Diaphragm pressure gauges with electrical alarm contacts in stainless steel case

with or without dampening

with magnetic snap-action contacts or inductive alarm contacts

Nominal sizes ND 100, 160

Connection position bottom, radial

Description

The design principle and material selection of the diaphragm pressure gauges allow them to meet the stringent demands occurring above all in industrial service.
Special corrosion resistant materials are used for service with chemically aggressive media.
Open process connections ensure that the gauges are easy to clean with highly viscous or crystallizing process media, thus guaranteeing process reliability.
As a result of the high actuating forces, pressure gauges with diaphragms are particularly suitable for connection of electric alarm contacts. Electric alarm contacts open and close circuits in response to the position of the pressure gauge pointer.

Magnetic snap-action electric alarm contacts are used in adverse operating conditions. The high contact pressure and the selection of various contact materials result in reliable and cost-effective solutions, above all when high currents have to be switched. Signal output does however take place slightly in advance of or lagging slightly behind the motion of the actual value pointer.

If the electrical switching capacities of the alarm contacts are exceeded or not reached (see DE 1231), **a relay** (DE 1230) **is to be used to provide an appropriate current rating.**

Inductive electric alarm contacts have an almost unlimited service life, as the signal is switched without physical contact. Closing or opening takes place without any feedback effect on the measuring system, precluding any signal lead or lag. A corresponding control unit is always required for operation. Units with inductive contacts may be operated in areas with potentially explosive atmospheres, assuming compliance with existing specifications.

Features

- o Limit value signalling by magnetic snap-action or inductive contacts
- o With SVA-amplifier suitable for SPS control units
- o Up to four alarm contacts possible
- o Can be used under Ex-conditions with inductive alarm contacts
- o Liquid dampening provides vibration-free display
- o Up to 10-fold overload capacity
- o Protection class IP 54 resp. IP 65

Ranges

0 ... 25 mbar to 0 ... 40 bar

Applications

Mechanical engineering,

plant and apparatus construction,

Building services

Model : P1651, P1831, P1653, P1833, P1661, P1841, P1663, P1843

Technical data

Model	P1651	P1831	P1653	P1833	P1661	P1841	P1663	P1843	Options
Nominal size	100				160				
Symbol									
Contact type	Magnetic snap action		Inductive		Magnetic snap action		Inductive		
Number of contacts *	1 to 4 depending on measuring range		1 to 3 depending on measuring range		1 to 4 depending on measuring range		1 to 3 depending on measuring range		
Liquid filling	---	Ester oil	---	Ester oil	---	Ester oil	---	Ester oil	
Electrical connection	Cable connector right hand side 6 screw terminals + PE, cross section of the conducting wire 2.5 mm^2 Screw type conduit fitting M20x1.5, outgoing downwards								back (withhout pressure relief opening)
Accuracy class	Class 1.6 according EN 837-3 Class 2.5 with liquid filling and ranges from 0...25 to 0...100 mbar								
Ranges	0...25 mbar to 0...250 mbar : flange ∅ 160 mm 0...0.4 bar to 0...40 bar : flange ∅ 100 mm negative or positive or negative and positive gauge pressure								
Application	Constant load : up to full scale value Alternating load : 0.9 x full scale vaue								
Overload protection	≤ 0.4 bar : 5 x full scale value > 0.4 bar to ≤ 2.5 bar : 3 x full scale value > 2.5 bar : 5 x full scale value, max. 40 b ar								overloadable: 10x full scale value, max. 40 bar. vacuum proof to -1 bar
Case	Stainless steel								
Upper flange	Steel, black								
Connection with lower flange - Position	steel, black bottom, radial								
- Thread	G1/2 B, SW 22								other threads or open flanges on request
Bezel	Stainless steel, bayonet ring								
Window	Plexiglass								Laminated safety glass
Dial	Aluminium, white, scale and lettering black								Dual scale
Pointer	Aluminium, black								
Movement	copper-alloy, bearing parts German silver								
Elastic measuring element	≤ 2.5 bar : stainless steel 1.4571 > 2.5 bar : stainless steel (Duratherm 600)								
Seal to pressure chamber and filled internal chamber	NBR (Perbunan)								FPM (Seals made of Viton ®) [1] or PTFE
Temperatures - medium - ambient	Tmin. -20°C , Tmax. 100° C Tmin. -20°C , Tmax. 60° C								
Temperature drift	0.5% / 10K deviation of normal temperature +20°C								
Protection EN 60 529/ IEC 259	IP 54	IP 65	IP 54	IP 65	IP 54	IP 65	IP 54	IP 65	
Components in contact with medium	see process connection with lower flange and elastic measuring element								Special materials on request
Orifice									ø0.4 ; ø0.8

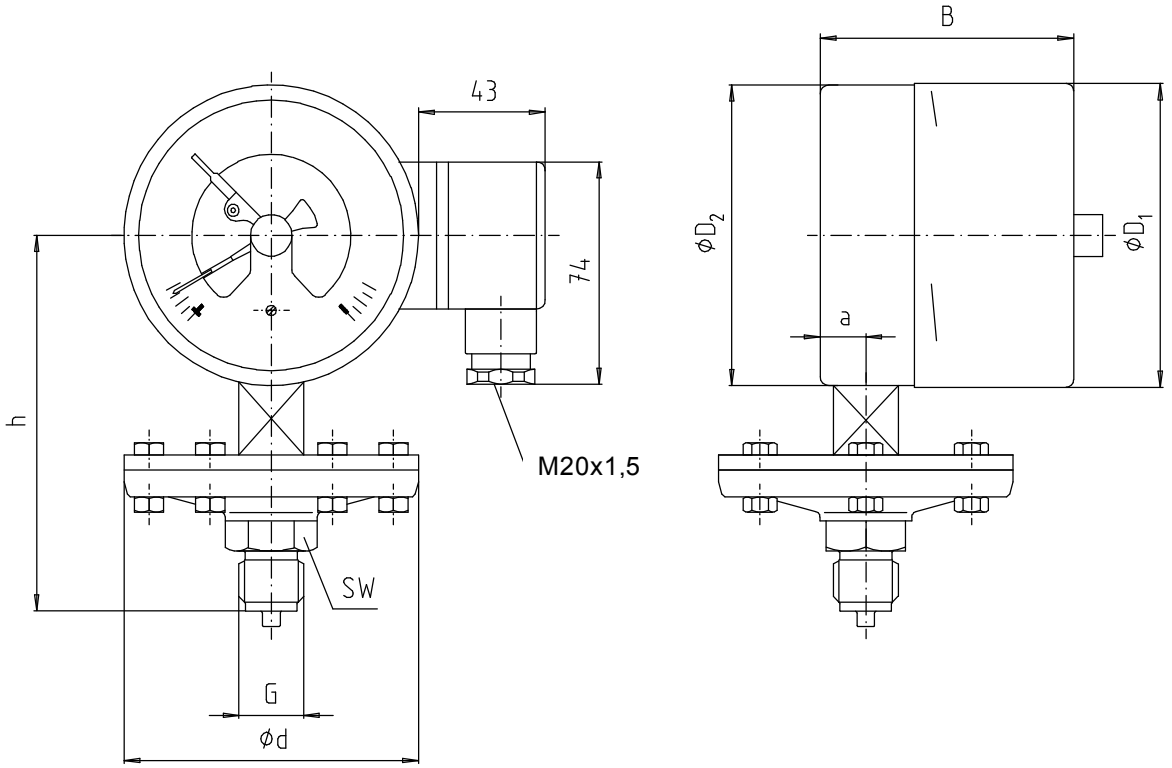
[1] Viton ® fluoroelastomer, a product of DuPont Dow Elastomers

*** Max. number of contacts**

Measuring range	Magnetic snap-action contact	Inductive contact
25 mbar	2	2
40 mbar to 160 mbar	3	3
above 250 mbar	4	3

See data sheet DE 1231 for electrical data.
See data sheet DE 1230 for electrical accessories.

Dimensions



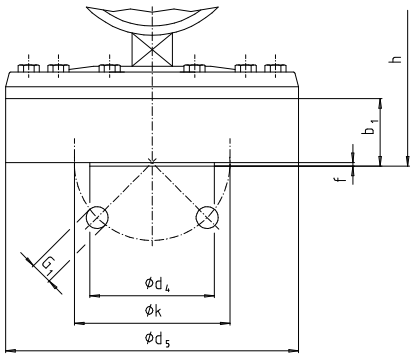
Size (mm)	Ranges [bar]	Dimension [mm]								
		∅ d	a	B ± 1 with 1+2 cont.	B ± 1 with 3 cont.	D_1	D_2	G	h ± 2	SW
100	≤ 0,25	160	15,5	88	96	101	99	G 1/2B	117	22
160						161	159		149	22
100	> 0,25	100	15,5	88	96	101	99	G 1/2B	117	22
160						161	159		149	22

Size (mm)	Ranges [bar]	contact	weight [kg] approx	
			unfilled with	filled with
100	≤ 0,25	1+2 - contact	3,7	4,2
		3 - contact	3,7	4,2
160	≤ 0,25	1+2 - contact	4,6	5,8
		3 - contact	4,7	6,0
100	> 0,25	1+2 - contact	2,2	2,7
		3 - contact	2,2	2,7
160	> 0,25	1+2 - contact	3,1	4,3
		3 - contact	3,1	4,4

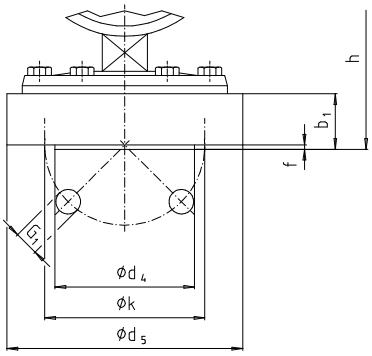
Thread to EN 837 -3

Dimensions

Optional DIN-flange connection DN 25 , PN 10 to PN 40



Ranges 0 ... 25 to 0 ... 250 mbar

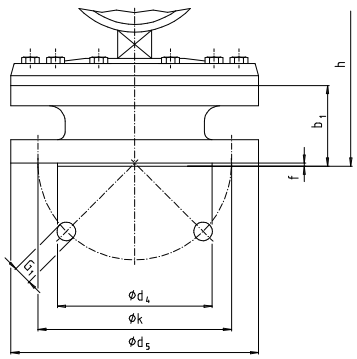


Ranges 0 ... 0.4 to 0 ... 40 bar

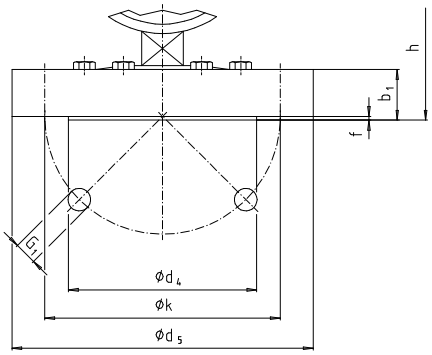
Size (mm)	flange DIN DN 25 PN 10 bis 40 1)	Dimension [mm]							Weight 2) [kg] approx
		d_5	k	d_4	b_1	f	G_1	h ± 2	
100	≤ 0,25 bar	160	85	68	36	2	4 x M 12	122	3,0
160								152	3,0
100	> 0,25 bar	115	85	68	25	2	4 x M 12	111	0,9
160								141	0,9

Other dimensions as standard version

Optional DIN-flange connection DN 50, PN 10 to PN 40



Ranges 0 ... 25 to 0 ... 250 mbar



Ranges 0 ... 0.4 to 0 ... 40 bar

Size (mm)	flange DIN DN 50 PN 10 bis 40 1)	Dimension [mm]							Weight 2) [kg] approx
		d_5	k	d_4	b_1	f	G_1	h ± 2	
100	≤ 0,25 bar	165	125	102	54	3	4 x ∅ 18	140	2,6
160								170	2,6
100	> 0,25 bar	165	125	102	30	3	4 x ∅ 18	106	2,5
160								136	2,5

Other dimensions as standard version

1) Suitable for mounting to flange acc. to DIN, sealing face form D to DIN 2526.
2) The listed weights are additional mass, which must be added to the weight of the standard version (connection G 1/2 B acc. to DIN 16 288).

Modifications reserved