

Selection and Types of 1199 Remote Mount Seal Systems

Product Introduction

Differential pressure transmitter assembly with remote mount seal system consists of a DP transmitter, one or two remote seal systems and one fill fluid. In service, the thin and elastic diaphragm, which is connected to the transmitter by capillaries or flange, together with the fill fluid, separates the sensor elements from the process.

When applying process pressure, the diaphragm of the fill fluid system is deformed and transfers the pressure to the diaphragm of the transmitter through capillaries. The transferred pressure results in deformation to the sensing diaphragm in the sensor module, which is proportional to the process pressure and is converted to appropriate current, voltage or digital HART output signal.

Considerations

While expanding the applications of the transmitter, the remote seal system also affects the overall performance of the instrument, such as amplified temperature effects, slowed response, etc. To minimize the impacts and meet the requirements for process control, please note the following precautions.

- Selecting appropriate models based on the flow, for example the pressure, temperature or fill fluid type
- The two remote seal systems of a DP transmitter shall be aligned to each other.
- While ensuring normal operation, the capillaries shall be kept as short as possible to reduce temperature effects and cut short the response time.
- The thickness and diameter of diaphragm affect the temperature but selecting thin and large-diameter diaphragm could reduce the effects.
- Note As the limit of remote pressure is associated with fill fluid density and the height difference of the pressure, the effects of the transmitter-to-remote seal system location shall be calculated particularly in vacuum service.

Remote Device Types

EST4300-RG/RD remote seal systems are connected with the process devices in the following ways

PFW Flat	EFW Plug-in
	
RTW thread-mounting	RFW Flange

General Specifications and Datasheet

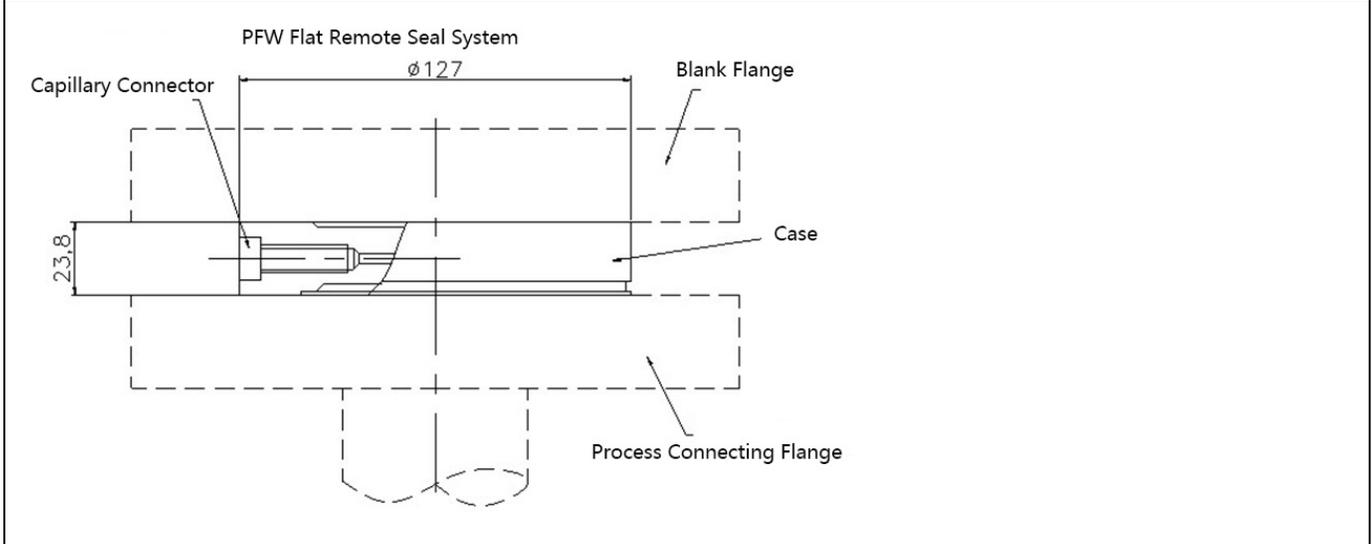
1199 Diaphragm Seal GSD- 1199DS-EV01

Measuring your business

	
SCW check ring (mainly for sanitary system)	CAP capillary
	

PFW Flat Remote Seal System

PFW Flat Remote Seal System (150Lb) Dimensional Drawings

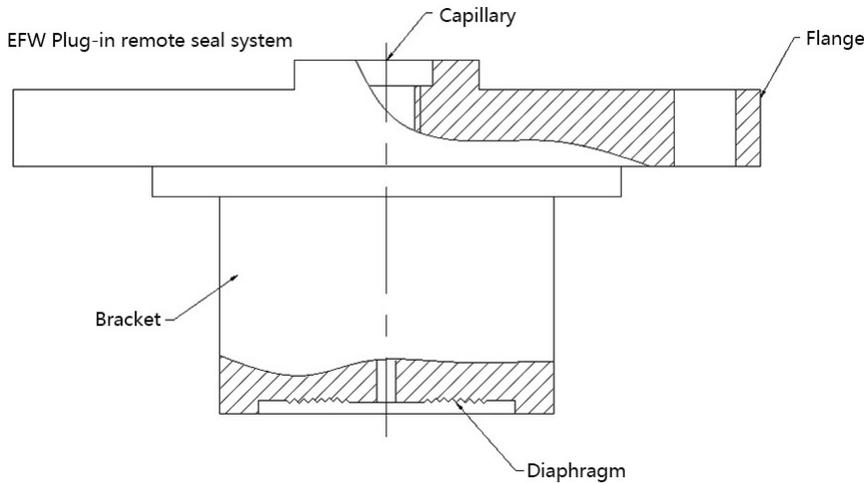


PFW Flat Remote Seal System Ordering Procedure

PFW	Flat Remote Seal System		
	Code	Specification	
	10	2"-150Lb	
	11	3"-150Lb	
	00	Others	
		Code	Diaphragm materials of remote seal system
		A	316LSST
		B	Alloy C-276
		C	Tantalum
		D	Monel
		Code	Mounting flange material
		11	316SST
		00	Others
PFW	11	C	11

EFW Plug-in Remote Seal System

EFW Plug-in Remote Seal System (150Lb) Dimensional Drawings



Flange Size of EFW plug-in remote seal system

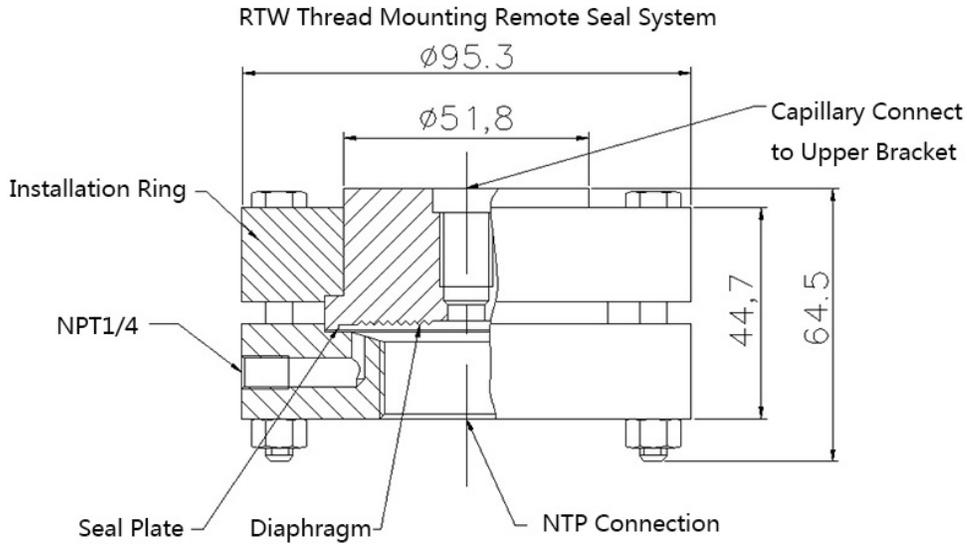
Flange Size (mm)						Bolt hole		
Dimension	Specification	Diameter (D)	A	B	C	Number (n)	Diameter (d)	Distribution diameter (D)
3"	150Lb	190	30	66	127	4	19	152
4"	150Lb	228	30	89	157	8	19	190
3"	300Lb	210	35	66	127	8	22	168
4"	300Lb	254	38	89	157	8	22	200

EFW Plug-in remote seal system ordering procedure

EFW	Plug-in remote seal system							
	Code	Extension length diameter and Wetted-parts materials						
	11	(3")66mm 316SST						
	12	(3")66mm Alloy (special order)						
	13	(4")89mm 316SST						
	14	(4")89mm Alloy (special order)						
	Code	Diaphragm materials of remote seal system						
	A	316LSST (only for code 11 and 13)						
	B	Alloy C-276 (only for code 12 and 14)						
	C	Tantalum						
	Code	Extension length						
	20	50mm						
	40	100mm						
	60	150mm						
	00	Others						
	Code	Flange materials and rating						
	A11	Zinc plated CS, Maximum working pressure 2.0 MPa						
	B12	Zinc plated CS, Maximum working pressure 5.0 MPa (not recommended)						
EFW	11	C	40	A11				

RTW Thread Mounting Remote Seal System

Dimensional Drawings of RTW thread-mounting remote seal system (maximum working pressure 10MPa)

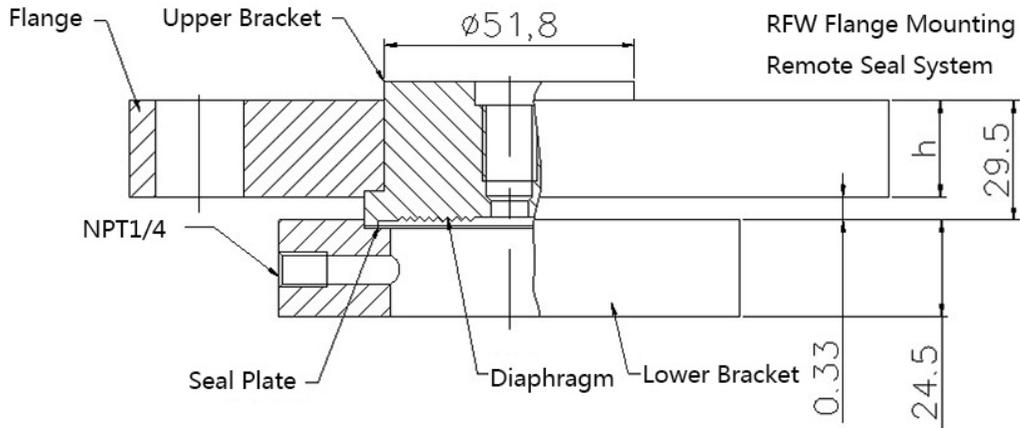


Ordering Procedure of RTW thread-mounting remote seal system

RTW	Thread-mounting remote seal system				
	Code	Spare purging vent			
	11	No			
	12	Yes			
	Code	Diaphragm materials of remote seal system			
	A	316LSST			
	B	Alloy C-276			
	C	Tantalum			
	Code	Construction Materials			
	11	316SST for cap, zinc-plated CS for mount ring and asbestos rubber for gasket			
	31	316SST for cap and mount ring, asbestos rubber for gasket			
	Code	material			
	A	316LSST			
	B	Hastelloy Alloy C			
	Code	Impulse pipe connection			
	11	M20*1.5 female			
	13	1/2NPT			
	00	Specials			
RTW	11	C	11	A	11

RFW Flange Mounting Remote Seal System

Dimensional Drawings of RFW Flange mounting remote seal system



Ordering Procedure of RFW Flange mounting Remote seal system

RFW	Flange mounting remote seal system	
	Code	Spare purging vent
	11	No
	12	Yes
	Code	Diaphragm materials of remote seal system
	A	316LSST
	B	Alloy C-276
	C	Tantalum
	D	Monel
	Code	Construction Materials
	11	316SST for cap, zinc-plated CS for mount ring and asbestos or rubber for
	31	316SST for cap and mount ring, asbestos or rubber for gasket
	Code	Maximum working pressure 38L
	A	150Lb (2.0MPa)
	B	300Lb (5.0MPa)
	Code	Lower bracket size
	1	1"
	1.5	1½"
	2	2"
	3	3"
	4	4"
	0	Others
	Code	Lower bracket material
	A	316SSL (recommended)
	B	Alloy C-276
	E	Zinc Plated CS
	T	Other Requirements

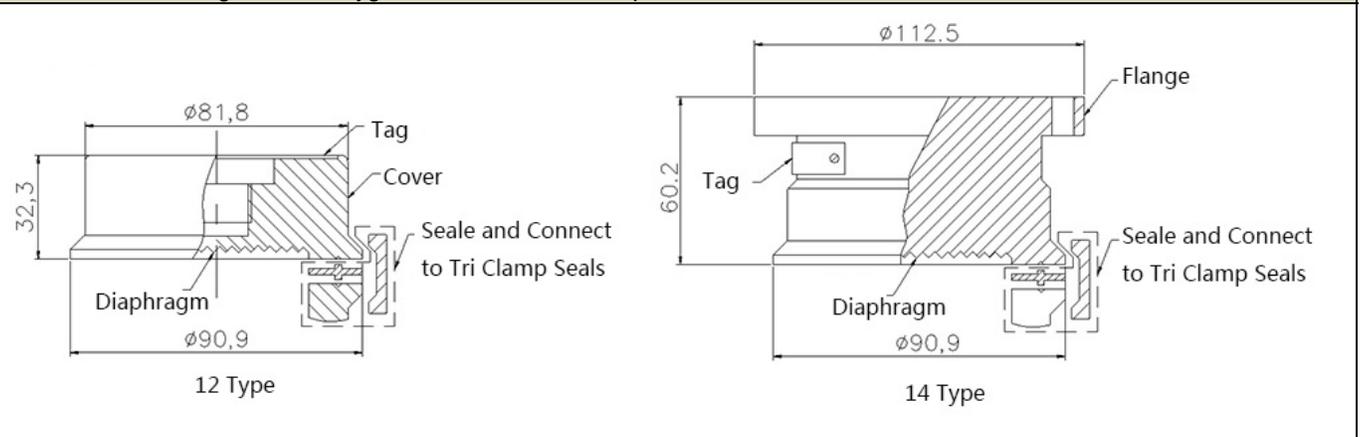
RFW 11 C 11 A 3 B

Flange Size of RFW plug-in remote seal system

Flange size of upper housing (mm)								Flange size of lower housing (mm)	
Nominal Bore (inch)	Nominal Pressure (Lb,M Pa)	Convex diameter	Outside diameter (D)	Thickness (A)	Bolt-hole Diameter (D1)	Numbers of bolt holes (n)	Diameters of bolt hole (d)	Diameter E(mm)	Diameter F(mm)
1	150/2	62	108	14	79	4	16	26.9	66.5
	300/5	66	124	17	89	4	20		
1½	150/2	73	127	17	98	4	16	41.9	78.7
	300/5	73	158	20	114	4	23		
2	150/2	92	152	19	120	4	20	52.5	95.2
	300/5	92	165	22	127	8	20		
3	150/2	127	190	23	152	4	20	79	127.2
	300/5	127	210	25	168	8	23		
4	150/2	164	229	23	190	8	20	103	157.2
	300/5	164	254	31	200	8	23		

SCW Hygienic Tri-clover Tri Clamp Seals

Dimensional Drawings of SCW Hygienic Tri-clover Tri Clamp Seals

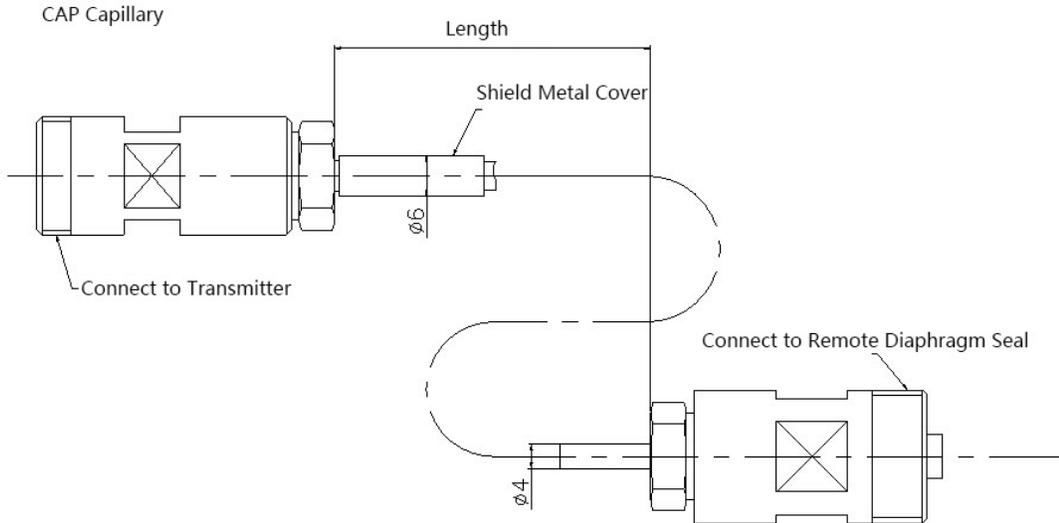


Ordering Procedure of SCW Hygienic Tri-clover Tri Clamp Seals

SCW	Hygienic Tri-clover Tri Clamp Seals		
	Code	Diaphragm Sea;	Extension Length
	A	316 片	316
	B	Hastelloy Alloy C	316
	T	Specials	
		Code	Extension length (mm)
		20	50
		40	100
		60	150
		70	Specials
SCW	C	60	

Capillary Ordering Procedure

Capillary Dimensional Drawings



Capillary Ordering Procedure

CAP	Material 304, Size $\Phi 3 \times 1$	
	Code	Capillary length (mm)
	15	1.5m
	30	3.0m
	45	4.5m
	60	6.0m
	75	7.5m
	Code	gland
	Not	Shielded 304
	A	PVC-sheathed, shielded
CAP	30	A

Fill Fluid

Code	Fill fluid	Temp. Range	Specific gravity	CTE (Coefficient	Viscosityat 25°C (mPa.
Not marked	Silicone Oil 200	-40~149°C	0.934	0.00108	<20
S	Modified silicone oil	15~315°C	1.07	0.00053	44~50
F	Fluorocarbon oil	-45~205°C	1.85	0.000864	65

Note

1. Temperature limit is lowered in vacuum application;
2. Please indicate S or F for the capillary in fill fluid order, otherwise silicone oil 200 will be shipped.