Data Sheet DS/S364-EN Rev. E

Models S364 Remote Seals

Measurement made easy

Engineered solutions for all applications

Wide range of remote seal types
- allow optimum design for each application without compromise of performance

Large selection of options, materials and fill fluids
- meet nearly all process requirements

All welded constructions
- combine an economically feasible and technically sound solution ensuring total reliability at line pressure down to full vacuum

Special designed remote seals for individual process solutions
- add flexibility for most demanding services

Power and productivity
for a better world™

Remote Seals Overview

The S364x seals are used in combination with model 364 transmitters, allowing differential, gauge or absolute pressure measurements.
Connection of the seal(s) to the relevant transmitter can be achieved as follows :

- directly mounted with a short capillary connecting the "integral" seal to the transmitter sensor;
- through a capillary system which link the transmitter sensor to a "remote" seal of any version.

Using remote seal the transmitter can be selected with

- two seals using same fill fluid, capillary and diaphragm size
- one seal having the other side configured with a process flange for wet/dry leg connection or a blind flange providing vacuum or atmospheric reference
- one seal only with a selectable reference to atmosphere or vacuum respectively for gauge or absolute pressure measurements.

The S364x Series Seal System is a protective device used to isolate model 364 transmitters from the process fluid.
The seal system provides a flexible diaphragm seal between the process fluid and a liquid filled capillary tube connected to the body of the transmitter. The diaphragm isolates the process fluid while the filled capillary tube hydraulically transmits the process pressure to the transmitter sensor. The capillary of remote seal is corrosion-resistant with robust costruction in stainless steel with spiral armour protection, also PVC jacket; PVC protection is always recommended except for high temperature application, where stainless steel armour is suggested.
The all welded construction assures reliable operation over the widest range of operating temperature and under vacuum conditions.
For certain applications, use of seal is necessary to prevent the process fluid from leaving its enclosure, due to reasons such as :

- the process fluid has solids in suspension or is highly viscous and can foul impulse lines.
- the process fluid can solidify in impulse lines or the transmitter.
- the process fluid is too hazardous to enter the control area where the transmitter is located.
- the process temperature exceeds the recommended limits for the transmitter.
- the application is interface level or density measurement. Remote seals offer the required constant and equal specific gravity of the pressure transfer fluid on the high and low sides of the transmitter.
- the transmitter must be located away from the process for easier maintenance.

The S364x series is available with process connections for ASME or EN pipe flanges, wedge flow elements, chemical tees, and threaded pipe fittings. Extended diaphragm remote seals, suitable for connection to 2in - 3in or 4in flanged tank nozzles or flanged tees, permit the seal diaphragm to be located flush with the inside of a tank or pipe. Sanitary type seals meet the stringent requirements of sanitary food, dairy, pharmaceutical and Bio Tech applications, offering FDA approved fillings and compliance with 3-A Sanitary Standards.
Fill fluids with FDA are defined as food fills and are Generally Recognized As Safe (GRAS) by the US Food and Drug Administration (FDA).

Seal system selection criteria

Application of an S364x system in direct mount or remote seal configuration to model 364 transmitters affects performances of original devices. Effects are evident in:

- Accuracy
- Temperature effects
- Dynamic response

• Accuracy

Accuracy is only marginally affected when seal diaphragm stiffness is relevant compared with sensor stiffness. This is the only characteristic of the S364x system which has role on accuracy performance. High stiffness of diaphragm associated with low URL might produce increased errors of linearity, hysteresis, and long term stability; when diaphragm stiffness is accuracy related also temperature effects are significantly affected. Some basic considerations on diaphragm stiffness help understanding effects introduced by S364x system associated with transmitters. This is physically defined by the ratio between the pressure variation applied to the diaphragm and the corresponding volume variation. The stiffness is not linear along the whole diaphragm volumetric displacement, but the S364x design is such to maintain the system linear within the service conditions of the transmitter such as:

- Operating pressure range
- Operating static pressure (for differential transmitters)
- Ambient & process temperature limits

Diaphragm stiffness is a function of material & thickness (elastic coefficient), diameter (type), convolution shape and geometry (design defined)

• Temperature effects

S364x system has effect on temperature performance of the complete transmitter. This effect is mostly on zero of the instrument and is produced by the expansion of the fill fluid into the closed volume formed by the transmitter flange cavity the capillary volume and the remote seal volume. This volume filled with a fluid with specific expansion coefficient; change in temperature of the measuring device produce a volume variation which is absorbed by the remote diaphragm, whose stiffness produces a change in the fluid pressure: this is the zero error. In real application the transmitter/seal system is not the same and stable temperature. Therefore the errors referred in this document for each type of diaphragm and different fluids should be taken as a reference for qualitatively evaluation and not a true behaviour in normal application conditions. Should again be recognized that the stiffness of diaphragm and in this case, the thermal coefficient of fluid are the parameter to take into account.

• Time response

Application of S364x seal to transmitters increases the original time response. The amount of the increase depends from the number of elements and condition of the instrument as follows :

- transmitter sensor range
- physical configuration (i.e. a remote seal on other side)
- type of measure/number of seal (one or two)
- fill fluid viscosity of the S364x system applied
- ambient temperature (affects the transmitter and the capillary) and process temperature on the seal diaphragm
- capillary length

The delay introduced by the seal may be considered as an added constant time to the one of the associated transmitter
For obtaining the best application solution :

- choose sensor code with URL closest to application SPAN
- select largest diameter diaphragm seal related to URL.
- keep the capillary length as short as possible
- select the fill fluid that suits the most extreme process conditions expected (highest temperature and lowest pressure) and it is compatible with the process fluid.
- In vacuum application, choose always the all welded version and mount the transmitter primary 30 cm/12 inches or more below the bottom seal connection.
- In a two-seal system use the same diaphragm size, capillary length and fill fluid on each side of the transmitter.

Ordering Information

The transmitter and each seal system are each identified by a product code number. These code numbers are stamped on the transmitter nameplate and each character identifies specific product features. Refer to ordering information for a detailed explanation of the product code numbers.
A typical example of the product code stamping is as follows :

Transmitter Product Code 364DRGSH203H–ENL1
Seal System Product Code S364WHBCDFSBES1NNN

Industrial application in chemical, sanitary, food and any other process industries may require seal configurations and/or process connection different from those reported in this document. Each “special” should be evaluated by ABB to check the correctness and its level of functionality. Ask for the “S364x series seal form” to define precisely the measuring problem and application requirements.

The following table shows the types of standard seals considered in this leaflet.
The mnemonics will be used as shortest cross references with the transmitter data sheet which should be read in conjunction with this data sheet.

Model	Seal type	Size	Mnemonic
S364W	Wafer Wafer (food)	1 ½in / DN40 2in / DN50 3in / DN80	P1.5 P2 P3
S364C	Chemical tee flanged	3in	P3
S364A S364E S364G S364R	Flanged flush diaphragm (also Ring Joint and JIS standard)	1-½in (ASME RJ only) 2in / DN50 / A50 3-4in / DN80-100 / A80-100	P1.5 P2 P3
	Flanged extended diaphragm	2in / DN50 3in / DN80 4in / DN100	E2 E3 P3
S364U	Union	1 ½in	Z1.5
S364T	Threaded off-line	2 ½in	T2.5
S364M	Flanged off-line	2 ½in	T2.5
S364S	Union nut Triclamp Cherry Burrel Sanitary, Aseptic	2in / F50 3in / F80 4in	S2 S3 S3

ABB can also cooperate with you by developing a special remote seal for problems requiring individual solutions.

PLEASE CONTACT YOUR LOCAL ABB OFFICE OR REPRESENTATIVE FOR ADDITIONAL INFORMATION, SPECIFIC SEAL DATA AND APPLICABILITY.

FILL FLUID CHARACTERISTICS (Table A)

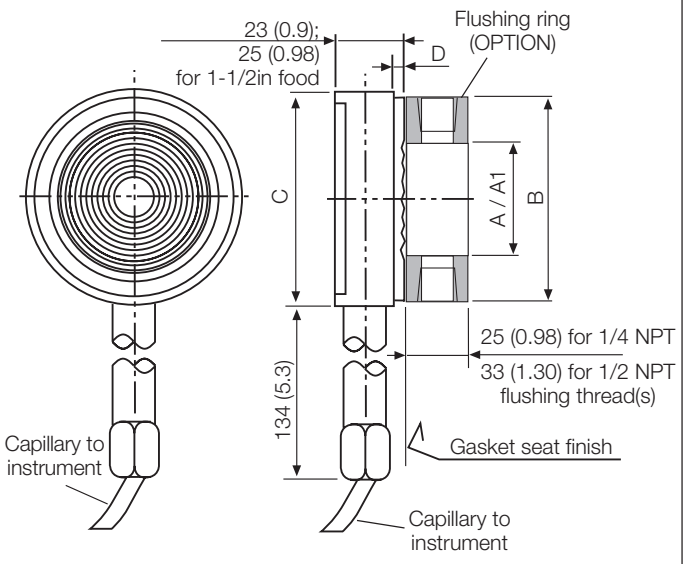
FILL FLUIDS (APPLICATION)	OPERATING CONDITIONS				SPECIFICATION AT 25° C (77° F)		
	Tmax @ Pabs>of	Pmin mbar abs (psia)	Tmax @ P min	Tmin	Specific gravity	Kinematic viscosity (cSt)	Thermal expansion (x 10^{-3} / ° C)
Silicone oil-DC200™ (General purpose)	200 (390) @ 35mbar	0.7 (0.01)	160 (320)	–40 (–40)	0.934	10	1.08
Silicone oil (High temperature)	375 (707) @ 1bar	0.7 (0.01)	220 (428)	–10 (+14)	1.07	39	0.77
Silicone Polymer–Syltherm XLT™ (Low temperature)	100 (212) @ 110mbar	2 (0.03)	20 (68)	–100 (–148)	0.852	1.4	1
Vegetable oil-Neobee M-20™ (Food-Sanitary) FDA	200 (390) @ 1bar	130 (1.9)	150 (300)	–18 (0)	0.92	9.8	1.2
Glycerin Water (70%) (Food-Sanitary) FDA	93 (200) @ 1bar	1000 (14.5)	93 (200)	–7 (+20)	1.08	2.2	0.36
Mineral oil-MARCOL 82™ (Food-Sanitary) FDA	200 (390) @ 200mbar	33 (0.5)	40 (104)	–40 (–40)	0.84	26	1.04
Inert – Galden™ (Oxygen Service)	160 (320) @ 1bar	2 (0.03)	70 (158)	–20 (–4)	1.82	4.4	1.1
Inert – Halocarbon™ 4.2 (Oxygen Service)	180 (356) @ 400mbar	4 (0.06)	70 (158)	–20 (–4)	1.87	6.3	0.864

Absolute viscosity (cP) = Kinematic Viscosity (cSt) x Specific gravity at specified temperature.
The absolute viscosity value is used for response time calculation.

SEALS DIMENSIONS ON FOLLOWING PAGES ARE IN mm (in)

S364W Model Wafer Remote Seal

The wafer remote seal is designed to be clamped between two ASME or EN raised face flanges. The diaphragm side of the seal faces the process flange and a blind back-up flange is used on the other side of the seal.
The wafer variant is also available as food design for 1½in and 3in sizes.



Size	DIMENSIONS mm (in)				
	A (dia) diaph.	**A1 Flushing ring int. dia.**	**B (dia)**	**C**	**D**
1 ½in	50 (1.97)	52 (2.05)	73 (2.87)	76.8 (3.02)	1.6 (0.06)
2in	60 (2.36)	62 (2.44)	92 (3.62)	95.8 (3.77)	
3in	89 (3.5)	92 (3.62)	127 (5)	130.8 (5.15)	
DN 40	50 (1.97)	52 (2.05)	88 (3.46)	92 (3.62)	3 (0.12)
DN 50	60 (2.36)	62 (2.44)	102 (4.02)	106 (4.17)	
DN 80	89 (3.5)	92 (3.62)	138 (5.43)	142 (5.59)	
1 ½in (food)	50 (1.97)	52 (2.05)	73 (2.87)	76.8 (3.02)	N.A.
3in (food)	89 (3.5)	92 (3.62)	127 (5)	130.8 (5.15)	3.7 (0.15)

Maximum Working Pressure

WAFER SEAL ELEMENT : 16 MPa, 160 bar, 2320 psi but not greater than the backup flange rating (not supplied).

Vacuum Service

Full vacuum subject to fill fluid limits. Refer to table A.

Minimum pressure with tantalum diaphragm is 1kPa abs, 10mbar abs, 0.15psia.

Process Temperature Limits

Same as fill fluid limits. Refer to table A.

260°C (500°F) for Tantalum diaphragm.

204°C (400°F) for use with PFA anti-stick coating.

320°C (608°F) for AISI gold plated diaphragm.

Limits for gaskets of flushing rings

Material	Pressure (max.)	Temperature (max.)	(min.)	PxT limit
Garlock	6.9MPa, 69bar, 1000psi	204° C (400° F)	–73° C (–100° F)	250000 (° F x psi)
Graphite	2.5MPa, 25bar, 362psi	380° C (716° F)	–100° C (–148° F)	
PTFE	6MPa, 60bar, 870psi	250° C (482° F)	–100° C (–148° F)	

Gasket seat finish

Smooth (ASME or EN): 0.8μm (Ra)

Serrated (ASME): 3.2 to 6.3μm (Ra)

Serrated (EN 1092-1 Type B1; up to PN40): 3.2 to 12.5 μm (Ra)

Serrated (EN 1092-1 Type B2; PN63 - 100): 0.8 to 3.2 μm (Ra)

Temperature effect

The following table shows the temperature effect for 20K (36°F) change, detailed separately for

a) the seal (one element)

b) the capillary per meter

c) the system (transmitter sensor when combined with a seal of specific size/type)

referred to silicone oil (DC 200) filling and AISI 316 L ss diaphragm materials.

For filling different from silicone oil (DC200) the errors can be multiplied by ratio between the thermal expansion coefficients of the selected filling divided by the one of DC200, listed in the fill fluid characteristics table.

THE ERRORS IN TABLE CAN BE CONSIDERED DIVIDED BY 4 FOR TRANSMITTERS USING SAME REMOTE SEAL ON THE TWO SIDES

Wafer Seal Size	Seal error	1m Capillary Error	System (Sensor) Error
1 ½in / DN 40	0.87kPa, 8.7mbar, 3.5inH_2O	0.3kPa, 3mbar, 1.2inH_2O	0.9kPa, 9mbar, 3.6inH_2O
2in / DN 50	0.29kPa, 2.9mbar, 1.16inH_2O	0.07kPa, 0.7mbar, 0.28inH_2O	0.2kPa, 2mbar, 0.8inH_2O
3in / DN 80	0.09kPa, 0.9mbar, 0.36inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O

BASIC ORDERING INFORMATION model S364W Wafer Remote Seal

Select one character or set of characters from each category and specify complete catalog number.

BASE MODEL – 1st to 5th characters			**S 3 6 4 W X X X X F X X X X X Cont'd**
Wafer Remote Seal			
Transmitter side of connection – 6th character			
High side			H
Low side			L
Centering system – 7th character			
Seat on back diameter (suitable for ASME backup flange)			B
Size – 8th character			
1 1/2in ASME			A
2in ASME			B
3in ASME			C
1 1/2in ASME food design			1
3in ASME food design			2
EN DN40			D
EN DN50			E
EN DN80			F
Seat finish – 9th character			
Serrated finish (suitable for ASME)	(Notes 1, 2)		D
Smooth finish (suitable for ASME)	(Note 1)		E
Serrated finish to EN 1092-1 Type B1; up to PN40	(Notes 2, 3)		R
Serrated finish to EN 1092-1 Type B2; PN63 to PN100	(Notes 2, 3)		S
Smooth finish (suitable for EN)	(Notes 2, 3)		T
Use code – 10th character			F
Diaphragm material – 11th character			
AISI 316 L ss		NACE	S
Hastelloy C276™	(Notes 2, 4)	NACE	H
Hastelloy C2000™	(Notes 2, 4)	NACE	M
Inconel 625	(Notes 2, 4)	NACE	L
Tantalum	(Notes 2, 4)		T
AISI 316 L ss gold plated	(Notes 2, 4)	NACE	N
AISI 316 L ss with anti–stick coating	(Notes 2, 4)	NACE	K
Hastelloy C276™ with anti–stick coating	(Notes 2, 4)	NACE	Y
AISI 316 L ss with anti-corrosion and anti-stick coating	(Notes 2, 4)	NACE	W
Diaflex (AISI with Anti Abrasion treatment)	(Note 2)	NACE	F
Superduplex ss (UNS S32750 to ASTM SA479)	(Note 2)	NACE	E
Capillary protection – 12th character			
AISI 316 L ss armour	(RECOMMENDED FOR HIGH TEMPERATURE)		A
AISI 316 L ss armour with PVC protective cover			B
Capillary length m (feet) – 13th character			
1 (3)			A
1.5 (5)			B
2 (7)			C
2.5 (8)			D
3 (10)			E
3.5 (12)			F
4 (13)			G
4.5 (15)			H
5 (17)			J
5.5 (18)			K
6 (20)			L
6.5 (22)			M
7 (23)			N
7.5 (25)			P
8 (27)			Q
9 (30)			R
10 (33)			S
12 (40)			T
14 (47)			U
16 (53)			V
Fill fluid – 14th character			
Silicone oil			S
Inert fluid - Galden	(Notes 2, 5)		N
Inert fluid - Halocarbon	(Notes 2, 5)		D
Sllicone oil for high temperature	(Note 2)		G
Silicone polymer for low temperature	(Note 2)		C
Mineral oil (FDA approved)	(Note 6)		W
Vegetable oil (FDA approved)	(Note 6)		A
Glycerin-water (FDA approved)	(Note 6)		B
Certification – 15th character			
None			1

BASIC ORDERING INFORMATION S364W			**X**	**X**	**X**
Flushing ring: hole and thread – 16th character					
None			N		
1 hole - 1/2in NPT			2		
2 holes - 1/2in NPT			3		
1 hole - 1/4in NPT			4		
2 holes - 1/4in NPT			5		
Flushing ring material – 17th character					
None	(Note 7)			N	
AISI 316 L ss	(Note 8)	NACE		A	
Hastelloy C276	(Notes 4, 8)	NACE		H	
Flushing ring: plug and gasket – 18th character					
No plug - no gasket					N
No plug - garlock	(Note 8)				A
No plug - PTFE	(Note 8)				B
No plug - graphite	(Note 8)				C
AISI 316 L ss - no gasket	(Notes 8, 9)				D
AISI 316 L ss - garlock	(Notes 8, 9)				E
AISI 316 L ss - PTFE	(Notes 8, 9)				F
AISI 316 L ss - graphite	(Notes 8, 9)				G
Hastelloy C276 - no gasket	(Notes 8, 10)				H
Hastelloy C276 - garlock	(Notes 8, 10)				L
Hastelloy C276 - PTFE	(Notes 8, 10)				M
Hastelloy C276 - graphite	(Notes 8, 10)				P

Note 1: Not available with EN size code D, E, F

Note 2: Not available with food design size code 1, 2

Note 3: Not available with ASME size code A, B, C

Note 4: Not available with serrated seat finish code D, R, S

Note 5: Suitable for oxygen service

Note 6: Suitable for food application

Note 7: Not available with flushing ring - hole and thread code 2, 3, 4, 5

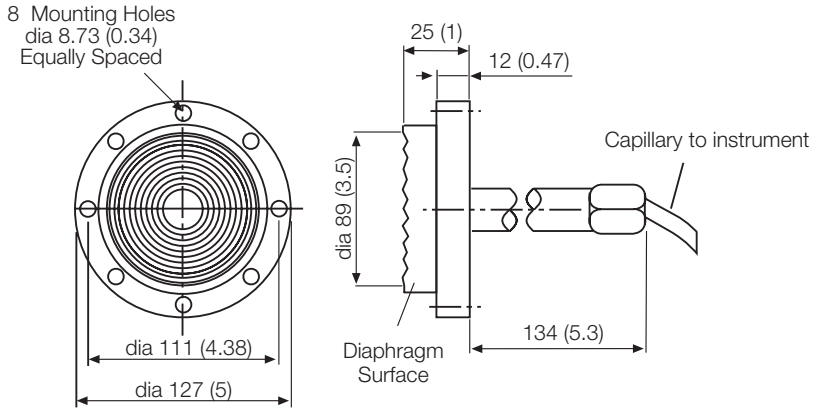
Note 8: Not available with flushing ring - hole and thread code N

Note 9: Not available with Hastelloy C276 flushing ring material code H

Note 10: Not available with AISI 316L flushing ring material code A

S364C Model Chemical Tee Remote Seal

The chemical tee remote seal is designed to connect to a Wedge Flow Element or to any process fitting with appropriate mating condition. Chemical tee elements cannot be connected to a standard ASME or EN pipe flange.



Maximum Working Pressure

2 MPa, 20 bar, 300 psi

Vacuum Service

Full vacuum subject to fill fluid limits.

Refer to table A.

Process Temperature Limits

Same as fill fluid limits. Refer to table A.

204°C (400°F) for use with PFA anti-stick coating.

–100°C (–148°F) to 260°C (500°F) with PTFE gasket

–100°C (–148°F) to 340°C (645°F) with graphite gasket

Temperature effect

The following table shows the temperature effect for 20K (36°F) change, detailed separately for

a) the seal (one element)

b) the capillary per meter

c) the system (transmitter sensor when combined with a seal of specific size/type)

referred to silicone oil (DC 200) filling and AISI 316 L ss diaphragm materials.

For filling different from silicone oil (DC200) the errors can be multiplied by ratio between the thermal expansion coefficients of the selected filling divided by the one of DC200, listed in the fill fluid characteristics table.

THE ERRORS IN TABLE CAN BE CONSIDERED DIVIDED BY 4 FOR TRANSMITTERS USING SAME REMOTE SEAL ON THE TWO SIDES

Chemical Tee Seal Size	Seal error	1m Capillary Error	System (Sensor) Error
3in	0.09kPa, 0.9mbar, 0.36inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O

BASIC ORDERING INFORMATION model S364C Chemical Tee Remote Seal

Select one character or set of characters from each category and specify complete catalog number.

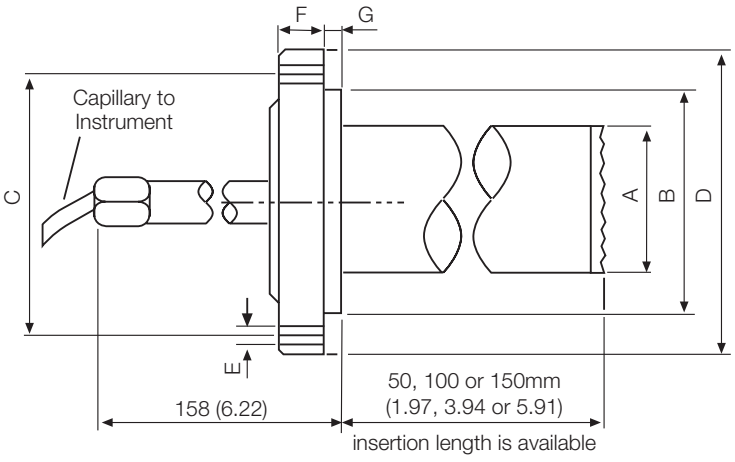
BASE MODEL – 1st to 5th characters		**S**	**3**	**6**	**4**	**C**	**X**	**X**	**X**	**P**	**X**	**X**	**X**	**X**	**X**
Chemical Tee Remote Seal																			
Transmitter side of connection – 6th character																			
High side							H												
Low side							L												
Mounting flange – 7th character																			
Integral with seal								P											
Size – 8th character																			
3in (proprietary standard; 20bar rating)									G										
Use code – 9th character										P									
Diaphragm material – 10th character																			
AISI 316 L ss							NACE				S								
Hastelloy C276™							NACE				H								
AISI 316 L ss with anti–stick coating							NACE				K								
Hastelloy C276™ with anti–stick coating							NACE				Y								
Diaflex (AISI with anti-abrasion treatment)							NACE				F								
AISI 316 L ss with anti-corrosion and anti-stick coating							NACE				W								
Capillary protection – 11th character																			
AISI 316 L ss armour	(RECOMMENDED FOR HIGH TEMPERATURE)											A							
AISI 316 L ss armour with PVC protective cover												B							
Capillary length m (feet) – 12th character																			
1 (3)													A						
1.5 (5)													B						
2 (7)													C						
2.5 (8)													D						
3 (10)													E						
3.5 (12)													F						
4 (13)													G						
4.5 (15)													H						
5 (17)													J						
5.5 (18)													K						
6 (20)													L						
6.5 (22)													M						
7 (23)													N						
7.5 (25)													P						
8 (27)													Q						
9 (30)													R						
10 (33)													S						
Fill fluid – 13th character																			
Silicone oil														S					
Inert fluid - Galden	(Note 1)													N					
Inert fluid - Halocarbon	(Note 1)													D					
Sllicone oil for high temperature														G					
Silicone polymer for low temperature														C					
Mineral oil (FDA approved)	(Note 2)													W					
Vegetable oil (FDA approved)	(Note 2)													A					
Glycerin-water (FDA approved)	(Note 2)													B					
Gasket – 14th character																			
None															1				
PTFE with Silica filler															6				
Graphite															7				

Note 1: Suitable for oxygen service

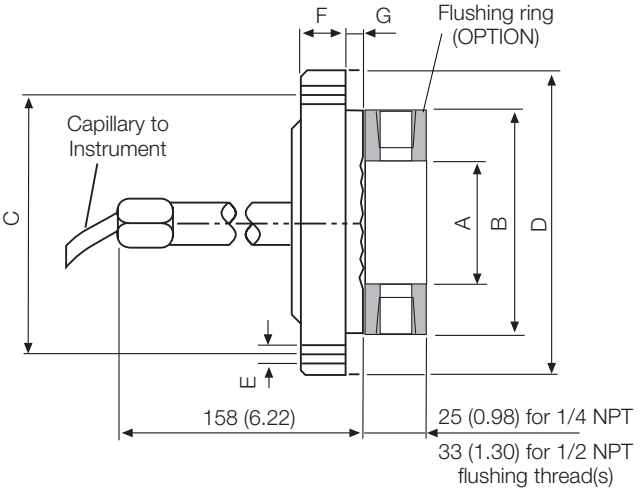
Note 2: Suitable for food application

S364A - S364E Models Flanged Extended and Flush Diaphragm Remote Seal

The extended and flush diaphragm remote seal is designed to connect to flanged pipe fitting, according to ASME (mod. S364A) or EN (mod. S364E) standards. For liquid level measurement installations the seal connects to an ASME or EN flanged tank nozzle (Schedule 40). The sealing is provided by a selectable smooth or serrated gasket seat surface finish.



Flanged Extended Diaphragm Seal



Flanged Flush Diaphragm Seal

Size/Rating	Dimensions mm (in)								N° of holes
	A (dia) extended diaphragm	A (dia) flush diaphragm	A (dia) flushing ring internal dia	B (dia)	C (dia)	D (dia)	E (dia)	F	G	
2in ASME CL 150	48 (1.9)	60 (2.36)	62 (2.44)	92 (3.62)	120.65 (4.75)	152.4 (6)	20 (0.79)	19.05 (0.75)	9.5 (0.37)	4
2in ASME CL 300	48 (1.9)	60 (2.36)	62 (2.44)	92 (3.62)	127 (5)	165.1 (6.5)	20 (0.79)	22.35 (0.88)	9.5 (0.37)	8
2in ASME CL 600	NA	60 (2.36)	62 (2.44)	92 (3.62)	127 (5)	165.1 (6.5)	20 (0.79)	25.4 (1)	9.5 (0.37)	8
2in ASME CL 900	NA	60 (2.36)	62 (2.44)	92 (3.62)	165 (6.5)	215.9 (8.5)	26 (1.02)	38.1 (1.5)	9.5 (0.37)	8
2in ASME CL 1500	NA	60 (2.36)	62 (2.44)	92 (3.62)	165 (6.5)	215.9 (8.5)	26 (1.02)	38.1 (1.5)	9.5 (0.37)	8
3in ASME CL 150	72 (2.83)	89 (3.5)	92 (3.62)	127 (5)	152.4 (6)	190.5 (7.5)	20 (0.79)	23.87 (0.94)	9.5 (0.37)	4
3in ASME CL 300	72 (2.83)	89 (3.5)	92 (3.62)	127 (5)	168.15 (6.62)	209.55 (8.25)	22 (0.86)	28.44 (1.12)	9.5 (0.37)	8
3in ASME CL 600	NA	89 (3.5)	92 (3.62)	127 (5)	168.15 (6.62)	209.55 (8.25)	22 (0.86)	31.75 (1.25)	9.5 (0.37)	8
3in ASME CL 900	NA	89 (3.5)	92 (3.62)	127 (5)	190.5 (7.5)	241 (9.48)	26 (1.02)	38.1 (1.50)	9.5 (0.37)	8
3in ASME CL1500	NA	89 (3.5)	92 (3.62)	127 (5)	203.2 (8)	266.7 (10.5)	31.75 (1.25)	47.8 (1.88)	9.5 (0.37)	8
4in ASME CL 150	94 (3.7)	89 (3.5)	92 (3.62)	157.2 (6.2)	190.5 (7.5)	228.6 (9)	20 (0.79)	24 (0.94)	9.5 (0.37)	8
4in ASME CL 300	94 (3.7)	89 (3.5)	92 (3.62)	157.2 (6.2)	200.2 (7.88)	254 (10)	22 (0.86)	32 (1.26)	9.5 (0.37)	8

Size/Rating	Dimensions mm (in)								N° of holes
	A (dia) extended diaphragm	A (dia) flush diaphragm	A (dia) flushing ring internal dia	B (dia)	C (dia)	D (dia)	E (dia)	F	G	
DN50 EN PN16	48 (1.9)	60 (2.36)	62 (2.44)	102 (4.02)	125 (4.92)	165 (6.5)	18 (0.71)	20 (0.79)	9.5 (0.37)	4
DN50 EN PN40	48 (1.9)	60 (2.36)	62 (2.44)	102 (4.02)	125 (4.92)	165 (6.5)	18 (0.71)	20 (0.79)	9.5 (0.37)	4
DN50 EN PN63	NA	60 (2.36)	62 (2.44)	102 (4.02)	135 (5.31)	180 (7.08)	22 (0.86)	26 (1.02)	9.5 (0.37)	4
DN50 EN PN100	NA	60 (2.36)	62 (2.44)	102 (4.02)	145 (5.71)	195 (7.67)	26 (1.02)	28 (1.1)	9.5 (0.37)	4
DN80 EN PN16	72 (2.83)	89 (3.5)	92 (3.62)	138 (5.43)	160 (6.3)	200 (7.87)	18 (0.71)	20 (0.79)	9.5 (0.37)	8
DN80 EN PN40	72 (2.83)	89 (3.5)	92 (3.62)	138 (5.43)	160 (6.3)	200 (7.87)	18 (0.71)	24 (0.94)	9.5 (0.37)	8
DN80 EN PN63	NA	89 (3.5)	92 (3.62)	138 (5.43)	170 (6.7)	215 (8.46)	22 (0.86)	28 (1.1)	9.5 (0.37)	8
DN80 EN PN100	NA	89 (3.5)	92 (3.62)	138 (5.43)	180 (7.08)	230 (9.05)	26 (1.02)	32 (1.26)	9.5 (0.37)	8
DN100 EN PN16	94 (3.7)	89 (3.5)	92 (3.62)	158 (6.22)	180 (7.08)	220 (8.66)	18 (0.71)	20 (0.79)	9.5 (0.37)	8
DN100 EN PN40	94 (3.7)	89 (3.5)	92 (3.62)	162 (6.38)	190 (7.48)	235 (9.25)	22 (0.86)	24 (0.94)	9.5 (0.37)	8

Maximum Working Pressure

Rating/Class to EN 1092-1	Carbon Steel @ 120° C	AISI 316 Stainless Steel @ 20° C
PN16	16bar	16bar
PN40	40bar	40bar
PN63	63bar	63bar
PN100	100bar	100bar

The pressure limit decreases with increasing temperature above 120°C for carbon steel or 20°C for AISI 316 stainless steel, according to EN 1092-1 standards.

Rating/Class to ASME B16.5	Carbon Steel @100° F (38° C)	AISI 316 Stainless Steel @ 100° F (38° C)
Class 150	285psi	275psi
Class 300	740psi	720psi
Class 600	1480psi	1440psi
Class 900	2220psi	2160psi
Class 1500	3705psi	3600psi

The pressure limit decreases with increasing temperature above 100°F (38°C), according to ASME B16.5 standards.

Vacuum Service

Full vacuum subject to fill fluid limits. Refer to table A.

Minimum pressure with tantalum diaphragm is 1kPa abs, 10mbar abs, 0.15psia.

Process Temperature Limits

Same as fill fluid limits. Refer to table A.

260°C (500°F) for Tantalum diaphragm.

204°C (400°F) for use with PFA anti-stick coating.

320°C (608°F) for AISI gold plated diaphragm.

Limits for gaskets of flushing rings

Material	Pressure (max.)	Temperature (max.)	Temperature (min.)	PxT limit
Garlock	6.9MPa, 69bar, 1000psi	204° C (400° F)	–73° C (–100° F)	250000 (° F x psi)
Graphite	2.5MPa, 25bar, 362psi	380° C (716° F)	–100° C (–148° F)	
PTFE	6MPa, 60bar, 870psi	250° C (482° F)	–100° C (–148° F)	

Gasket seat finish

Smooth (ASME or EN): 0.8μm (Ra)

Serrated (ASME): 3.2 to 6.3μm (Ra)

Serrated (EN 1092-1 Type B1; up to PN40): 3.2 to 12.5 μm (Ra)

Serrated (EN 1092-1 Type B2; PN63 - 100): 0.8 to 3.2 μm (Ra)

Temperature effect

The following table shows the temperature effect for 20K (36°F) change, detailed separately for

a) the seal (one element)

b) the capillary per meter

c) the system (transmitter sensor when combined with a seal of specific size/type)

referred to silicone oil (DC 200) filling and AISI 316 L ss diaphragm materials.

For filling different from silicone oil (DC200) the errors can be multiplied by ratio between the thermal expansion coefficients of the selected filling divided by the one of DC200, listed in the fill fluid characteristics table.

THE ERRORS IN TABLE CAN BE CONSIDERED DIVIDED BY 4 FOR TRANSMITTERS USING SAME REMOTE SEAL ON THE TWO SIDES

Flanged Extended Diaphragm Remote Seal

Flanged Extended Diaphragm Seal Size	Seal error	1m Capillary Error	System (Sensor) Error
2in / DN 50	0.3kPa, 3mbar, 1.2inH_2O	0.1kPa, 1mbar, 0.4inH_2O	0.3kPa, 3mbar, 1.2nH_2O
3in / DN 80	0.15kPa, 1.5mbar, 0.6inH_2O	0.08kPa, 0.8mbar, 0.32inH_2O	0.07kPa, 0.7mbar, 0.28inH_2O
4in / DN 100	0.09kPa, 0.9mbar, 0.36inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O

Flanged Flush Diaphragm Remote Seal

Flanged Flush Diaphragm Seal Size	Seal error	1m Capillary Error	System (Sensor) Error
2in / DN 50	0.29kPa, 2.9mbar, 1.16inH_2O	0.07kPa, 0.7mbar, 0.28inH_2O	0.2kPa, 2mbar, 0.8inH_2O
3in / DN 80	0.09kPa, 0.9mbar, 0.36inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O
4in / DN 100	0.09kPa, 0.9mbar, 0.36inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O

BASIC ORDERING INFORMATION model S364A ASME Flanged Remote Seal (flush and extended)

Select one character or set of characters from each category and specify complete catalog number.

BASE MODEL – 1st to 5th characters			**S**	**3**	**6**	**4**	**A**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**Cont'd**
Flanged Remote seal (flush and extended) to ASME B16.5																	
Transmitter side of connection – 6th character																	
High side								H									
Low side								L									
Mounting flange – 7th character																	
Rotating									R								
Size – 8th character																	
2in										C							
3in										D							
4in										E							
Rating – 9th character																	
ASME CL 150											1						
ASME CL 300											2						
ASME CL 600	(Not available with 4in size)	(Note 1)									3						
ASME CL 900	(Not available with 4in size)	(Note 1)									4						
ASME CL 1500	(Not available with 4in size)	(Note 1)									5						
Mounting flange material – 10th character																	
Carbon steel												A					
AISI 316 ss												B					
Extensions length and material – 11th character																	
Flush (see next for diaphragm material)													F				
50mm (2in)	AISI 316 L ss	(Note 2)											1				
50mm (2in)	Hastelloy 276™	(Note 2)											2				
100mm (4in)	AISI 316 L ss	(Note 2)											3				
100mm (4in)	Hastelloy 276™	(Note 2)											4				
150mm (6in)	AISI 316 L ss	(Note 2)											5				
150mm (6in)	Hastelloy 276™	(Note 2)											6				
Diaphragm material (seal) – 12th character																	
AISI 316 L ss		(Note 3)								NACE			S				
Hastelloy C276™										NACE			H				
Hastelloy C2000™- (not for extended diaphragms)		(Note 4)								NACE			M				
Inconel 625 - (not for extended diaphragms)		(Note 4)								NACE			L				
Tantalum - (not for extended diaphragms)		(Note 4)											T				
AISI 316 L ss gold plated - (not for extended diaphragms)		(Note 4)								NACE			N				
AISI 316 L ss with anti–stick coating		(Note 3)								NACE			K				
Hastelloy C276™with anti–stick coating										NACE			Y				
AISI 316 L ss with anti-corrosion and anti-stick coating		(Note 3)											W				
Diaflex (AISI with Anti Abrasion treatment)		(Note 3)											F				
Superduplex ss (UNS S32750 to ASTM SA479) - (not for extended diaphragms)		(Note 4)											E				
Seal surface finish – 13th character																	
Serrated		(Notes 3, 5)												1			
Smooth														2			
Capillary protection – 14th character																	
AISI 316 L ss armour	(RECOMMENDED FOR HIGH TEMPERATURE)														A		
AISI 316 L ss armour with PVC protective cover															B		
Capillary length m (feet) – 15th character																	
1 (3)																A	
1.5 (5)																B	
2 (7)																C	
2.5 (8)																D	
3 (10)																E	
3.5 (12)																F	
4 (13)																G	
4.5 (15)																H	
5 (17)																J	
5.5 (18)																K	
6 (20)																L	
6.5 (22)																M	
7 (23)																N	
7.5 (25)																P	
8 (27)																Q	
9 (30)																R	
10 (33)																S	
12 (40)																T	
14 (47)																U	
16 (53)																V	

BASIC ORDERING INFORMATION S364A			**X**	**X**	**X**	**X**	**X**
Fill fluid – 16th character							
Silicone oil			S				
Inert fluid - Galden	(Note 6)		N				
Inert fluid - Halocarbon	(Note 6)		D				
SIlicone oil for high temperature			G				
Silicone polymer for low temperature			C				
Mineral oil (FDA approved)	(Note 7)		W				
Vegetable oil (FDA approved)	(Note 7)		A				
Glycerin-water (FDA approved)	(Note 7)		B				
Certification – 17th character							
None				1			
Flushing ring: hole and thread – 18th character							
None (TO BE SELECTED FOR EXTENDED VERSIONS)					N		
1 hole - 1/2in NPT		(Note 4)			2		
2 holes - 1/2in NPT		(Note 4)			3		
1 hole - 1/4in NPT		(Note 4)			4		
2 holes - 1/4in NPT		(Note 4)			5		
Flushing ring material – 19th character							
None	(Note 8)					N	
AISI 316 L ss	(Note 9)	NACE				A	
Hastelloy C276	(Notes 9, 10)	NACE				H	
Flushing ring: plug and gasket – 20th character							
No plug - no gasket							N
No plug - garlock	(Note 9)						A
No plug - PTFE	(Note 9)						B
No plug - graphite	(Note 9)						C
AISI 316 L ss - no gasket	(Notes 9, 11)						D
AISI 316 L ss - garlock	(Notes 9, 11)						E
AISI 316 L ss - PTFE	(Notes 9, 11)						F
AISI 316 L ss - graphite	(Notes 9, 11)						G
Hastelloy C276 - no gasket	(Notes 9, 12)						H
Hastelloy C276 - garlock	(Notes 9, 12)						L
Hastelloy C276 - PTFE	(Notes 9, 12)						M
Hastelloy C276 - graphite	(Notes 9, 12)						P

Note 1: Not available with size code E

Note 2: Not available with mounting flange rating code 3, 4, 5

Note 3: Not available with extensions length and material code 2, 4, 6

Note 4: Not available with extensions length and material code 1, 2, 3, 4, 5, 6

Note 5: Not available with diaphragm material code M, L, T, N, K, Y, W and H when selected with extension length and material code F, 2, 4, 6

Note 6: Suitable for oxygen service

Note 7: Suitable for food application

Note 8: Not available with Flushing ring: hole and thread code 2, 3, 4, 5

Note 9: Not available with Flushing ring: hole and thread code N

Note 10: Not available with seal surface finish code 1 (serrated)

Note 11: Not available with Hastelloy C276 flushing ring material code H

Note 12: Not available with AISI 316L flushing ring material code A

BASIC ORDERING INFORMATION model S364E EN Flanged Remote Seal (flush and extended)

Select one character or set of characters from each category and specify complete catalog number.

BASE MODEL – 1st to 5th characters			**S**	**3**	**6**	**4**	**E**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**Cont'd**
Flanged Remote seal (flush and extended) to EN 1092-1																		
Transmitter side of connection – 6th character																		
High side								H										
Low side								L										
Mounting flange – 7th character																		
Rotating									R									
Size – 8th character																		
DN 50										C								
DN 80										D								
DN 100										E								
Rating – 9th character																		
PN 16											1							
PN 40											2							
PN 63	(Not for DN 100 size)	(Note 1)									3							
PN 100	(Not for DN 100 size)	(Note 1)									4							
Mounting flange material – 10th character																		
Carbon steel												A						
AISI 316 ss												B						
Extensions length and material – 11th character																		
Flush (see next for diaphragm material)													F					
50mm (2in)	AISI 316 L ss	(Note 2)											1					
50mm (2in)	Hastelloy 276™	(Note 2)											2					
100mm (4in)	AISI 316 L ss	(Note 2)											3					
100mm (4in)	Hastelloy 276™	(Note 2)											4					
150mm (6in)	AISI 316 L ss	(Note 2)											5					
150mm (6in)	Hastelloy 276™	(Note 2)											6					
Diaphragm material (seal) – 12th character																		
AISI 316 L ss		(Note 3)								NACE				S				
Hastelloy C276™										NACE				H				
Hastelloy C2000™- (not for extended diaphragm)		(Note 4)								NACE				M				
Inconel 625 - (not for extended diaphragm)		(Note 4)								NACE				L				
Tantalum - (not for extended diaphragm)		(Note 4)												T				
AISI 316 L ss gold plated - (not for extended diaphragm)		(Note 4)								NACE				N				
AISI 316 L ss with anti-stick coating		(Note 3)								NACE				K				
Hastelloy C276™with anti-stick coating										NACE				Y				
AISI 316 L ss with anti-corrosion and anti-stick coating		(Note 3)												W				
Diaflex (AISI with Anti Abrasion treatment)		(Note 3)												F				
Superduplex ss (UNS S32750 to ASTM SA479) - (not for extended diaphragm)		(Note 4)												E				
Seal surface finish – 13th character																		
Serrated		(Notes 3, 5)													1			
Smooth															2			
Capillary protection – 14th character																		
AISI 316 L ss armour	(RECOMMENDED FOR HIGH TEMPERATURE)															A		
AISI 316 L ss armour with PVC protective cover																B		
Capillary length m (feet) – 15th character																		
1 (3)																	A	
1.5 (5)																	B	
2 (7)																	C	
2.5 (8)																	D	
3 (10)																	E	
3.5 (12)																	F	
4 (13)																	G	
4.5 (15)																	H	
5 (17)																	J	
5.5 (18)																	K	
6 (20)																	L	
6.5 (22)																	M	
7 (23)																	N	
7.5 (25)																	P	
8 (27)																	Q	
9 (30)																	R	
10 (33)																	S	
12 (40)																	T	
14 (47)																	U	
16 (53)																	V	

BASIC ORDERING INFORMATION S364E			**X**	**X**	**X**	**X**	**X**
Fill fluid – 16th character							
Silicone oil			S				
Inert fluid - Galden	(Note 6)		N				
Inert fluid - Halocarbon	(Note 6)		D				
SIlicone oil for high temperature			G				
Silicone polymer for low temperature			C				
Mineral oil (FDA approved)	(Note 7)		W				
Vegetable oil (FDA approved)	(Note 7)		A				
Glycerin-water (FDA approved)	(Note 7)		B				
Certification – 17th character							
None				1			
Flushing ring: hole and thread – 18th character							
None (TO BE SELECTED FOR EXTENDED VERSIONS)					N		
1 hole - 1/2in NPT		(Note 4)			2		
2 holes - 1/2in NPT		(Note 4)			3		
1 hole - 1/4in NPT		(Note 4)			4		
2 holes - 1/4in NPT		(Note 4)			5		
Flushing ring material – 19th character							
None	(Note 8)					N	
AISI 316 L ss	(Note 9)	NACE				A	
Hastelloy C276	(Notes 9, 10)	NACE				H	
Flushing ring: plug and gasket – 20th character							
No plug - no gasket							N
No plug - garlock	(Note 9)						A
No plug - PTFE	(Note 9)						B
No plug - graphite	(Note 9)						C
AISI 316 L ss - no gasket	(Notes 9, 11)						D
AISI 316 L ss - garlock	(Notes 9, 11)						E
AISI 316 L ss - PTFE	(Notes 9, 11)						F
AISI 316 L ss - graphite	(Notes 9, 11)						G
Hastelloy C276 - no gasket	(Notes 9, 12)						H
Hastelloy C276 - garlock	(Notes 9, 12)						L
Hastelloy C276 - PTFE	(Notes 9, 12)						M
Hastelloy C276 - graphite	(Notes 9, 12)						P

Note 1: Not available with size code E

Note 2: Not available with mounting flange rating code 3, 4

Note 3: Not available with extensions length and material code 2, 4, 6

Note 4: Not available with extensions length and material code 1, 2, 3, 4, 5, 6

Note 5: Not available with diaphragm material code M, L, T, N, K, Y, W and H when selected with extension length and material code F, 2, 4, 6

Note 6: Suitable for oxygen service

Note 7: Suitable for food application

Note 8: Not available with Flushing ring: hole and thread code 2, 3, 4, 5

Note 9: Not available with Flushing ring: hole and thread code N

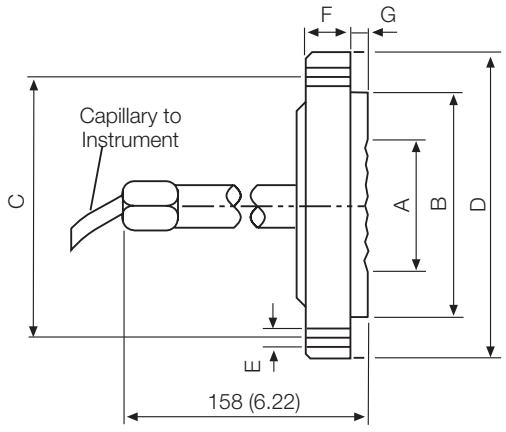
Note 10: Not available with seat surface finish code 1 (serrated)

Note 11: Not available with Hastelloy C276 flushing ring material code H

Note 12: Not available with AISI 316L flushing ring material code A

S364G Model Flanged Flush Diaphragm Remote Seal to JIS

This model identifies a diaphragm remote seal designed to connect to flanged pipe fitting, according to JIS standards.
For liquid level measurement installations, the seal connects to an JIS flanged tank nozzle. The sealing is provided by a selectable smooth or serrated gasket seat surface finish.



Size/Rating	Dimensions mm (in)							N° of holes
	A (dia) flush diaphragm	B (dia)	C (dia)	D (dia)	E (dia)	F	G	
A50 Class 10K	60 (2.36)	96 (3.78)	120 (4.72)	155 (6.1)	15 (0.59)	16 (0.63)	9.5 (0.37)	4
A50 Class 20K	60 (2.36)	96 (3.78)	120 (4.72)	155 (6.1)	19 (0.75)	18 (0.71)	9.5 (0.37)	4
A50 Class 40K	60 (2.36)	104.3 (4.11)	130 (5.12)	165 (6.5)	19 (0.75)	26 (1.02)	9.5 (0.37)	8
A80 Class 10K	89 (3.5)	126 (4.96)	150 (5.91)	185 (7.28)	15 (0.59)	18 (0.71)	9.5 (0.37)	8
A80 Class 20K	89 (3.5)	132 (5.2)	160 (6.3)	200 (7.87)	23 (0.91)	22 (0.87)	9.5 (0.37)	8
A80 Class 40K	89 (3.5)	139.4 (5.49)	170 (6.69)	210 (8.27)	23 (0.91)	32 (1.26)	9.5 (0.37)	8
A100 Class 10K	89 (3.5)	151 (5.94)	175 (6.89)	210 (8.27)	19 (0.75)	18 (0.71)	9.5 (0.37)	8
A100 Class 20K	89 (3.5)	160 (6.3)	185 (7.28)	225 (8.86)	23 (0.91)	24 (0.94)	9.5 (0.37)	8

Maximum Working Pressure

Rating/Class to JIS B 2220	Carbon Steel @ 120° C	AISI 316 Stainless Steel @ 120° C
10K	14bar	14bar
20K	36bar	36bar
40K	68bar	68bar

The pressure limit decreases with increasing temperature above 120°C according to JIS B 2220 standards.

Vacuum Service

Full vacuum subject to fill fluid limits. Refer to table A.

Minimum pressure with tantalum diaphragm is 1kPa abs, 10mbar abs, 0.15psia.

Process Temperature Limits

Same as fill fluid limits. Refer to table A.

260°C (500°F) for Tantalum diaphragm.

204°C (400°F) for use with PFA anti-stick coating.

320°C (608°F) for AISI gold plated diaphragm.

Gasket seat finish

Smooth : 0.8μm (Ra)

Serrated : 3.2 to 6.3μm (Ra)

Temperature effect

The following table shows the temperature effect for 20K (36°F) change, detailed separately for

a) the seal (one element)

b) the capillary per meter

c) the system (transmitter sensor when combined with a seal of specific size/type)

referred to silicone oil (DC 200) filling and AISI 316 L ss diaphragm materials.

For filling different from silicone oil (DC200) the errors can be multiplied by ratio between the thermal expansion coefficients of the selected filling divided by the one of DC200, listed in the fill fluid characteristics table.

THE ERRORS IN TABLE CAN BE CONSIDERED DIVIDED BY 4 FOR TRANSMITTERS USING SAME REMOTE SEAL ON THE TWO SIDES

Flanged Flush Diaphragm Remote Seal

Flanged Flush Diaphragm Seal Size	Seal error	1m Capillary Error	System (Sensor) Error
A50	0.29kPa, 2.9mbar, 1.16inH_2O	0.07kPa, 0.7mbar, 0.28inH_2O	0.2kPa, 2mbar, 0.8inH_2O
A80	0.09kPa, 0.9mbar, 0.36inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O
A100	0.09kPa, 0.9mbar, 0.36inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O

BASIC ORDERING INFORMATION model S364G Flanged Flush Remote Seal to JIS

Select one character or set of characters from each category and specify complete catalog number.

BASE MODEL – 1st to 5th characters			**S 3 6 4 G X X X X X X X X X X Cont'd**
Flanged Flush Remote seal to JIS			
Transmitter side of connection – 6th character			
High side			H
Low side			L
Mounting flange – 7th character			
Rotating			R
Size – 8th character			
A50			B
A80			C
A100			D
Rating – 9th character			
10K			2
20K			4
40K	(Note 1)		6
Mounting flange material – 10th character			
Carbon steel			A
AISI 316 ss			B
Extensions length and material – 11th character			
Flush (see next for diaphragm material)			F
Diaphragm material (seal) – 12th character			
AISI 316 L ss		NACE	S
Hastelloy C276™		NACE	H
Hastelloy C2000™		NACE	M
Inconel 625		NACE	L
Tantalum			T
AISI 316 L ss gold plated		NACE	N
AISI 316 L ss with anti–stick coating		NACE	K
Hastelloy C276™ with anti–stick coating		NACE	Y
AISI 316 L ss with anti-corrosion and anti-stick coating		NACE	W
Superduplex ss (UNS S32750 to ASTM SA479)		NACE	E
Seal surface finish – 13th character			
Serrated	(Note 2)		1
Smooth			2
Capillary protection – 14th character			
AISI 316 L ss armour	(RECOMMENDED FOR HIGH TEMPERATURE)		A
AISI 316 L ss armour with PVC protective cover			B
Capillary length m (feet) – 15th character			
1 (3)			A
1.5 (5)			B
2 (7)			C
2.5 (8)			D
3 (10)			E
3.5 (12)			F
4 (13)			G
4.5 (15)			H
5 (17)			J
5.5 (18)			K
6 (20)			L
6.5 (22)			M
7 (23)			N
7.5 (25)			P
8 (27)			Q
9 (30)			R
10 (33)			S
12 (40)			T
14 (47)			U
16 (53)			V

BASIC ORDERING INFORMATION S364G		**X**	**X**	**X**	**X**	**X**
Fill fluid – 16th character						
Silicone oil		S				
Inert fluid - Galden	(Note 3)	N				
Inert fluid - Halocarbon	(Note 3)	D				
SIlicone oil for high temperature		G				
Silicone polymer for low temperature		C				
Mineral oil (FDA approved)	(Note 4)	W				
Vegetable oil (FDA approved)	(Note 4)	A				
Glycerin-water (FDA approved)	(Note 4)	B				
Certification – 17th character						
None			1			
Flushing ring: hole and thread – 18th character						
None (TO BE SELECTED FOR EXTENDED VERSIONS)				N		
Flushing ring material – 19th character						
None					N	
Flushing ring: plug and gasket – 20th character						
No plug - no gasket						N

Note 1: Not available with A100 size code D

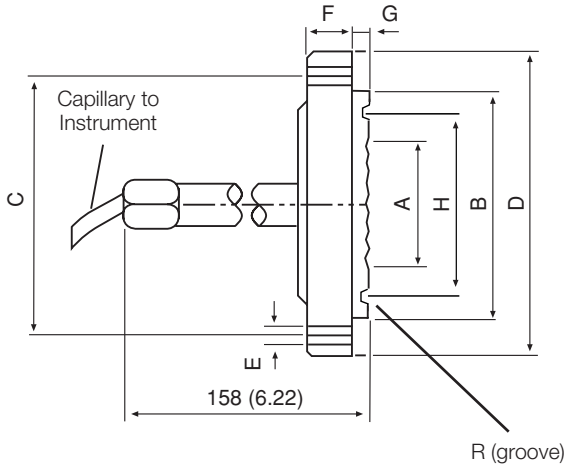
Note 2: Not available with diaphragm material code H, M, L, T, N, K, Y, W

Note 3: Suitable for oxygen service

Note 4: Suitable for food application

S364R Model Flanged Flush Diaphragm Remote Seal - Ring Joint

This flush diaphragm remote seal is designed to connect to ASME flanged pipe fitting; the sealing is provided by a metal ring in the provided groove. For liquid level measurement installations the seal connects to an ASME flanged tank nozzle (Schedule 40).



Size/Rating	Dimensions mm (in)								R	N° of holes
	A (dia)	B (dia)	C (dia)	D (dia)	E (dia)	F	G	H (dia)		
1-1/2in ASME CL 150	48 (1.89)	83 (3.27)	98.6 (3.88)	127 (5)	15.75 (0.62)	17.5 (0.69)	17.3 (0.68)	65.1 (2.56)	R19	4
1-1/2in ASME CL 300	48 (1.89)	90 (3.54)	114.3 (4.5)	155.5 (6.12)	22.35 (0.88)	20.6 (0.81)	17.3 (0.68)	68.3 (2.69)	R20	4
1-1/2in ASME CL 600	48 (1.89)	90 (3.54)	114.3 (4.5)	155.5 (6.12)	22.35 (0.88)	22.4 (0.88)	17.3 (0.68)	68.3 (2.69)	R20	4
1-1/2in ASME CL 900/1500	48 (1.89)	92 (3.62)	124 (4.88)	177.8 (7)	28.45 (1.12)	31.8 (1.25)	20.8 (0.82)	68.3 (2.69)	R20	4
1-1/2in ASME CL 2500	48 (1.89)	114 (4.49)	146.1 (5.75)	203.2 (8)	31.75 (1.25)	44.5 (1.75)	20.8 (0.82)	82.6 (3.25)	R23	4
2in ASME CL 150	60 (2.36)	102 (4.02)	120.65 (4.75)	152.4 (6)	19.05 (0.75)	19.05 (0.75)	17.3 (0.68)	82.6 (3.25)	R22	4
2in ASME CL 300	60 (2.36)	108 (4.25)	127 (5)	165.1 (6.5)	19.05 (0.75)	22.35 (0.88)	17.3 (0.68)	82.6 (3.25)	R23	8
2in ASME CL 600	60 (2.36)	108 (4.25)	127 (5)	165.1 (6.5)	19.05 (0.75)	25.4 (1)	17.3 (0.68)	82.6 (3.25)	R23	8
2in ASME CL 900/1500	60 (2.36)	124 (4.88)	165 (6.5)	215.9 (8.5)	25.4 (1)	38.1 (1.5)	20.8 (0.82)	95.3 (3.75)	R24	8
2in ASME CL 2500	60 (2.36)	133 (5.24)	171.5 (6.75)	235 (9.25)	28.45 (1.12)	50.8 (2)	20.8 (0.82)	101.6 (4)	R26	8
3in ASME CL 150	89 (3.5)	133 (5.24)	152.4 (6)	190.5 (7.5)	19.05 (0.75)	23.87 (0.94)	17.3 (0.68)	114.3 (4.5)	R29	4
3in ASME CL 300	89 (3.5)	146 (5.75)	168.15 (6.62)	209.55 (8.25)	22.35 (0.88)	28.44 (1.12)	17.3 (0.68)	123.8 (4.87)	R31	8
3in ASME CL 600	89 (3.5)	146 (5.75)	168.15 (6.62)	209.55 (8.25)	22.35 (0.88)	31.75 (1.25)	17.3 (0.68)	123.8 (4.87)	R31	8
3in ASME CL 900	89 (3.5)	155 (6.10)	190.5 (7.5)	241.3 (9.5)	25.4 (1)	38.1 (1.50)	20.8 (0.82)	123.8 (4.87)	R31	8
3in ASME CL 1500	89 (3.5)	168 (6.61)	203.2 (8)	266.7 (10.5)	31.75 (1.25)	47.8 (1.88)	20.8 (0.82)	136.5 (5.37)	R35	8
3in ASME CL 2500	89 (3.5)	168 (6.61)	228.6 (9)	304.8 (12)	35.05 (1.38)	66.5 (2.62)	20.8 (0.82)	127 (5)	R32	8

Maximum Working Pressure

Rating/Class to ASME B16.5	Carbon Steel @100° F (38° C)	AISI 316 Stainless Steel @ 100° F (38° C)
Class 150	285psi	275psi
Class 300	740psi	720psi
Class 600	1480psi	1440psi
Class 900	2220psi	2160psi
Class 1500	3705psi	3600psi
Class 2500	6170psi	6000psi

The pressure limit decreases with increasing temperature above 100°F (38°C), according to ASME B16.5 standards.

Vacuum Service

Full vacuum subject to fill fluid limits. Refer to table A.

Process Temperature Limits

Same as fill fluid limits. Refer to table A.

Temperature effect

The following table shows the temperature effect for 20K (36°F) change, detailed separately for

a) the seal (one element)

b) the capillary per meter

c) the system (transmitter sensor when combined with a seal of specific size/type)

referred to silicone oil (DC 200) filling and AISI 316 L ss diaphragm materials.

For filling different from silicone oil (DC200) the errors can be multiplied by ratio between the thermal expansion coefficients of the selected filling divided by the one of DC200, listed in the fill fluid characteristics table.

THE ERRORS IN TABLE CAN BE CONSIDERED DIVIDED BY 4 FOR TRANSMITTERS USING SAME REMOTE SEAL ON THE TWO SIDES

Flanged Flush Diaphragm Remote Seal - Ring Joint

Flanged Flush Diaphragm Ring Joint Seal Size	Seal error	1m Capillary Error	System (Sensor) Error
1 ½in	0.87kPa, 8.7mbar, 3.5inH_2O	0.3kPa, 3mbar, 1.2inH_2O	0.9kPa, 9mbar, 3.6inH_2O
2in	0.29kPa, 2.9mbar, 1.16inH_2O	0.07kPa, 0.7mbar, 0.28inH_2O	0.2kPa, 2mbar, 0.8inH_2O
3in	0.09kPa, 0.9mbar, 0.36inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O

BASIC ORDERING INFORMATION model S364R ASME Flanged Remote Seal - Ring Joint

Select one character or set of characters from each category and specify complete catalog number.

		Code
BASE MODEL – 1st to 5th characters		S 3 6 4 R X X X X X X X X X X Cont'd
Flanged Remote seal Ring joint to ASME B16.5		
Transmitter side of connection – 6th character		
High side		H
Low side		L
Mounting flange – 7th character		
Rotating		R
Size – 8th character		
1-1/2in		B
2in		C
3in		D
Rating – 9th character		
ASME CL 150		1
ASME CL 300		2
ASME CL 600		3
ASME CL 900		4
ASME CL 1500		5
ASME CL 2500		6
Mounting flange material – 10th character		
Carbon steel		A
AISI 316 ss		B
Extensions length and material – 11th character		
Flush (see next for diaphragm material)		F
Diaphragm material – 12th character		
AISI 316 L ss	NACE	S
Hastelloy C276™	NACE	H
Inconel 625	NACE	L
Seal surface finish – 13th character		
Ring joint		3
Capillary protection – 14th character		
AISI 316 L ss armour	(RECOMMENDED FOR HIGH TEMPERATURE)	A
AISI 316 L ss armour with PVC protective cover		B
Capillary length m (feet) – 15th character		
1 (3)		A
1.5 (5)		B
2 (7)		C
2.5 (8)		D
3 (10)		E
3.5 (12)		F
4 (13)		G
4.5 (15)		H
5 (17)		J
5.5 (18)		K
6 (20)		L
6.5 (22)		M
7 (23)		N
7.5 (25)		P
8 (27)		Q
9 (30)		R
10 (33)		S
12 (40)		T
14 (47)		U
16 (53)		V

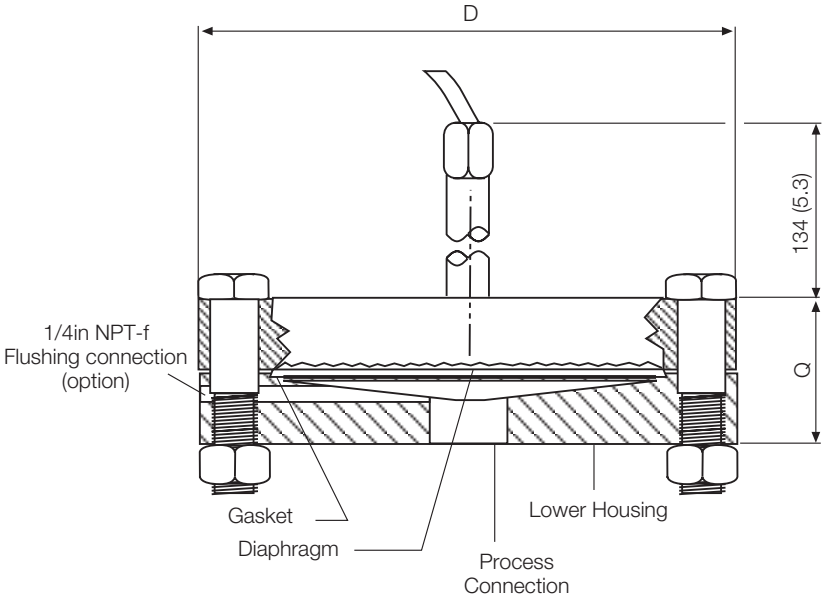
BASIC ORDERING INFORMATION S364R		**X**	**X**	**X**	**X**	**X**
Fill fluid – 16th character						
Silicone oil		S				
Inert fluid - Galden	(Note 1)	N				
Inert fluid - Halocarbon	(Note 1)	D				
SIlicone oil for high temperature		G				
Silicone polymer for low temperature		C				
Mineral oil (FDA approved)	(Note 2)	W				
Vegetable oil (FDA approved)	(Note 2)	A				
Glycerin-water (FDA approved)	(Note 2)	B				
Certification – 17th character						
None			1			
Flushing ring: hole and thread – 18th character						
Not fitted				N		
Flushing ring material – 19th character						
None					N	
Flushing ring: plug and gasket – 20th character						
None						N

Note 1: Suitable for oxygen service

Note 2: Suitable for food application

S364T Model Off-line Threaded Connection Remote Seal

The off-line threaded connection remote seals are designed to connect directly to a process pipe via the NPT connection in the lower housing . These elements are available with a flushing connection, on request, in the lower housing.



Size	Dimensions mm (in)	
	D (dia)	Q
1/4in NPT	109.2 (4.3)	53.3 (2.1)
1/2in NPT	109.2 (4.3)	53.3 (2.1)
3/4in NPT	109.2 (4.3)	63.5 (2.5)
1in NPT	109.2 (4.3)	63.5 (2.5)
1 1/2in NPT	109.2 (4.3)	63.5 (2.5)

Maximum Working Pressure

16 MPa, 160 bar, 2320 psi @ 20°C (68°F)

The pressure limit decreases with increasing temperature above 20°C (68°F)

Vacuum Service

Full vacuum subject to fill fluid limits. Refer to table A.

Minimum pressure with tantalum diaphragm is 1kPa abs, 10mbar abs, 0.15psia.

Process Temperature Limits

Same as fill fluid limits. Refer to table A.

260°C (500°F) for Tantalum diaphragm

320°C (608°F) for AISI gold plated diaphragm

–100°C (–148°F) to 260°C (500°F) with PTFE gasket

–20°C (-4°F) to 200°C (392°F) with Viton gasket

360°C (680°F) with Graphite gasket

Mounting flange

AISI 316 L ss, Hastelloy C

Gasket (flange to seal)

Viton, PTFE, Graphite

Bolts

AISI 316 ss bolts Class A4-80 and nuts Class A4-70 per EN ISO 3506;
Carbon steel bolts Class 8.8 per EN ISO 4014 and nuts Class 8 per EN ISO 898/2;
Alloy steel bolts per ASTM-A-193-77a grade B7M and nuts per ASTM A194/A 194 M-90 grade 2HM, in compliance with NACE MR0175 Class II.

Temperature effect

The following table shows the temperature effect for 20K (36°F) change, detailed separately for

a) the seal (one element)

b) the capillary per meter

c) the system (transmitter sensor when combined with a seal of specific size/type)

referred to silicone oil (DC 200) filling and AISI 316 L ss diaphragm materials.

For filling different from silicone oil (DC200) the errors can be multiplied by ratio between the thermal expansion coefficients of the selected filling divided by the one of DC200, listed in the fill fluid characteristics table.

THE ERRORS IN TABLE CAN BE CONSIDERED DIVIDED BY 4 FOR TRANSMITTERS USING SAME REMOTE SEAL ON THE TWO SIDES

Off-Line Threaded Seal Size	Seal error	1m Capillary Error	System (Sensor) Error
2 1/2in	0.32kPa, 3.2mbar, 1.28inH_2O	0.18kPa, 1.8mbar, 0.72inH_2O	0.15kPa, 1.5mbar, 0.6inH_2O

BASIC ORDERING INFORMATION model S364T Off-Line Threaded Connection Remote Seal

Select one character or set of characters from each category and specify complete catalog number.

BASE MODEL – 1st to 5th characters		**S**	**3**	**6**	**4**	**T**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Off-line threaded remote seal																					
Transmitter side of connection – 6th character																					
High side							H														
Low side							L														
Size – 7th character																					
1/4in NPT-f								1													
1/2in NPT-f								2													
3/4in NPT-f								5													
1in NPT-f								3													
1-1/2in NPT-f								4													
Bolts – 8th character																					
AISI 316 ss									1												
Carbon steel									2												
Alloy steel			NACE						3												
Flange material – 9th character																					
AISI 316 L ss			NACE							1											
Hastelloy C276™			NACE							2											
Diaphragm material – 10th character																					
AISI 316 L ss				NACE							S										
Hastelloy C276™				NACE							H										
Hastelloy C2000™				NACE							M										
Inconel 625				NACE							L										
Tantalum											T										
AISI 316 L ss gold plated											N										
Capillary protection – 11th character																					
AISI 316 L ss armour	(RECOMMENDED FOR HIGH TEMPERATURE)											A									
AISI 316 L ss armour with PVC protective cover												B									
Capillary length m (feet) – 12th character																					
1 (3)													A								
1.5 (5)													B								
2 (7)													C								
2.5 (8)													D								
3 (10)													E								
3.5 (12)													F								
4 (13)													G								
4.5 (15)													H								
5 (17)													J								
5.5 (18)													K								
6 (20)													L								
6.5 (22)													M								
7 (23)													N								
7.5 (25)													P								
8 (27)													Q								
9 (30)													R								
Fill fluid – 13th character																					
Silicone oil														S							
Inert fluid - Galden	(Note 1)													N							
Inert fluid - Halocarbon	(Note 1)													D							
Sllicone oil for high temperature														G							
Silicone polymer for low temperature														C							
Mineral oil (FDA approved)	(Note 2)													W							
Vegetable oil (FDA approved)	(Note 2)													A							
Glycerin-water (FDA approved)	(Note 2)													B							
Flushing connections – 14th character																					
Not required															1						
Provided	(Note 3)														Q						
Gasket – 15th character																					
PTFE																					2
Viton ™																					3
Graphite																					7

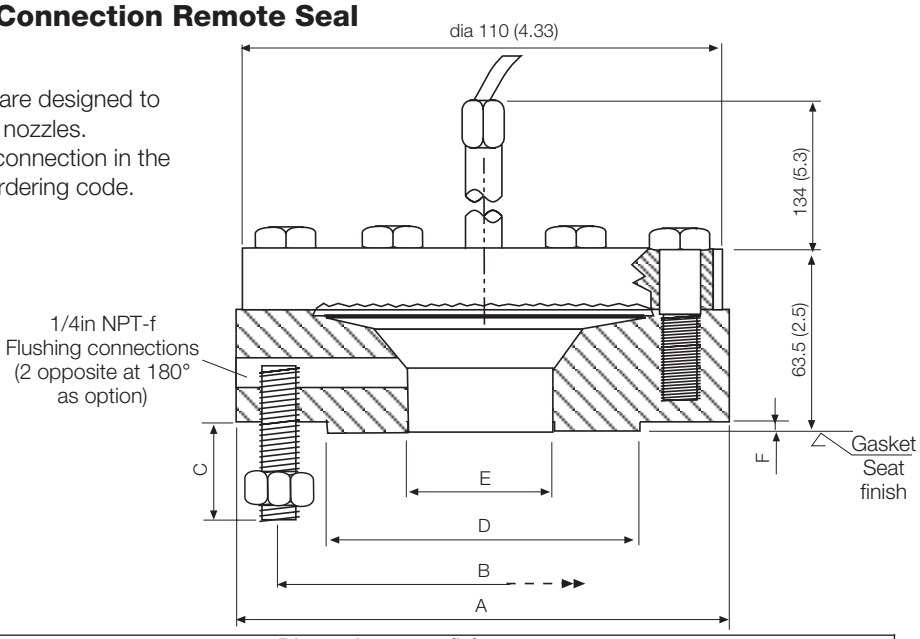
Note 1: Suitable for oxygen service

Note 2: Suitable for food application

Note 3: Not available with Size code 4

S364M Model Off-line Flanged Connection Remote Seal

The off-line flanged connection remote seals are designed to connect directly to ASME or EN flanged tank nozzles.
These elements are available with a flushing connection in the lower housing, selectable on request in the ordering code.



Connection		Dimensions mm (in)						
Size	Standard	A (dia)	B (dia)	C (4 studs)		D (dia)	E (dia)	F
				Length	Thread			
1/2in	ASME CL 150	110 (4.33)	60.5 (2.38)	39 (1.53)	1/2in – 13 UNC	35.1 (1.38)	15.8 (0.62)	1.6 (0.06)
	ASME CL 300	110 (4.33)	66.5 (2.62)	39 (1.53)	1/2in – 13 UNC			
1in	ASME CL 150	110 (4.33)	79.4 (3.12)	39 (1.53)	1/2in – 13 UNC	50.8 (2)	26.7 (1.05)	1.6 (0.06)
	ASME CL 300	124 (4.88)	88.9 (3.5)	51 (2)	5/8in – 11 UNC			
1 1/2in	ASME CL 150	127 (5)	98.4 (3.87)	39 (1.53)	1/2in – 13 UNC	73 (2.87)	41 (1.61)	1.6 (0.06)
	ASME CL 300	155 (6.1)	114.3 (4.5)	57 (2.24)	3/4in – 10 UNC			
DN 25	EN PN 16-40	115 (4.52)	85 (3.34)	42 (1.65)	M12	68 (2.67)	28.5 (1.12)	2 (0.07)
DN 40	EN PN 16-40	150 (5.9)	110 (4.33)	48 (1.89)	M16	88 (3.46)	43.1 (1.69)	3 (0.12)

Maximum Working Pressure

Class 150 to ASME B16.5: 230psi @ 100°F (38°C)

Class 300 to ASME B16.5: 600psi @ 100°F (38°C)

PN16-40 to EN 1092-1: 34bar @ 20°C

The pressure limit decreases with increasing temperature above to the specified values respectively for ASME B16.5 or EN 1092-1 std.

Vacuum Service

Full vacuum subject to fill fluid limits. Refer to table A.

Minimum pressure with tantalum diaphragm is 1kPa abs, 10mbar abs, 0.15psia.

Process Temperature Limits

Same as fill fluid limits. Refer to table A.

260°C (500°F) for Tantalum diaphragm

320°C (608°F) for AISI gold plated diaphragm

–100°C (–148°F) to 260°C (500°F) with PTFE gasket

–20°C (-4°F) to 200°C (392°F) with Viton gasket

360°C (680°F) with Graphite gasket

Gasket seat finish (flange to process)

serrated (ASME): 3.2 to 6.3μm (Ra)

serrated (EN 1092-1 Type B1): 3.2 to 12.5μm (Ra)

Mounting flange

AISI 316 L ss, Hastelloy C

Gasket (flange to seal)

Viton, PTFE, Graphite

Bolts

bolts (seal/flange): AISI 316 ss Class A4-70 per EN ISO 3506;

studs with nuts (flange/process): AISI 3xx per ASTM-SA-193/194 grade B8C or B8T

Temperature effect

The following table shows the temperature effect for 20K (36°F) change, detailed separately for

a) the seal (one element)

b) the capillary per meter

c) the system (transmitter sensor when combined with a seal of specific size/type)

referred to silicone oil (DC 200) filling and AISI 316 L ss diaphragm materials.

For filling different from silicone oil (DC200) the errors can be multiplied by ratio between the thermal expansion coefficients of the selected filling divided by the one of DC200, listed in the fluid characteristics table.

THE ERRORS IN TABLE CAN BE CONSIDERED DIVIDED BY 4 FOR TRANSMITTERS USING SAME REMOTE SEAL ON THE TWO SIDES.

Off-Line Flanged Seal Size	Seal error	1m Capillary Error	System (Sensor) Error
2 1/2in	0.32kPa, 3.2mbar, 1.28inH_2O	0.18kPa, 1.8mbar, 0.72inH_2O	0.15kPa, 1.5mbar, 0.6inH_2O

BASIC ORDERING INFORMATION model S364M Off-line Flanged Connection Remote Seal

Select one character or set of characters from each category and specify complete catalog number.

BASE MODEL – 1st to 5th characters				S 3 6 4 M X X X X X X X X X X
Off-line mini-flanged remote seal				
Transmitter side of connection – 6th character				
High side				H
Low side				L
Mounting flange– 7th character				
Integral with seal				P
Size/Mounting flange rating – 8th character				
1/2in	ASME CL 150			6
1/2in	ASME CL 300			7
1in	ASME CL 150			A
1in	ASME CL 300			C
1 1/2in	ASME CL 150			B
1 1/2in	ASME CL 300			D
DN25	EN PN 16/40			M
DN40	EN PN 16/40			N
Mounting flange/Seat form (seal) – 9th character				
AISI 316 L ss	Form RF (raised face) – serrated finish	(Note 1)	NACE	D
AISI 316 L ss	EN 1092-1 Type B1 – serrated finish	(Note 2)	NACE	L
Hastelloy C276™	Form RF (raised face) – serrated finish	(Note 1)	NACE	U
Hastelloy C276™	EN 1092-1 Type B1 – serrated finish	(Note 2)	NACE	V
Diaphragm material (seal) – 10th character				
AISI 316 L ss			NACE	S
Hastelloy C276™			NACE	H
Hastelloy C2000™			NACE	M
Inconel 625			NACE	L
Tantalum				T
AISI 316 L ss gold plated				N
Capillary protection – 11th character				
AISI 316 L ss armour	(RECOMMENDED FOR HIGH TEMPERATURE)			A
AISI 316 L ss armour with PVC protective cover				B
Capillary length m (feet) – 12th character				
1 (3)				A
1.5 (5)				B
2 (7)				C
2.5 (8)				D
3 (10)				E
3.5 (12)				F
4 (13)				G
4.5 (15)				H
5 (17)				J
5.5 (18)				K
6 (20)				L
6.5 (22)				M
7 (23)				N
7.5 (25)				P
8 (27)				Q
9 (30)				R
Fill fluid – 13th character				
Silicone oil				S
Inert fluid - Galden	(Note 3)			N
Inert fluid - Halocarbon	(Note 3)			D
Sllicone oil for high temperature				G
Silicone polymer for low temperature				C
Mineral oil (FDA approved)	(Note 4)			W
Vegetable oil (FDA approved)	(Note 4)			A
Glycerin-water (FDA approved)	(Note 4)			B
Flushing connections – 14th character				
Not required				1
Provided				Q
Gasket – 15th character				
PTFE				2
Viton ™				3
Graphite				7

Note 1: Not available with EN mounting flange code M, N

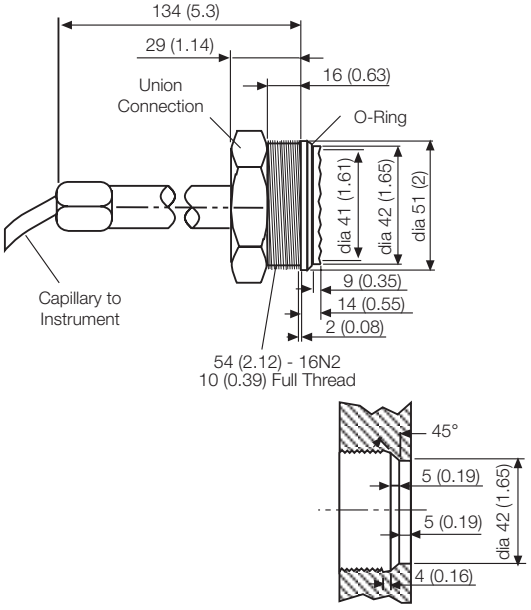
Note 2: Not available with ASME mounting flange code A, B, C, D, 6, 7

Note 3: Suitable for oxygen service

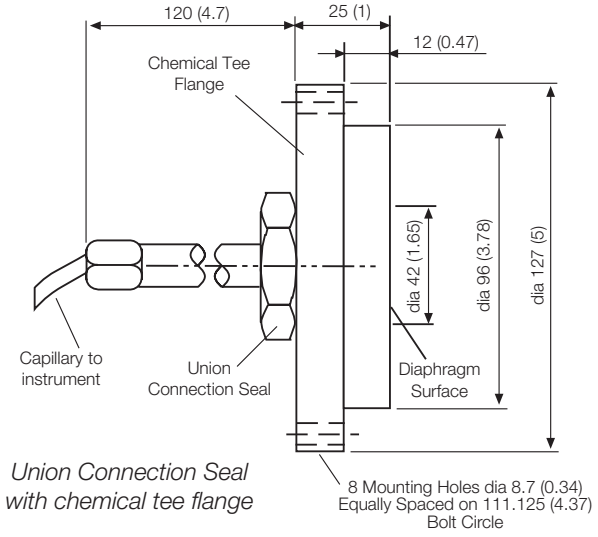
Note 4: Suitable for food application

S364U Model Union Connection Remote Seal (To be used only for gauge pressure)

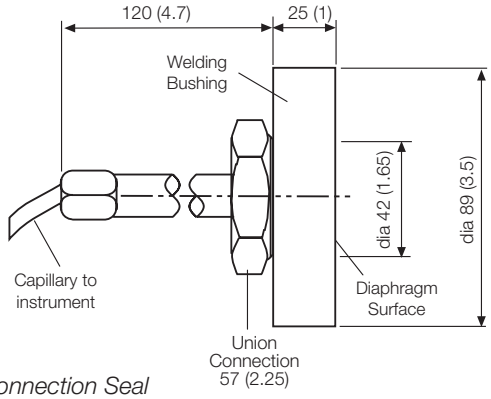
The union connection remote seal are used exclusively for pressure measurement with gauge pressure transmitter.
The seal is available with an optional weld bushing, or with an optional chemical tee flange.The remote seal with a weld bushing, includes a bushing which provides the mating surface for the seal element. The union connection seal with a chemical tee flange, is designed to connect to any process fitting which accepts a chemical tee seal element (refer to Chemical Tee Seal for more information). The union seal connects to the chemical tee flange which serves as an adaptor to permit connection of the union seal to a chemical tee type fitting.



Union Connection Seal without weld bushing



Union Connection Seal with chemical tee flange



Union Connection Seal with weld bushing

Maximum Working Pressure

Union Connection: 10.3 MPa, 103 bar, 1500 psi

With Chemical Tee Flange : 2 MPa, 20 bar, 300 psi

Vacuum Service

Full vacuum subject to fill fluid limits.

Refer to table A.

Process Temperature Limits

Same as fill fluid limits.

Refer to table A.

–50°C (–58°F) to 204°C (400°F) with silicone rubber gasket

–100°C (–148°F) to 260°C (500°F) with PTFE gasket

Temperature effect

The following table shows the temperature effect for 20K (36°F) change, detailed separately for

a) the seal (one element)

b) the capillary per meter

c) the system (transmitter sensor when combined with a seal of specific size/type)

referred to silicone oil (DC 200) filling and AISI 316 L ss diaphragm materials.

For filling different from silicone oil (DC200) the errors can be multiplied by ratio between the thermal expansion coefficients of the selected filling divided by the one of DC200, listed in the fill fluid characteristics table.

Union Connection Seal Size	Seal error	1m Capillary Error	System (Sensor) Error
1 ½in	0.87kPa, 8.7mbar, 3.5inH_2O	0.3kPa, 3mbar, 1.2inH_2O	0.9kPa, 9mbar, 3.6inH_2O

BASIC ORDERING INFORMATION model S364U Union Connection Remote Seal

Select one character or set of characters from each category and specify complete catalog number.

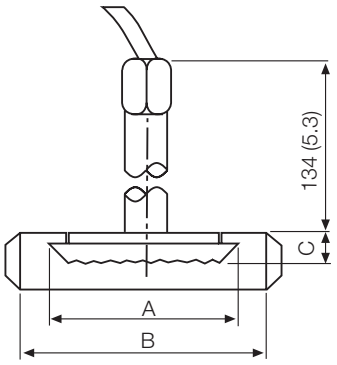
BASE MODEL – 1st to 5th characters		**S**	**3**	**6**	**4**	**U**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**				
Union connection remote seal (MUST BE ONE ONLY FOR EACH TRANSMITTER)																		
Transmitter side of connection – 6th character																		
High side							H											
Low side							L											
Size – 7th character																		
1 ½in								L										
Diaphragm material (seal) – 8th character																		
AISI 316 L ss				NACE					S									
Hastelloy C 276™				NACE					H									
Capillary protection – 9th character																		
AISI 316 L ss armour	(RECOMMENDED FOR HIGH TEMPERATURE)									A								
AISI 316 L ss armour with PVC protective cover										B								
Capillary length m (feet) – 10th character																		
1 (3)											A							
1.5 (5)											B							
2 (7)											C							
2.5 (8)											D							
3 (10)											E							
Fill fluid – 11th character																		
Silicone oil												S						
Inert fluid - Galden	(Note 1)											N						
Inert fluid - Halocarbon	(Note 1)											D						
SIlicone oil for high temperature												G						
Silicone polymer for low temperature												C						
Mineral oil (FDA approved)	(Note 2)											W						
Vegetable oil (FDA approved)	(Note 2)											A						
Glycerin-water (FDA approved)	(Note 2)											B						
Options – 12th character																		
None													1					
AISI 316 ss weld bushing													3					
Chemical tee flange													4					
Gasket – 13th character																		
Silicone rubber																		5
PTFE																		8

Note 1: Suitable for oxygen service

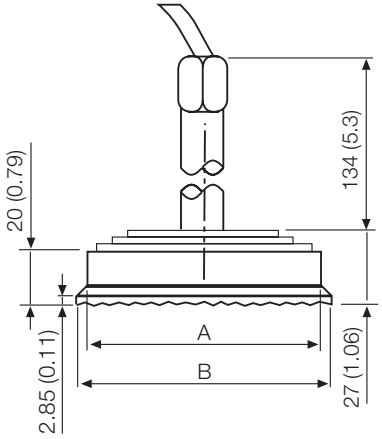
Note 2: Suitable for food application

S364S Food and Sanitary Remote Seals

The Union Nut and Triclamp remote seals are designed for connection by Union Nut according to DIN 11851 - F50 or F80 and 2 in, 3 in, 4 in Triclamp sanitary fittings. A variety of gaskets and clamp rings for the seals are available.



Note: seal model not 3-A authorized



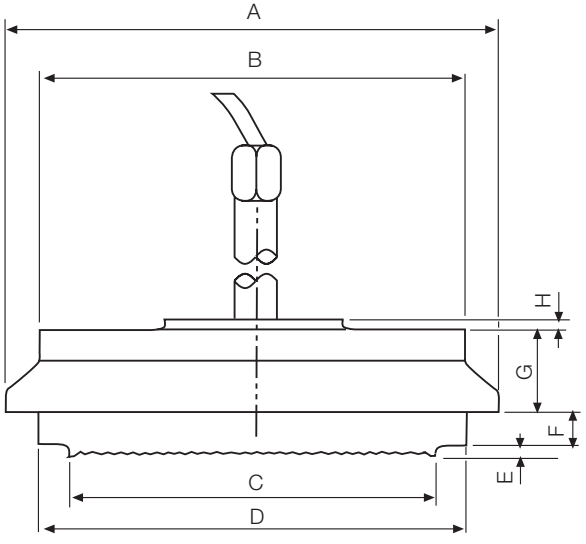
Union Nut Seal (to DIN 11851)

	Union Nut	
	F50	**F80**
A (dia)	68 (2.68)	100 (3.93)
B (RD)	78 (3.07)	110 (4.33)
C	16 (0.63)	19 (0.74)

Triclamp Seal

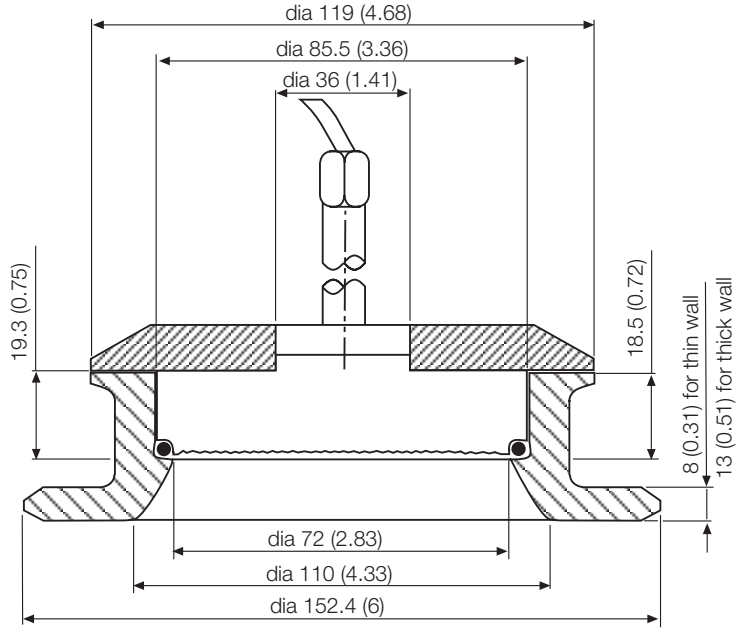
	Triclamp		
	2in	**3in**	**4in**
A (dia)	56.3 (2.2)	83 (3.26)	110.3 (4.34)
B (dia)	64 (2.5)	91 (3.58)	119 (4.68

The Cherry Burrell remote seals are designed for connection to 2in, 3in or 4in Cherry Burrell I-Line sanitary fittings. A 4in V-band clamp is optionally available for the 4in variant.

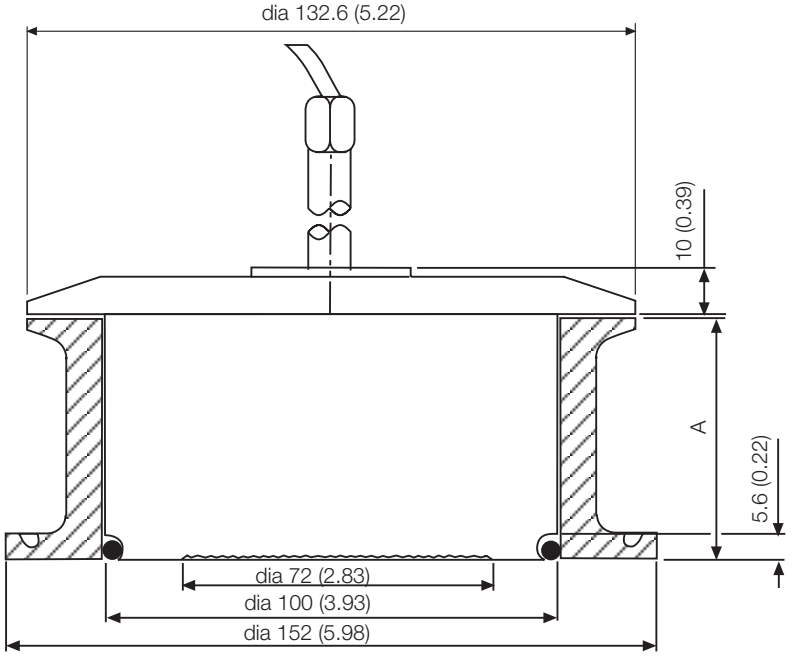


Size	DIMENSIONS mm (in)							
	A (dia)	**B (dia)**	**C (dia)**	**D (dia)**	**E**	**F**	**G**	**H**
2in	67 (2.64)	56 (2.2)	42 (1.65)	57(2.24)	3.2 (0.13)	6.5 (0.26)	12.5 (0.49)	3 (0.12)
3in	98.4 (3.87)	81 (3.19)	72.42 (2.85)	83.8 (3.3)	2.4 (0.09)	7.9 (0.31)	15 (0.59)	3 (0.12)
4in	124 (4.88)	111.25 (4.38)	72.42 (2.85)	109.3 (4.3)	2.4 (0.09	7.9 (0.31)	15 (0.59)	3 (0.12)

The sanitary remote seal with flush diaphragm is designed to connect to a 4in sanitary tank spud. The tank spud and process gasket are available as options with the seal suitable V-band clamp is also available on request.
NOTE: The tank spud required for connection of this seal element must be welded to the process vessel prior to connecting the seal, following a recommended welding and pressure testing procedure.

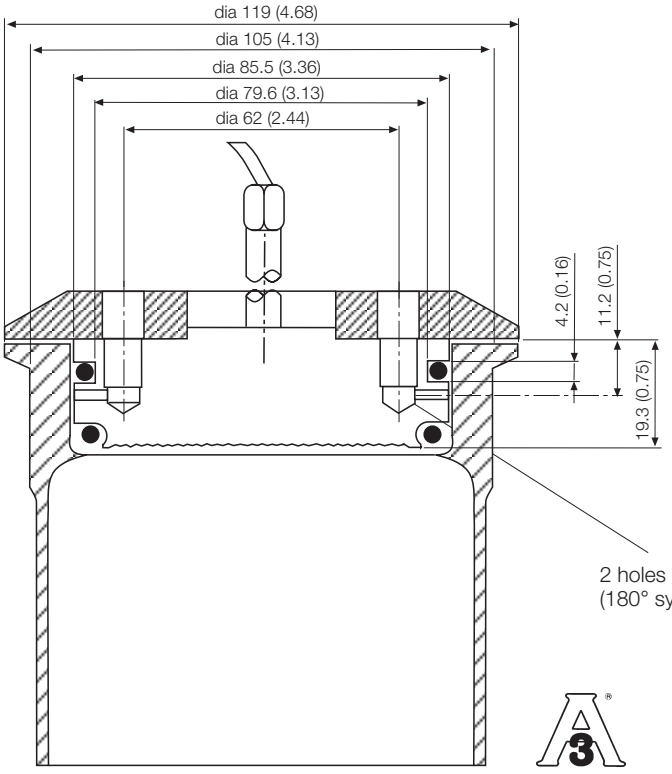


The sanitary remote seal with extended diaphragm is designed to connect to a 4in sanitary tank spud. The tank spud and process gasket are available with the seal.
NOTE: The tank spud required for connection of this seal element must be welded to the process vessel prior to connecting the seal, following a recommended welding and pressure testing procedure.

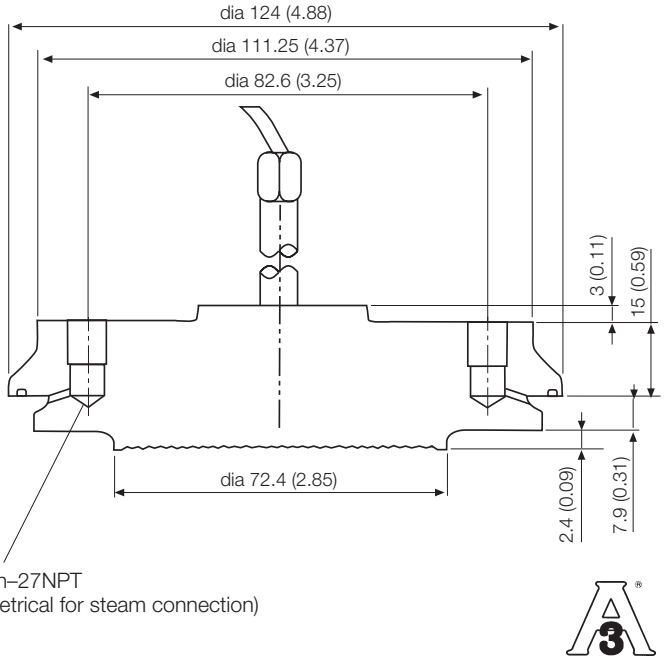


Size	Dimensions mm (in) A
2in	53.3 (2.1)
4in	104.1 (4.1)
6in	154.9 (6.1)

The sanitary aseptic remote seal is designed to connect to a 4in sanitary fitting: either an aseptic tank spud or a 4in Cherry Burrell aseptic ferrule. The tank spud, gaskets and V-band clamp are available option with the seal element.
NOTE: The tank spud or ferrule required for connection of this seal element must be welded to the process vessel prior to connecting the element, following recommended welding and pressure testing procedure. Weld the Cherry Burrell ferrule to the process vessel in accordance with manufacturers recommandations.



4in Aseptic Flanged Connection



4in Cherry Burrell Aseptic

Maximum Working Pressure @ 20°C (68°F)

2 in Triclamp : 3.8 MPa, 38 bar, 550 psi

3 in Triclamp : 2.4 MPa, 24 bar, 350 psi

4 in Triclamp : 1.7 MPa, 17 bar, 250 psi

F50/F80 Union nut : 2.5 MPa, 25 bar, 360 psi

Cherry Burrell: 1.9MPa, 19bar, 275psi

4in Sanitary flush or extended or aseptic: 1.9MPa, 19bar, 275psi

4in V-band clamp option: 1MPa, 10bar, 145psi

4in schedule 5 V-band clamp option: 0.7MPa, 7bar, 100psi @ 21°C.

Process Temperature Limits

Same as fill fluid limits. Refer to table A.

Process Gasket Temperature Limits

Ethylene Propylene EPDM 3-A 18-03 Class II:
–40 to 121°C (–40 to 250°F)

Ethylene Propylene: –40 to149°C (–40 to 300°F)

Vacuum Service

Full vacuum subject to fill fluid limits. Refer to table A.

Temperature effect

The following table shows the temperature effect for 20K (36°F) change, detailed separately for

a) the seal (one element)

b) the capillary per meter

c) the system (transmitter sensor when combined with a seal of specific size/type)

referred to silicone oil (DC 200) filling and AISI 316 L ss diaphragm materials.

For filling different from silicone oil (DC200) the errors can be multiplied by ratio between the thermal expansion coefficients of the selected filling divided by the one of DC200, listed in the fill fluid characteristics table.

THE ERRORS IN TABLE CAN BE CONSIDERED DIVIDED BY 4 FOR TRANSMITTERS USING SAME REMOTE SEAL ON THE TWO SIDES

Union Nut, Triclamp, Cherry Burrell, Sanitary and Aseptic Seal Size	Seal error	1m Capillary Error	System (Sensor) Error
2in / F50	0.7kPa, 7mbar, 2.8inH_2O	0.42kPa, 4.2mbar, 1.7inH_2O	1.4kPa, 14mbar, 5.6inH_2O
3in / F80	0.06kPa, 0.6mbar, 0.24inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O
4in	0.06kPa, 0.6mbar, 0.24inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O	0.03kPa, 0.3mbar, 0.12inH_2O

BASIC ORDERING INFORMATION model S364S Food and Sanitary Remote Seals

Select one character or set of characters from each category and specify complete catalog number.

BASE MODEL – 1st to 5th characters		**S**	**3**	**6**	**4**	**S**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Food and Sanitary remote seals														
Transmitter side of connection – 6th character														
High side							H							
Low side							L							
Mounting connection – 7th character														
Union nut DIN 11851 – F50	(Note 1)							A						
Union nut DIN 11851 – F80	(Note 1)							B						
2in Triclamp								F						
3in Triclamp								G						
4in Triclamp								H						
2in Cherry Burrell								L						
3in Cherry Burrell								M						
4in Cherry Burrell								N						
4in Sanitary flush diaphragm								P						
4in Sanitary extended (2in) diaphragm								Q						
4in Sanitary extended (4in) diaphragm								R						
4in Sanitary extended (6in) diaphragm								S						
4in Cherry Burrell aseptic								W						
4in aseptic flanged connection								J						
Seal diaphragm material – 8th character														
AISI 316 L ss									S					
Capillary protection – 9th character														
AISI 316 L ss armour	(RECOMMENDED FOR HIGH TEMPERATURE)									A				
AISI 316 L ss armour with PVC protective cover										B				
Capillary length m (feet) – 10th character														
1 (3)											A			
1.5 (5)											B			
2 (7)											C			
2.5 (8)											D			
3 (10)											E			
3.5 (12)											F			
4 (13)											G			
4.5 (15)											H			
5 (17)											J			
5.5 (18)											K			
6 (20)											L			
6.5 (22)											M			
7 (23)											N			
7.5 (25)											P			
8 (27)											Q			
9 (30)											R			
10 (33)											S			
Fill fluid – 11th character														
Silicone oil												S		
Mineral oil (FDA approved)	(Note 2)											W		
Vegetable oil (FDA approved)	(Note 2)											A		
Glycerin-water (FDA approved)	(Note 2)											B		
Clamp/Fittings – 12th character														
None													1	
2in V-band Clamp (for 2in Triclamp)													A	
3in V-band Clamp (for 3in Triclamp)													B	
4in V-band Clamp (for 4in Triclamp, 4in Cherry Burrell, 4in Sanitary flush and 4in aseptic flanged)													C	
4in Tank spud, tank wall up to 4.7mm (0.18) and 4in V-band Clamp (for 4in Sanitary flush seal)													D	
4in Tank spud, tank wall up to 9.5mm (0.37) and 4in V-band Clamp (for 4in Sanitary flush seal)													E	
4in schedule 5 V-band clamp (for 4in Sanitary extended seal)													F	
Tank spud for 2in extension and 4in schedule 5 V-band clamp (for 4in Sanitary extended 2in seal)													G	
Tank spud for 4in extension and 4in schedule 5 V-band clamp (for 4in Sanitary extended 4in seal)													H	
Tank spud for 6in extension and 4in schedule 5 V-band clamp (for 4in Sanitary extended 6in seal)													J	
Aseptic tank spud (for 4in aseptic flanged seal)													P	
Gasket – 13th character														
None														1
Ethylene propylene gasket DN100 (for 4in Sanitary extended seal) - (EPDM 3-A 18-03 Class II)														A
Ethylene propylene gasket DN50 (for F50 Union nut seal)														C
Ethylene propylene gasket DN80 (for F80 Union nut seal)														D
Ethylene propylene gasket (for 4in Sanitary flush and aseptic flanged seal) - (EPDM 3-A 18-03 Class II)														G

Note 1: Union nut DIN 11851 (F50 and F80) are not 3-A authorized models

Note 2: Suitable for food application

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