All-Metal Armored Variable Area Flowmeter

for Horizontal or Vertical Mounting



measuring
•
monitoring
•
analyzing

BGF











- Measuring Range:
 0.044...0.44 to 26.4...264 (Water)
 0.176...1.76 to 100...1000 SCFM (Air)
- Accuracy: ±2% of Full Scale
- p_{max}: 580 PSIG (Option: up to 5,800 PSIG)
- t_{max}: -40...390°F
- Connection: 1/2"...3" ANSI, 1/4"...2" NPT
- Material: 316L /316-Ti Stainless Steel, PTFE
- Options:
 Contacts, Analog Output with
 HART®, Profibus®-PA, Foundation™
 Fieldbus®



Order from: C A Briggs Company

622 Mary Street; Suite 101; Warminster, PA 18974 Phone: 267-673-8117 - Fax: 267-673-8118 Sales@cabriggs.com - www.cabriggs.com KOBOLD Instruments, Inc. 1801 Parkway View Drive Pittsburgh, PA 15205

OBOLD

All-Metal Armored Variable Area Flowmeter Model BGF

Description

The KOBOLD BGF metal-armored variable area flowmeter is ideal for difficult applications requiring high pressure, high temperature operation or low pressure loss. Its all-metal, armored design is available in stainless steel or PTFE-clad stainless steel. This flowmeter is unique in that its design employs a guided float and spring return mechanism that allows the BGF to be installed into both horizontal and vertical pipes. In standard configuration, the flowmeter is a purely mechanical meter suited for water and compressed gases in line sizes up to 3 inches. Electronic limit switches and/or an analog flow transmitter may be added if desired. Analog output is supplied standard with HART® protocol. Profibus-PA® is also available as an option. Available switches and analog outputs include those that operate via intrinsically safe methods of protection and may be used in hazardous areas where intrinsically safe installations are permitted. Foundation Fieldbus® is also available as an option. Custom designs for high pressure operation, special fittings and special materials of construction are available upon request.

Special Advantages

- Ideal for Difficult Operating Conditions
- Can be Used for All Directions of Flow
- A Large Spectrum of Wetted Materials
- Magneto-resistive Signal Transmission
- Special Design for High Pressure and High Temperature Applications

Technical Details

Sensor

Wetted Materials

SS Meas. Body: 316 L / 316-Ti Stainless Steel,

316-Ti Spring

PTFE Meas. Body: Hastelloy C-22®, PTFE,

Special Materials on Request

Process Connection: ASME B16.5, NPT,

Other Connections on Request

Nominal Pressure: 580 PSIG, ASME CI150 / 300

(Standard) (BGF-S) 230 PSIG, ASME CI150 (Standard) (BGF-P)

Higher Pressures Upon Request

(Max. 5800 PSIG)

Process Temperature: -40...300°F

(BGF-S with Electrical Output)

-40...390°F

(BGF-S without Electrical Output)

-40...390°F

(BGF-S with Option V / H / W)

-40...257 °F (BGF-P)

Ambient Temperature: -40...176°F

Accuracy

Liquid/Gas: $\pm 2\%$ of Full Scale

Additional Inaccuracy

by Transmitter (ES): $\pm 0.2\%$

Repeatability: $\pm 0.8\%$ of Full Scale



Protection: IP 65 (Aluminum Housing)

IP 67 (Stainless Steel Housing)

Certificate and Accreditation

Explosion Protection: BVS 03 ATEX H/B 112

Display

Material: Aluminum (Stove-Enameled)

Stainless Steel (as Option)

Electrical Outputs: Inductive Switch (Standard),

Inductive Switch (Safety Design), Microswitch, Others on Request

Ambient Temperature: -40...176°F (without Switch)

-40...150°F (with Switch)

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 Foundation Fieldbus®

Power Supply: $14 - 30 V_{DC}$

Output: Passive, Galvanically Isolated

Current: 4-20 mA

Binary 1 and 2: Ui =30 V, li =20 mA, Pi = 100 mW

Ambient Temperature: -40...158°F

Certification and Accreditation

Explosion Protection: DMT 00 ATEX E 075 **Type of Protection:** L 2G EEx ia IIC T6

All-Metal Armored Variable Area Flowmeter Model BGF



Order Details for DN15 Models: (Example: BGF-S15 201R H KO0 0 S1 0 0K)

DN15 Models						
Measuring Ranges: 0.0440.44 GPM to 0.2642.64 GPM						
Model	Measuring Tube Connection			Measuring Ra	nge*	Number Continued
Model	Material	Connection	Code Water		Air	
	S15 = Stainless Steel, Process Temp. ≤ 390 °F P15 = Stainless Steel Measuring Tube, PTFE-Lining, Process Temp. ≤ 257 °F, Max. Pressure 230 PSIG	201R ²⁾ = 1/2" Class 150 RF ASME 221R ²⁾ = 1/2" Class 300 RF ASME	H	0.0440.44 GPM	0.1761.76 SCFM	
		202R = 3/4" Class 150 RF ASME 222R = 3/4" Class 300 RF ASME	l	0.0710.71 GPM	0.2942.71 SCFM	То
BGF		203R = 1" Class 150 RF ASME223R = 1" Class 300 RF ASME204R ² = 1-1/4" Class 150 RF ASME	J	0.111.1 GPM	0.4124.12 SCFM	complete part number, please go directly to
		224R ²) = 1-1/4" Class 300 RF ASME 6010 ¹⁾²⁾ = 1/4" NPT 6020 ¹⁾²⁾ = 3/8" NPT	K	0.1761.76 GPM	0.5895.88 SCFM	order table on page 6.
		6030 ¹⁾²⁾ = 1/2" NPT 6040 ¹⁾²⁾ = 3/4" NPT	L	0.2642.64 GPM	1.010.0 SCFM	

^{*}Reference Conditions: Water at 68 °F @1 mPas, Air at 68 °F @ 0 PSIG (Range Values for Other Media Upon Request)

Order Details for DN25 Models: (Example: BGF-S25 202R M KO0 0 S1 0 0K)

DN25 Models							
Measuring Ranges: 0.444.4 GPM to 1.7617.6 GPM							
Model	Measuring Tube	Connection		Measuring Ra	nge*	Number Continued	
Model	Material	Comiconem	Code	Water	Air		
		202R ³ = 3/4" Class 150 RF ASME 222R ³ = 3/4" Class 300 RF ASME	M	0.444.4 GPM	1.7617.6 SCFM		
	\$25 = Stainless Steel, Process Temp. ≤ 390 °F	25 = Stainless Steel, Process Temp. < 390 °F 203R = 1" Class 150 RF ASME203R = 1" Class 300 RF ASMEN 0.7057.05 GPM	2.3527.1 SCFM	То			
BGF	P25 = Stainless Steel Measuring Tube, PTFE-Lining,	204R ³ = 1-1/4" Class 150 RF ASME 224R ³ = 1-1/4" Class 300 RF ASME 205R ³ = 1-1/2" Class 150 RF ASME	P	1.111 GPM	4.1241.2 SCFM	complete part number, please go directly to	
	Process Temp. ≤ 257 °F, Max. Pressure 230 PSIG	225R ³) = 1-1/2" Class 300 RF ASME 6010 ¹⁾³⁾ = 1/4" NPT 6020 ¹⁾³⁾ = 3/8" NPT 6030 ¹⁾³⁾ = 1/2" NPT 6040 ¹⁾³⁾ = 3/4" NPT	Q ²⁾	1.7617.6 GPM	6.4764.7 SCFM	order table on page 6.	

^{*}Reference Conditions: Water at 68 °F @1 mPas, Air at 68 °F @ 0 PSIG (Range Values for Other Media Upon Request)

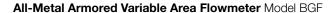
¹⁾ NPT floats can not be removed

²⁾ Not for BGF-P PTFE Models

¹⁾ NPT floats can not be removed

 $^{^{\}rm 2)}$ Range not available for BGF-P (PTFE Casing), for BGF-S Only

 $^{^{\}mbox{\tiny 3)}}$ Not Available for BGF-P with PTFE Casing





Order Details for DN40 Models: (Example: BGF-S40 205R P KO0 0 S1 0 0K)

	DN40 Models						
		Measuring Ranges: 1.111 GPM to 4.4.	44 GPM			Part Number	
Model	Measuring Tube	Connection		Measuring Ra	nge*	Continued	
Model	Material	Connection	Code	Water	Air		
	205P -	205R = 1-1/2" Class 150 RF ASME	P	1.111 GPM	4.1241.2 SCFM	To complete part number, please go directly to order table on page 6.	
205	S40 = Stainless Steel,	225R = 1-1/2" Class 300 RF ASME	Q	1.7617.6 GPM	4.1241.2 SCFM 6.4764.7 SCFM 10100 SCFM 17.0170 SCFM		
BGF	Process Temp. ≤ 390 °F	6040 ¹⁾ = 3/4" NPT 6050 ¹⁾ = 1" NPT	R	2.6426.4 GPM			
		6060 ¹⁾ = 1-1/4" NPT	S	4.444 GPM			

^{*}Reference Conditions: Water at 68 °F @1 mPas, Air at 68 °F @ 0 PSIG (Range Values for Other Media Upon Request)

Order Details for DN50 Models: (Example: BGF-S50 206R Q KO0 0 S1 0 0K)

DN50 Models							
		Measuring Ranges: 1.7617.6 GPM to 11	110 GPM			Part	
Model	Measuring Tube			Number Continued			
Model	Material	Connection	Code	Water	Air		
	S50 = Stainless Steel, Process Temp. ≤ 390 °F P50 = Stainless Steel Measuring Tube, PTFE-Lining, Process Temp. ≤ 257 °F, Max. Pressure 230 PSIG	206R = 2" Class 150 RF ASME	Q	1.7617.6 GPM	6.4764.7 SCFM		
		226R = 2" Class 300 RF ASME				<u> </u> 	
		207R ²⁾ = 2-1/2" Class 150 RF ASME	R	2.6426.4 GPM	10100 SCFM	To complete part	
BGF		227R ²⁾ = 2-1/2" Class 300 RF ASME	S	4.444 GPM	17.0170 SCFM	number, please go directly to	
		6060 ¹⁾² = 1-1/4" NPT 6070 ¹⁾² = 1-1/2" NPT	Т	7.070 GPM	27.0270 SCFM	order table on page 6.	
		6080 ¹⁾²⁾ = 2" NPT	U	11110 GPM	41410 SCFM		

 $^{{}^*\}text{Reference Conditions: Water at 68 °F @1 mPas, Air at 68 °F @ 0 PSIG (Range Values for Other Media Upon Request)}$

¹⁾ NPT floats can not be removed

¹⁾ NPT floats can not be removed

²⁾ Not Available for BGF-P with PTFE Casing

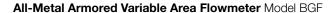
All-Metal Armored Variable Area Flowmeter Model BGF



Order Details for DN80 Models: (Example: BGF-S80 208R T KO0 0 S1 0 0K)

	DN80 Models						
	Measuring Ranges: 7.0570.5 GPM to 26.42264.2 GPM						
Model	Measuring Tube Material	Connection	Measuring Range* Code Water Air			Continued	
	\$80. . = Stainless Steel,		Т	7.070 GPM	27.0270 SCFM	To complete part number,	
BGF	Process Temp. ≤ 390 °F P80 = Stainless Steel Measuring Tube, PTFE-Lining, Process Temp. ≤ 257 °F, Max. Pressure 230 PSIG	208R = 3" Class 150 RF ASME	U	11110 GPM 41410 SCFM	41410 SCFM		
		228R = 3" Class 300 RF ASME	V 17.6176 GPM 64.7647 SCFMW 26.4264.2 GPM 1001000 SCFM	64.7647 SCFM	please go directly to order table on page 6.		

^{*}Reference Conditions: Water at 68 °F @1 mPas, Air at 68 °F @ 0 PSIG (Range Values for Other Media Upon Request)





Continuation of Order Details (Example: BGF-S80 208R T K O 0 0 S 1 0 0K)

Magnet Bearer	Flow Direction	Heating ¹⁾ / Cooling	Certificates	Display	Scale	Electrical Output	Accessories
from DN 50) P = PTFE (BGF-S to 300 °F) (BGF-P to 257 °F)	O = Top to Bottom L = Left to Right R = Right to Left U = Bottom to Top	0 = without 1 = with Heating, Ermeto 12 mm 3 = with Heating, ANSI- Flange ½" Class 150 4 = with Heating, 1/2" NPT	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 with Material Certificate with Material Certificate	V = Aluminum, Assembled at Distance up to 390°F E = St. SteelH = St. Steel, Assembled at Distance up to 390°F T = Aluminum with Pressure Comp. Assembled at Distance up to 390°F	Water1 = %-Scale2 = Measuring Range Media4 = %-Scale5 = Measuring Range F ² = Dual Scale **Please Specify Media Data (See Below)	0 = without1 = 1 Inductive Switch2 = 2 Inductive SwitchesC = 1 × MicroswitchD = 2× Microswitches6 = Transmitter ES with HART®, EExia, 4-20 mA, SIL7 = Transmitter ES with HART®, EExia, 4-20 mA and 2 NAMUR- Switches, SIL8 = Transmitter ES with HART®, EEx ia, 4-20 mA, 1 NAMUR Switches, 4-20 mA, 1 NAMUR Switch and 1 Pulse Output9 = Electrical Transmitter ES with Profibus®- PA, EExiaK = Electrical Transmitters ES with Foundation™ Fieldbus®	0K = withoutXK = Special (Please Spec.)

¹⁾ Not for model BGF-P (PTFE-coating)

*Additional Information Required for Order:

To ensure proper operation, this product requires a completed application guide form to be submitted with any order. Please refer to the 'documentation' tab on the bottom of the product page for this product on our website in order to obtain the correct form. You can also contact your KOBOLD representative for this form.

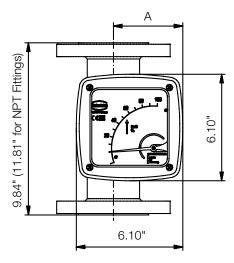
²⁾ Please specify ranges with units of measurement

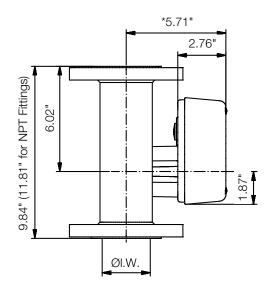
All-Metal Armored Variable Area Flowmeter Model BGF



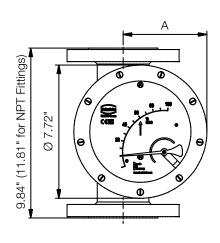
Dimensions

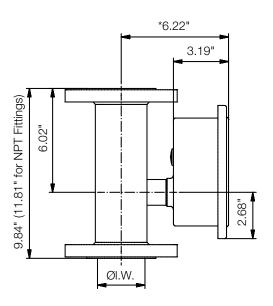
Aluminum Display





Stainless Steel Display





Size	ANSI	L M/ (Immar M/idth)	,	4
Size	ANSI	I. W. (Inner Width)	Aluminum Display	Stainless Steel Display
1/2"	150/300	1.02"	2.91"	3.94"
1"	150/300	1.26"	3.03"	4.06"
1-1/2"	150/300	1.81"	3.35"	4.33"
2"	150/300	2.76"	3.86"	4.84"
3"	150/300	4.02"	4.49"	5.51"

Dimensional Deviations:

^{* + 3.94&}quot; with forward advanced display