



LF

Miniature Liquid Level Sensors

- Compact size
- Low cost
- Reliability/long switch life
- Can be used in a wide range of liquids
- Utility design for shock resistive construction in the float

These miniature liquid level switches have been 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

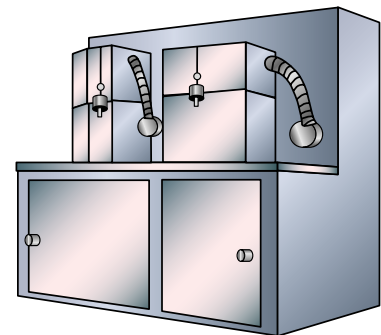
The stem of these miniature liquid level switches contains a hermetically sealed reed switch. The float contains a permanent magnet. As the float rises or falls with the level of the liquid, the reed switch is activated by the magnet. On most models, the operation of the switch, normally open (NO) or normally closed (NC), is easily changed by removing a retaining clip and inverting the float.

■ Applications

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

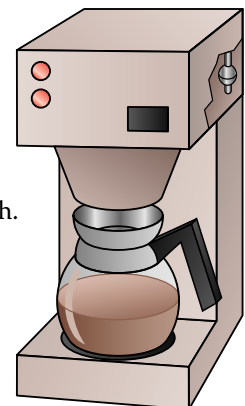
Controlling delivery of plating liquid

Nickel plating liquid is used for surface treatment of electronic parts. The liquid is automatically fed into a plating bath with the LFP-V-2PG detecting the upper and lower levels.



Commercial Coffee Maker

The LFS-V-5UN is mounted in the water tank to detect the lower limit of the hot water. The LFS-V-5UN is suitable for food and pharmaceutical applications because the float joints are plasma welded and the surface is buffed smooth.



■ **Protection from Electrical Surges**

Overvoltage

Reed switches are not designed for the direct starting of inductive loads such as motors, contactors, solenoid valves, etc. They are susceptible to damage from overvoltages. Do not exceed the specified switch ratings listed in the specifications charts. Contactors should be wired to miniature relays, suppressors or similar devices. APG recommends the use of the relay unit, Model RCU-7000. (Complete RCU-7000 specifications are located at www.apgsensors.com)

Overcurrent

Momentary surge currents produced by switching lamps or stray capacity from long cable lengths can weld the reed switches. Contactors should be wired to our Model RCU-7000 relay unit, coils in series, or suppressors. (Complete RCU-7000 specifications are located at www.apgsensors.com)

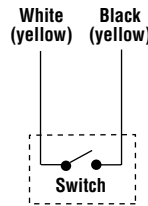
■ **Intrinsic Safety**

Any of the APG float switch level controls may be used with APG Intrinsic Safety Barriers (IS) to meet hazardous location requirements for level control device. For more information see www.apgsensors.com

■ **Submersibility**

These miniature liquid level switches are not designed to operate when fully submersed. The LFS-VE-S1 and LFS-VE-S2 series float switches can be submersed for short periods up to 76 hours under 500 mm depth of water at 20°C temperature. Water will penetrate the float for elevated temperatures and/or greater depths.

■ **Wiring**



■ **Switch Rating**

See specification charts on the following pages.

■ **Technical Notes**

- The sealing compound over the lead wire egress prevents moisture penetration, but is insufficient to prevent water penetration. Please install in an appropriate location or apply a suitable sealant.
- If there is surface wave motion, use a time delay relay to dampen the switch action.
- The switch should be located away from strong magnetic fields such as those produced by motors or solenoid valves.
- Maximum allowable impact is 10 g. Shocks greater than this can damage the switch.
- Maximum tensile force on the lead wire is 4.4 lb. (19.6 N) Exceeding this during installation may damage the switch.

■ **Ordering Information**

Please order by part number, as shown on the specification charts on the following pages.



■ **Metal Float Specifications**

| Series | LFS | |
|-----------------------------------|-------------------------------|--|
| Model | LFS-H-10 | |
| Part Number | 22427 | |
| Material | | |
| Stem | 316L SS | |
| Float | 316L SS | |
| Retainer | 316L SS | |
| Operating Temperature | 14 to 248°F (-10 to 120°C) | |
| Pressure Rating | 145 psi (10 bar) | |
| Mounting | Horizontal | |
| Switch Rating (by model code) | | |
| Maximum Capacity | 50 VA | |
| Nominal Current | 0.17 A | |
| Maximum Voltage | 300 VAC | |
| Life Expectancy (# of actuations) | 10 ⁷ | |
| Lead Wires | #22 AWG (300 mm) | |
| Minimum SG | 0.6 | |
| Dimensions | — in./mm | |
| | | |

Specifications are subject to change without notice.