

Mechanical
pressure measurement

**Bourdon tube pressure gauge
Stainless steel version
Models 232.50, 233.50**

WIKA data sheet PM 02.02



for further approvals
see page 3

Applications

- With liquid-filled case for applications with high dynamic pressure loads or vibrations ¹⁾
- For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive ambience
- Process industry: Chemical/petro-chemical, power stations, mining, on- and offshore, environmental technology, machine building and general plant construction

Special features

- Excellent load-cycle stability and shock resistance
- All stainless steel construction
- German Lloyd and Gosstandart approval
- Scale ranges up to 0 ... 1,600 bar



Bourdon tube pressure gauge model 232.50

Description

Design

EN 837-1

Nominal size in mm

63, 100, 160

Accuracy class

NS 63: 1.6
NS 100, 160: 1.0

Scale ranges

NS 63: 0 ... 1 to 0 ... 1,000 bar
NS 100: 0 ... 0.6 to 0 ... 1,000 bar
NS 160: 0 ... 0.6 to 0 ... 1,600 bar
or all other equivalent vacuum or combined pressure and vacuum ranges

¹⁾ Model 233.50

WIKA data sheet PM 02.02 · 11/2015

Data sheets showing similar products:
Stainless steel, safety version; model 232.30; see data sheet PM 02.04

Pressure limitation

NS 63:	Steady:	3/4 x full scale value
	Fluctuating:	2/3 x full scale value
	Short time:	Full scale value
NS 100, 160:	Steady:	Full scale value
	Fluctuating:	0.9 x full scale value
	Short time:	1.3 x full scale value

Permissible temperature

Ambient: -40 ... +60 °C without liquid filling
-20 ... +60 °C gauges with glycerine filling ¹⁾
Medium: +200 °C maximum without liquid filling
+100 °C maximum with liquid filling ¹⁾

Temperature effect

When the temperature of the measuring system deviates from the reference temperature (+20 °C):
max. ±0.4 %/10 K of full scale value

Ingress protection

IP 65 per EN 60529 / IEC 60529

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Standard version

Process connection

Stainless steel 316L (NS 63: 1.4571),
Lower mount (LM) or lower back mount (LBM), NS 63 centre
back mount (CBM)
NS 63: G ¼ B (male), 14 mm flats
NS 100, 160: G ½ B, 22 mm flats

Pressure element

Stainless steel 316L
C-type or helical type

Movement

Stainless steel

Dial

Aluminium, white, black lettering,
NS 63 with pointer stop pin

Pointer

Aluminium, black

Case

Stainless steel, with pressure relief at case circumference,
12 o'clock (NS 63) and on the back of the case (NS 100
and 160),
Scale ranges $\leq 0 \dots 16$ bar with compensating valve to vent
case

Window

Laminated safety glass
(NS 63: Polycarbonate)

Ring

Cam ring (bayonet type), stainless steel

Filling liquid (for model 233.50)

Glycerine 99.7 %
(Glyzerine 86.5 % for scale range $\leq 0 \dots 2.5$ bar)

Options









- Other process connection
- Sealings (model 910.17, see data sheet AC 09.08)
- Assembly on diaphragm seals see product review DS
- Measuring system Monel (model 26x.50, not with NS 160
back mount connection)
- Surface or panel mounting flange, stainless steel
- Panel mounting flange, polished stainless steel
- Triangular bezel, polished stainless steel, with clamp
- Ambient temperatures -40 °C: Silicone oil filling
- Limit indicator at NS 100 and 160, see data sheet
SP 09.03
- Pressure gauge with switch contacts, see model
PGS23.1x0, data sheet PV 22.02
- Pressure gauge with electrical output signal, see model
PGT23.100/160, data sheet PV 12.04

Special versions

Gauges for ammonia plants (NS 100 and 160)

With temperature scale for refrigerant R 717 (NH₃) in °C,
Scale ranges: $-1 \dots 0 \dots 15$ bar or $-1 \dots 0 \dots 26$ bar

Approvals

Logo	Description	Country
	EC declaration of conformity <ul style="list-style-type: none"> ■ Pressure equipment directive 97/23/EC PS > 200 bar, module A, pressure accessory ■ ATEX directive 94/9/EC (option) Ignition protection type "c" - constructive safety 	European Community
		
	EAC (option) <ul style="list-style-type: none"> ■ Pressure equipment directive ■ Hazardous areas 	Eurasian Economic Community
	GOST Metrology, measurement technology	Russia
	KazInMetr Metrology, measurement technology	Kazakhstan
-	MTSCHS Permission for commissioning	Kazakhstan
	BelGIM Metrology, measurement technology	Belarus
	Uzstandard Metrology, measurement technology	Uzbekistan
-	CPA Metrology, measurement technology	China
	KOSHA (option) Hazardous areas	South Korea
	GL (option) Ships, shipbuilding (e.g. offshore)	International
-	CRN Safety (e.g. electr. safety, overpressure, ...)	Canada

Certificates (option)

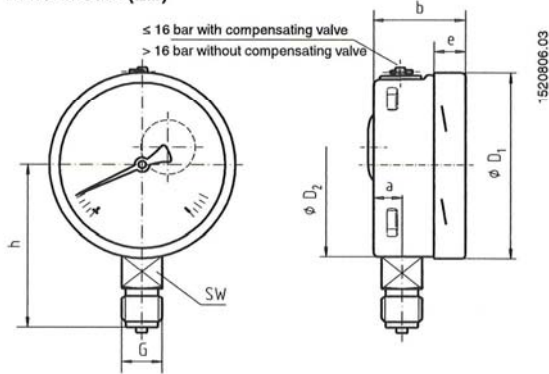
- 2.2 test report
- 3.1 inspection certificate

Approvals and certificates, see website

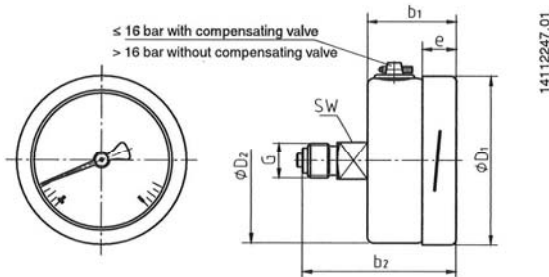
Dimensions in mm

Standard version

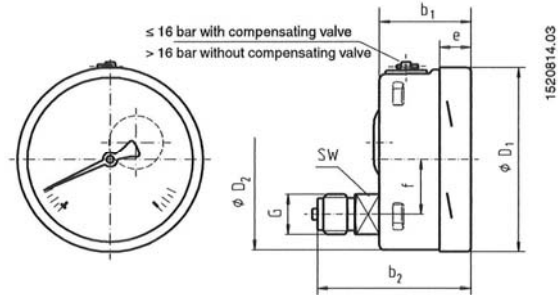
Lower mount (LM)



NS 63, centre back mount (CBM)



NS 100, 160, lower back mount (LBM)



NS	Dimensions in mm											Weight in kg	
	a	b	b ₁	b ₂	D ₁	D ₂	e	f	G	h ±1	SW	Model 232.50	Model 233.50
63	9.5	33	33	57	63	62	11.5	-	G ¼ B	54	14	0.16	0.20
100	15.5	49.5	49.5	83	101	99	17.5	30	G ½ B	87	22	0.60	0.90
160	15.5	49.5 ²⁾	49.5 ²⁾	83 ¹⁾	161	159	17.5	50	G ½ B	118	22	1.10	2.00

Process connection per EN 837-1 / 7.3

- 1) Plus 16 mm with scale ranges ≥ 100 bar
- 2) Plus 16 mm with scale range 1,600 bar

Ordering information

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

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We reserve the right to make modifications to the specifications and materials.



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Pressure Gauge

Art. No. 4001 to 4055, 4080 to 4094 and
740-63 to 756

Art. No.	Ident No.
740-63	102308
740/1-63	102309
740/2-63	102310
740/3-63	102311
740/4-63	102312
740/5-63	102313
740/6-63	102314
742-63	102315
743-63	102316
744-63	102317
745-63	102318
746-63	102319
747-63	102320
748-63	102321
749-63	102322
750-63	102323
751-63	102324
752-63	102325
753-63	102326
754-63	102327
755-63	102328
756-63	102329

Art. No.	Ident No.
740-100	102330
740/1-100	102331
740/2-100	102332
740/3-100	102333
740/4-100	102334
740/5-100	102335
740/6-100	102336
741-100	102337
742-100	102338
743-100	102339
744-100	102340
745-100	102341
746-100	102342
747-100	102343
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749-100	102345
750-100	102346
751-100	102347
752-100	102348
753-100	102349
754-100	102350
755-100	102351
756-100	102352

Art. No.	Ident No.
740	102353
740/1	102354
740/2	102355
740/3	102356
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740/6	102359
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