M-Zert
Zertifiziertes QM-System
DIN EN ISO 9001
Zertifikat-Nr. 01017

Full Metal Variable Area Flow Meter and Counter

for horizontal and vertical mounting

KOBOLD

measuring
•
monitoring
•
analysing

Special versions up to 600 bar

- Measuring range:
  10 - 100...4000 - 40 000 L/h water
  0.3 - 3.0...110 - 1100 m³/h air
  (20 °C, 1.013 bar)
- Accuracy class: 1.6
- p_{max}: PN 40 · t_{max}: -40...+200 °C
- Connection: Flange DN 15...DN 80
- Material: st. steel 1.4404/1.4571, PTFE
- Option:
  Contacts, analogue output with HART®
  or PROFIBUS-PA®, counter

KOBOLD companies worldwide
ALGERIA, ARGENTINA, AUSTRALIA, AUSTRIA, BELGIUM, BULGARIA, CANADA, CHILE, CHINA, COLUMBIA, CZECHIA, DOMINICAN REPUBLIC, DUBAI, EGYPT, FRANCE, GERMANY, GREAT BRITAIN, HUNGARY, INDIA, INDONESIA, ITALY, MALAYSIA, MEXICO, MOROCCO, NETHERLANDS, PERU, PHILIPPINNES, POLAND, ROMANIA, SINGAPORE, SLOVAKIA, SOUTH KOREA, SPAIN, SWITZERLAND, TAIWAN, THAILAND, TUNISIA, UKRAINE, USA, VENEZUELA, VIETNAM

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Model:
BGF

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Function

Inside the flow tube, there is a star guided float which works towards a spring. An annular gap is produced between the cone-shaped magnet system and the meter ring in case of flows other than zero. The position of the magnet system depends on the resulting force of all forces acting upon it. These forces comprise the flow force, a spring force acting opposite to the flow force, and the buoyancy and weight force significant for the measurements in case of vertical installation. Each position of the magnet holder corresponds to a flow value measured during calibration, which is transferred to a scale.
The BGF flow meter consists of a meter tube with connections, a meter ring, and a conical magnet holder. By means of a magnet, the position of the magnet system is transferred to an encapsulated follow magnet, which has been fitted to a pointer axle. The position of a second annular follow magnet fitted on the pointer axle is transferred to the scale by means of the pointer.

Application

The BGF meter is suitable for flow measurement of liquid or gaseous products in pipes. The special advantage is that it can be used for all directions of flow. It shows the current flow rate in volume or mass per unit in time.

Applications

Flow measurement, dosing, monitoring, adjusting and control of liquid and gaseous products. The meter's design makes it ideal for processes under difficult and adverse operating conditions.
The devices are available with additional electrical equipment for process monitoring and control.

- A large spectrum of wetted materials
- Magneto-resistive signal transmission
- Special design for high-pressure and high-temperature applications
- Excellent heat tracing technology (as option)
- Double eddy current damping (as option)

Technical data

Sensor

Materials:	1.4404 (316 L) / 1.4571 (316 Ti), Hastelloy C-22, PTFE other materials on request
Process connection	Flanges acc. EN 1092, ASME B16.5, DIN 2512, JIS, NPT, screw pipe connection, special connections on request
Nominal pressure:	PN 40, ASME Cl150 / 300 (standard) (BGF-S/H) PN 16, ASME Cl150 (standard) (BGF-P) higher pressure rates optional (max. 600 bar)
Process temperature:	-40 °C up to +150 °C (BGF-S with electrical output) -40 °C up to +200 °C (BGF-S without electrical output) -40 °C up to +200 °C (BGF-S with option V / H / W) -40 °C up to +125 °C (BGF-P)
Ambient temperature:	-40 °C up to +80 °C

Accuracy

Liquid/Gas:	± 2% of upper range value ± 0,2% with transmitter (ES)
Repeatability:	± 0,8% of full scale
Ingress protection:	IP 65 (Aluminium housing) IP 67 (Stainless steel housing)

Certificate and accreditation

Explosion protection:	BVS 03 ATEX H/B 112

Advertisement

Display:	Aluminum (stove-enameled) Stainless steel (as option)
Outputs:	inductive switch inductive switch (safety design) microswitch others on request
Ambient temperature:	-40 °C up to +80 °C (without switch) -40 °C up to +65 °C (with switch)

06/2009

Technical data (continuation)

Transmitter

- ES with HART®-protocol
- ES with HART®-protocol and 2 NAMUR-switches
- ES with HART®-protocol and 1 NAMUR-switch / 1 pulse output
- ES with Profibus-PA®
- ES with HART®-protocol and counter module

Power supply:	14 - 30 V_{DC}
Output:	passive, galvanically isolated
Currency:	4 - 20 mA
Binary 1 and 2:	Ui = 30 V, Ii = 20 mA, Pi = 100 mW
Input Binary:	Counter reset (only for ES with counter module)
Ambient temperature:	-40 °C up to +70 °C

Certification and accreditation

Explosion protection:	DMT 00 ATEX E 075
Type of protection:	Ex II 2G EEx ia IIC T6

Additionall options

- Other materials
- Other flange versions and sizes
- Certifications and certificates
- Display with pressure compensations against condensate build up
- Microswitch
- Inductive switches with safety design

Order details for liquids (order example: BGF-S 105C H K O 00 S 1 0)

Typ	Measuring range water [L/h]	Measuring range air at 20 °C, 1013 mbar [m^3_N/h]	Nominal diameter	Pressure stage (DIN-flange)	Max. pressure loss [mbar]	Code 2) flange DIN EN 1092-1 Form B1	Code 2) flange ASME Class 150 RF
BGF-S = stainless steel tube	10 - 100	0,3 - 3,0	DN 15, (¾")	PN 40	On request	305B H	202R H
	16 - 160	0,5 - 4,6	DN 15, (¾")	PN 40	110	305B I	202R I
	25 - 250	0,7 - 7,0	DN 15, (¾")	PN 40	110	305B J	202R J
	40 - 400	1,0 - 11	DN 15, (¾")	PN 40	110	305B K	202R K
	60 - 600	1,7 - 17	DN 15, (¾")	PN 40	120	305B L	202R L
	100 - 1000	3,0 - 30	DN 15, (¾")	PN 40	90	305B M	202R M
	160 - 1600	4,0 - 46	DN 15, (¾")	PN 40	105	305B N	202R N
	250 - 2500	7,0 - 70	DN 15, (¾")	PN 40	130	305B P	202R P
	400 - 4000 1)	11 - 110 1)	DN 15, (¾")	PN 40	240	305B Q	202R Q
	10 - 100	0,3 - 3,0	DN 25, 1"	PN 40	On request	309B H	203R H
	16 - 160	0,5 - 4,6	DN 25, 1"	PN 40	110	309B I	203R I
	25 - 250	0,7 - 7,0	DN 25, 1"	PN 40	110	309B J	203R J
	40 - 400	1,0 - 11	DN 25, 1"	PN 40	110	309B K	203R K
	60 - 600	1,7 - 17	DN 25, 1"	PN 40	120	309B L	203R L
	100 - 1000	3,0 - 30	DN 25, 1"	PN 40	90	309B M	203R M
	160 - 1600	4,0 - 46	DN 25, 1"	PN 40	105	309B N	203R N
BGF-P = stainless steel tube, PTFE-liner	250 - 2500	7,0 - 70	DN 25, 1"	PN 40	130	309B P	203R P
	400 - 4000 1)	11 - 110 1)	DN 25, 1"	PN 40	240	309B Q	203R Q
	250 - 2500	7,0 - 70	DN 40, 1 ½"	PN 40	75	317B P	205R P
	400 - 4000	11 - 110	DN 40, 1 ½"	PN 40	110	317B Q	205R Q
	600 - 6000	17 - 170	DN 40, 1 ½"	PN 40	130	317B R	205R R
	400 - 4000	11 - 110	DN 50, 2"	PN 40	100	321B Q	206R Q
	600 - 6000	17 - 170	DN 50, 2"	PN 40	110	321B R	206R R
	1000 - 10 000	29 - 290	DN 50, 2"	PN 40	120	321B S	206R S
	1600 - 16 000	46 - 460	DN 50, 2"	PN 40	130	321B T	206R T
	2500 - 25 000	70 - 700	DN 50, 2"	PN 40	200	321B U	206R U
	1600 - 16 000	46 - 460	DN 80, 3"	PN 16	110	330B T	208R T
	2500 - 25 000	70 - 700	DN 80, 3"	PN 16	130	330B U	208R U
	4000 - 40 000	110 - 1100	DN 80, 3"	PN 16	200	330B V	208R V

Reference conditions: water at 20 °C, 1 mPas

1) Not for model BGF-P (PTFE-casing)

2) Other flange connections: Form C, N, D, JIS or Class 300 on request

06/2009

Continuation order details for liquids (order example: BGF-S 105C H K O 00 S 1 0)

Magnet bearer	flow direction	Heating[1] / Cooling	**Certificates**	Display	Scale	Electrical output
K = PP[1] (to 80 °C, from DN50) P = PTFE (BGF-S to 150 °C) (BGF-P to 125 °C) S = st. st.[1]	O = top to bottom **L** = left to right **R** = right to left U = bottom to top	0 = without **1** = with heating ermeto 12 mm **2** = with heating DIN-Flange DN 15 / PN 40 **3** = with heating ANSI-Flange ½" Class 150	**0** = without certificate **1** = Certificate of compliance with the order 2.1 **2** = Certificate of compliance with the order 2.2 **B** = Inspection certificate with material certificate 3.1 **C** = Inspection certificate with material certificate 3.2	S = aluminium V = aluminium, assembled at distance, up to 200 °C **E** = st. st. **H** = st. st., assembled at distance up to 200 °C T = aluminium with pressure compensation W = aluminium with pressure compensation, assembled at distance up to 200 °C	Water **1** = %-scale **2** = measuring range Media **4** = %-scale **5** = measuring range Please specify mediadata in plain text (see below)	0 = without 1 = 1 inductive switch 2 = 2 inductive switches 6 = transmitter ES with HART®, EEx ia, 4-20 mA **7** = transmitter ES with HART®, EEx ia, 4-20 mA, and 2 Namur-switches **8** = transmitter ES with HART®, EEx ia, 4-20 mA, and 1 pulse output 9 = electrical transmitter with Profibus PA®, EEx ia I = 4-20 mA with HART® and counter module

[1] Not for model BGF-P (PTFE-casing)

For the right design of the flowmeter we need the following data:
measuring range with unit, measured media, process temperature and pressure, viscosity, operating density (liquids), norm density (gases), mechanical connection

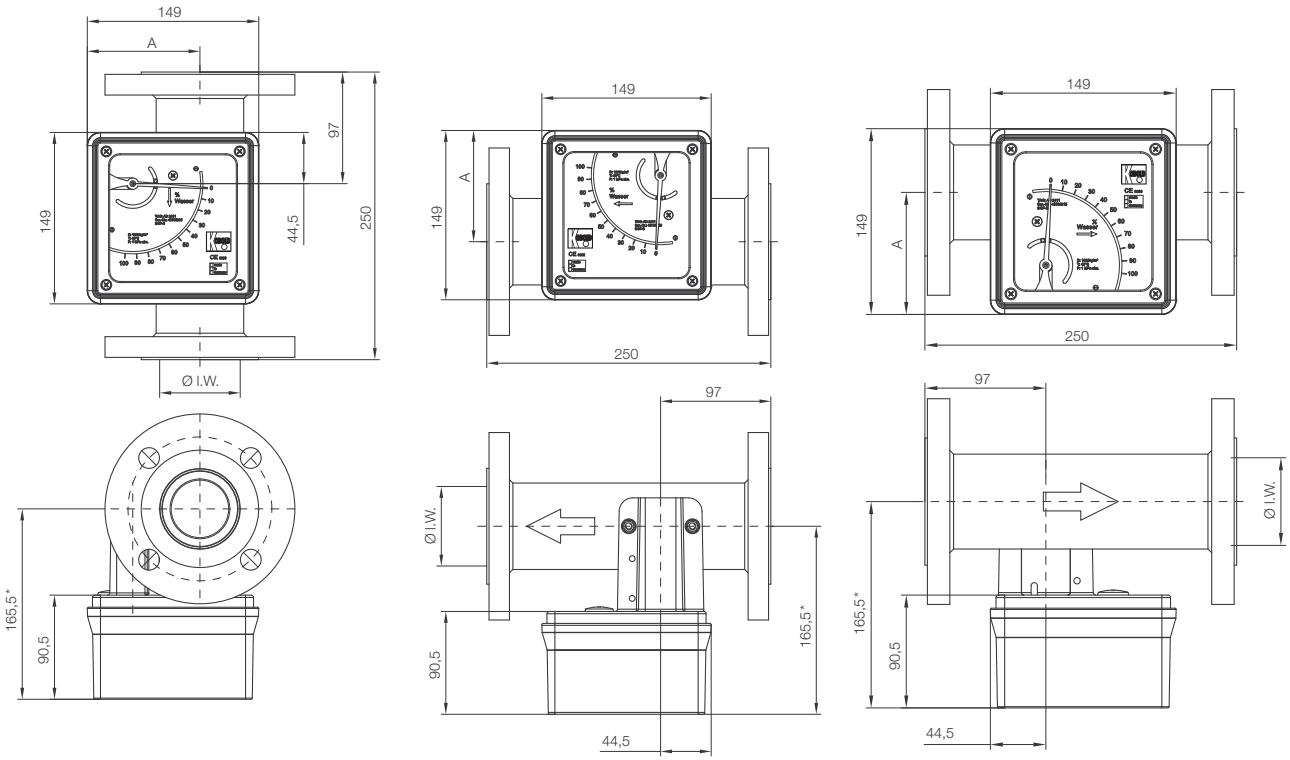
Dimensions

DN	PN	I. W.	A (aluminium)	A (stainless steel)
15	40	26	74	100
25	40	32	77	103
40	40	46	85	110
50	40	70	98	123
80	40	102	114	140

Dimensional deviations:
* +100 mm with forward advanced display

Dimensions

Display: aluminum



Display: stainless steel