

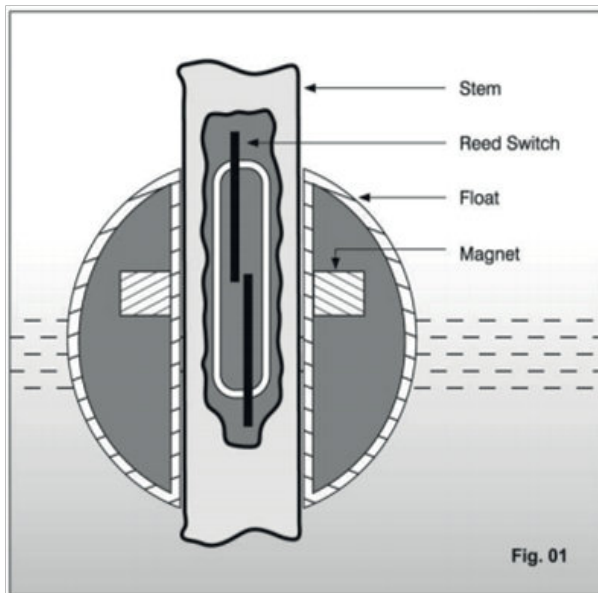
1. VFS SERIES - VERTICAL MOUNTING MAGNETIC FLOAT LEVEL SWITCHES

Vertical Float Switches are established and reliable technique in industry for single / multiple liquid level sensing and control in open or pressurized vessels. It offers trouble free service in conductive / non-conductive liquids under widely varying temperatures, pressures, liquid viscosity and corrosive conditions. Besides, it provides high repeatability and effects of shocks / vibrations are minimal.

1.1 CONSTRUCTION & OPERATION

Vertical mounting type float switches operate on below principle.

- **Use of magnetic Reed switch as sensing element.** A float encircling a fixed stationary stem is equipped with powerful permanent magnets. As the float rises or lowers with liquid level the magnetic field generated by the magnet that is present within the float actuates a hermetically sealed reed switch mounted inside the stem. This in turn makes or breaks the contact of the reed switch. (Refer fig.01)



1.2 GENERAL SPECIFICATIONS

Enclosure	Cast Al., Weather-proof to IP 67, Ex-proof IP 66 to Gr. IIA, IIB & Gr.IIC, DIN Polyamide connector
Gland Connection	Brass, ¾" ET / ½" NPT/ M20 x 1.5
Guided Stem MOC	SS316 / SS304 / Brass / SS316L / PP
Float MOC x Size	SS316 x Ø28, Ø30, Ø41, Ø45, Ø52, Ø63 : SS316L x Ø52 : PU foam x Ø25, Ø35 : PP x Ø25, Ø46, PVDF x Ø48
Stem OD	Ø8, Ø12.7 in SS316 / SS304 / Brass / SS316L, Ø16 in PP
Operating Temperature	SS316 - float Ø52, Ø41 Up to 150°C, float Ø28, Ø30 Up to 100°C SS316L - float Ø52 up to 150°C , PU foam - float Ø25, Ø35 Up to 60°C, PP float Ø 25, Ø46 up to 60°C, PVDF: Ø48 up to 120°C.
Operating pressure max.	SS316 – float Ø52, Ø41 Up to 20Kg/cm ² , float Ø28, Ø30 upto 8Kg/cm ² , SS316L float dia. 52mm up to 40Kg/cm ² , PU foam - float Ø25, Ø35-Atmospheric, PP up to 5kg/cm ² , PVDF up to 5kg/cm ²
Min. specific gravity	0.65
No. of floats	Single / Multiple (Max. 4) (More available on request)
Process connections	Flanged / Threaded / Triclover Flange special constructions as per application
Pre-set levels	1 to 4 (Factory set) (More available on request)
Switch type	Glass encapsulated hermetically sealed reed contacts
Switching capacity	SPST - 15VA / 100VA SPDT - 3VA / 50VA
Differential	Fixed (10 ± 2mm)
Accuracy / Repeatability	± 2mm / ± 1mm
Load	Resistive / Inductive
Insulation	100 Mega-Ohms at 500 VDC
Special Features	Intrinsically safe to Ex ia, Gr. IIA, IIB

1.3 ORDERING INFORMATION FOR VERTICAL MOUNTING FLOAT LEVEL SWITCHES

SPECIFY PART NO. → VFS **1** **2** **3** **4** **5**

VFS ☐ ☐ ☐ ☐ ☐

Example: VFS **B** **A** **1** **S1** **1**

1	TERMINAL TYPE
A	Cable
B	DIN Polyamide (upto 2 levels)
C	Weather Proof IP 67/SS304
D	Weather Proof IP 67/Cast Al.
E	Ex. Proof IP 66 Gr IIA , IIB , IIC
F	Aluminium Junction Box
G	Polycarbonate Enclosure
O	Others

3	DIA. OF STEM WITH MATERIAL
1	Dia. 8mm - SS304
2	Dia. 12.7mm - SS304
3	Dia. 16.0mm - PP
4	Dia. 8mm - PP
5	Dia. 8mm - SS316
6	Dia. 12.7mm - SS316
7	Dia. 12.7mm - SS316L
O	Others

5	ELECTRICAL SPECIFICATIONS
1	SDN 102
2	SDN 104
3	SDN 202
4	SDN 204
↓	Refer table below

2	CONNECTION TYPE		
	Size Of Flange		Adapter
A	Dia. 75mm-60mm PCD	0	¼" BSP
B	Dia. 75mm-65mm PCD	1	1" BSP
C	Dia. 100mm-80mm PCD	2	1 ½" BSP
D	2" #150 ANSI	3	2" BSP
E	2 ½" #150 ANSI	4	2" NPT
F	2 ½" BS 10 - E	5	3/8" BSP
G	2" BS 10 - E	6	1/8" NPT
H	1 ½" #150 ANSI	0	Others
I	3" BS 10 - E		
J	3" #150 ANSI		
K	Dia. 45mm-38mm PCD		
L	Dia. 58.7mm-51mm PCD		
M	Square 92 x 92		
O	Others		

Please Note:

Flange / Adapter Material Available in variants of
Stainless Steel / Mild Steel / Aluminium / Brass

4	FLOAT TYPE		
Type	Material	Float	Stem
S1	SS316	Dia. 28mm	Dia. 8mm
S2	SS316	Dia. 30mm	Dia. 8mm
S3	SS316	Dia. 41mm	Dia. 12.7mm
S4	SS316	Dia. 52mm	Dia. 12.7mm
S5	SS316L	Dia. 52mm	Dia. 12.7mm
S6	SS316	Dia. 45mm	Dia. 12.7mm
P1	PU	Dia. 25mm	Dia. 8mm
P2	PP	Dia. 25mm	Dia. 8mm
P3	PU	Dia. 35mm	Dia. 12.7mm
P4	PP	Dia. 46mm	Dia. 16mm
P5	PVDF	Dia. 48mm	Dia. 16mm
S0	Others		

ELECTRICAL SPECIFICATIONS

Model Type	SDN 102	SDN 104	SDN 202	SDN 204
Switching Voltage (Max.)	200 V DC 125 V AC	300 V DC 240 V AC	28 V DC 28 V AC	500 V DC 250 V AC
Switching Current (Max.)	0.5A	3A	0.25 A	1.5A
Contact Rating	15VA	100VA	3VA	50VA
Contact Form	SPST	SPST	SPDT	SPDT

- The REED contacts are potential free and the specified values are maximum threshold. Recommended voltage range is 12-36V DC.
- For Higher Rating Reed Switches - Please consult factory.

1.4 VERTICAL FLOAT LEVEL SWITCH INSTALLED IN A CHAMBER

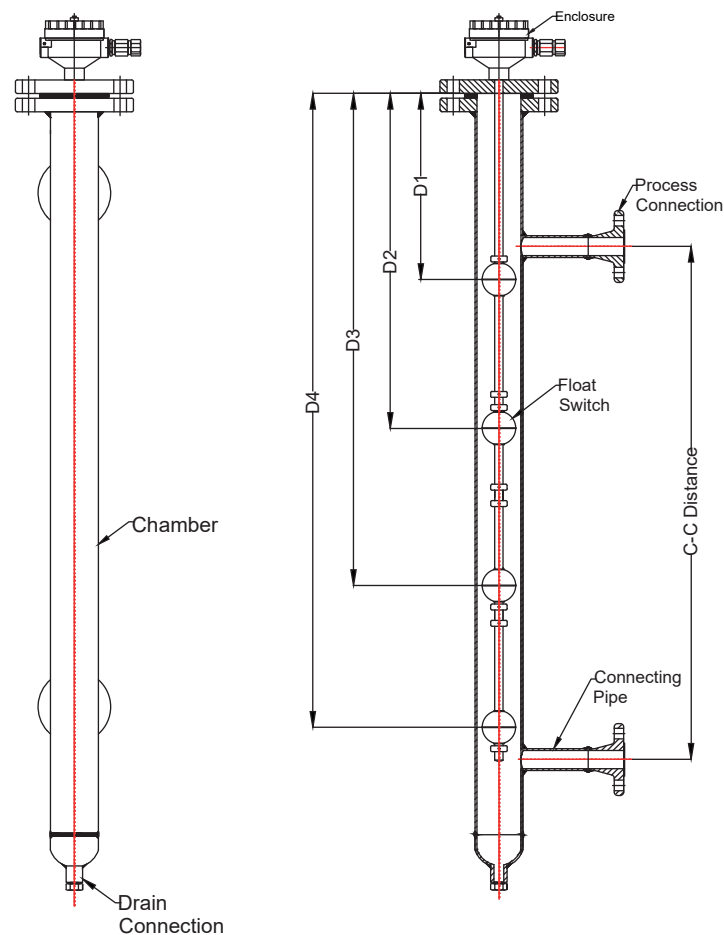
Wherever it is not possible or desirable to install Vertical Float switches directly onto the vessel, switches can be installed in an External Chamber. This arrangement gives smooth level control irrespective of turbulence in the process vessel and prevents accidental damages to the switch during shutdown or maintenance of the vessel. Chambers are used in applications which require isolations of process, High Pressure / High Temperature applications, Corrosive applications, Onshore / Offshore installations.

Main function of these chambers are:

- Level Measurement
- Interface Measurement / Control.

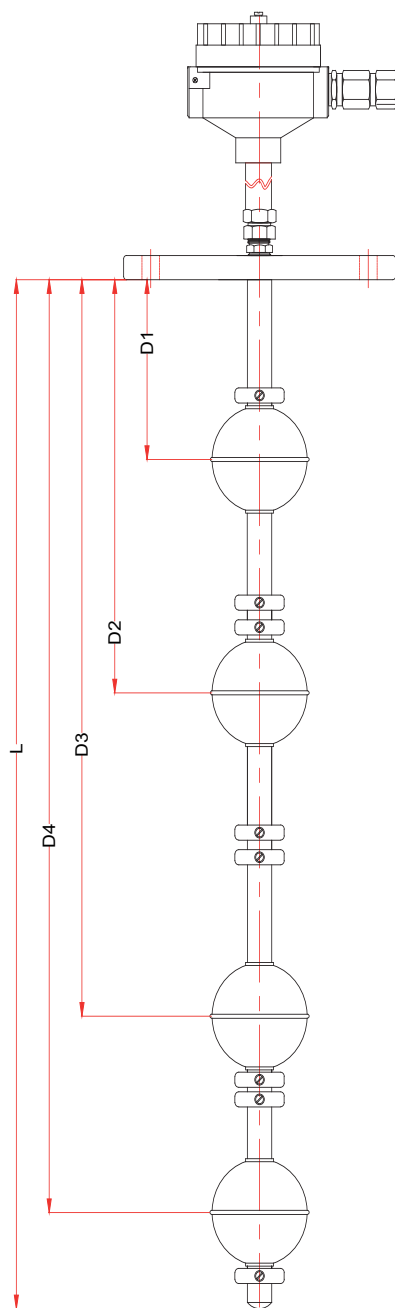
FEATURES

- Available for Low Pressure and High Pressure applications.
- Wide range of material of construction to suit different environmental conditions.
- Wide range of end connection types / sizes to choose from.
- A variety of chamber mounting arrangements provided to suit existing nozzles.

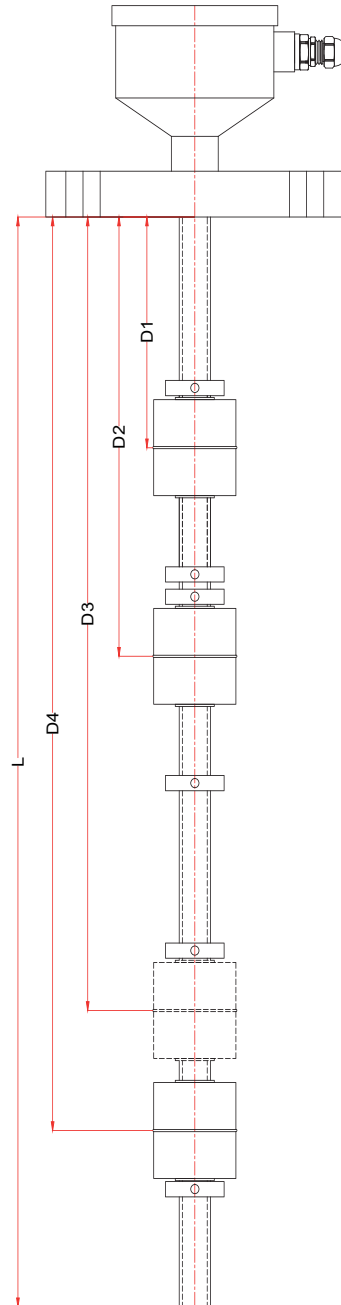


• For ordering Information of External Chamber refer External Chamber Catalog.

1.5 ACCESSORIES



VFS-Ferrule-Model



VFS-PTFE-Model