

Differential pressure gauge, with high overload limit with switch contact Type series BG32../BG33..



Application area

- Chemical and petrochemical industry
- Machinery construction
- Shipping

Features

- Differential pressure gauge with switch contact
- 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 160 bar, one-sided and double-sided
- Accuracy class as per DIN 16085
- Switch contacts (electrical contact devices) per DIN 16085:
 - slow acting contact
 - magnetic snap contact
 - inductive contact
 - inductive contact with integrated switching amplifier

Options

- Approvals/Certificates
 - Ex-protection (ATEX/UKEX)
 - Material certificate per EN 10204-3.1
 - Calibration certificate per EN 10204-3.1
- As per UKCA regulations
- Case with liquid filling
- Extended temperature range
- Connection to Zone 0 (upon request)
- 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 contact 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) ventilation valve, 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 (Polycarbonate)		
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		

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.
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Material wetted parts

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

See order details, further ranges upon request

Overload limit: Plus and minus sides up to max. working pressure.

For information on definitions of terms regarding the Pressure Equipment Directive, see Technical Instruction TA_068.

Accuracy

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

NS 160 without case filling

Nominal range (bar)	no. of contacts		
	1	2	3
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: 160 bar

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

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

Tests and certificates

Ex-protection: Magnetic snap contact:
Simple electrical apparatus per 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

ATEX ■ PTB 99 ATEX 2219X
■ PTB 00 ATEX 2049X

UKEX: ■ CML 21UKEX2893X
■ CML 21UKEX2977X

Ex-protection (ATEX/UKEX) for mechanical devices:

⊕ II 2G Ex h IIC T1...T6 Gb X

⊕ II 2D Ex h IIIC Txx°C Db X

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

Switch contacts

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: Type N4

- max. 3 contacts, contactless
- Control unit required

Inductive contact: Type N1

- Safety initiator
- max. 3 contacts, contactless
- Control unit required

Inductive contact inverse: Type N2

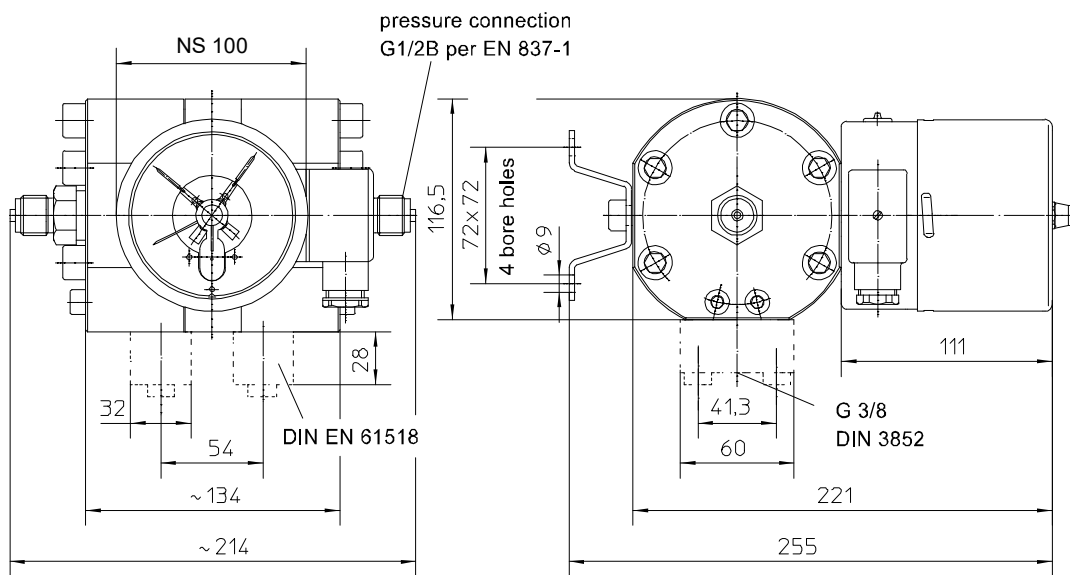
- Safety initiator, inverse switching
- max. 2 contacts, contactless
- Control unit required

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 contact, with high overload limit

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	
E4...	working pressure/ process connection	working pressure 160 bar	axial threaded connection G1/2
E5...			vertical threaded connection G3/8
E6...			prepared for valve block mounting
E2...			with flanged 3-way valve block
E3...			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 contacts	type of contact	number
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)	single contact
N2 . . 0			double contact
N6 . 00		inductive contact device with integrated switch- ing amplifier in 3 wire technology PNP ¹	single contact
N6 . . 0			double contact
. . .	switch function – per contact, replace point with number		
1	switch	rising measured value closes contact	
2		rising measured value opens contact	
4		falling measured value closes contact	
5		falling measured value opens contact	
3	change-over element ²	rising measured value switches	
6		falling measured value switches	

Example of order code switch contacts N4210:

Double inductive contact with initiator → type of contact = N4

1. Inductive contact closes on rising measured value → code number 1
2. Inductive contact opens on rising measured value → code number 2
3. Inductive contact not be used → code number 0

Additional features (to be indicated if required)		
T2	marking	on scale (please specify)
W1020	material certificate	per EN 10204-3.1, wetted parts
W1204	calibration certificate	per EN 10204-3.1, 3 measuring points
W1201		per EN 10204-3.1, 5 measuring points
W2660	as per UKCA regulations	
W4090	extended temperature range	

Order code (example): BG3200 – E2053 – N4210 - ...

¹ not for devices with Ex-protection

² possible with touch contacts only (slow acting contact or magnetic snap contact)