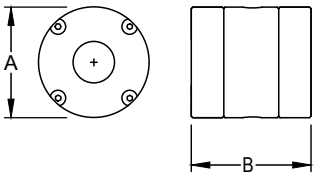
RING SEAL THREADED

ORT



Threaded

Nominal Pipe Size (in)	Inner Dia. (in)	Outer Dia. A (in)	Width B (in)	Thread NPT-TPI (in)
0.5	1.05	3.00	3.00	0.5 - 14
1	1.05	3.00	3.25	1 - 11.5
1.5	1.61	3.50	3.25	1.5 - 11.5
2	2.07	4.00	3.25	2 - 11.5

Custom dimensions are available if your application requires. Choose -RV as option code. Alternate manufacturers dimensions may differ from above.

The Reotemp Ring Seal Threaded boasts an In-Line Flow-Thru design ideal for waste water, slurries, or abrasives. Mounted between pipe flanges or threaded in-line, it has a tough but sensitive elastomer lining. One unique feature of this seal is the ability to mount multiple instruments on one seal.

SPECIFICATIONS

Materials: Body: Carbon Steel, 316 SS

Wetted Materials: End Flange: Carbon Steel, 316 SS. Diaphragm/Sleeve: Buna-N, PTFE EPDM, Natural Rubber and more.

Process Temperature Limits

Sleeve Material	Limit
Buna-N	225ºF
Viton	400ºF
PTFE	350ºF
EPDM	300ºF
Natural Rubber	212ºF

Maximum Working Pressure: 300 psi

Ambient Temperature Limits: Determined by the pressure instrument

Wetted Materials End Flanges

End Flanges	Max Size
316L	10"
Carbon Steel	10"
Hastelloy C-276	4"
Titanium	4"
Alloy 20	4"
Kynar (VDF	4"
PTFE (25% Glass Filled)	4"
PVC	4"
CPVC	4"

All Non-Metallic End Flanges Rated to 150 PSIG Max

Diaphragm/Sleeve

Buna N	10"
Viton A	10"
PTFE	10" (2" min)
EPDM	10"
Natural Rubber	10"

RING SEAL THREADED

Liner/Sleeve Selection Chart			
Sleeve Material	Chemical Resistance	Max Temp.	Durability/Abrasion
Buna N	Most common in Wastewater market. Limited chemical compatability.	225°F	Is an industry standard material that carries a medium/low abrasion resistance.
Viton	Good chemical resistance that can be utilized in many applications. Limited chemical compatability.	400°F	Offers the best combination of temperature and high abrasion resistance.
EPDM	Medium level of chemical resistance. Specialized material that performs very well in specific process medias.	300°F	Offers medium abrasion resistance.
Natural Rubber	Often used in mining applications due to excellent wear properties, however, contains poor resistance to a variety of chemicals. Specialized material that performs very well in specific process medias.	212°F	Offers the highest resistance to abrasion out of the materials listed. NR is a tough material with a high durometer and stiffness.
PTFE	Offers the best chemical resistance of all listed liners.	350°F	Soft material subject to plastic deformation and cold flow. Very low resistance to abrasion.

HOW TO ORDER: Choose options to build a part number. For example: ORTCC1010-D-GTS-AG-TSX-TS

ORT | **C** | **C** | **1** | **010** | **-D** | **-GTS**

MODEL
ORT = Ring Seal, Threaded

BODY
C = Carbon Steel (Green Epoxy Coated)
S = 316 SS

END FLANGE
C* = Carbon Steel (Green Epoxy Coated)
S = 316 SS
D =Carpenter 20
H = Hast C-276
J = Titanium
G = Solid Glass-Filled Teflon
K = Kynar
Z = PVC
W = CPVC

Wetted

*Carbon Steel Not Available with SS Body

DIAPHRAGM/ SLEEVE
1 = Buna
2 = Viton
3 = PTFE
4 = EPDM
5 = Natural Rubber

Wetted

PIPE SIZE
005 = 0.5" FNPT
010 = 1" FNPT
015 = 1.5" FNPT
020 = 2" FNPT

INSTRUMENT REMOVAL
-D = IQD at Base of Assembly
-N = Needle Valve at Base of Assembly
-B = One IQD Under Each Instrument
-V = One Needle Valve Under Each Instrument
-X = No IQD or Needle Valve

MOUNTING
Direct Mounts - *See Page 109 for Complete Direct Mounting Guide*

Remote Mounts
(Single Instrument Only)
A?? = Armored Capillary, Threaded
B?? = Armored Capillary, Welded (N/A with Carbon Steel Body)
P?? = PVC Coated Armor, Threaded
W?? = PVC Coated Armor, Welded (N/A with Carbon Steel Body)

YYY = No Mount (Dry Seal)

-AG | **-T** | **S** | **X** | **-TS**

FILL FLUID
-AS = Silicone DC200
-AG = Glycerin USP
-BP = Propylene Glycol

See Page 100 for Complete Fill Guide

-XX = No Fill Fluid

INSTRUMENT A
-T = Smart Transmitter
-S = Switch
-G = Gauge
-D = "Stick" Transducer
-X = No Instrument

INSTRUMENT B
T = Smart Transmitter
S = Switch
G = Gauge
D = "Stick" Transducer
X = No Instrument

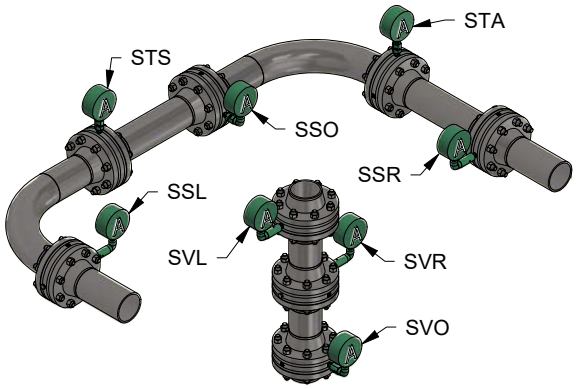
INSTRUMENT C
T = Smart Transmitter
S = Switch
G = Gauge
D = "Stick" Transducer
X = No Instrument

OPTIONS
-RV = Red-Valve Dimensions (for drop-in replacements)
-PP = PulsePlus Pulsation Dampening (available with Reotemp Pressure Gauges Only)
-MR = Certficate of Material Traceability (MTR)
-US = American Iron & Steel (AIS) Compliant Material
-PM = Certificate of Positive Material Identification (PMI) for metallic parts only
-HT = Hydrostatic Testing per ASME B31.3
-TS = SS Tag (1-10 Characters)

INSTRUMENT-TO-PIPE MOUNT CODES

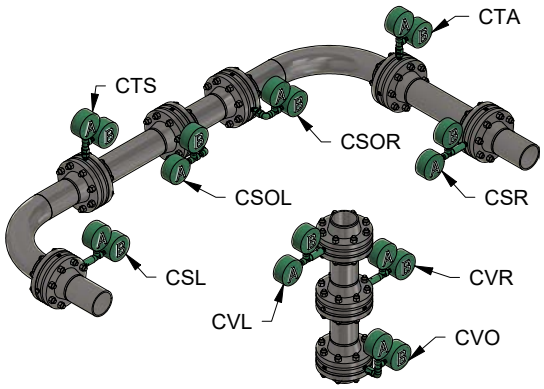
Single Instrument Orientations	
Horizontal Pipe Mounts	Vertical Pipe Mounts
STS	SVL
STA	SVR
SSO	SVO
SSR	
SSL	

Custom Single Mount Per Customer dwg - Use Code "SCU"

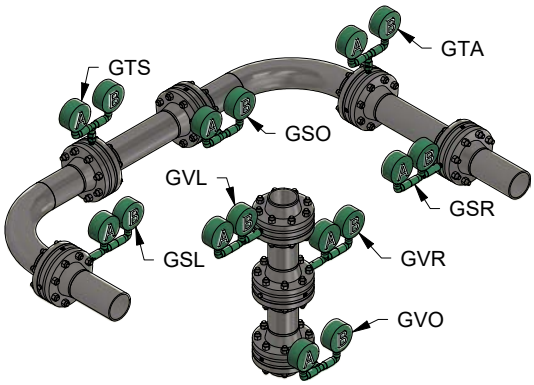


Compact (2 Instrument Orientations)	
Horizontal Pipe Mounts	Vertical Pipe Mounts
CTS	CVL
CTA	CVO
CSR	CVR
CSL	
CSOR	
CSOL	

Custom Dual Mount Per Customer dwg - Use Code "CCU"

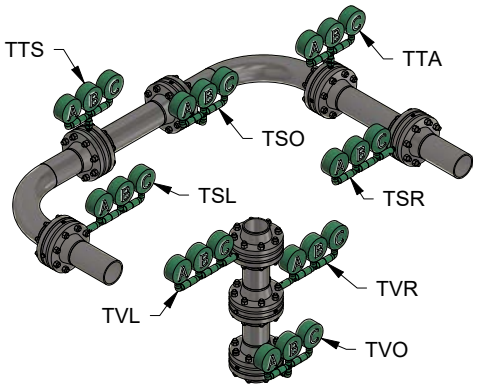


Goalpost (2 Instrument Orientations)	
Horizontal Pipe Mounts	Vertical Pipe Mounts
GTS	GVL
GTA	GVO
GSO	GVR
GSR	
GSL	

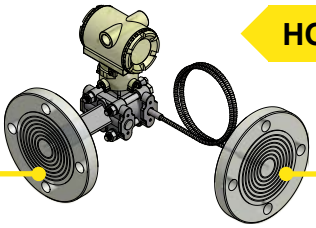


Trident (3 Instrument Orientations)	
Horizontal Pipe Mounts	Vertical Pipe Mounts
TTS	TVL
TTA	TVO
TSO	TVR
TSR	
TSL	

Custom Triple Mount Per Customer dwg - Use Code "TCU"



SMART TRANSMITTER ATTACHMENT



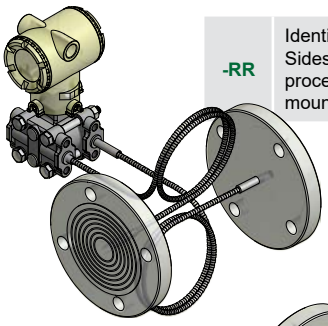
HOW TO ORDER: Unbalanced System Example

W9FFWR31S-DWD-AS-**RB**

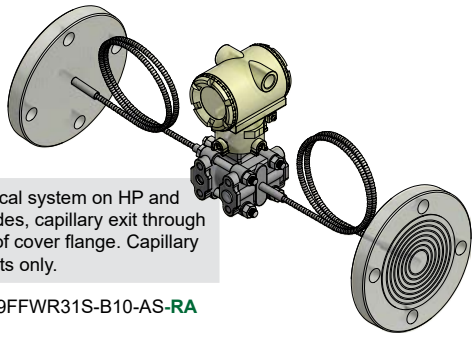
W9FFWR31S-B05-AS-**RL**

DIFFERENTIAL PRESSURE ASSEMBLY

Balanced System A complete assembly with one part number that includes two diaphragm seals, two capillaries, two fills, and one complete assembly calibration certificate.



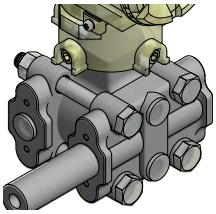
-RR	Identical system on HP and LP Sides, capillary exit through process connections. Capillary mounts only.



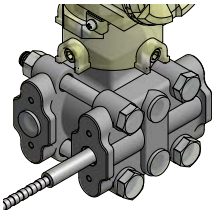
-RA	Identical system on HP and LP sides, capillary exit through face of cover flange. Capillary mounts only.

Example: W9FFWR31S-B10-AS-**RA**

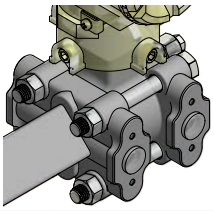
Unbalanced DP System Where seal, mount, capillary, or fill is not identical. A complete assembly includes one diaphragm seal on the HP side AND one diaphragm seal on the LP side.



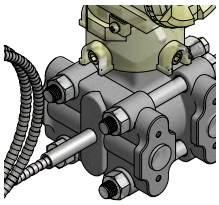
-RH	Mount via Process Connections
Side	High Pressure



-RL	Mount via Process Connections
Side	Low Pressure



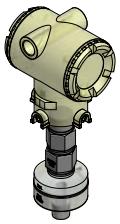
-RB	Mount via Face of Cover Flange
Side	High Pressure



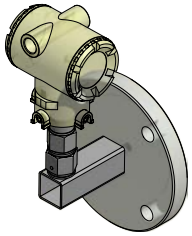
-RC	Mount via Face of Cover Flange
Side	Low Pressure

GAUGE PRESSURE ASSEMBLY

In Line Pressure Transmitter

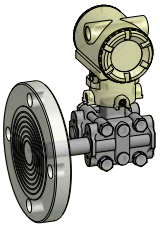


-R1	Mount to In-Line Gauge Pressure Transmitter. Direct or remote mount.

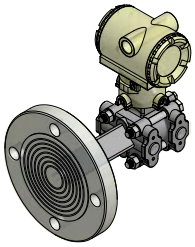


-R4	Horizontal Mount (Tank Mount) to In-Line Gauge Pressure Transmitter. Direct mount only.

Traditional Mount for Gauge Pressure Seal mount on one side only, other side is vented.



-R2	Instrument mount through process connections, HP Side. Use “R3” if mounting to LP side

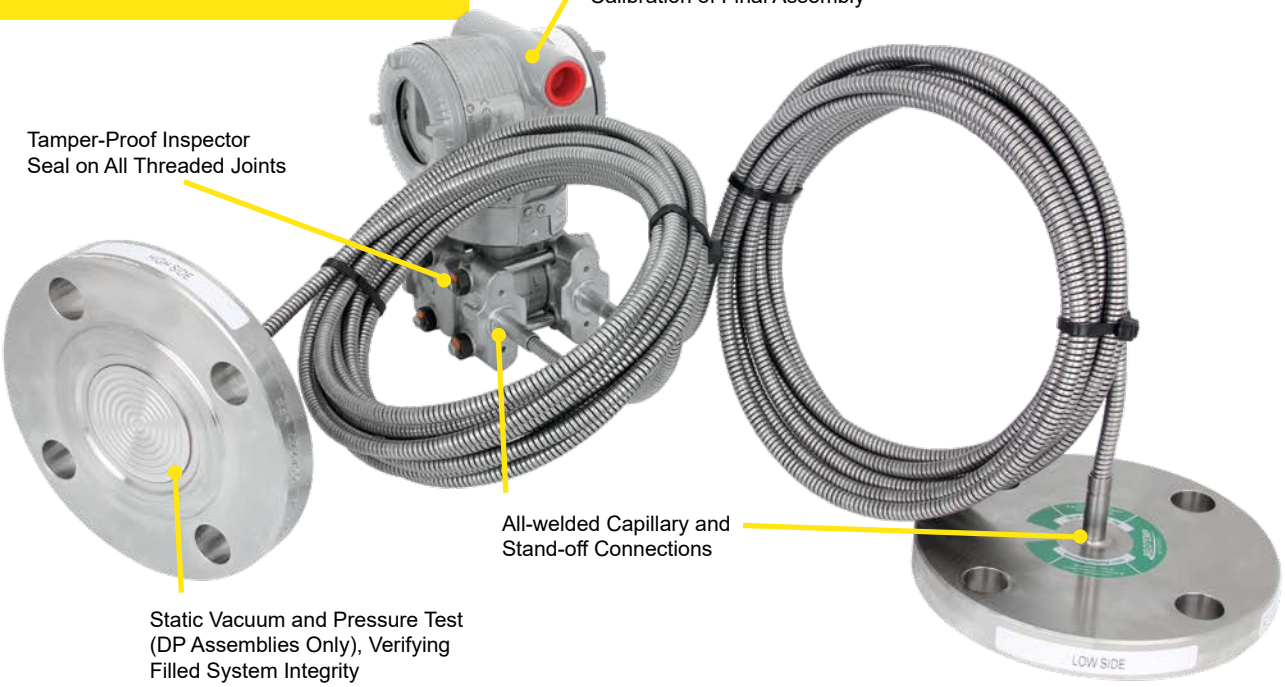


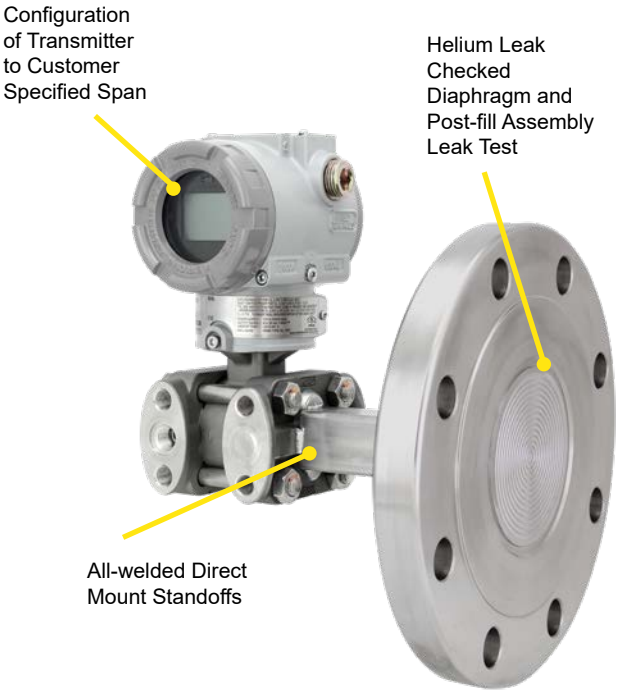
-R8	Instrument mount through face of cover flange, HP Side. Use “R9” if mounting to LP Side

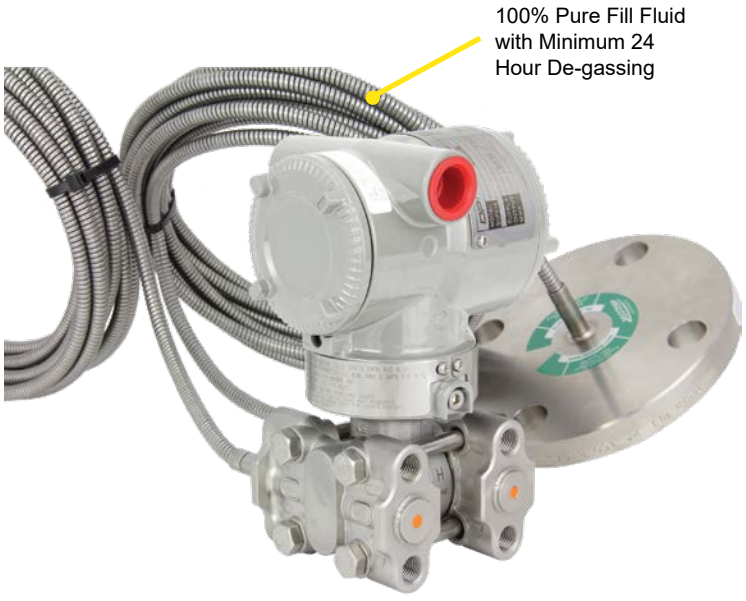
DIAPHRAGM SEAL ASSEMBLY TO SMART TRANSMITTERS

Reotemp specializes in the unique craft of assembling diaphragm seals to field transmitters for the purpose of measuring pressure, differential pressure, level, and flow. As a trusted supplier to many of the world's leading transmitter manufacturers, Reotemp can assemble a diaphragm seal system to virtually any make or model transmitter. Every transmitter mount includes the features below to ensure superior performance and durability for every assembly. Reotemp also offers repair, refurbishment or replacement of used transmitters with remote seals.

STANDARD FEATURES ON ALL REOTEMP ASSEMBLIES







INSTRUMENT MOUNTING CONFIGURATIONS

DIRECT MOUNT

Direct Mounting a pressure gauge, switch, or transmitter is the most common diaphragm seal assembly.

Threaded

- Allows Replaceability
- High Quality Thread Sealant
- Inspector Seal

Welded

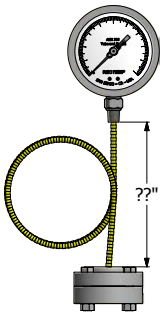
- Tamper Proof
- Rated for High Temps
- Leak Resistant

Code	Description	Max. Temp
-DTD	Threaded Instrument Connection	400°F
-DWD	Welded Instrument Connection	600°F

Assembly Notes: Welded connection recommended for pressure exceeding 1,500 psi for purposes of leak prevention.

REMOTE MOUNT

Remote Mounting a pressure instrument using flexible capillary is a common mounting method when the point of measurement is in a hazardous or inconvenient location.



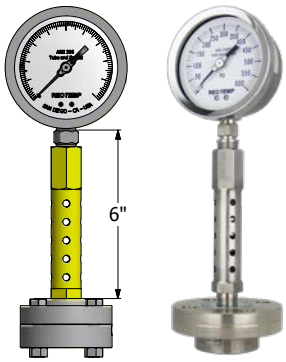
Code	Description
A	Armored, Threaded, 2mm
B	Amored, Welded, 2mm
W	PVC, Threaded, 2mm
P	PVC, Welded, 2mm
C	Armored, Threaded, 1mm
E	Armored, Welded, 1mm
F	PVC, Threaded, 1mm
G	PVC, Welded, 1mm
H	Armored, Threaded, 0.55mm
J	Armored, Welded, 0.55mm
K	PVC, Threaded, 0.55mm
L	PVC, Welded, 0.55mm

Note: ?? = Length in feet (e.g. 05 = 5 feet)

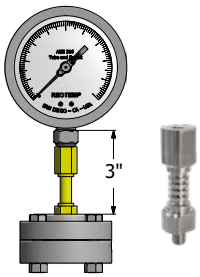
Assembly Notes: 2mm, 1mm, and .55mm are capillary inner diameter. Ambient temperature limit of PVC coated armor is 250ºF. Process temperature limit of threaded connections is 400°F. Standard instrument connection is threaded (Smart Transmitters are welded), unless specified by customer.

COOLING ELEMENTS

Used in either high temp or cold temp applications, Cooling Elements mounted above diaphragm seals quickly normalize fluid temperature toward ambient. This protects the pressure instrument while still maintaining the convenience of a direct mount.



-RTR



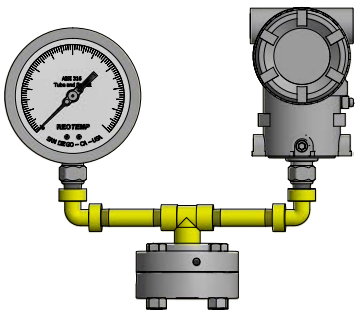
-STW

Code	Description	Max. Temp
-RTR	6” Cooling Tower	750°F
-STW	3” Cooling Standoff	600°F

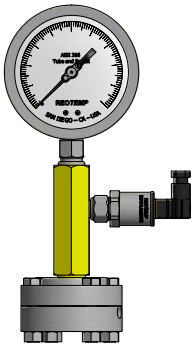
Assembly Notes: Cooling elements are welded to diaphragm seal. Instruments are threaded to cooling element unless specified. All lengths are nominal.

TREE ASSEMBLIES

Tree Assemblies offer the ability to mount two pressure instruments onto one diaphragm seal, allowing the user to gain both a local indication and a remote signal without adding an additional pipe insertion.



-TRE & -TRX



-TRM

Code	Description	Max. Temp
-TRE	Goal Post, Low Pressure Assembly (Max. 150 psi)	400°F
-TRX	Goal Post, Heavy Duty (Max. 3,000 psi)	600°F
-TRM	Compact Tree Assembly (Max. 3,000 psi)	600°F

Assembly Notes: Threaded joints are fully welded for consistent instrument orientation. Instrument connections are threaded unless specified by customer. Diaphragm seal must displace enough fluid to drive both instruments.

FILL GUIDE

Diaphragm seals are designed to protect pressure instruments from hot process media and corrosive chemicals while minimizing any negative effect on instrument accuracy and durability. A well-made diaphragm seal can achieve this goal only if it is properly assembled, filled, and tested. Reotemp's highly trained technicians use state-of-the-art equipment so that every diaphragm seal assembly is filled and tested to assure optimal instrument performance:

- ✓ 24-hour Minimum Fluid De-gassing
- ✓ Evacuated Instrument Chamber Up to 10^{-8} mbar Absolute
- ✓ Complete Fill Integrity Check
- ✓ Fill-port Leak Test
- ✓ Post-fill Static Test
- ✓ Verification of Instrument Calibration
- ✓ High-temp Pipe Sealant Option for Joints
- ✓ Tamper-proof (Inspection Seal) Lacquer used on All Threaded Joints
- ✓ Sturdy Diaphragm Packaging Protection

Part Number Code	Name	Description	Temperature Range (Vacuum Service <5psia)	Pulse+™	Viscosity cst @ ~77°F	Specific Gravity @ ~77°F	Thermal Expansion cc/cc/°C
STANDARD FILL FLUID							
AS	Silicone DC200[1]	This is the standard fill fluid for most diaphragm seal applications.	-40°F to 400°F (-40°F to 250°F)	Yes	20	0.94	.00104
HIGH TEMP SILICONE							
BH	Silicone DC704[1]	Standard for Smart Transmitters and capillary systems. Performs well in applications with high temperature and a deep vacuum.	0°F to 650°F (0°F to 450°F)	No	44	1.07	.00077
B1	Silicone DC710[1]	Highest temperature rating; ideal for gauge seal assemblies. Too thick for capillary assemblies. Response time can become very slow in cold conditions.	50°F to 750°F (50°F to 400°F)	Yes	500	1.11	.00043
C8	Syltherm 800[2]	Low viscosity allows it to perform well in both low and high temperatures. Not recommended for vacuum service or at high temperatures when under low static pressure.	-40°F to 750°F (-40°F to 150°F)	No	9.5	0.93	.00136
B5	Silicone DC705[1]	Performs very well in high temperatures when under vacuum. The high viscosity and freezing point of this fluid makes it a poor choice for cold or outdoor installations without heat tracing.	50°F to 675°F (50°F to 550°F)	Yes	175	1.09	.00096
B2	Silicone DC550[1]	Similar high temperature performance as DC705, however it performs better at lower temperatures.	-40°F to 575°F (-40°F to 400°F)	No	125	1.07	.00076
FOOD GRADE							
AG	Glycerin USP	This is the standard fill fluid for most gauge seal assemblies for food, beverage, and pharmaceutical applications. Its high viscosity will cause very slow response at times in low temperature and outdoor installations.	60°F to 450°F (Not Suitable)	Yes	1100	1.26	.00061
BN	NEOBEE M20[7]	Low viscosity and a wide temperature range makes this the standard sanitary fill fluid for Smart Transmitters and capillary systems.	-10°F to 400°F (-10°F to 200°F)	No	10	0.92	.00101
BS	Food Grade Silicone	Highest temperature limit for food grade fluids. Because of its high viscosity it does not perform well in low temperatures.	20°F to 550°F (20°F to 250°F)	Yes	350	0.97	.00096
BP	Propylene Glycol	This is the fill fluid used when Glycol is called for on the customer specification. It has a very narrow temperature range.	0°F to 200°F (Not Suitable)	No	2.85	1.03	.00073
INERT (TYPICALLY FOR CHLORINE AND OXYGEN APPLICATIONS OR IN SILICONE-FREE ENVIRONMENTS)							
C1	Fomblin Y06[4]	Ideal inert fluid for transmitter applications. Relatively high vapor pressure above 200°F. Not recommended for use in high temperature situations with low static pressure.	-40°F to 450°F (0°F to 250°F)	No	71	1.88	.00086
C2	Halocarbon 6.3[3]	Standard inert fluid used in gauge seal assemblies.	-40°F to 400°F (-40°F to 200°F)	Yes	6.3	1.87	.00084
C3	Halocarbon 1.8[3]	Typically used in low temperature applications because of its low viscosity.	-110°F to 220°F (-100°F to 100°F)	No	1.8	1.82	.00084
C4	Fluorolube FS-5[5]	Similar performance to Halocarbon 6.3, however not suitable for vacuum service.	-40°F to 450°F (Not Suitable)	No	5	1.86	.00087
SPECIALTY							
CK	Krytox 1506[6]	Specialty fill fluid, inert.	-40°F to 350°F (-40°F to 300°F)	No	62	1.88	.00095
BE	Ethylene Glycol	Occasionally used in annular (O-ring) seal assemblies.	-25°F to 320°F (Not Suitable)	No	30	1.10	.00062
CT	Syltherm XLT[2]	Used for very low process temperatures.	-150°F to 500°F (Not Suitable)	No	1.4	0.85	.00168

1 Trademark Dow Corning
2 Trademark The Dow Chemical Company
3 Trademark Halocarbon Product Corporation
4 Trademark AUSIMONT S.P.A
5 Trademark Hooker Chemical Company
6 Trademark The Chemours Company FC, LLC
7 Trademark Stepan Specialty Products

Note: PulsePlus™ fill fluids may have different physical properties than specified. Chemical composition and temperature ranges do not vary.