Differential Pressure Gauges

With 2 vertical diaphragms / measuring membranes
Pressure chambers stainless steel

DiP1Ch
DiP1ChG

Application

The differential pressure gauge models DiP1Ch and DiP1ChG are used for direct indication of low differential pressures from 0 – 40 mbar with high static pressure (PN 40).
They 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. The pressure chambers can be rinsed and are thus resistant to contamination.
Various additional electrical accessories (contacts or potentiometers) can be mounted.

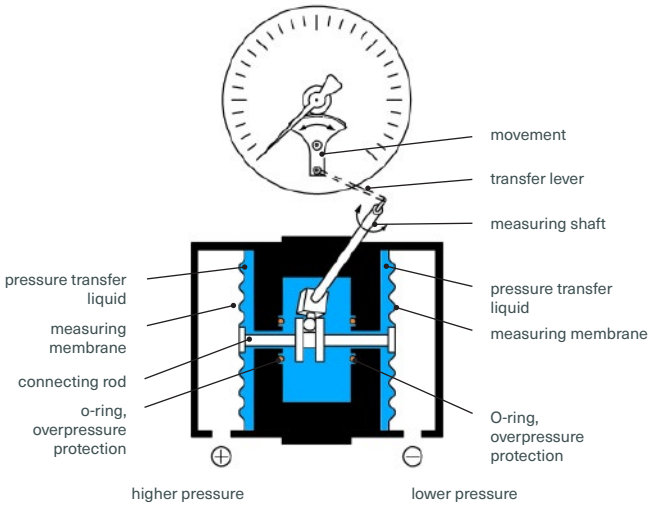
Construction and Measuring Principle

Both pressure chambers each have a membrane as measuring element, which are connected via a connecting rod. The space between the membranes is filled with a pressure transfer liquid. If the pressures are equal, both membranes are in rest position. If there is a pressure difference, the force acting on the membranes causes them to deflect in the direction of the lower pressure.

The connecting rod performs the same movement, which then is converted into a rotary motion via measuring shaft and transmission lever. This rotary motion is then indicated by the pointer movement.

If the measuring system is exposed to a one-sided pressure exceeding the measuring range, the overpressure protection is activated. A collar at the connecting rod of the membranes is pressed against an O-ring, which prevents the transfer of the overpressure to the opposite membrane. This creates two separate pressure chambers.

In the liquid-filled chamber behind the overloaded membrane up to the O-ring seal, a counterpressure corresponding to the overpressure builds up, which supports the membrane.



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 DiP1Ch**G**

Case Filling
Model DiP1Ch**G** glycerin

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

Pressure Range (DIN EN 837-1)
NCS 100 0 – 0.6 bar to 0 – 25 bar (0 – 10 psi to 0 – 400 psi)
NCS 160 0 – 40 mbar to 0 – 400 mbar (0 – 16 inH_2O to 0 – 160 inH_2O)

Max. Static Pressure
PN 40

Overload Capability
One-sided overload resistant up to PN, vacuum-proof

Temperature Resistance
Ambient temperature −20 to +60 °C (−4 to +140 °F)
Storage temperature −40 to +80 °C (−40 to +176 °F)
Medium temperature max. +100 °C (+212 °F)

Temperature Caused Error
The additional caused error per 10 °C (18 °F) deviation from the reference temperature +20 °C (+68 °F) is approx. 0.3 %

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Standard Versions, Options, Special Versions and Accessories

Wetted Parts

Pressure chambers	stainless steel 316L (1.4404)	
With connections	bottom connection, flange connection made of stainless steel 316L (1.4404), similar to DIN 61518, with 2 x G ½" female, marked with "+" and "–"	
Measuring membrane	≤ 400 mbar	stainless steel 316Ti (1.4571)
	≥ 0.6 bar	Duratherm
Connecting rod	AlMgSiPb - Hart COAT®	
O-rings	FKM	
Pressure transfer liquid	silicone oil	

Movement
Stainless steel

Dial
Aluminum white, scale black

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

Window
Laminated safety glass

Ordering Information, Standard Pressure Ranges, Options

See page 4

Further Options

- Stationary red pointer, adjustable on the scale
- Maximum drag indicator, resettable from the acrylic glass window
- Other pressure ranges
- Mounting or installation of electromechanical (low-action or magnetic) or inductive limit switch contact assemblies or of potentiometers

Special Versions Upon Request

- Other connection threads
- Other position of connection
- Special scales (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 manifold type 11
- 5-valve manifold type 12

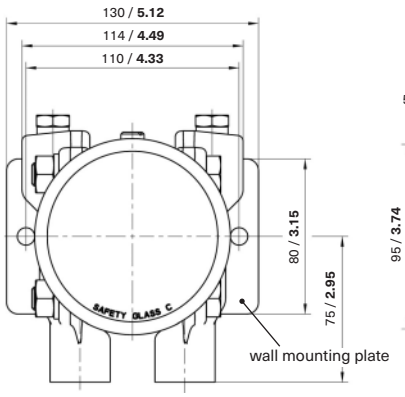
- DN 5 PN 420
- flange connection according to DIN EN 61518
- cutting ring fittings for 12 mm tube
- including mounting assembly

Case Configurations, Dimensional Data (mm / inch) and Weight (kg / lb)

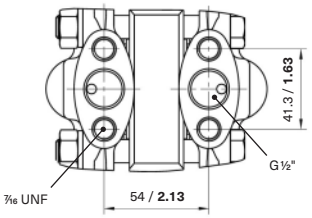
Bottom Connection, Next To Each Other

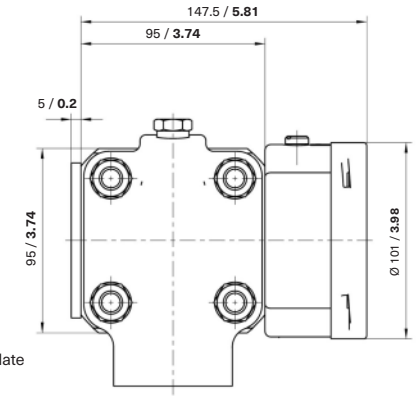
Pressure ranges from 0 – 0.6 bar to 0 – 25 bar (NCS 100 (4"))

wall mounting (standard)

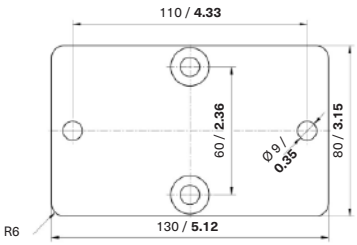


flange based on DIN EN 61518





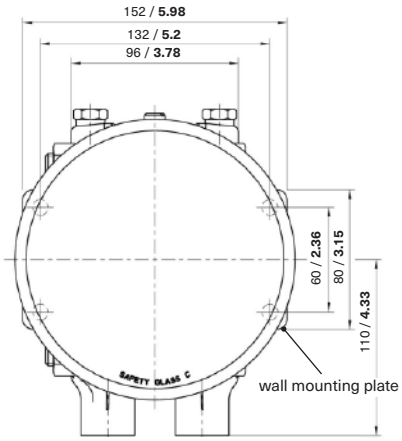
wall mounting plate



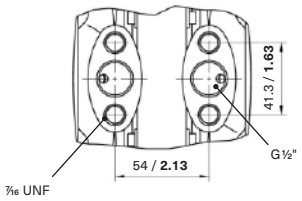
Pressure ranges from 0 – 40 mbar to 0 – 400 mbar (NCS 160 (6"))

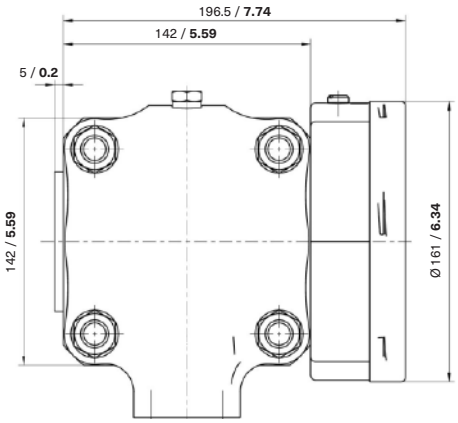
wall mounting (standard)

dimensions for other pressure ranges upon request

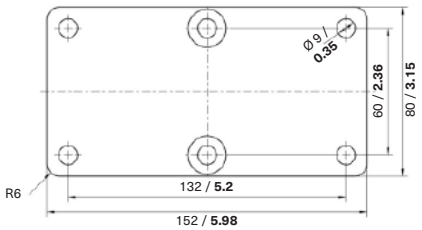


flange based on DIN EN 61518



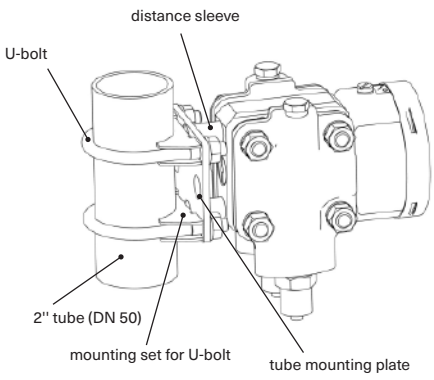


wall mounting plate



Available for all versions

2" tube mounting (optional)



Weight (kg / lb)

model	pressure range	approx. weight
DiP1Ch 100 DiP1ChG 100 DiPCh 160 DiPChG 160	0 – 0.6 bar to 0 – 25 bar	6.0 / **13.23** 6.6 / **14.55** 6.6 / **14.55** 7.6 / **16.76**
DiPCh 160 DiPChG 160	0 – 40 mbar to 0 – 400 mbar	12.0 / **26.46** 13.0 / **28.66**

Ordering Information, Options

Basic Model	Differential Pressure Gauge			DiP1Ch
Case filling	without			without code letters
	glycerin			**G**
Nominal case size	case Ø 100, 160 mm (4, 6")			**100, 160**
Wetted material	stainless steel			**– 3**
	> 0.6 bar: stainless steel / Duratherm			
Case configuration	position of the connection		bottom connection, next to each other	without code letters
	mounting device		wall mounting	**W**
			2" tube mounting	**R**
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 – 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	
	−1 / +0.6 bar		−30" Hg – 15 psi	
	−1 / +1.5 bar		−30" Hg – 30 psi	
	−1 / +3 bar		−30" Hg – 60 psi	
	−1 / +5 bar		−30" Hg – 100 psi	
	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	similar to DIN 61518 with G½	**G½ female**
	options	female	¼"-18 NPT	**¼"-18 NPT female**
			½"-14 NPT	**½"-14 NPT female**
		male	G½ B	**G½ B male**
			¼"-18 NPT	**¼"-18 NPT female**
			½"-14 NPT	**½"-14 NPT female**
			cutting ring fitting 12 mm tube	

NCS 160 only

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

Max. static pressure	PN 100
	PN 250
	PN 400
Limit switch contact assembly (from 100 mbar)	1 x magnetic
	2 x magnetic
	1 x inductive
	2 x inductive
Pressure compensation valves	3-valve manifold type 11
	5-valve manifold type 12
	other valve manifolds upon request other valve manifolds upon request
Example	**DiP1ChG 100 – 3, R, 0 – 6 bar**

Special Versions: Please describe your requirements in cleartext!