

## Diaphragm pressure gauge per EN 837-3, chemical design, NS 100/160, Type series BA2...



### Application area

- Water / wastewater
- Machinery construction
- Chemical and petrochemical industry
- General process technology

### Technical data

#### Constructional design / case

**Design:** High quality case with bayonet ring per EN 837-1 S1, material: stainless steel mat.-no.-Nr. 1.4301 (304); with blow-out device, material: PUR, ventilation valve, material: PUR

**Alternative:** Safety design with blow-out back and solid baffle wall per EN 837-1 S3, Material: Stainless steel 1.4301 (304)

**Nominal size:** NS 100 or NS 160

### Features

- Diaphragm pressure gauge
- Nominal ranges -400 mbar to -1...24 bar, 0...25 mbar to 0...25 bar
- High quality case with bajonet ring NS 100/160 per EN 837-1 S1
- Case and measuring flange of stainless steel, diaphragm of Duratherm
- Accuracy class 1.6 as per EN 837-3
- High overload protection up to 5 times (option: up to 20 times)
- Degree of protection IP 65
- EAC declaration (upon request)

### Options

- Approvals/Certificates
  - Explosion protection (ATEX) for mechanical devices
  - Certificate of measuring equipment for Russian Federation
  - Material certificate per EN 10204
  - Calibration certificate per EN 10204
- Electrical contact device, see data sheet D3-028
- Electronical angle-of-rotation sensor, see data sheet D6-020
- Extended temperature range
- Wetted parts of special materials, e.g. PTFE, PFA, Monel, Hastelloy or Tantal.
- Connection to Zone 0
- Open measuring flange per DIN/ASME
- Safety case per EN 837-1 S3
- Case with liquid filling and degree of protection IP 66

### Application

Suitable for measuring liquids and gases; with open measuring flange also designed for viscous media and media containing solids. Because of its robust design, the device is suitable for use in tough environments.

**Degree of protection per EN 60529:**

- Without filling: IP 65
- With filling S1 case: IP 65
- With filling S3 case: IP 66

**Case filling:**

Glycerine-water (optional)  
Further liquid fillings upon request.

**Atmosph. pressure compensation:**

Standard case, filled, ≤ 10 bar: with ventilation valve

> 10 bar: filling plug, material: PUR

**Safety case:** internal pressure compensation diaphragm

Case seal: Material gasket: NBR

Pressure chamber seal: Material: NBR, optional PTFE.  
Further materials upon request.

Window: Non-splintering laminated glass.  
Option: Non-splintering plastic (Macrolon)

Measuring element: Diaphragm

Movement: Stainless steel

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

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

Mounting: Via process connection

Weights: NS 100:

Flange Ø 100 without filling:	approx. 1.9 kg
Flange Ø 160 without filling:	approx. 3.4 kg
Flange Ø 100 with filling:	approx. 2.2 kg
Flange Ø 160 with filling:	approx. 3,6 kg
NS 160:	
Flange Ø 100 without filling:	approx. 2.2 kg
Flange Ø 160 without filling:	approx. 3.7 kg
Flange Ø 100 with filling:	approx. 2.8 kg
Flange Ø 160 with filling:	approx. 4.3 kg

#### Process connection

Design: Per EN 837-3, G1/2 B, 1/2" NPT or open measuring flange. Further process connections upon request.

#### Material wetted parts

Measuring element: Diaphragm: Duratherm (similar resistance as mat.-no. 1.4571 (316Ti)), alternatively with:

- PTFE foil
- PFA coating
- Monel foil
- Hastelloy C 276 foil
- Tantal foil
- Stainless steel foil

Measuring flange: Stainless steel mat.-no. 1.4571, alternatively with:

- PTFE lining
- PFA coating
- PVDF

Further materials upon request.

#### Nominal range

See order details, further ranges upon request

Overload protection

Flange Ø 100:  
standard: for a short time 5 times, max. 100 bar  
optional: 20 times, max. 100 bar \*

Flange Ø 160:  
Standard: 50 times\*

\* negative measuring ranges upon request.

#### Accuracy

Accuracy class: 1.6 per EN 837-3

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

#### Temperature ranges

	without filling	with filling
Ambient:	-20...70 °C	-20...70 °C (60 °C) <sup>1</sup>
Media: <sup>2</sup>	-20...110 °C	-20...70 °C (60 °C) <sup>1</sup>
Storage:	-40...70 °C	-40...70 °C (-20...60 °C) <sup>1</sup>

Extended temperature range (optional):

	without filling	with filling
Ambient:	-40...100 °C	-40...80 °C (60 °C) <sup>1</sup>
Media: <sup>2</sup>	-40...150 °C	-40...150 °C

<sup>1</sup> Safety case S3

<sup>2</sup> Nominal range ≤ 1 bar up to 110 °C

#### Approvals/Certificates

Explosion protection: Ex-protection (ATEX) for mechanical devices

- ⊕ II 2G c TX
- ⊕ II 2D c TX

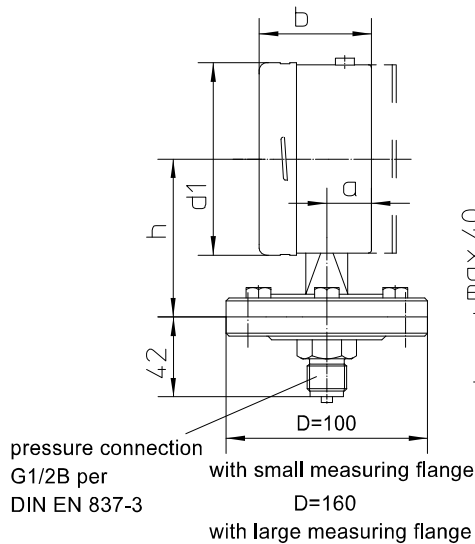
Further details see Ex Safety Instruction XA\_005.

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

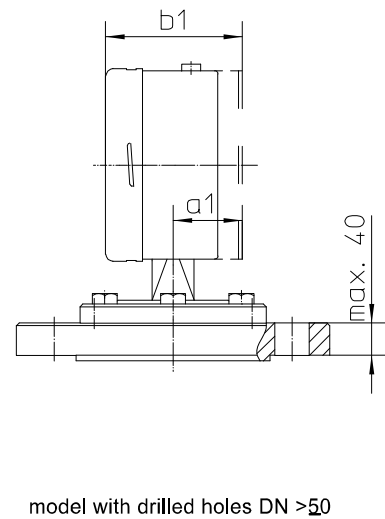
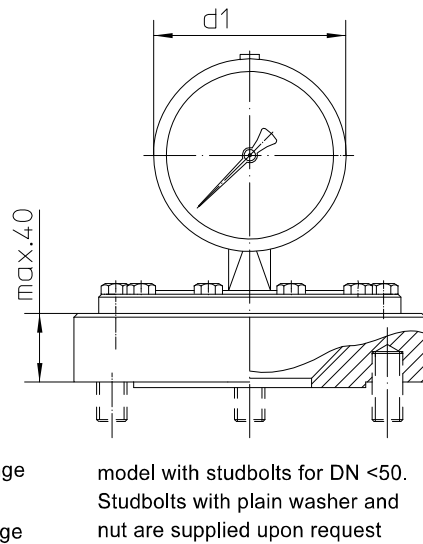
**Information on other models see order details or upon request.**

## Dimensions

Standard design



Open measuring flange  
Dimensions per DIN EN or ASME



dimensions (mm)						
case	d1	a	b	a1	b1	h
NS 100	100	21	59	37	72	83
NS 160	160	21	59	47	82	113

## Order details

### Diaphragm pressure gauge per EN 837-3, chemical design DN 100/160, Type series BA2...

Order details BA2...				
BA2200	case	NS 100	IP 65	
BA2220			IP 65 with case filling	
BA2300		NS 160	IP 65	
BA2320			IP 65 with case filling <sup>1</sup>	
BA2500		NS 100 safety case	IP 65	
BA2540			IP 66 with case filling	
BA2600		NS 160 safety case	IP 65	
BA2640			IP 66 with case filling	
A1010	nominal range	measuring flange Ø 100 mm	0...250 mbar	
A1011			0...400 mbar	
A1051			0...0.4 bar	
A1052			0...0.6 bar	
A1053			0...1 bar	
A1054			0...1.6 bar	
A1055			0...2.5 bar	
A1056			0...4 bar	
A1057			0...6 bar	
A1058			0...10 bar	
A1059			0...16 bar	
A1060			0...25 bar	
A1027			-250...0 mbar	
A1028			-400...0 mbar	
A1085			-0.6...0 bar	
A1086			-1...0 bar	
A1087			-1...0.6 bar	
A1088			-1...1.5 bar	
A1089			-1...3 bar	
A1090			-1...5 bar	
A1091			-1...9 bar	
A1092			-1...15 bar	
A1093			-1...24 bar	
A1005			measuring flange Ø 160 mm	0...25 mbar
A1006				0...40 mbar
A1007				0...60 mbar
A1008				0...100 mbar
A1009		0...160 mbar		
A1022		-25...0 mbar		
A1023		-40...0 mbar		
A1024		-60...0 mbar		
A1025		-100...0 mbar		
A1026	-160...0 mbar			
D10011	process connection	threaded connection		G1/2 B, material no. 1.4571 (316Ti)
D10021				G1/2 B, material no. 1.4571 (316Ti), with 12 mm bore hole
D10015				G1/2 B, material no. 1.4571 (316Ti), PFA coated
D10012				G1/2 B, material no. 1.4571 (316Ti), PTFE coated <sup>2</sup>
D10017				G1/2 B, PVDF (PN max. up to 16 bar)
D10201			1/2" NPT, material no. 1.4571 (316Ti)	
D10301		M20 x 1,5 material no. 1.4571 (316Ti)		
D20101		open measuring flange PN10...40, mat.-no. 1.4571 (316Ti) sealing surface EN 1092-1 model B1 (DIN 2526 Form C)	DN 25, for studbolts	
D20102			DN 25, for studbolts, with PTFE lining <sup>3</sup>	
D20131			DN 50, for nominal ranges ≥ 250 mbar with through holes	
D20131			DN 50, for nominal ranges ≤ 160 mbar for studbolts	
D20132			DN 50, DN 50, with PTFE lining <sup>3</sup>	

Additional features (to be indicated if required)		
S30	Ex-protection (ATEX) for mechanical devices <sup>3</sup>	⊕ II 2G c TX
		⊕ II 2G c TX
H102	gasket	pressure chamber seal, gasket PTFE <sup>4</sup>
H112	diaphragm respectively protective foil	PFA red lining
H132		Monel protective foil <sup>4</sup>
H142		Hastelloy C276 protective foil <sup>4</sup>
H162		Tantal protective foil <sup>4</sup>
I2	pointer	with micro adjustment
R2	window	non-splintering glass with maximum pointer
R3		non-splintering glass with adjustable reference pointer
R12		Macrolon with maximum pointer <sup>5</sup>
R13		Macrolon with adjustable reference pointer <sup>5</sup>
T2	marking	on scale (please specify)
T3		fixed reference pointer (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
W2673	certificate of measuring equipment for Russian Federation	
W4010	overload protection	20 times (max. to 100 bar), short term, for measuring flange 100 mm
	extended temperature range	
Z1	connection to Zone 0 <sup>6</sup>	with Zone 0 adapter (coupling element KF6)

**Order code (example): BA2320 – A1090 – D20102 - ...**

<sup>1</sup> with rubber filling plug for pressure compensation: nom. range ≤ 10 bar: IP54

<sup>2</sup> PN up to max. 25 bar

<sup>3</sup> for devices with non-splintering glass only

<sup>4</sup> no PTFE gasket for use in vacuum

<sup>5</sup> not for devices with Ex-protection

<sup>6</sup> for devices with Ex-protection only