (46)</td>
<td>7.3 (185)</td>
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<td>D10WA12</td>
<td>6&quot;</td>
<td>6&quot;</td>
<td>340</td>
<td>25 (1.7)</td>
<td>14.1 (358)</td>
<td>7.5 (46)</td>
<td>8.0 (203)</td>
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</table>

**SPECIFICATIONS**

- **Wetted Materials:**
  - Body: cast steel;
  - Trim: 316 stainless steel;
  - Packing: PTFE.

- **Trim Style:** Modified linear.

- **Connection:** Threaded.

- **Pressure and Temperature Limits:** 250 psi (17.24 bar) @ 410°F (210°C).

<table>
<thead>
<tr>
<th>Valve Body Number</th>
<th>Size</th>
<th>Connection</th>
<th>Nominal Port (in)</th>
<th>Capacity (CV)</th>
<th>Maximum Close-Off Pressure psid (bar)</th>
<th>Dimensions in (mm)</th>
<th>Approximate Shipping Wt. lb (kg)</th>
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<td>3/4&quot;</td>
<td>1/8&quot;</td>
<td>0.17</td>
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<td>6.0 (17.3)</td>
<td>2.3 (58)</td>
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<tr>
<td>DBV2A2</td>
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<td>3/4&quot;</td>
<td>3/16&quot;</td>
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<td>6.0 (17.3)</td>
<td>2.3 (58)</td>
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<tr>
<td>DB3VA2</td>
<td>3/4&quot;</td>
<td>3/4&quot;</td>
<td>1/4&quot;</td>
<td>0.7</td>
<td>250 (17.3)</td>
<td>6.0 (17.3)</td>
<td>2.3 (58)</td>
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<tr>
<td>DB4VA2</td>
<td>3/4&quot;</td>
<td>3/4&quot;</td>
<td>3/8&quot;</td>
<td>1.4</td>
<td>250 (17.3)</td>
<td>6.0 (17.3)</td>
<td>2.3 (58)</td>
</tr>
<tr>
<td>DB5VA2</td>
<td>3/4&quot;</td>
<td>3/4&quot;</td>
<td>1/2&quot;</td>
<td>2.6</td>
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<td>6.0 (17.3)</td>
<td>2.3 (58)</td>
</tr>
<tr>
<td>DBTVA2</td>
<td>3/4&quot;</td>
<td>3/4&quot;</td>
<td>5/8&quot;</td>
<td>5.6</td>
<td>140 (9.7)</td>
<td>6.0 (17.3)</td>
<td>2.3 (58)</td>
</tr>
<tr>
<td>DC1VA2</td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>1/8&quot;</td>
<td>0.17</td>
<td>250 (17.3)</td>
<td>6.0 (17.3)</td>
<td>2.3 (58)</td>
</tr>
<tr>
<td>DC2VA2</td>
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<td>1&quot;</td>
<td>3/16&quot;</td>
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<td>250 (17.3)</td>
<td>6.0 (17.3)</td>
<td>2.3 (58)</td>
</tr>
<tr>
<td>DC3VA2</td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>1/4&quot;</td>
<td>0.7</td>
<td>250 (17.3)</td>
<td>6.0 (17.3)</td>
<td>2.3 (58)</td>
</tr>
<tr>
<td>DC4VA2</td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>3/8&quot;</td>
<td>1.4</td>
<td>250 (17.3)</td>
<td>6.0 (17.3)</td>
<td>2.3 (58)</td>
</tr>
<tr>
<td>DC5VA2</td>
<td>1&quot;</td>
<td>1&quot;</td>
<td>1/2&quot;</td>
<td>2.6</td>
<td>250 (17.3)</td>
<td>6.0 (17.3)</td>
<td>2.3 (58)</td>
</tr>
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<td>DC6VA2</td>
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<td>1&quot;</td>
<td>3/4&quot;</td>
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<td>1&quot;</td>
<td>1/4&quot;</td>
<td>0.7</td>
<td>80 (5.5)</td>
<td>6.0 (17.3)</td>
<td>2.3 (58)</td>
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</table>
# 2-Way Stainless Steel Valve Body

**SPECIFICATIONS**

Wetted Materials:
- Body: 316 stainless steel;
- Trim: 316 stainless steel;
- Packing: PTFE.

Trim Style: Modified linear.

Connection: Threaded.

Pressure and Temperature Limits: 250 psi (17.24 bar) @ 410°F (210°C).

## Table of Specifications

<table>
<thead>
<tr>
<th>Valve Body Number</th>
<th>Size</th>
<th>Connection (NPT)</th>
<th>Nominal Port</th>
<th>Capacity (Cv)</th>
<th>Maximum Close-Off Pressure psi (bar)</th>
<th>Dimensions in (mm)</th>
<th>Approximate Shipping Wt. (lb (kg))</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA1VA42</td>
<td>1/2&quot;</td>
<td>1/8&quot; 0.34</td>
<td>250 (17.3)</td>
<td>6.0 (127)</td>
<td>2.9 (74) 3.4 (86) 8.0 (3.64)</td>
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</tr>
<tr>
<td>DA2VA42</td>
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<td>3/16&quot; 0.76</td>
<td>250 (17.3)</td>
<td>5.0 (127)</td>
<td>2.9 (74) 3.4 (86) 8.0 (3.64)</td>
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<td></td>
</tr>
<tr>
<td>DA3VA42</td>
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<td>1/4&quot; 1.5</td>
<td>250 (17.3)</td>
<td>5.0 (127)</td>
<td>2.9 (74) 3.4 (86) 8.0 (3.64)</td>
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<td></td>
</tr>
<tr>
<td>DA4VA42</td>
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<td>3/8&quot; 3.4</td>
<td>250 (17.3)</td>
<td>5.0 (127)</td>
<td>2.9 (74) 3.4 (86) 8.0 (3.64)</td>
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<td></td>
</tr>
<tr>
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<td>1/2&quot; 6.6</td>
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<td>5.0 (127)</td>
<td>2.9 (74) 3.4 (86) 8.0 (3.64)</td>
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<td></td>
</tr>
<tr>
<td>D01VA42</td>
<td>3/4&quot;</td>
<td>3/4&quot; 8.6</td>
<td>140 (9.7)</td>
<td>5.0 (127)</td>
<td>2.9 (74) 3.4 (86) 8.0 (3.64)</td>
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<td>1-1/2&quot; 27</td>
<td>25 (1.7)</td>
<td>6.1 (155)</td>
<td>3.5 (89) 4.0 (102) 15.5 (7.05)</td>
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<tr>
<td>D05VA42</td>
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<td>2&quot; 33</td>
<td>15 (1.0)</td>
<td>6.5 (165)</td>
<td>3.9 (89) 4.2 (107) 19.0 (8.64)</td>
<td></td>
<td></td>
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</tbody>
</table>
## 2-Way Bronze Fail Safe Valve Body

### Single Seat 1/2”

- **Direct Acting for Heating**
  - Valve Body Number: DA1VA32, DA2VA32, DA3VA32, DA4VA32, D00VA32
  - Size: 1/2”
  - Nominal Port: 1/8”, 3/16”, 1/4”, 3/8”, 1/2”
  - Capacity (Cv): 0.12, 0.25, 0.5, 1.0, 2.0
  - Maximum Close-Off Pressure: 250 psi (17.3 bar)
  - Dimensions in (mm): A 4.8, B 2.3
  - Approximate Shipping Wt.: 3.0 (1.35 lb)

- **Reverse Acting for Cooling**
  - Valve Body Number: RA1VA32, RA2VA32, RA3VA32, RA4VA32, R00VA32
  - Size: 1/2”
  - Nominal Port: 1/8”, 3/16”, 1/4”, 3/8”, 1/2”
  - Capacity (Cv): 0.12, 0.25, 0.5, 1.0, 2.0
  - Maximum Close-Off Pressure: 250 psi (17.3 bar)
  - Dimensions in (mm): A 4.8, B 2.3
  - Approximate Shipping Wt.: 3.0 (1.35 lb)

### Double Seat 3/4” - 2”

- **Direct Acting for Heating**
  - Valve Body Number: D01WA32, D02WA32, D03WA32, D04WA32, D05WA32
  - Size: 3/4”, 1”, 1-1/4”, 1-1/2”, 2”
  - Nominal Port: 3/4”, 1”, 1-1/4”, 1-1/2”, 2”
  - Capacity (Cv): 5.6, 8.4, 15, 21, 33
  - Maximum Close-Off Pressure: 250 psi (17.3 bar), 200 psi (13.8 bar), 175 psi (12.1 bar), 150 psi (10.3 bar), 100 psi (6.9 bar)
  - Dimensions in (mm): A 5.6 (142), B 2.3 (58)
  - Approximate Shipping Wt.: 5.0 (2.25 lb)

- **Reverse Acting for Cooling**
  - Valve Body Number: R01WA32, R02WA32, R03WA32, R04WA32, R05WA32
  - Size: 3/4”, 1”, 1-1/4”, 1-1/2”, 2”
  - Nominal Port: 3/4”, 1”, 1-1/4”, 1-1/2”, 2”
  - Capacity (Cv): 5.6, 8.4, 15, 21, 33
  - Maximum Close-Off Pressure: 250 psi (17.3 bar), 200 psi (13.8 bar), 175 psi (12.1 bar), 150 psi (10.3 bar), 100 psi (6.9 bar)
  - Dimensions in (mm): A 5.6 (142), B 2.3 (58)
  - Approximate Shipping Wt.: 5.0 (2.25 lb)

### SPECIFICATIONS

- **Wetted Materials**:
  - Body: Bronze;
  - Trim: 316 stainless steel;
  - Packing: PTFE;
  - Union: Iron.

- **Trim Style**: Modified linear.

- **Connection**: Threaded, malleable iron union ends.

- **Pressure and Temperature Limits**: 250 psi (17.24 bar) @ 410°F (210°C).
Series 38R Three-Way Self-Acting Temperature Control Valves can be used for both mixing and diverting flow applications. See the adjacent diagrams for the mixing and diverting flow patterns. To properly control the mixing of two flows, the inlet pressures at ports B and C should be as close as possible. The 38R Series Three-Way Valves are not designed for use in steam applications.

### SPECIFICATIONS

**Wetted Materials:**
- Body: Bronze;
- Trim: Bronze;
- Packing: PTFE;
- Union: Iron.

**Trim Style:** Modified linear.

**Connection:** Threaded, malleable iron union ends.

**Pressure and Temperature Limits:** 250 psi (17.24 bar) @ 300°F (149°C).

### Valve Body Specifications

<table>
<thead>
<tr>
<th>Valve Body Number</th>
<th>Size</th>
<th>Connection</th>
<th>Nominal Port</th>
<th>Capacity (Cv)</th>
<th>Maximum Close-Off Pressure psid (bar)</th>
<th>Dimensions in (mm)</th>
<th>Approximate Shipping Wt. lb (kg)</th>
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</thead>
<tbody>
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<td>1/2”</td>
<td>1/2”</td>
<td>2.8</td>
<td>250 (17.3)</td>
<td>4.8 (122) 1.8 (46) 1.8 (46) 2.9 (1.31)</td>
<td>A 4.8 (122) B 1.8 (46) C 1.8 (46)</td>
<td>300°F (149°C).</td>
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<tr>
<td>301WA31</td>
<td>3/4”</td>
<td>3/4”</td>
<td>5.6</td>
<td>250 (17.3)</td>
<td>5.6 (142) 2.3 (58) 2.3 (58) 4.7 (2.12)</td>
<td>A 5.6 (142) B 2.3 (58) C 2.3 (58)</td>
<td>300°F (149°C).</td>
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<tr>
<td>302WA31</td>
<td>1”</td>
<td>1”</td>
<td>8.4</td>
<td>250 (17.3)</td>
<td>6.0 (152) 2.3 (58) 2.3 (58) 5.7 (2.57)</td>
<td>A 6.0 (152) B 2.3 (58) C 2.3 (58)</td>
<td>300°F (149°C).</td>
</tr>
<tr>
<td>303WA31</td>
<td>1-1/4”</td>
<td>1-1/4”</td>
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<td>250 (17.3)</td>
<td>7.2 (183) 2.8 (71) 2.6 (66) 9.5 (4.28)</td>
<td>A 7.2 (183) B 2.8 (71) C 2.6 (66)</td>
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<tr>
<td>304WA31</td>
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<td>1-1/2”</td>
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<td>250 (17.3)</td>
<td>7.7 (196) 3.5 (89) 2.6 (66) 11.1 (5.00)</td>
<td>A 7.7 (196) B 3.5 (89) C 2.6 (66)</td>
<td>300°F (149°C).</td>
</tr>
<tr>
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<td>2”</td>
<td>2”</td>
<td>33</td>
<td>250 (17.3)</td>
<td>8.6 (218) 4.1 (104) 3.1 (79) 16.7 (7.55)</td>
<td>A 8.6 (218) B 4.1 (104) C 3.1 (79)</td>
<td>300°F (149°C).</td>
</tr>
</tbody>
</table>
### Series 38R 3-Way Cast Iron Valve Body

**Wetted Materials:**
- **Body:** Cast iron;
- **Trim:** Bronze;
- **Packing:** PTFE;
- **Union:** Iron.

**Trim Style:** Modified linear.

**Connection:** Class 125 flanged.

**Pressure and Temperature Limits:** 125 psi (8.62 bar) @ 300°F (149°C).

**Specifications Table:**

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<th>Size</th>
<th>Connection (NPT)</th>
<th>Nominal Port</th>
<th>Capacity (Cv)</th>
<th>Maximum Close-Off Pressure psid (bar)</th>
<th>Dimensions in (mm)</th>
<th>Approximate Shipping Wt. lb (kg)</th>
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<tbody>
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<td>6</td>
<td>68</td>
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<tr>
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<td>3</td>
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<td>10.0 (254)</td>
<td>13.0 (330)</td>
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</tr>
<tr>
<td>308WA11</td>
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<td>4˝</td>
<td>160</td>
<td>125 (8.6)</td>
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<td>140 (64)</td>
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### Series 38R 3-Way Stainless Steel Valve Body

**Wetted Materials:**
- **Body:** 316 stainless steel;
- **Trim:** 316 stainless steel;
- **Packing:** PTFE;
- **Union:** Iron.

**Trim Style:** Modified linear.

**Connection:** Threaded.

**Pressure and Temperature Limits:** 250 psi (17.24 bar) @ 300°F (149°C).

**Specifications Table:**

<table>
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<tr>
<th>Valve Body Number</th>
<th>Size</th>
<th>Connection (NPT)</th>
<th>Nominal Port</th>
<th>Capacity (Cv)</th>
<th>Maximum Close-Off Pressure psid (bar)</th>
<th>Dimensions in (mm)</th>
<th>Approximate Shipping Wt. lb (kg)</th>
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</thead>
<tbody>
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<td>1/2˝</td>
<td>6</td>
<td>300 (20.7)</td>
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<td>3.4 (86)</td>
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<tr>
<td>301WA42</td>
<td>3/4˝</td>
<td>3/4˝</td>
<td>8</td>
<td>300 (20.7)</td>
<td>4.9 (124)</td>
<td>2.9 (74)</td>
<td>3.4 (86)</td>
</tr>
<tr>
<td>302WA42</td>
<td>1˝</td>
<td>1˝</td>
<td>11</td>
<td>300 (20.7)</td>
<td>4.9 (124)</td>
<td>2.9 (74)</td>
<td>3.4 (86)</td>
</tr>
<tr>
<td>304WA42</td>
<td>1-1/2˝</td>
<td>1-1/2˝</td>
<td>20</td>
<td>200 (13.6)</td>
<td>6.1 (155)</td>
<td>3.4 (86)</td>
<td>4.0 (102)</td>
</tr>
<tr>
<td>305WA42</td>
<td>2˝</td>
<td>2˝</td>
<td>30</td>
<td>100 (6.9)</td>
<td>6.5 (165)</td>
<td>3.8 (97)</td>
<td>4.2 (107)</td>
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</tbody>
</table>
Self-Acting Actuators require no external power to operate. The powder-coated aluminum housing allows these actuators to be rugged and lightweight. Indicating models include a dial gauge with swivel and angle adjustment. Actuators available in three styles: Non-Indicating, Indicating, and Fail-Safe.

SPECIFICATIONS

**Power Requirements:** Fully self-contained, no external power required.

**Indicator:** 3-1/2” dial thermometer, stainless steel case, swivel and angle adjustable (available for Indicating Actuator only).

**Housing:** Die cast aluminum, epoxy powder coated blue finish.

**Set Point Scale:** Integral to housing.

**Bellows:** High-pressure brass, corrosion resistant, tin-plated finish.

**Adjustment Screws:** Brass.

**Range Adjustment Spring:** Cadmium plated.

**Overrange Protection:** 100°F over upper range limit for temporary situations (not available for Fail-Safe actuators).

**Weight:** See model table.

<table>
<thead>
<tr>
<th>Actuator Number</th>
<th>Description</th>
<th>Weight (lb)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Non-Indicating Temperature Control Actuator</td>
<td>6.0</td>
<td>2.70</td>
</tr>
<tr>
<td>2</td>
<td>Indicating Temperature Control Actuator</td>
<td>6.6</td>
<td>2.97</td>
</tr>
<tr>
<td>3</td>
<td>Fail-Safe Temperature Control Actuator</td>
<td>9.5</td>
<td>4.32</td>
</tr>
</tbody>
</table>