

## Diaphragm Seals Pressure Gauges

All Stainless Steel, Case With Bayonet Ring

Ø 100 mm (4") and Ø 160 mm (6")

Standard (BID 100 / 160 DS) or Glycerine Filled (BID 100 / 160 LS)

Models :

**BID 100 DS/BID 160 DS**

**BID 100 LS / BID 160 LS**

### APPLICATIONS

Pressure gauges with Diaphragm seals allow to find suitable version for even difficult kinds of media, such as aggressive, contaminated or viscid media.

### NOMINAL HEAD DIAMETERS

Ø 100 mm (4") and Ø 160 mm (6")

### ACCURACY CLASS

Accuracy 1.6 according to EN 837-3 Standard (i.e.  $\pm$  max. 1,6% of full span)

### PRESSURE RANGES (EN / ASME 837)

0/0.6 to 0/600 bar resp. 0/10 to 0/10.000 psi  
also corresponding vacuum / compound pressure ranges

### PRESSURE LIMITATIONS

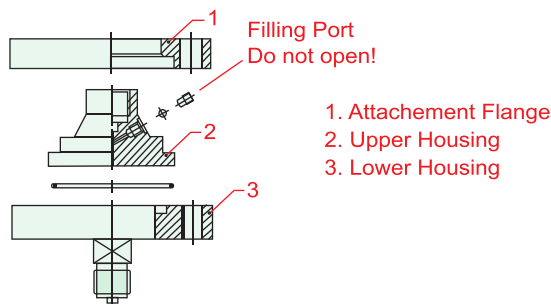
Normal service : Full scale value  
Pulsation service : 90% of full scale value  
Temporary : 130% of full scale value

### PROTECTION TYPE (EN 60529 / IEC 529)

IP 54 dry version / IP 65 filled version

### CONSTRUCTION

The membrane is welded to the upper housing. The diaphragm seals are provided with a filling port in the upper part to simplify the filling of the complete measuring system after mounting and evacuation of the system. A special screw closes the filling port afterwards. This screw may not be opened. The lower housing with process connection (male thread connection or flange) and the upper housing are tied together by an attachment flange and 6 bolts M 8.



### STANDARD CONFIGURATION

### UPPER HOUSING WITH INSTRUMENT CONNECTION

Stainless steel AISI 316 L, G $\frac{1}{2}$ " (½" BSP) female

### DIAPHRAGM / MEMBRANE

Stainless steel AISI 316 L welded to the upper housing; effective Ø of the membrane 64 mm

Another material of membrane, please see page 27

### LOWER HOUSING WITH PROCESS CONNECTION

Stainless steel AISI 316 L

### ATTACHMENT FLANGE AND BOLTS WITH NUTS

Carbon steel zinc plated, 6 bolts and nuts M8

### Filling Fluid

Silicon Oil



### SPECIAL OPTIONS

- ⇒ Process connection other threads or other flange sizes (standard JIS or others) upon request
- ⇒ Special scales, such as dual ranges, special units, fine division (with knife edge pointer) etc.
- ⇒ Protection foil PTFE or others
- ⇒ Capillary line between diaphragm seal and measuring instrument; with or without armored in SS 316 L
- ⇒ Material of lower housing in PVC or PVDF
- ⇒ With **Electrical Accessories**
  - standard contacts, magnetic contacts or inductive electronic (for electrical pressure gauges see page 17+18)

### HOW TO ORDER

Please select :

- |  |            |            |          |          |          |
|--|------------|------------|----------|----------|----------|
|  | <b>BID</b> | <b>100</b> | <b>D</b> | <b>S</b> | <b>A</b> |
| 1. Model code : BID  | _____      | _____      | _____    | _____    | _____    |
| 2. Nominal head diameter<br>Ø 100 mm (4") or Ø 160 mm (6")   | _____      | _____      | _____    | _____    | _____    |
| 3. D : Dry / standard or L : Liquid filled   | _____      | _____      | _____    | _____    | _____    |
| 4. Material of diaphragm/membrane<br>S : Stainless Steel AISI 316 L<br>TA : Tantalum   | _____      | _____      | _____    | _____    | _____    |
| 5. Lower housing with process connection<br>A : Male thread process connection or<br>B1, B2 or B3 : <b>Flange process connection</b><br>(see page 25) or | _____      | _____      | _____    | _____    | _____    |
| MDM number : Number please see other data sheet  |            |            |          |          |          |

### EXAMPLE OF ORDER NUMBER

Diaphragm Seals Pressure Gauges Ø 100 mm  
Material : all stainless steel  
Range : 0 – 6 kg/cm<sup>2</sup>  
Bottom connection : ½" NPT Male  
Dry / non Liquid filled  
Material diaphragm/membrane in stainless steel AISI 316 L

Order number :  
BID 100 DSA, 0 - 6 kg/cm<sup>2</sup>, ½" NPT Male

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Models :

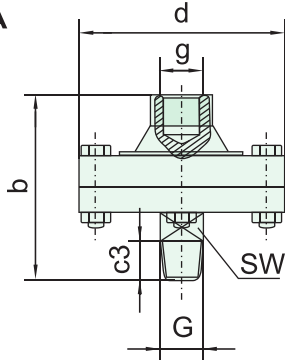
**BID 100 DS/BID 160 DS**

**BID 100 LS/BID 160 LS**

### VARIOUS TYPE OF LOWER HOUSING FOR DIAPHRAGM SEALS

#### MALE THREAD PROCESS CONNECTION

Code Letter : **A**



**PN 40 / 100**  
(600 / 1.500 psi)



**PN 250**  
(3.500 psi)

Dimensional Data (mm) and Weight (kg)

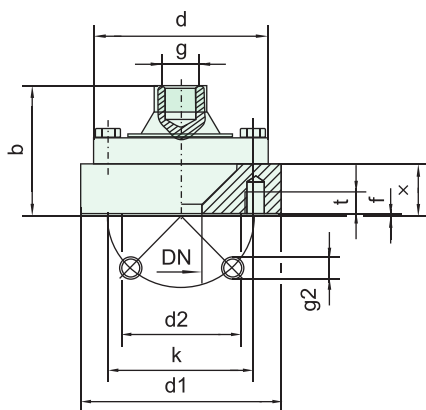
PN	b	c3	d	g	G	SW	Weight (approx.)
PN 100 (1.500 lb/sq.in.)	89	19	99	G $\frac{1}{2}$ $\frac{1}{2}$ " BSP-F	1/2" NPT-M	22	1.43
PN 250 (3.500 lb/sq.in.)	97	19	118			22	3.00

#### FLANGE PROCESS CONNECTION

ASME-flange Sealing face ASME B 16.5 RF 150...600 lb/sq.in.

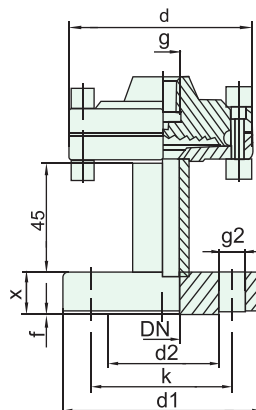
Code Letter : **B1**

Size :  $\frac{1}{2}$ ",  $\frac{3}{4}$ " and 1"



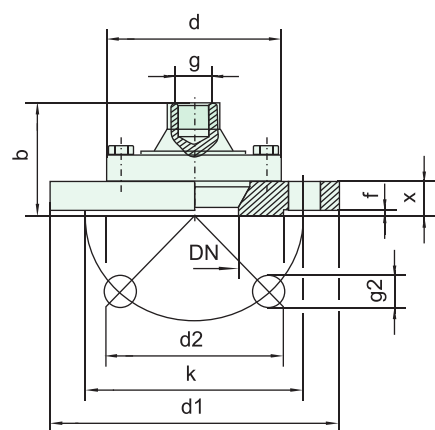
Code Letter : **B2**

Size :  $\frac{1}{2}$ ",  $\frac{3}{4}$ " and 1"



Code Letter : **B3**

Size : 2"



Flanges acc. to ASME, Dimensions (mm) and Weight (kg)

SIZE	b±2 150 300 lb/sq.in.	d	d1		d2	f		g	g2	k		t	x			Weight (approx.)
	150 lb/sq.in.		300 lb/sq.in.	150 lb/sq.in.		300 lb/sq.in.	150 lb/sq.in.			300 lb/sq.in.	150 lb/sq.in.		300 lb/sq.in.	600 lb/sq.in.		
1/2"	74	99	89	95	34.9	1.6	6.4	G1/2" 1/2" BPS-F	4 ø 16	60.3	66.7	15	30		35	2.00
1"			108	124	50.8				4 ø 16 <sup>1)</sup>	79.4	88.9					3.00
2"	66.4		152	165	92.1				4 ø 19 <sup>2)</sup>	121	127	-	19.1	22.2	32	3.75

1) 4 ø 19 for 300 lb/sq.in.

2) 8 ø 19 for 300 lb/sq.in.

## Diaphragm Seals Pressure Gauges

Overview Models for Diaphragm Seals

Ø 100 mm (4") and Ø 160 mm (6")

Standard (BID 100 / 160 DS) or Glycerine Filled (BID 100 / 160 LS)

Models :

**BID 100 DS/BID 160 DS**

**BID 100 LS/BID 160 LS**



### OVERVIEW MODELS MDM 7190, 7210, 7211 and 7280

MODEL	PLASTIC VERSION	3 PART VERSIONS, MALE THREAD OR FLANGE CONNECTION		
	MDM 7190	MDM 7210	MDM 7211	MDM 7280
Process Connection	½" BSP female / outside glue joint acc. to DIN 8063 Part 8  Optionally: Welded male connection M14x1.5	½" NPT male  Optionally:  Open flanges acc. to DIN EN (DN 15...50) and ASME (½"...2")	½" NPT male  Optionally:  Open flanges acc. to DIN EN and ASME	½" NPT female  Optionally: ½" BSP male, ½"...2" NPT female, 1"...2" NPT male
PN	PN 10 at +20 °C (+68 °F)	PN 40 / 100	PN 250	PN 600
Material	PVC, options: PP, PVDF Diaphragm EPDM/PTFE	Upper housing 316 L Diaphragm 316 L / TA or others	Upper housing 316 L Diaphragm 316 L / TA or others	Upper housing 316 L Diaphragm 316 L / TA or others



### CHEMICAL SEALS FOR SPECIAL APPLICATIONS

MODEL	MDM 7390 for Homogenizing Systems	MDM 7590 for Pulp and Paper Industry	MDM 7936 MDM 7939 Compact Type Mini Seal for Aggressive Media	MDM 7943 for DRD Connections (21/16-23)
Process Connection	For homogenizing systems ø 23.8 mm, Immersion length 13 mm	DN 48, extension tube 15 mm long, optionally 6,5 mm	½" BSP MDM 7936 ½" NPT MDM 7939	Suitable for DRD connection DN 50
PN	PN 600	PN 40	PN 160	PN 40
Material	Diaphragm Stainless Steel AISI 316 L  Body with holding collar Stainless Steel AISI 316 L	Diaphragm Stainless Steel AISI 316 L  Body including extension Stainless Steel AISI 316 L  Moulding attachment flange Stainless steel	Stainless Steel AISI 316 L	Stainless steel AISI 316 L

## Diaphragm Seals Pressure Gauges

### Overview Models for Diaphragm Seals

Ø 63 mm (2½"), Ø 100 mm (4") and Ø 160 mm (6")

Standard (BID 63/100/160 DS) or Glycerine Filled (BID 63/100/160 LS)

Models :

**BID 63/100/160 DS**

**BID 63/100/160 LS**



### OVERVIEW MODELS MDM 7310 FF

Hygienic Applications Food Industry / Biotechnics / Pharmacy								
Connection with Flat or Form Sealing					Aseptic Connection for O-Ring Sealing			
Process Connection and Model	Hygienic connection with	Standard	Size	Model	Aseptic connection with	Standard	Size	Model
	Union nut	DIN 11 851	DN 25...80	MDM 7310	union nut	DIN 11 864-1 Form A	DN 25...80	MDM 7310.1
		APV-ISS	DN 1"...3"	MDM 7320		Südmo	DN 25...80	MDM 7311
		APV-RJT	DN 1"...3"	MDM 7330		Naue	DN 40...80	MDM 7312
		IDF-Norm	DN 1"...3"	MDM 7350		Guth (LKM)	DN 40...80	MDM 7316
		SMS-Norm	DN 1"...3"	MDM 7370		Neumo / BioConnect®		
		DS 722	DN 25...80	MDM 7380		- for DIN pipes	DN 40...80	MDM 7317
	Male thread connection				In-line access or Flange	- for ISO pipes	DN 40...50	MDM 7317.1
		DIN 11 851	DN 25...80	MDM 7315		Varivent®	DN 50, 68	MDM 7313
		APV-ISS	DN 1"...3"	MDM 7325		APV In-line	DN 50	MDM 7319
		SMS-Norm	DN 1"...3"	MDM 7375		Neumo / BioConnect®	DN 25...80	MDM 7391
	Clamp	DS 722	DN 25...80	MDM 7385	Clamp			
		ISO 2852	DN 1"...3"	MDM 7340		Neumo / BioConnect®		
		DIN 32 676	DN 25...80	MDM 7340.1		- for DIN pipes	DN 40...80	MDM 7340.5
						- for ISO pipes	DN 40...80	MDM 7340.9
PN		PN 10 to 40, depending on model and size						
Material		316 L stainless steel or others						
Instrument Connection		½" BSP female, others at option, e.g. welded to a pressure gauge						
Filling Fluid		Vegetable oil						

### VARIOUS MATERIAL OF DIAPHRAGM SEALS

**Standard :** ⇒ Stainless steel AISI 316 L (1.4435)

**Others :** ⇒ Hastelloy alloy C4 (2.4610)

⇒ Hastelloy alloy C276 (2.4819)

⇒ Inconel (2.4816)

⇒ Monel metal (2.4360)

⇒ Nickel (2.4068)

⇒ Titanium (3.7035)

⇒ Tantalum



**PRESSURE GAUGES  
CAPILLARY WITH ARMORED  
IN SS 316**