



Variable Area Flow Meters and Switches

for liquids and gases



measuring
•
monitoring
•
analysing

KSM

- Measuring range:
15 - 150 ... 8000 - 60 000 l/h water
0.8 - 5 ... 300 - 2500 Nm³/h air
- p_{\max} : 16 bar; t_{\max} : 100 °C
- Accuracy: ± 4 % of full scale
- Connection: 1/2" ... 3 1/2"
- Material:
Trogamide-T or polysulfone



S2



KOBOLD companies worldwide:

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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. From nominal size DN65 the devices are provided with a guide rod to stabilize the floats. 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 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.

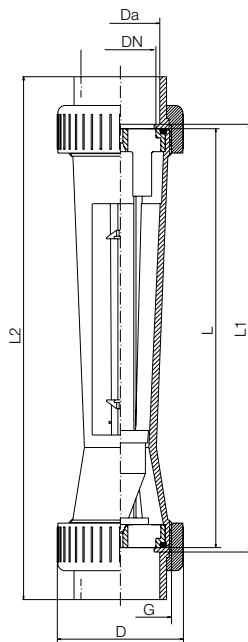
Special advantages

- 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 |
| Connections: | see table Order Details |
| Float: | PVDF |
| Guide rod: | PVDF stainless steel for the 3 largest sizes |
| Seals: | EPDM (KSM-1... / KSM-2...) |
| Max. temperature: | KSM-1...: 0-60°C KSM-2...: 0-100°C with contact max. 85°C |
| Max. pressure: | KSM-x0xx, KSM-x1xx: 16 bar KSM-x201, KSM-x301, KSM-x601: PN10 |
| Accuracy: | ±4 % of full scale |
| Repeatability: | ≤1 % |

Reed contact option

Bistable reed contact N/O contact with increasing flow

| | |
|---------------------|---|
| Max. ambient temp.: | 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...)

The following auxiliary screwed fittings are available with a union nut:

- Glue-in connection in PVC (max. 60°C, PN10)
- Internal thread in PVC (max. 60°C, PN10)
- 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 Rp ½ | PVC Rp ¾ | PVC Rp 1 | PVC Rp 1 ¼ | PVC Rp 1 ½ | PVC Rp 2 | PVC Flange | | |
| KSM-..001 | 25 | G 1 ½ | 32 | 335 | 341 | 390 | 385 | 432 | 411 | 480 | - | - | - | on request | 60 | |
| KSM-..005 | 25 | G 1 ½ | 32 | 335 | 341 | 390 | 385 | 432 | 411 | 480 | - | - | - | on request | 60 | |
| KSM-..010 | 25 | G 1 ½ | 32 | 335 | 341 | 390 | 385 | 432 | 411 | 480 | - | - | - | on request | 60 | |
| KSM-..020 | 40 | G 2 ¼ | 50 | 335 | 341 | 401 | 403 | - | - | 467 | 477 | 525 | - | 475 | 83 | |
| KSM-..030 | 40 | G 2 ¼ | 50 | 335 | 341 | 401 | 403 | - | - | 467 | 477 | 525 | - | 475 | 83 | |
| KSM-..060 | 50 | G 2 ¾ | 63 | 335 | 341 | 411 | 417 | - | - | 482 | - | 498 | 558 | 501 | 103 | |
| KSM-..120 | 50 | G 2 ¾ | 63 | 335 | 341 | 411 | 417 | - | - | 482 | - | 498 | 558 | 501 | 103 | |
| KSM-..201 | 65 | G 3 ½ | 75 | 335 | 342 | 412 | 457 | - | - | - | - | 510 | 570 | 526 | 122 | |
| KSM-..301 | 65 | G 3 ½ | 75 | 335 | 342 | 412 | 457 | - | - | - | - | 510 | 570 | 526 | 122 | |
| KSM-..601 | 65 | G 3 ½ | 75 | 335 | 342 | 412 | 457 | - | - | - | - | 510 | 570 | 526 | 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] |
| KSM-..001 | 15 - 150 | 19 | - | - | 0.25 - 2.5 |
| KSM-..005 | 50 - 500 | 19 | - | - | 0.8 - 8 |
| KSM-..010 | 100 - 1000 | 19 | 0.1 - 1 | - | 1.7 - 17 |
| KSM-..020 | 200 - 2000 | 26 | 0.2 - 2 | 0.056 - 0.56 | 3.3 - 33 |
| KSM-..030 | 300 - 3000 | 26 | 0.3 - 3 | 0.08 - 0.8 | 5 - 50 |
| KSM-..060 | 600 - 6000 | 26 | 0.6 - 6 | 0.17 - 1.7 | 10 - 100 |
| KSM-..120 | 1200 - 12000 | 26 | 1.2 - 12 | 0.34 - 3.4 | 20 - 200 |
| KSM-..201 | 2000 - 20000 | 26 | 2.0 - 20 | 0.55 - 5.5 | 33 - 330 |
| KSM-..301 | 3000 - 30000 | 26 | 3.0 - 30 | 0.83 - 8.3 | 50 - 500 |
| KSM-..601 | 8000 - 60000 | 34 | 8.0 - 60 | 2.22 - 16.66 ¹⁾ | - |

¹⁾ Only with KSM-1

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

| Measuring range water [l/h] | Order no. Trogamide | Order no. Polysulfone | Scale | Option screwed fitting | Option contact |
|-----------------------------|---------------------|-----------------------|---|---|---|
| 15 - 150 | KSM-1001... | KSM-2001... | H = l/h water Q = m³/h water M = l/min water S = l/s water | 000 = without auxiliary screwed fitting K32 = glue-in connection Da32 (PVC) P15 = PVC Rp ½ female P20 = PVC Rp ¾ female P25 = PVC Rp 1 female T25 = malleable cast iron G1 female F25 = PVC flange DN 25 | R0 = without contact R1 = 1 contact R2 = 2 contacts |
| 50 - 500 | KSM-1005... | KSM-2005... | | | |
| 100 - 1000 | KSM-1010... | KSM-2010... | | | |
| 200 - 2000 | KSM-1020... | KSM-2020... | H = l/h water Q = m³/h water M = l/min water S = l/s water | 000 = without auxiliary screwed fitting K50 = glue-in connection Da50 (PVC) P25 = PVC Rp 1 female P32 = PVC Rp 1 ¼ female P40 = PVC Rp 1 ½ female T40 = malleable cast iron G 1 ½ female F40 = PVC flange DN 40 | R0 = without contact R1 = 1 contact R2 = 2 contacts |
| 300 - 3000 | KSM-1030... | KSM-2030... | | | |
| 600 - 6000 | KSM-1060... | KSM-2060... | H = l/h water Q = m³/h water M = l/min water S = l/s water | 000 = without auxiliary screwed fitting K63 = glue-in connection Da63 (PVC) P25 = PVC Rp 1 female P40 = PVC Rp 1 ½ female P50 = PVC Rp 2 female T50 = malleable cast iron G2 female F50 = PVC flange DN 50 | R0 = without contact R1 = 1 contact R2 = 2 contacts |
| 1200 - 12000 | KSM-1120... | KSM-2120... | | | |
| 2000 - 20000 | KSM-1201... | KSM-2201... | H = l/h water Q = m³/h water M = l/min water S ¹⁾ = l/s water | 000 = without auxiliary screwed fitting K75 = glue-in connection Da75 (PVC) P40 = PVC Rp 1 ½ female P50 = PVC Rp 2 female T65 = malleable cast iron G2 ½ female F65 = PVC flange DN 65 | R0 = without contact |
| 3000 - 30000 | KSM-1301... | KSM-2301... | | | |
| 8000 - 60000 | KSM-1601... | KSM-2601... | | | |

¹⁾ Not for KSM-2601



Medium air

The following scales are available for air

| Model | Nm ³ /h (0 bar rel.) | Nm ³ /h (1 bar rel.) | Nm ³ /h (2 bar rel.) | Nm ³ /h (3 bar rel.) | Nm ³ /h (4 bar rel.) | Nm ³ /h (5 bar rel.) | Nm ³ /h (6 bar rel.) | Nm ³ /h (7 bar rel.) | Nm ³ /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 | 20 - 210 | 25 - 230 | 25 - 250 | 30 - 260 | 30 - 280 |
| KSM-..060 | 22 - 190 | 30 - 260 | 40 - 380 | 40 - 400 | 40 - 450 | 50 - 480 | 50 - 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-..201 | 70 - 580 | - | - | - | - | - | - | - | - |
| KSM-..301 | 100 - 900 | - | - | - | - | - | - | - | - |

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

| Meas. range air [Nm ³ /h] (0 bar rel.) | Order no. Trogamide | Order no. Polysulfone | Scale Range see table | Option screwed fitting | Option contact |
|---|---------------------|-----------------------|--|---|---|
| 0,8 - 5 | KSM-1001... | KSM-2001... | 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 Rp ½ female P20 = PVC Rp ¾ female P25 = PVC Rp 1 female T25 = malleable cast iron G1 female F25 = PVC flange DN 25 | R0 = without contact R1 = 1 contact R2 = 2 contacts |
| 2 - 18 | KSM-1005... | KSM-2005... | | | |
| 3 - 34 | KSM-1010... | KSM-2010... | | | |
| 10 - 70 | KSM-1020... | KSM-2020... | | 000 = without auxiliary screwed fitting K50 = glue-in connection Da50 (PVC) P25 = PVC Rp 1 female P32 = PVC Rp 1 ¼ female P40 = PVC Rp 1 ½ female T40 = malleable cast iron G 1 ½ female F40 = PVC flange DN 40 | R0 = without contact R1 = 1 contact R2 = 2 contacts |
| 10 - 90 | KSM-1030... | KSM-2030... | | | |
| 22 - 190 | KSM-1060... | KSM-2060... | | 000 = without auxiliary screwed fitting K63 = glue-in connection Da63 (PVC) P25 = PVC Rp 1 female P40 = PVC Rp 1 ½ female P50 = PVC Rp 2 female T50 = malleable cast iron G2 female F50 = PVC flange DN 50 | R0 = without contact R1 = 1 contact R2 = 2 contacts |
| 45 - 370 | KSM-1120... | KSM-2120... | | | |
| 70 - 580 | KSM-1201...* | KSM-2201...* | | 000 = without auxiliary screwed fitting K75 = glue-in connection Da75 (PVC) P40 = PVC Rp 1 ½ female P50 = PVC Rp 2 female T65 = malleable cast iron G2 ½ female F65 = PVC flange DN 65 | R0 = without contact |
| 100 - 900 | KSM-1301...* | KSM-2301...* | | | |

* only available for 0 bar rel.