

# Diaphragm Seals

## Aseptic Connections for O-Ring Sealing

Typen

# MDM 73..

### Application

Diaphragm seals series 73.. are applied where hygienic resp. aseptic process conditions are required. Aseptic connections are characterized by crevice free and dead space free mounting and by their sterile cleanability.

Pressure gauges, pressure switches, pressure transmitters and other pressure measuring instruments can be attached.



Various MDM models with aseptic process connection are already EHEDG approved. The number of certified connection types grows continuously. Please contact us for the latest information.

Diaphragm seals for aseptic connections with flat or form sealing are to find in data sheet 7300.

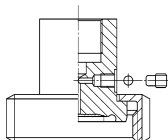
Important information about advantages, applications and features can be found in our model overview 7000 where you will also find an overview of our other chemical seal series.

Please note especially the explanations about the influences of temperature and other special operating conditions, and the requirement of detailed ordering information resp. inquiries.

Please use our check list for pressure measuring instruments with chemical seal to ensure the completeness of all required ordering information (for download to find at our website, PDF-Download). You can receive the check list in printed version with mail upon request.

### Construction

The diaphragm is flush welded to the body. The complete measuring system is evacuated, completely filled with a suitable filling liquid and hermetically sealed.



Do not open any connection of the system! Otherwise filling fluid will leak out and the measuring system cannot work properly anymore!

## Standard Configuration

### Process Connection:

Norm:	Nom. Size:	Model:
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With union nut 304 stainless steel (1.4301) polished



MDM 7310.1

<b>DIN 11 864-1</b>		
<b>Form A</b>	DN 25...80	MDM 7310.1
<b>Südmo</b>	DN 25...80	MDM 7311
<b>Naue</b>	DN 40...80	MDM 7312
<b>Guth (LKM)</b>	DN 40...80	MDM 7316
<b>Neumo/BioConnect®</b>		
for DIN tubes	DN 40...80	MDM 7317
for ISO tubes	DN 40...50	MDM 7317.1

Flange



MDM 7391

<b>APV In-line</b>	DN 50	MDM 7319
<b>Neumo/BioControl®</b>	DN 25...80	MDM 7391



MDM 7313, here with Bourdon tube gauge model RCh 100-3

### Continuation Process Connection:

Norm:	Nom. Size:	Model:
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Clamp



MDM 7313

<b>Varivent®</b>	DN 50, 68	MDM 7313
for <b>Varinline®</b> access units		
<b>Neumo / BioConnect®</b>		
for <b>DIN</b> tubes	DN 40...80	MDM 7340.5
for <b>ISO</b> tubes	DN 40...80	MDM 7340.9

Body

Stainless steel 316 L (1.4435)

Diaphragm

Stainless steel 316 L (1.4435) flush welded, effective diaphragm Ø dM see tables on pages 3-4

Nominal Pressure

PN 10 to 40, dependent on model and size, see pages 3-4

Instrument Connection <sup>1)</sup>

G ½ (½" BSP) female

Filling Liquid

Vegetable oil (FN 1)

Pressure Ranges Measuring Instrument

Pressure gauge: dependent on model and size, minimum pressure range and PN see tables on pages 3-4  
Minimum pressure ranges for other measuring instruments upon request

Reference Temperature

+20 °C ( +68 °F), dial inscription for pressure gauges: t<sub>A</sub> 20 °C

Max. Cleaning Temperature CIP/SIP

+150 °C (+302 °F), dial inscription for pressure gauges: t<sub>R</sub> 150 °C for the complete pressure measuring system consisting of pressure gauge NCS 100 (4") and chemical seal, mounted at our factory and filled with vegetable oil (without electrical accessories); t<sub>R</sub> max. for other versions upon request.

Sealing

not part of our standard supply, compare "Accessories"

<sup>1)</sup>Separately delivered standard MDM (not mounted to a measuring instrument) are provided with a filling port at the instrument connection piece.



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# 7301


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# Accessories, Special Configurations, How to Order

## Accessories

### Process Connection Pieces and Sealings

Process connection pieces such as welding connection pieces, clamps, union nuts, and sealings are not part of our standard supply, but available upon request.

 The nominal pressures PN stated in the following tables are valid for our diaphragm seals only. Possibly valid further restrictions for the applied process connection pieces are to consider. Reinforced clamps or union nuts might be required for certain applications.

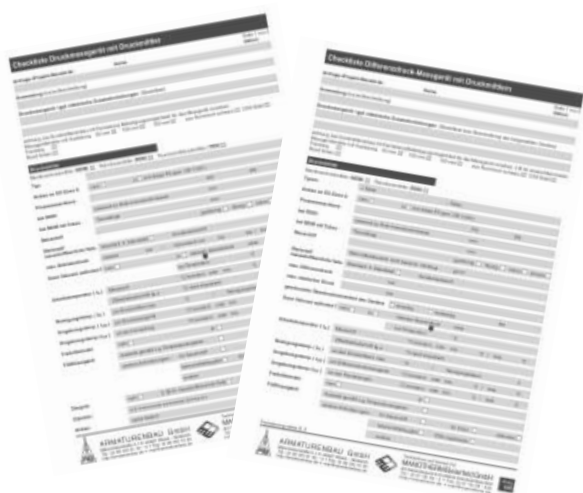


## Special Configurations et. al.

- Diaphragm seal additionally welded to the measuring instrument upon request;  
Twice welded diaphragm seal/pressure gauge version (Hygienic Design) see data sheets 7303/1903
- Instrument connection female: G 1/4, 1/2"NPT, 1/4" NPT; others upon request
- Process connection: other versions and sizes upon request, e.g. aseptic flange DIN 11864-2 and aseptic clamp DIN 11864-3
- Working temperature different than +20 °C ( +68 °F)
- Cleaning temperature > +150 °C (+302 °F) upon request
- Filling Liquid  
Paraffin oil (FN2), with FDA approval,  
Glycerine (FN3), with FDA approval,  
Glycerine/water (FN4),  
others upon request
- Other materials diaphragm and/or body (compare model overview 7000) upon request
- With hygiene attestation for EHEDG approved versions, i. e. currently available for models MDM 7312, MDM 7313, MDM 7317, MDM 7317.1, MDM 7340.5, MDM 7340.9 und MDM 7391 (EHEDG certificate, test report EN 10204, 2.2)
- Capillary line between diaphragm seal and instrument (length limit upon request), or cooling element, see data sheet 7002, strongly recommended for medium temperatures >+100 °C (>+212 °F)



MDM7310.1, DN25, mounted to pressure gauge RCh 100-3, with cooling element KEIvR according to data sheet 7002



## How to Order:

Please note the details about the required ordering information

- in our model overview 7000 and our check list for measuring instruments with chemical seal
- on the data sheet for the measuring instrument that shall be attached.

Model: e.g **MDM 7310.1, MDM 7317**, see p. 1  
 Nominal size: see tables p. 3-4  
 Nominal pressure: **PN 10, 16, 25** or **40**, see p. 3-4  
 Material: **1.4435** (316 L)  
 Instrument connection<sup>1)</sup> **G 1/2** (1/2" BSP)  
 Special options: see left, e.g. other instrument connection, cooling element, capillary line etc.

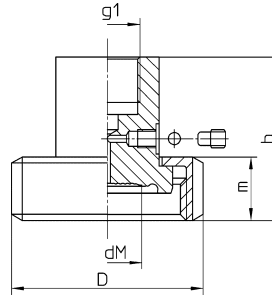
Please point out especially when the medium or ambient temperature is different than +20 °C (+68 °F) as well as all special process or cleaning conditions.

**Example:** MDM 7310.1, DN 25, PN 40, 1.4435, G1/2 for measuring instrument

<sup>1)</sup> to state only for separate ordered chemical seals

# Dimensional Data, Weight, Minimum Pressure Ranges for Pressure Gauges

## Connection with Groove Union Nut:



Dimensions ( mm / inches ) and Weight ( kg / lb ), Minimum Pressure Range for Bourdon Tube Gauge NCS 100 (4" )<sup>1)</sup>

Model	DN	PN (bar/psi)	D	dM	b	m	g1	Minimum Pressure Range <sup>1)</sup>	Weight (approx.)
<b>MDM 7310.1</b> DIN 11 864-1	25	<b>40</b> <b>580</b>	63 <b>2.48</b>	21 <b>.83</b>	54 <b>2.13</b>	21 <b>.83</b>	<b>G ½</b> <b>½" BSP</b>	0 - 4 bar <b>0 - 60 psi</b>	.50 <b>1.10</b>
	32		70 <b>2.76</b>	28 <b>1.10</b>					.65 <b>1.43</b>
	40		78 <b>3.07</b>	34 <b>1.34</b>	.73 <b>1.61</b>				
	50	25 <b>360</b>	92 <b>3.62</b>	45 <b>1.77</b>	48 <b>1.89</b>	22 <b>.87</b>		0 - 1 bar <b>0 - 15 psi</b>	1.10 <b>2.43</b>

Dimensions for nominal sizes up to DN 80 upon request

Fig. A

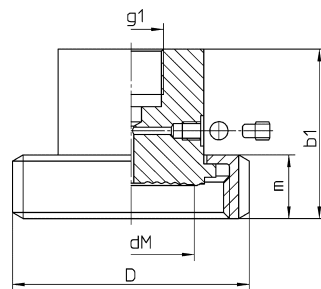
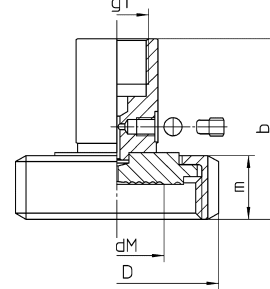


Fig. B



Dimensions ( mm / inches ) and Weight ( kg / lb ), Minimum Pressure Range for Bourdon Tube Gauges NCS 100 (4" )<sup>1)</sup>

Model	DN	PN (bar/psi)	D	dM	b	m	g1	Minimum Pressure Range <sup>1)</sup>	Weight (approx.)
<b>MDM 7311</b> DIN 11 851 <b>Südmo</b> <sup>2)</sup> (Fig. A)	25	<b>40</b> <b>600</b>	63 <b>2.48</b>	26 <b>1.02</b>	57 <b>2.24</b>	21 <b>.83</b>	<b>G ½</b> <b>½" BSP</b>	0 - 2.5 bar <b>0 - 30 psi</b>	.50 <b>1.10</b>
	32		70 <b>2.76</b>	28 <b>1.10</b>					.65 <b>1.43</b>
	40		78 <b>3.07</b>	34 <b>1.34</b>	0 - 1 bar <b>0 - 15 psi</b>	.85 <b>1.87</b>			
	50	25 <b>300</b>	92 <b>3.62</b>	38 <b>1.50</b>	1.40 <b>3.09</b>				
<b>MDM 7312</b> <b>Naue</b> (Fig. A)	40	10 <b>160.</b>	63 <b>2.48</b>	30 <b>1.18</b>	58 <b>2.28</b>	22 <b>.87</b>	<b>G ½</b> <b>½" BSP</b>	0 - 2.5 bar <b>0 - 30 psi</b>	.65 <b>1.43</b>
<b>MDM 7316</b> <b>Guth</b> (Fig. A)	40	40 <b>600</b>	78 <b>3.07</b>	38 <b>1.50</b>	56 <b>2.20</b>	21 <b>.83</b>		0 - 1 bar <b>0 - 15 psi</b>	.73 <b>1.61</b>
<b>MDM 7317</b> <b>Neumo/BioConnect®</b> for DIN tubes (Fig. B)	40	10 <b>160</b>	70 <b>2.76</b>	34 <b>1.34</b>	58.5 <b>2.30</b>				.55 <b>1.21</b>
50	82 <b>3.23</b>		45 <b>1.77</b>	.65 <b>1.43</b>					
<b>MDM 7317.1</b> <b>Neumo/BioConnect®</b> for ISO tubes (Fig. B)	40		70 <b>2.76</b>		38 <b>1.50</b>		.58 <b>1.28</b>		
50	82 <b>3.23</b>		48 <b>1.89</b>	.68 <b>1.50</b>					

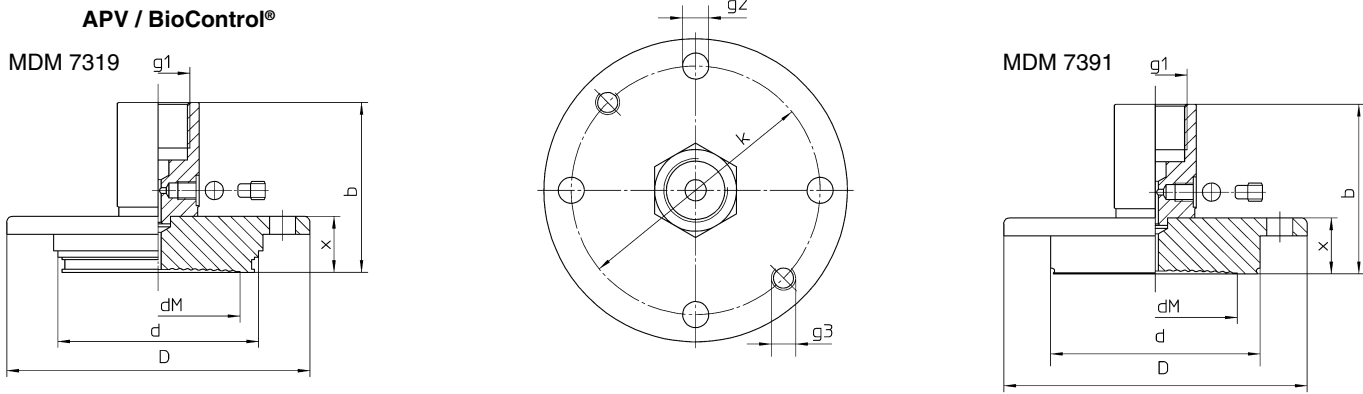
Dimensions for MDM 7311 to 7317 with nominal sizes up to DN 80 upon request

<sup>1)</sup> also valid for corresponding vacuum and vacuum/pressure compound ranges. Data for other pressure measuring instruments upon request.

<sup>2)</sup> Südmo standard W 500 D; optionally W 200 D or W 100 D available. When ordering, please quote exactly which Südmo version is required!

# Dimensional Data, Weight, Minimum Pressure Ranges for Pressure Gauges

## Flange Connection:

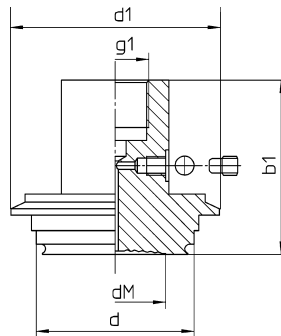


Dimensions ( mm / inches ) and Weight ( kg / lb ), Minimum Pressure Range for Bourdon Tube Gauges NCS 100 (4) <sup>1)</sup>

Model	DN	PN (bar/psi)	D	dM	d	b	g1	g2	g3	k	x	Minimum Pressure Range <sup>1)</sup>	Weight (approx.)
MDM 7319 APV In-line	50	10	100	52	66.2	56	G ½ ½" BSP	4 x Ø 8.6	2 x M8	82	18.5	0 - 1 bar 0 - 15 psi	0.80 1.76
		150	3.94	2.05	2.61	2.2		.34		3.23	.73	0 - 4 bar 0 - 60 psi	0.40 .88
MDM 7391 Neumo / BioControl®	25	16 230	64	21	30.5	57.5	G ½ ½" BSP	7	—	50	20	0 - 1 bar 0 - 15 psi	0.61 1.34
	50		90	45	50	64.5		9		70	27		1.97 .79
	65		120	58	68	2.54		11		95	1.06	3.74	1.54
	80		140	72	87.5	74.5		.43		115	37	4.53	1.46

## Clamp Connection:

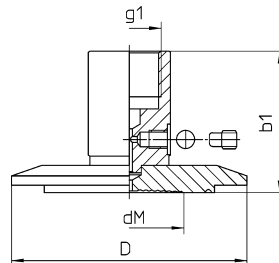
Varivent® for Varinline Access Unit



Dimensions ( mm / inches ) and Weight ( kg / lb ), Minimum Pressure Range for Bourdon Tube Gauges NCS 100 (4) <sup>1)</sup>

Model	DN	Suitable for Tube Ø	PN (bar/psi)	d	d1	dM	b1	g1	Minimum Pressure Range <sup>1)</sup>	Weight (approx.)
MDM 7313 Varivent®	50	Ø 25 and Ø 32 mm Ø .98 and Ø 1.26	25 360	50	66	30 1.18	55 2.17	G ½ ½" BSP	0 - 2.5 bar 0 - 30 psi	.56 1.23
		Ø 40 up to 125 mm Ø 1.57 up to 4.92	16 230	68	84	46 1.81			0 - 1 bar 0 - 15 psi	.82 1.81

BioConnect®



Dimensions ( mm / inches ) and Weight ( kg / lb ), Minimum Pressure Range for Bourdon Tube Gauges NCS 100 (4) <sup>1)</sup>

Model	DN	PN (bar/psi)	D	dM	b1	g1	Minimum Pressure Range <sup>1)</sup>	Weight (approx.)
MDM 7340.5 Neumo for DIN tubes	40	16 230	64	34	46.5 1.83	G ½ ½" BSP	0 - 1 bar 0 - 15 psi	.27 .60
	50		77.4	45				.36 .79
MDM 7340.9 Neumo for ISO tubes	40	16 230	64	38	46.5 1.83	G ½ ½" BSP	0 - 1 bar 0 - 15 psi	.30 .66
	50		77.4	46				.39 .86

Dimensions for nominal sizes up to DN 80 upon request

<sup>1)</sup> also valid for corresponding vacuum and vacuum/pressure compound ranges.  
Data for other pressure measuring instruments upon request.

The information in this leaflet is given in good faith, but we reserve the right to make changes without notice.