

Maintenance . . .

Do not disassemble unit or reposition retaining grip rings. Return unit to Gems Sensors Division for any service required.

Warning . . .

The LS-700F Series switches should only be installed (in the proper tank size) by a UL-approved facility. Failure to do so, may cause failure and possible overflow of tank. Improper installation shall void Gems' warranty. Consult Gems for proper cable adapter. Improper adapter use will void warranty.

Important Points!

Product must be maintained and installed in strict accordance with the National Electrical Code and GEMS product catalog and instruction bulletin. Failure to observe this warning could result in serious injuries or damages.

An appropriate explosion-proof enclosure or intrinsically safe interface device must be used for hazardous area applications involving such things as (*but not limited to*) ignitable mixtures, combustible dust and flammable materials.

Pressure and temperature limitations shown on individual catalog pages and drawings for the specified level switches must not be exceeded. These pressures and temperatures take into consideration possible system surge pressures/temperatures and their frequencies.

Selection of materials for compatibility with the media is critical to the life and operation of GEMS level switches. Take care in the proper selection of materials of construction; particularly wetted materials.

Life expectancy of switch contacts varies with applications. Contact GEMS if life cycle testing is required.

Ambient temperature changes do affect switch set points, since the specific gravity of a liquid can vary with temperature.

Level switches have been designed to resist shock and vibration; however, shock and vibration should be minimized.

Liquid media containing particulate and/or debris should be filtered to ensure proper operation of GEMS products.

Electrical entries and mounting points may require liquid/vapor sealing if located in an enclosed tank.

Level switches must not be field repaired.

Physical damaged sustained by the product may render it unserviceable.

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LS-700F Series Refrigerant Recovery Level Switches

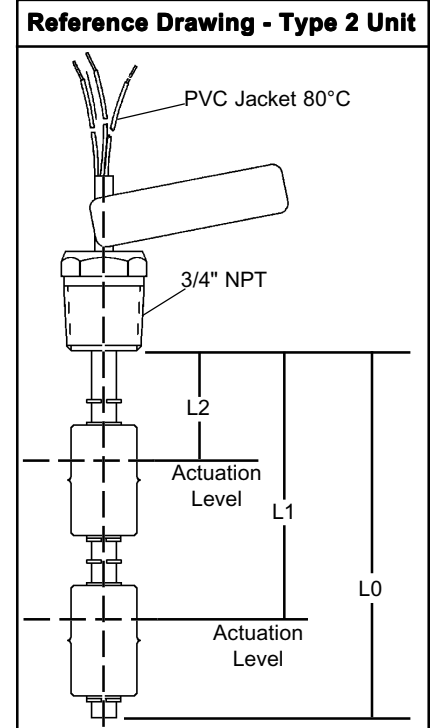
Instruction Bulletin No. 142224

Installation/Mounting . . .

1. Install units vertically in tank top or bottom. Gems recommends the use of Loctite 592 (*Pipe Sealant with Teflon*), instead of teflon tape to thread mounting plug to tank. Do not mishandle or abuse floats.
2. Any dings or creases may cause improper operation. Improper wiring of switch may cause switch failure. (*See Wiring Diagrams*)
3. Gems LS-700F (Refrigerant Recovery) level switches are **UL-Recognized under File No. SA8857 and CSA-approved under File LR-30200**. Please contact Gems Sensors Division for specific model numbers for various tank sizes.

Note: Failure to observe the following instructions may result in leakage.

- a/ Apply pipe thread sealant to male level switch threads.
- b/ Thread level switch into female coupling until hand-tight.
- c/ Using a suitable wrench on hex flats, tighten 1 to 2 additional turns past hand-tightness.



Specifications . . .

| | Type 1 | Type 2 | Type 3 |
|--------------------------|--|----------|--------|
| Mounting Size | 1/8" NPT | 3/4" NPT | 1" NPT |
| Stem/Mounting Material | Brass | | |
| Mounting Attitude | Vertical | | |
| Float Material | Stainless Steel or Teflon | | |
| Electrical Data | <u>Electrical Rating</u> 20 Watt Switch (Resistive Load): <u>Pilot Duty Rating:</u> 20 VA, 120-240 VAC, 12-30 VDC | | |
| Max. Overall Length (LO) | 48" | | |
| Ambient Temperature | -40°F to 300°F | | |

Note: See Float Specification Table on inside.

Float Dimensions, Materials, Pressures . . .

| | Float P/N | |
|---------------------------------------|-----------|---------|
| | 133310 | 136550 |
| | | |
| Float Material | 304 SS | 304 SS |
| Max. Operating Pressure Rating | 325 psi | 400 psi |

Dimensional Data . . .

| Type 1 (Internal Mounting) | Type 2 (External Mounting) | Type 3 (External Mounting) |
|-------------------------------|-------------------------------|-------------------------------|
| | | |

Note: Consult technical drawings for unit actuation level information.

Typical Wiring Diagrams*

(*Note: No Polarity Requirements for L1 and L2)

| | | | | |
|--|--|--|---|---|
| <p>Single Level (Group 1) Cable Output</p> <p>L1: N.C. (Dry)</p> | <p>Single Level (Group 1C) Integral Connector</p> <p>L1: N.C. (Dry)</p> | <p>Single Level (Group 5C) with Ground Integral Connector</p> <p>L1: N.C. (Dry)</p> | <p>Single Level with Ground Integral Connector</p> <p>L1: N.C. (Dry)</p> | <p>Dual Level (Group 6C) with Ground Integral Connector</p> <p>L2: N.C. (Dry) L1: N.C. or N.O.</p> |
| <p>Dual Level (Group 1) Cable Output (Common Wire)</p> <p>L2: N.C. L1: N.C. or N.O.</p> | <p>Mating Plug: Brad Harrison 70000 Series</p> <p>L1</p> | <p>Mating Plug: Brad Harrison 70303 Series</p> <p>L1 Ground Pin is 1/16" Longer</p> | <p>Mating Plug: Amp #206060-1</p> <p>L1 Ground</p> | <p>Mating Plug: Brad Harrison 70600 Series</p> <p>L1 L2 Ground Pin is 1/16" Longer</p> |