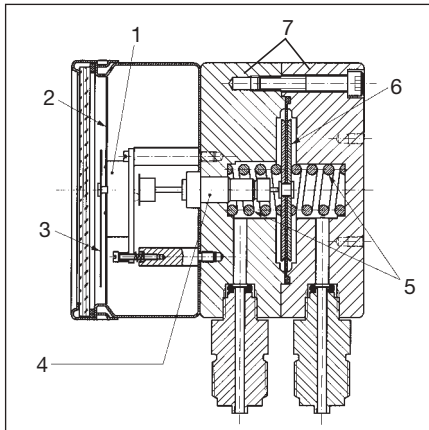


Spring-diaphragm pressure gauges for differential pressure – overload protected



Function overview

1. Movement
2. Dial
3. Pointer
4. Transmission unit
5. Measuring spring
6. Diaphragm
7. Measuring flange



Application

For differential pressure measurement with low differential pressure and high static pressure. For gaseous and liquid media with low viscosity and non-corrosive. Particularly suitable for monitoring filters, pumps and pipe systems.

Type

MF 100 Dif D401

Nominal size

100

Function

The pressures act on two pressure chambers separated by an elastic diaphragm. Different pressures in the chambers cause an axial deflection of the diaphragm against a pressure spring which is proportional to the pressure. This is transmitted to the movement via a rod. The differential pressure is directly indicated by a pointer. The diaphragm is held by metallic supports at both sides providing an overpressure safety of up to 25 bar.

Accuracy class (EN 837-3/6)

2.5

Ranges (EN 837-3/5)

0/250 mbar to 0/6 bar

Maximum static pressure

25 bar

Overpressure safety

Up to 25 bar on both sides

Operating temperature range

Medium: $T_{max} = +60\text{ °C}$

Ambient: $T_{min} = -20\text{ °C}$

$T_{max} = +60\text{ °C}$

Temperature performance

Indication error when the temperature of the measuring element deviates from 20 °C:

rising temp. approx. $\pm 0.5\text{ %}/10\text{ K}$

falling temp. approx. $\pm 0.5\text{ %}/10\text{ K}$

percentage of full scale value

Protection

IP 54 (EN 60529)

Standard version

Connection

Brass, nickel plated, bottom, parallel in line

2 x G $\frac{1}{2}$ B – spanner size 22 (EN 837-3/7.3)

with locked damping screw
inner diameter 0.5 mm

Measuring element

Pressure spring

stainless steel 301

Diaphragm

Viton

Measuring flange

Aluminium eloxed

Movement

Brass

Dial

Aluminium, white

Dial marking black

Pointer

Aluminium, black

Housing

Stainless steel 304

Bayonet type bezel

Stainless steel 304

Front glass

Laminated safety glass

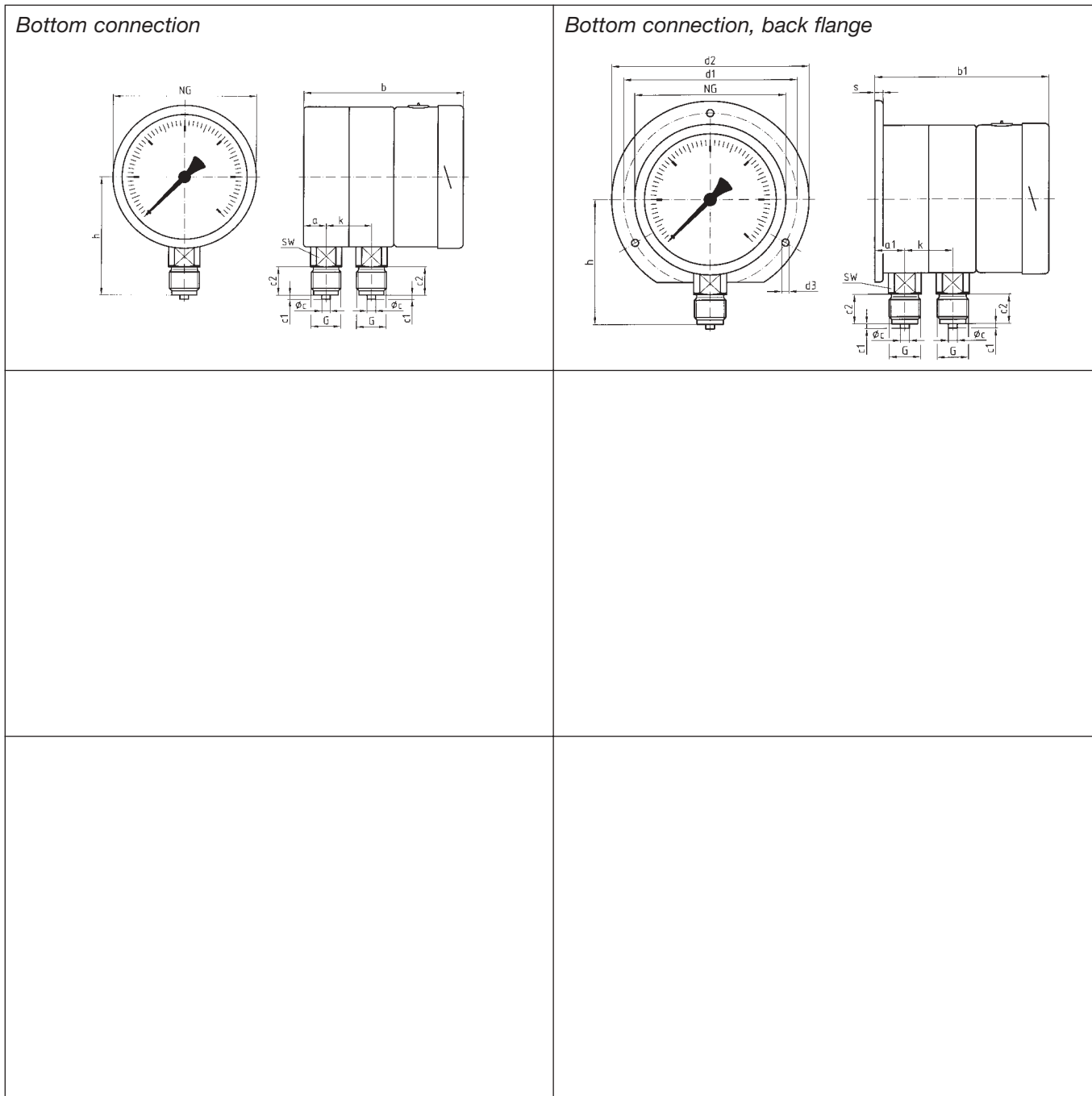
Options

- Glycerine filling (type D8)
- Back flange
- Other connections

Spring-diaphragm pressure gauges for differential pressure

Type D 4 – NG 100

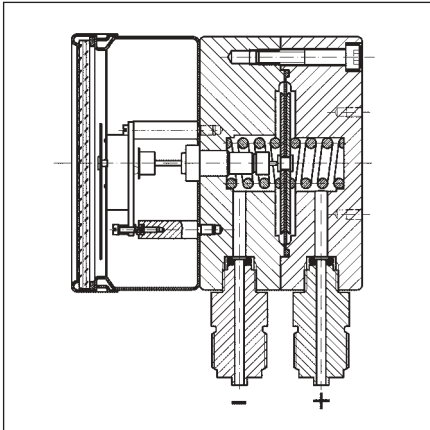
Housing types and dimensions



Dimensions (mm)

Nominal size (NG)	a	a1	b	b1	ϕ_c	c1	c2	d1	d2	d3	G	h	k	s	SW
100	16	19.5	112.5	116	6	3	20	116	132	4.8	G $\frac{1}{2}$ B	84	32	5.5	22

Spring-diaphragm pressure gauges for differential pressure and chemical applications – overload protected



Application

For differential pressure measurement with low differential pressure and high static pressure. For corrosive, gaseous and liquid media which are not highly viscous, also for use in corrosive atmospheres. Particularly suitable for monitoring filters, pumps and pipe systems.

Types

MF 100 Ch Dif D402
MFW 100 Ch Dif D402

Nominal size

100

Function

The pressures act on two pressure chambers separated by an elastic diaphragm. Different pressures in the chambers cause an axial deflection of the diaphragm against a pressure spring which is proportional to the pressure. This is transmitted to the movement via a rod. The differential pressure is directly indicated by a pointer. The diaphragm is held by metallic supports at both sides which provides for an overpressure safety of up to 25 bar.

Accuracy class (EN 837-3/6)

2.5

Ranges (EN 837-3/5)

MF 100: 0/250 mbar to 0/6 bar
MFW 100: 0/250 mbar to 0/25 bar

Maximum static pressure

25 bar

Overpressure safety

up to 25 bar on both sides

Operating temperature range

Medium: $T_{max} = +60\text{ °C}$
Ambient: $T_{min} = -20\text{ °C}$
 $T_{max} = +60\text{ °C}$

Temperature performance

Indication error when the temperature of the measuring element deviates from 20 °C:

rising temp. approx. $\pm 0.5\text{ %}/10\text{ K}$
falling temp. approx. $\pm 0.5\text{ %}/10\text{ K}$
percentage of full scale value

Protection

IP 54 (EN 60529)

Standard version

Connection

Stainless steel 316 Ti or 316 L,
bottom, parallel in line
2 x G $\frac{1}{2}$ B – spanner size 22
(EN 837-3/7.3)
with locked damping screw
inner diameter 0.5 mm

Measuring element

Pressure spring
stainless steel 1.4310

Diaphragm

Viton

Measuring flange

Stainless steel 316 Ti or 316 L

Movement

Stainless steel

Dial

Aluminium, white
Dial marking black

Pointer

Aluminium, black

Housing

Stainless steel 304

Bayonet type bezel

Stainless steel 304

Front glass

Laminated safety glass

Options

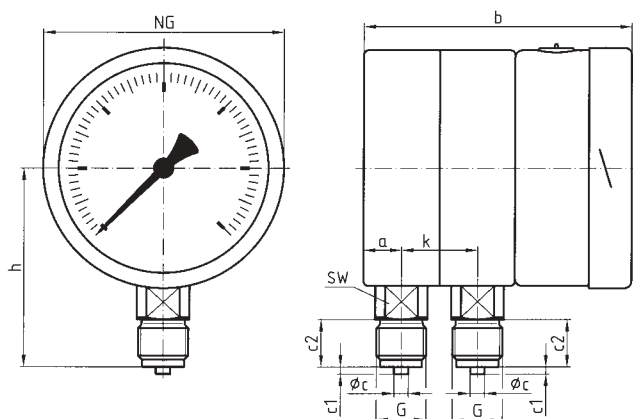
- Back flange (MF 100)
- Other connections
- Electrical contacts (MFW 100)

Spring-diaphragm pressure gauges for differential pressure and chemical applications

type D 4 – NG 100 Housing types and dimensions

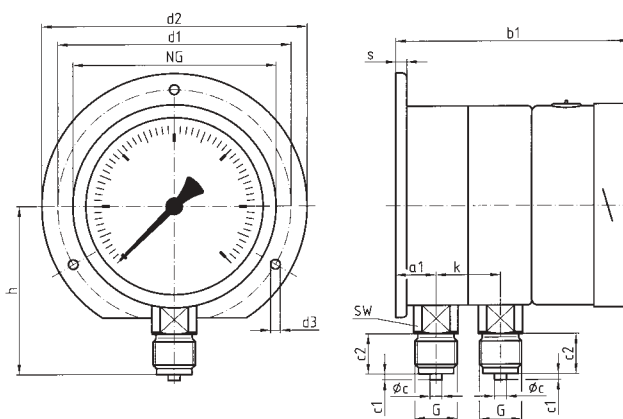
MF 100 Ch Dif D402

Bottom connection



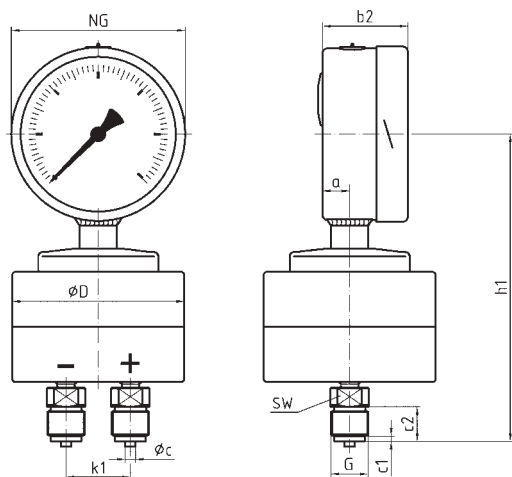
MF 100 Ch Dif D472

Bottom connection, back flange



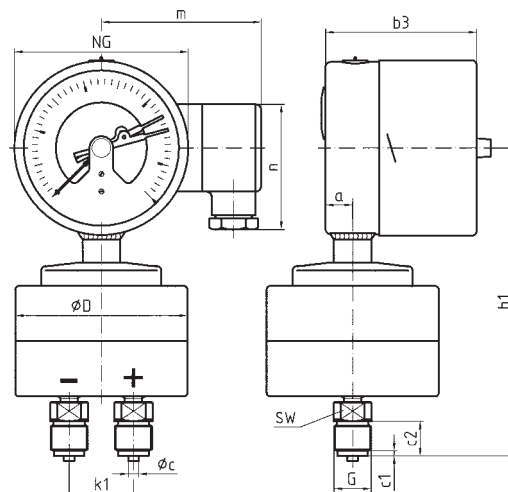
MFW 100 Ch Dif D402

Bottom connection



MFW 100 Ch Dif D402

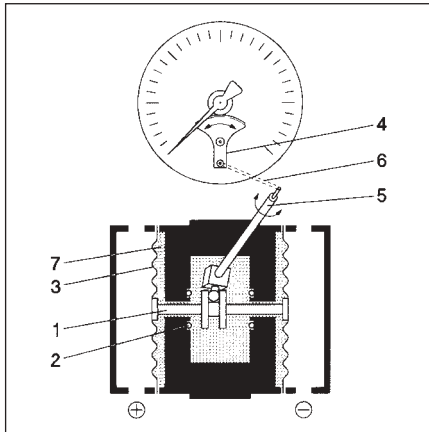
Bottom connection with electrical contacts



Dimensions (mm)

Nominal size (NG)	a	a1	b	b1	b2	b3	Øc	c1	c2	d1	d2	d3	ØD	G	h	h1	k	k1	m
100	16	19	84	87.5	49	87	6	3	20	116	132	4.8	99	G1/2B	86	177	32	37	92
Nominal size (NG)	n	s	s1	s2	SW														
100	72	2	5.5	3	22														

Diaphragm pressure gauges for differential pressure for chemical applications – high overload protection



Function overview

1. Connection rod
2. O ring, overpressure-proof
3. Diaphragm
4. Movement
5. Measuring shaft
6. Transmission lever
7. Pressure transmission liquid



Application

For differential pressure measurement with low differential pressure and very high static pressure.

For corrosive, gaseous and liquid media, also for use in corrosive atmospheres. Since the pressure chambers can be flushed, the units are also suitable for polluted media. **!** When measuring gas or vapour, the instruments must be used in accordance with the safety recommendations of EN 837-2 (see appendix).

Type

PF 100/160 Dif H D402

Nominal size

100 – 160

Function

Each of the pressures acts on a diaphragm. The diaphragms are connected via a rod. To compensate for the static pressure, the chamber between the diaphragms is filled with pressure transmission liquid. At identical pressures, both diaphragms are in „rest“ position. If the pressures are different, the diaphragms change their shape in the direction of the lower pressure. This displacement is picked up by the movement. The differential pressure is directly indicated by a pointer.

Accuracy class (EN 837-3/6)

1.6

Ranges (EN 837-3/5)

NG 100 0/0.6 to 0/25 bar

NG 160 0/40 mbar to 0/25 bar

Maximum static pressure

40 bar/100 bar

Overpressure safety

Up to the maximum static pressure on one side

Operating temperature range

Medium: $T_{max} = +100\text{ °C}$

Ambient: $T_{min} = -20\text{ °C}$

$T_{max} = +80\text{ °C}$

Protection

IP 54 (EN 60529)

Standard version

Connection

Stainless steel, bottom

Flange connection based on DIN 19213

2 x G¹/₂ female thread

Measuring element

Diaphragm,

≤ 400 mbar stainless steel 316 Ti or 316 L

> 400 mbar Duratherm

Intermediate block

AlMgSiPb – hard coated

Pressure transmission liquid

Acid free oil

Zero correction

through top housing opening
±25 % of full scale value

Seals

FPM (Viton)

Movement

Stainless steel

Dial

Aluminium, white

Dial marking black

Pointer

Aluminium, black

Housing

Stainless steel 304

Bayonet type bezel

Stainless steel 304

Front glass

Laminated safety glass

Mounting

Wall mounting via a back mounting plate (optional) or pipe mounting by a combination of a back mounting plate and fixing clamp (optional) for 2" pipe

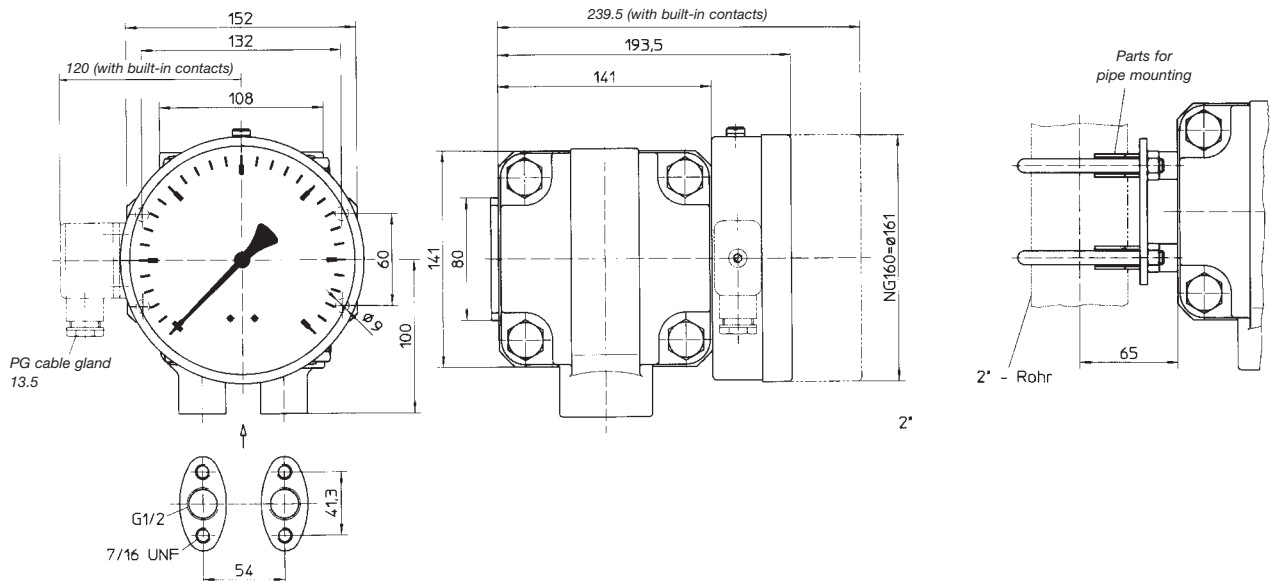
Options

- Fixing clamp for 2" pipe
- Glycerine filling (type D 802)
- Electrical contacts (> 100 mbar)

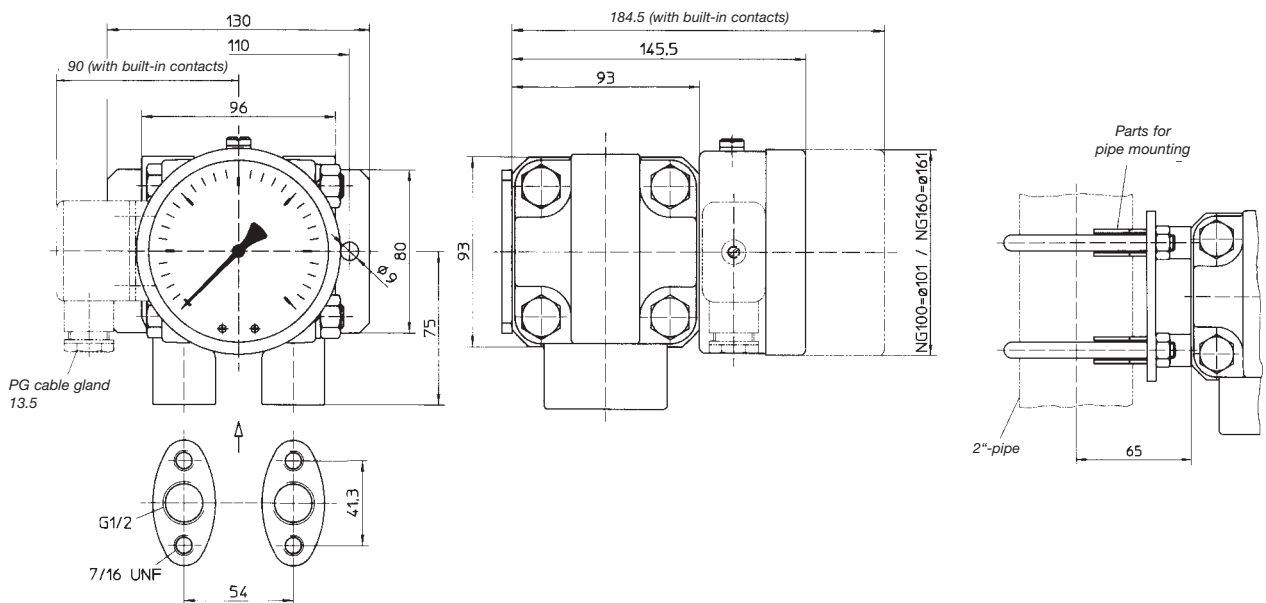
Diaphragm pressure gauges for differential pressure for chemical applications – high overload protection

Type D 4 – NG 100/160 Housing types and dimensions (in mm)

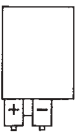

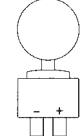

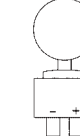


Ranges 0/40 to 0/400 mbar NG 160



Ranges 0/0.6 to 0/25 bar NG 100/160



Spring-diaphragm pressure gauges/diaphragm pressure gauges for differential pressure

Type	MF 100 Dif, D401	MF 100 Ch Dif, D402	MFW 100 Ch Dif, D402	MFW 100 Ch Dif, MK1 D402	MFW 100 Ch Dif, IK1 D402	PF 100 Ch Dif H, D402	PF 160 Ch Dif H, D402
Version							
Housing-Ø	100	100	100	100	100	100	160
Housing	Stainless steel 304, bayonet type bezel stainless steel 304						
Meas. elem.	refer to data sheet					Stainless steel/Duratherm	
Accuracy class	2.5	2.5	2.5	2.5	2.5	1.6	1.6
Connection	2 x G1/2B	2 x G1/2B	2 x G1/2B	2 x G1/2B	2 x G1/2B	Flange connection based on DIN 19213, 2 x G1/2 female thread	
Max. static pressure	25 bar	25 bar	25 bar	25 bar	25 bar	40 bar	
Range	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
0/40 mbar	---	---	---	---	---	---	88022402
0/60 mbar	---	---	---	---	---	---	88023402
0/100 mbar	---	---	---	---	---	---	88024402
0/160 mbar	---	---	---	---	---	---	88025402
0/250 mbar	88086401	88086402	88106402	88126402	88146402	---	88026402
0/400 mbar	88087401	88087402	88107402	88127402	88147402	---	88027402
0/600 mbar	88088401	88088402	88108402	88128402	88148402	88008402	88028402
0/1 bar	88089401	88089402	88109402	88129402	88149402	88009402	88029402
0/1.6 bar	88090401	88090402	88110402	88130402	88150402	88010402	88030402
0/2.5 bar	88091401	88091402	88111402	88131402	88151402	88011402	88031402
0/4 bar	88092401	88092402	88112402	88132402	88152402	88012402	88032402
0/6 bar	88093401	88093402	88113402	88133402	88153402	88013402	88033402
0/10 bar	---	---	88114402	88134402	88154402	88014402	88034402
0/16 bar	---	---	88115402	88135402	88155402	88015402	88035402
0/25 bar	---	---	88116402	88136402	88156402	88016402	88036402
Add. costs							
Max. static pressure PN 100	---	---	---	---	---	---	---
Glycerine filling							
Wall mounting	Back flange		Connection piece for instrument bracket is standard. Refer to page 409 for instrument brackets.			Standard	
Pipe mounting (2")	---	---	---	---	---		