

Diaphragm Safety Pressure Gauges

With horizontal diaphragm,
stainless steel case with bayonet ring

PSCh
PSChG

Information on advantages, application ranges, temperature resistance, metrological features and pressure ranges of all available diaphragm pressure gauges with horizontal diaphragm can be found in our model overview 3000.

Application

Pressure gauges with horizontal diaphragm provide the possibility to find a suitable version even for difficult media, such as aggressive, contaminated or viscous liquids. The high-quality bayonet ring case made of stainless steel 304 (1.4301) is particularly suitable for applications in which a case sealing (outdoor installations, wet operation) and/or the chemical resistance is essential. The safety version offers increased protection for the user.

Standard Versions

Accuracy (DIN EN 837-3)

Class 1.6

Class 2.5 for version with protection foil
for PSChG with compound ranges ≤ 250 mbar

Case

Bayonet ring case made of stainless steel 304 (1.4301) (ventilated)

Case Filling

For model PSChG: glycerin

Degree of Protection (DIN EN 60 529/IEC 529)

PSCh IP54

PSChG IP65

Nominal Case Size

100, 160 mm (4, 6")

Wetted Parts

Ordering code	Lower measuring flange	Sealing	Diaphragm
- 3	stainless steel 316L	FPM	0–10 mbar to 0–40 bar
- 5 ¹⁾	stainless steel 316L, PTFE lining	PTFE	0–40 mbar to 0–40 bar

stainless steel 316L (1.4404), Duratherm (not for NACE conformity) or Inconel

Pressure Ranges (DIN EN 837-3)

PSCh 0–10 mbar to 0–40 bar
0–40 mbar to 0–40 bar for version PTFE foil

PSChG 0–160 mbar to 0–40 bar
also corresponding vacuum and compound ranges

Upper Measuring Flange (Stainless Steel 1.4301)

Pressure ranges ≤ 250 mbar = measuring flange \varnothing 160 mm
Pressure ranges ≥ 400 mbar = measuring flange \varnothing 100 mm

Overpressure

Up to 5 times overrange protected, max. 40 bar

Process Connection

G $\frac{1}{2}$ B bottom connection

Window

Laminated safety glass



Movement

Stainless steel

Dial

Aluminum white, scale black

Pointer

Aluminum black

Safety Features

Safety version similar to S3 according to DIN EN 837-1, with break-proof solid front made of stainless steel 304 (1.4301) between measuring unit and dial, as well as blow-out back; when pressure increases in the case, the entire case back separates, allowing full relief

Ventilation

Model PSChG: direct ventilation at the top of the case

Special Versions and Options

- Increased orifice \varnothing 10 mm for version – 3
- Other process connections upon request
- Special position of installation or connection upon request
- Various protection foils, e.g. tantalum or fine silver, from 160 mbar onwards, vacuum-proof upon request
- Other materials for lower measuring flange upon request
- Measuring flange \varnothing 160 mm from 0–10 mbar to 0–250 mbar overrange protected up to 4 bar due to metallic inserts
- Measuring flange \varnothing 100 mm from 0–0.4 bar to 0–40 bar overrange protected up to 100 bar due to metallic inserts
- Diaphragm gauges with even higher overrange protection upon request
- Accuracy class 1.0 or 0.6 upon request
- Versions for higher or lower temperatures upon request

Ordering Information

Please specify in your order:

Basic model	PSCh (unfilled) or PSChG (filled)
Nominal case size	100 or 160 mm
Wetted parts	– 3 or – 5
Pressure range	according to DIN EN 837-3 e.g. 0–4 bar or 0–250 mbar
Process connection	G $\frac{1}{2}$ B
Specifics	see above

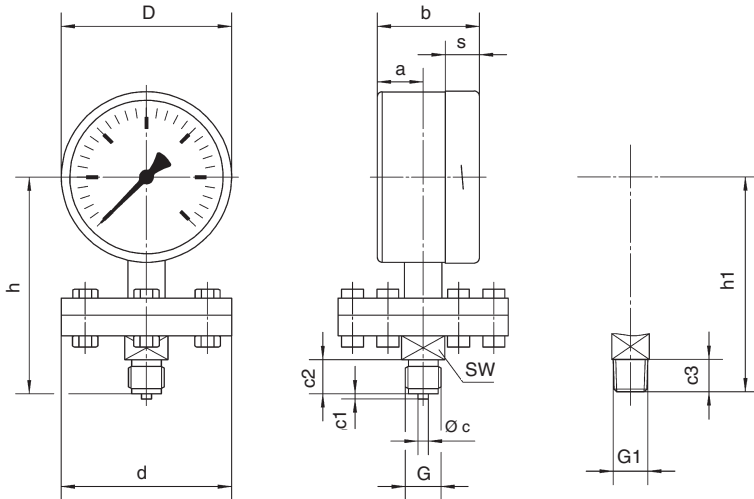
Example: PSCh 100 – 3, 0 – 60 mbar, G $\frac{1}{2}$ B
PSChG 100 – 5, –1 / +9 bar, $\frac{1}{2}$ " NPT

¹⁾ orifice \varnothing 7 mm

Case Configuration, Flange Connections, Dimensional Data and Weight

Bottom Process Connection

(no additional code letters)



Dimensional Data (mm/inch) and Weights (kg/lb)

case NCS	measuring flange Ø d	a	b	c	c1	c2	c3	D	G	G1	h ^{±2}	h1 ^{±2}	s	SW	(approx.) weight ¹⁾	
															PSCh	PSChG
100 4	100	27	60	6	3	20	19	101	G½ B ½" BSP	½" NPT	127	126	20	22	2.00	2.35
	4														4.41	5.18
	6														3.70	3.95
160 6	100	40	78	0.24	0.12	0.79	0.75	161	G½ B ½" BSP	½" NPT	157	156	0.79	0.87	2.70	3.60
	4														1.57	3.07
	6														6.18	6.14
															9.48	11.24

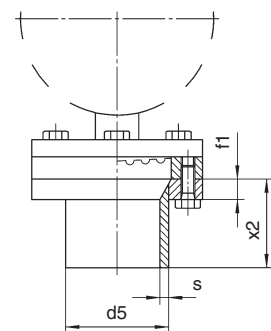
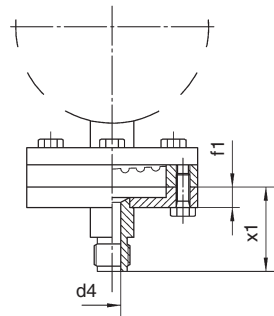
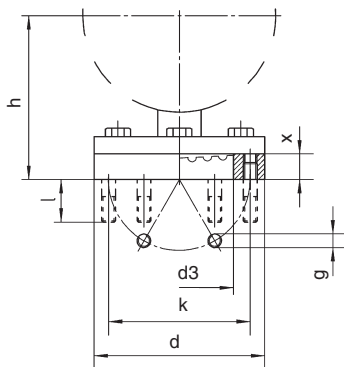
Open Flange 2707a

upon request including stud screws

optionally available, suitable for flange 2707a:

connection flange with thread connection G½ B or ½" NPT with increased orifice

connection flange with welding piece (only in stainless steel 304 (1.4301), for measuring flange Ø 100 mm)



Dimensional Data (mm/inch) and Weights (kg/lb)

measuring flange Ø d	d3	d4	d5 ²⁾	f1	g	h ^{±2}		k	l	x	x1	x2	s	(approx.) weight ¹⁾					
																NCS 100		NCS 160	
						NCS 100	NCS 160							PSCh	PSChG	PSCh	PSChG		
100	63.5	10	60.3	12	6 x M8	96	126	83	25	15	46	50	5	1.85	2.20	2.60	3.50		
4	2.5		2.37	0.47				3.27						0.98	0.59	1.97	0.2	4.08	4.85
160	123	0.39	-	-	8 x M8	3.78	4.96	140	5.51	-	-	-	-	2.75	3.00	3.60	4.40		
6	4.84		-	-				5.51						6.61	7.94	9.7			

¹⁾ The weights of the devices deviate considerably for different pressure ranges and materials, therefore only vague values can be given.

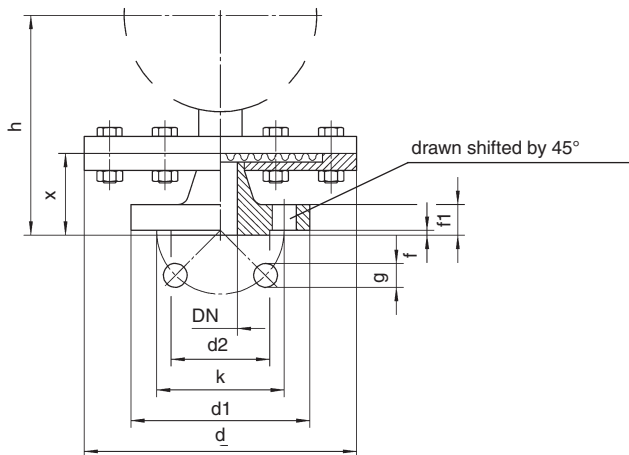
²⁾ other tube diameters upon request

Case Configuration, Dimensional Data and Weight

Open Flanges According to DIN EN 1092-1, PN 10 to PN 40

measuring flange $\varnothing d = 160$ mm

suitable for mounting to counter flanges according to DIN EN 1092-1 type 11 (complies with the version according to former DIN 2633, 2635)



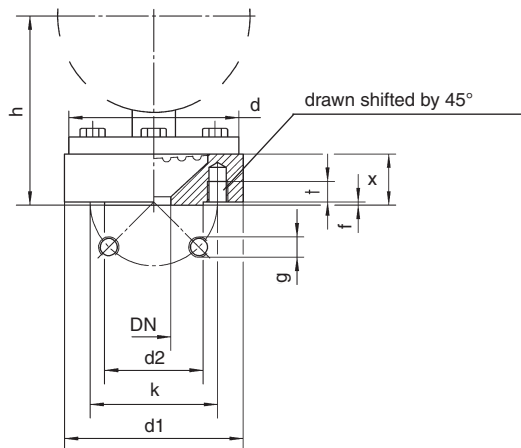
Dimensional Data (mm/inch) and Weights (kg/lb)

measuring flange $\varnothing d$	DN	d1	d2	f	f1	g	h^{z2}		k	x	(approx.) weight ¹⁾			
							h^{z2}				NCS 100		NCS 160	
							NCS 100	NCS 160			PSCh	PSChG	PSCh	PSChG
160 6	15	95	45	2	16	4 x 14	127	157	65	46	4.25	4.55	4.90	5.75
	0.59	3.74	1.77		0.63		4 x 0.55	5	6.18	2.56	1.81	9.37	10.03	10.8
	20	105	58		18	4 x 18	129	159	75	48	4.65	4.95	5.35	6.20
	0.79	4.13	2.28		0.71		4 x 0.71	5.08	6.26	2.95	1.89	10.25	10.91	11.79
25	115	68	20	4 x 0.71	137	167	85	56	4.70	5.00	5.45	6.30		
0.98	4.53	2.68	0.79		5.39	6.57	4.92	2.2	10.36	11.02	12.02	13.89		
50	165	102	20		137	167	125	56	6.15	6.45	6.85	7.70		
1.97	6.5	4.02	0.79		5.39	6.57	4.92	2.2	13.56	14.22	15.1	16.98		

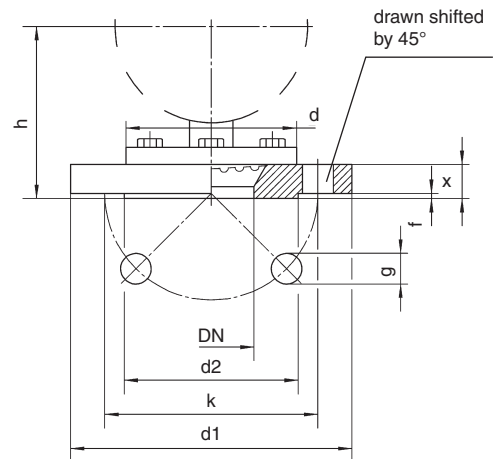
Open Flanges DN 15, 20, 25 and 50, PN 10 to PN 40

measuring flange $\varnothing d = 100$ mm

DN 15, 20 and 25



DN 50



Dimensional Data (mm/inch) and Weights (kg/lb)

measuring flange $\varnothing d$	DN	d1	d2	f	g	h^{z2}		k	t	x	(approx.) weight ¹⁾			
						h^{z2}					NCS 100		NCS 160	
						NCS 100	NCS 160				PSCh	PSChG	PSCh	PSChG
100 4	15	99	45	2	4 x M12 ²⁾	106	136	65	12	25	2.55	2.85	3.15	4.00
	0.59	3.4	1.77			4.17	5.35	2.56		0.98	5.62	6.28	6.94	8.82
	20	105	58		103	133	75	0.47		2.60	2.90	3.20	4.05	
	0.79	4.13	2.28		4.06	5.24	2.95			0.87	5.73	6.39	7.05	8.93
25	115	68	4 x \varnothing 18	85	4 x \varnothing 0.71	101	131	85	22	3.05	3.35	3.65	4.50	
0.98	4.53	2.68	4 x \varnothing 0.71	3.35		0.87	6.72	7.39	8.05	9.92				
50	165	102	101	131	125	20	3.85	4.15	4.45	5.30				
1.97	6.5	4.02	3.98	5.16	4.92	0.79	8.49	9.15	9.81	11.68				

¹⁾ The weights of the devices deviate considerably for different pressure ranges and materials, therefore only vague values can be given.

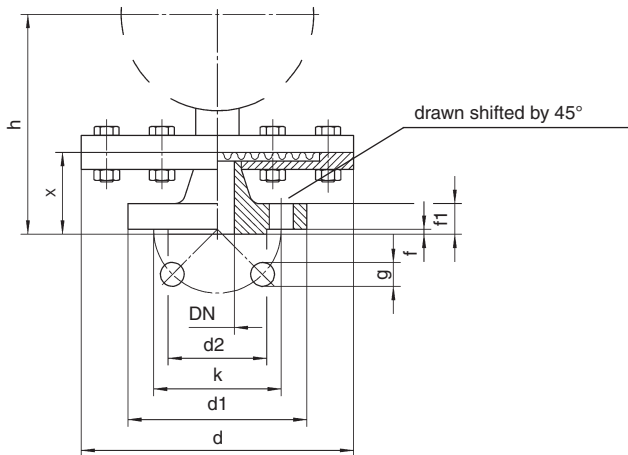
²⁾ upon request with stud screws M 12x35

Case Configuration, Dimensional Data and Weight

Open Flanges According to ASME, 1/2", 1" and 2", PN 150 lb/sq.in.

measuring flange $\varnothing d = 160$ mm

ASME B 16.5 RF



Dimensional Data (mm/inch) and Weights (kg/lb)

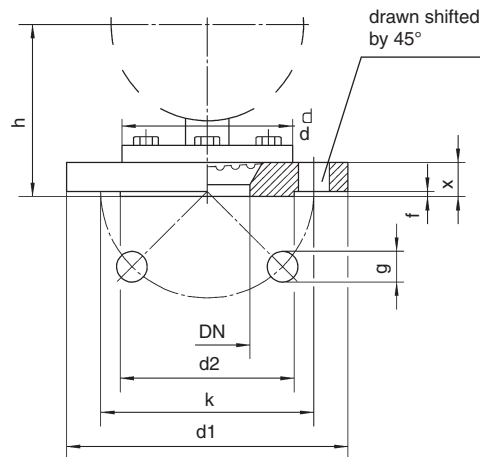
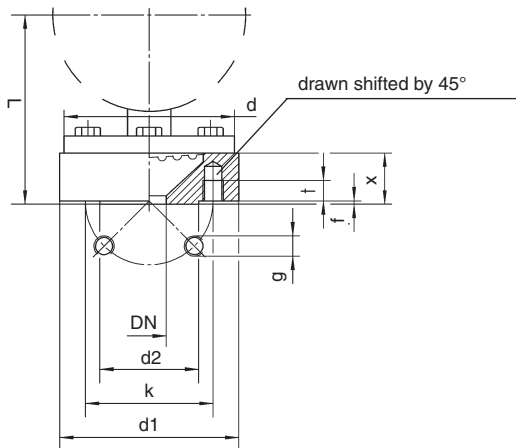
measuring flange $\varnothing d$	DN	d1	d2	f	f1	g	h^{22}		k	l	(approx.) weight ¹⁾					
							NCS 100				NCS 160		NCS 100		NCS 160	
							PSCh	PSChG			PSCh	PSChG				
160 6	1/2"	88.9 3.5	34.9 1.37	1.6 0.06	11.1 0.44	16	137 5.39	167 6.57	60.3 2.37	56 2.2	3.75 8.27	4.00 8.82	4.40 9.7	5.20 11.46		
	1"	108 4.25	50.8 2		14.3 0.56	0.63	145 5.71	175 6.89	79.4 3.13	64 2.52	4.35 9.59	4.60 10.14	5.05 11.13	5.85 12.9		
	2"	152 5.98	92.1 3.63		19 0.75	19 0.75	153 6.02	183 7.2	121 4.76	72 2.83	6.35 14	6.60 14.55	7.05 15.54	7.85 17.31		

Open Flanges According to ASME, 1/2", 1" and 2", PN 150, 300 or 600 lb/sq.in.

measuring flange $\varnothing d = 100$ mm

DN 1/2" and 1"

DN 2"



Dimensional Data (mm/inch) and Weights (kg/lb)

measuring flange $\varnothing d$	DN	d1 (lb/sq.in.)		f (lb/sq.in.)		g 4 x UNF-2B	h^{22} 4)		k (lb/sq.in.)		t	x (lb/sq.in.)			(approx.) weight ¹⁾						
		150	300 600	150	300		600	at 300 lb/sq.in.		150		300 600	150	300	600	NCS 100		NCS 160			
		PSCh	PSChG	PSCh	PSChG		PSCh	PSChG	PSCh	PSChG											
100 4	1/2"	99 3.9	34.9 1.37	1.6 0.06	6.4 0.25	1/2" - 20	111	141	60.3	66.7	15	30	35	2.70	3.05	3.30	4.30				
	1"	108 4.25	124 4.88				50.8 2	0.06	0.25	4.37		5.55	79.4 3.13	88.9 3.5	0.59	1.18	1.38	5.95	6.72	7.28	9.48
	2"	152 5.98	165 6.5				92.1 3.63	103 4.06	133 5.24	121 4.76		127 5	19.1 0.75	22.2 0.87	32 1.26	3.90	4.15	4.50	5.30		

Several other connection flanges are available upon request, e.g. male or female thread G 1, groove union nut DIN 11 851.

¹⁾ The weights of the devices deviate considerably for different pressure ranges and materials, therefore only vague values can be given.

²⁾ 150 lb/sq.in.: 1/2" - 20 UNF-2B

³⁾ 300 and 600 lb/sq.in.: 8 x \varnothing 19

⁴⁾ 150 and 600 lb/sq.in.: difference as of dimension "x"