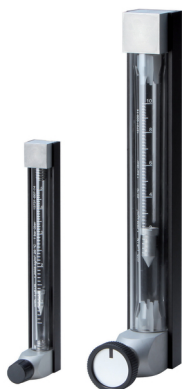


Low flow-rates area flowmeters SGK 1-3



- Direct reading on a calibrated tube
- Water: 0.1 – 1 l/h ... 1.2 m³/h
- Air: 0.3 – 3 l/h ... 16 m³/h
- Maxima: 10 bar or 100 °C
- Measuring glass tube: Conical (Pyrex®)
- Fittings: BSP ¼" or ½"
- OPTIONS :
Pressure regulator
Limit value switches
Analogue output 4-20 mA
ATEX version available

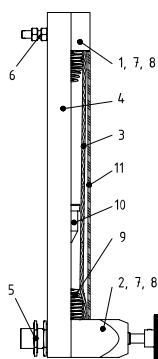
APPLICATIONS

Flowmeters SGK 1-3 are used for direct reading and measuring of low flow-rates on liquids and gases. They are designed for reduced space, in laboratory, in technical rooms.

DESCRIPTION

The measuring principle is that of the variable area flowmeter, the float is moved by the fluid inside a calibrated conical glass tube. The glass tube (3) is sealed at each end by an O-ring protected against damaged by a flat gasket (inserted in the parts 1 and 2).

These flowmeters can be equipped with an adjustment valve and they receive limit value switches. The signal output from limit value switches are easily connected to a PLC or monitoring device. The GK2 version can be fitted with a ruler with a 4-20 mA transmitter (Hall effect sensors).



- 1) Head (here: vertical outlet, model B1)
- 2) Adjustment valve (here: at bottom, type B1)
- 3) Conical measuring glass tube
- 4) Body
- 5) Fittings with nut BSP ¼" or ½"
- 6) Nut M5 or M8 for fastening heads
- 7) O-ring seals inside 1) & 2); Not shown
- 8) Gaskets inside 1) & 2); Not shown

Standard versions:

SGK-1	For smallest flows of air and water
SGK-2	For medium flows of air and water
SGK-3	Low flows of air and water
...-MSK1	With bistable Reed contact N.C.
...-MSK12	With bistable Reed contact N.O.
...-MSKW	With changeover Reed contact
...-RC ¹⁾	With inductive limit value switch
...-EM ²⁾	With analogue output 4-20 mA or 10 V

¹⁾ Flow-rates < 2 l/h of water; < 80 l/h of air

²⁾ Available only with SGK-2 version (other ranges on request)

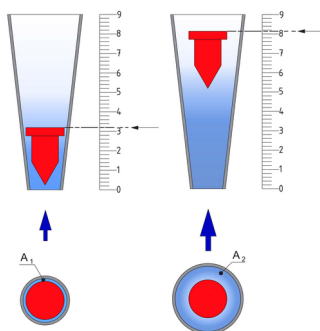
Limit value switches:

These flowmeters can be equipped with a magnetic float and Reed contacts, triggerpoints adjustable over the entire measuring range. For small flows up to 30 l/h, detection by inductive contact series RC will be used.

Analogue output 4-20 mA or 0-10 V:

The output signal is obtained by using a linear Hall effect displacement sensor. The output signal is proportional to the height of the magnetic float position. The sensor is plugged through a connector M12.

This output is useful for applications using a PLC. The device is compact with a high level of measurement repeatability.



Principle

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Low flow-rates area
flowmeters
SGK 1-3

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TECHNICAL FEATURES

Fittings	Threads or male or female according DIN EN ISO 228 T1 Option : Hose couplings
Design	From "A" to "Do" types: Report to the table "DESIGN" (end of document)
Operating temperature	With NBR seals: Max. 80 °C With FPM seals: Max. 100 °C
Operating pressure	Max. 10 bar (Without water hammer event)

Measuring tube

Reading scale	Engraved scale
Graduated scale length	SGK 1-2: ~150 mm SGK 3: ~220 mm
Accuracy class	VDE/VDI 3513, page 2
Error limit (G)	1.6 %
Linear limit (qG)	50 %
Calibration	According application specifications

Materials

Body	Anodized aluminum
Fittings	Standard: Or anodized aluminum, or PVC Options: AISI 316 Ti or PVDF
Seals	Standard: NBR for Aluminum version FPM for AISI 316 Ti version Options: EPDM, Perlast® (FFKM)
Conical measuring tube	Borosilicate glass
Float	Aluminum, PVC, PP, AISI 316 Ti Option: PTFE
Pressure regulator	Needle: AISI 316 Ti

Other materials on request

	Reed contact features		
	MSK1	MSK2	MSKW
Function	Bistable NC	Bistable NO	Bist. Changeover
Max. Voltage	50 V AC / 75 V DC	50 V AC / 75 V DC	50 V AC/75 V DC
Max. Current	0,5 A	0,5 A	0,5 A
Switching capacity	10 W/VA	10 W/VA	5 W/VA
Temperature ¹⁾	-20...+90 °C	-20...+90 °C	-20...+90 °C

¹⁾ The thermal endurance of the flow meter is crucial.

	Inductive contacts features	
	RC 10-14-N3	RC 15-14-N3
Inner diameter	10 mm	15 mm
Rated voltage	8 V DC	8 V DC
Consumption	1 mA / 3 mA	1 mA / 3 mA
Max. speed (float)	≤10 m/s	≤10 m/s
Self-inductance	≤120 mH	≤120 mH
Temperature range	-20...+70 °C	-20...+70 °C
Switching function	NAMUR bistable	NAMUR bistable

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Analogue output 4-20 mA - EM, features

Measuring range [A...B]	125 mm, 160 mm
Repeatability	≤ 0.1% F.S. ≤ dependent upon position sensor
Linearity deviation	≤ 1 % v.E.
Temperature drift	≤ ±0,03 % /K
Ambient temperature ¹⁾	-25....+65 °C
Operating voltage	15...30 V DC
Idle current	≤ 15 mA
Analogue output ²⁾	4-wire transmitter
Load resistor on 4-20 mA	≤ 0,4 kΩ
Output 0-10 V	0...10 V
Load resistor on 0-10 V	≥ 4,7 kΩ
Sampling rate	200 Hz
Connection	Plug Connector, M12 x 1
Protection	IP 67
Signaling LED	Green: Operating Yellow: Position sensor in detection range

¹⁾ The thermal endurance of the flow meter is crucial.

²⁾ 2-wire version available on request

MEASURING SCALES

	Range for Air ¹⁾	Range for Water
SGK-1	0.3 - 3 l/h 0.25 - 2.5 m ³ /h	0.1 - 1 l/h 15 - 150 l/h
SGK-2	6 - 60 l/h 0.58 - 5.8 m ³ /h	0.5 - 5 l/h 20 - 200 l/h
SGK-3	0.15 - 1.5 m ³ /h 1.6 - 16 m ³ /h	12 - 120 l/h 0.12 - 1.2 m ³ /h

Measuring scales for other fluids and operating conditions: On request

¹⁾ For standard operating conditions at 0 °C and 1013 mbar ABS



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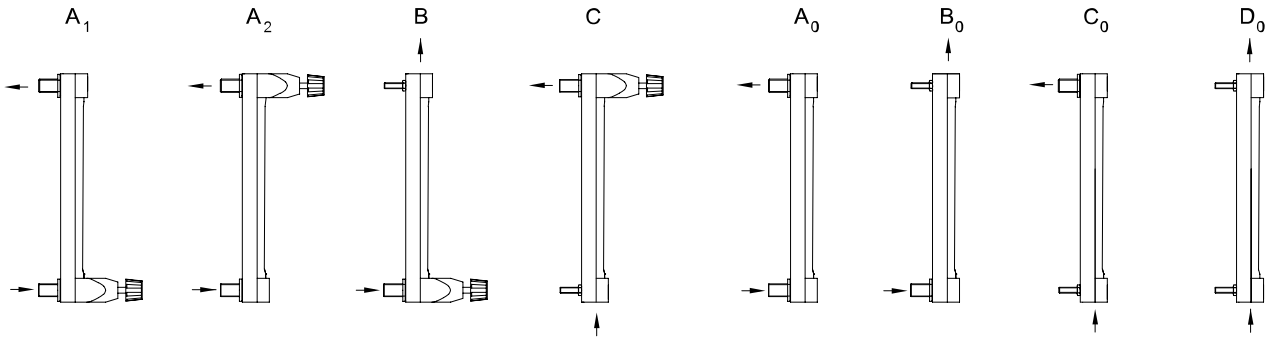
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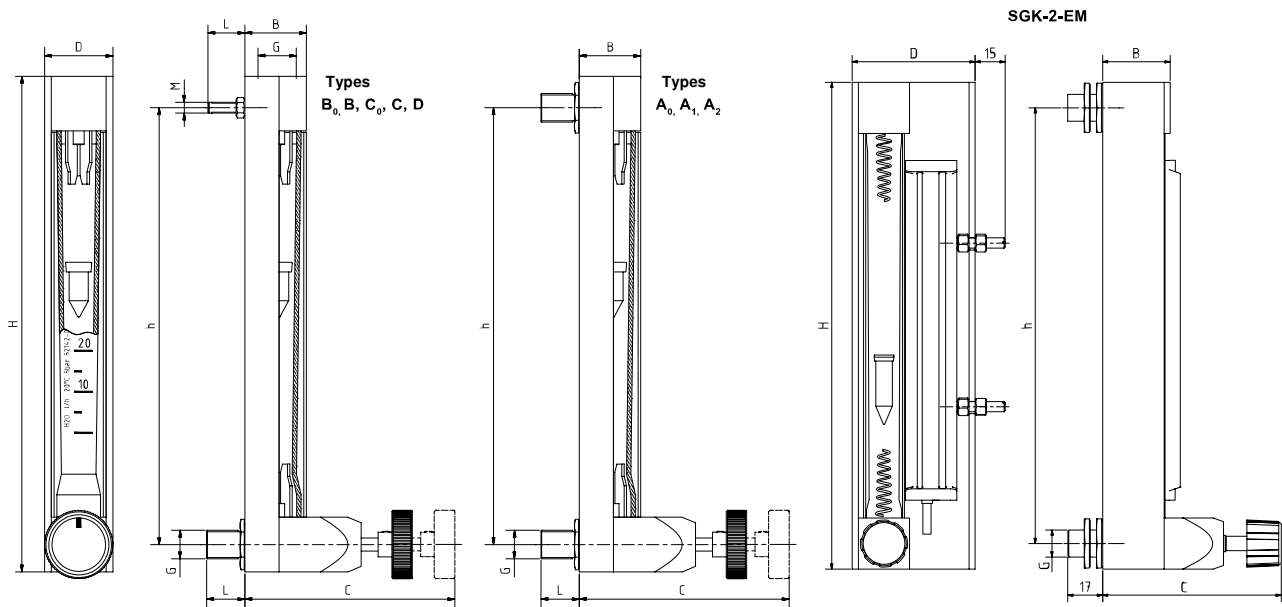
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DESIGN



DIMENSIONS



	G	Types	H [mm]	h [mm]	M	L [mm]	B [mm]	D [mm]	C maxi [mm]
SGK-1	1/4"	A ₁ , A ₂ , A ₀	238	213	-	~ 22.5	27.5	30	80 (Only: A ₁ , A ₂)
SGK-2	1/4"	A ₁ , A ₂ , A ₀	238	213	-	~ 22.5	27.5	30	80 (Only: A ₁ , A ₂)
	1/4"	B, B ₀ , C, C ₀	242	211	M5	~ 22.5	27.5	30	80 (Only: B, C)
	1/4" i	D ₀	246	209	M5	~ 22.5	27.5	30	-
SGK-2-EM	1/4"	A ₁ , A ₂ , A ₀	238	213	-	~ 17	33	60	85 (Only: A ₁ , A ₂)
SGK-3	1/2	A ₁ , A ₂ , A ₀	363	323	-	~ 27	45	50	135 (Only: A ₁ , A ₂)
	1/2	B, B ₀ , C, C ₀	363	320	M8	~ 27	45	50	135 (Only: B, C)
	1/2 i	D ₀	363	317	M8	~ 27	45	50	-

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