

# 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 and as special version up to 600 mbar. When pressurised on one side, they are suitable up to the full scale value. 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 60529 / IEC 60529)  
IP66

**Nominal Case Size**  
100, 160 mm (4, 6")

### Wetted Parts

Type – 3 connections	stainless steel 316L
	restrictor screw in the "+" port
diaphragm capsule sealings	stainless steel 316Ti
	FKM

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

### Case Configuration

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

### Pressure Range (DIN EN 837-3)

DiKPCh 160	0 – 2.5 to 0 – 250 mbar (0 – 1 to 0 – 100 inH <sub>2</sub> O)
DiKPCh 100 – 1	0 – 2.5 <sup>1)</sup> to 0 – 400 mbar (0 – 1 to 0 – 160 inH <sub>2</sub> O)
DiKPCh 100 – 3	0 – 16 to 0 – 400 mbar (0 – 6 to 0 – 160 inH <sub>2</sub> O)



### 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 Limitation

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

### Temperature Resistance

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 837-3, 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 0.6 %.

<sup>1)</sup> scale 180 angular degrees

## Options and Special Versions

---

### Ordering Information, Standard Pressure Ranges, Options

See page 4

### Further 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

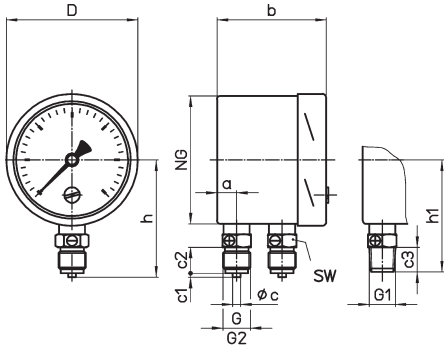
- Other connection threads
- Special scales

# Case Configurations, Code Letters, Dimensional Data and Weight

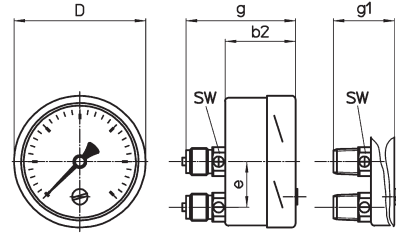
Bottom Connection Parallel One Behind the Other	Back Connection One Above the Other	Bottom Connection 30° Angle ¾ Hose Connections
--	--	---

without mounting device

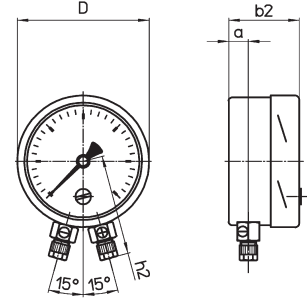
code letters **ph**



code letter **r**

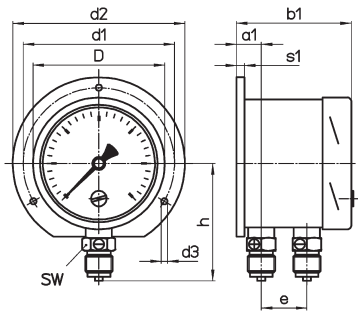


code letter **w**

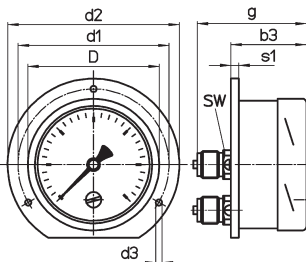


with back flange for surface mounting

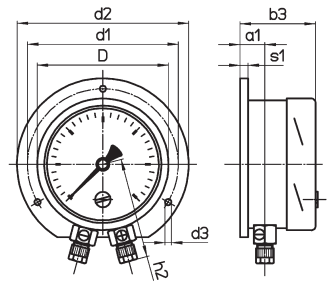
code letters **phRh**



code letters **rRh**

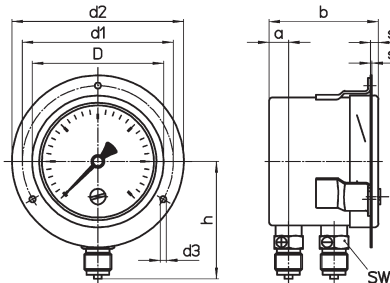


code letters **wRh**

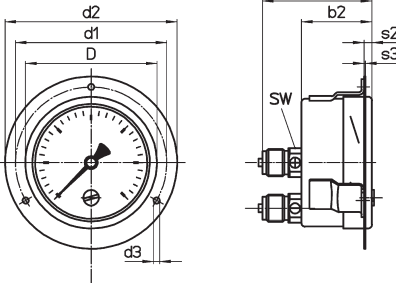


with front flange for panel mounting

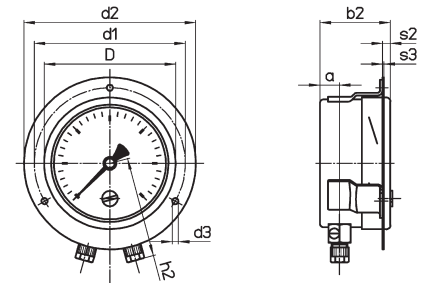
code letters **phFr**



code letters **rFr**



code letters **wFr**



with 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
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 ½ B	½" NPT
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		

G2	g	g1	h <sup>±1</sup>	h1 <sup>±1</sup>	h2 <sup>±1</sup>	s1	s2	s3	SW	approx. weight <sup>1)</sup>
M 20x1.5	84 3.31	83 3.27	90	86	86	6	6	1	22	0.74
			3.54	3.39	3.39					1.63
			120	116	107					1.30
			4.72	4.57	4.21	0.24	0.24	0.04	0.87	2.87

<sup>1)</sup> data for version without mounting device

## Ordering Information, Options

Basic Model	Differential Pressure Gauge With Diaphragm Capsule		DiKPCh
Nominal case size	case Ø 100, 160 mm (4, 6")		<b>100, 160</b>
Wetted material	copper alloy		- 1
	stainless steel		- 3
Case configuration	case / connection	screwed	without code letters
	position of the connection	bottom connection, parallel one behind the other	<b>ph</b>
		back connection, one above the other	<b>r</b>
		bottom connection, 30° angle	<b>w</b>
mounting device	without	without code letters	
	back flange for surface mounting	<b>Rh</b>	
	front flange for panel mounting	<b>Fr</b>	
Pressure ranges	0 – 2.5 mbar	0 – 1 inH <sub>2</sub> O	
	0 – 4 mbar	0 – 1.6 inH <sub>2</sub> O	
	0 – 6 mbar	0 – 2.5 inH <sub>2</sub> O	
	0 – 10 mbar	0 – 4 inH <sub>2</sub> O	
	0 – 16 mbar	0 – 6 inH <sub>2</sub> O	
	0 – 25 mbar	0 – 10 inH <sub>2</sub> O	
	0 – 40 mbar	0 – 16 inH <sub>2</sub> O	<b>e.g. 0 – 40 mbar</b>
	0 – 60 mbar	0 – 25 inH <sub>2</sub> O	
	0 – 100 mbar	0 – 40 inH <sub>2</sub> O	
	0 – 160 mbar	0 – 60 inH <sub>2</sub> O	
	0 – 250 mbar	0 – 100 inH <sub>2</sub> O	
	0 – 400 mbar (NCS 100)	0 – 160 inH <sub>2</sub> O	
	Process connection	standard thread	G ½ B
options		¾ hose connections (for pHFr or rFr)	<b>¾ hose connections</b>
		M 20x1.5	<b>M 20x1.5</b>
		½" NPT	<b>½" NPT</b>

**These options are to be ordered in written form. Please contact us to ensure compatibility when combining options.**

Pressure range	0 – 400 mbar for NCS 160
	0 – 600 mbar for NCS 100
Overrange protection one-sided up to	"+" side 3-fold
	"+" side 10-fold (from 0 – 40 mbar)
	"-" side 3-fold
max. 400 mbar for NCS 100	
max. 250 mbar for NCS 160	

Example

**DiKPCh 100 – 3 ph, 0 – 40 mbar**

**Special Versions:** Please describe your requirements in cleartext!