**FloTect® Vane Operated Flow Switch**

Field Adjustable — Dependable Protection Against Flow Variation or Stopping in Pipelines for Fluids, Gases and Flowing Solids

The Series V4 FloTect® Vane Operated Flow Switch is rugged and reliable, ideal for automatically protecting equipment and pipeline systems against damage from reduction or loss of flow. Time tested in thousands of pipeline installations and processing plants around the world this Series is Weatherproof, designed to meet NEMA 4 and Explosion-proof ratings (including in specifications). This series can be used in pipes 1-1/2” (38.10 mm) and up.

**Features/Benefits**

- Unique magnetically actuated switching design gives superior performance
- Features a free-swinging vane which attracts a magnet within the solid metal switch body, actuating a snap switch by means of a simple lever arm with no bellows, springs, or seals to fail
- Leak proof body machined from bar stock
- Electrical assembly can be easily replaced without removing the unit from installation
- High pressure rating of 1000 psig (69 bar) with the brass body and 2000 psig (138 bar) with the 316 SS body
- Choice of custom vane calibrated for your application, Model V4, or field adjustable multilayer vane, Model V4-2-U (see set point chart)

**Applications**

- 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
- Controls dampers according to flow

**Model Chart**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Connection Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>V4-2-U</td>
<td>Brass body, universal vane</td>
<td>NPT</td>
</tr>
<tr>
<td>V4-2-DD</td>
<td>316 SS* body, universal vane</td>
<td>NPT</td>
</tr>
<tr>
<td>V4-2-CN</td>
<td>Brass body, universal vane, no housing</td>
<td>NPT</td>
</tr>
<tr>
<td>V4-4-CN</td>
<td>Brass body, custom vane</td>
<td>NPT</td>
</tr>
<tr>
<td>V4-4-CN*</td>
<td>Brass body, custom vane, no housing</td>
<td>NPT</td>
</tr>
<tr>
<td>V4-2-U-BSP</td>
<td>Brass body, universal vane</td>
<td>BSP</td>
</tr>
<tr>
<td>V4-2-D-BSP</td>
<td>316 SS* body, universal vane</td>
<td>BSP</td>
</tr>
<tr>
<td>V4-4-BSP</td>
<td>Brass body, custom vane</td>
<td>BSP</td>
</tr>
<tr>
<td>V4-4-BSP</td>
<td>316 SS* body, custom vane</td>
<td>BSP</td>
</tr>
</tbody>
</table>

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

**Note:** 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.

*316 SS body with 430 SS magnet keeper.
**No housing option (-NH) has no approvals.

**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 153°C) standard, MT high temperature option 400°F (204°C) [MT option not UL, CSA, ATEX or IECEx].
- **Pressure Limit:** Brass body 1000 psig (69 bar), 316 SS body 2000 psig (138 bar), optional 5000 psig (345 bar) available with 316 SS body and SPDT switch only.
- **Enclosure Rating:** Weatherproof and Explosion-proof. [UL and CSA models: 16 AWG, 6" (152 mm) long, ATEX and IECEx unit: Terminal block.]
- **Conduit Connection:** 3/4" female NPT or 19.05 mm standard or M25 with -BSPT option.
- **Process Connection:** 1-1/2" male NPT or 38.10 mm.
- **Mounting Orientation:** Vertical for proper operation. Units for horizontal installation (vertical pipe with up flow) available.
- **Set Point Adjustment:** For universal vane: five vane combinations. Weight: 4 lb 8 oz (1.9 kg).
- **Agency Approvals:** ATEX, CE, CSA, FM, IECEx, UL**.

**Options**

- **To order add suffix:**
  - **D**
  - **MV**
  - **MT**
  - **TRI**
  - **TRD**
  - **316**
  - **V**
  - **AT**
  - **IEC**

**Electrical Rating:**

- UL, FM, ATEX and IECEx models 10 A @ 125/250 VAC (V~).
- CSA models: 5 A @ 125/250 VAC (V~).
- 1 A res., .5 A ind. @ 30 VDC (V~).
- **Zone 1.** Also FM approved.

**Electrical Connection:**

- UL and CSA models: 16 AWG, 6" (152 mm) long, ATEX and IECEx unit: Terminal block.
- **Conduit Connection:** 3/4" female NPT or 19.05 mm standard or M25 with -BSPT option.
- **Process Connection:** 1-1/2" male NPT or 38.10 mm.

**WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov

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**USA: California Proposition 65**

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V4 UNIVERSAL VANE FLOW CHARTS
Values shown in both charts are nominal. If normal flows exceed actuation rates by less than 10%, custom vanes are recommended. Figures are based on standard vertical installation in a 1-1/2" threaded branch connection in a horizontal run of pipe.

APPROXIMATE ACTUATION/DEACTUATION FLOW RATES FOR COLD WATER: GPM (LPM)

<table>
<thead>
<tr>
<th>Vane Layers</th>
<th>1.5&quot; Pipe</th>
<th>2&quot; Pipe</th>
<th>2.5&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>45-22</td>
<td>95-40</td>
<td>210-120</td>
<td>375-175</td>
<td>600-300</td>
<td>900-450</td>
<td>1200-600</td>
<td>1400-800</td>
<td>1600-900</td>
<td>1800-1000</td>
<td>2000-1200</td>
</tr>
<tr>
<td>1 &amp; 2</td>
<td>7-4</td>
<td>23-14</td>
<td>50-35</td>
<td>130-90</td>
<td>230-150</td>
<td>450-250</td>
<td>700-400</td>
<td>1100-600</td>
<td>1500-800</td>
<td>1900-1000</td>
<td>2300-1200</td>
<td>2700-1300</td>
<td>3100-1400</td>
</tr>
<tr>
<td>1, 2 &amp; 3</td>
<td>11-7</td>
<td>27-19</td>
<td>80-60</td>
<td>120-90</td>
<td>230-150</td>
<td>450-250</td>
<td>700-400</td>
<td>1100-600</td>
<td>1500-800</td>
<td>1900-1000</td>
<td>2300-1200</td>
<td>2700-1300</td>
<td>3100-1400</td>
</tr>
<tr>
<td>1, 2, 3 &amp; 4</td>
<td>40-10</td>
<td>80-65</td>
<td>130-100</td>
<td>230-150</td>
<td>450-250</td>
<td>700-400</td>
<td>1100-600</td>
<td>1500-800</td>
<td>1900-1000</td>
<td>2300-1200</td>
<td>2700-1300</td>
<td>3100-1400</td>
<td>3800-1800</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: SCFM (LPS)

<table>
<thead>
<tr>
<th>Vane Layers</th>
<th>1.5&quot; Pipe</th>
<th>2&quot; Pipe</th>
<th>2.5&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 &amp; 2</td>
<td>23-13</td>
<td>50-35</td>
<td>100-70</td>
<td>160-120</td>
<td>220-180</td>
<td>320-260</td>
<td>500-400</td>
<td>750-550</td>
<td>1050-800</td>
<td>1300-1050</td>
<td>1600-1300</td>
<td>1900-1450</td>
<td>2200-1600</td>
</tr>
<tr>
<td>1, 2 &amp; 3</td>
<td>60-48</td>
<td>135-100</td>
<td>260-200</td>
<td>425-300</td>
<td>650-500</td>
<td>1100-700</td>
<td>1650-900</td>
<td>2400-1400</td>
<td>3400-2000</td>
<td>4400-2700</td>
<td>5400-3300</td>
<td>6400-4100</td>
<td>7400-4800</td>
</tr>
<tr>
<td>1, 2, 3 &amp; 4</td>
<td>65-50</td>
<td>130-100</td>
<td>260-200</td>
<td>425-300</td>
<td>650-500</td>
<td>1100-700</td>
<td>1650-900</td>
<td>2400-1400</td>
<td>3400-2000</td>
<td>4400-2700</td>
<td>5400-3300</td>
<td>6400-4100</td>
<td>7400-4800</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 FLOTECT® AUTOMATIC FLOW SWITCHES

1-1/2" (38.10) threaded branch connection

1-1/2" x 1-1/2" x 1-1/2" (38.10 x 38.10 x 38.10 mm) tee installation

2-1/2" (63.50 mm) threaded branch connection

1-1/2" (38.10) face or hex bushing

1-1/2" (38.10) 3000 lb coupling

1-1/2" x 2" (50.80 x 50.80 x 50.80 mm) tee installation

2-1/2" x 2" (64.00 x 64.00 x 64.00 mm) tee installation

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