



Diaphragm Pressure Gauges

all stainless steel version
for aggressive media



measuring
•
monitoring
•
analysing

MAN-C



- Housing Ø100 + 160 mm
- Connection DIN or ANSI flange
- Basic material: stainless steel
- Wetted parts: ECTFE and PTFE
- Measuring ranges:
-250 mbar ... +25 bar
- Medium temperature
up to 200 °C
- Option: filling liquid,
contacts, transmitter,
overpressure resistant



P1

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Application

KOBOLD all stainless steel diaphragm pressure gauges are preferably used for aggressive media where standard diaphragm pressure gauges are challenged. Diaphragm pressure gauges have a relatively high actuating force. The circular diaphragm is insensitive to jarring or vibration. An extremely high resistance to overpressure is achieved by underpropping the diaphragm.

For highly viscous, crystallising or strongly heterogeneous media, open flange connections are used. The wetted parts are coated by high quality polymers (PTFE/ECTFE) for specific use with aggressive media. Also, the used seals are made of PTFE or covered by it.

In contrast to pressure gauges assembled with membrane chemical seals, the accuracy and zero point stability is ensured over a bigger temperature range. Even the mechanical stability and robustness is multifold in comparison to sensitive membrane chemical seals.

Measuring Principle

The weld-in or clamped diaphragm is subjected to pressure from one side. The pressure bends the diaphragm and an indicator mechanism converts the amount it is bent into a corresponding movement of the pointer. The scale on the dial then shows the actual pressure. Because of the diaphragm's shape and the fact that it is mounted on the side means it is mechanically very stable, and consequently less susceptible to vibration than Bourdon gauges.

Housing

The following housing diameters are available: 100 mm and 160 mm. The housing material is stainless steel.

Installation

The gauges are most often installed straight into the customer's screw necks. Open measuring flanges for special operational conditions are available either as Norm or customer specifications.

Connection

The gauges are supplied with DIN or ANSI flanges. Other flanges are available as per Norm or customer specifications.

Measuring Ranges

The measuring ranges are graduated according to DIN recommendations and lie between -250 mbar and 25 bar. Other scales with measuring ranges in PSI, Pa or as OEM version are available on request.

Damping Liquid

Pressure gauges with liquid filling are used in locations with high alternating dynamic loads, strong vibrations and pulses. The filling ensures easy readability through steady pointer movement even when subjected to extreme loading and heavy vibration. The lubricating effect of the glycerine also keeps wear to a minimum. Glycerine is always used as a matter of principle.

In gauges with a contact or an electrical measuring transducer, liquid paraffin is used as a non-conductive alternative. Silicone fillings of various viscosities are also optionally available.

Contacts

For monitoring the system pressure, gauges with 100 mm or 160 mm diameter can be fitted with up to four limit contacts. Slow action, magnetic spring, inductive and pneumatic contacts are also available. (see website »Contact Fittings for Pressure Gauges«).

Fields of Application

- Chemical and petrochemical industries
- Plastics and paper-manufacturing industries
- Food and beverage industries
- Machine and plant construction
- Process technology

All Stainless Steel Diaphragm Pressure Gauges

Model/Code	MAN-CF2...	MAN-CF7...	MAN-CG2...	MAN-CG7...
Measuring chamber and measuring spring ECTFE (HALAR®) coated PTFE or comparable seal with standoff (neckpipe) 50 mm from 0,4 bar measuring spring welded	Ø 100 unfilled	Ø 100 filled	Ø 160 unfilled	Ø 160 filled
Accuracy class	1.6	1.6	1.6	1.6
Housing	1.4301	1.4301	1.4301	1.4301
Housing diameter	100 mm	100 mm	160 mm	160 mm
Ø measuring flange (up to 0,25 bar Ø 160 mm)	100 mm (from 0,4 bar)	100 mm (from 0,4 bar)	100 mm (from 0,4 bar)	100 mm (from 0,4 bar)
Pointer	stainless steel	stainless steel	stainless steel	stainless steel
Wetted materials	ECTFE + PTFE*	ECTFE + PTFE*	ECTFE + PTFE*	ECTFE + PTFE*
Connection	DIN/ANSI flange	DIN/ANSI flange	DIN/ANSI flange	DIN/ANSI flange
Connection	at bottom	at bottom	at bottom	at bottom
max. temperature	80 °C (option 200°C)	80 °C	80 °C (option 200°C)	80 °C
max. pressure	1,3-fold (for a short time)	1,3-fold (for a short time)	1,3-fold (for a short time)	1,3-fold (for a short time)
Protection	IP54 (option IP65)	IP65	IP54 (option IP65)	IP65
Measuring range	Code measuring range			
-25...0 mbar	E7	E7	E7	E7
-40...0 mbar	E8	E8	E8	E8
-60...0 mbar	E9	E9	E9	E9
-100...0 mbar	E0	E0	E0	E0
-160...0 mbar	E1	E1	E1	E1
-250...0 mbar	E2	E2	E2	E2
0...25 mbar	F9	F9	F9	F9
0...40 mbar	F0	F0	F0	F0
0...60 mbar	F1	F1	F1	F1
0...100 mbar	F2	F2	F2	F2
0...160 mbar	F3	F3	F3	F3
0...250 mbar	F4	F4	F4	F4
-0,4...0 bar	AB	AB	AB	AB
-0,6...0 bar	AC	AC	AC	AC
-1...0 bar	AD	AD	AD	AD
-1...0,6 bar	A0	A0	A0	A0
-1...+1,5 bar	A1	A1	A1	A1
-1...+3 bar	A2	A2	A2	A2
-1...+5 bar	A3	A3	A3	A3
-1...+9 bar	A4	A4	A4	A4
-1...+15 bar	A5	A5	A5	A5
0...0,4 bar	BA	BA	BA	BA
0...0,6 bar	B1	B1	B1	B1
0...1 bar	B2	B2	B2	B2
0...1,6 bar	B3	B3	B3	B3
0...2,5 bar	B4	B4	B4	B4
0...4 bar	B5	B5	B5	B5
0...6 bar	B6	B6	B6	B6
0...10 bar	B7	B7	B7	B7
0...16 bar	B8	B8	B8	B8
0...25 bar	B9	B9	B9	B9

* seal



All Stainless Steel Diaphragm Pressure Gauges (continued)

Connection DIN 2501 flange	Code connection DIN flange			
DN15 PN6	D151	D151	D151	D151
DN20 PN6	D201	D201	D201	D201
DN25 PN6	D251	D251	D251	D251
DN32 PN6	D321	D321	D321	D321
DN40 PN6	D401	D401	D401	D401
DN50 PN6	D501	D501	D501	D501
DN65 PN6	D651	D651	D651	D651
DN80 PN6	D801	D801	D801	D801
DN100 PN6	D1H1	D1H1	D1H1	D1H1
DN15 PN16 (=10)	D152	D152	D152	D152
DN20 PN16 (=10)	D202	D202	D202	D202
DN25 PN16 (=10)	D252	D252	D252	D252
DN32 PN16 (=10)	D322	D322	D322	D322
DN40 PN16 (=10)	D402	D402	D402	D402
DN50 PN16 (=10)	D502	D502	D502	D502
DN65 PN16 (=10)	D652	D652	D652	D652
DN80 PN16 (=10)	D802	D802	D802	D802
DN100 PN16 (=10)	D1H2	D1H2	D1H2	D1H2
DN15 PN40 (=25)	D154	D154	D154	D154
DN20 PN40 (=25)	D204	D204	D204	D204
DN25 PN40 (=25)	D254	D254	D254	D254
DN32 PN40 (=25)	D324	D324	D324	D324
DN40 PN40 (=25)	D404	D404	D404	D404
DN50 PN40 (=25)	D504	D504	D504	D504
DN65 PN40 (=25)	D654	D654	D654	D654
DN80 PN40 (=25)	D804	D804	D804	D804
DN100 PN40 (=25)	D1H4	D1H4	D1H4	D1H4
Connection ANSI B16,5 flange	Code connection ANSI flange			
½" 150 lb/square inch	A051	A051	A051	A051
¾" 150 lb/sq.in	A071	A071	A071	A071
1" 150 lb/sq.in	A101	A101	A101	A101
1¼" 150 lb/sq.in	A121	A121	A121	A121
1½" 150 lb/sq.in	A151	A151	A151	A151
2" 150 lb/sq.in	A201	A201	A201	A201
2½" 150 lb/sq.in	A251	A251	A251	A251
3" 150 lb/sq.in	A301	A301	A301	A301
3½" 150 lb/sq.in	A351	A351	A351	A351
4" 150 lb/sq.in	A401	A401	A401	A401
½" 300 lb/sq.in	A053	A053	A053	A053
¾" 300 lb/sq.in	A073	A073	A073	A073
1" 300 lb/sq.in	A103	A103	A103	A103
1¼" 300 lb/sq.in	A123	A123	A123	A123
1½" 300 lb/sq.in	A153	A153	A153	A153
2" 300 lb/sq.in	A203	A203	A203	A203
2½" 300 lb/sq.in	A253	A253	A253	A253
3" 300 lb/sq.in	A303	A303	A303	A303
3½" 300 lb/sq.in	A353	A353	A353	A353
4" 300 lb/sq.in	A403	A403	A403	A403
1" 600 lb/sq.in	A106	A106	A106	A106
1¼" 600 lb/sq.in	A126	A126	A126	A126
1½" 600 lb/sq.in	A156	A156	A156	A156
2" 600 lb/sq.in	A206	A206	A206	A206
2½" 600 lb/sq.in	A256	A256	A256	A256
3" 600 lb/sq.in	A306	A306	A306	A306



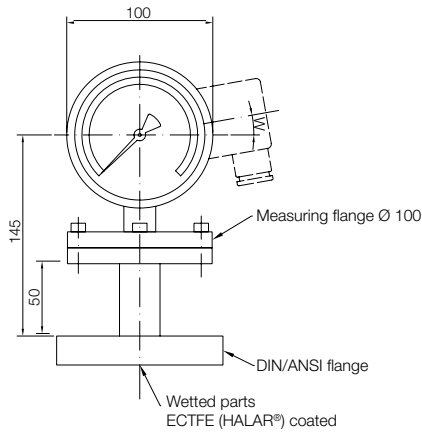
All Stainless Steel Diaphragm Pressure Gauges (continued)

Connection ANSI B16,5 flange	Code connection ANSI flange			
3½" 600 lb/sq.in	A356	A356	A356	A356
4" 600 lb/sq.in	A406	A406	A406	A406
1" 1500 lb/sq.in	A109	A109	A109	A109
1¼" 1500 lb/sq.in	A129	A129	A129	A129
1½" 1500 lb/sq.in	A159	A159	A159	A159
2" 1500 lb/sq.in	A209	A209	A209	A209
2½" 1500 lb/sq.in	A259	A259	A259	A259
3" 1500 lb/sq.in	A309	A309	A309	A309
4" 1500 lb/sq.in	A409	A409	A409	A409
Options	Code options			
Slow action contacts from 160 mbar	S	S	S	S
Magnetic spring contacts from 600 mbar	M	M	M	M
Inductive contacts from 60 mbar	I	I	I	I
Transmitter for analogue output in-built from 160 mbar	F	F	F	F
Further options (on request) specify in writing:	Y	Y	Y	Y
Protection IP65 (fillable)	✓	✓	✓	✓
Medium density adjustment	✓	✓	✓	✓
Medium temperature >100 °C*	✓	-	✓	-
Display PSI/Pa... instead of (m)bar	✓	✓	✓	✓
Adjustable indicator (for zero-point setting)	✓	-	✓	-
Temperature adjustment up to 80 °C	✓	✓	✓	✓
Temperature adjustment from 80 °C...200 °C	✓	-	✓	-
Overpressure safe 4-fold, max. 40 bar	✓	✓	✓	✓
Overpressure safe up to 40 bar	✓	✓	✓	✓

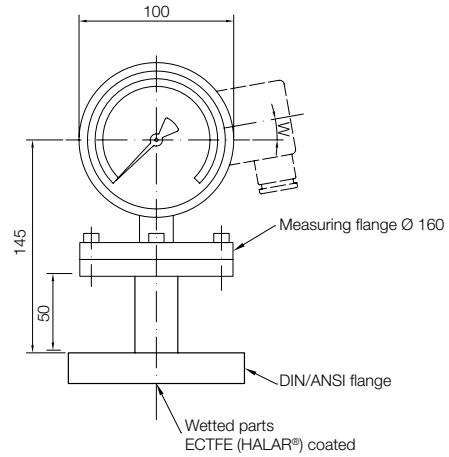
* Additional 50 mm between housing and measuring flange

Dimensions mm]

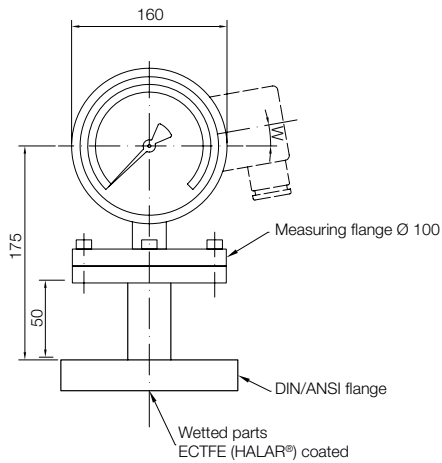
**All Stainless Steel Diaphragm Type
Pressure Gauges MAN-CF**
> 250 mbar



**All Stainless Steel Diaphragm Type
Pressure Gauges MAN-CF**
≤ 250 mbar



**All Stainless Steel Diaphragm Type
Pressure Gauges MAN-CG**
> 250 mbar



**All Stainless Steel Diaphragm Type
Pressure Gauges meter MAN-CG**
≤ 250 mbar

