Test gauge, stainless steel
Standard version, class 0.6, NS 160 [6"]
Models 332.50, 333.50

For further approvals, see page 6

Applications

- For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive environments
- Precision measurement in laboratories
- High-accuracy pressure measurement
- Testing of industrial type pressure gauges
- With liquid-filled case (model 333.50) for applications with high dynamic pressure loads or vibrations

Special features

- Designed in compliance with the requirements of EN 837-1 and ASME B40.100
- Completely from stainless steel
- Knife edge pointer for optimal accuracy of reading
- Wear-resistant precision movement from stainless steel
- Scale ranges from 0 … 0.6 to 0 … 1,600 bar [0 ... 10 psi to 0 ... 20,000 psi]

Test gauge, unfilled, model 332.50

Description

The model 33x.50 high-quality test gauge has been specifically designed for increased safety requirements during high-accuracy pressure measurements and is suited for calibration tasks. With an accuracy class of 0.6, the Bourdon tube pressure gauge is suitable for testing industrial type pressure gauges or for precision measurement in laboratories. For pressures ≤ 400 bar [6.000 psi] the instrument is also available with an accuracy class of 0.25.

The wear-resistant precision movement, the wetted parts and the case are made from high-grade stainless steel. WIKA manufactures and qualifies the pressure gauge in accordance with the standards EN 837-1 and ASME B40.100. This version has a blow-out device with blow-out plug on the back of the case. In the event of a failure, overpressure can escape there and the operator is protected at the front side.

For harsh operating conditions (e.g. vibrations), all instruments are also available with a liquid filling.

The optimal readability of the instrument, with a nominal size of 160 mm [6"], is achieved via a knife edge pointer and a dial with fine divisions. In addition, a mirror band scale can be chosen to avoid the parallax error.

On request, a calibration certificate will be provided for this instrument. Safe storage and transport is ensured by a transport case (accessory).

Data sheets showing similar products:
Test gauge, safety version; models 332.30, 333.30; see data sheet PM 03.05

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, oil- and grease-free ■ Silicone-free
Nominal size (NS)	Ø 160 mm [6"]
Connection location	■ Lower mount ■ Back mount
Window	Laminated safety glass
Case	
Design	Safety level “S1” per EN 837: With blow-out device in case back With compensating valve to vent case
Material	Stainless steel
Ring	■ Bayonet bezel, stainless steel ■ Triangular profile ring, polished stainless steel, with clamp
Mounting	■ Without ■ Surface mounting flange, stainless steel ■ Panel mounting flange, stainless steel ■ Panel mounting flange, polished stainless steel
	For information on “Mounting types, mounting flanges, panel cutouts”, see technical information IN 00.04
Case filling	■ Without ■ Glycerine ■ Glycerine-water mixture with scale range ≤ 0 ... 2.5 bar [≤ 0 ... 40 psi] ■ Silicone oil
Movement	Stainless steel
Adjustment medium	■ Liquid for scale ranges > 25 bar [400 psi]; gas for scale ranges ≤ 25 bar [400 psi] ■ Gas for all scale ranges

Measuring element	
Type of measuring element	Bourdon tube, C-type or helical type
Material	
< 1,000 bar [15,000 psi]	Stainless steel 1.4404 (316L)
≥ 1,000 bar [15,000 psi]	NiFe alloy
Leak tightness	■ Leakage rate: < $1 \cdot 10^{-3}$ mbar l/s ■ Helium tested, leakage rate: < $1 \cdot 10^{-6}$ mbar l/s

Accuracy specifications	
Accuracy class	
EN 837-1	■ Class 0.6 ■ Class 0.25 (selectable for scale ranges ≤ 400 bar [6,000 psi])
ASME B40.100	■ ±0.5 % of measuring span (grade A) ■ ±0.25 % of measuring span (grade 3A) (selectable for scale ranges ≤ 400 bar [6,000 psi])
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 ... 60
0 ... 1	0 ... 70
0 ... 1.6	0 ... 100
0 ... 2.5	0 ... 140
0 ... 4	0 ... 160
0 ... 6	0 ... 200
0 ... 7	0 ... 250
0 ... 10	0 ... 315
0 ... 14	0 ... 400
0 ... 16	0 ... 600
0 ... 20	0 ... 700
0 ... 25	0 ... 1,000
0 ... 30	0 ... 1,400
0 ... 40	0 ... 1,600

MPa	
0 ... 0.06	0 ... 4
0 ... 0.1	0 ... 6
0 ... 0.16	0 ... 10
0 ... 0.20	0 ... 14
0 ... 0.25	0 ... 16
0 ... 0.4	0 ... 20
0 ... 0.6	0 ... 25
0 ... 0.7	0 ... 31.5
0 ... 1	0 ... 40
0 ... 1.4	0 ... 60
0 ... 1.6	0 ... 70
0 ... 2	0 ... 100
0 ... 2.5	0 ... 140
0 ... 3	0 ... 160

kPa	
0 ... 60	0 ... 3,000
0 ... 70	0 ... 4,000
0 ... 100	0 ... 6,000
0 ... 160	0 ... 7,000
0 ... 200	0 ... 10,000
0 ... 250	0 ... 14,000
0 ... 300	0 ... 16,000
0 ... 400	0 ... 20,000
0 ... 600	0 ... 25,000
0 ... 700	0 ... 31,500
0 ... 1,000	0 ... 40,000
0 ... 1,400	0 ... 60,000
0 ... 1,600	0 ... 70,000
0 ... 2,500	0 ... 100,000

kg/cm²	
0 ... 0.6	0 ... 60
0 ... 1	0 ... 70
0 ... 1.6	0 ... 100
0 ... 2.5	0 ... 140
0 ... 4	0 ... 160
0 ... 6	0 ... 200
0 ... 7	0 ... 250
0 ... 10	0 ... 315
0 ... 14	0 ... 400
0 ... 16	0 ... 600
0 ... 20	0 ... 700
0 ... 25	0 ... 1,000
0 ... 30	0 ... 1,400
0 ... 40	0 ... 1,600

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 ... 150	0 ... 4,000
0 ... 160	0 ... 5,000
0 ... 200	0 ... 6,000
0 ... 250	0 ... 7,500
0 ... 300	0 ... 10,000
0 ... 400	0 ... 15,000
0 ... 600	0 ... 20,000

Vacuum and +/- scale ranges

bar	
-0.6 ... 0	-1 ... +7
-1 ... 0	-1 ... +9
-1 ... +0.6	-1 ... +10
-1 ... +1	-1 ... +15
-1 ... +1.5	-1 ... +24
-1 ... +2	-1 ... +15
-1 ... +3	-1 ... +30
-1 ... +5	-

kg/cm²	
-0.6 ... 0	-1 ... +7
-1 ... 0	-1 ... +9
-1 ... +0.6	-1 ... +10
-1 ... +1	-1 ... +15
-1 ... +1.5	-1 ... +24
-1 ... +2	-1 ... +15
-1 ... +3	-1 ... +30
-1 ... +5	-

kPa	
-60 ... 0	-100 ... +700
-100 ... 0	-100 ... +900
-100 ... +60	-100 ... +1,000
-100 ... +150	-100 ... +1,500
-100 ... +200	-100 ... +1,500
-100 ... +300	-100 ... +2,400
-100 ... +400	-100 ... +3,000
-100 ... +500	-

MPa	
-0.06 ... 0	-0.1 ... +0.5
-0.1 ... 0	-0.1 ... +0.7
-0.1 ... +0.06	-0.1 ... +0.9
-0.1 ... +0.1	-0.1 ... +1
-0.1 ... +0.15	-0.1 ... +1.5
-0.1 ... +0.2	-0.1 ... +2.4
-0.1 ... +0.3	-0.1 ... +3
-0.1 ... +0.4	-

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

Further details on: Scale ranges	
Special scale ranges	Other scale ranges on request
Unit	■ bar ■ psi ■ kg/cm² ■ kPa ■ MPa
Increased overload safety	■ Without ■ 1.3 times
	The possibility of selection depends on the scale range
Vacuum resistance	Vacuum-resistant to -1 bar [-30 inHg]
Dial	
Reading aid	■ Without ■ Mirror band scale
Scale colour	Black
Material	Aluminium
Special scale	Other scales or customer-specific dials, e.g. with red mark, circular arcs or circular sectors, on request

Further details on: Scale ranges		
Pointer		
Instrument pointer	Knife edge pointer, aluminium, black	
Mark pointer/drag pointer	■ Without ■ Red mark pointer on dial, fixed ■ Red mark pointer on window, 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 ¼ B, male thread ■ G ½ B, male thread ■ M20 x 1.5, male thread	
ISO 7	■ R ¼, male thread ■ R ½, male thread	
ANSI/B1.20.1	■ ¼ NPT, male thread ■ ½ NPT, male thread	
Restrictor	■ Without ■ Ø 0.6 mm [0.024"], stainless steel ■ Ø 0.3 mm [0.012"], stainless steel	
Material (wetted)		
Measuring element	< 1,000 bar [15,000 psi]	Stainless steel 1.4404 (316L)
	≥ 1,000 bar [15,000 psi]	NiFe alloy
Process connection	Stainless steel 1.4404 (316L)	

Other process connections on request

Operating conditions	
Medium temperature	■ ≤ +100 °C [+212 °F] ■ ≤ +200 °C [+392 °F]
Ambient temperature	■ -20 ... +60 °C [-4 ... +140 °F] ■ -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

Packaging	
Packaging	■ Packaging with increased shock resistance ■ Plastic bag ■ Transport case

Approvals

Logo	Description	Country
CE	**EU declaration of conformity** Pressure Equipment Directive PS > 200 bar, module A, pressure accessory	European Union
UKCA	**UKCA** Pressure equipment (safety) regulations	United Kingdom
-	**CRN** Safety (e.g. electr. safety, overpressure, ...) For scale ranges ≤ 1,000 bar	Canada

Optional approvals

Logo	Description	Country
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	**MChS** Permission for commissioning	Kazakhstan
-	**PAC Ukraine** Metrology, measurement technology	Ukraine
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan
-	**PAC China** Metrology, measurement technology	China

Manufacturer's information and certificates

Logo	Description
-	Pressure Equipment Directive (PED) for maximum allowable pressure PS ≤ 200 bar
-	Suitability of wetted materials for drinking water in accordance with the European 4MS initiative

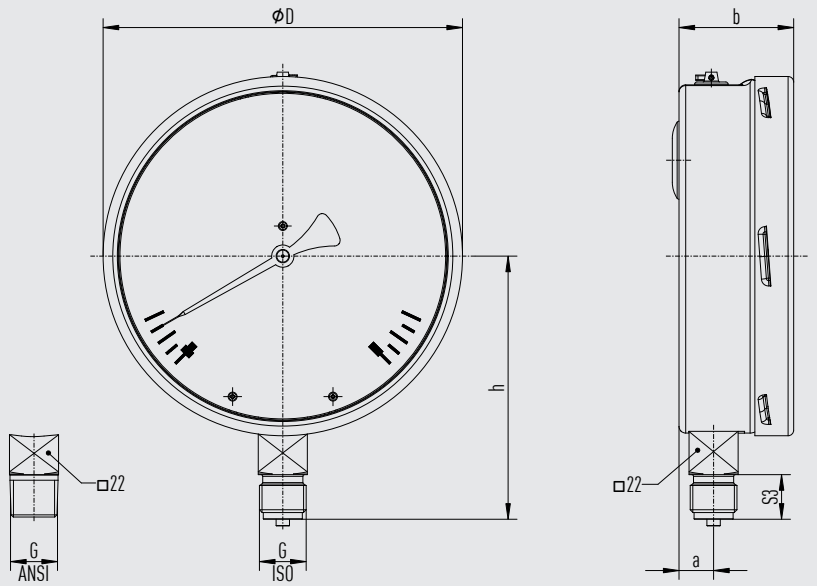
Certificates (option)

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]

Lower mount



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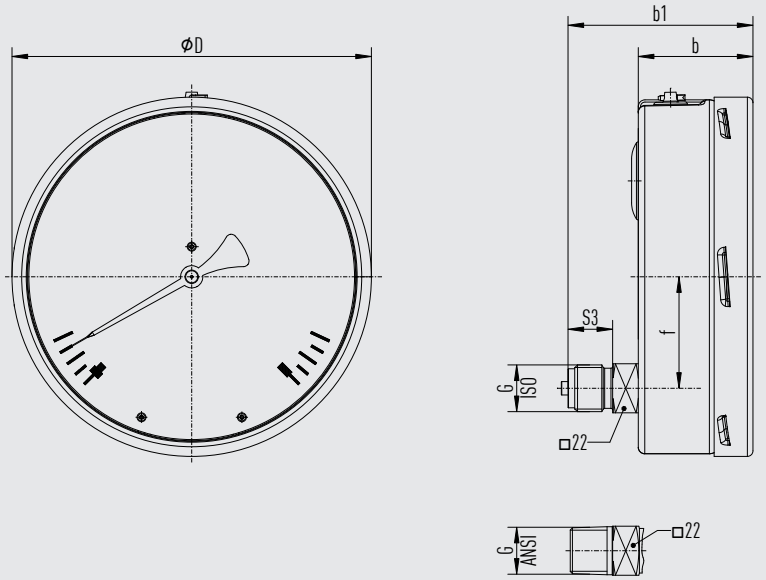
Back mount



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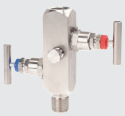
G	Dimensions in mm [in]					
	h ±1 [0.04]	b1 ±1 [0.04]	b ±0.5 [0.02]	a	D	S3
G ¼ B	111 [4.37]	75.9 [2.99]	51.4 [2.02]	15.5 [0.61]	161 [6.34]	20 [0.79]
G ½ B	118 [4.65]	82.9 [3.26]	51.4 [2.02]	15.5 [0.61]	161 [6.34]	20 [0.79]
M20 1.5	118 [4.65]	82.9 [3.26]	51.4 [2.02]	15.5 [0.61]	161 [6.34]	20 [0.79]
¼ NPT, R ¼	111 [4.37]	75.9 [2.99]	51.4 [2.02]	15.5 [0.61]	161 [6.34]	20 [0.79]
½ NPT, R ½	117 [4.61]	81.9 [3.22]	51.4 [2.02]	15.5 [0.61]	161 [6.34]	20 [0.79]

Weight

Weight in kg [lb]	
Model 332.50	**Model 333.50**
1.50 [4.019]	2.70 [7.234]

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
	**IV10, IV11**	Needle valve and multiport valve → See data sheet AC 09.22
	**IV20, IV21**	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

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-0
info@wika.de
www.wika.de