



MDX/MDA/MDE Bellows pressure gauges

Ø 150 mm

Bellows pressure gauges

For corrosive process fluids and atmospheres

The MDX pressure gauge enables measurement of differential pressures from 0 + 0.1 bar (1.5 psi) to 0+25 bar (0+400 psi) at static pressures from 0.6 to 100 bar (1500 psi) (see table overleaf).

A set of two stainless steel bellows mounted on a force balance enables direct reading of the actual differential pressure. Each bellows of the pressure gauge can withstand the full static pressure without any damage or shifting being caused to the instrument for $P \leq 25$ bar (400 psi); a by-pass valve is not necessary.

The MDA pressure gauge enables measurement of absolute pressures (from 0.1 bar A to 16 bar A). The low pressure bellows (where vacuum has been drawn) is used as reference. Not for differential pressures.

The MDE pressure gauge enables measurement of gauge pressures with high overpressures (from 0 + 0.06 bar G to 0 + 10 bar G). Not for differential pressures.



Low
pressure

High
pressure

Specifications (20°C)

| Ranges | MDX, MDA, MDE, see tables overleaf. | | | | | | | | | | | | | | | |
|---|---|---|------|--|--|--|--|--------|---|---|--|---|---|---|---|---|
| Standard accuracy | ± 2% full scale for st. graduations and accuracy (see table overleaf) | | | | | | | | | | | | | | | |
| Standard degree of protection | IP 65 according to EN 60529. | | | | | | | | | | | | | | | |
| Sensing element | Two 1.4404 (AISI 316 L) stainless steel bellows. Balance effect by high tensile leaf spring ; mechanical start and end-of-travel stops to withstand full static pressure. | | | | | | | | | | | | | | | |
| Connections and parts in contact with process fluid : | 1.4401 (AISI 316 L) stainless steel. G 1/2 or 1/2 NPT threads | | | | | | | | | | | | | | | |
| Operating temperature | -40° to + 80° C | | | | | | | | | | | | | | | |
| Case and Bezelring | 1.4301 (AISI 304) stainless steel. Bayonet lock type. | | | | | | | | | | | | | | | |
| Window | Glass, 3 mm thick. | | | | | | | | | | | | | | | |
| Window gasket | Elastomer, ensures a tight seal between glass window and case. | | | | | | | | | | | | | | | |
| Movement | All stainless steel. | | | | | | | | | | | | | | | |
| Mounting | <table border="1"> <thead> <tr> <th></th> <th colspan="2">Type</th> </tr> <tr> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>Direct</td> <td>D</td> <td>F</td> </tr> <tr> <td>Surface mounting by means of removable back flange</td> <td>A</td> <td>E</td> </tr> <tr> <td>Flush panel mounting with front flange welded to case</td> <td>C</td> <td>B</td> </tr> </tbody> </table> | | Type | | | | | Direct | D | F | Surface mounting by means of removable back flange | A | E | Flush panel mounting with front flange welded to case | C | B |
| | Type | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| Direct | D | F | | | | | | | | | | | | | | |
| Surface mounting by means of removable back flange | A | E | | | | | | | | | | | | | | |
| Flush panel mounting with front flange welded to case | C | B | | | | | | | | | | | | | | |
| Dial | Aluminium alloy, with elastomer zero stop, black figures and graduations on white background. | | | | | | | | | | | | | | | |
| Pointer | Aluminium alloy, balanced, black painted. | | | | | | | | | | | | | | | |
| Blow-out disc | Elastomer. Positioned on the top of the pressure gauge. Ensures pressure balance with atmosphere. Blows out when pressure inside the case exceeds 0.6 bar (10 psi). | | | | | | | | | | | | | | | |
| Weight | 1.6 kg ("dry" gauge) 2.5 kg (filled with dampening liquid) | | | | | | | | | | | | | | | |

Options

Coded options

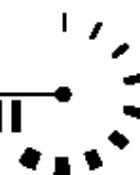
BH version : the watertight case can be filled with a vibration dampening liquid with a degradation of the accuracy of 1%.

Uncoded options (have to be listed after the code number)

Index or set pointer
1.4401 (AISI 316 L) stainless steel case
Toughened or laminated glass or perspex window
Degreased for oxygen service or cleaned to other specifications (laboratory, nuclear...) (Please consult us).
Threads smaller than or equal to G 1/2.

**BOURDON
HAENNI**

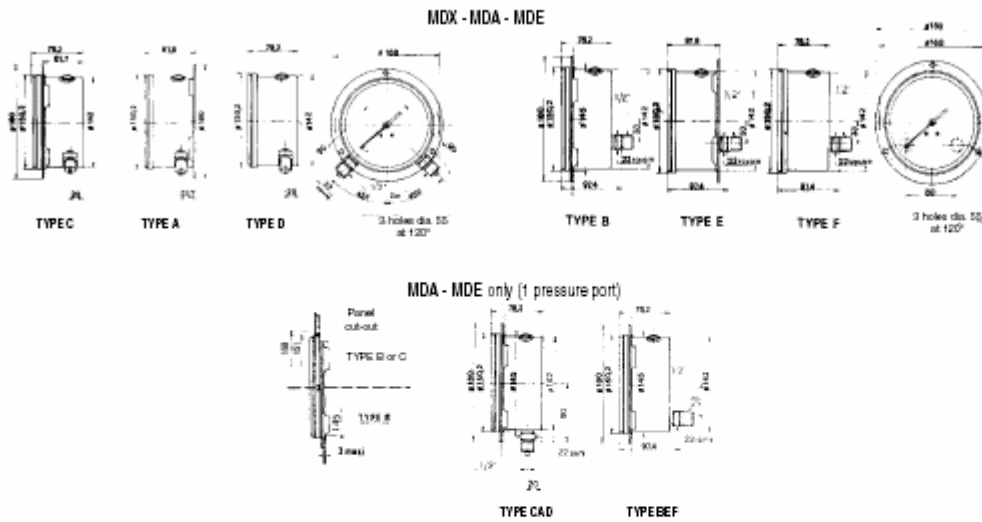
made to measure



Saltire Instruments for Industry Ltd
PO Box 3557, Bothwell, G71 8EN

Tel: +44 (0) 1698 852695 Fax: +44 (0) 1698 853332 email: sales@instrumentsforindustry.biz

Dimensions (mm)



Codification - MDX/MDA/MDE

| Family | 1 digit | MDX7 XXX XXXXXX |
|---------------------------------|--|-----------------|
| Pressure gauges | M | |
| Type | 2...3 digit | |
| MDX | | DX |
| MDA | | DA |
| MDE | | DE |
| Dial diameter | 4 digit | 7 |
| Ø 150 mm | | |
| Type of mounting | 5 digit | |
| bottom connection, back flange | | A |
| back connection, front flange | | B |
| bottom connection, front flange | | C |
| bottom connection | | D |
| back connection, back flange | | E |
| back connection | | F |
| Hydraulic connection | 6 digit | |
| G 1/2 | | 3 |
| G 1/2 NPT | | 6 |
| Type of liquid filling | 7 digit | |
| Without | | 0 |
| BH1 filling (-20° to +70° C) | | 1 |
| BH2 filling (0° to +90° C) | | 2 |
| BH3 filling (-40° to +100° C) | | 3 |
| BH4 filling (-60° to +100° C) | | 4 |
| BH5 filling (-15° to +100° C) | | 5 |
| BH7 filling (-35° to +100° C) | | 7 |
| Unit of measurement | 8 digit | |
| bar | | B |
| kPa | | D |
| kg/cm ² | | F |
| psi | | H |
| Pressure range | 9...10 digit | |
| See codes in table | Ranges : ΔP (MDX), absolute (MDA), gauge (MDE), see standard graduations above | XX |
| Unit of measurement | 11 digit | |
| bar | | B |
| kPa | | D |
| kg/cm ² | | F |
| psi | | H |
| Pressure range | 12...13 digit | |
| See codes in table | Static pressure (MDX) overpressure (MDA, MDE) see above | XX |

| Code | ΔP differential pressure | Static pressure | | | | | | | | | |
|------|--------------------------|-----------------|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| 00 | 0 + 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01 | 0 + 0.15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02 | 0 + 0.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03 | 0 + 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04 | 0 + 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05 | 0 + 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06 | 0 + 1.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07 | 0 + 2.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08 | 0 + 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09 | 0 + 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 + 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 + 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 + 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 + 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 + 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 + 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

MDX
Choose a differential pressure range ΔP corresponding to the maximum static pressure that the instrument is to withstand. For an intermediate static pressure, take the value of the static pressure immediately above.

| Code | Absolute pressure | Overpressure | | | | | | | | | |
|------|-------------------|--------------|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| 00 | 0 + 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01 | 0 + 0.15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02 | 0 + 0.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03 | 0 + 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04 | 0 + 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05 | 0 + 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06 | 0 + 1.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07 | 0 + 2.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08 | 0 + 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09 | 0 + 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 + 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 + 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 + 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 + 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 + 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 + 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

MDA / MDE
Choose an absolute pressure range (MDA) or a gauge pressure range (MDE) corresponding to the maximum over pressure that the instrument is to withstand. For an intermediate over pressure, take the value of the over pressure immediately above.

| Code | Range pressure | Overpressure | | | | | | | | | |
|------|----------------|--------------|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| 00 | 0 + 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01 | 0 + 0.15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02 | 0 + 0.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03 | 0 + 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04 | 0 + 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05 | 0 + 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06 | 0 + 1.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07 | 0 + 2.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08 | 0 + 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09 | 0 + 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 + 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 + 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 + 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 + 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 + 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 + 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* Graduations on 20°
Standard accuracy ±1%
□ Standard accuracy > ±2% @ 20°
● Scale < 20°
Standard accuracy > ±2%



BOTTOM ENTRY VERSION - 54MM CENTRES TO SUIT STANDARD MANIFOLDS

