

Pressure Measurement

Remote seals for pressure transmitters
SITRANS P320/P420

Quick-release inline seals

1

Overview



Quick-release inline seals, to DIN 11851 with threaded socket



Quick-release inline seals, with clamp connection

Quick-release inline seals for pressure are available for the following SITRANS P pressure transmitter series:

- P300
- DS III with HART
- DS III with PROFIBUS PA
- DS III with FOUNDATION Fieldbus

Application

The quick-release inline seal is a special design for flowing media and high-viscosity media. Since it is completely integrated in the process pipe, no turbulences, dead volumes or other obstructions to the flow occur. The measured medium flows unhindered through the inline seal and results in self-cleaning of the measuring chamber. Furthermore, the inline seal can be cleaned by a pig.

Design

The quick-release clamp is available in two versions:

- DIN 11851 with threaded socket
- Clamp connection

The inline seal is connected to the pressure transmitter either directly or by way of a capillary.

Function

The measured pressure is transferred from the diaphragm, mounted on the inner circumference of the inline seal, to the filling liquid and then passes through the capillary to the measuring chamber of the pressure transmitter. The interior of the inline seal and of the capillary, as well as the measuring chamber of the pressure transmitter, are filled gas-free by the filling liquid.

Note:

When operating in the low-pressure range, also during commissioning, it is recommended to use a vacuum-proof pressure transmitter (see Selection and Ordering data).

Technical specifications

Inline seals of quick-release design for pressure		
Connection	Nominal diameter	Nominal pressure
• Standard to DIN 11851 with thread	DN 25/32/40	PN 40
	DN 50/65/80	PN 25
• Standard Clamp ISO 2852	DN 25/38/51	PN 16
	DN 63.5/76.1	PN 10
	1, 1½ inch	PN 25
• Standard Clamp DIN 32676, row C Tri-clamp	2, 2½ inch	PN 16
	3 inch	PN 10
	DN 25/32/40	PN 25
• Standard Clamp DIN 32676, row A metric	DN 50	PN 16
	DN 65	PN 10
	Material	
• Main body	Stainless steel 1.4404/316L	
• Diaphragm	Stainless steel 1.4404/316L	
Capillary		
• Length	Max. 10 m (32.8 ft)	
• Internal diameter	2 mm (0.079 inch)	
• Minimum bending radius	150 mm (5.9 inch)	
• Sheath	Spiral protective tube made of stainless steel, mat. No. 1.4404/316L	
Filling liquid	• Food 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 (approx. 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 the requirements of article 4, paragraph 1 (appendix 1); assigned to category III, conformity evaluation module H by the TÜV Nord	
EHEDG	Complies with EHEDG recommendations	

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1

Selection and Ordering data	Article No.	Order code
Quick release inline-seal		
Flange type design, with flexible capillary tube or directly connected to a		
<ul style="list-style-type: none"> 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		
7MF0930 -		
- 0 A 0		
↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.		
Nominal diameter	Nominal pressure	
<u>Connection standard DIN 11851 with thread</u>		
DN 25	PN 40	1 BM
DN 32	PN 40	1 CD
DN 40	PN 40	1 DM
DN 50	PN 25	1 EK
DN 65	PN 25	1 FL
DN 80	PN 25	1 GK
<u>Connection standard Clamp ISO 2852</u>		
DN 25	PN 16	2 BK
DN 38	PN 16	2 CQ
DN 51	PN 16	2 FH
DN 63,5	PN 10	2 FJ
DN 76,1	PN 10	2 GJ
<u>Connection standard Clamp DIN 32676, row C Tri-clamp</u>		
DN 1"	PN 25	3 KV
DN 1½"	PN 25	3 LV
DN 2"	PN 16	3 MV
DN 2½"	PN 16	3 NV
DN 3"	PN 10	3 PV
<u>Connection standard Clamp DIN 32676, row A metric</u>		
DN 25	PN 25	4 BL
DN 32	PN 25	4 CC
DN 40	PN 25	4 DL
DN 50	PN 16	4 EJ
DN 65	PN 10	4 FK
Other version		9 AA
Add Order code and plain text		H 1 Y

Selection and Ordering data	Article No.	Order code
Quick release inline-seal		
Flange type design, with flexible capillary tube or directly connected to a		
<ul style="list-style-type: none"> 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		
7MF0930 -		
- 0 A 0		
Transmitter connection		
Without capillary tube, direct mount straight connection (for gauge pressure)		
Connection via capillary tube		
Length of capillary		
1 m	1 0	
1,6 m	1 1	
2 m	1 2	
2,5 m	1 3	
3 m	1 4	
4 m	1 5	
5 m	1 6	
6 m	1 7	
7 m	1 8	
8 m	2 0	
9 m	2 1	
10 m	2 2	
Other version	9 8	L 1 Y
Add Order code and plain text		
Filling liquid		
Food-grade oil (FDA listed)		
Other version		
Add Order code and plain text		P 1 Y

Pressure Measurement

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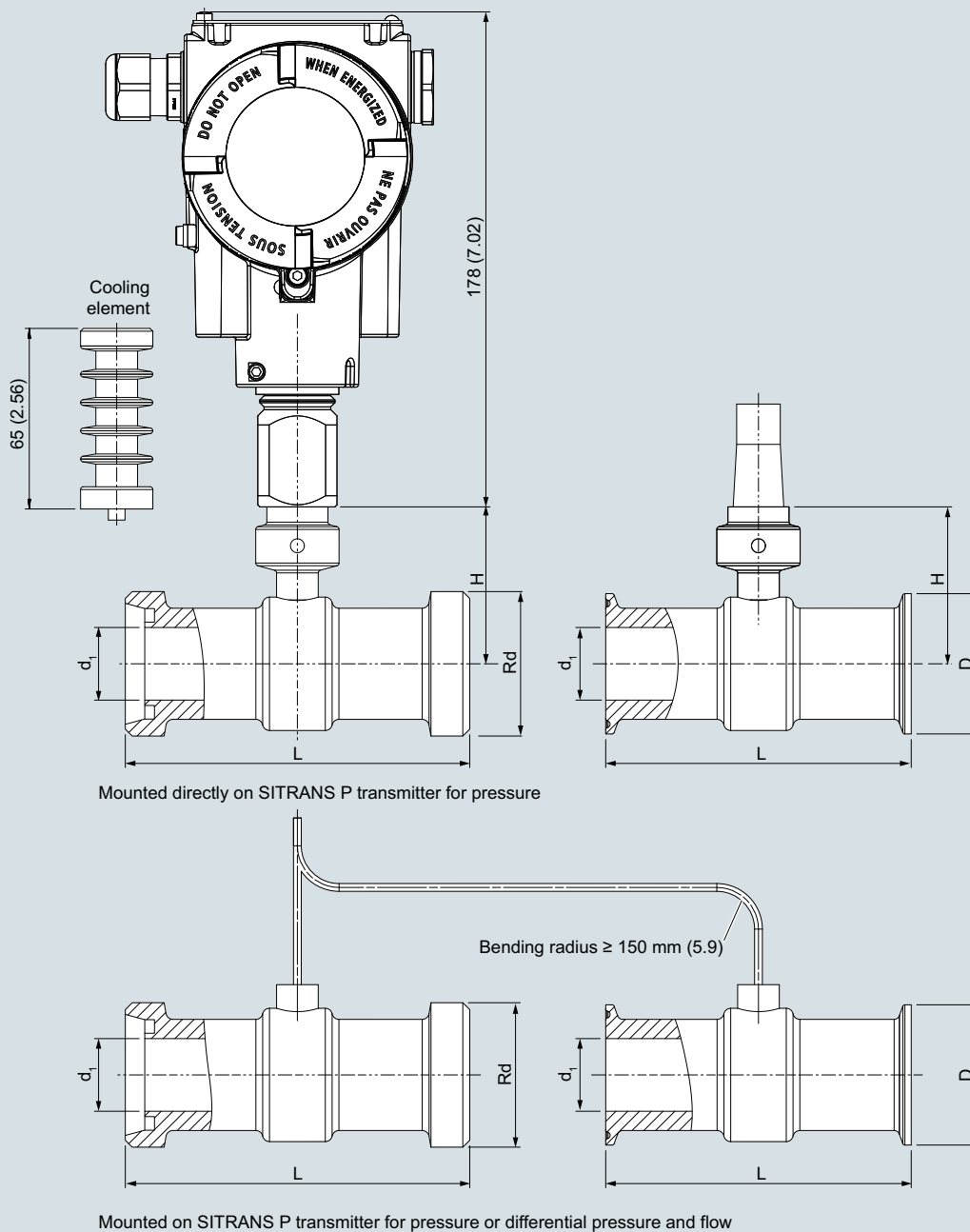
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1

Selection and Ordering data	Order code	Selection and Ordering data	Order code
Further designs		Further designs	
Add "-Z" to Article No. and specify Order code.		Add "-Z" to Article No. and specify Order code.	
Factory certificates		PVC protective tube	
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2	C11	1 m	S70
Inspection certificate to EN 10204-3.1 - material of body and wetted parts	C12	1,6 m	S71
Inspection certificate (EN 10204-3.1) - PMI test of pressure containing and wetted parts	C15	2 m	S72
Certificate of FDA-approved fill oil (to EN10204-2.2)	C17	2,5 m	S73
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511 (Includes SIL conformity declaration)	C20	3 m	S74
		4 m	S75
		5 m	S76
		6 m	S77
		7 m	S78
		8 m	S79
		9 m	S80
		10 m	S81
Negative pressure services		Customer-specific tube length	
Negative pressure service (for gauge and absolute pressure transmitters)	D81	Customer-specific tube length (specify in plain text)	Y44
Extended negative pressure service (for gauge and absolute pressure transmitters)	D85		
Capillary connection		Specification of process conditions¹⁾	
Single-side mounted at differential pressure transmitters at high-side	S03	Ambient temperature range	
Single-side mounted at differential pressure transmitters at low-side	S04	• -10 ... +50 °C (14 ... +122 °F) preset	D66
cooling element	S08	• -40 ... +50 °C (-40 ... +122 °F)	D67
		• -10 ... +85 °C (14 ... +185 °F)	D68
		Process temperature min. ... °C/(°F)/max. ... °C/(°F)	Y50
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		
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		

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

Dimensional drawings



Quick-release inline seal, dimensions in mm (inch)

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Clamp-on seals for pipes to EN 10357 (DIN 11851)

Food connections							
				DIN 11851		DIN 32676	
Length		Inner diameter	Connection height	Nominal pressure	Round thread connection to DIN 11851	Nominal pressure	Clamp connection to DIN 32676
Nominal diameter	L (mm)	di (mm)	h (mm)		Thread Rd		D (mm)
DN 10	96	10	27.5	PN 40	28 x 1/8"	PN 16	34
DN 15	150	16	12	PN 40	34 x 1/8"	PN 16	34
DN 25	110	26	21	PN 40	52 x 1/6"	PN 16	50.5
DN 32	110	32	26	PN 40	58 x 1/6"	PN 16	50.5
DN 40	110	38	28.5	PN 40	65 x 1/6"	PN 16	50.5
DN 50	110	50	34	PN 25	78 x 1/6"	PN 16	64
DN 65	110	66	42	PN 25	95 x 1/6"	PN 10	91
DN 80	60	81	47.5	PN 25	110 x 1/4"	PN 10	106
DN 100	60	100	60	PN 25	130 x 1/4"	PN 10	119

Clamp-on seals for pipes to BS 4825 Part 3 and O.D. Tube (suited for pipes to ASME-BPE)

Food connection								
				IDF to ISO 2853		Clamp connection to ISO 2852		
Length		Inner diameter	Connection height	Nominal pressure	IDF-Thread to ISO 2853	Nominal pressure	Clamp connection to ISO 2852	
Nominal diameter	L (mm)	di (mm)	h (mm)		IDF-thread (Tr)		D (mm)	
1 inch	25.4 mm	110	22.2	21	PN 40	37 x 3.175	PN 16	50.5
1½ inch	38 mm	110	34.8	28.5	PN 40	50 x 3.175	PN 16	50.5
2 inch	51 mm	110	47.8	34	PN 25	64 x 3.175	PN 16	64
1½ inch	63.5 mm	110	60.3	38	PN 25	77.5 x 3.175	PN 16	77.5
3 inch	76.1 mm	60	72.9	44.5	PN 25	91 x 3.175	PN 10	91
4 inch	101.6 mm	60	97.6	59.5	PN 25	118 x 3.175	PN 10	119