Differential Pressure Gauges

With 1 horizontal diaphragm / measuring membrane
Pressure chambers stainless steel

DiP2Ch
DiP2ChG

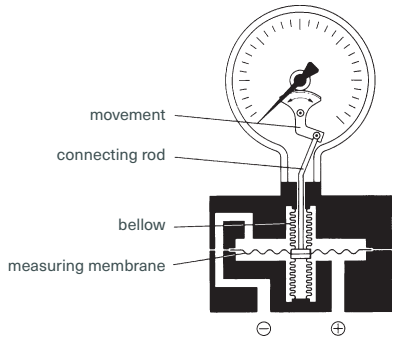
Application

The differential pressure gauge models DiP2Ch and DiP2ChG are used for direct indication of low differential pressures from 0 – 25 mbar for a static pressure of PN 10 or from 400 mbar – 25 bar for a static pressure of PN 25.
Differential pressure gauges with accuracy class 1.6 for static pressures PN 40 or PN 100 (one-sided overload resistant) can be found in data sheet 5200 (DiP1Ch or DiP1ChG).
The differential pressure gauge models DiP2Ch and DiP2ChG are suitable for gaseous or liquid media, which do not corrode stainless steel 316L (1.4404), 316Ti (1.4571) as well as Duratherm and Viton. For highly viscous media that tend to contaminate or crystallise, we recommend models DiP1Ch or DiP1ChG.
Various additional electrical accessories (e.g. limit switch contact assemblies, potentiometers, rotational angle transducers) can be mounted.
The pressure gauges are also available with a safety case according to DIN EN 837-1 Ⓢ. This case complies with all accident prevention regulations and offers an increased level of safety due to its break-proof solid front between measuring system and dial and its blow-out back. When pressure increases in the case, the entire case back separates, allowing full relief.

Construction and Measuring Principle

The measuring system consists of two pressure chambers separated by a diaphragm. A pressure difference (differential pressure) in those two chambers leads to the deflection of the diaphragm. The connecting rod transfers this deflection to the movement, which transmits it into a pointer movement proportional to the differential pressure. The differential pressure is indicated on the dial.

For a wear- and friction-free sealing, the measuring element is separated from the pressure chambers by metal bellows.



Standard Versions

Accuracy (DIN EN 837-1)
Class 1.6

Case
With bayonet ring, stainless steel 304 (1.4301)

Case Screws
Stainless steel

Degree of Protection (DIN EN 60529 / IEC 60529)
IP54
IP65 for model DiP2Ch**G**

Case Filling
Model DiP2Ch**G** glycerin

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

Pressure Range (DIN EN 837-1)
0 – 25 mbar to 0 – 25 bar (0 – 10 inH_2O to 0 – 400 psi)

Max. Static Pressure
Pressure ranges ≤ 250 mbar PN 10
Pressure ranges ≥ 0.4 bar PN 25

Overload Capability
For one-sided overpressure 10-times overrange protected, max. up to permissible operating pressure (10 or 25 bar)
For one-sided vacuum 10-times vacuum protected

Temperature Resistance
Ambient temperature −20 to +80 °C (−4 to +176 °F)
Medium temperature max. +100 °C (+212 °F)

Temperature Caused Error
In accordance with DIN EN 837-3, the additional caused error per 10 °C (18 °F) deviation from the reference temperature +20 °C (+68 °F) can be up to 0.6 %.

Wetted Parts

Pressure chambers	stainless steel 316L (1.4404)	
With connections	2 x G¼" female, stainless steel 316L (1.4404), marked with "+" and "–", direct mounting on pressure connection line	
Measuring membrane	≤ 400 mbar	stainless steel 316Ti (1.4571)
	≥ 0.6 bar	Duratherm
Bellows	stainless steel 316Ti (1.4571)	
O-rings	FKM (Viton®)	

Movement
Stainless steel

Dial
Aluminum white, scale black

Pointer
Aluminum black
Zero point adjustment, accessible via opening at the top of the case, ±25 % of full scale value

Window
Laminated safety glass

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Options, Special Versions and Accessories

Ordering Information, Standard Pressure Ranges, Options

See page 4

Further Options

- Stationary red pointer adjustable on the scale or with external adjustment
- Maximum drag indicator, adjustable on the front side, acrylic glass window (from pressure range 0 – 60 mbar onwards)
- Safety case DIN EN 837-1 Ⓢ
- Free of grease and oil for oxygen applications (only available with safety case according to DIN EN 837-1Ⓢ)
- Mounting or installation of electromechanical (low-action or magnetic contacts) or inductive limit switch contact assemblies or of potentiometers

Special Versions Upon Request

- Other connection threads
- Special scales (e.g. dual scale, flow scale)
- Scale with zero point not at the beginning of the scale (similar to compound scale)

Accessories

see technical information sheet T05-000-005

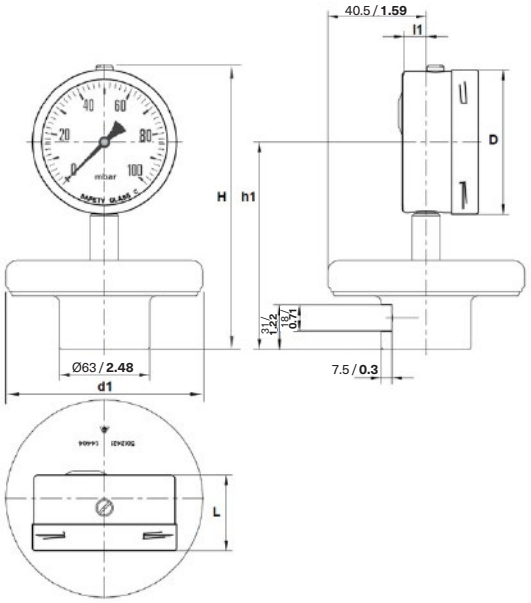
- 3-valve manifolds type 13, stainless steel
- 4-valve manifolds type 14, stainless steel[1)]

[1)] Upon request, the valve is available with an additional ventilation valve. However, this version can only be used under certain restrictions and is not suitable for wall mounting, e.g. due to lack of space.

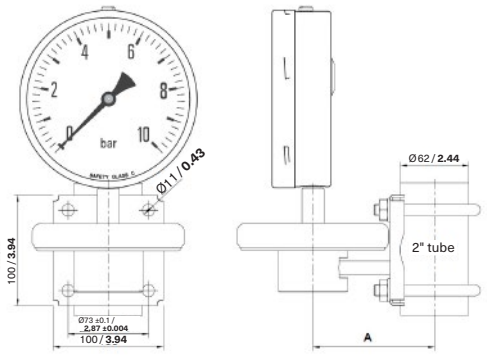
Case Configurations, Dimensional Data (mm / inch), Process Connection

Dimensional Drawing 25 – 250 mbar

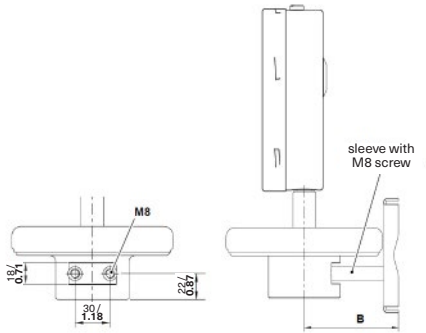
cable (direct) mounting (standard)



tube mounting (optional)



wall mounting (optional)



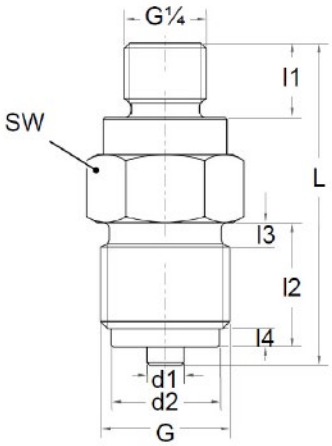
Pressure range 25 – 250 mbar	D	d1	H	h1	L	l1
NCS 100 **(4")**	Ø 101 **3.98**	138 **5.43**	199 **7.83**	145 **5.71**	53 **2.09**	15.5 **0.61**
NCS 160 **(6")**	Ø 161 **6.34**	138 **5.43**	259 **10.2**	175 **6.89**	53.5 **2.11**	16.5 **0.65**

Pressure range 0.4 – 25 bar	D	d1	H	h1	L	l1
NCS 100 **(4")**	Ø 101 **3.98**	81 **3.19**	198 **7.8**	144 **5.67**	53 **2.09**	15.5 **0.61**
NCS 160 **(6")**	Ø 161 **6.34**	81 **3.19**	258 **10.16**	174 **6.85**	54.5 **2.15**	16.5 **0.65**

Pressure range	Tol.	A	B
25 – 250 mbar	±0.1 **0.004**	110.4 **4.35**	83 **3.27**
0.4 – 25 bar	±0.1 **0.004**	54.5 **2.15**	81.9 **3.22**

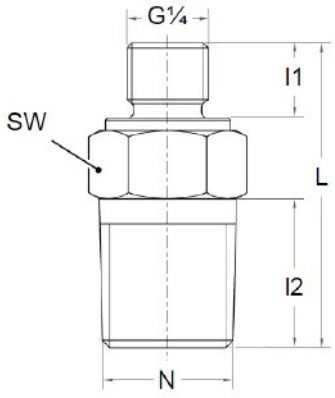
Process Connection

Male thread G



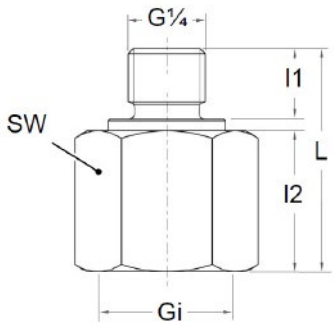
	d1	d2	L	l1	l2	l3	l4	SW
G¼	5 **0.2**	9.5 **0.37**	39 **1.54**	12 **0.47**	15 **0.59**	3 **0.12**	2 **0.08**	19 **0.75**
G½	6 **0.24**	17.5 **0.69**	52 **2.05**	12 **0.47**	23 **0.91**	4 **0.16**	3 **0.12**	22 **0.87**

Male thread NPT



	L	l1	l2	SW
¼-18 NPT	42 **1.65**	12 **0.47**	18 **0.71**	19 **0.75**
½-14 NPT	49 **1.93**	12 **0.47**	24 **0.94**	22 **0.87**

Female thread Gi



	L	l1	l2	SW
G½	38 **1.5**	12 **0.47**	24 **0.94**	27 **1.06**
¼-18 NPT	32 **1.26**	12 **0.47**	18 **0.71**	19 **0.75**
½-14 NPT	38 **1.5**	12 **0.47**	24 **0.94**	27 **1.06**

Ordering Information, Options

Basic Model	Differential Pressure Gauge			DiP2Ch
Case filling	without			without code letters
	glycerin			**G**
Nominal case size	case Ø 100, 160 mm (4, 6")			**100, 160**
Wetted material	stainless steel / Viton			**– 3**
	> 0.6 bar: stainless steel / Duratherm / Viton			
Case configuration	position of the connection		bottom connection, next to each other	without code letters
	mounting device		cable (direct) mounting	**L**
			2" tube mounting	**R**
			wall mounting	**W**
Pressure ranges	−40 / +60 mbar		−15 / +25 inH_2O	
	−60 / +100 mbar		−20 / +40 inH_2O	
	−100 / +150 mbar		−40 / +60 inH_2O	
	−150 / +250 mbar		−60 / +100 inH_2O	
	0 – 25 mbar		0 – 10 inH_2O	
	0 – 40 mbar		0 – 16 inH_2O	
	0 – 60 mbar		0 – 25 inH_2O	
	0 – 100 mbar		0 – 40 inH_2O	
	0 – 160 mbar		0 – 60 inH_2O	
	0 – 250 mbar		0 – 100 inH_2O	
	0 – 400 mbar		0 – 160 inH_2O	
	0 – 0.6 bar		0 – 10 psi	
	0 – 1 bar		0 – 15 psi	
	0 – 1.6 bar			
	0 – 2.5 bar		0 – 30 psi	
	0 – 4 bar		0 – 60 psi	
	0 – 6 bar		0 – 100 psi	**e.g. 0 – 6 bar**
	0 – 10 bar		0 – 160 psi	
	0 – 16 bar		0 – 200 psi	
			0 – 300 psi	
	0 – 25 bar		0 – 400 psi	
Process connection	standard thread	female	G¼	**G¼ female**
	options	female	½" NPT	**½" NPT female**
		male	G½ B	**G½ B male**
			M 20x1.5	**M 20x1.5 male**
			¼" NPT	**¼" NPT male**
			½" NPT	**½" NPT male**

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

Limit switch contact assembly (from 100 mbar)	1 x magnetic
	2 x magnetic
	1 x inductive
	2 x inductive
Pressure gauge safety version	safety category S3 according to DIN EN 837-1, with break-proof solid front and blow-out back
Pressure compensation valves	3-valve manifold type 13
	4-valve manifold type 14
	other valve blocks upon request
Example	**DiP2ChG 100 – 3, L, 0 – 6 bar**

Special Versions: Please describe your requirements in cleartext!