



Plastic Flow Meters and Switches

for Liquids and Gases



measuring
•
monitoring
•
analysing

- Measuring range:
15-150 to 8000-60000 L/h water
0.8-5 to 300-2500 m³_N/h air
- p_{max} 16 bar, t_{max} 140 °C
- Accuracy: ±4 % f. s
- Connection:
G ½ to G 3 ½ or
glue-in connection
- Material:
Trogamide-T, Polysulfone or PVDF



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Model:
KSM



Description

The KOBOLD plastic flow meters of model KSM are based on the float principle with the float moving freely without friction in the measuring tube. The indication point is at the greatest diameter of the float. The standard flow meters are supplied with a scale for water (+20°C), a percentage scale, O-rings, two setpoint indicators and a guide rail for accessories. The measuring tube is available in PVDF (model KSM-3...) for service with highly aggressive media, in polysulfone (KSM-2...) for less aggressive media or in Trogamide (model KSM-1...) for simple water or air applications. The materials are resistant to impact, bending and compressive stresses. Optional threaded fittings can be fitted on the external threads integrally extruded at the ends. The floats are supplied with integrated magnets for operation with a bistable reed contact.

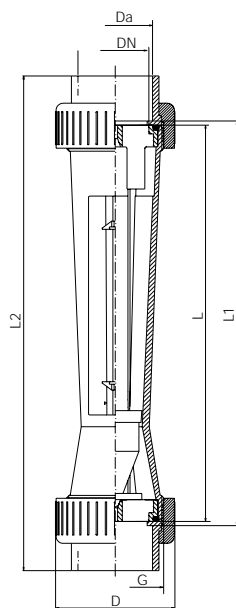
Special advantages

- Rugged and corrosion resistant
- Special scales can be attached
- Guide rails for limit switches (can also be retrofitted, only replacement of the float is necessary).
- Nominal sizes, measuring range and measuring tube material are all marked on the measuring tube.

Applications

- Cooling circuits
- Water treatment
- Plant engineering

Dimensions



Technical Details

Housing:	KSM-1...: Trogamide-T KSM-2...: Polysulfone KSM-3...: PVDF (translucent)
Connections:	G 1 1/2 to G 3 1/2 depending on the size
Float:	PVDF, PVC (KSM-x600...)
Seals:	EPDM (KSM-1... / KSM-2...) FPM (KSM-3...)
Max. temperature:	KSM-1...: 0-60°C KSM-2...: 0-100°C with contact: max. 85°C KSM-3...: 0-140°C
Max. pressure:	KSM-1...: 16 bar KSM-2...: 16 bar KSM-3...: 10 bar
Accuracy:	± 4% f. s.
Repeatability:	≤ 1%

Reed contact option

Bistable reed contact N/O contact with increasing flow
 Max. ambient temperature: 0-55°C
 Max. power: 230 V_{AC}
 10 W / 12 VA
 0.5 A
 Hysteresis: approx. 3-12 mm float travel
 Protection: IP 65
 (To retrofit an instrument with a contact the float must be replaced with a float with integral magnet).

Auxiliary screwed fittings option

(KSM-1... and KSM-2... only)
 The following auxiliary screwed fittings are available with a union nut:

- Glue-in connection in PVC (max. 60°C; PN 10)
- Internal thread in PVC (max. 60°C; PN 10)
- Internal thread in cast iron

The sizes are shown in the Order Details table.

Dimensions

Model	DN	G	Da (mm)	L (mm)	L1 (mm) approx.	L2 (mm) approx.										D (mm) approx.
						Cast Iron	Glue In	PVC G 1/2	PVC G 3/4	PVC G 1	PVC G 1 1/4	PVC G 1 1/2	PVC G 2	PVDF Welding sleeve		
KSM..001	25	G 1 1/2	32	335	341	390	385	432	411	480	-	-	-	385	60	
KSM..005	25	G 1 1/2	32	335	341	390	385	432	411	480	-	-	-	385	60	
KSM..010	25	G 1 1/2	32	335	341	390	385	432	411	480	-	-	-	385	60	
KSM..020	40	G 2 1/4	50	335	341	401	403	-	-	467	477	525	-	403	83	
KSM..030	40	G 2 1/4	50	335	341	401	403	-	-	467	477	525	-	403	83	
KSM..060	50	G 2 3/4	63	335	341	411	417	-	-	482	-	498	558	417	103	
KSM..120	50	G 2 3/4	63	335	341	411	417	-	-	482	-	498	558	417	103	
KSM..200	65	G 3 1/2	75	335	342	412	457	-	-	-	-	510	570	429	122	
KSM..300	65	G 3 1/2	75	335	342	412	457	-	-	-	-	510	570	429	122	
KSM..600	65	G 3 1/2	75	335	342	412	457	-	-	-	-	510	570	-	122	



Medium liquids

The following scales are available for liquids

Model	Standard Water L/h	Pressure loss mbar	Special scale					
			Water m³/h	Water L/s	Water L/min	NaOH 30% L/h	NaOH 50% L/h	HCl* 30-33% L/h
KSM-...001	15 - 150	19	-	-	0.25 - 2.5	3 - 46	0.5 - 7	20 - 130
KSM-...005	50 - 500	19	-	-	0.8 - 8	10 - 270	2.5 - 70	60 - 460
KSM-...010	100 - 1000	19	0.1 - 1	-	1.7 - 17	40 - 600	6 - 220	120 - 900
KSM-...020	200 - 2000	26	0.2 - 2	0.056 - 0.56	3.3 - 33	100 - 1400	20 - 600	200 - 1900
KSM-...030	300 - 3000	26	0.3 - 3	0.08 - 0.8	5 - 50	200 - 2000	50 - 1200	300 - 2700
KSM-...060	600 - 6000	26	0.6 - 6	0.17 - 1.7	10 - 100	400 - 4600	200 - 3400	800 - 5600
KSM-...120	1200 - 12000	26	1.2 - 12	0.34 - 3.4	20 - 200	800 - 8400	300 - 5600	1200 - 10000
KSM-...200	2000 - 20000	26	2.0 - 20	0.55 - 5.5	33 - 330	1400 - 15000	500 - 11000	2000 - 18000
KSM-...300	3000 - 30000	26	3.0 - 30	0.83 - 8.3	50 - 500	2000 - 20000	1000 - 14000	3000 - 25000
KSM-...600	8000 - 60000	34	8.0 - 60	-	-	-	-	-

* for KSM-2... and KSM-3... only

Order Details (Example: KSM-1005H K32 R1)

Measuring range water L/h	Order no. Trogamide	Order no. Polysulfone	Order no. PVDF	Scale	Option screwed fitting (for KSM-1..., KSM-2... only)	Option contact
15 - 150	KSM-1001...	KSM-2001...	KSM-3001...	H = L/h water Q = m³/h water M = L/min water	000 = without auxiliary screwed fitting K32 = glue-in connection Da32 (PVC) P15 = PVC G 1/2 female	R0 = without contact R1 = 1 contact R2 = 2 contacts
50 - 500	KSM-1005...	KSM-2005...	KSM-3005...	S = L/s water N = L/h NaOH 30%	P20 = PVC G 3/4 female P25 = PVC G 1 female	
100 - 1000	KSM-1010...	KSM-2010...	KSM-3010...	A = L/h NaOH 50% C = L/h HCl 30%	T25 = malleable cast iron G 1 fem. V32 = PVDF (Welding sleeve) Da32**	
200 - 2000	KSM-1020...	KSM-2020...	KSM-3020...	H = L/h water Q = m³/h water M = L/min water	000 = without auxiliary screwed fitting K50 = glue-in connection Da50 (PVC) P25 = PVC G 1 female	R0 = without contact R1 = 1 contact R2 = 2 contacts
300 - 3000	KSM-1030...	KSM-2030...	KSM-3030...	S = L/s water N = L/h NaOH 30%	P32 = PVC G 1 1/4 female P40 = PVC G 1 1/2 female	
600 - 6000	KSM-1060...	KSM-2060...	KSM-3060...	A = L/h NaOH 50% C = L/h HCl 30%	T40 = malleable cast iron G 1 1/2 fem. V50 = PVDF (Welding sleeve) Da50**	
1200 - 12000	KSM-1120...	KSM-2120...	KSM-3120...	H = L/h water Q = m³/h water M = L/min water	000 = without auxiliary screwed fitting K63 = glue-in connection Da63 (PVC) P25 = PVC G 1 female	R0 = without contact R1 = 1 contact R2 = 2 contacts
2000 - 20000	KSM-1200...	KSM-2200...	KSM-3200...	S = L/s water N = L/h NaOH 30%	P40 = PVC G 1 1/2 female P50 = PVC G 2 female	
3000 - 30000	KSM-1300...	KSM-2300...	KSM-3300...	A = L/h NaOH 50% C = L/h HCl 30%	T50 = malleable cast iron G 2 fem. V63 = PVDF (Welding sleeve) Da63**	
8000 - 60000	KSM-1600...	KSM-2600...	-	H = L/h water Q = m³/h water M = L/min water	000 = without auxiliary screwed fitting K75 = glue-in connection Da75 (PVC) P40 = PVC G 1 1/2 female	R0 = without contact Contact not for KSM-16.. and KSM-26.. R1 = 1 contact R2 = 2 contacts
				S = L/s water N = L/h NaOH 30%	P50 = PVC G 2 female T65 = malleable cast iron G 2 1/2 fem.	
				A = L/h NaOH 50% C = L/h HCl 30%	V75 = PVDF (Welding sleeve) Da75**	

**for KSM-3... only



Medium air

The following scales are available for air

Model	m ³ _N /h (0 bar rel)	m ³ _N /h (1 bar rel)	m ³ _N /h (2 bar rel)	m ³ _N /h (3 bar rel)	m ³ _N /h (4 bar rel)	m ³ _N /h (5 bar rel)	m ³ _N /h (6 bar rel)	m ³ _N /h (7 bar rel)	m ³ _N /h (8 bar rel)
KSM-...001	0.8 - 5	1.2 - 7	1.4 - 9	1.6 - 10	2 - 12	2 - 13	2 - 14	2.5 - 14	2.5 - 15
KSM-...005	2 - 18	3 - 25	4 - 30	5 - 35	5 - 40	6 - 43	6 - 45	7 - 50	6 - 52
KSM-...010	4 - 34	6 - 50	8 - 60	8 - 70	10 - 74	10 - 84	10 - 90	12 - 96	12 - 100
KSM-...020	10 - 70	12 - 90	14 - 120	15 - 130	20 - 150	20 - 160	20 - 170	20 - 190	20 - 200
KSM-...030	10 - 90	15 - 130	20 - 160	20 - 190	25 - 210	25 - 230	30 - 250	30 - 260	30 - 280
KSM-...060	22 - 190	30 - 260	40 - 380	40 - 400	50 - 450	50 - 480	75 - 500	70 - 550	75 - 550
KSM-...120	45 - 370	60 - 520	80 - 660	100 - 760	100 - 840	100 - 900	100 - 1000	120 - 1000	140 - 1100
KSM-...200	60 - 580	90 - 800	100 - 1060	120 - 1200	150 - 1300	150 - 1500	150 - 1500	200 - 1700	200 - 1800
KSM-...300	100 - 860	140 - 1200	200 - 1500	200 - 1700	250 - 1900	250 - 2100	300 - 2200	300 - 2400	300 - 2500

Order Details (Example: KSM-1010 2 P15 R0)

Meas. range air m ³ _N /h (0 bar rel.)	Order no. Trogamide	Order no. Polysulfone	Order no. PVDF	Scale Range see Table	Option screwed fitting	Option contact		
0.8 - 5	KSM-1001...	KSM-2001...	KSM-3001...	0 = 0 bar rel. 1 = 1 bar rel. 2 = 2 bar rel. 3 = 3 bar rel. 4 = 4 bar rel. 5 = 5 bar rel. 6 = 6 bar rel. 7 = 7 bar rel. 8 = 8 bar rel.	000 = without auxiliary screwed fitting* K32 = glue-in connection Da32 (PVC)* P15 = PVC G 1/2 female* P20 = PVC G 3/4 female* P25 = PVC G 1 female* T25 = malleable cast iron G 1 fem.* V32 = PVDF (Welding sleeve) Da32**	R0 = without contact R1 = 1 contact R2 = 2 contacts		
2 - 18	KSM-1005...	KSM-2005...	KSM-3005...					
4 - 34	KSM-1010...	KSM-2010...	KSM-3010...					
10 - 70	KSM-1020...	KSM-2020...	KSM-3020...			000 = without auxiliary screwed fitting* K50 = glue-in connection Da50 (PVC)* P25 = PVC G 1 female* P32 = PVC G 1 1/4 female* P40 = PVC G 1 1/2 female* T40 = malleable cast iron G 1 1/2 fem.* V50 = PVDF (Welding sleeve) Da50**	R0 = without contact R1 = 1 contact R1 = 1 contact	
10 - 90	KSM-1030...	KSM-2030...	KSM-3030...					
22 - 190	KSM-1060...	KSM-2060...	KSM-3060...				000 = without auxiliary screwed fitting* K63 = glue-in connection Da63 (PVC)* P25 = PVC G 1 female* P40 = PVC G 1 1/2 female* P50 = PVC G 2 female* T50 = malleable cast iron G 2 fem.* V63 = PVDF (Welding sleeve) Da63**	R0 = without contact R1 = 1 contact R2 = 2 contacts
45 - 370	KSM-1120...	KSM-2120...	KSM-3120...					
60 - 580	KSM-1200...	KSM-2200...	KSM-3200...					
100 - 860	KSM-1300...	KSM-2300...	KSM-3300...					

*for KSM-1... and KSM-2... only

**for KSM-3... only