

# Differential Pressure Gauges Model 732.51, Process Industry Series, with Diaphragm Element All Welded Construction

WIKA Data Sheet PM 07.05

## Applications

- For corrosive gaseous and liquid media, provided they are not highly viscous or crystallising, and also for corrosive environments
- 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 and transmitters



Differential Pressure Gauge Model 732.51

## Description

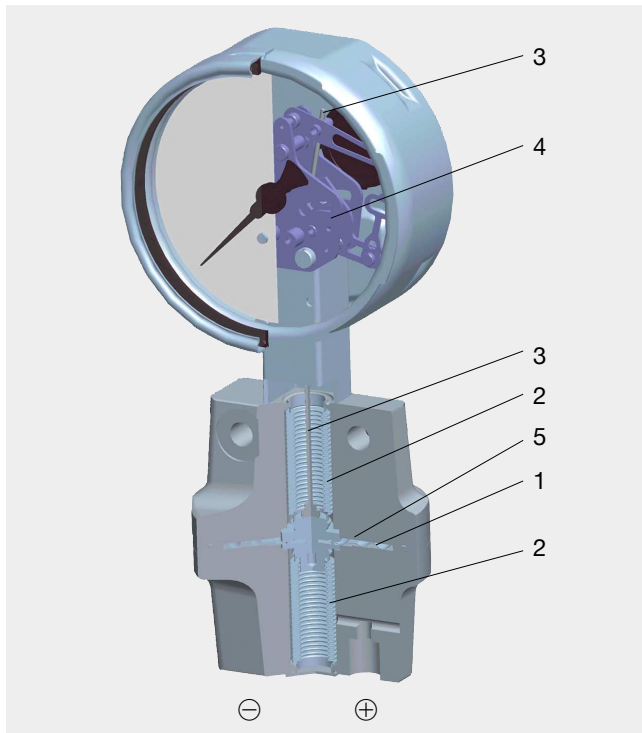
These differential pressure gauges are made of highly corrosion-resistant stainless steel and feature an all-metal, all-welded media chamber to ensure long-term leak tightness (no elastomer sealing elements).

A high 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 and also for corrosive environments.

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

## Illustration of operating principle



Pressure entries identified

⊕ 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 linkage (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 design of the pressure measuring diaphragm (5)

## Specifications

### Design

WIKA trade pattern DT - GM 86 08 176

All welded construction of diaphragm and pressure chambers

Pressure chamber below dial, bottom pressure entry

Other configuration feasible

### Nominal size

100 and 160 mm

### Accuracy class

1.6

### Scale ranges

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

Scale range 0 ... 16 mbar: full scale length approx. 180 ° or other equivalent units of pressure or vacuum

### Working pressure

Steady: full scale value

Fluctuating: 0.9 x full scale value

### Overpressure safety

see table page 3

### Working pressure max. (static pressure)

see table page 3

### Operating temperature

Ambient: -20 ... +60 °C

Medium: +100 °C maximum

### Temperature effect

When temperature of the pressure element deviates from reference temperature (+20 °C):

max. ±0.5 %/10 K of true scale value

### Ingress protection

IP 54 per EN 60 529 / IEC 529

(with liquid filling IP 65)

## Standard features

### Pressure connection (exposed to pressure medium)

Pressure chamber

Material: stainless steel 1.4571

Threaded entry per EN 837-1 /7.3 , 2 x G ¼ female

### Pressure element (exposed to pressure medium)

≤ 0.25 bar: stainless steel 1.4571

> 0.25 bar: Duratherm (NiCrCo-alloy)

### Sealing bellows (exposed to pressure medium)

Stainless steel 1.4571

### Air bleeding plugs (exposed to pressure medium)

Stainless steel 1.4571

Scale ranges ≤ 0.25 bar (Option: ranges ≥ 0.4 bar)

### Movement

Material: stainless steel

### Dial

White aluminium with black lettering

### Pointer

Adjustable black aluminium pointer

### Case

Natural finish stainless steel case with pressure vent in case back

### Window

Laminated safety glass

### Bezel ring

Cam ring (bayonet type), natural finish stainless steel

### Gauge mounting

Pressure entries identified ⊕ und ⊖,

⊕ high pressure,

⊖ low pressure

Requires mounting by means of rigid tailpipe or panel or surface mounting flange. Body incorporates threaded mounting holes,

Additional pipe or surface mounting bracket is optionally available.

## Optional extras

- Liquid filling (model 733.51)
- Safety pattern case (model 73X.31)
- Higher static pressure and overpressure safe (see table)
- Accuracy class better than 1.6
- Air bleeding plugs ranges ≥ 0.4 bar
- Zero adjustment
- Panel or surface mounting rings (consider possible conflict with pressure chamber)
- Other threaded pressure connection, male or female
- Pipe or surface mounting bracket
- Pressure entry at sides, front or rear of pressure chamber
- Indication of differential pressure and static pressure (with additional gauge)
- Medium temperature > 100 °C
- Pressure equalising valve (see data sheet AC 09.11)
- Alarm contacts (see data sheet AC 08.01)
- Transmitters (see data sheet AE 08.02)

## Working pressure max. / Overpressure safety

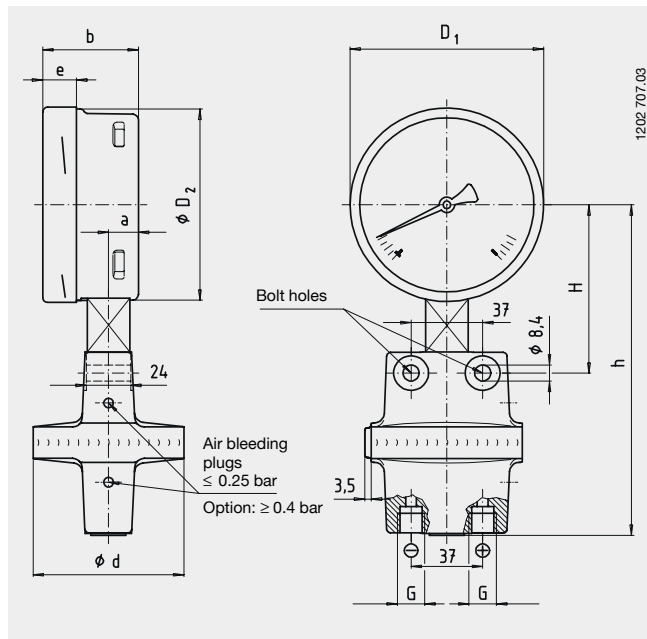
Scale ranges	Working pressure max. in bar (static pressure)		Overpressure safety in bar either side max.	
	Standard	Option	Standard	Option
0 ... 16 to 0 ... 40 mbar	2,5	6 <sup>1)</sup>	2,5	-
0 ... 60 to 0 ... 250 mbar	6	10	2,5	6
0 ... 400 mbar	25	40	4	40
0 ... 0.6 bar	25	40	6	40
0 ... 1 bar	25	40	10	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

## Dimensions in mm

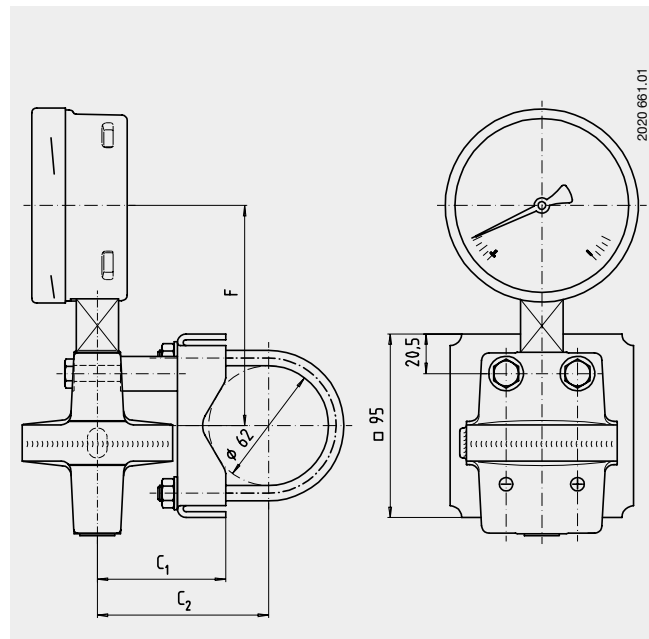
### Standard version

bottom entry 2 x G ¼ female



### Optional version

pipe or surface mounting bracket



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 ¼	171	90	114	96	118	2.70
100	> 0.25 bar	15.5	49.5	101	99	78	17.5	G ¼	171	87	114	66	88	1.90
160	≤ 0.25 bar	15.5	49.5	161	159	140	17.5	G ¼	201	120	144	96	118	3.40
160	> 0.25 bar	15.5	49.5	161	159	78	17.5	G ¼	201	117	144	66	88	2.40

Standard pressure entry with parallel thread and seating to EN 837-1 / 7.3.

### Ordering information

Model / Nominal size / Scale range / Scale layout, e.g. direct pressure reading or square root incrementation / Static pressure rating ... bar / Size and location of connection / Optional extras required

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.

