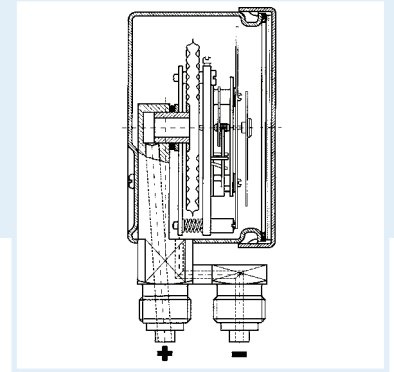


Standard capsule pressure gauges for differential pressure

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- Measurement of extremely small differential pressures
- Robust design
- Static pressures up to 400 mbar
- Direct indication of the differential pressure
- Many customised versions available



Application For differential pressure measurement of non-corrosive, gaseous, dry media. Especially suitable for filter loss measurement in air conditioning and ventilation applications.
! For measuring gas or vapour, these gauges must be used in accordance with the table "Selection Criteria as per EN 837-2" (see appendix!)

Technical specifications

Type
D 9/D 4

Nominal size
63 – 100 – 160

Function
The "plus" pressure (= high pressure) is applied to the inside of the diaphragm. The "minus" pressure (= low pressure) is applied to the inside of the pressure-tight housing. The pressure difference causes the diaphragm to change its shape, thus generating the movement required to measure the 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 (≤ 10 mbar – 2.5)

Ranges (EN 837-3/5)
NG 63 0/16 to 0/400 mbar
NG 100 0/6 to 0/400 mbar
NG 160 0/4 to 0/400 mbar

Standard version Connection (wetted part)
NG 63:
2 x G $\frac{1}{4}$ B – spanner size SW 14 centre back (brass)
NG 100../..160:
2 x G $\frac{1}{2}$ B – spanner size SW 22 bottom (stainless steel)
2 x G $\frac{1}{2}$ B – spanner size SW 22 centre back (brass) (EN 837-3/7.3)

Measuring element (wetted part)
Capsule element, CuBe alloy

Movement (wetted part)
Brass

Seal (wetted part)
NBR (Perbunan)

Options

- Back flange
- 3-hole fixing, panel mounting bezel
- Hose connections

Application area

Static load: full scale value
Dynamic load: 0.9 x full scale value

Overpressure safety

Full scale value

Maximum static pressure

400 mbar

Operating temperature range

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

Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:
rising temperature approx. ± 0.6 %/10 K
falling temperature approx. ± 0.6 %/10 K
of full scale value

Degree of protection

IP 66 (EN 60529)

Dial (wetted part)

Aluminium, white, dial marking black

Pointer (wetted)

Aluminium, black

Housing (wetted part)

Stainless steel 304

Bayonet type bezel/crimped bezel

Stainless steel 304

Window (wetted part)

Plastic (PMMA)

Mounting

Wall mounting by means of back flange or 3-hole fixing, panel mounting bezel (each as option).
Direct mounting to rigid measuring line possible.

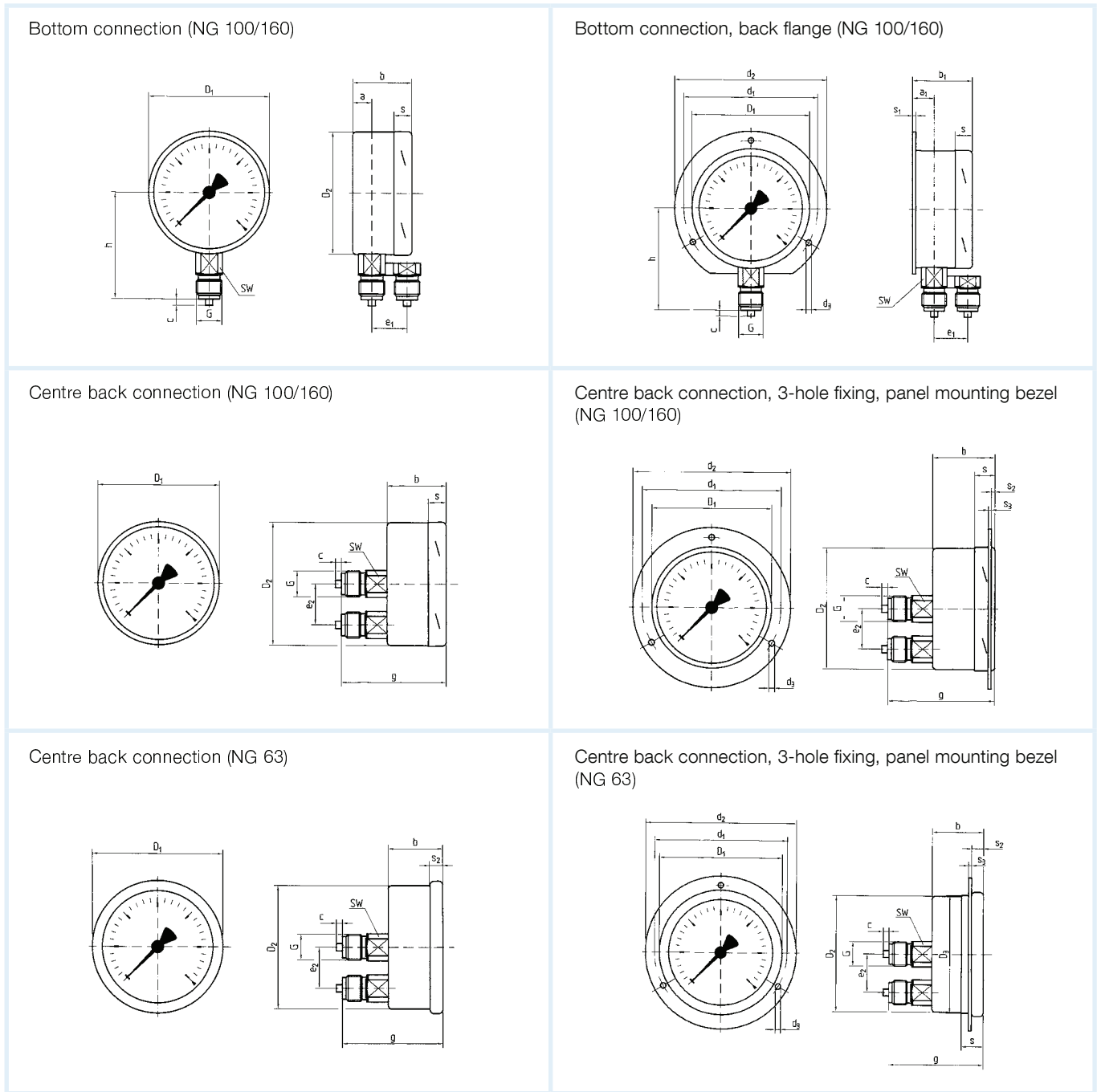
- Special scales
- Other process connections

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See page 133 for prices.

Standard capsule pressure gauges for differential pressure

type D 9 – NG 63/type D 4 – NG 100/160

1 Housing types and dimensions



Dimensions (mm)

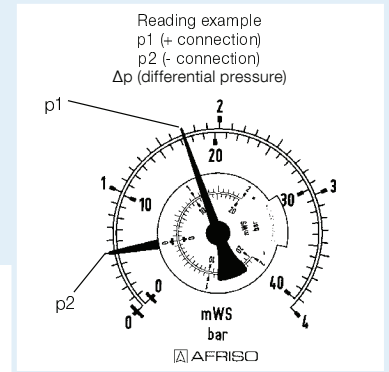
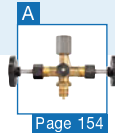
Nominal size (NG)	a	a1	b	b1	c	d1*	d2	d3*	D1	D2	D3	e1	e2	g	G	h	S	S1	S2	S3	SW
63	-	-	30.5	-	2	75	85	3.6	68	62	64.3	-	20	53	G¼B	-	14	-	6	2	14
100	16	18	49	51	3	116	133	4.5	101	99	-	32	34.5	79	G½B	86	20	5	2.5	3	22
160	16	19	49	52	3	178	196	4.5	161	159	-	32	34.5	79	G½B	118	20	6	4.5	2	22

* Dimensions as per DIN 16063/16064.

Standard Bourdon tube pressure gauges for differential pressure



- Indication of plus pressure, minus pressure and differential pressure
- Excellent price/performance ratio
- Two independent Bourdon tube systems
- Housing and wetted parts also available in stainless steel (option)



Application For differential pressure measurement of gaseous and liquid media which are not highly viscous, do not crystallize and do not attack copper alloys. Specially suitable for heating systems (supply and return pipes). ! For measuring gas or vapour, these gauges must be used in accordance with the table "Selection Criteria as per EN 837-2" (see appendix)!

Technical specifications

Type
D 2

Nominal size
100

Function

The pressures are measured in two independent Bourdon tube systems ("plus" pressure = high pressure, "minus" pressure = low pressure). The pressure is indicated by means of a dial and a pointer. The differential pressure scale covers 50 % of the range of the "plus" pressure and 50 % of the range of the "minus" pressure. The black pointer ("plus" connection) and the red pointer ("minus" connection) at the differential pressure gauge scale allow you to read the pressures in both systems on the fixed scale.

Accuracy class (EN 837-1/6)
1.6

Ranges (EN 837-1/5)
0/0.6 to 0/60 bar

Standard version

Connection

Brass, bottom; parallel in line
2 x G $\frac{1}{2}$ B – spanner size SW 22 (EN 837-1/7.3)

Measuring element

Bourdon tube, "C" type tube, copper alloy

Movement

Brass

Dial

Aluminium, white
Dial marking black (bar/mWC)

Options

- Wetted parts stainless steel
- Housing and push on bezel stainless steel
- Nominal size 160 (type D1, housing plastic)
- Back flange

Application area

The maximum pressure in the system must not exceed the full scale value. For good readability, the differential pressure to be measured should not be less than approx. 20 % of the full scale value.

Operating temperature range

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

Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:
rising temperature approx. $\pm 0.4\text{ } \%/10\text{ K}$
falling temperature approx. $\pm 0.4\text{ } \%/10\text{ K}$
of full scale value

Degree of protection

IP 32 (EN 60529)

Pointer/dial

Aluminium

Housing

Sheet steel, black

Push on bezel

Sheet steel, black

Window

Instrument glass

- 3-hole fixing, panel mounting bezel
- Damping screw
- Special scales
- Other process connections

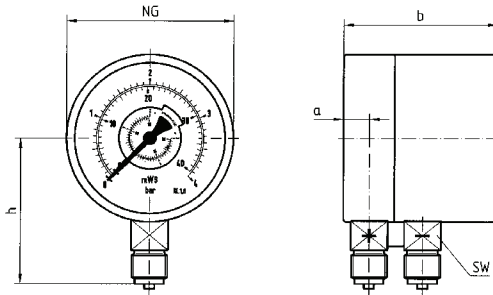


See page 133 for prices.

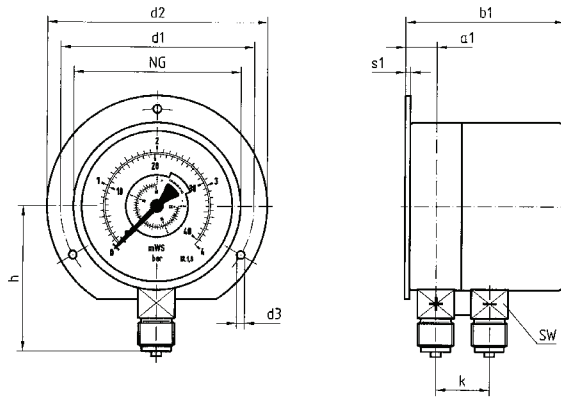
Standard Bourdon tube pressure gauges for differential pressure type D 2 – NG 100

1 Housing types and dimensions

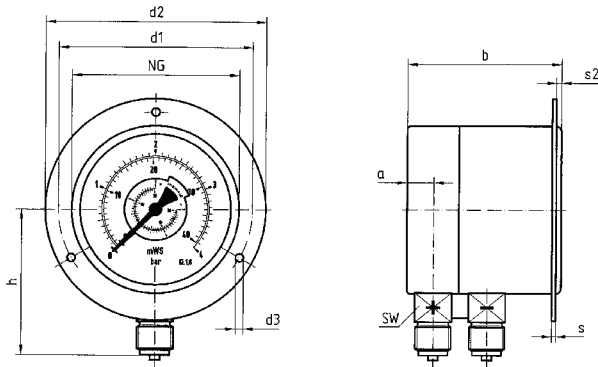
Bottom connection



Bottom connection, back flange



Bottom connection, 3-hole fixing, panel mounting bezel



Dimensions (mm)

Nominal size (NG)	a	a1	b	b1	Øc	c1	c2	d1*	d2*	d3*	G	h	k	s	s1	s2	SW
100	15.6	19.1	84	87.5	6	3	20	116	132	4.8	G½B	86	32	2	5.5	3	22

* Dimensions as per DIN 16064.

Standard capsule/Bourdon tube pressure gauges for differential pressure

DG: M, PG: 2

1

Type	KP63Dif, D 911	KP100Dif, D 401	KP100Dif, D 411	KP160Dif, D 401	KP160Dif, D 411	RF100Dif, D 201	RF100Dif, D 301	RF160Dif, D 101
Version								
Housing Ø	63	100	100	160	160	100	100	160
Housing	Stainless steel 304, plastic window					Sheet steel	Stainless steel	Plastic
Measuring element	Capsule element, CuBe alloy					Bourdon tube, copper alloy		
Accuracy class	1.6	1.6*	1.6*	1.6*	1.6*	1.6	1.6	1.6
Connection	G¼B	G½B	G½B	G½B	G½B	G½B	G½B	G½B
	Dual scale bar/mWC, black							
Range	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
Price €								
0/4 mbar	---	---	---	35612401	35612411	---	---	---
0/6 mbar	---	35563401	35563411	35613401	35613411	---	---	---
0/10 mbar	---	35564401	35564411	35614401	35614411	---	---	---
0/16 mbar	35515911	35565401	35565411	35615401	35615411	---	---	---
0/25 mbar	35516911	35566401	35566411	35616401	35616411	---	---	---
0/40 mbar	35517911	35567401	35567411	35617401	35617411	---	---	---
0/60 mbar	35518911	35568401	35568411	35618401	35618411	---	---	---
0/100 mbar	35519911	35569401	35569411	35619401	35619411	---	---	---
0/160 mbar	35520911	35570401	35570411	35620401	35620411	---	---	---
0/250 mbar	35521911	35571401	35571411	35621401	35621411	---	---	---
0/400 mbar	35522911	35572401	35572411	35622401	35622411	---	---	---
Price €								
0/0.6 bar	---	---	---	---	---	85609201	85609301	---
0/1 bar	---	---	---	---	---	85610201	85610301	85660101
0/1.6 bar	---	---	---	---	---	85611201	85611301	85661101
0/2.5 bar	---	---	---	---	---	85612201	85612301	85662101
0/4 bar	---	---	---	---	---	85613201	85613301	85663101
0/6 bar	---	---	---	---	---	85614201	85614301	85664101
0/10 bar	---	---	---	---	---	85615201	85615301	85665101
0/16 bar	---	---	---	---	---	85616201	85616301	85666101
0/25 bar	---	---	---	---	---	85617201	85617301	85667101
0/40 bar	---	---	---	---	---	85618201	85618301	85668101
Price €								
0/60 bar	---	---	---	---	---	85619201	85619301	85669101
0/100 bar	---	---	---	---	---	---	---	85670101
0/160 bar	---	---	---	---	---	---	---	85671101
0/250 bar	---	---	---	---	---	---	---	85672101
0/400 bar	---	---	---	---	---	---	---	85673101
Extra charges (PG: 3)						Price €	Price €	Price €
Wetted parts stainless steel	---	---	---	---	---			On request

* ≤ 10 mbar = accuracy class 2.5



See page 150 for extra charges for mounting accessories.