

Differential pressure gauge, working pressure up to 500 bar with switch function, Type series BG32../BG33..



Application area

- Chemical and petrochemical industry
- Machinery construction
- Shipping

Features

- Differential pressure gauge with switch function
- Nominal range 0...1 to 0...25 bar
- High quality case with bajonet ring NS 100/160
- Wetted parts of stainless steel and NBR
- Case and measuring flange of stainless steel, diaphragm of Duratherm
- Working pressure up to 500 bar, one-sided and double-sided
- Accuracy class as per DIN 16085
- Switch functions (electrical contact devices) per DIN 16085:
 - slow acting contact
 - magnetic snap contact
 - inductive contact
 - inductive contact with integrated switching amplifier
- EAC declaration (upon request)

Options

- Approvals/Certificates
 - Explosion protection
 - Certificate of measuring equipment for Russian Federation
 - Material certificate per EN 10204
 - Calibration certificate per EN 10204
- Case with liquid filling
- Extended temperature range
- Connection to Zone 0
- 3-way valve block
- Wetted gaskets of special materials

Application

Can be used as a differential pressure measuring system for high overload ranges with switch function (electrical contact device) for universal use in measurement and control systems for indicating and monitoring pre-selectable minimum and/or maximum pressure values. Because of its robust design, it is suitable for use in tough environments.

Technical data

Constructional design / case

Design: High quality case with bayonet ring, material: st. steel mat.-no. 1.4301 (304)
Filling plug, material: PUR

Nominal size: NS 100 or NS 160

Degree of protection per EN 60529:

- Without case filling: IP 65
- With case filling: IP 66

Case filling: Labofin

Case seal: Material gasket: NBR

Pressure chamber seal: Material gasket: NBR

Window: Non-splintering laminated glass.

Option: Non-splintering plastic (Macrolon)

Contact lock: Stainless steel with NBR gasket

Measuring element: Diaphragm

Movement: Stainless steel segment

Scale: Pure aluminium, white with black inscription
Option: with red marking
Special scale upon request

Pointer: Pure aluminium, black, with micro adjustment for zero point correction

Mounting: sturdy device holder

Weights: Without filling:

Radial or axial connection	approx. 14 kg
Valve block design	approx. 17 kg
Diaphragm seal design	approx. 22 kg

NS 160 without case filling

Nominal 1 2 3	no. of contacts			
	range (bar)			
	1	Kl. 1.6	Kl. 1.6	-
	1.6	Kl. 1.6	Kl. 1.6	Kl. 2.5
	≥ 2.5	Kl. 1.6	Kl. 1.6	Kl. 1.6

For devices with case filling it is not possible to specify the accuracy class.

Plus effect of switch function on indication per DIN 16085.

Temperature influence: Max. ± 0.8% / 10K of measuring span per EN 837-3.

Working pressure: 250 bar, 400 bar, 500 bar

Influence working pressure: 2×10^{-5} % of measuring range

Process connection

- Design:
- G1/2 B axial, option: G3/8 screw-in thread, adaption per EN 61518, arranged vertically to measuring flange.
 - Valve block mounting per EN 61518 possible.
 - Diaphragm seal fitting with capillary.

Temperature ranges

	without filling	with filling
Ambient:	-20...50 °C	-20...50 °C
Media:	-20...100 °C	-20...100 °C
Storage	-40...70 °C	-40...70 °C

Material wetted parts

Measuring flange: Stainless steel mat.no. 1.4571 (316Ti) and 1.4404 (316L)

For measuring devices with inductive contact type SJ2-S1N (NS 100, double contact): For safe operation refer to TA_044!

Nominal range

See order details, further ranges upon request

Overload protection: Plus and minus sides up to max. working pressure. Other designs upon request.

Approvals/Certificates

Ex-protection: Magnetic snap contact:
Simple electrical apparatus per IEC/DIN EN 60079-11 suitable for intrinsically safe circuits Ex IIC TX.

Inductive contact: _____
Contact device suitable for intrinsically safe circuits

⊗ II 2G Ex ia IIC T4/T5/T6 Gb

- Reg.-no.: ■ PTB 99 ATEX 2219X
■ PTB 00 ATEX 2049X

Ex-protection (ATEX) for mechanical devices:

⊗ II 2G c Tx

⊗ II 2D c Tx

Further details see operation instruction BA_037 and Ex Safety Instructions XA_005, XA_013, XA_014 and XA_021.

- EAC declaration (upon request)
- Certificate of measuring equipment for Russian Federation

Accuracy

Accuracy class:	NS 100 without case filling				
	Nominal 1 2 3	range (bar)	no. of contacts		
		1	Kl. 1.6	Kl. 1.6	-
		1.6	Kl. 1.6	Kl. 1.6	Kl. 1.6
		≥ 2.5	Kl. 1.6	Kl. 1.6	Kl. 1.6

Switch functions

Slow acting contact:

Type L2

- max. 3 touch contacts
- Contact load: 10 W / 18 VA
- Switching up to 230 V DC
- Available with separate circuit (Type M2)

Magnetic snap contact:

Type L4

- max. 3 touch contacts
- Contact load: 30 W / 50 VA
- Switching up to 230 V DC
- Available with separate circuit (Type M4)

Inductive contact:
(standard)

Type N4

- max. 3 contacts, contactless
- Control unit required, see product group M7

Inductive contact:
(SN)

Type N1

- Safety initiator
- max. 3 contacts, contactless
- Control unit required, see product group M7

Inductive contact inverse:
(S1N)

Type N2

- Safety initiator, inverse switching
- max. 2 contacts, contactless
- Control unit required, see product group M7

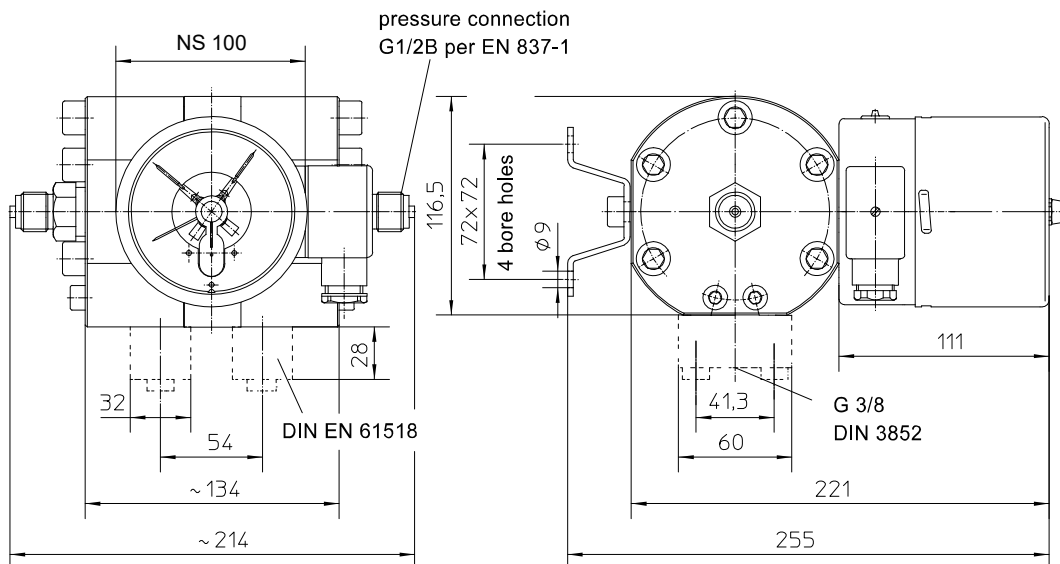
Inductive contact with integrated amplifier:

Type N6

- max. 2 contacts, contactless
- 100 mA
- 3-wire technology, suitable for direct activation at a PLC

Further information see operating instruction BA_037 and Technical Information TA_039.

Dimensions



All dimensions are in millimeter

Order details

Differential pressure gauge with switch function, highly resistant to excess pressure
Type series BG3...

Order details BG3...			
BG320.	case	NS 100	IP 65 without liquid filling
BG324.			IP 66 with liquid filling
BG330.		NS 160	IP 65 without liquid filling
BG334.			IP 66 with liquid filling
0	design	standard	
1		Ex-protection	
A4...	working pressure/ process connection	BD 250 bar	axial threaded connection G1/2
A5...			vertical threaded connection G3/8
A6...			prepared for valve block mounting
A2...			with flanged 3fold valve block
A3...			for diaphragm seal connection
C5...		BD 400 bar	vertical threaded connection G3/8
C6...			prepared for valve block mounting
C2...			with flanged 3fold valve block
C4...		BD 500 bar	axial threaded connection G1/2
C3...			for diaphragm seal connection
053	nominal range	0...1 bar	
054		0...1.6 bar	
055		0...2.5 bar	
056		0...4 bar	
057		0...6 bar	
058		0...10 bar	
059		0...16 bar	
060		0...25 bar	
		switch function	type of contact
L4 . 00	touch contact	magnetic snap contact	single contact
L4 . . 0			double contact
L4 . . .			triple contact
L2 . 00		slow acting contact ¹	single contact
L2 . . 0			double contact
L2 . . .			triple contact
M4 . . 0		magnetic snap contact separated circuits	double contact
M4 . . .			triple contact
M2 . . 0		slow acting contact ¹ separated circuits	double contact
M2...			triple contact
N4 . 00	inductive contact	initiator (N)	single contact
N4 . . 0			double contact
N4 . . .			triple contact
N1 . 00		safety-initiator (SN)	single contact
N1 . . 0			double contact
N1 . . .			triple contact
N2 . 00		safety-initiator-invers (S1N) ²	single contact
N2 . . 0			double contact
N6 . 00		inductive contact device with integrated switching amplifier in 3 wire technology PNP ¹	single contact
N6 . . 0			double contact
. . .	switch function – per contact, replace point with number		
1	switch	increasing pressure makes contact	
2		increasing pressure breaks contact	
4		decreasing pressure makes contact	
5		decreasing pressure breaks contact	
3	change-over element	change-over elements increasing pressure makes or breaks contact	
6		change-over elements decreasing pressure makes or breaks contact	

Additional features (to be indicated if required)		
T2	marking	on scale (please specify)
W2673	certificate of measuring equipment for Russian Federation	
Z1	connection to zone 0 ³	with zone 0 adapter (coupler element KF6)

Order code (example): **BG3200 – A2053 – N1100 - ...**

¹ not for devices with Ex-protection

² **with NS 100, double contact: for safety operation refer to TA_044!**

³ for devices with Ex-protection, only - not with magnetic snap contact