

# Differential Pressure Gauges

**Capsule type for low pressure**  
**Bayonet ring case stainless steel**

Class 1.6 NCS 100 (4") Model **DiKPCh**  
 160 (6")

## Application

Differential pressure gauges with diaphragm capsules are suitable for measurement of very low differential pressures of gaseous, dry and clean media.

## Measuring Principle and Version

A diaphragm capsule measuring unit 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 is pressurised from the inside and from the outside. The differential pressure is indicated directly by a pointer. As the "-"-pressure enters the case, the medium-resistance of the case and of the inner parts has to be ensured.

At double-sided pressurisation these pressure gauges are suited for static pressures up to max. 400 mbar [NCS 100 (4")] resp. 250 mbar [NCS 160 (6")], in special configurations up to 600 mbar, at one-sided pressurisation max. to the full scale value. The instruments can be manufactured overrange protected for one-sided overstressing (see under "special configurations").

## Nominal Case Sizes (NCS)

100 (4"), 160 (6")

## Accuracy Class (EN 837-3)

1.6 (indication accuracy better than  $\pm 1.6$  % of full scale value)

## Pressure Ranges (EN 837-3)

NCS 160: 0 – 2.5 to 0 – 250 mbar,  
 0 – 1" to 0 – 100" WC  
 NCS 100: Version –1: 0 – 2.5<sup>1)</sup> to 0 – 400 mbar,  
 0 – 1" to 0 – 160" WC  
 Version –3: 0 – 16 to 0 – 400 mbar,  
 0 – 6" to 0 – 160" WC

## Pressure Limitations

Differential pressure: max. full scale value (f.s.)  
 Static pressure: max. 400 mbar NCS 100 (4"),  
 max. 250 mbar NCS 160 (6")

## Temperature Resistance

Reference temperature: +20 °C (+68 °F)  
 Ambient temperature max.: -20 °C to +60 °C (-4 °F to +140 °F)  
 Medium temperature max.: +70 °C (+158 °F)

## Temperature Caused Error

If the operating temperatures of the measuring system (measuring unit and movement) deviate from the reference temperature, additional deviations in the indication occur. According to EN 837-1 these can amount to  $\pm 0.6$  % of the span per each 10 K (18 °F).

## Protection Type (EN 60 529/IEC 529)

IP 66

## Standard Version

### Connections

2 x G 1/2 B (1/2" BSP) Version **ph**: bottom connection  
 parallel one behind the other  
 Version **r**: back connection  
 one above the other  
 2 x 8/6- tube Version **w**: bottom connection in 30° angle  
 connections

### Case and Ring

Stainless steel 1.4301 (304), bayonet ring tight

### Window

Polycarbonate

### Scaling

Black figures on white background



## Wetted Parts:

Version –1 Socket: brass / restrictor screw  
 in + - channel  
 Diaphragm capsule: copper / beryllium alloy  
 Gaskets: NBR  
 Movement: brass/German silver  
 Pointer: aluminum black  
 Zero adjustment: aluminum, frontside  
 Dial: aluminum white  
 Version –3 Socket: 316 SS / restrictor screw  
 in + - channel  
 Diaphragm capsule: 316 SS  
 Gaskets: FPM  
 Movement: stainless steel  
 Pointer: aluminum black,  
 protection lacquer  
 Zero adjustment: stainless steel, frontside  
 Dial: aluminum white,  
 protection lacquer

## Special Versions among others

- Connection threads M20x1.5, 1/2" NPT, tube connections 8/6 for versions phFr or rFr, others upon request
- Special scales
- Pressure ranges to 0 – 600 mbar, at static pressure up to 600 mbar, window polycarbonate
- One-sided overload (overrange protection):  
**0 – 2.5 to 0 – 25 mbar:** "+" and "-" sides 3-fold f.s.  
**≥ 40 mbar:** "+"-side 10-fold f.s.,  
 "-"-side 3-fold f.s.,  
 both sides max. 400 mbar for NCS 100 (4"),  
 max. 250 mbar for NCS 160 (6")

## Ordering Information:

Basic model/NCS: **DiKPCh 100** or **DiKPCh 160**  
 Ordering code  
 wetted parts: – 1 or – 3 (cf. above)  
 Code letters for  
 case configuration: **ph, phRh, phFr,**  
 (compare overleaf) **r, rRh, rFr**  
**w, wRh, wFr**  
 Pressure range: e.g. 0 – 25 mbar or 0 – 250 mbar (EN 837-3)  
 Process connection: **G 1/2 B (1/2" BSP)** for versions ph... and r...,  
**8/6** tube connection for versions w...,  
 others see above  
 Special configurations:(see above)

### Examples for ordering information:

- DiKPCh 100 – 1, rFr, 0 – 250mbar, G 1/2 B
- DiKPCh 160 – 3, ph, 0 – 40 mbar, 1/2" NPT

<sup>1)</sup> for Model 100 – 1 with pressure range 0 – 2.5 mbar (0 – 1" WC): Scale over 180°



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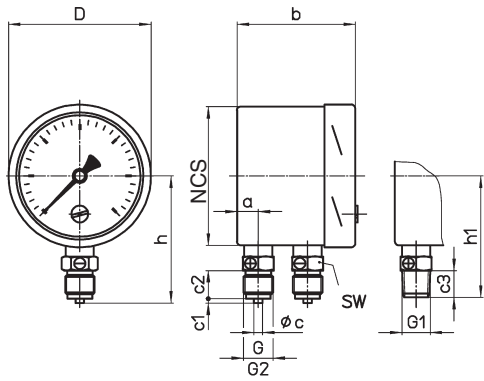


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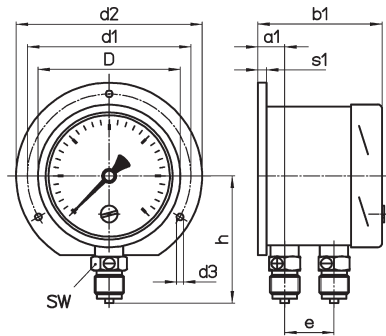
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# Case Configurations, Code Letters, Dimensional Data and Weight

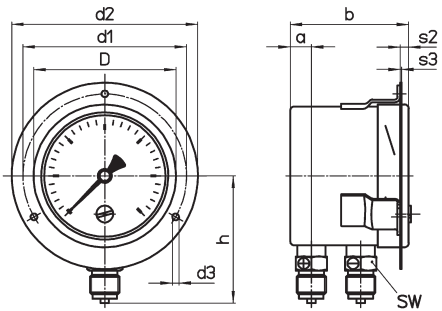
Bottom connections  
in parallel one behind the other,  
code letters **ph**



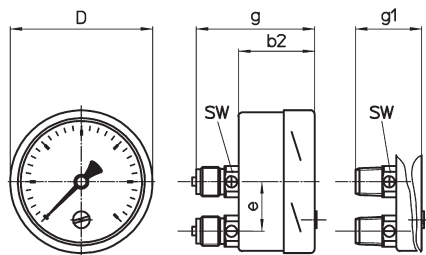
Bottom connections parallel one behind the other, rear mounting flange,  
code letters **phRh**



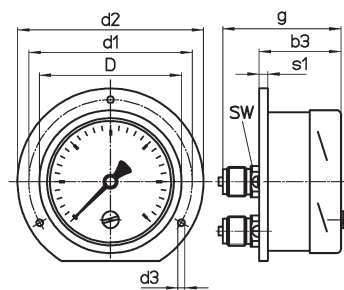
Bottom connections parallel one behind the other, front mounting flange,  
code letters **phFr**



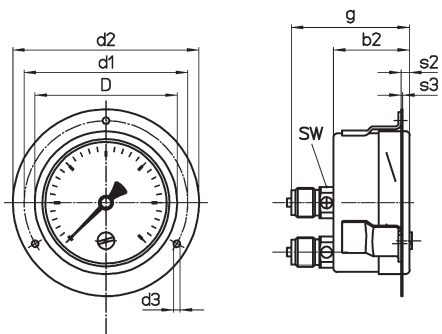
Back connections  
one above the other,  
code letter **r**



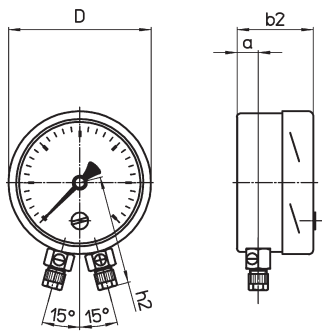
Back connections one above the other, rear mounting flange,  
code letters **rRh**



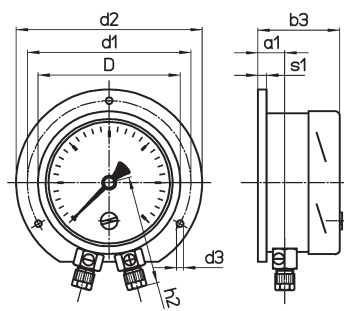
Back connections one above the other, front mounting flange,  
code letters **rFr**



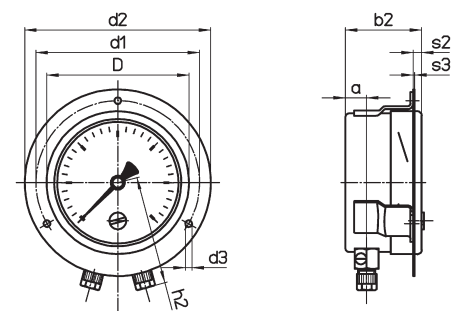
Bottom connections in 30° angle,  
8/6 tube connections,  
code letter **w**



Bottom connections in 30° angle,  
8/6 tube connections,  
rear mounting flange,  
code letters **wRh**



Bottom connections in 30° angle,  
8/6 tube connections,  
front mounting flange,  
code letters **wFr**



Case configurations **ph Fr**, **rFr** and **wFr** =  
mounting brackets welded to the case and a  
separate cover 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
100 4"	15	19	84	88	54	58	6	3	20	19	101	116	132	4.8	35
160 6"	.59	.75	3.31	3.46	2.13	2.28	.24	.12	.79	.75	6.34	7.01	7.72	.19	1.38

NCS	g	g1	G	G1	G2	h	h1	h2	s1	s2	s3	SW	Weight (approx.)
100 4"	84	83	G½B	½"NPT	M20x1.5	90	86						0.74
						3.54	3.39					22	1.63
160 6"	3.31	3.27	½"BSP	½"NPT	M20x1.5	120	116	107	.24	.04		.87	1.30
						4.72	4.57	4.21					2.87