

Corrosion Resistant and Ultra-Pure Rotameters for Accurate Measurement of Liquids and Gases



Markets/Applications

George Fischer rotameters are ideally suited for a multitude of corrosive and sanitary processes in these industrial markets:

- Beverages
- Biotechnical Sciences
- Brewing
- Chemical
- Confectionery
- Cosmetics
- Distilling
- Electronics
- Fertilizers & Agricultural Chemicals
- Food Processing
- Manufacturing
- Industrial Equipment
- Marine
- Metal Working
- Mining
- Oils
- Paint
- Pulp & Paper
- Petroleum & Oil
- Photographics
- Pollution Control
- Power
- Printing
- Water & Water Treatment

George Fischer Plastic Rotameters are vertical flow meters for measuring the rate of flow of liquids or gases in industrial piping systems. Our wide selection of materials and measurement scales allows our rotameters to be used in a broad range of applications and media.

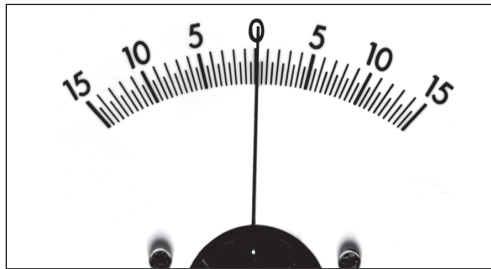
George Fischer UPW Rotameters are designed specifically for measuring the flow of liquids or gases in applications which require ultra-pure conditions. The rotameters are designed without any dead spaces and are specially cleaned and bagged for high purity.

Shatter-proof



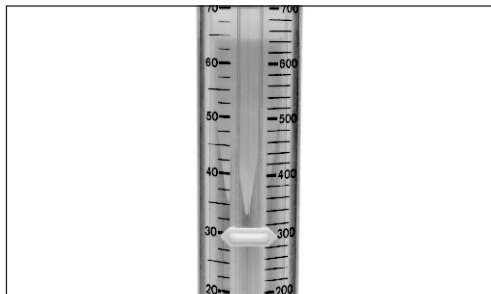
George Fischer high impact plastic rotameter tubes are durable and virtually shatter-proof. They are the perfect alternative to fragile glass and expensive armored flow meters.

Accuracy



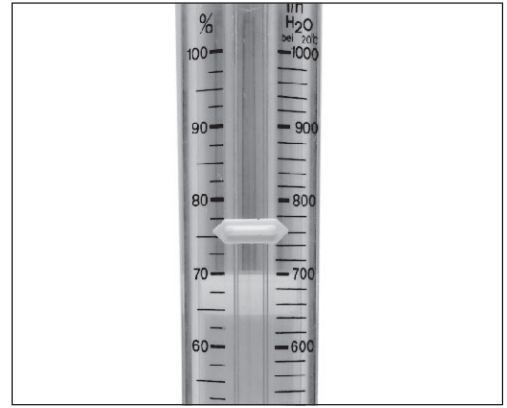
The George Fischer rotameter is a highly accurate fluid flow instrument. Accuracy is rated at 3% of full scale, 1% of measured range. The float stops include flow-straightening vanes. These allow for accurate measurement even if connected directly to a tee or elbow. George Fischer rotameters do not require a section of straight pipe to straighten the flow, making them ideal for applications where limited space is an issue.

Easy to Read



George Fischer rotameters are equipped with adjustable guides for easy visual readout. Bright orange-colored floats are clearly visible, even from a distance.

Dual Scales



George Fischer rotameters have been designed as dual scale units. This enables people at different locations to quickly and accurately communicate actual process flow conditions without having to convert units. Scales are offered in GPM, LPH, % and cubic meters per hour for water. Special scales are available for SCFM (air), NaOH 33%, NaOH 50%, and HCl 33%. (Currently, the short version has one scale only.)

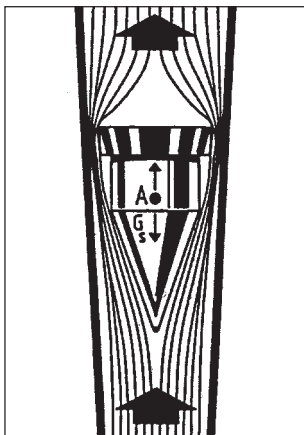
Modular Design

The modular design makes our rotameters very versatile. It allows the user to design the correct rotameter configuration for a given application. George Fischer offers a wide selection of materials, sizes, and scales. All types of end connectors are available.

Limit Switches



Minimum and maximum limit switches can be easily installed and adjusted using the integral mounting rail. These reed switches provide an accurate flow readout when activated by the optional magnetic float.



Mode of Operation

The weighted float is raised by the fluid flowing upwards through the tapered tube. The float is raised to the point at which the lifting force is in equilibrium with the weight of the float. The level to which the float is raised is determined by the rate of flow of the fluid.

Technical Specifications

Accuracy

3% of full scale or range
1% of measured range in accordance with accuracy standard VDE/VDI 3513, sheet 2, accuracy class 4

Pressure

Rated pressure 150 psi at 68°F/
10 bar at 20°C.

Temperature

PA and PSU with PVC ends:
32° to 140°F/0° to 60°C

PSU with PP ends:
32° to 194°F/0° to 90°C

PSU with PVDF ends:
32° to 212°F/0° to 100°C

Materials of Industrial Rotameters

Tubes

Polyamide (PA), Polysulphone (PSU)

Flow Ranges

0.01 to 132 GPM/
2.50 to 30,000 LPH

Floats

PVDF Standard Float
PVDF Magnetic Float (for use with limit switches)

Ends

3/8" to 2 1/2"
PVC, PP, PVDF

Socket, threaded, flanged

Seals

O-Rings in EPDM or FPM

Scales

GPM, LPH, Percentage (10-100%)
NaOH 33%, NaOH 50%
HCl 33%, SCFM, M³/h

Limit Switches

For Maximum and/or Minimum readout (magnetic floats required)

Materials of UPW Rotameters

Tubes

Polysulphone

Floats

Solid PTFE

Ends

PVDF
Metric BCF/IR fusion ends
32 mm to 75 mm

O-Rings

FPM White

Scales

GPM and LPH

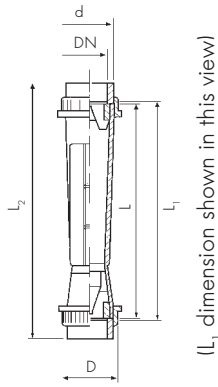
Pressure Loss @ 100% Flow

Type	Water Column mm	Water Column inches
Short Version		
3/8"	44	1.73
1/2"	83	3.27
1"	46	1.81
Standard Version		
1"	242	9.53
1 1/2"	255	10.04
2"	305	12.01
2 1/2"	312	12.28

10 meters of water column =
1 bar (14.5 psi)

Dimensions for Industrial Rotameters

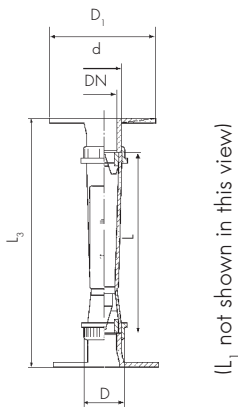
Short Version



Socket/Threaded

Size		Tube length	Socket laying lgth.	Socket/Thread	Flange	Nut O.D.	Flg. O.D.
d/DN mm	ID inch	L inch	L ₁ inch	L ₂ inch	L ₃ inch	D inch	D ₁ inch
16/10	3/8"	6.5	6.7	7.4	-	1.38	-
16/10	3/8"	6.5	6.7	7.4	-	1.38	-
16/10	3/8"	6.5	6.7	7.4	-	1.38	-
20/16	1/2"	7.3	7.5	8.2	11.83	1.69	1.73
20/16	1/2"	7.3	7.5	8.2	11.83	1.69	1.73
20/16	1/2"	7.3	7.5	8.2	11.83	1.69	1.73
32/25	1"	7.9	8.1	9.0	17.96	2.36	2.48
32/25	1"	7.9	8.1	9.0	17.96	2.36	2.48
32/25	1"	7.9	8.1	9.0	17.96	2.36	2.48
32/25	1"	7.9	8.1	9.0	17.96	2.36	2.48

Standard Version

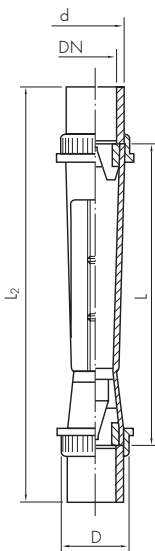


Flanged

Size		Tube length	Socket laying lgth.	Socket/Thread	Flange	Nut O.D.	Flg. O.D.
d/DN mm	ID inch	L inch	L ₁ inch	L ₂ inch	L ₃ inch	D inch	D ₁ inch
32/25	1"	13.2	13.4	14.3	17.96	2.36	2.48
32/25	1"	13.2	13.4	14.3	17.96	2.36	2.48
50/40	1-1/2"	13.2	13.4	14.5	18.74	3.27	3.23
50/40	1-1/2"	13.2	13.4	14.5	18.74	3.27	3.23
63/50	2"	13.2	13.4	14.7	18.74	4.06	4.02
63/50	2"	13.2	13.4	14.7	18.74	4.06	4.02
75/63	2-1/2"	13.2	13.5	14.8	18.54	4.80	4.80
75/63	2-1/2"	13.2	13.5	14.8	18.54	4.80	4.80

Dimensions for UPW Rotameters

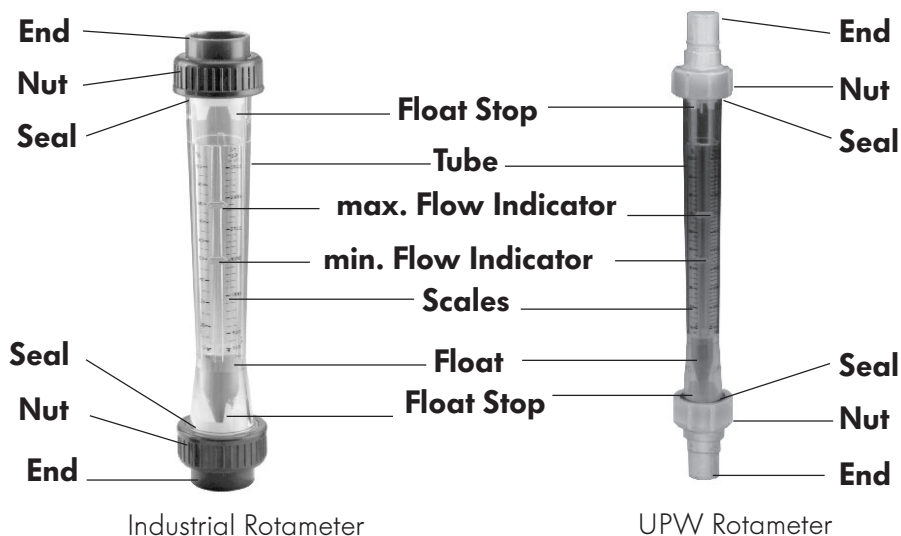
BCF/IR fusion ends



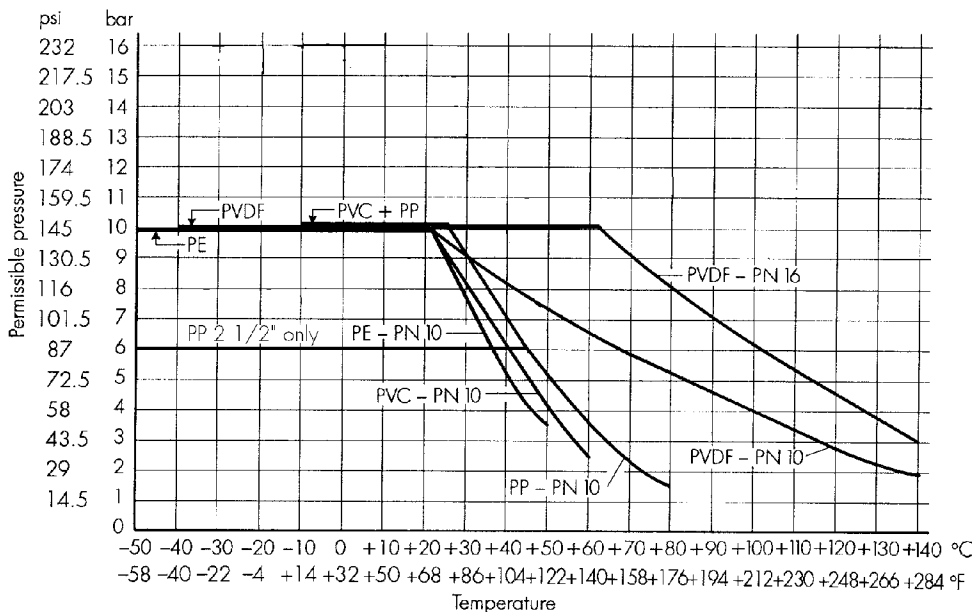
d/DN mm	L Tube Length inch	L ₂ BCF/IR inch	D PVDF Nut O.D. inch
32/25	7.9	13.4	2.36
50/40	13.2	19.7	3.27
63/50	13.2	19.8	4.06
75/63	13.2	17.8	4.80

Parts and Materials

Part	Quantity		Material	
	Ind.	UPW	Industrial	UPW
Tube	1	1	PA, PSU	PSU
Float	1	1	PVDF	PTFE
Stop Short Tube	1	1	PVDF	PVDF
Stops Standard Tube	2	2	PVDF	PVDF
O-Ring Short Tube	2	2	EPDM, FPM	FPM White
O-Rings Standard Tube	2	3	EPDM, FPM	FPM White
Nuts	2	2	PVC, PP, PVDF	PVDF
End Connectors	2	2	PVC, PP, PVDF	PVDF



Application Limits (25 years operation with safety factor incorporated)



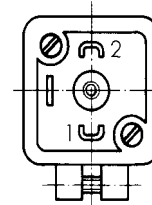
Accessories

Limit contacts

Variable area flow meters from George Fischer are equipped with two dovetailed holders. For external electrical monitoring, these can be used for fitting magnetically actuated limit contacts. These contacts can be used to signal high/low flow conditions.

The same contact type can be used for monitoring both the min. and max. levels. Fitting should be carried out in such a way that the cableways are mutually opposed.

Electrical Connection



Electrical connection for all limit switches

Mode of operation of contacts

Position of float in relation to limit contacts

	above	below
Maximal contact	closed	open
Minimal contact	open	closed

The contacts remain in these positions, even if the float moves away from the contact concerned.



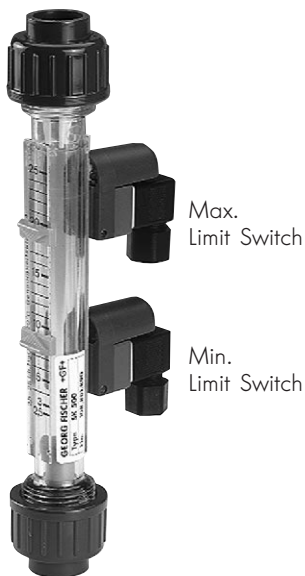
Technical Data

Standard tube

Type: Minimum/Maximum limit switch (for SK 100–SK 410)
 Connection: Standard plug DIN 43650
 Contact fitted: Bistable reed contact
 Mode of protection: IP 65 (NEMA 4x)
 Max. voltage: 250 V AC
 Max. continuous current: 0.2 A
 Peak switch-on current: 0.5 A
(For use with inductive loads, use an external relay to protect the contacts)

Short tube

Type: Minimum/Maximum limit switch (for SK 500–SK 730)
 Connection: Standard plug DIN 40050
 Contact fitted: Bistable reed contact
 Mode of protection: IP 65 (NEMA 4x)
 Supply voltage: 250 V AC
 Max. voltage: 0.2 A
 Peak switch-on current: 0.5 A
(For use with inductive loads, use an external relay to protect the contacts)



4 – 20 mA-Sensor Type GK 05



The sensor Type GK 05 was especially developed for our variable area flow meters for standard tube sizes 1"–2 1/2". By installing this sensor, the customer is able to achieve remote indication easily and economically.

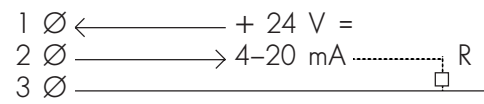
An analog signal (4–20 mA) is emitted, proportional to the position of the float, which can be used directly as an indication value. As a display unit, we suggest the 9010 series from our renowned +GF+ SIGNET line of products.

Technical Data

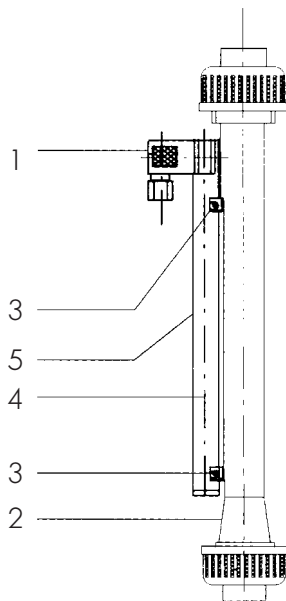
Operating voltage:	24 V = +/- 10%
Current consumption:	8 mA for 4 mA at the current interface
Working resistance:	min. 50 Ω / max. 250 Ω
Current output:	4–20 mA / max. voltage-span + 5 V =
Electrical tolerance:	max. +/- 3% of reading
Protection rating:	IP 65 (NEMA 4x) according to DIN 40050
Ambient temperature:	32°–120°F (0°–50°C)
Connection:	DIN plug according to DIN 43650
Protection:	– reverse polarity protection – RC wiring for operating voltage

Electrical Connection

Pin 1: Operating voltage 24 V =
Pin 2: Output signal 4–20 mA
Pin 3: 0 V



Assembly and Installation



- 1 Connector
- 2 Variable area flow meter
- 3 Fastening screws to adjust the sensor to the dovetail shaft
- 4 Sensor housing
- 5 Marking on the sensor housing, which must be adjusted to the 50% mark on the measurement scale. (With this adjustment, the 4 mA and the 20 mA points are in proportion)
- 6 Exchange float

Density of Correction Table for Liquids

		Calibrating liquid (kg/l) Float material PVDF																
		0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	
Density of working liquid	0.5	1	1.105	1.2	1.29	1.38	1.464	1.545	1.63	1.71	1.785	1.86	1.94	2.02	2.09	2.16	2.24	0.5
	0.6	0.903	1	1.084	1.168	1.248	1.32	1.397	1.475	1.545	1.615	1.68	1.754	1.82	1.89	1.95	2.02	0.6
	0.7	0.834	0.923	1	1.078	1.15	1.22	1.29	1.36	1.425	1.49	1.55	1.615	1.68	1.745	1.8	1.865	0.7
	0.8	0.775	0.856	0.928	1	1.066	1.133	1.196	1.262	1.325	1.38	1.43	1.5	1.56	1.62	1.67	1.73	0.8
	0.9	0.724	0.802	0.87	0.937	1	1.06	1.12	1.18	1.24	1.295	1.35	1.405	1.46	1.515	1.57	1.62	0.9
	1.0	0.683	0.755	0.818	0.883	0.94	1	1.055	1.114	1.17	1.22	1.27	1.325	1.375	1.43	1.48	1.53	1.0
	1.1	0.645	0.715	0.771	0.836	0.892	0.946	1	1.055	1.106	1.155	1.2	1.255	1.3	1.35	1.4	1.45	1.1
	1.2	0.613	0.678	0.735	0.793	0.845	0.896	0.947	1	1.05	1.095	1.14	1.19	1.235	1.28	1.33	1.37	1.2
	1.3	0.585	0.648	0.7	0.755	0.807	0.857	0.903	0.955	1	1.044	1.088	1.134	1.176	1.22	1.264	1.305	1.3
	1.4	.056	0.62	0.671	0.723	0.773	0.82	0.865	0.913	0.958	1	1.042	1.085	1.13	1.17	1.21	1.25	1.4
	1.5	0.537	0.595	0.645	0.695	0.743	0.787	0.832	0.877	0.92	0.96	1	1.042	1.084	1.125	1.16	1.205	1.5
	1.6	0.515	0.57	0.618	0.665	0.712	0.755	0.798	0.84	0.882	0.92	0.958	1	1.04	1.08	1.11	1.15	1.6
	1.7	0.496	0.548	0.595	0.641	0.685	0.726	0.767	0.81	0.848	0.886	0.923	0.961	1	1.038	1.072	1.11	1.7
	1.8	0.478	0.538	0.574	0.617	0.66	0.7	0.74	0.78	0.817	0.853	0.888	0.926	0.962	1	1.032	1.07	1.8
	1.9	0.462	0.511	0.555	0.597	0.638	0.676	0.715	0.755	0.79	0.826	0.858	0.897	0.93	0.968	1	1.034	1.9
	2.0	0.446	0.495	0.536	0.578	0.617	0.654	0.691	0.73	0.764	0.798	0.83	0.867	0.9	0.935	0.965	1	2.0

This table is used to correct the reading displayed by the flowmeter if the specific gravity of the medium differs from that on which calibration is based.

Example

Specific gravity at calibration: 1.4 kg/l .
A liquid with a specific gravity of 0.9 is to be measured. On the basis of a calibrating liquid of 1.4, read out factor 1.295 on line 5 of the working fluid

densities. The readings displayed by the flowmeter are multiplied by this factor to determine the actual volume of flow at a specific gravity of 0.9.

Note

If the new density is higher, the factor is less than 1 .
If the new density is lower, the factor is more than 1 .

Ordering Information

All PVC Socket Ends and UPW Rotameters have a standard nine digit part number (see pages 14.10 – 14.12). All other configurations require a tube assembly, end connection and seal material part number. All flow ranges will be standard unless otherwise noted.

End Connection Options

- A - PVC Threaded
- B - PVC Flanged
- C - PP Socket
- D - PP Threaded
- E - PP Flanged
- F - PVDF Socket
- G - PVDF Threaded
- H - PVDF Flanged

Seal Options

- A - EPDM
- B - FPM

Please see p. 14.16–14.18 for other scales. See p. 14.13–14.15 for component parts.

Accessories

limit switches: p. 14.18

Accuracy

3% of full scale
1% of measured range.

Pressure Range

Rated pressure: 150 psi at 68°F/20°C.

Temperature Range

PA and PSU with PVC ends: 32° to 140°F/0° to 60°C

PSU with PP ends:

32° to 194°F/0° to 90°C

PSU with PVDF ends:

32° to 212°F/0° to 100°C

Note: For reduced pressure ratings at elevated temperatures please use the appropriate George Fischer union material charts.

Example

A 2" PSU Rotameter with Polypropylene socket end connections, EPDM seals, for 5 gpm with a non-magnetic float will have the following part number: **198 806 235 CA**

Tube Assembly	End Connection	Seal Material
198 806 235 (2", 5 gpm)	C (PP socket)	A (EPDM)

PA (Polyamide) Tube Assembly

Inch Size	SK #	Scale Range GPM (Water)	Float Type Standard	Float Type Magnetic
Standard				
1	10	0.22–2.20	198 806 225	198 806 237
1	11	0.44–4.40	198 806 226	198 806 238
1-1/2	20	1.30–13.0	198 806 227	198 806 239
1-1/2	21	2.60–26.0	198 806 228	198 806 240
2	30	4.40–44.0	198 806 229	198 806 241
2	31	6.60–66.0	198 806 230	198 806 242
2-1/2	40	8.80–88.0	198 801 271	198 801 272
2-1/2	41	13.2–132	198 801 275	198 801 276

PSU (Polysulphone) Tube Assembly

Inch Size	SK #	Scale Range GPM (Water)	Float Type Standard	Float Type Magnetic
Short				
3/8	50	0.01–0.11	198 806 100	198 806 110
3/8	51	0.02–0.22	198 806 101	198 806 111
3/8	52	0.04–0.44	198 806 102	198 806 112
1/2	60	0.03–0.33	198 806 103	198 806 113
1/2	61	0.06–0.66	198 806 104	198 806 114
1/2	62	0.08–0.88	198 806 105	198 806 115
1	70	0.06–0.66	198 806 106	198 806 116
1	71	0.13–1.32	198 806 107	198 806 117
1	72	0.22–2.20	198 806 108	198 806 118
1	73	0.44–4.40	198 806 109	198 806 119
Standard				
1	10	0.22–2.20	198 806 231	198 806 243
1	11	0.44–4.40	198 806 232	198 806 244
1-1/2	20	1.30–13.0	198 806 233	198 806 245
1-1/2	21	2.60–26.0	198 806 234	198 806 246
2	30	4.40–44.0	198 806 235	198 806 247
2	31	6.60–66.0	198 806 236	198 806 248
2-1/2	40	8.80–88.0	198 801 273	198 801 274
2-1/2	41	13.2–132	198 801 277	198 801 278

Rotameters - PA (Polyamide) Tube PVC Socket Ends (inch), GPM/% scales



Standard version only.

Please see p. 14.16–14.18 for other scales.

See p. 14.13–14.15 for component parts.

Accessories

limit switches: p. 14.18

Accuracy

3% of full scale

1% of measured range.

Pressure Range

Rated pressure: 150 psi at 68°F/20 C.

Temperature Range

PA and PSU with PVC ends:
32° to 140°F/0° to 60°C

PSU with PP ends:

32° to 194°F/0° to 90°C

PSU with PVDF ends:

32° to 212°F/0° to 100°C

Note: For reduced pressure ratings at elevated temperatures please use the appropriate George Fischer union material charts.

EPDM Seals

Inch Size	SK #	Scale Range GPM	Float Type Standard	Float Type Magnetic
Standard				
1	10	0.22–2.20	198 807 622	198 807 630
1	11	0.44–4.40	198 807 623	198 807 631
1-1/2	20	1.30–13.0	198 807 624	198 807 632
1-1/2	21	2.60–26.0	198 807 625	198 807 633
2	30	4.40–44.0	198 807 626	198 807 634
2	31	6.60–66.0	198 807 627	198 807 635
2-1/2	40	8.80–88.0	198 807 628	198 807 636
2-1/2	41	13.2–132	198 807 629	198 807 637

FPM Seals

Inch Size	SK #	Scale Range GPM	Float Type Standard	Float Type Magnetic
Standard				
1	10	0.22–2.20	198 807 638	198 807 646
1	11	0.44–4.40	198 807 639	198 807 647
1-1/2	20	1.30–13.0	198 807 640	198 807 648
1-1/2	21	2.60–26.0	198 807 641	198 807 649
2	30	4.40–44.0	198 807 642	198 807 650
2	31	6.60–66.0	198 807 643	198 807 651
2-1/2	40	8.80–88.0	198 807 644	198 807 652
2-1/2	41	13.2–132	198 807 645	198 807 653

Rotameters - PSU (Polysulphone) Tube

PVC Socket Ends (inch), GPM/% Scales*



* Short Version has one scale only.

Please see p. 14.16–14.18 for other scales.

See p. 14.13–14.15 for component parts.

Accessories

limit switches: p. 14.18

Accuracy

3% of full scale

1% of measured range.

Pressure Range

Rated pressure: 150 psi at 68°F/20 C.

Temperature Range

PA and PSU with PVC ends:
32° to 140°F/0° to 60°C

PSU with PP ends:

32° to 194°F/0° to 90°C

PSU with PVDF ends:

32° to 212°F/0° to 100°C

Note: For reduced pressure ratings at elevated temperatures please use the appropriate George Fischer union material charts.

EPDM Seals

Inch Size	SK #	Scale Range GPM	Float Type Standard	Float Type Magnetic
Short				
3/8	50	0.01–0.11	198 807 550	198 807 576
3/8	51	0.02–0.22	198 807 551	198 807 577
3/8	52	0.04–0.44	198 807 552	198 807 578
1/2	60	0.03–0.33	198 807 553	198 807 579
1/2	61	0.06–0.66	198 807 554	198 807 580
1/2	62	0.08–0.88	198 807 555	198 807 581
1	70	0.06–0.66	198 807 556	198 807 582
1	71	0.13–1.32	198 807 557	198 807 583
1	72	0.22–2.20	198 807 558	198 807 584
1	73	0.44–4.40	198 807 559	198 807 585
Standard				
1	10	0.22–2.20	198 807 560	198 807 568
1	11	0.44–4.40	198 807 561	198 807 569
1-1/2	20	1.30–13.0	198 807 562	198 807 570
1-1/2	21	2.60–26.0	198 807 563	198 807 571
2	30	4.40–44.0	198 807 564	198 807 572
2	31	6.60–66.0	198 807 565	198 807 573
2-1/2	40	8.80–88.0	198 807 566	198 807 574
2-1/2	41	13.2–132	198 807 567	198 807 575

FPM Seals

Inch Size	SK #	Scale Range GPM	Float Type Standard	Float Type Magnetic
Short				
3/8	50	0.01–0.11	198 807 602	198 807 612
3/8	51	0.02–0.22	198 807 603	198 807 613
3/8	52	0.04–0.44	198 807 604	198 807 614
1/2	60	0.03–0.33	198 807 605	198 807 615
1/2	61	0.06–0.66	198 807 606	198 807 616
1/2	62	0.08–0.88	198 807 607	198 807 617
1	70	0.06–0.66	198 807 608	198 807 618
1	71	0.13–1.32	198 807 609	198 807 619
1	72	0.22–2.20	198 807 610	198 807 620
1	73	0.44–4.40	198 807 611	198 807 621
Standard				
1	10	0.22–2.20	198 807 586	198 807 594
1	11	0.44–4.40	198 807 587	198 807 595
1-1/2	20	1.30–13.0	198 807 588	198 807 596
1-1/2	21	2.60–26.0	198 807 589	198 807 597
2	30	4.40–44.0	198 807 590	198 807 598
2	31	6.60–66.0	198 807 591	198 807 599
2-1/2	40	8.80–88.0	198 807 592	198 807 600
2-1/2	41	13.2–132	198 807 593	198 807 601

Rotameters for UPW

Polysulphone Tube, Solid PTFE Float, White FPM O-rings, PVDF BCF/IR Spigot Ends, GPM/LPH Scales



Please see p. 14.16–14.18 for other scales.

Accessories

limit switches: p. 14.18

Accuracy

3% of full scale

1% of measured range.

Pressure Range

Rated pressure: 150 psi at 68°F/20 C.

Temperature Range

PA and PSU with PVC ends:
32° to 140°F/0° to 60°C

PSU with PP ends:
32° to 194°F/0° to 90°C

PSU with PVDF ends:
32° to 212°F/0° to 100°C

Note: For reduced pressure ratings at elevated temperatures please use the appropriate George Fischer union material charts.

End size d mm	SK #	Flow Range		Part Number
		GPM	LPH	
32	70	0.36-1.0	59-182	198 801 209
32	71	0.4-1.4	79-300	198 801 210
32	73	0.6-3.5	136-795	198 801 202
50	20	2.5-10.0	568-2273	198 801 203
50	21	4.0-18.0	909-4091	198 801 204
63	30	4.4-35.0	1000-8142	198 801 205
63	31	4.4-40.0	1000-9091	198 801 206
75 (IR only)	40	8.0-50.0	1848-11364	198 801 207
75 (IR only)	41	10.0-72.0	2273-16364	198 801 208

These rotameters are compatible for both ambient and hot UPW systems.

Component Parts

Polysulphone Tubes for Hot and Ambient UPW

with Flow Indicators and GPM/LPH Scales

End size d mm	Flow Range		Part Number
	GPM	LPH	
32	0.6-3.5	136-795	700 251 574
50	2.5-10.0	568-2273	700 251 575
50	4.0-18.0	909-4091	700 251 576
63	4.4-35.0	1000-8142	700 251 577
63	4.4-40.0	1000-9091	700 251 578
75	8.0-50.0	1848-11364	700 251 579
75	10.0-72.0	2273-16364	700 251 580

Rotameters - Component Parts

Socket End Connectors (2 required)



OD d mm	ID DN mm	PP (mm)	PVDF (mm)	Inch Size
16	10	727 600 105	735 600 105	3/8
20	15	727 600 106	735 600 106	1/2
32	25	727 600 108	735 600 108	1
50	40	727 600 110	735 600 110	1-1/2
63	50	727 600 111	735 600 111	2
75	65	*727 600 112M	*735 600 112M	2-1/2

* Flange O.D. modified to fit 2-1/2 rotameter nuts (next page)

Socket End Connectors (2 required)

Inch Size	PVC (inch) ASTM	PVC (mm)	CPVC (inch) ASTM
3/8	721 602 005	721 600 105	723 602 005
1/2	721 602 006	721 600 106	723 602 006
1	721 602 008	721 600 108	723 602 008
1-1/2	721 602 010	721 600 110	723 602 010
2	721 602 011	721 600 111	723 602 011
2-1/2	700 259 430	*721 600 112M	N/A

* Flange O.D. modified to fit 2-1/2 rotameter nuts (next page)

Threaded End Connectors (2 required)

Inch Size	PVC FNPT	PP FNPT	PVDF FNPT
3/8	721 602 655	198 203 601	198 203 609
1/2	721 602 656	198 203 603	198 203 611
1	721 602 658	198 203 604	198 203 612
1-1/2	721 602 660	198 203 606	198 203 614
2	721 602 661	198 203 607	198 203 615
2-1/2	N/A	N/A	N/A

IR-Butt Fusion End Connectors (Pipe Union Style) (2 required)

Size (mm)	Beta PP	PVDF	PP-N
20	727 608 506	735 608 606	728 608 506
32	727 608 508	735 608 608	728 608 508
50	727 608 510	735 608 610	728 608 510
63	727 608 511	735 608 611	728 608 511

Rotameters - Component Parts

Nuts (2 required)



Inch Size	PVC
3/8	721 690 005
1/2	721 690 006
1	721 690 008
1-1/2	721 690 010
2	721 690 011
2-1/2	198 806 423

Nuts (2 required)

OD d mm	ID DN mm	PP	PVDF	Inch Size
16	10	727 690 405	735 690 405	3/8
20	15	727 690 406	735 690 406	1/2
32	25	727 690 408	735 690 408	1
50	40	727 690 410	735 690 410	1-1/2
63	50	727 690 411	735 690 411	2

Nuts for 75mm/2-1/2 Inch (2 required)

OD d mm	ID DN mm	PVC	PP	PVDF	Inch Size
75	65	198 806 423	198 806 421	198 806 422	2-1/2

Rotameters - Component Parts



Flanges (2 required)

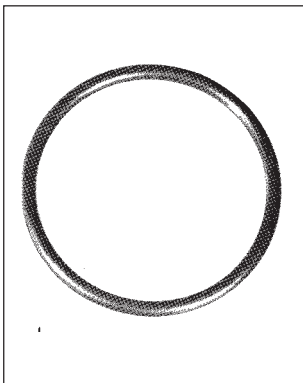
Inch Size	PVC Flange ANSI, complete with adaptor	PVDF-Coated Steel Flange Rings for PP or PVDF
1/2	856-005	155 701 806
1	856-010	155 701 808
1-1/2	856-015	155 701 810
2	856-020	155 701 811
2-1/2	856-025	155 701 812

Flange bolt holes drilled in accordance with ANSI B16.5 Class 150 pattern



Flange Adapters, serrated face (2 required)

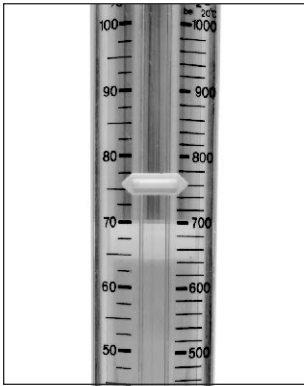
Inch Size	PP ANSI	PVDF ANSI	OD d mm	ID DN mm
1/2	727 798 506	735 798 606	20	15
1	727 798 658	735 798 658	32	25
1-1/2	727 798 660	735 798 660	50	40
2	727 798 511	735 798 611	63	50
2-1/2	727 798 512	735 798 602	75	65



O-Rings (2 required)

Inch Size	EPDM	FPM	OD d mm	ID DN mm
3/8	748 410 005	749 410 005	16	10
1/2	748 410 006	749 410 006	20	15
1	748 410 008	749 410 008	32	25
1-1/2	748 410 010	749 410 010	50	40
2	748 410 011	749 410 011	63	50
2-1/2	748 410 014	749 410 014	75	65

Rotameter Scales



All Rotameters have dual scale capability. Short version has one scale only.

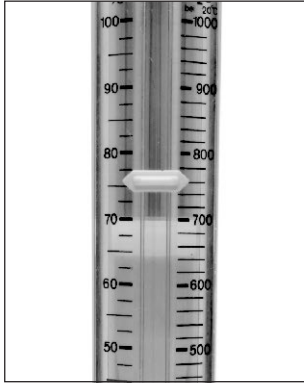
Scales for Water

Inch Size	SK #	Water: Specific Gravity: 1			
		GPM Range	Part Number	LPH Range	Part Number
Short					
3/8	50	0.01-0.11	198 801 961	2.5-25	198 801386
3/8	51	0.02-0.22	198 801 962	5-50	198 801387
3/8	52	0.04-0.44	198 801 963	10-100	198 801388
1/2	60	0.03-0.33	198 801 964	8-80	198 801389
1/2	61	0.06-0.66	198 801 965	15-150	198 801390
1/2	62	0.08-0.88	198 801 966	20-200	198 801391
1	70	0.06-0.66	198 801 967	15-150	198 801392
1	71	0.13-1.32	198 801 968	30-300	198 801393
1	72	0.22-2.20	198 801 969	50-500	198 801394
1	73	0.44-4.40	198 801 970	100-1000	198 801395
Standard					
1	10	0.22-2.20	198 801 949	50-500	198 801 955
1	11	0.44-4.40	198 801 950	100-1000	198 801 956
1-1/2	20	1.30-13.0	198 801 951	300-3000	198 801 957
1-1/2	21	2.60-26.0	198 801 952	600-6000	198 801 958
2	30	4.40-44.0	198 801 953	1000-10,000	198 801 959
2	31	6.60-66.0	198 801 954	1500-15,000	198 801 960
2-1/2	40	8.80-88.0	198 801 320	2000-20,000	198 801 876
2-1/2	41	13.2-132.0	198 801 321	3000-30,000	198 801 877

Standard Scales

Inch Size	SK #	Percentage (Liquids & Air)		Water: Specific Gravity: 1	
		% Range	Part Number	m ³ /hour Range	Part Number
1	10	10%-100%	198 802 076	0.05-0.5	198 801 937
1	11	10%-100%	198 802 077	0.1-1.0	198 801 938
1-1/2	20	10%-100%	198 802 078	0.3-3.0	198 801 939
1-1/2	21	10%-100%	198 802 079	0.6-6.0	198 801 940
2	30	10%-100%	198 802 080	1.0-10.0	198 801 941
2	31	10%-100%	198 802 081	1.5-15.0	198 801 942
2-1/2	40	10%-100%	198 802 082	2.0-20.0	198 801 318
2-1/2	41	10%-100%	198 802 083	3.0-30.0	198 801 319

Rotameter Scales



Special Scales for Liquids – NaOH (GPM)

Inch Size	SK #	NaOH 30%		NaOH 50%	
		GPM Range	Part Number	GPM Range	Part Number
1	10	0.066–1.05	198 801 477	0.008–0.26	198 801 485
1	11	0.22–2.65	198 801 478	0.04–0.84	198 801 486
1-1/2	20	0.88–8.80	198 801 479	0.22–4.4	198 801 487
1-1/2	21	2.20–19.85	198 801 480	0.44–11.0	198 801 488
2	30	2.20–33.0	198 801 481	0.44–21.0	198 801 489
2	31	3.52–48.0	198 801 482	1.32–30.8	198 801 490
2-1/2	40	6.16–66.0	198 801 483	2.20–48.4	198 801 491
2-1/2	41	8.8–88.0	198 801 484	4.40–61.6	198 801 492

Special Scales for Liquids – NaOH (LPH)

Inch Size	SK #	NaOH 30%		NaOH 50%	
		LPH Range	Part Number	LPH Range	Part Number
1	10	15–240	198 801 296	2–60	198 801 302
1	11	50–600	198 801 297	10–190	198 801 303
1-1/2	20	200–2000	198 801 298	50–1000	198 801 304
1-1/2	21	500–4500	198 801 299	100–2500	198 801 305
2	30	500–7500	198 801 300	100–4750	198 801 306
2	31	800–11000	198 801 301	300–7000	198 801 307
2-1/2	40	1400–15000	198 801 326	500–10000	198 801 328
2-1/2	41	2000–20000	198 801 327	1000–14000	198 801 329

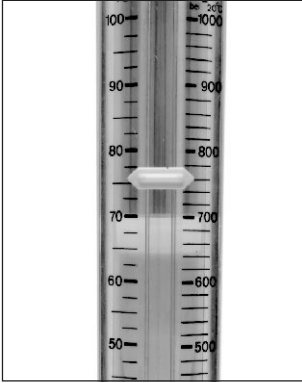
All Rotameters have dual scale capability. Short version has one scale only.

Special Scales for Liquids – HCl (GPM/LPH) for use with magnetic floats

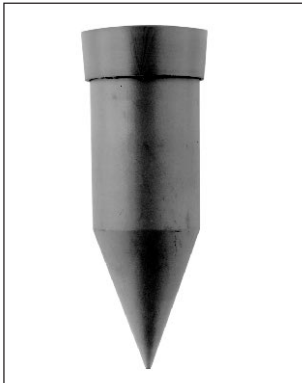
Inch Size	SK #	HCl 30%–33%		HCl 30%–33%	
		GPM Range	Part Number	LPH Range	Part Number
1	10	0.22–1.98	198 801 469	50–450	198 801 290
1	11	0.66–3.95	198 801 470	150–900	198 801 291
1-1/2	20	2.2–11.0	198 801 471	500–2500	198 801 292
1-1/2	21	3.1–22.0	198 801 472	700–5000	198 801 293
2	30	3.1–37.5	198 801 473	700–8500	198 801 294
2	31	4.4–52.9	198 801 474	1000–18000	198 801 295
2-1/2	40	8.8–88.0	198 801 475	2000–18000	198 801 324
2-1/2	41	15.8–110.0	198 801 476	3600–25000	198 801 325

Rotameter Scales and Accessories

Special Scales for Air



Inch Size	Air 14.7 psi (1 bar)				OD d mm	ID DNmm
	SCFM Range	Part Number	Nm ³ /hr Range	Part Number		
1	1.2-10.0	198 801 356	2.1-16	198 801 284	32	25
1	2.5-18.8	198 801 357	4.2-32	198 801 285	32	25
1-1/2	7.0-52.9	198 801 358	12.1-90	198 801 286	50	40
1-1/2	12.5-104	198 801 359	21.1-177	198 801 287	50	40
2	20-162.5	198 801 360	34.2-276	198 801 288	63	50
2	30-245	198 801 361	49.6-414	198 801 289	63	50
2-1/2	38-405	198 801 362	34.2-276	198 801 322	75	65
2-1/2	60-512	198 801 363	49.6-414	198 801 323	75	65



Magnetic Floats (for use with limit switches)

Inch Size	Tube Sizes	Part Number	OD d mm	ID DNmm
3/8	SK50-52	198 806 222	32	25
1/2	SK60-62	198 806 223	20	15
1 Short	SK70-73	198 806 224	32	25
1 Standard	SK10/11	198 801 980	32	25
1-1/2	SK20/21	198 801 981	50	40
2	SK30/31	198 801 982	63	50
2-1/2	SK40	198 801 988	75	65
2-1/2	SK41	198 801 345	75	65



Accessories – Limit Switches

Tube Type	Product Description	Part Number
Short Version	Maximum Limit Switch	198 801 878
Short Version	Minimum Limit Switch	198 801 879
Standard	Maximum or Minimum Switch	198 801 936

Connection: Standard plug DIN 43650

Contact: Bistable reed contact

Protection: NEMA 4X

Max. Voltage: 250 VAC

Max. continuous Current: 0.2A

Peak switch-on Current: 0.5A



4 - 20 mA Sensor Type GK 05

(Transmitter kit for standard tubes only)

Inch Size	Tube Sizes	Product Description	Part Number
1	SK 10/11	4 - 20 mA sensor and magnetic PVDF float	199 190 334
1-1/2	SK 20/21		199 190 335
2	SK 30/31		199 190 336
2-1/2	SK 40		199 190 337
2-1/2	SK 41		199 190 338