**Typical Actuation Levels (LS-350)**

* Actuation level distances and \( L_{\text{o}} \) (overall unit length) are measured from inner surfaces of mounting.
* Length Overall (LO) = \( L_{\text{t}} \) + Dimension D.

**Maintenance**

(\( L_{\text{300 and LS-350 Series}} \))

An occasional "wipe-down" cleaning is the only maintenance normally required. Do not disassemble unit. Return unit to Gems Sensors Division for any service required.

**European Pressure Directive**

The product is designed and manufactured in accordance with Sound Engineering Practice as defined by the Pressure Equipment Directive 97/23/EC. This product must not be used as a "safety accessory" as defined by the Pressure Equipment Directive, Article 1, Paragraph 2.1.3. The presence of a CE Mark on the unit does not refer to the Pressure Engineering Practice as defined by the Pressure Equipment Directive provided. Please consult the Factory for compliance information on Class III compliance.

**Actuation Level Dimensions**

Switch actuation levels are determined following the guidelines below.

A = Minimum distance to highest actuation level.

B = Minimum distance between actuation levels.

C = Minimum distance between two actuation levels with one float (Note: One float for two levels can be used only when low level is N.C. dry and high level is N.O. dry.)

D = Minimum distance from end of unit to lowest level.

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buna N</td>
<td>13/16&quot;</td>
<td>1-3/4&quot;</td>
<td>1/8&quot; Min</td>
<td>15/16&quot;</td>
</tr>
<tr>
<td>Polypropylene</td>
<td>1-1/8&quot;</td>
<td>1-1/8&quot;</td>
<td>1/8&quot; Min</td>
<td>1-1/8&quot;</td>
</tr>
</tbody>
</table>

**Notes:**
1. Actuation levels are calibrated on ascending fluid level, with water as the calibrating fluid, unless otherwise specified. For conductive medium requires that the medium be effectively earthed so as to provide an earthed barrier between the unit and accessible areas. For Class III compliance, a supply at safety extra-low voltage (SELV) must be provided. Please consult the Factory for compliance information on specific part numbers.

**Switch Ratings - Maximum Resistive Load (LS-300 and LS-350 Series)**

<table>
<thead>
<tr>
<th>VA</th>
<th>Volts</th>
<th>Amps AC</th>
<th>Amps DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>0-50</td>
<td>.2</td>
<td>.13</td>
</tr>
<tr>
<td>20</td>
<td>.3</td>
<td>.3</td>
<td>.3</td>
</tr>
<tr>
<td>50</td>
<td>.5</td>
<td>.6</td>
<td>.6</td>
</tr>
<tr>
<td>100*</td>
<td>1.3</td>
<td>1.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**Notes:**
1. Level switch units with 100 VA switches are not U.L. recognized.
2. Limited to 50,000 operations

**Important Points!**

Selection of materials for compatibility with the media is critical to the life and operation of GEMS level switches. Take care in proper selection of materials of construction, particularly wetted materials.

Life expectancy of switch contacts varies with applications. Contact GEMS if life cycle testing is required. Ambient temperature changes do affect switch set points, since the specific gravity of a liquid can vary with temperature.

Level switches have been designed to resist shock and vibration; however, shock and vibration should be minimized. Filter liquid media containing particulate and/or debris to ensure the proper operation of our products. Electrical entries and mounting points in an enclosed tank may require liquid/vapor sealing. Level switches must not be field-repaired. Physical damage sustained by the product may render it unserviceable.

Gems Sensors Inc.
One Coates Road
Plymouth, CT
06786-1196

Tel 860.747.3000
Fax 860.747.4244

**Series LS-300/LS-350 Multi-Station Level Switches**

Instruction Bulletin No. 15475

**Installation...**

Install LS-300 and LS-350 Series switches vertically in tank top (mounting up) or in tank bottom (mounting down). Multi-station level switches will operate normally inclined up to 30°.

**Type E Mounting - The Pop Flange**

Designed for quick installation into molded plastic tanks and reservoirs. Units are supplied with a Buna N gasket for positive sealing. Mount into openings 1.31" to 1.32" in diameter.

A single float type is selected for use at all actuation points.

**Float Material**

- Buna N
- Polypropylene
- Polysulfone

**Float Dimensions**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>LS-300</th>
<th>LS-350</th>
</tr>
</thead>
<tbody>
<tr>
<td>39049</td>
<td>51974</td>
<td>39055</td>
</tr>
<tr>
<td>119455</td>
<td>145730</td>
<td></td>
</tr>
</tbody>
</table>

**Operating Temperature**

- Water: to 180°F (82°C)
- Oil: -40°F to +225°F (-40°C to +107.2°C)

**Pressure, PSI (Max)**

<table>
<thead>
<tr>
<th>Min. Media S.G.</th>
<th>250</th>
<th>350</th>
<th>50</th>
<th>250</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polypropylene</td>
<td>.45</td>
<td>.65</td>
<td>.75</td>
<td>.90</td>
<td>.65</td>
</tr>
</tbody>
</table>

*When used with mounting type A, B, or C only. Mounting types D and E are not recommended for pressure applications. Pressures are derated with increasing temperature.
Number of Actuation Levels and Electrical Specifications

Typically, one float is required for each point at which you need a switch action to occur. The number of actuation levels available depends on the Group Type Wiring selected. (See Below)

Group I Wiring: 1 to 4 Actuation Levels
Group II Wiring: 1 or 2 Actuation Levels
Switch (SPST, N.O. or N.C.): 10/20/50/100 VA
Lead Wires: #22 AWG, 24" L., PVC

Approvals: LS-300 Series switches are U.L.Recognized - file No. E45168 and CSA Listed - File #30200

Typical Approvals

Approvals:
- Group II Wiring:
- Group I Wiring:

Typical Lead Wires:
- #22 AWG, 24" L., PVC

Typical Approvals

Approvals:
- Group II Wiring:
- Group I Wiring:

Typical Switch (SPST, N.O. or N.C.):
- 10/20/50/100 VA

Typical Approvals

Approvals:
- Group II Wiring:
- Group I Wiring:

Typical Group II Wiring:
- Approvals:
- Lead Wires:

Typical Group I Wiring:
- Approvals:
- Lead Wires:

Typical Wiring Diagrams

For clarity, only two actuation levels are shown in each group diagram.

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