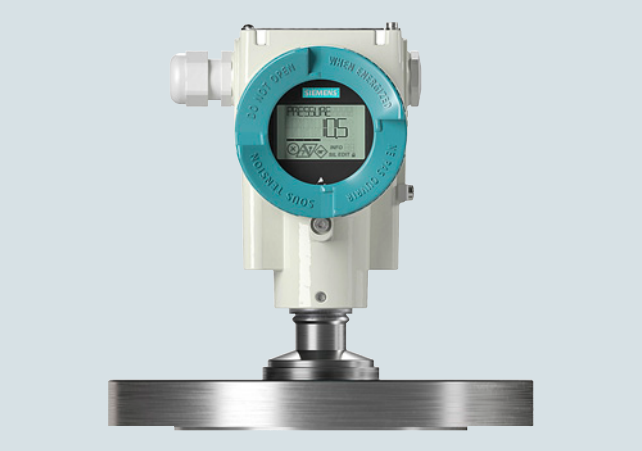
Diaphragm seals of flange design mounted directly on transmitter

Overview



Diaphragm seals of flange design, directly fitted on a pressure transmitter for pressure

Technical specifications

Diaphragm seals (flange design) for pressure and absolute pressure, directly fitted on a transmitter

Nominal diameter	Nominal pressure
Connecting standard EN 1092-1	
• DN 25	PN 10/16/25/40/63/100/160/250
• DN 40	PN 10/16/25/40/63/100/160
• DN 50	PN 10/16/25/40/63/100
• DN 80	PN 10/16/25/40/100
• DN 100	PN 10/16/25/40
• DN 125	PN 16/40
Connecting standard ASME B16.5	
• 1 inch	Class 150/300/600/1500
• 1½ inch	Class 150/300/400/600/900/1500
• 2 inch	Class 150/300/400/600/900/1500
• 3 inch	Class 150/300/600/1500
• 4 inch	Class 150/300/400/1500
• 5 inch	Class 150/300/400
Connecting standard J.I.S.	
• DN 50	10K
• DN 80	20K
• DN 100	40K
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	Smooth to EN 1092-1, form B2 or ASME B16.5 RFSF

Materials	
• Main body	Stainless steel, 1.4404/316L
• Wetted parts	Stainless steel, 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, 1.4404/316L
• Sealing material at the transmitter connection	Copper
Maximum pressure	See above and the technical data of the transmitter
Tube length	• Without tube • 50 mm (1.97 inch) • 100 mm (3.94 inch) • 150 mm (5.91 inch) • 200 mm (7.87 inch)
Capillary	
• Length	Max. 10 m (32.8 ft), longer lengths on request
• Internal diameter	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 oil (FDA listed)
Max. recommended process temperature	170 °C (338 °F)
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)

Diaphragm seals of flange design mounted directly on transmitter

Selection and Ordering data	Article No.	Order code
Diaphragm seal		
Flange type design, directly mounted 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	7MF0810-	
	■■■■■-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 PN 10/16/25/40	0BD	
PN 63/100	0BF	
PN 160	0BG	
PN 250	0BH	
DN 40 PN 10/16/25/40	0DD	
PN 63/100	0DF	
PN 160	0DG	
DN 50 PN 10/16/25/40	0ED	
PN 63	0EE	
PN 100	0EF	
DN 80 PN 10/16/25/40	0GD	
PN 100	0GF	
DN 100 PN 10/16	0HB	
PN 25/40	0HD	
DN 125 PN 16	0JB	
PN 40	0JD	
Connecting standard ASME B16.5		
1 inch class 150	1KL	
class 300	1KM	
class 600	1KN	
class 1500	1KP	
1½ inch class 150	1LA	
class 300	1LB	
class 400/600	1LD	
class 900/1500	1LF	
2 inch class 150	1MA	
class 300	1MB	
class 400/600	1MD	
class 900/1500	1MF	
3 inch class 150	1PA	
class 300	1PB	
class 600	1PD	
class 1500	1PF	
4 inch class 150	1QA	
class 300	1QB	
class 400	1QC	
class 1500	1QF	
5 inch class 150	1RA	
class 300	1RB	
class 400	1RC	
Connecting standard J.I.S.		
DN 50 10K	2ES	
20K	2ET	
40K	2EU	
DN 80 10K	2GS	
20K	2GT	
40K	2GU	
DN 100 10K	2HS	
20K	2HT	
40K	2HU	
Other version Add Order code and plain text	9AA	H1Y

Selection and Ordering data	Article No.	Order code
Diaphragm seal		
Flange type design, directly mounted 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	7MF0810-	
	■■■■■-0■■■	■■■
Transmitter connection		
Without capillary tube, direct mount straight connection (for gauge pressure)	00	
Without capillary tube, direct mount connection via 90°-bow (for gauge pressure)	01	
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

Diaphragm seals of flange design mounted directly on transmitter

Selection and Ordering data	Article No.	Order code
Diaphragm seal		
Flange type design, directly mounted 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	**7MF0810-**	
	- 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")		**A 1**
51 ... 100 mm (2.01 ... 3.94") / 100 mm (3.94")		**A 2**
101 ... 150 mm (3.98 ... 5.91") / 150 mm (5.91")		**A 3**
151 ... 200 mm (5.94 ... 7.87") / 200 mm (7.87")		**A 4**
201 ... 250 mm (7.91 ... 9.84") / 250 mm (9.84")		**A 5**
• Wetted parts stainless steel with ECTFE coating		
Range / Standard length		
20 ... 50 mm (0.79 ... 1.97") / 50 mm (1.97")		**F 1**
51 ... 100 mm (2.01 ... 3.94") / 100 mm (3.94")		**F 2**
101 ... 150 mm (3.98 ... 5.91") / 150 mm (5.91")		**F 3**
151 ... 200 mm (5.94 ... 7.87") / 200 mm (7.87")		**F 4**
201 ... 250 mm (7.91 ... 9.84") / 250 mm (9.84")		**F 5**
• Wetted parts stainless steel with PFA coating		
Range / Standard length		
20 ... 50 mm (0.79 ... 1.97") / 50 mm (1.97")		**D 1**
51 ... 100 mm (2.01 ... 3.94") / 100 mm (3.94")		**D 2**
101 ... 150 mm (3.98 ... 5.91") / 150 mm (5.91")		**D 3**
151 ... 200 mm (5.94 ... 7.87") / 200 mm (7.87")		**D 4**
201 ... 250 mm (7.91 ... 9.84") / 250 mm (9.84")		**D 5**
• Wetted parts Monel 400		
Range / Standard length		
20 ... 50 mm (0.79 ... 1.97") / 50 mm (1.97")		**G 1**
51 ... 100 mm (2.01 ... 3.94") / 100 mm (3.94")		**G 2**
101 ... 150 mm (3.98 ... 5.91") / 150 mm (5.91")		**G 3**
151 ... 200 mm (5.94 ... 7.87") / 200 mm (7.87")		**G 4**

Selection and Ordering data	Article No.	Order code
Diaphragm seal		
Flange type design, directly mounted 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	**7MF0810-**	
	- 0	
• Wetted parts Hastelloy C276		
Range / Standard length		
20 ... 50 mm (0.79 ... 1.97") / 50 mm (1.97")		**J 1**
51 ... 100 mm (2.01 ... 3.94") / 100 mm (3.94")		**J 2**
101 ... 150 mm (3.98 ... 5.91") / 150 mm (5.91")		**J 3**
151 ... 200 mm (5.94 ... 7.87") / 200 mm (7.87")		**J 4**
• Wetted parts Tantalum		
Range / Standard length		
20 ... 50 mm (0.79 ... 1.97") / 50 mm (1.97")		**K 1**
51 ... 100 mm (2.01 ... 3.94") / 100 mm (3.94")		**K 2**
101 ... 150 mm (3.98 ... 5.91") / 150 mm (5.91")		**K 3**
151 ... 200 mm (5.94 ... 7.87") / 200 mm (7.87")		**K 4**

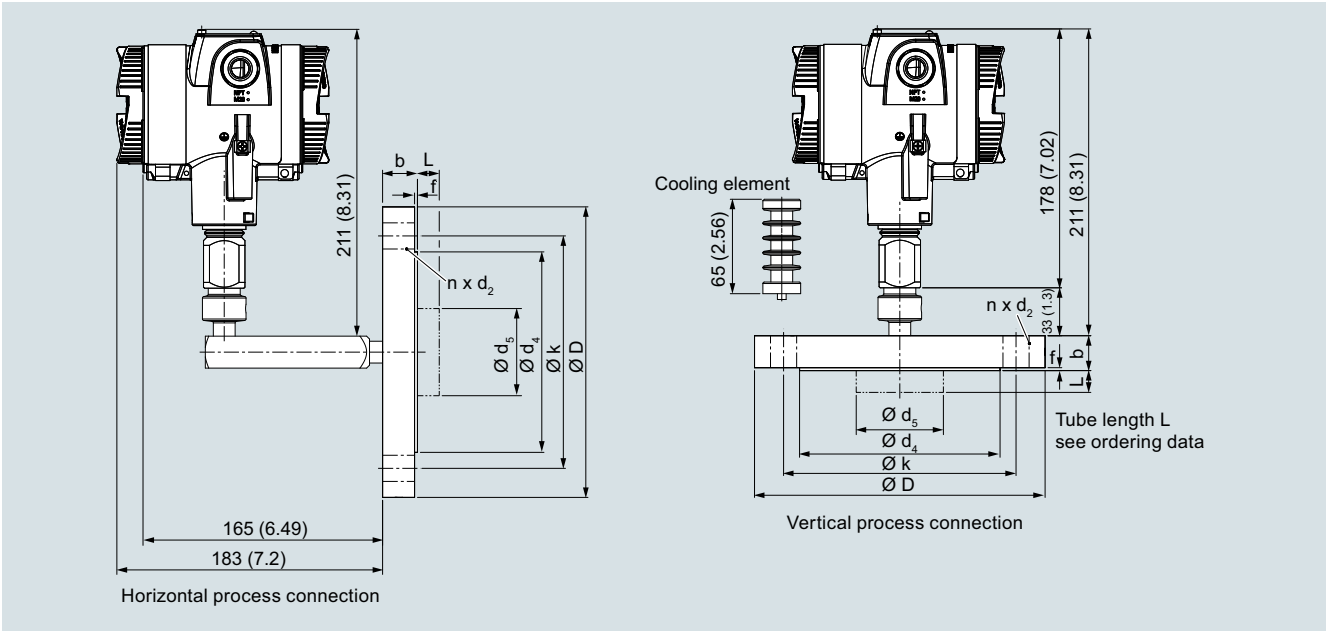
Selection and Ordering data	Order code
Further designs	
Add "**-Z**" to Article No. and specify Order code.	
Factory certificates	
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2	**C11**
Inspection certificate to EN 10204-3.1 - material of body and wetted parts	**C12**
Manufacturer's 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**
Low-temperature version (for Silicon Oil M50 only)	**D67**
Negative pressure services	
Negative pressure service (for gauge and absolute pressure transmitters)	**D81**
Extended negative pressure service (for gauge and absolute pressure transmitters) (only for 7MF0810)	**D85**
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	
Elongated pipe, 150 mm instead of 100 mm, max. medium temperature 300 °C (572 °F), observe the max. permissible media temperature of the fill liquid.	**S05**
Elongated pipe, 200 mm instead of 100 mm, max. medium temperature 300 °C (572 °F), observe the max. permissible media temperature of the fill liquid.	**S06**
Elongated pipe elbow, 200 mm instead of 130 mm, max. medium temperature 300 °C (572 °F), observe the max. permissible media temperature of the fill liquid.	**S07**
Cooling element, max. medium temperature 300 °C (572 °F), observe the max. permissible media temperature of the fill liquid.	**S08**
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 flange design mounted directly on transmitter

Dimensional drawings



Diaphragm seals of flange design, direct connection to a SITRANS P320/420 pressure transmitter (process connection vertical (top) and horizontal (bottom)), dimensions in mm (inch)

Connection to EN 1092-1

Nominal diameter	Nominal pressure	b	D	d_2	d_4	d_5	d_M with extension	d_M without extension	f	k	n	L
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
DN 25	PN 10/16/25/40	18	115	14	68	24.5	22.6	27	2	85	4	0, 50, 100, 150 oder 200
	PN 63/100	24	140	18	68	24.5	22.6	27	2	100	4	
	PN 160	24	140	18	68	24.5	22.6	27	2	100	4	
	PN 250	28	150	22	68	24.5	22.6	27	2	105	4	
DN 40	PN 10/16/25/40	16	150	18	88	38	30	42	2	110	4	
	PN 63/100	24	170	22	88	38	30	42	2	125	4	
	PN 160	26	170	22	88	38	30	42	2	125	4	
DN 50	PN 10/16/25/40	18	165	18	102	48.3	40	51	2	125	4	
	PN 63/100	26	195	26	102	48.3	40	51	2	145	4	
	PN 160	28	195	26	102	48.3	40	51	2	145	4	
DN 80	PN 10/16/25/40	22	200	18	138	76	65	85	2	160	8	
	PN 100	30	230	26	138	76	65	85	2	180	8	
DN 100	PN 10/16	18	220	18	158	94	85	85	2	180	8	
	PN 25/40	22	235	22	162	94	85	85	2	190	8	
DN 125	PN 16	20	250	18	188	127	85	116	2	210	8	
	PN 40	24	270	26	188	127	85	116	2	220	8	

Connection to ASME B16.5

Nominal diameter	Nominal pressure	b	D	d_2	d_4	d_5	d_M with extension	d_M without extension	f	k	n	L
	lb./sq.in	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		inch (mm)
1 inch	150	0.71 (18)	4.33 (110)	0.61 (15.6)	2 (50.8)	0.96 (24.5)	0.89 (22.6)	1.18 (30)	0.08 (2)	3.13 (79.4)	4	0, 2, 3.94, 5.94 oder 7.87 (0, 50, 100, 150 oder 200)
	300	0.77 (19.5)	4.92 (125)	0.75 (19.1)	2 (50.8)	0.96 (24.5)	0.89 (22.6)	1.18 (30)	0.08 (2)	3.5 (88.9)	4	
	600	0.96 (24.5)	4.92 (125)	0.75 (19.1)	2 (50.8)	0.96 (24.5)	0.89 (22.6)	1.18 (30)	0.28 (7)	3.5 (88.9)	4	
	1500	1.4 (35.6)	5.91 (150)	1 (25.4)	2 (50.8)	0.96 (24.5)	0.89 (22.6)	1.18 (30)	0.28 (7)	4 (101.6)	4	
1½ inch	150	0.63 (15.9)	4.92 (125)	0.63 (15.9)	2.87 (73)	1.5 (38)	1.18 (30)	1.42 (36)	0.08 (2)	3.87 (98.4)	4	
	300	0.75 (19.1)	6.10 (155)	0.87 (22.2)	2.87 (73)	1.5 (38)	1.18 (30)	1.42 (36)	0.08 (2)	4.5 (114.3)	4	
	400/600	0.88 (22.3)	6.10 (155)	0.87 (22.2)	2.87 (73)	1.5 (38)	1.18 (30)	1.42 (36)	0.28 (7)	4.5 (114.3)	4	
	900/1500	1.25 (31.8)	7.09 (180)	1.13 (28.6)	2.87 (73)	1.5 (38)	1.18 (30)	1.42 (36)	0.28 (7)	4.87 (123.8)	4	
2 inch	150	0.69 (17.5)	5.91 (150)	0.75 (19.1)	3.63 (92.1)	1.9 (48.3)	1.57 (40)	2.01 (51)	0.08 (2)	4.75 (120.7)	4	
	300	0.81 (20.7)	6.5 (165)	0.75 (19.1)	3.63 (92.1)	1.9 (48.3)	1.57 (40)	2.01 (51)	0.08 (2)	5 (127)	8	
	400/600	1.00 (25.4)	6.5 (165)	0.75 (19.1)	3.63 (92.1)	1.9 (48.3)	1.57 (40)	2.01 (51)	0.28 (7)	5 (127)	8	
	900/1500	1.5 (38.1)	8.46 (215)	1.00 (25.4)	3.63 (92.1)	1.9 (48.3)	1.57 (40)	2.01 (51)	0.28 (7)	6.5 (165.1)	8	
3 inch	150	0.88 (22.3)	7.48 (190)	0.75 (19.1)	5 (127)	3 (76)	2.65 (65)	3.35 (85)	0.08 (2)	6 (152.4)	4	
	300	1.06 (27)	8.27 (210)	0.87 (22.2)	5 (127)	3 (76)	2.65 (65)	3.35 (85)	0.08 (2)	6.63 (168.3)	8	
	600	1.23 (31.8)	8.27 (210)	0.87 (22.2)	5 (127)	3 (76)	2.65 (65)	3.35 (85)	0.28 (7)	6.63 (168.3)	8	
	1500	1.88 (47.7)	10.43 (265)	1.25 (31.8)	5 (127)	3 (76)	2.65 (65)	3.35 (85)	0.28 (7)	8 (203.2)	8	
4 inch	150	0.88 (22.3)	9.06 (230)	0.75 (19.1)	6.19 (157.2)	3.69 (94)	3.35 (85)	3.35 (85)	0.08 (2)	7.5 (190.5)	8	
	300	1.19 (30.2)	10.04 (255)	0.87 (22.2)	6.19 (157.2)	3.69 (94)	3.35 (85)	3.35 (85)	0.08 (2)	7.87 (200)	8	
	400	1.38 (35)	10.04 (255)	0.87 (22.2)	6.19 (157.2)	3.69 (94)	3.35 (85)	3.35 (85)	0.28 (7)	7.87 (200)	8	
	1500	2.13 (54)	12.20 (310)	1.37 (34.9)	6.19 (157.2)	3.69 (94)	3.35 (85)	3.35 (85)	0.28 (7)	9.5 (241.3)	8	
5 inch	150	0.88 (22.3)	10.04 (255)	0.87 (22.2)	7.31 (185.7)	5 (127)	4.57 (116)	4.57 (116)	0.08 (2)	8.5 (215.9)	8	
	300	1.31 (33.4)	11.02 (280)	0.87 (22.2)	7.31 (185.7)	5 (127)	4.57 (116)	4.57 (116)	0.08 (2)	9.25 (235)	8	
	400	1.50 (38.1)	11.02 (280)	0.87 (22.2)	7.31 (185.7)	5 (127)	4.57 (116)	4.57 (116)	0.28 (7)	9.25 (235)	8	

Diaphragm seals of flange design mounted directly on transmitter

Connection to J.I.S

Nominal diameter	Nominal pressure	b	D	d_2	d_4	d_5	d_M with extension	d_M without extension	f	k	n	L
		mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)		mm (inch)
DN 50	10K	14 (0.55)	155 (6.10)	19 (0.75)	96 (3.78)	48.3 (1.9)	40 (1.57)	51 (2.01)	2	120 (4.72)	4	0, 50, 100, 150 oder 200 (0, 2, 3.94, 5.94 oder 7.87)
	20K	16 (0,63)	165 (6.50)	19 (0.75)	96 (3.78)	48.3 (1.9)	40 (1.57)	51 (2.01)	2	120 (4.72)	8	
	40K	26 (1.02)	165 (6.50)	19 (0.75)	105 (4.13)	48.3 (1.9)	40 (1.57)	51 (2.01)	2	130 (5.12)	8	
DN 80	10K	16 (0.63)	185 (7.28)	19 (0.75)	126 (4.96)	76 (2.99)	65 (2.56)	85 (3.35)	2	150 (5.91)	8	
	20K	20 (0.79)	200 (7.87)	23 (0.91)	132 (5.20)	76 (2.99)	65 (2.56)	85 (3.35)	2	160 (6.30)	8	
	40K	32 (1.26)	210 (8.27)	23 (0.91)	140 (5.51)	76 (2.99)	65 (2.56)	85 (3.35)	2	170 (6.30)	8	
DN 100	10K	16 (0.63)	210 (8.27)	19 (0.75)	151 (5.94)	94 (3.7)	85 (3.35)	85 (3.35)	2	175 (6.89)	8	
	20K	22 (0.87)	225 (8.86)	23 (0.91)	160 (6.30)	94 (3.7)	85 (3.35)	85 (3.35)	2	185 (7.28)	8	
	40K	36 (1.42)	250 (9.84)	25 (0.98)	165 (6.50)	94 (3.7)	85 (3.35)	85 (3.35)	2	205 (8.07)	8	

d: Internal diameter of gasket to DIN 2690
d_M: Effective diaphragm diameter