

Differential Pressure Gauge With Diaphragm Capsule

Bayonet ring case stainless steel

DiKPCh

Application

Differential pressure gauges with diaphragm capsule are suitable for the measurement of particularly low differential pressures of gaseous, dry and non-contaminated media.

Measuring Principle and Design

A diaphragm capsule measuring system is built into a pressure-tight case. The process connections are marked with “+” and “-”. The higher “+” pressure enters the diaphragm capsule while the lower “-” pressure is led into the pressure-tight case. Thus, the diaphragm capsule system is pressurised from both the inside and the outside. The differential pressure is directly indicated with a pointer. Since the “-” pressure enters the case, medium-resistance of the case and the inner parts has to be ensured.

The devices are suitable for static pressures up to max. 400 mbar (NCS 100) or 250 mbar (NCS 160) when pressurised on both sides, as special version up to 600 mbar, and up to the full scale value when pressurised on one side. The “+” and/or “-” sides can be provided for higher overload capabilities (see “Options”).



Standard Versions

Accuracy (DIN EN 837-3)
Class 1.6

Case
With tight bayonet ring stainless steel 304 (1.4301)

Degree of Protection (DIN EN 60 529/IEC 529)
IP66

Nominal Case Sizes
100, 160 mm (4, 6")

Wetted Parts

Type – 3: connections: stainless steel 316L
restrictor screw in the “+” port
diaphragm capsule: stainless steel 316Ti
sealings: FPM

Type – 1: connections: brass
restrictor screw in the “+” port
diaphragm capsule: CuBe alloy
sealings: NBR

Case Configuration

Connection: screwed
Position
of the connection: - bottom connection, parallel one behind the other (**ph**)
- back connection, one above the other (**r**)
- bottom connection, 30° angle (**w**)
Mounting device: - without
- back flange for surface mounting (**Rh**)
- front flange for panel mounting (**Fr**)

Pressure Ranges (DIN EN 837-3)

DiKPCh 160 0 – 2.5 to 0 – 250 mbar (0 – 1 to 0 – 100 "WC)
DiKPCh 100 – 1 0 – 2.5¹⁾ to 0 – 400 mbar (0 – 1 to 0 – 160 "WC)
DiKPCh 100 – 3 0 – 16 to 0 – 400 mbar (0 – 6 to 0 – 160 "WC)

Process Connection
2 x G ½ B
2 x ¾ hose connections

Window
Polycarbonate

Movement
Stainless steel for type – 3
Brass/German silver for type – 1

Dial
Aluminum white, scale black

Pointer
Aluminum black

Zero Adjustment
Stainless steel, front side for type – 3
Aluminum, front side for type – 1

Pressure Limitations
Differential pressure: max. full scale value
Static pressure: max. 400 mbar for NCS 100
max. 250 mbar for NCS 160

Temperature Limitation
Ambient temperature: –20 to +60 °C (–4 to +140 °F)
Storage temperature: –40 to +70 °C (–40 to +158 °F)
Medium temperature: max. +100 °C (+212 °F)

Temperature Caused Error
In accordance with DIN EN 837-1, the additional error per 10 °C (18 °F) temperature deviation from the reference temperature +20 °C (+68 °F) (based on the measuring system) can be up to 0.4 %.

¹⁾ scale 180 angular degrees

Options and Special Versions

Ordering Information, Standard Pressure Ranges, Options

See page 4

Options

- Connection thread M20x1.5, ½" NPT, hose connections ¾ for construction types phFr or rFr
- Pressure ranges
 - 0 – 400 mbar at static pressure up to 400 mbar for NCS 160
 - 0 – 600 mbar at static pressure up to 600 mbar for NCS 100
- One-sided overload capability (overrange protection) up to max. 400 mbar for NCS 100 / max. 250 mbar for NCS 160
 - “+” side 3-fold
 - “+” side 10-fold (from 0 – 40 mbar)
 - “-” side 3-fold

Special Versions Upon Request

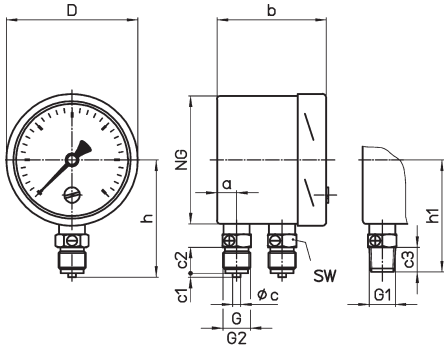
- Other connection threads
- Special scales

Case Configurations, Code Letters, Dimensional Data and Weight

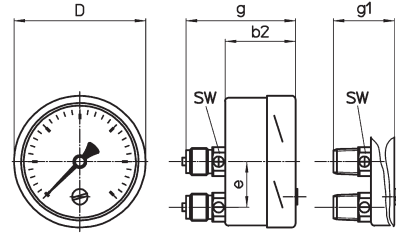
Bottom Connection Parallel One Behind the Other	Back Connection One Above the Other	Bottom Connection 30° Angle ½ Hose Connections
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without mounting device

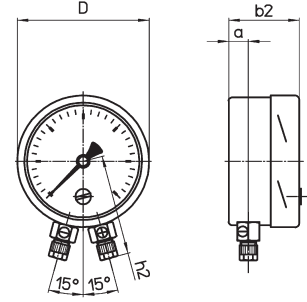
code letters **ph**



code letter **r**

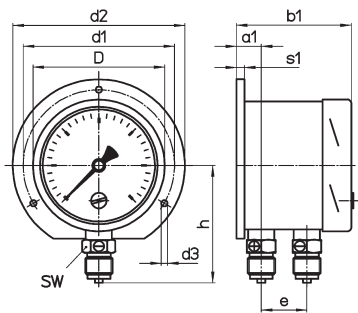


code letter **w**

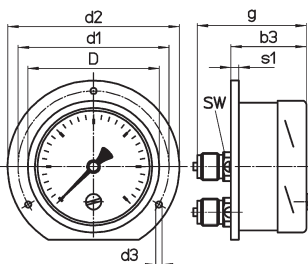


with back flange for surface mounting

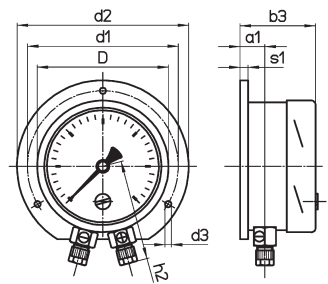
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code letters **rRh**

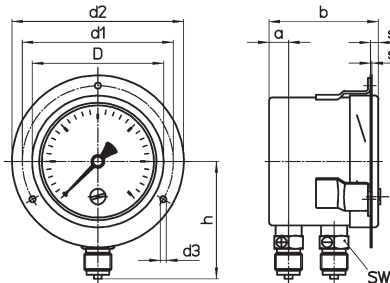


code letters **wRh**

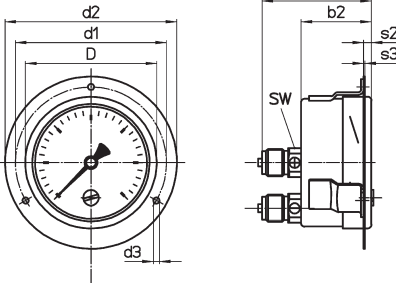


with front flange for panel mounting

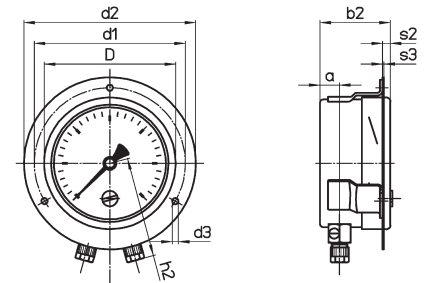
code letters **phFr**



code letters **rFr**



code letters **wFr**



brackets welded to the case and removable front flange

Dimensional Data (mm/inch) and Weight (kg/lb)																		
NCS	a	a1	b	b1	b2	b3	c	c1	c2	c3	D	d1	d2	d3	e	G	G1	G2
100 4"	15	19	84	88	54	58	6	3	20	19	101 3.98	116 4.57	132 5.2	4.8 0.19	35	G ½B	½" NPT	M20x1.5
160 6"	0.59	0.75	3.31	3.46	2.13	2.28	0.24	0.12	0.59	0.75	161 6.34	178 7.01	196 7.72	5.8 0.23	1.38			

g	g1	h ⁻¹	h1 ⁻¹	h2 ⁻¹	s1	s2	s3	SW	approx. weight ¹⁾
84	83	90	86	86	6	6	1	22	0.74
3.31	3.27	3.54	3.39	3.39	0.24	0.24	0.04	0.87	1.63
		120	116	107					1.30
		4.72	4.57	4.21					2.87

¹⁾ data for version without mounting device

