**Series 251**

**Welded Chamber**

External Mount Pressure to 1250 psig (86 bar), Hermetically Sealed Switches, Temperature to 750°F (400°C), Explosion-Proof Housings

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**APPLICATIONS**

Refineries, chemical plants, power generating stations, water treatment plants, mixing systems, scrubbers, accumulators, condensate recovery, industrial tanks and vessels.

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**Time proven magnetic head** leak proof construction combines with a heavy duty welded chamber to provide excellent reliability for control of compatible liquids. Operating pressures of 1250 psig (86 bar) at 650°F (345°C) and 750 psig (52 bar) at 750°F (400°C) are standard. The use of an external magnet reduces the possibility of magnetic particle build up inside the armature tube and subsequent loss of operation as may occur with the internal magnet repulsion design. The controls feature carbon steel bodies and stainless steel internal trim. Process mounting configurations include either side/bottom connection 1” NPT/socket weld hubs, side/bottom flanges or side/side flanges. A variety of hermetically sealed snap action or mercury switches are available. In SPST, SPDT, or DPDT action or mercury switches are available in SPST, SPDT, or DPDT.

**ORDERING CODE**

C1-75: Minimum specific gravity 0.75. Process pressure 1250 psig (86 bar) at 100°F (38°C), to 650°F (345°C). 750 psig (52 bar) at 750°F (400°C). *Heat fins and/or high temperature switches must be used for process temperatures above 500°F (260°C).

**Switch Types:** Snap action or mercury. See charts A and B.

**Electrical Rating:** See charts A and B.

**Wiring Connections:** G, WT or E enclosure, terminal block. EV enclosure 18” (460 mm) leads.

**Process Connections:** Combination 1” NPT/socket weld hubs or flanges. See model chart.

**Enclosures:** G painted steel and aluminum. WT, painted steel, aluminum and neoprene. E, aluminum. EV, aluminum and neoprene.

**Wetted Parts:** C1 construction, carbon steel, 303SS, 304SS, 316SS, 430SS. (Optional 316SS with 430SS).

**Weight:** 251, 40 lb (18 kg); 253, 50 lb (22.7 kg); 254, 57 lb (25.8 kg).

**Suggested Specifications**

Liquid level control shall be 251 (253) (254) Series with combination 1” NPT/socket weld hubs (flanged) process connections. Chamber shall be welded carbon steel (316SS) suitable for operation at 1250 psig (86 bar) at 100°F (38°C) to 650°F (345°C), 750 psig (52 bar) at 750°F (400°C) at a minimum specific gravity of 0.75. Circuit shall be hermetically sealed snap action (mercury) switch (SPST) (SPDT) (DPDT). Enclosure shall be general purpose (weather proof) (explosion-proof) (explosion-proof – vapor proof). Switch mechanism shall be gravity return and shall be activated by a stainless steel float.

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**EXTERNAL MOUNT PRESSURE**

Series 251 is installed with one horizontal and one vertical 1” socket weld or 1” NPT combination hub.

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**Switch Level Change**

<table>
<thead>
<tr>
<th>SP GR</th>
<th>A*</th>
<th>B</th>
<th>A**</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN SP GR 0.75</td>
<td>7 1/4” (184 mm)</td>
<td>3/4” (19 mm)</td>
<td>6 1/4” (159 mm)</td>
<td>3/4” (19 mm)</td>
<td>8 1/2” (216 mm)</td>
<td>1 1/4” (32 mm)</td>
<td>2 1/4” (57 mm)</td>
</tr>
</tbody>
</table>

*“A” is adjustable ±1”.

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**Miscellaneous**

- Series 253 has one vertical and one horizontal flanged connection (1” RF forged steel – ANSI specifications). Flange centerline 1” (356 mm). Other centerlines available.

- Series 254 features two vertical flanged connections (1” RF forged steel – ANSI specifications). Flange centerline 1/4” (371 mm). Other centerlines available.

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## Model Chart – Series 251

### Example

<table>
<thead>
<tr>
<th>251 WT</th>
<th>GLD 10 GLD 75 HF C1</th>
<th>251-WT-7810-C1-75. Liquid level control. Welded carbon steel chamber. Weather proof enclosure. SPDT snap switch, fixed deadband, automatic reset. Operating pressure 1250 psig (86 bar) at 650°F (345°C), 750 psig (52 bar) at 750°F (400°C). Side/bottom process connections, combination 1 NPT/socket weld hubs, minimum specific gravity 0.75.</th>
</tr>
</thead>
</table>

### Enclosure

|---|---|

### Circuits

<table>
<thead>
<tr>
<th>48XX</th>
<th>48XX</th>
<th>78XX</th>
<th>78XX</th>
<th>78XXXH</th>
<th>98XX</th>
<th>XX</th>
<th>Single stage. Mercury switch. See Chart A.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10XX</td>
<td>10XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td></td>
<td></td>
<td>Two stage. Mercury switch. See Chart A.</td>
</tr>
</tbody>
</table>

### Welded Chamber Construction Combination 1 NPT/Socket Weld Hubs

<table>
<thead>
<tr>
<th>251 C1 C1 75</th>
<th>Carbon steel body. Minimum specific gravity 0.75. Side/bottom process connections. Combination 1 NPT/socket weld hub. Pressure rating 1250 psig (86 bar) at 100°F (38°C), to 650°F (345°C), 750 psig (52 bar) at 750°F (400°C). V.</th>
</tr>
</thead>
</table>

### Welded Chamber Construction with Flanged Process Connections

<table>
<thead>
<tr>
<th>253 C1 175</th>
<th>1 1500# flanges side/bottom process connection. Pressure rating 275 psi (19 bar) at 100°F (38°C), 100 psi (7 bar) at 750°F (400°C). Minimum specific gravity 0.75.</th>
</tr>
</thead>
<tbody>
<tr>
<td>253 C1 375</td>
<td>1 3000# flanges side/bottom process connection. Pressure rating 720 psi (50 bar) at 100°F (38°C), 425 psi (29 bar) at 750°F (400°C). Minimum specific gravity 0.75.</td>
</tr>
<tr>
<td>253 C1 675</td>
<td>1 6000# flanges side/bottom process connection. Pressure rating 1250 psi (86 bar) at 100°F (38°C), 750 psi (52 bar) at 750°F (400°C). Minimum specific gravity 0.75.</td>
</tr>
</tbody>
</table>

### Options

<table>
<thead>
<tr>
<th>GLD GLD HF C216</th>
<th>Gold alloy contact for low current service rated at 1 amp resistive, 0.5 amp inductive 28 VDC. Circuit 7810 or 7806 only. High temperature fins should be considered if ambient temperature is extremely high or if process temperature exceeds 500°F (260°C) for extended periods. 316SS chamber and trim. 430SS armature. Breather and drain for E type enclosure. Recommended for high humidity or outdoor service.</th>
</tr>
</thead>
</table>

### Charts A & B - Electrical Circuits and Ratings

#### Switch Type

- **Mercury Contacts**
- **Snap Action Contacts**

#### Switch Action

- **SP-ST** Open on level FALL
- **SP-ST** Open on level RISE
- **SP-DT** One Switch
- **SP-DT** Two switches E.I.*
- **DP-ST** Two switches E.I.* Open on level FALL
- **DP-ST** Two switches E.I.* Open on level RISE
- **DP-DT** Two SP-DT switches
- **SP-DT** One hermetically sealed switch
- **DP-DT** Two hermetically sealed SP-DT switches
- **DP-DT** Two SP-DT switches
- **SP-DT** One switch
- **DP-DT** Two SP-DT switches

#### Electrical Ratings in Amps

<table>
<thead>
<tr>
<th>AC</th>
<th>DC</th>
<th>SINGLE STAGE</th>
<th>TWO STAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>120V</td>
<td>240V</td>
<td>440V</td>
<td>30V</td>
</tr>
</tbody>
</table>

#### Ordering Code

- **SP-ST** 10 5 3† pounded 10 5 -4821 -4821 -21 UL
- **SP-ST** 10 5 3† pounded 10 5 -4820 -4820 -20 UL
- **SP-DT** 4 2 1† pounded 4 2 -4810 -4810 -10 UL
- **SP-DT** 10 5 3† pounded 10 5 -4815 -4815 -15 UL
- **DP-ST** 10 5 3† pounded 10 5 -4813 -4813 -13 UL
- **DP-ST** 10 5 3† pounded 10 5 -4814 -4814 -14 UL
- **DP-DT** 10 5 3† pounded 10 5 -4806 -4806 -06 UL

#### Remarks

- *Electrically independent
- †Available on special order. Change 1st digit in Ordering Code from 4 to 5 or 7 to 8
- ‡10 Amp inductive (Polarized) at 125 VDC
- i.e. 5820 becomes -5860, -7810 becomes -8810, etc.