

# Mechanical Pressure Measurement

Differential Pressure Gauges  
Model GDW, Stainless Steel Series,  
with Diaphragm Element All Welded Construction



## Applications

- For gaseous and liquid, aggressive media that are not highly viscous or crystallising, also in aggressive ambience
- Monitoring and control of pumps
- Filter monitoring
- Level measurement in closed tanks

## Special Features

- Differential pressure measuring ranges from 0 ... 16 mbar
- High working pressure (static pressure) up to 40 bar
- High overpressure safety up to 40 bar
- Compatible with alarm contacts

## Description

These differential pressure gauges are made of highly corrosion-resistant stainless steel and feature an all-metal, all-welded media chamber to ensure long-term leak tightness (no elastomer sealing elements).

A high overpressure safety is achieved by the all-metal construction and the close-fitting design of the pressure measuring diaphragm.

With its high-grade stainless steel construction and robust design this pressure gauge is geared to chemical and process engineering applications. It is suitable for gaseous or liquid media, also in aggressive ambience.

Scale ranges from 0 ... 16 mbar to 0 ... 25 bar are available to meet the requirements of a wide variety of applications.

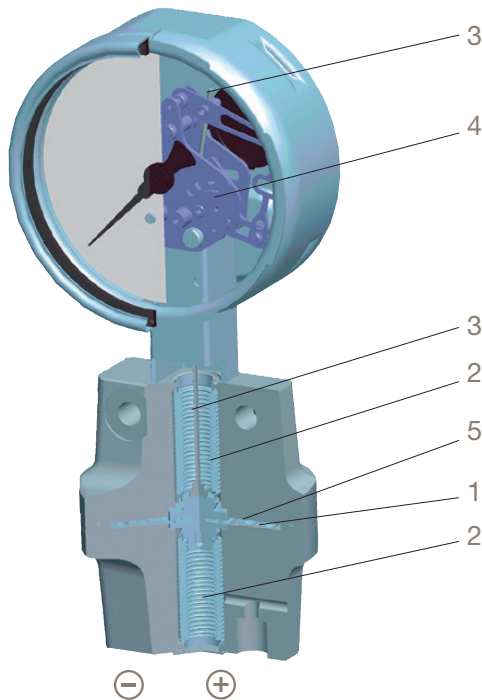


Differential Pressure Gauge Model GDW



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## Illustration of operating principle



Mounting according to affixed symbols,  
⊕ high pressure and ⊖ low pressure

## Specifications

### Design

Lower mount process connections, highly corrosion-resistant all metal construction, gauge head secured against unauthorised intervention, process connection location adjustable to mounting conditions, trade pattern DT - GM 86 08 176

### Nominal size in mm

100, 160

### Accuracy class

1.6

### Scale ranges

0 ... 16 mbar to 0 ... 25 bar

Scale range 0 ... 16 mbar: scale length approx. 180°  
or all other equivalent vacuum or combined pressure and vacuum ranges

### Pressure limitation

Steady: full scale value  
Fluctuating: 0.9 x full scale value

### Overpressure safety

see table page 3

### Max. working pressure (static pressure)

see table page 3

## Design and operating principle

- Positive and negative media chambers are separated by the diaphragm element (1)
- Metal bellows (2) isolate the pressure chambers from atmosphere
- The pressure differential between the positive and negative media chambers leads to an axial deflection of the pressure element
- The deflection is transmitted to the movement (4) via the connecting rod (3)
- The movement converts the axial deflection into an angular deflection at the pointer
- Overpressure safety is ensured by the all-metal construction and the close-fitting all-metal design (5)

### Operating temperature

Ambient: -20 ... +60 °C

Medium: +100 °C maximum

### Temperature effect

When the temperature of the measuring system deviates from the reference temperature (+20 °C): max. ±0.5 %/10 K of full scale value

### Ingress protection

IP 54 per EN 60 529 / IEC 529

(with liquid filling IP 65)

## Standard version

### Measuring chamber with process connection (wetted)

Stainless steel 1.4571,  
lower mount (LM),  
2 x G ¼ female

### Pressure element (wetted)

≤ 0.25 bar: stainless steel 1.4571  
> 0.25 bar: NiCrCo-alloy (Duratherm)

### Sealing bellows (wetted)

Stainless steel 1.4571

### Venting of the media chambers (wetted)

Stainless steel 1.4571 for scale ranges ≤ 0.25 bar  
(optional for scale ranges ≥ 0.4 bar!)

### Movement

Stainless steel

### Dial

Aluminium, white, black lettering

### Pointer

Adjustable pointer, aluminium, black

### Case

Stainless steel, with pressure vent in case back

### Window

Laminated safety glass

### Bezel ring

Cam ring (bayonet type), stainless steel

### Mounting

according to affixed symbols,

⊕ high pressure,

⊖ low pressure

Mounting by means of

- Rigid tailpipes
- Threaded mounting holes in measuring flange
- Panel mounting flange (option)
- Mounting bracket for wall or pipe mounting (option)

## Max. working pressure / Overpressure safety

Scale ranges	Max. working pressure in bar (static pressure)		Overpressure safety in bar either side max.	
	Standard	Option	Standard	Option
0 ... 16 to 0 ... 40 mbar	2.5	6 <sup>1)</sup>	2.5	-
0 ... 60 to 0 ... 250 mbar	6	10	2.5	6
0 ... 400 mbar	25	40	4	40
0 ... 0.6 bar	25	40	6	40
0 ... 1 bar	25	40	10	40
0 ... 1.6 bar	25	40	16	40
0 ... 2.5 to 0 ... 25 bar	25	40	25	40

1) Accuracy class 2.5

## Options

- Liquid filling (model 733.51)
- Safety pattern version (model 73X.31)
- Higher max. working pressure (static pressure) and higher overpressure safety (see table)
- Accuracy class better than 1.6
- Venting of the media chambers (wetted) for scale ranges ≥ 0.4 bar
- Zero adjustment appliance
- Lateral connection location (right, left, front or back)
- Other threaded process connections, female or male
- Combined differential pressure and working pressure readout
- Medium temperature > 100 °C
- Mounting bracket for wall or pipe mounting
- Panel mounting flange
- Version per ATEX Ex II 2 GD c
- Pressure equalising valve (data sheet AC 09.11)
- Alarm contacts (data sheet AC 08.01)
- Pressure gauge with electrical output signal, see model DPGT43.100/160, data sheet PV 17.05

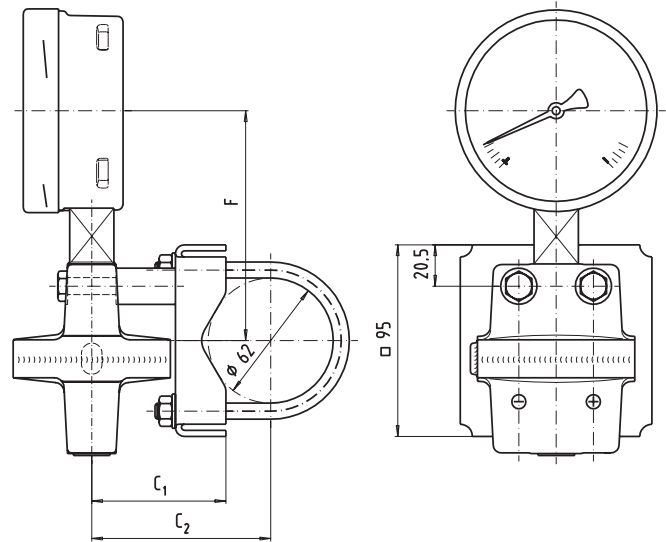
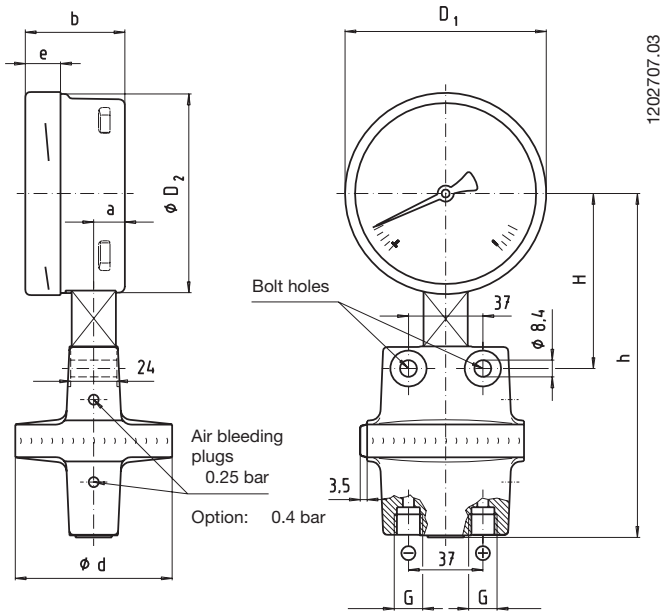
## Dimensions in mm

### Standard version

Connection 2 x G 1/4 female, lower mount (LM)

### Option

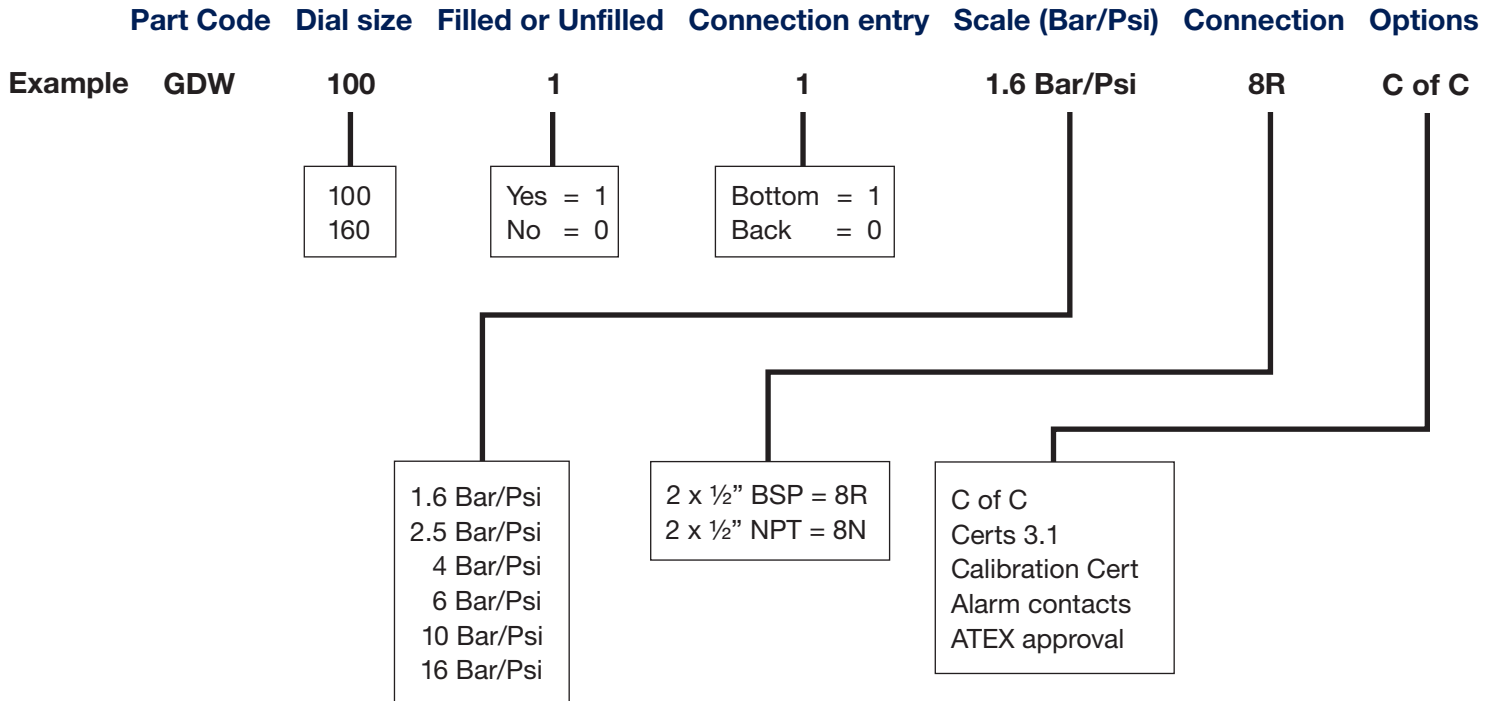
Mounting bracket for wall or pipe mounting



NS	Pressure range	Dimensions in mm											Weight in kg	
		a	b	D <sub>1</sub>	D <sub>2</sub>	d	e	G	h ± 1	H	F	C <sub>1</sub>		C <sub>2</sub>
100	≤ 0.25 bar	15.5	49.5	101	99	140	17.5	G 1/4	171	90	114	96	118	2.70
100	> 0.25 bar	15.5	49.5	101	99	78	17.5	G 1/4	171	87	114	66	88	1.90
160	≤ 0.25 bar	15.5	49.5	161	159	140	17.5	G 1/4	201	120	144	96	118	3.40
160	> 0.25 bar	15.5	49.5	161	159	78	17.5	G 1/4	201	117	144	66	88	2.40

Process connection per EN 837-1 / 7.3.

# 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.

