BOURDON HAENNI
made to measure

instruments for industry

MDD/H/C/J/M/N Bellows differential pressure gauges

Ø 100 mm - Ø 150 mm

These pressure gauges are designed for measuring low differential pressures from 75 mbar up to 35 bar with high static pressure values up to 400 bar.

They can be used on gas or corrosive fluid systems, for measuring flow, indicating levels, detecting clogged filters, etc...

It is a sealed unit and the indicator can be filled with a dampening liquid.

Each bellow pressure gauge can bear accidentally the full static pressure without any damage of the device.

High pressure

Low pressure

Specifications (20°C)

Common	
Accuracy	125 mbar to 35 bar scale : ± 1% of full scale 75 mbar scale : ± 1.6% of full scale (MDD and MDH only)
Operating temperature	-50°C to +90°C. For temperatures higher than 90°C, use cooling systems
Degree of protection	IP 65 according to EN 60529
Case and bezelring	1.4404 (AISI 316 L) stainless steel Sealed, bayonet fixing
Window	Safety laminated glass 3 mm thick
Window gasket	Hypalon elastomer
Movement	Stainless steel
Dial	Aluminium alloy. Black graduations and figures on white background with elastomer zero stop
Pointer	Aluminium alloy black painted adjustable pointer
Blow out disc	Elastomer
Others	Filled with Propylene-Glycol transmitter fluid Viton sealing gasket

Differential cell	
MDD - bronze bellows version	- Range 75 mbar to 35 bar - Max. static pressure 70 bar (1000 psi) - Beryllium copper bellows - Brass bellows center plate - Brass cell end housing - 1/4 NPT female thread only
MDH	- Identical to the MDD, but with a cell end housing in 1.4404 (AISI 316 L) stainless steel Static pressure 200 bar (3000 psi) - 1/2 NPT female threads
MDC - MDJ - stainless steel bellows version	- Range 125 mbar to 35 bar - Static pressure : 200 bar (3000 psi) and 400 bar (6000 psi) - 1.4404 (AISI 316 L) stainless steel bellows - Carbon steel (MDC) or 316 L stainless steel (MDJ) bellows center plate - 1.4404 (AISI 316 L) stainless steel cell end housing - 1/2 NPT female threads
MDM - monel 400 bellows version	- Range 125 mbar to 4 bar - Static pressure : 200 bar (3000 psi) and 400 bar (6000 psi) - Monel 400 bellows - 1.4404 (AISI 316 L) stainless steel bellows center plate - Monel 400 cell end housing - 1/2 NPT female threads
MDN	- Identical to the MDM, but with 1.4404 (AISI 316 L) cell end housing

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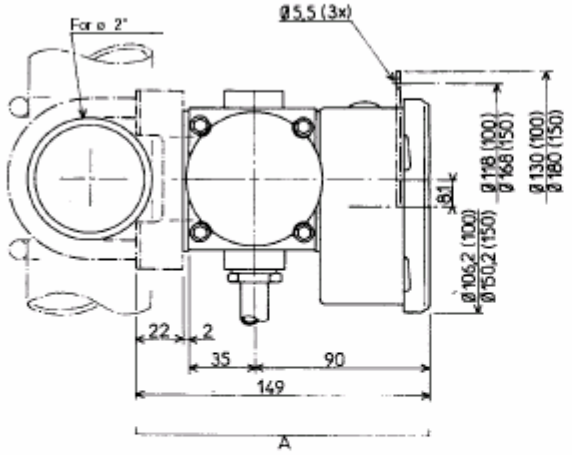
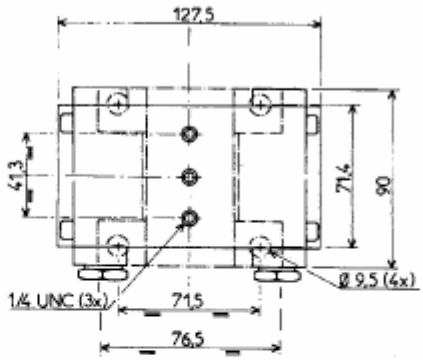
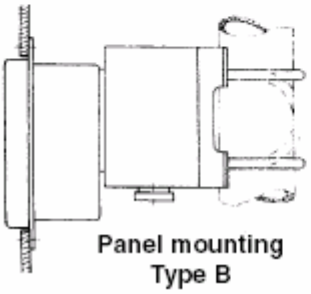
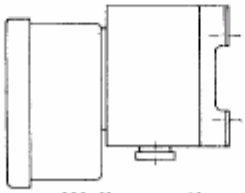
Dimensions (mm) - fitting



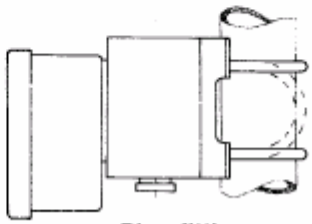




Panel mounting
Type B



Wall mounting
Type A



Pipe fitting
Type P

Standard connection lower	
1/2 NPT female	1/4 NPT female

Weight - 3.75 Kg

Ranges

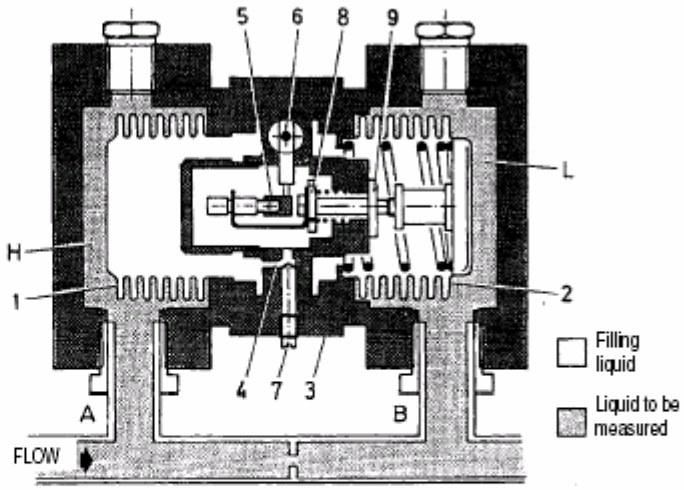
	PRESSURE		MODEL - DIA															
			MDD		MDH		MDC / MDJ				MDM				MDN			
Code	mbar		100	150	100	150	100	150	100	150	100	150	100	150	100	150	100	150
1G	0 + 75		*	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-
08	0 + 100		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
1H	0 + 125		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
1J	0 + 150		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
10	0 + 250		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
11	0 + 400		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
99	0 + 500		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
12	0 + 600		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
1N	0 + 750		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
Code	psi	bar	100	150	100	150	100	150	100	150	100	150	100	150	100	150	100	150
15	0 + 15	0 + 1	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
16	0 + 20	0 + 1.6	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
17	0 + 30	0 + 2	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
18	0 + 40	0 + 2.5	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
19	0 + 60	0 + 4	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
20	0 + 100	0 + 6	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	-	-	-	-	-	-	-	-
22	0 + 160	0 + 10	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	-	-	-	-	-	-	-	-
24	0 + 250	0 + 16	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	-	-	-	-	-	-	-	-
26	0 + 400	0 + 25	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	-	-	-	-	-	-	-	-
1E	0 + 500	0 + 35	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	-	-	-	-	-	-	-	-

Static pressure								
psi	1000	3000	3000	6000	3000	6000	3000	6000
bar	70	200	200	400	200	400	200	400
Code	30	34	34	38	34	38	34	38

* Accuracy ± 1.6 % of full scale
⊗ Accuracy ± 1 % of full scale
\- Unavailable

Mechanical diagram

1 - High pressure bellows
2 - Low pressure bellows
3 - Housing
4 - HP-LP interconnection hole
5 - Temperature compensation
6 - Motion transmission shaft
7 - Adjustment valve - For adjustment of the pulse damping
8 - Overrange valve
9 - Overrange valve
A - Process HP connection
B - Process LP connection
H - HP section end piece
L - LP section end piece



Description of operation:

Two bellows (1 - 2) filled with a pressure transmission fluid are connected to the cell housing (3) and protected by end housing (H - L).
Bellows (1) corresponds to the high pressure connection.
Bellows (2) corresponds to the low pressure connection.

The measuring element detects the difference in pressure between inlet A and inlet B.
This difference in pressure between A and B induces movement of bellows (1), the pressure transmission fluid passes through the orifice (4) and displaces bellows (2).

A mechanical system linked to bellows (2) converts the linear motion into rotary motion.

A shaft with a sealed outlet (6) provides an attachment for the pointer amplifier system.

The internal mechanical system is equiped with a compensating mechanism for variations in temperature (5).

Two valves (8 - 9) protect the cell against overpressure.
Pulsation dampening can be adjusted directly on the cell by turning the adjustment valve (7) which is accessible from the exterior of the unit.

Options Uncoded option (have to be listed after the code number)

Common specifications

Window - glass
- polycarbonate

Special scales

Electrical contacts: CES - CEI
min pressure = 250 mbar

Cells

Special filling: consult us

Cleanliness for laboratory standard

Conforms to recommendation NACE MR 01-75

Special seals - Nitrile
- Ethylene propylene

Explosion-proof housing version
min pressure = 250 mbar - Type A 150 mm dia

Fitting chemical seals : consult us.

Coded options

BH1 filling (glycerine) - BH3 filling (silicone oil).

Codification - MDD/MDH/MDC/MDJ/MDM/MDN

		MDxx	xxx	xxx
Family	1´ digit			
Pressure gauges		M		
Type	2´...3´ digit			
MDD**		DD		
MDH		DH		
MDC		DC		
MDJ		DJ		
MDM		DM		
MDN		DN		
Dial diameter	4´ digit			
Ø 100 mm		5		
Ø 150 mm		7		
Type of mounting	5´ digit			
Wall mounting			A	
Panel mounting			B	
Pipe fitting			P	
Hydraulic connection	6´ digit			
Female 1/4 NPT**			8	
Female 1/2 NPT			N	
Type of liquid filling	7´ digit			
without			0	
BH1 filling (-20° to + 70°C)			1	
BH3 filling (-40° to + 100°C)			3	
Unit of measurement	8´ digit			
mbar				N
bar				B
kpa				D
kg/cm²				F
psi				H
Pressure range	9´...10´ digit			
See codes in table overleaf				xx

MDD** : female 1/4 NPT only

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