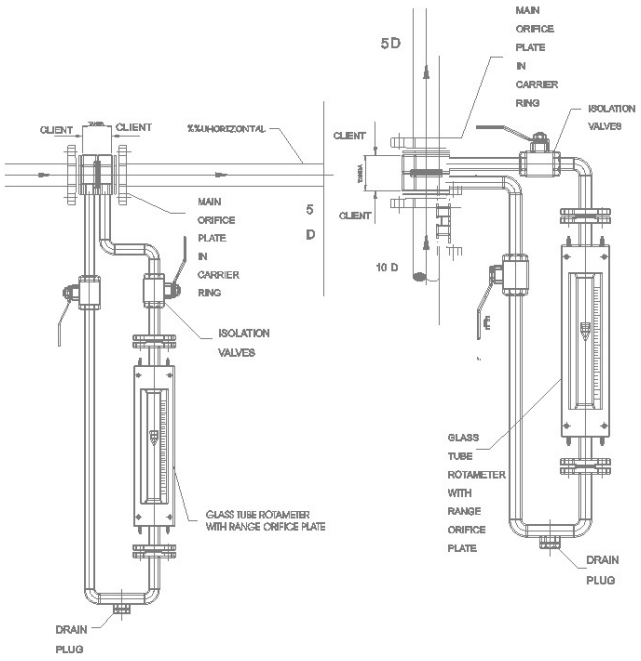
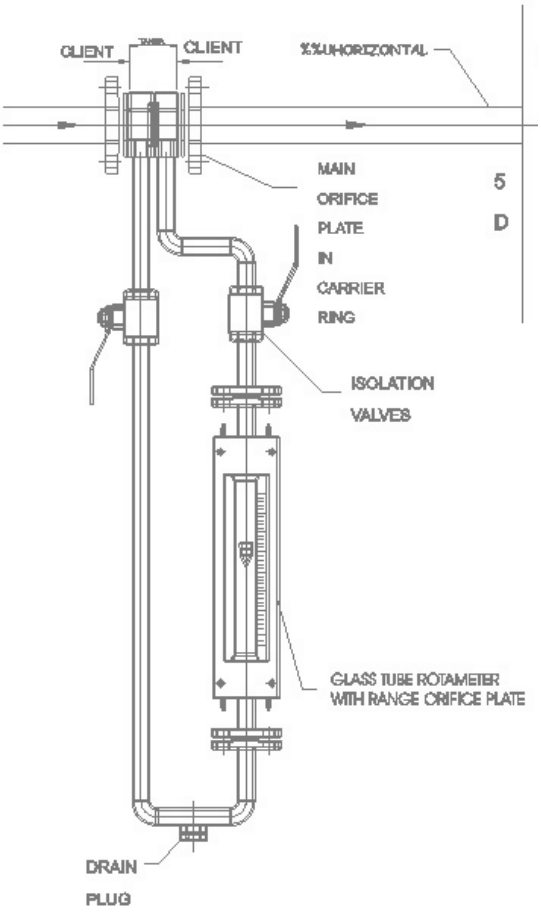
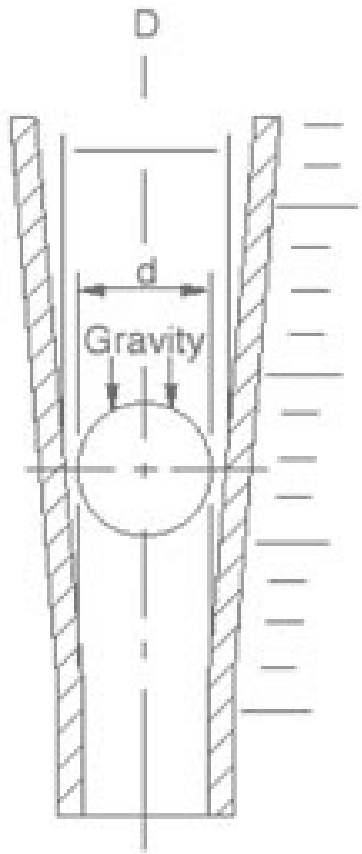


ADVANCE FLOW MEASUREMENT

Product Catalog





NO.	DESCRIPTION	MATERIAL
6	BODY STUD & NUT	ASTM A 193 Gr. B8M CL.2 / A 194 GR. 8M
5	DRAIN PLUG (SIZE : 1/2"=1/4" NPT) (SIZE : 1"=1/2"NPT)	S.S. 316L
4	GASKET	ASTM A 240 T 316L SPIRAL WOUND WITH GRAPHITE FILLER
3	SCREEN	S.S. 316 L (PERF. PLATE-18 HOLES/CM²)
2	COVER	ASTM A 182 GR. F 316 / 316L DUAL GRADE
1	BODY	ASTM A 182 GR. F 316 / 316L DUAL GRADE

Contact: +91 8097902746 **Email:** business@vdtechnologycenter.com **Web:** www.vdtechnologycenter.com

VD TECHNOLOGY CENTER™

ACRYLIC ROTAMETER :

Acrylic Rotameter is a Variable Area Flow Meter. It consists of a tapered tube, typically made from acrylic block, with a 'float' made of SS or PTFE. The differential pressure across the annulus area is constant. The float moves through the tapered tube up and down with respect to fluid flow. The vertical position of the float as indicated by scale is the measure of the instantaneous flow rate.

Specifications:

- Material of Construction : Acrylic
- Float : SS 316 / SS 304 / PTFE
- Tube : Within Acrylic Block
- Packing : PTFE / Nitrile
- Enclosure : Acrylic Block
- Line Size from 1/2" to 3"
- Flow Range : AIR : 1 LPM - 20000 LPM
  Water: 1 LPH - 40000 LPH
- FFD or CCD: 75mm to 500mm
- Accuracy : +/- 4% to 5% of Full Scale
- Measuring Span : 1:10
- Scale : Engraved on Acrylic Block

Application:

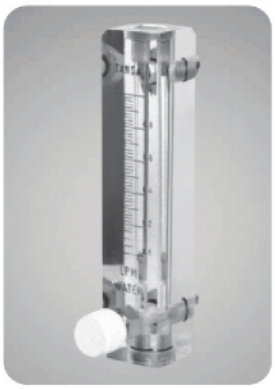
Acrylic Rotameters are mainly suitable for Indoor Applications. These Rotameters are used for Air, Water and other non-corrosive fluids.

1 Latching type Switch

VDTC has developed **'Latching Type Switch'.** Unlike the proximity switch, when the float passes up in front of the switch, the switch becomes open. Even if the float goes up beyond the level, the switch remains open, i.e it latches off. Unless the float comes down and goes below the level, the switch will not turn on. Thus, the switch is Bi-Stable with stable. The switch operates by sensing the direction of the float travel

Technical Specification:

Contact	:	Bi-Stable
Supply	:	8V through NAMUR Switching amplifier
O/P	:	NO and NC Contacts



Fluid - Air

Fluid - Water

Flow Range Chart
(Fluid : WATER, Temp: AMB ; Press. : ATM)

Model No.	Flow Range (LPH)	Thread Connection	Flange Connection
ACR 01	1 – 10	¼"	15 NB
ACR 02	3 - 30	¼"	15 NB
ACR 03	6 – 60	¼"	15 NB
ACR 04	10 – 100	¼"	15 NB
ACR 05	20 - 200	½"	15 NB
ACR 06	30 - 300	½"	15 NB
ACR 07	60 - 600	½"	15 NB
ACR 08	80 - 800	½"	15 NB
ACR 09	100 - 1000	¾"	20 NB
ACR 10	200 - 2000	¾"	20 NB
ACR 11	300 - 3000	1"	25 NB
ACR 12	500 - 5000	1"	25 NB
ACR 13	600 – 6000	1 ½"	40 NB
ACR 14	800 – 8000	1 ½"	40 NB
ACR 15	1000 – 10000	1 ½"	40 NB
ACR 16	1500 – 15000	2"	50 NB
ACR 17	2000 – 20000	2"	50 NB
ACR 18	2500 – 25000	2.5"	65 NB
ACR 19	3000 – 30000	2.5"	65 NB
ACR 20	3500 – 35000	3"	80 NB
ACR 21	4000 – 40000	3"	80 NB

Flow Range Chart
(Fluid : AIR, Temp: AMB ; Press. : ATM)

Model No.	Flow Range (LPM)	Thread Connection	Flange Connection
ACR 22	1 – 10	¼"	15 NB
ACR 23	3 - 30	¼"	15 NB
ACR 24	6 – 60	¼"	15 NB
ACR 25	10 – 100	¼"	15 NB
ACR 26	20 - 200	¼"	15 NB
ACR 27	40 - 400	½"	15 NB
ACR 28	60 - 600	1"	25 NB
ACR 29	80 - 800	1"	25 NB
ACR 30	100 - 1000	1"	25 NB
ACR 31	200 - 2000	1"	25 NB
ACR 32	300 - 3000	1 ½"	40 NB
ACR 33	500 - 5000	1 ½ "	40 NB
ACR 34	600 – 6000	2"	50 NB
ACR 35	800 – 8000	2"	50 NB
ACR 36	1000 – 10000	2"	50 NB
ACR 37	1500 – 15000	2 ½"	65 NB
ACR 38	2000 – 20000	3"	80 NB

VD TECHNOLOGY CENTER™

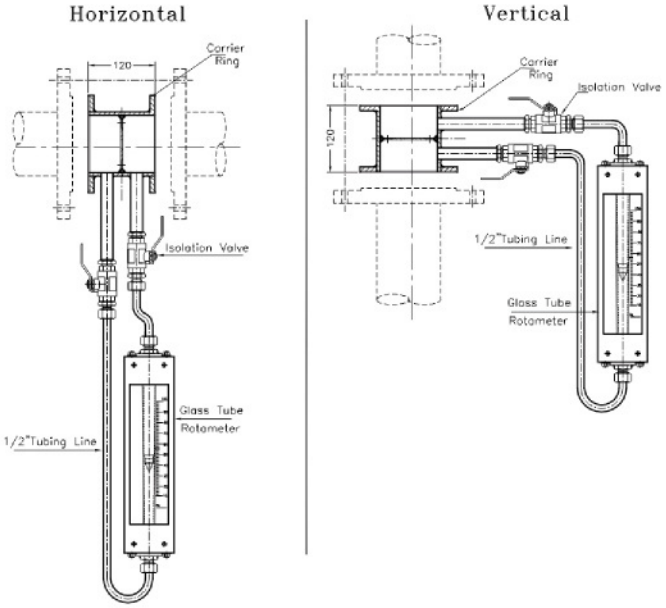
BY PASS ROTAMETER :

By-Pass Rotameter is an Inference type flow meter. Differential pressure (DP) is created by providing an Orifice Plate in the main line. Due to the differential pressure, fluid flows through branch pipes provided across the upstream and downstream sides of the Orifice Plate. An additional Range Orifice plate is provided in the by-pass line as flow through the by-pass line will be in proportion with Main Line.

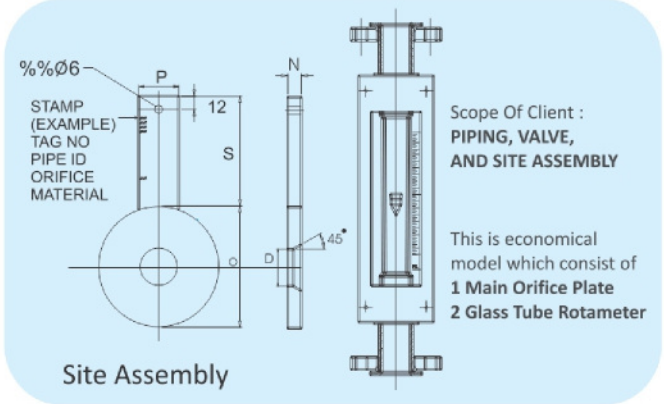
Specifications:

- By- Pass Rotameter Type: Glass Tube / Metal Tube / Acrylic
- Flange: CS / A 105 / SS 304 / SS 316
- Carrier Ring: CS / A 105 / SS 304 / SS 316
- Line Size from 80 NB to 300 NB
- Main Orifice Plate: SS 316 / SS 304 / PTFE
- Range Orifice Plate: SS 316 / SS 304 / PTFE
- Accuracy :+/- 5% of FullScale
- Measuring Span :1:10
- Scale: Acrylic / Aluminum / SS
- Measuring Span :1:10

Just Insert Model



	Pressure Drop in Meters per Water Column									
	1.2	2.5	3.8	5.0	10.0	1.2	2.5	3.8	5.0	10.0
MAIN LINE	LIQUID M^3/ Hr					AIR NM^3/ Hr				
40	8	12	14	16	22	246	350	424	492	730
50	13	19	22	27	38	407	577	713	815	1206
65	19	27	34	38	54	594	849	1019	1155	1699
80	29	40	52	59	83	917	1274	1580	1835	2684
100	59	86	104	120	170	1869	2616	3228	3738	5437
125	95	136	163	188	272	2888	4078	5097	5777	8496
150	136	192	227	272	385	4248	5947	7306	8496	12234
200	227	340	408	476	658	7306	10365	12744	14613	21409
250	363	522	635	749	1044	11554	16482	20390	23109	33984
300	522	749	930	1066	1498	16482	23109	28036	32284	47577



Bills of Materials		
SR. NO.	ITEM	M.O.C.
1.	Carrier Ring	MS / SS 304 / SS 316
2.	Rotameter Type	Glass Tube Rotameter / Metal Tube Rotameter Acrylic Rotameter
3.	Float	MS / SS 304 / SS 316 / PTFE
4.	Tube Material	Glass / Metal / Acrylic
5.	Orifice Plate	MS / SS 304 / SS 316 / PTFE / HAST-C
6.	By Pass Line & Fittings	MS / SS

Data Required for Offer	
Tag No.	MOC of Main Pipe
Flange Size. Specification	Main Pipe Size
Flow Max., Nor., Min.,	Fluid
Density	Pressure
Temperature	Viscosity
Measuring Range	

Optional Features :

1 Two-Wire Transmitter & Latching Type Switch can be provided in By-Pass Rotameter

ENGINEERING CONSULTANCY & MANUFACUTRING COMPANY

Visit : www.vdtechnologycenter.com

VD TECHNOLOGY CENTER™

ECONOMICAL GLASS 'U' TUBE MANOMETER :

- High Accuracy, fully Enclosed, Industrial Grade, U-TUBE TYPE MANOMETER, Wall/Front of Panel Mounting type
- Wetted Parts: SS 304.
- Manometer will be complete with standard accessories

SPECIFICATIONS	MODEL NO : TAN-MANO
Standard Range	a) 150-0-150mm. W.G. b) 250-0-250mm. W.G. c) 380-0-380mm. W.G d) 500-0-500 mm. W.G.
Scale Unit	mm / cm
Connection	Nozzel type or ¼" BSP (F) or as per required
Manometer Casing	Aluminums Casing from 3 sides and transparent acrylic front
Scale	Engraved on milky white acrylic, scale. Engraving filled with black color.
Metering Tube	Borosilicate Glass Tube having uniform bore & U achieved by blowing glass tube.
Mounting	Brackets for wall or front of panel mounting
Indicating Liquid	Water
MOC of wetted parts	Acrylic blocks
Scale Adjusting Knob	Scale Zero adjusting Knob will be provided
Packing	Teflon & Neoprene
Accuracy	+/-0.8% OF F.R
Accessories Box	Plastic Bottle filled with coloured water, PVC tubing.

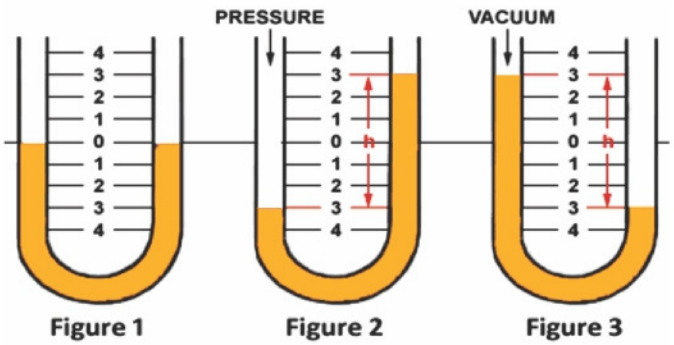


Figure 1 Figure 2 Figure 3

Figure. 1. In its simplest form the manometer is a U-tube about half filled with liquid. With both ends of the tube open, the liquid is at the same height in each leg.

Figure. 2. When positive pressure is applied to one leg, the liquid is forced down in that leg and up in the other. The difference in height, "h", which is the sum of the readings above and below zero, indicates the pressure.

Figure. 3. When a vacuum is applied to one leg, the liquid rises in that leg and falls in the other. The difference in height, "h", which is the sum of the readings above and below zero, indicates the amount of vacuum

VD TECHNOLOGY CENTER™

ELECTROMAGNETIC FLOW METER:

Electromagnetic flow measurement is based on Faraday's Law of Induction. The law states that voltage is induced across a conductor moving through a magnetic field. The functional principle of electromagnetic measuring devices is also based on this law of nature. An emf is generated across a conductor moving in a magnetic field. This emf is directly proportional to the flux density, velocity of conductor and length of the conductor. This principle is used for flow measurement through electromagnetic flow meter. The flowing liquid itself is a conductor and its average velocity is the velocity of conductor.

E = B.V.D.

Where

E = Induced emf proportional to velocity.
B = Magnetic flux Density
V = Average velocity of the media
D = Distance between two electrodes or Practically the diameter of the flow sensor

Since the Flux Density and diameter of the flow sensor are fixed for given combination Theemf becomes proportional to average velocity only and in turn the volumetric flow rate.

Electromagnetic flow meters are based on the laws of electromagnetic induction, conductive liquids are the only liquids for which flow can be detected. Whether it is a conductive liquid or not is determined by the presence of electrical conductivity. Minimum conductivity of fluid should be 0.5 µS/cm

Types:

Electromagnetic Flow Meter - Full Bore - Flanged Type
Electromagnetic Flow Meter - Full Bore - Wafer Type

Specifications:

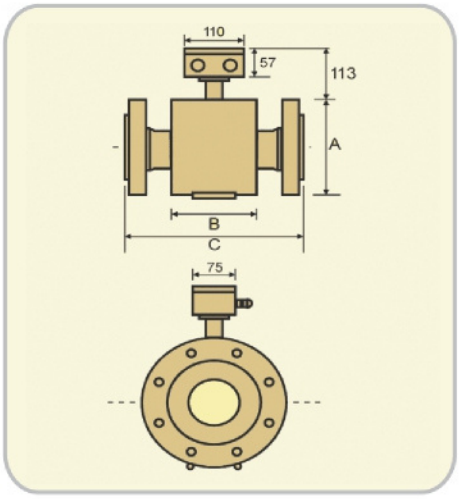
- **Line Size :** 15 NB to 350 NB (For higher size contact factory)
- **Lining :** PTFE / Hard Rubber / PFA
- **Electrode :** SS316 / SS 316L / HAST-C / Tantalum / Titanium
- **Flange :** CS / SS 304 / SS 316 / SS 316L
- **Body :** MS / SS 304 / SS 316 / SS 316L
- **Flow Transmitter :** Integral / Remote
- **Supply :** 230VAC / 24VDC

Advantage:

- Unaffected by the temperature, pressure, density, or viscosity of the liquid.
- Able to detect liquids that include contaminants (solids, air bubbles)
- There is no pressure loss
- No moving parts (improves reliability)

Disadvantage:

- Cannot detect gases and liquids without electrical conductivity
- A short section of straight pipe is required



Electromagnetic Flow Meter - Full Bore

Meter Dimensions (mm)

Table for Meter dimensions SROAT 1000 Plus (mm)			
DN (mm)	**A**	**B**	**C**
25	108	100	200
32	117	100	200
40	127	105	200
50	152	99	200
65	177	92	200
80	190	89	200
100	228	135	250
125	254	135	250
150	279	170	300
200	343	205	350
250	406	240	400
300	482	290	500
350	533	290	550

Note :

All dimensions are in mm
Dimensions are with ANSI B 16.5, Class 150 Flags with terminal box.
Dimensions 'C' is without earth rings.
Standard Flanges :

- ANSI B 16.5, Class 150 up to DN 150
- BS 10, Table F - From DN 200 and onwards

ENGINEERING CONSULTANCY & MANUFACUTRING COMPANY
Visit : www.vdtechnologycenter.com

VD TECHNOLOGY CENTER™

GLASS TUBE ROTAMETER :

Glass Tube Rotameter is a Variable Area Flow Meter. A rotameter consists of a tapered tube, typically made of glass, with a 'float' made of SS or PTFE. The differential pressure across the annulus area is constant. The float moves through the tapered tube up and down with respect to fluid flow. The vertical position of the float as indicated by scale is the measure of the instantaneous flow rate.

Specifications:

- Material of Construction : CS / SS 304 / 316 / PTFE
- Float : SS 316 / SS 304 / PTFE
- Tube : Glass Borosilicate
- Packing : PTFE / VITON / Silicon / Neoprene
- Enclosure : SS Buffed / MS Powder Coated / FRP
- Line Size from 15 NB to 80NB
- Ranges between 2.0 LPH to 25000LPH
- Face-To-Face Distance :500mm
- Accuracy : +/- 2% of Full Scale
- Measuring Span : 1:10
- Scale : Acrylic / Aluminum / SS

Various Features:

- Heavy Duty Design with Maximum Visibility
- Two Tone Powder Coated Excellent Finish
- No Threads in Body, Avoids Corrosion
- Easy to Maintain and Replace
- Suitable for on Line Installation
- Single Piece (Joint-less) PTFE/ PFA/ PP cladded end connections

OPTIONAL FEATURES :

Two-Wire Transmitter

VDTC has developed **'2- Wire transmitter'** for Glass Tube Rotameter. It can provide local indication along with 4-20 mA transmitter output which can be connected to PLC / DCS for controlling purpose. Transmitter is mounted on the glass tube while retaining visibility and the present local indication by the float and the scale. Transmitter output is two wire loop powered.

Technical Specification:

Transmitter Enclosure	:	Dia Cast Aluminum - IP 66, Flameproof
Sensor Enclosure	:	FRP
Supply	:	24VDC
I/P	:	Float Movement
O/P	:	4 to 20mA

Latching type Switch

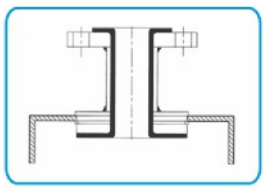
VDTC has developed **'Latching Type Switch'.** Unlike the proximity switch, when the float passes up in front of the switch, the switch becomes open. Even if the float goes up beyond the level, the switch remains open, i.e it latches off. Unless the float comes down and goes below the level, the switch will not turn on. Thus, the switch is Bi-Stable with stable. The switch operates by sensing the direction of the float travel

Technical Specification:

Contact	:	Bi-Stable
Supply	:	8V through NAMUR Switching amplifier
O/P	:	NO and NC Contacts

Flow Range Chart (Fluid : Water, Temperature: AMB ; Pressure : ATM)

NB						Model No	With PTFE Float (LPH)	With SS 316 Float (LPH)	Max Pressure Drop in mmwc	Test Pressure
15	20	25	40	50	80					
■	■	■				GTR 01	2 - 20	3 - 30	140	15
■	■	■				GTR 02	3 - 30	6 - 60		
■	■	■				GTR 03	4 - 40	10 - 100		
■	■	■				GTR 04	6 - 60	20 - 200	350	15
■	■	■				GTR 05	8 - 80	30 - 300		
■	■	■				GTR 06	12 - 120	40 - 400		
■	■	■				GTR 07	18 - 180	60 - 600		
	■	■	■			GTR 08	20 - 200	80 - 800	600	12
	■	■	■			GTR 09	40 - 400	100 - 1000		
	■	■	■			GTR 10	50 - 500	150 - 1500		
	■	■	■			GTR 11	80 - 800	250 - 2500		
			■	■		GTR 12	90 - 900	300 - 3000	900	9
			■	■		GTR 13	100 - 1000	350 - 3500		
			■	■		GTR 14	150 - 1500	400 - 4000		
			■	■	■	GTR 15	200 - 2000	600 - 6000	900	7
			■	■	■	GTR 16	250 - 2500	700 - 7000		
			■	■	■	GTR 17	400 - 4000	1000 - 10000		
				■	■	GTR 18	500 - 5000	1500 - 5000	900	5
					■	GTR 19	600 - 6000	2000 - 20000		
					■	GTR 20	800 - 8000	2500 - 25000		



PTFE - Single PC (No Joint) Clading 100% Spark Proof

Float with PTFE Ring avoids glass to metal contact and minimizes possibility of Glass Tube breakage

Data Required for Offer:

- Tag No.
- Material of Construction of Wetted parts
- Type of connection
- Flange Size/Rating
- Fluid
- Fluid Density/Sp. Gravity
- Viscosity at Operating Conditions
- Operating Pressure
- Operating Temperature
- Measuring Range

VD TECHNOLOGY CENTER™

METAL TUBE ROTAMETER :

Metal Tube Rotameter is a Variable Area Flow Meter. It consists of a tapered tube, typically made of steel with a 'float', made of SS or PTFE. The differential pressure across the annulus area is constant. The float moves through the tapered tube up and down with respect to fluid flow. The vertical position of the float as indicated by scale is the measure of the instantaneous flow rate.

Specifications:

- Material of Construction : SS 316 / PTFE
- Float : SS 316 / PTFE
- Tube : SS 316
- Enclosure: SS Buffed / Die Cast Aluminum
- Line Size from 15 NB to 100NB
- Ranges between 25 LPH to 60000LPH
- Face-To-Face Distance :250mm
- Accuracy : +/- 2% of FullScale
- Measuring Span : 1:10
- Scale : Acrylic / Aluminum / SS

Various Features:

- Heavy Duty Design with Maximum Visibility
- Two Tone Powder Coated Excellent Finish
- No Threads in Body, Avoids Corrosion
- Easy to Maintain and Replace
- Suitable for on High Pressure application
- Single Piece (Joint-less) PTFE/ PFA/ PP cladded end connections

OPTIONAL FEATURES :

1 Two-Wire Transmitter

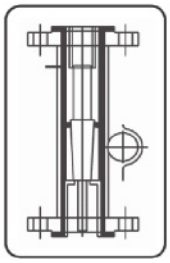
It is a micro controller based transmitter having LCD display with digital indications for instantaneous and totalized flow. The user can set various parameters through a front panel with easy to operate keypad. Each of the modes like Communication, Configuration, Calibration, Relay; in which the instrument can be programmed to operate are PASSWORD protected

Technical Specification:

- Integral Mounting with Rotameter
- Transmitter Enclosure : Aluminium Die Casting, Ex-d IIC, IP66, T6 Zone 1 and 2
- Power Supply : 24 VDC ± 10%, 4.8 VA
- Input : Displacement of float with respect to flow
- Output : Option 1. : 4 - 20mA dc max. 600 Ω load /
  Option 2. : 2. 4 - 20mA with HART Compatibility (Optional)
- Zero Cut-Off : 1%, 2%, 5%, 10% - Programmable
- Accuracy : ± 2% of Full Scale
- In-Built Relay Output (Latching Type)
- Nominal Switching Capacity : 1A 30 VDC (resistive load)
- Max. Switching Power : 30 W (DC) (resistive load)
- Max. Switching Voltage : 110V DC
- Max. Switching Current : 1 A

2 Rotameter with 'P&F' (PEPPERL+FUCHS)' Make Switch

- P & F Switch Model No : SJ5-N
- Slot Distance : 5mm
- Supply Voltage : 8VDC through isolation amplifier
- O/P : Switching O/p
- Switch Setting : At any point over the scale.



PTFE/PP - single pc (no joint) clading
100% spark proof

Data Required for Offer:

1. Line Size
2. Flow Range
3. Optr. Temperature
4. Optr. Pressure
5. Flow Range
6. Fluid
7. Fluid Density

Flow Range Chart (Fluid : Water, Temp: AMB ; Pressure : ATM)

NB	Model No	With PTFE Float LPH	With SS 316 Float LPH	Max Pressure Drop in mmwc	Test Pressure
15	MTR 01	-	2.5 - 25	1000	20
	MTR 02	2.5 - 25	4 - 40		
	MTR 03	4 - 40	6.5 - 65		
	MTR 04	6.5 - 65	10 - 100		
	MTR 05	10 - 100	16 - 160		
	MTR 06	16 - 160	25 - 250		
	MTR 07	25 - 250	40 - 400		
	MTR 08	40 - 400	63 - 630		
25	MTR 09	63 - 630	100 - 1000	1000	20
	MTR 10	100 - 1000	160 - 1600		
	MTR 11	160 - 1600	250 - 2500		
	MTR 12	250 - 2500	400 - 4000		
50	MTR 13	400 - 4000	630 - 6300	1200	20
	MTR 14	630 - 6300	1000 - 10000		
	MTR 15	1000 - 10000	1600 - 25000		
80	MTR 16	1600 - 10000	2500 - 25000	1500	20
	MTR 17	2500 - 25000	4000 - 40000		
100	MTR 18	4000 - 40000	6300 - 63000	1500	20

VD TECHNOLOGY CENTER™

ORIFACE :

An orifice plate is a device used for measuring flow rate. Either a volumetric or mass flow rate may be determined, depending on the calculation associated with the orifice plate. It is based on Bernoulli's principle which states that there is a relationship between the pressure of the fluid and the velocity of the fluid. When the velocity increases, the pressure decreases and vice versa.

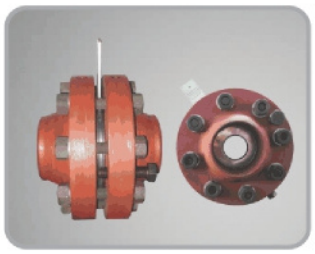
It is also used for reducing pressure or for restricting flow. It is often called a *restriction plate*.

Specifications:

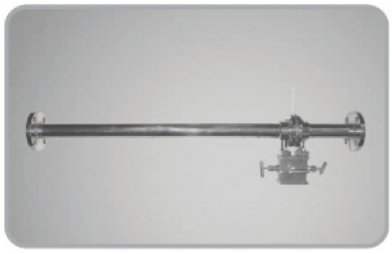
- Orifice Plate Types : Square edge Concentric / Quadrant Edge / Eccentric
- Tapings : Flange / Corner / D X D/2
- Accuracy within +/- 1%
- Suitable for All Pipe Sizes from 1/2'' to 36''
- For Integral Design : 15 NB to 40 NB
- For Flange Design : 15 NB to 400 NB
- Material of Construction : CS / SS 304 / SS 316 / PTFE/ PP / HAST C / MONEL
- Material of Construction : CS / SS 304 / SS 316 / PTFE/ PP / HAST C / MONEL
- Flange Material : A 105 / SS 316 / SS 304 / SS 316L / CS
- Gasket : CAF / SS Spiral Wound / PTFE / Rubber Stud Bolts and Nuts : ASTM A 193 Gr B / ASTM A 194 Gr. 2H

Restriction Orifice Plate

Orifice Plate with DP Transmitter

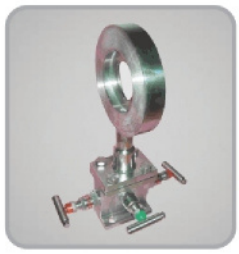


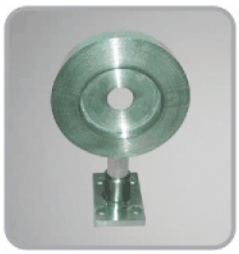
Orif
WNRF Flange Assembly



Integral Assembly with Meter Run

Design Standard: ISO 5167





Carrier Ring Assembly with Manifold Mounting Pad

ORIFICE Based Gas or Steam Flow Meter

In conventional system of measurement, the differential pressure generated by orifice plate is measured by D.P. transmitter. The output from D.P. transmitter after square rooting is accepted as proportional to flow - rate. This assumption is true only when density is constant. Unfortunately, density of compressible fluid is never constant. The density of compressible fluid changes with line pressure and line temperature. Thus, by measuring line pressure and temperature and usingthe relevant algorithms, instantaneous density can be found out and also the state of steam (i.e. saturated / superheated) .By knowing the correct density one can compute the accurate mass-flow rate. The further operation of integration, square rooting is similar to ordinary flow Totaliser.

Technical Specifications:

- Service : Biogas, Compressed Air, Compressed Gas, LPG, Steam, Other Gases
- Size : ½" to 14"
- Type of Flow meter : Differential Pressure Type
- Flow Element : Orifice / Integral Orifice
- MOC Of Flow element : SS 316
- Type of Flanges : WNRF (Weld Neck Raised Face)/ SORF (Slip On Raised Face)
- MOC of Flange : C.S / S.S / P.P.
- Flange Rating : ANSI 150 / ANSI 300 / ANSI 600
- Type Of Taps : Flanged Tapping / CornerTapping / D & D/2
- No. Of DP Tappings : 1 Pair
- No. Of Drain Tappings : 1 Pair
- Design Standard : BS - 1042 / ISO : 5167
- Accuracy : ± 3% of actual reading
- Typical Turndown : 10:3.

** Specifications are subject to change without prior notice.*

Various Features:

- Robust and Simple Design
- Proven Design
- Suitable for Almost All Types of Fluids
- First Principle Device - Which never Fails
- Proven Solution for Flow Measurement
- Very nominal cost compared to other flow elements
- Zero Maintenance

Accessories:

- Nipples
- Isolation Valves
- Condensing Pots
- Manifold (H Type, T Type)

ENGINEERING CONSULTANCY & MANUFACUTRING COMPANY
Visit : www.vdtechnologycenter.com

VD TECHNOLOGY CENTER™

REFLEX LEVEL GAUGE :

Reflex level gauges are commonly used for level detection within a specific vessel, and the primary principle is based on the difference in refractive indices of vapor and liquid.

Reflex gauges, also referred to as prismatic level gauges, offer a well-defined image of water levels. This reduces risks of distortions or reading areas. Because of this, a reflex level gauge can be installed in a tilt-view or vertical position to produce even greater accuracy in readings along with a much better degree of reliability. As imagined, this is highly beneficial for many industries.

Using the prism glass, a reflex level gauge accurately measures liquid inside the vessel. When light hits the glass where there is no liquid, the prism reflects the light directly out of the gauge. Known as the "dry" area, a silver color is displayed while the "wet" part is displayed in black. The contrasting colors create a clear delineation line that makes it easy to view the measurement.

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:

- Orientation of Process Connection : Top - Bottom Vertical / Side-Side Right / Side-Side Left
- Process Connection : Flange Connection / Screwed Connection
- Connection Size : 15 NB to 50 NB
- MOC of Liquid Chamber : CS / A 105 / SS 304 / SS 316 / SS 316L
- MOC of Cover Plate : CS / A 105 / SS 304 / SS 316 / SS 316L
- Drain and Vent : ½" NPT / ½" Ball Valve / ½" Needle Valve
- Isolation Valves: Screwed Bonnet / Bolted Bonnet with Auto ball check
- Gasket: CAF / PTFE / Graphoil
- Toughened Glass: Indigenous / Klinger or Maxos Make
- Scale: Aluminium / SS / Acrylic
- Stud Bolts & Nut: ASTM A 193 Gr. B7 – ASTM A 194 Gr. 2H

TRANSPERENT LEVEL GAUGE : :

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:

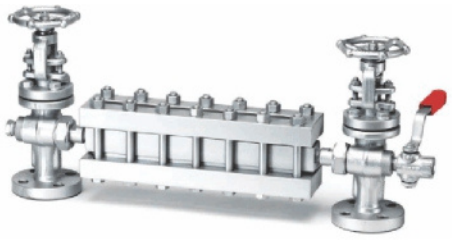
Transparent level gauges are suitable for almost all installations.
In fact they permit:

- 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.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.

Specifications:

- Orientation of Process Connection : Top - Bottom Vertical / Side-Side Right / Side-Side Left
- Process Connection : Flange Connection / Screwed Connection
- Connection Size : 15 NB to 50 NB
- MOC of Liquid Chamber : CS / A 105 / SS 304 / SS 316 / SS 316L
- MOC of Cover Plate : CS / A 105 / SS 304 / SS 316 / SS 316L
- Drain and Vent : ½" NPT / ½" Ball Valve / ½" Needle Valve
- Isolation Valves : Screwed Bonnet / Bolted Bonnet with Auto ball check
- Gasket : CAF / PTFE / Graphoil
- Toughened Glass : Indigenous / Klinger or Maxos Make
- Scale : Aluminium / SS / Acrylic
- Stud Bolts and Nut : ASTM A 193 Gr. B7 – ASTM A 194 Gr. 2H



VD TECHNOLOGY CENTER™

RTD :

- It employs high purity electrical resistance wire , non-inductively wound on ceramic or glass base.
- When RTD element is subjected to heat, it changes its electrical resistance value, corresponding to variation in temperature and its thermal coefficient (α)
- The temperature resistance characteristic have an established pattern for different resistance elements, like Copper, Nickel, Platinum etc.
- Most commonly used resistance element is Platinum known as Pt 100 (100 Ω at 0°C)
- Temperature resistance characteristic conform to DIN 43760/IEC 751 / BSS 1904 / JIS C1604 standards.
- Conventional thermocouple or RTD elements pass through multi bore insulators, encased in outer protection sheath and connected to temperature measuring instruments.

Mineral Insulated Elements

Mineral insulated (MI) sensors are insulated with tightly compacted high purity magnesium oxide powder, simplex or duplex, enclosed in various metal sheath and connected to temperature measuring instrument.

Hot junction is form in inert gas atmosphere and tested for leakage with Nitrogen gas under pressure.

- Simplex or Duplexassemblies.
- Vibration Proof, Fast Response, High Insulation Resistance, Accurate and Stable.
- Sheaths can be bent, twisted and flattended to sit application.
- Length can be form few inches to several meters.

I) T/C type: K, T, J, E, N with sheath diameters from 1mm to 19mm

ii) T/C Sheath Material: SS 304, 316, 310, 321, 446, Inconel 600, Incolloy 800/825.

iii)T/C Juctions can be Grounded or Insulated (Un-Grounded).

RTD Type: PT 100 simplex or duplex, two or three wire system.

SHEATH DIAMETER (mm)		Simplex	Duplex	Insulation Resistance (MIN). MΩ @ Room Temp.	Termination	RTD Dimensions
T/C	RTD					
1, 1.5, 2	-	YES	NO	10 at 500 V DC	PSFL, MFC, HEAD, JB	
3	-	YES	YES	100 at 500 V DC	PSFL, MFC, HEAD, JB	
6	6	YES	YES	100 at 500 V DC	PSFL, MFC, HEAD, JB	6x60mm bulb with 5mm OD SS316 MI cable extension
8		YES	YES	100 at 500 V DC	PSFL, MFC, HEAD, JB	6x60mm bulb with 5mm OD SS316 MI cable extension
12.7	12.7	YES	YES	100 at 500 V DC	PSFL, HEAD	

VD TECHNOLOGY CENTER™

SIGN FLOW INDICATOR (SFI) :

Double Window

Sight flow indicators is a device installed into a pipe to provide a visual of verifying liquid flow for direction and accurate flow rate. Sight flow indicators allow operators to observe the color and clarity of liquids through a window. A sight flow indicator is a body with one or more viewing windows, usually with gaskets, and a way to mount the indicator to the pipeline, such as flanged, threaded, or sanitary clamp connections. Sight flow indicators are available to fit standard pipe sizes ranging from 1/4-inch to 16-inches and carry ANSI pressure ratings. Sight flow indicators allow direct observation that do not give a false reading, lose power, or unable to read. Sight flow indicators may be applied to almost every phase of movement, whether it is liquid, gas or powder. Operators of the Sight flow indicator can see the direction of flow, and condition without interrupting process flow.

Full View

Specification:

- Types of Sight Flow Indicator: 1. Full View. 2. Double Window
- Material of Construction: CS / SS 304 / SS 316
- Size: ½" to 24"
- Glass: Toughened Borosilicate
- Gasket: CAF / PTFE
- Hardware: CS / SS 304 / 316
- Test Pressure: 10 KG/Cm2 for Full View & 30 KG/CM2 for Double Window

CALIBRAT ON POT :

A calibration pot is a simple and economical way of measuring a specific volume. It is placed vertically on the suction pipe (as close as possible to the pump) is used to measure and control the dosing pump flow rate in line with its installation conditions and the properties of the fluid being dosed.

TANSA is specialized in various types of calibration pots. We design,fabricate manufacturer , test and supply the customized calibration pots and accessories to meet the highest standard of safety performance and reliability in accordance with global regulatory standards and guidelines.

Features and Benefits

- The widest range; Can measure volume from 25ml to 125 L
- Easy operation
- Volumetric and capacity values easily read by dual scale indication engraved on Glass Tube
- Superior design
- Radial sealing of glass ensures tight stress-free sealing over a wide temperature range
- Robust glass protection against mechanical impact by material
- Stressed relieved borosilicate glass 3.3 is always used instead of plastic material providing clear visibility without the risk of chemical or environmental attack
- Excellent Material choice. All SS 316 metals (wetted and non-wetted)
- Marking on the instrument suited for offshore installation.
- Designed for the oil and gas industry, meeting todays used and contractors' s document requirements

VD TECHNOLOGY CENTER™

THERMOCOUPLE (T/C) :

- It employs two dissimilar metals
- When two such dissimilar metals welded together at once end and subjected to heat, it develops a small DC voltage (EM corresponding to temperature difference between hot junction (measuring junction and cold junction (reference junction)
- The temperature-EMF characteristic have an established pattern for different type of Thermocouple elements like T, J, K, N, E, R, S etc.
- Temperature – EMF characterstic conform to ANSI MC 96.1 / IEC 584 / DIN 43710 standards.

THERMOWELL :

Thermowell is a closed-end re-entrant tube designed for insertion of a temperature-sensing element, and provided with means for a pressure-tight attachment to a vessel.
These are typically constructed of solid drilled-out bar stock and are designed to protect a temperature sensor from flow, high pressure and harsh environments. Thermowells encase and protect temperature sensors from the harmful effects of the processes into which they are immersed without substantially insulating the temperature sensor (thermocouple, RTD, etc.) from the temperature of the process.

Material of Construction:
SS 304 / SS 316 / SS 316L / SS 321 / SS 310 / Brass / Incoloy / Monel Metal / Inconnel 600 / Cronax / Hastalloy / Carbon Steel / Others please specify

Types of Thermowell:

Threaded Type:

These type of Thermowells are used in industry where well will not be removed on regular basis
Common Applications: Small Pipes & Vessels, Non-Corrosive Media

Flanged Type:

These type of Thermowells are used for applications which required frequent removal or replacement of wells due to corrosion or other hazard
Common Applications: Large Pipes; High Pressure and High Corrosion.

Welded Type:

These type of Thermowells are directly welded to pipe or vessel which gives High Quality Connection. Since they are welded, cannot be removed easily. They should only be used when access is not required and corrosion is not an issue
Common Applications: High Temperature, High Pressure, Non-Corrosive Area.

Sanitary Type:

These type of Thermowells are normally fitted with TC connections. It has smooth surface which allows easy cleaning, this prevents contamination of process.
Common Applications: Dairy, Food Processing, and Pharmaceutical

VD TECHNOLOGY CENTER™

TUBULAR LEVEL GAUGE :

Tubular Level Gauge is one of the simplest forms of level indication used over the years. These level gauges are used in ow or medium pressure conditions. Tubular Level Gauge is mounted on the side of the tank or vessel. It consist of Glass Tube, Protection Frame, Packing material, End blocks, Isolation Valves, Vent and Drain Plugs

Specifications:

- Glass Tube : Borosilicate, 16mm to 28mm Heavy Wall (HW)
- Protection Frame : 'C' Channel - CS / SS 304 / SS 316 / FRP
- End Blocks : CS / SS 304 / SS 316 / PTFE Lining
- Process Connection : Flange / Screwed / Triclover
- Isolation Valves : Screwed Bonnet or Bolted Bonnet Isolation Valve with Auto Ball check
- Vent and Drain : ½" Plug / ½' Ball Valve / ½" Needle Valve
- Packing : PTFE
- Connection Orientation : Left / Right / Back / Vertical
- Line Size from 15 NB to 50NB
- Center to Center Distance (CCD) : 200mm to 3000mm
- Scale : Aluminum / SS / Acrylic
- Scale : Acrylic / Aluminum / SS
- Max. Hydro Test Pressure: 10 KG/CM2
- Max. Temperature: 100 Deg C

MAGNETIC LEVEL GAUGE :

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 operation of the magnetic level gauge is based on some elementary physical principles:

- 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

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.

Types of Magnetic Level Gauge : 1 Capsule Type 2 Flapper Type

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 superimposed phases (interface)

Specifications:

- Mounting Orientation of Process Connection : Top / Side
- Type of Level Gauge : Capsule / Flapper
- Process Connection : Flange Connection / Screwed Connection
- Connection Size : 15 NB to 100 NB
- MOC of Liquid Chamber : SS 304 / SS 316 / SS 316L
- MOC of Float : SS 304 / SS 316 / SS 316L
- Drain and Vent : ½" NPT / ½" Ball Valve / ½" Needle Valve
- Scale : Aluminium / SS / Acrylic
- Gasket : CAF / PTFE / Graphoil
- Fasteners : CS / SS
- Additional Feature : Available with Transmitter or Switch

VD TECHNOLOGY CENTER®

An ISO 9001: 2015 Certified Company

OFFICE:

OFFICE 602, SIXTH FLOOR, MIRAGE ARCADE CHS LTD, NEHRU ROAD, OPP. GANESH MANDIR ROAD, DOMBIVLI EAST, 421201

PLANT:

PLOT F-50 ANAND NAGAR ADDITIONAL MIDC, BEHIND ASB INTERNATIONAL PVT. LTD FACTORY AMBERNATH, 421506

CONTACT

VAIBHAV C. DATE
+91 8097902746

CONTACT

SWAPNIL BHARAMBE
+91 9222853155

WEB

WWW.VDTECHNOLOGYCENTER.COM