

Differential Pressure Gauges

Bayonet Ring Case Stainless Steel

Standard (DiP2Ch) or with Case Filling (DiP2ChG)

Accuracy $\pm 2.5\%$
Case \varnothing 100 (4")
160 (6")

Models

DiP2Ch
DiP2ChG

This data sheet contains all important features of models DiP2Ch and DiP2ChG, with ordering information.

Application

Differential pressure gauges models DiP2Ch respectively DiP2ChG are used for direct reading of low differential pressure from 0/25 mbar (0/10 "WC) and above at static pressures of 10 resp. 25 bar (150 resp. 400 psi).

Differential pressure gauges of accuracy class 1.6 (EN) for higher static pressures (40 bar or 100 bar / 600 or 1500 psi) are to find in data sheet 5200, models DiP1Ch and DiP1ChG.

Differential pressure gauges models DiP2Ch and DiP2ChG may be used for measuring gaseous and fluid media, which are compatible with 316 stainless steel (1.4571, 1.4404), Duratherm (NiCroCo-alloy), and Viton. In case of highly viscous media that tend to pollute or crystallize, we recommend models DiP1Ch or DiP1ChG (compare data sheet 5200).

Several electrical accessories such as limit switch contact assemblies or potentiometers may be installed.

The gauges can optionally be supplied with solid front case type S3 according to EN 837-1 © safety standard, with solid front (stainless steel) between measuring system and dial and full blow-out safety back. If the medium pressure gets into the case, e.g. because of a defective diaphragm, the entire case back separates allowing full relief.



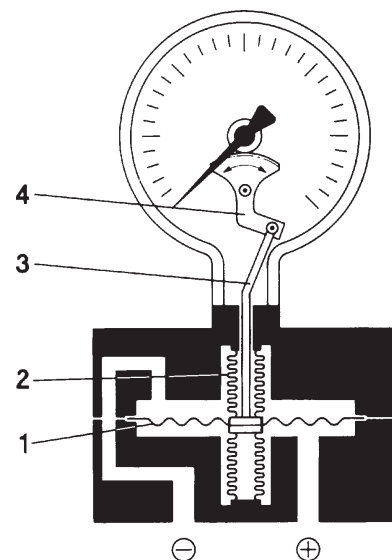
Construction and Function

The measuring system consists of two pressure chambers separated by a diaphragm. A pressure difference occurring in these pressure chambers leads to an axial deviation of the diaphragm. The connecting rod transfers this diaphragm deviation to the movement which transmits it into an analogous pointer move.

For a frictionless and non-wearing sealing, the connecting rod and the pressure chambers are separated by metallic bellows.

Functional Diagram

1. Measuring diaphragm
2. Bellow
3. Connecting rod
4. Movement



ARMATURENBAU GmbH

Manometerstraße • D-46487 Wesel - Ginderich
Phone: (0 28 03) 9130-0 • Fax: (0 28 03) 10 35
armaturenbau.com • mail@armaturenbau.com



Subsidiary Company and Sales East Germany and Eastern Europe

MANOTHERM Beierfeld GmbH

Am Gewerbehark 9 • D-08340 Beierfeld
Phone: (0 37 74) 58 - 0 • Fax: (0 37 74) 58 - 545
manotherm.com • mail@manotherm.com

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DiP2Ch / DiP2ChG

Pressure gauge with 2 measuring chambers for measuring differential pressure

Nom. Case Sizes

100 (4"), 160 (6")

Accuracy

Class 2.5 according to EN 837-3 Standard (i.e. $\pm 2.5\%$ f.s.)

Pressure Ranges (EN 837)

from 0 / 25 mbar (10 "WC) up to 0 / 25 bar (400 psi)

Pressure Limitations

Max. static pressure:

PN 10 (150 psi) (ranges ≤ 250 mbar [100 "WC])

PN 25 (400 psi) (ranges $\geq .4$ bar [160 "WC]);

overrange protected up to 10-times full scale pressure, but for one sided overpressure max. up to permissible PN (10 or 25 bar resp. 150 or 400 psi); vacuum protected

Temperature Limitations

Ambient temperature -20 to +80 °C (-4 to +176 °F)

Medium temperature max. +100 °C (+212 °F)

Temperature Caused Error

The accuracy error caused by media or ambient temperatures differing from +20 °C (+68 °F) is significant. It can be estimated with .6% per each +10 °C (+18 °F).

Protection Type (EN 60529 / IEC 529)

Model DiP2Ch = IP 54 / Model DiP2ChG = IP 65

Standard Configuration

Connection

2 x 1/4 "BSP female bottom connection, connections marked with "+" and "-"; direct mounting on pressure service lines¹⁾

Pressure Chambers

316 stainless steel (1.4404)

Diaphragm

Measuring ranges < 1 bar (0/15 psi): 316 stainl. steel (1.4571)

Measuring ranges ≥ 1 bar (0/15 psi): NiCrCo-Alloy (Duratherm)

Bellows

316 stainless steel (1.4571)

O-Rings

Viton (= FPM, fluorcaoutchouc)

Movement

Stainless steel

Dial

Aluminum alloy, black figures, white background

Case and Bayonet Ring

304 stainless steel

Case Filling

Model DiP2ChG with glycerine filling

Case Screws

Stainless steel

Lens

Laminated safety glass

Pointer

Aluminum alloy black, pointer adjustable $\pm 25\%$ of the full span through an opening at the case top

¹⁾ Installation/Mounting

The standard version is mounted directly on the pipes by screwing the fitting into the 1/4" BSP female connection by using appropriate sealing material (ordering code - L).

At extra charge the gauge can be supplied with a mounting bracket (ordering code - W) for wall mounting or accessories for 2" tube mounting (ordering code - R). Please specify when ordering.

Special Configurations

- Mounting bracket (ordering code - W) for wall mounting or accessories for 2" tube mounting (ordering code - R)
- Other connection threads upon request
- Special scales (dual ranges or flow ranges)
- Special measuring ranges from 0/4 to 0/25 mbar (0/1.6 to 0/10 "WC), PN 200 mbar (8 "WC)
- Special scale with Zero not at the beginning (similar to compound ranges)
- Stationary red pointer, internal or external adjustment
- Maximum pressure pointer, external adjustment, acrylic lens (ranges 0/100 mbar [0/40 "WC] and up)
- Solid front case EN 837-1 (S)
- Oxygen service, free of grease and oil [only available with solid front case EN 837-1(S)]
- Installation of electrical accessories like magnetic or inductive limit-switch contact assemblies or potentiometers
- Accessories: 3- or 4- spindle valve manifold model no.13, stainless steel, see page 4 of this data sheet.
(Please order as a separate item.)

How to Order:

Please specify:

Model code:

DiP2Ch = dry version, IP 54

DiP2ChG = filled version, IP 65,
filling fluid glycerine

DiP2Ch(G) = fillable version, IP 65

Nominal size:

100 or 160

Wetted parts:

ordering code: **-3** (= stainless steel/Viton,
 ≥ 1 bar stainless steel/Duratherm/Viton)

Code letter for
mounting type:

L for direct mounting (standard)

R for tube mounting

W for wall mounting

Pressure range:

according to EN 837-1,
i.e. 0/100 mbar or 0 - 6 bar

Special configurations: (see above)

Examples for Ordering Information:

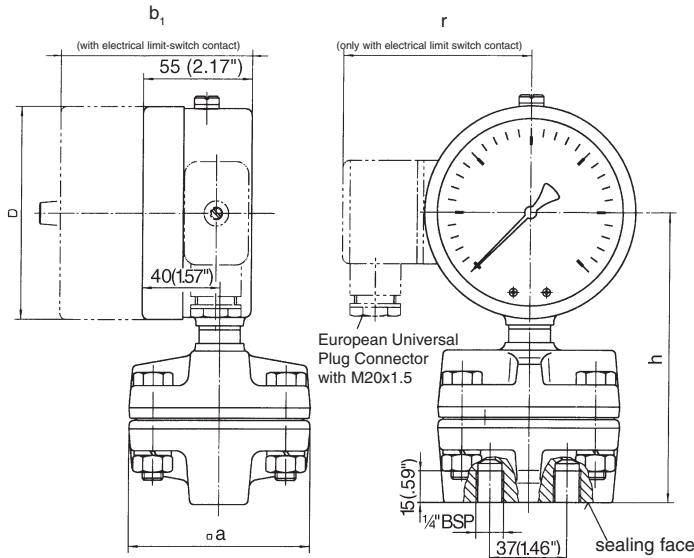
● DiP2Ch 100-3, L, 6 bar

● DiP2ChG 160-3, W, 100 mbar

The information in this leaflet is given in good faith, but we reserve the right to make changes without notice.

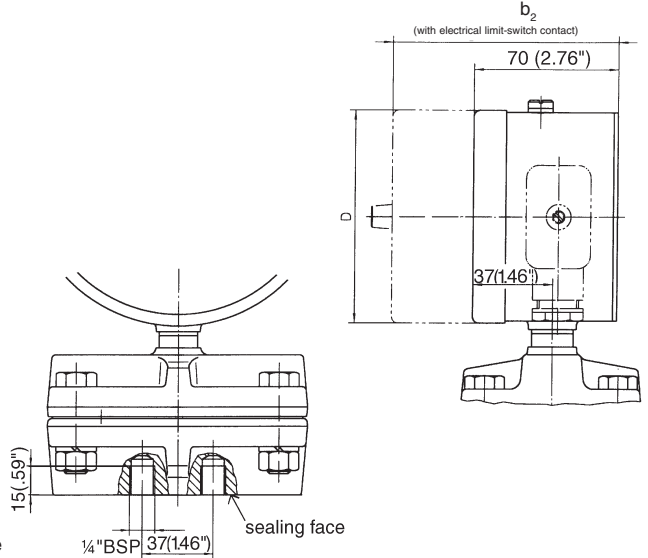
Case Configuration, Dimensional Data and Weight

Basic model



flange 0.4 - 25 bar

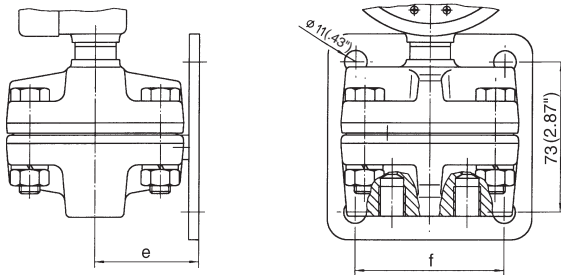
Solid front case EN 837-1



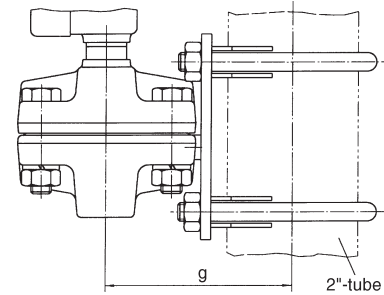
flange 25 - 250 mbar

0.4 - 25 bar

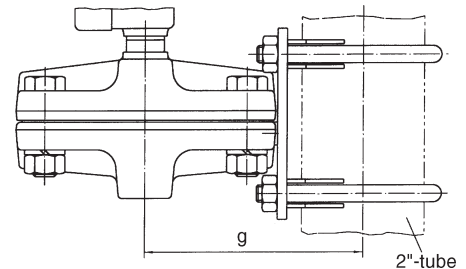
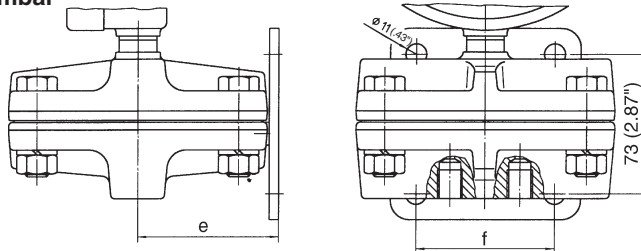
Wall mounting



Tube mounting



25 - 250 mbar



Dimensions (mm / inches)

Case Size	Pressure Range	a	D	b1	b2	e	f	g	h±1	r
100 4"	0/25 ... 0/250 mbar	136	101 3.98	100 3.94	116 4.57	74	73 2.87	114	140 5.51	86 3.39
	0/10 ... 0/100 "WC	5.35				2.91		4.49		
	0/0.4 ... 0/25 bar	90				51		91		
160 6"	0/25 ... 0/250 mbar	136	161 6.34	102 4.02	118 4.65	74	73 2.87	114	170 6.69	120 4.72
	0/10 ... 0/100 "WC	5.35				2.91		4.49		
	0/0.4 ... 0/25 bar	90				51		91		
	0/160"WC ... 0/400 psi	3.54				2.01		3.58		

Weights (kg / lb)

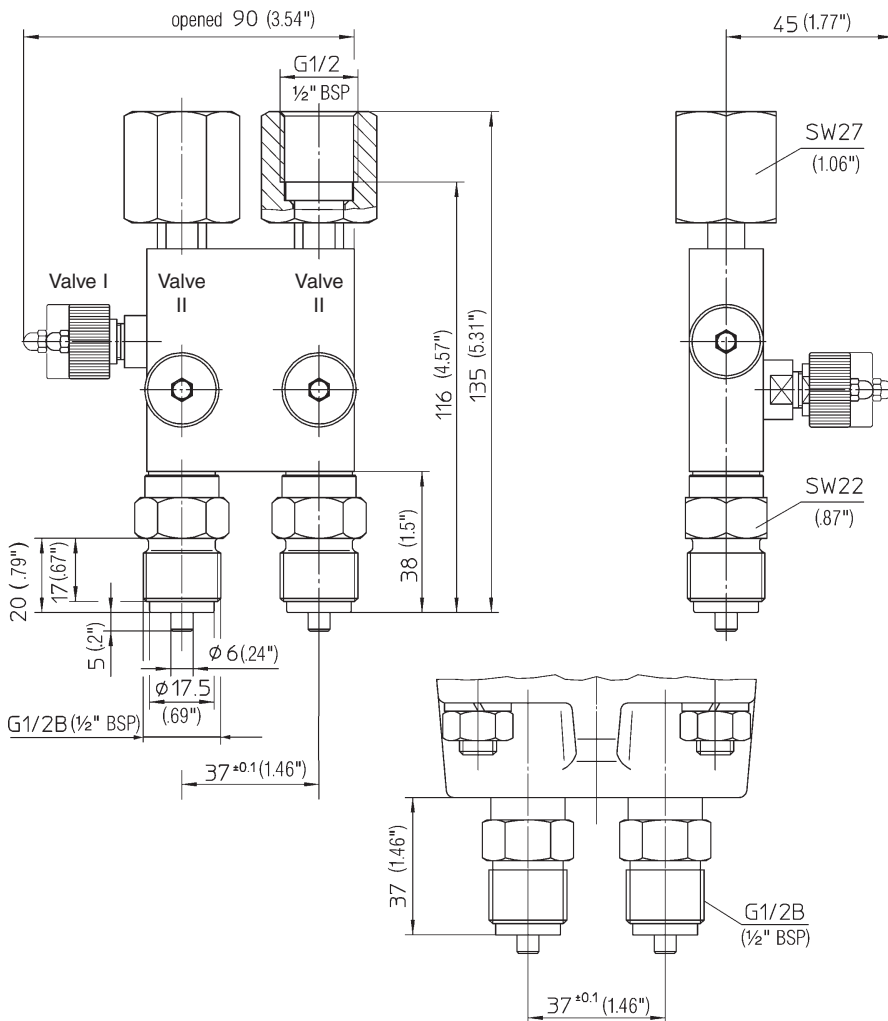
1. Basic Weight		Nom. Size 100 / 4"		Nom. Size 160 / 6"	
Pressure Range		0/0.4 ... 0/25 bar	0/25 ... 0/250 mbar	0/0.4 ... 0/25 bar	0/25 ... 0/250 mbar
kg / lb		3.200 / 7.06	6.550 / 14.40	3.800 / 8.38	7.150 / 15.76
2. Additional Weights		Nom. Size 100 / 4"		Nom. Size 160 / 6"	
Contacts only	kg / lb	0.200 / .44		0.350 / .77	
Case liquid filling only	kg / lb	0.270 / .60		0.700 / 1.54	
Contacts and case filling	kg / lb	0.550 / 1.21		1.480 / 3.26	
Solid front case with filling	kg / lb	0.120 / .27		0.330 / .73	

3-Valve Manifold

for Differential Pressure Gauges DiP2Ch / DiP2ChG

Model **13**

PN 40, DN 3, 316 stainless steel (1.4571)



Function:

- Valve I = 1 x equalizing valve (by-pass between + and - chamber)
- Valve II = 2 x shut-off and connection valves

Ex works all valves are closed.

User Instructions:

1. Open valve I first and then connect it to the pressure pipe.
2. Both valves II have now to be opened and then to be connected to the pressure pipes.
3. Now mount the differential pressure gauge and admit the pressure.
4. Close valve I. The differential pressure will be indicated.
Both valves II remain opened.

Dismounting of the Differential Pressure Gauge:

1. Open valve I.
2. Close both valves II.
3. Unscrew the pressure gauge connections and remove the differential pressure gauge.

4-Valve Manifold:

The shut-off and compensating valve is available with a ventilation valve upon request. But this model is suitable only under restrictions and does not fit for example when wall mounting is required.

How to Order:

Please specify:

Model code: **3-Valve Manifold No. 13**
Material: **316 stainless steel**