

Differential pressure gauge

Models 732.14, 762.14, universal version, with diaphragm element

High working pressures PN 40, 100, 250 or 400

data sheet PM 07.13



for further approvals
see page 3

Applications

- For measuring locations with a high differential pressure overload and/or high working pressures (static pressures), also in aggressive ambience.
- For gaseous, liquid, particulates-containing, viscous and aggressive media
- Monitoring and control of pumps
- Filter monitoring
- Level measurement in closed tanks

Special features

- Differential pressure measuring ranges from 0 ... 60 mbar
- High working pressure (static pressure) and high overpressure safety, optionally up to 40, 100, 250 or 400 bar
- Hydraulic cushioning protection against rapid pressure changes
- Compatible with switch contacts
- Model 762.14: Monel version

Description

These differential pressure gauges are made of highly corrosion-resistant stainless steel. 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.

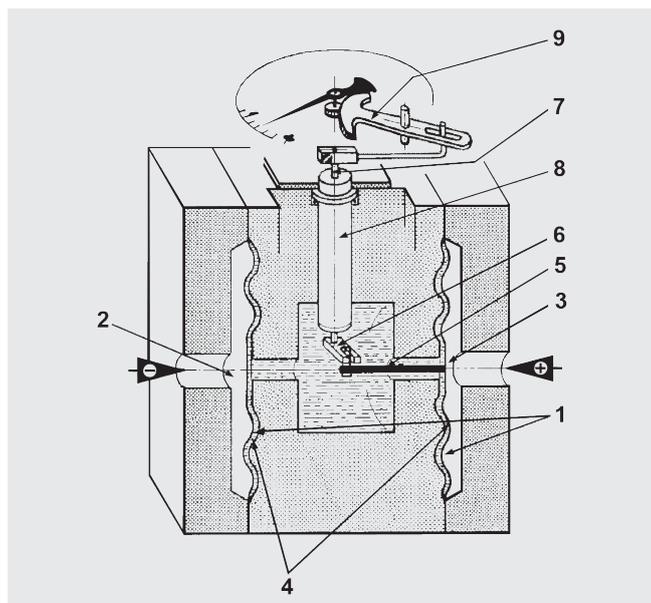


Differential pressure gauge model 732.14

The wetted parts for these differential pressure gauges are available also in special materials such as Monel, Hastelloy or PTFE.

The scale ranges of 0 ... 60 mbar to 0 ... 40 bar are available to meet the requirements of a wide variety of applications.

Illustration of the principle



Design and operating principle

- Process pressures p_1 and p_2 are applied to the media chambers \ominus (2) and \oplus (3).
- Measuring cell (4) is filled with transmission liquid.
- Differential pressure across \oplus and \ominus pressure sides deflects the diaphragm (1) and displaces the transmission fluid.
- The deflection of the connection rod (5) is converted through the use of a transmitting lever (6) into rotation, which is transferred over an axial shaft (7) to the movement (9).
- The torque pipe (8) seals, assuring a frictionless path from the measuring cell.
- Overpressure protection in both directions up to the max. total pressure applied is provided by contoured metal bolsters.

Mounting according to affixed symbols
 \oplus high pressure and \ominus low pressure

Specifications

Design

Highest overpressure safety either side, pressure ratings PN 40, 100, 250 or 400, hydraulic cushioning protection against rapid pressure changes

Nominal size in mm

100, 160

Accuracy class

Model 732.14: 1.6
 Model 762.14: 2.5

Overpressure safety and max. working pressure (static pressure)

Either side max. 40, 100, 250 or 400 bar

Scale ranges

Gauges with PN 40 and 100:

0 ... 60 mbar to 0 ... 160 mbar (measuring cell □ 140)
 0 ... 0.25 bar to 0 ... 40 bar (measuring cell □ 82)

Gauges with PN 250:

0 ... 60 mbar to 0 ... 250 mbar (measuring cell □ 140)
 0 ... 0.4 bar to 0 ... 40 bar (measuring cell □ 82)

Gauges with PN 400:

0 ... 0.4 bar to 0 ... 40 bar (measuring cell □ 86)

Pressure limitation

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

Permissible 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. $\pm 0.5\%$ /10 K of full scale value

Ingress protection

IP 54 per EN 60529 / IEC 60529
 (with liquid filling IP 65)

Standard version

Measuring flanges (wetted)

Model 732.14: Stainless steel 316L

Model 762.14: Monel 2.4360

Flange connecting screws

PN 40 / 100: Stainless steel

PN 250 / 400: Steel, corrosion-protected

Process connections

2 x G ½ female (EN 837), lower mount (LM)

Pressure elements (wetted)

Model 732.14: Stainless steel 316L / NiCr-alloy (Inconel)

Model 762.14: Monel 2.4375

(Hastelloy C276 for version per NACE
MR 0175/ISO 15156-T3)

Sealings (wetted)

FPM/FKM

Venting of the media chambers (wetted)

Model 732.14, PN 40 and 100: Stainless steel 316L

Standard for scale ranges ≤ 0.16 bar

(option for scale ranges ≥ 0.25 bar!)

Model 732.14, PN 250 and 400: Stainless steel 316L

Standard for scale ranges ≤ 0.25 bar

(option for scale ranges ≥ 0.4 bar!)

Model 762.14: Monel 2.4360

Standard for scale ranges ≤ 0.25 bar

(option for scale ranges ≥ 0.4 bar!)

Measuring cell

Chrome steel

Movement

Stainless steel

Dial

Aluminium, white, black lettering

Pointer

Adjustable pointer, aluminium, black

Zero adjustment

By means of adjustable pointer

(adjustment appliance with gauges with liquid filling and/or
switch contact)

Case / Bayonet ring

Stainless steel

Window

Laminated safety glass

Measuring cell filling

Silicone oil

Exception: Glycerine

Mounting by means of:

- Rigid measuring lines
- Drilled mounting holes at the back of the measuring cell
- Panel mounting flange (option)
- Mounting bracket for wall or pipe mounting (option)

Options

- Liquid filling (model 733.14 / 763.14)
- Venting of the pressure chambers for scale ranges
≥ 0.25 bar or ≥ 0.4 bar
- Measuring cell filling with special medium, e.g. for use in
oxygen applications
- Combined differential pressure and working pressure
readout
- Wetted parts made of special material
- Differential process connection per DIN EN 61518
- Other process connections, e.g. male thread 2 x G ½ B or
2 x ½ NPT
- Back mount connection or connection at 12 o'clock
- Medium temperature > 100 °C
- Admissible ambient temperature -40 ... +60 °C (silicone oil
filling)
- Panel mounting flange
- Mounting bracket for wall or pipe mounting, lacquered
steel or stainless steel
- Pressure equalising valve (data sheet AC 09.11)
- Pressure gauge with switch contacts, see model
DPGS43HP.100/160, data sheet PV 27.13
- Pressure gauge with electrical output signal,
see model DPGT43HP.100/160, data sheet PV 17.13

CE conformity

ATEX directive ¹⁾

94/9/EC, II 2 GD c TX

Approvals

- **EAC**, import certificate, customs union Russia/Belarus/
Kazakhstan
- **GOST**, metrology/measurement technology, Russia
- **CRN**, safety (e.g. electr. safety, overpressure, ...), Canada

Certificates ¹⁾

- 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)

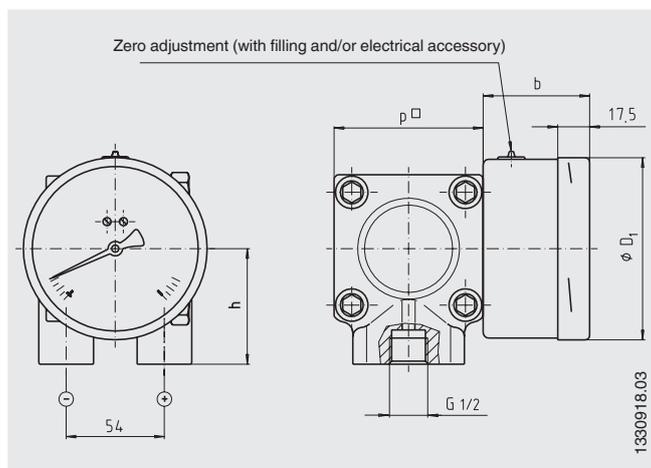
¹⁾ Option

Approvals and certificates, see website

Dimensions in mm

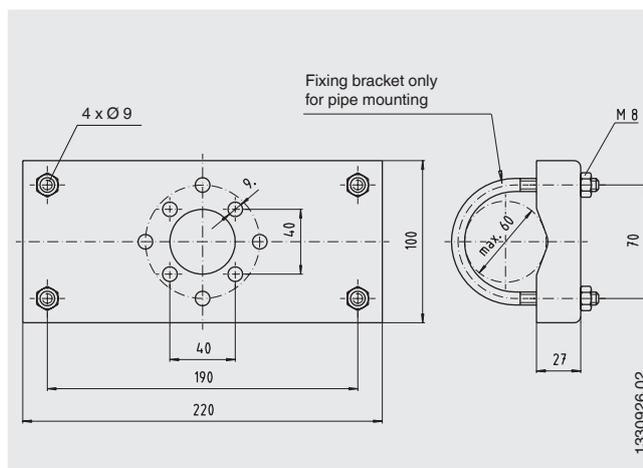
Standard version

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



Option

Mounting bracket for wall or pipe mounting



Gauges with PN 40 and 100

NS	Scale range	Dimensions in mm			p□		Weight in kg	
		b	D ₁	h ±1	PN 40	PN 100	PN 40	PN 100
100	≤ 0.16 bar	58.5	101	86	140	140	12.1	12.1
100	≥ 0.25 bar	58.5	101	64	82	82	3.6	3.6
160	≤ 0.16 bar	65.5	161	86	140	140	12.5	12.5
160	≥ 0.25 bar	65.5	161	64	82	82	4.0	4.0

Gauges with PN 250 and 400

NS	Scale range	Dimensions in mm			p□		Weight in kg	
		b	D ₁	h ±1	PN 250	PN 400	PN 250	PN 400
100	≤ 0.25 bar	58.5	101	86	140	-	13.1	-
100	≥ 0.4 bar	58.5	101	64	82	86	3.9	4.5
160	≤ 0.25 bar	65.5	161	86	140	-	13.5	-
160	≥ 0.4 bar	65.5	161	64	82	86	4.3	4.9

Process connection per EN 837

Ordering information

Model / Nominal size / Scale range / Scale layout (linear pressure or square root incrementation) / Max. working pressure (static pressure) / Overpressure safety (one-sided or both-sided) up to ... bar / Medium (liquid or gas, density ρ ...) / Medium temperature (constant ... °C, fluctuating from ... °C to ... °C) / Connection location / Connection size / Options