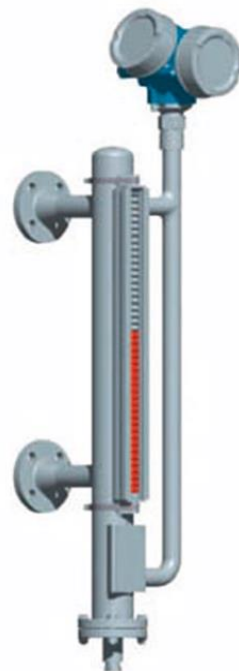


DATASHEET

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# KSS Magnetic Level Gauge

KSS Data Sheet - DS - LM - 001 - 00



## Product Overview

The Magnetic Level Gauge (MLG) is widely applied in the monitoring and process control of liquid level and interface for many industries; such as petroleum, chemical, power, paper, metallurgy, water treatment etc.

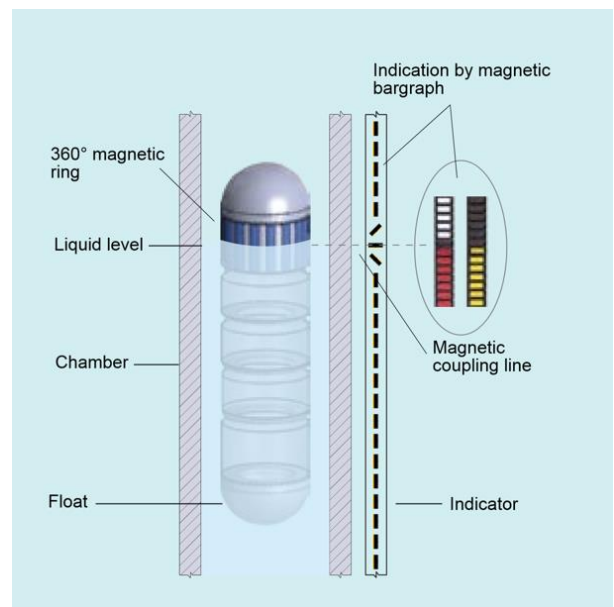
The products are suitable for real time, precise, safe and reliable continuous measurement of process level. The design adopts a 360° magnetic ring which is hermetically sealed and incompressible.

The indicator uses sealed technology to clearly indicate the level, which eliminates the common problems of glass gauges, such as vapour, condensation and liquid leakage etc.

## Principle

Based on the principle of magnetic coupling and buoyancy, the magnetic level gauge provides real-time measurement for level and interface.

KSS's Magnetic Level Gauge (MLG) is connected to a process vessel. Within the chamber is a float containing a 360° magnetic ring. Outside of the chamber is an indicator equipped with a vacuum glass tube, which contains a bicolored two-face magnetic bar graph. In response to the level movement, the float moves accordingly, forcing the magnetic bar graph to turn and change color. True liquid level is indicated or "read" from the corresponding point on the measuring scale.



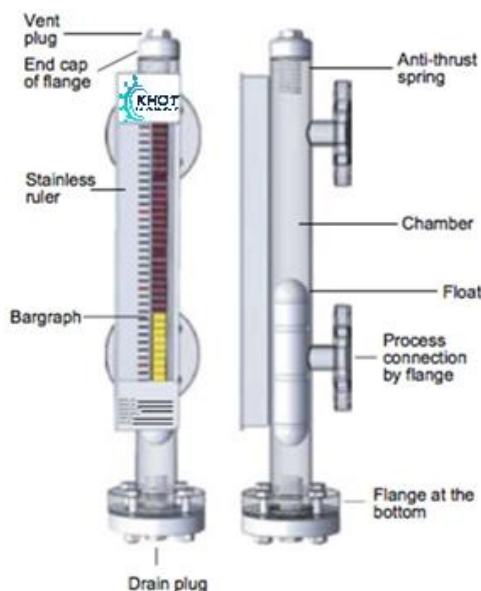
## Why Choose KSS?

- Global support and service
- Fast quotations and deliveries
- Innovative solutions for oil & gas applications
- Support of all major communication protocols
- Commissioning services - Remotely and on-site

## Applications

- **Boiler:** Steam drum liquid level.
- **Power Generation:** Auxiliary machinery liquid level (HP reheater, LP reheater, deaerator, condenser and heating network heater etc)
- **Chemical & Waste water treatment.**
- **Coal Chemical:** Methanol, dimethyl ether, synthesis ammonia/urea, MTO, CTL, SNG
- **Silicon Industry:** Organic silicon, Polycrystalline silicon
- **Petroleum & Petrochemical:** Oil & Gas, Ethylene, Trimerization etc.
- **Fine Chemicals:** Methane oxide, Epoxy ethane, Aniline, PTMEG, BDO, Carbon fiber, POM, Acetic acid, Styrene, Rubber, Crude benzol refining
- **Others:** Metallurgy, Paper-making, Water treatment, Biological, Pharmaceutical, Food & beverage etc.

## Product Features



- Simple, robust and solid design, long service life
- Material of construction SS-304/304L, SS-316/316L, SS-321, Titanium, Hastelloy C-276, SS+PTFE Lined/Coated, PVDF, CPVC & PP (Others on request).
- Pressure- and gas-tight separation between measuring and display chamber.
- Dampening spring on top and bottom of the chamber for protection of float.
- Measuring and indicating of the level of aggressive, combustible, toxic, hot and contaminated media.
- Functioning of the magnetic display guaranteed even in the case of power failures.
- By using a variety of corrosion-resistant materials, applicable for virtually all industrial applications.
- Continuous measurement of levels, independent of physical and chemical changes of the media such as: Foaming, conductivity, dielectric constant, vapors, bubble formation, boiling effects
- Interface-layer level measurement from  $\Delta$  density 100 kg/m<sup>3</sup>
- Special versions: Food compliant, coatings, liquid gas, heating jacket.

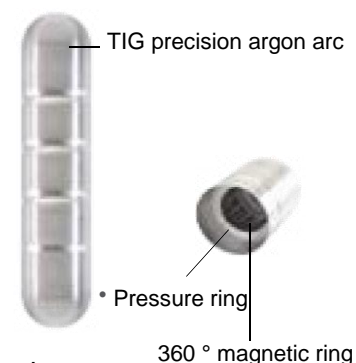
## Float

The float is the key component of the level gauge, which magnetically couples to the outside indicator, liquid level switch and transmitter.

Hermetically sealed incompressible

- 360° magnetic ring
- 316LSS, Hastelloy C-276, Ti2, 304SS+PFA, and other materials
- Special structure and precision manufacturing technology of pulse TIG and laser weld
- Range of temperature: -60 to 450°C
- Range of pressure: vacuum to 120 Bar

Suitable for harsh working conditions, such as HTHP, cryogenics and strong corrosion



## Technical Specification



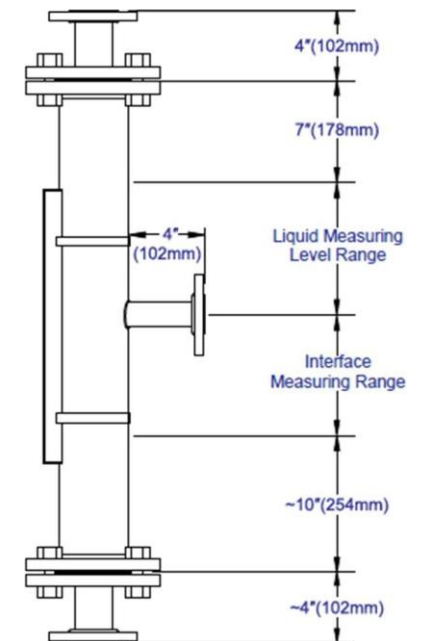
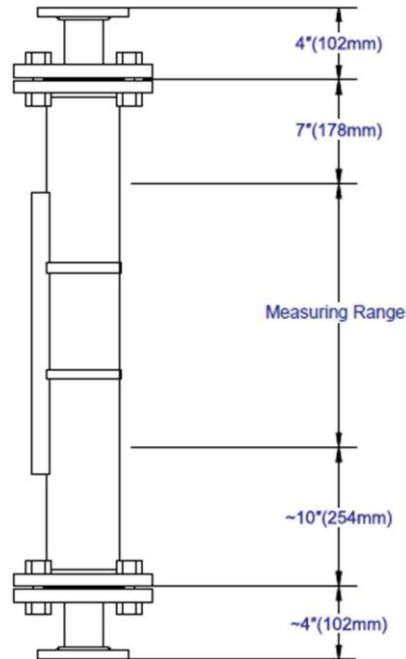
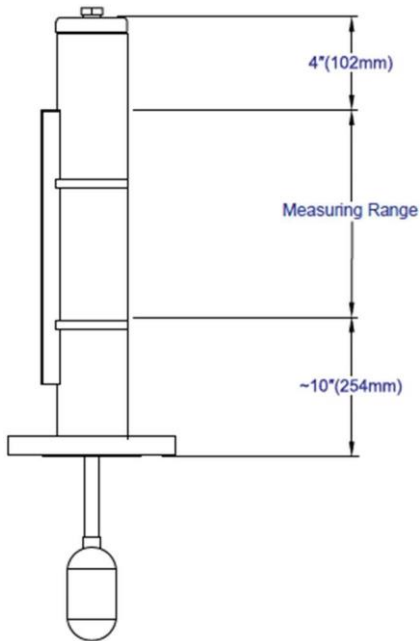
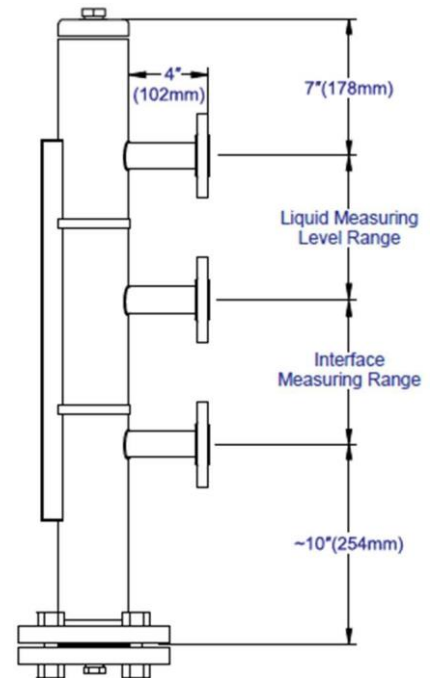
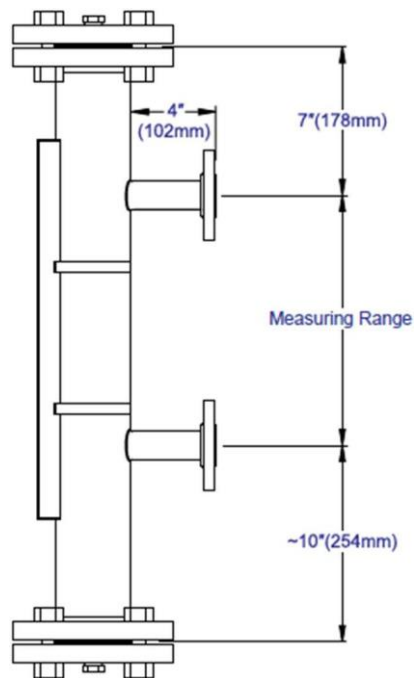
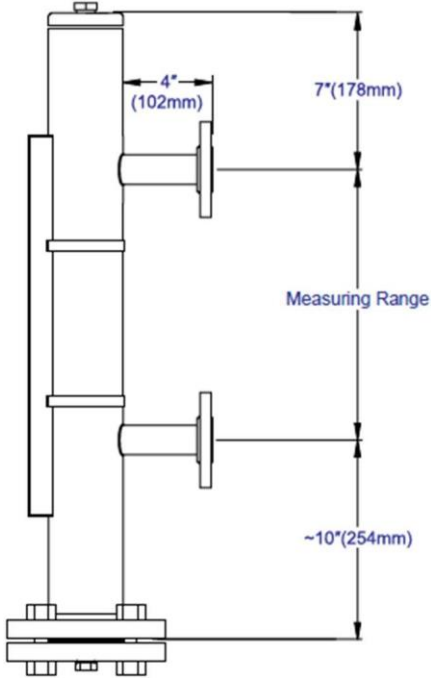
### Magnetic Level Gauge

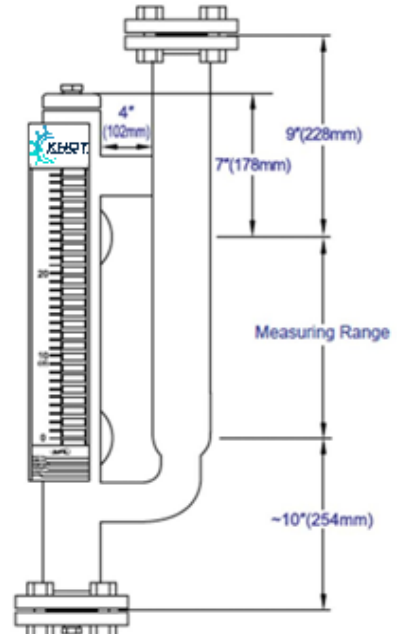
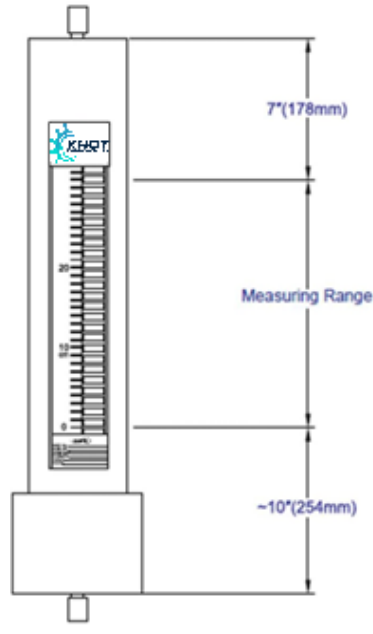
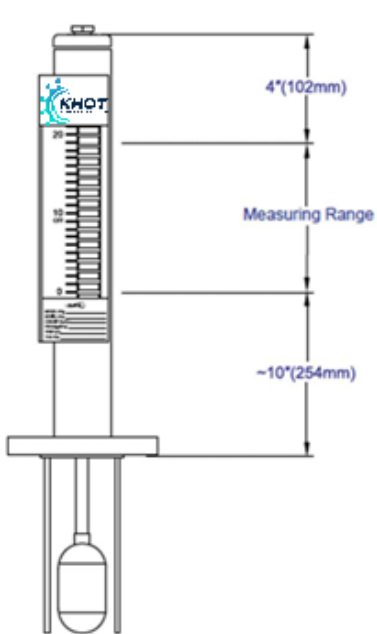
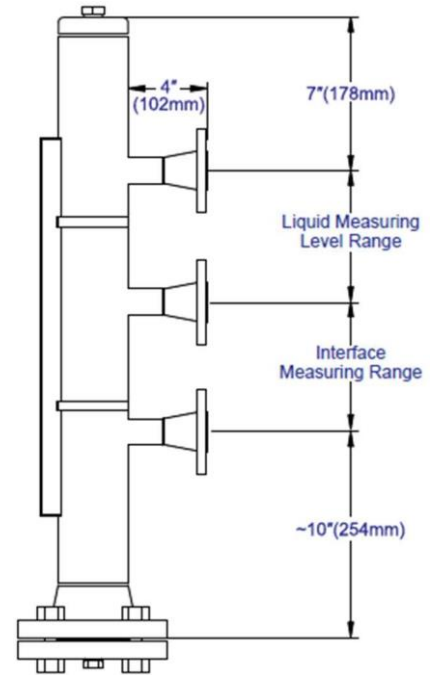
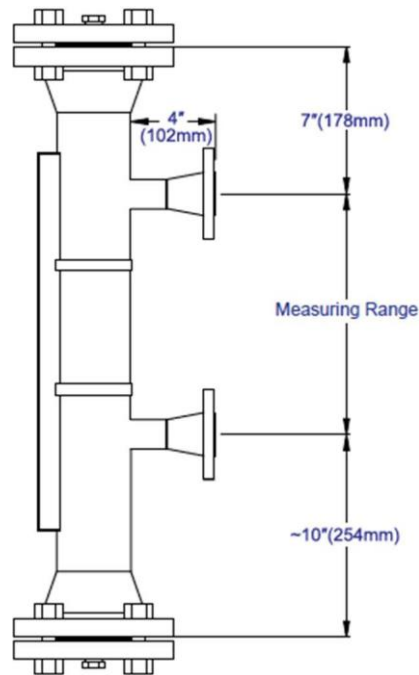
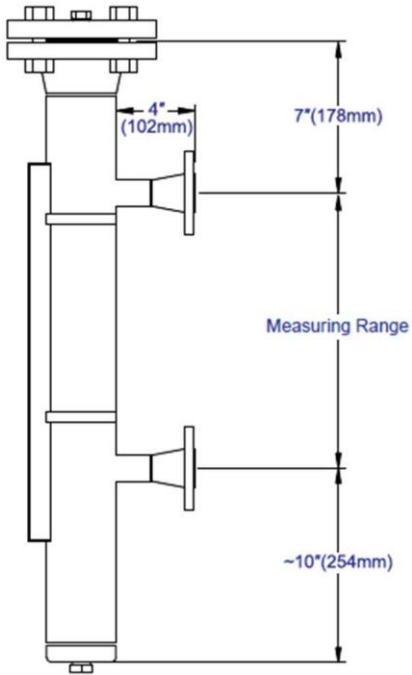
- Single chamber
- Dual chamber
- Multiple special materials available
- Chamber size: 2" / 2.5" / 3"
- Maximum pressure rating: ANSI 1500LB
- Multiple options for installation and process connection

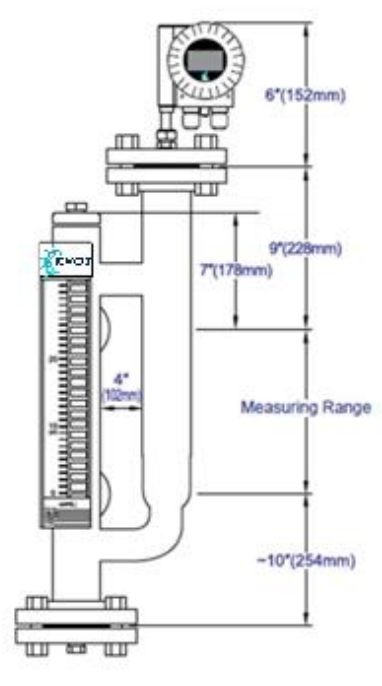
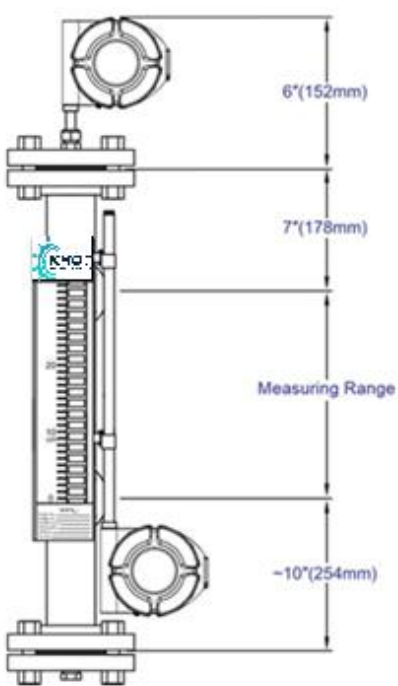
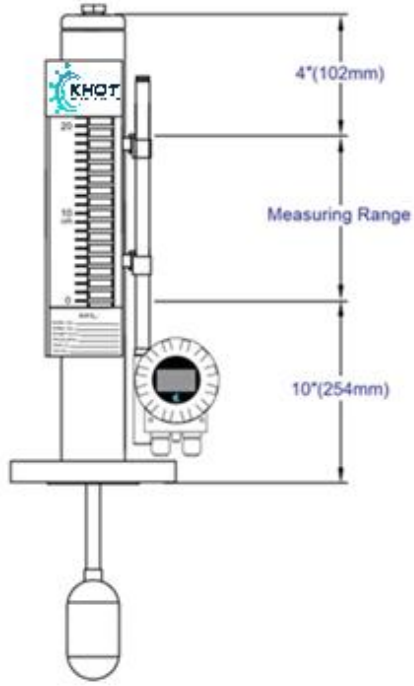
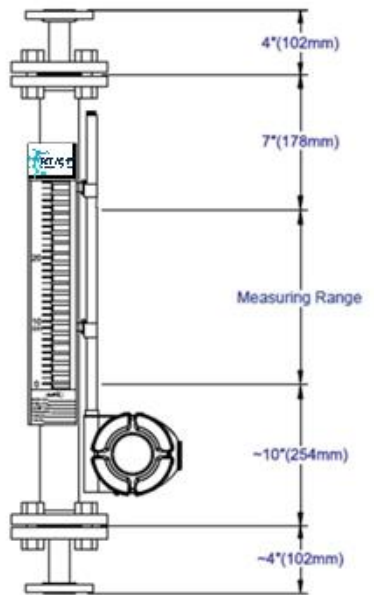
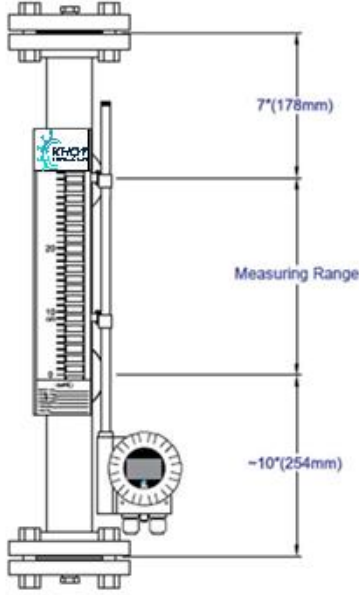
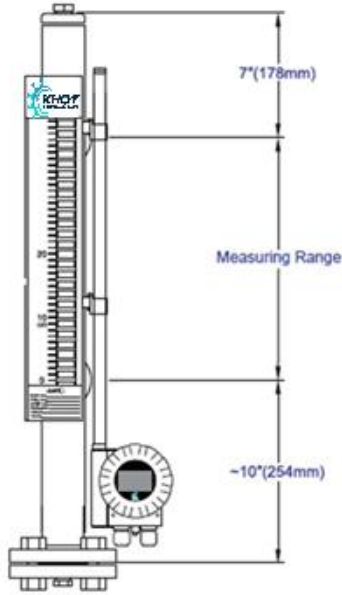
Chamber Material	: SS-304/304L, SS-316/316L, SS-321, Titanium, Hastelloy C276, SS-304/ 316 lined/Coated, PTFE, PVDF, CPVC and PP
Float Material	: SS-304L, SS-316L, Titanium, SS lined PTFE, Hastelloy C276, PVDF, CPVC and PP
Pressure Rating	: ASME #150 to #1500; DIN PN16 to PN 420
Process Connection Size	: Side Mounting – ASME 1/2" to 3" and DIN DN15 to DN80 Top Mounting – AMSE 3" to 10" and DIN DN80 to DN250
Process Connection Type	: Flanged / Threaded / Nipple / Stub Weld
Measuring Range	: 350 mm to 6000 mm (Any other on request)
Temperature Range	: – 60 to +450 deg. C
Pressure Range	: Full vacuum to 110 Bar g (Other on request)
Minimum Liquid Density	: 450 kg/m <sup>3</sup> ( S.G. 0.450)
Indication	: Bi-colour Plastic Roller / SS Flappers
Indicator scale / ruler	: Stainless ruler with multi engineering units

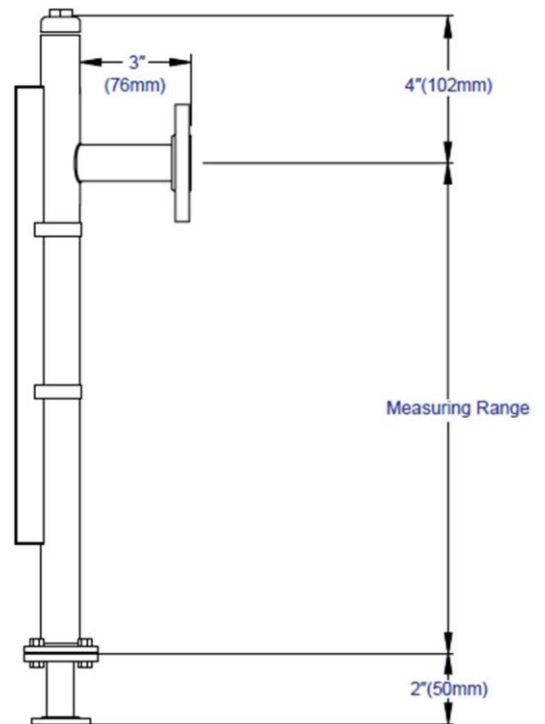
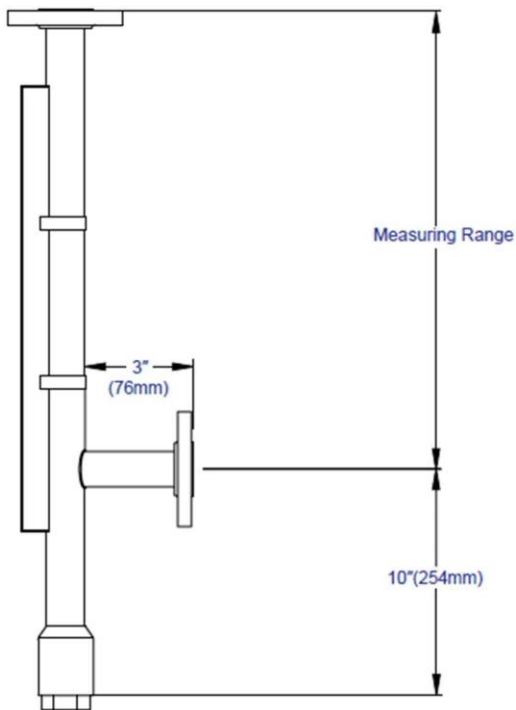
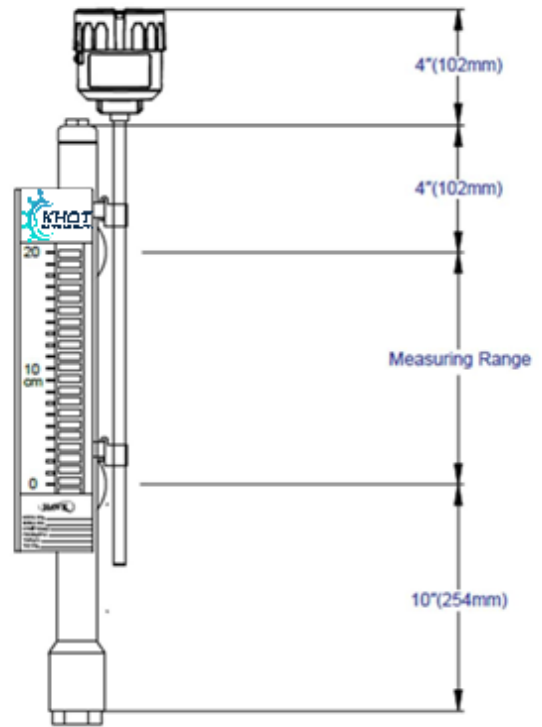
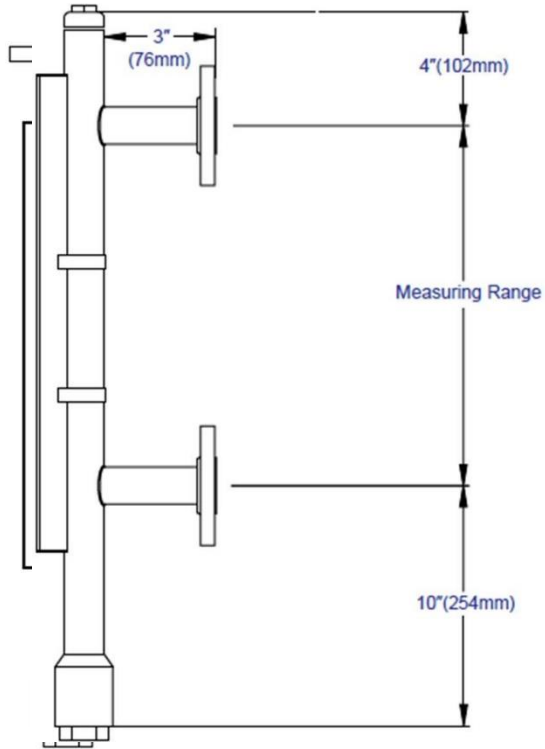
## Optional Accessories

<b>Transmitter &amp; Switches</b>	: Various type of transmitters and switches are available
<b>For High Temperature</b>	: High temperature insulation pad; high temperature insulation blanket
<b>For Low Temperature</b>	: Insulation level with special frost prevention extension device and indicator
<b>Heat Tracing</b>	: Electric heat tracing, steam tracing tubing, steam jacket
<b>Valve</b>	: Vent valve/Drain valve

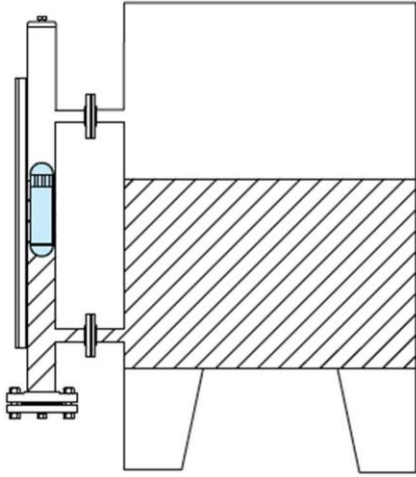




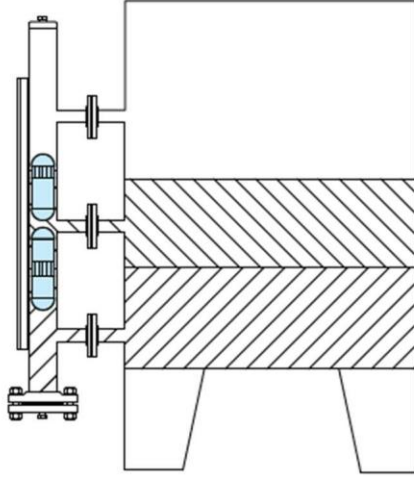




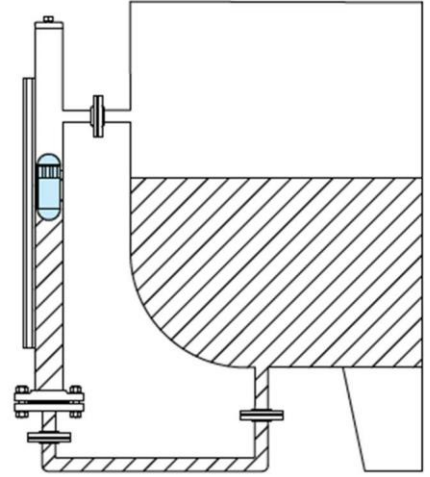




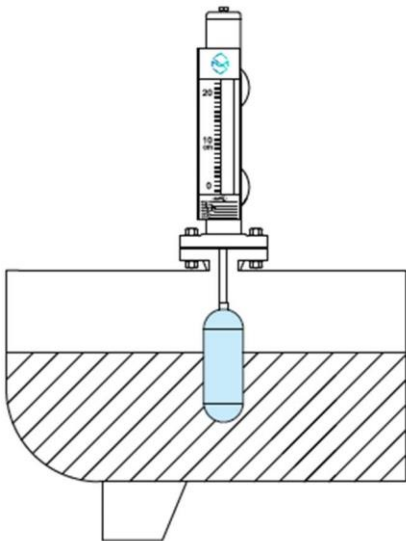
Side - Side Mount



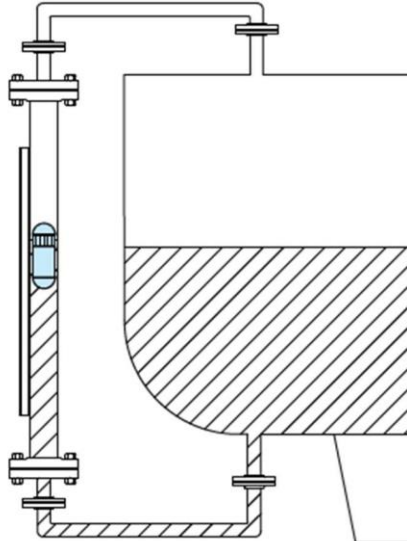
Side - Side - Side Mount



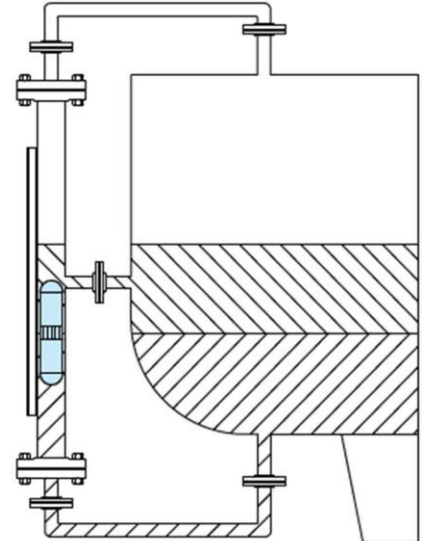
Side - Bottom Mount



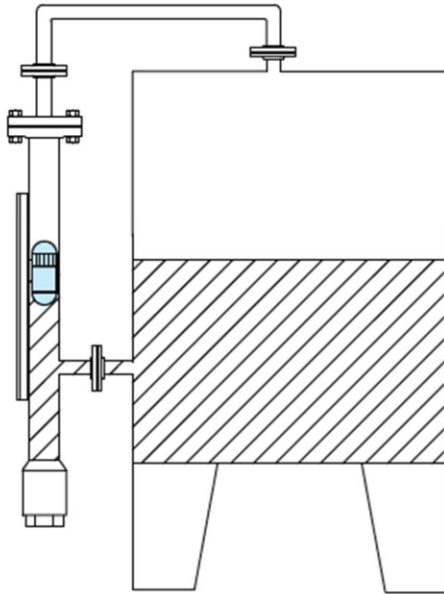
Top Mount



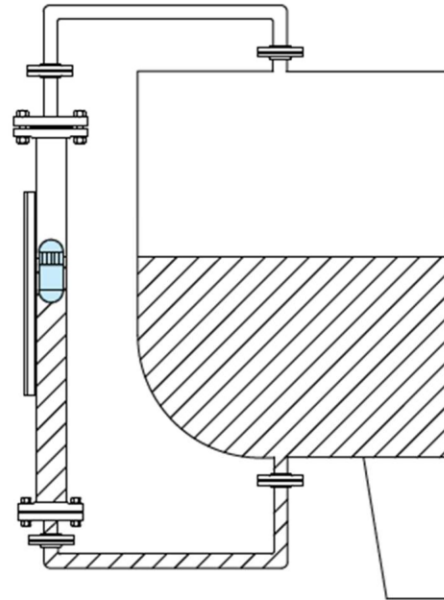
Top - Bottom Mount



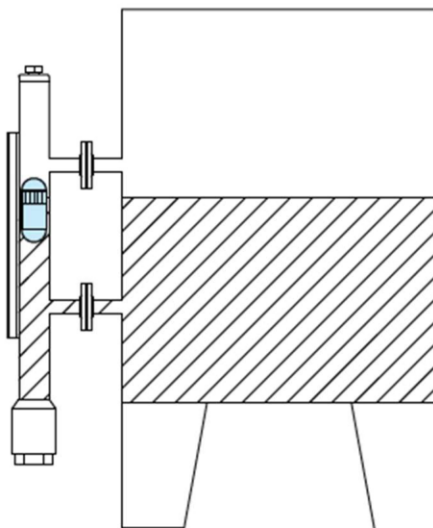
Top - Side - Bottom Mount



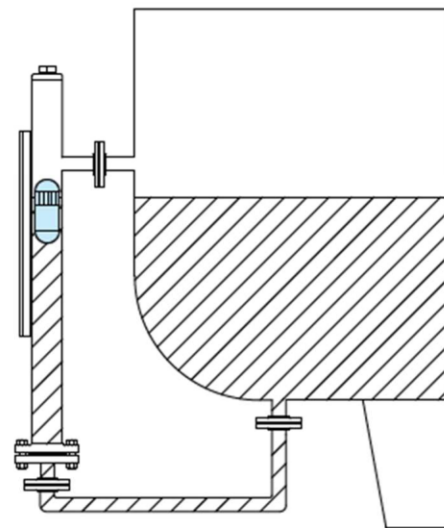
Top - Side - Side Mount



Top - Side - Bottom Mount



Side - Side Mount



Side - Bottom Mount

## Ordering Information

### Ordering Information

Code						
<b>1</b>		<b>Basic Type</b>				
	MLG	Magnetic Level Gauge				
<b>2</b>		<b>Design / Mounting Information</b>				
		1st Key		2nd Key		
-/-		Mounting		Chamber Type		
	SM	Side Mounted	SU	Single Chamber		
	TP	Top Mounted	DU	Dual Chamber		
<b>3</b>		<b>Process Connection</b>				
		1st Key		2nd Key		3rd Key
-/-/-		Type		Size		Pressure Rating / Flange Face
	F	Flanged	--	ANSI 1/2" To 3"	--	150# To 2500# RF/SF/FF/RTJ
	T	Threaded		DIN DN15 To DN80		PN6 To PN400 C/N/F
	N	Welding Nipple		EN1092 DN10 To DN80		PN6 To PN400 B1/B2/C/D
	O	Others		NPT 1/2" To 3"		
				BSP 1/2" To 3"		
<b>4</b>		<b>Distance</b>				
		1st Key		2nd Key		
M-/L-	M-	Centre To Centre Distance	L-	Measuring Range		
<b>5</b>		<b>Wetted Parts Material &amp; Chamber Dimensions</b>				
		1st Key				2nd Key
		Material				Chamber Dimensions
-/-X-	L	SS304/304L	PP	Polypropylene	-X-	Chamber OD X Wall Thickness In MM
	LV	SS316/316L	PV	PVDF		
	TI	Titanium	PC	PVC		
	HS	Hastelloy C2776	O	Other Material Grade		
<b>6</b>		<b>Indicator</b>				
		1st Key		2nd Key		3rd Key
		Indicator Type		Scale		Scale Engraving
-/-/-	SS	Stainless Steel Housing	AL	Aluminium Scale	MM	Millimetre
	HS	Hermetically Sealed SS Housing	SS	Stainless Steel Scale	CM	Centimetre
		Note: Flappers will be provided	-	Not Required	IN	Inches
		in Red/White colour as standard.			P	Percentage
		Other colour combination on demand.			SP	Special
<b>7</b>	FLT	<b>Float</b>				
		1st Key				2nd Key
		Material Of Construction				Pressure Rating/Float Diameter
FLT/-/-	SS	Stainless Steel SS316/316L	PP	Polypropylene		PN16
	TI	Titanium Grade 2	PV	PVDF		PN25
	HC	Hastelloy C2776	PVC	PVC		PN--
	SE	Stainless Steel Coated				Pressure Rating
<b>8</b>		<b>Accessories</b>				
		1st Key		2nd Key		
		Type		Quantity		
	SW	Adjustable Switch	--			
	TS	Level Transmitter				
	GR	Guided Wave Radar				

## Ordering example

### Ordering Example

	Basic Type	Design / Mounting	Process Connection	Distance	Wetted Parts Material & Chamber Dimensions	Indicator	Float	Accessories
	1	2	3	4	5	6	7	8
Code	MLG	SM/SU	F/2"/300/RF	M1000/L1000	LV/60.3X3.91	SS/SS/MM	FLT/SS/PN30	SW/2

## Documentation

Following documents shall be provided as a standard part of supply,

- 1) General Arrangement drawings for approval
- 2) Hydro test report for level gauges.
- 3) Dimensional test report for level gauge.
- 4) Functional test report for level gauge.
- 5) Material certificate 3.1 acc. to EN-10204 for all wetted parts
- 6) Material compliance certificate for all non-wetted parts
- 7) Operational Manual.
- 8) Test & Warrantee Certificate.

For inquiries contact us at:

## Khot System And Solution

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