

# Differential pressure gauge For the process industry Model 732.51, all-metal media chamber

WIKA data sheet PM 07.05



for further approvals  
see page 4

## 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 overload safety up to 40 bar
- All welded media chamber
- Option: Low-temperature version down to an ambient temperature of -70 °C (-94 °F)



Differential pressure gauge model 732.51

## 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).

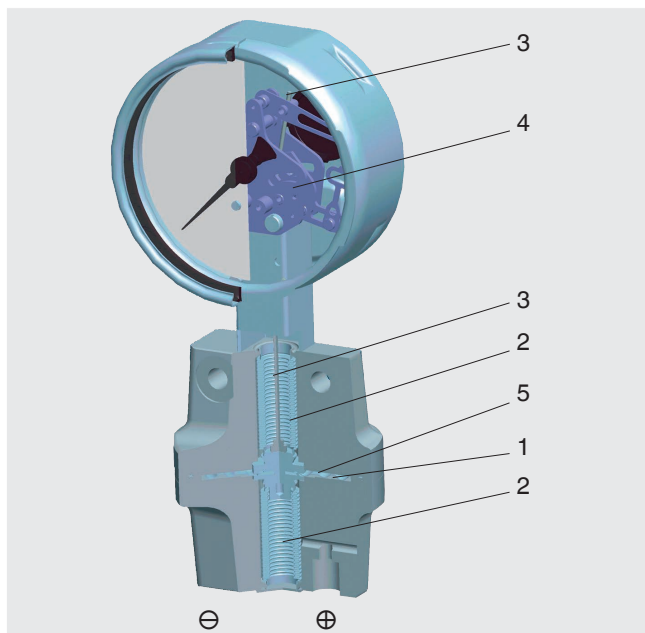
A high overload safety is achieved by the all-metal construction and the close-fitting design of the pressure measuring diaphragm.

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.

The optionally available low-temperature version allows the use for temperatures of down to -70 °C (-94 °F).

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

## Illustration of the principle



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

## 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 protection is ensured by the all-metal construction and the close-fitting all-metal design (5)

## Specifications

### Design

DIN 16003

Lower mount process connections,  
highly corrosion-resistant all-metal construction,  
measuring cell secured against unauthorised intervention,  
process connection location adjustable to mounting  
conditions,

WIKA 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

### Overload safety

see table on page 3

### Max. working pressure (static pressure)

see table on page 3

### Influence of static pressure

Scale ranges	Influence of static pressure
0 ... 16 to 0 ... 250 mbar	±0,3 %/1 bar
0 ... 400 mbar to 0 ... 25 bar	±0,04 %/1 bar

### Permissible temperature

Ambient: -20 ... +60 °C unfilled

-40 ... +60 °C with silicone oil filling <sup>1)</sup>

-70 ... +60 °C Low-temperature version <sup>1)</sup>

Medium: ≤100 °C

<sup>1)</sup> Option, only with model 733.51

### 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

IP54 per IEC/EN 60529 (with liquid filling IP65)

## Standard version

### Measuring chamber with process connection (wetted)

Stainless steel 1.4571,  
lower mount (LM),  
2 x G 1/4 female

### Pressure elements (wetted)

≤ 0.25 bar: Stainless steel 1.4571  
> 0.25 bar: NiCr-alloy (Inconel)

### 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 > 0.25 bar)

### Movement

Stainless steel

### Dial

Aluminium, white, black lettering

### Pointer

Model 732.51: Adjustable pointer, aluminium, black  
Model 733.51: Standard pointer, aluminium, black

### Case

Stainless steel, with pressure relief

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

## Options









- Liquid filling (model 733.51)
- Safety version (model 73x.31)
- Higher max. working pressure (static pressure) and higher overload safety (see table)
- Indication accuracy better than class 1.6
- Venting of the media chambers (wetted) for scale ranges > 0.25 bar
- Zero adjustment appliance
- Lateral connection location (right, left, front or back)
- Other threaded process connections, female or male
- Medium temperature > 100 °C
- Silicone oil filling:  
Admissible ambient temperature -40 ... +60 °C
- Low-temperature version:  
Admissible ambient temperature -70 ... +60 °C
- Mounting bracket for wall or pipe mounting
- Panel mounting flange
- Valve manifolds (models IV3x, IV5x, see data sheet AC 09.23)
- Sealings (model 910.17, see data sheet AC 09.08)
- Differential pressure gauge with switch contacts, see model DPGS43.100/160, data sheet PV 27.05
- Differential pressure gauge with electrical output signal, see model DPGT43.100/160, data sheet PV 17.05

## Max. working pressure, overload safety

Scale ranges	Max. working pressure in bar (static pressure)		Overload 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

## Approvals

Logo	Description	Country
 	<b>EU declaration of conformity</b> ATEX directive (option) Ignition protection type "c" - constructive safety	European Union
	<b>EAC (option)</b> ■ Pressure equipment directive ■ Hazardous areas	Eurasian Economic Community
	<b>GOST (option)</b> Metrology, measurement technology	Russia
	<b>KazInMetr (option)</b> Metrology, measurement technology	Kazakhstan
-	<b>MTSCHS (option)</b> Permission for commissioning	Kazakhstan
	<b>BelGIM (option)</b> Metrology, measurement technology	Belarus
	<b>UkrSEPRO (option)</b> Metrology, measurement technology	Ukraine
-	<b>CPA (option)</b> Metrology, measurement technology	China
	<b>KCs KOSHA (option)</b> Hazardous areas	South Korea
-	<b>CRN</b> Safety (e.g. electr. safety, overpressure, ...)	Canada

## Certificates (option)

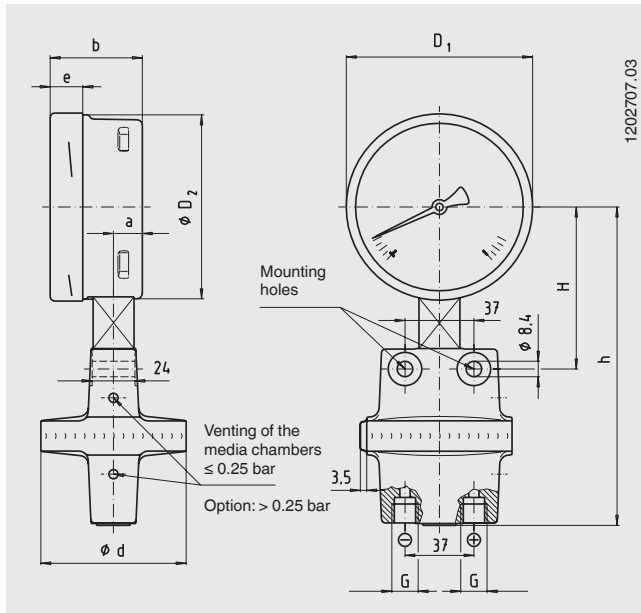
- 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, material proof, indication accuracy)
- 3.1 inspection certificate per EN 10204 (e.g. material proof wetted parts metal component, indication accuracy)

Approvals and certificates, see website

## Dimensions in mm

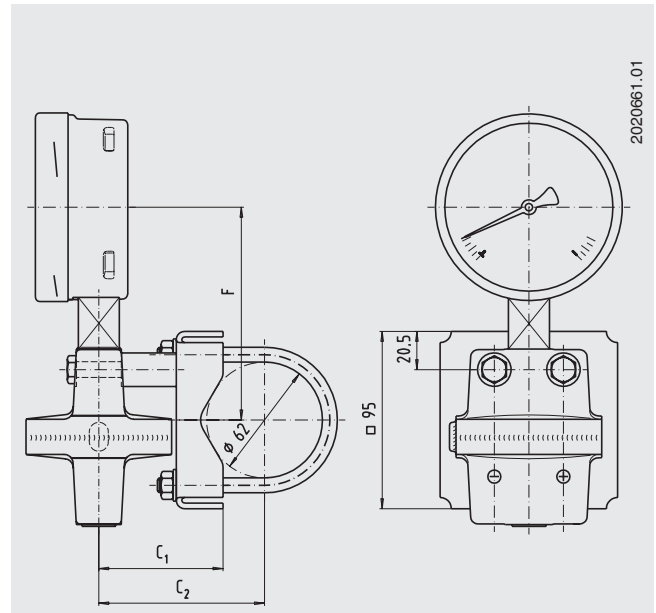
### Standard version

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



### Option

Mounting bracket for wall or pipe mounting



NS	Scale range	Dimensions in mm												Weight in kg
		a	b	$D_1$	$D_2$	d	e	G	$h \pm 1$	H	F	$C_1$	$C_2$	
100	$\leq 0.25$ bar	15.5	49.5	101	99	140	17.5	G 1/4	160	90	114	96	118	2.70
100	$> 0.25$ bar	15.5	49.5	101	99	78	17.5	G 1/4	170	87	114	66	88	1.90
160	$\leq 0.25$ bar	15.5	49.5	161	159	140	17.5	G 1/4	190	120	144	96	118	3.40
160	$> 0.25$ bar	15.5	49.5	161	159	78	17.5	G 1/4	200	117	144	66	88	2.40

Process connection per DIN 16003

### Ordering information

Model / Nominal size / Scale range / Scale layout (linear pressure or square root incrementation) / Max. working pressure (static pressure) ... bar / Process connection / Connection location / Options

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