

DISPLACER LEVEL SWITCH

DISPLACER LEVEL SWITCH SERIES



FLOWTECH

CE



Product Description

Displacer Type Level Switch have earned a long-time reputation for their high quality, rugged construction and reliable performance under the most demanding applications. All float level switches are individually built with strict attention to detail to meet the exact specifications of your process.

“FLOWTECH” Displacer Type Level Switch works on Force Balance Principle. Displacer is suspended by a spring. The Displacer is suspended by spring for effective performance.

When liquid level rises and Covers the displacer, it becomes lighter and the spring relaxes. This causes a small upward movement of the rod assembly inside the casing. This activates the magnetically operated micro switch.

Magnetically linked float & switch design provides a glandless Connection & ensure a Leak free design. Such switches can handle liquids with have specific gravity as low as **0.5**.



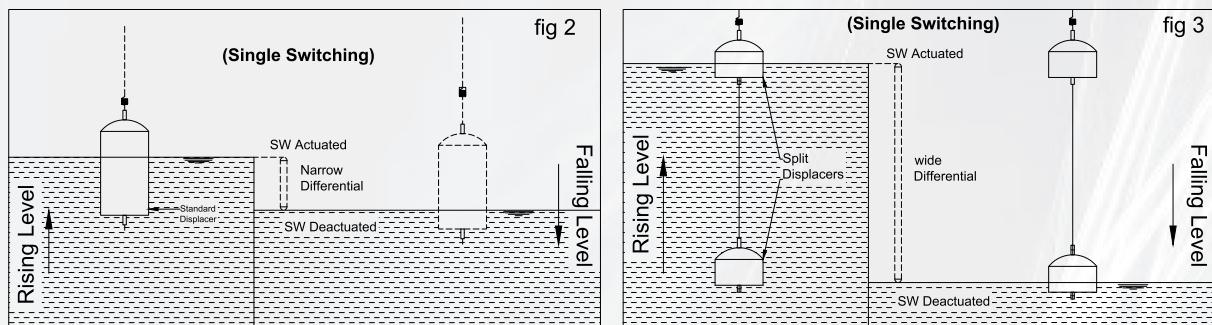
Displacer Type Level Switch

Design Feature :

- Mounting : Min. 50 NB to 300 NB.
- Rugged, Industrial level switches specifically designed for versatility of application.
- Stainless steel switching mechanisms – no aluminium or brass.
- High pressure capability.
- Wide variety of agency approvals.
- Versatile switching mechanisms for retro-fit situations.
- Ideal for Deep tank or Sump for low alarm.
- Pressure : Vacuum to 40 Kg/Cm²
- Two / Four displacers available for pump control.
- Suitable for high temperature.
- Level Height up to 20 Meters.

Construction & Operation

A single standard or two split displacers are suspended from a wire rope and connected to a coupler rod, carrying an actuator moving within a non-magnetic barrier tube via a compression spring (fig 1). Initially when the displacer is not immersed in liquid, the spring is in compressed condition due to weight of displacer so that the actuator is outside the magnetic field at position P1.



During rising level, the displacer gets immersed in liquid, undergoes weight loss (Archimedes Principle) causing an upward motion of the coupler rod, which makes the spring assume its original status and move the actuator to position P2 within the magnetic field, resulting in actuation of micro switches to provide change over contacts.

Narrow differential (nd) is achieved by using one standard displacer along with one switch carriage (fig 2) and wide differential (wd) is achieved by using two split displacer along with one switch carriage (fig 3). Narrow differential is fixed, however wide differential can be modified by varying the distance between split displacer.

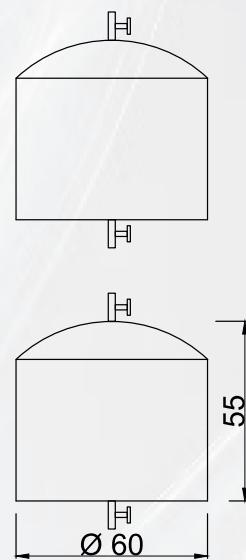
Technical Specifications

Measuring Range	500 to 15000mm
Enclosure	Cast Al, WP IP66 or Cast Al, Ex d Gr IIC T6, IP66 or Cast Al, ATEX Exd Gr IIC T6, IP66
Conduit Connection	1 no. x 3/4" ET Cable Gland (WP) or 1/2" NTP DC Cable Gland (Exd) Brass
Switch Carriage	Microswitch (2 nos) or Microswitch (2 nos) in hermetically sealed casing (Config. A, B, C, D, & F)
Switch Contacts	2 x SPDT (DPDT) rated for 5A, 250VAC
Optg. Differentials	Refer Table-1 on page 5
Terminals	Suitable for 1.5 mm ² cable conductor
Wire Rope	SS 304, SS316, SS316L, PP or PTFE
Displacer	Ø 60 x SS304, SS316, SS316L, PP. PVDF (config. E) or PTFE (config. A, B, C, D & F)
Displacer Type	Standard or Split (fig. 4a & b)
Spring MOC	SS 316, SS316L or PTFE/ECTFE ctd SS316
Process Flange	CS, CS ASTM A105, SS304, SS316, SS316L, PP or PTFE with steel cladding
Temperature	- 20 to 70°C (PP), 100°C (PVDF), 200°C (metallic) - Standard 300°C with radiating fins - High temp
Max. Test Pressure	Vacuum to 10 kg/cm ² (metallic), 2 kg/cm ² (PP/PTFE/PVDF) or High Pressure upto 100 kg/cm ² for metallic (optional)
Min. t SG	0.8 or Low SG upto 0.5 is available on demand

(a) Standard Displacer



(b) Split Displacers(Pair)



Accessories

Perforated Stillwell : 65 NB x CS, SS304, SS316, SS316L or PP

External Chamber : 80 NB x CS, SS304, SS316, CS ASTM A106

Table 01 :

OPERATING DIFFERENTIALS FOR SIX CONFIGURATIONS

Configurations	No. of switch Carriage	No. of Displacer	Displacer Type	Differential for SG 1
A	1	1	Standard	Narrow (40 ± 5 mm)
B	1	2	Split	Wide
C	2	2	Standard	Narrow (40 ± 5 mm)
D	2	3	1 Standard + 1 Split	Narrow (40 ± 5 mm) wide
E	3	3	Standard	Narrow (60 ± 5 mm)
F	2	4	Split	Wide

*Differential is inversely proportional to SG of Liquid

Applications/Service



Order Code for Displacer Type Level Switch

FMIPL-DTLS-		X	X	X	X	X	X	X	X	X	X	X	X	X	X
PROCESS CONNECTION TYPE	FLANGE-END	PC1													
	THREADED	PC2													
	CUSTOM	CU													
PROCESS CONNECTION MOC	CS	C													
	SS 304	S1													
	SS 316	S2													
	PP	P													
	CUSTOM	CU													
PROCESS CONNECTION STD	ASA 150 # RF	F1													
	NPT	TN													
	BSP	TB													
	CUSTOM	CU													
FLOAT MOC	SS 304	FS1													
	SS 316	FS2													
	PP	FP													
	CUSTOM	CU													
SPRING PIPE MOC	SS 316 (6MM DIA)	SP1													
	PP (6MM DIA)	SP2													
	CUSTOM	CU													
SPRING MOC	SS 304	SM1													
	SS 304 PTFE COATING	SM2													
	CUSTOM	CU													
HOUSING MOC	ALUMINIUM DIE CAST	ALC													
	ALUMINIUM DIE CAST WITH COOLING FENS	ALCC													
PROTECTION TYPE	WEATHERPROOF	WP													
	FLAMEPROOF	FLP													
	CUSTOM	CU													
WIRE ROPE	SS 316	WR1													
	SS 316+PTFE	WR2													
	NIYLON ROPE	WR3													
	CUSTOM	CU													
CABLE GLAND MOC	SS 304	CG1													
	SS 316	CG2													
	BRASS NICKLE PLATED	CG3													
	CUSTOM	CU													
CABLE ENTRY STANDARD	PG 11	CE1													
	M20*1.5	CE2													
CABLE GLAND PROTECTION	WEATHERPROOF	CP1													
	FLAMEPROOF	CP2													
POTENTIAL FREE CONTACT	1 SPDT (1NO +1NC + 1C)	PC1													
	2 SPDT - DPDT (2NO - 2NC - 2C)	PC2													

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