

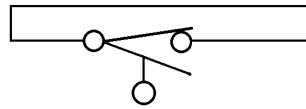
Electrical Data . . .

Standard snap-action switch is a 20VA, SPST, hermetically sealed, magnetically actuated, make-and-break type. Normally open or normally closed operation is selectable by inverting floats on unit stem. A level station with SPDT 3-wire switch is available as a separate component if required.

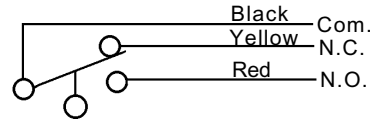
Switch Ratings . . . Max. Resistive Load

VA	Volts	Amps AC	Amps DC
20	0-30	.4	.3
	120	.17	.13
	240	.08	.06

Typical Wiring Diagrams



**SPST Switch N.O. or N.C. (Dry).
Selectable by Inverting Float.**



SPDT Switch in N.C. (Dry) Position

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.



Fabri-Level Switch Kit

Instruction Bulletin No. 72946

Fabri-Level Kits contain all components for complete assembly of a 1- or 2- station level switch unit for pipe-plug mounting in your tank. Each kit contains: 1 Tube Connector, 1 Mounting Plug, 2 Level Stations (Switch, Tube, Float), 2 Extension Tubes, 1 Tube End Fitting, 3 Tube Unions.

Specifications . . .

Conduit Thread: 1/2" NPT-F
 Tube/Fitting Size: 1/2" O.D.
 Max. No. Levels per Stem: 6
 Mounting Attitude: Vertical \pm 30°
 Fitting Ferrule:
 Buna N Floats: Nylon
 Stainless Floats: 316 Stainless Steel

N.O. or N.C. operation of the SPST switch is selectable by inverting the float(s) on the unit stem. **Note: SPDT circuits must have "N.O." toward lead wires. SPDT floats are not reversible.** Two 10" lengths of tube are furnished to space level stations as desired.

Switch	Material	Oper. Temp.		Min. Sp. Gr.	Pres. (Max.PSI)	Mtg. NPT	Part Number
		Water	Oil				
SPST 20 VA	Brass Fittings, Buna N Floats	To 180°F (82.2°C)	-40°F to +230°F	.55	150	2"	24576
			.75	1-1/4"		26128	
	316 SS Fittings, Buna N Floats	(-40°C to +110°C)	.75	1-1/4"		26130	
			55	2"		26675	
All 316 SS	-40°F to +275°F (-40°C to +135°C)	.80	750	2"	24577		

CE This product is suitable for Class I and Class II applications only, per the requirements of standard EN60730 and any additional specific requirements for a particular application or medium being sensed. Class I compliance of metal bodied units requires a ground connection between the metal body and the earthing system of the installation. Class I compliance of plastic bodied units in contact with a conductive medium requires that the medium be effectively earthed so as to provide an earthed barrier between the unit and accessible areas. For Class III compliance, a supply at safety extra-low voltage (SELV) must be provided. Please consult the Factory for compliance information on specific part numbers.

Installation and Maintenance . . .

Installation can be from top, bottom or side of tank, as shown below. Usually installed as nearly vertical as possible, units will operate reliably as much as 30° from the vertical. Only two wrenches are needed to assemble. From one to six level stations may be spaced as desired on a single unit. You merely follow "**Assembly Instructions**", install in tank, connect electrical leads and your "tailor-made" unit is ready for use . . . in any media compatible with Brass and Buna N or 316 Stainless Steel - the two material options available.



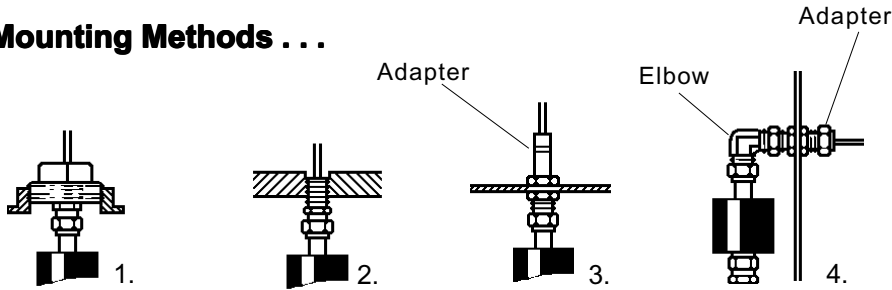
Gems Sensors Inc.
 One Cowles Road
 Plainville, CT
 06062.1198

tel 860.747.3000
 fax 860.747.4244

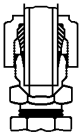
Installation and Maintenance (Cont.)

Maintenance requirements are minimal and usually limited to occasional clean-up of scum or scale accumulation.

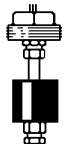
Mounting Methods . . .



- 1-1/4" or 2" NPT pipe plug. Top or bottom mount, boss or thickwall tank. Permits unit insertion from outside.
- 3/8" NPT-M tube connector. Top or bottom mount from inside. Boss or thickwall tank.
4. Top-mount through sheet metal cover, or with 90° elbow for mounting unit from inside of tank.



Pressure-type fittings form positive seal. Tube cannot turn, wires cannot twist during tightening. Nylon ferrule for brass units, SS ferrule for stainless units. 13/16" and 7/8" HEX fittings.



2" NPT mounting plug permits entire unit to be inserted in tank from outside. 1/2" NPT-F provides direct electrical conduit connection. A 1-1/4" NPT mounting plug is also available.

Assembly Instructions . . .

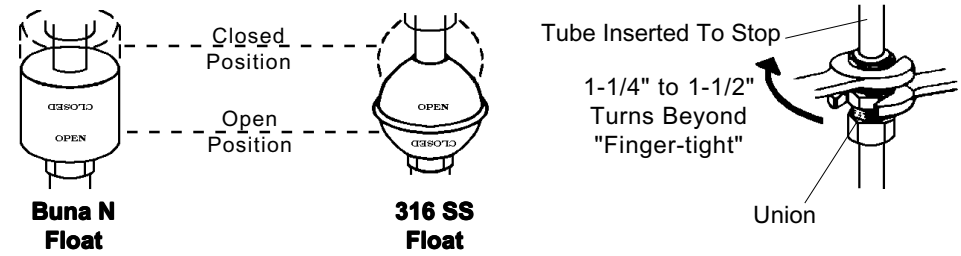
1. Assemble unit, observing the following sketches and information.

a/ Extension Tubes (When Required): Cut to proper length. Tubes 36" long are available as components, or use any 1/2" tubing of suitable non-magnetic material.

b/ Level Stations: Assemble floats on switch tubes for desired switch operation, as shown. Feed level station wires through switch tubes of each level station, toward mounting plug. **Note: Floats are shown in normally open (dry) position. To reverse operation, invert floats.** (See next page)

Note

SPDT circuits must have "N.O." towards lead wire end of switch tube. SPDT floats are not reversible.



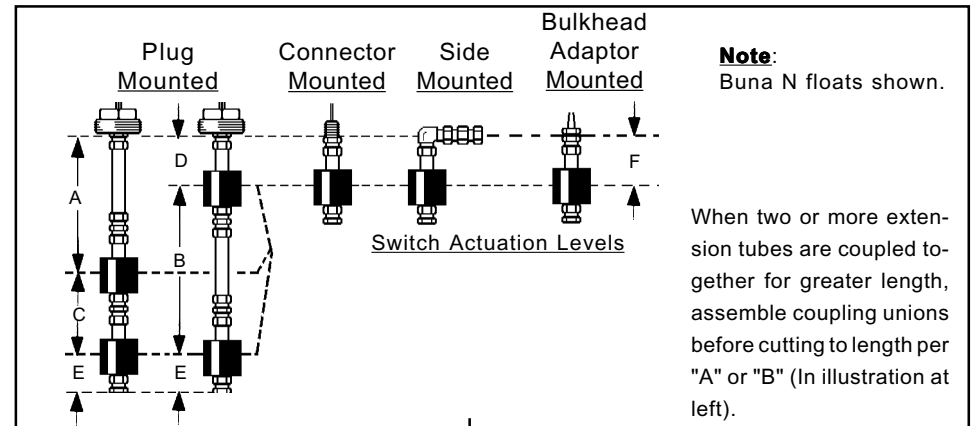
Buna N Float

316 SS Float

c/ **Coupling Components Together:** Insert tubes to limit in fittings and tighten "finger-tight". After checking entire unit, wrench-tighten as illustrated. **Important: Always assemble entire unit "finger-tight" first, then check level locations and switch operation (N.O. or N.C.) before final tightening.**

- Install Unit in Tank:** Fabri-Level units with 1 1/4" or 2" NPT mounting plugs are installed through a boss or tapped hole from outside of tank. Units with alternate mountings are installed from the inside.
- Electrical Leads:** Leads are readily identified for connection; i.e., switch leads nearest mounting end of unit project the farthest, etc. **CAUTION: See "Switch Ratings" before connecting power to Fabri-Level unit.**

Actuation Level Dimensional Data . . .



For Units with Buna N Floats . . .

- Min. with tube extension: 4-3/4"
Cut tube to length: "A" minus 2-7/8"
- Min. with tube extension: 6-5/16"
Cut tube to length: "B" minus 4-15/16"
- 4-1/4": Closest that levels can be.
- 2-5/8": Highest possible level.
- 2-1/8": Lowest possible level.
- 2-7/8": Minus tank wall thickness.

For Units with 316 Stainless Floats . . .

- Min. with tube extension: 4-1/2"
Cut tube to length: "A" minus 2-5/8"
- Min. with tube extension: 6-5/8"
Cut tube to length: "B" minus 4-11/16"
- 4-1/2": Closest that levels can be.
- 2-3/8": Highest possible level.
- 2-5/8": Lowest possible level.
- 2-5/8": Minus tank wall thickness.