

## Small Size – Engineered Plastics

### LS-3 Series – Offers High Reliability, Compact Size and Low Costs in NPT, Straight and Metric Threads

Ideal for shallow tanks or restricted spaces, or for any low-cost, high volume use. LS-3 Series are available in FDA compliant materials, consult GEMS for details.

Polysulfone Float



FDA  
CE  
UL US

For water based liquids, with limited use in oils and chemicals.

Polypropylene Float (Hollow)



CE  
UL US

Features a low specific gravity float offering broad chemical compatibility.

Polypropylene Float (Solid)



CE  
UL US

With Polypropylene stem and float, switch offers broad chemical compatibility.

Buna N Float



CE  
UL US

Ideal for oils and fuels.

ALL-PVDF



UL US  
CE  
FDA

Wetted materials of construction comply with FDA food contact regulations.

Stem and float of corrosion-resistant PVDF for ultra-pure applications.

New 3/4" Polypropylene Float



UL US  
CE

See next page for details.



#### RoHS Compliant:

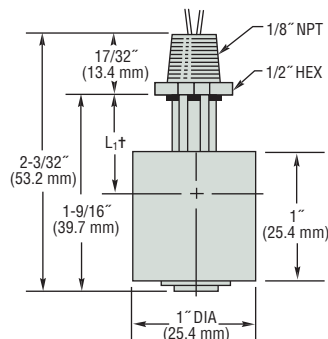
All LS-3 Series level switches featured on this page and the next are in compliance with EU-directive 2011/65/EC.

### Common Specifications

**Approvals:** U.L. Recognized – File No. E45168; CSA Listed – File No. 30200. CE Declaration Available Upon Request.  
NSF materials are NSF 169 Standard compliant. For NSF approved level switches contact Gems.  
RoHS – In compliance with EU-directive 2011/65/EC requirements for chemicals and substances.

**Switch SPST:** 20 VA, 120-240 VAC. Units are shipped N.O. unless otherwise specified. Selectable, N.O. or N.C., by inverting float on unit stem.  
**For LS-3 Micro:** 20 VA, 140 VAC/200 VDC

### Dimensions – 1" Float Models only



$\dagger L_1$  = Actuation Level  
(see chart on next page)

| Alternate Mountings    |                            |                      |                              |
|------------------------|----------------------------|----------------------|------------------------------|
|                        | 3/8"-16<br>Straight Thread | G1/8"<br>1/8"-28 BSP | M12x 1.75<br>Straight Thread |
|                        |                            |                      |                              |
| Electrical Termination | Lead Wires                 | Cable                | Cable                        |

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

| Stem and Mounting Material                                           | Float Material                                   | Float Dia. | Actuation Level <sup>1</sup> | Min. Liquid Sp. Gravity | Pressure Max. @ 70°F (21°C)    | Operating Temperature                            | Mounting Type | Electrical Termination      | Part Number |
|----------------------------------------------------------------------|--------------------------------------------------|------------|------------------------------|-------------------------|--------------------------------|--------------------------------------------------|---------------|-----------------------------|-------------|
| Polysulfone                                                          | Polysulfone                                      | 1"         | 3/4" (19.0 mm)               | .75                     | 50 psi (3 bar)                 | -40°F to +225°F (-40°C to +107°C)                | 1/8" NPT      | Lead Wires                  | 42295 ⚡     |
| Polypropylene <sup>2</sup>                                           | Polypropylene (Hollow)                           | 1"         | 13/16" (20.6 mm)             | .60                     | 50 psi (3 bar)                 | -40°F to +225°F (-40°C to +107°C)                | 1/8" NPT      | Lead Wires                  | 142505 ⚡    |
|                                                                      |                                                  |            |                              |                         |                                | -40°F to +225°F (-40°C to +107°C)                | 3/8"-16       | Lead Wires                  | 171517 ⚡    |
|                                                                      |                                                  |            |                              |                         |                                | -40°F to +176°F (-40°C to +80°C)                 | G 1/8"-28     | Cable                       | 171518      |
|                                                                      |                                                  |            |                              |                         |                                | -40°F to +176°F (-40°C to +80°C)                 | M12x1.75      | Cable                       | 189739      |
| Polypropylene <sup>3</sup> NSF Std. 169 (Kynar float retaining clip) | Polypropylene <sup>3</sup> (Hollow) NSF Std. 169 | 1"         | 13/16" (20.6 mm)             | .60                     | 50 psi (3 bar)                 | -40°F to +225°F (-40°C to +107°C)                | 1/8" NPT      | Lead Wires                  | 209475      |
|                                                                      |                                                  |            |                              |                         |                                |                                                  | 3/8"-16       | Lead Wires                  | 209455      |
|                                                                      |                                                  |            |                              |                         |                                |                                                  | G 1/8"-28     | Lead Wires                  | 209460      |
|                                                                      |                                                  |            |                              |                         |                                |                                                  | M12x1.75      | Lead Wires                  | 209465      |
| Polypropylene <sup>2</sup>                                           | Polypropylene (Solid)                            | 1"         | 9/16" (14.3 mm)              | .90                     | 150 psi (10 bar) @ 68°F (20°C) | -40°F to +150°F (-40°C to +66°C)                 | 1/8" NPT      | Lead Wires                  | 116826 ⚡    |
|                                                                      |                                                  |            |                              |                         |                                | -40°F to +150°F (-40°C to +66°C)                 | 3/8"-16       | Lead Wires                  | 171514 ⚡    |
|                                                                      |                                                  |            |                              |                         |                                | -40°F to +176°F (-40°C to +80°C)                 | M12x1.75      | Cable                       | 189787      |
| Nylon                                                                | Buna                                             | 1"         | 13/16" (20.6 mm)             | .45                     | 150 psi (10 bar)               | -40°F to +250°F (oil) (-40°C to +121°C [oil])    | 1/8" NPT      | Lead Wires                  | 162745 ⚡    |
|                                                                      |                                                  |            |                              |                         |                                | -40°F to +176°F (water) (-40°C to +80°C [water]) | M12x1.75      | Cable                       | 189786      |
| PVDF                                                                 | PVDF                                             | 1"         | 1/2" (12.7 mm)               | .86                     | 50 psi (3 bar)                 | -40°F to +250°F (-40°C to +121°C)                | 1/8" NPT      | Teflon® Jacketed Lead Wires | 173250 ⚡    |

Notes:

1. Based on a liquid specific gravity of 1.0.

2. All Polypropylene units carry a Kynar® retaining clip. Accessories Available in OEM Quantities: Jam Nut, Gaskets, and Slosh Shields.

3. NSF 169 Approved unit, for water use only.

⚡ – Stock Items.

## Miniature and Micro Floats for Tiny Tanks

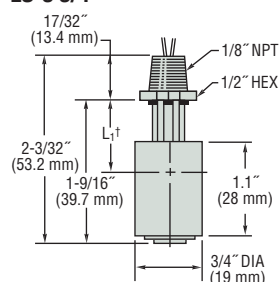
### Our smallest LS-3 Series switches yet!

Small yes, but with BIG performance. No other miniature float switches match our LS-3 specs. These units are ideal for potable water, medical devices and other compact appliances, such as printers. Gems proprietary float enables use in lighter-than-water fluids. Switches are made from FDA compliant materials.



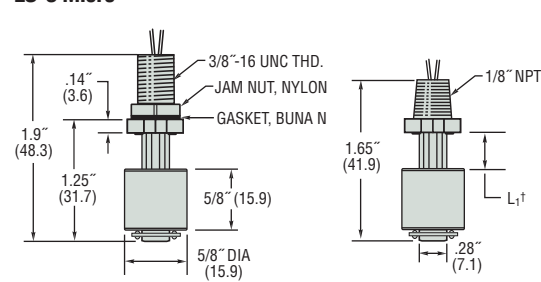
### Dimensions – 3/4" and Micro Series

#### LS-3 3/4"



<sup>†</sup> L<sub>1</sub> = Actuation Level (see chart below)

#### LS-3 Micro



| Series                 | Stem and Mounting Material | Float Material         | Actuation Level <sup>1</sup> | Min. Liquid Sp. Gravity | Pressure Max. @ 70°F (21°C) | Operating Temperature                         | Electrical Termination          | Mounting Type | Switch Logic                     | Part Number |
|------------------------|----------------------------|------------------------|------------------------------|-------------------------|-----------------------------|-----------------------------------------------|---------------------------------|---------------|----------------------------------|-------------|
| LS-3 3/4" <sup>2</sup> | Polypropylene <sup>2</sup> | Polypropylene (Solid)  | 7/16" (11.1 mm)              | .95                     | 100 psi (6.9 bar)           | -40°F to +212°F (-40°C to +100°C)             | Lead Wires or Cable             | 1/8" NPT      | N.C./N.O. Reverse Float Position | 201540      |
|                        | Nylon                      | Buna                   | 11/16" (17.5 mm)             | .85                     | 150 psi (10.3 bar)          | -40°F to +250°F (oil) (-40°C to +121°C [oil]) | Lead Wire                       |               |                                  | 177818      |
| LS-3 Micro             | Polypropylene              | Polypropylene (Hollow) | 3/8" (9.5 mm)                | .95                     | 50 psi (3 bar)              | -40°F to +176°F (-40°C to +80°C)              | PVC Jacketed Lead Wires 24"-26" | 1/8" NPT      | N.O.                             | 247135      |
|                        |                            |                        |                              |                         |                             |                                               |                                 | 1/8" NPT      | N.C.                             | 247137      |
|                        |                            |                        |                              |                         |                             |                                               |                                 | 3/8"-16       | N.O.                             | 246985      |
|                        |                            |                        |                              |                         |                             |                                               |                                 | Straight      | N.C.                             | 246986      |

Notes:

1. Based on a liquid specific gravity of 1.0.

2. Utilizes a Kynar® retaining clip.

## Unique Features Make These LS-3 Models Special

These small switches feature unique configurations for special applications.

Part No. 142545  
With Slosh Shield



Cut-away version shown

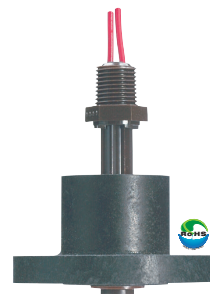
Compact, all-polypropylene switch with slosh shield is ideal for use with turbulent liquids in small tanks. FDA compliant materials.

Part No. 46999  
Bottle Level

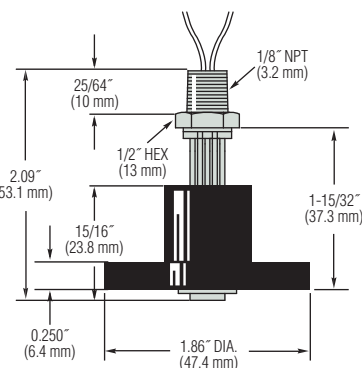
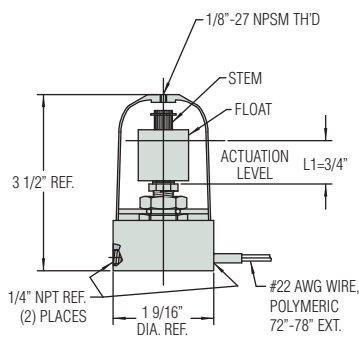
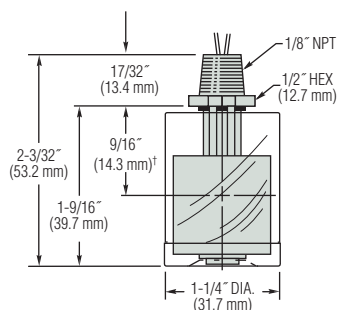


For external mounting on tanks too small to accommodate internally mounted switches. (See note below)

Part No. 76707  
For Low Level



For detecting levels as low as 5/8" from tank bottom. Use in water, some oils and chemicals.



| Order By Part Number             | 142545 ⚡                                           | 46999 ⚡                                  | 76707 ⚡                            |
|----------------------------------|----------------------------------------------------|------------------------------------------|------------------------------------|
| <b>Materials</b>                 |                                                    |                                          |                                    |
| Stem and Mounting                | All Polypropylene (Including Shield <sup>4</sup> ) | Polysulfone                              | All Polysulfone (Including Collar) |
| Float                            | Polypropylene (Solid)                              | Polysulfone                              | Buna N                             |
| Other Wetted                     | —                                                  | Brass, Aluminum, Polycarbonate, Viton A  | Epoxy                              |
| Min. Liquid Sp. Gr.              | .90                                                | .75                                      | —                                  |
| Operating Temperature            | -40°F to +150°F (-40°C to +65.6°C)                 | -40°F to +120°F (-40°C to +48.9°C)       | -40°F to +180°F (-40°C to +82.2°C) |
| Pressure, PSI, Max. <sup>3</sup> | 150                                                | 50                                       |                                    |
| Switch <sup>1</sup> , SPST       | 20 VA, N.C./N.O. Dry <sup>2</sup>                  | 20 VA, N.C. Dry                          |                                    |
| Electrical Termination           | No. 22 AWG, 22" L., PVC Lead Wires                 | No. 22 AWG, 72" L., Polymeric Lead Wires | No. 22 AWG, 72" L., PVC Lead Wires |

**Notes:**

- See "Electrical Data" on Page X-5 for more information.
  - Switch operation is selectable, N.O. or N.C., by inverting the float on the unit stem.
  - Maximum pressure at 70°F (21°C).
  - Consult factory for other available materials.
- † L<sub>1</sub> = Switch actuation level, nominal (based on a specific gravity of 1.0).

Note: LS-3 Series Bottle Level Switch is also available with any of the float materials shown on opposite page. Contact GEMS for correct part number.

⚡ – Stock Items.