

BY-PASS ROTAMETER

BPRM Series



FLOWTECH

Product Description

Flowtech Make By-pass Rotameters are suitable for flow rate measurement in 2" NB or 24" higher size pipes. The instrument is simple in construction and reliable in flow rate indication. The complete assembly consists of carrier rings/flanged taps, bypass line and a Rota meter as indicator. The orifice plate dimension is based on BS/ISO- 5167 specification.



Principle Of By-Pass Rotameters

- By Pass Rotameter is an inference type Rotameter & fixed Orifice in a pipeline.
- Differential pressure (DP) is created in the main pipe line by providing an Orifice Plate in the main Pipe line. Because of this differential pressure a branch of flow moves through by- pass line provided across the orifice plate from upstream side to down -stream side of Orifice Plate.
- An additional range orifice plate is provided in the by-pass line which is designed such that flow through by -pass line (through range orifice plate) flows in proportion with the flow through main pipe line (Main Orifice Plate).
- Hence by measuring the flow from By-pass Line we can estimate the flow through Main pipe Line

Performance

Accuracy	+/- 2% F.S.D.
Repeatability	0.5 %
Rangeability	5:1 for 50" WC D.P., 7:1 for 100" & 150" WC D.P., 10 : 1 for 200" & 40 0" WC D.P.
Scale length	180-200 mm
Pressure Ratings	Maximum Operating Pressure is 15 Kg/Cm2.
Temperature Ratings	Maximum Operating Temperature rating is 121 o C for Gas services And 93°C for Liquid services.
Connections	Flanged.
Enclosure	IP 55 OR IP 65 on request

By-Pass Rotameters Components

The By-pass flow meter consists of a mainline Orifice plate, a set of Orifice Flanges Or a carrier ring, a flow meter, range Orifice, Bypass piping with Isolation Valves.

- **Mainline Orifice Plate:** - The purpose of the mainline orifice plate is to create the pressure differential. As the flow rate varies across this mainline orifice, the pressure differential across this plate also varies and it is this variation, which makes the meter function.
- **Orifice Flanges / Carrier Ring:** - Orifice flanges / carrier rings serve two functions. First, they hold the mainline orifice plate in the proper position within the pipeline. Secondly they channel a portion of the flow out of the high-pressure side of the orifice and return it again to the low-pressure side. This function may be accomplished with other than flange taps. The Bypass piping may be connected directly to the pipeline in the form of pipe taps, radius taps OR vena contract taps.
- **Variable Area Flow Meter:** - As discussed above, a flow meter (Glass Tube Rotameter) is placed in the Bypass piping to measure the bypass flow.
- **Range Orifice:** - The range orifice is a small orifice placed in the bypass piping either before OR after the flow meter. This orifice is sized so that the total pressure drop through the bypass-piping equals the pressure differential across the mainline orifice

Material Of Construction

Mainline Orifice Plate	316SS/304SS/P.P./PTFE
Orifice Flange / Carrier Ring	M.S./316 SS/P.P.
Range Orifice	316 SS
Bypass Piping with Isolation Valves	M.S./316 SS

Glass Tube Rotameter

Tube	Borosilicate Glass
Float	SS 316/PTFE/others on request
Packing	Neoprene/PTFE/Silicon/Viton
End Fitting	M.S./C.S./SS304/SS316/CF-8M/CF8/C.I. / PTFE Lined, SS PTFE Lined/PVC/others on request
Frame & Cover	M.S. OR SS

Capacity Table - Glass Tube Bypass Rotameter For Liquids					
Mainline Size Sch. 40	Flange Taping (M3/Hr.)				
	Differential in mm W.C.				
	1250	2500	3750	5000	10000
1.5	7	10	12	14	20
2	11	16	20	23	33
2.5	16	23	28	33	47
3	25	36	40	51	72
4	44	62	76	88	125
5	69	98	119	138	196
6	100	141	173	200	282
8	173	245	300	346	490
10	273	386	473	546	772
12	387	548	671	775	1097
14	468	663	812	937	1326
16	612	866	1061	1225	1732
18	775	1096	1342	1550	2192
20	963	1362	1668	1926	2724
24	1393	1970	2413	2786	3940

Capacity Table - Glass Tube Bypass Rotameter For Gases					
Mainline Size Sch. 40	Flange Taping (M3/Hr.)				
	Differential in mm W.C.				
	1250	2500	3750	5000	10000
1.5	130	190	235	270	385
2	220	315	385	445	635
2.5	315	450	555	640	905
3	490	695	855	990	1400
4	1020	1450	1775	2050	2900
5	1605	2270	2780	3215	4545
6	2310	3270	4005	4630	6545
8	4000	5655	6930	8000	11320
10	6295	8905	10910	12600	17820
12	8930	12500	15000	17500	24600
14	10785	15255	18685	21580	30520
16	14095	19930	24415	28190	39870
18	17840	25230	30905	35685	50470
20	22170	31355	38400	44345	62715
24	32065	45350	55545	64135	90705

Order Code for By-Pass Glass Tube Rotameters

FMIPL-BPGTR-		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WETTED PARTS MOC	MS	WP															
	SS 304	WP1															
	SS 316	WP2															
	PP	WP3															
	MS+PTFE	WP4															
	SS 304+PTFE	WP5															
	SS 316+PTFE	WP6															
	CUST.	CU															
PROCESS CONNECTION MOC	FLANGE END		F														
	THREADED		T														
	TC JOINT		T1														
	CUST.		CU														
PROCESS CONNECTION MOC	MS			C													
	SS 304			S1													
	SS 316			S2													
	SS 316L			S3													
	CUST.			CU													
PROCESS CONNECTION STD	ASA 150 # RF				F1												
	ASA 300 # RF				F2												
	BS TEBLE 'F'				F3												
	BS 10 TABLE 'F'				F4												
	TABLE 'D'				F5												
	BSP (M)				TB1												
	BSP (F)				TB2												
	NPT (M)				TN1												
	NPT (F)				TN2												
	TC JOINT				TC												
FLOAT MOC	SS 316					FS											
	TEFLON					FT											
	PP					FP											
	CUST.					CU											
FLOAT RETAINER	SS 316						RS										
	TEFLON						RT										
	PP						RP										
	CUST.						CU										
SCALE MOC	ALUMINIUM						SA										
	ACRYLIC						SA1										
	SS 304						SS										
	SS 316						SS1										
	CUST.						CU										
BODY MOC	SS 304						BS										
	SS 316						BS1										
	MS+POWDER						BP										
	MS+FRP						BS										
RANGEABILITY	CUST.						CU										
	500 +/- 5 MM								F/F HT								
ORIFICE PLATE MOC	SS 316									OP1							
	TEFLON									OP2							
	CUST.									CU							
CARRIER RING	CS											CR1					
	SS 304											CR2					
	SS 316											CR3					
	SS 316L											CR4					
	PP											CR5					
	CUST.											CU					
FLOW DIRECTION	BOTTOM/TOP													BT			
	TOP/BOTTOM													TB			
	LEFT/RIGHT													LR			
	RIGHT/LEFT													RL			
	CUST.													CU			
MAIN CONNECTION STD	ASA 150 # RF														MC1		
	ASA 300 # RF														MC2		
	ASA 600 # RF														MC3		
	CUST.														CU		
INDUCED PIPE MOC	CS															IP1	
	SS 304															IP2	
	SS 316															IP3	
	SS 316L															IP4	
	PP															IP5	
	CUST.															CU	
ISOLATION VALVE MOC	CS																VM1
	SS 304																VM2
	SS 316																VM3
	SS 316L																VM4
	PP																VM5
	CUST.																CU

Scan QR to Connect



Flowtech Measuring Instruments Pvt Ltd

sales@flowtech-instruments.com

flowtech-instruments.com