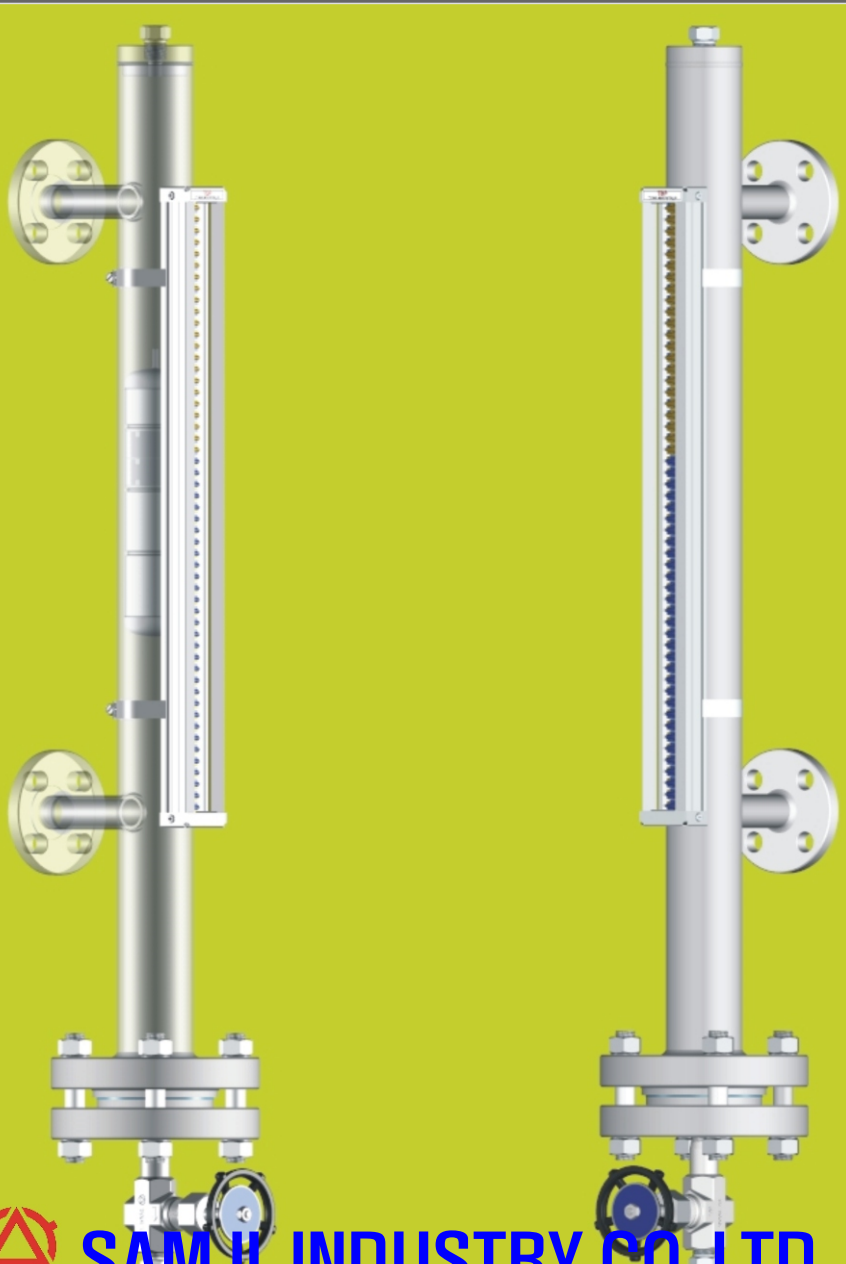
CHAPTER– 6

MAGNETIC LEVEL GAUGE SERIES

MAGNETIC FLOAT TYPE LEVEL GAUGES

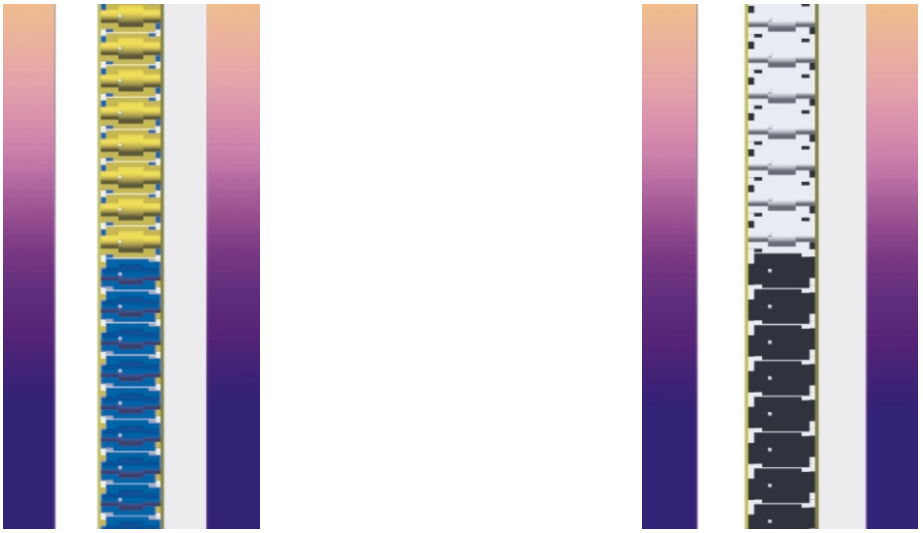
IN THIS CHAPTER-6

We introduce all types of magnetic float type level gauges as standard model and more details for the float dimensions will be indicated in the submittal drawings because those are various according to specific gravity of the operating conditions.



OPERATING PRINCIPLE

A float Assembly equipped with a magnetic rises and falls in the interior of its chamber with the liquid level of the tank. The indicator installed to the exterior of the float chamber is a series of bi-colored flappers in each a magnet. As the float assembly moves inside the chamber, magnetic forces cause the bi-colored flappers to flip to the opposite side and liquid level is visualized by means of two-color of the flappers.



Whenever the float rises orf falls with the liquid level, each flappers rotates 180° corresponding to the magnet forces and indicates its face of a contrasting color.

Flapper Color	Max. Working Temperature
Gold / Blue	199 deg C
Silver / Black	200 ~ 400 deg C

ADVANTAGES

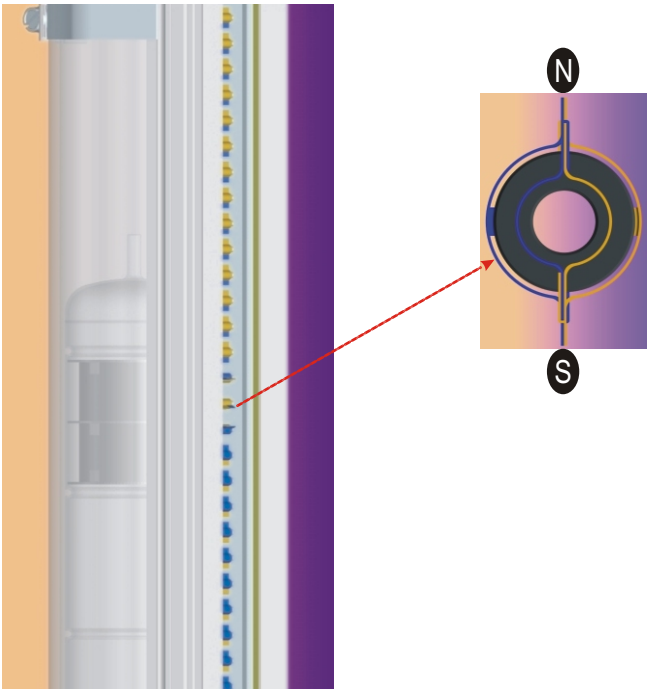
- There is no limits to inspect any height of the level and invisible part is very small.
- It can measure the boundary surface of two kinds liquid which have different specific gravity [Suitable for measuring interface].
- Local and Remote level indicators are available [Turn to page **M-7**].
- Measuring Scale Plate on request any units is available as an option.
- It Can be used for the underground tank [**Model : SMF-50AU**].
- Top Safety, as no used glass → liquid is contained within the float chamber.

HOW IT DOES MOTION

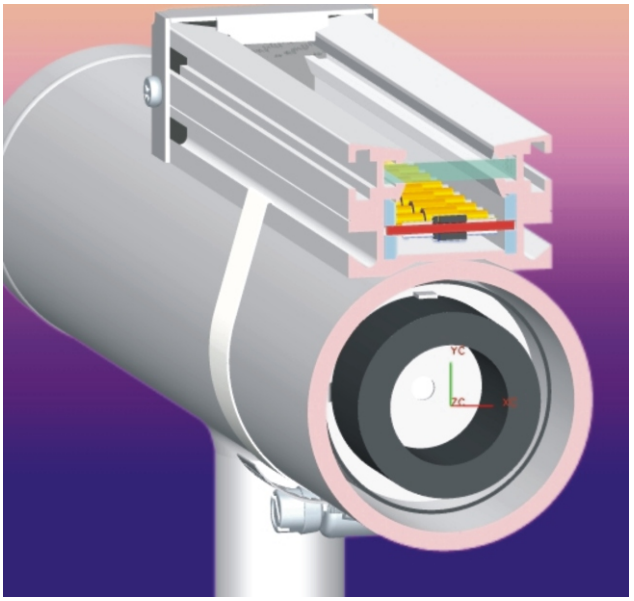
The magnetic float gauge is designed so that the fluid being measured is enclosed within a sealed chamber. A float fitted with a permanent magnet moves freely inside the chamber and activates the flappers of the aluminum indicator mounted on the outside of the chamber.

As the magnetic float passes each flapper with rising or falling with liquid level, The flapper rotates 180° to show the other color.

Rotating flappers are installed in the Non-Magnetic Case at intervals of 10 mm or so. It doesn't fail to indicate even at the sudden change of liquid level. The liquid phases and gaseous are indicated by blue color and gold color respectively.



SECTIONAL VIEW



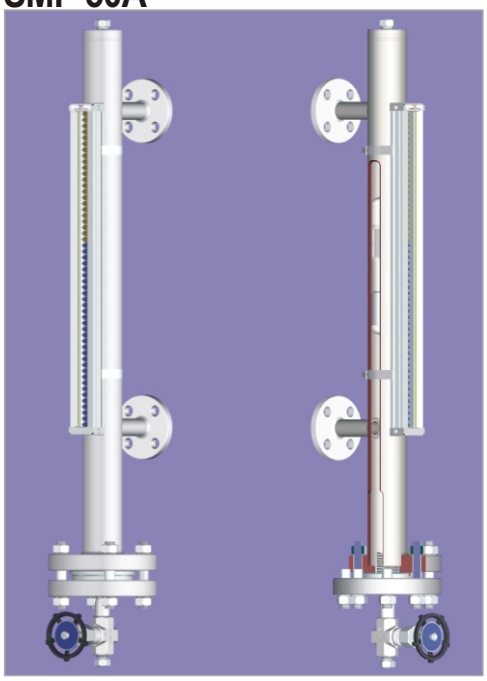
Magnetic Type Level Indicator is an instrument for indicating the fluid level. It has a magnetic float inside of the **Non-Magnetic** Chamber and an indicator outside of it.

The indicator indicates fluid level by means of magnetic force of the magnet installed inside the float. The Indicator is completely separated from the chamber.

The level of liquid and gaseous phases can be distinguished clearly by the Bi-Color.

STANDARD TYPE

SMF-50A



SPECIFICATIONS

- Column Size : DN50.
- Schedule : SCH 10S, 20S, 40S, etc.
- Flange Rating : 150LB ~ 900LB.
  PVC : 150LB ONLY.
- Material : 304SS, 316SS, 316LSS
  Titanium, PVC, Monel, etc.
- Max. Working Pres. : 900 PSI.
- Max. Working Temp. : 300 deg C.
- Specific Gravity : Min. 0.34.

SMF-50A is

Used for observing almost all fluid which is poisonous gas or liquid tank and boiler drum with low & middle pressure up to 900lb and it's have weight with outstanding safety from its damage or breakage and to be of low price.

SPECIFICATIONS

- Column Size : DN65.
- Schedule : SCH 40S, 80S, etc.
- Flange Rating : 900LB ~ 2500LB.
- Material : 304SS, 316SS, 316LSS
  Titanium, Monel, etc.
- Max. Working Pres. : 2500 PSI.
- Max. Working Temp. : 350 deg C.
- Specific Gravity : Min. 0.622.

SMF-65A is

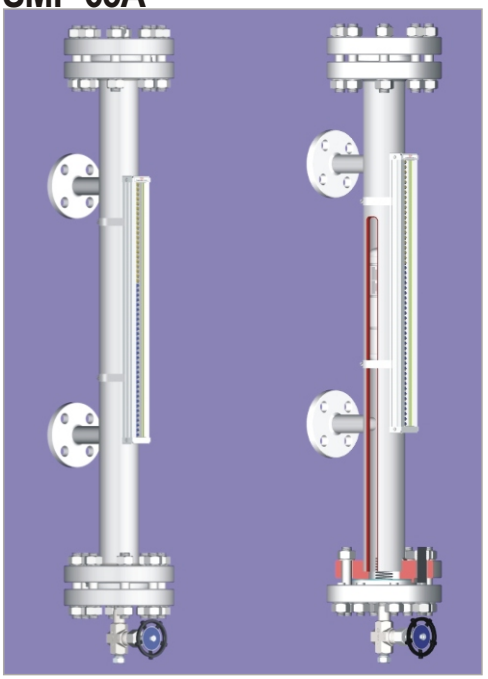
Used for more higher pressure up to 2500lb than **SMF-50A** of standard type.

OPTIONS

■ Scale Plate -Unit : centi-meter[Cm] as standard and others are also available an request.	■ Drain - Gate Valve. - Globe Valve. - Nipple & Cap.

STANDARD TYPE

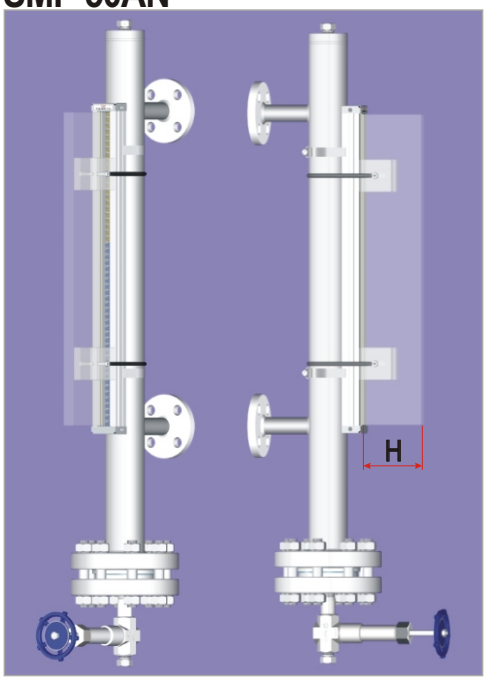
SMF-65A



Others, except the above specification are available on request by customer.

NON-FROSTING TYPE

SMF-50AN



SPECIFICATIONS

- Column Size : DN50.
- Schedule : SCH 10S, 20S, 40S, etc.
- Flange Rating : 150LB ~ 900LB.
- Material : 304SS, 316SS, 316LSS Titanium, Monel, etc.
- Max. Working Pres. : 900 PSI.
- Max. Working Temp. : -200 deg C.
- Specific Gravity : Min. 0.34.

NO.	H	Temp(°C)
F1	75	0 to -20
F2	100	-21 to -45
F3	150	-46 to -100
F4	200	-101 to -200

SMF-50AN for low temperature is

Used for protecting the frost at extremely low temperature applications, thereby you can obviously visible the flapper color to indicate it fluid level.

SPECIFICATIONS

- Column Size : DN50 - Jacket Pipe : DN65.
- Schedule : SCH 20S, 40S, etc.
- Flange Rating : 150LB ~ 600LB.
- Material : 304SS, 316SS, 316LSS Titanium, Monel, etc. Jacket Material : 304SS.
- Max. Working Pres. : 600 PSI.
- Max. Working Temp. : 300 deg C.
- Specific Gravity : Min. 0.34.

SMF-50AJ for Heating and Cooling is

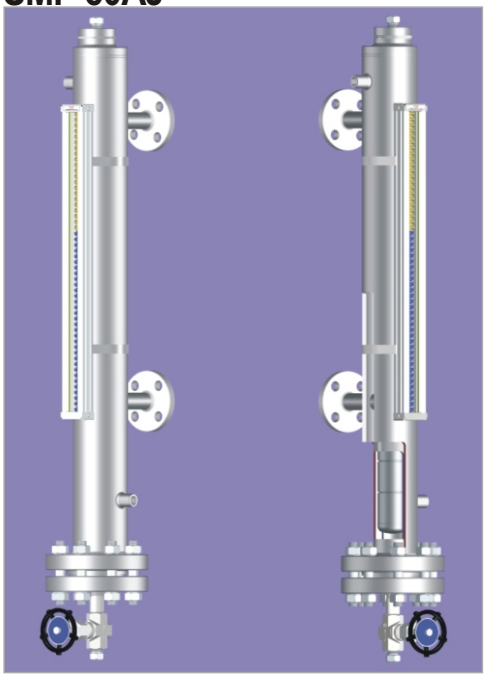
Used for observing the level of highly congealable or ebullient liquids. The principle is in flow a steam for congealable liquids and a cold water for ebullient liquids through the inside of the jacket pipe.

OPTIONS

■ Scale Plate -Unit : centi-meter[Cm] as standard and others are also available an request.	■ Drain - Gate Valve. - Globe Valve. - Nipple & Cap.

JACKET TYPE

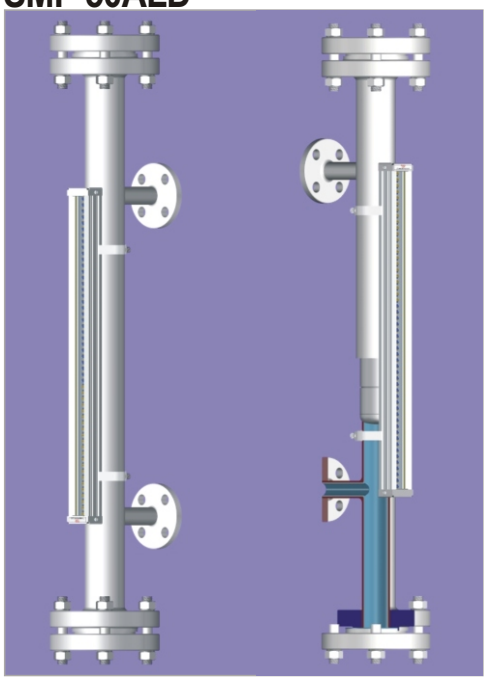
SMF-50AJ



Others, except the above specification are available on request by customer.

LINED TYPE

SMF-50ALD



SPECIFICATIONS

- Column Size : DN50.
- Schedule : SCH 5S, 10S, etc.
- Flange Rating : 150LB ~ 300LB.
- Material : 304SS, 316SS, 316LSS, Titanium, Monel, etc.
- Max. Working Pres. : 300 PSI.
- Max. Working Temp. : 130 deg C.
- Specific Gravity : Min. 0.34.
- Lining Material : Teflon, Rubber.

OPTIONS

■ Scale Plate -Unit : centi-meter[Cm] as standard and others are also available an request.	■ Drain - Plug Valve. - Nipple & Cap.

SMF-50ALD for Corrosive Fluid is

Used for observing the corrosive fluid effectively by lining all the wetted part of this type.

SPECIFICATIONS

- Column Size : DN50.
- Schedule : SCH 10S, 20S, etc.
- Flange Rating : 150LB ~ 300LB.
- Material : 304SS, 316SS, 316LSS Titanium, Monel, etc.
- Max. Working Pres. : 300 PSI.
- Max. Working Temp. : 350 deg C.
- Specific Gravity : Min. 0.34.

SMF-50AU is

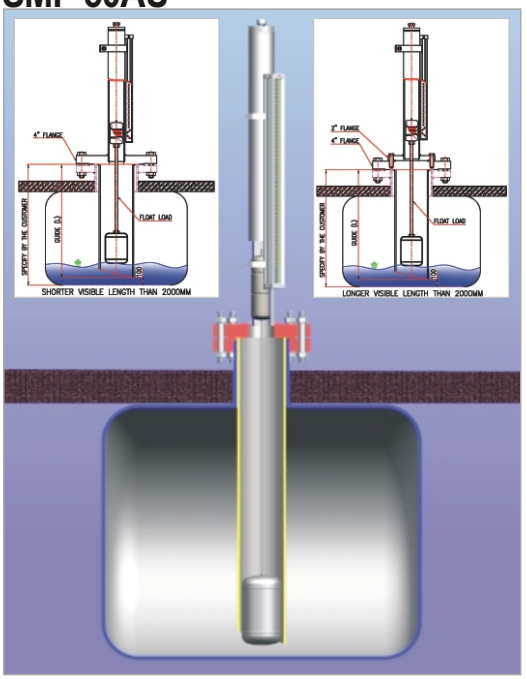
Used for observing the fluid in underground tanks or tanks under manhole.

OPTIONS

■ Scale Plate
-Unit : centi-meter[Cm] as standard
and others are also available an request.

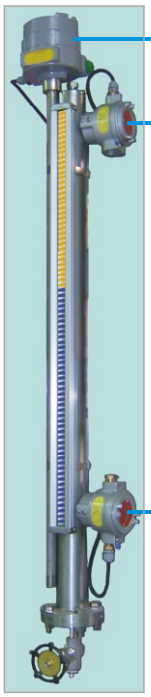
FOR UNDERGROUND TANKS

SMF-50AU



Others, except the above specification are available on request by customer.

This Assembly is suitable for alarm and control of various liquid, any fluid can be observed by through its central control system.



MODEL : SCF-1

MODEL : SEMS-90

MODEL : SEMS-90

SPECIFICATIONS

MODEL	SEMS-90 [Level Switch]	SHT-100S-EX [Level Transmitter]
Max. DC-A	0.5 A	4 ~ 20 mA
Max. DC-V	100 V	5 ~ 40 V
Temp. Range	-20 ~ 100°C	-10 ~ 80°C
Conduit	PF 1/2	PF 1/2
Remark	Exd IIB + H_2 T5	Exd IIB T5 IP65

SEMS-90 is

The Level Switch is installed on a certain place of column or magnet chamber. It operates **ON-OFF** control by means of magnetic force of the float when it comes up or down the exact place of switch located.

LEVEL SWITCH

Alarm switch has the self-holding type Reed switch. That is, when the **N** pole of magnet float coming near, the switch will be closed [**ON**], after the magnetic float passed by, the switch still remain closed [**ON**]. and when the magnet is coming back, the switch will be opened [**OFF**] again. and after the magnet passed away, the switch still remain open [**OFF**] also.

When the switch is installed in the opposite direction, the **ON-OFF** operation of the former will be reversed. Therefore, the operation [**ON-OFF**] is easy to change on the side.

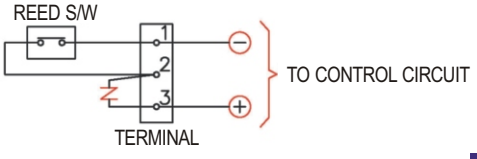
LEVEL TRANSMITTER

Used for detecting the level of measuring object from various level in the vessels or tanks and for transmitting it after converting to electric output signal and direct indication can also be possible with flapper colors.

A transient changing of liquid level is continuously transmitted by converting change of resistance value of level switch installed on the chamber.

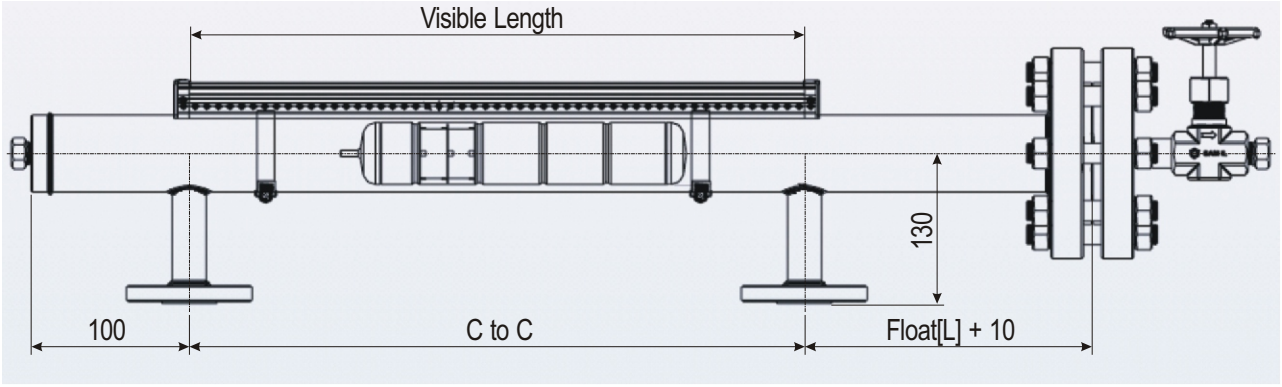
FEATURE

As our switch has no polarization, There is little point in arguing about an electric circuit whether wires are connected with terminal 1 or 2.

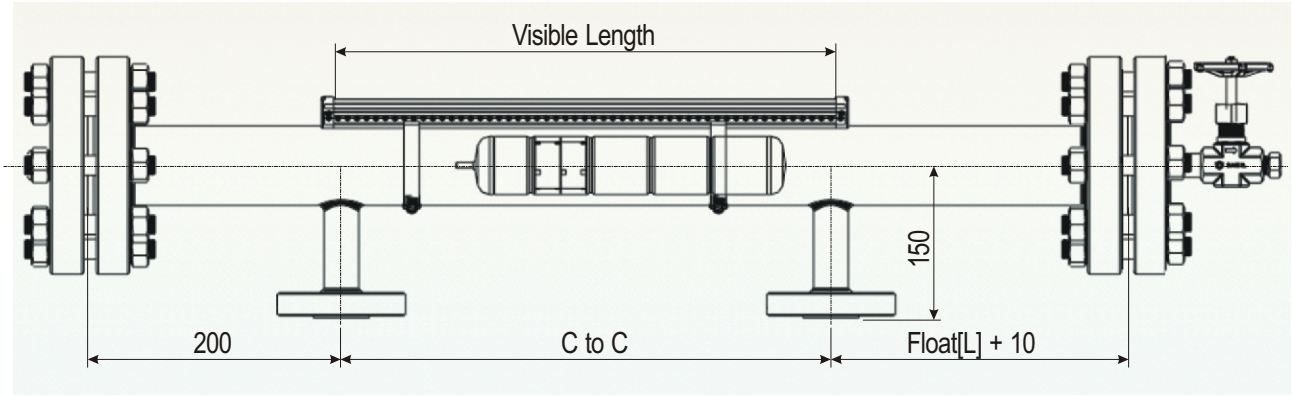


Others, except the above specification, are available on request by customer.

DIMENSIONAL VIEW



Float Lengths are totally difference depend on the specific gravity of liquid.



TYPICAL CONSTRUCTION

