

# Differential pressure gauge

## For very low differential pressures, from 2.5 mbar

### Model 736.51, with diaphragm element

WIKA data sheet PM 07.08



for further approvals see  
page 4

**switchGAUGE**

#### Applications

- Differential pressure measurement at measuring points with very low differential pressures, for transparent, gaseous, dry, clean, oil and grease free media, also in aggressive environments
- ⊕ media chamber also suitable for corrosive media
- Process industry: Chemical industry, petrochemical industry, on/offshore
- Filter monitoring in ventilation and heating systems or in overpressure and clean rooms
- Differential pressure controlled monitoring of ventilator and blast pressures

#### Special features

- Differential pressure measuring ranges from 0 ... 2.5 mbar
- Ingress protection IP66
- Case and wetted parts from stainless steel
- Version with inductive contacts for use in hazardous areas
- Version with switch contact for PLC applications



Fig. left: Model 732.51, NS 100

Fig. right: Model 732.51, NS 160 with switch contacts

#### Description

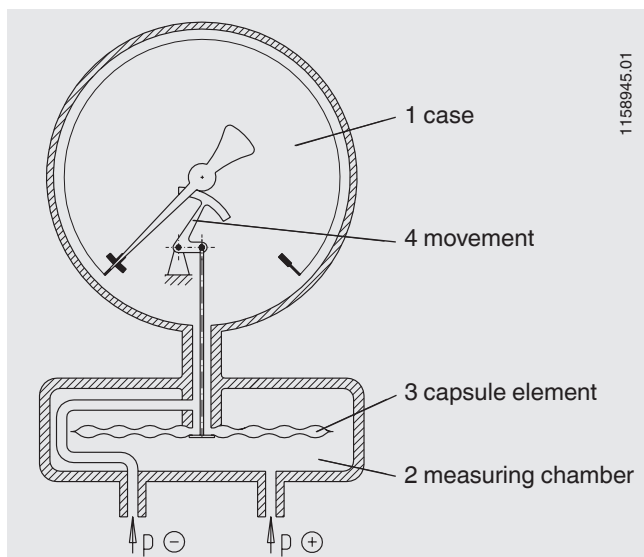
The model 736.51 capsule pressure gauge is based upon the proven capsule measuring system. The capsule measurement principle is particularly suitable for low pressures. On pressurisation, the expansion of the capsule element, proportional to the incident pressure, is transmitted to the movement and indicated.

For the version with switch contact, magnetic snap-action contacts, reed switches, inductive contacts and electronic contacts are available. Inductive contacts can be used in hazardous areas. For triggering programmable logic controllers (PLC), electronic contacts and reed switches can be used.

## Specifications

Model 736.51	
Nominal size in mm	<ul style="list-style-type: none"> <li>■ 100</li> <li>■ 160</li> </ul>
Accuracy class	1.6 Option: 1.0
Scale ranges	0 ... 2.5 mbar to 0 ... 100 mbar other units (e.g. psi, kPa) available or all other equivalent vacuum or combined pressure and vacuum ranges
Scale	Single scale Option: Dual scale
Zero point setting	via adjustment appliance at case circumference, stainless steel (wetted)
<b>Pressure limitation</b>	
Steady	Full scale value
Fluctuating	0.9 x full scale value
Overload safety and max. working pressure (static pressure)	<ul style="list-style-type: none"> <li>■ 200 mbar on ⊕ side</li> <li>■ 200 mbar on both sides</li> </ul>
Connection location	Lower mount (radial)
Process connection	<ul style="list-style-type: none"> <li>■ 2 x G ½ B</li> <li>■ 2 x ½ NPT</li> <li>others on request</li> </ul>
<b>Permissible temperature</b>	
Medium	+60 °C [+140 °F] maximum
Ambient	-20 ... +60 °C [-4 ... 140 °F]
Temperature effect	When the temperature of the measuring system deviates from the reference temperature (+20 °C): max. ±0.6 %/10 K of full scale value
Case	Version S1 per EN 837: With blow-out device in case back
Switch contacts (option)	<ul style="list-style-type: none"> <li>■ Magnetic snap-action contact (model 821)</li> <li>■ Inductive contact (model 831) For use in hazardous areas, (ATEX / IECEx)</li> <li>■ Electronic contact (model 830 E)</li> <li>■ Reed contact (model 851)</li> </ul> For further information on switch contacts, see data sheet AC 08.01
<b>Wetted materials</b>	
Process connection, pressure element, measuring chamber, case	Stainless steel 1.4571
Plug blow-out device	PUR
Movement	Stainless steel
Dial	Aluminium, white, black lettering
Instrument pointer	Aluminium, black
Set pointer	Aluminium, red
Window	Laminated safety glass
Sealings	PTFE and NBR
<b>Non-wetted materials</b>	
Bayonet ring	Stainless steel
Ingress protection per IEC/EN 60529	IP66
Mounting	according to affixed symbols ⊕ high pressure, ⊖ low pressure

## Illustration of the principle









## Design and operating principle

- Pressure-sealed case (1) with capsule element in pressure-sealed measuring chamber (2).
- The capsule element (3) is pressurised inside and from outside.  $\oplus$  pressure enters measuring chamber (2),  $\ominus$  pressure enters capsule element (3) and case (1)
- Pressure differential between  $\oplus$  and  $\ominus$  side causes stroke movement of the capsule element and deflects the capsule element
- The deflection is transmitted to the movement (4) and indicated.

### Note:

Versions with switch contact contain plastic components and copper alloy parts. They are incorporated in the pressure-sealed case (1), i.e. they are wetted! We therefore recommend an application test. This applies in particular for use in hazardous areas.

## Approvals

Logo	Description	Country
	<b>EAC</b> Pressure equipment directive	Eurasian Economic Community
	<b>GOST</b> Metrology, measurement technology	Russia
	<b>KazInMetr</b> Metrology, measurement technology	Kazakhstan
-	<b>MTSCHS</b> Permission for commissioning	Kazakhstan
	<b>BelGIM</b> Metrology, measurement technology	Belarus
	<b>UkrSEPRO</b> Metrology, measurement technology	Ukraine
	<b>Uzstandard</b> Metrology, measurement technology	Uzbekistan
-	<b>CPA</b> Metrology, measurement technology	China

1) Only for instruments with inductive contact model 831

## Certificates (option)

- 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy)
- 3.1 inspection certificate per EN 10204 (e.g. indication accuracy)

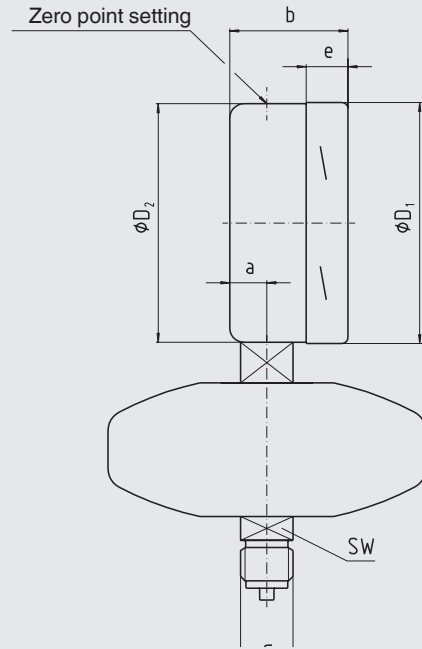
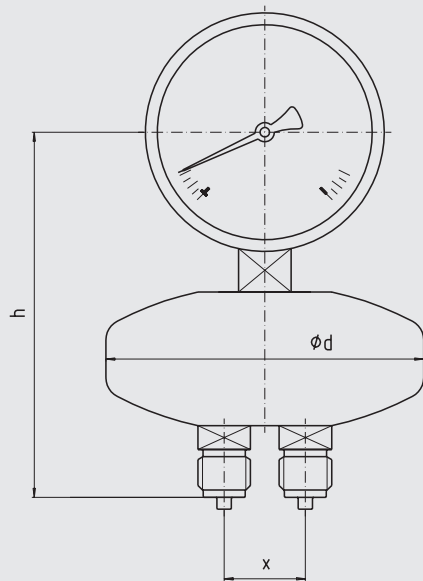
Approvals and certificates, see website

## Accessories

- Panel mounting flange, polished stainless steel
- Surface mounting flange, stainless steel
- Instrument mounting bracket for wall or pipe mounting
- Sealings (model 910.17, see data sheet AC 09.08)
- Valves (models IV30/IV50, see data sheet AC 09.23)
- Diaphragm seal

## Dimensions in mm

### Lower mount (radial)



1034472.01

NS	Dimensions in mm										Weight in kg
	a	b	D <sub>1</sub>	D <sub>2</sub>	d	e	G	h ±1	X	SW	
100	15.5	49.5	101	99	133	17.5	G ½ B	170	37	22	1.70
160	15.5	49.5	161	159	133	17.5	G ½ B	200	37	22	2.20

Process connection per DIN 16003

### Ordering information

Model / Nominal size / Scale range / Process connection / Options

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