Valve Specifications

Service: Chilled or hot water, 50% glycol
Flow characteristic:
- Two-way on/off
- Three-way on/off, diverting
Sizes:
- 1/2".
- 3/4".
- 1"
Type of end fitting: Female, NPT or Sweat
Materials:
- Body: Forged brass
- Stem: Stainless steel
- Seals: EPDM
Pressure rating: 300 psi
Media temp. range: 32°F to 212°F [0°C to 100°C]
Close off pressure: 20 – 75 psi
Leakage class: III 0.1%
Cv rating: 1.0 – 8.0

Actuator Specifications

Control: On/off
Nominal voltage:
- 24 VAC 50/60 Hz ± 10%
- 120 VAC 50/60 Hz ± 10%
- 230 VAC 50/60 Hz ± 10%
Power consumption: 6.5 W
Transformer sizing: 7VA (Class 2 power source)
Electrical connection:
Motor Lead Color:
- 24V: Black
- 120/230V: Black
Position indication: Integrated into lever (NC only)
Running time:
Motor: 20-40 seconds
Spring: 5 seconds
Humidity: 5 to 95% non-condensing
Ambient temperature: 32°F to 104°F (0°C to +40°C)
Storage temperature: -40°F to 176°F (-40°C to +80°C)
Agency listing: cULus
Noise level: Max. 35 db (A)
Quality standard: ISO 9001
Built-in auxiliary switch (optional):
- 1 x SPST, .4A resistive (.4A inductive) @ 24 VAC
- 1 x SPST, 5A resistive (5A inductive) @ 120 VAC
- 1 x SPST, 5A resistive (5A inductive) @ 230 VAC

Application

This valve is typically used on fan coil units, baseboards or other hydronic applications where fail safe operation or 2-wire control is required. This valve is suitable for use in a hydronic system with variable or constant flow.

This valve is designed to fit in compact areas where on/off control is required using 24 VAC, 120 VAC or 230 VAC.

Dimensions

Connection Size and type

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>1-5/16&quot; [34]</td>
<td>2-5/8&quot; [38]</td>
<td>15/16&quot; [24]</td>
<td>1-5/16&quot; [34]</td>
</tr>
</tbody>
</table>

Wiring

Built-in auxiliary switch (optional) (-S models)
Installation
The valve can be installed vertically or horizontally, but not turned upside down.

- A 3-way valve cannot be transformed into a 2-way valve and visa versa.

- The flow is from A to B (see diagram below) and must be installed so the paddle closes against the direction of flow as indicated in the following diagrams.

- The 2-way valves can be installed on the supply or on the return; for correct installation it is necessary to respect the direction of flow indicated from the arrow on the body valve.

### 2-way valve

<table>
<thead>
<tr>
<th>N.C. without power</th>
<th>2-way</th>
<th>N.C. open with power</th>
<th>2-way</th>
<th>N.C. manually open</th>
<th>2-way</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port &quot;A&quot; closed</td>
<td>Port &quot;A&quot; open</td>
<td>Port &quot;A&quot; open</td>
<td>Port &quot;B&quot; open</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port &quot;B&quot; open</td>
<td>Port &quot;B&quot; closed</td>
<td>Port &quot;A&quot; open</td>
<td>Port &quot;B&quot; open</td>
<td></td>
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<tr>
<td>Port &quot;AB&quot; open</td>
<td>Port &quot;AB&quot; open</td>
<td>Port &quot;A&quot; open</td>
<td>Port &quot;AB&quot; open</td>
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</tbody>
</table>

### Manual Open

1. The manual opening is achieved by moving the manual opening lever to the locked position. When power is applied, the manual lever unlocks automatically.

### Removing the Actuator

1. Move the manual open lever to the lock open position.
2. Press the push button in and pull the actuator up.

### Installing the Actuator

1. Move the manual open lever to the lock open position.
2. Align valve stem to the mating actuator hole. Move stem if required for proper alignment.
3. Press the push button in and slide the actuator onto the valve body, release the push button.

### SAFETY INSTRUCTION

This safety alert symbol will be used in this manual to draw attention to safety related instructions. When used, the safety alert symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A SAFETY HAZARD.

**CAUTION:**
All work must be performed by qualified personnel trained in the proper application, installation, and maintenance of systems in accordance with all applicable codes and ordinances.

**CAUTION:**
Over-tightening and breakage can occur with the use of Teflon pipe joint compounds. Teflon provides lubricity so that care must be exercised not to over-tighten joints. Failure to follow these instructions could result in property damage and /or personal injury.

**WARNING:**
System fluids are under pressure or temperature can be hazardous. Be sure the pressure has been reduced to zero and the system temperature is below 100°F (38°C). Failure to follow these instructions could result in property damage and/or personal injury.

*Note: An approximate 30 second delay is possible in valve movement after being powered on. For heating applications, it is important to cycle the N/O valves periodically during the off season or power them down to reduce the chance of the valve sticking in the up coming heating season.*