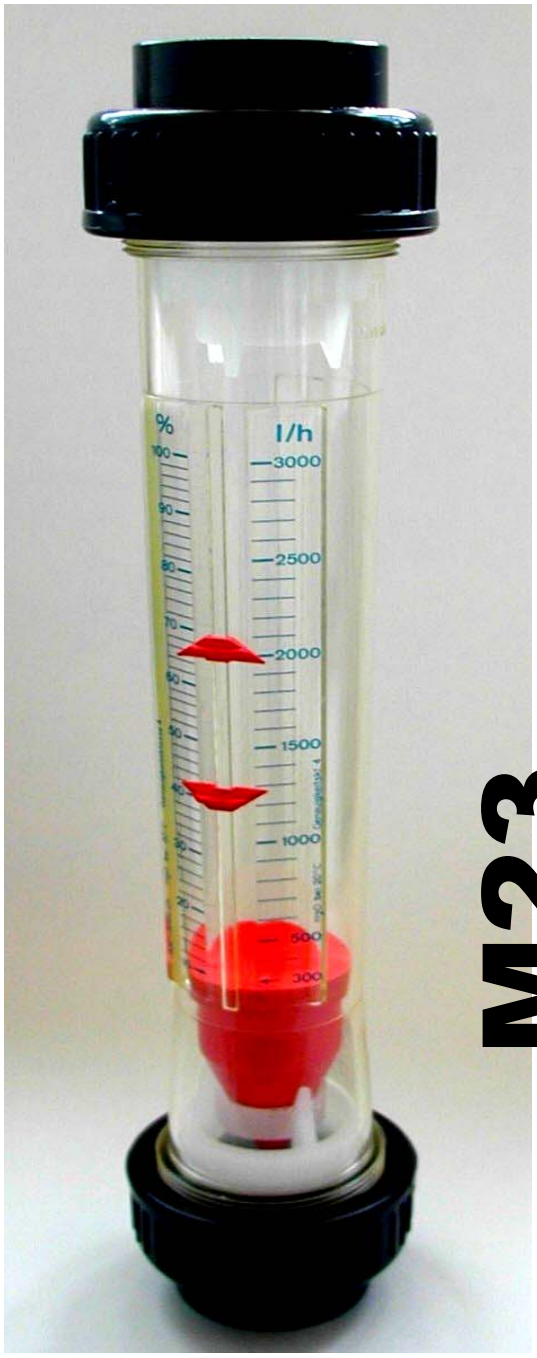
Flowmeter M 23



Operation:

The **FRANK type M 23** plastic flowmeter is based on the well known „suspended float“ principle and is used for measuring and monitoring flows in closed pipes. The medium flows upwards through the flowmeter and raises the float. The flow rate can be read off against the scale on the flowmeter body. The indication point corresponds to the largest diameter of the float.

The standard **FRANK M 23** plastic flowmeter is fitted with a scale for water and two limit indicators.

Special advantages:

- Break and corrosion proof
- May be inserted and removed radially
- Available with spezial scales for almost all liquids and gasses
- Guide rail for accessories
  Limit switches, flow transmitters for remote indication
- Measuring tube labeled with nominal diameter, measuring range and material
- PVDF plastic floats and inserts are standard
- Available in measuring ranges from 15-60.000 l/h

Materials

Tubes	Max Temp. at 1bar	Float	Inserts	O-Ring
PA	60 ° C	PVDF (Standard)	PVDF	EPDM
PVC*	40° C	V2a		FPM (Viton)
PSU	100 ° C	*PVC (for 8000-60000)		
PVDF	140 ° C			

*PVC tubes in test phase available in near future

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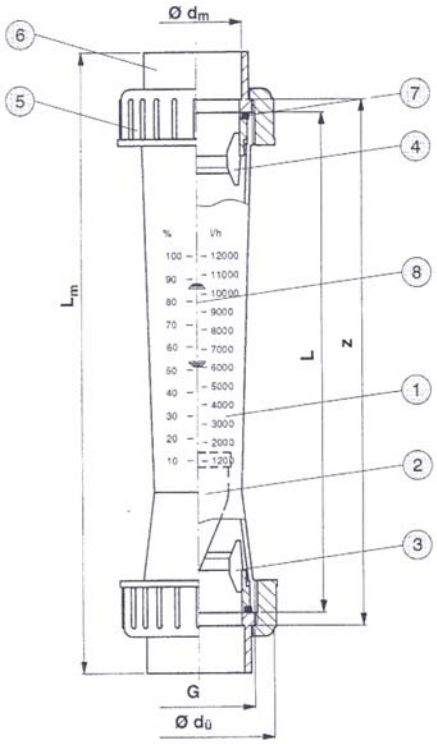
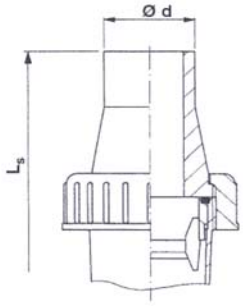
Connection possibilities

Socket fusions	Butt fusions	Internal thread plastic	Internal thread metal
PVC solvent sockets (Standard)	PP fusion sockets	PVC	Stainless steel V4A
PP fusion sockets	PVDF fusion sockets	PP	Malleable iron
PVDF fusion sockets	PE fusion sockets	PVDF	

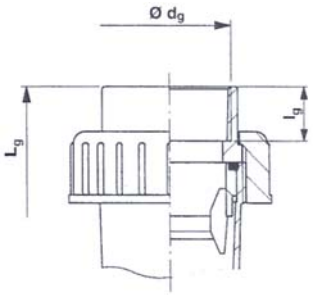
Fittings with solvent cement/fusion sockets



Fittings with Butt fusion sockets



Fittings with internal female thread



Single parts

Pos.	Description	Qty	Material
1	Measuring tube	1	PA,PVC, PSU,PVDF
2	Suspended float	1	PVDF, V2A
3	Lower insert	1	PVDF
4	Upper insert	1	PVDF

Pos.	Description	Qty.	Material
5	Union	2	PVC, PP, PVDF
6	Inserts (fusion, Butt fusion	2	PVC, PP, PVDF
7	O-Ring	2	EPDM, FPM
8	Limit indicator	2	PS

Dimensions and weights

Dimensions in mm																				Weight in kg/piece	
Range l/h H_2O	DN	$d_ü$	G	L	Solvent cement socket			Fusion socket			Butt fusion socket PP			Butt fusion socket PVDF			Threaded socket			PVC PA PSU	PVDF
					d_m	z	L_m	d_m	z	L_m	d	L_s	S SDR 11	d	L_s	S SDR 33	d_g	L_g	l_g		
15-150 50-500 100-1000	25	60	11/2”	335	32	341	385	31,5	345	381	32	455	3	32	443	2,4	1”	385	22	0,41	0,52
200-2000 300-3000	40	83	21/4”	335	50	341	403	50	345	391	50	467	4,6	50	459	3	11/2”	403	23	1,02	1,22
600-6000 1200-12000	50	103	23/4”	335	63	341	417	63	345	399	63	473	5,8	63	461	3	2”	418	24	1,38	1,68
2000-20000 3000-30000 8000-60000	65	122	31/2”	335	75	341	429	75	345	407	75	753	6,9	75	453	3,6	-	-	-	2,15	2,9

Pressure losses

Max operating pressure : PN 10 at 20 ^{0} C

Measuring range l/h	15-150	50-500	100-1000	200-2000	300-3000	600-6000	1200-12000	2000-20000	3000-30000	8000-60000*
Pressure loss (mm WS)	185.3	185.3	185.3	251.6	251.6	254.8	251.6	254.8	251.6	335.7

Measuring accuracy

Accuracy class 4 with VDE/DIN 3513 Blatt 2										
Flow %	10	20	30	40	50	60	70	80	90	100
Total difference from measuring value	13.00%	8.00%	6.333%	5.500%	5.00%	4.667%	4.429%	4.250%	4.111%	4.00%
Total difference from end value	1.3%	1.6%	1.9%	2.2%	2.5%	2.85	3.1%	3.4%	3.7%	4.0%

Special scales

Measuring range	AIR 0 bar	AIR 1 bar	AIR 2 bar	AIR 3 bar
H2O l/h	N m3/h	N m3/h	N m3/h	N m3/h
15-150	0.8-5	1.2-7	1.4-9	1.6-10
50-500	2-18	3-25	4-30	5-35
100-1000	4-34	6-50	8-60	8-70
200-2000	10-70	12-90	14-120	15-130
300-3000	10-90	15-130	20-160	20-190
600-6000	22-190	30-260	40-380	40-400
1200-12000	45-370	60-520	80-660	100-760
2000-20000	60-580	90-800	100-1060	120-1200
3000-30000	100-860	140-1200	200-1500	200-1700

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Measuring range	AIR 4 bar	AIR 5 bar	AIR 6 bar	AIR 7 bar
H2O l/h	N m3/h	N m3/h	N m3/h.	N m3/h
15-150	2-12	2-13	2-14	2.5-14
50-500	5-40	6-43	6-45	7-50
100-1000	10-74	10-84	10-90	12-96
200-2000	20-150	20-160	20-170	20-190
300-3000	25-210	25-230	30-250	30-260
600-6000	50-450	50-480	75-500	70-550
1200-12000	100-840	100-900	100-1000	120-1000
2000-20000	150-1300	150-1500	150-1500	200-1700
3000-30000	250-1900	250-2100	300-2200	300-2400

Measuring range	AIR 8 bar	HCl 30-33 % (PSU)	NaOH 30 %	NaOH 50 %
H2O l/h	N m3/h	l/h	l/h	l/h
15-150	2.5-15	20-130	3-46	0.5-7
50-500	6-52	60-460	10-270	2.5-70
100-1000	12-100	120-900	40-600	6-220
200-2000	20-200	200-1900	100-1400	20-600
300-3000	30-280	300-2700	200-2000	50-1200
600-6000	75-550	800-5600	400-4600	200-3400
1200-12000	140-1100	1200-10000	800-8400	300-5600
2000-20000	200-1800	2000-18000	1400-15000	500-11000
3000-30000	300-2500	3000-25000	2000-20000	1000-14000

Special scales on request Necessary data		
Medium		
Specific weight	g / cm3	
Viscosity	cP or mPas	
Operating temperature	°C	
Requested measuring range	l/h	

Installation and assembly references:

- Install flowmeters vertically and tension free into the piping system
- Antisipate the In- and Outlet distance
  Inlet aprox. 10 x DN
  Outlet aprox.. 5 x DN

Operating information

- Avoid pressure blows as these may lead to damages of the device
- Caution by installation. The measuring tube should not come into contact with solvents.
- Before use all connections should be examined for suffecient strain.
- Please do nat exchange the unions on our PVDF tubes. The construction length of the tube does not correspond with the measuring index.