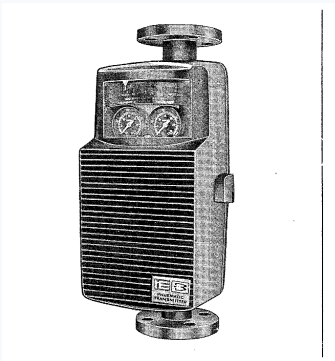


IE AR-MET Armored Rotameters

VARIABLE AREA FLOWMETERS – METAL TUBE

Description

The Model 3620-30 AR-MET Rotameters are intended for applications where high pressures, temperatures, or corrosive conditions preclude the use of conventional glass tubes. The Model 3611-5500X Series instruments are metal tube flowmeters designed primarily for difficult metering services involving solids-bearing liquids which tend to settle or crystallize in crevices or stagnant pockets, or those which require easily sterilized fittings. The flow is vertically straight through the instrument, and there is no extension well above or below the metering body. Indication and transmission are accomplished by a Series 5500 instrument mounted adjacent to the metering tube and actuated by a magnet imbedded in the float.



IE AR-MET ARMORED ROTAMETERS

Design Features

- Ten-to-one rangeability
- Simplified piping and reduced space requirements
- Permanent magnetic link between metering float and motion position transmitter
- Precision swaged metering tube
- Heavy duty welded float and guide construction
- Guide cartridges easily removable for cleaning
- Optional purged or square-broached guide cartridges
- Interchangeable, standardized floats in a given meter size
- Provided with pneumatic transmitter, solid-state electrical transmitter, flow indicator, or alarm
- Nominal scale lengths of 127 mm
- Flanges, threaded, or socket weld connections

Materials of Construction

Metering tube and flanges — all 316 stainless steel, or all 316 stainless steel with Teflon lining; carbon steel end fittings with 316 stainless tube; 316 stainless tubes with steel end fittings and Teflon lining. For Hastelloy or Monel construction, consult factory. Floats, extensions & cartridges: 316 Stn. Stl., Hastelloy C, Teflon Alloy 20, Monel. Gaskets & O-rings: standard cryogenic to +32°F Teflon; 32°F to 250°F Buna-N; 250°F to 450°F Viton; 450°F to 1000°F metal O-ring. Spool pieces (recommended optional equipment) — carbon steel and 316 stainless steel.

Performance

Industrial accuracy: $\pm 2\%$ of maximum scale from 100% down to 10% of scale reading (conforms to ISA R.P. 16.2, Spec. 2-S-10). Calibrated accuracy: $\pm 1\%$ of maximum scale from 100% down to 10% of scale reading (conforms to ISA R.P. 16.2, Spec. 1-S-10). Rangeability 10 to 1 (5 to 1 in lined meters). Repeatability: 0.5% full scale. Linearity: within 1%. Maximum temperature: 1000°F.

■ Optional Equipment

- Transmitting extensions — indicating pneumatic (Bulletin DS-5500), indicating electrical (Bulletin DS-5520)
- Indicating extensions — Model 5510 Indicator and Model 5618 Mag/Na/Vue
- Indicating alarm extension — Model 6300 (size 8 and larger only)
- Inlet spool pieces — carbon steel and 316 Str. Stl. (standard)
- Special flange facings — flat face, ring joint, tongue and groove
- Inverted meters for steam service



Instrumentation Engineers Pvt. Ltd.

Plots 1, 2, 3, Phase III, IDA Jeedimetla, Hyderabad 500 055, India
Tel: +91 40 2309 5147 · sales@ieflowmeters.com · www.ieflowmeters.com

DS-3611/3620/3630
February 1985

**Capacities
Model 3611**

Meter Size Tube Taper	Float Type	Water Max. Flow Rate		Pressure Drop Inches W.C.		Air Max. Flow Rate		Viscosity immunity Ceiling (Cs.)
		gpm	lpm	Water	Air	scfm	slpm	
7	V	0.8	3.0	4	5	3.5	99	5
8	V	1.2	4.5	19	21	5.0	142	10
8	V	2.0	7.6	28	32	8.3	235	10
8	S	3.0	11.4	61	69	12.5	354	2
9	V	5.0	18.9	114	130	20.8	589	10
9	V	4.0	15.1	49	56	16.6	470	10
9	S	6.0	22.7	183	209	24.9	705	2
10	V	4.3	16.3	11	12	17.8	504	18
10	V	7.0	26.5	31	36	29.1	824	15
10	S	8.5	32.2	14	15	35.3	1000	2
10	S	10.0	37.9	40	45	41.5	1175	2
11	V	9.0	34.1	22	26	37.4	1059	18
11	V	15.0	56.8	61	70	62.3	1764	15
11	S	19.5	71.1	36	41	56.0	1586	2
11	LV	22.0	83.3	105	120	91.3	2585	1
11	LS	34.0	128.7	235	269	141.1	3996	1
11	LS	38.0	143.8	274	313	157.7	4466	1
12	V	21.0	79.5	25	29	87.2	2469	25
12	V	36.0	136.3	64	73	149.4	4231	25
12	V	28.0	106.0	36	41	116.2	3290	25
12	S	48.0	181.7	93	106	193.2	5641	3
12	LV	82.0	310.4	230	263	340.3	9636	1
12	LS	88.0	333.1	247	282	365.2	10341	1
13	V	45.0	170.3	20	23	136.8	5290	70
13	V	75.0	283.9	51	59	311.3	8815	60
13	V	64.0	242.2	29	33	265.6	7521	60
13	LV	100.0	378.5	69	79	415.0	11752	1
13	LV	120.0	454.2	94	108	498.0	14102	1
13	LV	205.0	775.9	184	210	850.8	24092	1
15	V	50.0	189.3	20	23	207.5	5876	130
15	V	170.0	643.5	50	58	705.5	19978	125
15	S	200.0	757.0	80	92	830.0	23503	5
15	V	90.0	340.7	41	47	373.5	10576	125
15	S	225.0	851.6	90	102	933.8	26442	5
15	LS	300.0	1135.5	142	164	1245.0	35255	1
16	V	90.0	340.7	-	-	373.5	10576	-
16	V	250.0	946.3	-	-	1037.5	29379	-
16	V	100.0	378.5	-	-	415.0	11752	-
16	S	500.0	1892.5	-	-	2075.0	58758	-
18	V	600.0	2271.0	-	-	2490.0	70509	-
18	S	850.0	3217.3	-	-	3527.5	99898	-
18	S	2500.0	9462.5	-	-	10375.0	293789	-

All flow ranges are 10:1 except Teflon lined meters.
 Do not use Model 3611 on gas service below 50 psig without factory approval.

CAPACITIES

(For A Revision Ar-Mets) Models 3623A, 3621A, 3622A, 3633A, 3634A, 3635A

Meter Size Tube Taper*	Float Number	Water Max. Flow Rate		Pressure Drop Inches W.C.		Air Max. Flow Rate		Viscosity Immunity Ceiling (Cs.)
		gpm	lpm	Water	Air	scfm	slpm	
7 1.40	7-AV-22** 7-AV-29**	0.6 0.86	2.2 3.3	4 6	5 7	2.5 3.5	70.8 100.0	5 5
8 1.21	8-AV-30	1.0	3.8	9	10	4.1	117	10
	8-AV-34	1.42	5.38	11	13	5.85	166	10
	8-AV-57	1.85	7.01	18	21	7.62	216	10
	8-AV-113**	2.46	9.32	38	44	10.1	287	7
	8-AV-158**	3.10	11.7	60	69	12.8	362	7
	8-AS-158**	4.0	15.2	66	76	16.5	467	2
8 1.35	8-AV-30	2.0	7.6	12	14	8.2	233	10
	8-AV-34	2.6	9.9	16	19	10.7	303	10
	8-AV-57	3.25	12.3	30	35	13.4	379	10
	8-AV-113**	4.3	16.3	55	63	17.7	502	7
	8-AV-158**	5.3	20.1	67	77	21.8	618	7
	8-AS-158**	7.0	26.5	90	104	28.8	817	2
10 1.21	10-AV-55	3.4	12.9	5	6	14.0	397	18
	10-AV-108	5.0	19.0	11	13	20.6	583	18
	10-AV-174	6.2	23.5	18	21	25.5	723	15
	10-AV-289**	8.1	30.7	26	30	33.4	945	15
	10-AS-289**	10.8	40.9	32	37	44.5	1,260	2
10 1.35	10-AV-55	5.74	21.8	8	9	23.6	670	18
	10-AV-108	9.03	34.2	17	20	37.2	1,054	18
	10-AV-174	10.5	39.8	25	29	43.3	1,225	15
	10-AV-289**	14.8	56.1	45	52	61.0	1,727	15
	10-AS-289**	20.8	78.8	70	81	85.7	2,427	2
	10-AV-498**	27.8	105	125	144	114	3,244	2
	10-AS-325**	36.0	136	152	175	148	4,200	1
12	12-AV-213	16.6	63.0	11	13	68.4	1,937	25
	12-AV-388	23.5	89.1	21	24	96.8	2,742	25
	12-AV-605**	30.5	116	32	37	126	3,559	25
	12-AS-605**	41	155	43	50	169	4,784	3
	10-AS-812**	78	296	125	144	321	9,100	1
13 1.35	13-AV-231	24.1	91.3	8	9	99.3	2,812	70
	13-AV-561	37.8	143	17	20	156	4,418	70
	13-AV-923	51.5	195	27	31	212	6,004	60
	13-AV-1323**	63.3	240	39	45	261	7,392	60
	13-AS-1323**	89.4	339	58	67	368	10,422	5
	13-AV-1697**	102	387	72	83	420	11,895	10
	13-AV-1203**	150	568	60	70	618	17,502	1
	13-AS-1550**	207	784	205	236	853	24,157	1
15 1.35	15-AV-486	56.5	214	9	11	233	6,599	130
	15-AV-1398	84.1	318	41	47	346	9,799	125
	15-AV-2048**	114	432	45	52	470	13,311	125
	15-AV-2885**	141	534	50	58	581	16,454	125
	15-AS-2885**	207	784	80	92	853	24,157	5
16 1.35	15-AS-2798**	310	1,175	142	164	1,277	36,165	1
	MV	90	340	—	—	373	10,563	—
	MS	250	946	—	—	1,040	29,453	—
	MS	100	378.5	—	—	415	11,753	—
16 1.35	MS	500	1,892	—	—	2,080	58,906	—
	MS	500	1,892	—	—	2,080	58,906	—

NOTES:

1. All air flows are listed at 70°F & 14.7 psia.

* Ratio of tube Outlet I.D. to Inlet I.D.

** Floats marked require a minimum of 30 psig operating back pressure for satisfactory operation on Gas Service.

Model 3623, Size 7,8,10, flanged meter, Vertical Inlet, Horizontal Outlet Pressure Rating is determined by flanges.

Model 3621, Size 12,13,15, flanged meter, Vertical Inlet, Horizontal Outlet Pressure Rating is determined by flanges.

Model 3622, Size 7,8,10 Threaded Connection, Vertical Inlet, Horizontal Outlet Pressure Rating: 1500 psig @ 200°F.

Model 3633, Size 7,8,10, flanged meter, Horizontal Connections, Pressure Rating is determined by flanges.

Model 3634, Size 7,8,10 Socketweld, Horizontal Connections, Pressure rating: 1500 psig @ 200°F.

Model 3635, Size 7,8,10, Threaded, Horizontal Connections, Pressure Rating: 1500 psig @ 200°F.

(Model 3620-30)

Dimensions (For certified dimension prints, write to factory.)

Model Number	Meter Size	Conn. Size (Inches)	A in mm	B in mm	C (in mm)				D in mm	E in mm	Max. Working** Pressure of Meter Body (PSI at 200°F)
					150 lb.	300 lb.	600 lb.	1500 lb.			
3623* (flgd.)	7, 8 & 10	1	355.6	317.5*	88.9	101.6*	114.3	127			up to 1500
3621* (flgd.)	12	1½	402.8	368.3*	101.6*	114.3*	120.7	139.7			up to 1500
	13	2	449.3	393.7*	114.3*	127	146.1	165.1			
	15	3	525.5	457.2*	139.7*	152.4*	177.8	203.2			
	16	4	466.7	385.8	165.1	177.8	203.2	241.3			
	18	6"	584.2	419.1	203.2	215.9	266.7	317.5			up to 1500
3633 (flgd.)	7 & 8	½	365.1	279.4	88.9*	101.6*	108	127	47.6	50.8	up to 1500
	10	1									
3622 threaded	7 & 8	½	387.4	349.3		47.6					up to 1500
	10	1									
3632, 3637 (threaded)**** & 3630, 3636 (socket weld)****	7 & 8	½	317.5	228.6					44.5	50.8***	3620 & 3632
	10	1	419.1	288.9					65.1	76.2	up to 3000
	12	1½	419.1	288.9					65.1	101.6	3636 & 3637
	13	1½	419.1	288.9					65.1	101.6	up to 6000
3635 (threaded)	7 & 8	½	365.1	279.4					47.6	50.8	up to 1500
	10	1									

* Dimensions are those recommended by ISA RP-16.2

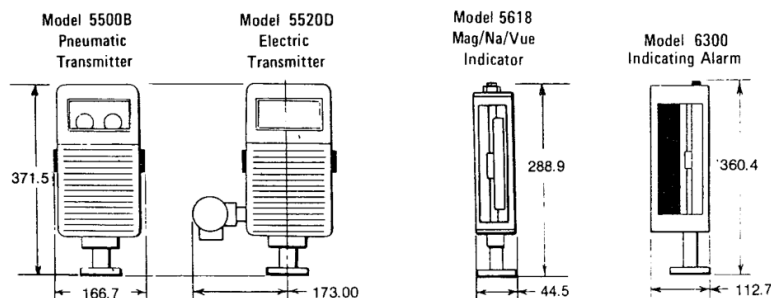
** For higher ratings, write to factory. Maximum working pressure for the meter is determined by the flange rating or the meter body rating, whichever is lower.

*** 3000 lb. rating, 'C' dimension for 600 lb. rating is 3 inches.

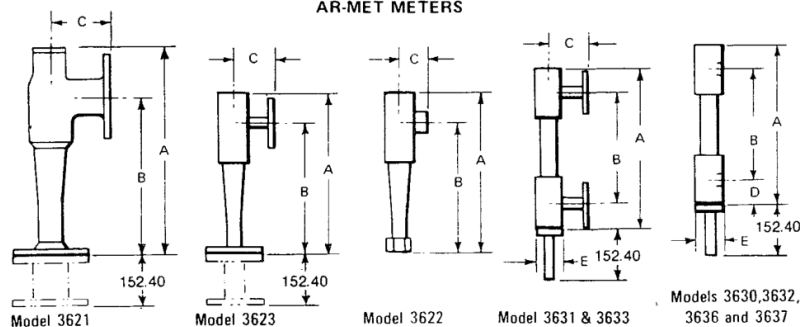
**** Limited availability.

All dimensions in mm.

EXTENSIONS



AR-MET METERS



Note: Models 3621, 3622, & 3623 require 6" clearance for float extension on inlet end. When meter is furnished with surge springs, a longer spool piece may be required. Consult factory.

Specifications

PERFORMANCE

Industrial Accuracy: Meter specified to have an accuracy of +2% of maximum scale from 100% down to 10% of scale reading. Conforms to ISA R.P. 16.2, Spec. 2-S-10. Calibrated Accuracy: Meter specified to have an accuracy of +1% of maximum scale from 100% down to 10% of scale reading. Conforms to ISA R.P. 16.2, Spec. 1-S-10.

RATINGS

Maximum non-shock pressure vs temperature for ANSI standard pipe flanges. Maximum recommended working pressure is determined by the flange rating or the meter rating, whichever is lower.

Flange Rating	Steel (PSIG at indicated temperature)					
	100°F	200°F	300°F	400°F	500°F	600°F
150 lb.	285	260	230	200	170	140
300 lb.	740	675	655	635	600	550
600 lb.	1480	1350	1315	1270	1200	1095

Flange Rating	316 Stainless Steel					
	100°F	200°F	300°F	400°F	500°F	600°F
150 lb.	275	240	215	195	170	140
300 lb.	720	620	560	515	480	450
600 lb.	1440	1240	1120	1030	955	905

Note: For 3620-30 meters cooling fins are required for temperatures over 500° below 32°F

MAXIMUM WORKING PRESSURE OF METER BODY ONLY

Meter Size	7	8	10	12	13	15	16
PSI at 200°F	1500	1500	1200	1500	1000	1350	1100

MAXIMUM TEMPERATURE- 1000° F

RANGE — 10 to 1 (5 to 1 in lined meters).

REPEATABILITY — 0.5% full scale.

LINEARITY — Within 1%

Optional Equipment

Transmitting Extensions:
Indicating Pneumatic (See Bulletin DS 5500)
Indicating Electrical (See Bulletin DS-5520)

Indicating Extensions:
Model 5510 Indicator and Model 5618 Mag/Na/Vue

Indicating Alarm Extension:
Model 6300 (For Size 8 and larger only)

Inlet Spool Pieces:
Carbon Steel and 316 Stn. Stl. (Standard)

Special Flange Facings:
Flat Face, Ring Joint, Tongue and Groove

Inverted Meters for Steam Service

Ordering Information

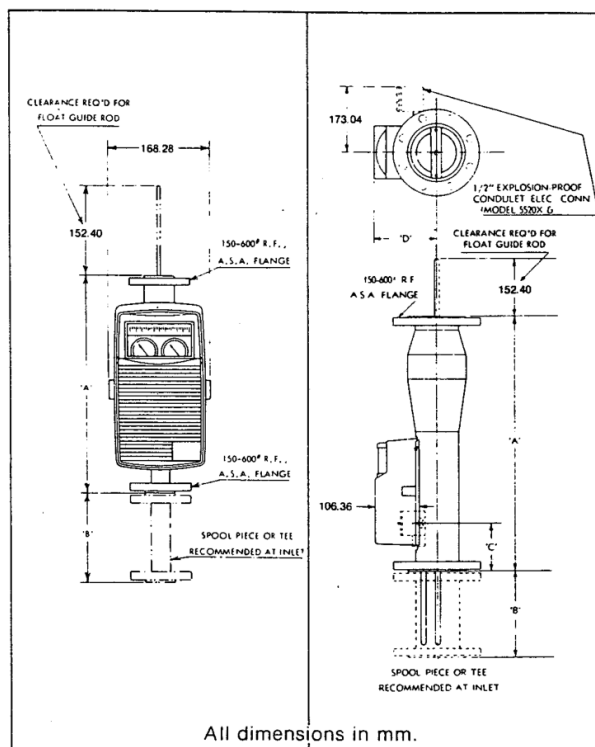
To order, please specify:

1. Model number and size of rotameter
2. Connection arrangement and orientation
3. Materials of construction
4. Scale data and float type required
5. Options if desired
6. Complete flow metering data:

Type of fluid
Maximum, minimum, normal flows
Temperature, pressure
Viscosity, specific gravity
Maximum allowable pressure drop

Dimensions and Weights (For Certified Prints, Write to factory)
(Model 3611)

Meter Size	Conn. Size	A B C D				Approx. Wt. (Kgs)	
		in mm	in mm	in mm	in mm	Meter only	Gross weight
7	1"	368.3	152.4	135	114	7.25	11.34
8	1"	368.3	152.4	135	114	7.25	11.34
10	1"	374.7	152.4	135	122	8.16	18.14
12	1½"	412.8	152.4	162	132	9.07	20.41
13	2"	419.1	152.4	167	141	15.88	22.68
15	3"	596.9	152.4	157	146	27.22	38.56
16	4"	673.1	152.4	106	159	34.02	54.43



All dimensions in mm.