

# Mechanical Pressure Measurement

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



## Applications

- Increased safety requirements
- 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/petrochemical, power stations, mining, on- and offshore, environmental technology, machine building 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 in mm

63, 100, 160

### Accuracy class

NS 63: 1,6

NS 100, 160: 1,0

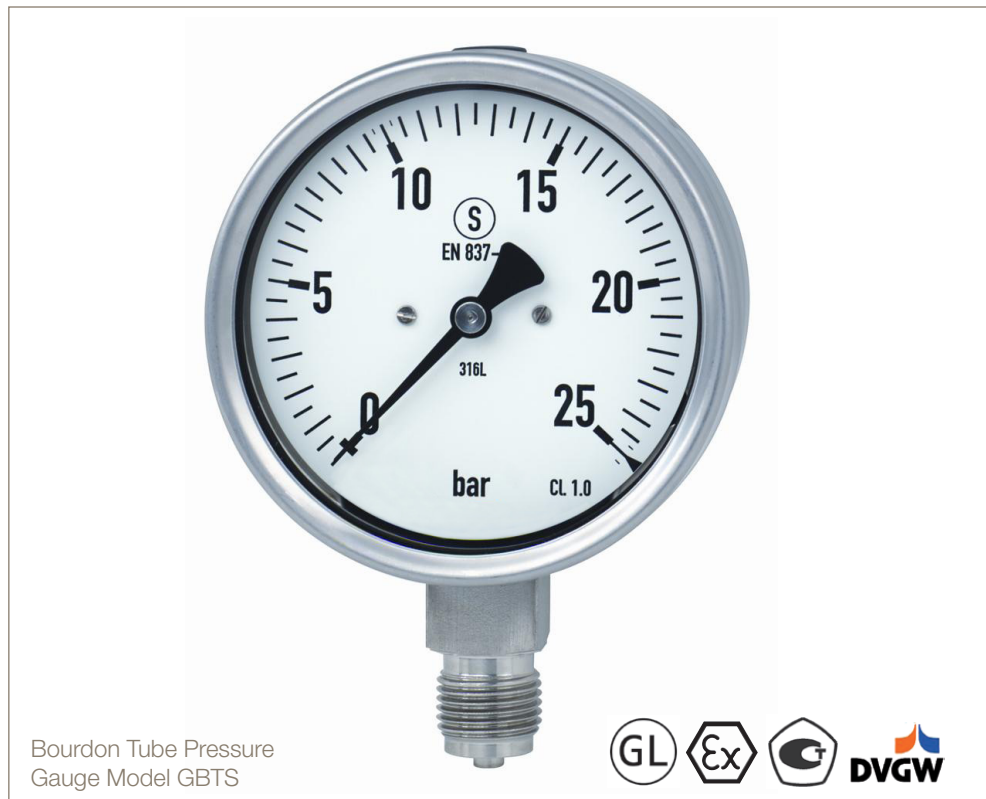
### Scale ranges

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.  $\pm 0.4 \%$ /10 K of full scale value

## Ingress protection

IP 65 per EN 60 529/IEC 529  
(gauges with back mount: IP 55)



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## Standard version

### Process connection

Stainless steel 316L (NS 63: 1.4571),  
lower mount (LM) or lower back mount (LBM)<sup>1)</sup>  
NS 63: G ¼ B (male), 14 mm flats  
NS 100, 160: G ½ B (male), 22 mm flats  
(NS 160 only lower mount)

### 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 top4(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 GBTS):

Glycerine 99.7 %

## Dimensions in mm

NS	Dimensions in mm											Weight in kg	
	a	b	b <sub>1</sub>	b <sub>2</sub>	D <sub>1</sub>	D <sub>2</sub>	e	f	G	h ± 1	SW	Model 232.30	Model 233.30
63	17.5	42	42	61	63	63	14.5	18.5	G ¼ B	54	14	0.20	0.26
100	25	59.5	59.5	93	101	100	17	30	G ½ B	87	22	0.65	1.08
160	27 <sup>2)</sup>	65 <sup>3)</sup>	-	-	161	159	17.5	-	G ½ B	118	22	1.30	2.34

Process connection per EN 837-1 / 7.3

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

2) 41.5 mm with pressure ranges ≥ 100 bar

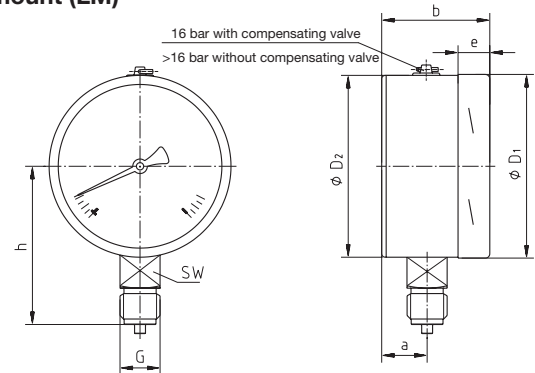
3) 79 mm with pressure ranges ≥ 100 bar

## Options

- Other process connection
- Assembly on diaphragm seals see product review DS
- Measuring system Monel® (model 262.30)
- Measuring system stainless steel 1.4571
- Panel mounting flange, stainless steel or polished stainless steel
- Surface mounting lugs on case, stainless steel
- Ambient temperature -40 °C: silicone oil filling
- Ingress protection IP 66 / IP 67
- Pressure gauge with switch contacts, data sheet PV 22.02 and PV 22.03
- Pressure gauge with electrical output signal, see Model PGT23.100/160, data sheet PV 12.04
- Version per ATEX Ex II 2 GD c

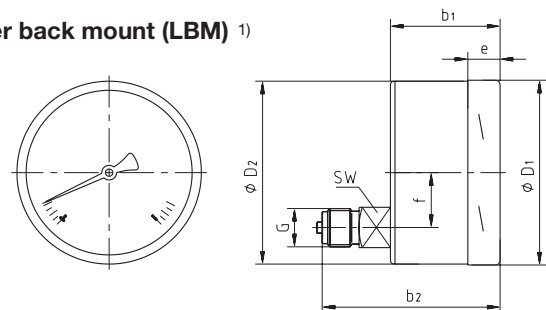
## Standard version

### Lower mount (LM)



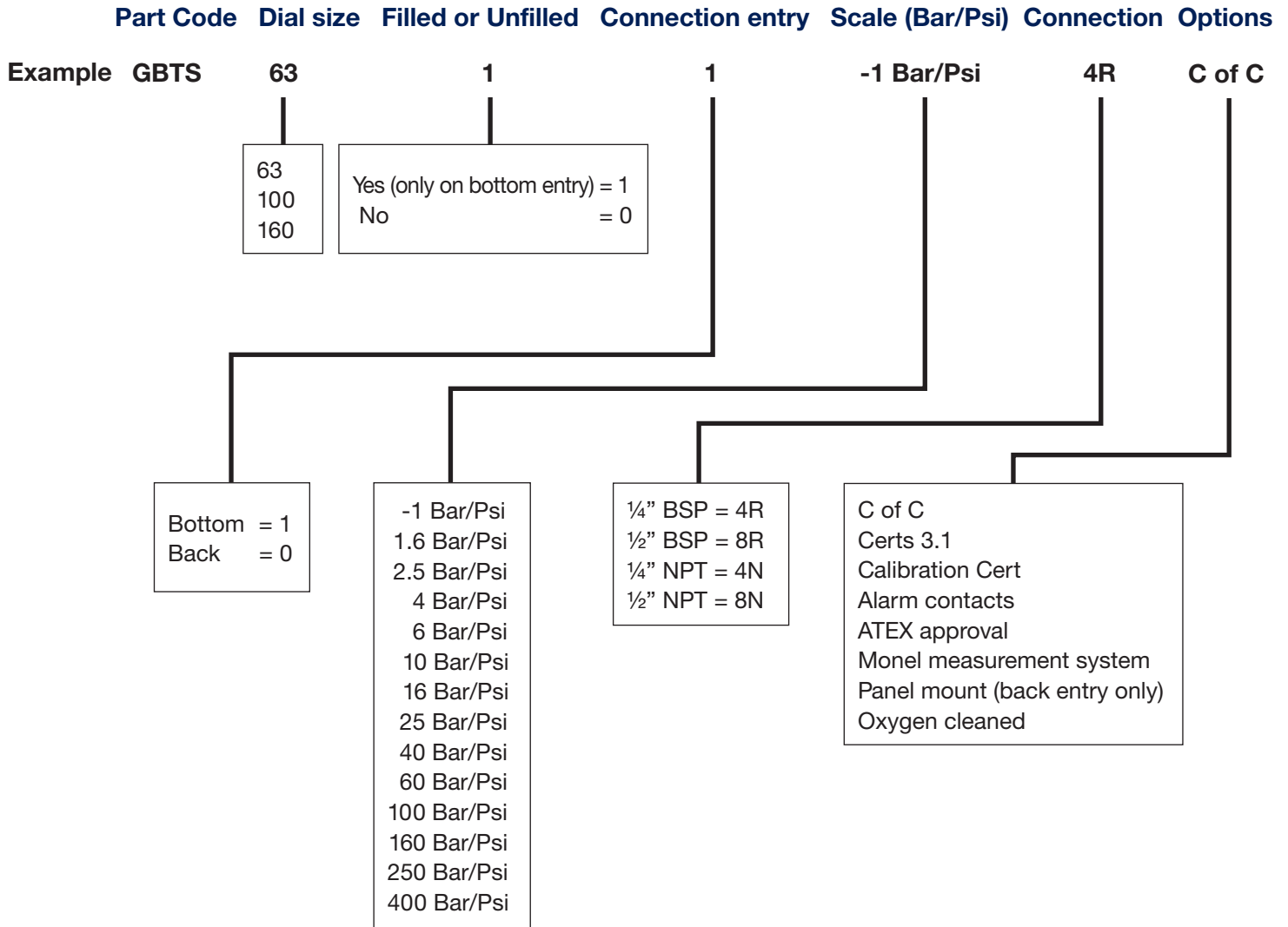
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### Lower back mount (LBM) 1)



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# Ordering information - Part Number Configurator



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.

