



3C.420-E
Issue 1.1 - 2016

Bourdon tube pressure gauge Stainless steel version Models 232.50, 233.50

Description

WIKA Bourdon tube pressure gauge type 232.50 (without liquid filling) and type 233.50 (with Glycerine filling) are completely made in stainless steel. Case nominal size is 100 mm, the scale is shown in bar g. Design according to EN837-1, Accuracy class 1.0
Lower mount process connection screwed 1/2" GAS
The pressure gauge can be equipped with:

- 2 way cock type 1200, made in stainless steel AISI 316L
- 3 way cock type 1450, complete with stuffing box and flange for pressure gauge installation, made in stainless steel AISI 316L
- Cooling element with 5 cooling fins type 910-32 completely made in stainless steel 1.4571 (AISI 316 Ti), to be used when the fluid temperature exceed the temperature limit of the pressure gauge.

Applications

- With liquid-filled case for applications with high dynamic pressure loads or vibrations¹⁾.
- 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, Gosstandart and DVGW approval.
- Scale ranges up to 0 ... 40 bar.

Size and pipe connections

Gauge connection is radial.

Device	Connections
Gauge	Screwed 1/2" Gas M, 22 mm flats
2 way cock Type 1200	Screwed IN/OUT 1/2" Gas MxF bleeder M8x1
3 way cock Type 1450	Screwed IN/OUT 1/2" Gas MxF drain M8x1 ISO/R 262
Cooling Element	Screwed 1/2" Gas M

For details of the connections of each component see "Dimensions and weights".

Available pressure ranges

DN100: 0 ... 2,5 to 0 ... 40 bar g

or all other equivalent vacuum or combined pressure and vacuum ranges.

Materials

Standard Version

Part	Material
Case with pressure relief on the back of the case	Stainless steel
Pressure element <100 bar: C type >100 bar: helical type	Stainless steel AISI 316L
Movement	Stainless steel
Dial	Aluminum, white, black lettering
Pointer	Aluminum, black
Window	Laminated safety glass
Ring	Stainless steel
2 way cock Type 1200	Stainless steel AISI 316L
3 way cock Type 1450	Stainless steel AISI 316L
Packing two / three-way cock	PTFE
Cooling Element	Stainless steel 1.4571



**Bourdon Tube Pressure Gauge
Type 232.50**



**Cooling Element
with 5 cooling fins
Type 910.32**



**2 way cock
Type 1200**



**3 way cock
Type 1450**

Options

- Other process connection or dimensions of the case
- Sealings
- Assembly on diaphragm seals
- Measuring system Monel
- Measuring system stainless steel 1.4571
- 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
- Pressure gauge with switch contacts
- Pressure gauge with electrical output signal

Special versions

Pressure gauges for ammonia systems

With temperature scale for refrigerant R 717 (NH3) in ° C

Ranges: -1 ... 0 ... 15 bar or -1 ... 0 ... 26 bar

Pressure/temperature limits

Gauge DN100:

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⁾

¹⁾ Type 233.50

Temperature effects

In case of difference between the reference temperature (+ 20°C) and that of the measuring system: max. $\pm 0.4\%/10K$ of the respective scale value.

Protection degree

IP 65 per EN 60529 / IEC 60529

Two/three-way cock

Pressure up to 400 bar (6000 psi).
Temperature: from - 73°C to 210°C with PTFE packing.

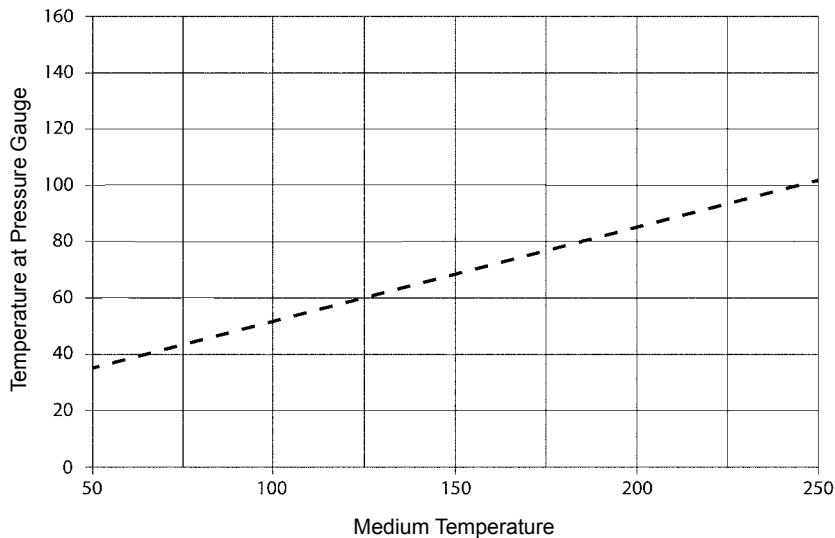
Cooling Element

Pressure up to 600 bar
See temperature limits below.

Temperature limits

Cooling element

Limits curve shown is referred to ambient temperature of 20°C



-- 5 cooling fins

Approvals

- GL, ships, shipbuilding (e.g. offshore), Germany
- DVGW, safety (e.g. electrical safety, overpressure, ...), Germany
- EAC, import certificate, customs union Russia/Belarus/Kazakhstan
- GOST, metrology/measurement technology, Russia
- KBA, automotive, European Community
- CRN, safety (e.g. electr. safety, overpressure, ...), Canada
- KOSHA, ignition protection type „i“ - intrinsic safety, South Korea

CE conformity

Pressure equipment directive

2014/68/EU, PS > 200 bar, module A, pressure accessory

ATEX directive ¹⁾

Ignition protection type „c“, constructive safety

Certificates ¹⁾

- 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, material proof, indication accuracy)
- 3.1 inspection certificate per EN 10204 (e.g. indication accuracy)

Note: all certification/inspection requirements must be stated at the time of order placement.

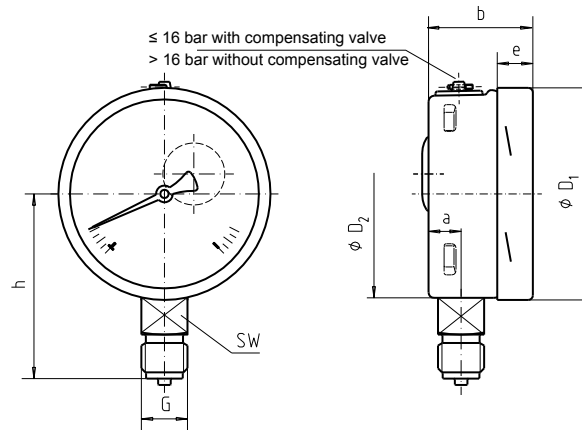
¹⁾ Option

Approvals and certificates, see website WIKA.

Dimensions in mm

Standard version

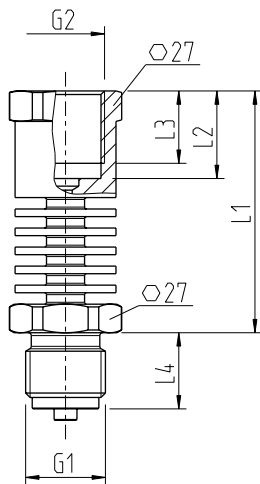
Lower mount (LM)



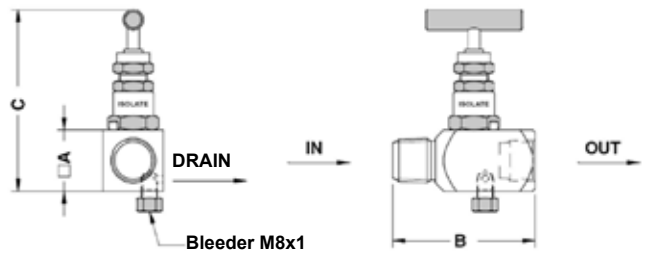
DN	Dimensions in mm											Weight in kg	
	a	b	b ₁	b ₂	D ₁	D ₂	e	f	G	h ±1	SW	Model 232.50	Model 233.50
100	15,5	49,5	49,5	83	101	99	17,5	30	G ½ B	87	22	0,60	0,90

Process connection as per EN 837-1 / 7.3

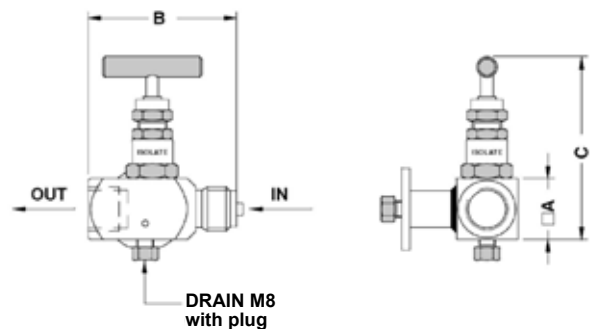
**Cooling element
Type 910.32**



**2 way cock
Type 1200**



**3 way cock
Type 1450**



Model	G1	G2	L1	L2	L3	L4	Weight in kg
910.32	G ½ B (EN 837)	G ½ B female (EN 837)	63,5	23	19	2202	0.20

Model	Connections		A	B	C	Orifice	Weight in kg
	Inlet	Outlet					
1200	½"	½"	30	70	89	4.00	0.53
1450	½"	½"	30	70	89	4.00	0.56

Ordering information

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