Bourdon Tube Pressure Gauges
Stainless Steel Series
Model 232.50/233.50, without/with Liquid Filling

Applications

- With liquid-filled case for applications with high dynamic pressure pulsations or vibrations
- For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive ambience
- Process industries: chemical/petro-chemical, power stations, mining, on and offshore, environmental technology, machine building and 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 … 1600 bar

Bourdon Tube Pressure Gauge Model 232.50

Description

Design
EN 837-1

Nominal size in mm
63, 100, 160

Accuracy class
NG 63: 1.6
NG 100, 160: 1.0

Scale ranges
NS 63: 0 ... 1 to 0 ... 1000 bar
NS 100: 0 ... 0.6 to 0 ... 1000 bar
NS 160: 0 ... 0.6 to 0 ... 1600 bar
or all other equivalent vacuum or combined pressure and vacuum ranges

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

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 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 60 529 / IEC 529

Data Sheets showing similar devices:
Stainless steel series; model 232.30; see data sheet PM 02.04

Standard version

Process connection
Stainless steel 316L (NS 63: 1.4571),
lower mount (LM) or lower back mount (LBM) [1]
NS 63: G ¼ B (male), 14 mm flats
NS 100, 160: G ½ B (male), 22 mm flats

Pressure element
Stainless steel 316L,
< 100 bar: C-type
≥ 100 bar: 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 in case top (NS 63) or in case back (NS 100 and 160),
ranges ≤ 0 ... 16 bar with compensating valve to vent case

Window: Laminated safety glass (NS 63: Polycarbonate)

Bezel ring: Cam ring (bayonet type), stainless steel

Liquid filling (for Model 233.50): Glycerine 99.7 %

Special versions

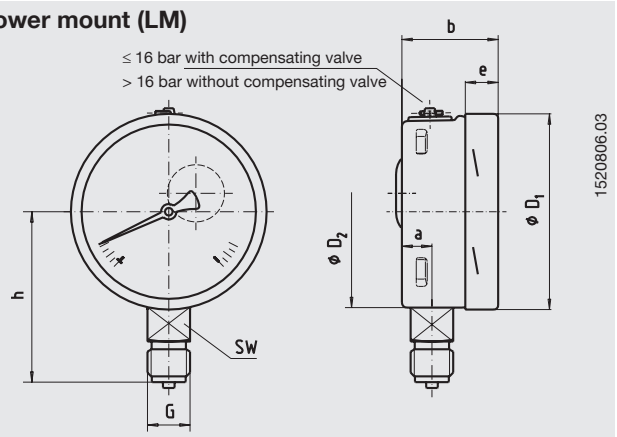
Gauges for ammonia plants (NS 100 and 160)
With temperature scale for refrigerant R 717 (NH_3) in °C,
scale ranges: -1 ... 0 ... 15 bar or -1 ... 0 ... 26 bar

Options

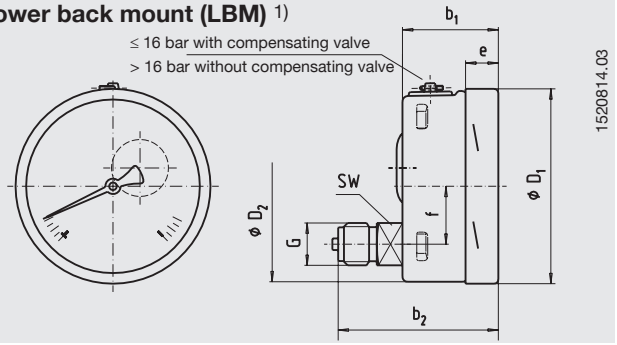
- Other process connection
- Assembly on diaphragm seals see product review DS
- Monel pressure system (model 26X.50, not with NS 160 back connection)
- Pressure system stainless steel 1.4571
- Surface or panel mounting flange, stainless steel
- Panel mounting flange, stainless steel, polished
- Triangular bezel, stainless steel, polished, with clamp
- Ambient temperature -40 °C: silicon oil filling
- Switch contacts (see data sheet AC 08.01)
- Pressure gauge with electrical output signal, see Model PGT23.100/160, data sheet PV 12.04
- Version per ATEX Ex II 2 GD c

Standard version

Lower mount (LM)



Lower back mount (LBM) [1]



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	Model 232.50	Model 233.50
63	9.5	33	33	57	63	62	11.5	- [1]	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 [3]	49.5 [2]	83 [2]	161	159	17.5	50	G ½ B	118	22	1.10	2.00

Process connection per EN 837-1 / 7.3
1) NS 63: Centre back pressure entry (CBM)
2) Plus 16 mm with pressure ranges ≥ 100 bar
3) Plus 16 mm with pressure range 1600 bar

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

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