

STR700 Traductor SmartLine cu Diafragme Incapsulate Specificatia 34-ST-03-104



Introducere

Parte a familiei de produse SmartLine®, STR700 este o alegere potrivita pentru monitorizare, control si achizitii de date . Traductoarele STR700 utilizeaza tehnologia cu senzori piezoresistivi care combina masurarea presiunii cu posibilitatea de compensare a temperaturii , asigurand o acuratete marita, stabilitate si performante pentru o gama larga de aplicatii de masura presiuni si temperaturi. Familia SmartLine este testate in intregime si este conforma cu sistemul Experion® PKS , furnizand cel mai inalt nivel de compatibilitate , siguranta si capacitate de integrare . Traductoarele SmartLine raspund la cele mai exigente cerinte in aplicatiile de masura a presiunii

Cele Mai Bune Caracteristici din Clasa:

- Precizie de pina la 0.075% standard
- Compensare automata cu presiunea statica & temperatura
- Raport intre limitele sup-inf de pina la 100:1
- Posibilitati multiple de afisare locala
- Posibilitati de configurare, ajustare de zero si domeniu
- Insensibil la polaritatea conectarii tensiunii de alimentare
- Capabilitate de diagnoza locala "on board"
- Realizat cu dubla membrana integrala pentru cea mai inalta siguranta in functionare conf. ANSI/NFPA 70-202 si ANSI/ISA 12.27.0
- Protectie la supra presiune
- Conformitate deplina cu cerintele SIL 2/3 .
- Proiectare modulara a instrumentului .
- Garantie de pina la 15 ani .

Limite si Domenii Traductor :

Model	Limita URL Psig (bar)	Limita LRL Psig (bar)	Domeniu max. Psig (bar)	Domeniu min. psig (bar)
STR73D	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)
Model	Psig (bar)	psig (bar)	psig (bar)	psig (bar)
STR74G	500 (35.0)	-500 (-35.0)	500 (35.0)	5 (0.35)



Figura 1 – STR700 Traductor cu Conectare la Distanta prin Diafragme

Aplicatii pentru Traductorul cu Conectare la Distanta prin Diafragme

- Procese tehnologice cu temperaturi inalte
- Fluide vascoase sau cu suspensii solide
- Procese tehnologice cu contin materiale inalt corozive
- Aplicatii Igiene
- Aplicatii cu risc de scurgeri de hidrogen
- Aplicatii masura nivel
- Aplicatii unde se monteaza traductoarele la distanta
- Aplicatii masura presiune la rezervoare cu calculul densitatii

Optiuni de Comunicare / Iesire:

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

La toate traductoarele sunt disponibile aceste protocoale de comunicatii.

Descriere

Familia SmartLine de traductoare de presiune este realizata pe baza unui sensor piezorezistiv de inalta performanta . Acest sensor integreaza senzori multipli care leaga masuratorile presiunii din proces de masuratoarea presiunii statice (la modelele DP) si a compensarii cu temperatura masurata . Acest nivel de performanta permite ca ST 700 sa inlocuiasca cele mai competitive traductoare disponibile astazi.

Optiuni de Indicare/Display

ST 700 in constructie modulara este echipat cu un display LCD alfanumeric .

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, iH₂O, mH₂O, bar, mbar, inH₂O, inHG, FTH₂O, mmH₂O, mm HG si psi
- 2 Linii 16 Caractere (4.13H x 1.83W mm)
- Indica iesirea cu extragere de radacina patrata (√)

Diagnoze

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

Instrumente de Configurare

Optiunea de Configurare cu Trei Butoane

Potriva 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

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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 :
 - Transfer de mesaje cu traductorul
 - Rapoarte acces neautorizat la date
- Imagine de Ansamblu Instrumente FDM cu rapoarte stare buna functionare
- Toate unitatile ST 700 sunt testate cu sistemul Experion pentru a asigura cel mai inalt nivel de compatibilitate in system .

Proiectare Modulara

Pentru a ajuta la controlul costurilor de mentenanta si gestiune a bunurilor, toate traductoarele ST 700 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 acestora . Fiecare din corpurile instrumentelor se caracterizeaza prin posibilitatea de a asigura performantele tehnice pentru o gama larga de aplicatii caracterizate prin variatii de temperatura si presiunea iar datorita interfetelor Honeywell , modulele electronice pot fi schimbate intre ele fara a pierde din caracteristicile tehnice .

Caracteristici ale Constructiei Modulare

- Inlocuirea corpului principal al traductorului
- Schimbarea / inlocuirea modulelor de comunicatie*
- Montarea sau indepartarea indicatorului integral*
- Montarea sau indepartarea terminalului de protectie la descarcari electrice (conexiunea)*

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

Fara afectarea performantelor ,conceptual de modularitate rezulta in ***necesitati mai mici de gestiune si costuri operationale per ansamblu mai mici .***

Specificatii despre Performante¹

Tabel 1

Precizia de Referinta²

pentru Domeniul , Temperatura si Presiunea Statica Specificate: (conformitate cu +/-3 Sigma)

Model	Limita superioara URL	Limita inferioara LRL	Domeniu Minim	Raport Maximum URL /LRL	Precizia de Referinta ¹ (% dom.)
STR73D	100 psid/7.0 bar	-100 psi/-7.0bar	9 psi/.07bar	100:1	0.075
STR74G	500 psi/35 bar	-14.7 psi/-1.0 bar	5 psi/.035 bar	100:1	0.075

Zeroul si domeniul pot fi setate oriunde in intervalul limitelor listate mai sus (Limita Superioara URL / Limita Inferioara LRL)

Tabel 2.

Model	Limita Sup. URL	Precizia ¹ (% din Domeniu)				Efect Temperatura [*] (% domeniu /50°F)		
		URL / LRL mai mare de	A	B	C psi(bar)	D	E	F psi(bar)
STR73D	100 psi/7.0 bar	3.33:1	0.0250	0.050	3.6 (0.25)	0.028	1.200	7.2 (0.50)
STR74G	500 psig/35 bar	25:1	0.0250	0.050	20 (1.4)			
Efectul Raport Limite URL/LRL					Efectul Temp.			
$\pm \left[A + B \left(\frac{C}{\text{Span}} \right) \right]$ % Span					$\pm \left[D + E \left(\frac{F}{\text{Span}} \right) \right]$ % Span per 28°C (50°F)			

Precizia pentru Domeniul Specificat, Efectul Temperaturii si a Presiunii Statice : (conformitate cu +/-3 Sigma)

Performanta Totala (% din Domeniu):

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

Exemple de Performanta Totala: (5:1 Raport limite -Turndown, variatie a temperaturii de pina la 50 °F)

STR73D @ 20 psig: 1.03% din domeniu

Frecventa Tipica de Calibrare:

Verificarea Calibrarii se recomanda a fi facuta la fiecare patru (4) ani

Note:

1. Precizia de Baza – Include efectele combinate ale linearitatii, histerezisului si repeatabilitatii. Iesirea analogica adauga o eroare de 0.005% din domeni.
2. Pentru domenii care include zeroul si in conditiile de referinta 25°C (77°F), 0 psig presiune statica, 10 la 55% R.H, si diafragme 316 otel inox
3. Specificatiile se aplica pentru traductoarele cu 2 diafragme incapsulate. Se aplica factorul de 1.5 oentru efectul temperaturii asupra capilarelor mai lungi de 3 m.

Conditii de Operare – Toate Modelele

Parametru	Conditii Referinta (la Pstatica=0)		Conditii Nominale		Limite Operative		Transport si Stocare							
	°C	°F	°C	°F	°C	°F	°C	°F						
Temperatura ambianta ¹	25±1	77±2	-	-	-	-	-55 la 90	-67 la 194						
Umiditate %RH	10 la 55		0 la 100		0 la 100		0 la 100							
Regiunea Vacuum , Presiune Minima mmHg absolut	Atmosferica (Vezi Figura 4 pentru limitarile de vacuum)													
Tensiune Alimentare , Curent si Resistenta de Sarcina	10.8 la 42.4 Vcc la terminale (versiunea IS este limitata la 30 Vcc) 0 la 1.440 ohm (asa cum se arata in Figura 2)													
Presiunea de Lucru Maxim Admisa (MAWP) ⁴ (Produsele ST 700 au presiunea nominala egala cu MAWP . Depinde de Agentia de Aprobare si materialele de constructie ale traductorului.)	MAWP reprezinta minimum dintre presiunea nominala a Corpului sau presiunea Diafragmelor (Vezi Ghidul de Selectie a Modelului pentru presiunea MAWP a diafragmelor) <table border="0"> <tr> <td>Corp Traductor</td> <td>MAWP</td> </tr> <tr> <td>STR73D</td> <td>750 psig (51.7 bar) Bolted Process Heads</td> </tr> <tr> <td>STR74G</td> <td>500 psig (35 bar)</td> </tr> </table>								Corp Traductor	MAWP	STR73D	750 psig (51.7 bar) Bolted Process Heads	STR74G	500 psig (35 bar)
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STR74G	500 psig (35 bar)													

¹ Limita Temperaturii Ambiante este functie de Temperatura de Proces. (Vezi Figurile 3 si 4)

Temperatura de Operare pentru display-ul LCD : -20°C la +70°C . Temperatura de Stocare este : -30°C la 80°C

⁴ Consultati producatorul pentru MAWP la traductoarele ST 700 care au aprobarile CRN .

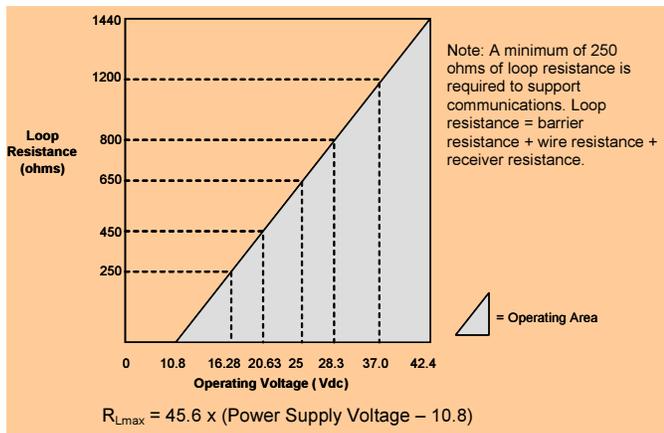


Figura 2 – Tensiunea de Alimentare si Rezistenta Buclei

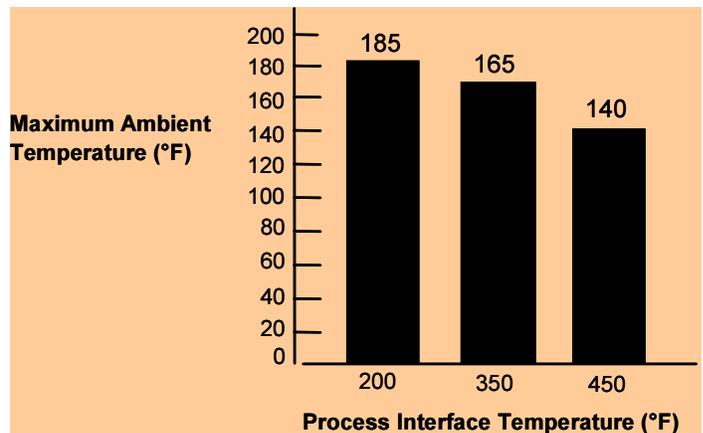


Figure 3 – Limitele Temperaturii Ambiante

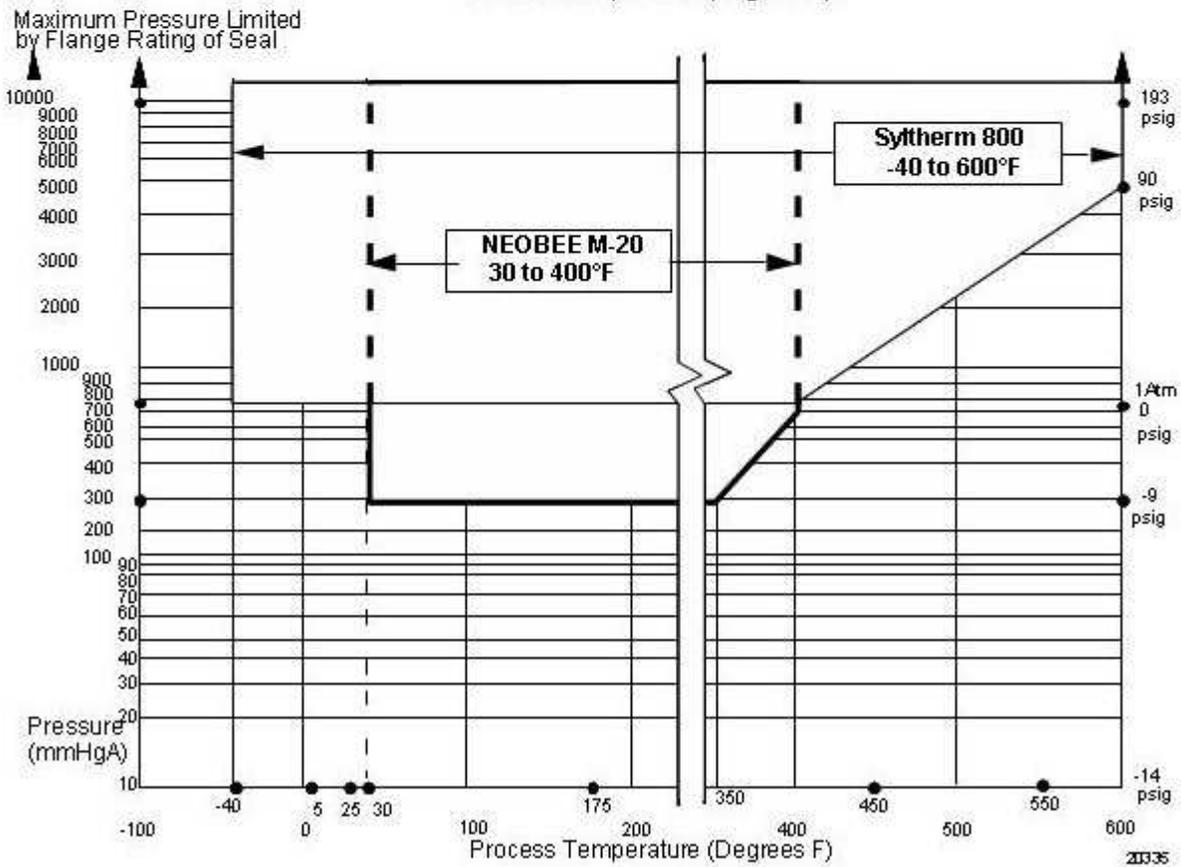
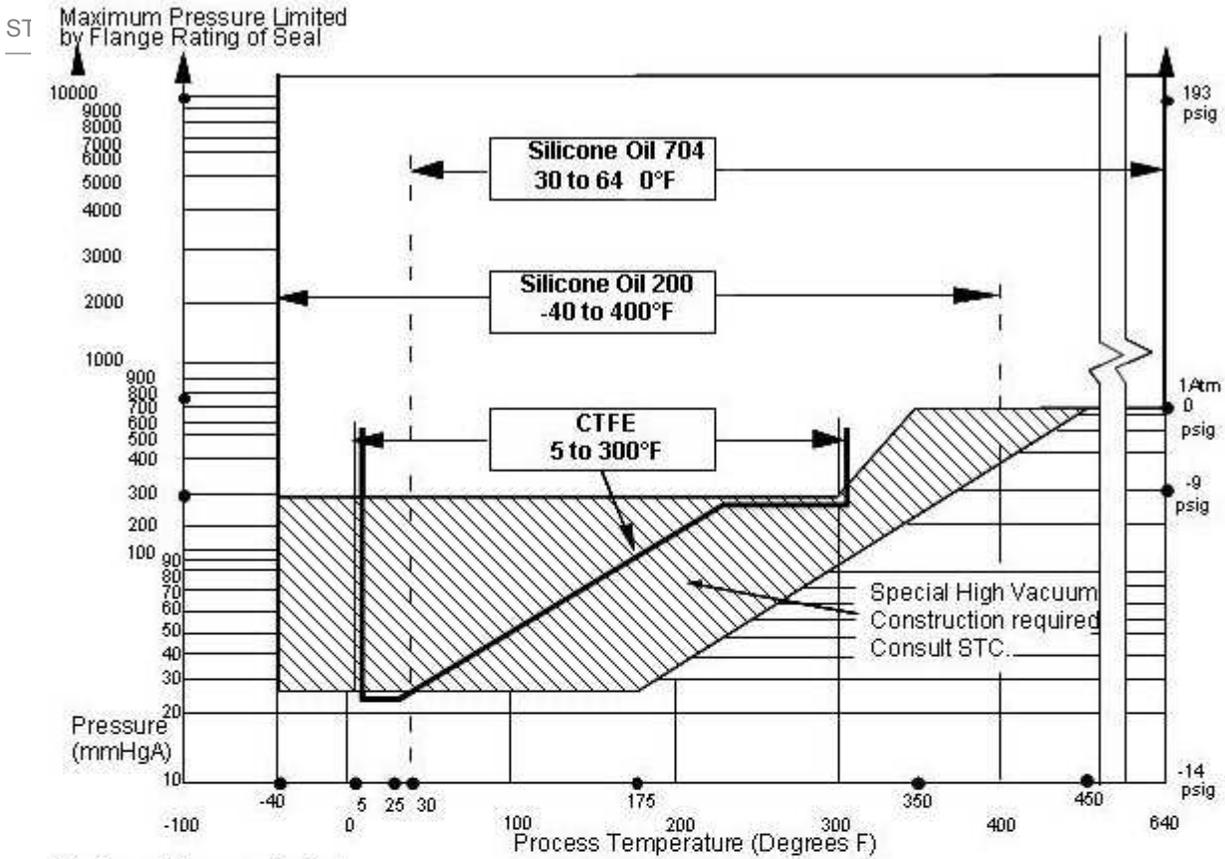


Figura 4 - STR700 cu Diafragme Incapsulate la Distanța : limitele de operare ale presiunii versus temperatura

Domeniul Minim Recomandat pentru traductorul STR73D cu 2 diafragme la distanta

Marime Diafragma	Capilare						Lungime Max. Capilare
	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'

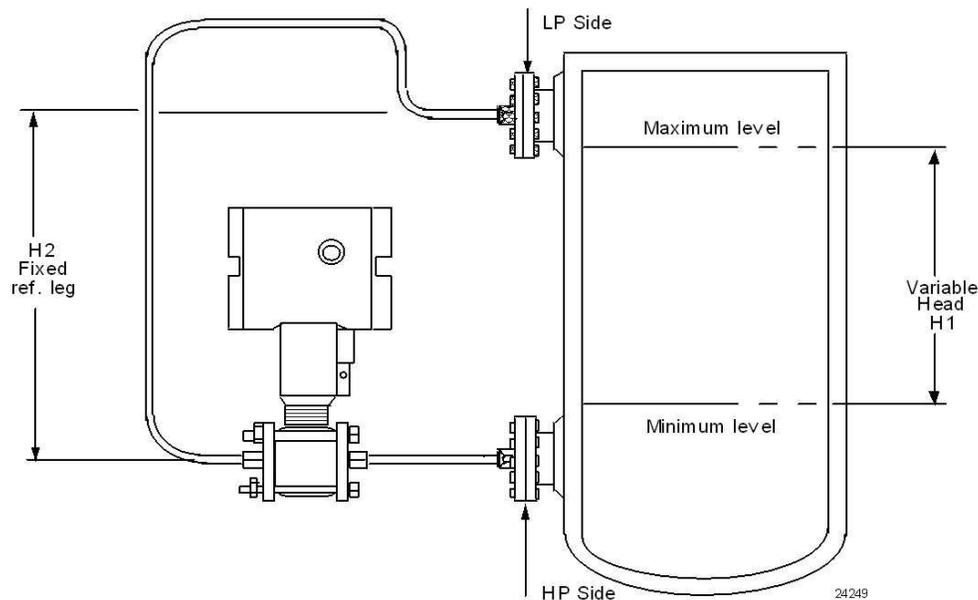
Domeniul Minim Recomandat pentru traductorul STR73D cu 1 diafragma la distanta

Marime Diafragma	Montare Directa	Capilare						Lungime Max. Capilare
		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'

Domeniul Minim Recomandat pentru Traductorul STR74G cu 1 diafragma la distanta

Marime Diafragma	Montare Directa	Capilare						Lungime Max. Capilare
		5"	10"	15"	20"	30"	35"	
2.0	25 psig	30 psig	40 psig					15'
2.4	10 psig	15 psig	20 psig	25 psig	30 psig	40 psig	50 psig	35'
2.9	8 psig	9 psig	10 psig	11 psig	12 psig	14 psig	15 psig	35'
3.5	5 psig	5 psig	5 psig	120 psig	140 psig	180 psig	200 psig	35'
4.1	5 psig	5 psig	5 psig	100 psig	120 psig	160 psig	180 psig	35'

Figura 5– Tabel cu lungimea maxima a capilarelor si dimensiunile diafragmelor

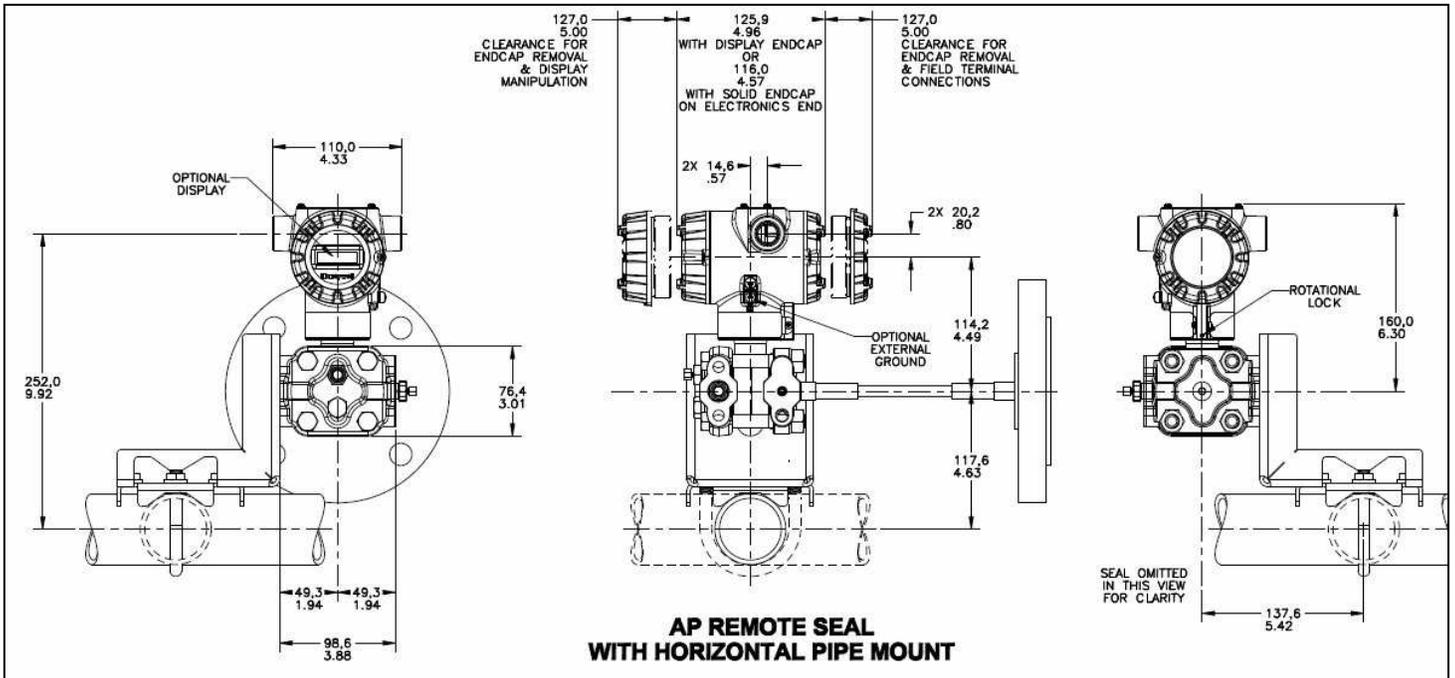
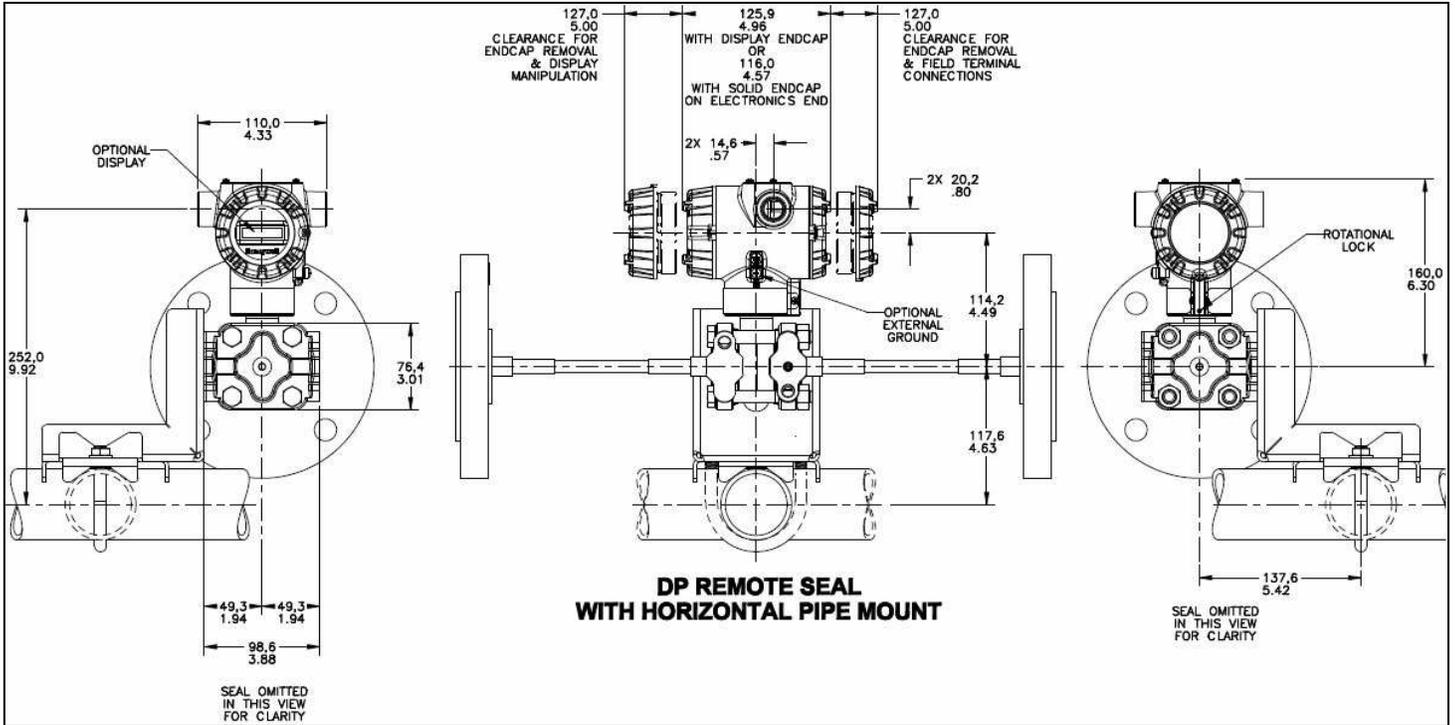


NOTE: Lower flange seal should not be mounted over 22 feet below or above the transmitter for silicone fill fluid (11 feet for CTFE fill fluid) with tank at one atmosphere. The combination of tank vacuum and high pressure capillary head effect should not exceed 9 psi vacuum (300 mmHg absolute).

Consult Honeywell for installation of STR73D.

Figura 6 – Traductorul STR700 montat pe un rezervor

Dimensiuni de Referinta pentru Montare Orizontala



Dimensiuni de Referinta pentru Montare Orizontala (continuare)

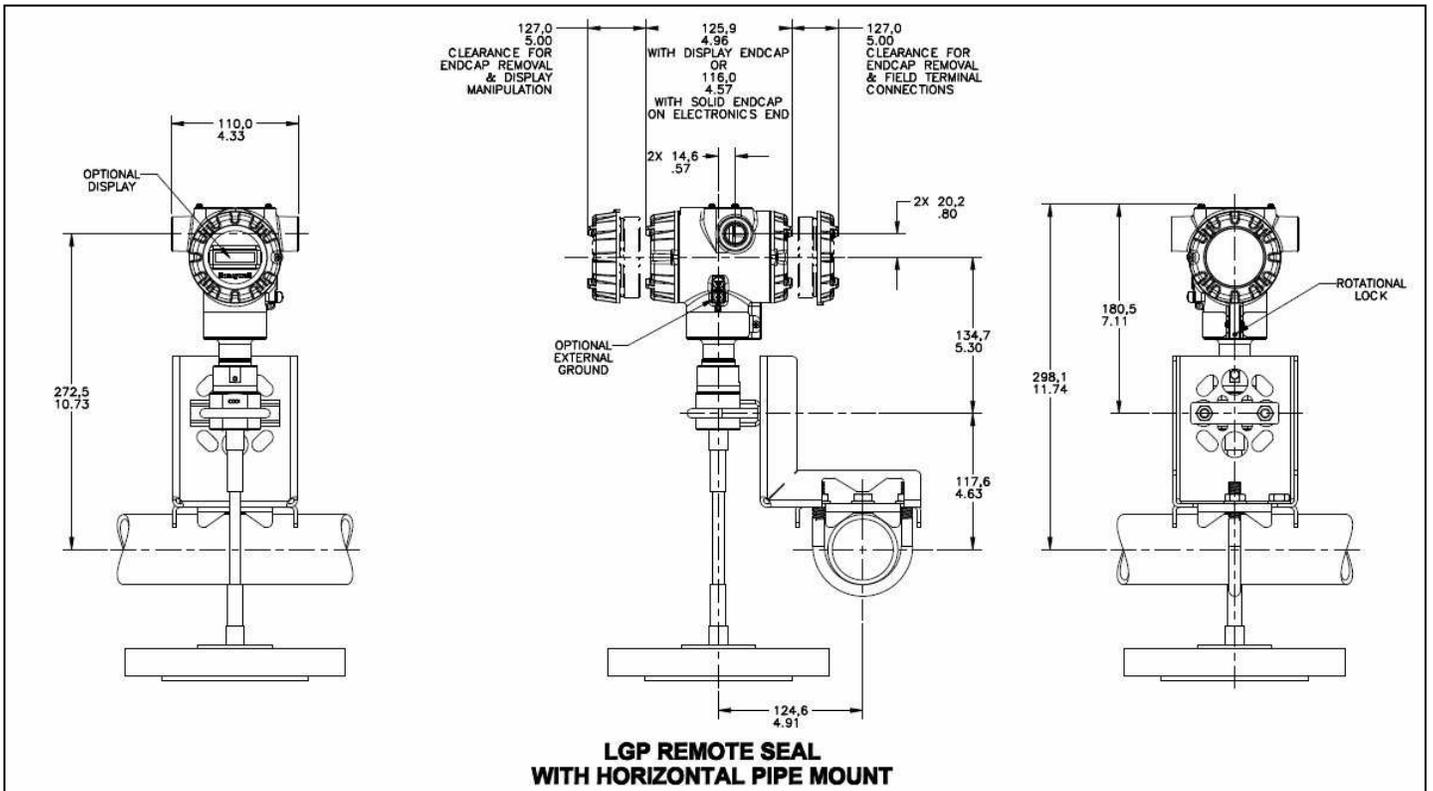
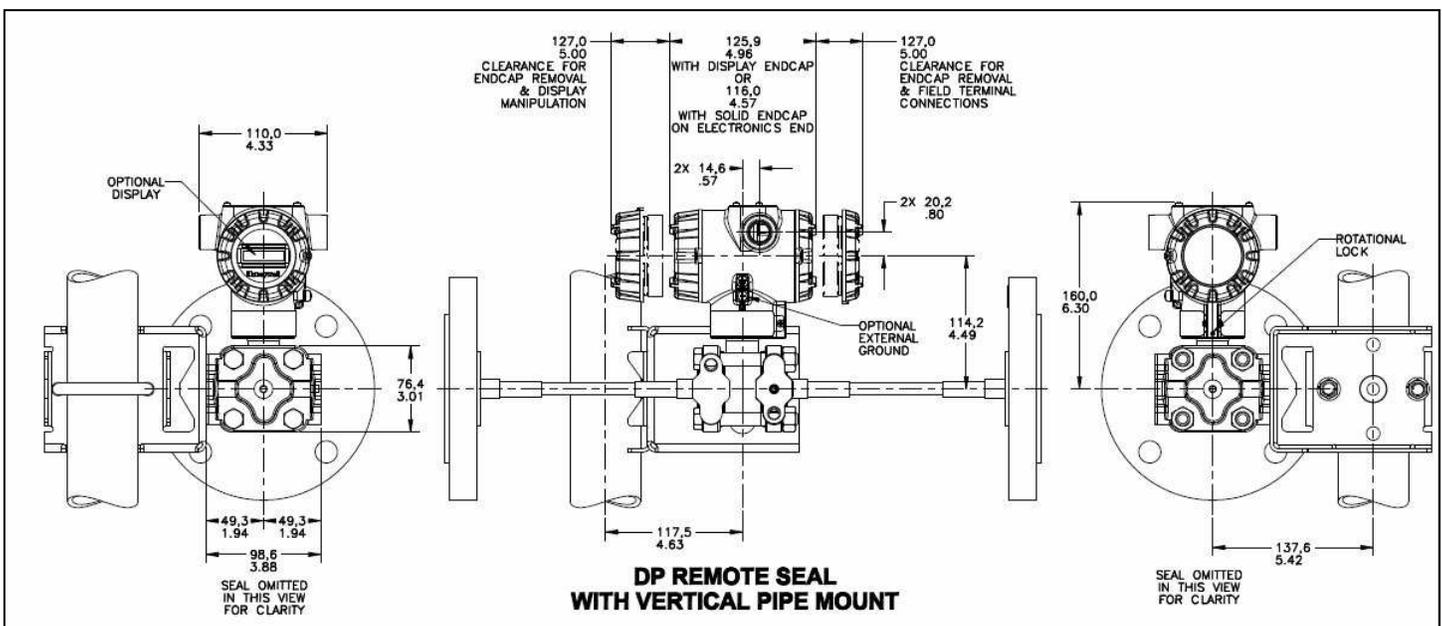


Figura 7 — Dimensiunile aproximative pentru montarea orizontala a traductorului cu diafragme la distanta

Dimensiuni Referinta pentru Montare Verticala



Dimensiuni Referinta pentru Montare Verticala (continuare)

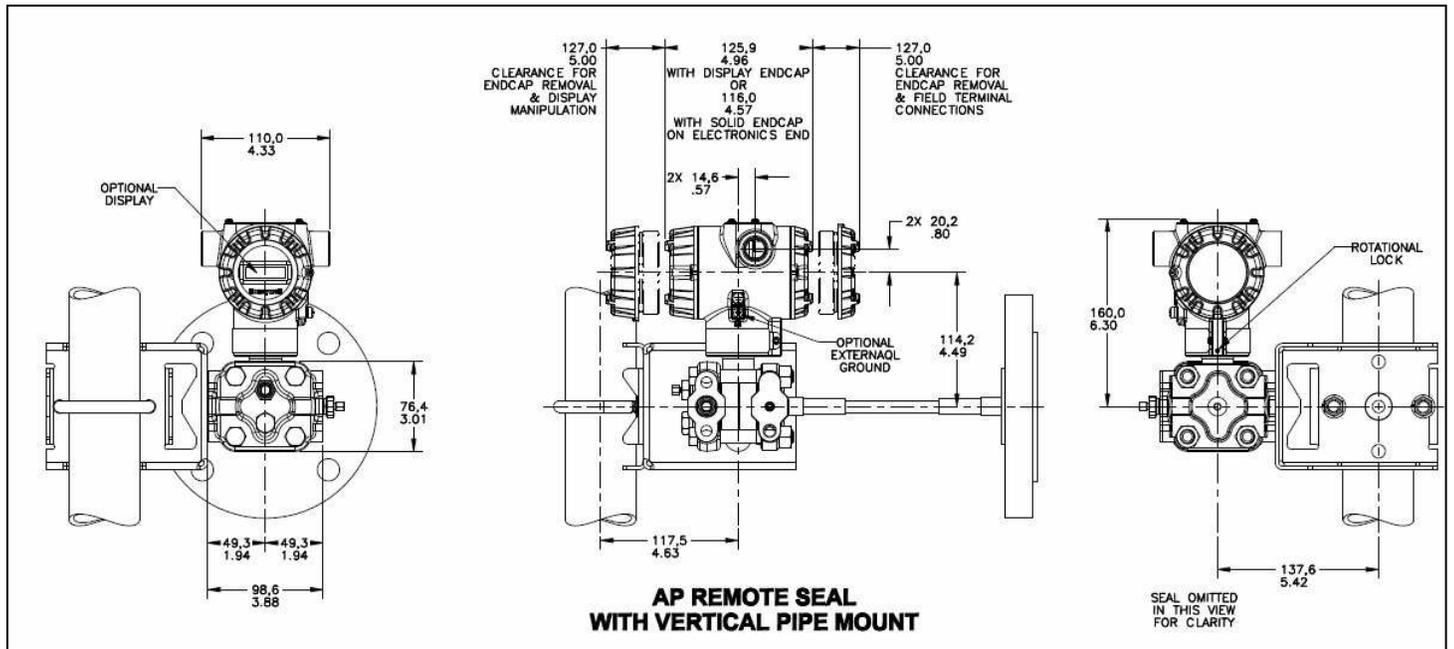
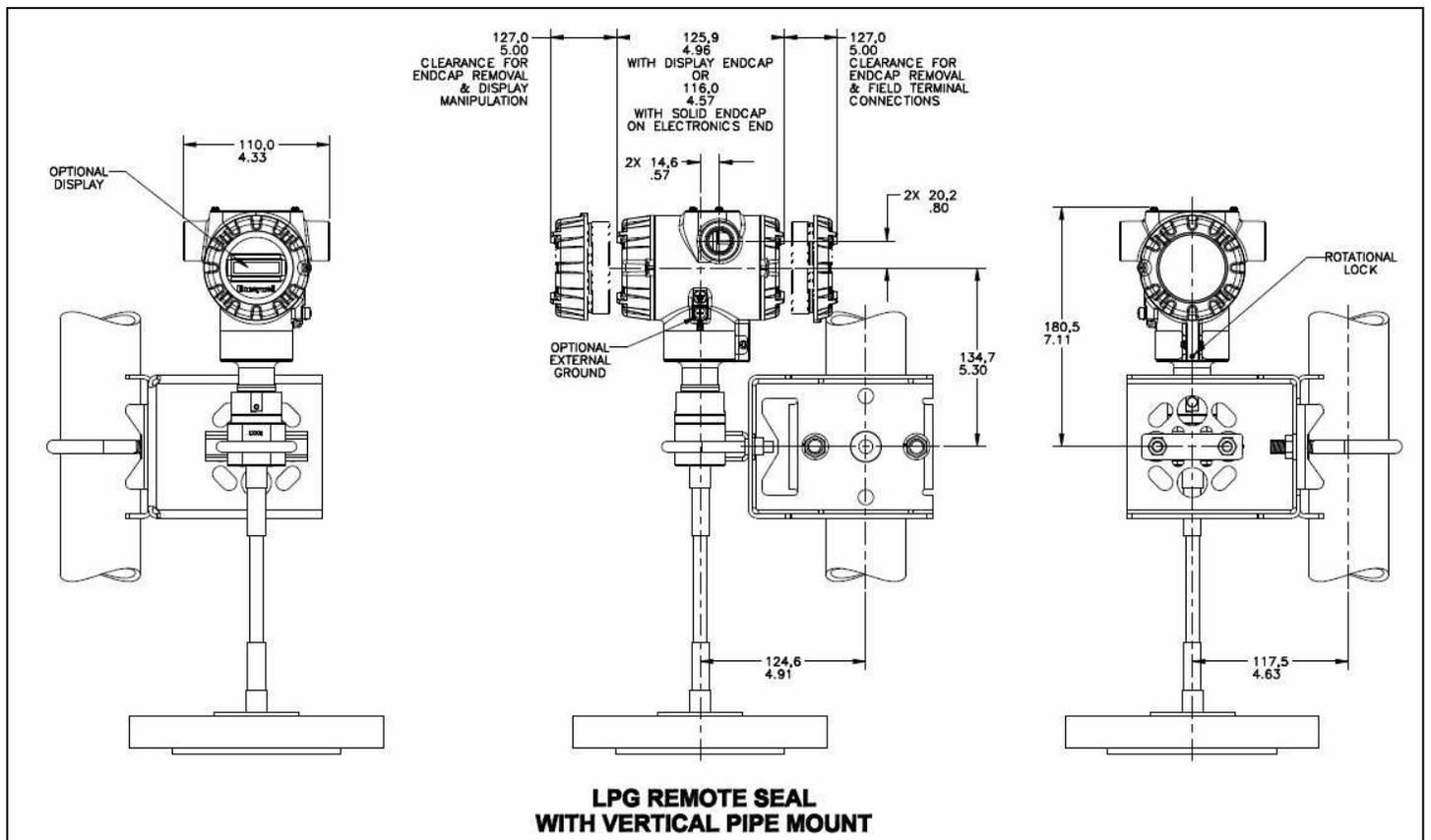


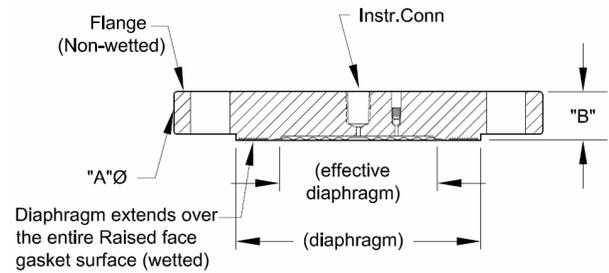
Figura 8 — Dimensiunile aproximative pentru montarea verticala a traductorului STR700



Dimensiuni de Referinta (continuare)

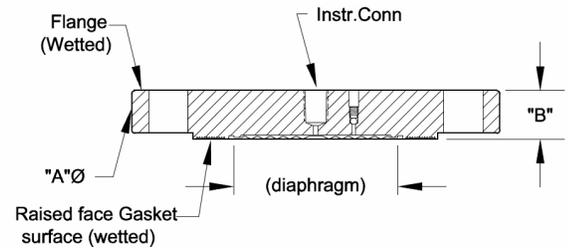
Dimensiuni Flanse cu Diafragme Incapsulate

Type	ANSI/DIN Rating	Flange Material	Wetted Materials		Construction See figure	↔ ↑	
			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 600#	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			



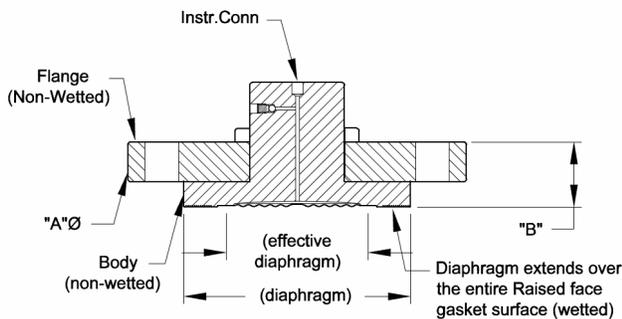
Configuration "HS"

Figura A



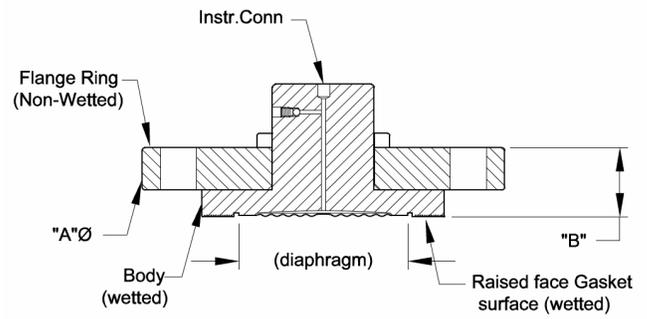
Configuration "HT"

Figura B



Configuration "IS"

Figura C



Configuration "IT"

Figura D

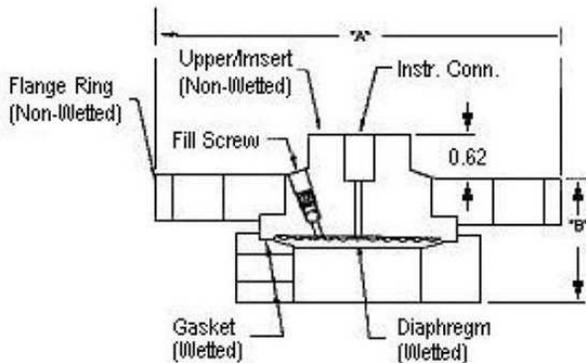
Figura 9 – Dimensiunile Flanselor cu Diafragme Incapsulate (Flush Flanged)

Dimensiuni de Referinta (continuare)

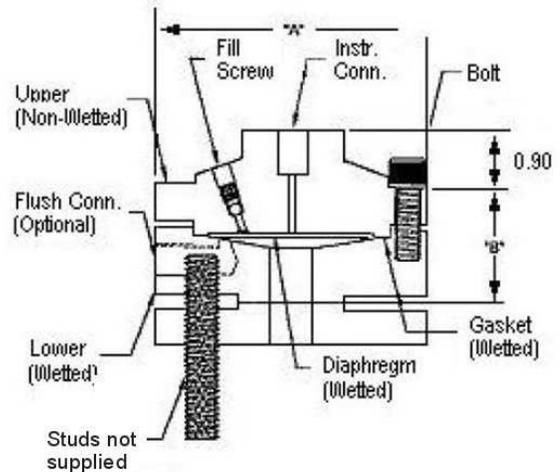
Dimensiuni Flanse cu Diafragma si Inel Adaptor

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	4.26	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	2.60	
		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	3.60		
	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	3.60		
	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 Diafragma si Inel Adaptor



Flanse cu Diafragma si Inel Adaptor

Nota: Dimensiunea 0.90 este 0.70 for 4.1" Dia Diafragma

Figura 10- Dimensiuni Diafragme Incapsulate (Flush Flanged)

Dimensiuni Referinta (continuare)

Flanse cu Diafragma 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

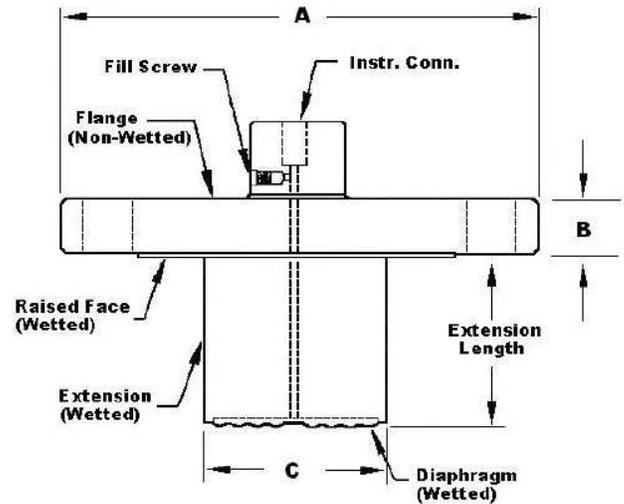


Figura 11 — Dimensiuni Diafragme (Diafragme cu Extensie)

Pancake Seal

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

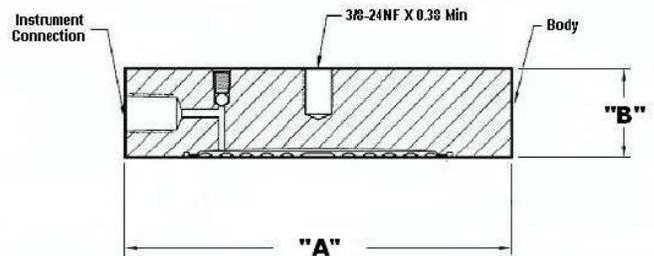


Figura 12 — Dimensiuni Capsule tip Pancake

Diafragme 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

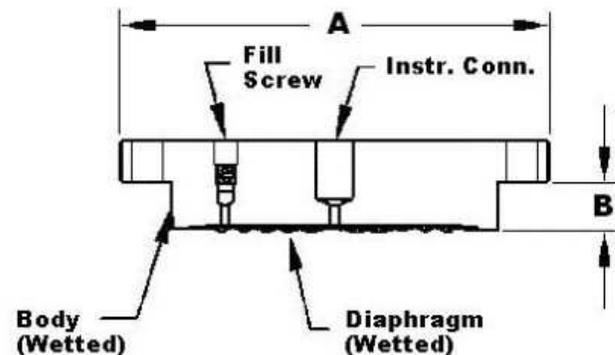


Figura 13 — Dimensiuni Diafragme (Chemical TEE "Taylor Wedge")

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	1.66	1.66	1.79
		B1	1.66	1.66	1.79
		B2	2.18	2.16	2.14
	3/4" or 1"	A	3.50	4.00	5.25
		B0	1.66	1.66	1.79
		B1	1.66	1.66	1.79
		B2	8.25	2.16	2.14

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

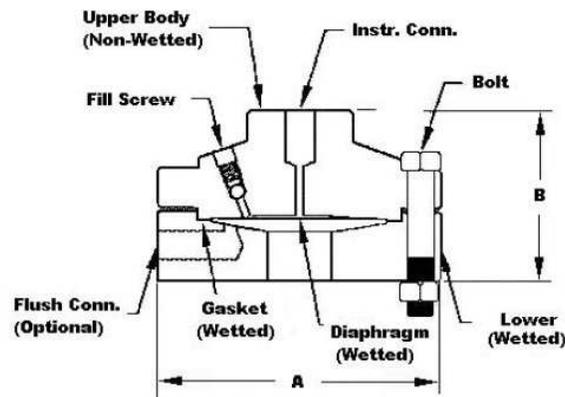


Figura 14— Dimensiuni Diafragme (conectare la proces prin filet)

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

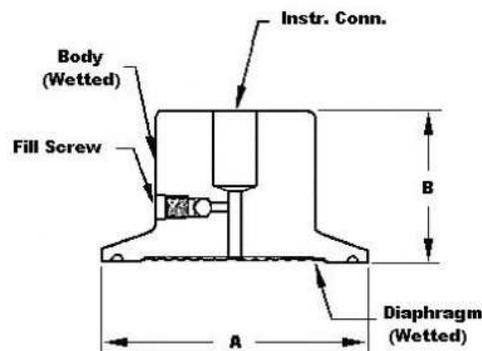


Figura 15— Dimensiuni Diafragme (aplicatii igienice)

Diafragme Incapsulate cu Protectie (Saddle Seal)

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

Note: Specify 6 or 8 bolt pattern

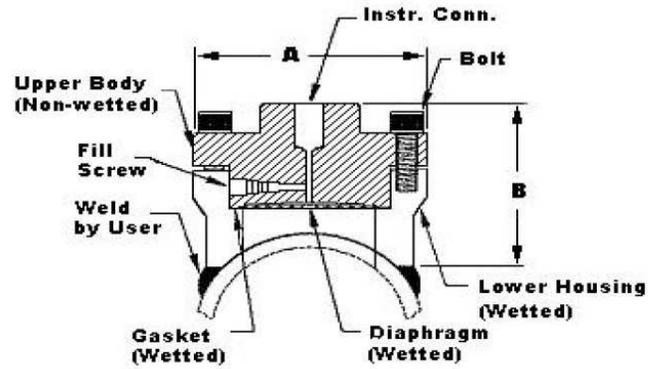


Figura 16— Dimensiuni Diafragme cu Protectie (3" Saddle Seal)

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

Note: Specify 6 or 8 bolt pattern

re

Figura 17— Dimensiuni Diafragme cu Protectie (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

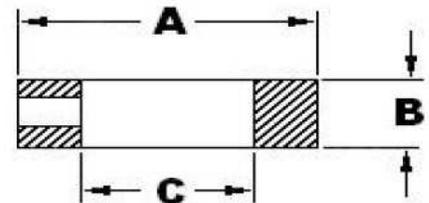


Figura 18— Inel de Calibrare

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

Tip Bloc	Cant.	Timp de Executie
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
Char Semnal (SC)	1	30 ms
DisplayLCD	1	n/a
Bloc Debit	1	30 ms
Selector Intrari	1	30 ms
Bloc 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	Basic Display
Electronic Module DAC Failure	Electronics Module fault
Meter Body NVM Corrupt	Meterbody fault
Config Data Corrupt	Electronics Module fault
Electronic Module Diag Failure	Electronics Module fault
Meter Body Critical Failure	Meterbody fault
Sensor Comm Timeout	Meterbody Comm fault

Non-Critical Diagnostics

HART DD/DTM tools
Display Failure
Electronic Module Comm Failure
Meter Body Excess Correct
Sensor Over Temperature
Fixed Current Mode
PV Out of Range
No Factory Calibration
No DAC Compensation
LRV Set Error – Zero Config Button
URV Set Error – Span Config Button
AO Out of Range
Loop Current Noise
Meter Body Unreliable Comm
Tamper Alarm
No DAC Calibration
Sensor Supply Voltage Low

Referire la Manualele ST 700 pentru nivel additional de informatii privind diagnoza

Alte optiuni de Certificare : **Materiale**

- o 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	Antideflagrant: 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)	Antideflagrant : 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)	Antideflagrant : 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)	Antideflagrant: 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	Note 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)	Antideflagrante: 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 lesirea Analogica / DE/ HART :

Vmax= Ui = 30V I_{max}= Ii= 105 mA Ci = 4.2nF Li = 820uH Pi =0.9W

b. Valori Foundation Fieldbus

Vmax= Ui = 30V I_{max}= Ii= 225mA Ci = 0 Li = 0 Pi =1W

Certificari Marine	Acest certificat defineste certificarile care privesc familia de Traductoare de Presiune ST 700 , 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)
Certificari SIL 2/3	IEC 61508 SIL 2 pentru utilizare non-redundanta si SIL 3 pentru configuratie redundanta conform cu EXIDA si TÜV Nord Sys Tec GmbH & Co. KG respectand urmatoarele standarde: IEC61508-1: 2010; IEC 61508-2: 2010; IEC61508-3: 2010.

Date Referitoare la Aplicatii

Masura Nivel Lichid I: Rezervor Inchis

Se determina presiunea diferentiaa minima si maxima care trebuie masurata (Figura 169).

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

$$\begin{aligned} P_{\text{Max}} &= (SG_p \times b) - (SG_f \times d) \\ &= \text{URV when HP at bottom of tank} \\ &= -\text{LRV when LP at bottom of tank} \end{aligned}$$

Unde:

Nivel minim la 4mA

Nivel maxim la 20 mA

a = distanta dintre vana de jos si nivelul minim

b = distanta dintre vana de jos si nivelul maxim

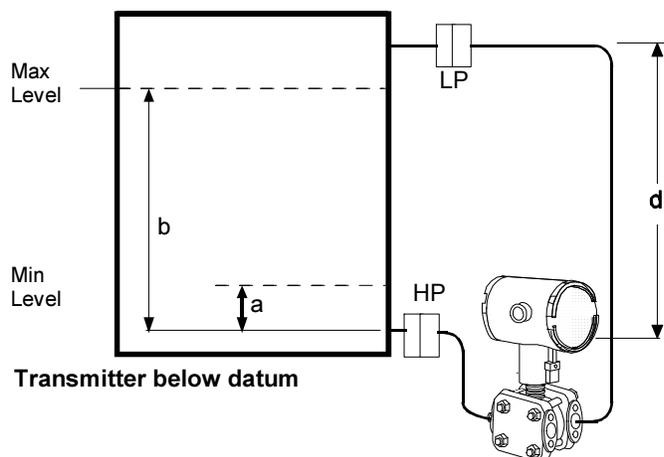
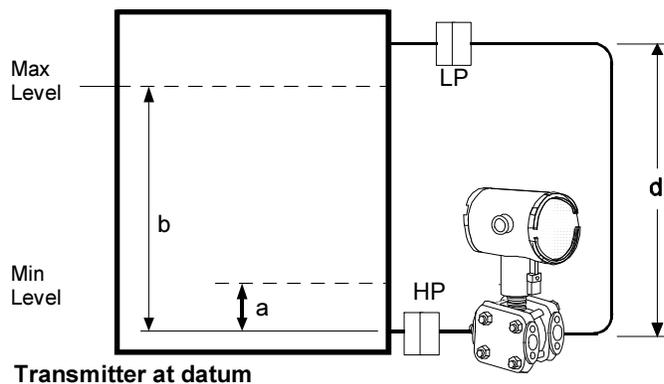
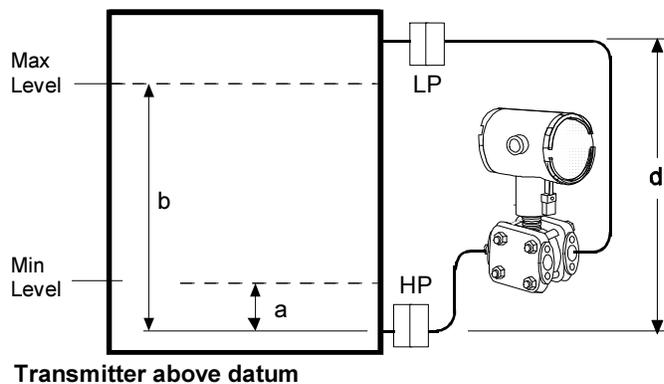
d = distanta dintre cele 2 vane

SG_f = Greutatea Specifica a fluidului de umplere din capilare(vezi Pag. 6 "Specificatii despre Materiale" pentru valori.)

SG_p = Greutatea Specifica a lichidului din process al carui nivel se masoara .

HP : zona de inalta presiune

LP : zona de joasa presiune



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Figura 19—Masurarea nivelului la un rezervor inchis

Date Referitoare la Aplicatii (Continuare)

Densitate sau Interfata*

Calculeaza valorile de minim si de maxima presiunii diferentiale masurate (Figura 20).

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

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

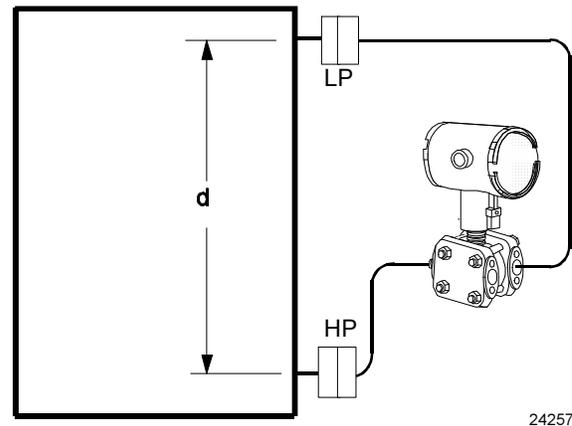
Unde:

d = distanta dintre vane

SG_{max} = Greutatea Specifica maxima

SG_{min} = minimum Specific Gravity

SG_f = Specific Gravity of capillary fill fluid (See Page 6 "Material Specifications" for values.)



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Figura 20- Configuratie de montare a traductorului pentru masurarea densitatii

Configuratii ale Diaframelor Incapsulate



Figura 191—Flansa cu Diafragma Incapsulata

Poate fi folosita cu traductoare de presiune diferentiale, relativa si absoluta si este disponibila in 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 22 Flansa cu Diafragma cu Extensie

Diafragmele prevazute cu Extensie pot fi folosite la traductoarele de presiune diferentiale, 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 .



Figure 203—Diafragma tip Pancake

Poate fi folosita cu traductoare de presiune diferentiale, relativa si absoluta si sunt disponibile in marimile de 3" ANSI Class 150, 300 si 600 pentru conectare la proces..



Figura 214— Diafragma tip "Taylor" Wedge

Aceasta diafragma "Taylor" Wedge poate fi folosita cu traductoare de presiune diferentiale si sunt disponibile cu conectare la process tip Taylor Wedge 5" O.D. .

Configuratii ale Diaframelor Incapsulate (continuare)



Figura 225— Diafragma cu conectare la proces prin filet

Seals with Threaded Process Connections can be used with differential, gauge and absolute pressure transmitters and are available with ½", ¾" and 1" NPT Female process connections.



Figure 236 — Diafragma Igienica

Sanitary Seals can be used with differential, gauge and absolute pressure transmitters and are available with 3" and 4" Tri-Clover-Tri-Clamp process connections.



Figura 247— Diafragme cu Protectie

Saddle Seals can be used with differential, gauge and absolute pressure transmitters and are available with 3" and 4" (6 bolt or 8 bolt designs) process connections.



Figura 258 — Inele de Calibrare

Calibration Rings are available with Flush Flange Seals and Pancake Seals. Flushing ports (1/4" or 1/2") are available with calibration rings.



Figura 269 — Armatura din inox si izolatia din PVC pentru capilare din otel inox

Armatura din otel inox si izolatia din PVC pentru capilarele armate cu otel inox sunt disponibile pentru solutiile Honeywell de conectare cu diafragme la distanta.



Figura 30 — Duza de 2" din otel inox

Duzele din inox de 2" sunt disponibile solutiile de cuplare a diaframelor incapsulate



Figura 271 — Corp sudat pentru solutiile de conectare cu diafragme la distanta

Pentru toate aplicatiile unde se masoara vacuum (in apropiere de zero)corpul sudat de la ST700 este o componenta importanta a diaframelor incapsulate.

Ghid de Selectie Modele traductoare STR700

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:

www.honeywellprocess.com/en-US/pages/default.aspx

**Model STR700
(DP, GP) Remote Seals**



Model Selection Guide
34-ST-16-104 Issue 2

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

KEY NUMBER	URL	LRL	Max Span	Min Span	Units	Selection	Availability
Measurement Range	100 (7)	-100 (-7)	100 (7)	1 (0.07)	psi (bar)	STR73D	↓
Std Accuracy	500 (35)	-9 (-0.62)	500 (35)	5 (0.35)	psi (bar)	STR74G	↓

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

TABLE I	Description		Selection		
Meter Body & Capillaries	a. Number of Seals	1 Remote Seal (High Side)	1 _____	•	•
		2 Remote Seals	2 _____	•	•
		1 Remote Seal (Low Side)	3 _____	•	•
	b. Primary Fill Fluid (Meter body)	Silicone Oil 200	_ 1 _____	•	•
		Fluorinated Oil CTFE	_ 2 _____	2	2
	c. Construction				
	Non-Wetted Adapter Head Materials				
	In-Line Gauge	316 SS Bonnet	__ A _____		•
		316 SS Bonnet for Close-Couple	B _____		3
	Dual Head DP	316 SS (bolt-on heads)	__ C _____	•	
		316 SS for Close-Couple	__ D _____	3	
		316 SS with all-welded meter body	__ E _____	4	
		None	__ 0 _____	22	•
	d. Bolts and Nuts for Transmitter Heads	Carbon Steel Bolts and Nuts	__ C _____	•	
		316 SS Bolts and Nuts	__ S _____	•	
A286 SS (NACE) Bolts and 304 SS (NACE) Nuts		__ N _____	•		
B7M (NACE) Bolts and 7M (NACE) Nuts		__ B _____	•		
None		__ 0 _____	5	5	
e. Secondary Fill Fluid (capillary & seal)	No Fill Fluid	__ 0 _____	•	•	
	Silicone Oil 200	__ 1 _____	•	•	
	Fluorinated Oil CTFE	__ 2 _____	•	•	
	Silicone Oil 704	__ 3 _____	•	•	
	Neobee® M20 ¹¹	__ 4 _____	•	•	
	Syltherm® 800 ¹²	__ 5 _____	•	•	
f. Connection of Remote Seal to Meter Body	No Capillary, No Nipple (Specify for VAM Unit Only)		0 _____	5	5
	Capillary Length	5 feet 1.5 m	__ 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	__ 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 _____	•	•	
	2 inch long SS nipple close-coupled		__ 2 _____	6	6
g. Seal Option	None	__ 0 _____	•	•	
	Std Gold Plated Seal Diaph. = 50 µin	__ 1 _____	7	7	
	Teflon Coated Seal Diaphragm - only for anti-sticking	__ 4 _____	7	7	

¹¹ Limited vacuum availability.

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



In-Line Gauge



Dual Head DP



All welded

STR74G
STR73D

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	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)	Flushing			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.

STR74G
STR73D

TABLE II		Description				Selection				
Seal Type	Diaphragm Diameter	Flange Size	Flange Pressure Rating ¹	Const. - See Spec. Figure 34-ST-03-104	Construction - See Spec. Figure 34-ST-03-104					
Seals (continued)  Flush Flanged Seal with Lower	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 _____	•	•		
			ANSI 300	22	CGC _____	•	•			
	2"	ANSI 150	22	CDA _____	•	•				
			ANSI 300	22	CDC _____	•	•			
	4.1"	1/2"	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.

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.

STR74G
STR73D

TABLE II	Description								
Seals (continued)	Seal Type	Diaphragm Diameter	Flange Size	Flange Pressure Rating ¹		Selection			
		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_____	•	•				
	Flange Seal with Extended Diaphragm	Wetted Material	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)		CS (Nickel Plated)		___7___	•	•			
316L SS		___8___	•	•					
Bolts		No Selection		___0___	•	•			
Extension Length		2"		___2___	•	•			
4"		6"		___4___	•	•			
6"		___6___		•	•				
No Selection	No Selection	No Selection		___0___	•	•			

Table II continued below

STR74G
STR73D

TABLE II	Description									
Seals (continued)	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		Selection		
				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		No Selection		___0___	•	•
				Bolts		No Selection		___0___	•	•
				Calibration Rings		None		___A___	•	•
316L SS		Hastelloy® C-276		___B___	10	10				
Hastelloy® C-276		Monel 400®		___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		One 1/4" with metal plug		___H___	11	11				
Two 1/4" with plastic plugs		Two 1/4" with metal plugs		___J___	11	11				
Two 1/4" with metal plugs		One 1/2" with plastic plug		___M___	11	11				
One 1/2" with plastic plug		One 1/2" with metal plug		___N___	11	11				
One 1/2" with metal plug		Two 1/2" with plastic plugs		___P___	11	11				
Two 1/2" with plastic plugs		Two 1/2" with metal plugs		___Q___	11	11				
Two 1/2" with metal plugs		___R___		11	11					
___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
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						
Seal Type	Diaphragm Diameter	Flange Size	Flange Pressure Rating ¹		Selection			
 <p>Seals (continued)</p> <p>Chemical Tee "Taylor" Wedge</p>	3.5"	Taylor Wedge 5" O.D.	750 psi		HM0 _____	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						
Seal Type	Diaphragm Diameter	Threaded Process Connection Size (NPT Female)	Pressure Rating		Selection			
			CS Bolts	304 SS Bolts				
 <p>Seals (continued)</p> <p>Seal with Threaded Process Connection</p>	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 ---	•	•		
		Grafoi®		--- 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 option is NACE, Bolts and Nuts will ship with Alloy Steel NACE 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	STR74G	STR73D
	 Sanitary Seal ⁹		1.9"	2"	Customer clamp rating or 600 psi, whichever is less	MD0 _____	
		2.4"	2-1/2"	NE0 _____		20	19
		2.9"	3"	PF0 _____		19	19
		4.1"	4"	QG0 _____		19	19
		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 ___	•	•

Table II continued below

TABLE II		Description						
Seals (continued)	Seal Type	Diaphragm Diameter	Size and Bolt Pattern	Seal Pressure Rating		Selection	STR74G	STR73D
				C.S. Bolts	304 SS Bolts			
 Saddle Seal	2.4" 8-Bolt Design for 3" Pipe ≥ 4" pipe	2,500 psi 1,250 psi	RFK _____ RGK _____	12	•			
								2.4" 6-Bolt Design for 3" Pipe ≥ 4" pipe
		Diaphragm	Lower Housing	Selection				
		Wetted Material	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 ___	•	•		

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.

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

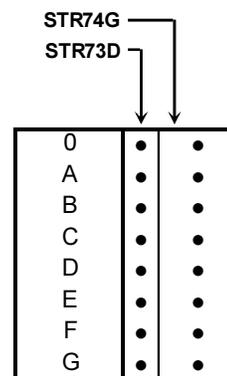


TABLE IV	TRANSMITTER ELECTRONIC SELECTIONS		
a. Electronic Housing Material & Connection Type	Material	Connection	Lightning Protection
	Polyester Powder Coated Aluminum	1/2 NPT	None
	Polyester Powder Coated Aluminum	M20	None
	Polyester Powder Coated Aluminum	1/2 NPT	Yes
	Polyester Powder Coated Aluminum	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
316 Stainless Steel (Grade CF8M)	M20	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	Ext Zero, Span & Config Buttons	Languages
	None	None	None
	None	Yes (Zero/Span Only)	None
	Basic	None	English
Basic	Yes	English	

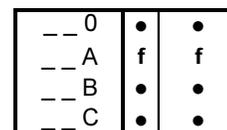
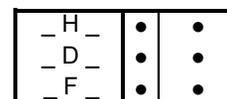
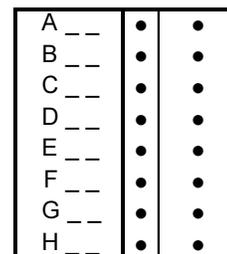


TABLE V	CONFIGURATION SELECTIONS		
a. Application Software	Diagnostics		
	Standard Diagnostics		
b. Output Limit, Failsafe & Write Protect Settings	Write Protect	Fail Mode	High & Low Output Limits ³
	Disabled	High > 21.0mA dc	Honeywell Std (3.8 - 20.8 mA dc)
	Disabled	Low < 3.6mA dc	Honeywell Std (3.8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

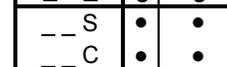
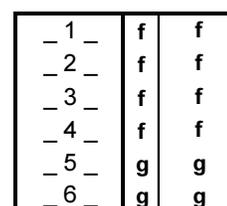
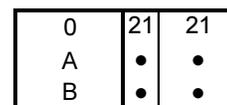


TABLE VI	CALIBRATION & ACCURACY SELECTIONS		
Accuracy and Calibration	Accuracy	Calibrated Range	Calibration Qty
	NA	None	None
	Standard	Factory Std	Single Calibration
	Standard	Custom (Unit Data Required)	Single Calibration



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	
	Flat Bracket	304 SS	
b. Customer Tag	Customer Tag Type		
	No customer tag		
	One Wired Stainless Steel Tag (Up to 4 lines 26 char/line) Two 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)		

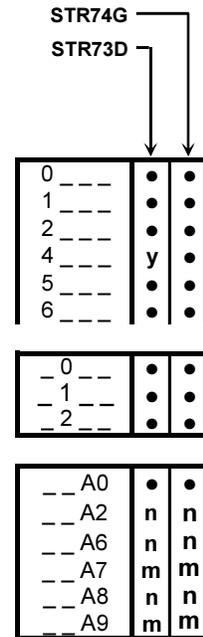


TABLE VIII		OTHER Certifications & Options : (String in sequence comma delimited (XX, XX, XX,...))
Certifications & Warranty	NACE MR0175; MR0103; ISO15156 (FC33338) Process wetted parts only	
	NACE MR0175; MR0103; ISO15156 (FC33339) wetted and non-wetted parts	
	Marine (DNV, ABS, BV, KR, LR) (FC33340)	
	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 AS 1M G93	

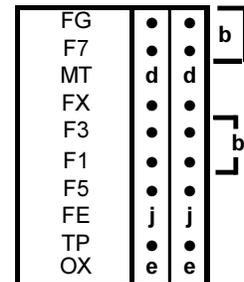


TABLE IX		Manufacturing Specials
Factory	Factory Identification	



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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