Product Information
Catalogue









MANUFACTURERING

PROCESS CONTROL INSTRUMENTS

FLOWTEL

FLOWTEL ENGINEERING

Committed for Quality Deliverance

Our Mission

We leverage our ability and willingness to develop engineered solutions from standard product platforms to create value for our customers.

Our Quality

- We focus on the quality of our products
- We value the quality of our relationships with our customers, our representatives, and our associates

Customer Service

- We focus on helping the customer
- We go out of our way to help solve problems
- We are willing to do the right thing, even when it's the "hard" thing
- We make every customer feel like they are the only one we want

Delivery

- We protect the integrity of our lead times (On-time delivery)
- We work quickly and efficiently
- We act with a sense of urgency
- We are reliable
- We keep our promises

FLOWTEL
Engineering

About Us

FLOWTEL is a global leader in the design and manufacture of FLOW, LEVEL, PRESSURE, TEMPERATURE, measurement and control devices, under the brands of FLOWTEL, and actively serves all sectors of the process industry with particular strengths in the Chemical , Pharmaceuticals , Power Oil & Gas , Petrochemical, segments. A network of sales and service personnel capable of addressing customer requirements.

The rugged quality and durability of FLOWTEL products have been at the center of the company's global success in measurement and control for TWO decades. Why? Because WE take the time to listen to what you specifically need to get the job done. Often that results in taking a standard product and re-designing it to fit your individual application. At FLOWTEL, flexibility is nothing out of the ordinary – it's how we do business every day. In fact, most of the products we deliver are made to order. And with our in-house machine shop and on-staff engineers, flexibility moves with even greater speed.

Honesty

Honesty – It's no secret why our current customers keep coming back. FLOWTEL delivers the most reliable products backed by the most impressive warranties in the industry. And unlike many companies that try to sell you a more expensive product, we give you exactly what it takes to get the job done. If you don't need the extras, we'll be the first to let you know. To sum it up, we're easy to do business with.

A Quality Range of

Process Control Products

- Rotameters
- Flow meter
- Orifice plates / Orifice Flange Assembly
- Level Indicators
- Level Switches
- Level Transmitter
- Strainers
- Sight Flow Indicators
- Manometers / McLeod Gauge
- Temperature Sensors / Indicators
- Pressure Gauge

So if you are serious about improving your process yield, throughput and product quality, choose

FLOWTEL

ROTAMETER

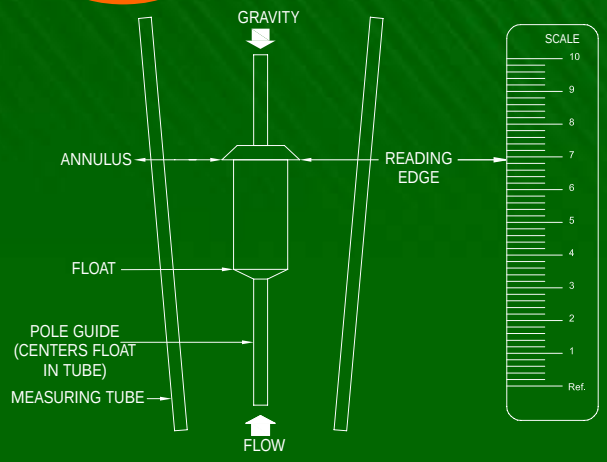
What are Rotameters ?

The rotameter is an industrial flowmeter used to measure the flowrate of liquids and gases. The rotameter consists of a tube and float. The float response to flowrate changes is linear, and a 10-to-1 flow range or turndown is standard. In the case of Flowtel Engineering, far greater flexibility is possible through the use of correlation equations. The rotameter is popular because it has a linear scale, a relatively long measurement range, and low pressure drop. It is simple to install and maintain.

Variable Area Rotameters

Principle of Operation

The rotameter's operation is based on the variable area principle: fluid flow raises a float in a tapered tube, increasing the area for passage of the fluid. The greater the flow, the higher the float is raised. The height of the float is directly proportional to the flowrate. With liquids, the float is raised by a combination of the buoyancy of the liquid and the velocity head of the fluid. With gases, buoyancy is negligible, and the float responds to the velocity head alone.
The float moves up or down in the tube in proportion to the fluid flowrate and the annular area between the float and the tube wall. The float reaches a stable position in the tube when the upward force exerted by the flowing fluid equals the downward gravitational force exerted by the weight of the float. A change in flowrate upsets this balance of forces. The float then moves up or down, changing the annular area until it again reaches a position where the forces are in equilibrium. To satisfy the force equation, the rotameter float assumes a distinct position for every constant flowrate. However, it is important to note that because the float position is gravity dependent, rotameters must be vertically oriented and mounted.



Application

These meters with all steel and plastic fittings to eliminate corrosion completely. The meters are useful for measuring flow of air, common gases, water and many organic chemicals, excluding petroleum products. Applications include purging of gas lines, anaesthesia, laboratory instruments, leak detection, cable pressurization, industrial furnaces and chromatography etc.

Rotameter Selection

The key questions which need to be answered before selecting a rotameter are:

. What is the fluids?
- What is the minimum and maximum flow rate for the flow meter?
- What is the minimum and maximum process temperature?
- What is the size of the pipe?
- Would you like a direct reading rotameter or is a lookup table acceptable?
- What accuracy do you need?
- Do you require a valve to regulate the flow?
- Will there be back pressure?
- What is the maximum process pressure?

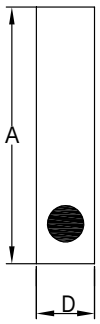
ACRYLIC BODY ROTAMETER

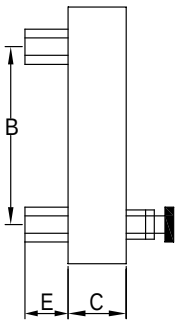
SPECIFICATIONS MODEL FL-A, FL-B

Meter Body	Acrylic
Float	SS 316, PTFE, PVC etc.
Wetted Parts	SS, PVC, P.P, PTFE etc.
O-Rings	Neoprene, PTFE Silicon etc.
Scale	Engraved on Body
Temp. Rating	160°F

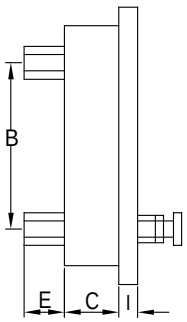
Connection	Threaded BSP/NPT Female or Male
Accuracy of	Model 10,20 & 30 ± 3%
Full Scale	Model 40 & 50 ± 2%
Repeatability	0.5%
Rangeability	10:1

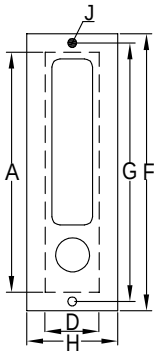
FL-A





FL-B





SERIES FL-A & FL-B MODEL & RANGES

Model FL-A/FL-B	Air at Amb. Temp Air LPM		Pressure Water LPH Maximum
10	0.1-1	0.4-5	3 Kg/Cm²
	0.2-2	1-10	
	0.4-5	3-30	
	1-10	5-50	
	2-20	10-100	
	3-30	15-150	
	4-50	20-200	
20	15-150	25-250	
30	10-100	50-500	
	15-160		
	30-300		
40	40-500	100-1000	5 Kg/Cm²
50	80-800	250-2500	
	140-1400		

OVERALL DIMENSIONS (MM) FL-A, FL-B

Model FLA/FLB	A	B	C	D	E	F	G	H	I	J HOLE ø	Connection BSP"F"
10	150	114	28	28	20	180	166	32	3	5	¼"
15	150	110	35	28	20	180	166	38	3	5	¼"
20	195	159	28	28	20	225	210	38	3	5	¼"
30	250	200	40	40	25	290	275	52	3	5	½"
35	250	194	48	42	25	290	275	52	3	5	¾"

ACRYLIC BODY ROTAMETER

Acrylic tubes are also used in some rotameter designs due to their lower cost and high impact strength. They are typically constructed of acrylic, with either metal or plastic end fittings. With plastic end fittings, care must be taken in installation, not to distort the threads. Rotameters with all plastic construction are available for applications where metal wetted parts cannot be tolerated, such as with deionized water or corrosives fluids.

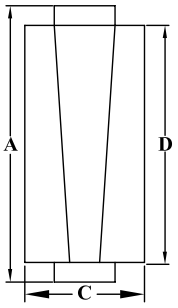
SPECIFICATIONS SERIES FL-C

Meter Body	Acrylic
Float	SS 316, PTFE, PVC etc.
Wetted Parts	SS, PVC, P.P, PTFE etc.
O-Rings	Neoprene, PTFE Silicon etc.
Scale	Engraved on Body
Temp. Rating	60°C
Connection	Flanged Or Threaded
Accuracy of	Model 10 & 20 ±3%
Full Scale	Model 30, 40, 50 & 60 ±2%
	Model 70, 80, 90, 100, 110 & 120 ±2%
Repeatibility	0.5%
Rangeability	10:1
Higher Pressure rating on request	

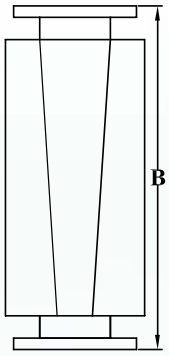
MODEL FL-C MODEL & RANGES

Model	AIR LPM	WATER LPH	Pressure Rating Max.
FLC 10	0.1-1	0.4-5	3 Kg/Cm^2
	1-10	1-10	
	2-20	3-30	
	3-30	4-50	
	5-50	10-100	
FLC 20	15-150	20-250	
FLC 30	50-500	50-500	
FLC 40	60-600	120-1200	7 Kg/Cm^2
FLC 50	150-1500	240-2400	
FLC 60	250-2500	600-6000	
FLC 70	300-3000	800-8000	12 Kg/Cm^2
FLC 80	800-8000	1500-15000	
FLC 90	NA	2000-20000	18 Kg/Cm^2
FLC 100	NA	400-40000	
FLC 110	NA	5000-50000	
FLC 120	NA	8000-80000	

FL-C



SCREWED



FLANGED

SPECIAL SIZES & RANGES ON REQUEST

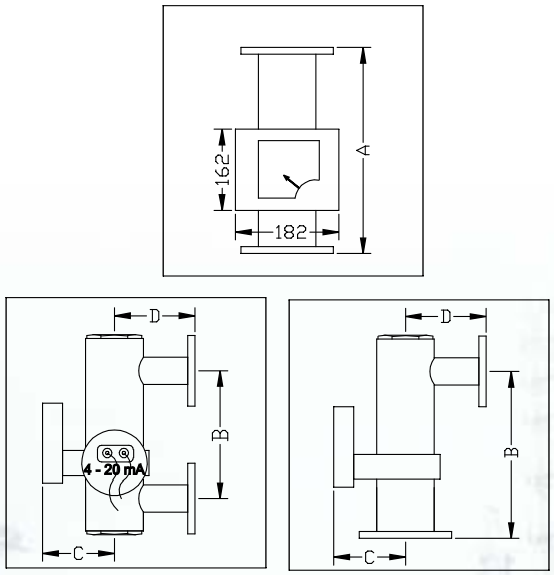
Model FL-C	A	B	C	D	Connection BSP'F' Flange
10	190	.....	28	150	¼"
20	190	.....	32	150	¼"& ½"
30	240	.....	28	195	¼"
40	250	275	35	180	½"
50	250	275	42	180	¾"
60	300	325	55	230	1"& 1½"
70	400	450	60	320	1"& 1½"
80/90	400	450	70	320	1½"& 2"
100	.....	450	85	320	2"& 2½
110	.....	450	100	320	2 ½"& 3"
120	.....	450	100	320	4"& 8"

METAL TUBE ROTAMETER

For higher pressures and temperatures beyond the practical range of glass tubes, metal tubes are used. These are usually manufactured in stainless steel. The position of the float is determined by magnetic or mechanical followers that can be read from the outside of the metal metering tube. Similar to glass tube rotameters, the spring-and-piston combination determines the flowrate, and the fittings and materials of construction must be chosen so as to satisfy the demands of the applications. These meters are used for services where high operating pressure or temperature, water hammer, or other forces would damage glass metering tubes. Spring and piston flowmeters can be used for most fluids, including corrosive liquids and gases. They are particularly well suited for steam applications, where glass tubes are unacceptable.

DIMENSIONS MODEL FLMT

Model & Ranges			Diamensions in mm			
Model No.	Range M^3/HR Water	Connection Flange Type	'A'	'B'	'C'	'D'
FLMT 10	0.1-1	½"	350	400	135	100
	0.2-2	¾"	350	400	135	100
	0.3-3	1"	350	400	135	100
	0.5-5	1"	350	400	135	100
FLMT 20	1-10	1½"	350	400	135	100
	1.5-15	1½"	350	400	135	100
FLMT 30	2-20	2"	350	400	135	120
	2.5-25	2"	350	400	135	120
FLMT 40	3-30	2½	350	400	135	120
	4-40	2½	350	400	135	120
FLMT 50	4-40	3"	350	400	155	150
	5-50	3"	350	400	155	150
FLMT 60	6-60	4"	350	400	155	150
	8-80	4"	500	500	175	170
	10-100	4"	500	500	175	170
FLMT 70	13-130	5"	500	.....	175	.....
FLMT 80	16-160	6"	500	.....	200	.....
FLMT 90	20-200	8"	500	.....	200	.....



Note : Dimensions Can be modified on Request.

SPECIFICATIONS MODEL FLMT

Meter Body	SS 316L, SS 316, SS 304 etc.
Float	SS 316L, SS 316, PTFE etc.
Indicator Housing	ABS, Optional- Aluminium, SS-304
Temperature Rating	250°C
Pressure Rating	40 Bar
Accuracy	±2% of full scale
Accessories	1) Electronic transmitter with (Steam jacket)
	4-20m A 0/P
	2) Digital Flowrate indicator totaliser
	3) Hi - low flow switch

GLASS TUBE ROTAMETER

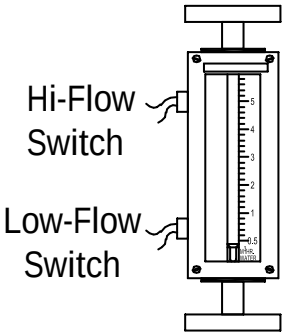
The glass tube rotameter is precision formed of borosilicate glass, and the float is precisely machined from metal, or plastic. The metal float is usually made of stainless steel to provide corrosion resistance. The float has a sharp metering edge/maximum diameter where the reading is observed by means of a scale mounted alongside the tube. End fittings and connections of various materials and styles are available.

SPECIFICATIONS SERIES FL-GT

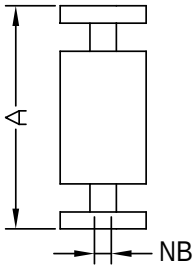
Meter Body	:	Powder coated M.S. optional SS 304, SS 316 etc.
Float	:	SS 316L, SS 316, PTFE, Monel, PVC etc.
Wetted Parts	:	SS 316L, SS 316, SS 304, MS PTFE, PVC, P.P., Monel etc.
Packings	:	Neoprene, PTFE , Silicon etc.
Tube	:	Borosillicate glass
Scale Length	:	175-225 mm
Temperature Max.	:	Upto 200°C depends on gland Packing material.
Connections	:	Flanged, threaded etc.
Accuracy	:	±2% of full scale.
Repeatibility	:	0.5%
Rangeability	:	10:1
Accessories	:	Hi- low flow switch, Steam jacketed

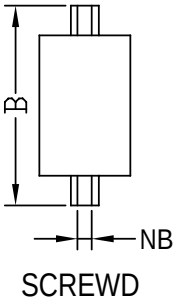
OVERALL DIMENSIONS

NB	A	B	C	D	E
15	500	425	440	55	90
20	500	425	440	60	90
25	500	425	440	65	115
40	500	425	500	85	140
50	500	450	500	85	155
65	500	N/A	500	N/A	190
80	500	N/A	500	N/A	190



VERTICAL

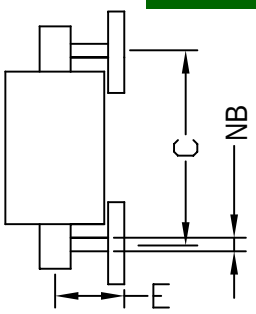


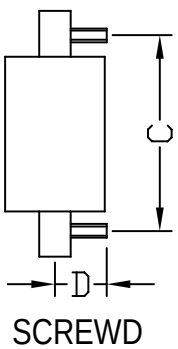


STANDARD RANGES

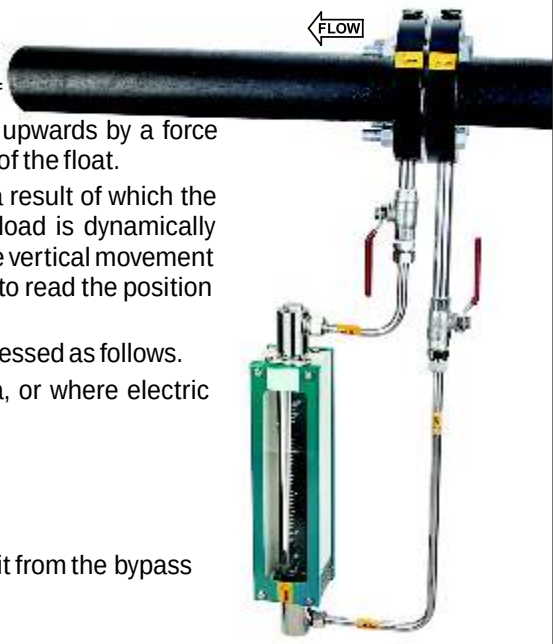
NB	Models	FLOW RATES Water At 20°C LPH	FLOW RATES Air At Amb. Temp. Nm^3/Hr	Pressure Rating KG/CM^2	Pressure Drop MM WG
15	FL-GT-10	10-100 25-250	0.3-3 0.8-8	20	250
20	FL-GT-10	50-500 60-600	1.5-15 1.8-18	20	360
25	FL-GT-20	100-1000 200-2000 300-3000	3-30 6-60 8-80	12	650
40	FL-GT-30	400-4000 500-5000	12-120 15-150	9	650
50	FL-GT-40	600-6000 80-8000 1000-10000	18-180 24-240 30-300	7	850
50 & 65	FL-GT-50	1200-12000 1500-15000 2000-20000	....	5 5	950 950
80	FL-GT-60	3000-30000 8000-40000	....	5 5	1100 1100

REAR





BYPASS ROTAMETER (FLBPR)



Horizontal Flow
(Right to Left)

When fluid or gas flows through a taper tube containing a float, a pressure difference of P1 and P2 is created between upper and lower side of the float. The float moves upwards by a force obtained by multiplying the pressure differential by the maximum cross sectional area of the float.

Due to taper tube, as the float moves upwards, the fluid passing area increases as a result of which the differential pressure decreases. Upward movement of float stops when the dead load is dynamically balanced by the differential pressure. Tapering of metering tube is so designed that the vertical movement of the float becomes linearly proportional to the rate of flow and the scale is provided to read the position of the float, thus giving birth to flow rate indication.

Based on Bernoulli's theorem, the principle mentioned above can be theoretically expressed as follows.

Usefulness where the measurement must be made in a hazardous or remote area, or where electric power

is either not available or would be potentially dangerous.

Rangeability can be 5:1 or 7:1.

Scale readings that can be graduated in direct units for flow in the main pipeline.

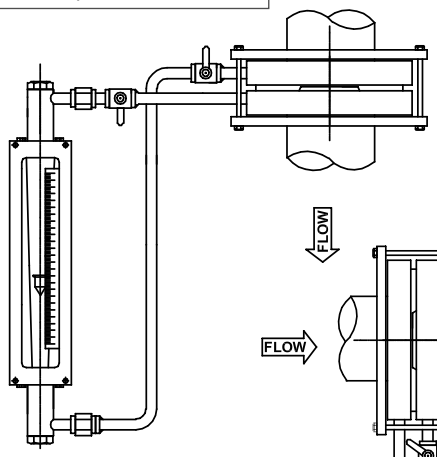
Changing the range or cleaning the tube without disassembling the meter or removing it from the bypass line.

STANDARD RANGES FOR WATER AT 20°C

Model		NB	Maximum Flowrate (M3/HR.)	Model		Maximum NB (M3/HR.)	Flowrate
FLGT-10-BPR-25	FLMT-10-BPR-25	25	5	FLGT-10-BPR-275	FLMT-10-BPR-275	275	650
FLGT-10-BPR-40	FLMT-10-BPR-40	40	10	FLGT-10-BPR-300	FLMT-10-BPR-300	300	800
FLGT-10-BPR-50	FLMT-10-BPR-50	50	20	FLGT-10-BPR-350	FLMT-10-BPR-350	350	1000
FLGT-10-BPR-80	FLMT-10-BPR-80	80	36	FLGT-10-BPR-400	FLMT-10-BPR-400	400	1500
FLGT-10-BPR-100	FLMT-10-BPR-100	100	80	FLGT-10-BPR-450	FLMT-10-BPR-450	450	2000
FLGT-10-BPR-125	FLMT-10-BPR-125	125	125	FLGT-10-BPR-500	FLMT-10-BPR-500	500	2500
FLGT-10-BPR-150	FLMT-10-BPR-150	150	150	FLGT-10-BPR-600	FLMT-10-BPR-600	600	3000
FLGT-10-BPR-200	FLMT-10-BPR-200	200	320	FLGT-10-BPR-700	FLMT-10-BPR-700	700	4000
FLGT-10-BPR-225	FLMT-10-BPR-225	225	450	FLGT-10-BPR-800	FLMT-10-BPR-800	800	5000
FLGT-10-BPR-250	FLMT-10-BPR-250	250	550	Other Sizes on request			

SPECIFICATION

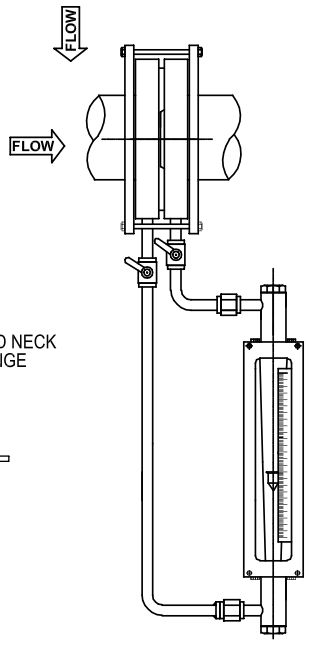
Type of tapping: Flange, D and D/2, corner
Accuracy: ±2% of full flow
Rangeability: 7:1 or 5:1



Vertical Downward Flow

STANDARD MATERIAL OF CONSTRUCTION

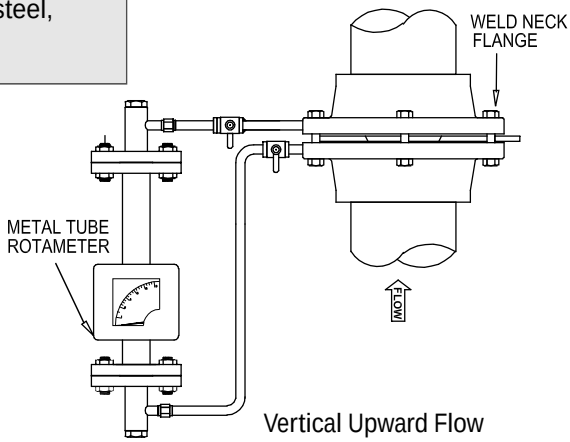
Orifice Flange	: SS 316 L, SS 316, SS 304, CS etc.
Orifice Plate	: SS 316, L, SS 316, SS 304, Hastelloy 'C', Monel, PVC etc.
Carrier Rings	: SS 316 L, SS 316, Mild steel, PP etc.
By Pass Line	: SS 316 L, SS 316, SS 304,Mild steel,PVC etc.
Wetted Parts of the Rotameter	: SS 316 L, SS 316, SS 304, Mild steel, PP etc.



Horizontal Flow
(Left to Right)

ACCESSORIES

Hi-low flow switch
4-20 mA transmitter



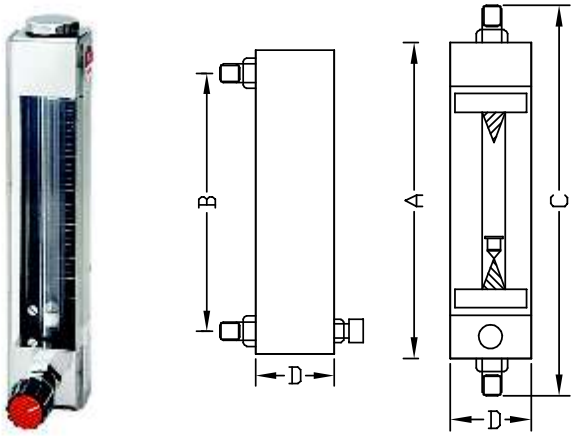
Vertical Upward Flow

METER ASSEMBLY

Glass Tube Rotameter :	FLGT-10
Metal Tube Rotameter :	FLMT-10

PURGE TUBE ROTAMETER

FLGTS



OVERALL DIMENSIONS

Model	A	B	C	D
FLGTS 10	144	114	190	28
FLGTS 20	193	163	240	36
FLGTS 30 & 40	255	225	302	36

STANDARD RANGES MODEL FLGTS

Models.	FLOW RATES Water At 20°C LPH	Air At Amb. Temp. LPM	Air At Amb. Temp. SCFH
FLGTS-10	0.1-1	0.05-0.5	0.1-1
	0.2-2	0.1-1	0.2-2
	0.5-5	0.2-2	0.4-4
	0.6-6	0.4-4	0.8-8
	1.0-10	0.6-6	1.2-12
FLGTS-20	1.5-15	1.0-10	2.20
	2.5-25	1.5-15	3-30
	1.2-12	0.7-7	1.5-15
	2-20	1.2-12	2.5-25
	3-30	1.6-16	3.2-32
FLGTS-30	5-50	2.5-25	5-50
	6-60	3-30	6-60
	10-100	5-50	10-100
FLGTS-40	12-120	6-60	12-120
	15-150	8-80	16-160
	18-180	10-100	20-200
	20-200	12-120	25-250

SPECIFICATIONS

Meter	: Powder coated M.S., SS 304, SS 316
Float	: SS 316L, SS 316, PTFE etc.
Wetted Parts	: SS 316L, SS 316, SS 304, PTFE etc.
Packings	: Neoprene, PTFE etc.
Tube	: Borosillicate glass
Scale Length	: Model FLGTS 10-20 =65 mm, : FLGTS 30-40 = 110 mm & FLGTS 80-170 =140mm
Temp. Max.	: Upto 200°C depends on gland packing
Connections	: threaded etc.
Accuracy	: FLGTS 10-20 ±5%, FLGTS 30-40 ±3%, FLGTS 40 ±2% of full scale.(on request)
Repeatability	: 0.5%
Rangeability	: 10:1
Accessories	: Hi- low flow switch

WATER METER
15NB TO 500NB

A removable mechanism type Woltman Water meter /multijet dry With magnetic drive and vacuum sealed register.

APPLICATION

Meter Suitable for use to measure the total flow of water passing through pipeline in waterworks, mining and industrial enterprises.

STANDARDS

Conforms to ISO 4064, Class-B

FEATURES

(1) Leak proof and sealed totaliser
(2) Magnetic drive
(3) Repairable without interrupting water supply
(4) Removable mechanism ensures easy maintenance
(5) Totaliser protected by metallic cover
(6) Reliable sensitive metrology and low pressure loss
(7) Remote reading facility/pulse output available on request

ORIFICE PLATES

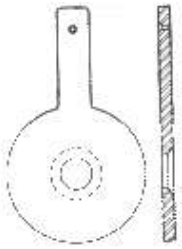
Orifice Plate manufactured by us is quality controlled from the selection of new material to the packaging of the finished product.

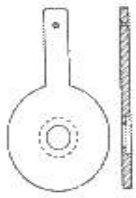
- EDGES: Sharp & square, will not reflect a beam of light when viewed without magnification.
- BORE: Orifice bore tolerance strictly in accordance with A.G.A, Asme, ISO5167, ISA and BS standards.
- FLANGE MATERIAL: CARBON STEEL A105/ASTMA182/SS304/SS316/SS16L/ALLOY STEEL OTHER MATERIAL ON REQUEST.
- ORIFICE PLATE: SS304/SS306/SS316L/PVC ETC OTHER MATERIAL ON REQUEST.
- STUDS &NUTS: ASTM A193 GR.B7/A194GR.2H/SS OTHER MATERIAL ON REQUEST.
- GASKETS: CAF/PTFE/SPIRAL WOUND/NEOPRENE/NON-ASSBESTOS OTHER MATERIAL ON REQUEST

ORIFICE PLATE GUIDE

CONCENTRIC ORIFICE PLATE

The bore and bevel is the standard method of limiting the plate edge thickness. The bevel is machined at a 45° angle to the desired edge thickness. Unless otherwise specified, plates will be bevelled to 1/50 of the line I.D. or 1/8 of the orifice bore, minimum governing.



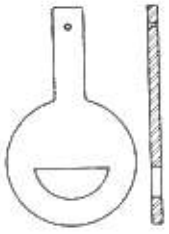


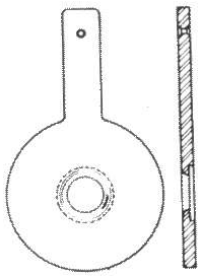
BORE AND COUNTER BORE

The Bore and Counter bore is a special method in limiting the plate edge thickness. Instead of beveling at the normal 45°, the plate is counter bored to the desired edge thickness.

SEGMENTAL

Segmentally bored orifice plates are provided for measurements where solids are entrained in a gas or liquid flow stream. The circular portion of the bore is inscribed within a circle which is normally 98% of the pipe diameter. The segmental opening may be placed either at the top or bottom of the pipe. Industries using these bores include sewage treatment, steel, chemical, water conditioning, paper and petrochemical



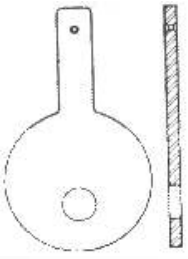


ECCENTRIC

Eccentrically bored plates are plates with the orifice off-center, or eccentric, as opposed to concentric. The bore of the eccentric orifice is normally inscribed in a circle which is 98% of the pipe diameter, so that solids or slurries may pass through. Eccentric orifice plates are used in many industries including heavy and light chemicals, steel, paper, atomic and petrochemicals.

QUARTER ROUND

The Quarter-Round, or Quadrant bore, is an orifice with the inlet edge rounded. The radius of the quarter-circle bore is a function of the orifice-to-pipe ratio (d/D). Thickness at the throat is equal to the radius. This bore is specifically designed for fluids of high viscosity, such as heavy crude's, syrups and slurries. Quarter-Round bores are recommended for viscous flows having Reynolds Numbers below 100,000.



ORIFICE PLATES & FLANGE ASSEMBLIES

Flowtel offers a complete range of Orifice plates for a variety of flow conditions fro mounting between flanges for Carrier Rings and with RJ plate holders for mounting between RJ Flanges.
Flowtel's Orifice Flange Assemblies are made to AGA/ASME recomendations and are reliable means to flow measurement. Assemblies to other international standards Viz. ISO,BS,DIN etc. are also available.
Flowtel's Orifice Flanges cover complete range of sizes pressure rating upto ASA 2500 of ANSI B16.36 as standard and dimensions as per other major international standard viz.- APL, MSS, BS and DIN etc. are also available on request. These flanges are available in various types such as Weld neck, slip on, Scewed with facing FF RJ, TG etc avrious types of tapping available are viz. Flange, Corner and D-D/2. Orifice Bore calculation can be carried out as per ASME MFC-3M, ASME 19.5 ISO 5167/BS1042, R.W. MILLER and L.K. Spink etc.

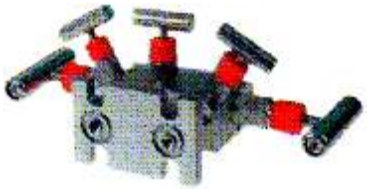
FLANGES : Carbon Steel/ ASTM A105/ ASTM A 182 / ASTM A 350/ Ss304/ SS04L/ SS 316/ SS 316 L/ PP/ PTFE
ORIFICE PLATE : Ss304 / SS304L / Ss316 / SS 316 L / Monel / HAST ALLOY / PP / PTFE Other material on request.
STUDS & NUTS : MS/SS/ASTM A193 Gr. B7 /A194 Gr. 2h
GASKETS : SPIRAL WOUND/CAF/PTFF/AF120
Fasteners & Gaskets of other material specification available on request.

Integral Orifice Flange Assembly (SORF)

Orifice Plate with WNRF Flange Assembly

3 Way 'T' Type Manifold

Integral Orifice Flange Assembly (SORF)



5 Way 'T' Type Manifold

Condensate Pot

ORIFICE FLANGE ASSEMBLIES WITH DP TRANSMITTER

FLANGES : Carbon Steel/ ASTM A105/ ASTM A 182 / ASTM A 350/ SS304/ SS04L/ SS 316/ SS 316 L/ PP/ PTFE
ORIFICE PLATE : SS304 / SS304L / SS316 / SS 316 L / MONEL / HAST ALLOY / PP / PTFE Other material on request.
STUDS & NUTS : MS/SS/ASTM A193 Gr. B7 /A194 Gr. 2h
GASKETS : SPIRAL WOUND/CAF/PTFF/AF120
Fasteners & Gaskets of other material specification available on request.

FEATURES

- Repeatability of reading up to 0.1 %.
- High flow rate turndown ratio.
- Suitable for liquid, Gas & Steam flow application.
- Choice of linear or square root out put.
- A/D or D/A converter not required as the electronic unit can be directly hooked up with the control system.
- Piezo resistive sensor for temperature & pressure compensation.
- Programmable engineering units for display.

TURBINE FLOWMETER

Flowtel series FLTF100 2 wire /FLTF200 4 wire turbine flow transmitter specially used for various industrial applications. The flowing media engages a vaned rotor causing it to rotate at an angular velocity proportional to flow rate. The pick-up coil senses the spinning motion of the rotor inside the pipe & converts it into a pulsating electrical signal. Summation of the pulsation electrical signal is directly related to the total flow. The frequency is linearly proportional to flow rate which is converted to electrical signal 4 - 20 mA.

FLTF 100

TECHNICAL SPECIFICATIONS

Media:	Liquids (Clear)	Process Temp. :	150 °C max
Viscosity :	100 cp max	Process Pressure :	30 kg/cm3 max
Pick off Type:	Magnetic sensor	Construction Material :	Body, Bearing, Support & Flange - SS 316
Line Size :	15 NB to 150 NB	Rotor :	SS 410 / SS 410 with Teflon coating
Display :	8 x 1 LCD/ 4x1 LED, 8 x 1 LED	Shaft :	Tungsten carbide
Type of Output:	4 to 20 mA DC, 2 wire/Pulse 30 mV	Power Supply :	Loop powered, 24 V DC, External
Calibration Range:	As per requirement	Power Consumption :	< 40 mW
Accuracy :	+/- 1% F. S.	Response Time :	< 100 mSec
Linearity :	+/- 1%	Temperature Coefficient :	+/- 0.01% per °C
Repeatability :	+/- 1%	Transmitter Enclosure :	Flame-proof, IP-65, IIA, IIB CMRI Certified
Pressure Drop :	Approx 0.28 kg/cm3 at max. flow	Process Connections :	Flanged / Threaded / Tri-clover
Turn down ratio :	10:1 to 100:1	Mounting :	In-line (Horizontal OR Vertical)
		Operating Conditions :	Temperature 0 to 55°C / Humidity 5 to 95%

LINE SIZE SELECTOR CHART WITH RESPECT TO FLOW RANGE

Line Size	15	20	25	40	50	80	100	150
Flow Range M^3/Hr	0.2-2.2	0.6-6	1-10	2.5-25	4.5-45	9-90	18-180	35-350
F/F Distance	175/208	175/210	175/213	175/220	175/238	238/250	250/275	250/275

ELECTRO MAGNETIC FLOWMETER

Micro-controller based full bore type electromagnetic flow transmitter specially used for various industrial applications. These flow transmitters accurately measures the flow rate of conductive liquids & slurries in closed pipes. Due to simple & rigid design the flow transmitter is an obstruction less & maintenance free instrument in place of conventional mechanical flow measuring device. The use of 'Pulsed DC' technology offers highest ability & better measuring accuracy in the form of electrical signal 4 - 20 mA DC linearly proportional to volumetric flow. The instrument is based on Faraday's law of electro-magentic induction. A magnetic field is generated by the instrument in the flow tube. The fluid flowing through this magnetic field generates a voltage that is proportional to the flow velocity. Corresponding electrical output is provided with respect to measuring voltage.

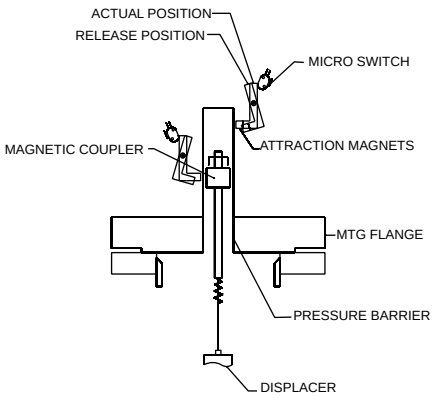
FLMAG-200

TECHNICAL SPECIFICATIONS

Media	: Liquids (Clear)	Display :	1) 16 x 2 LCD
Line Size	: 15 NB to 2000 NB.		:2) 4 digit, 0.3" Red LED for Flow Rate Indication
Accuracy	: +/- 0.5% F. S.		& 8 digit, 0.3" Red LED for Totalised Flow Indication
Process Temperature	: 150 °C max	Repeatability :	+/- 1%
Type of Output	: 4 to 20 mA DC, Isolated, Pulse, RS 485	Linearity :	+/- 0.5%
Calibration Range	: As per requirement (Factory Calibrated)	Excitatio:	Pulsed DC coil
Process Pressure	: 10 kg/cm2 max	Viscosity:	200 cp max
Material of construction	: Lining - Neoprene / Rubber / PTFE (Teflon) Flange - MS / SS Electrode - SS 316, SS 316 L, Hastalloy "C", Platinum Wetted Parts - SS 316, Body - MS		
Power Supply	: 1) 230 V AC, 50 Hz +/- 10% 2) 24 V DC, External	Dimensions:	As per chart on rear
Isolation	: 1.4 KV between Input, Output & Power Supply	Process Connections:	ASA B 16.5, Flanged
Temperature Coefficient	: +/- 0.1% per °C	Mounting:	In-Line (Horizontal or Vertical)

Line Size	15	20	25	40	50	65	80	100	150	200	250	300	350
Flow Range M^3/Hr	0.4-4.2	0.6-6	1-10	2.7-27	4.2-42	7.1-71	10-100	17-170	38-380	67-678	100-1000	150-1500	200-2000
F/F Distance	152	152	200	200	200	200	200	250	300	350	450	500	550

DISPLACER TYPE LEVEL SWITCHES



Displacer type level switch is based on buoyancy principle. It is used for controlling the liquid level in underground & overhead tanks.

Application	:	Water, Furnace Oil, Lube Oil Chemical, Solvent, effluent etc.
Protection	:	Weather proof IP 65/Ex-Proof IIA & IIB
Output	:	Relay contacts
Switch Rating	:	5 Amps 230 VAC
Pressure	:	20kg/Cm^2
Temp.	:	150^0 C
Conn.	:	3"(Min.) Flanged or Screwed

(1)	Service	:	To Mention
(2)	Op Press Kg/Cm2g/Temp/S.G	:	To Mention
(3)	All wetted parts malt	:	SS/PP/PVC/HDPE/PVDF/PTFE etc.
(4)	No. of Displacer	:	1, 2, 3 (HIHI, HI, LO & LOLO)
(5)	MOC OF Spring	:	SS 316 / Inconel /Monel /SS sleeved with PTFE
(6)	MOC Multistrand wire rope	:	SS316 /PP/SS sleeved with PTFE
(7)	Mounting Flange	:	3" ANSI 150# RF N 16.5 (OR) to Mention
(8)	Connection Head	:	Cast Aluminium Weatherproof of Flameproof
(9)	Cable Entry	:	¾"ET (F) STD
(10)	Switch Differential	:	60-80 mm Approx
(11)	Guide Pipe perforated	:	Will be supplied as per the request
(12)	Repeatability	:	±1%
(13)	Measuring Range / Tank Height	:	To Mention
(14)	HI & LO actuation Points	:	To Mention from bottom of the flange
(15)	Adjustable	:	The switches are adjustable over the entire stem length to have various level actuation points

RF LEVEL SWITCHES

Rf DESIGN

Rf Principle based Level Sensors have been designed based on the considerations discussed and various other aspects. Flowtel's Rf Level Sensors are highly reliable for use with materials that are conductive or nonconductive, granular or slurries, fines to large particles and contaminated or pure liquids at varying temperatures and pressures

FUNCTION

Flowtel's Rf Level Switch Series FLRF 20 Models work on Rf Principle. Independent but identical low power Rf signals equal in frequency, phase, amplitude and wave shape generated in the Electronic Controller are provided to active and shield sections of the Sensing Probe, whereas, the reference ground of electronics is connected to the vessel shell. The signal provided to the shield section is maintained constant by use of a compensating circuit in the Electronic Controller while the signal applied to the active section varies with change of media between probe and the vessel shell/wall.

The suspended dust or material in-transit do not have cohesive inter-particale contact, and have no role in this Rf Principle of Level Sensing. The variation in active signal is compared with the constant shield signal. At a predetermined value of difference a relay is actuated to obtain potential free relay change-over contacts for further alarm and controls.

TOP MOUNTED MAGNETIC LEVEL SWITCH

A magnetic float moves up and down on probe immersed in a liquid. The float energizes the hermitically sealed sensors, which change from NO to NC or otherwise as the float - passes them.

FEATURES

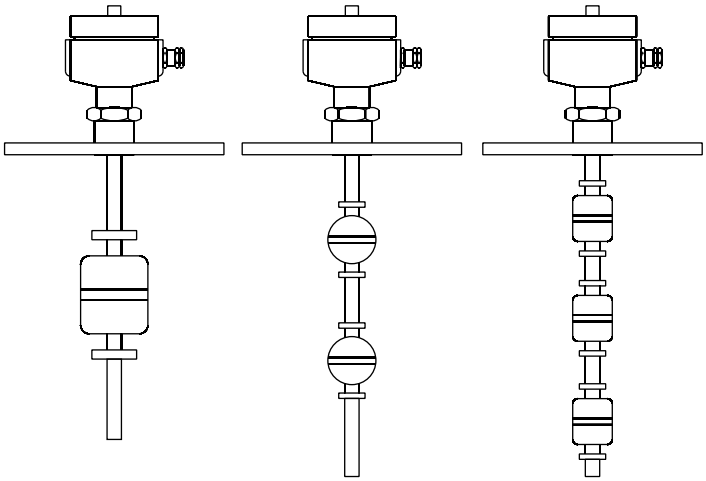
(1) Versatile System Contact Points can be changed in accordance with process necessity
(2) Less Wear & Tear- Easy on Maintenance
(3) Inter linking liquid level in parallel tanks
(4) External cage on request

Standard Range :	200 mm to 2000 mm
Temperature	: Upto 200 ℃
Pressure	: Upto 20 KG/CM2
MOC	: SS 304, SS 316, SS 316L, PP
Connection	: Flange End/Scrwed or to mention

FLTS

DETAILS REQUIRED FOR QUOTATION

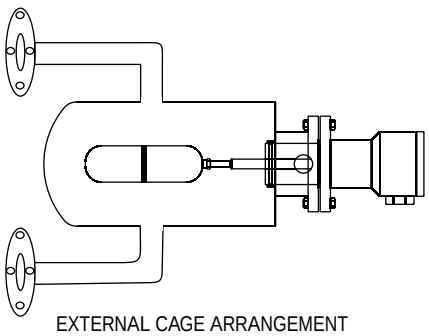
(1) Height of the tank or probe length required.
(2) No. of points to be controlled with respect to top flange.
(3) Material of construction of wetted parts.
(4) Top nozzle detail which is welded on tank on which you are intenting to mount level switch.
(5) Housing enclosure (flame proof/ weather proof).



SIDE MOUNTED MAGNETIC LEVEL SWITCHES

LIQUID LEVEL SWITCHES

The range is widespread and meets various industry applications catering to all type of operating conditions. The switches can have miniature floats, vertical or horizontal mounting operating in single and multiple liquid levels. Side Mounted Magnetic Level Switch As the liquid level in the tank changes, a horizontal magnetic float moves about a fulcrum in accordance with the level. The micro switch contacts (NO/NC) are accordingly activated providing an output for further industry processing.



EXTERNAL CAGE ARRANGEMENT

FLSLS

FEATURES

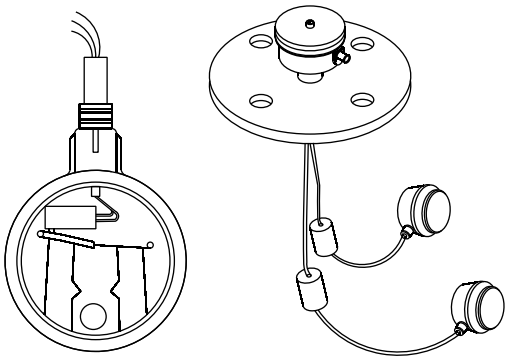
Temperature : Upto 300°C
Pressure : Upto 75 KG/CM2
MOC : SS 304, SS 316, SS 316L, PP, PVC
Less wear & tear- easy on maintenance inter linking liquid level in parallel
tanks External cage on request

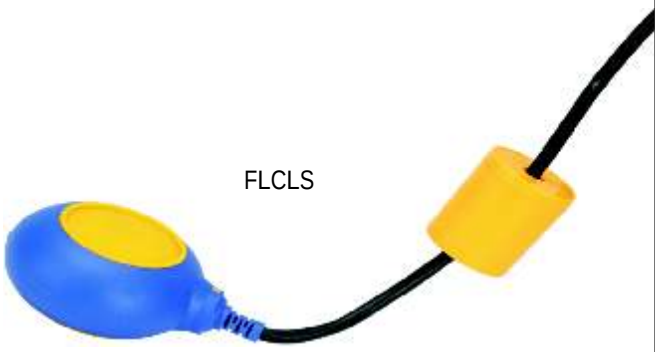
APPLICATION

(1) High / Low level Alarm
(2) Automatic Pump/Valve control
(3) Elimination of tank over flow
(4) Enhances pump safety against dry running

CABLE TYPE BALLOON LEVEL SWITCHES

(1) An Economical, Viable alternative for control in liquid levels
(2) Simple, Rugged & Reliable
(3) Range: upto 10 mtr
(4) Switch rating: 10-14 Amp @ 230 VAC
(5) Material of Construction PVC suitable for most liquids
(6) Housing: Weatherproof to IP 66/68/ Flameproof - On request.





FLCLS

DETAILS REQUIRED FOR QUOTATION

(1)	Tank Height
(2)	No. of Contacts

CAPACITANCE LEVEL TRANSMITTERS

DESCRIPTION

Flowtel FLCLT-10 are capacitance type level transmitters. The probe is based on proerties of capacitor. Vessel wall & probe forms two electrodes. If vessel is of non conductive material, the probe will be double rod type. The distance between electrode & surface area of electrodes remain unchanged. The variable is the depth of the material being measured which represents the dielectric constant between two electrodes. Air & vacuum have relative dielectric constant as 1 & that of liquids, it is greater than 1. The capacitance of the capacitor the therefore depends on how much material lies between the probe & vessel wall i.e. whether the probe is covered with or free from material. The capacitor changes with change in level of the material & provides corresponding 4-20 mA DC continuous output.

TECHNICAL SPECIFICATIONS

➢ Probe Length	:	As per requirement (max 3 mtr.)
➢ Type of Output	:	4 to20 mA DC, 2 wire
➢ Accuracy	:	±2% F.S.
➢ Linearity	:	±2%
➢ Process Temperature	:	250°C max
➢ Probe MOC	:	30 kg/cm^2 max
➢ Power Supply	:	SS 316 with Teflon coating
➢ Power Consumption	:	24 V DC, External
➢ Response Time	:	< 6 VA
➢ Temperature Coefficient	:	< 1000 mSec
➢ Process Connections	:	Flame-proof, [P-65, IIA, IIB, CMRI Certified]
➢ Mounting	:	Flanged/ Threaded
➢ Operating Conditions	:	Top of the tank
➢ Optional	:	Temperature 0 to 55°C / Humidity 5 to 95% non condensing
➢ Local Display	:	8 x 1 LCD

LEVEL INDICATOR

Level indicators are devices used in the measurement of level of fluids at various industrial applications. These devices are used to determine the level of liquid in tanks, drums. pressure vessels etc..

There are many level indicators to suit the needs of different applications. Normally, fluids are used in many forms in highly commercial industries. Without proper devices it will be very difficult to find the quantity and level of fluid stored. Also, in certain situations where the nature of fluid is dangerous or the place in which the liquid is stored is of such a nature that it is manually impossible to find the level, then the level indicators are of utmost importance.

Depending on the type of application used, the type of level indicator should be selected. For example, in the process industry.

TYPES OF LEVEL INDICATORS

There are many different types of level indicators, each with its own application.

- TUBULAR LEVEL INDICATOR
- REFLEX LEVEL INDICATORS are for applications that involve high temperature, high pressure and use of corrosive fluids. The colorless fluid used in this apparatus gives better clarity to level indication.
- TRANSPARENT LEVEL INDICATORS are highly useful in chemical industries and petrochemical fertilizers. As the fluid is stored in high pressure and high temperature, the transparent level indicator is very useful to find the fluid level.
- FLOAT & BOARD TYPE LEVEL INDICATOR , some other level indicators for reference are tubular level indicators, float and board level indicators, sight flow indicators, window type sight flow indicators, manometers, and bi-color indicators. Some of the level indicators are provided with various features, such as a built-in controller, continuous output measurement, and adjustable alarm switches.
- MAGNETIC LEVEL INDICATORS are red followers that need magnetic level indicators. Cylindrical floats and powerful magnets are used to find the level of the fluid. The float movement is followed by magnetic capsules, and thus, the level in indicated. This type of indicator has good visibility and is absolutely safe to use as it contains non-fragile metal chamber.

TUBULAR LEVEL INDICATOR

EASY MOUNTING

Flange and screwed mounted parallel along the side of the tank multiple mounting/ Orientation alternative on request.

SIMPLE OPERATION

When the liquid level rise in the tank, the liquid also rise inside the glass tube carrying a graduated Scale. The liquid level in the tank can be conveniently read against the scale.

IN-BUILT RUGGEDNESS

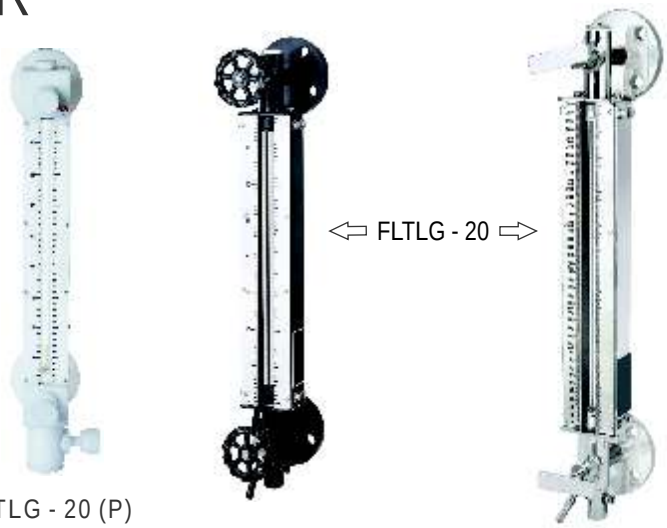
Box type guard made of steel channels (Poly propylene for corrosive applications) Enhances safety in operation and long usability.

CLEAR FULL VISIBILITY

High quality Borosilicate glass tube.

DETAILS REQUIRED FOR QUOTATION

(1)	Center to center distance
(2)	Material of construction
(3)	Connection detail
(4)	Operating pressure & temperature



FLTLG - 20 (P)

SPECIFICATION

Glass Tube	:	Borosilicate
Glass OD	:	16mm, 19mm, 22mm
Material of All Wetted Parts	:	MS, SS 304, SS 316, SS 316 L, PP, PTFE
Gland Packing	:	PTFE
Glass Protector	:	MS powder coated, SS, PP
Scale	:	Aluminium, SS, Acrylic, Bakelite
Mounting	:	Side, rear, bottom & top
Rated Temp.	:	150 °C
Rated Pressure	:	10kg / cm²
Vent & Drain	:	Plug / valve
Connection	:	Flanged / screwed / or to mention

REFLEX LEVEL GUAGE

WORKING PRINCIPLE

Reflex glass level gauges working principle is based on the light refraction and reflection laws.

Reflex glass level gauges use glasses having the face fitted towards the chamber shaped to have prismatic grooves with section angle of 90°. When in operation, the chamber is filled with liquid in the lower zone and gases or vapors in the upper zone; the liquid level is distinguished by different brightness of the glass in the liquid and in the gas/vapor zone. The reflex level gauges do not need a specific illumination: the day environmental light is enough. Only during the night an artificial light must be provided.

The different brightness in the two zones is obtained as explained below:

LIQUID ZONE

This zone appears quite dark when the gauge is in operation and lighted as above said.

Given the construction, most of the environmental light rays incident on the external face of the glass are quite perpendicular to said face and, therefore, not deviated by the glass. These rays reach the glass/liquid interface with an inclination of approx. 45°. The critical angle glass/liquid is always superior to 45°. Therefore the rays incident within the critical angle (practically the totality) are refracted within the liquid and, since the internal walls of the gauge chamber are not reflecting, the rays cannot be seen from the outside. In fact the zone will appear dark, nearly black, to the observer.

GAS/VAPOR ZONE

This zone appears almost silver bright to the observer. As for the liquid zone, the light rays reach the glass/gas-vapor interface with an angle around 45°. Since this angle is greater than glass/gas-vapor critical angle, the rays are not refracted , but totally reflected making 90° turn, thus reaching the nearest glass/gas-vapor interface again with angle of 45°. For same reason they will be reflected and turned by 90° towards the observer, to whom the zone will appear silver bright.

APPLICATIONS

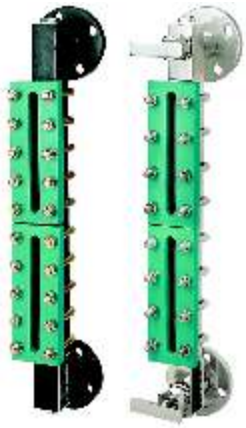
Reflex glass level gauges can be used in most of the cases and offer great advantages in terms of: low initial cost, low operating cost, easy level reading.

Reflex level gauges cannot be used in certain cases as for example:

- When the separation level between two liquids has to be read (interface)
- When besides the level indication, the observation of the liquid colour is required
- When the process fluid is high-pressure water steam, since in this case the glass must be protected from the solvent action of the boiler water by using mica shields
- When the process fluid is such that can corrode the glass (e.g. high temperature alkaline solutions or hydrofluoric acid), since ica shields or Polytrifluorochloroethylene shields must be used to protect the glass

SPECIFICATIONS

Type	:	Reflex / Transparent
Material Of Construction	:	Toughned Borosilicate Imported Kinger / Maxos / Indian make
Material Of Body	:	CS/SS 304 / SS316/PP/PTFE
Material Of Cover Plate	:	CS to ASTM A-105 (Non wetted parts)
Valve Type / Design	:	Ball Check / Auto Shut-off
Valve Body Material	:	CS/SS 304/SS316/PP/PTFE
Valve Trim Material	:	SS 316/SS-304
Vent / Drain Connection	:	1/2" NPT(F) with plug (or) to mention
Material Of U-Bolts, Studs & Nuts	:	SS 316 MS, EN-8, SS or to mention
Gaskets / Seals	:	CAF, AF 120, PTFE



Reflex Level Indicator
Model No. FLRLG-10

TRANSPARENT LEVEL GUAGE

Transparent Level Indicator
Model No. FLTTG-20

WORKING PRINCIPLE

Apart from glass tube level gauges, transparent level gauges are always fitted with two plate transparent glasses between which the fluid is contained. The fluid level is indicated as the result of the different transparency of the two media and in some cases (for water steam), by conveying upwards on to the surface of separation (between liquid and gaseous substances) a source of light located at the back of the gauge, the rays of which are totally reflected down to the observer.

APPLICATIONS

Transparent level gauges are suitable for almost all installations.
In fact they permit:

- the use of mica shields or Polytrifluorochloroethylene shields to protect the glass from the corrosive action of the process fluid
- the observation of interface
- the observation of the liquid colour

This instrument consists of a metal body, machined to have an internal chamber and one or more front windows (on each side of the gauge). On each window a special high resistance plate transparent glass is applied with sealing joint and metal cover plate hold by bolts and nuts.

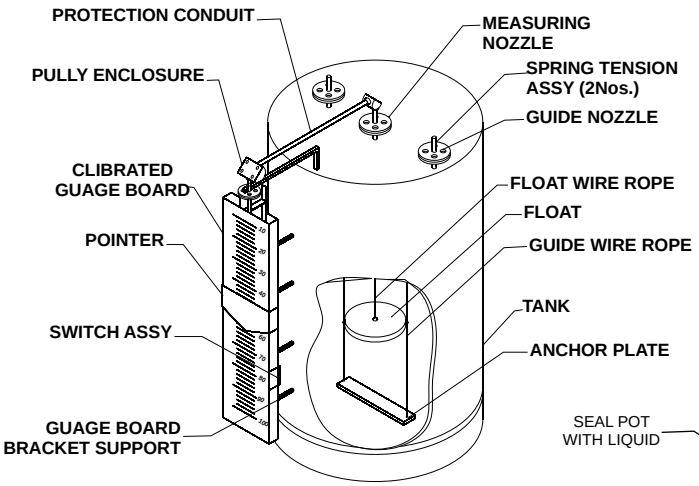
The chamber is connected to vessel with cross fittings and flanged, threaded or welded ends. Usually, between the instrument and its connecting ends, valves are fitted to consent shut-off piping and to disassemble the level gauge without to empty the vessel. Drain valves can also be fitted to cross fittings device.

To avoid leakage in case of glass breakage, safety ball-check device can be provided in cross-fittings or shut-off valves. This kind of indicator is suitable for water/steam. To protect glass surfaces from corrosive action of the process fluid, Transparent Level Gauges can be fitted with Mica shields or Polytrifluorochloroethilene shields. This kind of indicator is suitable for liquids colorless and very fluid.

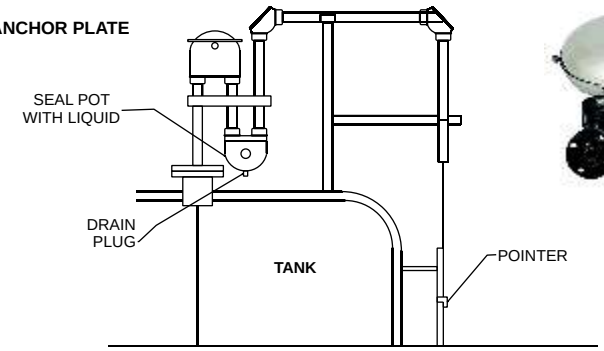
In some case (i.e. for water / steam) the best reading is obtained by conveying upwards on the surface of separation (liquid/steam or vapor interface), a source of light, located on the back of the gauge, the rays of which are totally reflected down to the observer.

FLOAT & BOARD LEVEL INDICATOR

As the liquid level rises, a large dia float moves up with the change in liquid level in the tank.
The float is attached to a multi strand wire rope, which passes through 2 nos. friction less specially designed pulleys. The Pulleys in turn are connected to a pointer, which moves on a graduated scale by



Model No. FLBL-10



FLBL 'U' Seal Arrangement

FEATURES

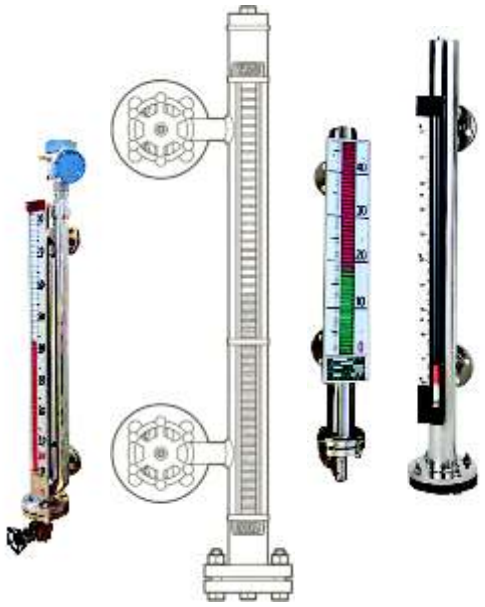
(1) Clear visibility
(2) Powder coated screen printed scale board
(3) Less corissosion powder coated finish
(4) Easy movement nylon roller pointer glides effortlessly
(5) No guide wire specially designed self centering float/ Anchor plate optional
(6) Non- stretching multistrand wire rope in SS/PP/Nylon
(7) Dust free housing for pulleys - minimizing friction in movement
(8) Easy to install, modular design,
(9) Vapour tight-version used for evaporating fluids.

DETAILS REQUIRED FOR QUOTATION

(1)	Height of the tank
(2)	Material of construction of wetted parts
(3)	Top nozzle detail
(4)	Service
(5)	Specific gravity
(6)	Operating temperature
(7)	Operating pressure

MAGNETIC LEVEL GUAGE

The Magnetic Level Gauge is the instrument to read a level indication in whatever plant or operating conditions giving free maintenance, preventive security against leakage, environmental safety, sure and trouble free application with chemically aggressive, pollutant, harmful or poisonous, inflammable or explosive, optically similar fluid interface.



OPERATING PRINCIPLE

- The principle whereby the liquid in communicating vessels is always at the same level
- Archimede's principle according to which a body immersed in a liquid receives a buoyancy equal to the weight of displaced liquid
- The principle of attraction between North and South poles of two permanent magnets and that of repulsion between like poles.
  This principle has two applications in the magnetic level gauge:
- First between the magnet in the chamber float and every single magnet of the indicating scale
- second between the magnets of the indicating scale

DESIGN

The magnetic level gauge consists of:

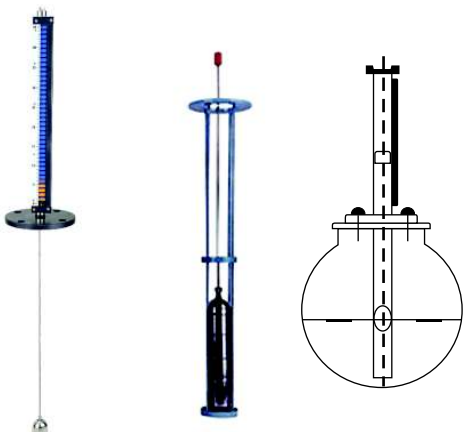
- A vertical chamber consisting of a tube of suitable diameter and thickness containing a float wherein a permanent magnet is placed exactly on the liquid level line
- Two horizontal stub pipes for connection to the vessel containing the liquid of which we wish to know the level
- Two stop valves (recommended, but not mandatory) one on each stub pipe, to isolate the level gauge
- An indicating scale, outside the vertical chamber, consisting of a case of non-magnetic material with transparent front face containing a set of small permanent magnets enclosed in small cylinders which can rotate on their horizontal axis. These cylinders show an external surface having two different colours.

According to the orientation of each magnet (due to the action of the magnet in the float) each cylinder will show externally half of its surface of one colour or the other.
The indicating scale will be of one colour (e.g. white) over the chamber area taken up by gas, vapour or steam phase contrasting with the other colour (e.g. red) over the chamber area taken up by liquid phase.

APPLICATIONS

The application range is very wide and includes all the situations where the fluids are:

- At high pressure, at low or high temperature
- At low pressure, at low or high temperature
- Chemically aggressive
- Pollutant to environment
- Noxious or poisonous for people health
- Inflammable or explosive
- With identical optical characteristics of the superimpose phases (interface)



TOP MOUNTED MODEL NO. FEMLT- 200

DETAILS REQUIRED FOR QUOTATION

(Top Mounted Magnetic Level Indicator - Model No.: FEMLT -200)

(1)	Height of the tank & height of the nozzle welded on it
(2)	Name of the liquid
(3)	Material of construction of wetted parts
(4)	Specific gravity of the liquid
(5)	Operating temperature
(6)	Operating pressure
(7)	Top nozzle detail on which you are intending to mount level indicator

BASKET STRAINERS

Basket Strainers feature top removal of the screen. The screen is in the form of a basket, with a lifting handle, so that all particulate captured and retained bythe screen can be easily removed for disposal.
The are intended for applications where large amounts of solids particulate are expected and where the clean-out will be frequent. For easily flushable solids, a modified cone bottom basket can be tilted with automatic or manual blow-down through drain port. This will allow clean-out without removal of the screen, and without interrupting the flow process.

BASKET STRAINER DUPLEX STRAINER

Y-STRAINERS

Y Strainers take their name from their configuration. They are typically used in application where the amount of solids to be removed is small, and where frequentclean - out is not required. They are most commonly used in pressurized lines, gas or liquid, but can also be used in suction or vacuum conditions. A Y-Strainer has the advantage of being able to be installed in either a horizontal or vertical position. However, in both cases, the screening element or "leg" must be on the "downside" of the strainer body so that entrapped solids can be properly collected and held for disposal. A blow down plug on the drain port will allow clean-out without removal of the screen, and without interrupting the process flow.

FEATURES

(1) Large basket size holds sufficient solids for the required time between clean-outs

(2) Top removal of screen with a lifting handle

(3) Maintenance features includes Automatic flush, Davit arm assembly, pressure gaps or difficult pressure gaps or difficult pressure gaps, special internal coatings, single or multiple baskets

(4) Baskets made of heavy gauges perforated stainless steel lined with wire mesh as low as 5 microns

MANOMETER

METALIC / ACRYLIC BODY MANOMETER

Pressure is defined as a force per unit area - and the most accurate way to measure low air pressure is to balance a column of liquid known weight against it and measure the height of the liquid column so balanced. The unit of measure commonly used are mm hg /inches hg using mercury as the fluid, and mm wc / inches wc using water or oil as the fluid.

Mcleod Guage

U-Tube

Single Limb

Inclined

SIGHT FLOW INDICATORS

Flowtel sight flow indicators provides a quick, reliable and economical way to verify fluid flows through industrial process lines. Sight Flow Indicator is available with four styles of indicators including rotar wheel, flapper, or drip tube, Plain. A rotar wheel indicator style is ideal for indicating flow of clear or opaque liquids as well as observations from a distance. It can be installed in any direction, upward, downward, vertical or horizontal lines. A flap indicates at a glance which direction the flow is moving in horizontal lines or vertical lines with upward flow. A port in the shape of a whistle or drip tube is ideal for gravity flow, extremely low flow or intermittent flow. The drip tube keeps the fluid from dripping on the sight glass, ensuring visibility.

DOUBLE WINDOW SIGHT FLOW INDICATOR

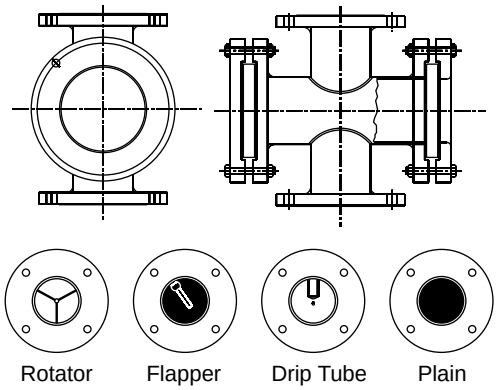
NB	Face to Face IN MM	Visible Dia IN MM
15	160	38
20	160	38
25	160	38
40	200	50
50	230	65
65	310	96
80	310	96
100	350	150

FEATURES & BENEFITS

- Simple, reliable and economical way to verify liquid flows through industrial process lines
- Many specials are available upon request to meet various conditions of pressure, temperature, fluid types and mechanical dimensions

SPECIFICATION

Item	: Sight glass
Type	: Double window
Nuts & bolts	: Carbon steel/SS-304/SS-316
Sealing	: CAF/PTFE/METALLIC GRAPHITE/SPIRAL WOUND
Cushion	: CAF/PTFE/METALLIC GRAPHITE/SPIRAL WOUND
Cover Plate	: M.S/ SS-304/SS-316
Body Material	: ASTMA A216 Gr. WCB/ASTM 351 CF8/ ASTM351 CF8M/A106 GRB/Carbon steel/SS-304/SS-316
End Connection	: Flanged/ screwed



DOUBLE WINDOW SIGHT GLASS
FLDW-10

FULL VIEW SIGHT GLASS
FLFV-20

FULL VIEW SIGHT FLOW INDICATOR

SPECIFICATION

Item	: Sight glass
Type	: Full view
Glass	: Borosilicate with flare end
Packing	: PTFE
F/F Distance	: 150 mm
End Connection	: Screwed/ flanged etc.
Tie Rod & Flanges	: SS-316L, SS-316, SS-304L, SS-304,MS,PTFE BUSH & WASHER

SIZE(NB)	F/F Distance IN MM
15	150
20	150
25	150
40	150
50	150
80	150
100	150

DETAILS REQUIRED FOR QUOTATION

(1) Type (full view or double window)	(4) Operating pressure
(2) Size	(5) Operating temperature
(3) End connection detail	(6) Material of construction

TEMPERATURE SENSORS, INDICATORS & CONTROLLERS

CONVENTIONAL THERMO COUPLE & RTD ASSEMBLIES

- Ceramic insulated wide in bead construction
- Available in K and N caliberation
- SS316 and INCONEL 600 are standard sheath materials
- Also available in SS310/SS316 & INCOLOY 800
- Terminal heads for flameproof application also
- ½" BSP (F) cable entry as standard
- Single cable entry without cable gland as standard
- Double cable entry and cable glands optional
- Elements terminated into nickel plated brass terminals mounted
- on high purity ceramic terminal block
- All models also available with dual element configuration

THERMOWELLS & PROTECTION TUBES

- Wide range of BARSTOCK (Monolithic drilled well of bar material)
- and FABRICATED (Protection tube weld sealed at the end of drwan
- Metal Pipe) thermowells and protection tubes.
- Available in SS316/SS310/SS446/Hastalloy B&C,Tantalum/Monel

DIGITAL TEMPERATURE INDICATOR/MULTI POINT/SCANNER

SD Digital Temperature Controller are suitable for measure & control of highly precise Temperature of single/various stages of Heat & cool Process.

Features:

- DT-103/DTI-10M/DTI-13S08/1216
- 96 x 96 x 110 mm/ 72 x 72 x110mm/ 48 x 96 x110mm
- 48 x 72 x110 mm/ 96 x 192 x 200mm
- Range-50°C to 200°C, 400°C, 1200°C, 1600°C
- J&K Thermocouple Pt-100 (RTD) /4-20 mA/Pt-Pt-Rh 10% and 13%
- 3.5 digits, 0.5ÿ Red LED Display
- Accuracy : J,K ±1%, Pt-100/4-20 mA ±0.2%
- High Accurate design
- Hold Switch, Auto/Manual and Adj. Scan Time for scanner

PRESSURE GAUGE

Pressure Gauges – of LATM, brand Offers complete range of Pressure Gauge catering all the industrial low pressure to heavy-duty applications. Pressure Gauges ranging from (-) 1kg/cm2 (Vaccum) to Pressure up to 1400kg/cm2 with dial sizes starting from 40ND to 250ND.
Master / Test Gauges are made to 0.1%, 0.25 & 0.5%, accuracy with knife edged pointer and mirror scale as an option to dial sizes 150 & 250 ND.
Our scope of supply include Pressure Gauges for Low Gaseous Pressure (mbar, Capsule type), Liquid Pressure (mmWC, Schaffer Diaphragm), Medium to Higher Pressures (kg/cm2- bar, Bourdon tube type), for clogging & suspended media's (Diaphragm Sealed type), Flanged Ends type, For aggressive chemicals (Teflon Lined / Coated type).
Options of direct / flanged, bottom / back mounting, panel / surface mounting / flanged or with remote capillary (remote capillary used for medias at high temperature & line vibration). Liquid filling with crimped dials are for Hydraulic & OEM end users best-suited recommendation.
Triclover end / Homogeniser Pressure Gauges are of regular manufacture scope catering to food, beverage, pharmaceutical & dairy industries for sanitary applications.

A Quality Range of

Process Control Products

- **Rotameters**
  Acrylic body Rotameter, Metal Tube Rotameter, Glass tube Rotameter, Bypass Rotameter, Purge Tube Rotameter,
- **Flowmeter**
  Turbine Flowmeter, Electromagnetic Flowmeter, Oval Gear Flowmeter, Differential Pressure Flowmeter, Water Meter
- **Orifice plates / Orifice Flange Assembly**
  Concentric Orifice Plate, Multistage Orifice Plate, Integral Orifice Plate Assembly
- **Level Indicators**
  Tubular Level Indicator, Reflex Level Indicator, Transparent Level Indicator, Float and Board Level Indicator, Magnetic Level Indicator
- **Level Switches**
  Side Mounted Level Switch, Top Mounted Level Switch, Displacer Level Switch, Cable Balloon Level Switch, RF Level Switch
- **Level Transmitter**
  Capacitance Level Transmitter
- **Strainers**
  Y- Strainer, Basket Strainer, Duplex Strainer
- **Sight Flow Indicators**
  Double Window Sight Flow Indicator, Full View Sight Flow Indicator
- **Manometers / McLeod Gauge**
  Inclined Manometer, Single Limb Manometer, U-Tube Manometer
- **Temperature Sensors / Indicators**
  RTD, PT-100, Thermocouple, Temperature Indicator / Multipoint / Scanner/ Temperature Transmitter
- **Pressure Gauge / Pressure Sensor**
  Analog Pressure Gauge, Digital Pressure Gauge, Pressure Transmitter

FLOWTEL ENGINEERING

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