Remote seals for pressure transmitters SITRANS P320/P420

Technical description

Overview

In many cases the pressure transmitter and the medium have to be physically separated. It is then necessary to use a remote seal.

The remote seals can be used with the SITRANS P320/420 pressure transmitter series:

- Pressure
- Absolute pressure
- Differential pressure and flow

Note

When configuring your remote seal, be sure to read the information about transmission response, temperature error and response time to be found in the sections "Function" and "Technical data". Only then will the remote seal work to optimum effect.

Benefits

- No direct contact between the pressure transmitter and the medium
- Individual configuration of the pressure transmitter for perfect adaptation to the operating conditions
- Available in many versions
- · Specially designed for difficult operating conditions
- Quick-release versions available for the food industry

Application

Remote seal systems should be used if a separation between the medium and the measuring instrument is essential or appropriate.

Examples of such cases:

- The temperature of the medium is outside the limits specified for the pressure transmitter.
- The medium is corrosive and requires diaphragm materials which are not available for the pressure transmitter.
- The medium is highly viscous or contains solids which would block the measuring chambers of the pressure transmitter.
- The medium may freeze in the measuring chambers or pulse line.
- The medium is heterogeneous or fibrous.
- The medium tends towards polymerization or crystallization.
- The process requires quick-release remote seals, as necessary e.g. in the food industry for fast cleaning.
- The process requires cleaning of the measuring point, e.g. in a batch process.

Design

A remote seal system consists of the following components.

- Pressure transmitter
- · One or two remote seals
- Filling liquid
- Connection between pressure transmitter and remote seal (direct mounting or by means of capillary)

The space for the medium is sealed off with a flat embedded elastic diaphragm. Between the diaphragm and the pressure transmitter is the filling liquid.

In many cases, a capillary must be connected between the remote seal and the pressure transmitter in order, for example, to reduce the temperature effects on the pressure transmitter when the measured medium is hot. However, the capillary influences the activation time and the temperature response of the overall remote seal system. When capillaries are used to connect a remote seal to a pressure transmitter for differential pressure, two capillaries of equal length must always be used.

Optionally, the remote seal with diaphragm extension (tube) can be ordered.

The remote seals in sandwich design are secured with a blank flange.

Designs

Diaphragm seal

With diaphragm seals, the pressure is measured by means of a flat diaphragm which rests in a bed.

The following types of diaphragm seals exist:



Diaphragm seal of sandwich design without (left) and with a projecting diaphragm (tube)

- · Sandwich design
- Sandwich design with projecting diaphragm (tube) to DIN or ASME which are secured using a dummy flange.



Diaphragm seal of flange design without (left) and with a projecting diaphragm (tube)

- Flange design
- Flange design with projecting diaphragm (tube) to DIN or ASME, secured using holes in the flange.



Quick-release diaphragm seal

- Quick-release remote seals, e.g. to DIN 11851, SMS standard, IDF standard, APV RJF standard, clamp connection, etc.
- Miniature diaphragm seal with male thread for screwing into tapped holes
- · Remote seals with customer-specific process connections

Remote seals for pressure transmitters SITRANS P320/P420

Technical description



Miniature diaphragm seal with diaphragm flush with front

· Miniature diaphragm seals

The quick-release remote seals are used above all in the food industry. Their design means that the medium cannot accumulate in dead volumes. The quick-release clamp present on the remote seal means that quick dismounting is possible for cleaning.

Inline seal



Inline seal with quick-release design (left) and for flange mounting

With inline seals, the pressure is first measured using a cylindrical diaphragm positioned in a pipe, and then transmitted to the pressure transmitter by means of the filling liquid.

The inline seal is a special design for flowing media. It consists of a cylindrical pipe in which a cylindrical diaphragm is embedded. Since it is completely integrated in the process pipe, no turbulences, dead volumes or other obstructions to the flow occur. Furthermore, the inline seal can be cleaned by a pig.

The following types of inline seals exist:

- Quick-release inline seals, e.g. to DIN 11851, SMS standard, IDF standard, APV/RJF standard, clamp connection etc. The quick-release facility attached to the remote seal enables the seal to be removed quickly for cleaning purposes.
- Inline seals for flanging to EN or ASME.
- Inline seals with customer-specific process connections.

Note:

The pressure data on the transmitter and the remote seal must be observed with regard to pressure/temperature behavior.

Function

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

Transmission response

The transmission response of a remote seal is characterized by the following variables:

- Temperature error
- Adjustment time

Temperature error

Temperature errors are caused by the change of volume of the filling liquid due to temperature variations. To select the right remote seal you must calculate the temperature error.

Below you will find an overview of the factors which influence the size of the temperature error, as well as information on how to calculate the temperature error.

The temperature error is dependent on the following variables:

- Rigidity of the diaphragm used
- Filling liquid used
- Influence of the filling liquid underneath the process flanges or in the connection shank of the pressure transmitter
- Internal diameter of the capillary: The bigger the internal diameter, the bigger the temperature error
- Length of the capillary: The longer the capillary, the bigger the temperature error

Diaphragm rigidity

The rigidity of the diaphragm is of decisive importance. The bigger the diameter of the diaphragm, the softer the diaphragm and the more sensitively it reacts to temperature-induced changes in volume of the filling liquid.

The result is that small measuring ranges are only possible with large diaphragm diameters.

Other factors apart from diaphragm rigidity which also play a role:

- Diaphragm thickness
- Diaphragm material
- · Coatings if present

Filling liquid

Every filling liquid reacts to temperature variations with a change of volume. Temperature errors can be minimized by selecting a suitable filling liquid, but the filling liquid must also be appropriate for the temperature limits and operating pressure. Furthermore, the filling liquid must also be physiologically harmless.

Since the filling liquid is present under the diaphragm, in the capillary and under the process flange of the pressure transmitter (or in the connection shank), the temperature error must be calculated separately for each combination.

Note:

A vacuum-resistant remote seal is recommended for continuous low-pressure operation at 500 mbar a or below, including during commissioning (see ordering data).

An example of a temperature error calculation can be found in the section "Technical Specifications".

Remote seals for pressure transmitters SITRANS P320/P420

Technical description

Response time

The response time is dependent on the following factors:

- Internal diameter of the capillary: The bigger the internal diameter, the shorter the response time
- Viscosity of the filling liquid The greater the viscosity, the longer the response time
- Length of the capillary: The longer the capillary, the longer the response time
- Pressure in the pressure measuring system: The higher the pressure, the shorter the response time

Recommendations

The following should be observed to obtain an optimum combination of transmitter and remote seal:

- Choose the biggest possible diameter for the remote seal. The effective diameter of the seal diaphragm is then bigger and the temperature error smaller.
- Choose the shortest possible capillary. The response time is then shorter and the temperature error smaller
- Choose the filling liquid with the least viscosity and the smallest coefficient of expansion. Make sure, however, that the filling liquid meets the process requirements with regard to pressure, vacuum and temperature. And ensure that the filling liquid and the medium are compatible with one another.
- Note the following points for use in the vacuum range:
 The pressure transmitter must always be positioned below the lowest spigot.
 - The operating range of some filling liquids is very limited with regard to the permissible temperature of the medium.
 - A vacuum-proof seal is necessary for continuous operation in the low-pressure range.
- Recommendations for the minimum measuring span can be found in the section "Technical data".

Note

The remote seals listed here are a selection of the most common designs. On account of the large variety of process connections, certain remote seals which are not listed here may be available nevertheless.

Other versions can be:

- Other process connections, standards
- Aseptic or sterile connections
- Other dimensions
- Other nominal pressures
- Special diaphragm materials, including coatings
- Other sealing faces
- Other filling liquids
- Other capillary lengths
- Sheathing of capillaries with protective hose
- Calibration at higher/lower temperatures etc.

Please contact your local Siemens office for further information.

Negative pressure service

Liquids, such as silicone oils, inert or those suitable for food, are used in remote seal systems for transmission of the process pressure to the pressure transmitter.

In each liquid, particles have the tendency to leave the liquid compound with increasing temperature (transition from liquid to gaseous aggregate state). This means the vapor pressure increases with increasing temperature and is dependent on the substance or mixture being present.

The higher the temperature and the lower the associated process pressure in the liquid, the more difficult it gets to guarantee the desired transmission properties of the fill fluid and therefore the measuring arrangement.

Plus the sealing elements at the transmitter must be designed so that a diffusion of molecules from the atmosphere into the remote seal system is prevented due to the constantly occurring negative pressure.

In addition to the influencing variables process pressure and process temperature, the vapor pressure curve of the fill fluid at the remote seal end and the stiffness of the remote seal membrane impact the functionality of the remote seal in the negative pressure range.

This means you have to pay special attention to the physical properties of fill fluids with applications in the negative pressure range.

There are three stages for the negative pressure resistance:

- **Standard design** of the remote seal without additional protective measures, suitable for the overpressure range and low negative pressure range. This design is identified with (1) in the diagrams below in section 3.
- **Negative pressure service** with suitable seals and treated fill fluid, identified with (2) in the diagrams below in section 3. Here you select the order codes D81 or D83, depending on the mounting type.
- Extended negative pressure service with more extended treatment of the fill fluid and the remote seals, identified in the diagrams below. Here you select the order codes D85 or D88, depending on the mounting type.

There are two more areas in the diagrams. The area (4) identifies an area that has to be clarified with Technical Support prior to placing the order. The area (5) describes the area in which the remote seal fill fluid is permanently destroyed and the entire remote seal is therefore without function.

Remote seals for pressure transmitters SITRANS P320/P420

Technical description

Technical specifications of the remote seal filling liquids

Filling liquid	Num- ber in the Arti- cle No.			Suitable for nega- tive pres- sure service	Suitable for extended negative pressure service		
Silicone oil M5	1	0.914	4	х	-		
Silicone oil M50	2	0.966	50	х	х		
High-tempera- ture oil	3	1.070	57	х	х		
Halocarbon oil	4	1.968	14	х	-		
Food oil (FDA-listed)	7	0.920	10	х	х		

The suitable negative pressure service is specified with the pressure/temperature curves of the respective liquids described below. **Note:** For reasons of operational safety, the transmitter must not exceed the height of the remote seal - with differential pressure applications, the height of the bottom remote seal - for measurements in the negative pressure range. The associated installation types B, C1, C2 or H are described at the end of this section under the topic "Measuring arrangements".

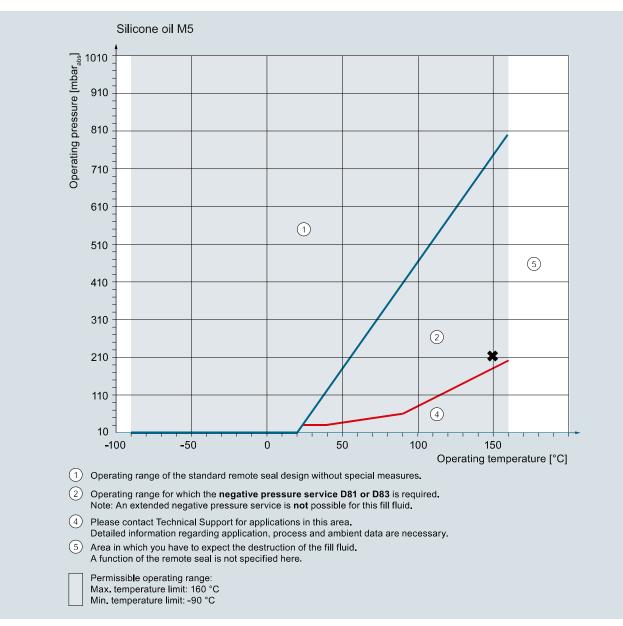
Selection of the required negative pressure service

The procedure for determining the required negative pressure service is described below using the silicone oil M5 as fill fluid. The minimum existing process pressure of a fictitious process is 200 mbar_{abs} (2.9 psi) (at a maximum process temperature of 150 °C (302 °F)). This intersection is identified by an "*****" in the diagram below. This means the negative pressure service D81 or D83 (depending on the application) is sufficient in this example.

The suitable negative pressure resistance is determined this way for all other fill fluids.

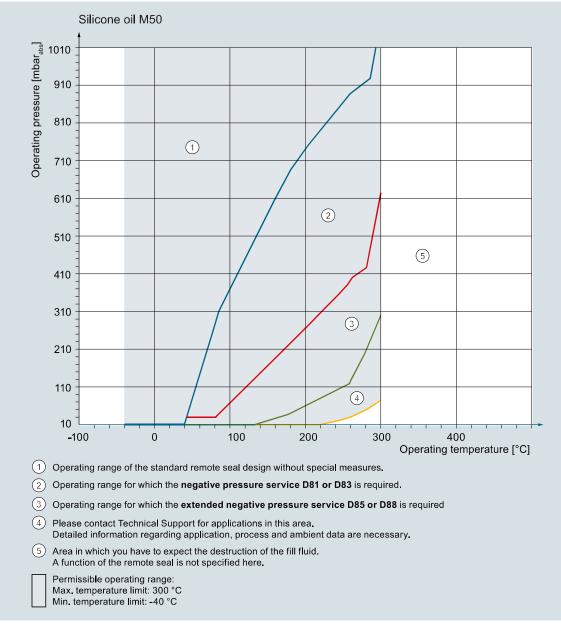
Note:

Note the response times according to the table on page 1/336.



Negative pressure applications with silicone oil M5

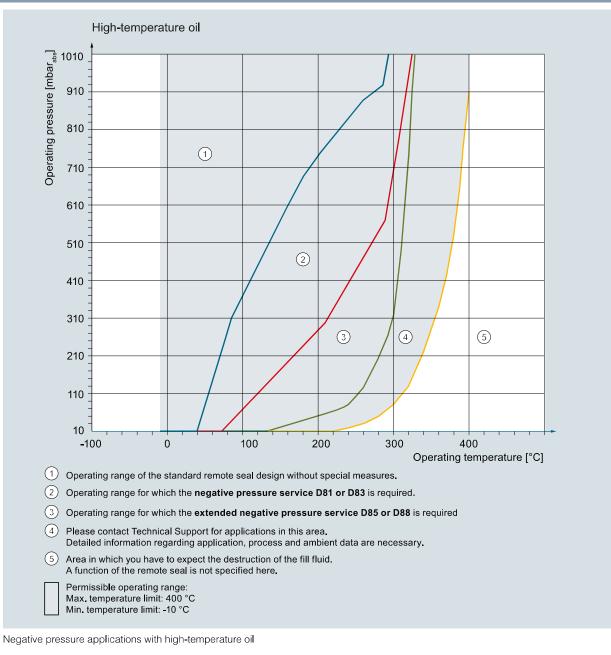
Remote seals for pressure transmitters SITRANS P320/P420



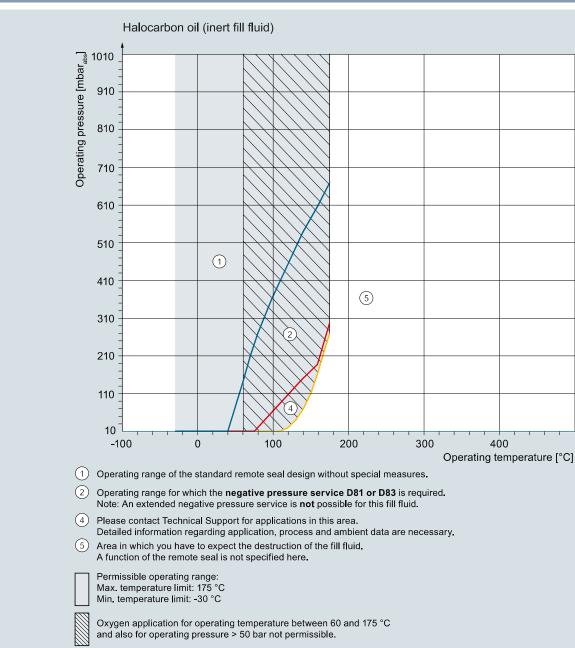
Negative pressure applications with silicone oil M50

Remote seals for pressure transmitters SITRANS P320/P420

Technical description



Remote seals for pressure transmitters SITRANS P320/P420

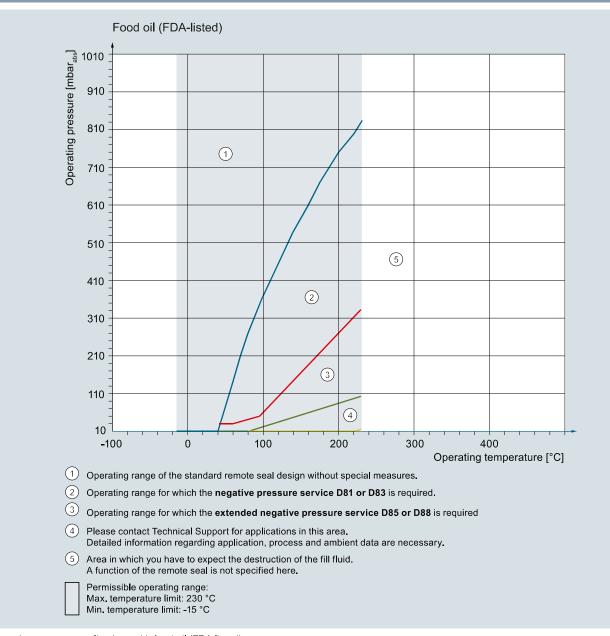


Negative pressure applications with halocarbon oil (inert filling liquid)

A BAM approval for process temperatures up to 60 °C (140 °F) and system pressures up to 50 bar (725 psi) is available for the oxygen application.

Remote seals for pressure transmitters SITRANS P320/P420

Technical description



Negative pressure applications with food oil (FDA listed)

Remote seals for pressure transmitters SITRANS P320/P420

Technical description

Technical specifications

Temperature error Diaphragm seals

Temperature errors of diaphragm seals when connected to pressure transmitters for pressure, absolute pressure, differential pressure (single-sided) and level

	Nominal diameter/ design		diameter error of remote of seal f _{RS}		Temperature o capillary f _{Cap}	error of	Temperature error of process flange/connec- tion spigot f _{PF}		Recommended min. measuring spans (guidance values, observe temp. error)		
		mm	(inch)	mbar/ 10 K	(psi/ 10 K)	mbar/ (10 K ⋅ m _{Cap})	(psi/ (10 K ⋅ m _{Cap)}))	mbar/ 10 K	(psi/ 10 K)	mbar	(psi)
Sandwich	DN 50 without tube	59	(2.32)	1.5	(0.022)	2	(0.029)	2	(0.029)	200	(2.90)
design or with flange to	DN 50 with tube	45	(1.89)	5	(0.073)	10	(0.145)	10	(0.145)	500	(7.25)
EN 1092-1	DN 80 without tube	89	(3.50)	0.2	(0.003)	0.2	(0.003)	0.2	(0.003)	100	(1.45)
	DN 80 with tube	72	(2.83)	1	(0.015)	1	(1.015)	1	(1.015)	250	(3.63)
	DN 100 without tube	89	(3.50)	0.2	(0.003)	0.4	(0.006)	0.4	(0.006)	100	(1.45)
	DN 100 with tube	89	(3.50)	0.4	(0.006)	0.4	(0.006)	0.4	(0.006)	100	(1.45)
	DN 125 without tube	124	(4.88)	0.2	(0.003)	0.1	(0.002)	0.1	(0.002)	20	(0.29)
	DN 125 with tube	124	(4.88)		(0.003)	0.1	(0.002)	0.1	(0.002)	20	(0.29)
Sandwich	2 inch without tube	59	(2.32)	1.5	(0.022)	2	(0.029)	2	(0.029)	200	(2.90)
design or with	2 inch with tube	45	(1.89)		(0.073)	10	(0.145)	10	(0.145)	500	(7.25)
flange to ASME B16.5	3 inch without tube	89	(3.50)	0.2	(0.003)	0.2	(0.003)	0.2	(0.003)	100	(1.45)
	3 inch with tube	72	(2.83)	1	(0.015)	1	(1.015)	1	(1.015)	250	(3.63)
	4 inch without tube	89	(3.50)	0.2	(0.003)	0.4	(0.006)	0.4	(0.006)	100	(1.45)
	4 inch with tube	89	(3.50)	0.4	(0.006)	0.4	(0.006)	0.4	(0.006)	100	(1.45)
	5 inch without tube	124	(4.88)	0.2	(0.003)	0.1	(0.002)	0.1	(0.002)	20	(0.29)
	5 inch with tube	124	(4.88)	0.2	(0.003)	0.1	(0.002)	0.1	(0.002)	20	(0.29)
Remote seal	DN 25	25	(0.98)	20	(0.290)	60	(0.870)	60	(0.870)	6000	(87)
with union nut to DIN 11851	DN 32	32	(1.26)	8	(0.116)	25	(0.363)	25	(0.363)	4000	(58)
511111001	DN 40	40	(1.57)	4	(0.058)	10	(0.145)	10	(0.145)	2000	(29)
	DN 50	52	(2.05)	4	(0.058)	5	(0.073)	5	(0.073)	500	(7.25)
	DN 65	59	(2.32)	3	(0.044)	4	(0.058)	4	(0.058)	500	(7.25)
	DN 80	72	(2.83)	1	(0.015)	1	(0.015)	1	(0.015)	250	(3.63)
Remote seal, screwed gland design	DN 50	52	(2.05)	4	(0.058)	5	(0.073)	5	(0.073)	500	(7.25)
Remote seal	DN 25	25	(0.98)	20	(0.290)	60	(0.870)	60	(0.870)	6000	(87)
vith threaded socket to	DN 32	32	(1.26)	8	(0.116)	25	(0.363)	25	(0.363)	4000	(58)
DIN 11851	DN 40	40	(1.57)	4	(0.058)	10	(0.145)	10	(0.145)	2000	(29)
	DN 50	52	(2.05)		(0.058)	5	(0.073)	5	(0.073)	500	(7.25)
	DN 65	59	(2.32)	3	(0.044)	4	(0.058)	4	(0.058)	500	(7.25)
	DN 80	72	(2.83)	1	(0.015)	1	(0.015)	1	(0.015)	250	(3.63)
Clamp connec-	1½ inch	32	· /	8	(0.116)	25	(0.363)	25	(0.363)	4000	(58)
ion	2 inch	40	(1.57)		(0.058)	10	(0.145)	10	(0.145)	2000	(29)
	2½ inch	59	(2.32)	3	(0.044)	5	(0.073)	5	(0.073)	500	(7.25)
	3 inch	72	()	1	(0.015)	1	(0.015)	1	(0.015)	250	(3.63)
Viniature dia- ohragm seal	G1B	25	(0.98)		(0.290)	60	(0.870)	60	(0.870)	6000	(87)
Jinayin seal	G11/2B	40	(1.57)		(0.058)	10	(0.145)	10	(0.145)	2000	(29)
	G2B	52	(2.05)	4	(0.058)	5	(0.073)	5	(0.073)	500	(7.25)

Remarks:

• Values apply for the filling liquids silicone oil M5, silicone oil M50, high-temperature oil, halocarbon oil and food oil (FDA listed).

• Values apply to stainless steel as the diaphragm material.

Remote seals for pressure transmitters SITRANS P320/P420

Technical description

	Nominal diameter/ design	diameter of remote seal f _{RS} of		Temperature capillary f _{Cap}	Temperature error of capillary f _{Cap}		Temperature error of process flange/connec- tion spigot f _{PF}		Recommended min. measur- ing spans (guidance val- ues, observe temperature error)		
		mm	(inch)	mbar/ 10 K	(psi/ 10 K)	mbar/ (10 K ⋅ m _{Cap})	(psi/ (10 K · m _{Cap}))	mbar/ 10 K	(psi/ 10 K)	mbar	(psi)
Sandwich	DN 50 without tube	59	(2.32)	0.3	(0.0043)	0.3	(0.0045)	0.3	(0.0045)	250	(3.626)
design or with flange to	DN 50 with tube	45	(1.89)	1.26	(0.018)	1.7	(0.025)	1.7	(0.025)	250	(3.626)
EN 1092-1	DN 80 without tube	89	(3.50)	0.05	(0.001)	0.05	(0.001)	0.05	(0.0007)	50	(0.725)
	DN 80 with tube	72	(2.83)	0.24	(0.004)	0.17	(0.003)	0.17	(0.003)	100	(1.45)
	DN 100 without tube	89	(3.50)	0.05	(0.001)	0.07	(0.001)	0.07	(0.001)	50	(0.725)
	DN 100 with tube	89	(3.50)	0.1	(0.002)	0.07	(0.001)	0.07	(0.001)	50	(0.725)
	DN 125 without tube	124	(4.88)	0.05	(0.001)	0.03	(0.0004)	0.03	(0.0004)	20	(0.29)
	DN 125 with tube	124	(4.88)	0.05	(0.001)	0.03	(0.0004)	0.03	(0.0004)	20	(0.29)
Sandwich	2 inch without tube	59	(2.32)	0.3	(0.0043)	0.3	(0.0043)	0.3	(0.0045)	250	(3.626)
design with flange to	2 inch with tube	45	(1.89)	1.26	(0.018)	1.7	(0.025)	1.7	(0.025)	250	(3.626)
ASME B16.5	3 inch without tube	89	(3.50)	0.05	(0.001)	0.05	(0.0007)	0.05	(0.0007)	50	(0.725)
	3 inch with tube	72	(2.83)	0.24	(0.004)	0.17	(0.003)	0.17	(0.003)	100	(1.45)
	4 inch without tube	89	(3.50)	0.05	(0.001)	0.07	(0.001)	0.07	(0.001)	50	(0.725)
	4 inch with tube	89	(3.50)	0.1	(0.002)	0.07	(0.001)	0.07	(0.001)	50	(0.725)
	5 inch without tube	124	(4.88)	0.05	(0.001)	0.03	(0.0004)	0.03	(0.0004)	20	(0.29)
	5 inch with tube	124	(4.88)	0.05	(0.001)	0.03	(0.0004)	0.03	(0.0004)	20	(0.29)
Remote seal, screwed gland design	DN 50	52	(2.05)	1	(0.015)	0.83	(0.012)	0.83	(0.012)	250	(3.626)
Remote seal	DN 50	52	(2.05)	1	(0.015)	0.83	(0.012)	0.83	(0.012)	250	(3.626)
with union nut to DIN 11851	DN 65	59	(2.32)	0.7	(0.010)	0.67	(0.010)	0.67	(0.010)	250	(3.626)
	DN 80	72	(2.83)	0.24	(0.004)	0.17	(0.003)	0.17	(0.003)	100	(1.450)
Remote seal	DN 50	52	(2.05)	1	(0.015)	0.83	(0.012)	0.83	(0.012)	250	(3.626)
with threaded socket to	DN 65	59	(2.32)	0.7	(0.010)	0.67	(0.010)	0.67	(0.010)	250	(3.626)
DIN 11851	DN 80	72	(2.83)	0.24	(0.004)	0.17	(0.003)	0.17	(0.003)	100	(1.450)
Clamp connec-	2 inch	40	(1.57)	1	(0.015)	2.5	(0.036)	2.5	(0.036)	2000	(29.01)
tion	2½ inch	59	(2.32)	0.7	(0.010)	0.67	(0.010)	0.67	(0.010)	250	(3.626)
	3 inch	72	(2.83)	0.24	(0.004)	0.17	(0.003)	0.17	(0.003)	100	(1.450)

Remarks:

• Values apply for the filling liquids silicone oil M5, silicone oil M50, high-temperature oil, halocarbon oil and food oil (FDA listed).

• Values apply to stainless steel as the diaphragm material.

Remote seals for pressure transmitters SITRANS P320/P420

Technical description

Temperature error inline seals

Temperature errors of inline seals when connected to pressure transmitters for gauge pressure and absolute pressure, and with single-sided connection to pressure transmitters for differential pressure

Nominal diameter/ design	Temperature error of remote seal f _{RS}		Temperature e capillary f _{Cap}	rror of	Temperature e cess flange/co spigot f _{PF}		Recommended suring spans (values, observ ture error)	guidance
	mbar/10 K	(psi/10 K)	mbar/10 K	(psi/10 K)	mbar/10 K	(psi/10 K)	mbar	(psi)
DN 25 (1 inch)	6.0	(0.0870)	8.5	(0.123)	8.5	(0.123)	1000	(14.5)
DN 40 (1½ inch)	4.5	(0.065)	4.5	(0.065)	4.5	(0.065)	250	(3.63)
DN 50 (2 inch)	4.0	(0.058)	3.0	(0.044)	3.0	(0.044)	100	(1.45)
DN 80 (3 inch)	9.5	(0.138)	5.0	(0.073)	5.0	(0.073)	100	(1.45)
DN 100 (4 inch)	8.0	(0.012)	3.0	(0.044)	3.0	(0.044)	100	(1.45)

Temperature errors of inline seals with double-sided connection to pressure transmitters for differential pressure

Nominal diameter/ design	Temperature error of remote seal f _{RS}		Temperature e capillary f _{Cap}	rror of		ss flange/connection suring spans		ommended min. mea- ng spans (guidance es, observe tempera- error)	
	mbar/10 K	(psi/10 K)	mbar/10 K	(psi/10 K)	mbar/10 K	(psi/10 K)	mbar	(psi)	
DN 25 (1 inch)	2.3	(0.033)	1.8	(0.026)	1.8	(0.026)	1000	(14.5)	
DN 40 (1½ inch)	0.8	(0.012)	0.3	(0.004)	0.3	(0.004)	250	(3.63)	
DN 50 (2 inch)	0.3	(0.004)	0.1	(0.002)	0.1	(0.002)	100	(1.45)	
DN 80 (3 inch)	3.0	(0.044)	0.5	(0.007)	0.5	(0.007)	100	(1.45)	
DN 100 (4 inch)	1.0	(0.015)	0.1	(0.002)	0.1	(0.002)	100	(1.45)	

Remarks:

• Values apply for the filling liquids silicone oil M5, silicone oil M50, high-temperature oil, halocarbon oil and food oil (FDA listed).

• Half the values apply to glycerin/water mixture as the filling liquid.

• Values apply to stainless steel as the diaphragm material.

• Diaphragm thickness 0.05 mm (0.002 inch) for DN 25/DN 40/DN 50 and 0.1 mm (0.004 inch) for DN 80/DN 100

Remote seals for pressure transmitters SITRANS P320/P420

Technical description

Calculation of the temperature error

The following equation is used to calculate the temperature error:

dp = (9 _{RS} – 9 _{Ca}	լ) · f _{RS} + (Ց _{Ca}	ap — ୬ _{Cal}) · I _{Cap}	ેf _{Cap} + (ર	[∋] тв − ⁹ Cal) · 1	PF
---	---	--	------------------------	---	----

dp	Additional temperature error (mbar)
9 _{RS}	Temperature on remote seal diaphragm (generally corresponds to temperature of medium)
9 _{Cal}	Calibration (reference) temperature (20 °C (68 °F))
f _{RS}	Temperature error of remote seal
θ _{Cap}	Ambient temperature on the capillaries
I _{Cap}	Capillary length
9 _{Cap} I _{Cap} f _{Cap}	Temperature error of capillaries
ϑ_{TR}	Ambient temperature on pressure transmitter
f _{PF}	Temperature error of the oil filling in the process flanges of the pressure transmitter

Example of temperature error calculation

Existing conditions:

SITRANS P pressure transmitter for differential pressure, 250 mbar, set	f _{RS} = 0.05 mbar/10 K (0.039 inH ₂ O/10 K)
to 0 100 mbar, with DN 100 remote seal diaphragms without tube, diaphragm made of stainless steel, mat. No. 1.4404/316L	
Capillary length	I _{Cap} = 6 m (19.7 ft)
Capillaries fitted on both sides	f _{Cap} = 0.07
Filling liquid silicone oil M5	f _{PF} = 0.07 mbar/10 K (0.028 inH ₂ O/10 K)
Process temperature	θ _{RS} = 100 °C (212 °F)
Temperature on the capillaries	9 _{Cap} = 50 °C (122 °F)
Temperature on pressure transmitter	θ _{TR} = 50 °C (122 °F)
Calibration temperature	θ _{Cal} = 20 °C (68 °F)

Required:

Additional temperature error of remote seals: dp

Calculation:

in mbar

 $\begin{array}{l} dp = (100\ ^\circ C - 20\ ^\circ C) \cdot 0.05\ mbar/10\ K + (50\ ^\circ C - 20\ ^\circ C) \cdot 6\ m \cdot \\ 0.07\ mbar/(10\ K \cdot m) + (50\ ^\circ C - 20\ ^\circ C) \cdot 0.07\ mbar/10\ K \\ \end{array}$

dp = 0.4 mbar + 1.26 mbar + 0.21 mbar

in inH₂O

Result:

 $dp = 1.87 \text{ mbar} (0.75 \text{ inH}_2\text{O})$

(corresponds to 2.27% of set measuring span)

Note

The determined temperature error only applies to the error resulting from connection of the remote seal.

The transmission response of the respective transmitter is <u>not</u> included in this consideration.

It must be calculated separately, and the resulting error <u>added</u> to the error determined above from connection of the remote seal.

Dependence of temperature error on diaphragm material

The temperature errors listed in the previous table are based on the use of stainless steel as the diaphragm material. If other diaphragm materials are used, the temperature errors change as follows:

Diaphragm material	Change in temperature error of remote seal
	Increase in values by
Stainless steel, Duplex,	See previous tables
Hastelloy C4, mat. No. 2.4602	50 %
Hastelloy C276, mat. No. 2.4819	50 %
Monel 400, mat. No. 2.4360	60 %
Tantalum	50 %
Titanium	50 %
PTFE coating on stainless steel diaphragm	80 %
ECTFE coating or PFA coating on stainless steel diaphragm	100 %
Gold coating on stainless steel diaphragm	40 %
Inconel	50 %
Incoloy	50 %

Maximum temperature of medium

Note:

When taking into account the maximum medium temperature, the application limits of the fill fluids and gaskets used as well as the pressure/temperature limits of the respective process connections must also be taken into consideration.

The following maximum temperatures of the medium apply depending on the material of the wetted parts.

Material	Max. temperature of medium	Min./max. pressure
Stainless steel, 316L	400 °C (752 °F)	No restriction
PTFE coating	200 °C (392 °F)	< 0 bar (0 psi); gauge pressure
	260 °C (500 °F)	0 bar (0 psi) 25 bar (363 psi); gauge pressure
	150 °C (302 °F)	25 bar (363 psi) 40 bar (580 psi); gauge pressure
	50 °C (302 °F)	40 bar (580 psi) 60 bar (870 psi); gauge pressure
ECTFE coating	150 °C (302 °F)	For pressures < 1 bar (14.5 psi) on request
PFA coating	200 °C (392 °F)	< 0 bar (0 psi); gauge pressure
	260 °C (500 °F)	25 bar (363 psi)/40 bar (580 psi); gauge pressure
	150 °C (302 °F)	40 bar (580 psi)/60 bar (870 psi); gauge pressure
	50 °C (302 °F)	For pressures < 1 bar (14.5 psi) on request
Hastelloy C4, mat. No. 2.4602	400 °C (752 °F)	No restriction
Hastelloy C276, mat. No. 2.4819	400 °C (752 °F)	No restriction
Hastelloy C22, mat. No. 2.4602	400 °C (752 °F)	No restriction
Monel 400, mat. No. 2.4360	400 °C (752 °F)	No restriction
Tantalum	300 °C (572 °F)	No restriction
Duplex, mat. No. 1.4462	250 °C (482 °F)	No restriction
Titanium	150 °C (302 °F)	No restriction
Inconel	400 °C (752 °F)	No restriction
Incoloy	400 °C (752 °F)	No restriction
Gold coating	400 °C (752 °F)	No restriction

Remote seals for pressure transmitters SITRANS P320/P420

Technical description

Maximum capillary length for diaphragm seals (guidance values)

Nom. diar	n.	Max. leng	th of capil	lary	
		Diaphrag	m seal	inline sea	I
		m	(ft)	m	(ft)
DN 25	(1 inch)	2.5	(8.2)	2.5	(8.2)
DN 32	(1¼ inch)	2.5	(8.2)	2.5	(8.2)
DN 40	(1½ inch)	4	(13.1)	6	(19.7)
DN 50	(2 inch)	6	(19.7)	10	(32.8)
DN 65	(2½ inch)	8	(26.2)	10	(32.8)
DN 80	(3 inch)	15	(49.1)	10	(32.8)
DN 100	(4 inch)	15	(49.1)	10	(32.8)
DN 125	(5 inch)	15	(49.1)	-	-

Response times

The values listed in the following table are the response times (in seconds per meter of capillary) for a change in pressure which corresponds to the set measuring span.

The listed values must be multiplied by the respective length of the capillary, or with transmitters for differential pressure and flow by the total length of both capillaries. The response times are independent of the set measuring span within the range of the respective transmitter. The response times are of insignificant importance for measuring spans above 10 bar (145 psi). The response times of the pressure transmitters are not considered in the table.

Filling liquid	Density		Tempe on cap	erature billary	Response time in s/m (s/ft) with max. measuring span of pressure transmitter					
	kg/dm ³	(l b/in ³)	°C	(°F)	250 mbar	(101 inH ₂ O)	600 mbar	(241 inH ₂ O)	1600 mbar	(643 inH ₂ O)
Silicone oil M5	0.914	(0.033)	+60	(140)	0.06	(0.018)	0.02	(0.006)	0.01	(0.003)
			+20	(68)	0.11	(0.034)	0.02	(0.006)	0.02	(0.006)
			- 20	(-4)	0.3	(0.091)	0.12	(0.037)	0.05	(0.015)
Silicone oil M50	0.966	(0.035)	+60	(140)	0.6	(0.183)	0.25	(0.076)	0.09	(0.027)
			+20	(68)	0.61	(0.186)	0.26	(0.079)	0.1	(0.030)
			- 20	(-4)	1.69	(0.515)	0.71	(0.216)	0.27	(0.082)
High-temperature oil	1.070	(0.039)	+60	(140)	0.14	(0.043)	0.06	(0.018)	0.02	(0.006)
			+20	(68)	0.65	(0.198)	0.27	(0.082)	0.1	(0.030)
			-10	(14)	3.96	(1.207)	1.65	(0.503)	0.62	(0.189)
Halocarbon oil	1.968	(0.071)	+60	(140)	0.07	(0.021)	0.03	(0.009)	0.01	(0.003)
			+20	(68)	0.29	(0.088)	0.12	(0.037)	0.05	(0.015)
			- 20	(-4)	2.88	(0.878)	1.2	(0.366)	0.45	(0.137)
Food oil (FDA listed)	0.920	(0.033)	+60	(140)	0.75	(0.229)	0.33	(0.101)	0.17	(0.052)
			+20	(68)	4	(1.220)	1.75	(0.534)	0.67	(0.204)
			- 20	(-4)	20	(6.100)	8.5	(2.593)	3.25	(0.991)

Permissible data of filling liquids for pressure and temperature see diagrams on page 1/327 ff.

Remote seals for pressure transmitters SITRANS P320/P420

Technical description

More information

Specification of process conditions for selection and ordering data

Ambient temperature range

As standard, the remote seal systems are optimized for an ambient temperature range of -10 to +50 $^{\circ}$ C (14 to +122 $^{\circ}$ F). Therefore, in the ordering options, the **order code "D66" is** preset.

If the range of the ambient temperature deviates from this, you have the possibility to choose other ambient temperature ranges:

- With the order code D67, a range from -40 to +50 °C (-40 to +122 °F)
- With the order code D68, a range from -10 to +85 °C (14 to +185 °F)

In the case of a **special version**, which you can select with the **order option Y99** in the device settings, it is possible to enter the ambient temperature as a numerical value.

Process temperature

The standard optimization for the process temperature depends on the filling liquid used:

Filling liquid	Code	Optimized temperature range as standard
Silicone M50	В	-10 +200 °C (14 +392 °F)
High-temperature oil	С	-10 +300 °C (14 +572 °F)
Silicone oil M5	А	-40 +140 °C (-40 +284 °F)
Food-grade oil (FDA grade)	Е	-10 +140 °C (14 +284 °F)
Halocarbon oil	D	-20 +60 °C (-4 +140 °F)

- If the process temperatures deviate from the temperature ranges mentioned in the table above, we ask you to send the process temperature with the order code Y50 along with the order.
- If the remote seal has a small diameter (< DN 50/2") or a long capillary (> 4 m), we also ask you to provide the process data with the **following order code** when ordering.

These entries are transmitted and ensure the correct functioning of the remote seal systems.

Ambient temperature range	Order code
 -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

Remote seals for pressure transmitters SITRANS P320/P420

Overview



Diaphragm seals of sandwich design

Diaphragm seals of sandwich de	esign	Sealing material in the process		
Nominal diameter	Nominal pressure	flanges		
Connecting standard EN 1092-1		 For pressure transmitters, abso- lute pressure transmitters and 	Copper	
 DN 25, DN 40, DN 50, DN 65, DN 80, DN 100, DN 125 	PN 16 PN 400	 For other applications 	Viton	
Connecting standard ASME B16.5				
• 1 inch, 1½ inch, 2 inch, 2½ inch, 3 inch, 4 inch, 5 inch	Class 150 class 2500	Maximum pressure	See above and the technical data of the pressure transmitters	
Connecting standard J.I.S.		Tube length	Without tube as standard (tube available on request)	
 DN 25, DN 40, DN 50, DN 65, DN 80, DN 100, DN 125 	10K 63K	Capillary		
Sealing surface		• Length	Max. 10 m (32.8 ft), longer lengths on request	
• For stainless steel, mat. No.	To EN 1092-1, form B1 or	 Internal diameter 	max. 2 mm (0.079 inch)	
1.4404/316L	ASME B16.5 RF 125 250 AA	• Minimum bending radius	150 mm (5.9 inch)	
 For the other materials 	To EN 1092-1, form B2 or ASME B16.5 RFSF	Filling liquid	Silicone oil M5	
Materials			Silicone oil M50	
• Main body	Stainless steel mat. no. 1.4404/316L		High-temperature oil	
Wetted parts	Stainless steel mat. no. 1.4404/316L		Halocarbon oil (for measuring O_2)	
	Without coating		Food grade oil (FDA listed)	
	PTFE coatingECTFE coating (for vacuum on re-	Permissible ambient temperature	Dependent on the pressure trans- mitter and the filling liquid of the remote seal	
	quest) • PFA coating Monel 400, mat. No. 2.4360 Hastelloy C276, mat. No. 2.4819 Hastelloy C4, mat. No. 2.4602		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	
	Hastelloy C22, mat. no. 2.4602	Weight	Approx. 4 kg (8.82 lb)	
	Tantalum	Certificate and approvals		
	Titanium, mat. no. 3.7035 Nickel 201 Duplex 2205, mat. no. 1.4462 Stainless steel 316L, gold plated, thickness approx. 25 µm	Classification according to pres- sure equipment directive (DGRL 2014/68/EU)	For gases of fluid group 1 and liq- uids of fluid group 1; complies with requirements of article 4, paragraph 3 (sound engineering practice)	
• Capillary	Stainless steel, mat. No. 1.4571/316Ti			
Sheath	Spiral protective tube made of stain- less steel, mat. No. 1.4404/316L			

Remote seals for pressure transmitters SITRANS P320/P420

				Diaphragm seals of sandwich design	with flexi	ble ca	apil	la	ry
Selection and Or	rdering data	Article No.	Order code	Selection and Ordering data	Article No).	Or co		
Diaphragm seal				Diaphragm seal					
	esign, with flexible capillary with flexible capillary tube			Sandwich type design, with flexible capillary tube, connected with flexible capillary tube to a					
pressure or abs (only together w	vith negative pressure ser- 7MF04 order separately	7 M F 0 8 0 0 -		 SITRANS P320/P420 transmitter for gauge pressure or absolute pressure (only together with negative pressure ser- vice), 7MF03/7MF04 order separately Scope of delivery: 1 off 	7 M F 0 8 0	0 -			
	P420 transmitter for abso- A MF03/7MF04 order sepa- delivery: 1 off	7 M F 0 8 0 1 -		 SITRANS P320/P420 transmitter for abso- lute pressure, 7MF03/7MF04 order sepa- rately, Scope of delivery: 1 off 	7 M F 0 8 0	1 -			
ential pressure	P420 transmitter for differ- 7 and flow, 7MF03/7MF04 y, Scope of delivery: 2 off			 SITRANS P320/P420 transmitter for differ- ential pressure and flow, 7MF03/7MF04 order separately, Scope of delivery: 2 off 	7 M F 0 8 0				
		- 0				0			
	rticle No. for the online con-			11 m (only for 7MF0802)	23				
	e PIA Life Cycle Portal.			12 m (only for 7MF0802) 13 m (only for 7MF0802)	24 25				
Nominal diamete	•			14 m (only for 7MF0802)	25				
Connecting stand				15 m (only for 7MF0802)	27				
(DN 25, DN 40 ar only for pressure	nd DN 50 recommended			Other version	98		L	. 1	Y
DN 25	PN 16 400	0 B Q		Add Order code and plain text			-		
DN 40	PN 16 400	0 D Q		Filling liquid	-				
DN 50	PN 16 400	0 E Q		Silicone oil M50		в			
DN 65	PN 16 400	0 F Q		High-temperature oil		С			
DN 80	PN 16 400	0 G Q		Silicone oil M5		Α			
DN 100	PN 16 400	0 H Q		Food-grade oil (FDA listed)		Е			
DN 125	PN 16 400	0 J Q		Halocarbon oil		D			
Connecting stand				Other version		z	F	י 1	Y
	and 2 inch recommended			Add Order code and plain text	_				
only for pressure 1 inch	class 150 2500	1 K X		Wetted parts materials					
1½ inch	class 150 2500	1 L X		Stainless steel 316L					
2 inch	class 150 2500	1 M X		 Without coating 		Α			
2½ inch	class 150 2500	1 N X		 With PFA coating 		D			
3 inch	class 150 2500	1 P X		 With PTFE coating 		E	0		
4 inch	class 150 2500	10X		With ECTFE coating		F			
5 inch	class 150 2500	1 R X		Monel 400, 2.4360		G			
Connecting stand	tard JLS			Hastelloy C276, 2.4819		J			
	nd DN 50 recommended			Tantalum Titanium, 3.7035		K	^		
only for pressure	1 10 A			Nickel 201		м			
DN 25	10K 63K	2 B W		Diaphragm Duplex, 1.4462		Q			
DN 40	10K 63K	2 D W		Diaphragm plus flange Duplex, 1.4462		R			
DN 50	10K 63K	2 E W		Stainless steel 316L with gold coating		S	0		
DN 65	10K 63K	2 F W		Hastelloy C4, 2.4610		U	0		
DN 80	10K 63K	2 GW		Hastelloy C22, 2.4602		۷	0		
DN 100 DN 125	10K 63K	2 HW 2 J W		Other version		z	8 0	21	Y
	10K 63K			Add Order code and plain text					
Other version Add Order code a	and plain text	9 A A	H1Y	Extension length					
				• without			0		
Length of capilla	ary	1.0		• 50 mm (2")			1		
1 m 1,6 m		10 11		• 100 mm (4")			2		
2 m		12		• 150 mm (6") • 200 mm (9")			3 4		
2,5 m		13		• 200 mm (8") • 250 mm (10")			4 5		
3 m		14		· · ·			5 8 (1	Y
4 m		15		Other version Add Order code and plain text		-			
5 m		16		, au order oode and plain text					
6 m		17							
7 m		18							
8 m		20							
9 m 10 m		21							
		2 2							

Order code

Article No.

7MF0800-

7MF0801-

7MF0802-

- 0

J 1 J 2 J 3 J 4

K 1 K 2 K 3 K 4

Pressure Measurement

Remote seals for pressure transmitters SITRANS P320/P420

Selection and Orde	ering data	Article No.	Order	Selection and Ordering data	
			code		
Diaphragm seal	te en la des des estas en la composición de			Diaphragm seal	
Sandwich type des tube, connected wir to a			Sandwich type design, with flexible capilla tube, connected with flexible capillary tube to a		
pressure or absol (only together with	n negative pressure ser- IF04 order separately	7 M F 0 8 0 0 -		 SITRANS P320/P420 transmitter for gat pressure or absolute pressure (only together with negative pressure s vice), 7MF03/7MF04 order separatel Scope of delivery: 1 off 	
	420 transmitter for abso- F03/7MF04 order sepa- elivery: 1 off	7 M F 0 8 0 1 -		 SITRANS P320/P420 transmitter for abs lute pressure, 7MF03/7MF04 order so rately, Scope of delivery: 1 off 	
ential pressure an	420 transmitter for differ- Id flow, 7MF03/7MF04 Scope of delivery: 2 off	7 M F 0 8 0 2 -		 SITRANS P320/P420 transmitter for diff ential pressure and flow, 7MF03/7MF0 order separately, Scope of delivery: 2 c 	
	antanalan kanath	- 0			
Customer-specific	extension length			Wetted parts Hastelloy C276 Range Standard length	
 wetted parts stair Range 	Standard length			20 50 mm 50 mm (1.97")	
	50 mm (1.97")		A 1	(0.79 1.97") 51 100 mm 100 mm (3.94")	
51 100 mm (2.01 3.94")	100 mm (3.94")		A 2	(2.01 3.94") 101 150 mm (3.98 5.91")	
101 150 mm (3.98 5.91")	150 mm (5.91")		A 3	(5.90 3.91) 151 200 mm 200 mm (7.87") (5.94 7.87")	
151 200 mm (5.94 7.87") 201 250 mm	200 mm (7.87") 250 mm (9.84")		A 4 A 5	Wetted parts Tantalum Range Standard length	
(7.91 9.84")			дJ	20 50 mm 50 mm (1.97")	
 wetted parts stair coating 	nless steel with ECTFE			(0.79 1.97") 51 100 mm 100 mm (3.94")	
Range	Standard length			(2.01 3.94") 101 150 mm 150 mm (5.91")	
20 50 mm (0.79 1.97")	50 mm (1.97")		F1	(3.98 5.91") 151 200 mm 200 mm (7.87")	
51 100 mm (2.01 3.94") 101 150 mm	100 mm (3.94") 150 mm (5.91")		F 2 F 3	(5.94 7.87")	
(3.98 5.91") 151 200 mm	200 mm (7.87")		F4		
(5.94 7.87") 201 250 mm (7.91 9.84")	250 mm (9.84")		F 5		
· /	 nless steel with PFA coat-				
Range	Standard length				
20 50 mm (0.79 1.97")	50 mm (1.97")		D 1		
(0.79 1.97) 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 Mon					
Range 20 50 mm	Standard length 50 mm (1.97")		G 1		
(0.79 1.97") 51 100 mm	100 mm (3.94")		G 2		
(2.01 3.94") 101 150 mm	150 mm (5.91")		G 3		
	1 150 000 05 910				

G 3 G 4

150 mm (5.91")

200 mm (7.87")

(2.01 ... 3.94) 101 ... 150 mm (3.98 ... 5.91") 151 ... 200 mm (5.94 ... 7.87")

Pressure Measurement

Remote seals for pressure transmitters SITRANS P320/P420

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
Factory certificate 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 trans- mitters)	D61
Spark arrestor (for differential pressure and level trans- mitters)	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	E80
60 °C and max. pressure 50 bar) 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 125250AA, wetted	M64
parts 316L only) Sealing surface with tongue to EN1092-1, form C (watted parts 316L only)	
(wetted parts 316L only) • DN 25	M70
• DN 40	M71
• DN 50 • DN 80	M72 M73
• DN 100	M73 M74
• DN 125	M75
Sealing surface with spigot to EN1092-1, form E (wetted parts 316L only)	
• DN 25	M76
• DN 40 • DN 50	M77 M78
• DN 80	M79
• DN 100 • DN 125	M80 M81
	MOT

dd '-Z' to Article No. and specify Order code.Image: splice of the splice o	Selection and Ordering data	Order code
ealing surface with recess to EN1092-1, form F M82 wetted parts 316L only) M82 DN 40 M83 DN 40 M83 DN 40 M83 DN 50 M84 DN 80 M85 DN 100 M86 DN 125 M87 capillary connection M87 application mounted at differential pressure transmitinge-side mounted at differential pressure transmitinges at low-side S04 applicaty coating 504 E protective tube S11 m S12 ,5 m S13 m S15 m S16 m S114 m S15 m S16 m S17 m S18 m S12 ,5 m S13 m S20 0 m S21 1 m Moly of 7MF0802) 2 m (only for 7MF0802) S24 2 m (only for 7MF0802) S25	Further designs	
wetted parts 316L only) M82 DN 25 M82 DN 40 M83 DN 40 M83 DN 50 M84 DN 80 M85 DN 100 M86 DN 125 M87 apillary connection only for 7MF0800) S03 ingle-side mounted at differential pressure transmit- ers at high-side S04 apillary coating 504 E protective tube S10 m S12 5m S13 m S12 5m S13 m S15 m S15 m S16 m S16 m S17 m S18 m S12 m S20 0 m S21 1 m (only for 7MF0802) S23 2 m (only for 7MF0802) S24 4 m (only for 7MF0802) S25 5 m S41 m S42	Add "-Z" to Article No. and specify Order code.	
DN 25 M82 DN 40 M83 DN 40 M83 DN 50 M84 DN 80 M85 DN 125 M87 Sapillary connection M86 DN 125 M87 Solage Solage single-side mounted at differential pressure transmit- ers at high-side Solage apillary coating 504 E protective tube Solage m S11 m S12 ,5 m S13 m S14 m S15 m S16 m S17 m S18 m S16 m S12 ,5 m S18 m S12 ,5 m S18 m S12 m S12 jon (n) for 7MF0802) S22 m S40 ,6 m S41 m S42 <td< td=""><td>Sealing surface with recess to EN1092-1, form F</td><td></td></td<>	Sealing surface with recess to EN1092-1, form F	
DN 40M83DN 50M84DN 50M85DN 100M85DN 100M86DN 125M87apillary connection only for 7MF0800)S03ingle-side mounted at differential pressure transmit- set at low-sideS04apillary coatingS04E protective tube mS105S11mS12.5 mS13mS13mS14mS15mS16mS17mS18mS18mS19mS200 mS211 m (only for 7MF0802)S233 m (only for 7MF0802)S244 m (only for 7MF0802)S245 mS405 mS41mS40.6 mS41mS40.5 mS41mS40.5 mS41mS40.5 mS41mS40.5 mS41mS40.5 mS41mS42.5 mS41mS42.5 mS41mS42.5 mS41mS42.5 mS41mS42.5 mS41mS42.5 mS41mS42.5 mS41mS42.5 mS41m <td></td> <td>M82</td>		M82
DN 50M84DN 80M85DN 100M86DN 125M87apillary connection only for 7MF0800)S03ingle-side mounted at differential pressure transmit- ers at low-sideS04apillary coatingS04E protective tubeS10mS11mS12.5 mS13mS14mS15mS16mS17mS18mS16mS17mS18mS19mS19mS19mS16mS17mS18mS19mS200 mS211 m (only for 7MF0802)S222 m (only for 7MF0802)S233 m (only for 7MF0802)S241 m (only for 7MF0802)S245 mS41mS40.6 mS41mS42.5 mS43mS44mS44mS44mS45mS46mS47mS48mS48mS49mS49mS40mS46mS46mS47mS48mS49mS49mS49mS500 mS511 m	DN 40	
DN 100 DN 125M86 M87appllary connection only for 7MF0800)S03ingle-side mounted at differential pressure transmiters at high-sideS04appllary coatingS04E protective tube mS106 mS11mS12.5 mS13mS14mS12.5 mS13mS14mS15mS16mS17mS18mS18mS18mS19mS18mS19mS19mS200 mS211 m (only for 7MF0802)S232 m (only for 7MF0802)S244 m (only for 7MF0802)S245 mS41mS42.5 mS43mS44mS44mS45mS46mS47mS48mS48mS48mS48mS48mS48mS49mS49mS500 mS511 m (only for 7MF0802)S522 m (only for 7MF0802)S522 m (only for 7MF0802)S523 mS49 <td>DN 50</td> <td>M84</td>	DN 50	M84
DN 125M87apillary connection only for 7MF0800)S03ingle-side mounted at differential pressure transmit- ingle-side mounted at differential pressure transmit- ers at low-sideS04apillary coatingS04E protective tube mS10.6 mS11mS12.5 mS13mS15mS15mS16mS17mS18mS16mS17mS18mS18mS19mS200 mS211 m (only for 7MF0802)S222 m (only for 7MF0802)S233 m (only for 7MF0802)S244 m (only for 7MF0802)S245 mS41mS425 mS43mS425 mS43mS44mS44mS44mS45mS461 m (only for 7MF0802)S43mS44mS44mS44mS44mS44mS46mS46mS46mS46mS46mS46mS47mS48mS49mS500 mS511 m (only for 7MF0802)S522 m (only for 7MF0802)S513 m	DN 80	M85
apillary connection only for 7MF0800)S03ingle-side mounted at differential pressure transmit- ars at low-sideS04apillary coatingS04E protective tube mS10mS12,6 mS11mS12,5 mS13mS14mS16mS17mS18mS18mS19mS200 mS211 m (only for 7MF0802)S222 m (only for 7MF0802)S244 m (only for 7MF0802)S244 m (only for 7MF0802)S255 m (only for 7MF0802)S26TFE protective tube mS40,6 mS41mS423 m (only for 7MF0802)S265 m (only for 7MF0802)S265 m (only for 7MF0802)S26TFE protective tube mS43mS44mS44mS44mS44mS45mS46mS46mS47mS48mS48mS49mS500 mS511 m (only for 7MF0802)S522 m (only for 7MF0802)S522 m (only for 7MF0802)S533 m (only for 7MF	DN 100	
bitly for 7MF0800)S03ingle-side mounted at differential pressure transmitars at high-sideS04reapillary coatingS04E protective tubeS10mS10.6 mS11mS12.5 mS13mS14mS15mS16mS17mS18mS18mS17mS18mS19mS12.5 mS13mS14mS15mS16mS17mS18mS19mS200 mS211 m (only for 7MF0802)S232 m (only for 7MF0802)S244 m (only for 7MF0802)S255 m (only for 7MF0802)S26TEE protective tubeS40mS41mS42.5 mS41mS43mS44mS45mS45mS46mS46mS47mS48mS49mS500 mS511 m (only for 7MF0802)S522 m (only for 7MF0802)S522 m (only for 7MF0802)S533 m (only for 7MF0802)S533 m (only for 7MF0802)S533 m (only for 7MF0802)S54		M87
ingle-side mounted at differential pressure transmiters at high-sideS03ingle-side mounted at differential pressure transmiters at low-sideS04applilary coating504E protective tube510mS10.6 mS11mS12.5 mS13mS14mS15mS16mS17mS18mS18mS19mS200 mS211 m (only for 7MF0802)S222 m (only for 7MF0802)S233 m (only for 7MF0802)S244 m (only for 7MF0802)S255 m (only for 7MF0802)S26TFE protective tubeS40mS41mS42.5 mS43mS44mS44mS44mS44mS44mS44mS45mS46mS47mS48mS49mS500 mS511 m (only for 7MF0802)S522 m (only for 7MF0802)S522 m (only for 7MF0802)S512 m (only for 7MF0802)S513 m (only for 7MF0802)S533 m (only for 7MF0802)S533 m (only for 7MF0802)S533 m (only for 7MF0802)S533 m (only for 7MF0802)S54	Capillary connection	
ingle-side mounted at differential pressure transmit- ers at low-side S04 Eprotective tube m S10 6 m S11 m S12 ,5 m S13 m S14 m S15 m S16 m S17 m S13 m S14 m S15 m S16 m S17 m S16 m S17 m S18 m S12 y S17 m S16 m S17 m S18 m S12 y S18 m S12 y S17 m S12 y S18 m S12 y S17 m S22 y No(oly for 7MF0802) y S25	ingle-side mounted at differential pressure transmit-	S03
apillary coating still E protective tube S10 .6 m S11 m S12 .5 m S13 m S14 m S15 m S16 m S17 m S16 m S16 m S18 m S18 m S18 m S12 .5 m S16 m S16 m S18 m S18 m S20 0 m S21 1 m (only for 7MF0802) S22 2 m (only for 7MF0802) S25 5 m (only for 7MF0802) S26 TEP protective tube F m S40 .6 m S41 m S42 .5 m S43 m S44 m S44 m S44 m	5	S04
E protective tube S10 m S11 m S12 ,5 m S13 m S14 m S14 m S15 m S16 m S17 m S16 m S16 m S17 m S18 m S12 off S17 m S16 m S17 m S17 m S18 m S12 off S18 m S12 m S12 m S16 m S16 m S17 m S18 m S12 m S20 om S22 m S24 f Minol (nor /MF0802) S25 S f Minol (nor /MF080	ers at low-side	004
m S10 ,6 m S11 m S12 ,5 m S13 m S14 m S15 m S15 m S16 m S16 m S16 m S16 m S17 m S18 m S19 m S20 0 m S21 1 m (only for 7MF0802) S22 2 m (only for 7MF0802) S23 3 m (only for 7MF0802) S24 4 m (only for 7MF0802) S25 5 m (only for 7MF0802) S26 TFE protective tube S40 ,6 m S41 m S42 ,5 fm S43 m S44 m S44 m S44 m S45 m S48 m S48 m S48 <	Capillary coating	
.6 m S11 m S12 .5 m S13 m S14 m S15 m S16 m S17 m S17 m S17 m S17 m S16 m S17 m S16 m S17 m S16 m S17 m S17 m S16 m S17 m S16 m S17 m S17 m S16 m S16 S17 S18 m S17 S19 S20 S0 S21 S1 S22 m S22 m S23 S1 S24 M S42 .6 m S41 m S42 .5 m S43 m <td< td=""><td>PE protective tube</td><td></td></td<>	PE protective tube	
m S12 ,5 m S13 m S14 m S15 m S15 m S16 m S17 m S18 m S19 m S20 0 m S21 1 m (only for 7MF0802) S22 2 m (only for 7MF0802) S23 3 m (only for 7MF0802) S24 4 m (only for 7MF0802) S25 5 m (only for 7MF0802) S26 TFE protective tube F m S41 m S42 ,6 m S41 m S42 ,5 m S43 m S44 m S44 m S44 m S45 m S46 m S47 m S46 m S47 m S50 0 m S51 1		
,5 m S13 m S14 m S15 m S15 m S16 m S17 m S17 m S18 m S19 m S20 0 m S21 1 m (only for 7MF0802) S22 2 m (only for 7MF0802) S23 3 m (only for 7MF0802) S24 4 m (only for 7MF0802) S24 5 m (only for 7MF0802) S25 5 m (only for 7MF0802) S26 5 m (only for 7MF0802) S26 7 m S40 ,6 m S41 m S42 ,5 m S41 m S42 ,5 m S43 m S44 m S45 m S45 m S46 m S46 m S47 m S50 0 m S51	·	
m S14 m S15 m S15 m S16 m S17 m S17 m S18 m S19 m S20 0 m S21 1 m (only for 7MF0802) S22 2 m (only for 7MF0802) S23 3 m (only for 7MF0802) S24 4 m (only for 7MF0802) S25 5 m (only for 7MF0802) S26 5 m (only for 7MF0802) S26 7 m S40 ,6 m S41 m S42 ,5 m S41 m S42 ,5 m S43 m S44 m S44 m S44 m S45 m S46 m S46 m S47 m S48 m S50 0 m S51		
m S15 m S16 m S17 m S17 m S18 m S19 m S20 0 m S21 1 m (only for 7MF0802) S23 2 m (only for 7MF0802) S24 3 m (only for 7MF0802) S24 4 m (only for 7MF0802) S24 5 m (only for 7MF0802) S25 5 m (only for 7MF0802) S26 5 m (only for 7MF0802) S40 6 m S41 m S42 5 f m S41 m S42 m S43 m S44 m S45 m S46 m S46 m S47 m S50 0 m	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
m S17 m S18 m S19 m S20 0 m S21 1 m (only for 7MF0802) S22 2 m (only for 7MF0802) S23 3 m (only for 7MF0802) S24 4 m (only for 7MF0802) S25 5 m (only for 7MF0802) S25 5 m (only for 7MF0802) S26 TFE protective tube ************************************	m	S15
m S18 m S19 m S20 0 m S21 1 m (only for 7MF0802) S22 2 m (only for 7MF0802) S23 3 m (only for 7MF0802) S24 4 m (only for 7MF0802) S25 5 m (only for 7MF0802) S25 5 m (only for 7MF0802) S26 7 FE protective tube ************************************	m	
m S19 m S20 0 m S21 1 m (only for 7MF0802) S22 2 m (only for 7MF0802) S23 3 m (only for 7MF0802) S24 4 m (only for 7MF0802) S25 5 m (only for 7MF0802) S26 5 m (only for 7MF0802) S26 TFE protective tube ************************************	m	
m S20 0 m S21 1 m (only for 7MF0802) S23 2 m (only for 7MF0802) S24 3 m (only for 7MF0802) S24 4 m (only for 7MF0802) S25 5 m (only for 7MF0802) S26 7 FE protective tube S40 m S40 ,6 m S41 m S42 ,5 m S41 m S42 ,5 m S41 m S42 ,5 m S43 m S44 m S43 m S44 m S44 m S44 m S44 m S44 m S44 m S46 m S47 m S48 m S49 m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802)	m	
S21 1 m (only for 7MF0802) S22 2 m (only for 7MF0802) S23 3 m (only for 7MF0802) S24 4 m (only for 7MF0802) S25 5 m (only for 7MF0802) S26 TFE protective tube S40 m S41 m S42 ,6 m S41 m S42 ,5 m S43 m S44 m S42 ,5 m S43 m S44 m S47 m S48 m S49 m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53		
1 m (only for 7MF0802) S22 2 m (only for 7MF0802) S23 3 m (only for 7MF0802) S24 4 m (only for 7MF0802) S25 5 m (only for 7MF0802) S26 TFE protective tube S40 m S41 m S42 ,6 m S41 m S42 ,5 m S43 m S44 m S43 m S44 m S44 m S44 m S44 m S45 m S44 m S45 m S45 m S45 m S45 m S46 m S48 m S49 m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S53		
2 m (only for 7MF0802) \$23 3 m (only for 7MF0802) \$24 4 m (only for 7MF0802) \$25 5 m (only for 7MF0802) \$26 TFE protective tube \$40 m \$41 m \$41 m \$42 ,6 m \$41 m \$42 ,5 m \$43 m \$44 m \$45 m \$44 m \$45 m \$46 m \$47 m \$48 m \$49 m \$50 0 m \$51 1 m (only for 7MF0802) \$52 2 m (only for 7MF0802) \$53 3 m (only for 7MF0802) \$54		
3 m (only for 7MF0802) \$24 4 m (only for 7MF0802) \$25 5 m (only for 7MF0802) \$26 TFE protective tube \$40 m \$40 ,6 m \$41 m \$42 ,5 m \$43 m \$44 m \$42 ,5 m \$43 m \$44 m \$45 m \$44 m \$45 m \$46 m \$47 m \$48 m \$49 m \$50 0 m \$51 1 m (only for 7MF0802) \$52 2 m (only for 7MF0802) \$53 3 m (only for 7MF0802) \$54		
5 m (only for 7MF0802) S26 TFE protective tube m S40 ,6 m S41 m S42 ,5 m S43 m S44 m S44 m S44 m S44 m S45 m S45 m S46 m S46 m S47 m S47 m S47 m S47 m S47 m S47 m S49 m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54	3 m (only for 7MF0802)	S24
TFE protective tube S40 m S41 m S42 ,5 m S43 m S44 m S44 m S44 m S45 m S45 m S46 m S47 m S48 m S49 m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54	4 m (only for 7MF0802)	S25
m S40 ,6 m S41 m S42 ,5 m S43 m S44 m S44 m S45 m S45 m S45 m S45 m S45 m S46 m S47 m S48 m S49 m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54	5 m (only for 7MF0802)	S26
Addition S41 m S42 S5m S43 m S44 m S44 m S45 m S45 m S45 m S46 m S46 m S47 m S47 m S49 m S50 Om S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54		
m S42 ,5 m S43 ,5 m S43 m S44 m S45 m S45 m S46 m S46 m S47 m S47 m S49 m S49 m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54		
5 m 543 m 544 m 545 m 545 m 546 m 546 m 547 m 547 m 547 m 547 m 547 m 549 m 550 0 m 551 1 m (only for 7MF0802) 552 2 m (only for 7MF0802) 553 3 m (only for 7MF0802) 554		
m S44 m S45 m S46 m S47 m S47 m S47 m S49 m S49 m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54		
M S45 m S46 m S47 m S47 m S47 m S48 m S49 m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54		
m S46 m S47 m S48 m S49 m S49 m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54	m	
m S48 m S49 m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54	m	
m S49 m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54	m	
m S50 0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54	m	
0 m S51 1 m (only for 7MF0802) S52 2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54	m	
1 m (only for 7MF0802) \$52 2 m (only for 7MF0802) \$53 3 m (only for 7MF0802) \$54		
2 m (only for 7MF0802) S53 3 m (only for 7MF0802) S54		
3 m (only for 7MF0802) S54		
	3 m (only for 7MF0802)	
	4 m (only for 7MF0802)	

Remote seals for pressure transmitters SITRANS P320/P420

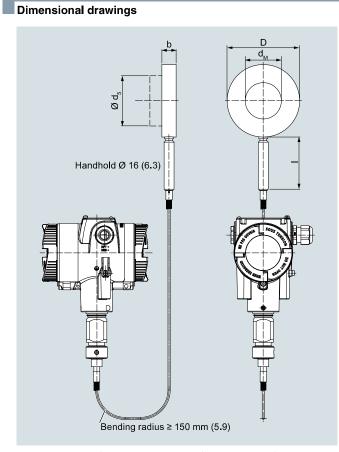
Diaphragm seals of sandwich design with flexible capillary

Selection and Ordering data	Order code
Further designs	
Add "-Z" to Article No. and specify Order code.	
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
Frocess temperature min O/(F)/max O/(F)	150

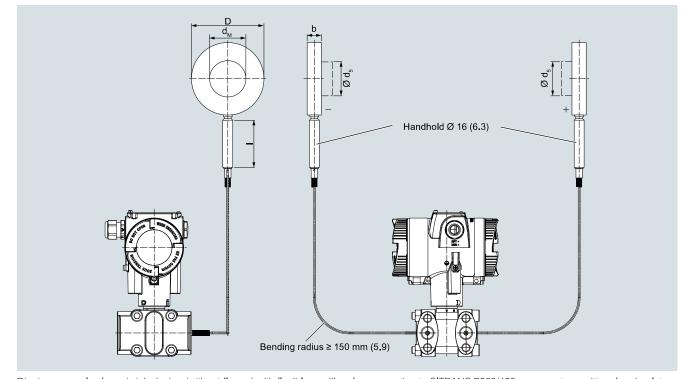
 See also "Specification of process conditions for selection and ordering data", page 1/337.

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of sandwich design with flexible capillary



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)

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of sandwich design with flexible capillary

Connection to EN 1092-1

Nom. diameter	Nom. pres- sure	b	D	d ₅	d _M with tube	d _M w/o tube	I
		mm	mm	mm	mm	mm	mm
DN 25	PN 16	20	68	24,5	22.6	27	100
DN 40	- PN 400	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. pres- sure	b	D	d ₅	d _M with tube	d _M w/o tube	I
	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. diame- ter	Nom. pres- sure	b	D 10K, 20K	D 30K 63K	d ₅	d _M with tube	d _M w/o tube	I
		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 $\rm d_{M^{:}}$ Effective diaphragm diameter

Remote seals for pressure transmitters SITRANS P320/P420

		Diaphragm seals of flange of	design with flexible capillary
Overview		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, WNr. 2.4602
			Tantalum
			Titanium, WNr. 3.7035 Nickel 201
			Duplex 2205, mat. no. 1.4462
Diaphragm seals of flange design			Stainless steel 316L, gold plated, thickness approx. 25 μm
Technical specifications Diaphragm seals of flange design	with flexible capillary	• Capillary	Stainless steel, mat. No. 1.4571/316Ti
Nominal diameter	Nominal pressure	• Sheath	Spiral protective tube made of stainless steel, mat.
Connecting standard EN 1092-1			no. 1.4404/316L
• DN 25 • DN 40	PN 10/16/25/40/63/100/160/250 PN 10/16/25/40/63/100/160	Sealing material in the process flanges	
• DN 50 • DN 80 • DN 100	PN 10/16/25/40/63/100 PN 10/16/25/40/100 PN 10/16/25/40	 For pressure transmitters, absolute pressure transmitters and low- pressure applications 	Copper
• DN 125	PN 16/40	 For other applications 	Viton
Connecting standard ASME B16.5 1 inch 	Class 150/300/600/1500	Maximum pressure	See above and the technical data of the pressure transmitter
 1½ inch 2 inch 	Class 150/300/400/600/900/1500 Class 150/300/400/600/900/1500	Tube length	Without tube as standard (tube available on request)
• 3 inch	Class 150/300/600/1500	Capillary	
4 inch5 inch	Class 150/300/400/1500 Class 150/300/400	• Length	Max. 10 m (32.8 ft), longer lengths on request
Connecting standard J.I.S.		 Internal diameter 	2 mm (0.079 inch)
• DN 50 • DN 80	10K 20K	 Minimum bending radius Filling liquid 	150 mm (5.9 inch)
• DN 100 Sealing surface	40K	(for remote seals of sandwich and flange design)	Silicone oil M5
For stainless steel, mat.	To EN 1092-1, form B1 or		Silicone oil M50
No. 1.4404/316L	ASMR B16.5 RF 125 250 AA		High-temperature oil
 For the other materials 	To EN 1092-1, form B2 or ASME B16.5 RFSF		Halocarbon oil (for measuring O_2)
			Food oil (FDA listed)
		Permissible ambient temperature	Dependent on the pressure trans- mitter 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)

Remote seals for pressure transmitters SITRANS P320/P420

Selection and Orde	ring data	Article No.	Order	Selection and Ordering data	Article No	o. Orc	ler
	ing data		code		7 11 11 01 0 1 10	coc	
Diaphragm seal				Diaphragm seal			
Flange type design, with flexible capillary tube, connected with flexible capillary tube to a				Flange type design, with flexible capillary tube, connected with flexible capillary tube to a			
pressure or absolu		7 M F 0 8 1 0 -		 SITRANS P320/P420 transmitter for gauge pressure or absolute pressure 	7 M F 0 8 1	0-	
	negative pressure ser- 04 order separately 1 off			(only together with negative pressure ser- vice), 7MF03/7MF04 order separately Scope of delivery: 1 off			
lute pressure from	20 transmitter for abso- differential pressure, rder separately, Scope of	7 M F 0 8 1 1 -		 SITRANS P320/P420 transmitter for abso- lute pressure from differential pressure, 7MF03/7MF04 order separately, Scope of delivery: 1 off 	7 M F 0 8 1	1-	
ential pressure and	20 transmitter for differ- 7 1 flow, 7MF03/7MF04 cope of delivery: 2 off	7 M F 0 8 1 2 -		 SITRANS P320/P420 transmitter for differ- ential pressure and flow, 7MF03/7MF04 order separately, Scope of delivery: 2 off 	7 M F 0 8 1	2 -	
		- 0				0	
	le No. for the online con- IA Life Cycle Portal.			Connecting standard J.I.S. (DN 50 recommended only for pressure			
Nominal diameter	Nominal pressure			transmitters)			
Connecting standard	EN 1092-1			DN 50 10 K	2 E S		
(DN 25, DN 40 and [DN 50 recommended			20 K 40 K	2 E T 2 E U		
only for pressure trar				DN 80 10 K	2 G S		
DN 25	PN 10/16/25/40	OBD		20 K	2 G T		
	PN 63/100	OBF		40 K	2 G U		
	PN 160	0 B G		DN 100 10 K	2 H S		
N 40	PN 250 PN 10/16/25/40	0 B H 0 D D		20 K	2 H T		
JN 40	PN 10/16/25/40 PN 63/100	0 D F		40 K	2 H U		
	PN 160	0 D G		Other version	9 A A	н	1 Y
DN 50	PN 10/16/25/40	0 E D		Add Order code and plain text			
1100	PN 63	OEE		Transmitter connection			
	PN 100	0 E F		Connection via capillary tube			
DN 80	PN 10/16/25/40	0 G D		Length of capillary			
	PN 100	0 G F		1 m	10		
DN 100	PN 10/16	0 H B		1,6 m	11		
	PN 25/40	0 H D		2 m 2,5 m	12		
DN 125	PN 16	0 J B		2,5 m 3 m	1 4		
	PN 40	0 J D		4 m	15		
Connecting standard	ASME B16.5			5 m	16		
(1 inch, 1½ inch and	2 inch recommended			6 m	17		
only for pressure trar	nsmitters)			7 m	18		
1 inch	class 150	1 K L		8 m	2 0		
	class 300	1 KM		9 m	2 1		
	class 600	1 KN		10 m	2 2		
1½ inch	class 1500 class 150	1 K P 1 L A		11 m (only for 7MF0812)	23		
172 111011	class 300	1LA 1LB		12 m (only for 7MF0812)	24		
	class 300 class 400/600	1 L D		13 m (only for 7MF0812)	25		
	class 900/1500	1 L F		14 m (only for 7MF0812) 15 m (only for 7MF0812)	26 27		
2 inch	class 150	1 M A		Other version	98		1 Y
	class 300	1 M B		Add Order code and plain text	90		1
	class 400/600	1 M D		Filling liquid			
	class 900/1500	1MF		Silicone oil M50		в	
3 inch	class 150	1 P A		High-temperature oil		C	
	class 300	1 P B		Silicone oil M5		Ă	
	class 600	1 P D		Food-grade oil (FDA listed)		Ê	
	class 1500	1 P F		Halocarbon oil		D	
4 inch	class 150	1 Q A		Other version			1 Y
	class 300	1 Q B		Add Order code and plain text			
	class 400	100					
Einch	class 1500	1QF					
5 inch	class 150 class 300	1RA 1RB					

class 300 class 400 1 R B 1 R C

Remote seals for pressure transmitters SITRANS P320/P420

							Diaphragm sea	Is of flange design \	vith flexible o	apillar
Selection and Orde	ering data	Article No.		Drd cod			Selection and Order	ring data	Article No.	Order code
Diaphragm seal						17	Diaphragm seal			
Flange type design, with flexible capillary tube, connected with flexible capillary tube to a							Flange type design, w connected with flexible	rith flexible capillary tube, le capillary tube to a		
pressure or absolution (only together with	negative pressure ser- F04 order separately	7 M F 0 8 1 0 -				 SITRANS P320/P42 pressure or absolut (only together with vice), 7MF03/7MF Scope of delivery: 	7 M F 0 8 1 0 -			
lute pressure from	20 transmitter for abso- differential pressure, rder separately, Scope of	7 M F 0 8 1 1 -				lute pressure from	20 transmitter for abso- differential pressure, der separately, Scope of	7 M F 0 8 1 1 -		
ential pressure and	20 transmitter for differ- d flow, 7MF03/7MF04 Scope of delivery: 2 off	7 M F 0 8 1 2 -			 SITRANS P320/P42 ential pressure and order separately, Separately	7 M F 0 8 1 2 -				
Wattad parts mate	iala	- 0		_		-	• Wattad parts staiple		- 0	
Wetted parts mater Stainless steel 316L							 Wetted parts stainle coating 	ess steel with ECTFE		
 Without coating 			А				Range	Standard length		
With PFA coating			D				20 50 mm (0.79 1.97")	50 mm (1.97")	F	1
 With PTFE coating With ECTFE coating 			E O F				(0.73 1.97) 51 100 mm (2.01 3.94")	100 mm (3.94")	F	2
Monel 400, 2.4360 Hastelloy C276, 2.48	319		G J				, 101 150 mm (3.98 5.91")	150 mm (5.91")	F	3
Tantalum Titanium, 3.7035			K L O				151 200 mm (5.94 7.87")	200 mm (7.87")	F	4
Nickel 201 Diaphragm Duplex,			M 0 Q				201 250 mm (7.91 9.84")	250 mm (9.84")	F	5
Diaphragm plus flar Stainless steel 316L			R S 0					ss steel with PFA coating		
Hastelloy C4, 2.461	0		U 0				Range	Standard length		
Hastelloy C22, 2.460			V O				20 50 mm (0.79 1.97")	50 mm (1.97"))1
Other version Add Order code and	d plain text		Z 8	Q	1 Y		51 100 mm (2.01 3.94")	100 mm (3.94")		2
Extension length • without			0				101 150 mm (3.98 5.91")	150 mm (5.91")	Ľ) 3
• 50 mm (2") • 100 mm (4")			1				151 200 mm (5.94 7.87")	200 mm (7.87")	Ľ) 4
• 150 mm (6")			3				201 250 mm (7.91 9.84")	250 mm (9.84")	Ľ	5
 200 mm (8") 250 mm (10") 			4 5				Wetted parts Monel		-	
Other version			Z 8	Q	1 Y		Range	Standard length		
Add Order code and	1	_					20 50 mm (0.79 1.97")	50 mm (1.97")	C	à 1
• Wetted parts stain	extension length less steel without coating						51 100 mm (2.01 3.94")	100 mm (3.94")	C	à 2
Range 20 50 mm	Standard length						101 150 mm (3.98 5.91")	150 mm (5.91")		3 3
20 50 mm (0.79 1.97") 51 100 mm	50 mm (1.97") 100 mm (3.94")		A 1				151 200 mm (5.94 7.87")	200 mm (7.87")	C	i 4
(2.01 3.94") 101 150 mm							Wetted parts Hastel Range	lloy C276 Standard length		
(3.98 5.91")	150 mm (5.91")		A 3				20 50 mm	50 mm (1.97")		1
151 200 mm (5.94 7.87")	200 mm (7.87")		A 4				(0.79 1.97") 51 100 mm	100 mm (3.94")		2
201 250 mm (7.91 9.84")	250 mm (9.84")		A 5				(2.01 3.94") 101 150 mm	150 mm (5.91")		3
							(3.98 5.91") 151 200 mm	200 mm (7.87")		4

Order

code

Pressure Measurement

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of flange design with flexible capillary

Article No.

7MF0810-

7MF0811-

7MF0812-

- 0

Diaphragm seals of flange design v
Selection and Ordering data
Diaphragm seal
Flange 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
- SITRANS P320/P420 transmitter for absolute pressure from differential pressure, 7MF03../7MF04.. order separately, Scope of delivery: 1 off
- SITRANS P320/P420 transmitter for differential pressure and flow, 7MF03../7MF04.. order separately, Scope of delivery: 2 off

Wetted parts Tantalum

 wetted parts lantalur 	n		
Range	Standard length		
20 50 mm (0.79 1.97")	50 mm (1.97")	к	1
51 100 mm (2.01 3.94")	100 mm (3.94")	к	2
101 150 mm (3.98 5.91")	150 mm (5.91")	к	3
151 200 mm (5.94 7.87")	200 mm (7.87")	К	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
Factory certificate 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 trans- mitters)	D61
Spark arrestor (for differential pressure and flow transmitters)	D62
Low-temperature version (for Silicon Oil M50 only)	D67
Negative pressure services Negative pressure service (for gauge and absolute	D81
pressure transmitters) (only for 7MF0810) Negative pressure service (for differential pressure transmitters)	D83
Extended negative pressure service (for gauge and	D85
absolute pressure transmitters) (only for 7MF0810) 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	E80
60 °C and max. pressure 50 bar) 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 125250AA, wetted parts 316L only)	M64
Sealing surface with tongue to EN1092-1, form C (wetted parts 316L only)	
• DN 25 • DN 40	M70 M71
• DN 50	M72
• DN 80	M73
• DN 100 • DN 125	M74 M75
• DN 125 Sealing surface with spigot to EN1092-1, form E (wetted parts 316L only)	in s
• DN 25	M76
• DN 40	M77
• DN 50 • DN 80	M78 M79
• DN 100	M80
• DNI 125	MQ1

M81

• DN 125

Remote seals for pressure transmitters SITRANS P320/P420

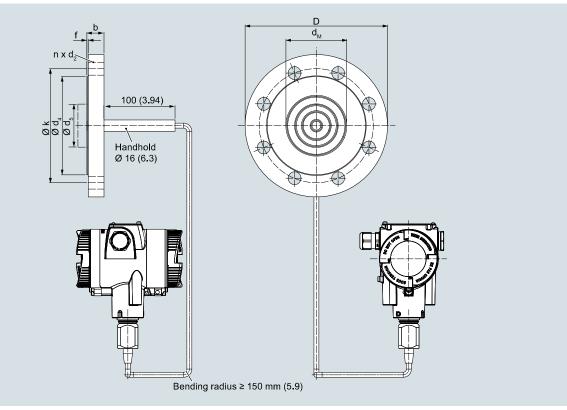
Selection and Ordering data	Order code	Selection and Ordering data	Order code
Further designs		Further designs	
Add " -Z " to Article No. and specify Order code.		Add " -Z " to Article No. and specify Order code.	
Sealing surface with recess to EN1092-1. form F		PVC protective tube	
(wetted parts 316L only)		1 m	S70
• DN 25	M82	1,6 m	S71
• DN 40	M83	2 m	S72
• DN 50 • DN 80	M84 M85	2,5 m	S73
• DN 100	M85	3 m	S74
• DN 125	M80 M87	4 m 5 m	S75 S76
Capillary connection		6 m	S70 S77
For 7MF0810		7 m	S78
		8 m	S79
Radial capillary pipe outlet (for single-side mounting and capillary connection only)	S01	9 m	S80
Single-side mounted at differential pressure transmit-	603	10 m	S81
ers at high-side	S03	11 m (only for 7MF0802) 12 m (only for 7MF0802)	S82
Single-side mounted at differential pressure transmit-	S04	12 m (only for 7MF0802) 13 m (only for 7MF0802)	S83 S84
ers at low-side		14 m (only for 7MF0802)	S85
For 7MF0811		15 m (only for 7MF0802)	S86
Radial capillary pipe outlet (for single-side mounting	S01	Customer-specific tube length	
and capillary connection only)		Customer-specific tube length (specify in plain text)	Y44
For 7MF0812		Specification of process conditions ¹⁾	1 7 7
Radial capillary pipe outlet (for double-side mounting)	S02		
Capillary coating		- Ambient temperature range	
		• -10 +50 °C (14 +122 °F) preset	D66
PE protective tube 1 m	S10	• -40 +50 °C (-40 +122 °F)	D67
1,6 m	S11	• -10 +85 °C (14 +185 °F)	D68
2 m	S12	Process temperature min °C/(°F)/max °C/(°F)	Y50
2,5 m	S13	1) See also "Specification of process conditions for selec	tion and orderi
3 m	S14	data", page 1/337	
4 m -	S15		
5 m	S16 S17		
6 m 7 m	S18		
3 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) 15 m (only for 7MF0802)	S25		
15 m (only for 7MF0802)	S26		
PTFE protective tube	640		
1 m 1,6 m	S40 S41		
2 m	S42		
2,5 m	S43		
3 m	S44		
4 m	S45		
5 m	S46		
6 m	S47		
7 m	S48		
3 m	S49 S50		
9 m 10 m	S50 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		

Siemens FI 01 · 2021 1/349

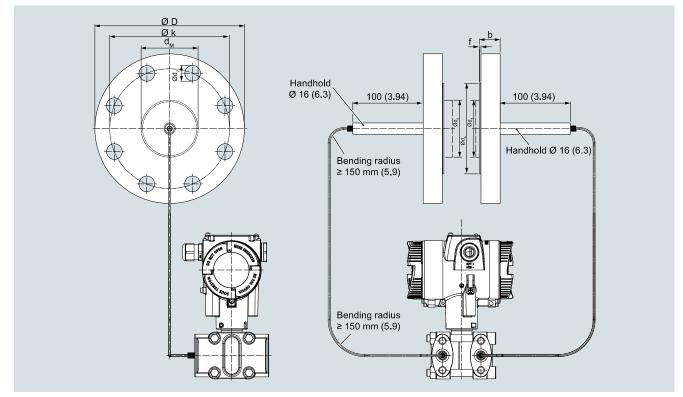
Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of flange design with flexible capillary

Dimensional drawings



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



Diaphragm seals of flange design with flexible capillary for connection to SITRANS P320/420 pressure transmitters for absolute pressure or for differential pressure and flow, dimensions in mm (inch)

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of flange design with flexible capillary

Connectio	n to EN 1092	2-1										
Nominal diameter	Nominal pressure	b	D	d ₂	d ₄	d ₅	d _M with exten- sion	d _M without exten- sion	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
	PN 63/100	24	140	18	68	24.5	22.6	27	2	100	4	200
	PN 160	24	140	18	68	24.5	22.6	27	2	100	4	0, 50, 100, 150 oder
	PN 250	28	150	22	68	24.5	22.6	27	2	105	4	200
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 exten- sion	d _M without exten- sion	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,
	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	3.94, 5.94
	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	oder 7.87
	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	(0,
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	50, 100,
	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	150
	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	oder 200)
	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	

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of flange design with flexible capillary

<u>Connectior</u>	n to J.I.S											
Nominal diameter	Nominal pressure	b	D	d ₂	d ₄	d ₅	d _M with exten- sion	d _M without exten- sion	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,
	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	100, 150
	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	oder
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	- 200 (0, 2,
	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	3.94,
	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	5.94 oder
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	7.87)
	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	

Materials

Main body

Pressure Measurement

Stainless steel, 1.4404/316L

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of flange design mounted directly on transmitter
--



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

	connection	
Technical specifications		Maximum pressure
Diaphragm seals (flange design) f sure, directly fitted on a transmitte Nominal diameter		Tube length
Connecting standard EN 1092-1		
 DN 25 DN 40 DN 50 DN 80 DN 100 DN 125 	PN 10/16/25/40/63/100/160/250 PN 10/16/25/40/63/100/160 PN 10/16/25/40/63/100 PN 10/16/25/40/100 PN 10/16/25/40 PN 16/40	Capillary • Length
Connecting standard ASME B16.5		 Internal diameter
 1 inch 1½ inch 2 inch 3 inch 4 inch 5 inch 	Class 150/300/600/1500 Class 150/300/400/600/900/1500 Class 150/300/400/600/900/1500 Class 150/300/600/1500 Class 150/300/400/1500 Class 150/300/400	• Minimum bending rad
Connecting standard J.I.S.		
• DN 50 • DN 80 • DN 100	10K 20K 40K	Max. recommended terr medium Permissible ambient terr
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	
		Weight

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 O₂)
	 Food oil (FDA listed)
Max. recommended temperature of medium	170 °C (338 °F)
Permissible ambient temperature	Dependent on the pressure trans- mitter 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)

Remote seals for pressure transmitters SITRANS P320/P420

DN 80

DN 100

Diaphragm s	eals of flange design m	ounted dire	ct <mark>ly</mark> on tr	ansmitter				
Selection and (Ordering data	Article No.	Order code	Selection and Ordering data	Article No.		Orde code	
Diaphragm sea	l			Diaphragm seal				
Flange type desi	ign, directly mounted to a			Flange type design, directly mounted to a				
pressure or at (only together	D/P420 transmitter for gauge 7 solute pressure with negative pressure ser- /7MF04 order separately rery: 1 off	7 M F 0 8 1 0 -		 SITRANS P320/P420 transmitter for gauge pressure or absolute pressure (only together with negative pressure ser- vice), 7MF03/7MF04 order separately Scope of delivery: 1 off 	7 M F 0 8 1 0	-		
		- 0			- 0			
	Article No. for the online con- he PIA Life Cycle Portal.			Transmitter connection Without capillary tube, direct mount straight	0 0			
Nominal diame	ter Nominal pressure			connection (for gauge pressure)				
	ndard EN 1092-1			Without capillary tube, direct mount connec-	0 1			
DN 25	PN 10/16/25/40	0 B D		tion via 90°-bow (for gauge pressure)	_			
21120	PN 63/100	OBF		Filling liquid		_		
	PN 160	0 B G		Silicone oil M50		В		
	PN 250	0 B H		High-temperature oil		C		
DN 40	PN 10/16/25/40	0 D D		Silicone oil M5 Food-grade oil (FDA listed)		A E		
	PN 63/100	0 D F		Halocarbon oil		D		
	PN 160	0 D G		Other version		z	P 1	v
DN 50	PN 10/16/25/40	0 E D		Add Order code and plain text		-	•••	
	PN 63	OEE		Wetted parts materials	-			
	PN 100	0 E F		•				
DN 80	PN 10/16/25/40 PN 100	0 G D 0 G F		Stainless steel 316L				
DN 100	PN 10/16	OHB		Without coatingWith PFA coating		A D		
DIN 100	PN 25/40	OHD		With PTFE coating		EO		
DN 125	PN 16	0 J B		With ECTFE coating		F		
BINIE	PN 40	0 J D		Monel 400, 2.4360		G		
Connecting stor				Hastelloy C276, 2.4819		J		
1 inch	ndard ASME B16.5 class 150	1 K L		Tantalum		к		
T INCH	class 300	1 KM		Titanium, 3.7035		L 0		
	class 600	1 K N		Nickel 201		M 0		
	class 1500	1 K P		Diaphragm Duplex, 1.4462		Q		
1½ inch	class 150	1 L A		Diaphragm plus flange Duplex, 1.4462		R		
	class 300	1 L B		Stainless steel 316L with gold coating		S 0		
	class 400/600	1 L D		Hastelloy C4, 2.4610		UO		
	class 900/1500	1LF		Hastelloy C22, 2.4602		V O		
2 inch	class 150	1 M A		Other version		Z 8	Q 1	Y
	class 300	1 M B		Add Order code and plain text				
	class 400/600	1 M D		Extension length				
Qinah	class 900/1500	1MF		• without		0		
3 inch	class 150 class 300	1 P A 1 P B		• 50 mm (2")		1		
	class 600	1PD		• 100 mm (4")		2		
	class 1500	1 P F		• 150 mm (6") • 200 mm (8")		3 4		
4 inch	class 150	1QA		• 250 mm (10")		5		
	class 300	1 Q B					Q1	Y
	class 400	100		Other version Add Order code and plain text			~·	
	class 1500	1QF		Add order oode and plain text				
5 inch	class 150	1 R A						
	class 300	1 R B						
	class 400	1 R C						
Connecting star	ndard J.I.S.							
DN 50	10K	2 E S						
	20K	2 E T						
	40K	2 E U						
	101/	200						

Other version Add Order code and plain text

10K 20K

40K

10K

20K 40K 2 G S

2 G T

2 G U

2 H S 2 H T

2 H U

9 A A

H 1 Y

Remote seals for pressure transmitters SITRANS P320/P420

election and Ord	ering data	Article No.	Article No. Order code Selection and Ordering data					
aphragm seal			code	Diaphragm seal			code	
	directly mounted to a			Flange type design,				
• SITRANS P320/P420 transmitter for gauge pressure or absolute pressure (only together with negative pressure ser- vice), 7MF03/7MF04 order separately Scope of delivery: 1 off		7 M F 0 8 1 0 -		 SITRANS P320/P² pressure or absol (only together with vice), 7MF03/7M Scope of delivery 	7 M F 0 8 1 0 -			
		- 0				- 0		
Customer-specific	extension length			Wetted parts Hast				
	less steel without coating			Range	Standard length			
Range	Standard length			20 50 mm (0.79 1.97")	50 mm (1.97")		J 1	
20 50 mm (0.79 1.97")	50 mm (1.97")		A 1	51 100 mm	100 mm (3.94")		J 2	
51 100 mm (2.01 3.94")	100 mm (3.94")		A 2	(2.01 3.94") 101 150 mm	150 mm (5.91")		J 3	
101 150 mm	150 mm (5.91")		A 3	(3.98 5.91") 151 200 mm	200 mm (7.87")		J 4	
(3.98 5.91") 151 200 mm	200 mm (7.87")		A 4	(5.94 7.87")				
(5.94 7.87")				 Wetted parts Tanta 		-		
201 250 mm (7.91 9.84")	250 mm (9.84")		A 5	Range	Standard length			
 Wetted parts stain 	l less steel with ECTFE			20 50 mm (0.79 1.97")	50 mm (1.97")		К1	
coating Range	Standard length			51 100 mm (2.01 3.94")	100 mm (3.94")		K 2	
20 50 mm	50 mm (1.97")		F1	101 150 mm	150 mm (5.91")		КЗ	
0.79 1.97") 51 100 mm	100 mm (3.94")		F 2	(3.98 5.91") 151 200 mm	200 mm (7.87")		К 4	
2.01 3.94") 101 150 mm			F 3	(5.94 7.87")				
3.98 5.91")	150 mm (5.91")		гз					
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					
, ,	less steel with PFA coating							
Range	Standard length							
20 50 mm (0.79 1.97")	50 mm (1.97")		D 1					
51 100 mm	100 mm (3.94")		D 2					
(2.01 3.94") 101 150 mm	150 mm (5.91")		D 3					
3.98 5.91") 151 200 mm	200 mm (7.87")		D 4					
(5.94 7.87") 201 250 mm	250 mm (9.84")		D 5					
(7.91 9.84")								
Wetted parts Mone								
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	200 mm (7.87")		G 4					

1

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of flange design mounted directly on transmitter

Diapinagin seals of hange design mounted	
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
Factory certificate 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 transmit- ters)	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	E80
$60 ^{\circ}\text{C}$ and max. pressure 50 bar) 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 125250AA, wetted parts 316L only)	M64
Sealing surface with tongue to EN1092-1, form C (wetted parts 316L only)	
• DN 25	M70
DN 40DN 50	M71 M72
• DN 80	M72 M73
• DN 100	M74
• DN 125	M75
Sealing surface with spigot to EN1092-1, form E (wetted parts 316L only)	M76
• DN 25 • DN 40	M76 M77
• DN 50	M78
• DN 80	M79

M80

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 • DN 40 • DN 50 • DN 80 • DN 100 • DN 125	M82 M83 M84 M85 M86 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. 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. 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. Cooling element, max. medium temperature 300 °C (572 °F), observe the max. permissible media temperature of the fill liquid.	S05 S06 S07 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 -40 +50 °C (-40 +122 °F) -10 +85 °C (14 +185 °F) 	D66 D67 D68

Process temperature min. ... °C/(°F)/max. ... °C/(°F) **Y50**

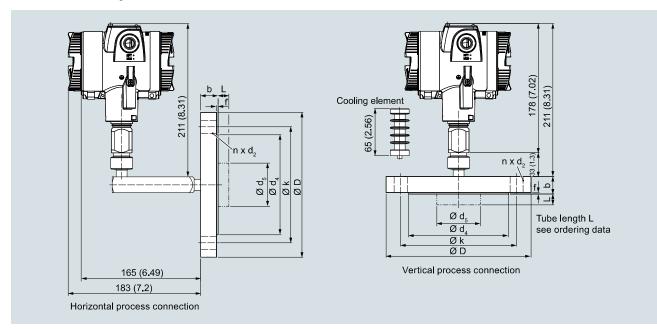
 See also "Specification of process conditions for selection and ordering data", page 1/337.

• DN 100

• DN 125

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of flange design mounted directly on transmitter



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)

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of flange design mounted directly on transmitter

Connection to EN 1092-1

Nominal diameter	Nominal pressure	b	D	d ₂	d ₄	d ₅	d _M with exten- sion	d _M without exten- sion	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
	PN 63/100	24	140	18	68	24.5	22.6	27	2	100	4	200
	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 exten- sion	d _M without exten- sion	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,
	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	3.94, 5.94
	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	oder 7.87
	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	(0,
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	50, 100,
	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	150
	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	oder 200)
	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	

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of flange design mounted directly on transmitter

Connectior	onnection to J.I.S											
Nominal diameter	Nominal pressure	b	D	d ₂	d ₄	d ₅	d _M with exten- sion	d _M without exten- sion	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,
	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	100, 150
	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	oder
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	- 200 (0, 2,
	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	3.94,
	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	5.94 oder
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	7.87)
	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	

Materials

Main bodyWetted parts

Pressure Measurement

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of flange design mounted directly and with capillary

Overview



Diaphragm seal of flange design for pressure transmitters for differential pressure, fixed connection and with flexible capillary

Technical specifications

	l design for pressure transmitters for connection and with flexible capillary
Nominal diameter	Nominal pressure

Nominal diameter	Nominal pressure
Connecting standard EN 1092-1 • DN 40 • DN 50 • DN 80 • DN 100 • DN 125	PN 10/16/25/40/63/100/160 PN 10/16/25/40/63/100 PN 10/16/25/40/100 PN 10/16/25/40 PN 16/40
Connecting standard ASME B16.5	
 1½ inch 2 inch 3 inch 4 inch 5 inch 	Class 150/300/400/600/900/1500 Class 150/300/400/600/900/1500 Class 150/300/600/1500 Class 150/300/400/1500 Class 150/300/400
Connecting standard J.I.S.	
• DN 50 • DN 80 • DN 100	10K 20K 40K
Sealing surfaceFor stainless steel, mat. No. 1.4404/316LFor the other materials	To EN 1092-1, form B1 or ASME B16.5 RF 125 250 AA To EN 1092-1, form B2 or ASME B16.5 RFSF

- Capillary
- Sheath

Sealing material in the process flanges

- For pressure transmitters, absolute pressure transmitters and lowpressure applications
- For other applications
 Maximum pressure

Tube length

```
Capillary
```

- Length
- Internal diameterMinimum bending radius
- Filling liquid

Max. recommended temperature of 170 ° medium

Permissible ambient temperature

Hastelloy C22, W.-Nr. 2.4602 Tantalum Titanium, W.-Nr. 3.7035 Nickel 201 Duplex 2205, mat. no. 1.4462 Stainless steel 316L, gold plated, thickness approx. 25 µm Stainless steel, mat. No. 1.4571/316Ti Spiral protective tube made of stainless steel, mat. No. 1.4404/316L Copper Viton See above and the technical data of the pressure transmitter Without tube 50 mm (1.97 inch) 100 mm (3.94 inch) 150 mm (5.91 inch) 200 mm (7.87 inch) Max. 10 m (32.8 ft), longer lengths on request 2 mm (0.079 inch)

Stainless steel, 1.4404/316L

Stainless steel, 1.4404/316L • Without coating • PTFE coating

Monel 400, mat. No. 2.4360 Hastelloy C276, mat. No. 2.4819 Hastelloy C4, mat. No. 2.4602

request)PFA coating

• ECTFE coating (for vacuum on

150 mm (5.9 inch) Silicone oil M5

Silicone oil M50

High-temperature oil

Halocarbon oil (for measuring O2)

Food oil (FDA listed)

170 °C (338 °F)

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

Approx. 4 kg (8.82 lb)

Certificate and approvals

Weight

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)

Remote seals for pressure transmitters SITRANS P320/P420

			Diap	ohra	ıgr	n seals of flange design mounted direct	tly and v	vith c	apillary
Selection and Order	ing data	Article No		Orde code		Selection and Ordering data	Article N	0.	Order code
Diaphragm seal						Diaphragm seal			
Flange type design, c high-side and with fle low-side to	direct connected at exible capillary tube at					Flange type design, direct connected at high-side and with flexible capillary tube at low-side to			
 SITRANS P320/P424 ential pressure and 7MF03/7MF04 or Scope of delivery: 2 	der separately	7 M F 0 8 1	3 -			 SITRANS P320/P420 transmitter for differ- ential pressure and flow, 7MF03/7MF04 order separately Scope of delivery: 2 off 	7 M F 0 8	13-	
			0					- 0	
	e No. for the online con- A Life Cycle Portal.					Length of capillary tube at low-side 1 m	1 0		
Nominal diameter	Nominal pressure					1,6 m	11		
Connecting standard						2 m 2,5 m	12 13		
DN 40	PN 10/16/25/40	0 D D				2,5 m 3 m	13		
	PN 63/100	0 D F				4 m	15		
	PN 160	0 D G				5 m	16		
DN 50	PN 10/16/25/40	0 E D				6 m	17		
	PN 63	0 E E				7 m	18		
	PN 100	0 E F				8 m	2 0		
DN 80	PN 10/16/25/40	0 G D				9 m	21		
	PN 100	0 G F				10 m	2 2		
DN 100	PN 10/16	0 H B				Other version	98		L1Y
	PN 25/40	0 H D				Add Order code and plain text			
DN 125	PN 16	0 J B				Filling liquid	-		
	PN 40	0 J D				Silicone oil M50		в	
Connecting standard	ASME B16.5					High-temperature oil		c	
1½ inch	class 150	1 L A				Silicone oil M5		A	
	class 300	1 L B				Food-grade oil (FDA listed)		Ē	
	class 400/600	1 L D				Halocarbon oil		D	
	class 900/1500	1LF				Other version		z	P 1 Y
2 inch	class 150	1 M A				Add Order code and plain text		2	
	class 300	1 M B							
	class 400/600	1 M D							
	class 900/1500	1 M F							
3 inch	class 150	1 P A							
	class 300	1 P B							
	class 600	1 P D							
	class 1500	1 P F							
4 inch	class 150	1 Q A							
	class 300	1 Q B							
	class 400	1 Q C							
	class 1500	1 Q F							
5 inch	class 150	1 R A							
	class 300	1 R B							
	class 400	1 R C							
Connecting standard	J.I.S.								
DN 50	10K	2 E S							
	20K	2 E T							
	40K	2 E U							
DN 80	10K	2 G S							
	20K	2 G T							
	40K	2 G U							
DN 100	10K	2 H S							
	20K	2 H T							
	40K	2 H U							
Other version		9 A A		Н1	v				
Add Order code and	plain text	JAA			1				
Add Grace code driu	plantion								

Siemens FI 01 · 2021 1/361

Remote seals for pressure transmitters **SITRANS P320/P420**

Diaphragm s

coating Range 20 ... 50 mm

(0.79 ... 1.97") 51 ... 100 mm (2.01 ... 3.94")

101 ... 150 mm (3.98 ... 5.91")

151 ... 200 mm (5.94 ... 7.87")

201 ... 250 mm

(7.91 ... 9.84")

Diaphragm seals of flange design mounted directly and with capillary												
Selection and Ordering	data	Article No.		rder ode	Selection and Orde	ering data	Article No.	Order code				
Diaphragm seal				Diaphragm seal								
Flange type design, direc high-side and with flexible low-side to					direct connected at exible capillary tube at							
 SITRANS P320/P420 tra ential pressure and flow 7MF03/7MF04 order s Scope of delivery: 2 off 	7 M F 0 8 1 3 -			 SITRANS P320/P4 ential pressure and 7MF03/7MF04 c Scope of delivery: 	7 M F 0 8 1 3 -							
		- 0					- 0					
Wetted parts materials						ess steel with PFA coating						
Stainless steel 316L					Range	Standard length						
Without coatingWith PFA coating			A D		20 50 mm (0.79 1.97")	50 mm (1.97")	I	D 1				
With PTFE coating With ECTFFE coating			E 0 F		(0.76 100 mm (2.01 3.94")	100 mm (3.94")	I.	0 2				
Monel 400, 2.4360			G		101 150 mm	150 mm (5.91")	ſ	D 3				
Hastelloy C276, 2.4819 Tantalum			J K		(3.98 5.91") 151 200 mm (5.94 7.87")	200 mm (7.87")	l l	D 4				
Titanium, 3.7035 Nickel 201	20		L 0 M 0		201 250 mm (7.91 9.84")	250 mm (9.84")	I	D 5				
Diaphragm Duplex, 1.446 Diaphragm plus flange D			Q R		 Wetted parts Mone 							
Stainless steel 316L with gold coating			S O		Range	Standard length						
Hastelloy C4, 2.4610 Hastelloy C22, 2.4602			U 0 V 0		20 50 mm (0.79 1.97")	50 mm (1.97")		G 1				
Other version Add Order code and plai	n text		Z 8 (Q 1 Y	51 100 mm (2.01 3.94") 101 150 mm	100 mm (3.94")		G 2 G 3				
Extension length		-			(3.98 5.91")	150 mm (5.91")		33				
 without 50 mm (2") 			0 1		151 200 mm (5.94 7.87")	200 mm (7.87")	(G 4				
• 100 mm (4")			2		Wetted parts Haste	elloy C276	-					
• 150 mm (6")			3		Range	Standard length						
• 200 mm (8")			4		20 50 mm	50 mm (1.97")		J 1				
• 250 mm (10") Other version	n tout		Z 8 (Q 1 Y	(0.79 1.97") 51 100 mm (2.01 3.94")	100 mm (3.94")		J 2				
Add Order code and plai		_			101 150 mm	150 mm (5.91")		J 3				
Customer-specific exter	•				(3.98 5.91")	000 (7.071)						
	tandard length				151 200 mm (5.94 7.87")	200 mm (7.87")	_	J 4				
(0.79 1.97")	0 mm (1.97")		A 1		 Wetted parts Tanta Range 	lum Standard length						
(2.01 3.94")	00 mm (3.94")		A 2		20 50 mm (0.79 1.97")	50 mm (1.97")	l l l l l l l l l l l l l l l l l l l	(1				
(3.98 5.91")	50 mm (5.91")		A 3		51 100 mm (2.01 3.94")	100 mm (3.94")	,	K 2				
(5.94 7.87")	00 mm (7.87")		A 4		101 150 mm (3.98 5.91")	150 mm (5.91")		K 3				
201 250 mm (7.91 9.84")	50 mm (9.84")		A 5		151 200 mm (5.94 7.87")	200 mm (7.87")	H	< 4				
 Wetted parts stainless st coating 						1						
Range	tandard length											

50 mm (1.97")

100 mm (3.94")

150 mm (5.91")

200 mm (7.87")

250 mm (9.84")

F 1

F 2

F 3

F 4

F 5

d with capillary

Order code

S10 S11

S12 S13

S14

S15

S16 S17

S18 S19

S20

S21

S40

S41

S42

S43

S44

S45

S46

S47

S48

S49 S50

S51

S70 S71

S72

Y50

Remote seals for pressure transmitters **SITRANS P320/P420**

	Diaphragi	m seals of flange design mounted directly and
a	Order code	Selection and Ordering data
		Further designs
ecify Order code.		Add "-Z" to Article No. and specify Order code.
		Capillary coating
(Five-step factory	C11	PE protective tube
		1 m
0204-3.1 - material of	C12	1,6 m
		2 m
cc. to NACE	C13	2,5 m
5-2009)		3 m
nragm made of Hastelloy		4 m
		5 m
204-3.1) - PMI test of	C15	6 m
ed parts		7 m
fill oil (to EN10204-2.2)	C17	8 m
safety (SIL2/3), devices	C20	9 m
IEC 61508 and IEC 61511		10 m
laration)		PTFE protective tube
		1 m
pressure and level transmit-	D62	1,6 m
		2 m
Silicon Oil M50 only)	D67	2,5 m
		3 m
or differential pressure	D83	4 m
		5 m
service (for differential	D88	6 m
		7 m

8 m

9 m 10 m

1 m

1,6 m 2 m

PVC protective tube

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 cody 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
Factory certificate functional safety (SIL2/3), devices suitable for use according to IEC 61508 and IEC 61511 (includes SIL conformity declaration)	C20
Accessories	
Spark arrestor (for differential pressure and level transmit- ters)	D62
Low-temperature version (for Silicon Oil M50 only)	D67
Negative pressure services	
Negative pressure service (for differential pressure transmitters)	D83
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	E80

(only with fill fluid Halocarbon oil max. temperature 60 °C and max. pressure 50 bar) 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 125250AA, wetted parts 316L only)	M64
Sealing surface with tongue to EN1092-1, form C (wetted parts 316L only)	
• DN 25	M70
• DN 40 • DN 50	M71 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 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

M86

M87

• DN 100

• DN 125

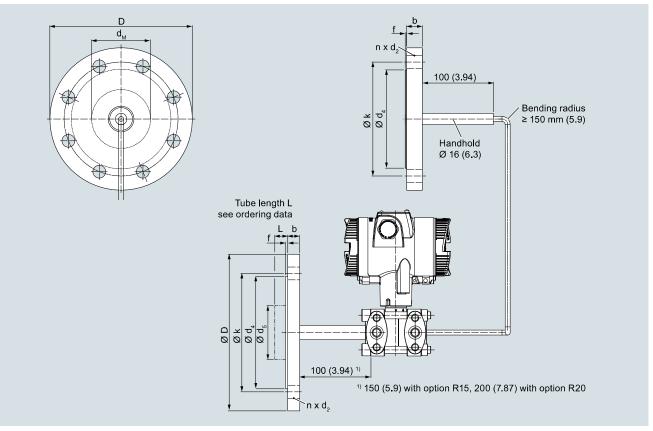
2	012
2,5 m	S73
3 m	S74
4 m	S75
5 m	S76
6 m	S77
7 m	S78
8 m	S79
9 m	S80
10 m	S81
Customer-specific tube length	
Customer-specific tube length (specify in plain text)	Y44
Specification of process conditions ¹⁾	
Ambient temperature range	
• -10 +50 °C (14 +122 °F) preset	D66
• -40 +50 °C (-40 +122 °F)	D67
• -10 +85 °C (14 +185 °F)	D68

1) See also "Specification of process conditions for selection and ordering data", page 1/337.

Process temperature min. ... °C/(°F)/max. ... °C/(°F)

Remote seals for pressure transmitters SITRANS P320/P420

Dimensional drawings



Diaphragm seals of screwed design with flexible capillary, fixed connection, for connection to a SITRANS P320/420 pressure transmitter for differential pressure, dimensions in mm (inch)

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of flange design mounted directly and with capillary

Connectio	n to EN 1092	<u>!-1</u>										
Nominal diameter	Nominal pressure	b	D	d ₂	d ₄	d ₅	d _M with exten- sion	d _M without exten- sion	f	k	n	L
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
DN 40	PN 10/16/ 25/40	16	150	18	88	38	30	42	2	110	4	0, 50, 100, 150 oder
	PN 63/100	24	170	22	88	38	30	42	2	125	4	200
	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 exten- sion	d _M without exten- sion	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)
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	0, 2,
	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	3.94, 5.94
	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	oder
	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	7.87 (0, 50,
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	100, 150
	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	oder
	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	200)
	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	

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seals of flange design mounted directly and with capillary

Connection to J.I.S													
Nominal diameter	Nominal pressure	b	D	d ₂	d ₄	d ₅	d _M with exten- sion	d _M without exten- sion	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,	
	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	100, 150	
	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	oder - 200	
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	(0, 2,	
	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	3.94,	
	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	5.94 oder	
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	7.87)	
	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		

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seal, screwed design, directly mounted or/and with capillary

Overview



Diaphragm seal, screwed gland design with inside diaphragm for gauge, absolute and differential pressure for direct mounting

Technical specifications

Diaphragm seal, screwed gland wi	th inside diaphragm
Process connection	Nominal pressure
• Open flange EN1092-1	
- DN 15 - DN 20 - DN 25	PN 10/16/25/40/63/100/160/250 PN 10/16/25/40 PN 10/16/25/40/63/100/160/250
Open flange ASME B16.5	
- ½ inch, ¾ inch, 1 inch	Class 150/300/600/1500
Thread to EN 837-1	
- G¼"B, G½"B, G¾"B, G1"B	PN 100/250
Thread ASME B1.20.1	
- ¼" NPT-M, ¼" NPT-F - ½" NPT-M, ½" NPT-F - ¾" NPT-M, ¾" NPT-F - 1" NPT-M, 1" NPT-F	Class 1500/3675 Class 1500/3675 Class 1500/3675 Class 1500/3675
Sealing surface for open measure- ment flange	
 For stainless steel, mat. no. 1.4404/316L 	To EN 1092-1, form B1 or ASME B16.5 RF 125 250 AA
Materials	
• Lower section (in the case of pro- cess connection thread)	Stainless steel, Mat. no. 1.4404/316L
• Diaphragm	Stainless steel, Mat. no. 1.4404/316L
	 No coating
	 With PTFE coating
	Monel 400, mat. no. 2.4360
	Hastelloy C276, mat. no. 2.4819
	Hastelloy C4, mat. no. 2.4602 Tantal
	Stainless steel 316L, gold plated, thickness approx. 25 μm
 Top section (process connection in the case of an open measure- ment flange) 	Stainless steel, mat. no. 1.4404/316L
• Capillary	Stainless steel 1.4404/316L



Process connection, open measuring flange

 Sealing material on the process connection 	Viton or copper (in the case of vacuum-free version)
Sealing material between top and	Viton (FKM) (standard)
bottom section	Teflon (PTFE) metal spring ring (silver-coated)
Capillary	
• Length	Max. 10 m (32.8 ft)
Internal diameter	2 mm (0.079 inch)
Minimum bending radius	150 mm (5.9 inch)
Sheath	Stainless steel protective tube, mat. No. 1.4301/304
Filling liquid	• Silicone oil M5
	• Silicone oil M50
	 High-temperature oil
	Halocarbon oil
	(for measuring O_2)
	 Food oil (FDA listed)
Max. recommended temperature of medium	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 specifications of the pressure transmitters and in the section "Technical data of filling liquid" in the introduction to the remote seals
Weight	Approx. 1.5 kg (3.3 lb)
Certificates and approvals	
Classification according to pressure equipment directive (PED 2014/68/EU)	For gases of fluid group 1 and liq- uids of fluid group 1; complies with requirements of article 4, paragraph 3 (sound engineering practice)

Remote seals for pressure transmitters **SITRANS P320/P420**

Diaphragm seal, screwed design, directly mounted or/and with capillary

1"-NPT-M

1"-NPT-M

1"-NPT-F

1"-NPT-F

Other version

Diaphragm seal, screwed design, directly mounted or/and with capillary								
Selection and Ord	dering data	Article No.	Order code	Selection and Ordering data	Article No	-	Ord	
Diaphragm seal t	hreaded design			Diaphragm seal threaded design				
With inside diaphra connected via flexil	gm, directly connected or ble capillary tube to a			With inside diaphragm, directly connected or connected via flexible capillary tube to a				
 SITRANS P320/F pressure or abso er with negative 	2420 transmitter for gauge Jute pressure (only togeth- pressure service), order separately	7 M F 0 8 4 0 -		 SITRANS P320/P420 transmitter for gauge pressure or absolute pressure (only togeth- er with negative pressure service), 7MF03/7MF04 order separately Scope of delivery: 1 off 	7 M F 0 8 4	0 -		
ential pressure a	order separately,	7 M F 0 8 4 2 -		 SITRANS P320/P420 transmitter for differ- ential pressure and flow, 7MF03/7MF04 order separately, Scope of delivery: 2 off 	7 M F 0 8 4	2 -		
		- 0	0		-	0	0	
	icle No. for the online con-			Transmitter connection				
Nominal diameter	ecting standard EN 1092-1 PN 10/16/25/40	0 A D		Without capillary tube, direct mount straight connection (for gauge pressure) Connection via capillary tube Length of capillary 1 m	0 0			
	PN 63/100 PN 160	0 A F 0 A G		1,6 m 2 m	11			
	PN 250	0 A H		2,5 m	13			
DN 20	PN 10/16/25/40	0 A M		3 m	14			
DN 25	PN 10/16/25/40	0 B D 0 B F		4 m	1 5			
	PN 63/100 PN 160	OBG		5 m	16			
	PN 250	OBH		6 m	17			
Open flange, conr		0 BH		7 m	18			
ASME B16.5	lecting standard			8 m	2 0			
1/2 inch	class 150	1 K A		9 m	2 1			
	class 300	1 K B		10 m	2 2			
	class 600	1 K C		Other version	98		L	1 Y
	class 1500	1 K D		Add Order code and plain text				
¾ inch	class 150	1 K F		Filling liquid				
	class 300	1 K G		Silicone oil M50		в		
	class 600	1 K H		High-temperature oil		С		
	class 1500	1 K J		Silicone oil M5		Α		
1 inch	class 150	1 K L		Food-grade oil (FDA listed)		E		
	class 300	1 K M		Halocarbon oil		D		
	class 600	1 K N		Other version		z	Р	1 Y
	class 1500	1 K P		Add Order code and plain text				
Process connectio				Wetted parts materials				
G¼"B	PN 100	3 S B		Stainless steel 316L without coating		A		
G¼"B	PN 250	3 S C		Stainless steel 316L with PTFE-coating		E		
G½"B	PN 100	3 S F		Monel 400, 2.4360		G		
G1/2"B	PN 250	3 S G		Hastelloy C276, 2.4819		J		
G¾"B	PN 100 PN 250	3 S K		Tantalum		К		
G¾"B G1"B		3 S L 3 S P		Stainless steel 316L with gold coating		S		
G1'B	PN 100 PN 250	3 S Q		Hastelloy C4, 2.4610		U		
	n thread ASME B1.20.1	330		Other version		z	Q	1 Y
1/4"-NPT-M	Class 1500	5 T A		Add Order code and plain text				
1/4"-NPT-M	Class 3675	5 T B						
1/4"-NPT-F	Class 1500	5 T C						
1/4"-NPT-F	Class 3675	5 T D						
1⁄2"-NPT-M	Class 1500	5 T E						
1⁄2"-NPT-M	Class 3675	5 T F						
1/2"-NPT-F	Class 1500	5 T G						
1⁄2"-NPT-F	Class 3675	5 T H						
³ /4"-NPT-M	Class 1500	5 T J						
34"-NPT-M	Class 3675	5 T K						
34"-NPT-F	Class 1500	5 T L						
34" NIDT E	Class 2675	5 T M						

Add Order code and plain text

Class 3675

Class 1500

Class 3675

Class 1500

Class 3675

5 T M

5 T N

5 T P

5 T Q

5 T R

9 **A** A

H 1 Y

Remote seals for pressure transmitters SITRANS P320/P420

Dia	phragm seal	screwed de	esian. direct i v	mounted or/	and with	capillary

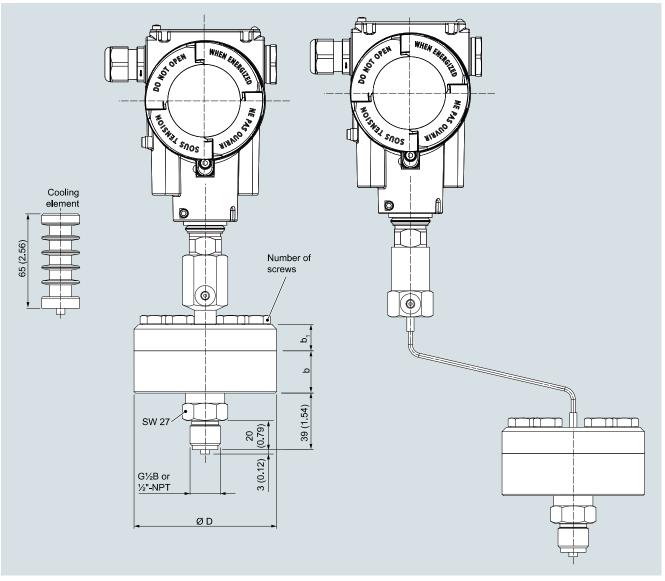
Selection and Ordering data	Order code	
Further designs		
Add "-Z" to Article No. and specify Order code.		
Factory certificates		
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2	C11	
Inspection certificate to EN 10204-3.1 - material of body and wetted parts	C12	
Manufacturer's 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	
Factory certificate functional safety (SIL2/3), devices suitable for use according to IEC 61508 and IEC 61511 (includes SIL conformity declaration)	C20	
Accessories		
Low-temperature version (for Silicon Oil M50 only)	D67	
Flushing port ¼"-18 NPT unsealed	D70	
Flushing port 1/4"-18 NPT sealed with stainless steel plug	D71	
Sealing material between upper and lower enclosure PTFE (instead of FKM viton)	D75	
Sealing material between upper and lower enclosure metal C-circlip (instead of FKM viton)	D76	
PTFE coating for lower enclosure (only for G½B PN 100, DN 25 PN 10 40, 1 inch Class 150/300)	D77	
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)	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	
Capillary connection (only for 7MF0840)		
Single-side mounted at differential pressure transmit- ters at high-side	S03	
Single-side mounted at differential pressure transmit- ters at low-side Cooling element	S04 S08	
	300	

Selection and Ordering data	Order code
<i>Further designs</i> Add "- Z " to Article No. and specify Order code.	
Capillary coating	
PE protective tube	S10
1,6 m	S10
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 7 m	S47 S48
8 m	S49
9 m	S50
10 m	S51
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 10 m	S80 S81
Customer-specific tube length	301
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
	130

 See also "Specification of process conditions for selection and ordering data", page 1/337.

Remote seals for pressure transmitters SITRANS P320/P420

Dimensional drawings

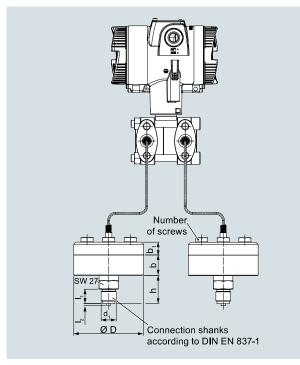




Range	D mm	b mm	b ₁ mm	Number of screws
up to 100 bar	98	14	16	6
up to 250 bar	98	14	20	12

Remote seals for pressure transmitters SITRANS P320/P420

Diaphragm seal, screwed design, directly mounted or/and with capillary

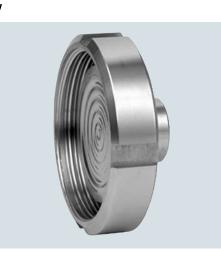


Diaphragm seal, screwed gland with inside diaphragm, for differential pressure, direct and attached directly to the transmitter with with capillaries, dimensions in mm (inch)

Nomi- nal diam- eter	Nominal pressure	D mm	d ₄ mm	k mm	Μ	Number of holes	b mm	b ₁ mm	f mm
DN 25	PN 10/16/ 25/40	115	68	85	M12	4	26	12	2
1 inch	150 Ib/sq.in	110	50.8	79.4	M12	4	32	12	2
1 inch	300 Ib/sq.in	125	50.8	88.9	M16	4	32	12	2

Remote seals for pressure transmitters SITRANS P320/P420

Overview



Quick-release diaphragm seals, to DIN 11851 with slotted union nut



Quick-release diaphragm seals, with clamp connection

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

- For pressure: P300, DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus
- For differential pressure and flow: P500, DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus
- The quick-release remote seals are common designs in the food industry. Their design means that the medium cannot accumulate in dead volumes. The quick-release clamp present on the remote seal means that quick dismounting is possible for cleaning.

Technical specifications

Quick-release diaphragm seal						
Connection, nominal diameter	Nominal pressure					
 Standard to DIN 11851 with nut DN 25/32/40 DN 50/65/80 	PN 40 PN 25					
 Standard to DIN 11851 with thread DN 25/32/40 DN 50/65/80 	PN 40 PN 25					
• Standard clamp ISO 2852 - DN 25/38/51 - DN 63.5/76.1	PN 16 PN 10					

Standard clamp DIN 32676,	
row C Tri-clamp - 1 inch, 1½ inch	PN 25
-2 inch, $2\frac{1}{2}$ inch	PN 16
- 3 inch	PN 10
Standard clamp DIN 32676,	
row A metric - DN 25/32/40	PN 25
- DN 50	PN 16
- DN 65	PN 10
 Varivent DN 25/32/40/50 	PN 25
• DRD-flange	
- DN 50	PN 40
Sealing surface	
 For stainless steel, mat. No. 1.4404/316L 	To EN 1092-1, form B1 or ASME B 16.5RF 125 250 AA
For the other materials	To EN 1092-1, form B2 or
	ASME B16.5 RFSF
Materials	
• Main body	Stainless steel 316L
Wetted parts	Stainless steel 316L
• Capillary	Stainless steel, mat. No. 1.4571/316Ti
• Sheath	Spiral protective tube made of stainless steel, mat. No. 1.4301/316
Maximum pressure	See above and the technical data of the pressure transmitter
Tube length	Without tube
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)
• 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 trans- mitter 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)
Certificates and approvals	
Classification according to pressure equipment directive (DGRL 2014/68/EU)	For gases of fluid group 1 and liq- uids of fluid group 1; complies with requirements of article 4, paragraph 3 (sound engineering practice)
EHEDG	Complies with EHEDG recom- mendations

Pressure Measurement

Remote seals for pressure transmitters SITRANS P320/P420

			Quick-relea	ase diaphi	agm seals
Selection and Ordering data	Article No.	Order code	Selection and Ordering data	Article No.	Order code
Quick release diaphragm seal			Quick release diaphragm seal		
Flange type design, with flexible capillary tube or directly connected to a			Flange type design, with flexible capillary tube or directly connected to a		
 SITRANS P320/P420 transmitter for gauge pressure or absolute pressure (only togeth- er with negative pressure service), 7MF03/7MF04 order separately Scope of delivery: 1 off 	7 M F 0 8 3 0 -		 SITRANS P320/P420 transmitter for gauge pressure or absolute pressure (only togeth- er with negative pressure service), 7MF03/7MF04 order separately Scope of delivery: 1 off 	7 M F 0 8 3 0) -
 SITRANS P320/P420 transmitter for differ- ontial pressure and flow, 7MF03/7MF04 order separately Scope of delivery: 1 off 	7 M F 0 8 3 2 -		 SITRANS P320/P420 transmitter for differ- ential pressure and flow, 7MF03/7MF04 order separately Scope of delivery: 1 off 	7 M F 0 8 3 2	2 -
	- 0 A	0		- 0	
 ✓ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. Nominal diameter Nominal pressure 			Transmitter connection Without capillary tube, direct mount straight connection (for gauge pressure) Connection via capillary tube	0 0	
Connection standard DIN 11851 with nut DN 25 PN 40	0 B M		Length of capillary		
DN 32 PN 40	0 C D		1 m 1.6 m	10 11	
DN 40 PN 40	0 DM		2 m	1 2	
DN 50 PN 25 DN 65 PN 25	0 E K 0 F L		2,5 m	1 3	
DN 80 PN 25	OGK		3 m	14 15	
Connection standard DIN 11851 with thread			4 m 5 m	16	
DN 25 PN 40	1 B M		6 m	17	
DN 32 PN 40	1 C D		7 m	18	
DN 40 PN 40 DN 50 PN 25	1 D M 1 E K		8 m	20	
DN 65 PN 25	1 FL		9 m 10 m	21 22	
DN 80 PN 25	1 G K				147
Connection standard Clamp ISO 2852			Other version Add Order code and plain text	98	L1Y
DN 25 PN 16	2 B K		Filling liquid	-	
DN 38 PN 16	2 C Q		Food-grade oil (FDA listed)		E
DN 51 PN 16	2 F H		Other version		Z P1Y
DN 63.5 PN 10 DN 76.1 PN 10	2 F J 2 G J		Add Order code and plain text		
Connection standard Clamp DIN 32676, row C Tri-clamp					
DN 1" PN 25	зки				
DN 11/2" PN 25	3 L V				
DN 2" PN 16	3 M V				
DN 2½" PN 16 DN 3" PN 10	3 N V 3 P V				
Connection standard Clamp DIN 32676, row A metric	57 V				
DN 25 PN 25	4 B L				
	4 C C				
	4 D L				
	4 E J				
DN 65 PN 10	4 F K				
Varivent DN 25/32 PN 25	5 C L				
DN 25/32 PN 25	5 D K				
DRD-flange DN 50 PN 40	6 E M				
Other version		H 1 V			
Add Order code and plain text	9 A A	H1Y			

© Siemens 2020

Pressure Measurement

Remote seals for pressure transmitters SITRANS P320/P420

1

Quick-release diaphragm seals	
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
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
Factory certificate functional safety (SIL2/3), devices suitable for use according to IEC 61508 and IEC 61511 (includes SIL conformity declaration)	C20
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)	D85
Extended negative pressure service (for differential pressure transmitters)	D88
Capillary connection (only for 7MF0830)	
Single-side mounted at differential pressure transmit- ters at high-side	S03
Single-side mounted at differential pressure transmit- ters at low-side	S04
Cooling element	S08
Capillary coating	
PE protective tube	
1 m	S10
1,6 m	S11
2 m	S12
2,5 m 3 m	S13 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	\$51

S51

Turther designsAdd "-Z" to Article No. and specify Order code.PVC protective tube1 m\$701,6 m\$712 m\$722,5 m\$733 m\$744 m\$755 m\$766 m\$777 m\$788 m\$799 m\$8010 m\$81Customer-specific tube length (specify in plain text)Y44Specification of process conditions ¹ Ambient temperature range-10 +50 °C (14 +122 °F) presetD66-40 +50 °C (14 +185 °F)D67-10 +85 °C (14 +185 °F)D68	Selection and Ordering data	Order code
Add "-Z" to Article No. and specify Order code. Frequencies PVC protective tube 570 1 m \$70 1,6 m \$71 2 m \$72 2,5 m \$73 3 m \$74 4 m \$75 5 m \$76 6 m \$77 7 m \$78 8 m \$79 9 m \$80 10 m \$81 Customer-specific tube length (specify in plain text) Y44 \$79 Specification of process conditions ¹ Y44 Specification of process conditions ¹ Ambient temperature range \$66 $-10 + 50 °C (14 + 122 °F) preset $66 -40 + 50 °C (14 + 185 °F) $67 -10 + 85 °C (14 + 185 °F) $68 $		
PVC protective tube S70 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 Customer-specific tube length (specify in plain text) Y44 Specification of process conditions ¹) Ambient temperature range -10 +50 °C (14 + 122 °F) preset -10 +50 °C (-40 + 122 °F) D66 -40 +50 °C (-40 + 122 °F) D67 -10 +85 °C (14 + 185 °F) D68	•	
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 Customer-specific tube length (specify in plain text) Y44 Specification of process conditions ¹⁾ Ambient temperature range -10 +50 °C (14 +122 °F) preset 10 +50 °C (-40 +122 °F) D66 40 +50 °C (-40 +122 °F) D67 10 +85 °C (14 +185 °F) D68	Add -2 to Article No. and specify Urder code.	_
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 Customer-specific tube length (specify in plain text) Y44 Specification of process conditions ¹ Ambient temperature range Y44 -10 +50 °C (14 + 122 °F) preset D66 -40 +50 °C (-40 + 122 °F) D67 -10 +85 °C (14 + 185 °F) D68		
2 m \$72 2,5 m \$73 3 m \$74 4 m \$75 5 m \$76 6 m \$77 7 m \$78 8 m \$79 9 m \$80 10 m \$81 Customer-specific tube length (specify in plain text) Y44 Y44 Specification of process conditions ¹ Ambient temperature range Y44 -10 + 50 °C (14 + 122 °F) preset D66 -40 + 50 °C (-40 + 122 °F) D67 -10 + 85 °C (14 + 185 °F) D68		
$\begin{array}{cccc} 2,5 \mbox{ m} & $$73$ \\ 3 \mbox{ m} & $$574$ \\ 4 \mbox{ m} & $$574$ \\ 4 \mbox{ m} & $$574$ \\ 4 \mbox{ m} & $$574$ \\ 5 \mbox{ m} & $$575$ \\ 5 \mbox{ m} & $$575$ \\ 5 \mbox{ m} & $$575$ \\ 5 \mbox{ m} & $$576$ \\ 6 \mbox{ m} & $$576$ \\ 6 \mbox{ m} & $$576$ \\ 6 \mbox{ m} & $$576$ \\ 8 \mbox{ m} & $$578$ \\ 5 \mbox{ m}$		
4 m S75 5 m S76 6 m S77 7 m S78 8 m S79 9 m S80 10 m S81 Customer-specific tube length (specify in plain text) Y44 Specification of process conditions ¹ Ambient temperature range $e -10 \dots + 50 \degree C (14 \dots + 122 \degree F) \text{ preset}$ D66 $e -40 \dots + 50 \degree C (14 \dots + 122 \degree F)$ D67 $e -10 \dots + 85 \degree C (14 \dots + 185 \degree F)$ D68		
5 m 576 6 m 577 7 m 578 8 m 579 9 m 580 10 m 581 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 D67 -10 +85 °C (14 +185 °F) D68 D68		
6 m 577 7 m 578 8 m 579 9 m 580 10 m 581 Customer-specific tube length Customer-specific tube length (specify in plain text) Y44 Specification of process conditions ¹) Y44 Ambient temperature range -10 +50 °C (14 +122 °F) preset -10 +50 °C (-40 +122 °F) D66 -40 +50 °C (-40 +122 °F) D67 -10 +85 °C (14 +185 °F) D68		
7 m 578 8 m 579 9 m 580 10 m 581 Customer-specific tube length Customer-specific tube length (specify in plain text) Y44 Specification of process conditions ¹) Y44 Ambient temperature range -10 +50 °C (14 +122 °F) preset D66 - +0 +50 °C (-40 +122 °F) D67 D67 - 10 +85 °C (14 +185 °F) D68 D68		
8 m 579 9 m 580 10 m 581 Customer-specific tube length 744 Customer-specific tube length (specify in plain text) 744 Specification of process conditions ¹) 744 Ambient temperature range 666 -10 +50 °C (14 +122 °F) preset 766 -40 +50 °C (-40 +122 °F) 767 -10 +85 °C (14 +185 °F) 768		
9 m 10 mS80 S81Customer-specific tube length744Customer-specific tube length (specify in plain text)744Specification of process conditions ¹)744Ambient temperature range6• -10 +50 °C (14 +122 °F) presetD66• -40 +50 °C (-40 +122 °F)D67• -10 +85 °C (14 +185 °F)D68		
10 mS81Customer-specific tube lengthY44Customer-specific tube length (specify in plain text)Y44Specification of process conditions ¹)Ambient temperature range• -10 +50 °C (14 +122 °F) presetD66• -40 +50 °C (-40 +122 °F)D67• -10 +85 °C (14 +185 °F)D68		
Customer-specific tube lengthY44Customer-specific tube length (specify in plain text)Y44Specification of process conditions ¹)HomeAmbient temperature range-10 +50 °C (14 +122 °F) presetD66-40 +50 °C (-40 +122 °F)D67-10 +85 °C (14 +185 °F)D68		
Customer-specific tube length (specify in plain text)Y44Specification of process conditions1Ambient temperature range• -10 +50 °C (14 +122 °F) presetD66• -40 +50 °C (-40 +122 °F)D67• -10 +85 °C (14 +185 °F)D68		
Specification of process conditions ¹) D66 -10 +50 °C (14 +122 °F) preset D66 -40 +50 °C (-40 +122 °F) D67 -10 +85 °C (14 +185 °F) D68		
Ambient temperature range D66 • -10 +50 °C (14 +122 °F) preset D67 • -40 +50 °C (-40 +122 °F) D67 • -10 +85 °C (14 +185 °F) D68		Y44
• -10 +50 °C (14 +122 °F) preset D66 • -40 +50 °C (-40 +122 °F) D67 • -10 +85 °C (14 +185 °F) D68	Specification of process conditions ¹⁾	
• -40 +50 °C (-40 +122 °F) D67 • -10 +85 °C (14 +185 °F) D68	Ambient temperature range	
• -40 +50 °C (-40 +122 °F) D67 • -10 +85 °C (14 +185 °F) D68	• -10 +50 °C (14 +122 °E) preset	D66
• -10 +85 °C (14 +185 °F) D68		D67
	,	D68
	Process temperature min °C/(°F)/max °C/(°F)	Y50

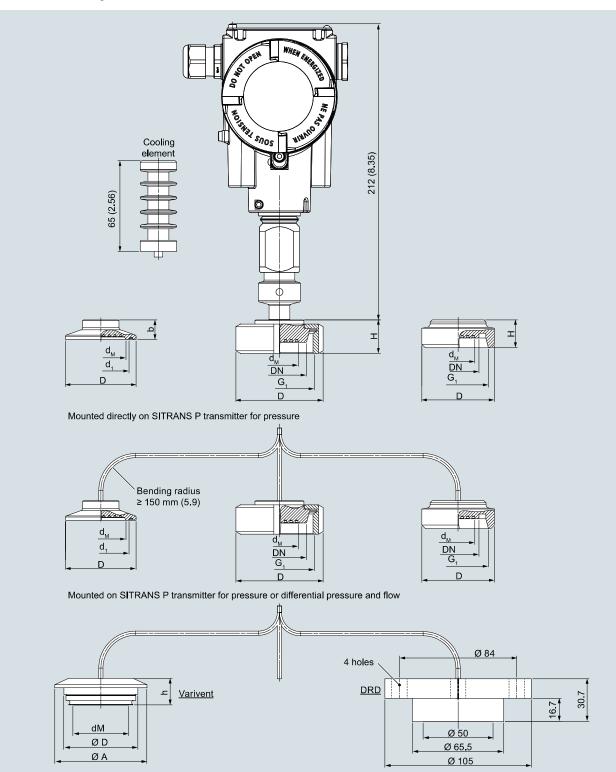
 See also "Specification of process conditions for selection and ordering data", page 1/337.

10 m

Remote seals for pressure transmitters SITRANS P320/P420

Quick-release diaphragm seals

Dimensional drawings



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

© Siemens 2020

Remote seals for pressure transmitters SITRANS P320/P420

Quick-release diaphragm seals

Connection to DIN 11851 with slotted union nut							
Nominal	Ø d _M	ØDHG ₁					
diameter	mm	mm	mm	mm			
DN 25	25	63	36	Rd 52x1/6			
DN 32	32	70	36	Rd 52x1/6			
DN 40	40	78	36	Rd 65x1/6			
DN 50	52	112	36	Rd 78x1/6			
DN 65	65	112	36	Rd 95x1/6			
DN 80	72	127	36	Rd 110x1/6			

Connection to DIN 11851 with threaded socket

Nominal	Ød _M	Н	G ₁
diameter	mm	mm	mm
DN 25	25	36	Rd 52x1/6
DN 32	32	36	Rd 52x1/6
DN 40	40	36	Rd 65x1/6
DN 50	52	36	Rd 78x1/6
DN 65	65	36	Rd 95x1/6
DN 80	72	36	Rd 110x1/6

Clamp connection to ISO 2852 for pipes to ISO 2037

Nominal	eter pressure -	d _M	d ₁	b	D
diameter		mm	mm	mm	mm
DN 25	PN 16	22.6	43.5	14	50.5
DN 38	PN 16	34	43.5	12	50.5
DN 51	PN 16	46	56.5	14	64
DN 63.5	PN 10	51	70.5	14	77.5
DN 76.1	PN 10	65	83.5	14	91

Clamp connection to DIN 32676 row C (Tri-Clamp) for pipes to ASME BPE

Nominal diameter	Nominal			b	D
	pressure	mm (inch)	mm (inch)	mm (inch)	mm (inch)
1"	PN 25	22.6 (0.89)	43.5 (1.71)	14 (0.55)	50.5 (1.99)
11⁄2"	PN 25	34 (1.34)	43.5 (1.71)	12 (0.47)	50.5 (1.99)
2"	PN 16	46 (1.81)	56.5 (2.22)	14 (0.55)	64 (2.52)
21⁄2"	PN 16	51 (2.01)	70.5 (2.78)	14 (0.55)	77.5 (3.05)
3"	PN 16	65 (2.56)	83.5 (3.29)	14 (0.55)	91 (3.58)

Clamp connection to DIN 32676 row A (metric) for pipes to EN 10357 (DIN 11850)

Nominal	pressure	Ød _M	d ₁	b	D
diameter		mm	mm	mm	mm
DN 25	PN 25	22.6	43.5	14	50.5
DN 32	PN 25	27	43.5	12	50.5
DN 40	PN 25	34	43.5	12	50.5
DN 50	PN 16	46	56.5	14	64
DN 65	PN 16	65	83.5	14	91

Varivent

Nominal diameter	d _M	Α	D	h
	mm	mm	mm	mm
	(inch)	(inch)	(inch)	(inch)
DN 25, DN 32, 1", 1¼"	40	66	50	19
	(1.57)	(2.6)	(1.97)	(0.75)
DN 40 125, 1 ½" 6"	58	84	68	19
	(2.28)	(3.331)	(2.68)	(0.75)

d_M Effective diaphragm diameter

Remote seals for pressure transmitters SITRANS P320/P420

Miniature diaphragm seals

Overview



Miniature diaphragm seals

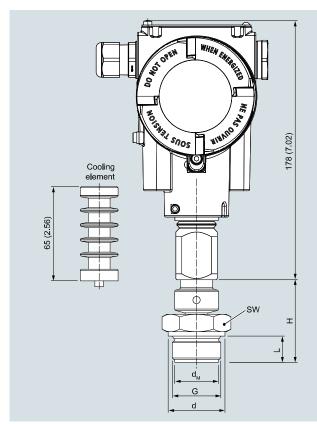
The miniature diaphragm seals are available for the SITRANS P320/420 pressure transmitter series.

Suitable for high pressures, contaminated, fibrous and viscous media in the chemical, paper, food and drink industries.

Design

- Flush-mounted diaphragm
- No dead spaces
- Fixed threaded stems

Dimensional drawings



Miniature diaphragm seal, dimensions in mm (inch)

						mate	ne u	apin	ayın	Seals
G	Ø	d _M	5	SW	(ðd		L		н
	mm	(inch)	mm	(inch)	mm	(inch)	mm	(inch)	mm	(inch)
G1B	25	(0.98)	41	(1.61)	39	(1.53)	28	(1.1)	56	(2.21)
G11⁄2B	40	(1.57)	55	(2.17)	60	(2.36)	30	(1.18)	50	(1.97)
G2B	50	(1.97)	60	(2.36)	70	(2.76)	30	(1.18)	63	(2.48)
•		~ .		-						
G		Ø d _M		SI	N		L			-
	mm	(inch) n	nm (inch)	mm	(inc	h) m	m ((inch)
1"-NPT	27	(1.06) 4	1 (1.61)	25	(0.9	8) 40) C	(1.57)
11/2"-NPT	34	(1.34) 5	5 (2.17)	26	(1.0	2) 4	5 ((1.77)
2" - NPT	46	(1.81) 6	5 (2.56)	26	(1.0	2) 4	5 ((1.77)

d_M: Effective diaphragm diameter

Technical specifications

•	
Miniature diaphragm seals	
Measuring span when	
 G1B and 1"-NPT 	> 6 bar (> 87 psi)
• G11/2B and 11/2"-NPT	> 2 bar (> 29 psi)
• G2B and 2"-NPT	> 600 mbar (> 8.7 psi)
Filling liquid	Silicone oil M5 or food oil (FDA listed)
Material	
 Main body 	Stainl. steel mat No. 1.4404/ 316L or
Diaphragm	Hastelloy C276, mat No. 2.4819 Stainl. steel mat No. 1.4404 / 316L or
• Diaphragin	Hastelloy C276, mat. No. 2.4819
Maximum pressure	100% of nominal pressure of pressure
Maximum pressure	transmitter, up to maximum of PN 400
	(5802 psi) (depending on the seal
	used)
Temperature of use	Same as pressure transmitter
Temperature range of medium	Same as pressure transmitter
Max. recommended tempera-	150 °C (302 °F)
ture of medium	
Weight	
 G1B and 1"-NPT 	Approx. 0.3 kg (approx. 0.66 lb)
• G1½B and 1½"-NPT	Approx. 0.5 kg (approx. 1.10 lb)
• G2B and 2"-NPT	Approx. 0.8 kg (approx. 1.76 lb)
Certificate and approvals	
Classification according to	For gases of fluid group 1 and liquids

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)

Remote seals for pressure transmitters SITRANS P320/P420

Miniature dia	aphragm seals					
Selection and (Drdering data	Artic	le No.	Order	Selection and Ordering data	Orde
	-			code	Further designs	
Miniature diaph	nragm seal				Add "-Z" to Article No. and specify Order code.	
directly connecte	ed to a				Factory certificates	
 SITRANS P320/P420 transmitter for gauge pressure or absolute pressure (only togeth- er with negative pressure service), 		7 M F	7 M F 0 8 5 0 -		Quality inspection certificate (Five-step factory calibration) to IEC 60770-2	C11
7MF03/7MF0 Scope of deliv	4 order separately ery: 1 off				Inspection certificate to EN 10204-3.1 - material of body and wetted parts	C12
figuration in t	Article No. for the online con- the PIA Life Cycle Portal.		00-0	0	Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) (only together with seal diaphragm made of Hastelloy	C13
Process conne					and stainless steel)	
Connection stand G 1/2" G 3/4"	PN 400 PN 400	4 S 1 4 S 1			Inspection certificate (EN 10204-3.1) - PMI test of pressure containing and wetted parts	C15
G 1"	PN 400 PN 400	450			Certificate of FDA-approved fill oil (to EN10204-2.2)	C17
G 1½"	PN 400	4 S V	V		Factory certificate functional safety (SIL2/3), devices	C20
G 2" Connection store	PN 400 dard ASME B1.20.1	4 S)	(suitable for use according to IEC 61508 and IEC 61511 (includes SIL conformity declaration)	
1/2"-NPT-M	class 5800	5 T S			· · · · · · · · · · · · · · · · · · ·	
³ / ₄ "-NPT-M	class 5800	5 T 1			Negative pressure services	
1"-NPT-M	class 5800	5 T L			Negative pressure service	D81
1½"-NPT-M 2"-NPT-M	class 5800 class 5800	5 T \ 5 T V	1		Extended negative pressure service (for gauge and absolute pressure transmitters)	D85
	Class 5600				Capillary connection	
Other version Add Order code	e and plain text	9 A A	,	H 1 Y	Cooling element between transmitter and remote seal	S08
Filling liquid					Customer-specific tube length	
Silicone oil M5			Α		Customer-specific tube length (specify in plain text)	Y44
Food-grade oil ((FDA listed)		E		Specification of process conditions ¹⁾	
Other version Add Order code	e and plain text		z	P 1 Y	Ambient temperature range	
Wetted parts m		-			• -10 +50 °C (14 +122 °F) preset	D66
•	316L without coating		А		• -40 +50 °C (-40 +122 °F)	D67
Hastelloy C276,			J		• -10 +85 °C (14 +185 °F)	D68

Process temperature min. ... °C/(°F)/max. ... °C/(°F)

1) See also "Specification of process conditions for selection and ordering data", page 1/337.

Order code

D67 D68 Y50

Remote seals for pressure transmitters **SITRANS P320/P420**

Inline seals in sandwich design



Overview



Inline seals for flange-mounting

The inline seal is completely integrated in the process line. It is particularly suitable for flowing and highly viscous media.

The inline seal consists of a cylindrical jacket into which a thinwalled pipe is welded. It is clamped directly between two flanges in the pipeline.

Design

- Inline seals for flange-mounting (flange design) to EN/ASME for SITRANS P pressure transmitters
 - For pressure: P300, DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus
 - For differential pressure and flow: DS III with HART, DS III with PROFIBUS PA, DS III with FOUNDATION Fieldbus and P500
- Sealing surface to EN 1092-1 or ASME B16.5
- · Connection to the transmitter directly or by means of a flexible capillary (max. 10 m long)
- See Technical data for details of materials used for the wetted parts
- Material used for the capillary, the guard sleeve, the seal's main body and the measuring cell: Stainless steel, mat.-No. 1.4571
- Filling liquid: Silicone oil, high-temperature oil, halocarbon oil, food oil (FDA listed) or glycerin/water (not suitable for uses in low-pressure range)

Function

The measured pressure is transferred from the diaphragm to the filling liquid and passes either directly or through the capillary to the measuring chamber of the pressure transmitter. The interior of the diaphragm 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 remote seal (see Selection and Ordering data).

Pressure Measurement

Remote seals for pressure transmitters SITRANS P320/P420

Inline seals in sandwich design

Selection and	Ordering data	Article No.	Order code	Selection and Ordering data	Article No.	Order code
Inline seal				Inline seal		
	design, directly connected or flexible capillary tube to a			Sandwich type design, directly connected or connected with flexible capillary tube to a		
pressure or al (only together	20/P420 transmitter for gauge bsolute pressure r with negative pressure ser- /7MF04 order separately very: 1 off	7 M F 0 9 0 0 -		• 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	7 M F 0 9 0 0 -	
ential pressur	20/P420 transmitter for differ- re and flow, 7MF03/7MF04 tely, Scope of delivery: 2 off	7 M F 0 9 0 2 -		 SITRANS P320/P420 transmitter for differ- ential pressure and flow, 7MF03/7MF04 order separately, Scope of delivery: 2 off 	7 M F 0 9 0 2 -	
		- 0	0		- 0	0
Click on the figuration in	Article No. for the online con- the PIA Life Cycle Portal.			Filling liquid Silicone oil M50	В	
Nominal diame				High-temperature oil	c	
	indard EN 1092-1			Silicone oil M5	A	
DN 25	PN 6 100	0 B P		Food-grade oil (FDA listed)	E	
DN 40	PN 6 100	0 D P		Halocarbon oil	D	
DN 50	PN 6 100	0 E P		Other version	Z	P 1 Y
DN 65	PN 6 100	0 F P		Add Order code and plain text		
DN 80	PN 6 100	0 G P		Wetted parts materials		
DN 100	PN 6 100	0 H P		Stainless steel 316L		
DN 125	PN 6 100	0 J P		Without coating	4	<u>م</u>
Connecting sta	indard ASME B16.5			With PFA coating	ſ	
1 inch	class 150 2500	1 K X		With ECTFFE coating	F	
1½ inch	class 150 2500	1 L X		Monel 400, 2.4360	Ċ	3
2 inch	class 150 2500	1 M X		Hastelloy C276, 2.4819		J
2½ inch	class 150 2500	1 N X		Tantalum	H	(
3 inch	class 150 2500	1 P X		Hastelloy C4, 2.4610	l	
4 inch	class 150 2500	1 Q X		Other version	Z	Z Q1Y
5 inch	class 150 2500	1 R X		Add Order code and plain text	4	
Other version	le and plain text	9 A A	H 1 Y			
Transmitter co						
Without capillar	ry tube, direct mount straight gauge pressure)	0 0				
Without capillar tion via 90°-bov Connection via	ry tube, direct mount connec- w (for gauge pressure)	0 1				
Length of capill						
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 0 m		20				
9 m 10 m		21				
10 m		22				
11 m (only for 7	,	2 3 2 4				
12 m (only for 7	,					
13 m (only for 7 14 m (only for 7	,	25				
()	,	26				
15 m (only for 7 Other version		27 98	L1Y			
Add Order cod	lo and plain text	50	- 1 1			

Other version Add Order code and plain text

Remote seals for pressure transmitters SITRANS P320/P420

Inline seals in sandwich design

Selection and Ordering data	Order co
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
Factory certificate 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 transmit-	D61
ters) Spark arrestor (for differential pressure and level transmit- ters)	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)	D85
Extended negative pressure service (for differential pressure transmitters)	D88
General product approvals without explosion proof	
	E90
Oil-and grease-free cleaned version (for O ₂ -appl. including certificate EN10204-2.2 (only with fill fluid Halocarbon oil max. temperature	E80
60 °C and max. pressure 50 bar) Oil-and grease-free cleaned version (not for O_2 -appl.	E87
(only with fill fluid Halocarbon oil)	E01
Sealing surface	
Sealing surface smooth, form B2/EN1092-1 resp.	M50
RFSF/ANSI B16.5 (wetted parts 316L only) Sealing surface groove to EN1092-1, form D	M54
(instead of sealing surface B1, wetted parts 316L only)	
Sealing surface RJF (groove) to ASME B16.5 (instead of sealing surface RF 125250AA, 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 • DN 80	M72 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 • DN 50	M77 M78
• DN 80	M79
• DN 100	M80 M81
• DN 125	

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 • DN 80	M84 M85
• DN 100	M86
• DN 125	M87
Capillary connection	
For 7MF0900	
Single-side mounted at differential pressure transmit- ters at high-side	S03
Single-side mounted at differential pressure transmit- ers at low-side	S04
cooling element	S08
Capillary coating	
PE protective tube	010
1 m 1 6 m	S10 S11
1,6 m 2 m	S11 S12
2,5 m	S13
3 m	S14
4 m	S15
5 m	S16
6 m	S17
7 m	S18
3 m 9 m	S19 S20
10 m	S21
11 m (only for 7MF0902)	S22
12 m (only for 7MF0902)	S23
13 m (only for 7MF0902)	S24
14 m (only for 7MF0902)	S25
15 m (only for 7MF0902)	S26
PTFE protective tube 1 m	S40
1,6 m	S40 S41
2 m	S42
2,5 m	S43
3 m	S44
4 m	S45
5 m	S46
6 m	S47
7 m 8 m	S48 S49
9 m	S50
10 m	S51
11 m (only for 7MF0902)	S52
12 m (only for 7MF0902)	S53
13 m (only for 7MF0902)	S54
14 m (only for 7MF0902)	S55
15 m (only for 7MF0902)	S56

Remote seals for pressure transmitters SITRANS P320/P420

Inline seals in sandwich design

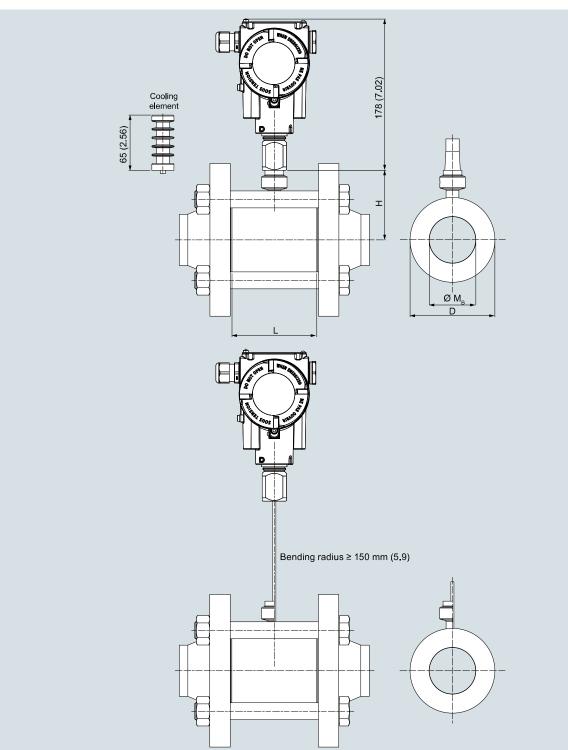
Selection and Ordering data	Order code
Further designs	
Add "-Z" to Article No. and specify Order code.	
PVC protective tube	
1 m	S70
1,6 m	S71
2 m	S72
2,5 m	S73
3 m	S74
4 m	S75
5 m	S76
6 m	S77
7 m	S78
8 m	S79
9 m	S80
10 m	S81
11 m (only for 7MF0902)	S82
12 m (only for 7MF0902)	S83
13 m (only for 7MF0902)	S84
14 m (only for 7MF0902)	S85
15 m (only for 7MF0902)	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

 See also "Specification of process conditions for selection and ordering data", page 1/337.

Remote seals for pressure transmitters SITRANS P320/P420

Inline seals in sandwich design

Dimensional drawings



Inline seal for flange-mounting, connected to SITRANS P pressure transmitter, dimensions in mm (inch)

© Siemens 2020

Remote seals for pressure transmitters SITRANS P320/P420

Inline seals in sandwich design

DN	PN	D	Mb	L	Н
mm	bar	mm	mm	mm	mm
25	6 100	68	28.5	60	81
40	-	88	43.1	60	91
50	-	100	54.5	60	93
65	-	120	70.3	60	107
80	_	138	82.5	60	116
100		160	107.1	60	127
125	-	188	127	60	141

Connection to ASME B16.5

DN	Class	D	Mb	L	Н
(inch)		mm (inch)	mm (inch)	mm (inch)	mm (inch)
1	150 2500	50 (1.97)	28.5 (1.12)	60 (2.36)	72 (2.83)
11⁄2	150 2500	73.5 (2.89)	43.1 (1.70)	60 (2.36)	84 (3.31)
2	150 2500	91.9 (3.62)	54.5 (2.15)	60 (2.36)	93 (3.66)
21/2	150 2500	104.6 (4.12)	70.3 (2.77)	60 (2.36)	99 (3.9)
3	150 2500	127 (5)	82.5 (3.25)	60 (2.36)	110 (4.33)
4	150 2500	157.2 (6.19)	107.1 (4.22)	60 (2.36)	125 (4.92)
5	150 2500	188 (7.4)	127 (5)	60 (2.36)	141 (5.55)

Remote seals for pressure transmitters **SITRANS P320/P420**

Quick-release inline seals



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 and high-viscosity media. Because it is completely integrated in the process line, there are no turbulences, dead spaces or other obstacles in the flow direction. The medium flows almost unhindered through the inline seal and causes self-cleaning of the sample chamber. The inline seal is also piggable.

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).

Quick-release inline seals for ga	uge pressure			
Connection	Nominal diameter	Nominal pressure		
Standard to DIN 11851 with	DN 25/32/40	PN 40		
thread	DN 50/65/80	PN 25		
 Standard Clamp ISO 2852 	DN 25/38/51	PN 16		
	DN 63.5/76.1	PN 10		
Standard Clamp DIN 32676,	1, 1½ inch	PN 25		
row C Tri-clamp	2, 21/2 inch	PN 16		
	3 inch	PN 10		
Standard Clamp DIN 32676,	DN 25/32/40	PN 25		
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	Max. 10 m (32.8 ft)		
 Internal diameter 	2 mm (0.079 ind	ch)		
 Minimum bending radius 	150 mm (5.9 ind	ch)		
• Sheath	Spiral protective tube made of stainless steel, mat. No. 1.4404/316L			
Filling liquid	• Food oil (FDA	• Food oil (FDA listed)		
Permissible ambient temperature				
Weight	Approx. 4 kg (a	pprox. 8.82 lb)		
Certificate and approvals				
Classification according to pres- sure equipment directive (DGRL 2014/68/EU)	For gases of flu uids of fluid gro the requiremen paragraph 1 (a			

EHEDG

assigned to category III, confor-

mity evaluation module H by the TÜV Nord

dations

Complies with EHEDG recommen-

Remote seals for pressure transmitters SITRANS P320/P420

Quick-release inline seals					
Selection and Ordering data	Article No.	Order code	Selection and Ordering data	Article No.	Order code
Quick release inline-seal			Quick release inline-seal		
Flange type design, with flexible capillary tube or directly connected to a			Flange type design, with flexible capillary tube or directly connected 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 	17MF0930-		 SITRANS P320/P420 transmitter for gauge pressure or absolute pressure (only together with negative pressure ser- vice), 7MF03/7MF04 order separately Scope of delivery: 1 off 	7 M F 0 9 3 () -
	- 0 4	40		- (0 A 0
✓ Click on the Article No. for the online con- figuration in the PIA Life Cycle Portal.			Transmitter connection Without capillary tube, direct mount straight connection (for gauge pressure)	0 0	
Nominal diameter Nominal pressure Connection standard DIN 11851 with thread			Connection via capillary tube Length of capillary		
DN 25 PN 40	1 B M		1 m	1 0	
DN 32 PN 40 DN 40 PN 40	1 C D 1 D M		1,6 m	11	
DN 50 PN 25	1 E K		2 m	1 2	
DN 65 PN 25	1 F L		2,5 m	13	
DN 80 PN 25	1 G K		3 m	14	
Connection standard Clamp ISO 2852			4 m	15	
DN 25 PN 16	2 B K		5 m	16	
DN 38 PN 16	2 C Q		6 m	17	
DN 51 PN 16	2 F H		7 m 8 m	18 20	
DN 63.5 PN 10	2 F J		9 m	20	
DN 76.1 PN 10	2 G J		911 10 m	2 2	
Connection standard Clamp DIN 32676,			Other version	98	L1Y
row C Tri-clamp	0 K N		Add Order code and plain text		
DN 1" PN 25	3 K V		Filling liquid	-	
DN 1½" PN 25	3 L V		Food-grade oil (FDA listed)		E
DN 2" PN 16 DN 2½" PN 16	3 M V 3 N V		Other version		Z P1
DN 272 PN 16 DN 3" PN 10	3 P V		Add Order code and plain text		
	3 - 1				
Connection standard Clamp DIN 32676, row A metric					
DN 25 PN 25	4 B L				
DN 32 PN 25	4 C C				
DN 40 PN 25	4 D L				
DN 50 PN 16	4 E J				
DN 65 PN 10	4 F K				

H 1 Y

9 A A

Other version Add Order code and plain text

Pressure Measurement

Remote seals for pressure transmitters SITRANS P320/P420

Quick-release inline seals

Y50

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
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
Factory certificate functional safety (SIL2/3), devices suitable for use according to IEC 61508 and IEC 61511 (includes SIL conformity declaration)	C20
Negative pressure services	-
Negative pressure service (for gauge and absolute pressure transmitters)	D81
Extended negative pressure service (for gauge and absolute pressure transmitters)	D85
Capillary connection	
Single-side mounted at differential pressure transmit- ters at high-side	S03
Single-side mounted at differential pressure transmit- ters at low-side	S04
cooling element	S08
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 7 m	S47
7 111	S48
	C10
8 m 9 m	S49 S50

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
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

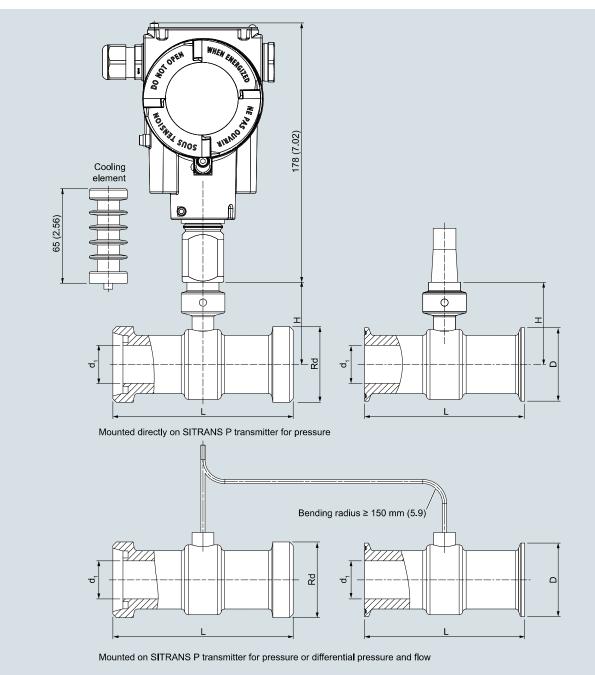
 See also "Specification of process conditions for selection and ordering data", page 1/337.

Process temperature min. ... °C/(°F)/max. ... °C/(°F)

Remote seals for pressure transmitters SITRANS P320/P420

Quick-release inline seals

Dimensional drawings



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

Remote seals for pressure transmitters SITRANS P320/P420

Quick-release inline seals

Inline seals for pipes according to EN 10357 (DIN 11851)

				Food connec	tions		
				DIN 11851		DIN 32676	
	Length	Inner diameter	Connection height	Nominal pressure	Round thread connection to DIN 11851	Nominal pressure	Clamp connec- tion 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

Inline seals for pipes according to BS 4825 Part 3 and O.D. Tube (suitable for pipes according to ASME-BPE)

					Food connection	า		
					IDF to ISO 2853		Clamp connection	on to ISO 2852
		Length	Inner diameter	Connection height	Nominal pressure	IDF-Thread to ISO 2853	Nominal pressure	Clamp connec- tion 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 3175	PN 10	119

Remote seals for pressure transmitters SITRANS P320/P420

Overview



Flushing ring

Flushing rings are required for flange-mounted and sandwichtype remote seals (Article No. 7MF0800 ... 7MF0814) if the danger exists that the process conditions and the geometry of the connection could cause the medium to form deposits or blockages.

The flushing ring is clamped between the process flange and the remote seal.

Deposits can be flushed away from the diaphragm through the holes in the side, or the pressure volume can be vented. Different nominal diameters and forms permit adaptation to the respective process flange.

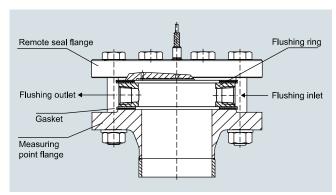
Process connection

For flanges to EN and ASME: DN 50, 80, 100, 125; PN 16 ... 100 or DN 2 inch, 3 inch, 4 inch, 5 inch; Class 150 ... 600

Standard design

Material: CrNi-Stahl, mat. No. 1.4404/316L Sealing faces and flushing holes: See Selection and Ordering data

Design



Installation example

Technical specifications

Flushing ring for remote seals of s	andwich and flange design
Nominal diameter	Nominal pressure
• DN 50	PN 16 PN 100
• DN 80	PN 16 PN 100
• DN 100	PN 16 PN 100
• DN 125	PN 16 PN 100
• 2 inch	Class 150 class 600
• 3 inch	Class 150 class 600
• 4 inch	Class 150 class 600
• 5 inch	Class 150 class 600
Sealing surface	
• To EN 1092-1	Form B1
	Form B2
	Form D/Form D
	Form C/Form C
	Form C/Form C
	Form E
	Form F
• To ASME B16.5	RF 125 250 AA
	RFSF
	RJF ring groove
Flushing holes (2 off), female	• G1⁄4
thread	• G1⁄2
	• 1⁄4-18 NPT
	• ½-14 NPT
Material	Stainless steel 1.4404/316L

Remote seals for pressure transmitters SITRANS P320/P420

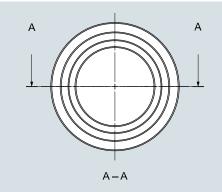
Flushing rings for diaphragm seals

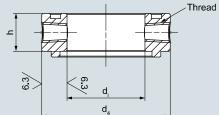
data		No.Ord	. 00		Dimen	isional draw	vings				
					Conne	ection acco	rding to	EN 1092-	1		
o. for the online configu-			T		Form E	31 and form	<u>B2</u>				
Nominal pressure PN 16 PN 100 PN 16 PN 100 PN 16 PN 100 PN 16 PN 100 Class 150 600 Class 150 600 Class 150 600 Class 150 600 Class 150 Class 150 Class 150 Class 150 Class 150 Class 150 Class 300 600 Class 300 600 Class 300 600 Class 300 600 Class 300 600	A B C D G H J K N R R R R R R R R R R V R V R X R Z		J 1	Y						A Thread	
	A					• • •					
	С						Thread		•		Weig
	D				mm	bar		Ø in mm (inch)	(inch)	(inch)	kg (lt
	F				50	16 100	1⁄4 NPT	102 (4.02)	62 (2.44)	30 (1.18)	1.24 (2.73
	G H				80	16 100	1⁄4 NPT	138 (5.43)	92 (3.62)	30 (1.18)	1.99 (4.39
	м				100	16 100	1⁄4 NPT	162 (6.38)	92 (3.62)	30 (1.18)	3.35 (7.39
	R				125	16 100	1⁄4 NPT	188 (7.40)	132 (5.2)	30 (1.18)	3.38 (7.45
in text:	Z		К1	Y	50	16 100	1⁄2 NPT	102 (4.02)	62 (2.44)	30 (1.18)	1.24 (2.73
					80	16 100	1⁄2 NPT	138 (5.43)	92 (3.62)	30 (1.18)	1.99 (4.39
	2	2			100	16 100	1⁄2 NPT	162 (6.38)	92 (3.62)	30 (1.18)	3.35 (7.39
					125	16 100	1⁄2 NPT	188 (7.40)	132 (5.2)	30 (1.18)	、 3.38 (7.45
in text:		0 9 code	M 1	Y							
	0 to 7MF0814 . for the online configu- cycle Portal. Nominal pressure PN 16 PN 100 PN 16 PN 100 PN 16 PN 100 PN 16 PN 100 Class 150 600 Class 150 600	00 to 7MF0814 1 0. for the online configu- Cycle Portal. A Nominal pressure PN 16 PN 100 A PN 16 PN 100 B PN 16 PN 100 D Class 150 600 H Class 150 600 J Class 150 600 K	borninal pressure PN 16 PN 100 A PN 16 PN 100 C Class 150 600 G Class 150 600 K Class 150 600 VR Class 150 600 VR Class 150 600 VR Class 150 600 VR Class 300 600 VR R C G K G K </td <td>00 to 7MF0814 1 0. for the online configu- Cycle Portal. A Nominal pressure PN 16 PN 100 A PN 16 PN 100 B PN 16 PN 100 C Class 150 600 G Class 150 600 K Class 150 600 VR Class 150 600 VR Class 150 600 VR Class 300 600 VR Class 300 600 VR Class 300 600 VR Class 300 600 XR af C brin text: A c A c C prinal pressure: A c C c A c A c C c C</td> <td>00 to 7MF0814 1 <</td> <td>00 to 7/MF0814 1 Comme 0. for the online configu- Cycle Portal. A Form E Nominal pressure A Form E PN 16 PN 100 B B Form E PN 16 PN 100 C B Form E PN 16 PN 100 D C Form E PN 16 PN 100 D C Form E PN 16 PN 100 D C Form E Class 150 600 H Class 150 Form E Class 150 R R Class 150 Form E Class 150 R R Class 150 R Class 300 600 VR VR J1 Y Flushin Class 300 600 VR R B B Class 300 600 XR Z J1 Y DN in text: M C B B B B in text: M R R R B B B B B B B B B B B B B</td> <td>00 to 7/MF0814 1 Connection accountion accounting accounterely accountion accounting accounterely accoun</td> <td>00 to 7MF0814 1 Connection according to Eorm B1 and form B2 Nominal pressure PN 16 PN 100 A PN 16 PN 100 B PN 16 PN 100 C PN 16 PN 100 C Class 150 600 G Class 150 600 H Class 150 600 H Class 150 600 K Class 150 600 K Class 150 600 K Class 150 C Class 300 600 VR Vin text: Z M C P F G H A C P N P N P N N N P N R K1Y <t< td=""><td>0.0 to 7MF0814 1 1 Connection according to EN 1092- Dyole Portal. A Form B1 and form B2 Nominal pressure A A PN 16PN 100 B A PN 16PN 100 Class 150600 G Class 150600 G A Class 150600 K A Class 150600 K A Class 150600 Cass 150 R Class 150 CR A Class 150 CR Class 150 Class 150 R R R C D Flushing ring; sealing surface (EN 1092-1 B 1610</td><td>0.0 to 7MF0814 1 Connection according to EN 1092-1 2, for the online configu- Sycle Portal. Form B1 and form B2 Nominal pressure A PN 16 PN 100 A PN 16 PN 100 C Class 150 600 G Class 150 600 C Class 150 OR Class 300 600 VR Z J 1 Y A C B C B C Class 300 600 VR Z J 1 Y A C B C B C B C B</td><td>00 to 7MF0814 1 1 Connection according to EN 1092-1 2, for the online configue- yocker Portal. A A Nominal pressure PN 16 PN 100 A A PN 16 PN 100 D Class 150600 G Class 150600 G A A Class 150600 K A A Class 150600 K A A Class 150 G R A Class 150 Class 150 R A Class 150 Class 150 R A Class 150 R R A Class 300600 VR R C Class 300600 VR R C Class 300600 XR Z J 1Y A C D E F G G R C D E F G I<</td></t<></td>	00 to 7MF0814 1 0. for the online configu- Cycle Portal. A Nominal pressure PN 16 PN 100 A PN 16 PN 100 B PN 16 PN 100 C Class 150 600 G Class 150 600 K Class 150 600 VR Class 150 600 VR Class 150 600 VR Class 300 600 VR Class 300 600 VR Class 300 600 VR Class 300 600 XR af C brin text: A c A c C prinal pressure: A c C c A c A c C c C	00 to 7MF0814 1 <	00 to 7/MF0814 1 Comme 0. for the online configu- Cycle Portal. A Form E Nominal pressure A Form E PN 16 PN 100 B B Form E PN 16 PN 100 C B Form E PN 16 PN 100 D C Form E PN 16 PN 100 D C Form E PN 16 PN 100 D C Form E Class 150 600 H Class 150 Form E Class 150 R R Class 150 Form E Class 150 R R Class 150 R Class 300 600 VR VR J1 Y Flushin Class 300 600 VR R B B Class 300 600 XR Z J1 Y DN in text: M C B B B B in text: M R R R B B B B B B B B B B B B B	00 to 7/MF0814 1 Connection accountion accounting accounterely accountion accounting accounterely accoun	00 to 7MF0814 1 Connection according to Eorm B1 and form B2 Nominal pressure PN 16 PN 100 A PN 16 PN 100 B PN 16 PN 100 C PN 16 PN 100 C Class 150 600 G Class 150 600 H Class 150 600 H Class 150 600 K Class 150 600 K Class 150 600 K Class 150 C Class 300 600 VR Vin text: Z M C P F G H A C P N P N P N N N P N R K1Y <t< td=""><td>0.0 to 7MF0814 1 1 Connection according to EN 1092- Dyole Portal. A Form B1 and form B2 Nominal pressure A A PN 16PN 100 B A PN 16PN 100 Class 150600 G Class 150600 G A Class 150600 K A Class 150600 K A Class 150600 Cass 150 R Class 150 CR A Class 150 CR Class 150 Class 150 R R R C D Flushing ring; sealing surface (EN 1092-1 B 1610</td><td>0.0 to 7MF0814 1 Connection according to EN 1092-1 2, for the online configu- Sycle Portal. Form B1 and form B2 Nominal pressure A PN 16 PN 100 A PN 16 PN 100 C Class 150 600 G Class 150 600 C Class 150 OR Class 300 600 VR Z J 1 Y A C B C B C Class 300 600 VR Z J 1 Y A C B C B C B C B</td><td>00 to 7MF0814 1 1 Connection according to EN 1092-1 2, for the online configue- yocker Portal. A A Nominal pressure PN 16 PN 100 A A PN 16 PN 100 D Class 150600 G Class 150600 G A A Class 150600 K A A Class 150600 K A A Class 150 G R A Class 150 Class 150 R A Class 150 Class 150 R A Class 150 R R A Class 300600 VR R C Class 300600 VR R C Class 300600 XR Z J 1Y A C D E F G G R C D E F G I<</td></t<>	0.0 to 7MF0814 1 1 Connection according to EN 1092- Dyole Portal. A Form B1 and form B2 Nominal pressure A A PN 16PN 100 B A PN 16PN 100 Class 150600 G Class 150600 G A Class 150600 K A Class 150600 K A Class 150600 Cass 150 R Class 150 CR A Class 150 CR Class 150 Class 150 R R R C D Flushing ring; sealing surface (EN 1092-1 B 1610	0.0 to 7MF0814 1 Connection according to EN 1092-1 2, for the online configu- Sycle Portal. Form B1 and form B2 Nominal pressure A PN 16 PN 100 A PN 16 PN 100 C Class 150 600 G Class 150 600 C Class 150 OR Class 300 600 VR Z J 1 Y A C B C B C Class 300 600 VR Z J 1 Y A C B C B C B C B	00 to 7MF0814 1 1 Connection according to EN 1092-1 2, for the online configue- yocker Portal. A A Nominal pressure PN 16 PN 100 A A PN 16 PN 100 D Class 150600 G Class 150600 G A A Class 150600 K A A Class 150600 K A A Class 150 G R A Class 150 Class 150 R A Class 150 Class 150 R A Class 150 R R A Class 300600 VR R C Class 300600 VR R C Class 300600 XR Z J 1Y A C D E F G G R C D E F G I<

Remote seals for pressure transmitters SITRANS P320/P420

Flushing rings for diaphragm seals

Form D/form C

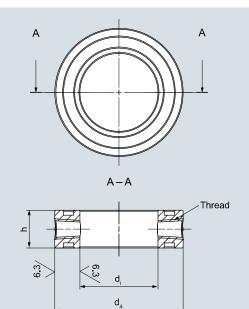




Flushing ring; sealing surface (EN 1092-1), form D/form C

DN	PN	Thread	d ₄	d _i	h	Weight
mm	bar		Ø in mm (inch)	Ø in mm (inch)	Ø in mm (inch)	kg (lb)
50	16 100	1/4 NPT	102 (4.02)	62 (2.44)	35.5 (1.40)	1.46 (3.22)
80	16 100	1/4 NPT	138 (5.43)	92 (3.62)	35.5 (1.40)	2.36 (5.2)
100	16 100	1/4 NPT	162 (6.38)	92 (3.62)	35.5 (1.40)	3.96 (8.73)
125	16 100	1/4 NPT	188 (7.40)	132 (5.2)	35.5 (1.40)	4.00 (8.82)
50	16 100	½ NPT	102 (4.02)	62 (2.44)	40.5 (1.595)	1.67 (3.68)
80	16 100	1⁄2 NPT	138 (5.43)	92 (3.62)	40.5 (1.595)	2.69 (5.93)
100	16 100	½ NPT	162 (6.38)	92 (3.62)	40.5 (1.595)	4.52 (9.97)
125	16 100	1⁄2 NPT	188 (7.40)	132 (5.2)	40.5 (1.595)	4.56 (10.05)

Form D/form D



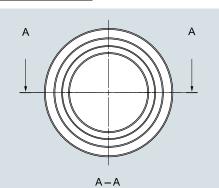
Flushing ring; sealing surface (EN 1092-1), form D/form D

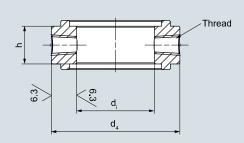
DN	PN	Thread	d ₄	di	h	Weight
mm	bar		Ø in mm (inch)	Ø in mm (inch)	Ø in mm (inch)	kg lb)
50	16 100	1/4 NPT	102 (4.02)	62 (2.44)	40 (1.58)	1.65 (3.64)
80	16 100	1/4 NPT	138 (5.43)	92 (3.62)	40 (1.58)	2.66 (5.86)
100	16 100	1⁄4 NPT	162 (6.38)	92 (3.62)	40 (1.58)	4.47 (9.86)
125	16 100	1⁄4 NPT	188 (7.40)	132 (5.2)	40 (1.58)	4.50 (9.92)
50	16 100	1⁄2 NPT	102 (4.02)	62 (2.44)	40 (1.58)	1.65 (3.64)
80	16 100	½ NPT	138 (5.43)	92 (3.62)	40 (1.58)	2.66 (5.86)
100	16 100	1⁄2 NPT	162 (6.38)	92 (3.62)	40 (1.58)	4.47 (9.86)
125	16 100	½ NPT	188 (7.40)	132 (5.2)	40 (1.58)	4.50 (9.92)

Remote seals for pressure transmitters SITRANS P320/P420

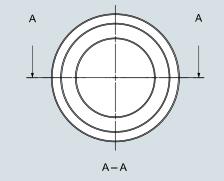
Flushing rings for diaphragm seals

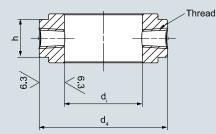
Form C/form C and form E





Flushing ring; sealing surface (EN 1092-1), form C/form C

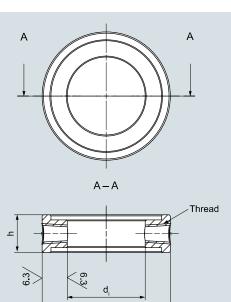




Flushing ring; sealing surface (EN 1092-1), form E

DN	PN	Thread	d ₄	d _i	h	x	f3	Weight
mm	bar		Ø in mm (inch)	kg (lb)				
50	16 100	1⁄4 NPT	102 (4.02)	62 (2.44)	31 (1.22)	87 (3.43)	4.5 (0.18)	1.49 (3.28)
80	16 100	1/4 NPT	138 (5.43)	92 (3.62)	31 (1.22)	120 (4.72)	4.5 (0.18)	2.40 (5.29)
100	16 100	1/4 NPT	162 (6.38)	92 (3.62)	30 (1.18)	149 (5.87)	5 (0.2)	4.21 (9.28)
125	16 100	1/4 NPT	188 (7.40)	132 (5.2)	30 (1.18)	175 (6.89)	5 (0.2)	4.21 (9.28)
50	16 100	½ NPT	102 (4.02)	62 (2.44)	31 (1.22)	87 (3.43)	4.5 (0.18)	1.49 (3.28)
80	16 100	½ NPT	138 (5.43)	92 (3.62)	31 (1.22)	120 (4.72)	4.5 (0.18)	2.40 (5.29)
100	16 100	1⁄2 NPT	162 (6.38)	92 (3.62)	30 (1.18)	149 (5.87)	5 (0.2)	4.21 (9.28)
125	16 100	1⁄2 NPT	188 (7.40)	132 (5.2)	30 (1.18)	175 (6.89)	5 (0.2)	3.38 (7.45)

Form F



Flushing ring; sealing surface (EN 1092-1), form F

	5 5,	-						
DN	PN	Thread	d ₄	d _i	h	x	f3	Weight
mm	bar		Ø in mm (inch)	kg lb)				
50	16 100	1/4 NPT	102 (4.02)	62 (2.44)	35 (1.38)	88 (3.46)	4 (0.16)	1.25 (2.76)
80	16 100	1/4 NPT	138 (5.43)	92 (3.62)	35 (1.38)	121 (4.76)	4 (0.16)	2.02 (4.45)
100	16 100	1/4 NPT	162 (6.38)	92 (3.62)	35 (1.38)	150 (5.91)	4.5 (0.18)	3.11 (6.86)
125	16 100	1/4 NPT	188 (7.40)	132 (5.2)	35 (1.38)	175 (6.89)	4.5 (0.18)	3.19 (7.03)
50	16 100	1⁄2 NPT	102 (4.02)	62 (2.44)	40 (1.58)	88 (3.46)	4 (0.16)	1.45 (3.2)
80	16 100	1⁄2 NPT	138 (5.43)	92 (3.62)	40 (1.58)	121 (4.76)	4 (0.16)	2.35 (5.18)
100	16 100	½ NPT	162 (6.38)	92 (3.62)	40 (1.58)	150 (5.91)	4.5 (0.18)	3.67 (8.09)
125	16 100	1⁄2 NPT	188 (7.40)	132 (5.2)	40 (1.58)	175 (6.89)	4.5 (0.18)	3.76 (8.29)

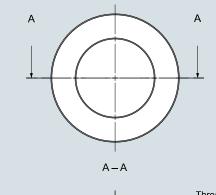
 d_4

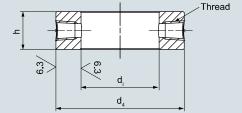
Remote seals for pressure transmitters SITRANS P320/P420

Flushing rings for diaphragm seals

Connection according to ASME B 16.5

RFSF and RF 125 ... 250 AA

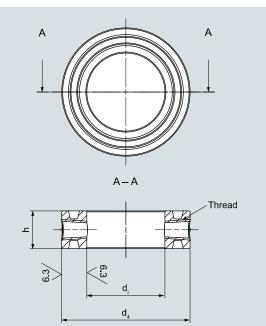




Flushing ring; sealing surface (ASME B 16.5), RFSF and RF 125 to 250 AA $\,$

DN	Class	Thread	d ₄	d _i	h	Weight
inch			Ø in mm (inch)	Ø in mm (inch)	Ø in mm (inch)	kg lb)
2	150 600	1/4 NPT	92 (3.62)	62 (2.44)	30 (1.18)	0.87 (1.92)
3	150 600	1/4 NPT	127 (5)	92 (3.62)	30 (1.18)	1.44 (3.17)
4	150 600	1/4 NPT	157 (6.18)	92 (3.62)	30 (1.18)	3.05 (6.72)
5	150 600	1/4 NPT	186 (7.32)	141 (5.55)	30 (1.18)	2.77 (6.11)
2	150 600	1/2 NPT	92 (3.62)	62 (2.44)	30 (1.18)	0.87 (1.92)
3	150 600	1⁄2 NPT	127 (5)	92 (3.62)	30 (1.18)	1.44 (3.17)
4	150 600	1⁄2 NPT	157 (6.18)	92 (3.62)	30 (1.18)	3.05 (6.72)
5	150 600	1⁄2 NPT	186 (7.32)	141 (5.55)	30 (1.18)	2.77 (6.11)

RJF ring groove



Flushing ring; sealing surface (ASME B 16.5), RJF ring groove

DN	Class	Thread	d ₄	di	h	Weight
inch			Ø in mm (inch)	Ø in mm (inch)	Ø in mm (inch)	kg Ib)
2	150	1/4 NPT	102 (4.02)	62 (2.44)	40 (1.58)	1.65 (3.64)
3	150	1/4 NPT	133 (5.24)	92 (3.62)	40 (1.58)	2.32 (5.12)
4	150	1/4 NPT	171 (6.73)	92 (3.62)	40 (1.58)	5.22 (11.51)
5	150	1⁄4 NPT	194 (7.64)	141 (5.55)	40 (1.58)	4.46 (9.83)
2	150	½ NPT	102 (4.02)	62 (2.44)	46 (1.81)	1.90 (4.19)
3	150	1⁄2 NPT	133 (5.24)	92 (3.62)	46 (1.81)	2.66 (5.86)
4	150	½ NPT	171 (6.73)	92 (3.62)	46 (1.81)	6.00 (13.23)
5	150	½ NPT	194 (7.64)	141 (5.55)	46 (1.81)	5.13 (11.31)
2	300 600	1/4 NPT	108 (4.25)	62 (2.44)	40 (1.58)	1.96 (4.32)
3	300 600	1/4 NPT	146 (5.75)	92 (3.62)	40 (1.58)	3.23 (7.12)
4	300 600	1⁄4 NPT	175 (6.89)	92 (3.62)	40 (1.58)	5.57 (12.28)
5	300 600	1/4 NPT	210 (8.27)	141 (5.55)	40 (1.58)	6.08 (13.4)
2	300 600	1⁄2 NPT	108 (4.25)	62 (2.44)	46 (1.81)	2.26 (4.98)
3	300 600	1⁄2 NPT	146 (5.75)	92 (3.62)	46 (1.81)	3.71 (8.18)
4	300 600	½ NPT	175 (6.89)	92 (3.62)	46 (1.81)	6.4 (14.11)
5	300 600	½ NPT	210 (8.27)	141 (5.55)	46 (1.81)	7 (15.43)

seals

Pressure Measurement

Remote seals for pressure transmitters SITRANS P320/P420

Measuring setups

This section shows examples of typical measuring setups for using SITRANS P pressure transmitters with and without remote seals.

Equations for calculating lower range value and upper range value are provided for each example.

Questionnaires are included to help you select the right combination of remote seal and pressure transmitter.

Installation

Overview

Remote seals of sandwich design are fitted between the connection flange of the measuring point and a dummy flange. Remote seals of flange design are fitted directly on the connection flange of the measuring point. The respective pressure rating of the dummy flange or the flanged remote seal must be observed.

The pressure transmitter should be installed below the connection flange (and below the lower connection flange in the case of differential pressure transmitters). This arrangement <u>must</u> be used in the low-pressure range.

When measuring at pressures above atmospheric, the pressure transmitter can also be installed above the connection flange.

The capillaries between the remote seal and the pressure transmitter should be as short as possible to obtain a good transmission response.

Offset of measuring range

If there is a difference in height between the two connection flanges when measuring with two remote seals, an additional differential pressure will result from the oil filling of the remote seal capillaries. This results in a measuring range offset which has to be taken into account when you set the pressure transmitter.

An offset in the measuring range also occurs when combining a remote seal with a transmitter if the remote seal is not installed at the same height as the transmitter.

Pressure transmitter output

If the level, separation layer or density increase in closed vessels, the differential pressure and hence the output signal of the pressure transmitter also increase.

For an inverted relationship between the differential pressure and the output signal, the lower range value and upper range value of the SITRANS P must be interchanged.

With open vessels, a rising pressure is usually assigned to an increasing level, separation layer or density.

Influence of ambient temperature

Temperature differences between the individual capillaries and between the individual remote seals should be avoided.

Temperature variations in the area of the measuring setup cause a change in volume of the filling liquid and hence measuring errors.

Notes

- For the separation layer measurement, the separation layer has to be positioned between the two spigots. Also you must make sure that the level in the container is always above the top spigot.
- When measuring density, make sure that the level of the medium remains constant. The level should be above the top spigot.

Type of installation	Pressure trans- mitters	Remote seals		
A/B	7MF030 7MF031 7MF040 7MF041	7MF0800 7MF0810		
C_1 and C_2	7MF032 7MF042	7MF0800 7MF0810		
		(negative pressure service in each case)		
	7MF033 7MF043	7MF0801 7MF0811		
D	7MF034 7MF035 7MF044 7MF045	7MF0802 7MF0812		
E	7MF034 7MF035 7MF044 7MF045	7MF0813		
G, H and J	7MF034 7MF035 7MF044 7MF045	7MF0802 7MF0812		

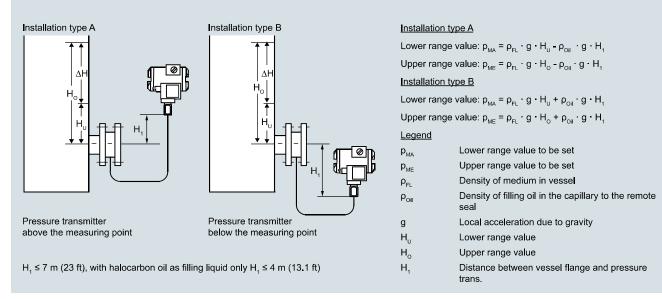
Possible combinations of pressure transmitters and remote

Remote seals for pressure transmitters SITRANS P320/P420

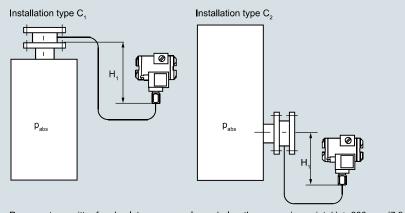
Measuring setups with remote seals

Dimensional drawings

Types of installation for pressure and level measurements (open vessels)



Types of installation for absolute level measurements (closed vessels)

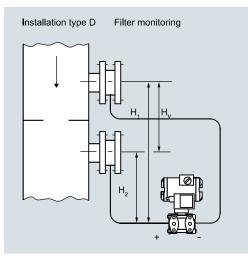


Installation type C_1 and C_2

Lower range value: $p_{MA} = p_{START} + \rho_{OII} \cdot g \cdot H_1$							
Upper range	value: $p_{ME} = p_{END} + \rho_{Oil} \cdot g \cdot H_1$						
Legend							
р _{ма}	Lower range value to be set						
P _{ME}	Upper range value to be set						
P _{START}	Lower range value						
P _{END}	Upper range value						
ρ _{oil}	Density of filling oil in the capillary to the remote seal						
g	Local acceleration due to gravity						
H ₁	Distance between vessel flange and pressure trans.						

Pressure transmitter for absolute pressure always below the measuring point: $H_1 \ge 200 \text{ mm} (7.9 \text{ inch})$

Type of installation for differential pressure and flow measurements



Installation type D

Lower range value: $p_{MA} = p_{START} - p_{OII} + g + H_{V}$

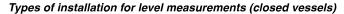
Upper range value: $p_{_{ME}} = p_{_{END}} - \rho_{_{Oil}} \cdot g \cdot H_{_{V}}$

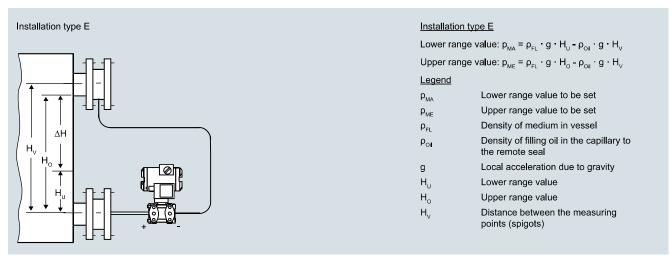
Legend

1090110	
P _{MA}	Lower range value to be set
P _{ME}	Upper range value to be set
P _{START}	Lower range value
P _{END}	Upper range value
ρ _{oi}	Density of filling oil in the capillary to the remote seal
g	Local acceleration due to gravity
H_v	Distance between the measuring points (spigots)

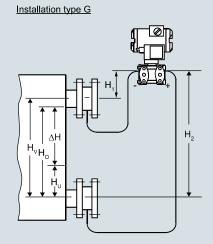
Remote seals for pressure transmitters SITRANS P320/P420

Measuring setups with remote seals





Installation type H



Pressure transmitter for differential pressure above the upper measuring point, no vacuum

 $H_2 \le 7$ m (23 ft), with halocarbon oil as filling liquid only $H_1 \le 4$ m (13.1 ft)

Installation type G, H and J

 $p_{_{ME}} = \rho_{_{FL}} \cdot g \cdot H_{_{O}} - \rho_{_{Oil}} \cdot g \cdot H_{_{V}}$

 $\begin{array}{l} \text{Lower range value:} \\ \textbf{p}_{\text{MA}} = \textbf{\rho}_{\text{FL}} \cdot \textbf{g} \cdot \textbf{H}_{\text{U}} - \textbf{\rho}_{\text{Oil}} \cdot \textbf{g} \cdot \textbf{H}_{\text{V}} \end{array}$

Upper range value:

below the lower measuring point

Lower range value to be set

Upper range value to be set

Density of medium in vessel

the remote seal

Density of filling oil in the capillary to

Legend

р_{ма}

 p_{ME}

 ρ_{FL}

 ρ_{oil}

Installation type for vacuum applications

Installation type J

between the measuring points, no vacuum

 $H_2 \le 7 \text{ m} (23 \text{ ft})$, with halocarbon oil as filling liquid only $H_2 \le 4 \text{ m} (13.1 \text{ ft})$

g	Local acceleration due to gravity
H_{U}	Lower range value
H_{o}	Upper range value
H_{v}	Distance between the measuring points (spigots)

Remote seals for pressure transmitters SITRANS P320/P420

Measuring setups without remote seals

Overview

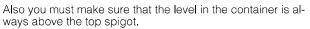
Notes

• For the separation layer measurement, the separation layer has to be positioned between the two spigots.

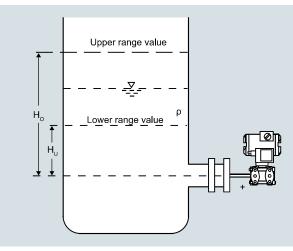
Dimensional drawings

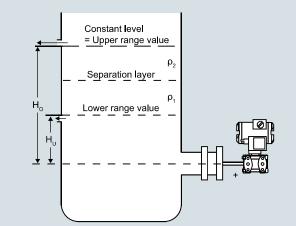
Pressure transmitters for differential pressure, for flanging

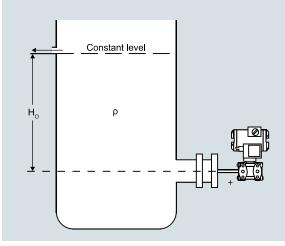
Measuring setups for open containers



• When measuring density, make sure that the level of the medium remains constant. The level should be above the top spigot







Level measurement

Lower	range	value	: р _{мА}	= t	· ·	g•	Нυ

Upper range value: $p_{ME} = \rho \cdot g \cdot H_{O}$

Legend

- p_{MA}
 Lower range value to be set

 p_{ME}
 Upper range value to be set

 ρ
 Density of medium in vessel

 g
 Local acceleration due to gravity

 H_U
 Lower range value
- H_o Upper range value

Separation layer measurement

Lower range value: $p_{MA} = g \cdot (H_{U} \cdot \rho_{1} + (H_{O} - H_{U}) \cdot \rho_{2})$

Upper range value: $p_{ME} = \rho_1 \cdot g \cdot H_o$

<u>Legend</u>

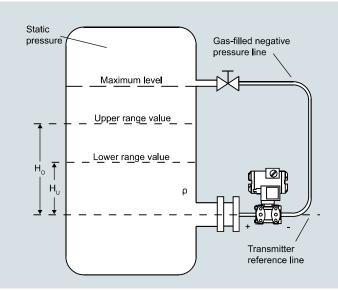
р _{ма}	Lower range value to be set
P _{ME}	Upper range value to be set
ρ	Density of heavier liquid
ρ	Density of lighter liquid
g	Local acceleration due to gravity
H_{U}	Lower range value
H_{o}	Upper range value

Density measurement

Lower range value: $p_{MA} = p_{MIN} \cdot g \cdot H_{O}$			
Upper range value: p _{ME} = ρ _{MAX} · g · H _o			
Legend			
р _{ма}	Lower range value to be set		
р _{ме}	Upper range value to be set		
ρ _{MIN}	Minimum density of medium in vessel		
ρ _{MAX}	Maximum density of medium in vessel		
g	Local acceleration due to gravity		
H _o	Upper range value in m		

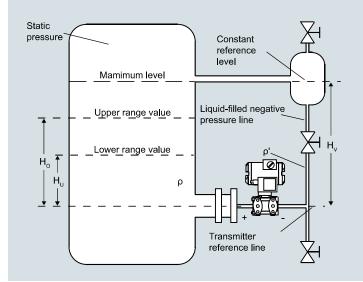
Remote seals for pressure transmitters SITRANS P320/P420

Measuring setups without remote seals



Measuring setups for closed containers

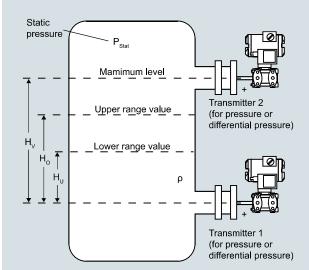
Level measu	urement, Version 1	
Lower range value: $\Delta p_{MA} = \rho \cdot g \cdot H_{U}$		
Upper range value: ∆pME = ρ ⋅ g ⋅ H _o		
Legend		
Δp_{MA}	Lower range value to be set	
Δp_{ME}	Upper range value to be set	
ρ	Density of medium in vessel	
g	Local acceleration due to gravity	
Η _υ	Lower range value	
H _o	Upper range value	

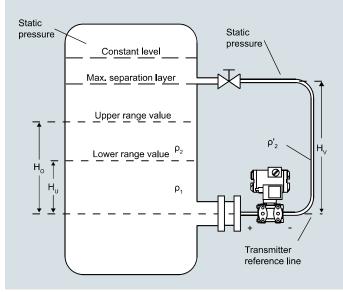


Level measurement, Version 2

Lower range value: $\Delta p_{MA} = g \cdot (H_{U} \cdot \rho - H_{V} \cdot \rho')$			
Upper range value: $\Delta p_{ME} = g \cdot (H_{O} \cdot \rho - H_{V} \cdot \rho')$			
<u>Legend</u>			
Δp_{MA}	Lower range value to be set		
Δp_{ME}	Upper range value to be set		
ρ	Density of medium in vessel		
ρ'	Density of liquid in the negative pressure line (corresponding to the temperature existing there)		
g	Local acceleration due to gravity		
Η _υ	Lower range value		
H _o	Upper range value		
H _v	Distance between the measuring points (spigots)		

Remote seals for pressure transmitters SITRANS P320/P420





Level measurement, Version 3

Lower range value:	$\Delta p_{MA} = \underbrace{P_{Stat} + \rho \cdot g \cdot H_{U}}_{Transmitter 1} - \underbrace{P_{Stat}}_{Transmitter 2}$
Upper range value:	$\Delta p_{ME} = \underbrace{P_{Stat} + \rho \cdot g \cdot H_{O}}_{Transmitter 1} - \underbrace{P_{Stat}}_{Transmitter 2}$
Legend	
Δp _{MA} Lowe	er range value to be set
Δp _{ME} Upp	er range value to be set
ρ Den:	sity of medium in vessel
g Loca	l acceleration due to gravity
H _u Low	er range value
H _o Upp	er range value
H _v Dista	ance between the measuring points (spigots)

The pressure measuring range (\triangleq level) will be calculated by subtraction of measuring range of transmitter 1 minus measuring range of transmitter 2 in the process control system.

Separation layer measurement

 $\text{Lower range value: } \Delta \boldsymbol{\rho}_{\text{MA}} = \boldsymbol{g} \boldsymbol{\cdot} (\boldsymbol{H}_{\text{U}} \boldsymbol{\cdot} \boldsymbol{\rho}_{\text{1}} + (\boldsymbol{H}_{\text{O}} \boldsymbol{\cdot} \boldsymbol{H}_{\text{U}}) \boldsymbol{\cdot} \boldsymbol{\rho}_{\text{2}} \boldsymbol{\cdot} \boldsymbol{H}_{\text{V}} \boldsymbol{\cdot} \boldsymbol{\rho}_{\text{2}}')$

Upper range value: $\Delta p_{_{ME}} = g \cdot (H_{_{O}} \cdot \rho_{_{1}} - H_{_{V}} \cdot \rho'_{_{2}})$

<u>Legend</u>

Legena	
Δp_{MA}	Lower range value to be set
Δp_{ME}	Upper range value to be set
ρ	Density of heavier liquid with separation layer in vessel
ρ2	Density of lighter liquid with separation layer
ρ' ₂	Density of liquid in the negative pressure line (corresponding to the temperature existing there)
g	Local acceleration due to gravity
Η _υ	Lower range value
H _o	Upper range value
H_{v}	Distance between the measuring points (spigots)

Siemens Ltd. Digital Industries Process Automation R&D Technology Centre Thane Belapur Road Kalwa, Thane – 400 601

For more information call us on 1800 209 1800

For new enquiries, life cycle support for products, systems and solutions, call us at 1800 208 3000 or email us at pisupport.in@siemens.com

Product upgradation is a continuous process. Hence, data in this leaflet is subject to change without prior notice. For the latest information, please get in touch with our Sales Offices.

www.siemens.co.in