

Differential Pressure Gauges Diaphragm Element Series Type 732.51 All-welded Construction

WIKA Datasheet 732.51

Applications

- For gaseous and liquid aggressive media that are not highly viscous or crystallizing. Also suitable in aggressive environments
- Monitoring and control of pumps
- Filter monitoring
- Level measurement in closed tanks

Product Features

- Differential pressure measuring ranges from 0 ... 6" WC (16 mbar)
- High working pressure (static pressure) up to 600 psi (40 mbar)
- High overpressure safe up to 600 psi (40 mbar)
- All welded media chamber



Diaphragm Element Series Type 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 contoured design of the pressure measuring diaphragm.

The high-grade stainless steel construction and robust design is ideal for chemical and process engineering applications. It is suitable for gaseous or liquid media, also and aggressive environments.

Differential pressure from ranges 0 ... 6" WC (16 mbar) to 0 ... 360 psi (25 bar) are available to meet the requirements of a wide variety of applications.

Specifications

Design

Lower mount process connections, highly corrosion-resistant all-metal construction, measuring cell protected against tampering. Location of process connection can be modified to mounting requirements. WIKA trade pattern DT - GM 86 08 176

Sizes

4" (100 mm)
6" (160 mm)

Accuracy Class

1.6

Ranges

6" WC (16 mbar) to 0 ... 360 psi (25 bar)
Scale range 0 ... 6" WC (16 mar): Scale length approx. 180 \times °
Other equivalent differential pressure ranges or compound ranges available.

Working Pressure

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

Overpressure safety

see table on page 3

Max. working pressure (static pressure)

see table on page 3

Operating Temperature

Ambient: -4°F to +140°F (-20°C to +60°C)

Medium: +212°F (+100°C) maximum

Temperature error

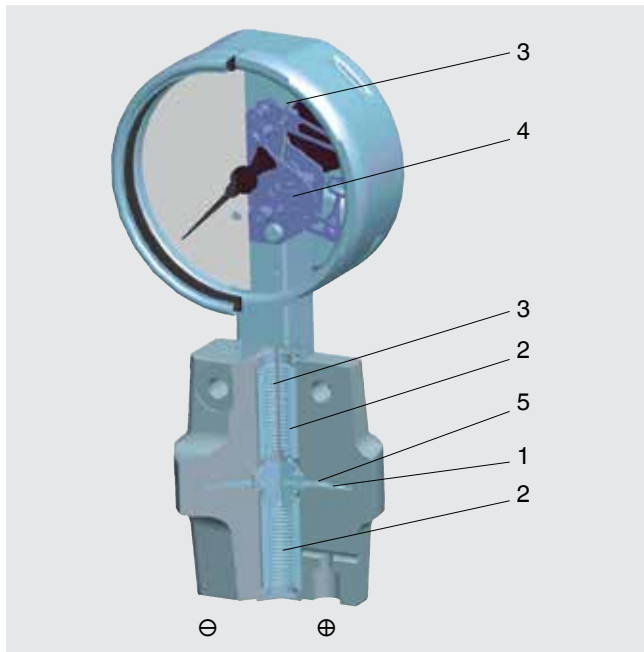
Additional error when temperature changes from reference temperature of 68 °F (20 °C) \pm 0.5% of span for every 18 °F (10 °K) rising or falling

Ingress protection

NEMA 3 (IP 54) per EN 60529 / IEC 529

NEMA 4 (IP 66) with liquid filling

Principle Illustration



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) with a push rod (3)
- The movement converts the axial deflection into a clockwise pointer travel
- The overpressure safety is ensured by an all-metal construction and a tight-fitting contoured diaphragm (5)

Measuring chamber with process connection (wetted)

316 SS
 lower mount (LM),
 2 x 1/4" NPT female

Pressure elements (wetted)

≤ 100" WC (250 mbar): 316 SS
 > 100" WC (250 mbar): NiCr-alloy (Inconel®)

Sealing bellows (wetted)

316 SS

Venting of the media chambers (wetted)

316 SS for scale ranges ≤ 100" WC (250 mbar)
 (optional for scale ranges > 100" WC)

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 disc

Window

Laminated safety glass

Bezel ring

Bayonet ring, stainless steel

Gauge Mounting

Pressure ports marked ⊕ and ⊖
 ⊕ high pressure
 ⊖ low pressure

Mounting by means of:

- Direct mounting
- Mounting holes in measuring flange
- Front flange (optional)
- Mounting bracket for wall or pipe mounting (optional)

Options

- Liquid filling (model 733.51)
- Solid front safety design (model 73x.31)
- Increased max. working pressure (static pressure) and higher overpressure safety (see table)
- Accuracy better than class 1.6
- Venting of the media chambers (wetted) for scale ranges > 100" WC (250 mbar)
- External zero adjustment
- Lateral connection location (right, left, front or back)
- Other threaded process connections, female or male
- Medium temperature > 212 °F (100 °C)
- Admissible ambient temperature -40 °F ... +140 °F (-40 °C ... +60 °C) (silicone oil filling)
- Mounting bracket for wall or pipe mounting
- Panel mounting flange
- Version per ATEX Ex II 2 GD c TX
- Pressure equalizing valve

Max. working pressure, overpressure safety

Scale ranges	Max. working pressure in psi (static pressure)		Overpressure safety in psi either side max.	
	Standard	Optional	Standard	Optional
0 ... 6 to 0 ... 16" WC *	36 (2.5 bar)	87 ¹⁾ (6 bar)	36 (2.5 bar)	-
0 ... 25 to 0 ... 100" WC **	87 (6 bar)	150 (10 bar)	36 (2.5 bar)	87 (6 bar)
0 ... 160" WC (0...400 mbar)	360 (25 bar)	600 (40 bar)	60 (4 bar)	600 (40 bar)
0 ... 8 psi (0...0.6 bar)	360 (25 bar)	600 (40 bar)	87 (6 bar)	600 (40 bar)
0 ... 15 psi (0...1 bar)	360 (25 bar)	600 (40 bar)	150 (10 bar)	600 (40 bar)
0 ... 25 psi (0...1.6 bar)	360 (25 bar)	600 (40 bar)	230 (16 bar)	600 (40 bar)
0 ... 36 to 0 ... 360 psi ***	360 (25 bar)	600 (40 bar)	360 (25 bar)	600 (40 bar)

1) Accuracy class 2.5

* (0...16 to 0...40 mbar)

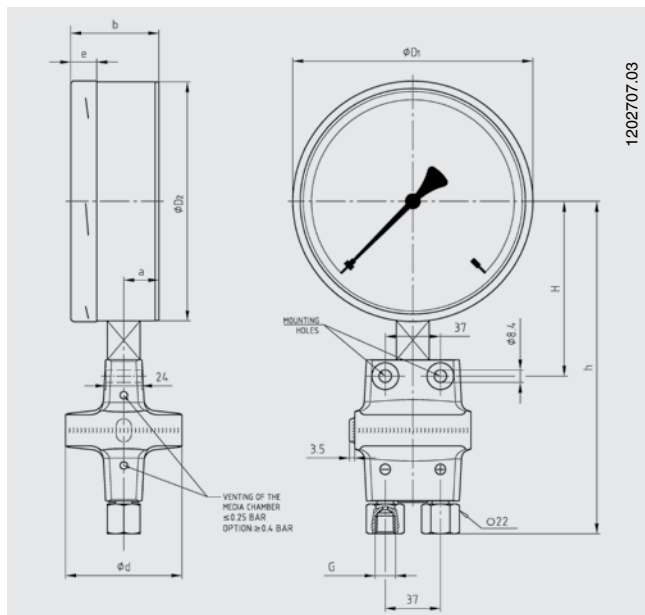
** (0...60 to 0...250 mbar)

*** (0...2.5 to 0...25 bar)

Dimensions in ”

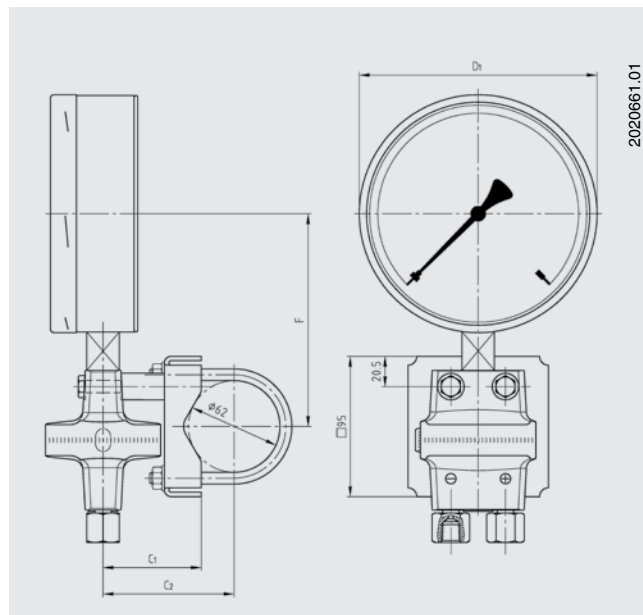
Standard version

Connection 2 x ¼“ NPT female, lower mount (LM)



Option

Mounting bracket for wall or pipe mounting



NS	Scale range	Dimensions in ”										Weight in lbs		
		a	b	D ₁	D ₂	d	e	G	h ±1	H	F		C ₁	C ₂
100	≤ 100” WC	0.61	1.95	3.97	3.90	5.51	0.69	¼ NPT-F	7.60	3.54	4.49	3.78	4.66	5.94
100	> 100” WC	0.61	1.95	3.97	3.90	3.07	0.69	¼ NPT-F	7.60	3.42	4.49	2.60	3.46	4.18
160	≤ 100” WC	0.61	1.95	6.34	6.26	5.51	0.69	¼ NPT-F	8.78	4.72	5.67	3.78	4.66	7.48
160	> 100” WC	0.61	1.95	6.34	6.26	3.07	0.69	¼ NPT-F	8.78	4.61	5.67	2.60	3.46	5.28

Process connection per EN 837-1 / 7.3

Ordering information

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

Ordering information

Pressure gauge model / Nominal size / Scale range / Size of connection / Optional extras required.
Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.
Modifications may take place and materials specified may be replaced by others without prior notice.



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