



L312E

Description

The vertically mounted L312E multi-level switches are designed and FM approved for use in hazardous location environments including fuel tanks and combustible fluid storage tanks. With up to five independent switch points, the L312E is a versatile, compact and economical way to monitor multiple liquid level points within a single tank.

With only a single entry, the L312E can track changing levels within the tank as well as monitor liquid interfaces of dissimilar liquids in a single tank like oil/water separations, chemical emulsions, or condensation levels.

Measurement Principle

A hermetically sealed reed switch is actuated by a magnet inside the float. As the float rises and falls, the magnetic field passing the switches within the stem causes the switches to either close or open.

Product Configuration Choices

Mounting & Materials: Select mounting size, mount and stem material, float material, switch type, and optional enclosure from Table A.

Float Size: Select float from Table B.

Switch Wiring: Select switch wiring from Table C.

Actuation Levels: Select switch actuation level(s) from Section D.

Approvals

FM (Factory Mutual) Class I, Div 1, Grps A,B,C & D

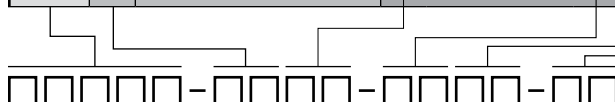
Class II, Grps E,F & G

Class III, T4



A. Component Choices L312E

	Mounting Types	Mounting & Stem Materials	Float Materials	Switch Type	Enclosures
L312E	05 3/4" NPT	08 316/316L SS	08 316 Stainless Steel	55 50VA SPST w/terminal	00 No enclosure
	06 1" NPT		15 Teflon® (PFA)		
	07 1 1/4" NPT				
	08 1 1/2" NPT				
	09 2" NPT				
	10 3" NPT	10 Hastelloy*		56 100VA SPST w/terminal	01 Aluminum, 1/2" NPT
	11 4" NPT			57 30VA SPDT w/terminal	02 Small Cast 3/4" NPT
	12 2 1/2" NPT				
	73 2" 150# ANSI Flange				03 Large Cast 1/2" NPT
	74 2 1/2" 150# ANSI Flange				
	75 3" 150# ANSI Flange				
	86 3" 300# ANSI Flange				



Example: L312E-0908-0855-01 = 2" NPT mounting; 316SS mounting & stem material; 316 SS float; 50VA SPST switches; aluminum enclosure

*Other mountings and materials are available. Consult factory for details.

Bulletin: IS-182.1
Effective: April 2010

B. Float Sizes and Operating Specifications					
Float Materials	Dimensions	Available Mount Types	Temperature	Pressure	Minimum Specific Gravity
316 stainless steel	1" x 1"	1" NPT or larger	-40° to +300° F	300 psig	.95
	1.5" x 1"	1½" NPT or larger		150 psig	.70
	1" Ball	1¼" NPT or larger		275 psig	.80
	.90" x 1.50"	¾" NPT or larger		200 psig	.85
	1.00" x 1.22"	1" NPT or larger		275 psig	.87
	1.61" x 1.10"	1½" NPT or larger		120 psig	.55
Teflon [®]	1.00" x 1.00"	1" NPT or larger		1000 psig	.90

C. Switch Wiring and Electrical Specifications

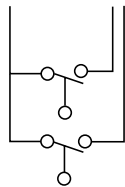
Each switching point requires one float. For special applications, a single float can be used to activate two switch points, though these points must have a minimum separation of ½" (12mm). The maximum number of actuation levels depends on the wiring type selected.

Ratings: 50, or 100 VA @ 240 VAC SPST
100 W @ 240 VAC SPDT

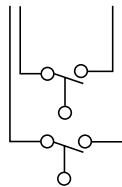
Connection: Terminal Strip #22 AWG

Mounting Attitude: Vertical ±30°

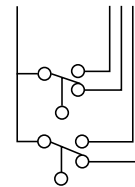
**Group 1 SPST
One Common Wire**



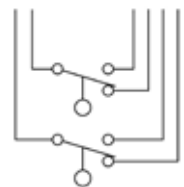
**Group 2 SPST
Independent Circuits**



**Group 3 SPDT
One Common Wire**



**Group 4 SPDT
Independent Circuits**



C. Switch Wiring and Electrical Specifications								
Wiring Options	Group 1 SPST	Group 2 SPST		Group 3 SPDT		Group 4 SPDT		
Common Wire	Black	None		Black		None		
	NO/NC	NO or NC		NO	NC	Common	No	NC
L1	Red	Red	Red	Red	White-Red	Red	White-Red	White-Black-Red
L2	Yellow	Yellow	Yellow	Yellow	White-Yellow	Yellow	White-Yellow	White-Black-Yellow
L3	Blue	Blue	Blue	Blue	White-Blue			
L4	Brown	Brown	Brown					
L5	Orange							
L6	Gray							

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D. Actuation Level Dimensions

A = 1/2" (38mm) minimum distance from actuation point to inside surface of tank or mounting pad.

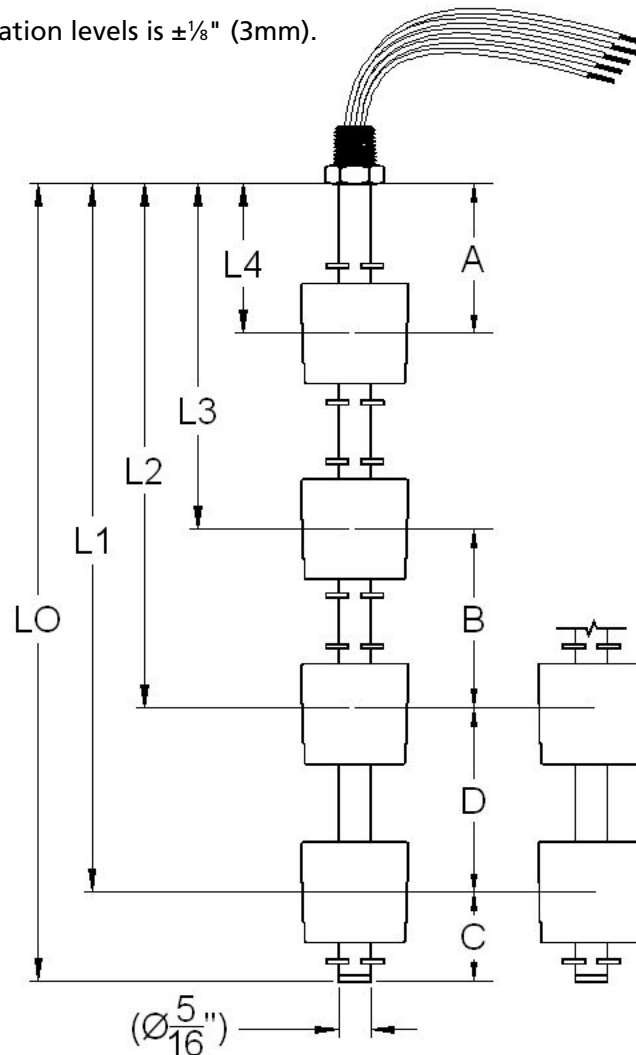
B = 3" (76mm) minimum distance between actuation levels.

C = 2" (51mm) minimum distance from end of unit to lowest actuation level.

D = 1/2" (12mm) minimum distance between points when a single float is used to activate two switches. (One float can activate two switches when the lower switch is NC and the upper switch is NO.)

Notes

1. A, B, and C dimensions are based on a specific gravity of 1.0.
2. When using one float for two actuation positions, contact the factory for available switch ratings.
3. Actuation levels are calibrated on descending fluid level, with water as the fluid, unless otherwise specified.
4. Standard tolerance on actuation levels is $\pm 1/8"$ (3mm).



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