

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**.



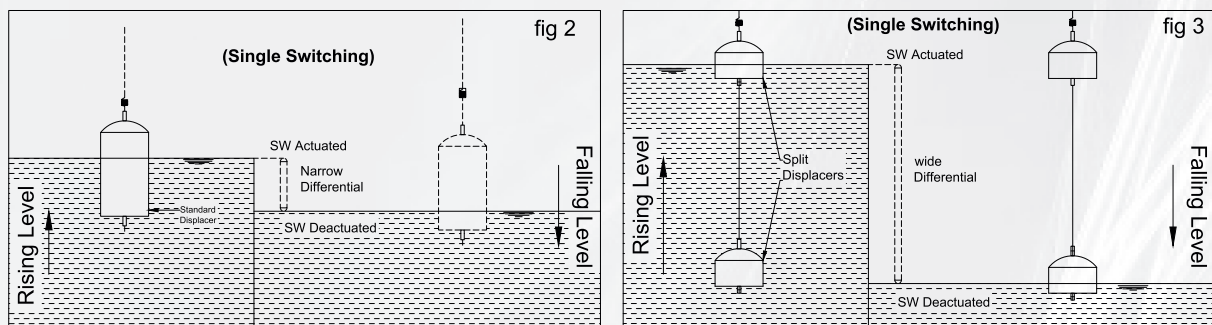
**Displacer Type
Level Switch**

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.



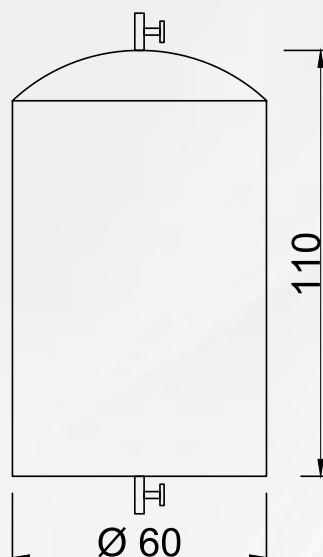
During rising level, the displacer gets immersed in liquid, undergoes weight loss (Archimedes Principle) causing an upward motion of the coupler rod, which makes the spring assume its original status and move the actuator to position P2 within the magnetic field, resulting in actuation of micro switches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

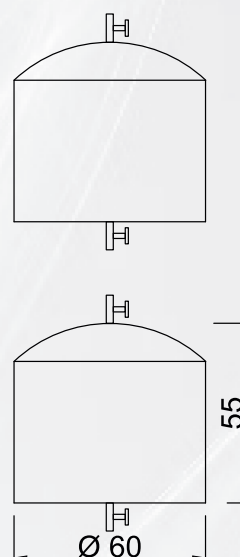
Technical Specifications

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/PTFt/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

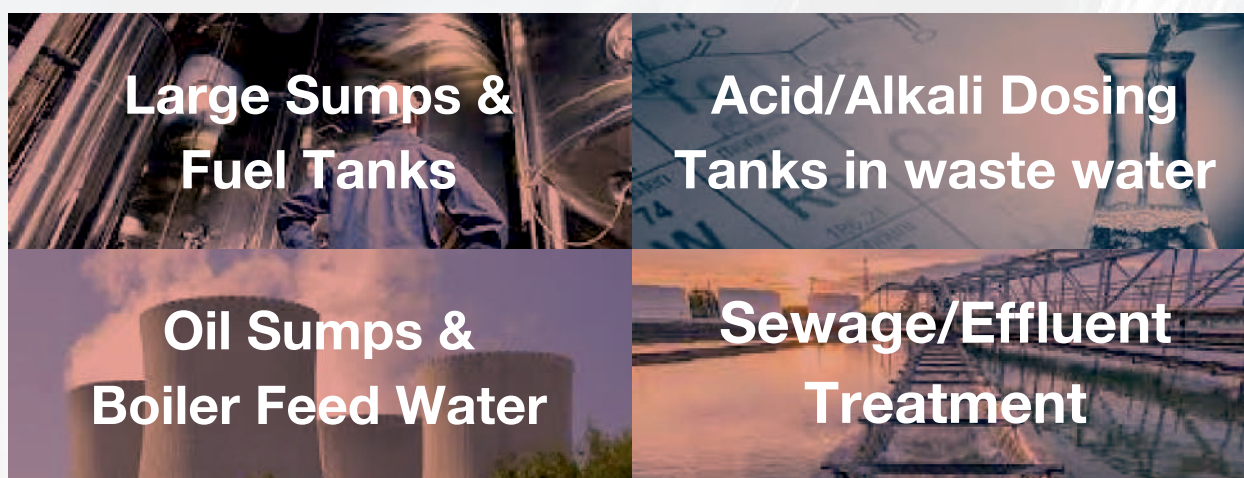
Table 01 :

OPERATING DIFFERENTIALS FOR SIX CONFIGURATIONS

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

***Differential is inversely proportional to SG of Liquid**

Applications/Service



PRODUCT ORDERING INFORMATION



Order Code for Displacer Type Level Switch

FM IPL-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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Flowtech Measuring Instruments Pvt Ltd

sales@flowtech-instruments.com
flowtech-instruments.com

