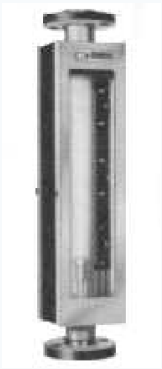
IE Teflon Lined Glass Tube Variable Area Flow Meters

VARIABLE AREA FLOWMETERS — GLASS TUBE

Description

IE Teflon lined glass tube variable area flow meter is intended for flow measurement of gases and liquids on applications where the operating conditions are within the limitations of glass metering tubes. The high degree of corrosion resistance achieved in these instruments combined with packed gland tube construction make them suitable for chemical petrochemical, food, pharmaceuticals, water treatment and other industries.



IE TEFLON LINED GLASS TUBE VARIABLE AREA FLOW METERS

Design Features

- Rugged construction
- Heavy wall precision bore ribbed borosilicate glass metering tubes
- Simple assembly procedure
- Aluminum window frame for strength
- One quarter inch thick laminated safety glass
- Quick tube exchange
- Ten-to-one range
- Detachable direct reading scales
- Scale length of 127 mm, 150 mm and 250 mm
- Standard float types interchangeable in tubes of given meter size
- Choice of float types and capacity ranges
- Teflon lined end fittings

Materials Of Construction

METERING TUBES – Borosilicate glass FLOATS – Standard: 316 SS Optional: Hastelloy C, Teflon END FITTINGS – Teflon lined PACKING MATERIALS – Teflon SIDE PLATE – Standard: Steel Optional: 316 SS GLAND RINGS – Standard: Steel Optional: 316 SS GLAND FOLLOWERS – Standard: Steel Optional: 316 SS SAFETY GLASS SHIELD – Aluminum BOLTS – 304 SS OPTIONAL COATING – Epoxy

Specifications

WARNING: Do not operate this instrument in excess of the specifications listed below. Failure to heed warning may result in serious personal injury or damage to equipment. SCALES Nominal lengths: 127mm, 150mm and 250 mm Standard: Detachable aluminum; Optional: 316 stainless steel Graduations: Choice of direct reading, arbitrary millimeter or 0-100 linear with calibration curves or percentage of maximum flow with factor tag. PRESSURE DROP – Refer capacity table PERFORMANCE Industrial accuracy: +2% of full scale from 100% to 10% of full scale. Calibrated accuracy: +1% of full scale from 100% to 10% of full scale. Repeatability: +0.5% of full scale

Meter Size	Maximum Pressure (PSIG) at 121.1OC	Maximum Temperature Degrees C
6	450	121.1
7	350	121.1
8	300	121.1
9	175	93.3
10	100	93.3
12	75	93.3
13	60	93.3

1. Pressure ratings are based on static pressure applicable at 93.3^{O}C

Table 1 – Capacities (150mm Tubes)

Meter Size	Tube Number	Float Number	Maximum Flow Rates			
			Water	Air	H_2	He
			CCM	SLPM		
2	R-2-15-AAA	G2	0.54	0.049	0.102	0.0444
		S2	2.49	0.146	0.322	0.144
		C2	4.9	0.245	0.594	0.268
	R-2-15-AA	G2	1.11	0.096	0.209	0.0916
		S2	4.93	0.265	0.631	0.293
		C2	9.33	0.43	1.12	0.533
	R-2-15-D	G2	5.75	0.37	1.03	0.491
		S2	20.6	0.82	2.52	1.39
		C2	33.2	1.22	3.88	2.28
	R-2-15-A	G2	18.3	0.95	2.63	1.54
		S2	52.1	1.9	5.57	3.42
		C2	81.8	2.8	8.2	5.16
	R-2-15-B	G2	52.8	2.35	8.01	5.02
		S2	133	4.6	15.9	10.3
		C2	199	6.6	22.9	14.9
	R-2-15-C	G2	84.6	3.8	12.9	8
		S2	218	7.6	26.1	16.7
		C2	326	10.4	37.6	24.4
6	R-6-15-A	G6	200	8.6	29.9	19.2
		S6	493	16.4	58.9	38.3
		C6	726	23	83.3	55.2
	R-6-15-B	G6	573	23.5	85.9	55.3
		S6	1350	43	160	109
		C6	1950	60	222	152

Table 2 – Capacities (250mm Tubes)

Meter Size	Tube Number	Float Number	Maximum Flow Rates					Meter Size	Tube Number	Float Number	Maximum Flow Rates				
			Water			Air					Water			Air	
			LPM	ΔP (iwc)	VIS LIMIT	SLPM	ΔP (iwc)				LPM	ΔP (iwc)	VIS LIMIT	SLPM	ΔP (iwc)
6	R-6M-25-1A	G6	0.28	0.2	1	12.3	0.36	10	R-10M-25-1	10-RV-64	17.18	8	14	511.18	9
		S6	0.68	1.17	1	22.8	1.34			10-RV-138*	24.3	17	22	753.31	19
7	R-7M-25-1	G7	0.58	-	1	24	-			10-RS-64	21.35	15	3.7	662.78	17
		S7	1.48	-	1	50	-			10-RS-138*	30.36	21	5	942.47	23
8	R-8M-25-2	8-RV-3	2.08	2	2	62.87	3			10-LJ-238*	56.43	52	1	1752.15	59
		8-RV-8	2.95	5	3.3	91.19	6		R-10M-25-3	10-RV-64	23.77	11	15	729.52	13
		8-RV-14	3.94	8	4.6	121.21	9			10-RV-138*	33.46	23	23	1022.35	26
		8-RV-31*	5.68	17	6	173.32	19			10-RS-64	29.67	15	3.7	910.49	17
		8-RS-8	3.79	6	1.7	117.51	7			10-RS-138*	41.37	29	5.5	1284.44	33
		8-RS-14	5	11	1.8	155.19	12			10-LJ-238*	87.43	98	1	2714.6	112
		8-RS-31*	7.15	22	2.6	219.76	25	12	R-12M-25-4	12-RV-221	35.31	8	28	1070.78	9
		8-LJ-48*	11.39	45	1	353.72	51			12-RV-343*	44.32	12	35	1334.44	14
	R-8M-25-4	8-RV-3	2.95	4	2	89.77	4			12-RS-221	47.16	9	4	1434.41	10
		8-RV-8	4.13	7	3.7	126.02	8			12-RS-343*	58.4	13	4.3	1777.08	15
		8-RV-14	5.49	12	5.4	166.52	14			12-LJ-740*	113.55	31	1	3491.86	36
		8-RV-31*	7.8	23	7	235.62	28		R-12M-25-5	12-RV-221	65.14	10	29	2022.44	11
		8-RS-8	5.3	10	1.8	164.52	11			12-RV-343*	79.3	15	36	2448.26	17
		8-RS-14	6.93	17	1.9	214.1	19			12-RS-221	84.78	12	4.2	2601.19	14
		8-RS-31*	9.8	33	3.1	301.89	37			12-RS-343*	101.82	18	4.5	3161.16	20
		8-LJ-48*	18.47	93	1	573.47	106			12-LJ-740*	255.83	65	1	7944.05	75
9	R-9M-25-1	9-RV-33	7.19	5	10	223.28	6	13	R-13M-25-1	13-RV-510	75.47	12	40	2309.5	14
		9-RV-87*	11.66	12	15	355.7	14			13-RV-760*	90.05	18	50	2718.72	20
		9-RS-33	12.26	7	2.4	296.23	8			13-RS-510	101.78	15	7.3	3067.06	17
		9-RS-87*	15.29	14	3.4	476.91	16			13-RS-760*	120.55	21	9	3709.92	24
		9-LJ-160*	26.04	31	1	808.5	35			13-LJ-1394	206.66	46	1	-	-
	R-9M-25-3	9-RV-33	9.58	6	11	295.94	7		R-13M-25-3	13-RV-510	120.29	17	42	3707.09	19
		9-RV-87*	14.84	14	17	460.2	16			13-RV-760*	142.32	24	52	4395.27	27
		9-RS-33	12.26	7	2.4	380.9	8			13-RS-510	153.29	23	6.6	4759.23	26
		9-RS-87*	19.38	17	3.5	600.38	20			13-RS-760*	187.55	32	9.3	5822.89	36
		9-LJ-160*	36.53	43	1	1134.02	49			13-LJ-1394	373.2	92	1	-	-

Table 3 – Capacities (127mm Tubes)

Meter Size	Tube Number	Float Number	Maximum Flow Rates					Meter Size	Tube Number	Float Number	Maximum Flow Rates				
			Water			Air					Water			Air	
			LPM	ΔP (iwc)	VIS LIMIT	SLPM	ΔP (iwc)				LPM	ΔP (iwc)	VIS LIMIT	SLPM	ΔP (iwc)
8	R-8M-127-1	8-RV-3	1.9	2	2	58.1	2	10	R-10M-127-3	10-RV-64	22.8	9.2	15	689	11
		8-RV-8	2.8	3	3.3	85.2	4			10-RV-138*	30.3	17.2	23	941	20
		8-RV-14	3.6	6	4.6	111.9	6			10-RS-64	28.6	11.4	3.7	872.3	13
		8-RV-31*	5.2	11	6	158.6	13			10-RS-138*	37.6	21	5.5	1179	24
		8-RS-8	3.5	4	1.7	108	4			10-LJ-238*	85.1	61	1	2640	70
		8-RS-14	4.6	6	1.8	142.5	7	12	R-12M-127-1	12-RV-221	32.6	8	28	997.7	9
		8-RS-31*	6.4	13	2.6	197.7	15			12-RV-343*	40.7	12	35.5	1233.3	14
		8-LJ-48*	9.8	22	1	304.2	25			12-RS-221	43.5	8	4	1333.9	10
	R-8M-127-4	8-RV-3	2.7	2	2	83.3	2			12-RS-343*	52.9	13	4.3	1605.7	15
		8-RV-8	3.9	4	3.7	118.7	5			12-LJ-740*	92	28	1	2826.3	32
		8-RV-14	5.1	7	5.4	154.6	8		R-12M-127-3	12-RV-221	62.9	10	29	1915.9	11
		8-RV-31*	7	14	7	213.3	15			12-RV-343*	74.5	14	36	2274.1	17
		8-RS-8	4.9	5	1.8	152.7	6			12-RS-221	82.6	12	4.2	2540.3	13
		8-RS-14	6.4	8	1.9	197.7	10			12-RS-343*	93.6	16	4.5	2883	19
		8-RS-31*	8.7	16	3.1	267.6	18			12-LJ-740*	272.5	57	1	-	-
		8-LJ-48*	16.7	35	1	512.6	40	13	R-13M-127-1	13-RV-510	73	12	40	2216	14
9	R-9M-127-1	9-RV-33	6.4	4.6	10	198.2	6			13-RV-760*	86.7	17	50	2628.1	20
		9-RV-87*	10	11.5	15	310	13			13-RS-510	99.4	14	7.3	2982.1	16
		9-RS-33	8.3	5.3	2.3	256.3	6			13-RS-760*	118.5	20	9	3571.2	23
		9-RS-87*	13.1	13	3.4	406	15			13-LJ-1394*	179.6	38	1	-	-
		9-LJ-160*	22.4	26.6	1	694	31		R-13M-127-3	13-RV-510	115.1	16	42	3540	18
10	R-10M-127-1	10-RV-64	16.2	7	14	502	8			13-RV-760*	132.1	22	52	4083.7	25
		10-RV-138*	22.5	14	22	697	16			13-RS-510	156.3	20	7.6	4853	23
		10-RS-64	20.4	8.4	3	634	10			13-RS-760*	176	27	9.3	5464	31
		10-RS-138*	28.1	16.2	5	870	19			13-LJ-1394*	355	70	1	-	-
		10-LJ-238*	51.7	36	1	1604	41								

Specifications subject to change without any notice