All-Metal Through-Flow Rotameters

• Rugged, compact flowmeters with the largest selection of extensions for indication, transmission, Totalization or Alarm. Shortest Lay-Length in the industry allows easy installation where space is a problem or where retrofitting an existing installation. Suitable for nearly all applications but especially those with high temperature or pressure, shock or corrosion.

The through-flow design affords no pockets for process fluid stagnation and design is such that no float rods extend beyond flanges at any time.

SPECIFICATIONS:

Accuracy: ±2.0% of full scale.

Repeatability: .25% of full scale.

Rangeability: 10 to 100% of full scale (10 to 1 turndown)

Scales: Stardard: 10 to 100%, direct reading optional.

Materials of Construction

Meter Body and Float:
Stainless Steel Type 316 Ti (UNS S31635)

Temperature Limits:

Ambient: —40 to 212°F (—40 to 100°C)
Process Fluid: Varies as function of ambient temperature

Model	Standard Design*	High Temp. Design*
10A5471, 72, 73, 74	616°F (325°C)	860°F (460°C)
10A5451, 53, 55	409°F (209°C)	560°F 293°C)
10A5441	374°F (190°C)	509°F (265°C)
10A5425, 27	270°F (132°C)	360°F (182°C)

*@Ambient temp. of 70°F (21°C)

Pressure Limits: 150 lb. flanges: 275 psig @ 100°F (1900 kPa gauge at 40°C).
300 lb. flanges: 720 psig at 100°F (4964 kPa @ 37°C)

Model Number Designation

Function — 10A54 _ _ _ _ _ _ _ _ _ _ _ _ E

- Indicator — 71
- Indicator with minimum alarm — 72
- Indicator with maximum alarm — 73
- Indicator with minimum and maximum alarm — 74
- Indicator with integrator 5-digit with reset — 25
- Indicator with integrator 7-digit without reset — 27
- Indicator w/pneumatic x-mtr., 3 to 15 psig — 41
- Indicator w/pneumatic x-mtr., 2.9 to 14.5 psig — 42
- Indicator w/elect. x-mtr. gen. purp. 4 to 20 mA dc — 51/53
- Indicator w/elect. x-mtr. intr. safe, 4 to 20 mA dc — 55

Design Level — D

Installation Length

- 9-7/8 inches (250mm) Non-Jacketed — A
- 14-3/4 inches (375mm) Non-Jacketed — B
- 9-7/8 inches (250mm) Steam Jacketed — D
- 14-3/4 inches (375mm) Steam Jacketed — E

Connection Construction

- Stainless Steel Flange (welded) — 3

Tube & Connection Size

Tube Size	Connection Size		Code
1/2"	1"	Standard	P
1"	1"	Standard	B
2"	1-1/2"	Standard	N
2"	2"	Standard	C
3"	3"	Standard	D
1/2"	1"	Steam Jacketed	F
1"	1-1/2"	Steam Jacketed	G
2"	2-1/2"	Steam Jacketed	H
3"	3-1/2"	Steam Jacketed	J

Connection

- Flanges (Mates with ANSI Class 150, RF) — Standard Only — J
- Flanges (Mates with ANSI Class 300, RF) — Standard Only — K
- Flanges (Mates with ANSI Class 150, RF) — Steam Jacketed — E
- Flanges (Mates with ANSI Class 300, RF) — Steam Jacketed — F

Float Design

- Liquid All Sizes Standard Construction — 1
- Liquid All Sizes Welded Construction — 4
- Gas Size 1/2" and 1" Standard Construction — 2
- Gas Size 1/2" and 1" Welded Construction — 5
- Gas Size 1-1/2" and 2" Standard Construction — 3
- Gas Size 1-1/2" and 2" Welded Construction — 8

Float Material

- Stainless Steel Type 316Ti (UNS S31635) — A

Temperature Range

- Standard — 1
- High Temperature (must be welded float design) — 2

Power Requirements (Reference only)

- None, Indicator Only — A
- 220V, 60 Hz Alarms or Integrators only — J
- 110V, 60 Hz Alarms or Integrators only — K
- Air @ 1.4 bar Pneumatic Transmitter only — G
- Air @ 20 psig Pneumatic Transmitter only — H
- 24V dc Electronic Transmitter only — Y

Separate Power Supply or Transistorized Relay

- None — A
- WE 77/Ex 1 (FM Approved) Required for all Single Alarms (10A5472 or 10A5473, SPDT) — B
- WE 77/Ex 2 (FM Approved) Required for all Dual Alarms (10A5474, SPDT) — C
- WE 77/Ex 1-2 (FM Approved) Required for All Single Alarms (10A5472 or 10A5473, DPDT) — E
- WE 77/Ex 1-2 (FM Approved) Required for all Dual Alarms (10A5474, DPDT) — F
- 24V dc Power Supply Optional for Electronic Transmitters — D

Accuracy Class

- 2% of full scale — 1
- Water calibration @ 1% full scale — 3
- Viscosity calibration ± 1% of full scale — 4

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CONNECTION SIZE & UNIT WEIGHT (POUNDS)

	Model	Design	Tube Size							
			1/2"		1"		2"		3"	
			CL. 150	CL. 300	CL. 150	CL. 300	CL. 150	CL. 300	CL. 150	CL. 300
250mm Installation Length	10A5471/72, 73, 74	Standard	8.6	10.6	12.8	14.8	23.6	27.6	35	45
	10A5420, 41, 42	Standard	11.0	13.0	13.9	15.9	24.5	28.5	36	46
	10A5451, 55	Standard	10.4	12.4	13.2	15.2	24.0	28.0	35	45
375mm Installation Length	10A5471/72, 73, 74	Standard	—	—	18.0	20.0	32.4	36.4	47	57
	10A5420, 41, 42	Standard	—	—	19.1	21.1	33.5	37.5	48	58
	10A5451, 55	Standard	—	—	18.4	20.4	32.9	36.9	47	57
	Add for Steam Jacket		3.7	3.7	3.7	3.7	13.0	13.0	11.0	11.0

CAPACITY TABLE

Tube Size	Flange Size*	LIQUIDS Maximum Flows GPM Liq. Sp. Gr. 1.0	LIQUIDS VIC[1]	GASES Maximum Flows Scfm Air @ S.T.P.	GASES Min.[2] PSIA	Pressure Loss[3] Factor
9-7/8 Inches (250mm) Installation Length						
1/2"	1"	0.34-0.93 0.94-1.86 1.87-3.74	16 16 16	1.40-3.81 3.82-7.62 7.63-15.0	23.5 29.4 35.3	28 27.5 22.5
1"	1"	1.54-9.68 9.69-11.4 11.5-14.5 14.6-18.5	28 28 10 10	6.30-39.6 39.7-46.8 46.9-59.5 59.6-75.0	26.5 29.4 29.4 35.3	13 12 12.7 11.3
2"	1-1/2"	39.7-48.4	10	163-198	29.4	4.5
2"	2"	11.0-39.6 39.7-57.2 57.3-72.6	36 10 10	45.0-162 163-234 235-290	26.5 29.4 35.3	4.0 4.5 5.0
3"	3"	39.6-57.2 59.4-74.8 81.5-92.4 103.5-116 123.0-138	40 40 12 12 12	162-235 243-307 334-379 424-476 504-566	20.6 26.5 29.4 35.3 44.1	2.1 2.7 2.7 3.2 3.7
14-3/4 Inches (375mm) Installation Length						
1"	1"	18.6-17.1 18.9-25.0	18 4	56-70.4 78-100	35.3 41.2	19.0 19.0
2"	1-1/2"	35.2-48.4 48.4-66.0	36 36	145-198 198-260	23.5 23.5	5.1 5.1
2"	2"	35.2-66.0 66.1-132	36 10	145-260 261-500	23.5 26.5	5.1 4.0
3"	3"	66.0-149 150-220 221-330	40 12 12	270-590 600-900 901-1200	23.5 29.4 32.3	3.30 2.75 4.40

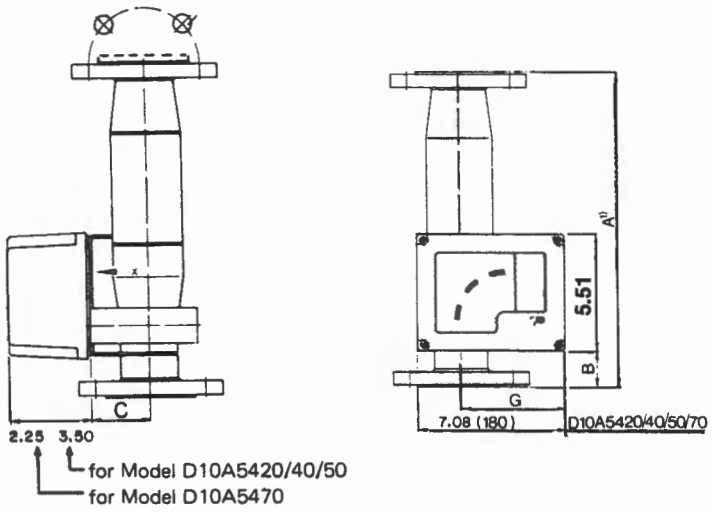
*Flange Size is for standard non-jacketed unit.

NOTES:

1. Meter is unaffected by Liquid Viscosity when the Operating Viscosity in cP ≦ V.I.C. $\sqrt{\text{Sp. Gr.}}$
2. Minimum allowable operating pressure to insure Float Stability on gas service.
3. Pressure loss across the meter at 100% of Flow in inches of Water Column = Factor × $\sqrt{Q}$ where Q = GPM water Equivalent.

All-Metal Rotameters

Dimensions (Inches)



How to Order

1. Determine air or water equivalent by using Tables on Pages 36 & 37.
2. Determine tube size by referring to Capacity Table above.
3. Specify complete model number from Table on page 16.
4. Specify type of scale, maximum flow, fluid name, liquid specific gravity and viscosity or gas specific gravity, operating and maximum temperature and pressure.

Tube Size	250 mm (9.84 inches)				375 mm (14.75 inches)			
Inches	A	B	C	D	A	B	C	D
½"	9.84	1.75	1.97	4.53	—	—	—	—
1"	9.84	1.75	1.97	4.53	—	—	—	—
2"	9.84	1.75	2.76	5.00	14.75	1.75	2.76	5.0
3"	9.84	1.75	3.54	5.55	14.75	1.75	3.54	5.55