Flow Switches, Paddle

- Stops liquid cooled engines, machines and processing when coolant flow is insufficient.
- Automatically starts auxiliary pumps and engines.

**APPLICATIONS**
- High pressure rating of 1000 psig (69 bar) with the brass body and 2000 psig (138 bar) with the 316 SS body.
- Electrical assembly can be easily replaced without removing the unit from the process.
- Can be used in pipes 1-1/2˝ and up.
- Installs directly and easily into pipeline with a thredolet, tee, or flange (see application drawings).
- Explosion-proof (listing included in specifications).
- Weatherproof, designed to meet NEMA 4.
- Choice of custom vane calibrated for your application, Model V4, or field adjustable universal vane, Model V4-2-U (see set point chart).
- Leak proof body machined from bar stock.
- There are no bellows, springs, or seals to fail. Instead, a free-swinging vane attracts a magnet within the solid metal switch body, actuating a snap switch by means of a simple lever arm.

**FEATURES**
- The V4 is time tested being installed in thousands of pipelines and processing plants around the world. A unique magnetically actuated switching design gives superior performance.
- Rugged and reliable the Series V4 Flotect® flow switch operates automatically to protect equipment and pipeline systems against damage from reduction or loss of flow.
- Operates automatically to protect equipment and pipeline systems against damage from reduction or loss of flow.
- Protects pumps, motors and other equipment against low or no flow.
- Controls sequential operation of pumps.
- Automatically starts auxiliary pumps and engines.
- Stops liquid cooled engines, machines and processing when coolant flow is interrupted.
- Shuts down burner when air flow through heating coil fails.
- Process Connection: 1-1/2˝ male NPT.
- Body: Brass or 316 SS standard; Magnet Keeper: 430 SS standard, 316 SS optional; Options: Other materials also available, consult factory (e.g. PVC, Hastelloy, Nickel, Monel, Titanium).

**SPECIFICATIONS**
- Service: Gases or liquids compatible with wetted materials.
- Wetted Materials:
  - Vane: 316 SS;
  - Body: Brass or 316 SS standard;
  - Magnet Keeper: 430 SS standard, 316 SS optional;
  - Options: Other materials also available, consult factory (e.g. PVC, Hastelloy, Nickel, Monel, Titanium).
- Temperature Limit: -4 to 275°F (-20 to 135°C) standard, MT high temperature option 400°F (205°C) [MT option not UL, CSA, ATEX or IECEx] ATEX and IECEx options, ambient temperature -4 to 163°F (-20 to 73°C), Process temperature -4 to 163°F (-20 to 73°C).
- Pressure Limit: Brass body 1000 psig (69 bar), 316 SS body 2000 psig (138 bar), optional 5000 psig (345 bar) available, consult factory (e.g. PVC, Hastelloy, Nickel, Monel, Titanium).
- Electrical Rating: 5A res., 3A ind. @ 30 VDC (V ). MT option: 5A @ 125/250 VAC (V~). CSA models: 5A @ 125/250 VAC (V~); 5A res., .5A ind. @ 30 VDC (V ). MT option: 5A @ 125/250 VAC (V~); 5A res., 3A ind. @ 30 VDC (V ). IECEx models 10A @ 125/250 VAC (V~); 5A res., 3A ind. @ 30 VDC (V ). MT option: 5A @ 125/250 VAC (V~); 5A res., 3A ind. @ 30 VDC (V ). IECEx options for dry circuits.
- Enclosure Rating: Weatherproof and Explosion-proof. Listed with UL and CSA for Class I, Groups C and D, Class II, Groups E, F, and G.
- Agency Approvals: ATEX, CE, CSA, FM, IECEx, UL.
- Weight: 4 lb 8 oz (1.9 kg).
- Dimensions: USABLE IN LARGER PIPE FOR 1-1/2˝ TO 8˝ PIPES. FIVE LAYER VANE 316 STAINLESS STEEL DESIGNED FOR 1-1/2˝ TO 8˝ PIPES. USABLE IN LARGER PIPE SIZES.

**OPTIONS**
- Consult factory for price and availability of fittings for V4 installation. Thredolets, bushings, and tees are available in a variety of sizes and materials.
- For custom vane models, please supply factory with following information: pipe size, flow direction (horizontal, up), mounting, pressure, temperature, specific gravity, flow rates (maximum normal, actuation/deactuation*), etc.
- *When both values are supplied, note which is critical.

**Model | Description**
--- | ---
V4-2-U | Brass body, universal vane
V4-SS-2-U | 316SS® body, universal vane
V4 | Brass body, custom vane
V4-SS | 316SS® body, custom vane

---

Consult factory for price and availability of fittings for V4 installation. Thredolets, bushings, and tees are available in a variety of sizes and materials.

For custom vane models, please supply factory with following information: pipe size, flow direction (horizontal, up), mounting, pressure, temperature, specific gravity, flow rates (maximum normal, actuation/deactuation*), etc.

*When both values are supplied, note which is critical.

---

**Agency Approvals:** ATEX, CE, CSA, FM, IECEx, UL.
Figures are based on standard vertical installation in a 1-1/2" Threaded Branch Connection in a horizontal run of pipe.

Values shown in both charts are nominal. If normal flows exceed actuation rates by less than 10%, custom vanes are recommended.

V4 Universal Vane Flow Charts

Approximate Actuation/Deactuation Flow Rates for Cold Water.
Upper Figures in GPM. Lower Figures in LPM.

<table>
<thead>
<tr>
<th>Vane Layers</th>
<th>1.5&quot; Pipe</th>
<th>2&quot; Pipe</th>
<th>3&quot; Pipe</th>
<th>4&quot; Pipe</th>
<th>6&quot; Pipe</th>
<th>8&quot; Pipe</th>
<th>10&quot; Pipe</th>
<th>12&quot; Pipe</th>
<th>14&quot; Pipe</th>
<th>16&quot; Pipe</th>
<th>18&quot; Pipe</th>
<th>20&quot; Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7-3</td>
<td>15-8</td>
<td>26-8</td>
<td>69-16</td>
<td>120-27</td>
<td>186-38</td>
<td>273-60</td>
<td>417-97</td>
<td>640-166</td>
<td>885-222</td>
<td>1050-265</td>
<td>1190-282</td>
</tr>
<tr>
<td>1 2, 3, 4</td>
<td>11-7</td>
<td>27-19</td>
<td>41.7-26.7</td>
<td>88-215</td>
<td>141-300</td>
<td>213-452</td>
<td>315-630</td>
<td>477-950</td>
<td>650-1400</td>
<td>850-1800</td>
<td>1000-2000</td>
<td></td>
</tr>
<tr>
<td>1 2, 3, 4, 5</td>
<td>17-12</td>
<td>30-45</td>
<td>47-30</td>
<td>86-55</td>
<td>140-233</td>
<td>220-410</td>
<td>320-620</td>
<td>475-900</td>
<td>650-1400</td>
<td>800-1700</td>
<td>950-1900</td>
<td></td>
</tr>
</tbody>
</table>

Actuation rates are based on cold water at a specific gravity of 1.0.

For fluids of different specific gravity, actuation rates may be approximated by dividing the rate shown by the square root of the specific gravity.

Approximate Actuation/Deactuation Flow Rates for Cold Air.
Upper Figures in SCFM. Lower Figures in LPS.

<table>
<thead>
<tr>
<th>Vane Layers</th>
<th>1.5&quot; Pipe</th>
<th>2&quot; Pipe</th>
<th>3&quot; Pipe</th>
<th>4&quot; Pipe</th>
<th>6&quot; Pipe</th>
<th>8&quot; Pipe</th>
<th>10&quot; Pipe</th>
<th>12&quot; Pipe</th>
<th>14&quot; Pipe</th>
<th>16&quot; Pipe</th>
<th>18&quot; Pipe</th>
<th>20&quot; Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3-17</td>
<td>0-35</td>
<td>100-50</td>
<td>210-105</td>
<td>300-175</td>
<td>420-240</td>
<td>560-300</td>
<td>735-400</td>
<td>925-500</td>
<td>1100-600</td>
<td>1300-700</td>
<td>1500-800</td>
</tr>
<tr>
<td>1 2, 3, 4</td>
<td>7-11</td>
<td>10-16</td>
<td>20-30</td>
<td>40-60</td>
<td>80-120</td>
<td>120-180</td>
<td>160-240</td>
<td>200-320</td>
<td>250-400</td>
<td>300-500</td>
<td>350-650</td>
<td>400-800</td>
</tr>
<tr>
<td>1 2, 3, 4, 5</td>
<td>12-18</td>
<td>20-40</td>
<td>40-80</td>
<td>80-160</td>
<td>160-240</td>
<td>240-360</td>
<td>320-480</td>
<td>400-640</td>
<td>500-800</td>
<td>600-1200</td>
<td>700-1400</td>
<td>800-1700</td>
</tr>
</tbody>
</table>

Actuation rates are based on air at standard conditions. For gases at other pressures, temperatures, or specific gravities, consult factory for equivalent flow approximations.

Application Drawings
For Flotec® Automatic Flow Switches

Threaded Branch Connection Installation. May also be installed using tee, flange or coupling.

Approximate Actuation/Deactuation Flow Rates for Cold Air.