



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

<sup>1)</sup> Air 1,013 bar abs., 20°C

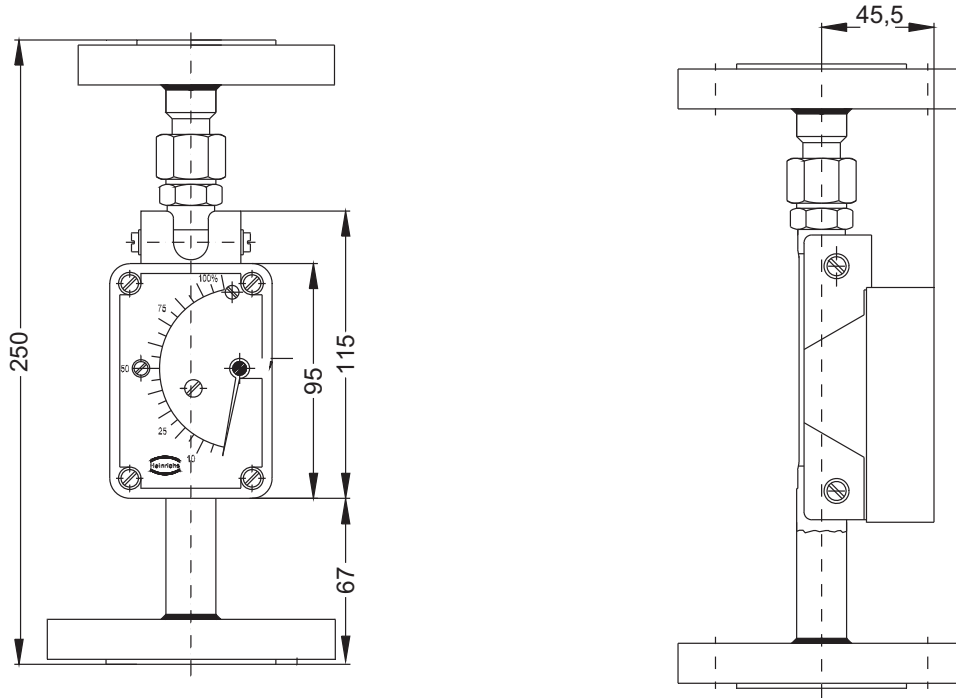
<sup>2)</sup> Certificate of compliance with the order 2.1, Test report 2.2, Inspection certificate 3.1 with material certificate (DIN EN 10204:2004) and Inspection certificate 3.2 with material certificate (DIN EN 10204:2004) on request



All Metal Variable Area Flowmeter Model BGK

Dimensions

BGK



BGK-..E

