

Bourdon tube pressure gauge per EN 837-1 S3

Safety pattern gauge

Type series BA45../BA46..



Application area

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

Features

- High quality case with bajonet ring NS 100/160 per EN 837-1 S3
- Nominal ranges -0.6...0 bar to -1...24 bar, 0...0.6 to 0...1000 bar
- Case and measuring element of stainless steel
- Degree of protection IP 65
- Accuracy class 1.0 or 1.6 per EN 837-1

Options

- Approvals/Certificates
 - Explosion protection (ATEX/UKEX) for mechanical devices
 - Material certificate per EN 10204
 - Calibration certificate per EN 10204
- As per UKCA regulations
- Damping of movement
- Electrical contact device, see data sheet D3-025 (depending on design)
- Electronical angle-of-rotation sensor, Type series PL1100, see data sheet D6-020
- Mounting: front flange for flush mounting
- Extended temperature range
- Connection to Zone 0 by using the flame arrester MF21xx, see data sheet D6-025
- Case with liquid filling and degree of protection IP 66
- Oxygen free of oil and grease

Application

The safety pattern gauge has been designed for universal use in areas with extended requirements. This high quality stainless steel version is suitable for service in the chemical, petrochemical and foodstuff industry for measuring gaseous, liquid and aggressive media. The safety case offers increased operator protection.

Technical data

Constructional design / case

Design:	High quality safety case with blow-out back and solid baffle wall per EN 837-1 S3, material: stainless steel mat.-no. 1.4301 (304), pressure compensation diaphragm: silicone, 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:	Option: Glycerine-water In combination with electronic angle-of-rotation sensor PL11: Labofin Further liquid fillings upon request
Pressure compensation:	To atmosphere via internal pressure compensation diaphragm
Case seal:	Material gasket: NBR
Window:	Non-splintering laminated glass. Option: Non-splintering plastic (Polycarbonate)
Measuring element:	Bourdon tube < 60 bar: c-type ≥ 60 bar: spiral
Movement:	Stainless steel segment optional: movement with integrated damping system
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:	Stand-alone, upon request for flush mounting with DIN mounting flange
Weights:	NS 100 without filling: approx. 0.7 kg NS 160 without filling: approx. 1.3 kg NS 100 with filling: approx. 1.0 kg NS 160 with filling: approx. 2.5 kg

Process connection

Design:	Per EN 837-1, G1/2 B, 1/2" NPT or M20 x 1.5; bottom connection. Further process connections upon request.
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Material wetted parts

Measuring element:	Bourdon tube and shanks stainless steel mat.-no. 1.4571 / 1.4404 (316Ti / 316L)
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Nominal range

See order details, further ranges upon request

Overload limit:	standard: 1.3 times higher overload protection see order details
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For information on definitions of terms regarding the Pressure Equipment Directive, see Technical Instruction TA_068.

Accuracy

Accuracy class:	1.0 per EN 837-1 (for nominal ranges < 1000 bar) 1.6 per EN 837-1 (for nominal range 1000 bar)
Temperature influence:	Max. ± 0.4% / 10K of measuring span per EN 837-1

Temperature ranges

	without filling	with filling
Ambient:	-20...70 °C	-20...60 °C
Media: ^{1,2}	-40...200 °C	-40...200 °C
Storage:	-20...70 °C	-20...60 °C

Extended temperature range for nominal ranges ≤ 600 bar (optional):

	without filling	with filling
Ambient:	-40...100 °C	-40...60 °C
Media: ¹	-40...200 °C	-40...200 °C

¹ Nominal range ≤ 1 bar up to 100 °C

² Nominal range > 600 bar up to 150 °C

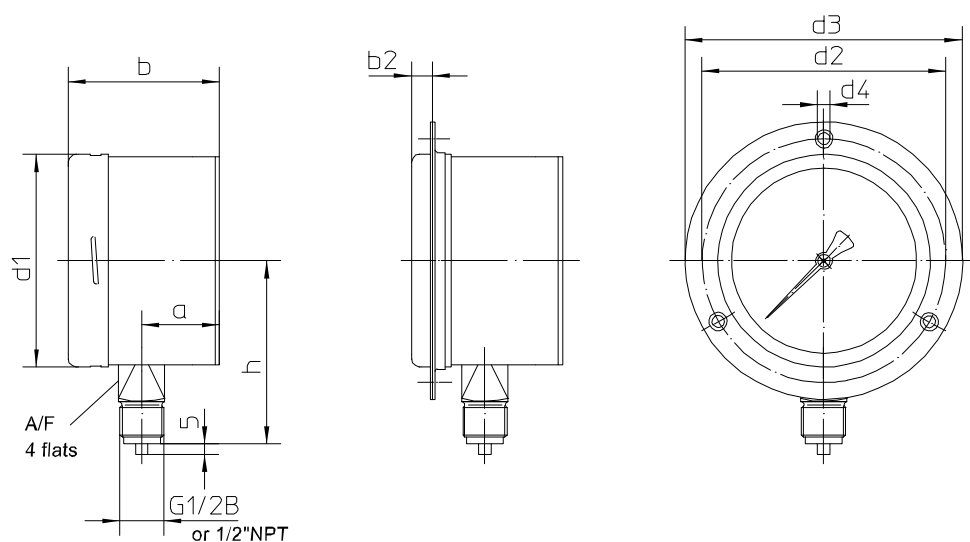
Tests and certificates

Explosion protection:	Ex-protection (ATEX/UKEX) for mechanical devices Ex II 2G Ex h IIC T1...T6 Gb X Ex II 2D Ex h IIIC Txx°C Db X
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Further details see Ex Instructions XA_005.

Information on other models see order details or upon request.

Dimensions



Standard design

for flush mounting

flush mounting view

Mounting instruction: Ensure full space requirement for operation with rear blow-out device of case!

dimensions (mm)											
case	d1	a	a1	b	b1	b2	h	d2	d3	d4	A/F
NS 100	100	37	39	72	74	10	87	116	132	4,8	22
NS 160	160	47	49	82	84	10	117	178	196	5,8	22

Order details

Bourdon tube pressure gauge safety pattern gauge per EN 837-1 S3, Type series BA45../BA46..

Order details BA45../BA46..

BA4500	Safety case S3	NS100	process connection bottom
BA4540			IP 66 process connection bottom with case filling
BA4600		NS 160	process connection bottom
BA4640			IP 66 process connection bottom with case filling
A2...	process connection	G1/2 B	
B2...		1/2" NPT	
C2...		M 20 x 1.5	
085	nominal range [bar]	-0.6...0	
086		-1...0	
087		-1...0.6	
088		-1...1.5	
089		-1...3	
090		-1...5	
091		-1...9	
092		-1...15	
093		-1...24	
052		0...0.6 ¹	
053		0...1	
054		0...1.6	
055		0...2.5	
056		0...4	
057		0...6	
058		0...10	
059		0...16	
060		0...25	
061		0...40	
062		0...60	
063		0...100	
064		0...160	
065		0...250	
066		0...400	
068		0...600	
070		0...1000 ²	

Additional features (to be indicated if required)		
S30	Ex-protection (ATEX/UKEX) for mechanical devices gauges ³	II 2G Ex h IIC T1...T6 Gb X II 2D Ex h IIIC Txx°C Db X
H2	overload protection	2 times (measuring range 1...4 bar)
H3		2 times (measuring range 6...40 bar)
H4		1.5 times (measuring range 60...160 bar)
I2	pointer	with micro adjustment
R2	window	non-splintering glass with maximum pointer
R3		non-splintering glass with adjustable reference pointer ⁴
R12		Polycarbonate with maximum pointer ⁵
R13		Polycarbonate with adjustable reference pointer ⁵
T2	marking	on scale (please specify)
T3		fixed reference pointer (please specify)
U2	restrictor screw	restrictor screw 0.3 mm
U3		restrictor screw 0.6 mm
U4		restrictor screw 1.0 mm
V3	mounting	front flange for flush mounting
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	
W4001	oxygen free of oil and grease	
W4090	extended temperature range	
W4102	damping of movement	with integrated damping system
PL110.	output signal	4...20 mA (20...4 mA) with electronic angle-of-rotation sensor (see data sheet D6-020) ⁶

Order code (example): BA4540 – C2087 - ...

¹ NS 100 without DIN and class specification

² accuracy class 1.6 as per EN 837-1

³ for devices with non-splintering glass only

⁴ NS 100 only

⁵ not for devices with Ex-protection

⁶ not possible with damping of movement