


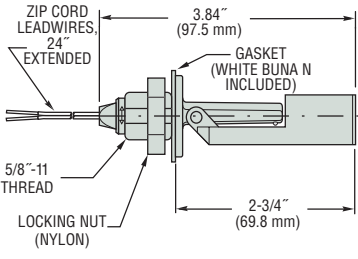
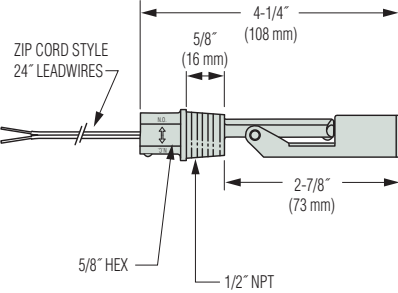
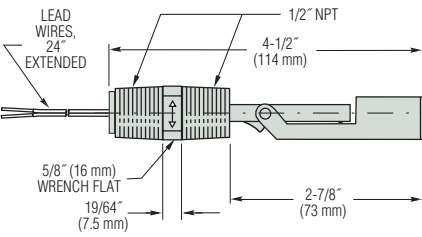


## Small Size – Engineered Plastics

### 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.

LEVEL SWITCHES – SINGLE POINT

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

#### Common Specifications

**Switch Rating\*:** SPST, 20VA

**Lead Wire Gauge:** No. 22 AWG

**Approvals:** All LS-7 Series switches on this page are U.L. Recognized – File No. E45168, and are CSA Listed-File No. 30200. For NSF approved level switches contact Gems.

**Mounting Attitude:** Horizontal.

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

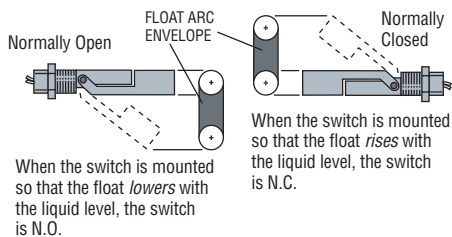
#### Media Compatibility

| Media                              | LS-7 Compatible Types |
|------------------------------------|-----------------------|
| Oil, Fuel, Hydrocarbons            | Nylon                 |
| Broad Range of Chemicals and Water | Polypropylene         |
| Limited Chemicals and Water        | Noryl®                |

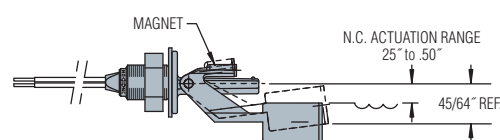
#### Switch Operation

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).

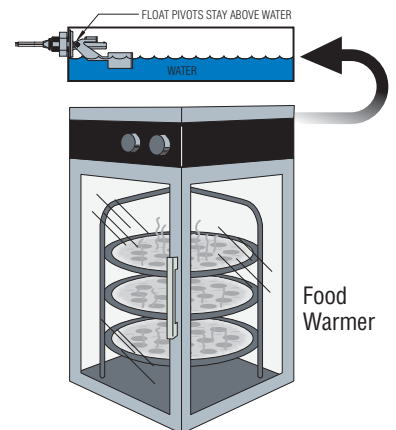
##### Types 3, 5, 7, 10 and 13






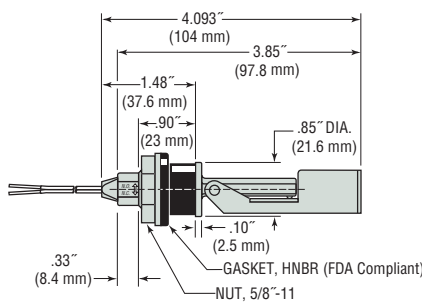
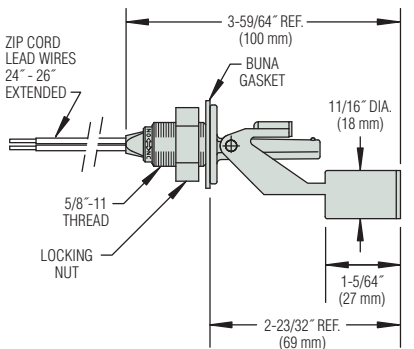
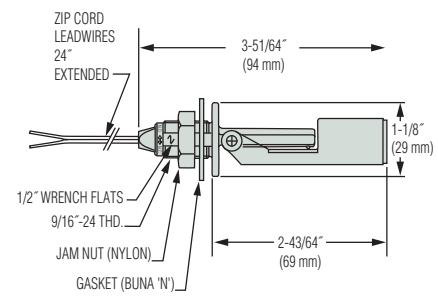
##### Type 12 – N.C. "Drop Float" Design



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. The units are made of Noryl®, which carries both NSF and WRC approval for use in potable water, and are supplied with FDA-approved Buna gaskets.



- ▶ Nylon is ideal for oils and fuels.
- ▶ NSF Standard 61 polypropylene is ideal for potable water and broad chemicals.

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

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           | 2.20               | 165570 ⚡    |
|               | Polypropylene     |       |                  | .55                 | -40°F to +225°F (-40°C to +107.2°C) |                          |                    | 164520 ⚡    |
| 5             | Polypropylene     | TPE†  |                  | .55                 | -40°F to +225°F (-40°C to +107.2°C) | 100 psi @ 70°F           | 1.25               | 131100 ⚡    |
|               | Nylon             |       |                  | .65                 | -40°F to +250°F (-40°C to +121.1°C) |                          |                    | 140620 ⚡    |
| 7             | Polypropylene     | TPE†  |                  | .55                 | -40°F to +225°F (-40°C to +107.2°C) | 100 psi @ 70°F           | 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            | 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           | .70                | 191080 ⚡    |
| 13            | Polypropylene     | TPE†  |                  | .55                 | -40°F to +225°F (-40°C to +107.2°C) | 100 psi @ 70°F           | 2.20               | 197050 ⚡    |

\* Polysulfone and Ryton® R-4 are available upon request.  
 † Thermoplastic Elastomer Zip Cord, 22 AWG.  
 Note: NSF C2 Versions available. Contact factory.

See alloy versions on next page.

⚡ – Stock Items.

Versaplast: -40 - 149°C, S.G ≥ 0.8  
 - p/n 177100: type 5  
 - p/n 189422: type 5 with BSP thread  
 - p/n 182600: type 3

## 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.

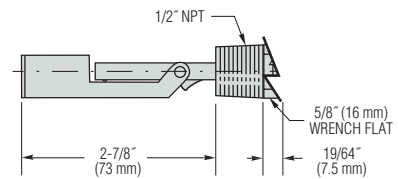
### Specifications

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

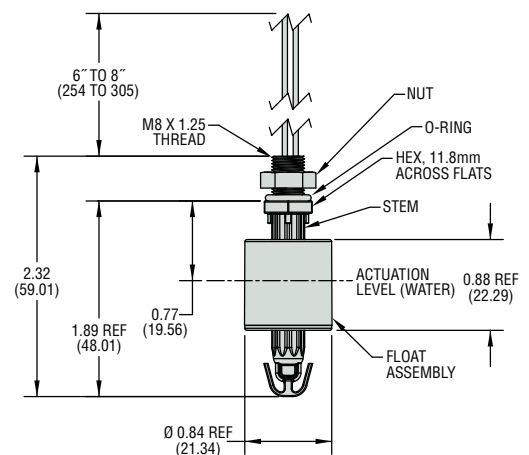
### Specifications

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

Order by Part Number: 602881



### Dimensions



**Junction box alternatives  
 for  
 flow and level switch units**



| Small size housings for max 32V, IP65 rating, 1/4 and 1/2" connections<br>internal terminal strip Dims: 60mm dia x 80 mm high  |  |  |
|--|--|--|
| Aluminium<br>Small<br>32V<br>IP65  | <b>JB-ALS-32V-65-1</b> (1/4")<br><b>JB-ALS-32V-65-2</b> (1/2")<br>Painted aluminium case<br>M16 NPB cable gland supplied |  |
| Stainless<br>Small<br>32V<br>IP65  | <b>JB-SSS-32V-65-2</b><br>Full 316SS case<br>M16 SS cable gland supplied   |  |
| Medium size housings for max 32V, IP65 rating, 1/2" connection<br>internal terminal strip on SS bracket Dims: 70mm dia x 75 mm high  |  |  |
| Aluminium<br>Medium<br>32V<br>IP65   | <b>JB-ALM-32V-65-2</b><br>Painted aluminium case<br>M20 cable entry (no gland)   |  |
| Stainless<br>Medium<br>32V<br>IP65   | <b>JB-SSM-32V-65-2</b><br>Full 316SS case<br>M20 SS cable gland supplied   |  |
| Large size housings for max 250V, IP65 rating, 1/2" connection<br>Painted earth terminals both inside and outside housing.<br>Cover locking screw internal terminal strip on SS bracket<br>Dims: 82mm dia x 94 mm high |  |  |
| Aluminium<br>Large<br>240V<br>IP65   | <b>JB-ALL-240V-65-2</b><br>Painted aluminium case<br>M20 cable entry (no gland)  |  |
| Stainless<br>Large<br>240V<br>IP65   | <b>JB-SSL-240V-65-2</b><br>Full 316SS case<br>M20 SS cable gland supplied  |  |



FS-200 with JB-ALL-240V-65-2



FS-550 with JB-SSL-240V-65-2



Typical Gems flow switch fitted with large 240V junction box



Typical Gems level sensors with junction box fitted