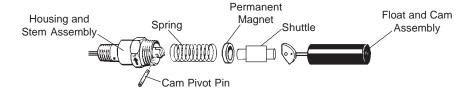
#### Maintenance . . .

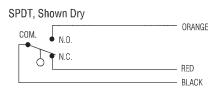
An occasional cleaning when excessive contamination is present in the liquid is all that is normally required. **To clean unit:** Compress split end of cam pivot pin, remove pin and disassemble unit as shown below. Wipe parts clean with hydrocarbon solvent and reassemble unit. Lock cam pivot pin by spreading split end slightly with screwdriver.

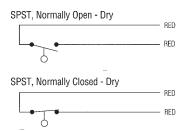


# **Electrical Connection...**

Electrical connection is provided by wire leads with 1/2" NPT or junction box with 1/2" NPT.

# Typical Wiring Diagrams . . .





#### Important Points!

Product must be maintained and installed in strict accordance with the National Electrical Code and GEMS technical brochure 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.

\*\*\* Warning: To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.

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 damage sustained by the product may render it unserviceable.



Gems Sensors Inc. One Cowles Road Plainville, CT 06062.1198

tel 860.747.3000 fax 860.747.4244



# LS-2050/LS-52100 Series Side-Mounted Level Switches Instruction Bulletin No. 72950

Units are side-mounted in the tank at the point of high, low or intermediate level sensing. Ideal for tanks with "hard-to-get-at" tops or bottoms. Float and cam action is positive. Standard versions are U.L. Recognized - File No. E45168. Explosion-proof units are approved for Class I, Division I, Group D hazardous areas.

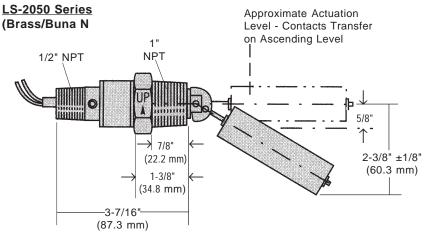
Standard	Explosion-Proof Versions			
Versions	FM Approved	CSA Listed	Switch*	
LS-2050's				
30288			SPDT, 20 VA	
30290	55690	55690	SPDT, 20 VA	
48068			SPST, 100 VA, N.O.**	
48069			SPST, 100 VA, N.C.**	
LS-52100's				
52100	121753	121753	SPDT, 20 VA	
116971			SPST, 100 VA, N.O.**	
116972			SPST, 100 VA, N.C.**	

<sup>\*</sup>See "Electrical Data" on next page for more information

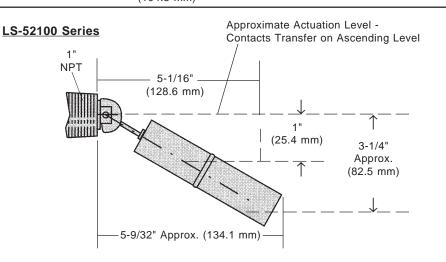
<sup>\*\*100</sup> VA switches are not UL recognized or CSA listed

Chasifications	1.0.0050		1.0.50400	
Specifications	LS-2050		LS-52100	
Stem & Mtg Material	Brass	316 SS	316 SS	
Float Material	Buna N	316 SS	304 SS	
	316 SS,	SS,		
Other Wetted	Beryllium Copper,	Teflon,	Teflon,	
Materials	Teflon,	Ceramic	Ceramic	
	Ceramic			
Operating Temp °F	<u>Water:</u> To +180°F <u>Oil</u> : -40° to +250°F	-40°F to +300°F		
PSIG, Max. @ 70°F	150	900	500	
Mounting Attitude	Horizontal: ±15°			
Switch Differential (In Liquid)	1/2" Min.	Approx. 3/4"		
Liquid Specific Gravity	.8 Min.	.9 Min.	.85 Min.	
Lead Wires	#18 AWG, 24" L., Polymeric			

# Dimensional Data . . .



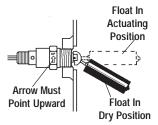
# LS-2050 Series (All Stainless Steel) Approximate Actuation Level -Contacts Transfer on Ascending Level 1" 5-1/16" NPT (128.6 mm) 1" (25.4 mm) 3-5/8" Approx. (92.0 mm) 4-1/8' -Approx. (104.8 mm)



# To Install LS-52100 Series or LS-2050 Series Units with Buna N Float . . .

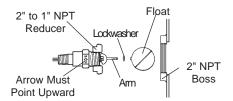
Insert unit from the outside through 1" NPT boss in the tank side and tighten so that the arrow on the unit housing is pointing upward.

**Important:** Units should be installed in environments free from excessive contamination and high shock.

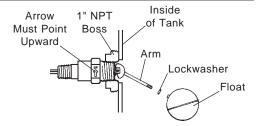


# To Install LS-2050 Series Units with Stainless Steel Float . . . (Use either Method A or Method B shown below)

Method A: From outside of tank. Unscrew and remove float and lockwasher from unit arm. Thread a 2" to 1" NPT reducer (by others) onto unit and reassemble float and lockwasher. Insert unit and reducer in 2" NPT boss in tank side and tighten so that arrow on unit housing points upward.



Method B: When inside of tank is accessible. Unscrew and remove float and lockwasher from unit arm. Insert unit in 1" NPT boss in tank and tighten so that arrow on housing points upward. Reassemble float and lockwasher on unit arm from inside of tank.



### Electrical Data . . .

## Switch Ratings - Max. Resistive Load

VA	Volts	Amps A.C.	Amps DC
20	0-30	.4	.3
	120	.17	.13
	240	.08	.06
100*	120	.8**	N.A.
	240	.4	N.A.

<sup>\* 100</sup> VA switches are not U.L. Recognized or CSA listed



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.

# **European Pressure Directive**

The product is designed and manufactured in accordance with Sound Engineering Practice as defined by the Pressure Equipment Directive 97/23/EC. This product must not be used as a "safety accessory" as defined by the Pressure Equipment Directive, Article 1, Paragraph 2.1.3. The presence of a CE Mark on the unit does not relate to the Pressure Equipment Directive.

<sup>\*\*</sup>Limited to 50,000 operations.