Differential pressure gauge
For the process industry
Models 732.14, 762.14, high overload safety up to 40, 100 or 400 bar

for further approvals
see page 4

Applications

- For measuring locations with a high differential pressure overload and/or high working pressures (static pressures), also in aggressive environments
- For gaseous, liquid, contaminated, viscous and aggressive media
- Pump monitoring and control
- Filter monitoring
- Level measurement on closed vessels

Special features

- Differential pressure measuring ranges from -1 … +30 bar [-14.5 ... +435 psi] to 0 ...40 bar [0 ... 580 psi]
- High working pressure (static pressure) and high overload safety, selectable up to 40 bar [580 psi], 100 bar [1,450 psi], 250 bar [3,625 psi] or 400 bar [5,800 psi]
- The transmission fluid in the measuring chamber dampens the indicator in case of high changes of the rate of pressure
- Model 732.14: Stainless steel version
  Model 762.14: Version with special materials (Monel, Hastelloy)

Differential pressure gauge model 732.14

Description

These differential pressure gauges are made of highly corrosion-resistant stainless steel. A high overload safety is achieved by the all-metal construction and the close-fitting design of the diaphragm measuring element.

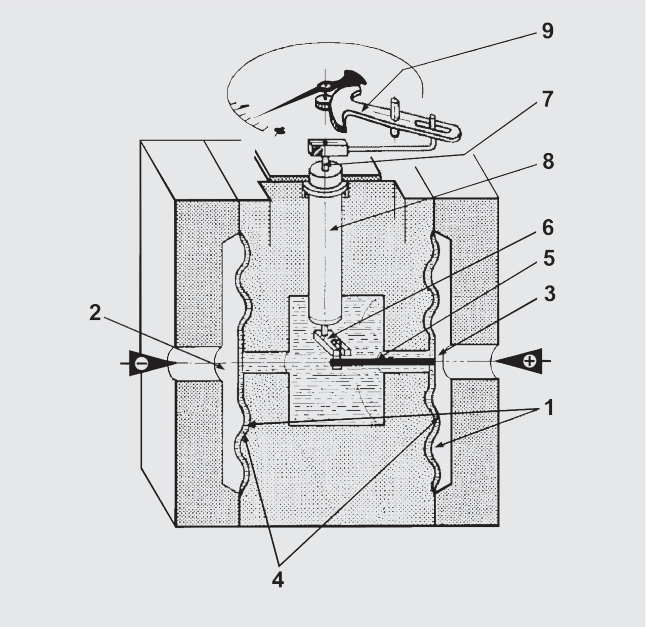
The use of high-quality stainless steel materials and the robust design are geared to applications in the chemical and process engineering industries. Thus the instrument is suitable for liquid and gaseous media, also in aggressive environments.

The wetted parts for these instruments are also available in special materials such as Monel or Hastelloy.

Scale ranges of 0 ... 60 mbar bar to 0 ... 40 bar [0 ... 0.9 to 0 ... 580 psi] ensure the measuring ranges required for a wide variety of applications.

Data sheets showing similar products:
Differential pressure gauge, all-metal media chamber; model 732.51; see data sheet PM 07.05

Illustration of the principle



Design and operating principle

- Pressures p1 and p2 act on the ⊕ and ⊖ side of the measuring chamber (4).
- The media chambers (1) and (2) are separated from the transmission fluid-filled measuring chamber by one diaphragm element each.
- Differential pressure across ⊕ and ⊖ pressure sides deflects the diaphragm (1) and displaces the transmission fluid.
- The deflection of the link (5) is converted through the use of a transmitting lever (6) into rotation, which is transfered over an axial shaft (7) to the movement (9).
- The torque pipe (8) seals, assuring a frictionless path from the measuring chamber.
- Overload safety is ensured by the all-metal construction and the close-fitting all-metal design.

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

Specifications

Models 732.14 and 762.14	
Design	Differential pressure gauge per DIN 16003, highest overload safety either side, pressure ratings PN 40, 100, 250 or 400. The transmission fluid in the measuring chamber dampens the indicator in case of high changes of the rate of pressure. ■ Version with special materials (model 762.14) ■ Version with liquid filling (models 733.14 and 763.14) ■ Version with switch contacts ■ Version with output signal ■ Design per NACE MR 0175/ISO 15156-T3
Nominal size in mm	■ 100 ■ 160
Accuracy class	
Model 732.14	1.6
Model 762.14	2.5
Scale ranges	
Instruments with PN 40 and 100	■ 0 … 60 mbar to 0 … 160 mbar [0 ... 0.9 to 0 ... 2.3 psi] (measuring chamber ☐ 140) ■ 0 … 0.25 bar to 0 … 40 bar [0 ... 3.6 to 0 ... 580 psi] (measuring chamber ☐ 82)
Instruments with PN 250	■ 0 … 60 mbar to 0 … 250 mbar [0 ... 0.9 to 0 ... 3.6 psi] (measuring chamber ☐ 140) ■ 0 … 0.4 bar to 0 … 40 bar [0 ... 5.8 to 0 ... 580 psi] (measuring chamber ☐ 82)
Instruments with PN 400	■ 0 … 0.4 bar to 0 … 40 bar [0 ... 5.8 to 0 ... 580 psi] (measuring chamber ☐ 86)
Scale	■ Single scale ■ Dual scale ■ Special scale (e.g. linear pressure or square root incrementation)
Zero point setting	■ External setting, for instruments with liquid filling ■ Setting by means of adjustable pointer, for instruments without liquid filling
Pressure limitation	
Steady	Full scale value
Fluctuating	0.9 x full scale value
Overload safety and max. working pressure (static pressure)	Either side max. 40, 100, 250 or 400 bar [580, 1,450, 3,625 or 5,800 psi]

Models 732.14 and 762.14	
Connection location	■ Lower mount (radial) ■ Other connection location on request
Process connection	■ 2 x G ½ female thread ■ 2 x G ½ B male thread ■ 2 x ½ NPT male thread
Permissible temperature	
Medium	■ ≤ 100 °C ■ > 100 °C
Ambient	■ -20 ... +60 °C [-4 ... +140 °F] ■ -40 ... +60 °C [-40 ... +140 °F] for versions with silicone oil filling
Temperature effect	When the temperature of the measuring system deviates from the reference temperature (+20 °C [68 °F]): max. ±0.5 %/10 K of full scale value
Transmission fluid in the measuring chamber	■ Silicone oil ■ Glycerine Other transmission fluids on request
Materials (wetted)	
Media chambers with process connection	Stainless steel 1.4571
Pressure element	Model 732.14: ■ Stainless steel 316L for scale ranges ≤ 0.25 bar [3.6 psi] ■ Stainless steel 316L / Inconel for scale ranges > 0.25 bar [3.6 psi] Model 762.14: ■ Monel 2.4360 ■ Hastelloy C276 for design per NACE MR 0175/ISO 15156-T3
Venting of the media chambers [1)]	■ Model 732.14: Stainless steel 316L ■ Model 762.14: Monel 2.4360
Sealings	FPM/FKM
Orifice flanges	■ Model 732.14: Stainless steel 316L ■ Model 762.14: Monel 2.4360
Materials (non-wetted)	
Flange connecting screws	■ PN 40 and 100: Stainless steel ■ PN 250 and 400: Steel, corrosion-protected
Measuring chamber	Chrome steel
Case	Stainless steel, safety level “S1” per EN 837: With blow-out device
Movement, bayonet ring	Stainless steel
Dial	Aluminium, white, black lettering
Instrument pointer	■ Model 7x2.14: Adjustable pointer, aluminium, black ■ Model 7x3.14: Standard pointer, aluminium, black
Window	Laminated safety glass
Ingress protection per IEC/EN 60529	■ IP54 ■ IP65 for instruments with liquid filling
Mounting	Mounting by means of: ■ Rigid measuring lines ■ Mounting holes at the back of the instrument

1) For small scale ranges, venting of the media chambers is always provided. For scale ranges ≥ 0.25 bar [3.63 psi], venting of the media chambers can be ordered.

Static pressure influence

Scale range	PN 40	PN 100	PN 250	PN 400
0.06 ... 0.16 bar [0.9 ... 2.3 psi]	±0.5 %/1 bar	±1.0 %/1 bar	±3.0 %/1 bar	-
0.25 bar [3.6 psi]	±0.5 %/1 bar	±1.5 %/1 bar	-	-
0.4 bar [5.8 psi]	±0.5 %/1 bar	±1.0 %/1 bar	±2.5 %/1 bar	-
0.6 ... 40 bar [8.7 ... 580 psi]	±0.5 %/1 bar	±1.0 %/1 bar	±1.5 %/1 bar	±2.5 %/1 bar

Approvals

Logo	Description	Country
CE Ex	**EU declaration of conformity** ■ Pressure equipment directive ■ ATEX directive (option) Ignition protection type “c”, constructive safety	European Union
EAC Ex	**EAC (option)** Hazardous areas	Eurasian Economic Community
	GOST (option) Metrology, measurement technology	Russia
	KazInMetr (option) Metrology, measurement technology	Kazakhstan
-	**MTSCHS (option)** Permission for commissioning	Kazakhstan
	BelGIM (option) Metrology, measurement technology	Belarus
	UkrSEPRO (option) Metrology, measurement technology	Ukraine
-	**CPA (option)** Metrology, measurement technology	China
-	**CRN** 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 for wetted metal parts, indication accuracy)

Approvals and certificates, see website

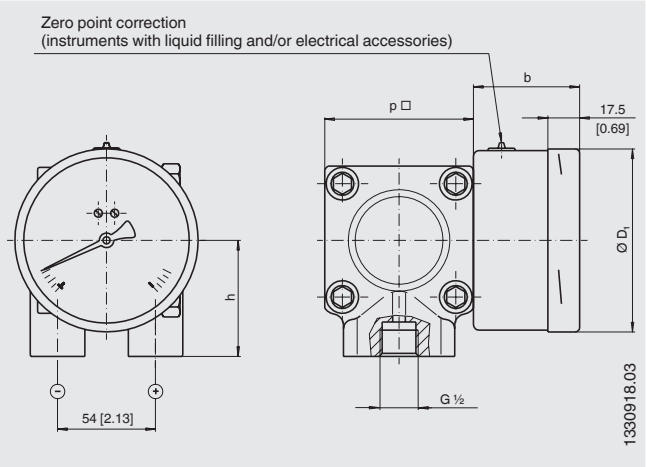
Accessories

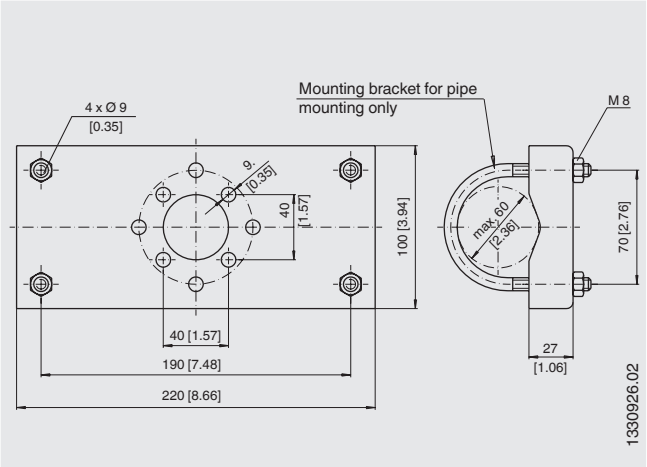
- Panel mounting flange
- Instrument mounting bracket for wall or pipe mounting, painted steel or stainless steel
- Valve manifolds (models IV3x, IV5x, see data sheet AC 09.23)
- Differential process connection per DIN EN 61518

Dimensions in mm [in]

Standard version
Connection 2 x G ½ female thread, lower mount

Accessories
Instrument mounting bracket for wall or pipe mounting





Instruments with PN 40 and 100

NS	Scale range	Dimensions in mm [in]					Weight in kg	
		b	D_1	h ±1	p □ PN 40	p □ PN 100	PN 40	PN 100
100	≤ 0.16 bar [2.3 psi]	58.5 [2.3]	101 [4.0]	86 [3.4]	140 [5.5]	140 [5.5]	12.1	12.1
100	≥ 0.25 bar [3.6 psi]	58.5 [2.3]	101 [4.0]	64 [2.5]	82 [3.2]	82 [3.2]	3.6	3.6
160	≤ 0.16 bar [2.3 psi]	65.5 [2.6]	161 [6.3]	86 [3.4]	140 [5.5]	140 [5.5]	12.5	12.5
160	≥ 0.25 bar [3.6 psi]	65.5 [2.6]	161 [6.3]	64 [2.5]	82 [3.2]	82 [3.2]	4.0	4.0

Instruments with PN 250 and 400

NS	Scale range	Dimensions in mm [in]					Weight in kg	
		b	D_1	h ±1	p □ PN 250	p □ PN 400	PN 250	PN 400
100	≤ 0.25 bar [3.6 psi]	58.5 [2.3]	101 [4.0]	86 [3.4]	140 [5.5]	-	13.1	-
100	≥ 0.4 bar [5.8 psi]	58.5 [2.3]	101 [4.0]	64 [2.5]	82 [3.2]	86 [3.4]	3.9	4.5
160	≤ 0.25 bar [3.6 psi]	65.5 [2.6]	161 [6.3]	86 [3.4]	140 [5.5]	-	13.5	-
160	≥ 0.4 bar [5.8 psi]	65.5 [2.6]	161 [6.3]	64 [2.5]	82 [3.2]	86 [3.4]	4.3	4.9

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) / Overload safety (one side or both sides to ... bar / Medium (liquid or gaseous, density ρ ...) / Medium temperature (constant ... °C, fluctuating from ... to ... °C / Connection location / Process connection / Options

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-0
Fax +49 9372 132-406
info@wika.de
www.wika.de