

Differential Pressure Gauges

with vertical diaphragm / measuring membrane

Class 2.5 NCS 100 Model

DiPsPH

Application

Differential pressure gauges model DiPsPH are suitable for overpressure, underpressure- and differential pressure measurement in the field of industrial measurement technique.

Typical special applications are differential pressure measurements between flow and return flow in heating systems, monitoring of filters, aerators and compressors.

Measuring units and measuring chambers are available as different materials. An adaption of the instruments to different requirements is possible with this.

Construction and Measuring Principle

A robust, non-sensitive membrane, resp. for 10 bar and above a diaphragm measuring system is provided as measuring cell.

In rest position the strengths, that effect the measuring membrane/diaphragm (5) are equalised both-sided. An one-sided strength, which switches the measuring membrane/diaphragm in one direction up to the compensation of the elastic force, arises by the measured pressure or differential pressure.

If overload occurs, the measuring membrane/diaphragm reinforces against metallic installation surfaces. A centrally ordered ram transfers the motion of the measuring membrane/diaphragm on to the movement.

Nominal case size	100 (4")
Accuracy class	2.5 according to EN 837-3
Pressure range	0-400 mbar to 0-25 bar (0-6 psi to 0-300 psi) according to EN 837-3

Max. static operating pressure:	– pressure range ≤ 400 mbar: 6 bar
	– pressure range 0.6 bar: 10 bar
	– pressure range 1 bar: 16 bar
	– pressure range 1.6 bar and above: 25 bar

Overrange protection	one-sided, both-sided- and reciprocal overrange protected up to 25 bar and underpressure protected
Temperature resistance	ambient temp.: -10...+70 °C (14 °F -158 °F) medium temp.: +70 °C max. (158 °F)
Temperature influence	The additional error caused by temperatures differing 10 °C of the reference temperature +20 °C according to EN 837-3 can be up to 0.8%.

Protection type	IP 54 (EN 60529 / IEC 529)
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Standard Version

Wetted parts:

Pressurised chambers with connections	aluminum, painted black 2 x female thread G ¼
Sealings	NBR
Diaphragm	≤ 10 bar measuring membrane NBR ≥ 16 bar diaphragm Duratherm
Inner section	1.4310 (301 stainless steel) and 1.4305 (303 stainless steel)

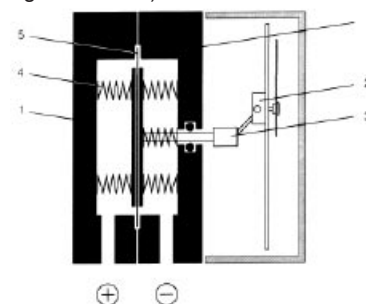
Cover plate	polycarbonate (Makrolon)
Movement	brass
Zero point adjustment	frontsided
Dial	aluminum, black figures, white background
Pointer	aluminum black
Mounting	3 brackets for panel mounting
Position of installation	any



Functional Diagram

(measuring unit with measuring membrane)

1. Pressurised chamber
2. Movement
3. Ram
4. Resilient elements
5. Measuring membrane



+ = higher pressure
– = lower pressure

Special Versions

- Connections G ¼ B brass or 1.4305 (303 stainless steel); Cutting ring fitting
 - made of steel or 1.4571 (316 stainless steel) for 6, 8, 10 or 12 mm tube;
 - made of brass for 6, 8 or 10 mm tube
- Membrane and sealing (pressure ranges ≤ 10 bar) Viton
- Sealing Viton for diaphragm Duratherm
- Pressurised chamber made of aluminum HART COAT, or made of 1.4305 (303 stainless steel)
- Other pressure ranges and special scales upon request
- With installed pressure switch, see data sheet 5495

Accessories

- Front flange-assembly **Er** for panel mounting, installation ring Ø 132 mm steel black (standard) or stainless steel (option), with mounting spacers and fixing screws
- Manifold and pressure gauge valve made of 1.4571 (316 stainless steel), 3-Spindle (Model 15) or 4-Spindle (Model 16; not suitable for standard version for panel mounting)

Ordering Information (model construction):

Please specify in your order:

Basic model/nominal case size: **DiPsPH 100**

Code letters for type of mounting: **-W** (panel mounting = standard)
-Er (with installation ring for panel mounting, see accessories)

Pressure range: according to EN 837, **e.g. 0-4 bar**

Specifics: see above; especially information on connections, if not standard

Examples:

- DiPsPH 100-W, 0-6 bar
- DiPsPH 100-Er, 0-2,5 bar, cutting ring fitting made of steel for Ø 8 mm



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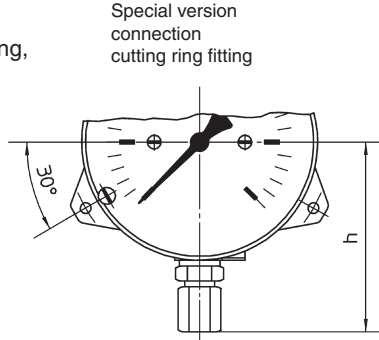
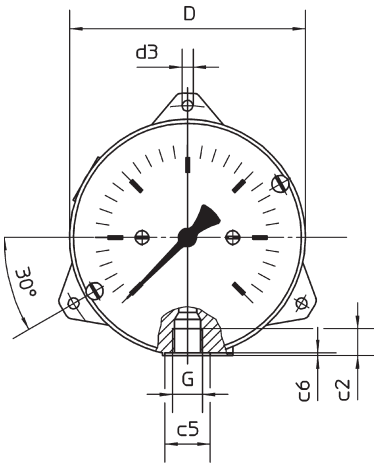


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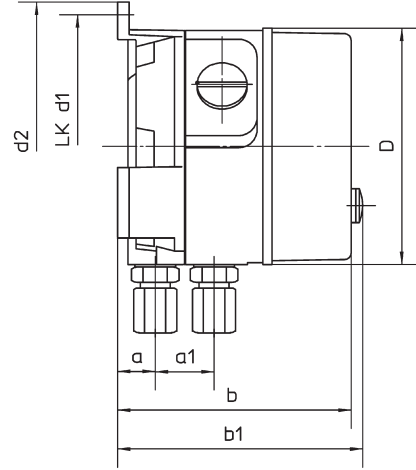
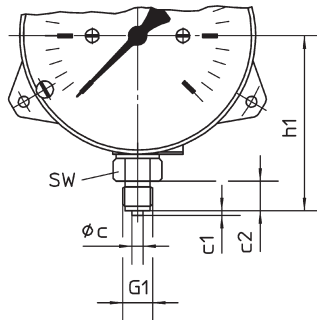
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Case Configurations, Dimensional Data and Weights

Bottom connections
parallel one behind the other,
3 mounting brackets for panel mounting,
standard version, code letter **-W**



Special version
connection G 1/4 B (1/4" BSP)

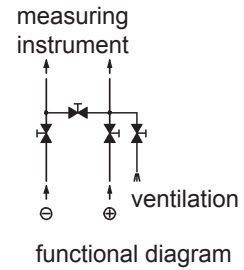
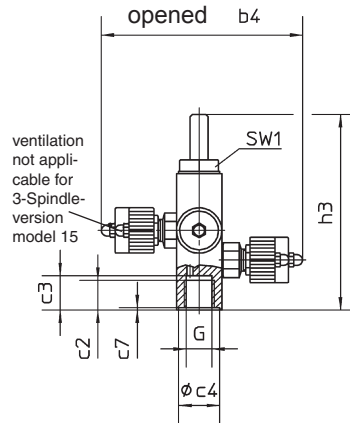
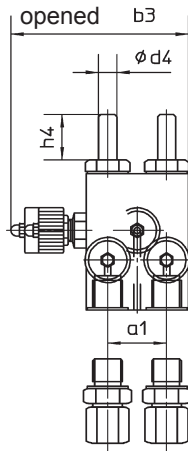
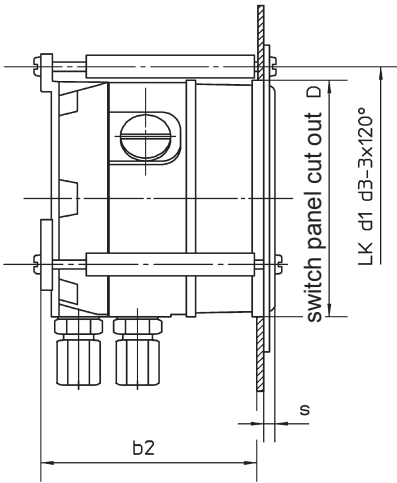


Accessories:

Front flange assembly
with installation ring for panel mounting,
code letters: **-Er**

Accessories (separate position):

Pressure gauge valve and manifold
in this case: 4-Spindle model 16 (suitable for cutting ring fitting 8 mm)



Dimensional data (mm / inches) and weights (kg / lb)

NCS	a	a1	b	b1	b2	b3	b4	c	c1	c2	c3	c4	c5	c6	c7	D	d1
100	16.5	26	103	105	98	78	90	5	3	13	15	18 ^{+0.2}	21	0.8	1	104	116
4"	.65	1.02	4.06	4.13	3.86	3.07	3.54	.2	.12	.51	.59	.71	.83	.03	.04	4.09	4.57

NG	d2	d3	d4	G	G1	h	h1	h3	h4	s	SW	SW1	Weight (approx.)
100	127	4.8	8	G 1/4 female	G 1/4 B	82	77	86	20	5	19	17	1.20 kg
4"	8	8	.31	1/4" female	1/4" BSP	3.23	3.03	3.39	.79	.2	.75	.67	2.6 lb

Technical changes, replacement of materials and errors excepted.