

Informatii Tehnice

STR800 Traductor SmartLine cu Diafragme Incapsulate - Specificatia 34-ST-03-88



Introducere

Parte a familiei de produse SmartLine®, STR800 reprezinta o serie de traductoare de presiune de inalta performanta , imperecheate hidraulic si optimizate cu un set complet de diafragme incapsulate cu conectare la proces , la distanta . Utilizind aceeasi tehnologie a senzorului piezorezistiv performant ca la traductoarele ST 800 , Honeywell a optimizat constructia mecanica si cea hidraulica in ideea de a minimiza influentele temperaturii la nivelul sistemului de conectare la distanta prin flanse cu diafragma .

Cele mai bune caracteristici din clasa:

- Precizie de pina la 0.065% standard
- Compensare automata cu presiunea statica& temperatura
- Posibilitati multiple de afisare locala cu indicator
- Aducere la zero,si configurare domenii
- Insensibil la polaritatea conectarii tensiunii de alimentare
- Posibilitati de diagnoza locala "on-board "
- Realizat cu dubla membrana pentru cea mai inalta siguranta in exploatare conform ANSI/NFPA 70-202 si ANSI/ISA 12.27.0
- Cea mai buna protectie la suprapresiune
- Conformitate deplina cu cerintele SIL 2/3 .
- Proiectare modulara a instrumentului
- Garantie de pina la 15 ani

Limite si Domenii Traductor :

Model	Limita URL "H ₂ O (mbar)	Limita LRL "H ₂ O (mbar)	Domeniu max. "H ₂ O (mbar)	Domeniu min. "H ₂ O (mbar)
STR82D	400 (1000)	-400 (-1000)	400 (1000)	4.0 (10)
Model	psid (bar)	psid (bar)	Psid (bar)	psid (bar)
STR83D	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)
Model	psig (bar)	psig (bar)	Psig (bar)	psig (bar)
STR84G	500 (35.0)	-14.7 (1.0)	500 (35.0)	5 (0.35)
STR87G	3000 (210)	-14.7 (1.0)	3000 (210)	30 (2.1)
Model	psia (bara)	psig (bara)	psig (bara)	psig (bara)
STR84A	500 (35)	0 (0)	500 (35)	5 (0.35)



Figura 1 – STR800 Traductor cu Conectare la Distanta prin Diafragme

Aplicatii Tipice ale Traductorului cu Conectare la Proces la Distanta

- Procese cu Temperaturi Inalte
- Fluide Viscoase sau cu Suspensii Solide
- Procese cu Materiale Inalt Corozive
- Aplicatii Igienice
- Aplicatii cu Risc de Scurgeri de Hidrogen
- Aplicatii Masura Nivel
- Aplicatii unde este nevoie de montarea traductoarelor la distanta
- Aplicatii masura presiune la rezervoare cu calculul densitatii

Optiuni Comunicatie/ lesiri:

- Honeywell Digitally Enhanced (DE)
- HART® (versiunea 7.0)
- FOUNDATION™ Fieldbus

Toate traductoarele au posibilitatea de comunicatie conform protocoalelor de mai sus.

Descriere

Familia SmartLine de traductoare de presiune relativa, presiune diferentia si presiune absoluta este realizata pe baza unui senzor piezorezistiv de inalta performanta . Acest senzor de fapt integreaza senzori multipli care leaga masuratoarea presiunii din proces de masuratoarea presiunii statice (la modelele DP) si a compensarii cu temperatura , rezultand astfel cele mai bune performante . Acest nivel de performanta permite ca ST 800 sa inlocuiasca theoretic oricare traductor competitive disponibil astazi .

Indicare Unica Avansata / Optiuni Display

ST 800 in constructie modulara este echipat cu un display de baza alfanumeric sau cu un display unic , grafic, avansat cu cristale lichide LCD, cu multe caracteristici de neegalat .

Caracteristici Display Alfanumeric LCD de baza

- Modular (poate fi montat sau indepartat direct in proces)
- Ajustare pozitie la 0, 90,180, si 270 grade
- Unitati de masura Pa, KPa, MPa, KGcm², Torr, ATM, i4H₂O, mH₂O, bar, mbar, inH₂O, inHG, FTH₂O, mmH₂O mm HG, & psi
- 2 linii 16 caractere (4.13H x 1.83W mm)
- Indica iesirea cu extragerea de radacina patrata

Caracteristici Display Grafic Avansat LCD

- Modular(poate fi montat sau indepartat direct in proces)
- Ajustare pozitie la 0, 90, 180 si 270 grade
- Unitati de masura standard si la alegerea utilizatorului
- Display cu opt ecrane si 3 formate sunt posibile
- Marimea PV cu bargraf sau PV cu grafic de evolutie
- Ecran configurabil cu revenire periodica a afisarii
- Posibilitati de display cu afisarea radacinii patrata care pot fi setate separat de semnalul de iesire4-20mA dc
- Indicatia unica "Health Watch" asigura vizibilitate instant a diagnozei starii de functionare

Diagnoze

Toate traductoarele SmartLine ofera diagnoza digitala care ajuta in atentionarea avansata a evenimentelor de defect posibile , minimizind intreruperile neplanificate, fapt ce conduce la scaderea costurilor de operare in ansamblu .

Instrumente de Configurare

Optiunea de Configurare cu Trei Butoane

Potrivita pentru toate cerintele electrice si de mediu inconjurator , familia SmartLine ofera abilitatea de a configura traductorul si display-ul cu ajutorul a trei butoane accesibile, atunci cand este selectata aceasta optiune. Posibilitatile de ajustare Zero/ Limite sunt de asemenea optionale cu aceste butoane cu sau fara selectia configurarii display-ului

Configuratorul Portabil

Traductoarele SmartLine au posibilitatea configurarii si a comunicatiei pe doua fire intre operator si instrument.

Acest lucru este realizat cu ajutorul Configuratorul Honeywell cu Comunicatie Multipla (MCT202).

MCT202 este capabil sa configureze echipamente de camp cu protocoale DE si HART si de asemenea poate fi comandat pentru utilizare in mediu cu siguranta intrinseca . Toate traductoarele Honeywell sunt proiectate si testate pentru a fi conforme cu protocoalele de comunicatie oferite si de asemenea proiectate sa opereze cu orice echipament de configurare portabil valid .

Configurare prin intermediul unui Personal Computer

Instrumentul de configurare SCT3000 Honeywell asigura o cale usoara de configurare a protocolului Digitally Enhanced (DE) utilizand un PC ca interfata . Softwarele Field Device Manager (FDM) si FDM Express sunt de asemenea la indemana pentru configurarea echipamentelor cu protocoale HART & Fieldbus

Integrarea in Sistemul Distribuut Experion PKS

- Protocoalele de comunicatie ale familiei SmartLine se aliniaza la cele mai uzuale standarde HART/DE/Fieldbus.
- Integrarea cu Sistemul Distribuut de Conducere Honeywell Experion PKS ofera urmatoarele avantaje unice :
 - Transfer de mesaje cu traductorul
 - Indicarea modului de mentenanta
 - Rapoarte acces neautorizat la date
 - Imagine Ansamblu Instrumente FDM cu rapoarte de stare de buna functionare
- Toate unitatile ST 800 sunt testate cu Sistemul Experion pentru a asigura cel mai inalt nivel de compatibilitate in sistem

Proiectare Modulara

Pentru a ajuta la controlul costurilor de mentenanta si al gestiunii bunurilor toate traductoarele ST 800 au o constructie modulara care permite utilizatorului sa inlocuiasca corpul instrumentului , sa monteze un display sau sa schimbe modulele electronice fara sa afecteze performantele de ansamblu sau certificarile acestuia .

Caracteristici ale Constructiei Modulare

- Inlocuirea corpului principal
- Schimbare/ inlocuire module electronice/comunicatie *
- Montarea sau indepartarea display-ului integral *
- Montarea sau inlocuirea terminalului de protectie fulgere*

* Inlocuirile subsansamblelor se pot face local chiar si in zonele cu hazard cu siguranta intrinseca IS cu exceptia zonelor cu pericol de incendiu , fara violarea aprobarilor agrematate..

Fara a afecta performantele, conceptul de modularitate al lui Honeywell rezulta in **necesitati mai mici de inventar si costuri de operare per ansamblu mai mici** .

Specificatii despre Performante¹

Precizia de Referinta² (conformitate cu +/-3 Sigma)

Model	Limita Sup. URL	Limita Inf. LRL	Domeniu Min .	Raport Maxim Limite	Precizie de Referinta ¹ (% Domeniu)
STR82D	400 in H ₂ O/1000mbar	-400 in H ₂ O/-1000mbar	4 in H ₂ O/10mbar	100:1	0.065
STR83D	100 psid/7.0 bar	-100 in H ₂ O/-7.0bar	1 in H ₂ O/.07bar	100:1	0.065
STR84G	500 psi/35 bar	-14.7/-1.0 bar	5 psi/0.35 bar	100:1	0.065
STR87G	3000 psi/210 bar	-14.7 psi/-1.0 bar	30 psi/2.1 bar	100:1	0.065
STR84A	500 psia/35 bara	0 psia/0 bara	5 psia/0.35 bara	100:1	0.065

Zeroul si domeniul pot fi configurate oriunde in interiorul limitelor listate mai sus (URL/LRL)

Precizia pentru Domeniul Specificiat, Temperatura si Presiune Statica : (conformitate cu +/-3 Sigma)

Model	URL	Raport Limite mai mare de	Precizia ₁ (% din Domeniu)			Efectul Temperaturii ³ (% Domeniu/50°F)		
			A	B	C	D	E	F
STR82D	400 in H ₂ O/1000mbar	8:1	0.015	0.050	50 (125)	0.175	1.000	200 (500)
STR83D	100 psi/7.0 bar	3.33:1	0.015	0.050	30 (2.1)	0.025	0.280	30 (2.1)
STR84G	500 psig/35 bar	25:1	0.015	0.050	20 (1.4)			
STR87G	3000 psi/210 bar	10:1	0.015	0.050	300 (21)			
STR84A	500 psia/35 bara	25:1	0.015	0.050	20 (1.4)			
			Efectul Raportului Limite $\pm \left[A + B \left(\frac{C}{\text{Span}} \right) \right]$ % Span			Efectul Temp $\pm \left[D + E \left(\frac{F}{\text{Span}} \right) \right]$ % Span per 28°C (50°F)		

Performanta Totala (% din Domeniu):

$$\text{Performanta Totala} = \pm \sqrt{(\text{Precizie})^2 + (\text{Efectul Temp.})^2}$$

Exemple de Performanta Totala : (5:1 raport intre limite, pina la 50 °F deplasare)

STR82D @ 80”H₂O: 2.68% din domeniu

STR83D @ 20 psid: 0.45% din domeniu

Frecventa Tipica de Calibrare :

Se recomanda efectuarea calibrarii la fiecare patru (4) ani

Note:

- 1.Precizia – Include efectele combinate ale linearitatii, histerezisului si repeatabilitatii. Iesirea analogica adauga 0.005% din domeniu.
2. Pentru domenii care contin zeroul si conditii de referinta la 25°C (77°F), 0 psig presiune statica , 10 la 55% R.H, si diafragme din SS 316
3. Specificatiile se aplica la traductoarele cu 2 diafragme. Adaugati factorul 1.5 pentru efectul temperaturii in cazul capilatelor cu lungime mai mare de 10 picioare (aprox.3 metri).

Conditii de Operare – Toate Modelele

Parametru	Conditii de Referinta (la Pstatic=0)		Conditii Nominale		Limite Operare		Transport si Stocare																	
	°C	°F	°C	°F	°C	°F	°C	°F																
Temperatura Ambianta ¹	25±1	77±2	-	-	-	-	-55 to 90	-67 to 194																
Umiditate %RH	10 la 55		0 la 100		0 la 100		0 la 100																	
Regiune Vacuum, Presiune Minima mmHg absolut	Atmosferic (Vezi Figura 4 pentru limitari in regiunea de vacuum)																							
Tensiune Alimentare, Curent, Resistenta Sarcina	10.8 to 42.4 Vdc at terminals (IS versions limited to 30 Vdc) 0 to 1,440 ohms (as shown in Figura 2)																							
Presiunea de Lucru Maxim Admisa (MAWP) ⁴ (Traductoarele ST 800 au o presiune nominala egala cu MAWP. MAWP depinde de Agentia de Aprobare si de materialele din care este realizat traductorul.)	MAWP reprezinta minimum dintre Presiunea Nominala a Corpului si Presiunea Nominala a Diafragmei (Vezi Ghidul de Selectie a Modelelor pentru MAWP a diafragmei) <table border="1"> <thead> <tr> <th>Corp</th> <th>MAWP</th> </tr> </thead> <tbody> <tr> <td>STR82D</td> <td>2,500 psig (172 bar) Capetele de Proces Nituite</td> </tr> <tr> <td>STR83D</td> <td>2,500 psig (172 bar) Capetele de Proces Nituite</td> </tr> <tr> <td>STR82D</td> <td>1,450 psig (100 bar) Conexiunile sudate</td> </tr> <tr> <td>STR83D</td> <td>1,450 psig (100 bar) Conexiunile sudate</td> </tr> <tr> <td>STR84G</td> <td>500 psig (35 bar)</td> </tr> <tr> <td>STR87G</td> <td>3,000 psig (207 bar)</td> </tr> <tr> <td>STR84A</td> <td>500 psia (35 bara)</td> </tr> </tbody> </table>								Corp	MAWP	STR82D	2,500 psig (172 bar) Capetele de Proces Nituite	STR83D	2,500 psig (172 bar) Capetele de Proces Nituite	STR82D	1,450 psig (100 bar) Conexiunile sudate	STR83D	1,450 psig (100 bar) Conexiunile sudate	STR84G	500 psig (35 bar)	STR87G	3,000 psig (207 bar)	STR84A	500 psia (35 bara)
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STR87G	3,000 psig (207 bar)																							
STR84A	500 psia (35 bara)																							

¹ Limita Temperaturii Ambiante este functie de Temperatura de Proces si lichidul de umplere . (Vezi Figura 23 & Figura 4)

Temperatura de Operare a display-ului LCD : -20°C la +70°C . Temperatura de Stocare : -30°C la 80°C

⁴ Consultati fabrica pentru MAWP la traductoarele ST 800 cu aprobări de la Agentia CRN .

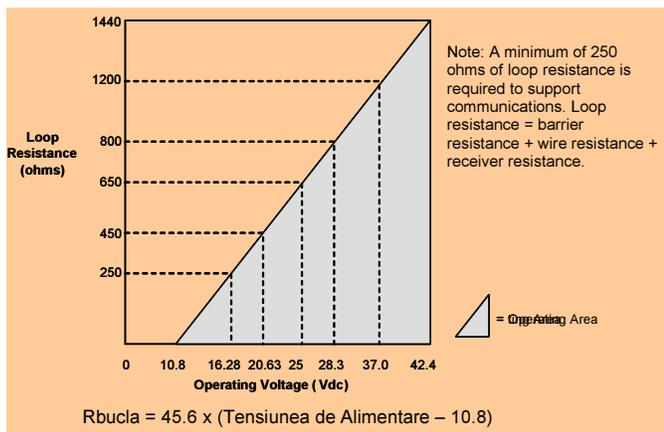


Figura 2 – Tensiunea de alimentare si rezistenta buclei

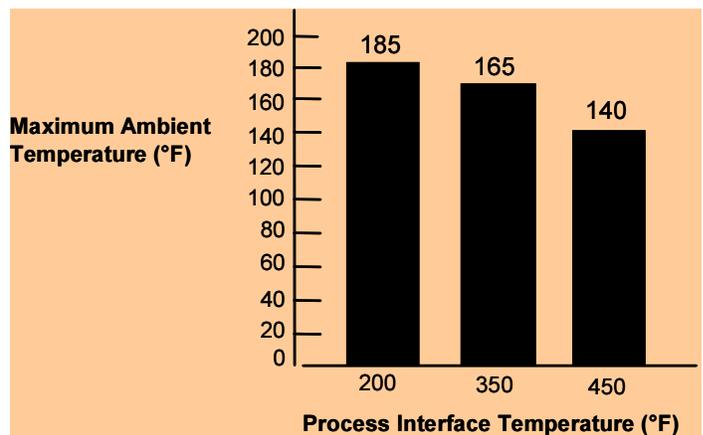


Figura 3 – Limitele Temperaturii Ambiante si a Temperaturii de Proces

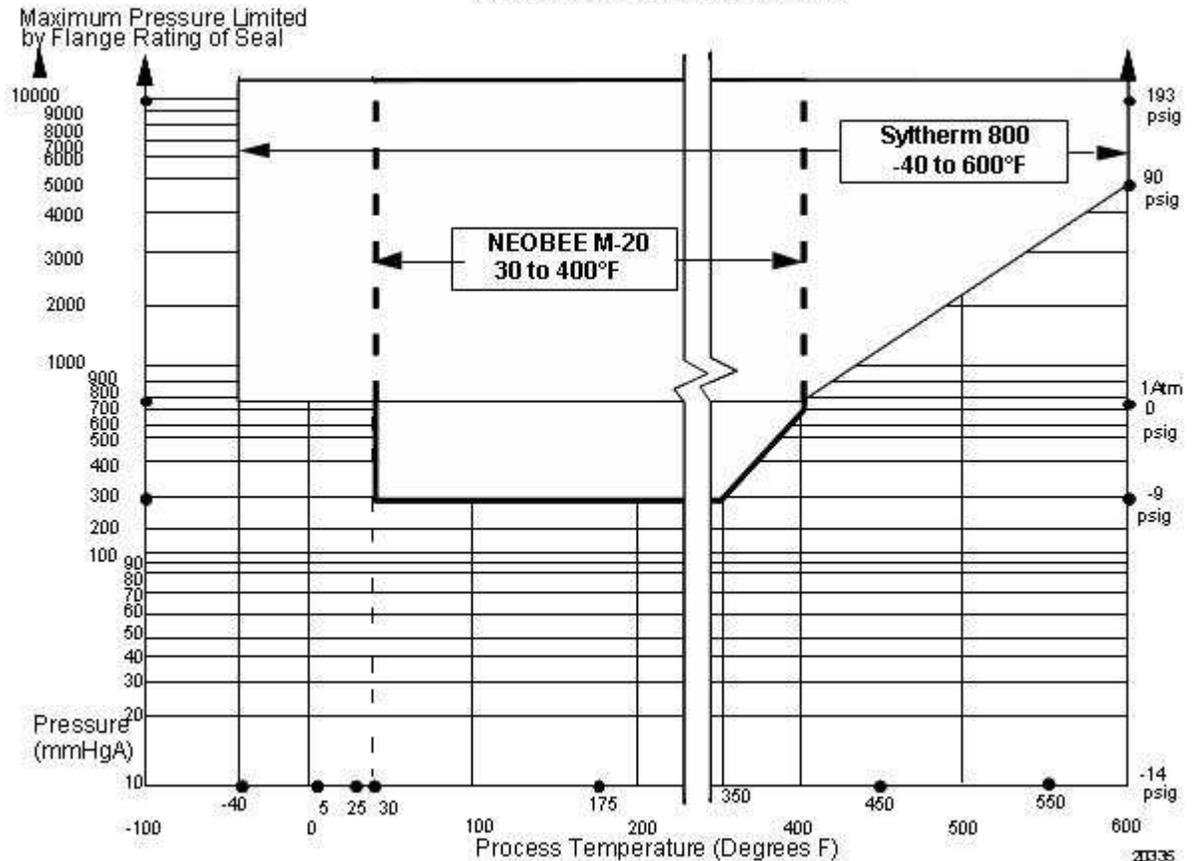
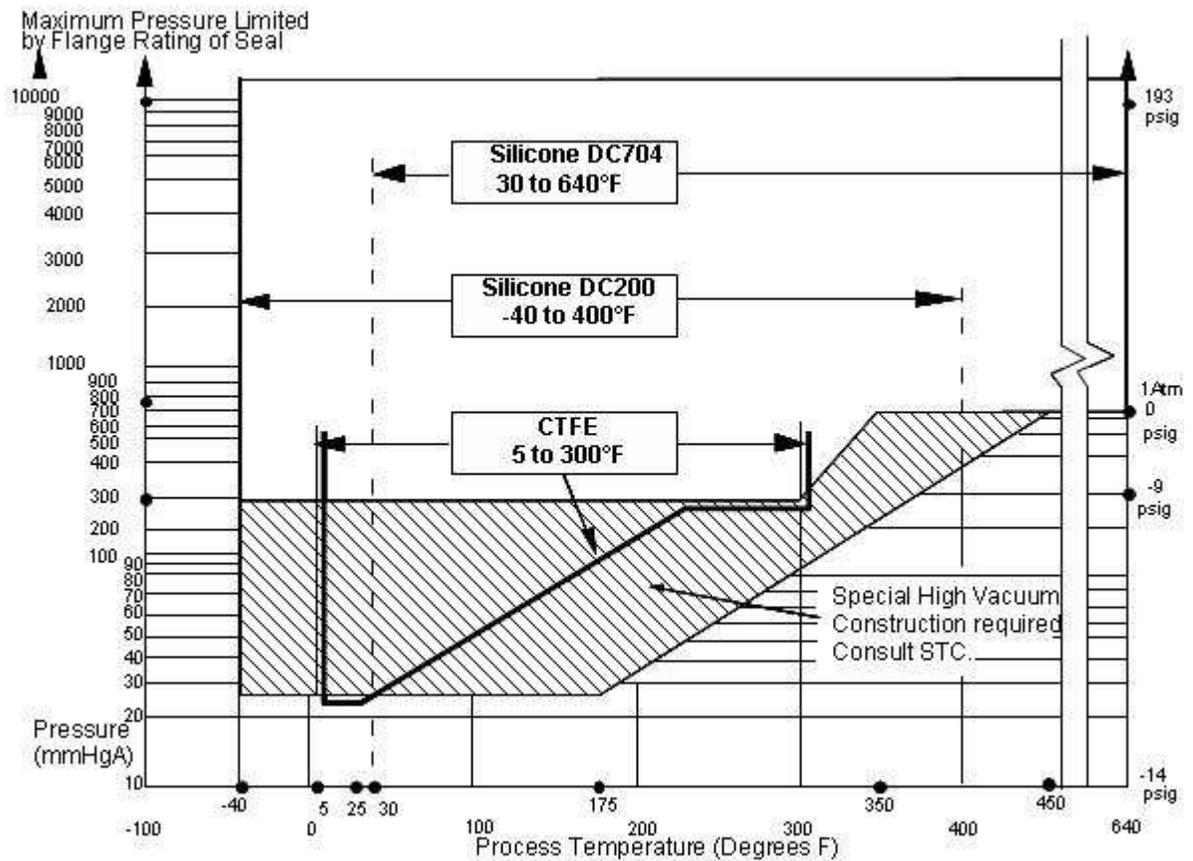


Figura 4 - STR800 cu Diafragme la Distanța: limitele de operare pentru presiune funcție de temperatura

Transmitter Minimum Span and Maximum Capillary Length

Minimum recommended span for STR12D and STR13D DP Transmitter with two Remote Seals

Diaphragm Size	Capillary						Capillary Length maximum
	5'	10'	15'	20'	30'	35'	
2.4	200 iwc	-	-	-	-	-	5'
2.9	100 iwc	125 iwc	150 iwc	175 iwc	-	-	20'
3.5	16 iwc	20 iwc	24 iwc	28 iwc	36 iwc	40 iwc	35'
4.1	12 iwc	15 iwc	18 iwc	21 iwc	27 iwc	30 iwc	35'

Minimum recommended span for STR12D and STR13D DP Transmitter with one Remote Seal

Diaphragm Size	Direct Mount	Capillary						Capillary Length maximum
		5'	10'	15'	20'	30'	35'	
2.4	20 psig	30 psig	-	-	-	-	-	5'
2.9	10 psig	15 psig	20 psig	25 psig	30 psig	-	-	20'
3.5	50 iwc	80 iwc	100 iwc	120 iwc	140 iwc	180 iwc	200 iwc	35'
4.1	40 iwc	60 iwc	80 iwc	100 iwc	120 iwc	160 iwc	180 iwc	35'

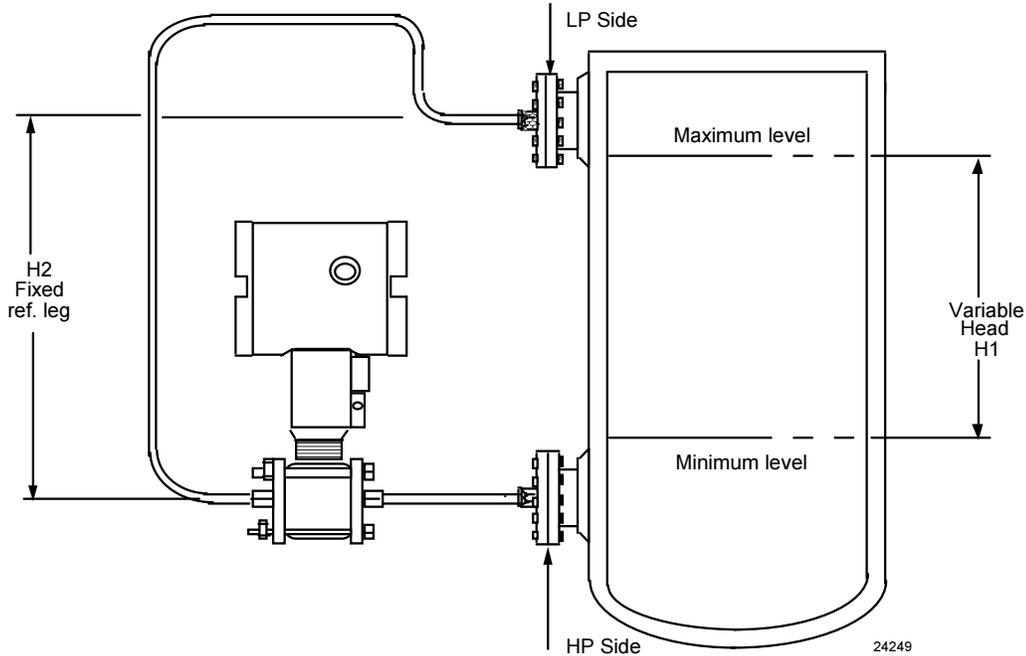
Minimum recommended span for STR14G, STR14A, STR17G Transmitter with Remote Seal

Diaphragm Size	Direct Mount	Capillary						Capillary Length maximum
		5'	10'	15'	20'	30'	35'	
2.0	25 psi	30 psi	40 psi	50 psi	-	-	-	15'
2.4	10 psi	15 psi	20 psi	25 psi	30 psi	40 psi	50 psi	35'
2.9	8 psi	9 psi	10 psi	11 psi	12 psi	14 psi	15 psi	35'
3.5	5 psi	5 psi	5 psi	5 psi	5 psi	7 psi	8 psi	35'
4.1	5 psi	5 psi	5 psi	5 psi	5 psi	7 psi	8 psi	35'

Minimum span is the higher of the value from the table above or the value defined under Performance Conditions for the range transmitter

Figura 5 – Tabel cu domeniul minim recomandat functie de lungimea maxima a capilarelor si marimea diafragmelor

Domeniul minim este cel mai mare dintre valoarea din tabelul de mai sus sau valoarea definita de Conditile de Performanta

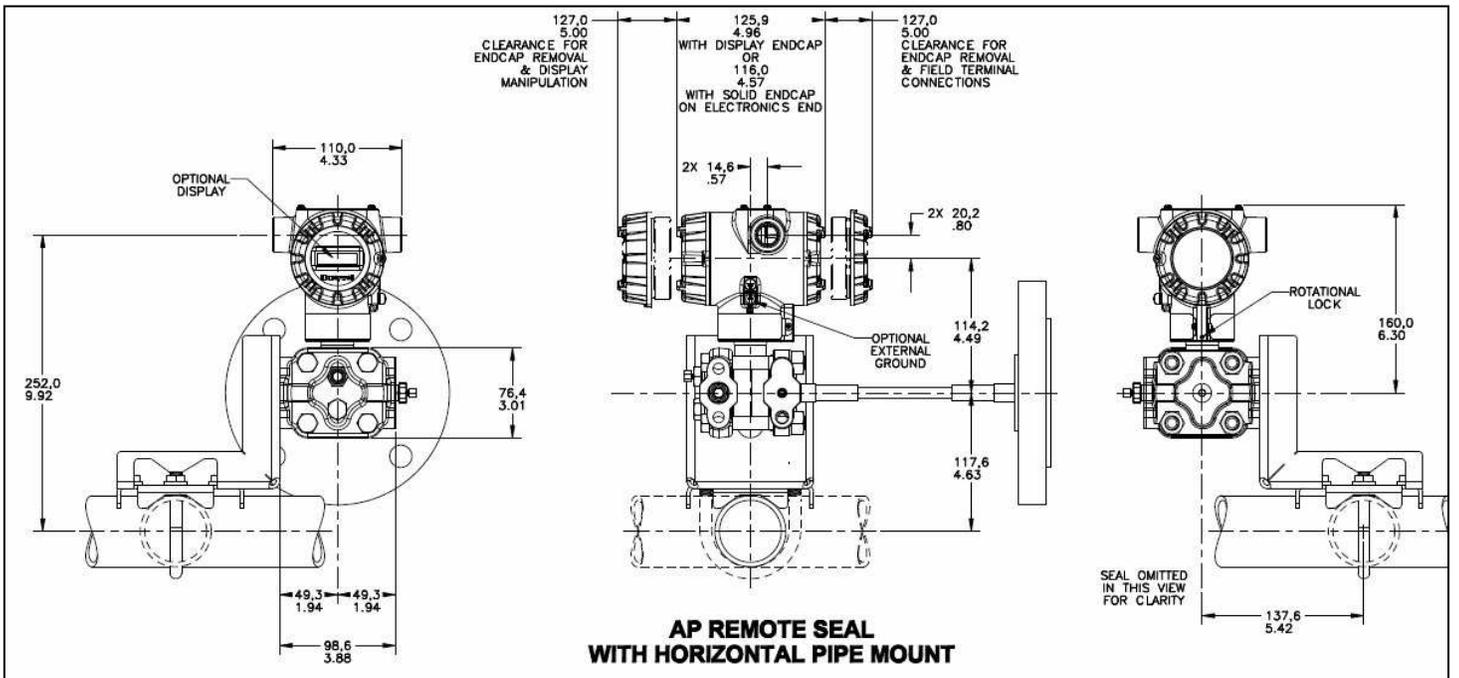
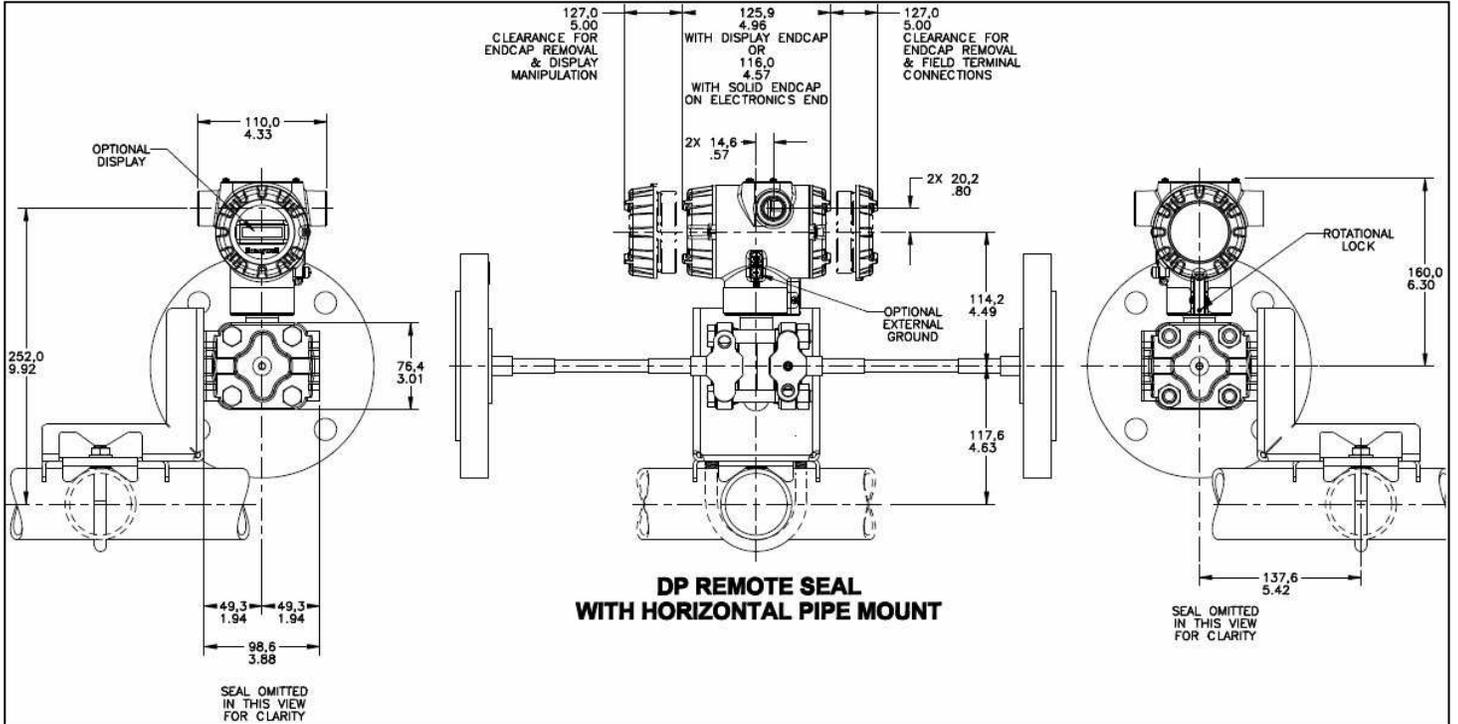


NOTE: Lower flange seal should not be mounted over 22 feet below or above the transmitter for silicone fill fluid (11 feet for CTFE fill fluid) with tank at one atmosphere. The combination of tank vacuum and high pressure capillary head effect should not exceed 9 psi vacuum (300 mmHg absolute).

Figura 6 – Traductorul STR800 cu conectare prin flanse cu diafragme incapsulate la distanta montat pe un rezervor

NOTA : Diafragma cu flansa din partea de jos nu se va monta la o distanta mai mare de 22 picioare sub sau deasupra traductorului care contine ulei siliconic (11 picioare pentru CTFE) in cazul in care presiunea pe rezervor este de 1 atm.

Dimensiuni de Referinta pentru Montare Orizontala



Dimensiuni de Referinta pentru Montare Orizontala (continuare)

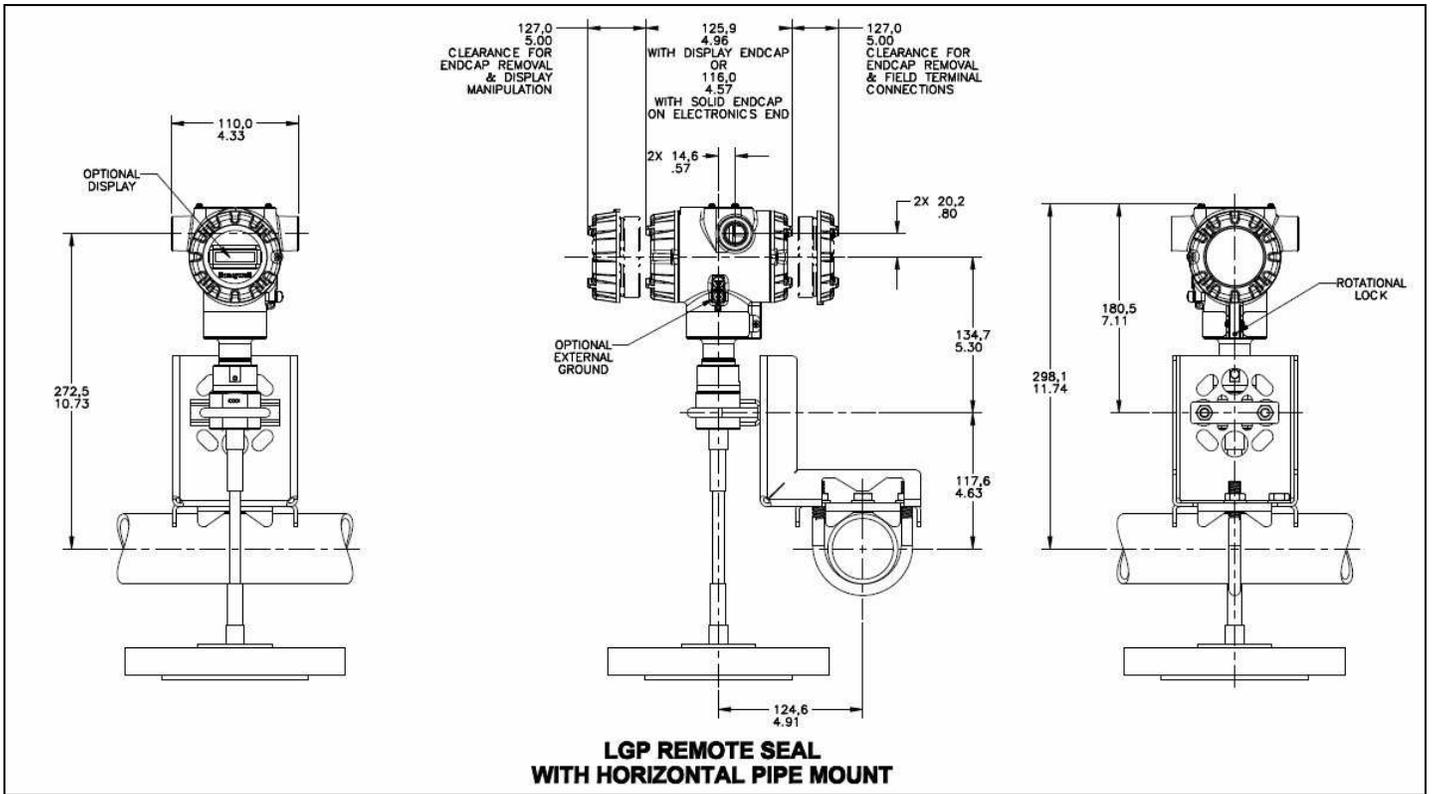
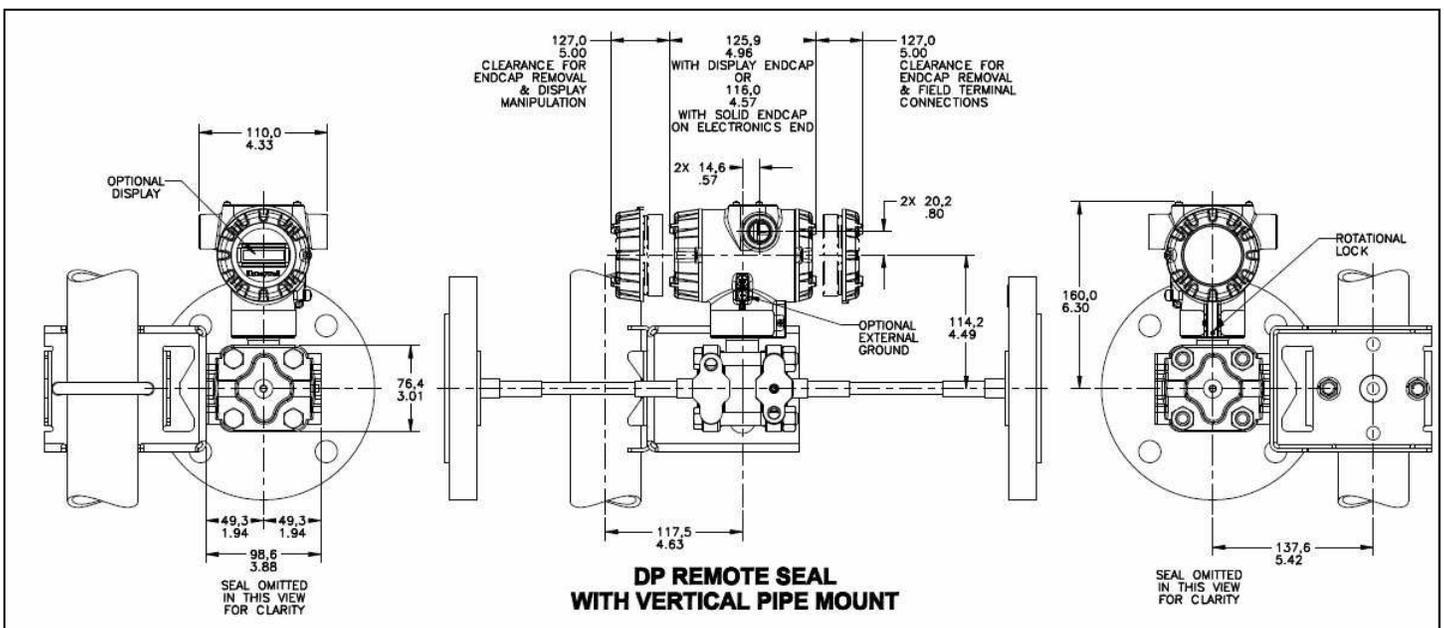


Figura 7 — Dimensiuni Aproximative pentru Montarea Orizontala a Traductorului STR800

Dimensiuni de Referinta pentru Montarea Verticala



Dimensiuni de Referinta pentru Montarea Verticala (continuare)

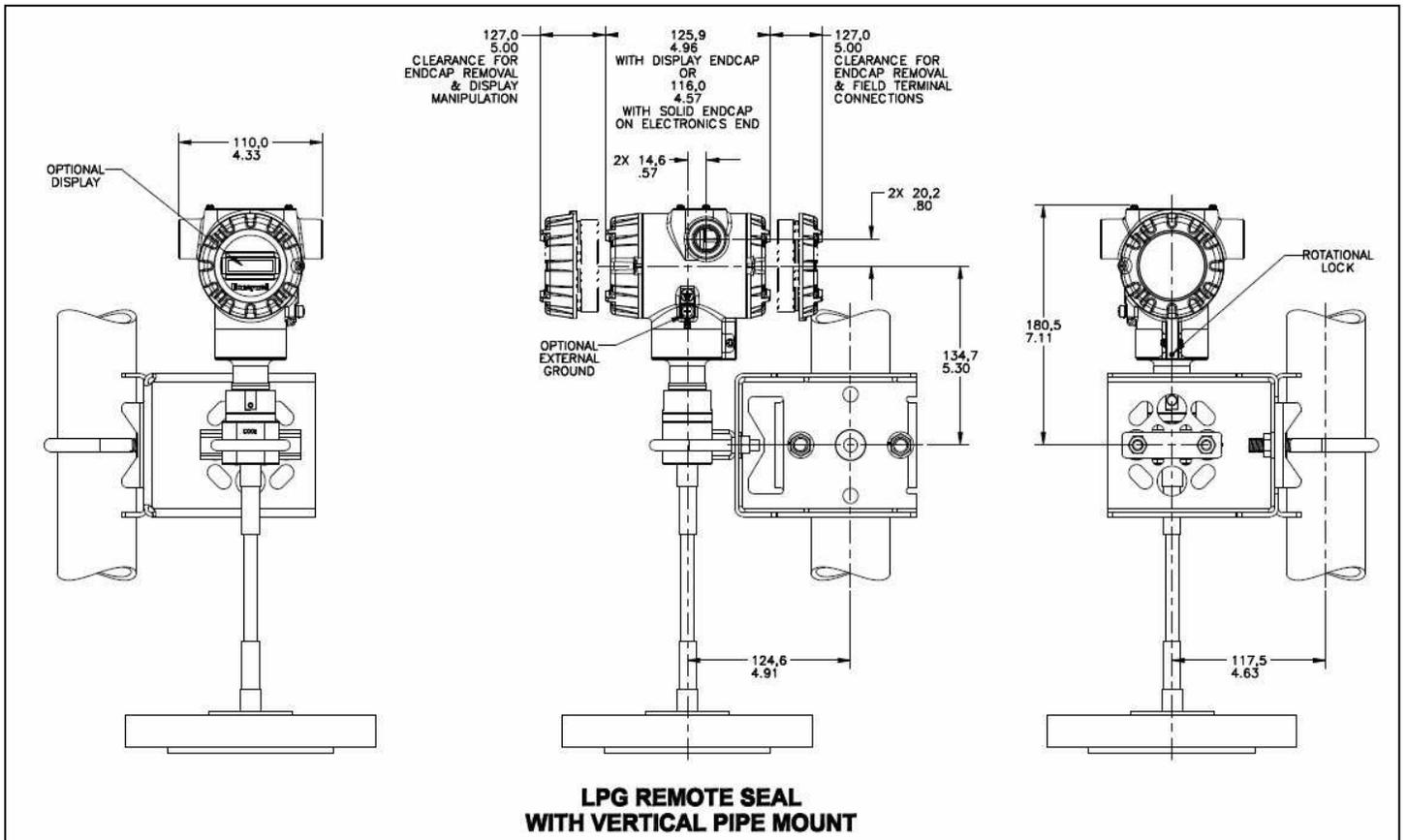
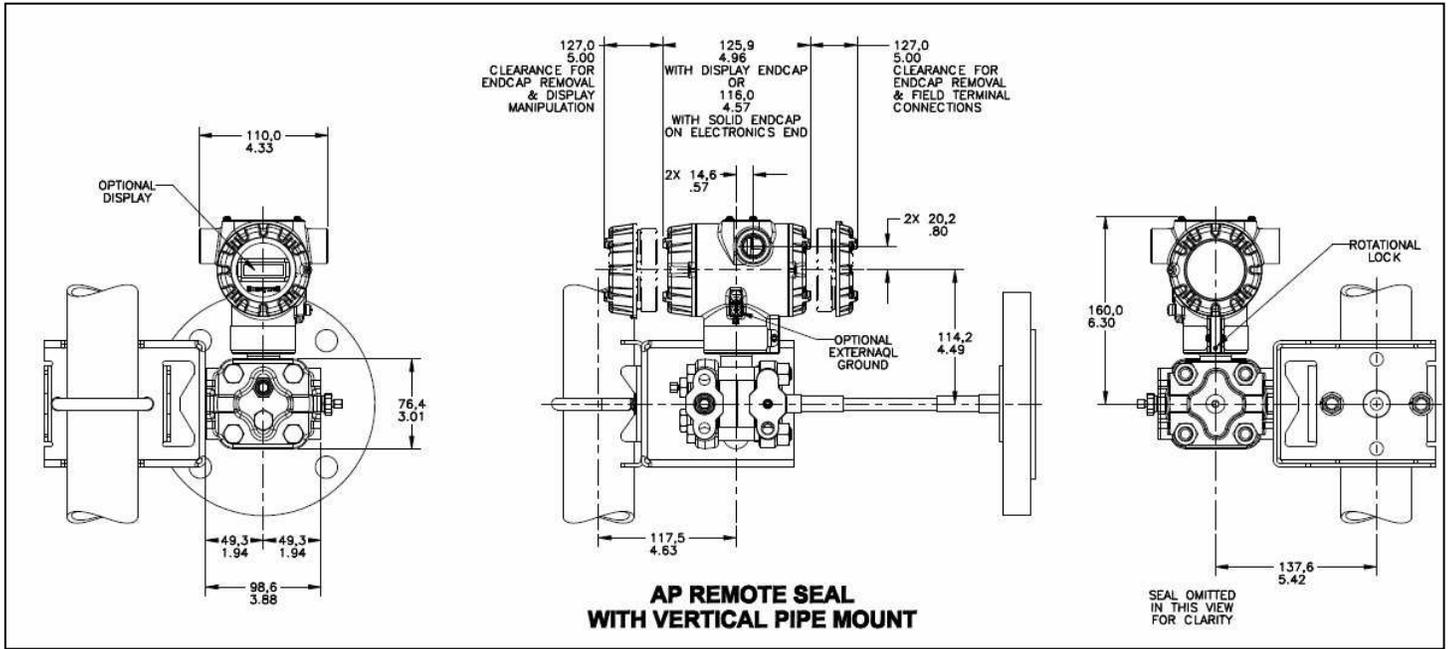
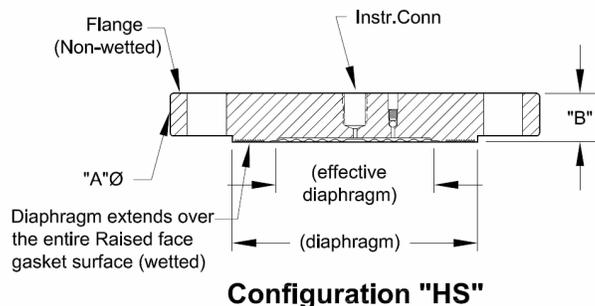


Figura 8 — Dimensiuni Aproximative pentru Montare Verticala a Traductorului STR800

Dimensiuni de Referinta (continuare)

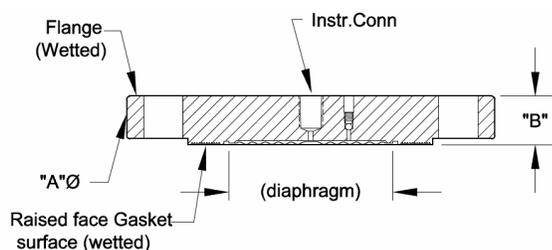
Dimensiuni Flanse cu Diafragme Incapsulate

Type	ANSI/DIN Rating	Flange Material	Wetted Materials		Construction See figure	Dimensions	
			Diaphragm	Body		A	B
Flush Flanged Seal	3" Class 150#	CS	SS	SS	D	7.5	1.37
			Hastelloy C	SS	C		
			Hastelloy C	Hastelloy C	D		
			Monel	Monel	D		
		Tantalum	SS	C			
		SS	SS	N/A	B	7.50	0.94
			Hastelloy C	SS	A		
			Hastelloy C	Hastelloy C	D		
	Monel		Monel	D			
	Tantalum	SS	C				
	3" Class 300#	CS	SS	SS	D	8.25	1.56
			Hastelloy C	SS	C		
			Hastelloy C	Hastelloy C	D		
			Monel	Monel	D		
		Tantalum	SS	C			
		SS	SS	N/A	B	8.25	1.12
			Hastelloy C	SS	A		
			Hastelloy C	Hastelloy C	D		
	Monel		Monel	D			
	Tantalum	SS	C				
3" Class 800#	CS	SS	SS	D	8.25	1.75	
		Hastelloy C	SS	C			
		Hastelloy C	Hastelloy C	D			
		Monel	Monel	D			
	Tantalum	SS	C				
	SS	SS	N/A	B	8.25	1.5	
		Hastelloy C	SS	A			
		Hastelloy C	Hastelloy C	D			
Monel		Monel	D				
Tantalum	SS	C					
DN80-PN40	CS	SS	SS	D	7.87	1.32	
		Hastelloy C	SS	C			
		Hastelloy C	Hastelloy C	D			
		Monel	Monel	D			
	Tantalum	SS	C				
	SS	SS	N/A	B	7.87	0.94	
		Hastelloy C	SS	A			
		Hastelloy C	Hastelloy C	D			
Monel		Monel	D				
Tantalum	SS	C					



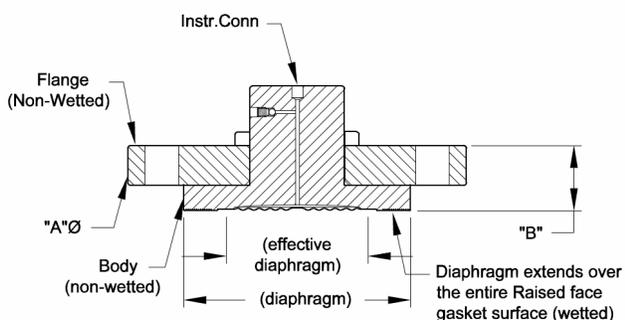
Configuration "HS"

Figura A



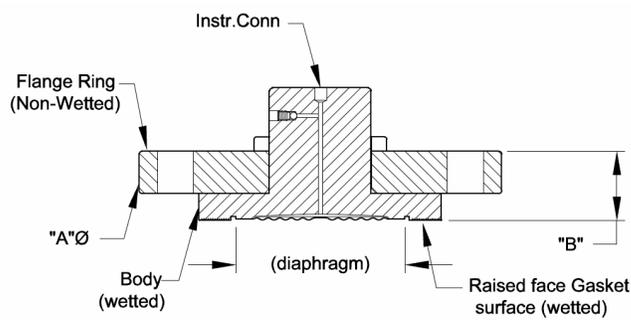
Configuration "HT"

Figura B



Configuration "IS"

Figura C



Configuration "IT"

Figura D

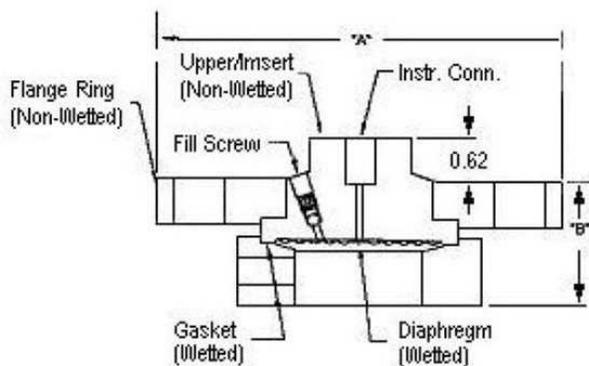
Figura 9— Dimensiunile Flanselor cu Diafragme Incapsulate(Flush Flanged)

Dimensiuni de Referinta (continuare)

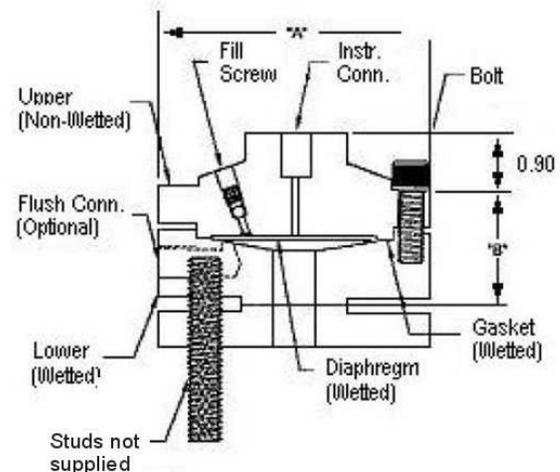
Dimensiuni Flanse cu Diafragma si Inel Adaptor

Type	ANSI/DIN Rating	Size	Dimension	2.4" Diaph. Dia. (in.)	2.9" Diaph. Dia. (in.)	4.1" Diaph. Dia. (in.)
Flush Flanged Seal with Lower	Class 150#	1/2"	A	3.50	4.00	5.25
			B0	1.72	1.72	1.84
			B1	1.72	1.72	1.84
			B2	2.22	2.22	2.34
		1"	B0	4.25	4.00	5.25
			B1	1.12	1.72	1.84
			B2	1.62	1.72	1.84
			B2	1.98	1.72	2.34
		1-1/2"	B0	5.00	5.00	5.25
			B1	2.50	2.50	1.78
			B2	3.00	3.00	2.12
			B2	3.50	3.40	2.12
	2"	A	6.00	6.00	6.00	
		B0	2.50	2.50	2.12	
		B1	3.00	3.00	2.12	
		B2	3.50	3.40	2.12	
	3"	A	7.50	7.50	7.50	
		B0	2.58	2.88	2.80	
		B1	2.88	2.88	3.00	
		B2	3.50	3.40	3.40	
	Class 300#	1"	A	4.88	4.00	5.25
			B0	2.50	1.72	1.88
			B1	3.00	1.72	2.12
			B2	3.50	2.22	2.12
1-1/2"		A	6.12	6.12	5.25	
		B0	2.50	2.50	2.12	
		B1	3.00	3.00	2.12	
		B2	3.50	3.40	2.12	
2"		A	6.50	6.50	6.50	
		B0	2.50	2.50	2.70	
		B1	3.00	3.00	3.00	
		B2	3.50	3.40	3.50	
3"	A	8.25	8.25	8.25		
	B0	3.48	3.48	3.20		
	B1	3.48	3.48	3.80		
	B2	4.10	4.00	4.00		
Class 600#	1"	A	4.88	4.50	5.25	
		B0	2.50	2.15	2.26	
		B1	3.00	2.15	2.26	
		B2	3.50	2.40	2.50	
	1-1/2"	A	6.12	6.12	5.25	
		B0	2.50	1.53	2.50	
		B1	3.00	2.09	3.00	
		B2	3.50	2.49	3.50	
	2"	A	6.50	6.50	6.50	
		B0	3.10	3.10	3.30	
		B1	3.60	3.60	3.60	
		B2	4.10	4.00	4.10	
3"	A	8.25	8.25	8.25		
	B0	3.48	3.48	3.20		
	B1	3.48	3.48	3.80		
	B2	4.10	4.00	4.00		

B0 Without Flush
 B1 B Dimension with 1/4 NPT Flushing Connection
 B2 B dimension with 1/2 NPT Flushing Connection



Flanse cu Capsula Diafragma si Inel Adaptor



Flanse cu Diafragma si Inel Adaptor
 Nota: dimensiunea 0.90 devine 0.70 pentru diametrul 4.1"

Figura 10 — Dimensiuni Diafragma Incapsulata (Flush Flanged)

Dimensiuni de Referinta (continuare)

Flanse cu Diafragme cu Extensie

Type	ANSI/DIN Rating	Dimension	2.8" Diaphragm Dia. (in.)	3.5" Diaphragm Dia. (in.)
Flanged Seal with Extended Diaphragm	3" Class 150#	A	7.50	-
		B	0.94	-
		C	2.80	-
	3" Class 300#	A	8.25	-
		B	1.12	-
		C	2.80	-
	DIN DN80-PN40	A	7.87	-
		B	0.94	-
		C	2.80	-
	4" Class 150#	A	-	9.00
		B	-	0.94
		C	-	3.70
4" Class 300#	A	-	10.00	
	B	-	1.25	
	C	-	3.70	
DIN DN80-PN40	A	-	9.25	
	B	-	0.94	
	C	-	3.70	

Designed to meet with schedule 40 pipe

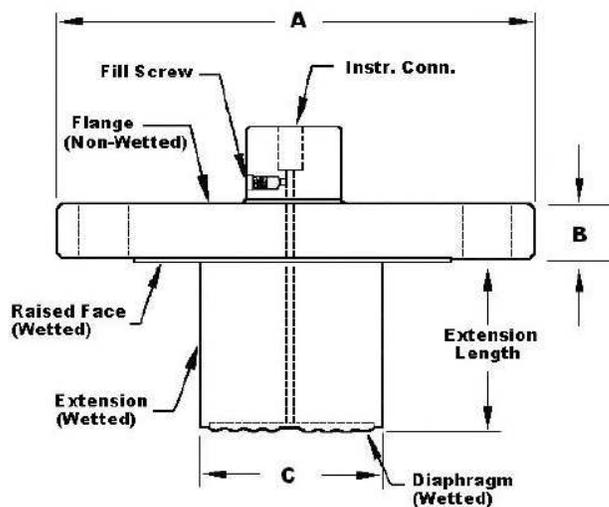


Figura 11 — Dimensiuni Flanse (Diafragme cu Extensie)

Capsula diafragma tip “Pancake”

Type	ANSI/DIN	Dimension	3.5" Diaph. (in.)
Pancake Seal	Class 150#, 300#, 600# DN80-PN40	A	5.00
		B	1.08

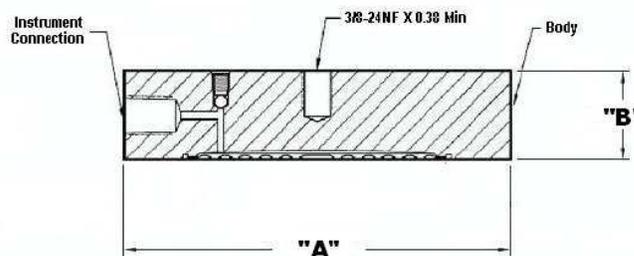


Figura 12— Dimensiuni Capsule tip “Pancake”

Flanse cu racord in teu ,tip “Taylor Wedge”

Type	Size	Dimension	3.5" Diaph. (in.)
Chemical Tee “Taylor Wedge” Seal	750 psi	A	5.00
		B	0.50

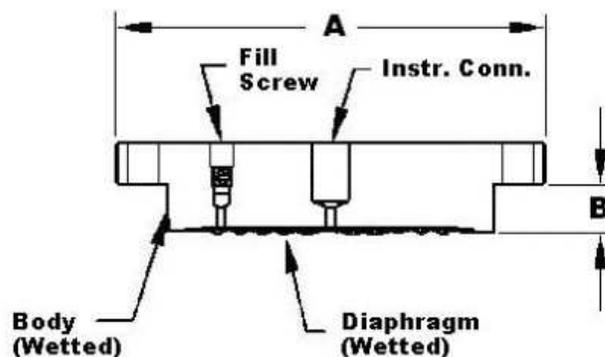


Figura 13— Dimensiuni Flanse cu racord in teu (Chemical TEE “Taylor Wedge”)

Diafragme cu conectare la proces prin filet

Type	Size	Dimension	2.4" Diaphragm Dia. (in.)	2.9" Diaphragm Dia. (in.)	4.1" Diaphragm Dia. (in.)
Threaded Process Conn. Seal	1/4" or 1/2"	A	3.50	4.00	5.25
		B0	1.88	1.88	1.79
		B1	1.88	1.88	1.79
		B2	2.18	2.18	2.14
	3/4" or 1"	A	3.50	4.00	5.25
		B0	1.88	1.88	1.79
		B1	1.88	1.88	1.79
		B2	3.25	2.18	2.14
	B0	Without Flush			
	B1	B Dimension with 1/4 NPT Flushing Connection			
	B2	B dimension with 1/2 NPT Flushing Connection			

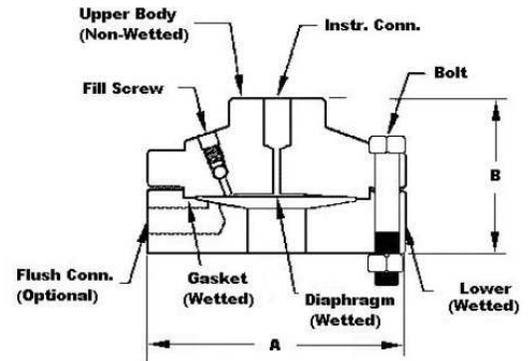


Figura 14— Dimensiuni Capsula Diafragme cu Conectare la Proces prin Filet

Diafragme pentru aplicatii igienice

Type	Size	Dimension	1.9" Diaphragm Dia. (in.)	2.4" Diaphragm Dia. (in.)	2.9" Diaphragm Dia. (in.)	4.1" Diaphragm Dia. (in.)
Sanitary Seal	2"	A	2.50	-	-	-
		B	1.42	-	-	-
	2- 1/2"	A	-	3.00	-	-
		B	-	1.28	-	-
	3"	A	-	-	3.57	-
		B	-	-	1.38	-
	4"	A	-	-	-	4.68
		B	-	-	-	1.60

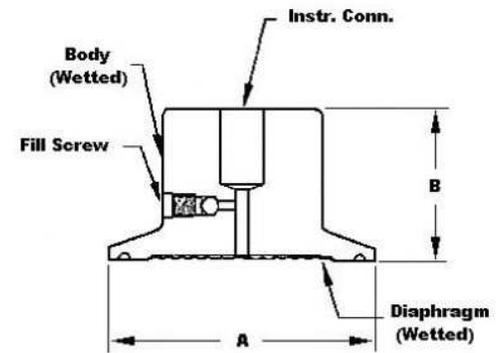


Figura 15- Dimensiuni Capsula Diafragme pentru aplicatii igienice (Sanitary Seals)

Diafragma Incapsulata cu Protectie

Type	Size	Dimension	2.4" Diaph. (in.)
Saddle Seal	3"	A	3.50
	3"	B	2.90
Saddle Seal	4" or larger	A	3.50
		B	3.04

Note: Specify 6 or 8 bolt pattern

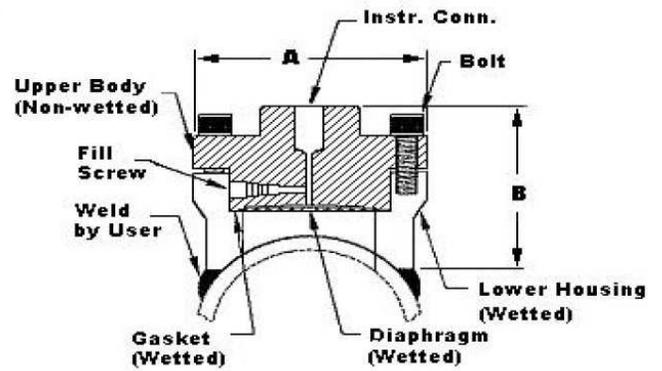


Figura 16 — Dimensiuni Capsula Diafragma (3" Saddle Seal)

Type	Size	Dimension	2.4" Diaph. (in.)
Saddle Seal	3"	A	3.50
	3"	B	2.90
Saddle Seal	4" or larger	A	3.50
		B	3.04

Note: Specify 6 or 8 bolt pattern

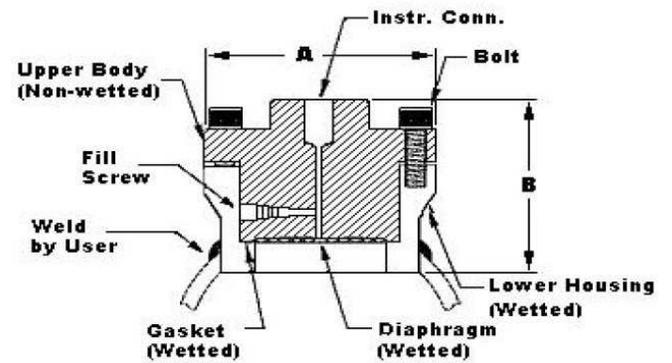


Figura 17— Dimensiuni Capsula Diafragma (4" Saddle Seal)

Inel de Calibrare

Type	Size	Rating	Dimension	1/4 NPT	1/2 NPT
Calibration Ring	3"	150# / 800#	A	5.00	5.00
			B	1.00	1.50
			C	3.00	3.00

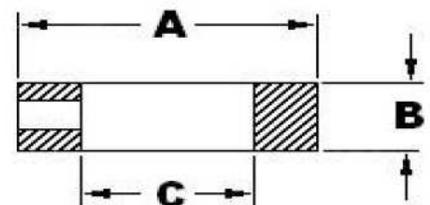


Figura 18— Inel de Calibrare

Protocoale de Comunicatie & Diagnoza

Protocolul HART

Versiune:

HART 7

Tensiune Alimentare

Tensiune: 10.8 la 42.4Vdc la terminale

Sarcina: Maximum 1440 ohm Vezi figura 2

Sarcina Minima : 0 ohm. (Pentru comunicatorul portabil o sarcina minima de 250 ohm este ceruta)

Foundation Fieldbus (FF)

Cerinte pentru tensiunea de alimentare

Tensiune: 9.0 la 32.0Vdc la terminale

Curent stationar : 17.6mA dc

Curent pentru descarcare software : 27.4mAdc

Blocuri de Functii Disponibile

Block Type	Qty	Execution Time
Resurse	1	n/a
Traductor	1	n/a
Diagnostic	1	n/a
Intrare Analogica	1*	30 ms
PID w/Autotune	1	45 ms
Integrator	1	30 ms
Signal Char (SC)	1	30 ms
LCD Display	1	n/a
Bloc Debit	1	30 ms
Selector Intrari	1	30 ms
Aritmetic	1	30 ms

* Blocul AI poate avea (2) obiecte aditionale nou create.

Toate blocurile de functii disponibile adera la standardul FOUNDATION Fieldbus . Blocurile PID suporta algoritmi PID ideali & robusti cu implementarea totala a Auto-tuning.

Planificator al legaturii active LAS

Traductoarele pot functiona ca rezerve ale Planificatorului Legaturii Active si preiau controlul atunci cand echipamentul Host este deconectat. Actionand ca un planificator LAS, dispozitivul asigura transferul planificat al datelor in timp determinat , fiind utilizat tipic pentru transferul periodic si ciclic al datelor din bucla de comanda intre echipamentele de pe magistrala Fieldbus.

Numarul de Echipamente / Segment

Numarul de modele IS : 6 echipamente / segment

Intrari Planificate

18 intrari maximum

Numar de VCR : 24 max

Teste de Conformitate: Testat conform cu ITK 6.0.1

Descarcare Software

Utilizeaza procedura descrisa in Clasa-3 : *Common*

Software Download asa cum este FF-883 care permite echipamentelor din camp ale oricarui fabricant sa primeasca actualizari de software de la oricare calculator de tip Host.

Protocolul Honeywell Digitally Enhanced (DE)

DE este un protocol al carui proprietar este Honeywell si care asigura comunicatia digitala intre echipamentele din camp Honeywell DE si echipamente de tip Hosts.

Tensiune de Alimentare

Tensiune: 10.8 la 42.4Vdc la terminale

Sarcina: Maximum 1440 ohm , vezi figura 2

Diagnoze Standard

Diagnozele performante ale modelelor ST 800 sunt raportate ca fiind ori critice ori non-critice si pot fi citite cu ajutorul DD/DTM sau pe display-ul integral ca mai jos.

Critical Diagnostics		
HART DD/DTM tools	Advanced Display	Basic Display
Electronic Module DAC Failure	Electronics Module fault	Electronics Module fault
Meter Body NVM Corrupt	Meterbody fault	Meterbody fault
Config Data Corrupt	Electronics Module fault	Electronics Module fault
Electronic Module Diag Failure	Electronics Module fault	Electronics Module fault
Meter Body Critical Failure	Meterbody fault	Meterbody fault
Sensor Comm Timeout	Meterbody Comm fault	Meterbody Comm fault

Non-Critical Diagnostics		
HART DD/DTM tools	Advanced Display	Basic Display
Display Failure	n/a	n/a
Electronic Module Comm Failure	n/a	n/a
Meter Body Excess Correct	Zero Correct (OK or EXCESSIVE) Span Correct (OK or EXCESSIVE)	n/a
Sensor Over Temperature	Meterbody Temp (OK, OVER TEMP)	n/a
Fixed Current Mode	Analog Out mode (Fixed or Normal)	n/a
PV Out of Range	Primary PV (OK or OVERLOAD)	n/a
No Factory Calibration	Factory Cal (OK, NO FACTORY CAL)	n/a
No DAC Compensation	DAC Temp Comp (OK, NO COMPENSATION)	n/a
LRV Set Error – Zero Config Button	n/a	n/a
URV Set Error – Span Config Button	n/a	n/a
AO Out of Range	n/a	n/a
Loop Current Noise	n/a	n/a
Meter Body Unreliable Comm	Meterbody Comm (OK, SUSPECT)	n/a
Tamper Alarm	n/a	n/a
No DAC Calibration	n/a	n/a
Sensor Supply Voltage Low	Supply Voltage (OK, LOW, or HIGH)	n/a

Referire la ST 800 nota tehnica de diagnosticare pentru un nivel suplimentar de diagnoza.

Alte Optiuni de Certificare

Materiale

- NACE MRO175, MRO103, ISO15156

Certificari cu Aprobare

AGENTIA	TIP DE PROTECTIE	OPTIUNI COMUNICATIE	PARAMETRII DE CAMP	TEMP.AMBIANTA (Ta)
FM Approvals™ Aprobari FM	Antideflagent: Clasa I, Divizia 1, Grupele A, B, C, D; Rezistenta la aprinderea prafului : Clasa II, III, Divizia 1, Grupele E, F, G; T4 Clasa I, Zonele 1/2, AEx d IIC T4 Clasa II, Zona 21, AEx tb IIIC T 85°C IP 66	Toate	Nota 1	-50 °C la 85°C
	Siguranta Intrinseca: Clasa I, II, III, Divizia1, Grupele A, B, C, D, E, F, G: T4 Clasa 1, Zona 0, AEx ia IIC T4	4-20 mA / DE/ HART	Nota 2a	-50 °C la 70°C
		Foundation Fieldbus	Nota 2b	-50 °C la 70°C
	Fara pericol de incendiu: Clasa I, Divizia 2, Grupele A, B, C, D locatii, Clasa 1, Zona 2, AEx nA IIC T4	4-20 mA / DE/ HART	Nota 1	-50 °C la 85°C
		Foundation Fieldbus	Nota 1	-50 °C la 85°C
	Incinta: Tip 4X/ IP66/ IP67	Toate	Toti	-
Canadian Standards Association (CSA) Asociatia de Standardizare Canadiana	Antideflagent: Clasa I, Divizia 1, Grupele A, B, C, D; Rezistenta la aprinderea prafului: Clasa II, III, Divizia 1, Grupele E, F, G; T4 Ex d IIC T4 Ex tD A21 T 95°C IP 66	Toate	Nota 1	-50 °C la 85°C
	Siguranta Intrinseca: Clasa I, II, III, Divizia 1, Grupele A, B, C, D, E, F, G; T4 Ex nA IIC T4	4-20 mA / DE/ HART	Nota 2a	-50 °C la 70°C
		Foundation Fieldbus	Nota 2b	-50 °C la 70°C
	Fara pericol de incendiu: Clasa I, Divizia 2, Grupele A, B, C, D; T4 Ex nA IIC T4	4-20 mA / DE/ HART	Nota 1	-50 °C la 85°C
		Foundation Fieldbus	Nota 1	-50 °C la 85°C
	Incinta: Type 4X/ IP66/ IP67	Toate	Toti	-
	Numar Inregistrare in Canada (CRN):	Toate modelele au fost inregistrate in toate provinciile si teritoriile din Canada si sunt marcate CRN: 0F8914.5C.		

Certificari cu Aprobare (Continuare)

ATEX	Antideflagranti: II 1/2 G Ex d IIC T4 II 2 D Ex tb IIIC T 85°C IP 66	Toate	Nota 1	-50 °C la 85°C
	Siguranta Intrinseca: II 1 G Ex ia IIC T4	4-20 mA / DE/ HART	Nota 2a	-50 °C la 70°C
		Foundation Fieldbus	Nota 2b	-50 °C la 70°C
	Fara pericol de incendiu: II 3 G Ex nA IIC T4	4-20 mA / DE/ HART	Nota 1	-50 °C la 85°C
		Foundation Fieldbus	Nota 1	-50 °C la 85°C
Incinta: IP66/ IP67	Toate	Toti	Toate	
IECEX (universal)	Antideflagranti : Ga/Gb Ex d IIC T4 Ex tb IIIC T 85°C IP 66	Toate	Nota 1	-50 °C la 85°C
	Siguranta Intrinseca: Ex ia IIC T4	4-20 mA / DE/ HART	Nota 2a	-50 °C la 70°C
		Foundation Fieldbus	Nota 2b	-50 °C la 70°C
	Fara pericol de incendiu : Ex nA IIC T4	4-20 mA / DE/ HART	Nota 1	-50 °C la 85°C
		Foundation Fieldbus	Nota 1	-50 °C la 85°C
Incinta : IP66/ IP67	Toate	Toti	Toate	
SAEx (Africa de Sud)	Antideflagranti : Ga/Gb Ex d IIC T4 Ex tb IIIC T 85°C IP 66	Toate	Nota 1	-50 °C la 85°C
	Siguranta Intrinseca: Ex ia IIC T4	4-20 mA / DE/ HART	Nota 2a	-50 °C la 70°C
		Foundation Fieldbus	Nota 2b	-50 °C la 70°C
	Fara pericol de incendiu: Ex nA IIC T4	4-20 mA / DE/ HART	Nota 1	-50 °C la 85°C
		Foundation Fieldbus	Nota 1	-50 °C la 85°C
Incinta: IP66/ IP67	Toate	Toti	Toate	
INMETRO (Brazilia)	Antideflagranti: Br- Ga/Gb Ex d IIC T4 Br- Ex tb IIIC T 85°C IP 66	Toate	Nota 1	-50 °C la 85°C
	Siguranta Intrinseca: Br- Ex ia IIC T4	4-20 mA / DE/ HART	Nota 2a	-50 °C la 70°C
		Foundation Fieldbus	Nota 2b	-50 °C la 70°C
	Fara pericol de incendiu: Ex nA IIC T4	4-20 mA / DE/ HART	Nota 1	-50 °C la 85°C
		Foundation Fieldbus	Nota 1	-50 °C la 85°C
Incinta : IP 66/67	Toate	Toti	-	

NEPSI (China)	Antideflagent: Br- Ga/Gb Ex d IIC T4 Br- Ex tb IIIC T 85°C IP 66	Toate	Nota 1	-50 °C la 85°C
	Siguranta Intrinseca: Br- Ex ia IIC T4	4-20 mA / DE/ HART	Nota 2a	-50 °C la 70°C
		Foundation Fieldbus	Nota 2b	-50 °C la 70°C
	Fara pericol de incendiu: Ex nA IIC T4	4-20 mA / DE/ HART	Nota 1	-50 °C la 85°C
		Foundation Fieldbus	Nota 1	-50 °C la 85°C
	Incinta : IP 66/67	Toate	Toti	-

Note:

1. Parametrii de Operare:

Tensiune= 11 la 42 V DC	Curent= 4-20 mA Normal (3.8 – 23 mA defect)
= 10 la 30 V (FF)	= 30 mA (FF)
2. Parametrii Electrici privind Siguranta Intrinseca a Produsului
 - a. Valori pentru Iesirea Analogica / DE/ HART :

Vmax= Ui = 30V	I _{max} = I _i = 105 mA	Ci = 4.2nF	Li = 820uH	Pi =0.9W
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 - b. Valori Foundation Fieldbus

Vmax= Ui = 30V	I _{max} = I _i = 225mA	Ci = 0	Li = 0	Pi =1W
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Certificari Marine	Acest certificat defineste certificarile care privesc familia de Traductoare de Presiune ST 800 , incluzand aici si Traductorul Smart Multivariabil SMV 800 . Reprezinta compilarea a cinci certificate Honeywell care in mod normal sunt acoperitoare pentru certificarea functionarii acestor produse in aplicatii marine .
	American Bureau of Shipping (ABS) - 2009 Regulamente pentru Vase din Otel 1-1-4/3.7, 4-6-2/5.15, 4-8-3/13 & 13.5, 4-8-4/27.5.1, 4-9-7/13. Certificat numarul: 04-HS417416-PDA
	Bureau Veritas (BV) – Cod de Produs: 389:1H. Certificat numarul: 12660/B0 BV
	Det Norske Veritas (DNV) – Clase de Locatii : Temperatura D, Umiditate B, Vibratii A, EMC B, Incinta C. Pentru expunere la imprastiere cu sare ; incinta din otel inox 316 SST sau 2-parti protectie epoxy se aplica pentru nituri din otel 316 SST . Certificat numar: A-11476
	Korean Register of Shipping (KR) – Certificat numarul: LOX17743-AE001
	Lloyd's Register (LR) - Certificat numarul: 02/60001(E1) & (E2)
Certificare SIL 2/3	IEC 61508 SIL 2 pentru utilizare ne redundanta si SIL 3 pentru redundanta in conformitate cu EXIDA si TÜV Nord Sys Tec GmbH & Co. KG respectand urmatoarele standarde: IEC61508-1: 2010; IEC 61508-2: 2010; IEC61508-3: 2010.

Aplicatii

Nivel Lichid: Rezervor inchis

Determina valorile de minim si maxim ale presiunii diferentiale care trebuie masurata (Figura 19).

$$\begin{aligned} P_{\text{Min}} &= (SG_p \times a) - (SG_f \times d) \\ &= \text{LRV cand HP este la baza rezervorului} \\ &= -\text{URV cand LP este la baza rezervorului} \end{aligned}$$

$$\begin{aligned} P_{\text{Max}} &= (SG_p \times b) - (SG_f \times d) \\ &= \text{URV cand HP este la baza rezervorului} \\ &= -\text{LRV cand LP este la baza rezervorului} \end{aligned}$$

Unde :

Nivelul minim este la 4mA
Nivelul maxim este la 20 mA

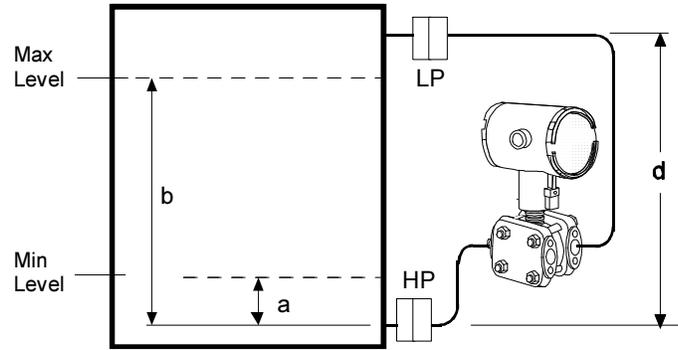
a = distanta intre valva de jos si nivelul minim al fluidului

b = distanta intre valva de jos si nivelul maxim al fluidului

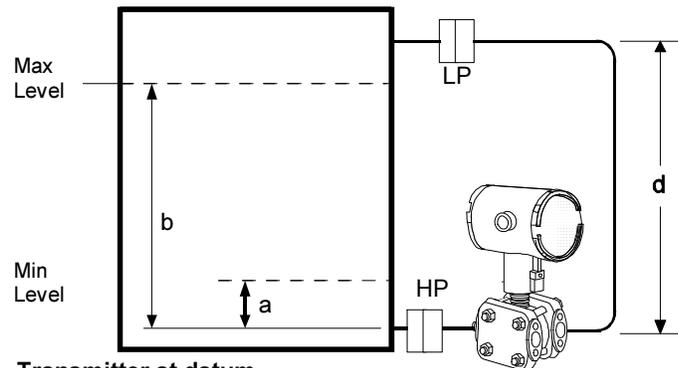
d = distanta intre cele 2 valve la care se conecteaza traductorul

SG_f = Greutatea Specifica a lichidului de umplere din capilare (vezi Pagina 6 "Specificatii Materiale" pentru valori.)

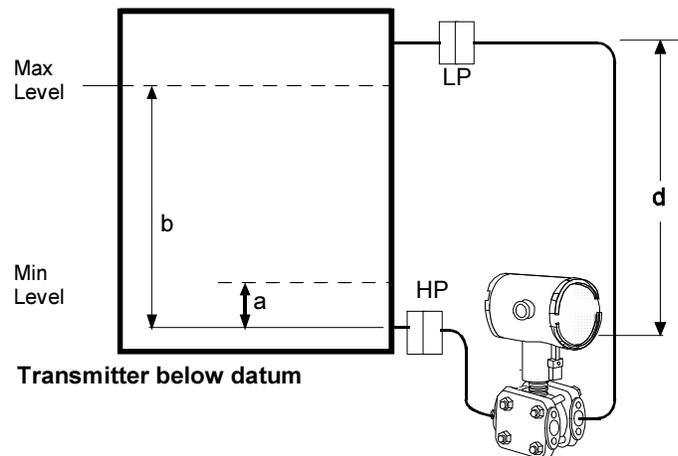
SG_p = Greutatea Specifica a Fluidului de Masurat



Transmitter above datum



Transmitter at datum



Transmitter below datum

24253

Figura 19—Masurarea Nivelului Fluidului intr-un Rezervor Inchis

Aplicatii (Continuare)

Densitate sau Interfata*

Calculeaza valorile de minim si maxim ale presiunii diferentiale ce urmeaza a fi masurata (Figura 20).

$P_{min} = (SG_{min} - SG_f) \times (d);$
 Densitate minima, iesire 4mA

$P_{max} = (SG_{max} - SG_f) \times (d);$
 Densitate maxina , iesire 20mA

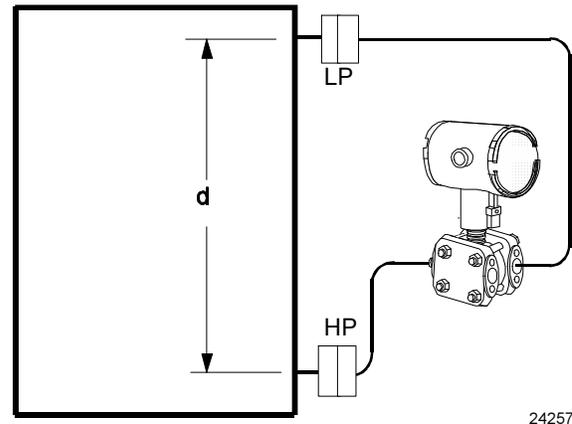
Unde:

d = distanta intre valve

SG_{max} = Greutatea Specifica maxima

SG_{min} = Greutatea Specifica minima

SG_f = Greutate Specifica a lichidului de umplere capilare
 (Vezi Pagina 6 "Specificatii ale Materialelor " pentru valori)



24257

Figura 20—Densitate, configuratie de montaj traductor

Configuratii de Diafragme Incapsulate



Figura 21—Flansa cu Diafragma Incapsulata

Poate fi folosita cu traductoare de presiune diferentia, relativa si absoluta si sunt disponibile marmile de 3" ANSI Class 150, ANSI Class 300 si DIN DN80-PN40 conectare la proces. Flansele cu diafragme pot fi prevazute cu inele adaptoare . Acestea sunt de fapt inele de calibrare , care permit conectarea directa in proces daca este necesar .



Figura 23—Diafragma tip "Pancake"

Poate fi folosita cu traductoare de presiune diferentia, relative si absoluta si este disponibila pentru conectare la proces cu 3" ANSI Class 150, 300 sau 600 .



Figura 22— Flansa cu Diafragma cu Extensie

Flansele cu Diafragme prevazute cu Extensie pot fi folosite la traductoarele de presiune diferentia, relativa sau absoluta si sunt disponibile pentru conectare la proces cu flanse de 3" si 4" ANSI Class 150, ANSI Class 300, DIN DN80-PN40 si DIN DN100-PN40 .Extensii de lungime de 2", 4" 6" sunt prevazute .



Figura 24— Diafragma cu racord in teu "Taylor" Wedge

Diafragmele cu racord in teu (Chemical Tee "Taylor" Wedge) pot fi folosite la traductoarele de presiune diferentia si sunt conexiune la process de tip "Taylor Wedge 5" O.D.

Configuratii de Diafragme (continuare)



Figura 25— Capsula Conectare la Proces prin Filet
Diafragmele cu conectare prin filet sunt utilizate cu traductoare de presiune diferentiala, relativa si absoluta fiind disponibile cu dimensiuni ale filetului de $\frac{1}{2}$ ", $\frac{3}{4}$ " si 1" NPT .



Figura 29— Tuburi Capilate armate cu otel inox PVC si imbricate in manta PVC

Capilarele armate cu otel inox si cele acoperite cu manta din PVC si armatura din otel inox sunt disponibile pentru solutiile cu diafragme incapsulate.



Figura 26— Capsule Diafragme Igienice

Sunt folosite la toate traductoarele de presiune , fiind disponibile cu conectare la proces prin racorduri de 3" si 4" Tri-Clover-Tri-Clamp .



Figura 30— Niplu de 2" din otel inox

Niplurile de 2" din otel inox sunt folosite pentru cuplarea apropiata a diaframelor .



Figura 27— Capsula Diafragma cu Protectie

Diafragmele cu protectie impotriva contaminarii cu agenti corozivi sunt disponibile cu dimensiuni de 3" si 4" (cu 6 sau 8 suruburi de fixare) pentru conectare la proces.



Figura 31— Corp sudat pentru toate Diafragmele incapsulate si sudate

Pentru aplicatiile unde se masoara vacuum (in apropiere de zero) corpul sudat de la ST 800 este o componenta importanta a diaframelor incapsulate si sudate .



Figura 28— Inel de Calibrare

Inelele de calibrare sunt disponibile pentru Flansele cu Diafragme incapsulate si Diafragmele tip "Pancake" . Conectarile la proces ($\frac{1}{4}$ " sau $\frac{1}{2}$ ") pot folosi inelele de calibrare.

Ghid de Selectie Modele Traductoare STR800

Ghidul de Selectie a Modelelor de traductoare este supus modificarilor si este adaugat la specificatia tehnica doar cu scop orientativ . Inainte de a specifica sau comanda un model verificati ultima revizie a Ghidului care este publicat la:

<http://www.honeywellprocess.com/en-US/pages/default.aspx>

Model STR800 (DP, GP & AP) Remote Seals

Model Selection Guide

34-ST-16-88 Issue 1, Rev.20

Instructions

- Select the desired Key Number. The arrow to the right marks the selection available.
- Make selections from each Table (I, II and IX) using the column below the proper arrow.
- A (•) denotes unrestricted availability. A letter denotes restricted availability.
- Restrictions follow Table IX.

Key Number I II III IV V VI VII VIII (Optional) IX

STR --- | - -- | - -- | - -- | - -- | - -- | - -- | - -- + 0 0 0 0

KEY NUMBER	URL	LRL	Max Span	Min Span	Units	Selection	Availabilit
Measurement Range Std Accuracy	400 (1000)	-400 (-1000)	400 (1000)	4 (10)	" H ₂ O (mbar)	STR82D	↓ ↓ ↓ ↓
	100 (7)	-100 (-7)	100 (7)	1 (0.07)	psi (bar)	STR83D	
	500 (35)	5.7 (0.39)	500 (35)	5 (0.35)	psia (bar A)	STR84A	
	500 (35)	-9 (-0.62)	500 (35)	5 (0.35)	psi (bar)	STR84G	
	3000 (210)	-9 (-0.62)	3000 (210)	30 (2.1)	psi (bar)	STR87G	

Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.

TABLE I	Description	Selection	•	•		
Meter Body & Capillaries	Number of Seals	1 Remote Seal (High Side) 2 Remote Seals 1 Remote Seal (Low Side)	1 2 3	• • •	• • •	
	Primary Fill Fluid	Silicone Oil DC [®] 200 Fluorinated Oil CTFE	- 1 - 2	• •	• 2	
	Construction	Non-Wetted Adapter Head Materials				
	In-Line Gauge/Absolute	316 SS Bonnet 316 SS Bonnet for Close-Couple	- A - B	• •	• 3	
	Dual Head DP	316 SS (bolt-on heads) 316 SS for Close-Couple 316 SS with all-welded meter body	- C - D - E	• • •	• 3 4	
	Bolts and Nuts for Transmitter Heads	None Carbon Steel Bolts and Nuts 316 SS Bolts and Nuts A286 SS (NACE) Bolts and 304 SS (NACE) Nuts B7M (NACE) Bolts and 7M (NACE) Nuts	- 0 - C - S - N - B	• • • • •	• • • • •	
	Secondary Fill Fluid (capillary & seal)	No Fill Fluid Silicone Oil DC [®] 200 Fluorinated Oil CTFE Silicone Oil DC [®] 704 Neobee [®] M20 ¹¹ Syltherm [®] 800 ¹²	- 0 - 1 - 2 - 3 - 4 - 5	• • • • • •	• • • • • •	
	Connection of Remote Seal to Meter Body	No Capillary, No Nipple (Specify for VAM Unit Only)				
		Capillary Length	5 feet 1.5 m	SS Armor	- A	•
			10 feet 3.0 m		- B	•
			15 feet 4.5 m		- C	•
			20 feet 6.1 m		- D	•
			25 feet 7.5 m		- E	•
			35 feet 10.7 m		- F	•
			5 feet 1.5 m		PVC Coated SS Armor	- G
10 feet 3.0 m			- H			•
15 feet 4.5 m			- J			•
20 feet 6.1 m	- K		•			
25 feet 7.5 m	- L	•				
35 feet 10.7 m	- M	•				
Seal Option	2 inch long SS nipple close-coupled None Std Gold Plated Seal Diaph. = 50 µin Teflon Coated Seal Diaphragm - only for anti-sticking	- 2 - 0 - 1 - 4	• • • •	• 6 7 7		

¹¹ Limited vacuum availability.
¹² Minimum static pressure requirement. No vacuum allowed. See Specifications 34-ST-03-88 Figure 15



STR84G & 87G & 84A
STR82D & 83D

Note: When selecting required seal, you must specify only the 9 selections within the required seal type.

TABLE II		Description				Selection			
		No Seal Attached to Core Transmitter (Specify for VAM Unit Only)				0 0 0 0 0 0 0 0	21 21		
Seals	 Flush Flanged Seal	Seal Type	Diaphragm Diameter	Flange Size	Flange Pressure Rating ¹	Selection			
		3.5"	3"	ANSI Class 150		AFA_____	•	•	
				ANSI Class 300		AFC_____	•	•	
			80mm	DIN DN80-PN40		AFM_____	•	•	
		Wetted Material			Diaphragm	Upper Insert	Selection		
					316L SS	316L SS	___AA___	•	•
					Hastelloy® C-276	316L SS	___AB___	•	•
					Hastelloy® C-276	Hastelloy® C-276	___AC___	•	•
					Monel 400®	Monel 400®	___AE___	•	•
				Tantalum ⁵	316L SS	___AF___	8	8	
		Non-Wetted Material (upper)		CS (Nickel Plated)		___1___	•	•	
				316L SS		___2___	•	•	
Seal-Capillary Connection		Center Seal		___1___	•	•			
		Side Seal		___2___	9	9			
Calibration Rings		None		___A___	•	•			
		316L SS		___B___	10	10			
		Hastelloy® C-276		___C___	10	10			
		Monel 400®		___D___	10	10			
Flushing Connections and Plugs ⁴ (Metal plug material will be the same as Cal. ring material if metal plug is chosen)		None		___0___	•	•			
		One 1/4" with plastic plug		___H___	11	11			
		One 1/4" with metal plug		___J___	11	11			
		Two 1/4" with plastic plugs		___M___	11	11			
		Two 1/4" with metal plugs		___N___	11	11			
		One 1/2" with plastic plug		___P___	11	11			
		One 1/2" with metal plug		___Q___	11	11			
		Two 1/2" with plastic plugs		___R___	11	11			
		Two 1/2" with metal plugs		___S___	11	11			

Table II continued next page

¹ Standard facing 125-250 AARH RF (raised face) serrated surface finish.

⁴ Plastic Plugs are TEMPORARY ONLY to protect threads and MUST be REMOVED before installation

⁵ Tantalum Upper insert has Tantalum wetted parts and 316 SS or CS non-wetted parts

Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.

STR84G & 87G & 84A
STR82D & 83D

TABLE II		Description				Selection			
Seal Type	Diaphragm Diameter	Flange Size	Flange Pressure Rating ¹	Const. - See Spec. Figure 34-ST-03-88	Construction - See Spec. Figure 34-ST-03-88				
 <p>Seals (continued)</p> <p>Flush Flanged Seal with Lower</p>	2.4"	1"	ANSI 150	22	BCA _____	12	•		
			ANSI 300	22	BCC _____	12	•		
		1-1/2"	ANSI 150	22	BGA _____	12	•		
			ANSI 300	22	BGC _____	12	•		
		2"	ANSI 150	22	BDA _____	12	•		
			ANSI 300	22	BDC _____	12	•		
		3"	ANSI 150	22	BFA _____	12	•		
			ANSI 300	22	BFC _____	12	•		
		2.9"	1/2"	ANSI 150	23	CAA _____	•	•	
			1"	ANSI 150	23	CCA _____	•	•	
				ANSI 300	23	CCC _____	•	•	
			1-1/2"	ANSI 150	22	CGA _____	•	•	
		4.1"	2"	ANSI 300	22	CGC _____	•	•	
				ANSI 150	22	CDA _____	•	•	
			1/2"	ANSI 300	22	CDC _____	•	•	
				ANSI 150	22	DAA _____	•	•	
		1"	ANSI 150	23	DCA _____	•	•		
			ANSI 300	23	DCC _____	•	•		
		1-1/2"	ANSI 150	23	DGA _____	•	•		
			ANSI 300	23	DGC _____	•	•		
		2"	ANSI 150	23	DDA _____	•	•		
			ANSI 300	22	DDC _____	•	•		
		3"	ANSI 150	22	DFA _____	•	•		
			ANSI 300	22	DFC _____	•	•		
		Wetted Material			Diaphragm	Lower	Selection		
					316L SS	316L SS	--- BA ---	•	•
					Hastelloy® C-276	316L SS	--- BB ---	•	•
					Hastelloy® C-276	Hastelloy® C-276	--- BC ---	•	•
					Monel 400®	Monel 400®	--- BE ---	•	•
					Tantalum	316L SS	--- BF ---	8	8
					Tantalum	Hastelloy® C-276	--- BG ---	8	8
				Tantalum	Tantalum Clad	--- BH ---	13	13	
Non-Wetted Material (upper, upper insert)			Upper	Upper Insert	Selection				
			316L SS	316L SS	----- 4 -----	•	•		
		Carbon Steel	316L SS	----- 5 -----	•	•			
Bolts ⁶		No Selection			----- 0 -----	•	•		
Flushing Connections and Plugs ⁴ (Metal plug material will be the same as Lower material, if metal plug is chosen - (SS Plug for CS Lower and Tantalum Clad)		None			----- 0 -----	•	•		
		One 1/4" with plastic plug			----- H -----	•	•		
		One 1/4" with metal plug			----- J -----	•	•		
		Two 1/4" with plastic plugs			----- M -----	•	•		
		Two 1/4" with metal plugs			----- N -----	•	•		
		One 1/2" with plastic plug			----- P -----	•	•		
		One 1/2" with metal plug			----- Q -----	•	•		
		Two 1/2" with plastic plugs			----- R -----	•	•		
		Two 1/2" with metal plugs			----- S -----	•	•		
Gasket	Klinger® C-4401 (non-asbestos)			----- K -----	•	•			
	Grafoil®			----- G -----	•	•			
	Teflon®			----- T -----	•	•			
	Gylon® 3510			----- L -----	15	15			

Table II continued next page

¹ Standard facing 125-250 AARH RF (raised face) serrated surface finish.

⁶ Bolt material will be same as Upper Material. However, if Table I bolts/nuts material is NACE or B7M, seal bolt material will be 304 SS NACE or Alloy Steel.

⁴ Plastic Plugs are TEMPORARY ONLY to protect threads and MUST be REMOVED before installation

Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.

STR84G & 87G & 84A
STR82D & 83D

TABLE II		Description					
Seal Type	Diaphragm Diameter	Flange Size	Flange Pressure Rating ¹		Selection		
 Flange Seal with Extended Diaphragm	2.8"	3" (2.8" OD extension)	ANSI Class 150		EFA _____	• •	
			ANSI Class 300		EFC _____	• •	
			DIN DN80-PN40		EFM _____	• •	
	3.5"	4" (3.70" OD extension)	ANSI Class 150		FGA _____	• •	
			ANSI Class 300		FGC _____	• •	
			DIN DN100-PN40		FGP _____	• •	
			Diaphragm	Ext. Tube	Selection		
			316L SS	316L SS	___ EA ___	• •	
			Hastelloy® C-276	316L SS	___ EB ___	• •	
			Hastelloy® C-276	Hastelloy® C-276	___ EC ___	• •	
		Non-Wetted Material (flange)		___ 7 ___	• •		
		316L SS		___ 8 ___	• •		
		Bolts		___ 0 ___	• •		
		Extension Length		___ 2 ___	• •		
		4"		___ 4 ___	• •		
		6"		___ 6 ___	• •		
No Selection	No Selection	No Selection		___ 0 ___	• •		

Table II continued below

STR84G & 87G & 84A
STR82D & 83D

TABLE II		Description					
Seal Type	Diaphragm Diameter	Flange Size	Flange Pressure Rating Dependent on Customer Flange ¹		Selection		
 Pancake Seal	3.5"	3"	ANSI Class 150/300/600		GFA _____	• •	
			Diaphragm	Body			
			316L SS	316L SS	___ GA ___	• •	
			Hastelloy® C-276	316L SS	___ GB ___	• •	
			Hastelloy® C-276	Hastelloy® C-276	___ GC ___	• •	
			Monel 400®	Monel 400®	___ GE ___	• •	
			Tantalum	Tantalum ⁷	___ GG ___	8 8	
			Non-Wetted Material		___ 0 ___	• •	
			Bolts		___ 0 ___	• •	
			Calibration Rings		___ A ___	• •	
		None		___ B ___	10 10		
		316L SS		___ C ___	10 10		
		Hastelloy® C-276		___ D ___	10 10		
		Monel 400®		___ 0 ___	• •		
		Flushing Connections and Plugs ⁴ (Metal plug material will be the same as Cal. Ring material, if metal plug is chosen)		___ H ___	11 11		
		One 1/4" with plastic plug		___ J ___	11 11		
		One 1/4" with metal plug		___ M ___	11 11		
		Two 1/4" with plastic plugs		___ N ___	11 11		
		Two 1/4" with metal plugs		___ P ___	11 11		
		One 1/2" with plastic plug		___ Q ___	11 11		
		One 1/2" with metal plug		___ R ___	11 11		
		Two 1/2" with plastic plugs		___ S ___	11 11		
		Two 1/2" with metal plugs					

Table II continued next page

¹ Standard facing 125-250 AARR RF (raised face) serrated surface finish.

⁴ Plastic Plugs are TEMPORARY ONLY to protect threads and MUST be REMOVED before installation

⁷ Tantalum Body has Tantalum wetted parts and 316 SS non-wetted parts

Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.

TABLE II		Description				Selection	
Seal Type	Diaphragm Diameter	Flange Size	Flange Pressure Rating ¹		Selection		
 Chemical Tee "Taylor" Wedge	3.5"	Taylor Wedge 5" O.D.	750 psi		HMO _____	16	
	Wetted Material		Diaphragm	Body	Selection		
			316L SS	316L SS	___ HA ___	•	
			Hastelloy® C-276	316L SS	___ HB ___	•	
			Hastelloy® C-276	Hastelloy® C-276	___ HC ___	•	
	Non-Wetted Material		No Selection		___ 0 ___	•	
	Bolts		No Selection		___ 0 ___	•	
Styles		No Selection		___ 0 ___	•		
No Selection		No Selection		___ 0 ___	•		

Table II continued below

TABLE II		Description				Selection	
Seal Type	Diaphragm Diameter	Threaded Process Connection Size (NPT Female)	Pressure Rating		Selection		
			CS Bolts	304 SS Bolts			
 Seal with Threaded Process Connection	2.4"	1/2 NPT	2,500 psi	1,250 psi	JJG _____	12	•
		3/4 NPT			JKG _____	12	•
		1 NPT			JLG _____	12	•
	2.9"	1/2 NPT	2,500 psi	1,250 psi	KJG _____	•	•
		3/4 NPT			KKG _____	•	•
		1 NPT			KLG _____	•	•
	4.1"	1/2 NPT	1,500 psi	750 psi	LJG _____	•	•
		3/4 NPT			LKG _____	•	•
		1 NPT			LLG _____	•	•
	Wetted Material		Diaphragm	Lower	Selection		
			316L SS	Carbon Steel	___ JA ___	•	•
			316L SS	316L SS	___ JB ___	•	•
			Hastelloy® C-276	316L SS	___ JC ___	•	•
			Hastelloy® C-276	Hastelloy® C-276	___ JD ___	•	•
			Monel 400®	Monel 400®	___ JE ___	•	•
		Tantalum	316L SS	___ JF ___	8	8	
		Tantalum	Hastelloy® C-276	___ JG ___	8	8	
Non-Wetted Material (upper)		CS (Nickel Plated)		___ A ___	•	•	
		316 Stainless Steel		___ C ___	17	17	
Bolts ⁸		Carbon Steel		___ C ___	8	8	
		304 SS		___ D ___	•	•	
Flushing Connections and Plugs ⁴		None		___ 0 ___	•	•	
		One 1/4" with plastic plug		___ H ___	•	•	
		One 1/4" with metal plug		___ J ___	•	•	
		Two 1/4" with plastic plugs		___ M ___	•	•	
		Two 1/4" with metal plugs		___ N ___	•	•	
		One 1/2" with plastic plug		___ P ___	18	18	
		One 1/2" with metal plug		___ Q ___	18	18	
		Two 1/2" with plastic plugs		___ R ___	18	18	
		Two 1/2" with metal plugs		___ S ___	18	18	
Gasket		Klinger® C-4401 (non-asbestos)		___ K ___	•	•	
		Grafoil®		___ G ___	•	•	
		Teflon®		___ T ___	•	•	
		Gylon® 3510		___ L ___	15	15	

Table II continued next page

¹ Standard facing 125-250 AARH RF (raised face) serrated surface finish.

⁴ Plastic Plugs are TEMPORARY ONLY to protect threads and MUST be REMOVED before installation

⁸ If Table I Bolts and Nuts material NACE or B7M is chosen, seal bolts will ship with 304 SS NACE or Alloy Steel and MAWP may change.

Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.

TABLE II		Description						
Seals (continued)	Seal Type	Diaphragm Diameter	Flange Size	Pressure Rating		Selection		
		1.9"	2"	Customer clamp rating or 600 psi, whichever is less		MD0 _____	19	
		2.4"	2-1/2"			NE0 _____	19	
		2.9"	3"			PF0 _____	19	
		4.1"	4"			QG0 _____	19	
	Sanitary Seal ⁹	Wetted Material		Diaphragm	Body	Selection		
				316L SS	316L SS	___ N A ___	• •	
		Non-Wetted Material		No Selection		_____ 0 _____	• •	
		Bolts		No Selection		_____ 0 _____	• •	
		Styles		Tri-Clover Tri-Clamp®		_____ 8 _____	• •	
Gasket		No Selection		_____ 0 _____	• •			

STR84G & 87G & 84A
STR82D & 83D

Table II continued below

TABLE II		Description						
Seals (continued)	Seal Type	Diaphragm Diameter	Size and Bolt Pattern	Seal Pressure Rating		Selection		
		8-Bolt Design	2.4"	for 3" Pipe ≥ 4" pipe	C.S. Bolts	316 SS Bolts	Selection	
					2,500 psi	1,250 psi	RFK _____	12 •
		RGK _____	12 •					
		6-Bolt Design	2.4"	for 3" Pipe ≥ 4" pipe	2,000 psi	1,000 psi	RPK _____	12 •
					RQK _____	12 •		
		Wetted Material		Diaphragm	Lower Housing	Selection		
				316L SS	Carbon Steel	___ RA ___	• •	
				316L SS	316L SS	___ RB ___	• •	
				Hastelloy® C-276	316L SS	___ RC ___	• •	
		Hastelloy® C-276	Hastelloy® C-276	___ RD ___	• •			
		316L SS	N/A-Body Only ¹⁰	___ SB ___	• •			
		Hastelloy® C-276	N/A-Body Only ¹⁰	___ SC ___	• •			
Non-Wetted Material		Body	Bolts ^{10,11}	Selection				
		Carbon Steel	Carbon Steel	_____ B _____	8 8			
		316L SS	316 SS	_____ C _____	• •			
Bolts		No Selection		_____ 0 _____	• •			
Styles		No Selection		_____ 0 _____	• •			
Gasket		Klinger® C-4401 (non-asbestos)		_____ K _____	• •			
		Grafoil®		_____ G _____	• •			
		Teflon®		_____ T _____	• •			
		Gylon® 3510		_____ L _____	• •			

STR84G & 87G & 84A
STR82D & 83D

⁹ All sanitary seals have dairy grade 3A approval.

¹⁰ Bolts are not included with "body only" selection.

¹¹ If Table I Bolts and Nuts material option is NACE, seal bolt material will be 304 SS NACE.

Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.

STR84G & 87G & 84A
STR82D & 83D

TABLE III	Agency Approvals (see data sheet for Approval Code Details)
Approvals	No Approvals Required
	FM Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof
	CSA Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof
	ATEX Explosion proof, Intrinsically Safe & Non-incendive
	IECEX Explosion proof, Intrinsically Safe & Non-incendive
	SAEx/CCoE Explosion proof, Intrinsically Safe & Non-incendive
	INMETRO Explosion proof, Intrinsically Safe & Non-incendive
	NEPSI Explosion proof, Intrinsically Safe & Non-incendive

0	•	•	#
A	•	•	#
B	•	•	#
C	•	•	#
D	•	•	#
E	•	•	#
F	•	•	#
G	•	•	#

TABLE IV	TRANSMITTER ELECTRONIC SELECTIONS		
a. Electronic Housing Material & Connection Type	Material	Connection	Lightning Protection
	Polyester Powder Coated Aluminum	1/2 NPT	None
	Polyester Powder Coated Aluminum	M20	None
	Polyester Powder Coated Aluminum	1/2 NPT	Yes
	Polyester Powder Coated Aluminum	M20	Yes
	316 Stainless Steel (Grade CF8M)	1/2 NPT	None
	316 Stainless Steel (Grade CF8M)	M20	None
	316 Stainless Steel (Grade CF8M)	1/2 NPT	Yes
b. Output/ Protocol	Analog Output		Digital Protocol
	4-20mA dc		HART Protocol
	4-20mA dc none		DE Protocol Foundation Fieldbus
c. Customer Interface Selections	Indicator	Buttons	Languages
	None	None	None
	None	Yes (Zero/Span Only)	None
	Basic	None	English
	Basic	Yes	English
	Advanced	None	EN,GR,IT, FR,SP,RU, TU
Advanced	Yes	EN,GR,IT, FR,SP,RU, TU	

A __	•	•
B __	•	•
C __	•	•
D __	•	•
E __	•	•
F __	•	•
G __	•	•
H __	•	•

_ H _	•	•
_ D _	•	•
_ F _	•	•

_ _ 0	•	•
_ _ A	f	f
_ _ B	•	•
_ _ C	•	•
_ _ D	•	•
_ _ E	•	•

TABLE V	CONFIGURATION SELECTIONS		
a. Application Software	Diagnostics		
	Standard Diagnostics		
b. Output Limit, Failsafe & Write Protect Settings	Write Protect	Fail Mode	High & Low Output Limits ³
	Disabled	High> 21.0mA dc	Honeywell Std (3.8 - 20.8)
	Disabled	Low< 3.6mA dc	Honeywell Std (3.8 - 20.8)
	Enabled	High> 21.0mA dc	Honeywell Std (3.8 - 20.8)
	Enabled	Low< 3.6mA dc	Honeywell Std (3.8 - 20.8)
	Disabled	N/A	N/A Fieldbus or Profibus
c. General Configuration	Factory Standard		
	Custom Configuration (Unit Data Required from customer)		

1 _ _	•	•
-------	---	---

_ 1 _	f	f
_ 2 _	f	f
_ 3 _	f	f
_ 4 _	f	f
_ 5 _	g	g
_ 6 _	g	g
_ _ S	•	•
_ _ C	•	•

TABLE VI	CALIBRATION & ACCURACY SELECTIONS		
Accuracy and Calibration	Accuracy	Calibrated Range	Calibration Qty
	NA	None	None
	Standard	Factory Std	Single Calibration
	Standard	Custom (Unit Data Required)	Single Calibration

0	21	21
A	•	•
B	•	•

³ NAMUR Output Limits 3.8 - 20.5mA dc can be configured by the customer or select custom configuration Table Vc

TABLE VII		ACCESSORY SELECTIONS	
a. Mounting Bracket	Bracket Type	Material	
	None	None	
	Angle Bracket	Carbon Steel	
	Angle Bracket	304 SS	
	Marine Approved Angle Bracket	304 SS	
	Flat Bracket	Carbon Steel	
b. Customer Tag	Customer Tag Type		
	No customer tag		
	One Wired Stainless Steel Tag (Up to 4 lines 26 char/line)		
c. Unassembled Conduit Plugs & Adapters	Unassembled Conduit Plugs & Adapters		
	No Conduit Plugs or Adapters Required		
	1/2 NPT Male to 3/4 NPT Female 316 SS Certified Conduit Adapter		
	1/2 NPT 316 SS Certified Conduit Plug		
	M20 316 SS Certified Conduit Plug		
	Minifast® 4 pin (1/2 NPT)		
Minifast® 4 pin (M20)			

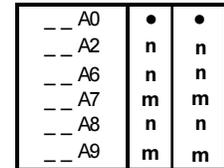
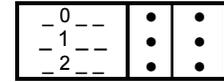
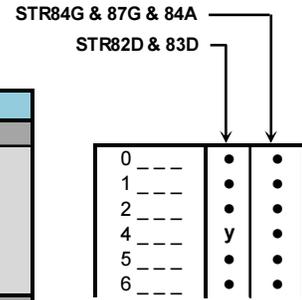


TABLE VIII		OTHER Certifications & Options : (String in sequence comma delimited (XX, XX, XX,....))
Certifications & Warranty	NACE MR0175; MR0103; ISO15156 (FC33338) Process wetted parts only	
	NACE MR0175; MR0103; ISO15156 (FC33339) wetted and non-wetted parts	
	Marine (DNV, ABS, BV, KR, LR) (FC33340)	
	EN10204 Type 3.1 Material Traceability (FC33341)	
	Certificate of Conformance (F3391)	
	Calibration Test Report & Certificate of Conformance (F3399)	
	Certificate of Origin (F0195)	
	FMEDA (SIL 2/3) Certification (FC33337)	
	Over-Pressure Leak Test Certificate (1.5X MAWP) (F3392)	
	Cert Clean for O ₂ or CL ₂ service per ASTM G93	
	Extended Warranty Additional 1 year	
Extended Warranty Additional 2 years		
Extended Warranty Additional 3 years		
Extended Warranty Additional 4 years		
Extended Warranty "LifeTime" Additional 15 years		

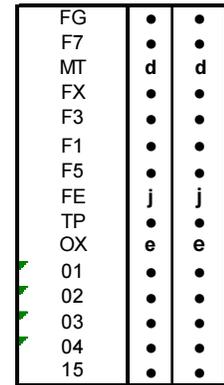
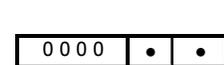


TABLE IX		Manufacturing Specials
Factory	Factory Identification	



MODEL RESTRICTIONS

Restriction Letter	Available Only With		Not Available With	
	Table	Selection(s)	Table	Selection(s)
b	Select only one option from this group			
d			VIIa	1,2,5,6 ___
e	lb	_ 2 _ 2 _		
f			IVb	_ F _
g			IVb	_ H, D _
j	IVb	_ H _	Vb	_ 1,2,6 _
m	IVa	B, D, F, H ___		
n	IVa	A, C, E, G ___		
y			lc	_ _ E _ _ _
2	le	_____ 0 _ _		
		_____ 2 _ _		
		_____ 4 _ _		
3	lf	_____ 2 _	la	2 _ _ _ _ _
4	l	2 _ _ 0 _ _		
5	VI	0	VIII	FG, F7, FX, OX, TP, MT, F1
6	l	_ _ B, D _ _ _ _	la	2 _ _ _ _ _
7			II	_ _ AF _ _ _ _
				_ _ BF _ _ _ _
				_ _ BG _ _ _ _
				_ _ BH _ _ _ _
				_ _ GG _ _ _ _
				_ _ JF _ _ _ _
8			VIII	FG, F7
9	II	_ _ AA2 _ _		
		_ _ AB2 _ _		
10			II	_____ 0
11			II	_____ A _
12	lf	_____ A, G, 2 _		
13	II	_____ 0 _	II	_____ T
			VIII	FG, F7
15	II			_ _ BF _ _ _ _
				_ _ BG _ _ _ _
				_ _ BH _ _ _ _
				_ _ JF _ _ _ _
				_ _ JG _ _ _ _
16	l	2 _ _ _ _ _		
17			II	_ _ JA _ _ _ _
18			II	JJG _ _ _ _ _
				JKG _ _ _ _ _
				JLG _ _ _ _ _
19			la	2 _ _ _ _ _
			lf	_ _ _ _ 2 _
20	lf	_____ A, G, 2 _		
21	l	_____ 000		

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