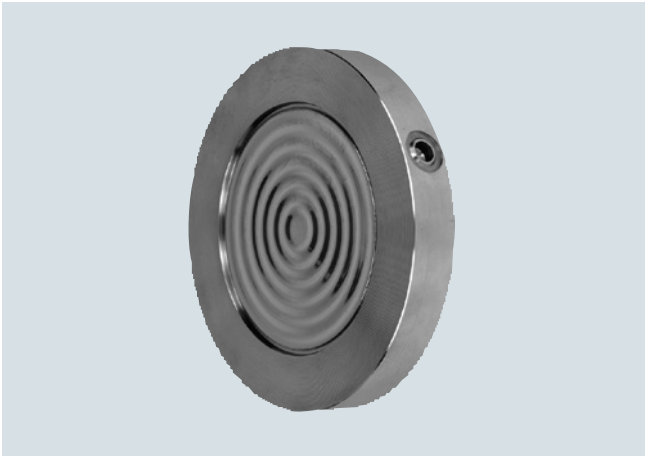
Overview



Diaphragm seals of sandwich design

Technical specifications

Diaphragm seals of sandwich design	
Nominal diameter	Nominal pressure
Connecting standard EN 1092-1	
• DN 25, DN 40, DN 50, DN 65, DN 80, DN 100, DN 125	PN 16 ... PN 400
Connecting standard ASME B16.5	
• 1 inch, 1½ inch, 2 inch, 2½ inch, 3 inch, 4 inch, 5 inch	Class 150 ... class 2500
Connecting standard J.I.S.	
• DN 25, DN 40, DN 50, DN 65, DN 80, DN 100, DN 125	10K ... 63K
Sealing surface	
• For stainless steel, mat. No. 1.4404/316L	To EN 1092-1, form B1 or ASME B16.5 RF 125 ... 250 AA
• For the other materials	To EN 1092-1, form B2 or ASME B16.5 RFSF
Materials	
• Main body	Stainless steel mat. no. 1.4404/316L
• Wetted parts	Stainless steel mat. no. 1.4404/316L
	• Without coating
	• PTFE coating
	• ECTFE coating (for vacuum on request)
	• PFA coating
	Monel 400, mat. No. 2.4360
	Hastelloy C276, mat. No. 2.4819
	Hastelloy C4, mat. No. 2.4602
	Hastelloy C22, mat. no. 2.4602
	Tantalum
	Titanium, mat. no. 3.7035
	Nickel 201
	Duplex 2205, mat. no. 1.4462
	Stainless steel 316L, gold plated, thickness approx. 25 µm
• Capillary	Stainless steel, mat. No. 1.4571/316Ti
• Sheath	Spiral protective tube made of stainless steel, mat. No. 1.4404/316L

Sealing material in the process flanges	
• For pressure transmitters, absolute pressure transmitters and low-pressure applications	Copper
• For other applications	Viton
Maximum pressure	See above and the technical data of the pressure transmitters
Tube length	Without tube as standard (tube available on request)
Capillary	
• Length	Max. 10 m (32.8 ft), longer lengths on request
• Internal diameter	max. 2 mm (0.079 inch)
• Minimum bending radius	150 mm (5.9 inch)
Filling liquid	Silicone oil M5
	Silicone oil M50
	High-temperature oil
	Halocarbon oil (for measuring O_2)
	Food grade oil (FDA listed)
Permissible ambient temperature	Dependent on the pressure transmitter and the filling liquid of the remote seal
	More information can be found in the technical data of the pressure transmitters and in the section "Technical data of filling liquid" in the Technical description to the remote seals
Weight	Approx. 4 kg (8.82 lb)
Certificate and approvals	
Classification according to pressure equipment directive (DGRL 2014/68/EU)	For gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 4, paragraph 3 (sound engineering practice)

1

Diaphragm seals of sandwich design with flexible capillary

Selection and Ordering data	Article No.	Order code
Diaphragm seal		
Sandwich type design, with flexible capillary tube, connected with flexible capillary tube to a		
• SITRANS P320/P420 transmitter for gauge pressure or absolute pressure (only together with negative pressure service), 7MF03../7MF04.. order separately Scope of delivery: 1 off	7MF0800-	
• SITRANS P320/P420 transmitter for absolute pressure, 7MF03../7MF04.. order separately, Scope of delivery: 1 off	7MF0801-	
• SITRANS P320/P420 transmitter for differential pressure and flow, 7MF03../7MF04.. order separately, Scope of delivery: 2 off	7MF0802-	
	■■■■■-0■■■	■■■
↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.		
Nominal diameter **Nominal pressure**		
Connecting standard EN 1092-1		
(DN 25, DN 40 and DN 50 recommended only for pressure transmitters)		
DN 25 PN 16 ... 400	0BQ	
DN 40 PN 16 ... 400	0DQ	
DN 50 PN 16 ... 400	0EQ	
DN 65 PN 16 ... 400	0FQ	
DN 80 PN 16 ... 400	0GQ	
DN 100 PN 16 ... 400	0HQ	
DN 125 PN 16 ... 400	0JQ	
Connecting standard ASME B16.5		
(1 inch, 1½ inch and 2 inch recommended only for pressure transmitters)		
1 inch class 150 ... 2500	1KX	
1½ inch class 150 ... 2500	1LX	
2 inch class 150 ... 2500	1MX	
2½ inch class 150 ... 2500	1NX	
3 inch class 150 ... 2500	1PX	
4 inch class 150 ... 2500	1QX	
5 inch class 150 ... 2500	1RX	
Connecting standard J.I.S.		
(DN 25, DN 40 and DN 50 recommended only for pressure transmitters)		
DN 25 10K ... 63K	2BW	
DN 40 10K ... 63K	2DW	
DN 50 10K ... 63K	2EW	
DN 65 10K ... 63K	2FW	
DN 80 10K ... 63K	2GW	
DN 100 10K ... 63K	2HW	
DN 125 10K ... 63K	2JW	
Other version Add Order code and plain text	9AA	H1Y
Length of capillary		
1 m	10	
1,6 m	11	
2 m	12	
2,5 m	13	
3 m	14	
4 m	15	
5 m	16	
6 m	17	
7 m	18	
8 m	20	
9 m	21	
10 m	22	

Selection and Ordering data	Article No.	Order code
Diaphragm seal		
Sandwich type design, with flexible capillary tube, connected with flexible capillary tube to a		
• SITRANS P320/P420 transmitter for gauge pressure or absolute pressure (only together with negative pressure service), 7MF03../7MF04.. order separately Scope of delivery: 1 off	7MF0800-	
• SITRANS P320/P420 transmitter for absolute pressure, 7MF03../7MF04.. order separately, Scope of delivery: 1 off	7MF0801-	
• SITRANS P320/P420 transmitter for differential pressure and flow, 7MF03../7MF04.. order separately, Scope of delivery: 2 off	7MF0802-	
	■■■■■-0■■■	■■■
11 m (only for 7MF0802)	23	
12 m (only for 7MF0802)	24	
13 m (only for 7MF0802)	25	
14 m (only for 7MF0802)	26	
15 m (only for 7MF0802)	27	
Other version Add Order code and plain text	98	L1Y
Filling liquid		
Silicone oil M5	A	
Silicone oil M50	B	
High-temperature oil	C	
Halocarbon oil	D	
Food-grade oil (FDA listed)	E	
Other version Add Order code and plain text	Z	P1Y
Wetted parts materials		
Stainless steel 316L		
• Without coating	A	
• With PFA coating	D	
• With PTFE coating	E0	
• With ECTFE coating	F	
Monel 400, 2.4360	G	
Hastelloy C276, 2.4819	J	
Tantalum	K	
Titanium, 3.7035	L0	
Nickel 201	M0	
Diaphragm Duplex, 1.4462	Q	
Diaphragm plus flange Duplex, 1.4462	R	
Stainless steel 316L with gold coating	S0	
Hastelloy C4, 2.4610	U0	
Hastelloy C22, 2.4602	V0	
Other version Add Order code and plain text	Z8	Q1Y
Extension length		
• without	0	
• 50 mm (2")	1	
• 100 mm (4")	2	
• 150 mm (6")	3	
• 200 mm (8")	4	
• 250 mm (10")	5	
Other version Add Order code and plain text	Z8	Q1Y

Selection and Ordering data	Article No.	Order code
Diaphragm seal		
Sandwich type design, with flexible capillary tube, connected with flexible capillary tube to a		
• SITRANS P320/P420 transmitter for gauge pressure or absolute pressure (only together with negative pressure service), 7MF03../7MF04.. order separately Scope of delivery: 1 off	**7MF0800-**	
• SITRANS P320/P420 transmitter for absolute pressure, 7MF03../7MF04.. order separately, Scope of delivery: 1 off	**7MF0801-**	
• SITRANS P320/P420 transmitter for differential pressure and flow, 7MF03../7MF04.. order separately, Scope of delivery: 2 off	**7MF0802-**	
	-0	
Customer-specific extension length		
• Wetted parts stainless steel without coating		
Range / Standard length		
20 ... 50 mm (0.79 ... 1.97") / 50 mm (1.97")		**A1**
51 ... 100 mm (2.01 ... 3.94") / 100 mm (3.94")		**A2**
101 ... 150 mm (3.98 ... 5.91") / 150 mm (5.91")		**A3**
151 ... 200 mm (5.94 ... 7.87") / 200 mm (7.87")		**A4**
201 ... 250 mm (7.91 ... 9.84") / 250 mm (9.84")		**A5**
• Wetted parts stainless steel with ECTFE coating		
Range / Standard length		
20 ... 50 mm (0.79 ... 1.97") / 50 mm (1.97")		**F1**
51 ... 100 mm (2.01 ... 3.94") / 100 mm (3.94")		**F2**
101 ... 150 mm (3.98 ... 5.91") / 150 mm (5.91")		**F3**
151 ... 200 mm (5.94 ... 7.87") / 200 mm (7.87")		**F4**
201 ... 250 mm (7.91 ... 9.84") / 250 mm (9.84")		**F5**
• Wetted parts stainless steel with PFA coating		
Range / Standard length		
20 ... 50 mm (0.79 ... 1.97") / 50 mm (1.97")		**D1**
51 ... 100 mm (2.01 ... 3.94") / 100 mm (3.94")		**D2**
101 ... 150 mm (3.98 ... 5.91") / 150 mm (5.91")		**D3**
151 ... 200 mm (5.94 ... 7.87") / 200 mm (7.87")		**D4**
201 ... 250 mm (7.91 ... 9.84") / 250 mm (9.84")		**D5**
• Wetted parts Monel 400		
Range / Standard length		
20 ... 50 mm (0.79 ... 1.97") / 50 mm (1.97")		**G1**
51 ... 100 mm (2.01 ... 3.94") / 100 mm (3.94")		**G2**
101 ... 150 mm (3.98 ... 5.91") / 150 mm (5.91")		**G3**
151 ... 200 mm (5.94 ... 7.87") / 200 mm (7.87")		**G4**

Selection and Ordering data	Article No.	Order code
Diaphragm seal		
Sandwich type design, with flexible capillary tube, connected with flexible capillary tube to a		
• SITRANS P320/P420 transmitter for gauge pressure or absolute pressure (only together with negative pressure service), 7MF03../7MF04.. order separately Scope of delivery: 1 off	**7MF0800-**	
• SITRANS P320/P420 transmitter for absolute pressure, 7MF03../7MF04.. order separately, Scope of delivery: 1 off	**7MF0801-**	
• SITRANS P320/P420 transmitter for differential pressure and flow, 7MF03../7MF04.. order separately, Scope of delivery: 2 off	**7MF0802-**	
	-0	
• Wetted parts Hastelloy C276		
Range / Standard length		
20 ... 50 mm (0.79 ... 1.97") / 50 mm (1.97")		**J1**
51 ... 100 mm (2.01 ... 3.94") / 100 mm (3.94")		**J2**
101 ... 150 mm (3.98 ... 5.91") / 150 mm (5.91")		**J3**
151 ... 200 mm (5.94 ... 7.87") / 200 mm (7.87")		**J4**
• Wetted parts Tantalum		
Range / Standard length		
20 ... 50 mm (0.79 ... 1.97") / 50 mm (1.97")		**K1**
51 ... 100 mm (2.01 ... 3.94") / 100 mm (3.94")		**K2**
101 ... 150 mm (3.98 ... 5.91") / 150 mm (5.91")		**K3**
151 ... 200 mm (5.94 ... 7.87") / 200 mm (7.87")		**K4**

Diaphragm seals of sandwich design with flexible capillary

Selection and Ordering data	Order code
Further designs	
Add "**-Z**" to Article No. and specify Order code.	
Factory certificates	
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2	**C11**
Inspection certificate to EN 10204-3.1 - material of body and wetted parts	**C12**
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) (only together with seal diaphragm made of Hastelloy and stainless steel)	**C13**
Inspection certificate (EN 10204-3.1) - PMI test of pressure containing and wetted parts	**C15**
Certificate of FDA-approved fill oil (to EN10204-2.2)	**C17**
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511 (Includes SIL conformity declaration)	**C20**
Accessories	
Spark arrestor (for gauge and absolute pressure transmitters)	**D61**
Spark arrestor (for differential pressure and level transmitters)	**D62**
Low-temperature version (for Silicon Oil M50 only)	**D67**
Negative pressure services	
Negative pressure service (for gauge and absolute pressure transmitters)	**D81**
Negative pressure service (for differential pressure transmitters)	**D83**
Extended negative pressure service (for gauge and absolute pressure transmitters) (only 7MF0800)	**D85**
Extended negative pressure service (for differential pressure transmitters)	**D88**
General product approvals without explosion proof approvals	
Oil-and grease-free cleaned version (for O_2-appl. including certificate EN10204-2.2 (only with fill fluid Halocarbon oil max. temperature 60 °C and max. pressure 50 bar)	**E80**
Oil-and grease-free cleaned version (not for O_2-appl. including certificate EN10204-2.2 (only with fill fluid Halocarbon oil)	**E87**
Sealing surface	
Sealing surface smooth, form B2/EN1092-1 resp. RFSF/ANSI B16.5 (wetted parts 316L only)	**M50**
Sealing surface groove to EN1092-1, form D (instead of sealing surface B1, wetted parts 316L only)	**M54**
Sealing surface RJF (groove) to ASME B16.5 (instead of sealing surface RF 125...250AA, wetted parts 316L only)	**M64**
Sealing surface with tongue to EN1092-1, form C (wetted parts 316L only)	
• DN 25	**M70**
• DN 40	**M71**
• DN 50	**M72**
• DN 80	**M73**
• DN 100	**M74**
• DN 125	**M75**
Sealing surface with spigot to EN1092-1, form E (wetted parts 316L only)	
• DN 25	**M76**
• DN 40	**M77**
• DN 50	**M78**
• DN 80	**M79**
• DN 100	**M80**
• DN 125	**M81**

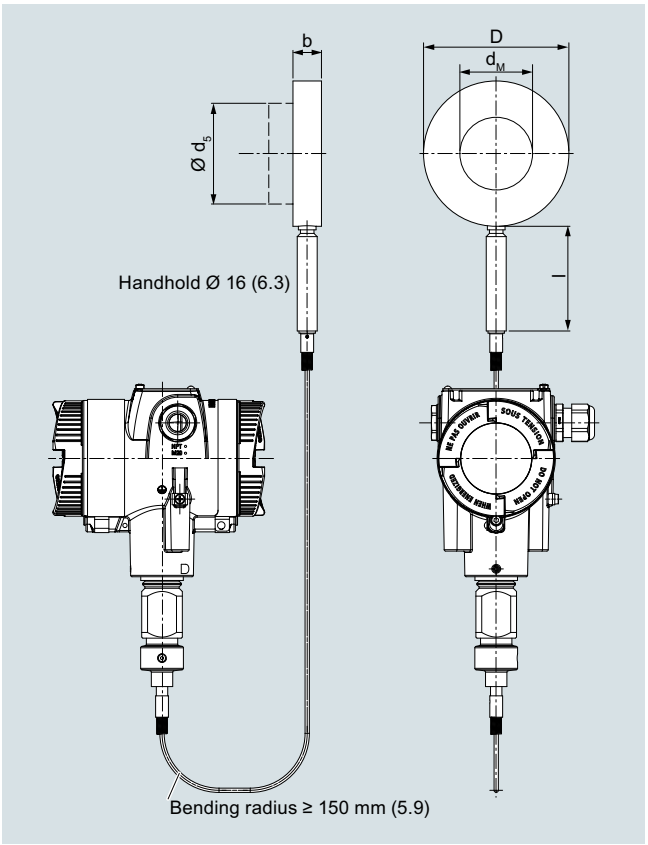
Selection and Ordering data	Order code
Further designs	
Add "**-Z**" to Article No. and specify Order code.	
Sealing surface with recess to EN1092-1, form F (wetted parts 316L only)	
• DN 25	**M82**
• DN 40	**M83**
• DN 50	**M84**
• DN 80	**M85**
• DN 100	**M86**
• DN 125	**M87**
Capillary connection (only for 7MF0800)	
Single-side mounted at differential pressure transmitters at high-side	**S03**
Single-side mounted at differential pressure transmitters at low-side	**S04**
Capillary coating	
PE protective tube	
1 m	**S10**
1,6 m	**S11**
2 m	**S12**
2,5 m	**S13**
3 m	**S14**
4 m	**S15**
5 m	**S16**
6 m	**S17**
7 m	**S18**
8 m	**S19**
9 m	**S20**
10 m	**S21**
11 m (only for 7MF0802)	**S22**
12 m (only for 7MF0802)	**S23**
13 m (only for 7MF0802)	**S24**
14 m (only for 7MF0802)	**S25**
15 m (only for 7MF0802)	**S26**
PTFE protective tube	
1 m	**S40**
1,6 m	**S41**
2 m	**S42**
2,5 m	**S43**
3 m	**S44**
4 m	**S45**
5 m	**S46**
6 m	**S47**
7 m	**S48**
8 m	**S49**
9 m	**S50**
10 m	**S51**
11 m (only for 7MF0802)	**S52**
12 m (only for 7MF0802)	**S53**
13 m (only for 7MF0802)	**S54**
14 m (only for 7MF0802)	**S55**
15 m (only for 7MF0802)	**S56**

Selection and Ordering data	Order code
Further designs	
Add "**-Z**" to Article No. and specify Order code.	
PVC protective tube	
1 m	**S70**
1,6 m	**S71**
2 m	**S72**
2,5 m	**S73**
3 m	**S74**
4 m	**S75**
5 m	**S76**
6 m	**S77**
7 m	**S78**
8 m	**S79**
9 m	**S80**
10 m	**S81**
11 m (only for 7MF0802)	**S82**
12 m (only for 7MF0802)	**S83**
13 m (only for 7MF0802)	**S84**
14 m (only for 7MF0802)	**S85**
15 m (only for 7MF0802)	**S86**
Customer-specific tube length	
Customer-specific tube length (specify in plain text)	**Y44**
Specification of process conditions[1)]	
Ambient temperature range	
• -10 ... +50 °C (14 ... +122 °F) preset	**D66**
• -40 ... +50 °C (-40 ... +122 °F)	**D67**
• -10 ... +85 °C (14 ... +185 °F)	**D68**
Process temperature min. ... °C/(°F)/max. ... °C/(°F)	**Y50**

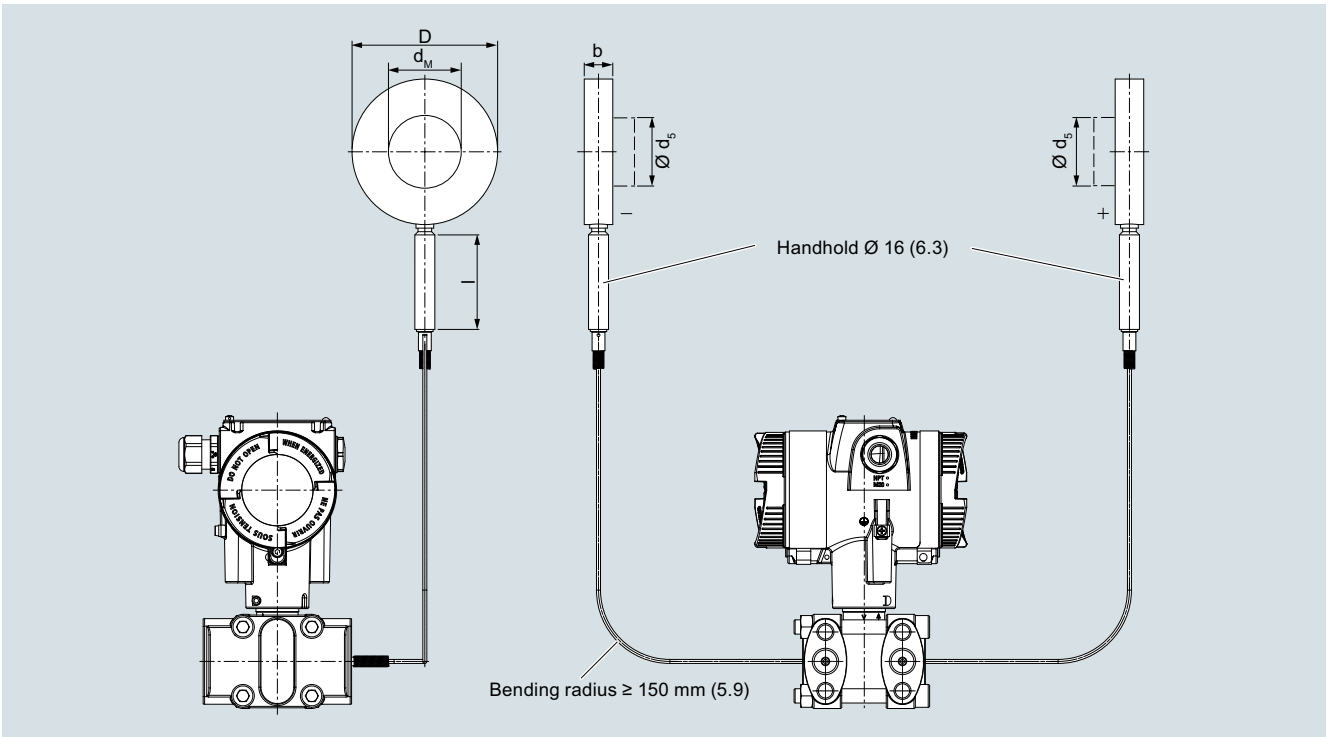
1) See also "Specification of process conditions for selection and ordering data", page 1/338.

Diaphragm seals of sandwich design with flexible capillary

Dimensional drawings



Diaphragm seals of sandwich design with flexible capillary for connection to SITRANS P320/420 pressure transmitters for pressure, dimensions in mm (inch)



Diaphragm seals of sandwich design (without flange) with flexible capillary for connection to SITRANS P320/420 pressure transmitters for absolute pressure or differential pressure and flow, dimensions in mm (inch)

Connection to EN 1092-1

Nom. diameter	Nom. pressure	b	D	d_5	d_M with tube	d_M w/o tube	l
		mm	mm	mm	mm	mm	mm
DN 25	PN 16 ... PN 400	20	68	24,5	22.6	27	100
DN 40		20	88	38	30	40	100
DN 50		20	102	48.3	40	51	100
DN 65		20	122	48,3	40	65	100
DN 80		20	138	76	65	85	100
DN 100		20	158	94	85	85	100
DN 125		22	188	125	16	116	100

Connection to ASME B16.5

Nom. diameter	Nom. pressure	b	D	d_5	d_M with tube	d_M w/o tube	l
	lb/sq.in.	mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)
1 inch	150 ... 2500	20 (0.79)	51 (2.01)	24.5 (0,96)	22.6 (0.89)	30 (1.18)	100 (3.94)
1½ inch		20 (0.79)	73 ()	38 (1.5)	30 (1.18)	40 (1.57)	100 (3.94)
2 inch		20 (0.79)	100 (3.94)	48.3 (1.9)	40 (1.57)	51 (2.01)	100 (3.94)
2½ inch		20 (0.79)	105 (4.13)	48.3 (1.9)	40 (1.57)	65 (2.56)	100 (3.94)
3 inch		20 (0.79)	134 (5.28)	72 (3)	65 (2.56)	85 (3.35)	100 (3.94)
4 inch		20 (0.79)	158 (6.22)	94 (3.69)	85 (3.35)	85 (3.35)	100 (3.94)
5 inch		22 (0.87)	186 (7.32)	125 (4.92)	116 (4.57)	116 (4.57)	100 (3.94)

Connection to J.I.S.

Nom. diameter	Nom. pressure	b	D 10K, 20K	D 30K ... 63K	d_5	d_M with tube	d_M w/o tube	l
		mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)
DN 25	10K ... 63K	20 (0.79)	67 (2.64)	70 (2.76)	24.5 (0.96)	22.6 (0.89)	30 (1.18)	100 (3.94)
DN 40		20 (0.79)	81 (3.19)	90 (3.54)	38 (1.5)	30 (1.18)	36 (1.42)	100 (3.94)
DN 50		20 (0.79)	96 (3.78)	105 (4.13)	48.3 (1.9)	40 (1.57)	51 (2.01)	100 (3.94)
DN 65		20 (0.79)	116 (4.57)	130 (5.12)	48.3 (1.9)	40 (1.57)	65 (2.56)	100 (3.94)
DN 80		20 (0.79)	132 (5.2)	140 (5.51)	76 (2.99)	65 (2.56)	85 (3.35)	100 (3.94)
DN 100		20 (0.79)	160 (6.3)	160 (6.3)	94 (3.69)	85 (3.35)	85 (3.35)	100 (3.94)
DN 125		20 (0.79)	195 (7.68)	195 (7.68)	125 (4.92)	116 (4.57)	116 (4.57)	100 (3.94)

d: Inside diameter of gasket according to EN 1092-1/ASME B16.5

d_M: Effective diaphragm diameter