

HORIZONTAL SINGLE POINT LIQUID LEVEL SWITCH



OPERATION

At the heart of this unit is a magnetically sensitive switch containing two magnetically polarized contacts, which are attracted to each other when exposed to a magnetic field. When the contacts come together an electric current can flow. When the magnetic field is removed the contacts separate and electrical current flow is interrupted.

The major components of the LS-20 are the specially oriented magnet within the float and the switch within the float shaft. The normally open configuration occurs when the float hangs down at approximately a 60° angle. As the float travels up through its arc due to rising liquid level the magnetic field closes the switch contacts completing the circuit. As the level lowers the float swings down and the contacts open breaking the circuit. Normally closed operation is achieved by installing the entire switch upside down causing the float to rest on the body. The switch contacts will be closed when the level is below the switch and open as the level rises.

The unique Micro Latch function holds the switch closed for approximately 22 Degrees of arc before it opens. This helps prevent excessive tight band switch cycling found in other types of switches. In water, this translates into 1/2 to 3/4 of an inch of latch before release.

The LS-20 is a small horizontally mounted hinged type single point magnetically activated liquid level switch capable of switching 10 watts up to 200Vdc or 12VA up to 230Vac. It is available in normally closed or normally open single pole single throw dry contact configurations. The LS-20 is ideally suited for mounting through tank walls in narrow tanks, close to corners, or between obstructions. This switch is designed for use with light loads such as micro processor analog inputs and outputs, logic control relays (similar to our CR-100 panel mount control relays and control modules), piezo electric buzzers, and small indicator lights. Materials of construction are unpigmented natural Polypropylene and PVDF. The LS-20 is economically priced and ideally suited for OEM applications. Custom design variations are available upon request.

ELECTRICAL CONSIDERATIONS

The maximum amperage due to the contact point air gap is .5 amps below 20 Vdc or 24 Vac. The maximum power switching above 20 Vdc or 24 Vac is 10 Watts to 200 Vdc or 12 VA to 230 Vac. Air gap is the actual physical distance separating the the switch contacts when open, which translates into the switches ability to resist electrical flow. High voltages have a greater ability to jump across the switch contacts and lead to contact pitting and premature failure, therefore the lower current ratings. The general relationship used in determining maximum current flow at higher voltages is: Current (Amps) equals Rated Switch Power (P) divided by Operating Voltage (V). See the Maximum Switching Capacity Graph.

Safe and Reliable Switch Selection - In selecting a level switch, the total system design must be considered to assure safe, trouble-free performance. Switch function, material compatibility, adequate power ratings, proper installation, operation and maintenance are the responsibility of the system designer and user. Please feel free to ask for a copy of our Product Warranty.

LS-20 SWITCH SPECIFICATIONS

MATERIAL: Polypropylene (PP)
Polyvinylidene Fluoride (PVDF)

WIRE: UL 1061 PVC coated solid single strand standard. Other wire optional.

BUOYANCY: 40% for Polypropylene
25% for Polyvinylidene Fluoride

MOUNTING ATTITUDE: Maximum normally open mounting 30° down and 70° up off horizontal. Maximum normally closed mounting 30° up and 70° down off horizontal. Float travel is on the vertical axis (up/down).

COLUMN / TANK CLEARANCE: Flush in clean liquid. 3 inches from the bottom of the tank in sediment bearing liquids.

ANTI-TURBULENCE SHROUD: Optional

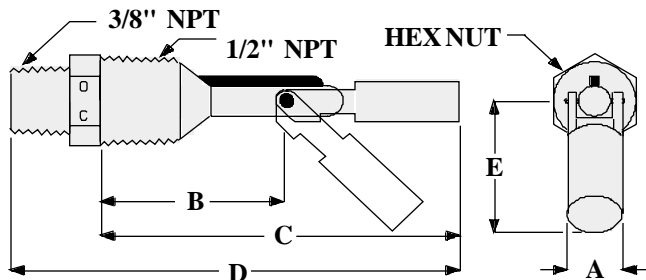
MOUNTING ATTACHMENTS: 3/8" NPT for conduit connection and 1/2" male NPT fitting for tank connection. Minimum thru hole clearance for 1/2" connection is 11/16 inch diameter.

MAXIMUM RECOMMENDED SWITCH LOADS

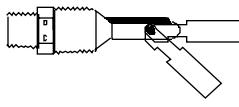
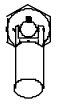
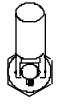
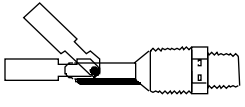
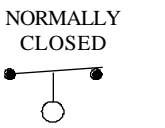
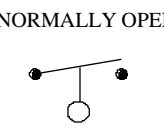
VOLTS	DC (AMPS)	AC (AMPS)
5	.5	.5
12	.5	.5
24	.41	.5
48	.20	.25
120	.08	.10
200	.05	.06
230	N/R	.05

The above table was calculated using $P=IV$ where P =power was 10Watts or 12 VA. I =amperes, V =Voltage. For inductive loads, such as relays and solenoid valves, de-rate the amps in the above chart by 50%. Exceeding the current ratings will weld the switch contacts together.

DIMENSIONAL DATA



MAGNETIC NORMALLY OPEN OR CLOSED CONFIGURATION

		CLOSED OPEN	NORMALLY OPEN SWITCH CONTACT
		OPEN CLOSED	NORMALLY CLOSED SWITCH CONTACT
SCHEMATIC SYMBOL		SINGLE POLE SINGLE THROW SWITCH	
		SIMPLE MAKE OR BREAK OPERATION	

PART NUMBER	WET END MATERIAL	DIMENSIONS					TEMP -VS- PRESSURE (PSIG)			
		A	B	C	D	E	70°F	140°F	180°F	230°F
LS-20P-0000	POLYPRO	.63	1.60	3.8	4.7	2.2	80	30	0	N/R
LS-20F-0000	PVDF	.63	1.60	4.2	5.2	2.6	80	60	30	0

VARIOUS TECHNOLOGIES INCORPORATED
2720 AIELLO DRIVE BUILDINGS C & D
SAN JOSE, CALIFORNIA 95111
PHONE (408) 972-4460 FAX (408) 972-4125

Distributed by: