

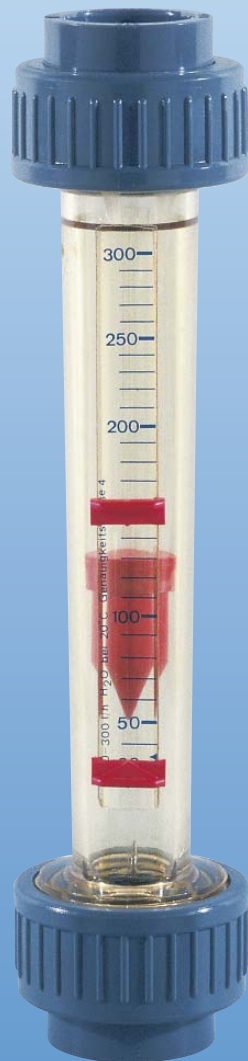


## Plastic Flow Meters and Switches for Liquids and Gases



measuring  
•  
monitoring  
•  
analysing

KSK



- Flow rates:  
Water 1.5 - 11 ... 100 - 1000 l/h  
Air 0.15 - 0.45 ... 20 - 105 Nm<sup>3</sup>/h
- Accuracy: category 4
- $p_{\max}$  PN10,  $t_{\max}$  140 °C
- Connection:  
Glue-in connection,  
G 1/4, G 1/2, G 3/4, G 1
- Material:  
Trogamide, polysulfone, PVDF



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**Function and design**

KOBOLD plastic flow meters and switches model KSK are based on the well known suspended float principle.

They are used for measuring and monitoring flows in closed pipes.

The media flows, from below, through a conical plastic measuring tube. This raises the float and the flow rate can be read off against the scale. The instruments can be fitted with bistable switches.

The use of the high-quality material PVDF (model KSK 3..) means that this type is very suited for service with corrosive media.

**Special advantages**

- Shock resistant and corrosion-resistant
- May be inserted/removed radially
- Special scales available
- Short installation length
- Plastic float and fitting generally made of PVDF

**Technical Details**

**Materials**

Measuring tube:	Trogamide T (KSK 1..) or polysulfone (KSK 2..) or PVDF (KSK 3..), not transparent, but <b>opaque</b> translucent
Float:	PVDF
Float stop:	PVDF
O-rings:	EPDM (KSK-1..; KSK-2..) FPM (KSK-3..)
Max. operating pressure:	PN 10
Max. operating temperature:	<b>KSK 1...</b> max. 60 °C (0...60 °C) <b>KSK 2...</b> max. 100 °C (0...100 °C) max. 60 °C (with PVC screwed fitting) max. 85 °C (with contact) <b>KSK 3...</b> max. 140 °C (max. 85 °C with contact)
Accuracy class:	4 (acc. to VDE / VDI 3513, sheet 2)

**Connection (standard)**

KSK 1... a. KSK 2...:	PVC glue-in connection
KSK 3...:	PVDF Welding sleeve

**Connection (optional) for KSK 1.. and KSK 2..**

KSK- ..080../..150../..200..:	Brass or st. steel union nut with G ½ female or male G ½ female or male or G ¾ male
KSK- ..300../..500../..999..:	PVC union nut with G ½; G ¾, G 1 internal thread or G1 female cast iron
KSK- ..015../..025../..050../ ..100..:	PVC G ¼ female

**Contacts (optional)**

The flow meter can be fitted with either reed contacts or electronic contacts.

**Reed contacts (bistable)**

Switching voltage*:	max. 130 V <sub>AC</sub> , 200 V <sub>DC</sub>
Breaking capacity*:	max. 10 W / 10 VA
Switching current*:	max. 0.5 A
Contact resistance:	max. 150 mΩ
Insulation resistance:	min. 1000 MΩ
Allowed ambient temperature:	0...+55 °C
Protection:	IP 65
Contact hysteresis:	approx 5 - 7 mm Floater distance

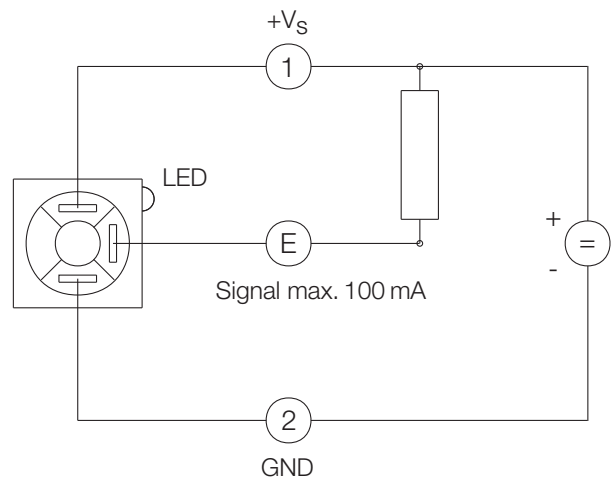
\* Short-time overshoot is not allowed.

The use of a contact protection relay is therefore recommended (see Accessories Z2 brochure).

**Electronic contacts (bistable)**

The contact operates electronically with no mechanical parts that are subject to wear and tear.

Operating voltage:	9 - 24 V <sub>DC</sub>
Switching output:	NPN max. 100 mA
Ambient temperature:	0...55 °C
Protection:	IP 65
Contact hysteresis:	< 6 mm
Dimensions:	33 x 18 x 40 mm
Weight with plug:	16 g
Output signal (with LED at the top)	
Float above contact across PIN 1 and PIN E:	0 V
Float below contact across PIN 1 and PIN E:	9 - 24 V LED out





**Medium air**

The following scales are available for air

Model	Nm <sup>3</sup> /h (0 bar rel)	Nm <sup>3</sup> /h (1 bar rel)	Nm <sup>3</sup> /h (2 bar rel)	Nm <sup>3</sup> /h (3 bar rel)	Nm <sup>3</sup> /h (4 bar rel)	Nm <sup>3</sup> /h (5 bar rel)	Nm <sup>3</sup> /h (6 bar rel)	Nm <sup>3</sup> /h (7 bar rel)	Nm <sup>3</sup> /h (8 bar rel)	Nm <sup>3</sup> /h (9 bar rel)	Nm <sup>3</sup> /h (10 bar rel)
KSK-...15...	0.15...0.45	0.2...0.6	0.25...0.75	0.25...0.9	0.3...1.0	0.35...1.1	0.35...1.2	0.4...1.3	0.4...1.35	0.4...1.4	0.45...1.5
KSK-...25...	0.2...1.1	0.25...1.5	0.3...1.9	0.3...2.2	0.4...2.45	0.5...2.75	0.5...2.9	0.5...3.1	0.6...3.3	0.6...3.5	0.6...3.6
KSK-...50...	0.4...2.0	0.5...2.8	0.6...3.4	0.7...4.0	0.8...4.5	0.9...5.0	1.0...5.5	1.0...5.75	1.0...6.0	1.25...6.5	1.5...7.0
KSK-...80...	0.5...3.0	0.75...4.25	0.75...5.5	1.0...6.5	1.0...7.0	1.0...8.0	1.25...8.5	1.5...9.0	1.5...9.5	1.5...10.0	1.5...10.5
KSK-...100...	0.75...3.75	1.0...5.0	1.25...6.0	1.5...7.0	1.75...8.0	2.0...9.0	2.0...9.5	2.0...10.0	2.5...10.5	2.5...11.0	2.5...12.0
KSK-...150...	1.0...6.0	1.5...7.5	2.0...9.0	2.0...11.0	2.5...13.0	2.5...14.0	3.0...15.0	3.0...16.0	3.0...17.0	3.5...18.5	3.5...19.5
KSK-...200...	1.5...7.5	2.5...10.0	3.0...13.0	3.5...14.5	4.0...17.0	4.5...19.0	5.0...20.0	5.0...22.5	6.0...23.0	6.0...24.0	6.0...25.0
KSK-...300...	1.0...10.0	1.5...14.0	2.0...17.0	2.5...20.0	3.0...23.0	3.0...24.0	3.5...25.0	3.5...27.5	3.5...30.0	4.0...31.0	4.0...32
KSK-...500...	2.0...17.0	3.0...24.0	4.0...28.0	4.0...32.0	5.0...36.0	5.0...40.0	6.0...42.0	6.0...45.0	6.0...48.0	7.0...50.0	7.0...55.0
KSK-...999...	6.0...31.0	8.0...44.0	10.0...54.0	12.0...62.0	12.0...70.0	15.0...75.0	15.0...80.0	15.0...90.0	15.0...95.0	15.0...100.0	20.0...105.0

**Order Details** (Example: KSK-1015H K16 00)

Measuring range water l/h	Order no. Trogamide	Order no. Polysulfone	Order no. PVDF*	Scale meas. range see table	Thread fitting option	Contact option	
1.5 - 11	KSK-1015...	KSK-2015...	-	<b>Standard</b> H = L/h water <b>Special scale</b> A = air; 0 bar rel. B = air; 1 bar rel. C = air; 2 bar rel. D = air; 3 bar rel. E = air; 4 bar rel. F = air; 5 bar rel. G = air; 6 bar rel. I = air; 7 bar rel. K = air; 8 bar rel. L = air; 9 bar rel. M = air; 10 bar rel. Y = other	<b>K16</b> = PVC glue-in connection Ø 16 <b>V16</b> = PVDF welding sleeve Ø 16* <b>P08</b> = PVC G ¼ female	<b>00</b> = without contact <b>SO</b> = 1 N/O contact <b>SS</b> = 2 N/O contact <b>SC</b> = 1 N/O contact/ 1 NC contact <b>C0</b> = 1 NC contact <b>CC</b> = 2 NC contact <b>EO</b> = 1 electr. cont. <b>EE</b> = 2 electr. cont.	
2.5 - 30	KSK-1025...	KSK-2025...	KSK-3025...*				
5 - 50	KSK-1050...	KSK-2050...	KSK-3050...*				
10 - 100	KSK-1100...	KSK-2100...	KSK-3100...*				
8 - 80	KSK-1080...	KSK-2080...	KSK-3080...*				<b>K20</b> = PVC glue-in connection Ø 20 <b>V20</b> = PVDF welding sleeve Ø 20* <b>IG1</b> = brass G ½ female <b>AG1</b> = brass G ½ male <b>AG3</b> = brass G ¾ male
20 - 150	KSK-1150...	KSK-2150...	KSK-3150...*				<b>IG2</b> = stainless steel G ½ female <b>AG2</b> = stainless steel G ½ male <b>AG4</b> = stainless steel G ¾ male
30 - 200	KSK-1200...	KSK-2200...	KSK-3200...*				<b>K32</b> = PVC glue-in connection Ø 32 <b>V32</b> = PVDF welding sleeve Ø 32* <b>P15</b> = PVC G ½ female <b>P20</b> = PVC G ¾ female <b>P25</b> = PVC G 1 female <b>T25</b> = Cast iron G 1 female
30 - 300	KSK-1300...	KSK-2300...	KSK-3300...*				
50 - 500	KSK-1500...	KSK-2500...	KSK-3500...*				
100 - 1000	KSK-1999...	KSK-2999...	KSK-3999...*				

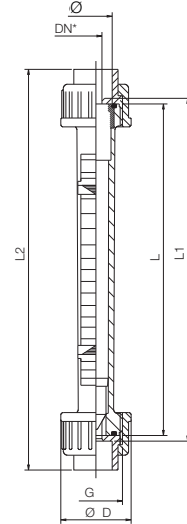
\* KSK-3... for PVDF-Welding sleeve and without air scale only



Dimensions (with standard glue-in conn. PVC, PVC G 1/4 female or PVDF welding sleeve)

Model	DN	Ø	L	L1	L2	D	G**	Press. loss mm WC*
KSK-..015..	10	16	165	171	199	35	G 3/4	46
KSK-..025..	10	16	165	171	199	35	G 3/4	46
KSK-..050..	10	16	165	171	199	35	G 3/4	46
KSK-..080..	15	20	185	191	223	43	G 1	45
KSK-..100..	10	16	165	171	199	35	G 3/4	46
KSK-..150..	15	20	185	191	223	43	G 1	45
KSK-..200..	15	20	185	191	223	43	G 1	45
KSK-..300..	25	32	200	206	250	60	G 1 1/2	83
KSK-..500..	25	32	200	206	250	60	G 1 1/2	83
KSK-..990..	25	32	200	206	250	60	G 1 1/2	83

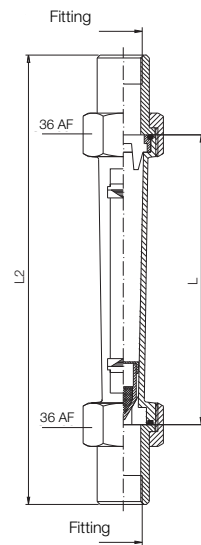
\* Medium water \*\*without auxiliary thread fitting



Dimensions (with special thread fittings in brass or stainless steel) female or male

Model	L	L2	Special thread fitting			G**	Press. loss mm WC*
			Female	Male	SW		
KSK-..015..	165	-	-	-	-	G 3/4	46
KSK-..025..	165	-	-	-	-	G 3/4	46
KSK-..050..	165	-	-	-	-	G 3/4	46
KSK-..080..	185	245	G 1/2	G 1/2 or G 3/4	36	G 1	45
KSK-..100..	165	-	-	-	-	G 3/4	46
KSK-..150..	185	245	G 1/2	G 1/2 or G 3/4	36	G 1	45
KSK-..200..	185	245	G 1/2	G 1/2 or G 3/4	36	G 1	45
KSK-..300..	200	-	-	-	-	G 1 1/2	83
KSK-..500..	200	-	-	-	-	G 1 1/2	83
KSK-..990..	200	-	-	-	-	G 1 1/2	83

\* Medium water \*\*without auxiliary thread fitting



Dimensions (with special thread fittings made of PVC or Cast iron) female

Model	L	L2	Special thread fitting	AF/D	G**	Press. loss mm WC*
KSK-..300..	200	255	Cast iron G 1 female	55 AF	G 1 1/2	83
KSK-..300..	200	295	PVC, G 1/2 female	Ø 60	G 1 1/2	83
KSK-..300..	200	303	PVC, G 3/4 female	Ø 60	G 1 1/2	83
KSK-..300..	200	346	PVC, G 1 female	Ø 60	G 1 1/2	83
KSK-..500..	200	255	Cast iron G 1 female	55 AF	G 1 1/2	83
KSK-..500..	200	295	PVC, G 1/2 female	Ø 60	G 1 1/2	83
KSK-..500..	200	303	PVC, G 3/4 female	Ø 60	G 1 1/2	83
KSK-..500..	200	346	PVC, G 1 female	Ø 60	G 1 1/2	83
KSK-..999..	200	255	Cast iron G 1 female	55 AF	G 1 1/2	83
KSK-..999..	200	295	PVC, G 1/2 female	Ø 60	G 1 1/2	83
KSK-..999..	200	303	PVC, G 3/4 female	Ø 60	G 1 1/2	83
KSK-..999..	200	346	PVC, G 1 female	Ø 60	G 1 1/2	83

\* Medium water \*\*without auxiliary thread fitting

