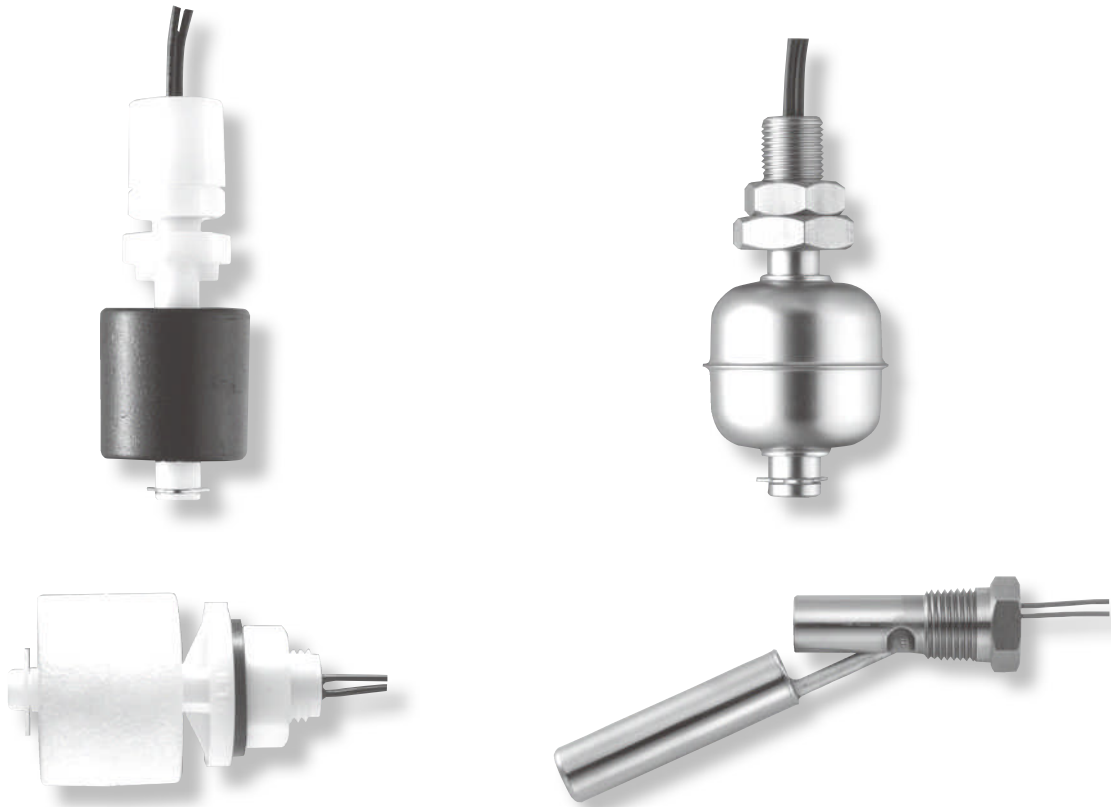


# MODEL OL, LS, SH, FH

**MINIATURE LIQUID  
LEVEL SENSOR**



## Features

- Compact size
- Low cost
- Reliability/long switch life
- Can be used in a wide range of liquids
- Perfect solution for standard assembly parts of mass-produced equipment

## General Description

These miniature liquid level sensors are designed for reliable operation in small tanks and containers. Their rugged design and careful engineering make them the perfect solution for OEM and large volume applications.

## Operational Description

These level sensors contain hermetically sealed reed switches in the stem and a permanent magnet in the float. As the float rises or falls with the level of the liquid, the reed switch activates by the magnet in the float. The operation of the switch, normally open or normally close, is easily changed by removing a retainer and inverting the float.

## Conformity

Hygienic standards of Food, additives, etc. by Japan Food Research Laboratories, see the page 6 for details.

Some of sensors are conformed by RoHS directive. Six materials such as Lead, Mercury, Hexavalent Chromium, Polybrominated Biphenyls, Polybrominated Diphenyl Ethers, and Cadmium are not contained to these products.

## Applications

Typical applications include automatic vending machines, photocopiers, small collection tanks, miniature pumping stations, pilot plants and similar small-system applications.

- Controlling delivery of plating liquid  
Nickel plating liquid is used for surface treatment of electronic parts. The liquid is automatically fed into a plating bath with the OLV-2P detecting the upper and lower levels.
- Coffee extraction control  
The OLV-5UN is mounted in the feeding water tank to detect the lower limit of the hot water. The OLV-5UN is suitable for food and pharmaceutical applications because the float joints are plasma welded and the surface is buffed smooth.
- Hot water control  
The high temperature version of OLV-5 is the perfect solution for automatic water boiler tank to keep it always full. The wetted parts of OLV-5 are 316LSS float and 316SS stem/retainer, and it can withstand up to 120°C.

### Switch Rating (Max. Resistive Load)

Model	OL, LS ■■■■-1& SH	LS ■■■■-0	FH30	FH50
Max. Capacity	50VA AC	10VA AC	15VA AC	110VA AC
Max. Current	0.5A AC	0.2A AC	1.0A AC	0.5VA AC
Max. Voltage	300V AC	100V AC	264V AC	220V AC
Life Expectancy	1×10 <sup>7</sup> operation	1×10 <sup>7</sup> operation	1×10 <sup>7</sup> operation	1×10 <sup>7</sup> operation

### Product Summary

OLV-2A: Designed for water applications.

OLV-2P: Use in chemicals, food and portable water.

OLV-2F: Designed for applications involving corrosive chemicals and solvents.

OLH-3: Use in water only, horizontal mounting, O-ring seal provided.

OLH-10: Use in chemicals, food and potable water, horizontal mounting.

LS1  P: Suitable for standard assembly parts of mass-produced water application equipment.

LS1  R: Suitable for standard assembly parts of mass-produced lubricating and hydraulic oil applications equipment.

OLV-5 & OLV-5UN: Use in most of liquids. 28×27mm plasma-welded 316LSS float with 316SS stem.

OLV-5UN is a UL recognized component.

FH30 & FH50: Continuous operation at 120°C for FH30 and at 200°C for FH50. Both models withstand steam cleaning and sterilization.

SH10: Horizontal mounting from outside container. 316 stainless steel construction.

OLV-25S/90: Horizontal mounting from inside container.

### Protection For Electrical Surges:

1. Over voltage  
Reed switches are not designed for the direct switching of inductive loads such as motors, contactors, solenoid valves, and so on. They are susceptible to damage from over voltage. **DO NOT EXCEED THE CONTACT RATINGS.** Contact should be wired to miniature relays, suppressors or similar devices. We recommend the use of our relay unit model RE7000.
2. Over current  
The switching lamps or stray capacity from long cable length may produce surge current, and the reed switch may be welded. Contact should be wired to our relay unit model RE7000.

### Technical Notes

1. The sealing compound over the lead wire egress will keep moisture, but is insufficient to prevent water penetration. Please install in good location or apply suitable sealant.
2. If there is surface wave motion, use a time-delay relay to dampen the switch action.
3. The switch should be located away from strong magnetic fields such as those produced by motors or solenoid valves.
4. Max. Allowable impact is 10G. Shocks greater than 10G may damage the switch.
5. Max. Pull load of lead wire is 19.6N. Exceeded pulling during installation may damage the switch.

## Specifications

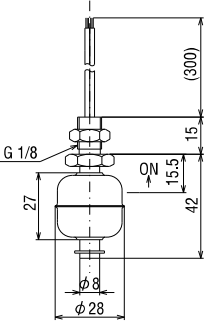
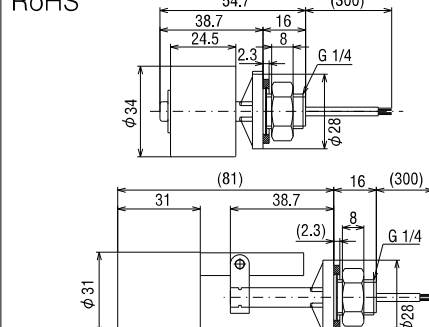
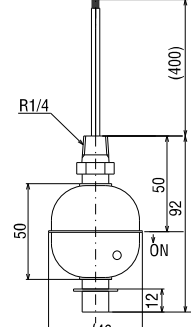
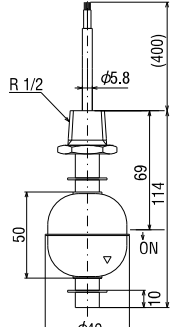
Model		OLV-2A	OLV-2P	OLV-2F	OLV-5
Drawing					
Material	Stem	Polycetal	PP	PVDF	316SS
	Float	BUNA	Foamed PP	PVDF	316LSS
	Retainer	316SS	PP	PVDF	316SS
Operating Temperature		-10 to 90°C		-10 to 100°C	
Maximum Pressure		1 MPa			2 MPa
Mounting Type		Vertical			
Switch Rating		50VA			
Lead Wires		#22AWG, 300mm or 1000mm			
Minimum SG		0.6	0.85	0.9	0.8

Heat proof of 120°C is available for OLV-5

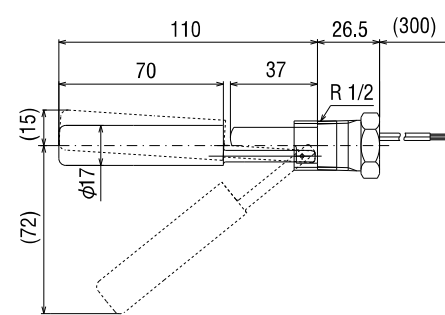
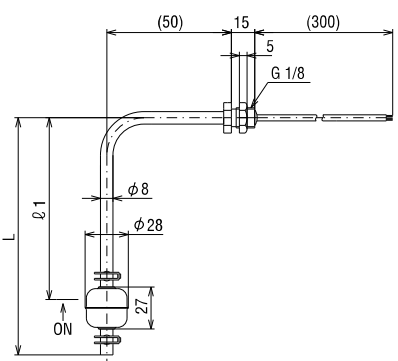
Model		LS11P		LS11R		LS12P		LS12R	
		0A/0B	1A/1B	0A/0B	1A/1B	0A/0B	1A/1B	0A/0B	1A/1B
Drawing									
Material	Stem	PP		PP		PP		PP	
	Float	Foamed PP		BUNA		Foamed PP		BUNA	
	Retainer	316SS		316SS		316SS		316SS	
Operating Temperature		-10 to 90°C							
Maximum Pressure		1 MPa							
Mounting Type		Vertical							
Switch Rating		10VA	50VA	10VA	50VA	10VA	50VA	10VA	50VA
Lead Wires		#22AWG, 300mm or 1000mm							
Minimum SG		0.9		0.7		0.9		0.7	

\*Magnet is exposed and in direct contact with liquids.

LS11P-■A: 15mm ↓ ON, LS11P-■B: 14mm ↑ ON,  
 LS11R-■A: 18mm ↓ ON, LS11R-■B: 17mm ↑ ON,  
 LS12P-■A: 25mm ↓ ON, LS12P-■B: 23mm ↑ ON,  
 LS12R-■A: 28mm ↓ ON, LS12R-■B: 26mm ↑ ON,

OLV-5UN	OLH-3, OLH-10	FH30	FH50
	RoHS 		
316SS	PP	304SS	
316LSS	PP*	316SS	
316SS	PP	304SS	
-10 to 100°C	-10 to 90°C	-10 to 120°C	-10 to 200°C
2 MPa	1 MPa	2 MPa	
Vertical	Horizontal	Vertical	
	50VA	15VA	110VA
	#22AWG, 300mm or 1000mm	Silicon 400mm	
0.8	0.8	0.55	0.7

\*Magnet is exposed and in direct contact with liquids for OLH-3, but not for OLH-10

Model	SH10		OLV25S-90	
Drawing			RoHS 	
Material	Stem	316SS	304SS	
	Float	316LSS	316LSS	
	Retainer	316SS	304SS	
Operating Temperature	-10 to 120°C		-10 to 100°C	
Maximum Pressure	1 MPa		2 MPa	
Mounting Type	Horizontal			
Switch Rating	50VA AC		50VA AC	
Lead Wires	#22AWG, 300mm			
Minimum SG	0.6		0.8	