



L312

Description

The vertically mounted L312 multi-level switches are individually designed for your application from over 360 possible combinations of floats, mounts, and material options. With up to five independent switch points, the L312 is a versatile, compact and economical way to monitor multiple liquid level points within a single tank.

With only a single entry, the L312 can track changing levels within the tank as well as monitoring liquid interfaces of dissimilar liquids in a single tank like oil water separations, chemical emulsions or condensation levels. These sensors can also be equipped with thermostatic switches to provide level and temperature control in a single device.

Principle of Operation

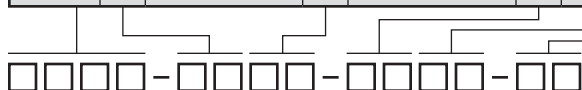
Hermetically sealed reed switches are actuated by a magnet inside the floats. As the floats rise and fall, the magnetic field passing the switches within the stem causes the switches to either close or open.

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 Table D.



A. Component Choices L312										
Series	Mounting Types		Mounting & Stem Materials		Float Materials		Switch Types		Enclosures	
L312	00	No Mounting	01	Brass	02	Polypropylene (hollow)	20	20 VA SPST	00	No enclosure
	01	1/8" NPT	02	Polypropylene	03	Polypropylene (solid)	03	50 VA SPST (standard)	01	Polypropylene NEMA 4
	02	1/4" NPT	04	Kynar (PVDF)	04	Kynar (PVDF)	04	100 VA SPST	02	Cast Aluminum NEMA 4/7/9
	03	3/8" NPT	05	PVC	05	PVC	06	3 VA SPDT		
	04	1/2" NPT	08	316 SS	08	316 SS			03	Cast Iron NEMA 4/7/9
	05	3/4" NPT	15	Teflon [®] (PFA)	15	Teflon [®] (PFA)				
	06	1" NPT	18	Nylon	18	Teflon PTFE (hollow)				
	07	1 1/4" NPT	21	Acetal (Delrin)	20	Buna-N				
	08	1 1/2" NPT	22	Polysulfone	22	Polysulfone				



Example: L312-0401-2003-00 = 1/2" NPT mounting; brass mounting & stem material; Buna-N float; 50VA SPST switches; no enclosure

Bulletin: IS-180.0
Effective: December 2009

B. Float Sizes and Operating Specifications

Float Materials	Dimensions	Available Mount Types	Temperature	Pressure	Minimum Specific Gravity
Polypropylene (hollow)	1" x 1"	00, 01, 02, 03, 04, 06, 07, 08	-40° to +150° F	50 psig	.70
Polypropylene (solid)	1" x 1"	00, 01, 02, 03, 04, 06, 07, 08	-40° to +150° F	150 psig	.90
Kynar	1" x 1"	00, 01, 02, 03, 04, 06, 07, 08	-40° to +176° F	50 psig	1.1
PVC	1" x 1"	00, 01, 02, 03, 04, 06, 07, 08	-40° to +140° F	50 psig	.90
316 stainless steel	1" x 1"	00, 01, 02, 03, 04, 06, 07, 08	-40° to +300° F	300 psig	.95
316 stainless steel	1.5" x 1"	00, 01, 02, 03, 08	-40° to +300° F	150 psig	.92
316 stainless steel	1" ball	00, 01, 02, 03, 04, 06, 07, 08	-40° to +300° F	275 psig	.85
316 stainless steel	.90" x 1½"	00, 01, 02, 03, 04, 05, 06, 07, 08	-40° to +300° F	200 psig	.85
Teflon (PFA)*	1" x 1"	00, 01, 02, 03, 04, 06, 07, 08	-40° to +300° F	1000 psig	.90*
Teflon (hollow)	1.125" x 1.250"	00, 01, 02, 03, 04, 06, 07, 08	-40° to +300° F	100 psig	1.0
Buna-N	1" x 1"	00, 01, 02, 03, 04, 06, 07, 08	-40° to +180° F	150 psig	.80
Polysulfone	1" x 1"	00, 01, 02, 03, 04, 06, 07, 08	-40° to +225° F	50 psig	.90

C. Switch Wiring and Electrical Specifications

Ratings:

20 VA @ 120 VAC SPST
50 VA @ 240 VAC SPST
3 VA @ 30 VAC/VDC SPDT

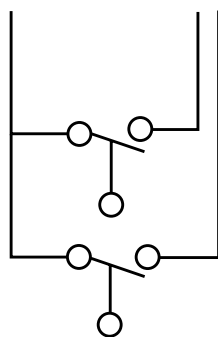
Connection:

24" Free Leads
#22 AWG, PVC jacketed

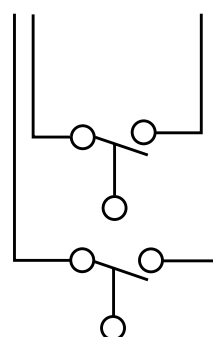
Mounting Attitude:

Vertical ±30°

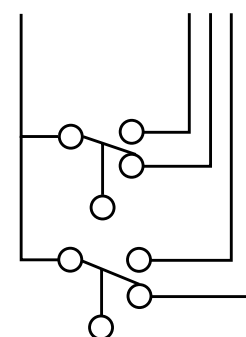
1 to 5 switch point



1 to 3 switch points



1 or 2 switch points



C. Switch Wiring and Electrical Specifications

Wiring Options	Group 1 SPST	Group 2 SPST	Group 3 SPDT
Common Wire	Black	None	Black
	NO or NC	NO or NC	NO/NC
L1	Red	Red/Red	Red/White-Red
L2	Yellow	Yellow/Yellow	Yellow/White-Yellow
L3	Blue	Blue/Blue	
L4	Brown		
L5	Orange		

Notes: All SPST switches are set normally open in their "dry", "no level" condition unless specified otherwise.
"White-Red" and "White-Yellow" denote single white wire with red or yellow stripes.

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D. Actuation Level Dimensions

A = Minimum distance from actuation point to bottom of mounting.

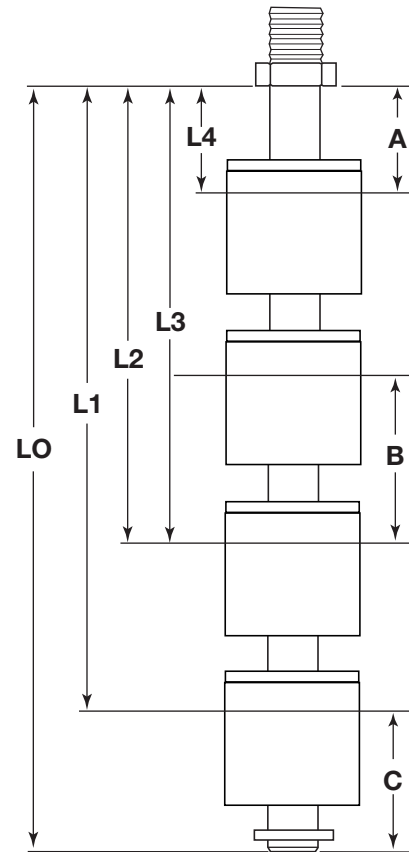
B = Minimum distance between actuation levels.

C = Minimum distance from end of unit to lowest actuation point.

D = Minimum distance between actuation points when a single float is used to actuate two switches.

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 $\pm\frac{1}{8}$ " (3mm).



D. Actuation Level Dimensions				
Float Type	A	B	C	D
1" x 1"	1"	1¾"	1"	½"
1.5" x 1"	1"	1¾"	1"	½"
1" ball	1"	1¾"	1"	½"
.9 x 1.5"	1"	2½"	1½"	½"