

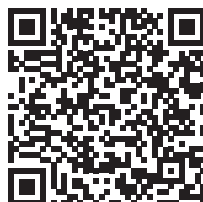
# Miniature Liquid Level Sensors Series LF



The Series LF Miniature Liquid Level sensors are designed for reliable operation in small tanks and containers. Their rugged design and multiple configurations make them the perfect solution for OEM and large volume applications.

## Series Features

- |   |  |  |
|---|--|--|
| <b>LFE</b> <ul style="list-style-type: none"><li>• APG's smallest vertical float switches</li><li>• Four configurable options</li><li>• Use in water or oil</li><li>• Non-reversible switch operation</li><li>• Standard pressure, temp range</li></ul> | <b>LFP</b> <ul style="list-style-type: none"><li>• PVDF, polypropylene, 6-nylon, or Buna wetted-parts</li><li>• Can use in water, oil, corrosive chemicals</li><li>• Temp ranges up to 40°C, 80°C, 90°C, and 110°C</li><li>• Ultra-low to standard pressure ranges</li><li>• Field-reversible switch operation</li></ul> | <b>LFS</b> <ul style="list-style-type: none"><li>• All stainless-steel construction</li><li>• Specific gravity from 0.55 to 0.8</li><li>• Temp ranges up from 80°C up to 200°C</li><li>• Ultra-low to high pressure ranges</li><li>• Field-reversible switch operation</li></ul> |
|---|--|--|



# LFE Specifications and Options

Model Number: LFE -      -      -      -       
                                   A      B      C      D

## A. Stem Length

- 11** Small (45 mm / 1.77")
- 12** Large (55 mm / 2.17")

## B. Float Material/Medium

- P** Polypropylene / Water (0.9 SG)
- R** Buna / Hydraulic or Lubricating Oil (0.7 SG)

## C. Switch Capacity

- 0** 10 VA
- 1** 50 VA

## D. Switch Operation

- A** Normally Closed
- B** Normally Open

Note: Not all configurations available. Please contact factory for individual model availability.

## Physical

- Stem: Polypropylene
- Retainer: 316L SS
- Mounting: Vertical, 1/8" G (PF)

## Electrical

- Life Expectancy: 10<sup>7</sup> (# of actuations)
- Lead Wires: #22 AWG, 11.8 or 39.4 in. (300 or 1000 mm)
- Switch Capacity
  - 10 VA: 0.2 A max, 100 VAC/DC max, 0.1 A nominal
  - 50 VA: 0.5 A max, 300 VAC/DC max, 0.17 A nominal

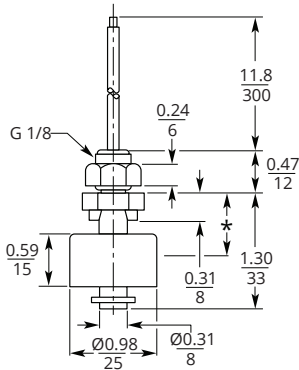
## Performance

- Pressure Rating: 145 psi (10 bar)

## Environmental

- Operating Temp: 14° - 194°F (-10° - 90°C)

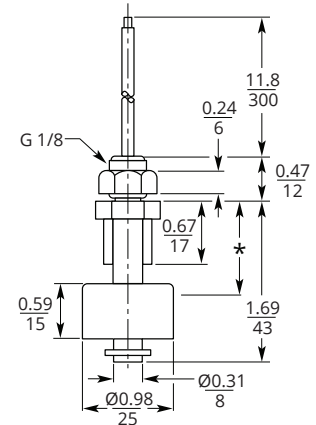
LFE-11P / LFE-11R



Activation Point (Dimension \*)

| Model     | ON              | OFF               |
|-----------|-----------------|-------------------|
| LFE-11P_A | 15 mm (Falling) | 13.5 mm (Rising)  |
| LFE-11R_A | 18 mm (Falling) | 16.5 mm (Rising)  |
| LFE-12P_A | 25 mm (Falling) | 23.5 mm (Rising)  |
| LFE-12R_A | 28 mm (Falling) | 26.5 mm (Rising)  |
| LFE-11P_B | 14 mm (Rising)  | 15.5 mm (Falling) |
| LFE-11R_B | 17 mm (Rising)  | 18.5 mm (Falling) |
| LFE-12P_B | 23 mm (Rising)  | 24.5 mm (Falling) |
| LFE-12R_B | 26 mm (Rising)  | 27.5 mm (Falling) |

LFE-12P / LFE-12R



# LFP Specifications and Options

Series

LFP

Model

|              |               |           |           |         |
|--------------|---------------|-----------|-----------|---------|
| LFP-V-2F-300 | LFP-V-2F-1000 | LFP-V-2PG | LFP-V-2PN | LFP-11D |
|--------------|---------------|-----------|-----------|---------|

## Performance

|                 |                     |                  |                  |
|-----------------|---------------------|------------------|------------------|
| Pressure Rating | 28.4 psi (1.96 bar) | 145 psi (10 bar) | 58.0 psi (4 bar) |
| Minimum S.G.    | 0.85                | 0.9              | 0.7              |

## Environmental

|                 |                                |                               |                                |                                |
|-----------------|--------------------------------|-------------------------------|--------------------------------|--------------------------------|
| Operating Temp. | -4° to 175°F<br>(-20° to 80°C) | 14° to 14°F<br>(-10° to 40°C) | 14° to 194°F<br>(-10° to 90°C) | -4° to 175°F<br>(-20° to 80°C) |
| Liquids         | Corrosive Chemicals            |                               | Water, Chemicals               |                                |

## Electrical

|                       |                                   |                                |   |                               |
|-----------------------|-----------------------------------|--------------------------------|---|-------------------------------|
| Max Capacity          | 50 VA                             |                                |   |                               |
| Max / Nominal Current | 1 A carry max                     | 0.5 A / 0.17 A                 | 0.5 A / 0.21 A                                |                               |
| Max Voltage           | 240 VAC / 200 DC                  | 300 VAC/DC                     | 240 VAC/DC                                    |                               |
| Life Expectancy       | 10 <sup>7</sup> (# of actuations) |                                |   |                               |
| Lead Wires            | #22 AWG, 11.8 in.<br>(300 mm)     | #22 AWG, 39.4 in.<br>(1000 mm) | #22 AWG, 11.8 or 39.4 in.<br>(300 or 1000 mm) | #22 AWG, 11.8 in.<br>(300 mm) |

## Physical

|             |             |               |             |  |
|-------------|-------------|---------------|-------------|--|
| Material    |             |               |             |  |
| Stem        | PVDF        | Polypropylene |             |  |
| Float       | PVDF        | Polypropylene |             |  |
| Retainer    | PVDF        | Polypropylene |             |  |
| Mounting    |             |               |             |  |
| Orientation | Vertical    |               |             |  |
| Type        | 1/8" G (PF) | 1/8" NPT      | 1/8" G (PF) |  |

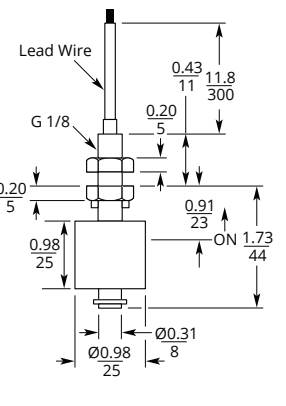
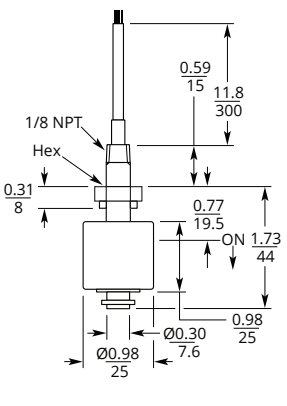
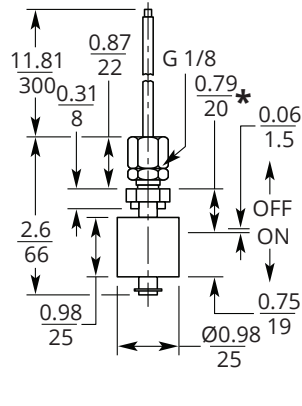
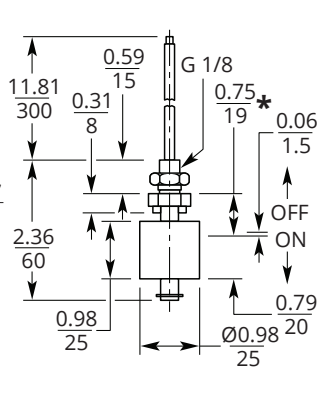
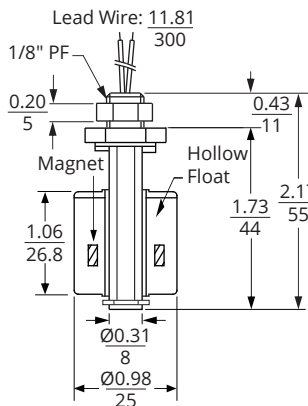
LFP-V-2F-300

LFP-V-2F-1000

LFP-V-2PG

LFP-V-2PN

LFP-11D



Notes:

- Reversing LFP-V-2F-1000 switch operation changes actuation distance from 19 mm to 16.5 mm.
- Reversing LFP-V-2PG switch operation changes actuation distance from 20 mm to 17 mm.



# LFP Specifications and Options

Series

LFP

Model

|          |          |           |         |
|----------|----------|-----------|---------|
| LFP-V-2A | LFP-V-2B | LFP-VE-B1 | LFP-H-3 |
|----------|----------|-----------|---------|

## Performance

|                 |                  |  |     |
|-----------------|------------------|--|-----|
| Pressure Rating | 145 psi (10 bar) |  |     |
| Minimum S.G.    | 0.6              |  | 0.8 |

## Environmental

|                 |                                |                                |                                    |
|-----------------|--------------------------------|--------------------------------|------------------------------------|
| Operating Temp. | 14° to 194°F<br>(-10° to 90°C) | 14° to 176°F<br>(-10° to 80°C) | 14° to 194°F<br>(-10° to 90°C)     |
| Liquids         | Water, Oil                     |                                | Water<br>(magnet exposed to media) |

## Electrical

|                       |   |                               |   |
|-----------------------|---|-------------------------------|---|
| Max Capacity          | 50 VA   |                               |   |
| Max / Nominal Current | 0.5 A / 0.17 A                                |                               |   |
| Max Voltage           | 300 VAC/DC                                    |                               |   |
| Life Expectancy       | 10 <sup>7</sup> (# of actuations)             |                               |   |
| Lead Wires            | #22 AWG, 11.8 or 39.4 in.<br>(300 or 1000 mm) | #22 AWG, 11.8 in.<br>(300 mm) | #22 AWG, 11.8 or 39.4 in.<br>(300 or 1000 mm) |

## Physical

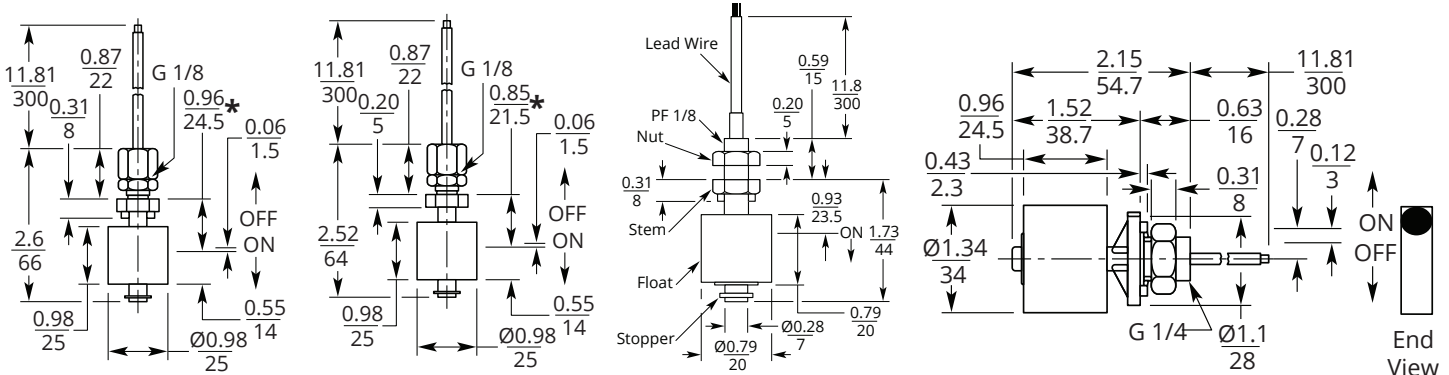
|             |             |                     |               |
|-------------|-------------|---------------------|---------------|
| Material    |             |                     |               |
| Stem        | Polyacetal  | Nickel-plated Brass | POM           |
| Float       | Buna        |                     | Polypropylene |
| Retainer    | 316 SS      | 304 SS              | Polypropylene |
| Mounting    |             |                     |               |
| Orientation | Vertical    |                     | Horizontal    |
| Type        | 1/8" G (PF) |                     | 1/4" G (PF)   |

LFP-V-2A

LFP-V-2B

LFP-VE-B1

LFP-H-3



Notes:

- Reversing LFP-V-2A switch operation changes actuation distance from 24.5 mm to 22.5 mm.
- Reversing LFP-V-2B switch operation changes actuation distance from 21.5 mm to 19.5 mm.





# LFS-V Specifications and Options

Series

LFS-V

Model

| LFS-V-30 | LFS-V-5G | LFS-V-5G-1000 | LFS-V-5UN |
|----------|----------|---------------|-----------|
|----------|----------|---------------|-----------|

## Performance

|                 |                  |                   |                  |
|-----------------|------------------|-------------------|------------------|
| Pressure Rating | 290 psi (20 bar) | 142 psi (9.8 bar) | 290 psi (20 bar) |
| Minimum S.G.    | 0.55             | 0.7               | 0.8              |

## Environmental

|                 |                                 |                               |                                 |
|-----------------|---------------------------------|-------------------------------|---------------------------------|
| Operating Temp. | 14° to 248°F<br>(-10° to 120°C) | 4° to 175°F<br>(-20° to 80°C) | 14° to 212°F<br>(-10° to 100°C) |
|-----------------|---------------------------------|-------------------------------|---------------------------------|

Liquids

Most liquids

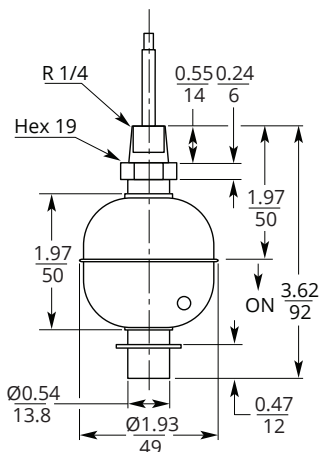
## Electrical

|                       |  |                           |                                |   |
|-----------------------|--|---------------------------|--------------------------------|---|
| Max Capacity          | 15 VA  | 50 VA                     |                                |   |
| Max / Nominal Current | 1.0 A / 0.06 A   | 1 A carry max             | 0.5 A / 0.17 A                 |   |
| Max Voltage           | 264 VAC  | 240 VAC / 200 VDC         | 300 VAC/DC                     |   |
| Life Expectancy       | 10 <sup>7</sup> (# of actuations)  |                           |                                |   |
| Lead Wires            | 0.3 mm <sup>2</sup> Silicon, 15.7 in.<br>or 47.2 in.<br>(400 or 1200 mm) | #22 AWG, 11.8<br>(300 mm) | #22 AWG, 39.4 in.<br>(1000 mm) | #22 AWG, 11.8 or 39.4 in.<br>(300 or 1000 mm) |

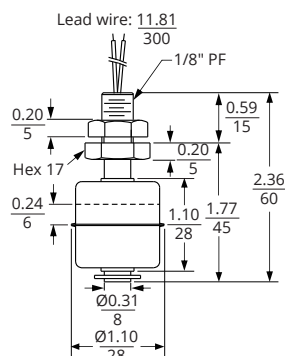
## Physical

|             |          |             |         |  |
|-------------|----------|-------------|---------|--|
| Material    |          |             |         |  |
| Stem        | 304 SS   | 316 SS      |         |  |
| Float       | 316 SS   |             | 316L SS |  |
| Retainer    | 304 SS   | 316 SS      |         |  |
| Mounting    |          |             |         |  |
| Orientation | Vertical |             |         |  |
| Type        | 1/4" R   | 1/8" PF (G) |         |  |

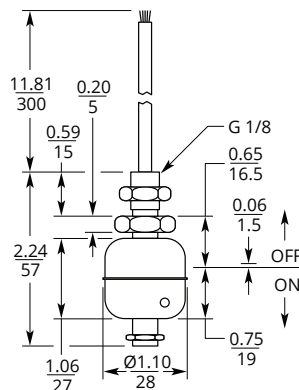
LFS-V-30



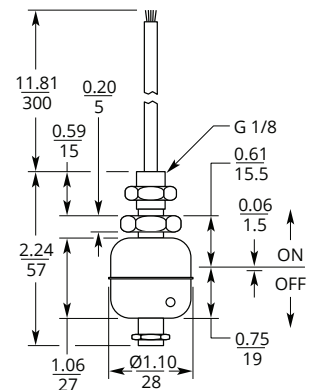
LFS-V-5G



LFS-V-5G-1000



LFS-V-5UN



# LFS-VE Specifications and Options

Series

LFS-VE

Model

LFS-VE-S1

LFS-VE-S2

LFS-VE-S4

## Performance

Pressure Rating 145 psi (10 bar)

Minimum S.G. 0.8 | 0.73

## Environmental

Operating Temp. 14° to 248°F (-10° to 120°C) | 14° to 392°F (-10° to 200°C)

Liquids Most liquids

## Electrical

Max Capacity 50 VA

Max / Nominal Current 0.5 A / 0.17 A

Max Voltage 300 VAC/DC

Life Expectancy  $10^7$  (# of actuations)

Lead Wires #22 AWG, 13.8 in. (350 mm) | #22 AWG, 92.5 in. (2350 mm)

## Physical

Material

Stem 304 SS | 316SS

Float 304 SS | 316 SS

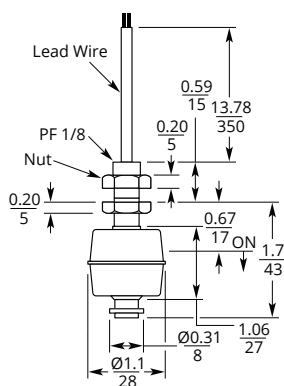
Retainer 304 SS | 316 SS

Mounting

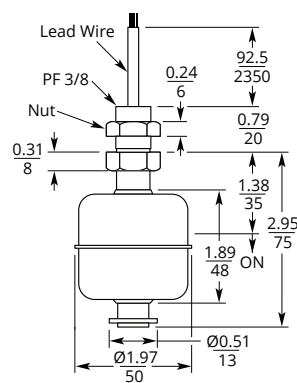
Orientation Vertical

Type 1/8" PF (G) | 3/8" PF (G)

LFS-VE-S1 & LFS-VE-S2



LFS-VE-S4



# LFS Specifications and Options



Series

LFS

Model

LFS-H-10

LFS-H-25S/90

LFS-HE-S2

## Performance

|                 |                  |                 |                  |
|-----------------|------------------|-----------------|------------------|
| Pressure Rating | 145 psi (10 bar) | 290 psi (20bar) | 72.5 psi (5 bar) |
| Minimum S.G.    | 0.6              | 0.8             |                  |

## Environmental

|                 |                                 |                                 |                                 |
|-----------------|---------------------------------|---------------------------------|---------------------------------|
| Operating Temp. | 14° to 248°F<br>(-10° to 120°C) | 14° to 212°F<br>(-10° to 100°C) | 14° to 248°F<br>(-10° to 120°C) |
| Liquids         |                                 | Most liquids                    |                                 |

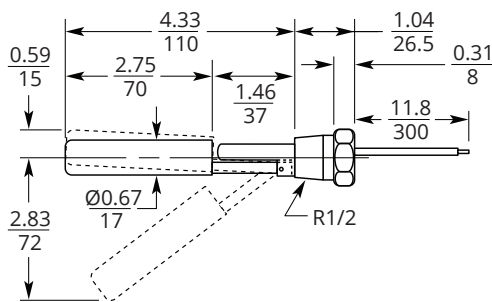
## Electrical

|                       |                                   |                               |  |
|-----------------------|-----------------------------------|-------------------------------|--|
| Max Capacity          | 50 VA                             |                               |  |
| Max / Nominal Current | 0.5 A / 0.17 A                    |                               |  |
| Max Voltage           | 300 VAC/DC                        |                               |  |
| Life Expectancy       | 10 <sup>7</sup> (# of actuations) |                               |  |
| Lead Wires            | #22 AWG, 11.8 in.<br>(300 mm)     | #22 AWG, 19.7 in.<br>(500 mm) |  |

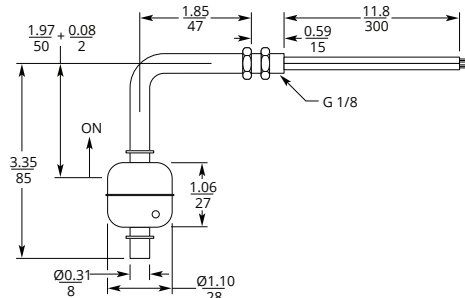
## Physical

|                         |                     |                     |                     |
|-------------------------|---------------------|---------------------|---------------------|
| Material                |                     |                     |                     |
| Stem                    | 316 SS              | 304 SS              |                     |
| Float                   | 316L SS             |                     | 304 SS              |
| Retainer                | 316 SS              | 304 SS              |                     |
| Mounting                |                     |                     |                     |
| Placement - Orientation | External Horizontal | Internal Horizontal | External Horizontal |
| Float Orientation       | Horizontal          | Vertical            | Horizontal          |
| Type                    | 1/2" R              | 1/8" PF (G)         | 1/2" NPT            |

LFS-H-10



LFS-H-25S/90



LFS-HE-S2

