



All Metal Variable Area Flowmeter for Liquids and Gases



measuring
•
monitoring
•
analysing

BGK



- Measuring range:
0.1 - 1 l/h ... 20 - 200 l/h water
5 - 50 NI/h ... 600 - 6000 NI/h air
- Accuracy:
±3 % q_G 50 acc. VDE/VDI 3513
- p_{max} : PN 40 bar; t_{max} : 130 °C
- Connection: Flange DN 10 / 15 / 25,
ASME 1/2", 3/4", 1"
- Material: Stainless steel
- 1 or 2 inductive contacts
- Analogue output



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Function

The fluid flows from bottom to top through the meter tube of the flow meter. The float is lifted until an annular gap between the measuring cone and the float is produced which corresponds to the flow. The forces acting on the float are in equilibrium.

The height of the float resulting from the flow rate is transmitted by the permanent magnet in the float through the magnetic tracking system in a rotation to the pointer axis of the analog indicator unit.

The variable-area flowmeter consists of a stainless steel device with an integrated conical stainless steel measuring-tube and a vertically movable float.

Application

The KDS meter is suitable for flow measurement of liquid or gaseous products in pipes.

It shows the current flow rate in volume or mass per unit in time.

Areas of Application

- Flow measurement of liquids and gases
- Can be used in the chemical industry or in medical or laboratory engineering
- Robust mechanical system with a low rate of wear

The devices are available with additional electrical equipment for process monitoring and control

- A variety of sealing materials
- High pressure application (option)
- Analogue output (option)

Materials

Indicator housing:	Polyamid, cover Ultramid
Measuring cone, float, armature:	Stainless steel 1.4404/1.4571 other materials on request
Process connection:	flange see order details
Nominal pressure:	PN 40/300 lbs
Accuracy liquid/gas:	±3 % q_G 50 acc. VDE/VDI 3513
Process temperature:	
Without limit contact/ electronic:	-40 °C ... +130 °C
With limit contact:	NJ1,5-6,5N -25 ... +100 °C; NJ2-11SN -40 ... +100 °C
With analogue output:	-40 ... +100 °C (BGK-..E)
Ambient temperature:	-25 °C ... +70 °C
Weight:	2.4 kg
Protection:	IP 65 (EN60529)
Display:	%-scale Measuring range scale

Certificate and Approval

Explosion protection: BVS 03 ATEX H/B 113

Pressure drop:

Measuring range	H ₂ O/mbar
A	6
B	7.5
C	7.5
D	8
E	9
F	10
G	11
H	12
I	15
J	20
K	28

Technical Details



Electrical contacts:

Limit contacts: 1 up to max. 2 inductive limit contacts,
NAMUR (Pepperl & Fuchs
NJ 1.5-6.5N); 8,2 V (Ri ~1K Ω)
(NJ 2-11-SN); 5...25 V_{DC}
(safety function)

Analogue output

(BGK-...E): 4-20 mA, 2-wire, passive; 14-30 V;
load max. 500 Ω version Ex
(intrinsically safe) connection via
M12 plug

Ambient
temperature: -40°C ... +70°C

Certificates and Approvals

Explosion protection:

BGK-...E: BVS 12 ATEX E 093 X and
IECEX BVS 12.0061X
II 2 G Ex ib IIC T4 Gb or
II 2D Ex ib IIC T135°C Db
NJ1,5-6,5N PTB 00 ATEX 2048 X II
2G Ex ia IIC T6-T4
NJ 2-11SN PTB 00 ATEX 2049 X II
2G Ex ia IIC T6-T4
ZELM 03 ATEX 0128 X II 1D Ex iaD
20 T...°C

CE-Marking: Explosion Protection Directive 94/9/EG,
PED 97/23/EG

Electromagnetic compability

For add-on
electrical sensors: EMV-Directive 89/336/EEG
EN 61326-1:2006

SIL: SIL Conformity acc. IEC-61508-
2:2000 and IEC-61508-2:2010

Order details (Example: BGK-301B A 0 A 0 0)

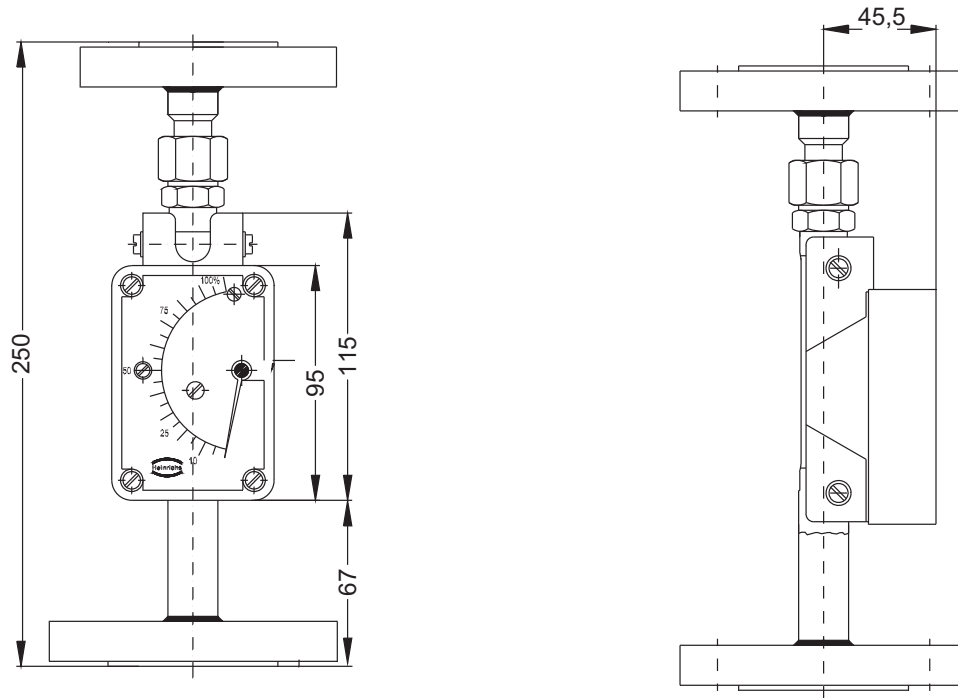
	Flange connection	Measuring range	Certificates ²⁾	Scale	Electrical output	Special version
BGK-	301B = DN 10, PN 40, Form B1 DIN EN 1092-1					
	305B = DN 15, PN 40, Form B1 DIN EN 1092-1	A = 0.1 - 1.0 l/h H ₂ O; 5-50 NI/h Air ¹⁾			0 = without (Process temperature -40°C...+130°C)	
	305D = DN 15, PN 40, Form D DIN EN 1092-1	B = 0.25 - 2.5 l/h H ₂ O; 15-80 NI/h Air ¹⁾		A = % Scale H ₂ O	1 = 1 x Inductive contact, initiator (NJ1.5-6.5-N) (Process temperature -25°C...+100°C)	
	309B = DN 25, PN 40, Form B1 DIN EN 1092-1	C = 0.6 - 6.0 l/h H ₂ O; 40-210 NI/h Air ¹⁾		B = MR-Scale H ₂ O		
	309D = DN 25, PN 40, Form D DIN EN 1092-1	D = 1.0 - 10 l/h H ₂ O; 60-350 NI/h Air ¹⁾		C = MR-Scale Air	2 = 2 x Inductive contact (NJ1.5-6.5-N) (Process temperature -25°C...+100°C)	
	201R = ½" Class 150 RF, ASME B16.5-2003	E = 1.6 - 16 l/h H ₂ O; 48-480 NI/h Air ¹⁾		D = % Scale Media		0 = without
	221R = ½" Class 300 RF, ASME B16.5-2003	F = 2.5 - 25 l/h H ₂ O; 75-750 NI/h Air ¹⁾	0 = without	E = MR-Scale Media		X = Special acc. to spezification
	202R = ¾" Class 150 RF, ASME B16.5-2003	G = 4.0 - 40 l/h H ₂ O; 120-1200 NI/h Air ¹⁾		F = Double scale according customer specification	3 = 1 x Inductive contact (NJ2-11-SN) (Process temperature -25°C...+100°C)	
	222R = ¾" Class 300 RF, ASME B16.5-2003	H = 6.0 - 60 l/h H ₂ O; 180-1800 NI/h Air ¹⁾		X = special scale according customer specification	E = Transmitter 4-20 mA without Hart®, Ex ib	
	203R = 1" Class 150 RF, ASME B16.5-2003	I = 10 - 100 l/h H ₂ O; 300-3000 NI/h Air ¹⁾			X = Special acc. to spezification	
	223R = 1" Class 300 RF, ASME B16.5-2003	J = 16 - 160 l/h H ₂ O; 480-4800 NI/h Air ¹⁾				
	203J = 1" Class 150 RTJ, ASME B16.5-2003	K = 20 - 200 l/h H ₂ O; 600-6000 NI/h Air ¹⁾				
	223J = 1" Class 300 RTJ, ASME B16.5-2003					
	XXXX = special connection					

¹⁾ Air 1,013 bar abs., 20°C

²⁾ Certificate of compliance with the order 2.1, Test report 2.2, Inspection certificate 3.1 with material certificate (DIN EN 10204:2004) and Inspection certificate 3.2 with material certificate (DIN EN 10204:2004) on request

Dimensions

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BGK-..E

