



NRG GLOBAL

Manufacturer of :
Flow, Level, Pressure and
Temperature Instruments

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GLASS TUBE ROTAMETER



1. Product Description

NRG GLOBAL Glass Tube Variable Area Flow Meters (Rotameters) are intended for general in line and ByPass metering applications (i.e. for Gas & Liquid) where operating conditions are with the limitations of Glass metering tubes. These are the principle of Variable Area.

The float moves freely up and down tapered borosilicate glass with fluid flow from bottom to top. The float takes up a position where buoyancy forces and the float weight are balanced in proportion to flow rate. The Vertical position of the float as indicated by scale is the measure of the instantaneous flow rate.

2. Principal of Operation

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

3. Technical Details

Accuracy : $\pm 2\%$ F.S.D.

Temperature Ratings : Maximum Operating Temperature rating is 150° C for Gas Services and 93° C for Liquid services.

Repeatability : 0.5 %

Connections : Flanged / Screwed / Tri Clover Joint / HoseNipple.

Rangeability : 10:1

Enclosure : IP 55

Scale length : 180-200 mm.

4. Pressure Ratings

Tube Size	Max.Operating Pressure in Kg/Cm ² (g)
1 – 7	10
8 – 11	10
12 – 14	7.5
15 – 17	5.0
18 – 20	3.0

5. Material of Construction

Tube : Borosilicate Glass

Float : SS 316 / PTFE / Aluminum / P.P.

Pickings : Neoprene, PTFE, Silicon, Viton

Frame & Cover : M.S. / SS

End Fitting : M.S. / C.S. / SS304 / SS316 / MS with PTFE Lined / SS PTFE Lined

Frame & Cover : M.S. / SS / MS with FRP Lined

Capacity Table – Glass Tube Rotameter

Line Size	Water at Amb. Temp. in LPH		Pressure Drop in mmWC
	Minimum	Maximum	
15	10	100	140
	100	1000	140
	200	2000	140
20	250	2500	360
	300	3000	360
	350	3500	360
25	400	4000	650
	450	4500	650
	500	5000	650
40	600	6000	950
	700	7000	950
	800	8000	950
	900	9000	950
	1000	10000	950
	1100	11000	950
50	1400	14000	950
	1600	16000	950
	1800	18000	950
	2000	20000	950
	2200	25000	950
65	2500	25000	1000
	3000	30000	1100
80	3000	30000	1200