

Одноточечные поплавковые реле уровня и датчики LS-7, LS-1

Технические характеристики

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LS-7 with 5 Amp Relay

► O-Ring Sealed, Water Resistant J-Box

An SPDT relay enables this LS-7 to control two independent loads up to 5 amps each. Switching N.O. for one load and N.C. for the other. This unit is designed to operate with a load connected to each of the two outputs. These loads must be 10 watts, minimum, for correct SPDT switching. One load used alone must be connected to the N.O. terminal. With this load, which may be less than 10 watts, the unit will operate the same as an SPST unit.

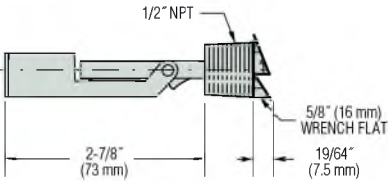
Specifications

Wetted Materials	Polypropylene
Min. Liquid Specific Gravity	0.55
Operating Temperature	-40°F to +250°F (-40°C to +121°C)
Operating Pressure	100 psi @ 70°F, max.
Float Arc Envelope	1.50"
J-Box with 5A Relay	120 VAC 50/60 Hz Contacts: 5A – 240 VAC Res 1/3 HP – 120 VAC 5A – 28 VDC Res

Order by Part Number: 181291



Dimensions



LS-1 – Miniature Level Switch

- Extremely Compact
- Easy Installation
- Low Cost

This miniature level switch feature an all-polypropylene stem and float construction for broad chemical compatibility. Fluted stem resists solids build-up. Float is held in place with integral stem tangs, which simultaneously eliminates a separate retaining ring and makes inverting the float for reversing switch actuation very easy.

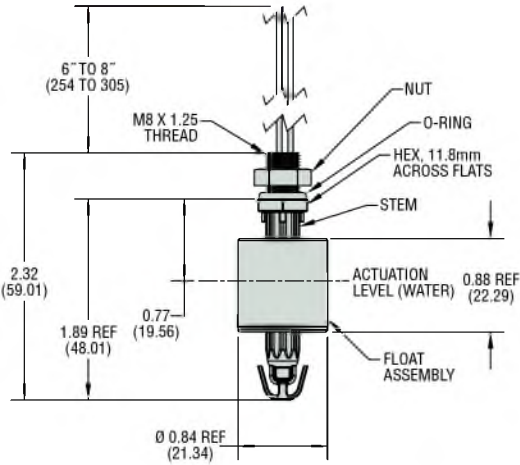
Specifications

Wetted Materials	
Stem and Float	Polypropylene
O-Ring	EPDM
Mounting Threads	M8 x 1.25"
Min. Liquid Specific Gravity	0.70
Operating Temperature	0°F to 175°F (-17°C to +79°C)
Operating Pressure	0 to 5 psig (0 to 0.3 bar)
Electrical Termination	22 AWG, 6"-8" PVC Jacketed Lead Wires (Black)
Switch Operation	N.O. Dry (May be converted to N.C. Dry by inverting float on stem)
Mounting Attitude	Vertical with lead wires up.

Order by Part Number: 602881



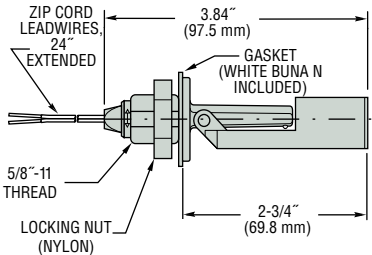
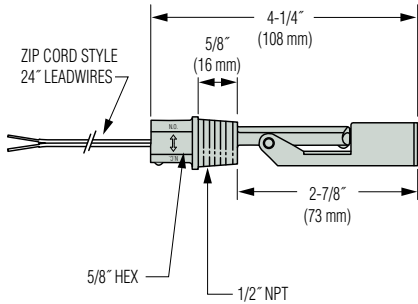
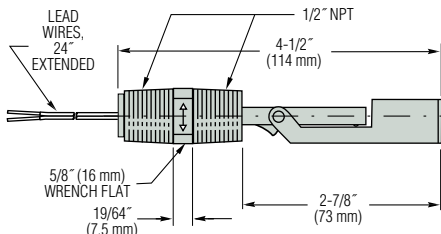
Dimensions



Small Size – Engineered Plastics

LS-7 Series–Compact Side Mounts are the Solution to Many Small Tanks

These low-cost units are ideal for high volume use in small tanks and vessels. Engineered plastics construction offers broad compatibility in water, oils and chemicals.

Type 3 Internal Mounting	Type 5 External Mounting	Type 7 External Mounting
 Polypropylene, Nylon or Versaplast™.	 Polypropylene, Nylon or Versaplast™.	 Polypropylene or Nylon; conduit connection.
 ZIP CORD LEADWIRES, 24" EXTENDED 3.84" (97.5 mm) GASKET (WHITE BUNA N INCLUDED) 5/8"-11 THREAD LOCKING NUT (NYLON) 2-3/4" (69.8 mm)	 ZIP CORD STYLE 24" LEADWIRES 4-1/4" (108 mm) 5/8" (16 mm) 2-7/8" (73 mm) 5/8" HEX 1/2" NPT	 LEAD WIRES, 24" EXTENDED 1/2" NPT 4-1/2" (114 mm) 5/8" (16 mm) WRENCH FLAT 19/64" (7.5 mm) 2-7/8" (73 mm)

Common Specifications

Switch Rating*: SPST, 20VA

Lead Wire Gauge: No. 22 AWG

Mounting Attitude: Horizontal.

RoHS: In compliance with EU-directive 2011/65/EC requirements for chemicals and substances.

* See "Electrical Data" on Page X-5 for more information.

Approvals

Material	CE	UL Recognized File No. E45168	cUL Recognized	CSA Listed File No. 30200
Nylon	X	X	X	X
Polypropylene	X	X	X	X
Noryl®	X	X	X	
Versaplast™	X	X	X	

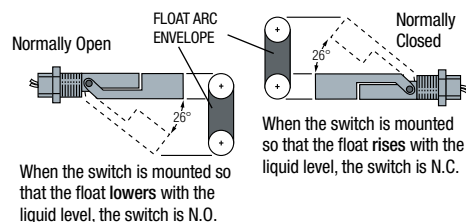
Media Compatibility

Media	LS-7 Compatible Types
Oil, Fuel, Hydrocarbons	Nylon
Broad Range of Chemicals and Water	Polypropylene
Limited Chemicals and Water	Noryl®
Oil, Antifreeze, High Temperatures, Corrosive Fluids, Various Chemicals	Versaplast™

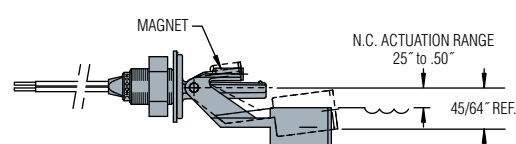
Switch Operation

Depending on the mounting position, the float on these switches can rise or lower with the liquid level. By rotating the switch 180°, the switch operation can be Normally Open or Normally Closed (except Type 12).

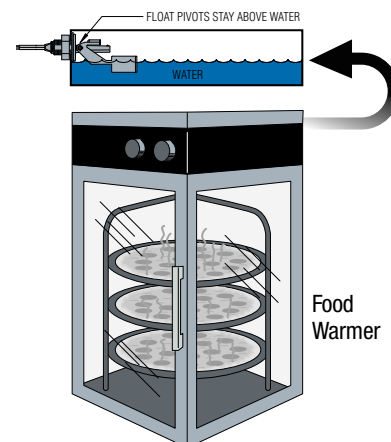
Types 3, 5, 7, 10 and 13



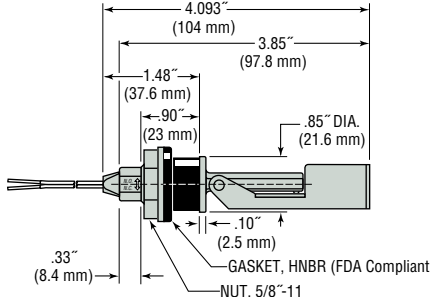
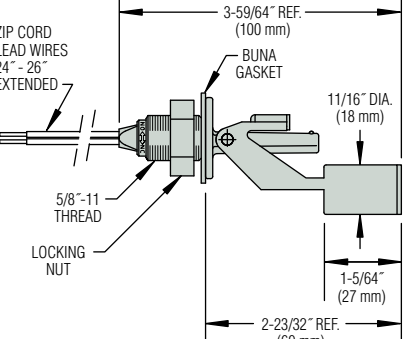
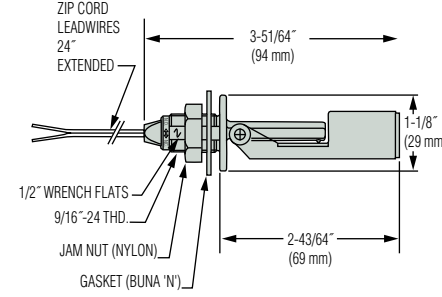
Type 12 – N.C. "Drop Float" Design



The LS-7 Type 12 is ideal for use on food warmers, hot water heaters, steam cookers, small boilers or wherever water evaporation occurs. The switch is used effectively for either high fluid level alarms or water make up systems.



- ▶ Nylon is ideal for oils and fuels.
- ▶ Polypropylene is ideal for potable water and broad chemicals.
- ▶ Versaplast™ is ideal for corrosive fluids, hot water, antifreeze, chemicals and oils.

Type 10 External Mounting	Type 12 Internal Mounting	Type 13 Internal Mounting
 Externally mounts through and seals non-threaded holes using a HNBR compression gasket.	 Side mount "Drop Down" design for calcifying hot water applications..	 Polypropylene or Nylon.
 Note: Recommended hole size = 7/8" dia. x 1/32" - 5/32" thick panel.		

How To Order – Select Part Number based on specifications required.

Mounting Type	Materials*			Min. Liquid Sp. Gr.	Operating Temperature	Operating Pressure, Max.	Float Arc Envelope	Part Number
	Stem and Mounting	Float	Lead Wire Jacket					
3	Nylon	TPE†		.65	-40°F to +250°F (-40°C to +121.1°C)	100 psi @ 70°F (6.8 bar @ 20°C)	2.20	165570 ⚡
	Polypropylene			.55	-40°F to +225°F (-40°C to +107.2°C)			164520 ⚡
	Versaplast™			.80	-40°F to +250°F (-40°C to +121.1°C)			182600
5	Polypropylene	TPE†		.55	-40°F to +225°F (-40°C to +107.2°C)	100 psi @ 70°F (6.8 bar @ 20°C)	1.25	131100 ⚡
	Nylon			.65	-40°F to +250°F (-40°C to +121.1°C)			140620 ⚡
	Versaplast™	Teflon®		.80	-40°F to +300°F (-40°C to +148.9°C)			177100 ⚡
5 - BSP	Versaplast™	TPE†		.80	-40°F to +250°F (-40°C to +121.1°C)	100 psi @ 70°F (6.8 bar @ 20°C)	1.25	189422
7	Polypropylene	TPE†		.55	-40°F to +225°F (-40°C to +107.2°C)	100 psi @ 70°F (6.8 bar @ 20°C)	1.50	160450 ⚡
	Nylon			.65	-40°F to +250°F (-40°C to +121.1°C)			160460 ⚡
10	Polypropylene	TPE†		.55	-40°F to +225°F (-40°C to +107.2°C)	50 psi @ 70°F (3.4 bar @ 20°C)	2.08	165800 ⚡
	Nylon			.65	-40°F to +250°F (-40°C to +121.1°C)			165900
12	Noryl®	TPE†		.80	-40°F to +225°F (-40°C to +107.2°C)	100 psi @ 70°F (6.8 bar @ 20°C)	.70	191080 ⚡
13	Polypropylene	TPE†		.55	-40°F to +225°F (-40°C to +107.2°C)	100 psi @ 70°F (6.8 bar @ 20°C)	2.20	197050

* Polysulfone and Rytan® R-4 are available upon request.

† Thermoplastic Elastomer Zip Cord, 22 AWG.

Note: NSF 169 certified products available. Contact factory.

See alloy versions on next page.

⚡ – Stock Items.

Small Size - Alloys

LS-7 Series

Compact Alloy and Alloy/Plastics Side Mounts

Built for durability, our LS-7 Series switches utilize stainless steel, or zinc bodies. Ideal for any small tank or vessel destined for a rugged environment. All-stainless steel material of construction of Types 9 and 11 is generally recognized as safe with FDA for food contact regulations.

Common Specifications

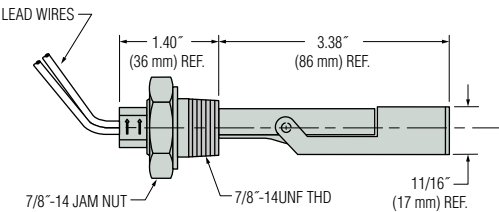
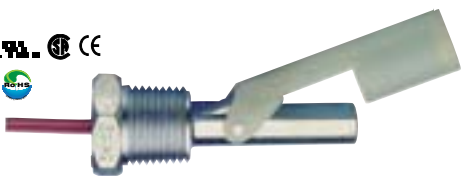
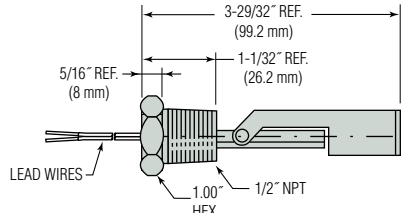
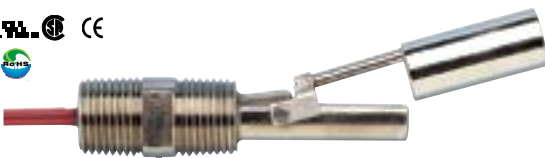
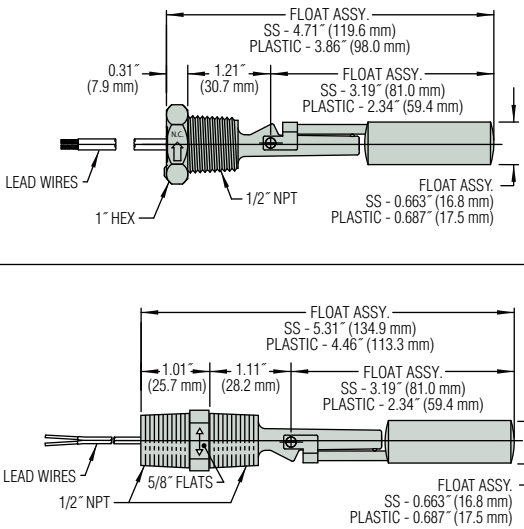
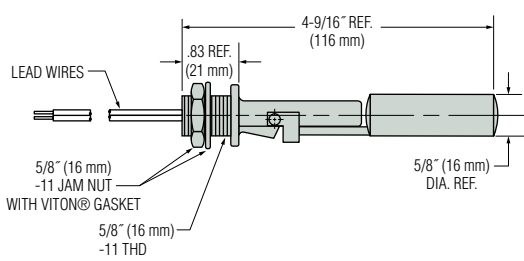
Switch Rating*: SPST, 20VA

Lead Wire: 22 AWG, 24"-27" Extended

Mounting Attitude: Horizontal.

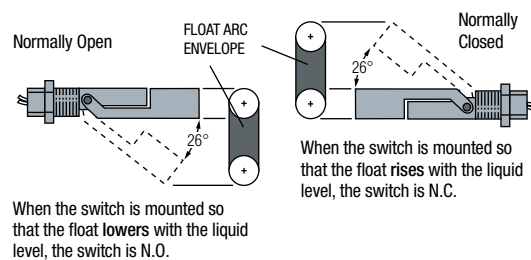
RoHS: In compliance with EU-directive 2011/65/EC requirements for chemicals and substances.

*See "Electrical Data" on Page X-5 for more information.

Type 6 External Mounting	 CE RoHS Zinc alloy body with polypropylene or nylon float. SAE Mounting.	
Type 8 External Mounting	 CE RoHS Zinc alloy body with nylon or polypropylene float.	
Type 9 External Mounting	 CE RoHS 316 Stainless Steel body with 316 SS, nylon or polypropylene float.	
Type 11 Internal Mounting	 CE RoHS 316 Stainless Steel body with 316 S.S. float.	

Switch Operation

Depending on the mounting position, the float on these switches can either rise or lower with the liquid level. By rotating the switch 180°, the switch operation can be Normally Open or Normally Closed.



How To Order – Select Part Number based on specifications required.

Mounting Type	Materials			Min. Liquid Sp. Gr.	Operating Temperature	Operating Pressure, Max.	Float Arc Envelope	Part Number
	Stem and Mounting	Float	Lead Wire Jacket					
6	Zinc Alloy*	Nylon	TPE†	.65	-40°F to +250°F (-40°C to +121°C)	100 psi @ 70°F	1.36	155660 ⚡
		Polypropylene		.75	-40°F to +225°F (-40°C to +107°C)	100 psi @ 70°F	1.36	179870
8	Zinc Alloy*	316 S.S.	TPE†	.80	-40°F to +250°F (-40°C to +121°C)	300 psi @ 70°F	1.43	249315
		Nylon		.65	-40°F to +250°F (-40°C to +121°C)	100 psi @ 70°F	1.40	160950 ⚡
		Polypropylene		.55	-40°F to +225°F (-40°C to +107°C)	100 psi @ 70°F	1.40	162795 ⚡
	316 Stainless Steel	316 S.S.	TPE†	.80	-40°F to +250°F (-40°C to +121°C)	300 psi @ 70°F	1.43	249315
		Nylon		.65	-40°F to +250°F (-40°C to +121°C)	100 psi @ 70°F	1.40	247390
		Polypropylene		.55	-40°F to +225°F (-40°C to +107°C)	100 psi @ 70°F	1.40	247380
9	316 Stainless Steel	316 S.S.	TPE†	.80	-40°F to +250°F (-40°C to +121°C)	300 psi @ 70°F	1.43	164870 ⚡
		Nylon		.65	-40°F to +250°F (-40°C to +121°C)	100 psi @ 70°F	1.40	164850 ⚡
		Polypropylene		.55	-40°F to +225°F (-40°C to +107°C)	100 psi @ 70°F	1.40	164860 ⚡
11	316 Stainless Steel		Teflon®	.80	-40°F to +250°F (-40°C to +121°C)	300 psi @ 70°F	1.65	179445

†Thermoplastic Elastomer Zip Cord.

⚡ – Stock Items.

*Zinc Alloy Material Note:

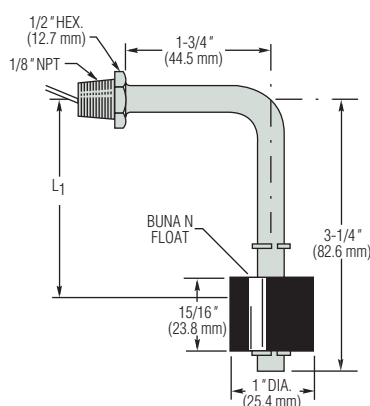
When mounted in certain cathodic metals, including stainless steel, and used in water-based liquids, galvanic corrosion may occur. Consult factory for information.

LS-77700 Series – Bent Stem Switches Provide Greatest Buoyancy Of Any Side Mount Version

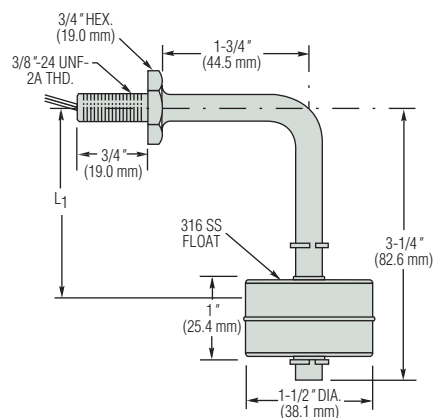
These units perform in liquids with specific gravities as low as .45; switches protrude into tank less than 3 inches.

Dimensions

Type I – 1/8" NPT



Type II – 3/8-24" Thread



L₁ Dimension (based on liquid specific gravity of 1.0):

Buna N Float: 2-3/8" (60.3 mm) ± 3/16"

Stainless Steel Float: 2" (50.8 mm) ± 3/16"

Common Specifications

Electrical Termination: No. 22 AWG, 24" L., Teflon® Lead Wires

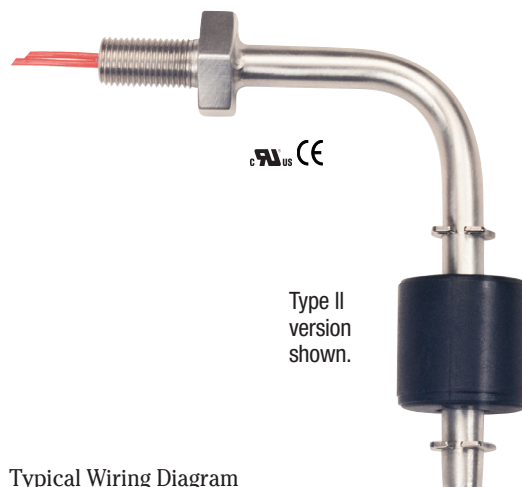
Approvals: U.L. Recognized – File No. E45168

Switch* SPST: 20 VA, 120-240 VAC. Switch is N.O. (Dry), but available N.C. (Dry).

Mounting Attitude: Vertical ± 30°.

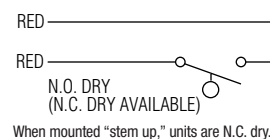
Other Wetted Materials: Float Stop is Beryllium Copper or PH-15-7-MO Stainless Steel.

Grooved Stem Option: Stem may be grooved to prevent accidental or vibrational movement of float stops (grip rings).

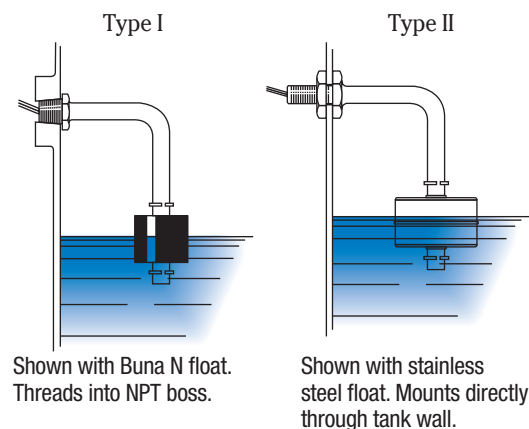


Type II version shown.

Typical Wiring Diagram



Typical Installation



Shown with Buna N float. Threads into NPT boss.

Shown with stainless steel float. Mounts directly through tank wall.

How To Order – Select Part Number based on specifications required.

Materials			Min. Liquid Sp. Gr.	Operating Temperature	Pressure, PSI, Max.	Part Number
Type	Stem and Mounting	Float				
I	Brass	316 Stainless Steel	.70	-40°F to +300°F (-40°C to +149°C)	100	117711
	316 Stainless Steel					117712 ⚡
	Brass	Buna N	.45	Water: to 180°F (82°C) Oil: -40°F to +300°F (-40°C to +149°C)	300	118125 ⚡
	Stainless Steel					118126
II	Brass	316 Stainless Steel	.70	-40°F to +300°F (-40°C to +149°C)	100	117715
	316 Stainless Steel					117716 ⚡
	Brass	Buna N	.45	Water: to 180°F (82.2°C) Oil: -40°F to +300°F (-40°C to +149°C)	300	118127 ⚡
	Stainless Steel					118128

*See "Electrical Data" on Page X-5 for more information.

⚡ – Stock Items.

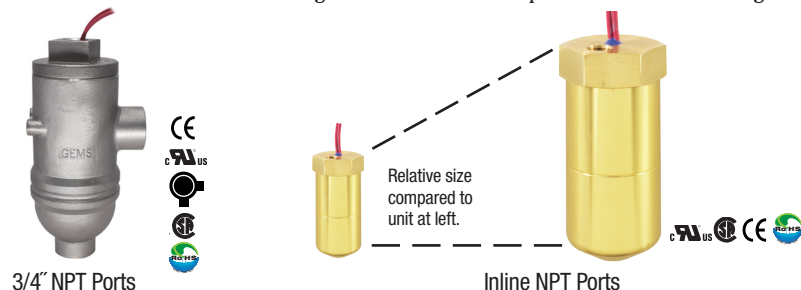
Large Size – Alloys

When a Switch Won't Fit In the Tank, Use a Non-Intrusive Bottle Type

Bottle type level switches are ideal for large or small tanks or where access to the inside is impractical or impossible. These units mount completely outside of the tank, at the level actuation point.

LS-800-5 Series – Single Level,
Brass or Stainless Steel Housing

LS-159000 Series – Low Cost,
Compact Aluminum Housing



For Remote Alarms –
See Page E-27

- Adjustable Volume
- Indoor Outdoor
- Solid-State



Dimensions

LS-800-5 – Brass and Stainless Steel	LS-159000
†L₁ = Switch actuation level, nominal (based on a liquid specific gravity of 1.0).	Switch operation is NC as shown. May be changed to NO by inverting float on stem, or by mounting unit with lead wires down.

Common Specifications

Electrical Termination: No. 18 AWG, 24" L., Polymeric Lead Wires (LS-800-5) / No. 22 AWG, 24" L., Polymeric Lead Wire (LS-159000).

Approvals: Series Nos. LS-800-5 and LS-159000 are U.L. Recognized – File No. E45168 and CSA listed – File No. LR-30200.

RoHS (except for LS-800-5 in Brass, part numbers 172625, 172986, and 172988) – In compliance with EU-directive 2015/863/EU requirements for chemicals and substances.

Switch Operation: Selectable, N.O. or N.C., by inverting float on unit stem.

Mounting Attitude: Vertical with lead wires up.

How To Order - Select Part Number based on specifications required.

Materials				Min. Liquid Sp. Gr.	Pressure, PSIG, Max.	Operating Temperature	L ₁	Switch*	Part Number
Series Number	Housing	Stem and Mounting	Float						
LS-800-5	Brass	316 Stainless Steel	Beryllium Copper	.75	500 @ 70°F	-40°F to +300°F (-40°C to +148.9°C)	3/4" (19 mm)	SPST, 20 VA	172625 ⚡
								SPST, 100 VA	172986
	316 Stainless Steel		S.S. ARMCO H-15-7 MO		750		7/16" (11 mm)	DPDT	172988
								SPST, 20 VA	172635 ⚡
LS-159000	Aluminum	Brass	316 S.S.	Beryllium Copper	600 @ 70°F	-40°F to +300°F (-40°C to +148.9°C)	See Dimensions	SPST, 20 VA	144080
			Buna N	Viton®	250 @ 70°F	-40°F to +250°F (oil); +180°F (water) (-40°C to +121°C [oil]; +82°C [water])			160405

*See "Electrical Data" on Page X-5 for more information. DPDT relay information is with Dimensions above.

По вопросам продаж и поддержки обращайтесь:

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Пенза (8412)22-31-16
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