

Bourdon tube pressure gauge, Hastelloy C276

For the process industry, high corrosion resistance

Model PG28, NS 100 [4"] and 160 [6"]

WIKA data sheet PM 02.32



For further approvals,
see page 6

Applications

- With case filling for applications with high dynamic pressure loads and vibrations
- For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive environments
- Oil and gas industry, chemical and petrochemical industries

Special features

- Wetted parts from Hastelloy C276
- Excellent resistance against corrosive media such as sulphuric acid, nitric acid, chlorine gas etc.
- Safety version with solid baffle wall (Solidfront) available
- Scale ranges from 0 ... 0.6 to 0 ... 700 bar [0 ... 10 to 0 ... 10,000 psi]
- QR code on dial links to instrument-specific information



Bourdon tube pressure gauge, model PG28

Description

The model PG28 Bourdon tube pressure gauge with wetted parts from Hastelloy C276 is particularly suitable for applications with aggressive media.

Hastelloy C276 belongs to the group of highly corrosion-resistant nickel-chromium-molybdenum-tungsten alloys and is notable for its high resistance to crevice corrosion, pitting and stress corrosion cracking in corrosive, oxidising and reducing media.

WIKA also produces the model PG28 in a particularly safe version with a solid baffle wall (Solidfront). This safety version is made up of a non-splintering window, a solid baffle wall between measuring system and dial and a blow-out back.

In the event of a failure, the user is protected at the front side, as media or components can only be ejected via the rear of the case.

As an alternative, WIKA offers diaphragm seals of models 990.34 and 990.10 as well as model 4 diaphragm pressure gauges in a Hastelloy version. Diaphragm seals are always the first choice for safety-relevant applications.

The QR code on the dial allows instrument-specific information such as the serial number, the order number, certificates and other product data to be retrieved from the internet easily and in the long term.

Specifications

Basic information	
Standard	■ EN 837-1 ■ ASME B40.100 → For information on the "Selection, installation, handling and operation of pressure gauges", see technical information IN 00.05.
Further version	■ Oil- and grease-free for oxygen ■ Per NACE ¹⁾ MR0175 / ISO 15156, use in H₂S-containing environments in oil and gas production ■ Per NACE ^{1) 2)} MR0103 / ISO 17945, metals resistant to sulphide stress cracking ■ Monel version; models 262 and 263; see data sheet PM 02.33
Nominal size (NS)	■ Ø 100 mm [4"] ■ Ø 160 mm [6"]
Connection location	■ Lower mount (radial) ■ Lower back mount
Window	Laminated safety glass
Case	
Design ³⁾	■ Safety level "S1" per EN 837-1: with blow-out device ■ Safety level "S3" per EN 837-1: with solid baffle wall and blow-out back Scale ranges ≤ 0 ... 16 bar [≤ 0 ... 300 psi] with equalising valve to vent and reseal case
Material	■ Stainless steel 1.4301 (304) ■ Stainless steel 1.4571 (316Ti)
Ring	Bayonet bezel, stainless steel
Mounting	■ Without ■ Panel mounting flange, stainless steel ■ Panel mounting flange, polished stainless steel ■ Triangular profile ring with mounting bracket, polished stainless steel ■ Surface mounting flange, stainless steel
Case filling	■ Without ■ Glycerine ■ Glycerine-water mixture for scale ranges ≤ 0 ... 2.5 bar [≤ 0 ... 40 psi] ■ Silicone oil
Movement	■ Stainless steel ■ Stainless steel 1.4404 (316L) ■ everlast[®] version

1) For general information about NACE standards, see data sheet IN 00.21

2) Only available up to scale ranges of 70 bar [1,000 psi]

3) For NS 160 [6"], lower back mount, only version "S1" is available

Measuring element	
Type of measuring element	Bourdon tube, C-type or helical type
Material	Hastelloy C276
Leak tightness	■ Helium tested, leakage rate: < 5 · 10⁻³ mbar l/s ■ Helium tested, leakage rate: < 1 · 10⁻⁶ mbar l/s

Accuracy specifications	
Accuracy class	
EN 837-1	Class 1.0
ASME B40.100	±1 % of measuring span (grade 1A)
Temperature error	On deviation from the reference conditions at the measuring system: ≤ ±0.4 % per 10 °C [≤ ±0.4 % per 18 °F] of full scale value
Reference conditions	
Ambient temperature	+20 °C [+68 °F]

Scale ranges

bar	
0 ... 0.6	0 ... 40
0 ... 1	0 ... 60
0 ... 1.6	0 ... 100
0 ... 2.5	0 ... 160
0 ... 4	0 ... 250
0 ... 6	0 ... 400
0 ... 10	0 ... 600
0 ... 16	0 ... 700
0 ... 25	-

kg/cm ²	
0 ... 0.6	0 ... 40
0 ... 1	0 ... 60
0 ... 1.6	0 ... 100
0 ... 2.5	0 ... 160
0 ... 4	0 ... 250
0 ... 6	0 ... 400
0 ... 10	0 ... 600
0 ... 16	0 ... 700
0 ... 25	-

kPa	
0 ... 60	0 ... 4,000
0 ... 100	0 ... 6,000
0 ... 160	0 ... 10,000
0 ... 250	0 ... 16,000
0 ... 400	0 ... 25,000
0 ... 600	0 ... 40,000
0 ... 1,000	0 ... 60,000
0 ... 1,600	0 ... 70,000
0 ... 2,500	-

MPa	
0 ... 0.06	0 ... 4
0 ... 0.1	0 ... 6
0 ... 0.16	0 ... 10
0 ... 0.25	0 ... 16
0 ... 0.4	0 ... 25
0 ... 0.6	0 ... 40
0 ... 1	0 ... 60
0 ... 1.6	0 ... 70
0 ... 2.5	-

psi	
0 ... 10	0 ... 800
0 ... 15	0 ... 1,000
0 ... 30	0 ... 1,500
0 ... 60	0 ... 2,000
0 ... 100	0 ... 3,000
0 ... 160	0 ... 4,000
0 ... 200	0 ... 5,000
0 ... 300	0 ... 6,000
0 ... 400	0 ... 7,500
0 ... 600	0 ... 10,000

Vacuum and compound scale ranges

bar	
-0.6 ... 0	-1 ... +5
-1 ... 0	-1 ... +9
-1 ... +0.6	-1 ... +15
-1 ... +1.5	-1 ... +24
-1 ... +3	-

kPa	
-60 ... 0	-100 ... +500
-100 ... 0	-100 ... +900
-100 ... +60	-100 ... +1,500
-100 ... +150	-100 ... +2,400
-100 ... +300	-

MPa	
-0.06 ... 0	-0.1 ... +0.5
-0.1 ... 0	-0.1 ... +0.9
-0.1 ... +0.06	-0.1 ... +1.5
-0.1 ... +0.15	-0.1 ... +2.4
-0.1 ... +0.3	-

psi	
-30 inHg ... 0	-30 inHg ... +100
-30 inHg ... +15	-30 inHg ... +160
-30 inHg ... +30	-30 inHg ... +200
-30 inHg ... +60	-30 inHg ... +300

Further details on: scale ranges	
Special scale ranges	→ Other scale ranges on request
Unit	■ bar ■ psi ■ kg/cm² ■ kPa ■ MPa
Increased overload safety	■ Without ■ 2 times The possibility of selection depends on scale range and nominal size
Vacuum resistance	■ Without ■ Vacuum-resistant to -1 bar
Dial	
Scale colour	Black
Material	Aluminium
Special scale	→ Other scales or customised dials, e.g. with red mark, circular arcs or circular sectors, on request
Pointer	
Instrument pointer	Aluminium, black
Mark pointer / Drag pointer	■ Without ■ Red mark pointer on dial, fixed ■ Red mark pointer on window, adjustable ■ Mark pointer on bayonet bezel, adjustable ■ Red drag pointer on window, adjustable
Pointer stop pin	■ Without ■ At 6 o'clock

Process connection	
Standard	■ EN 837-1 ■ ISO 7 ■ ANSI/B1.20.1
Size	
EN 837-1	■ G ½ B, male thread ■ M20 x 1.5, male thread
ISO 7	R ½, male thread
ANSI/B1.20.1	½ NPT, male thread
Restrictor	■ Without ■ Ø 0.6 mm [0.024"], stainless steel ■ Ø 0.3 mm [0.012"], stainless steel
Material (wetted)	
Process connection	Hastelloy C276
Bourdon tube	Hastelloy C276

→ Other process connections on request

Operating conditions	
Medium temperature	
Instruments without filling	≤ 200 °C [392 °F]
Instruments with filling	≤ 100 °C [212 °F]
Ambient temperature	
Instruments without filling	-40 ... +60 °C [-40 ... +140 °F]
Instruments with glycerine filling	-20 ... +60 °C [-4 ... +140 °F]
Instruments with silicone oil filling	-40 ... +60 °C [-40 ... +140 °F]
Pressure limitation	
Steady	Full scale value
Fluctuating	0.9 x full scale value
Short time	1.3 x full scale value
Ingress protection per IEC/EN 60529	IP65 ¹⁾

1) IP54 for back mount (safety version "S3")

Approvals

Logo	Description	Region
	EU declaration of conformity Pressure Equipment Directive PS > 200 bar, module A, pressure accessory	European Union
	UKCA Pressure equipment (safety) regulations	United Kingdom
-	CRN Safety (e.g. electr. safety, overpressure, ...) For full scale value $\leq 1,000$ bar	Canada

Optional approvals

Logo	Description	Region
 	EU declaration of conformity ATEX directive Hazardous areas - Ex h Gas II 2G Ex h IIC T6 ... T1 Gb X Dust II 2D Ex h IIIC T85°C ... T450°C Db X	European Union
	UKCA Equipment and protective systems intended for use in potentially explosive atmospheres regulations	United Kingdom
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan

Manufacturer's information and certificates

Logo	Description
-	Pressure Equipment Directive (PED) for maximum allowable pressure $PS \leq 200$ bar

Certificates (option)

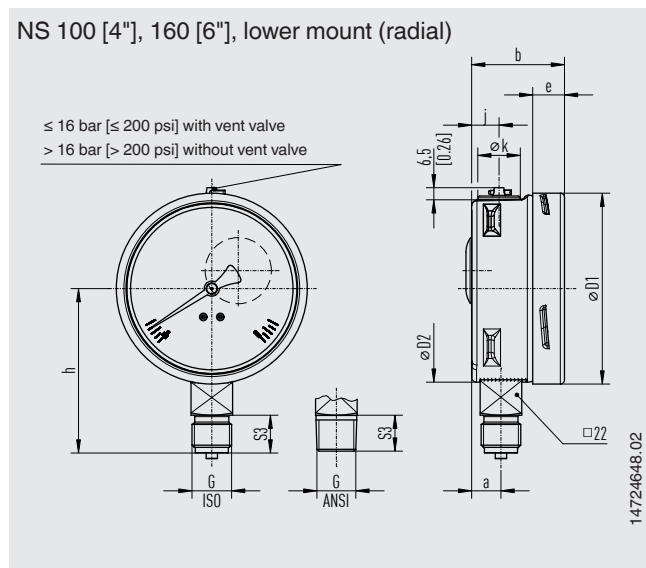
Certificates	
Certificates	■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy) ■ 3.1 inspection certificate per EN 10204 (e.g. material proof for wetted metal parts, indication accuracy) ■ PCA calibration certificate, traceable and accredited in accordance with ISO/IEC 17025 ■ Calibration certificate by a national accreditation body, traceable and accredited in accordance with ISO/IEC 17025 on request
Recommended calibration interval	1 year (dependent on conditions of use)

→ For approvals and certificates, see website

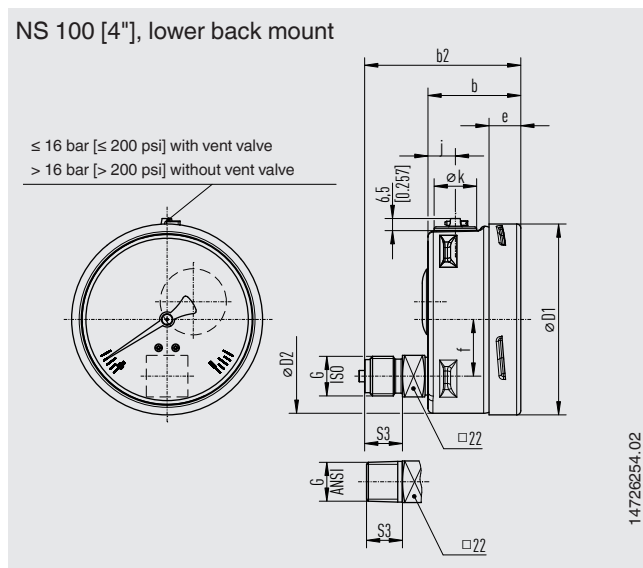
Dimensions in mm [in]

Model PG28, "S1" version

NS 100 [4"], 160 [6"], lower mount (radial)



NS 100 [4"], lower back mount



Process connection with thread per EN 837-1

NS	G	Dimensions in mm [in]										
		h ±1	h1 ±1	a	b	D1	D2	e	i	y	k	S3
100 [4"]	G ½ B	87	83	15.5	49.5	101	99	30	6.5	14.5	22.5	20
	M20 x 1.5	[3.43]	[3.27]	[0.61]	[1.95]	[3.98]	[3.90]	[1.18]	[0.26]	[0.57]	[0.89]	[0.79]
160 [6"]	G ½ B	118	-	15.5	49.5	161	159	-	6.5	14.5	15	20
	M20 x 1.5	[4.65]		[0.61]	[1.95]	[6.34]	[6.26]		[0.26]	[0.57]	[0.59]	[0.79]

Process connection with thread per ANSI/B1.20.1

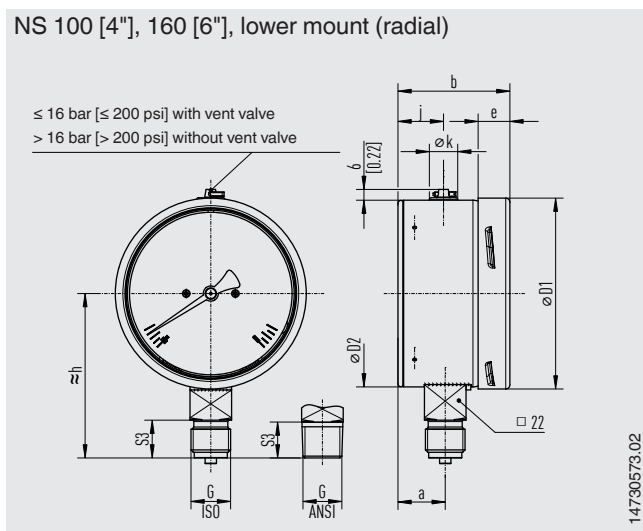
NS	G	Dimensions in mm [in]										
		h ±1	h1 ±1	a	b	D1	D2	e	i	y	k	S3
100 [4"]	½ NPT	86	82	15.5	49.5	101	99	30	6.5	14.5	22.5	19
		[3.39]	[3.23]	[0.61]	[1.95]	[3.98]	[3.90]	[1.18]	[0.26]	[0.57]	[0.89]	[0.75]
160 [6"]	½ NPT	117	-	15.5	49.5	161	159	-	6.5	14.5	15	19
		[4.61]		[0.61]	[1.95]	[6.34]	[6.26]		[0.26]	[0.57]	[0.59]	[0.75]

Weight

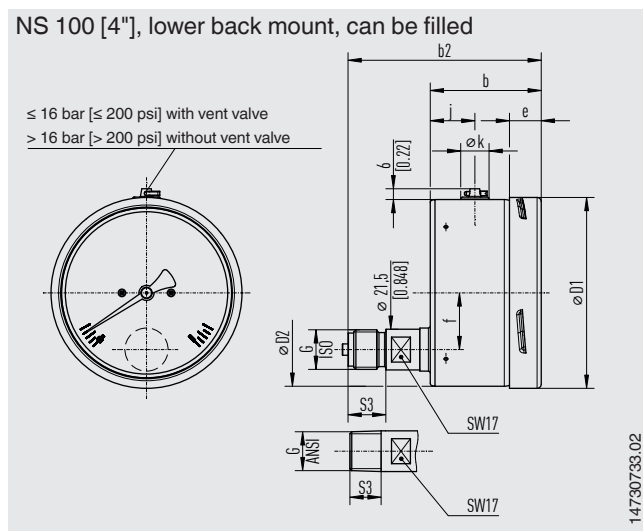
NS	Weight in kg [lb]	
	Without filling	With filling
100 [4"]	Approx. 0.6 [1.32]	Approx. 0.9 kg [1.98]
160 [6"]	Approx. 1.1 [2.43]	Approx. 2.1 kg [4.63]

Model PG28, "S3" safety version

NS 100 [4"], 160 [6"], lower mount (radial)



NS 100 [4"], lower back mount, can be filled



Process connection with thread per ISO 1179-2

NS	G	Dimensions in mm [in]										
		h ±1	a	b	b ₁	b ₂	D ₁	D ₂	e	f	k	S3
100 [4"]	G ½ B	87 [3.43]	25	59.5	59.5	93	101	100	17	30	22.5	20
	M20 x 1.5		[0.98]	[2.36]	[2.36]	[3.66]	[3.98]	[3.94]	[0.67]	[1.18]	[0.89]	[0.79]
160 [6"]	G ½ B	118	27	65	-	-	161	159	17.5	-	15	20
	M20 x 1.5	[4.65]	[1.06]	[2.56]			[6.34]	[6.26]	[0.69]		[0.59]	[0.79]

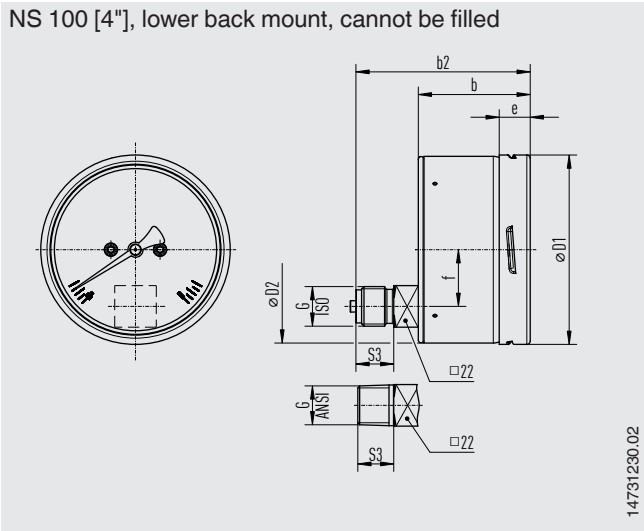
Process connection with thread per ANSI/B1.20.1

NS	G	Dimensions in mm [in]										
		h ±1	a	b	b ₁	b ₂	D ₁	D ₂	e	f	k	S3
100 [4"]	½ NPT	86 [3.39]	25	59.5	59.5	92	101	100	17	30	22.5	19
			[0.98]	[2.36]	[2.36]	[3.62]	[3.98]	[3.94]	[0.67]	[1.18]	[0.89]	[0.75]
160 [6"]	½ NPT	118	27	65	-	-	161	159	17.5	-	15	19
		[4.65]	[1.06]	[2.56]			[6.34]	[6.26]	[0.69]		[0.59]	[0.75]

Weight

NS	Weight in kg [lb]	
	Without filling	With filling
100 [4"]	Approx. 0.9 [1.98]	Approx. 1.1 [2.43]
160 [6"]	Approx. 2 [4.41]	Approx. 2.4 [5.29]

Model PG28, “S3” safety version



Process connection with thread per ISO 1179-2

NS	G	Dimensions in mm [in]						
		b	b ₂	D ₁	D ₂	e	f	S3
100 [4"]	G ½ B	59 [2.32]	93 [3.66]	101 [3.98]	99 [3.9]	17 [0.67]	30 [1.18]	20 [0.79]
	M20 x 1.5							

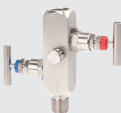
Process connection with thread per ANSI/B1.20.1

NS	G	Dimensions in mm [in]						
		b	b ₂	D ₁	D ₂	e	f	S3
100 [4"]	½ NPT	59 [2.32]	92 [3.62]	101 [3.98]	99 [3.9]	17 [0.67]	30 [1.18]	19 [0.75]

Weight

NS	Weight in kg [lb]
	Without filling
100 [4"]	Approx. 0.7 [1.54]

Accessories and spare parts

Model		Description
	910.17	Seals → See data sheet AC 09.08
	910.15	Syphons → See data sheet AC 09.06
	910.13	Overpressure protector → See data sheet AC 09.04
	IV1	Needle valve and multiport needle valve → See data sheet AC 09.22
	IV2	Block-and-bleed valve → See data sheet AC 09.19
	IVM	Monoflange, process and instrument version → See data sheet AC 09.17
	BV	Ball valve, process and instrument version → See data sheet AC 09.28
	IBF2, IBF3	Monoblock with flange connection → See data sheet AC 09.25

Ordering information

Model / Nominal size / Scale range / Process connection / Connection location / Options

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