Techtrol Chamber Float Switch - CFS

A versatile magnetic level switch for liquids with one or two preset levels. Single switch mechanism employed for one preset level and double switch mechanism is employed for two preset levels.

Salient Features

- Bi-stable switch action
- Choice of Ex-proof Gr. IIC or ATEX enclosure for hazardous areas
- Specially designed float available for interface level detection
- Choice of hermetically sealed switch mechanism
- Option of IBR approval

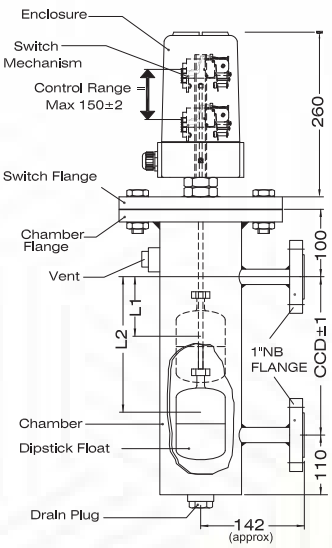
IBR

Construction & Operation

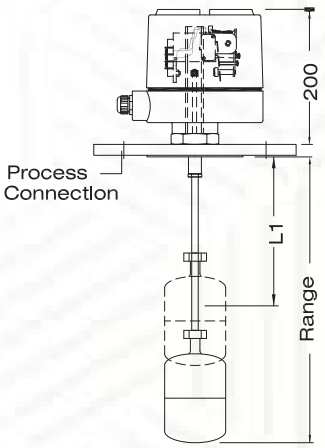
A dipstick float carrying a unique magnetic system at its top end, is housed in a chamber. The float rises and falls corresponding to change in liquid level, which causes magnetic system to actuate a switch mechanism to provide potential free changeover contacts.

Schematic Diagram Fig 1

a) With Chamber x Double Switch Mechanism



b) Without Chamber x Single Switch Mechanism



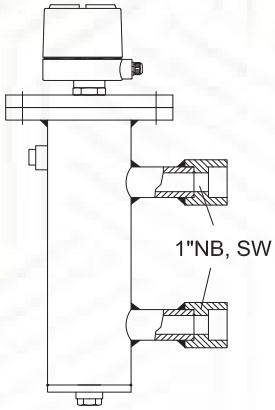
Important:

The preset level L1 (single switch mechanism) or L1, L2 (double switch mechanism) should be specified in PO, as they are factory set and cannot be modified at site.

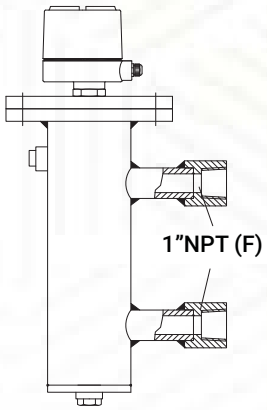
Specifications

Enclosure x Conduit Conn.	: Cast Al/SS304, IP66 x 3/4"ET or 1/2 NPT cable gland,brass Cast Al.Exd Gr.IIC (CCOE)x 1/2"NPT double compression cable gland, brass or Cast Al. ATEX Ex d IIB or IIC x ½"NPT, double compression cable gland, brass
Dipstick Float x Stem	: Ø65 mm x SS304 or SS316
Liquid Specific Gravity	: ≥0.8
Interface Detection	: 0.2 diff. between SG of upper & lower liquid
Switch Mechanism	: Standard Microswitch or Microswitch in Hermetically Sealed Casing(2 x SPDT)
Switch Rating	: 5A, 250 VAC/ 24 VDC
Switching Action	: Bi-stable
Preset Levels	: One (L1) with single switch mechanism : Two (L1 & L2) with double switch mechanism
Switch Differential	: 15 ± 5 mm (fixed)
Accuracy	: ± 5 mm
CC Dist. (with chamber)	: 200 to 400 mm (fig 1a)
Range (w/o chamber)	: 200 to 400 mm (fig 1b)
Process Connection (with chamber)	: 25NB Flanged or 1" NPT (F) Screwed or 1"NB SW
Process Connection (w/o chamber)	: 80 NB Flanged x CS A-105, SS304, SS316
Chamber MOC	: CS A-106 or SS304 or SS316
Vent x Drain	: 1/2" NPT Plug x Plug
Ambient Temperature	: 80°C
Max. Optg. Temperature	: 200°C or 300°C (with Radiating Fins)
Max Test Pressure	: 10 Kg/cm2
Gasket	: CAF, CNAF, PTFE
Nuts & Bolts	: CS Zinc plated

Schematic diagram with alternate process connections

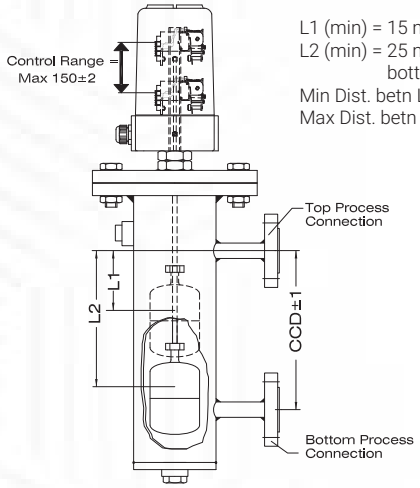


1"NB SW Process Conn.



1"NPT (F) Process Conn.

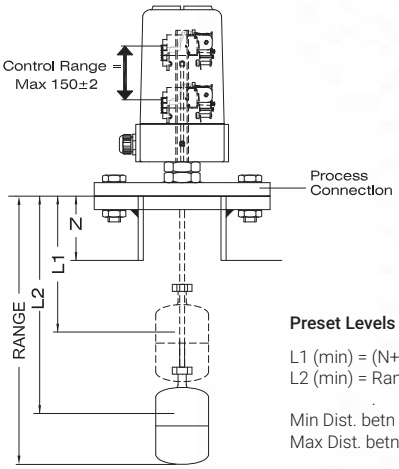
With Chamber - Min /Max preset levels w.r.t water SG 1



Preset Levels

L1 (min) = 15 mm w.r.t center of top pr. conn.
L2 (min) = 25 mm from center of bottom pr. conn.
Min Dist. betn L1 & L2 = 50 mm
Max Dist. betn L1 & L2 = 150 mm

Without Chamber - Min /Max preset levels w.r.t water SG 1



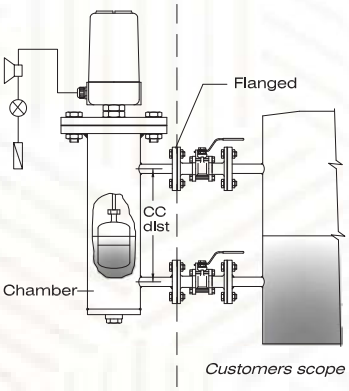
Preset Levels w.r.t center of top pr. conn.

L1 (min) = (N+50) mm
L2 (min) = Range -60 mm

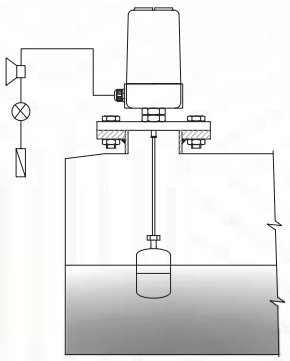
Min Dist. betn L1 & L2 = 50 mm
Max Dist. betn L1 & L2 = 150 mm

Installation

With Chamber



Without Chamber



Applications

Separators, Storage tanks, Drainage Systems, Heat Exchangers, Boilers, Concentrators.

Model Identification

CFS -										
1. Enclosure x Conduit Connection										
Cast Al. IP66 x ¾" ET Cable Gland	**J**									
Cast Al IP66 x ½" NPT Double Comp'n Cable Gland	**K**									
Cast Al IP66 x ½" NPT (F)	**L**									
Cast Al. Ex d Gr. IIC x ½" NPT Double Comp'n Cable Gland	**F**									
Cast Al. ATEX Ex d Gr. IIB x ½"NPT Double Comp'n Cable Gland	**G**									
Cast Al. ATEX Ex d Gr. IIC x ½"NPT Double Comp'n Cable Gland	**H**									
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**									
SS304 IP66 x ½"NPT Double Comp'n Cable Gland	**S**									
Others	**O**									
2. Dipstick Float + Stem MOC										
SS304		**N**								
SS316		**S**								
Others		**O**								
3. Chamber Type										
Without			**W**							
Side-side connection			**1**							
Side-bottom connection			**2**							
Bottom connection			**3**							
Others			**O**							
4. Chamber MOC										
Not applicable				**W**						
CS A106				**C**						
SS304				**N**						
SS316				**S**						
5. No. of Preset Level										
One					**1**					
Two					**2**					
6. Process Connection										
80 NB ASME 150# (without chamber) top mounted						**T**				
25 NB ASME 150# (with chamber)						**F**				
1" NPT (F) screwed (with chamber)						**S**				
1" NB Socket weld (with chamber)						**K**				
Others						**O**				
7. Switch Mechanism										
Standard Micro switch, 2 x SPDT							**M**			
Micro switch in hermetically sealed casing, 2 x SPDT							**H**			

8. Max. Temperature			
200 ^{0}C	**S**		
300 ^{0}C with radiating fins	**H**		
9. Gasket			
Not Provided		**W**	
CAF		**1**	
CNAF		**2**	
PTFE		**3**	
Others		**O**	
10. Nuts & Bolts			
Not Provided			**W**
CS, Zinc plated			**1**
Others			**O**

Ordering Information

With Chamber: Model No x Liquid & its SG. x Optg. Temp & Pressure x Preset Levels x CC distance
Without Chamber: Model No x Liquid & its SG. X Optg. Temp & Pressure x Preset Levels x Range