



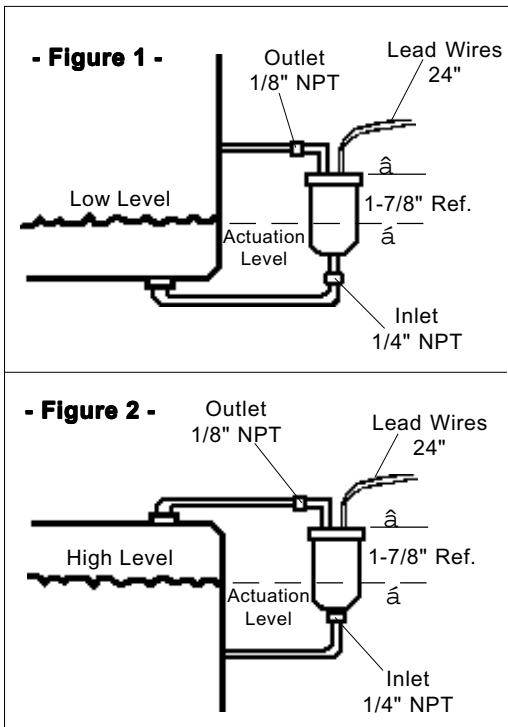
LS-159000 Series Bottle-Type Level Switches

Instruction Bulletin No. 160406

Installation

The LS-159000 Series bottle switch is a compact, economical liquid level sensing device for external mounting in applications not suited to small, internally-mounted level switches. These single point devices are typically used for low or high level sensing.

Typical Installation Applications



Installation Procedure

Step 1: Determine appropriate liquid level to set actuation.

Step 2: Choose proper fittings with 1/8" NPT thread for outlet (top) port and 1/4" NPT thread for inlet (bottom) port. Use straight, tee, elbow, flared or flareless fitting, as required to meet pressure ratings of application.

Step 3: Before bending tube or pipe, check actuation level height in relation to 1-7/8" reference dimension. Once height position is set, plumb inlet and outlet lines.

Mounting

Vertical, lead wire side up for N.C.(Dry)Operation or lead wire down for N.O. operation. (Stainless Steel and Buna N Floats, Only)

Note:

Fittings, piping, and tank connections to be supplied by installer. Maximum operating pressures and temperatures not to exceed float ratings.

Caution: If thin wall tubing is used, unit may need additional mounting support.

Specifications

Float Types

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

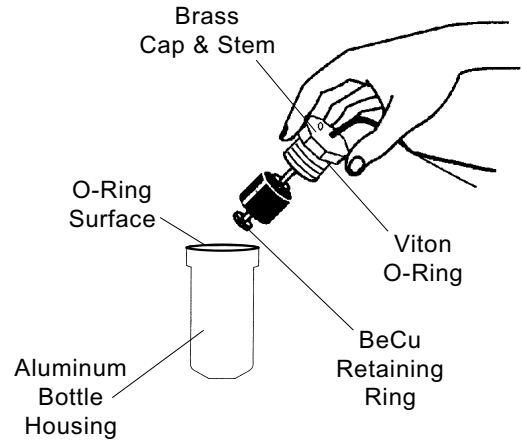
Float Material	Buna N	316 S.S.
Float Dimensions	15/16" 1"	1" 1"
Switch Rating	20 VA, SPST, N.O. or N.C.	
Operating Temperature	<u>H₂O</u> : -40°F to +180°F (-40°C to +82°C) <u>Oil</u> : -40°F to 250°F (-40°C to +121°C)	Oil: -40°F to +300°F (-40°C to +148.9°C)
Maximum Pressure @ 70°F	250 PSI	600 PSI
Minimum Liquid Specific Gravity	.50	.90

Notes

- Actuation levels are calibrated on ascending fluid level, with water as the calibration fluid, unless otherwise specified.
- Tolerance on actuation level is ±1/8".
- Dimensions are approximate:
Overall Length (Closed) = 3-1/4"
Bottle Housing Diameter = 1-1/2"
Lead Wire Length (Standard) = 24" Extended
- Ports:
1/4" NPT Inlet (Bottle)
1/8" NPT Outlet (Cap)

Maintenance

1. Unit may require an occasional "wipe-down" cleaning. Unscrew the float switch assembly and remove the retaining ring with the proper pliers for external rings.
2. After cleaning, replace float in the correct orientation for N.C. or N.O. switching. Ensure bottom retaining ring is seated in its groove.
3. Clean O-ring contact surface and replace O-ring, if necessary.
4. Screw unit together securely, until bottle housing makes contact against cap.



Switch Rating - Maximum Resistive Load

VA	Volts	Amps AC	Amps DC
20 Pilot Duty	0-30	.4	.3
	120	.17	.13
	240	.08	.06



This product is suitable for Class I and Class II applications only, per the requirements of standard EN60730 and any additional specific requirements for a particular application or medium being sensed. Class I compliance of metal bodied units requires a ground connection between the metal body and the earthing system of the installation. Class I compliance of plastic bodied units in contact with a 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.

Important Points!

Product must be maintained and installed in strict accordance with the National Electrical Code and GEMS technical brochure and instruction bulletin. Failure to observe this warning could result in serious injuries or damages.

An appropriate explosion-proof enclosure or intrinsically safe interface device must be used for hazardous area applications involving such things as (*but not limited to*) ignitable mixtures, combustible dust and flammable materials.

Pressure and temperature limitations shown on individual catalog pages and drawings for the specified level switches must not be exceeded. These pressures and temperatures take into consideration possible system surge pressures/temperatures and their frequencies.

Selection of materials for compatibility with the media is critical to the life and operation of GEMS level switches. Take care in the 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.

Liquid media containing particulate and/or debris should be filtered to ensure proper operation of GEMS products.

Electrical entries and mounting points may require liquid/vapor sealing if located in an enclosed tank.

Level switches must not be field repaired.

Physical damage sustained by the product may render it unserviceable.



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