

Features

- Float level switch with application upto 100 bar and 350 deg cent application
- Heavy walled floats for critical application
- Tight sealing versions for float sensors with switch to enable correct application solutions, with sealing internals at 10(-3/-4) mbar ltr/sec available
- CCD length defined for upto 2500mm
- Switching differential upto 4mm
- Durability defined on sealing and pressure and temperature application
- Improved reliability with dual opposed magnet design which provides snap action
- Applicable with various versions of MOC's depending on pressure and temperature, versions with Stainless and steel, hastelloy, monel, PTFE, PP, Titanium available

- Special magnet attractor to meet high temperature and pressure
- Versions with flange, screwed, welded available
- IBR versions available
- Applicable for H2S, NACE, certified
- Radiography level - 1 versions available
- Switch is CCOE approved and certified for IP67, IP65
- Switch certified for group IIA/IIB, IIC
- Switch enclosure at die cast alluminium and SS available
- Application with PTFE lined at special 1.6 mm thickness and PTFE floats for critical media available
- Versions with ATEX and FM certified available

Concept and Principle of operation

General Instruments Consortium offers External Cage Type Level Switches for single level set point. This is trouble free, consistent and inexpensive solution to control Level in the tanks / vessels.

In this type there are two versions applicable

- External cage chamber side mounted with side mounted switch SMLS 2000
- External cage chamber side mounted with top mounted switch TMLS 2000

Principle of operation:

1. External cage chamber side mounted with side mounted switch SMLS 2000

This type of level switch consists of fabricated external cage with inlet-outlet process connections having fixed distance. The switch assembly is mounted horizontally on the external cage as shown in figure.

Application:

The external cage type level switch is mounted outside the tank/ vessel which significantly reduce effect of turbulence. It also provides ease of online maintenance without impeding the process conditions.

2. External cage chamber side mounted with top mounted switch TMLS 2000

This type of level switch assembly is mounted vertically on the external cage as shown in figure. The external cage type level switch is mounted outside the tank / vessel which significantly reduces effect of turbulence.



Series SMLS/2000



Series TMLS/2000



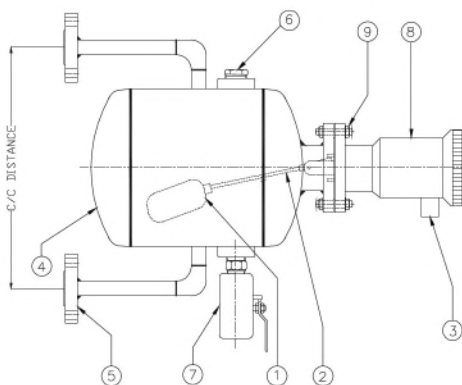
External cage chamber side mounted with top mounted switch TMLS 2000

Technical Specifications: Table-1 Material of Construction

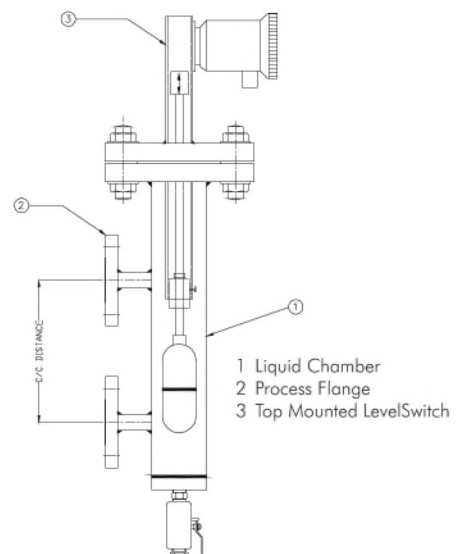
float	PTFE, PP, PVDF, SS316, SS304, SS316L, SS304L, Monel, Titanium, hastelloy
Float stem	PTFE lined SS, PP lined SS, PVDF lined SS, SS316, SS304, SS316L, SS304L, Monel, Titanium, hastelloy
Flange	PTFE, PP, PVDF, SS316, SS304, SS316L, SS304L, Monel, Titanium, cast carbon steel, hastelloy
Switch enclosure	Die cast aluminium, SS304, SS316, SS316L
Cable gland	Brass, PBS plastic, SS316, SS304, 316L
Chamber external	Carbon steel, SS316, SS316L, SS304, SS304L, Monel, Titanium, hastelloy, PTFE, PP, PVDF
Vent	Plugged in Same material as chamber or with ball valve or needle valve in 1/2" or 3/4" or 1" in SS316, SS304, SS316L, SS304L, PP, PTFE, PVDF, Titanium, monel, hastelloy
Drain	Plugged in Same material as chamber or with ball valve or needle valve in 1/2" or 3/4" or 1" in SS316, SS304, SS316L, SS304L, PP, PTFE, PVDF, Titanium, monel, hastelloy

Technical Specifications: Table-2 Technical data

Float	38X200mm upto 60X160mm and upto 68X100mm
float	Specific gravity = 0.4, till 1.2
Float Stem	50mm till 150 mm others on request
Flange	1/2" till 4", ANSI RF, FF, 125-250 AARH, DIN std DN15 till 100, BS10TabE, socket weld, butt weld, weld neck flange in ANSI
float	Pressure design till 40 kg/60 kg/100 kg
Flange rating	max rating ANSI 600# and DN PN 100
Cable gland	Double compression, metal cable normal glands, 1/2" NPT F, 3/4" ET, M20, PG 13.5, PG 16
Switch	SPDT, 230 VAC, 5 A or 24VDC, 0.5 A
No of cable entries	Two
Switch enclosure	IP65, IP66, IP67
Switch enclosure	EExia IICT6, EExd IIA/IIB, EExd IIC
Switch accuracy	Max upto 1%
Switch hysteresis	Max upto 0.5% to 1%
Switch repeatability	Max upto 1%
Switch certifications	CCOE, FM, ATEX, CE (versions applicability on request)
switch CCD length	Upto 2500mm
Switching differential	Max Upto 5 mm, lower versions applicable depending on configuration
Flange and chamber	Forged, cast versions, radiography level – 1 / 2 versions available
Float weight	60gms to 200 gms depending specific gravity
Float stem weight	Max upto 18 gms depending on size / length
Flange and chamber weight	500gms till 38 kg depending float dimensions which inturn would depend density of media and chamber CCD
Temperature application	-20 deg cent till 350 deg cent
Pressure application	Upto 100 kg/cm2 g



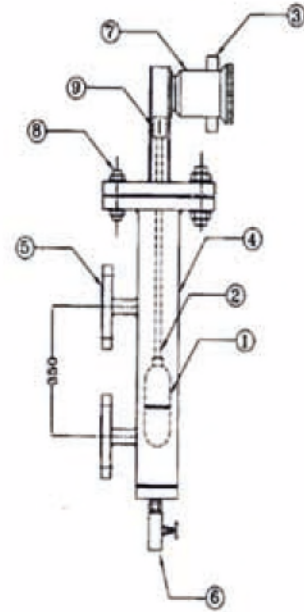
Side Mounted



Top Mounted

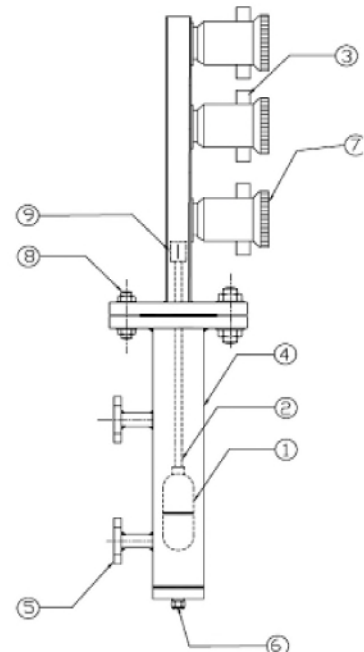
Specification sheet for level switch

Level Switch	External Cage Chamber Type
Type	External Cage Type
Mounting	Side Mounted on tank
Switch mounting	Top mounted on External Cage Chamber
Switch Assembly	
Float	SS 316L
Float Steam	SS 316L
Flange for Switch Assembly	SS304
Switch Type	1 SPDT Microswitch, 1 no + 1 NC, 5A@230 VAC
Switch Housing	Die cast aluminium-Wealth proof to IP-65
Electrical Connection	3/4"ET(F)
External Cage Chamber	
Body	Forged CS version of A217 WC9 or WC5
Process Connection	Flanged to ANSI B16.5 150#RF in forged CS
Size of Process Connection	1" (25NB)
Drain	1/2" NPT(F) with Needle Valve in SS316L
Process Details	
C. C. Distance	350±3mm
Service Fluid	Dowtherm
Specific Gravity	Please Specify (We have considered 1)
Normal. Pressure	2Kg/cm ²
Normal Temperature	350° C
Total Quantities	4 Nos.



TMLS 2000 for 350 deg cent operating conditions with A217WC5 material and also applicable 82 bar application at 400 deg cent

- Operating Pressure 82 Bar (G)
- Operating Temp. 425 Deg. C
- Process end connection: Socket Wold End Connection 25 NB
- CC Dist. 400mm
- TMLS 2000 External Cage Type
- MOC of Float Assembly SS316L
- MOC of External Chamber Carbon Steel
- Vent 1/2" Plugged
- Drain 1/2" Needle Valve
- Microswitch SPDT Rating 230 VAC
- Set points: 3 nos within CCD of 400mm



Ordering Information

TMLS/2000-50F150-S4S4-PP-1S-W5-Z



Series	
SMLS/2000	Side Mounted
TMLS/2000	Top Mounted

Process Connection				
Code	Size	Code	Code	Rating
15	1/2"	F	150	150#RF
20	3/4"			
25	1"		300	300#RF
40	1 1/2"			
50	2"			

MOC of Float Assembly	
S4	SS 304
S4L	SS 304L
S6	SS 316
S6L	SS 316L
M	Monel
T	Titanium
I	Inconel 600
H	Hastelloy C

MOC of External Chamber	
C	CS
S4	SS 304
S4L	SS 304L
S6	SS 316
S6L	SS 316L
M	Monel
T	Titanium
I	Inconel 600
H	Hastelloy C

Enclosure	
W5	Die Cast Aluminium Weatherproof to IP – 65
EA	Die Cast Aluminium Explosion proof suitable for Group IIA, IIB
EC	Die Cast Aluminium Explosion proof suitable for Group IIC

MicroSwitch	
1S	1 SPDT
2S	2 SPDT

Drain	
P	1/2" Plugged
N	1/2" Needle Valve
B	1/2" Ball Valve

Vent	
P	1/2" Plugged
N	1/2" Needle Valve
B	1/2" Ball Valve

Ordering Specifications

Customer Name : _____ Phone : _____
 Address : _____ Fax : _____
 _____ Email : _____

Contact Person : _____

1	Tag No.		
2	Model		
3	Quantity		
4	SERVICE	Fluid	
5		Specific Gravity	
6		Viscosity	
7		Op. Pressure	
8		Op. Temperature	
9		Design Pressure	
10		Design Temperature	
11	CONNECTION	Orientation	
12		Size	
13		Type	
14		Centre to Centre Dist.	
15	CONSTRUCTION	Float	
16		External Chamber	
17		Switch Type	
18		Switch Housing	
19		Electrical Connection	
20		Vent	
21		Drain	

Notes: _____