

Bourdon Tube Pressure Gauges Stainless Steel, Safety Pattern Version Model 232.30/233.30, without/with Liquid Filling

WIKA Data Sheet PM 02.04



Applications

- Increased safety requirements
- With liquid filled case for applications with high dynamic pressure pulsations or vibrations
- Suitable for corrosive environments and gaseous or liquid media that will not obstruct the pressure system
- Process industry: chemical/petro-chemical, power stations, mining, on- and offshore, environmental technology, mechanical engineering and plant construction

Special Features

- Safety pressure gauge with solid baffle wall designed in compliance with operational safety requirements of EN 837-1, BS 1780 and ASME B 40.1
- Excellent load-cycle stability and shock resistance
- All stainless steel construction
- Scale ranges up to 0 ... 1600 bar

Description

Design

EN 837-1

Nominal size

63, 100 and 160 mm

Accuracy class

63 mm: 1.6

100, 160 mm: 1.0

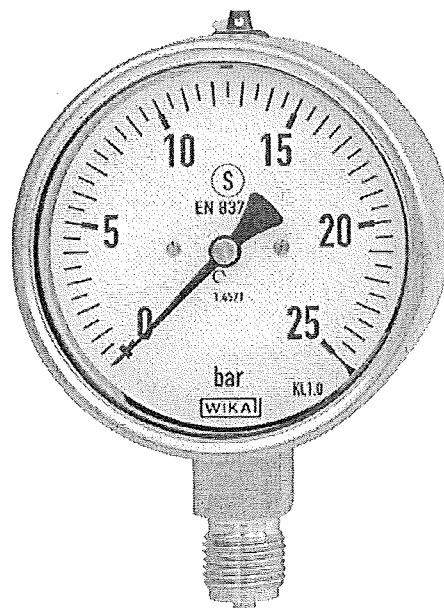
Scale ranges

63 mm: 0 ... 1 to 0 ... 1000 bar

100 mm: 0 ... 0.6 to 0 ... 1000 bar

160 mm: 0 ... 0.6 to 0 ... 1600 bar

or other equivalent units of pressure or vacuum



Bourdon Tube Pressure Gauge Model 232.30

Working pressure

63 mm:	Steady:	full scale value
	Fluctuating:	0.9 x full scale value
	Short time:	1.1 x full scale value
100, 160 mm:	Steady:	full scale value
	Fluctuating:	0.9 x full scale value
	Short time:	1.3 x full scale value

Operating Temperature

Ambient:	-40 ... +60 °C without liquid filling
	-20 ... +60 °C gauges with glycerine filling
Medium:	+200 °C maximum without liquid filling
	+100 °C maximum with liquid filling

Temperature effect

When temperature of the pressure element deviates from reference temperature (+20 °C):
max. $\pm 0.4 \text{ } \%/10 \text{ K}$ of true scale value

Ingress protection

IP 65 per EN 60 529 / IEC 529

Standard features

Pressure connection

Material: stainless steel 316L

Lower mount (LM) or lower back mount (LBM) ¹⁾

63 mm: G 1/4 B (male), 14 mm flats

100, 160 mm: G 1/2 B (male), 22 mm flats (160 mm only lower mount)

Pressure element

Material: stainless steel 316L

< 100 bar: C-type

≥ 100 bar: helical type

Movement

Stainless steel

Dial

White aluminium with black lettering,
63 mm with pointer stop pin

Pointer

Black aluminium

Case

Natural finish stainless steel, case with solid baffle wall and blow-out back

Window

Laminated safety glass

Bezel ring

Cam ring (bayonet type), natural finish stainless steel

Liquid filling (for model 233.30)

Glycerine 99.7 %

¹⁾ Connector position back mount only for gauges NS 63 and 100 without liquid filling

Dimensions in mm

NS	Dimensions in mm										Weight in kg		
	a	b	b ₁	b ₂	D ₁	D ₂	e	f	G	h ± 1	SW	Mod. 232.30	Mod. 233.30
63	17.5	42	42	61	63	63	14.5	18.5	G 1/4 B	54	14	0.20	0.26
100	25	59.5	59.5	93	101	100	17	30	G 1/2 B	87	22	0.65	1.08
160	27 ¹⁾	65 ²⁾	-	-	161	159	17.5	-	G 1/2 B	118	22	1.30	2.34

Standard pressure entry with parallel thread and sealing to EN 837-1 / 7.3

¹⁾ 41.5 mm with pressure ranges ≥ 100 bar

²⁾ 79 mm with pressure ranges ≥ 100 bar

Ordering information

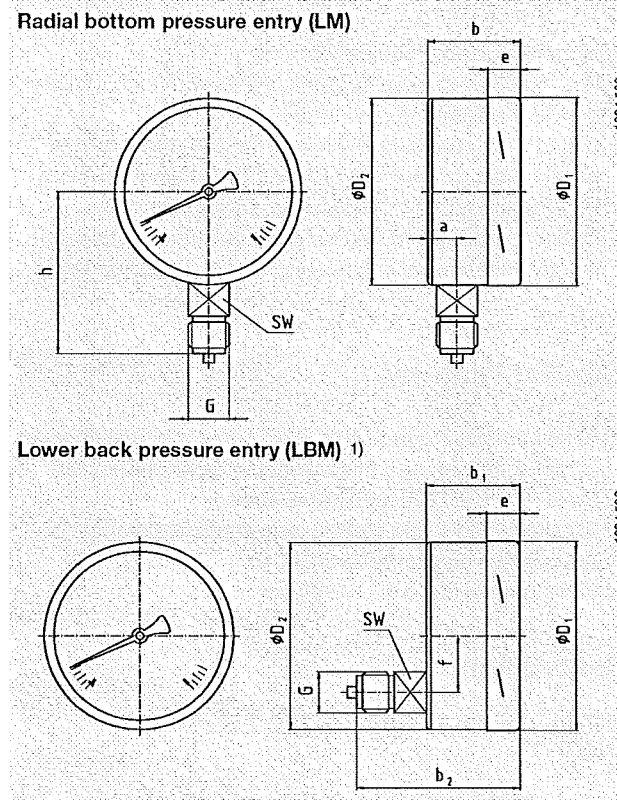
Pressure gauge model / Nominal size / Scale range / Size and location of connection / Optional extras required

Modifications may take place and materials specified may be replaced by others without prior notice.
Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.

Optional extras

- Other pressure connections
- Monel pressure system (model 262.30)
- Pressure system stainless steel 1.4571
- 3-hole panel mounting flange, stainless steel or stainless steel, polished
- Surface mounting lugs on case, stainless steel
- Ambient temperature -40 °C: silicon oil filling
- Alarm contacts (see data sheet AC 08.01)
- Transmitter (model 89X.34, see data sheet AE 08.02)

Standard version



WIKAI Alexander Wiegand GmbH & Co. KG
 Alexander-Wiegand-Straße 30
 63911 Klingenberg/Germany
 Phone (+49) 93 72/132-0
 Fax (+49) 93 72/132-406
 E-Mail info@wika.de
 www.wika.de

Thermowells

Solid Machined, Screwed Connection

Form 6 per DIN 43 772 • Model SD600G
Form 9 per DIN 43 772 • Model SD900G

Thermometers

Application

The thermowells model SD600G and model SD900G are screw-fitted into the process. They are suitable for high process loads, that might occur as a result of flow, temperature and process pressure influences or vibrations.

Standard features

Thermowell material

Stainless steel 1.4571

Process connection

G ½ B, G ¾ B

Instrument connection

SD600G: female thread G ½, G ¾

SD900G: male thread G ½ B, G ¾ B

Bore size

Ø 7 mm, Ø 9 mm, Ø 11 mm

Insertion length U_i

SD600G: 82, 142, 182, 232 or 382 mm

SD900G: 73, 110, 170, 260 or 410 mm

Total length L

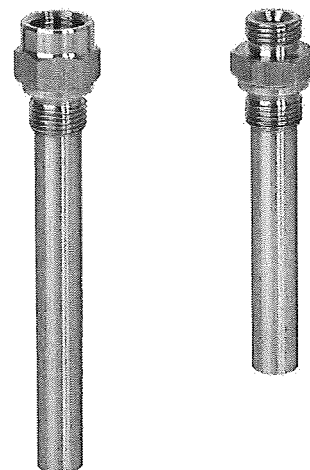
Insertion length + 28 mm

Maximum process temperature ¹⁾

600 °C

Maximum process pressure (static) ¹⁾

150 bar



SD600G

SD900G

Optional extras

- Other dimensions and materials
- Quality certificates
- Wake frequency calculations according to Dittrich / Klotter are recommended in critical applications. WIKA offer this as an engineering service.

Following process data are necessary for the calculation:

- Process pressure (in bar or psi)
- Process temperature (in °C or °F)
- Flow rate (in m/s)
- Density (in kg/m³)
- Dimensions and material of thermowell

¹⁾ Ratings depends on below parameters:

- Process medium
- Process pressure and temperature
- Flow rate
- Design of thermowell (dimensions, material)

Dimensions

Model SD600G

Dimensions in mm									Weight in kg			
E	N	Ø d ₁	Ø D ₁	Ø F ₂	H ₁	H ₂	K ₁	SW	U ₁ = 82 mm	U ₁ = 382 mm		
G ½ B	G ½	7	26	17	19	15	14	27	0.220	0.670		
		9							0.210	0.590		
		11							0.190	0.500		
G ¾ B	G ½	7	32	19	22	17	16	32	0.280	0.720		
		9							0.270	0.650		
		11							0.250	0.630		
	G ¾	7		17					22	17	0.310	0.820
		9									0.300	0.750
		11									0.290	0.740

Legend:

E Process connection

H₁ Bore depth for female thread

H₂ Length of female thread

K₁ Length of male thread

K₂ Length for instrument connection

L Total length

N Instrument connection

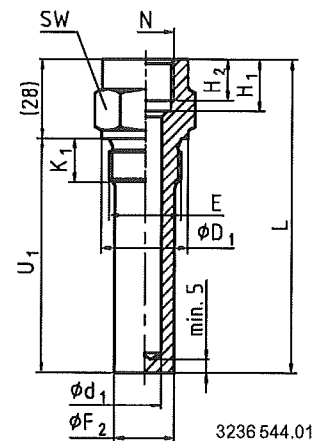
SW Across flats

U₁ Insertion length

Ø d₁ Bore size

Ø D₁ Diameter of sealing face

Ø F₂ Thermowell outer diameter

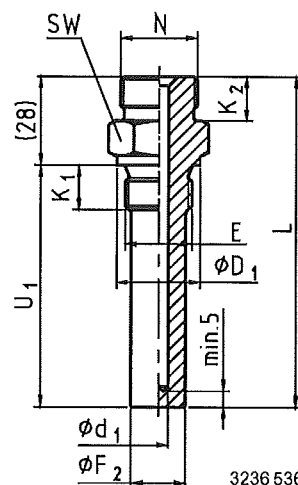


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Dimensions

Model SD900G

Dimensions in mm								Weight in kg	
E	N	Ø d ₁	Ø D ₁	Ø F ₂	K ₁	K ₂	SW	U ₁ = 73 mm	U ₁ = 410 mm
G ½ B	G ½ B	7	26	17	14	12	27	0.220	0.720
		9						0.200	0.640
		11						0.180	0.530
G ¾ B	G ¾ B	7	32	19	16	14	32	0.310	0.790
		9						0.290	0.710
		11						0.290	0.780



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Suitable stem lengths of mechanical thermometers

Dial thermometers

Thermowell model	Design of connection	Stem length l ₁	
SD600G	S/4/5	l ₁ = L - 10 mm	or l ₁ = U ₁ + 18 mm
	2	l ₁ = L - 30 mm	or l ₁ = U ₁ - 2 mm
SD900G	3	l ₁ = L - 12 mm	or l ₁ = U ₁ + 16 mm

Machine glass thermometers

Thermowell model	Design of connection	Instrument connection	Stem length l ₁	
SD600G	E	all	l ₁ = L - 10 mm	or l ₁ = U ₁ + 18 mm
SD900G	3	G ½	l ₁ = L - 12 mm	or l ₁ = U ₁ + 16 mm
		G ¾	l ₁ = L - 8 mm	or l ₁ = U ₁ + 20 mm

Ordering information

State: Model / Material / Process connection / Instrument connection / Bore size / Insertion length U₁ / Optional extras required

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WIKAI Alexander Wiegand GmbH & Co. KG
 Alexander-Wiegand-Straße · 63911 Klingenberg
 ☎ (0 93 72) 132-0 · ☎ (0 93 72) 132-406/414
<http://www.wika.de> · E-mail: info@wika.de