

## Differential pressure gauges with diaphragm for the chemical industry

with or without liquid filling

with or without electrical alarm contacts

with or without electrical output

Nominal size ND 100, 160



### Description

Differential pressure gauges are ideal for the hard conditions and the resulting high demands on pressure measurement in production facilities in chemical industry and other comparable branches. The use of high quality materials such as stainless steel makes the measuring system and the case resistant against chemically aggressive media and ambient.

Depending on the application, the gauges can be delivered with filling liquid. The filling liquid provides wear-protection for the measuring system through dampening, should pulsating pressures and mechanical vibrations occur.

Differential pressure gauges with electrical alarm contacts or electrical output are suitable for controlling or regulating process sequences with the aid of the process pressure.

### Function

Principal item of these differential pressure gauges is the pressure chamber with two "hydraulically" connected diaphragms with a liquid bolster between the diaphragms. In case both diaphragms with a liquid bolster between the diaphragms are set under different pressure, the displacement into one direction is transformed by a movement to a proportional pointer deflection.

### Features

- o Measuring chamber and case of corrosion resistant materials, stainless steel
- o Static pressure and overloadable up to 40 bar, optional up to 400 bar
- o Electric alarm contacts or electrical output
- o Flushing connection for the pressure chamber
- o Pressure connection according to DIN 19 213
- o Vibration-free display and long life term stability through liquid damping

### Ranges


0...60 mbar to 0...40 bar

### Applications

Level measurements in pressurised vessels,  
Filter monitoring,  
Flow measurement.

**Models: P2680, P2681, P2683, P2690, P2691, P2693**

## Technical data

Model	P2680	P2690	Options
Nominal size	100	160	
Type			
Liquid filling	Without Glycerine Oil		Silicone oil
Contact type Electrical output	none Magnetic snap action Inductive	4..20mA 2 -wire none Magnetic snap action Inductive	1)
Number of contacts	none 1 - 3		
Electrical connection	none Cable connector right hand side. 6 screw terminals + PE, cross section of the conducting wire 2.5 mm <sup>2</sup> . Screw type conduit fitting M20x1.5, outgoing downwards		Plug 2)
Accuracy class	1.6 to EN 837-3		
Ranges	0...60 mbar to 0...250 mbar (Measuring chamber DN 140) 0...0.4 bar to 0...40 bar (Measuring chamber DN 80) negative or positive and negative/positive gauge pressure		
Type	for max. gauge pressure (static pressure) 40 bar		100 / 250 / 400 bar
Overload protection	(+) resp. (-) side max. 40 bar		100 / 250 / 400 bar
Applications	Constant load: end scale value Alternating load: 0.9 x end of scale value		
Case	Stainless steel, 1.4301		
Bezel	Stainless steel, 1.4301, bayonet ring		Mounting flange front
Window	Laminated safety glass		
Dial	Aluminium, white, black imprint		Special scale
Pointer	Aluminium, black micro-adjustable pointer		
Zero-point adjustment	Micro-adjustable pointer External at the enclosure at 12 H		
Movement	Stainless steel		
Measuring element	Low pressure chamber, stainless steel, 1.4571 High pressure chamber, NiCrCo - alloy, Duratherm 600		Special material
Sealing	FPM Viton <sup>® 3)</sup> (medium wetted)		PTFE
Pressure connection -position	Stainless steel, 1.4571 radial bottom		rear Pressure port
-thread	2x G 1/2 female thread pressure connection		
Measuring flange, measuring chamber	Stainless steel, 1.4571, measuring chamber filled with silicon oil		Special filling media e.g. for oxygen
Venting of measuring chamber	at ranges ≤ 250 mbar		≥ 0.4 bar
Temperatures -Media -Ambient	Tmin. -20°C, Tmax. 100°C Tmin. -25°C, Tmax. 60°C		
Temperature behaviour	0.6% /10K if deviation from normal temperature 20°C		
Protection	IP 54 to EN 60 529 / EC 529		<b>Filled</b> pressure gauges: IP 65 to EN 60 529 / EC 529

1) Model P2690, other electrical outputs and electric alarm contacts on request

2) Similar to DIN 43 651

3) Viton<sup>®</sup> fluoroelastomer, a product of DuPont Dow Elastomers

### Special accessories :

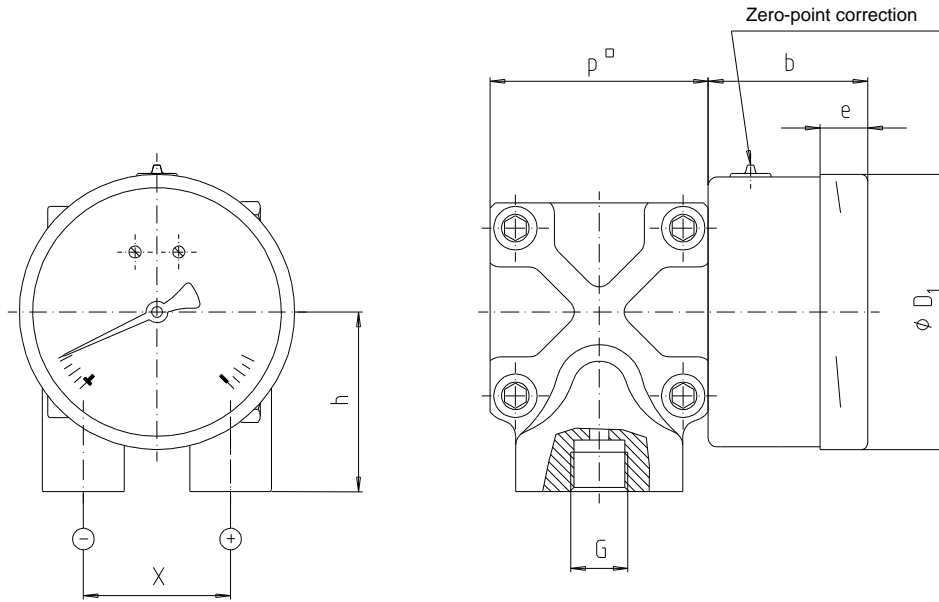
Shut-off valve block (one - five spindle) see AE 1215

Electrical data and switching functions see leaflet DE 1231 and DE 728

Electrical accessories see leaflet DE 1230.

## Dimensions

### Standard version



Model	Ranges [ bar ]	Dimension [ mm ]							Weight [ kg ]
		b	ø D1	e	G	h ±1	p	X	
P2680	≤ 0.25	58.5 <sup>1)</sup>	101	17.5 <sup>1)</sup>	G1/2	86	140	54	12.1
	> 0.25	58.5 <sup>1)</sup>	101	17.5 <sup>1)</sup>	G1/2	64	82	54	3.6
P2690	≤ 0.25	65.5 <sup>2)</sup>	161	17.5	G1/2	86	140	54	12.5
	> 0.25	65.5 <sup>2)</sup>	161	17.5	G1/2	64	82	54	4.0

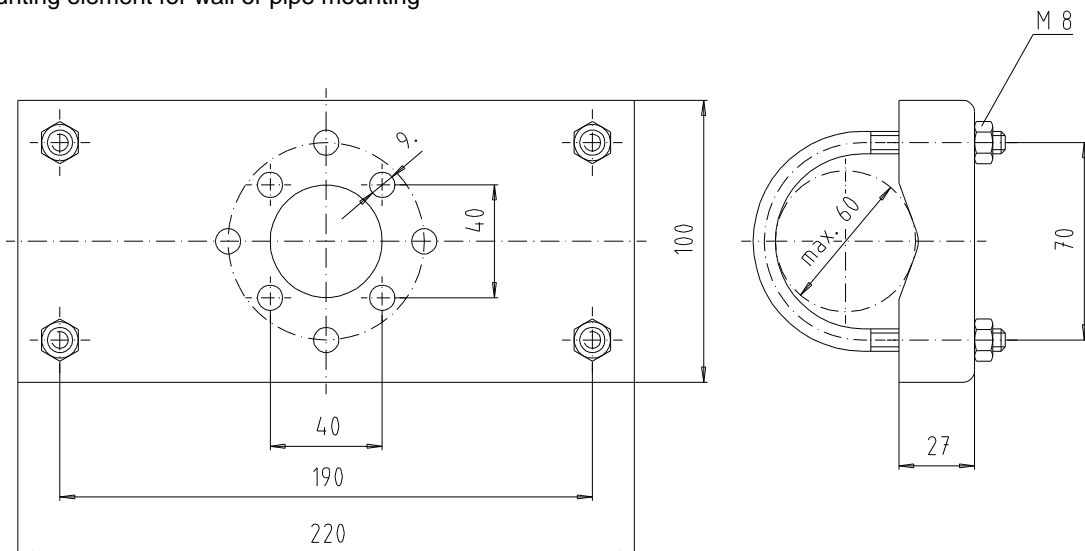
<sup>1)</sup> Model P2680 , 2683 with electric alarm contacts: plus 39 mm Connection to EN 837

<sup>2)</sup> Model P2690 , 2693 with electric alarm contacts: plus 36 mm

Model P2690 with current output: plus additional 50 mm

### Option

Mounting element for wall or pipe mounting



Modifications reserved