Magnetic Float Operated Pivoted Level Switch - UFPS

It is an economical device used for high, low or intermediate point level switching and ideal for tanks with inaccessible tops or bottoms.

Salient Features:

- ☑ Safety of operation through glandless design
- ☑ Option of `Extended Trim' for long nozzle length
- ☑ Option of `Hermetically Sealed' switch casing
- ☑ Option of `IBR Approved' switch, mounted in external chamber
- ☑ Option of Ex d (CCOE) / ATEX Certification / Marine Class Approval

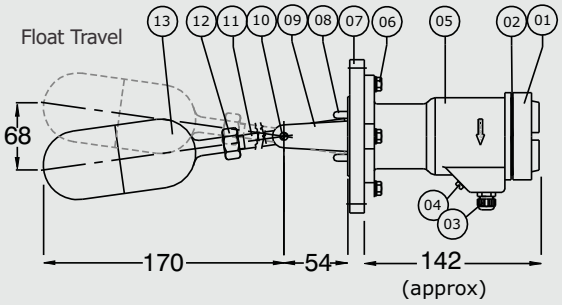
Construction & Operation :

Compact & rugged construction consisting of a free moving pivoted float assembly and a switch enclosure in non-magnetic material to achieve undisturbed magnetic flux. It employs dual magnets, one carried by the float arm and other by the contact carriers housed in the switch enclosure. A change in liquid level brings the like poles of dual magnets opposite to each other and resulting repulsion force ensures a changeover of contacts with snap action. The magnetic coupling is glandless to prevent leakage from vessel to switch housing.

Installation :

Mounted internally or externally through a chamber. External mounting is resorted to, where space is a limiting factor or mechanical devices like stirrers operate within the tank. Besides, in applications like boilers, reaction kettles etc., with external mounting, isolating is possible for regular servicing. The switch is normally side-mounted, however for applications like slurry, top installation is preferred. The switch can be wired directly "to make or break electrical circuits", of burners, heaters, motor-pumps, alarms and other such electrically operated devices.

Finish (Regular) :



01) Terminal cap	05) Enclosure	09) Bracket
02) Gasket	06) Bolts	10) Pivot pin
03) Conduit conn	07) Process conn	11) Trim
04) Earthing screw	08) Stopper	12) Float lock nut
		13) Float

Specifications :

Installation	:	Normally Side/ Top for special applications
Enclosure x Cable Entry	:	Cast Al IP66 x PG11 Gland (Polyamide) or Exd Gr IIB or IIC or ATEX Exd Gr IIB or IIC x 1/2"NPT Gland (Brass)
Float	:	SS304/ 316/ 316L, ECTFE (Hallar) coated SS304/ 316, PP
Float Dia x Min SG	:	Ø40 (≥0.8 SG), Ø50 or Ø60 (≥0.7 SG), Low SG upto 0.6 depending upon float moc & dimensions
Process Connection	:	Flanged or Screwed
Magnetic Switch Assembly	:	With Micro switch or Micro switch in Hermetically Sealed Casing (SPDT/DPDT, 150°C or 250°C) 5A,250VAC/ 24VDC
Switching Differential	:	Fixed (15 ± 5 mm)
		Adjust. between 40 & 300 mm depending upon float, trim length & cam positioning
Repeatability/ Accuracy	:	±1 mm/ ± 2 mm
Load/Insulation	:	Resistive/ 150 M Ohm at 500 VDC
Temp. Range	:	Standard -20 to 70°C (PP), 100°C (ECTFE coated), 150°C (SS)
	:	High Temp 250°C (SS), Very High Temp 350°C with Radiating Fins (for SS weighted parts)
Pressure Range	:	Vacuum to 20 Kg/cm^2 at ambient temp (contact factory for pressure more than 20 Kg/cm)^2
Finish	:	Regular / Sanitary
Special Features	:	1) Adj. differential 2) L/Z cranked trims

CE certified option with Weather Proof Enclosure is available as per 73/23/EEP

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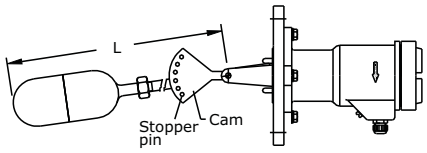
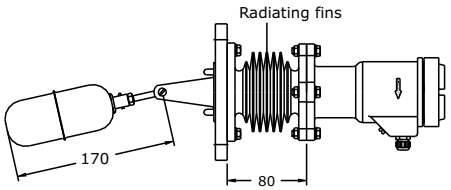
Special Features :



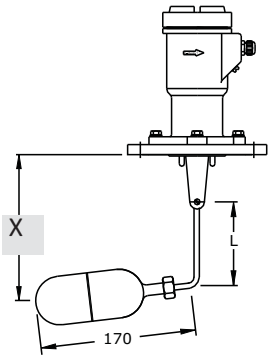
A- Adjustable differential

Adjustable differential by locating float trim at various fixed angles with the help of cam & stopper pin



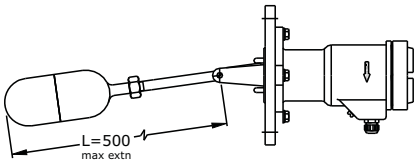
V- Very High-temp construction

Very High-temp. construction with radiating fins

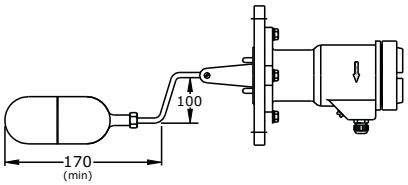


L- Cranked trim with top mtg.

`L' cranked trim for high level detection



X- Extended trim with side mtg



Z- Cranked trim with side mtg.

`Z' cranked trim for slurry applications.

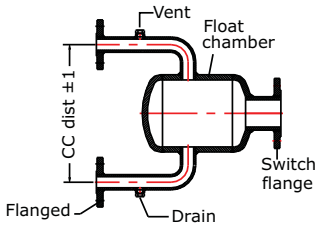
Accessories :

External Chamber - C : A wide range of external cages are available in various MOC's (CS,SS304,SS316),Mountings and Process connections for use in tanks where,

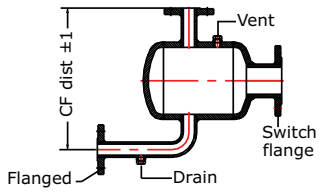
1) Space is a limiting factor.
2) Mechanical devices like stirrer operate within it.

Mounting Types :

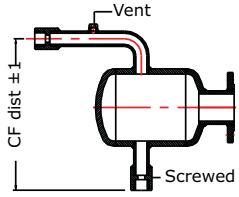
S-Side-side



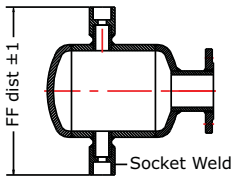
T-Side-top



B-Side-Bottom

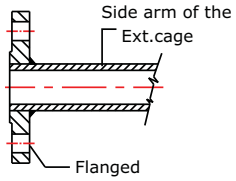


V-Top-bottom

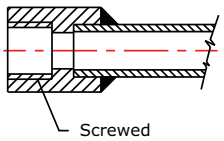


Process Connection Types :

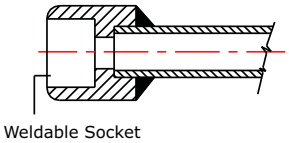
A-Flanged



C-Screwed Socket

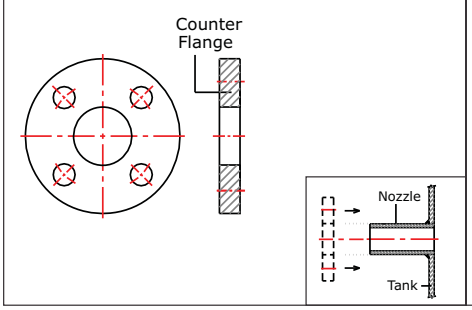


B-Welded Socket

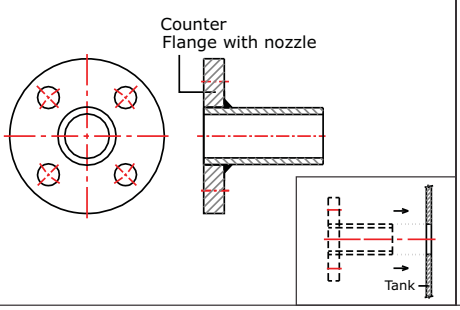


Counter Flange Type - F :

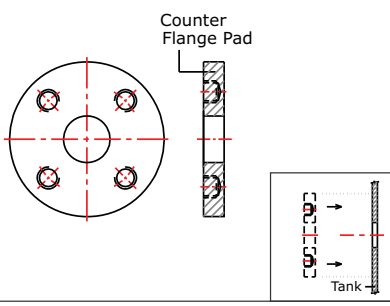
C-Counter Flange w/o Nozzle (weld flange on tank nozzle)



W-Counter Flange with Nozzle (weld nozzle to tank)



P-Counter Flange Pad (weld flange to tank)



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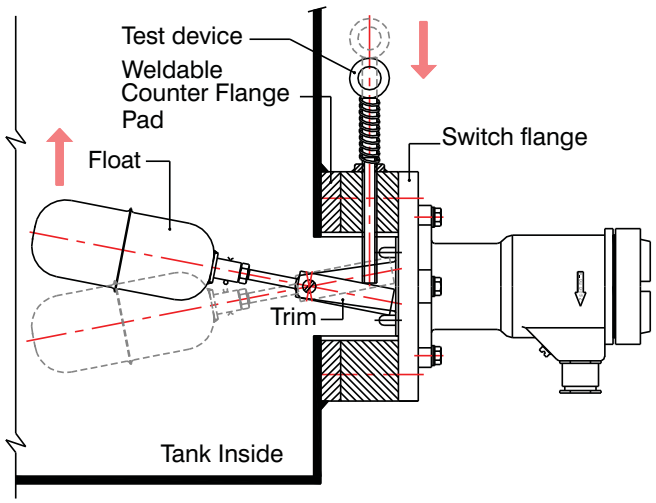
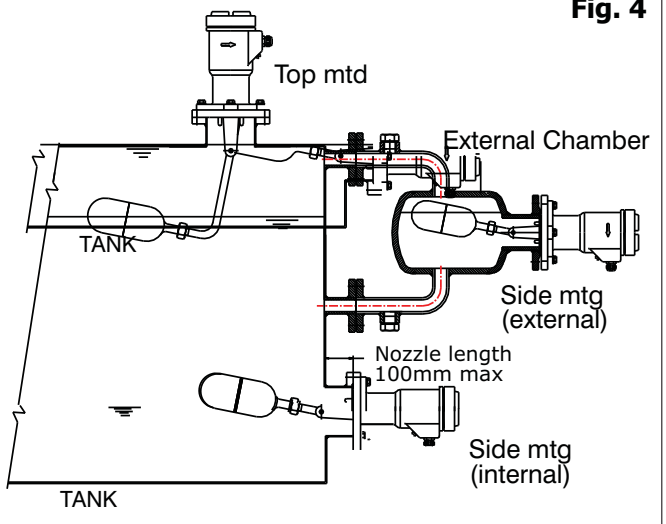
In situ Test Device - T :

It is supplied as an accessory to Magnetic Switch (UFPS) to facilitate mechanical testing of electrical circuit. As such operations are checked without carrying out the emptying/filling cycle.

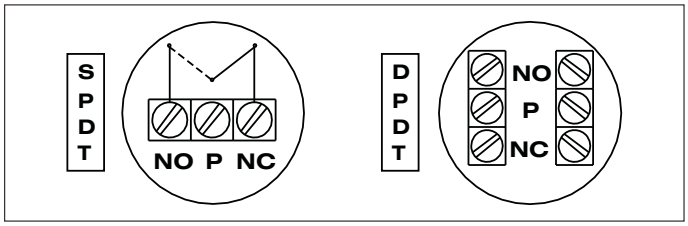


Installation :

Fig. 4



Termination for SPDT or DPDT Switch:



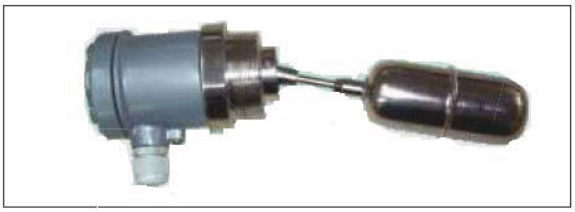
Ordering Information :

Specify Liquid, SpGr., Viscosity and Optg.Temp. & Pressure.
For Sp. features: Specify " L" for extended trim (max 500 mm)

Magnetic Float Operated Pivoted Level Switch - USFPS

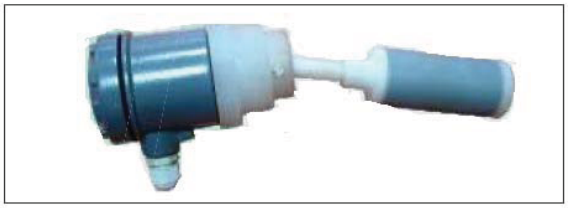
OTHER STANDARD MODELS

Screwed Float Pivoted Switch - 'USFPS'



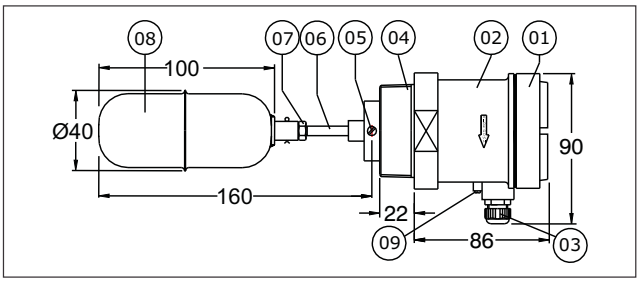
Specifications :

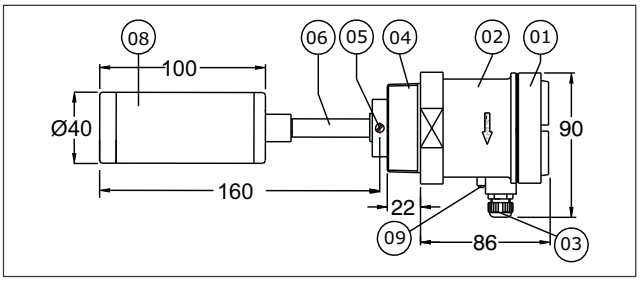
MOC	: SS316
Enclosure	: Cast Al, WP
Process Connection	: Screwed, 1-1/2"BSP(M)
Switch type	: Micro switch (SPDT)
Switching Capacity	: 5A, 250 VAC
Max Temp	: upto 100°C
Max Pressure	: upto 10 Kg / cm^2



Specifications :

MOC	: PP
Enclosure	: Cast Al, WP
Process Connection	: Screwed, 1-1/2"BSP(M)
Switch type	: Micro switch (SPDT)
Switching Capacity	: 5A, 250 VAC
Max Temp	: upto 70°C
Max Pressure	: upto 2 Kg / cm^2





Model identification No: USFPS-

MOC (Float x Process conn)

SS304	N
SS316	S
PP	P

Float x Process Connection combine

Ø40 x 1-1/2" BSP (M)	1
Ø50 x 2" BSP (M)	2
Others	O

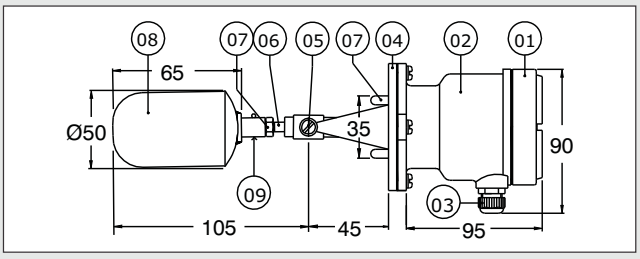
Accessories

None	W
External cage	C
Mtg Socket	F

Compact Float Pivoted Switch - 'UCFPS'

Specifications :

MOC	: SS316
Enclosure	: Cast Al, WP
Process Connection	: SQ80 x 82.5 PCD Flange
Switch type	: Airbreak (SPDT)
Switching Capacity	: 5A, 250 VAC
Max Temp	: upto 150°C
Max Pressure	: upto 10 Kg / cm^2



Model identification No: UCFPS-

MOC (Float x Process conn)

SS 316	S
Others	O

Process Connection combine

Sq 80 x 82.5 PCD	1
Others	O

TERMINOLOGY

01) Terminal cap	03) Conduit conn	05) Pivot pin	07) Float lock nut	09) Earthing screw
02) Enclosure	04) Process conn	06) Trim	08) Float	

Magnetic Float Operated Pivoted Level Switch - USFPS

Model Identification

UFPS									
1. Enclosure x Cable Entry									
Cast Al. IP66 x PG11 Gland	**J**								
Cast Al. IP66 x ½" NPT Double Comp'n Gland	**K**								
Cast Al. IP66 x ½"NPT (F)	**L**								
Cast Al. Ex d Gr IIB x ½" NPT Double Comp'n Gland	**E**								
Cast Al. Ex d Gr IIC x ½" NPT Double Comp'n Gland	**F**								
Cast Al. ATEX Ex d Gr IIB x ½"NPT Double Comp'n Gland	**G**								
Cast Al. ATEX Ex d Gr IIC x ½"NPT Double Comp'n Gland	**H**								
Cast Al. Ex d Gr IIB x ½" NPT (F)	**M**								
Cast Al. Ex d Gr IIC x ½"NPT (F)	**N**								
Cast Al. ATEX Ex d Gr IIB x ½"NPT (F)	**Q**								
Cast Al. ATEX Ex d Gr IIC x ½"NPT (F)	**R**								
SS316 IP66 x PG 11 Gland	**S**								
Cast Al. IP66 x Plug & Socket	**T**								
Others	**O**								
2. Wetted Parts (Float, Process Connection)									
SS304		**N**							
SS316		**S**							
SS316L		**L**							
PP (with Ø 50 float)		**P**							
ECTFE (Hallar) ctd. SS304		**H**							
ECTFE (Hallar) ctd. SS316		**V**							
Others		**O**							
3. Float Diameter									
Ø 40 (SS)			**1**						
Ø 50 (SS, ECTFE lined or PP)			**2**						
Ø 60 (SS)			**3**						
Others			**O**						
4. Process Connection Size & Type									
120 OD, 92 PCD Flange				**A**					
92 Square 92 PCD Flange				**B**					
2" NB ASME 150 # Flange				**C**					
2" NB ASME 300 # Flange				**D**					
2-1/2" NB ASME 150 # Flange				**E**					
2-1/2" NB ASME 300 # Flange				**F**					
3" NB ASME 150 # Flange				**G**					
3" NB ASME 300 # Flange				**H**					
2" BSP (M) Screwed (SS)				**I**					
2" NPT (M) Screwed (SS)				**J**					
2" Triclover Ferrule				**K**					
Others				**O**					
5. Magnetic Switch Assembly									
Micro Switch x SPDT					**1**				
Micro Switch x DPDT					**2**				
Hermetically Sealed Micro Switch x SPDT					**3**				
Hermetically Sealed Micro Switch x DPDT					**4**				
Others					**O**				

Magnetic Float Operated Pivoted Level Switch - USFPS

6. Temperature					
Standard - 70 °C (PP), 100 °C (ECTFE Lined), 150 °C (SS)		S			
High Temp - 250 °C (SS)		H			
Very High Temp - 350 °C with Radiating Fins		V			
7. Finish					
Regular			R		
Sanitary			S		
8. Special Feature					
Without				W	
Adjustable Differential (Regular Finish)				A	
Cranked Trim with Top Mounting				L	
Extended Trim with Side Mounting				X	
Cranked Trim with Side Mounting				Z	
Others				O	
9. Accessories					
Without					W
External Chamber (Refer ECS catalog)					C
Counter Flange with Nuts/ Bolts & Gasket					F
In-situ Test Device					T
Others					O

Counter Flange MOC		
CS	**M**	
SS304	**N**	
SS316	**S**	
SS316L	**L**	
Others	**O**	
Counter Flange Type		
Counter Flange w/o Nozzle (weld flange on tank nozzle)		**C**
Counter Flange with Nozzle (weld nozzle on tank)		**W**
Counter Flange Pad (weld flange to tank)		**P**

Ordering Information

- Model no x liquid & its SG, Operating Temperature & Pressure, Nozzle Length & ID,
- For Special Feature –
  - **A.** Specify **max. differential** for adjustable differential
  - **L.** Specify **switching point 'X'** for cranked trim with top mounting
- Model no of External Chamber if required (Refer ECS catalog)