

### STR700 SmartLine Remote Diaphragm Seals Specification 34-ST-03-124, November 2016



#### Introduction

Part of the SmartLine® family of products, the STR700 is suitable for monitoring, control and data acquisition. STR700 products feature piezoresistive sensor technology combining pressure sensing with on chip temperature compensation capabilities providing high accuracy, stability and performance over a wide range of application pressures and temperatures.

The SmartLine family is also fully tested and compliant with Experion® PKS providing the highest level of compatibility assurance and integration capabilities. SmartLine easily meets the most demanding application needs for pressure measurement applications.

#### Best in Class Transmitter Features:

- Accuracies up to 0.075% Span standard
- Automatic static pressure & temperature compensation
- Rangeability up to 100:1
- Easy to use and intuitive display capabilities
- Intuitive External zero, span, & configuration capability
- Comprehensive on-board diagnostic capabilities
- Integral Dual Seal design for highest safety based on ANSI/NFPA 70-202 and ANSI/ISA 12.27.0
- World class overpressure protection
- Full compliance to SIL 2/3 requirements.

#### Remote Seal/Transmitter Span & Range Limits:

Model	URL psid (bar)	LRL psid (bar)	Max Span psid (bar)	Min Span psid (bar)
STR735D	100 (7.0)	-100 (-7.0)	100 (7.0)	0.9 (0.062)
Model	psig (bar)	psig (bar)	psig (bar)	psig (bar)
STR745G	500 (35.0)	-14.7 (-1.0)	500 (35.0)	5 (0.35)



Figure 1 – STR700 Remote Diaphragm Seal Unit

#### Typical Diaphragm Seal applications

- High Process Temperatures
- Viscous or Suspended Solids
- Highly Corrosive Process Materials
- Sanitary Applications
- Applications with Hydrogen Permeation Possibilities
- Level Applications with Maintenance Intensive Wet Legs
- Applications requiring remote Transmitter Mounting
- Tank Applications with Density or Interface Measurements

#### Communications/Output Options:

- HART® (version 7.0)

## Description

The SmartLine family pressure transmitters are designed around a high performance piezo-resistive sensor. This one sensor actually integrates multiple sensors linking process pressure measurement with on-board static pressure (DP Models) and temperature compensation measurements.

## Indication/Display Option

### Standard LCD Display Features

- Modular (may be added or removed in the field)
- Supports HART protocol variant
- 0, 90, 180, & 270 degree position adjustments
- Configurable (HART only) and standard (Pa, KPa, MPa, KGcm<sup>2</sup>, Torr, ATM, mH<sub>2</sub>O, bar, mbar, inH<sub>2</sub>O, inHG, FTH<sub>2</sub>O, mmH<sub>2</sub>O, mm HG, & psi) measurement units.
- Supports Flow engineering units
- 2 Lines 6 digits PV (9.95H x 4.20W mm) 8 Characters
- Square root output indication ( $\sqrt{\quad}$ ) and Write protect Indication
- Built in Basic Device Configuration through Internal Buttons – Range/Engineering Unit/Loop Test /Loop Calibration/Zero /Span Setting

## Diagnostics

SmartLine transmitters all offer digitally accessible diagnostics which aid in providing advanced warning of possible failure events minimizing unplanned shutdowns, providing **lower overall operational costs**

## System Integration

- SmartLine communications protocols all meet the most current published standards for HART.
- All ST 700 units are Experion tested to provide the highest level of compatibility assurance

## Configuration Tools

### External Two Button Configuration Option

Suitable for all electrical and environmental requirements, SmartLine offers the ability to configure the transmitter and display, for all basic parameters, via two externally accessible buttons when a display option is selected. Zero/span capabilities are also optionally available via two external buttons with or without selection of the display option.

### Internal Two Button Configuration Option

The Standard display has two buttons that can be used for Basic configuration such as re ranging, PV Engineering unit setting, Zero/Span settings, Loop testing and calibration functions.

### Hand Held Configuration

SmartLine transmitters feature two-way communication and configuration capability between the operator and the transmitter. This is accomplished via Honeywell's field-rated Multiple Communication Configurator (MCT404). The MCT404 is capable of field configuring HART Devices and can also be ordered for use in intrinsically safe environments. All Honeywell transmitters are designed and tested for compliance with the offered communication protocols and are designed to operate with any properly validated hand held configuration device.

### Personal Computer Configuration

Field Device Manager (FDM) Software and FDM Express are also available for managing HART configurations.

## Modular Design

To help contain maintenance & inventory costs, all ST 700 transmitters are modular in design supporting the user's ability to replace meter bodies, standard displays or electronic modules without affecting overall performance. Each meter body is uniquely characterized to provide in-tolerance performance over a wide range of application variations in temperature and pressure.

### Modular Features

- Meter body replacement
- Add or remove standard displays
- Add or remove lightning protection (terminal connection)

With no performance effects, *Honeywell's unique modularity results in lower inventory needs and lower overall operating costs.*

## Performance Specifications

### Reference Accuracy (conformance to +/-3 Sigma)

Model	URL	LRL	Min Span	Maximum Turndown Ratio	Reference Accuracy <sup>1,2</sup> (% Span)
STR735D	100 psid/7.0 bar	-100 psi/-7.0bar	0.9 psi/.062bar	100:1	0.075
STR745G	500 psi/35 bar	-14.7 psi/-1.0 bar	5 psi/.035 bar	100:1	0.075

Zero and span may be set anywhere within the listed (URL/LRL) range limits

		Accuracy <sup>1,2</sup> (% of Span)				Temperature Effect <sup>3</sup> (% Span/50°F)		
Model	URL	Turn down greater than	A	B	C psi(bar)	D	E	F psi(bar)
STR735D	100 psi/7.0 bar	22:1	0.0250	0.050	4.52 (0.311)	0.275	1.200	9.0 (0.622)
STR745G	500 psig/35 bar	20:1	0.0250	0.050	25 (1.7)			
			Turn Down Effect $\pm \left[ A + B \left( \frac{C}{\text{Span}} \right) \right]$ % Span			Temp Effect $\pm \left[ D + E \left( \frac{F}{\text{Span}} \right) \right]$ % Span per 28°C (50°F)		

### Accuracy at Specified Span, Temperature and Static Pressure: (conformance to +/-3 Sigma)

#### Total Performance (% of Span):

$$\text{Total Performance} = \pm \sqrt{(\text{Accuracy})^2 + (\text{Temp Effect})^2}$$

**Total Performance Examples:** (5:1 Turndown, up to 50 °F shift)

**STR735D @ 20 psid:** 1.48% of span

#### Typical Calibration Frequency:

Calibration verification is recommended every four (4) years

#### Notes:

1. Terminal Based Accuracy – Includes combined effects of linearity, hysteresis, and repeatability. Analog output adds 0.006% of span.
2. For zero based spans and reference conditions of 25°C (77°F), 0 psi static pressure for DP, >= 0 psia for GP, 10 to 55% R.H, and 316 Stainless Steel barrier diaphragms
3. Specification applies to transmitter with 2 balanced remote seals. Apply a factor of 1.5 for temperature effect of capillary lengths greater than 10 feet.

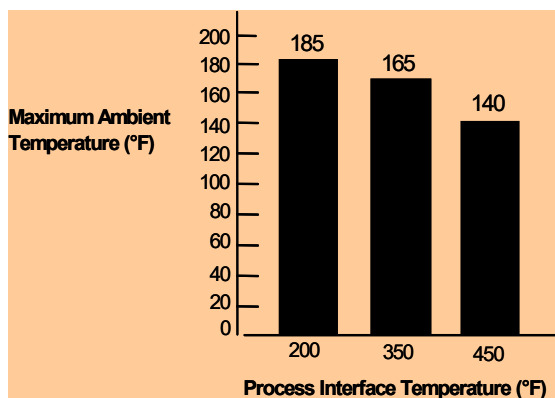
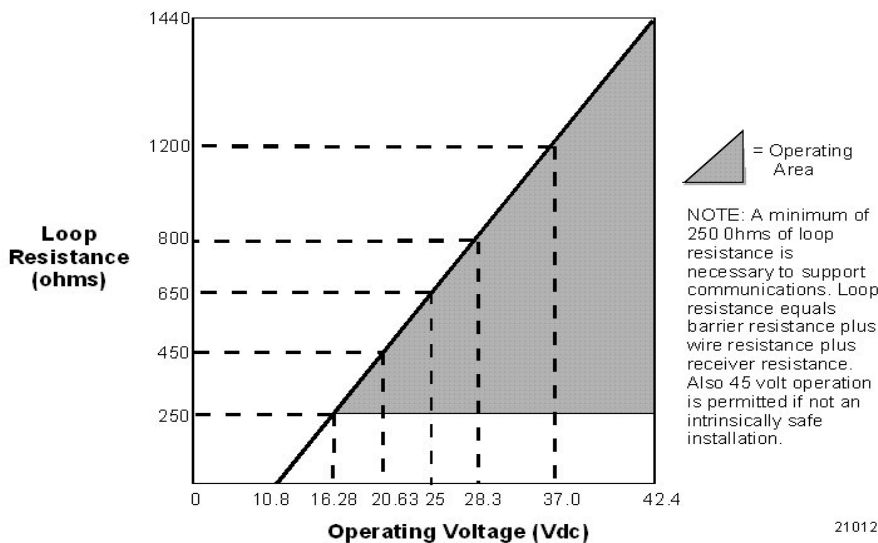
**Operating Conditions – All Models**

Parameter	Reference Condition (at zero static)		Rated Condition		Operative Limits		Transportation and Storage							
	°C	°F	°C	°F	°C	°F	°C	°F						
<b>Ambient Temperature<sup>1</sup></b>	25±1	77±2	-	-	-	-	-55 to 90	-67 to 194						
<b>Humidity %RH</b>	10 to 55		0 to 100		0 to 100		0 to 100							
<b>Vacuum Region, Minimum Pressure mmHg absolute</b>	Atmospheric (See Figure 4 for vacuum limitation)													
<b>Supply Voltage, Current, and Load Resistance</b>	10.8 to 42.4 Vdc at terminals (IS versions limited to 30 Vdc) 0 to 1,440 ohms (as shown in Figure 2)													
<b>Maximum Allowable Working Pressure (MAWP)<sup>4</sup></b> <small>(ST 700 products are rated to Maximum Allowable Working Pressure. MAWP depends on Approval Agency and transmitter materials of construction.)</small>	MAWP is minimum of Body Rating or Seal Rating (See Model Selection Guide for Seal MAWP) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>Body</b></td> <td style="width: 50%;"><b>MAWP</b></td> </tr> <tr> <td>STR735D</td> <td>750 psig (51.7 bar) Bolted Process Heads</td> </tr> <tr> <td>STR745G</td> <td>500 psig (35 bar)</td> </tr> </table>								<b>Body</b>	<b>MAWP</b>	STR735D	750 psig (51.7 bar) Bolted Process Heads	STR745G	500 psig (35 bar)
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<sup>1</sup> Ambient Temperature Limit is a function of Process Interface Temperature. (See Figures 3 & 4)

LCD Display operating temperature -20°C to +70°C . Storage temperature -30°C to 80°C

<sup>4</sup> Consult factory for MAWP of ST 700 transmitters with CRN approval.



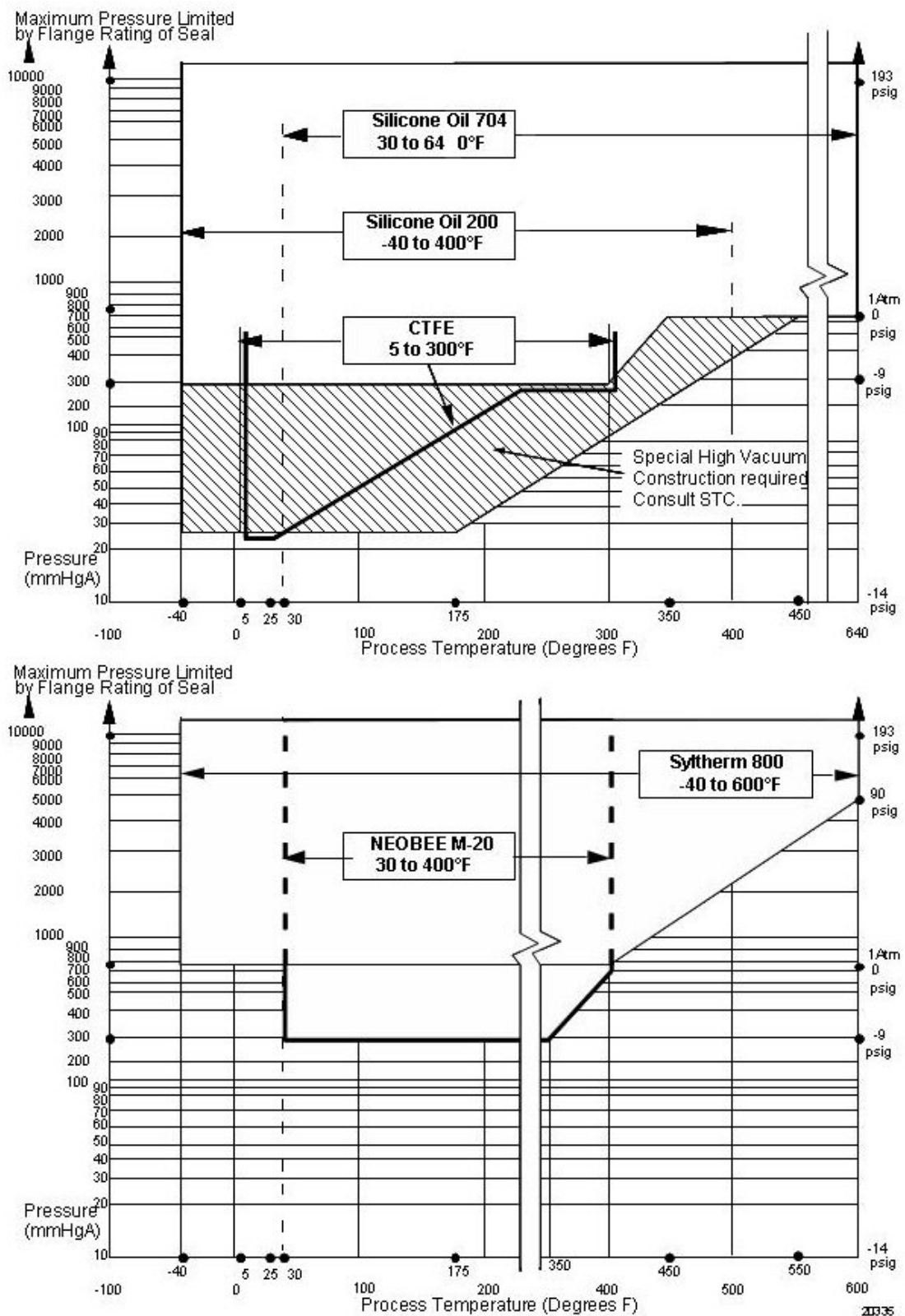


Figure 4 - STR700 Remote Seals operable limits for pressure vs. temperature

### Performance Under Rated Conditions – All Models

Parameter	Description									
Analog Output	Two-wire, 4 to 20 mA									
Digital Communications:	HART 7 protocol									
HART Output Failure Modes	<table border="0"> <tr> <td></td> <td style="text-align: center;"><b>Honeywell Standard:</b></td> <td style="text-align: center;"><b>NAMUR NE 43 Compliance:</b></td> </tr> <tr> <td><b>Normal Limits:</b></td> <td style="text-align: center;">3.8 – 20.8 mA</td> <td style="text-align: center;">3.8 – 20.5 mA</td> </tr> <tr> <td><b>Failure Mode:</b></td> <td style="text-align: center;">≤ 3.6 mA and ≥ 21.0 mA</td> <td style="text-align: center;">≤ 3.6 mA and ≥ 21.0 mA</td> </tr> </table>		<b>Honeywell Standard:</b>	<b>NAMUR NE 43 Compliance:</b>	<b>Normal Limits:</b>	3.8 – 20.8 mA	3.8 – 20.5 mA	<b>Failure Mode:</b>	≤ 3.6 mA and ≥ 21.0 mA	≤ 3.6 mA and ≥ 21.0 mA
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<b>Failure Mode:</b>	≤ 3.6 mA and ≥ 21.0 mA	≤ 3.6 mA and ≥ 21.0 mA								
Supply Voltage Effect	0.005% span per volt.									
Transmitter Turn on Time (includes power up & test algorithms)	2.5 sec.									
Damping Time Constant	Adjustable from 0 to 32 seconds in 0.1 increments. <b>Default:</b> 0.50 seconds									
Electromagnetic Compatibility	IEC 61326-3-1									
Lightning Protection Option	<b>Leakage Current:</b> 10uA max @ 42.4VDC 93C <b>Impulse rating:</b> 8/20uS      5000A (>10 strikes)      10000A (1 strike min.) 10/1000uS      200A (> 300 strikes)									

### Materials Specifications (see model selection guide for availability/restrictions with various models)

Parameter	Description										
Process Interface	See Model Selection Guide for Material Options for desired seal type.										
Seal Barrier Diaphragm	316L Stainless Steel, Monel®, Hastelloy® C, Tantalum										
Seal Gasket Materials	Klinger C-4401 (non-asbestos) Grafoil®, Teflon®, Gylon 3510®										
Mounting Bracket	Carbon Steel (Zinc-Chromate plated) or 304 Stainless Steel or 316 Stainless Steel.										
Fill Fluid (Meter Body)	<table border="0"> <tr> <td>Silicone 200</td> <td>S.G. @ 25°C = 0.94</td> </tr> <tr> <td>CTFE (Chlorotrifluoroethylene)</td> <td>S.G. @ 25°C = 1.89</td> </tr> </table>	Silicone 200	S.G. @ 25°C = 0.94	CTFE (Chlorotrifluoroethylene)	S.G. @ 25°C = 1.89						
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Fill Fluid (Secondary)	<table border="0"> <tr> <td>Silicone 200</td> <td>S.G. @ 25°C = 0.94</td> </tr> <tr> <td>CTFE (Chlorotrifluoroethylene)</td> <td>S.G. @ 25°C = 1.89</td> </tr> <tr> <td>Silicone 704</td> <td>S.G. @ 25°C = 1.07</td> </tr> <tr> <td>Syltherm 800®</td> <td>S.G. @ 25°C = 0.90</td> </tr> <tr> <td>NEOBEE M-20®</td> <td>S.G. @ 25°C = 0.93</td> </tr> </table>	Silicone 200	S.G. @ 25°C = 0.94	CTFE (Chlorotrifluoroethylene)	S.G. @ 25°C = 1.89	Silicone 704	S.G. @ 25°C = 1.07	Syltherm 800®	S.G. @ 25°C = 0.90	NEOBEE M-20®	S.G. @ 25°C = 0.93
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Electronic Housing	Pure Polyester Powder Coated Low Copper (<0.4%)-Aluminum. Meets NEMA 4X, IP66, & P67. All stainless steel housing is optional.										
Capillary Tubing	<b>Material:</b> Armored Stainless Steel or PVC Coated Armored Stainless Steel. <b>Length:</b> 5, 10, 15, 20, 25, and 35 feet (1.5, 3, 4.6, 6.1, 7.5, and 10.7 meters). A 2 inch (51 millimeter) S.S. close-coupled nipple is also available. See Model Selection Guide. Refer to <a href="#">Table 1</a> for guide to maximum capillary length vs. diaphragm diameter. Note: The minimum span is the higher of the higher of the value from the table above or the value defined under the Performance Conditions for the range transmitter.										
Wiring	Accepts up to 16 AWG (1.5 mm diameter)										
Mounting	See <a href="#">Figure 5</a>										
Dimensions	<b>Transmitter:</b> <a href="#">Figure 6</a> and <a href="#">Figure 7</a> <b>Seal:</b> <a href="#">Figure 8</a> through to <a href="#">Figure 13</a>										
Net Weight	<b>Transmitter:</b> 8.3 pounds (3.8 Kg). With Aluminum Housing. Total weight is dependent on seal										

**NOTE:** Pressure transmitters that are part of safety equipment for the protection of piping (systems) or vessel(s) from exceeding allowable pressure limits, (equipment with safety functions in accordance with Pressure Equipment Directive 97/23/EC article 1, 2.1.3), require separate examination.

MINIMUM RECOMMENDED SPAN FOR STR735D TRANSMITTER WITH TWO SEALS

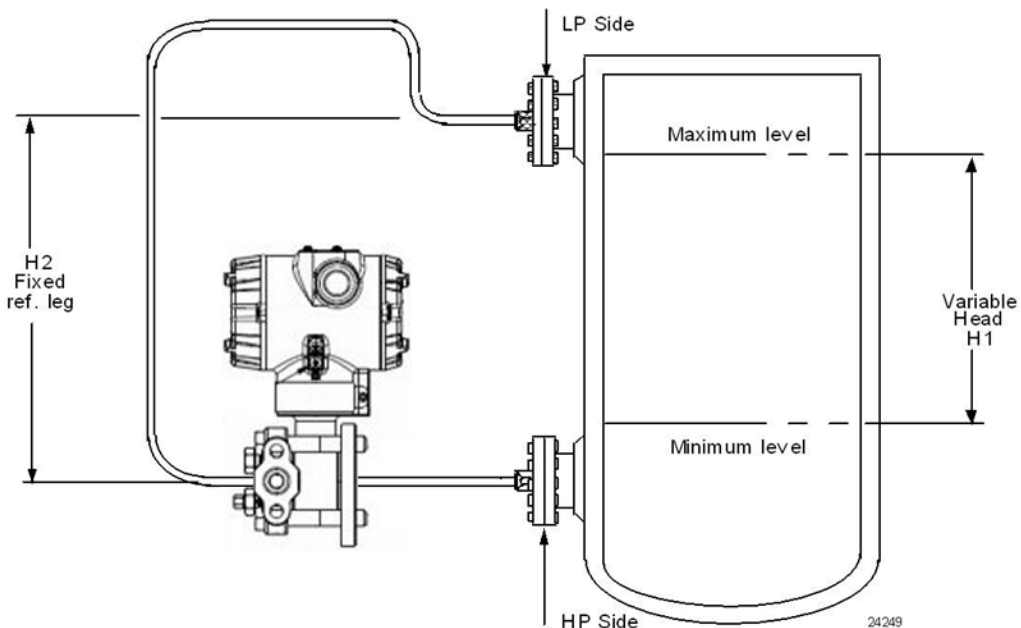
Diaphragm Size (Inch)	Capillary Length (Feet)						Maximum Capillary Length (Feet)
	5	10	15	20	25	35	
1.9	15 psi	20 psi	25 psi	-	-	-	15
2.4	5.4 psi	7.2 psi	9.0 psi	10.8 psi	12.6 psi	14.4 psi	35
2.9	1.8 psi	2.7 psi	3.6 psi	4.5 psi	5.4 psi	7.2 psi	35
3.5	0.9 psi	0.9 psi	0.9 psi	1.0 psi	1.2 psi	1.4 psi	35
4.1	0.9 psi	0.9 psi	0.9 psi	0.9 psi	0.9 psi	1.1 psi	35

MINIMUM RECOMMENDED SPAN FOR STR745G AND STR735D TRANSMITTER WITH ONE REMOTE SEAL

Diaphragm Size (Inch)	Direct Mount	Capillary Length (Feet)						Maximum Capillary Length (Feet)
		5	10	15	20	25	35	
1.9	25 psi	30 psi	40 psi	50 psi	-	-	-	15
2.4	10 psi	15 psi	20 psi	25 psi	30 psi	35 psi	50 psi	35
2.9	8 psi	9 psi	10 psi	11 psi	12 psi	13 psi	15 psi	35
3.5	2 psi	2 psi	3 psi	4 psi	5 psi	6 psi	8 psi	35
4.1	0.9 psi	0.9 psi	1 psi	2 psi	3 psi	3.5 psi	5 psi	35

**Note:** The minimum span is the higher of the higher of the value from the table above or the value defined under the Performance Conditions for the range transmitter.

**Table 1 – Typical Maximum capillary length and diaphragm size chart**

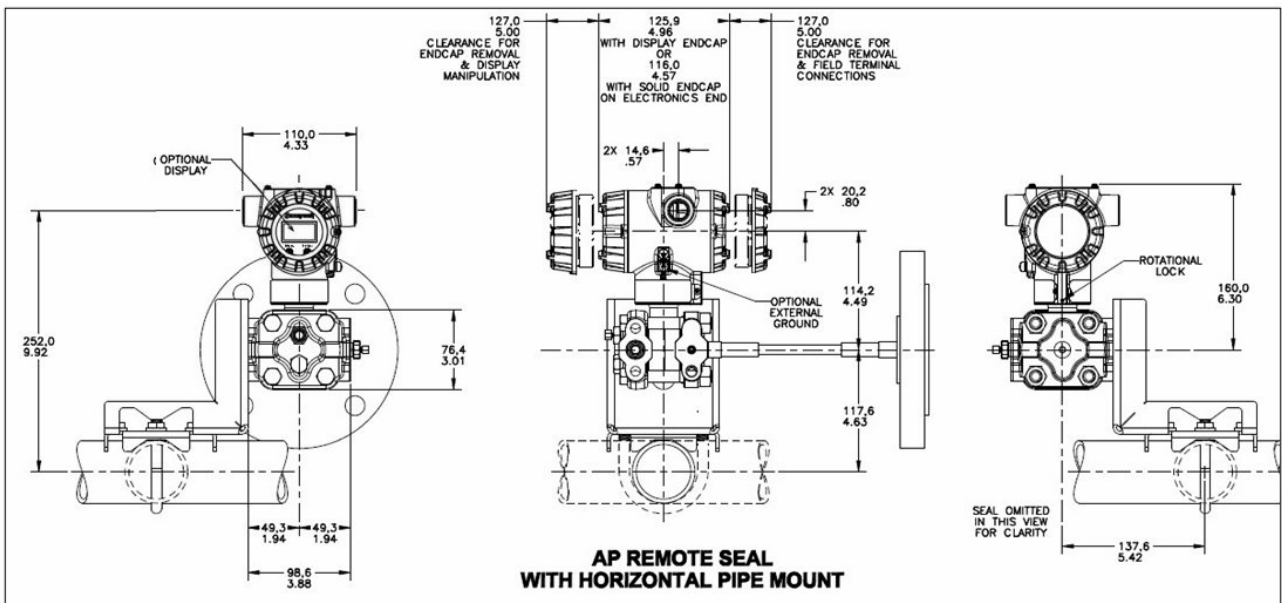
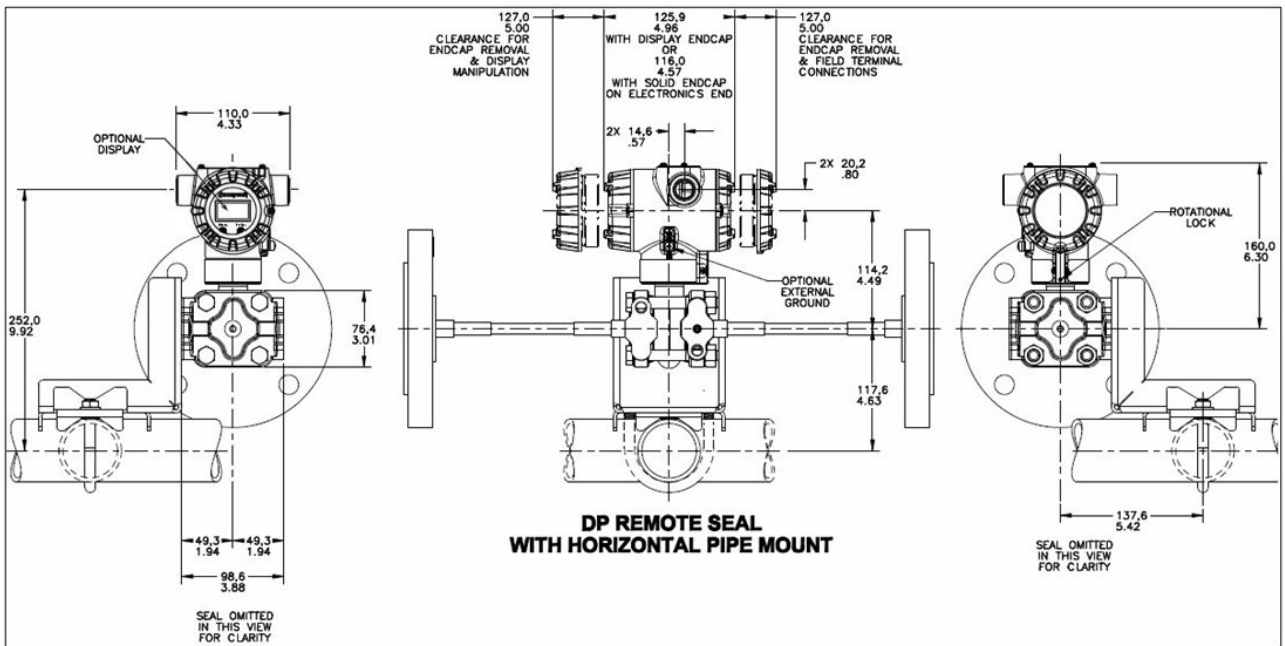


NOTE: Lower flange seal should not be mounted over 22 feet below or above the transmitter for silicone fill fluid (11 feet for CTFE fill fluid) with tank at one atmosphere. The combination of tank vacuum and high pressure capillary head effect should not exceed 9 psi vacuum (300 mmHg absolute).

Consult Honeywell for installation of STR735D

**Figure 5 - STR700 transmitter with remote diaphragm seals shown mounted on a tank**

**Reference Dimensions Horizontal Mounting**





**Reference Dimensions Horizontal Mounting (cont'd)**

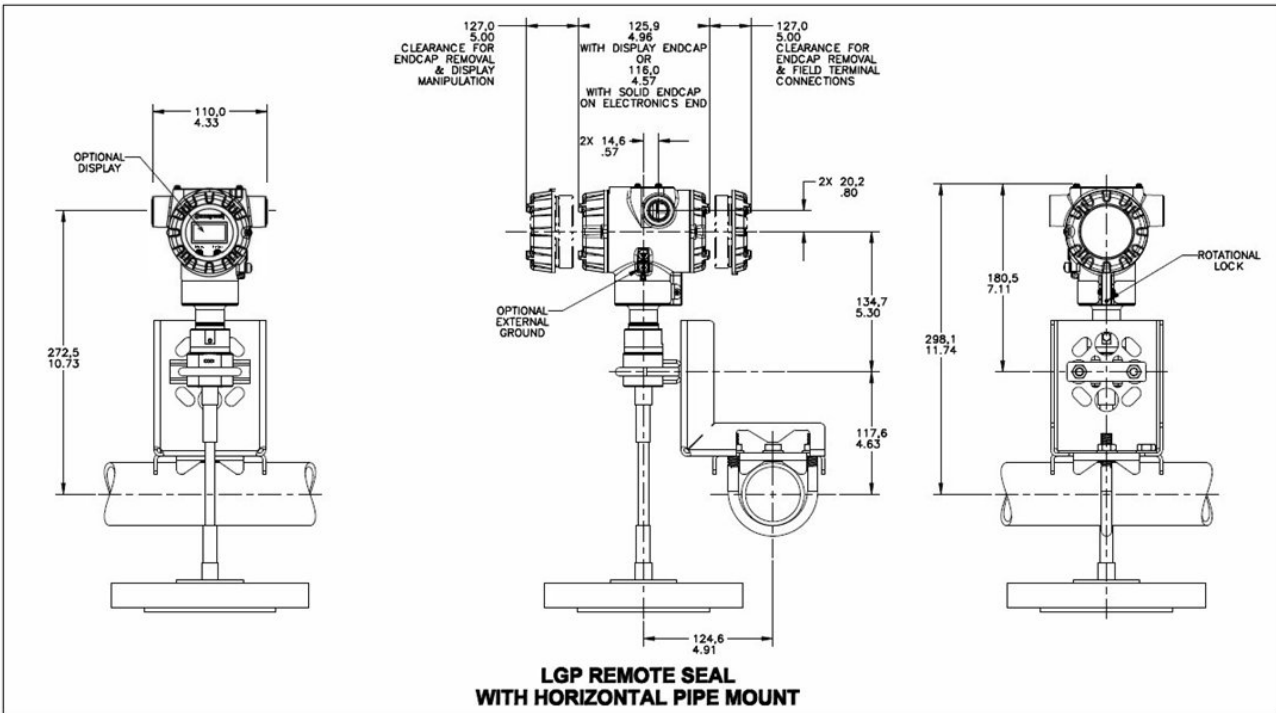
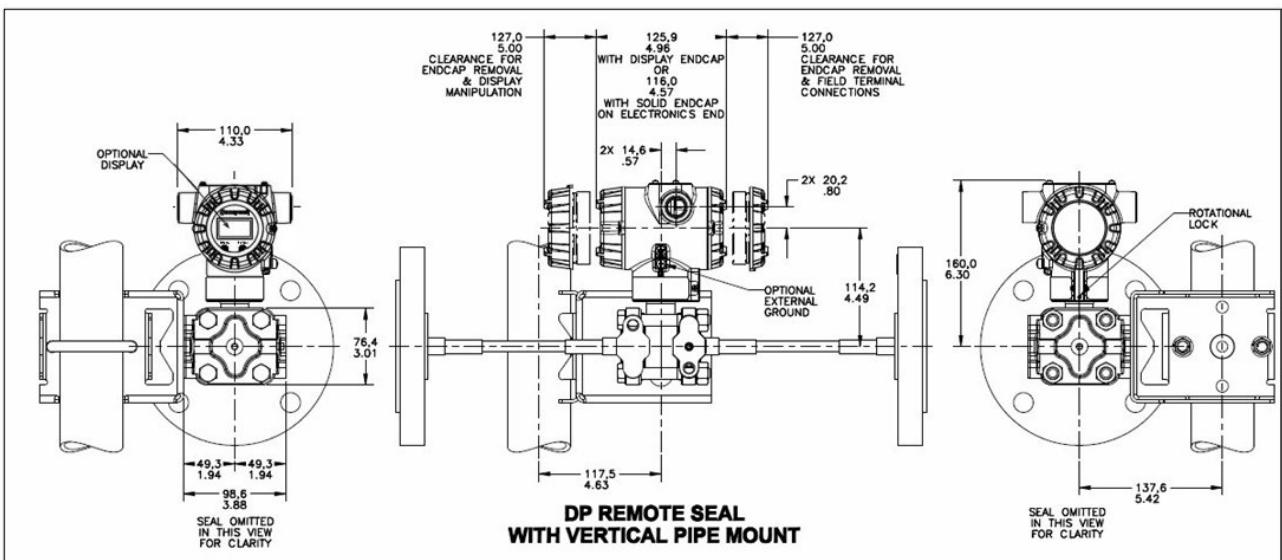
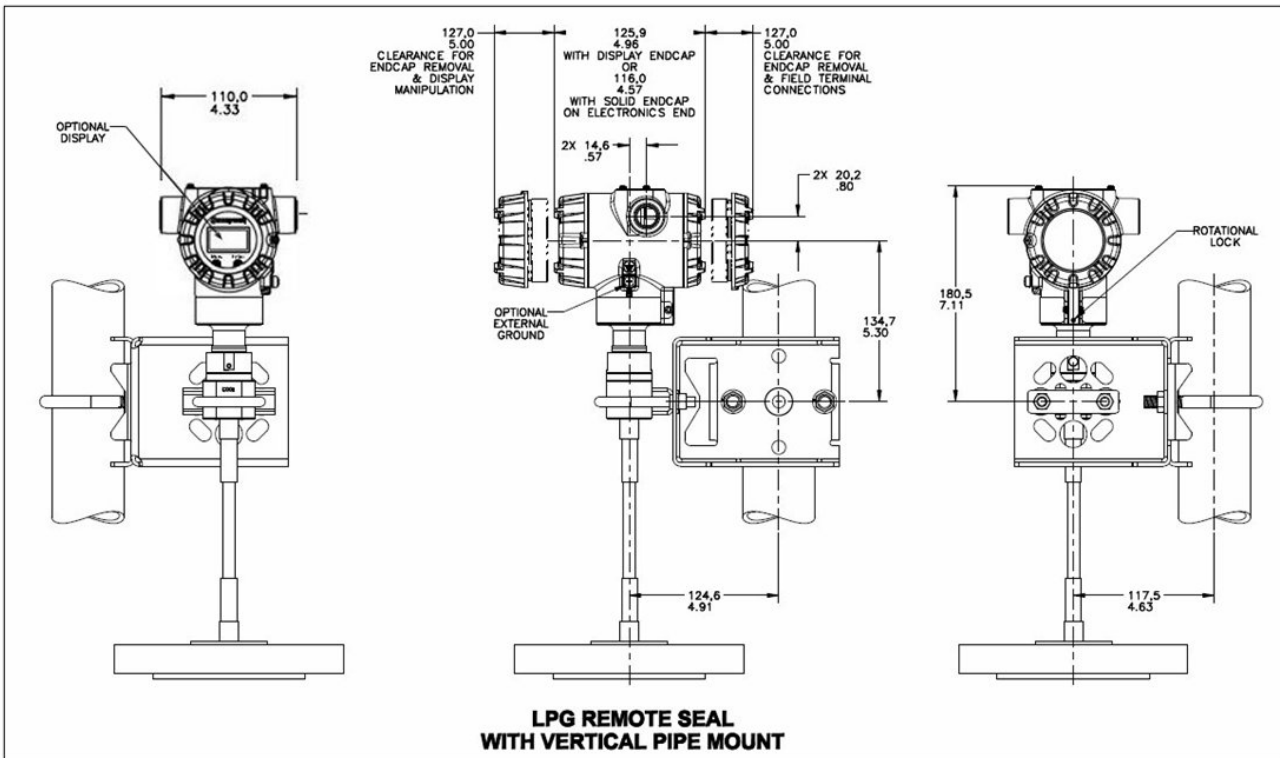
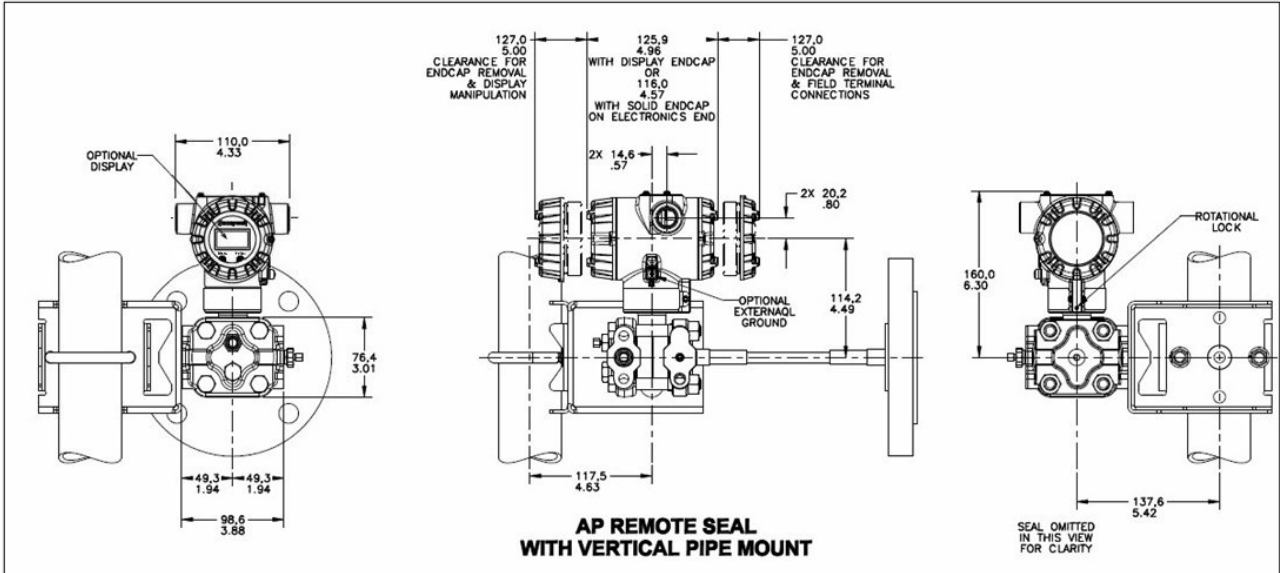


Figure 6 - Approximate Horizontal Mounting Dimensions for Remote Seal Transmitter

**Reference Dimensions Vertical Mounting**



**Reference Dimensions Vertical Mounting (cont'd)**

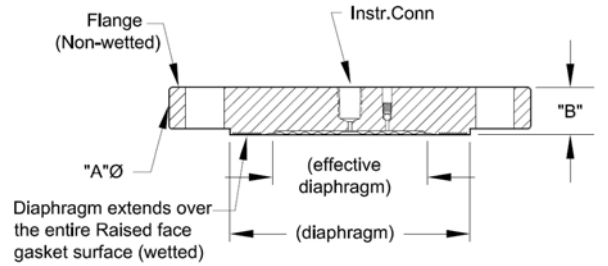


**Figure 7 — Approximate vertical mounting dimensions for Remote Seal Transmitter**

**Reference Dimensions (cont'd)**

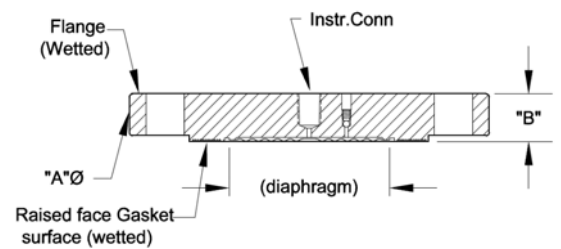
**Flush Flanged Seal Dimensions**

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		
		SS	Monel	Monel	D		
			Tantalum	SS	C		
			SS	N/A	B		
	3" Class 300#	CS	Hastelloy C	SS	A	8.25	1.37
			Hastelloy C	Hastelloy C	D		
			Monel	Monel	D		
		SS	Tantalum	SS	C		
			SS	N/A	B		
			Hastelloy C	SS	A		
	3" Class 600#	CS	Hastelloy C	SS	D	8.25	1.56
			Hastelloy C	Hastelloy C	D		
			Monel	Monel	D		
		SS	Tantalum	SS	C		
SS			N/A	B			
Hastelloy C			SS	A			
DN80-PN40	CS	Hastelloy C	SS	D	7.87	1.32	
		Hastelloy C	Hastelloy C	D			
		Monel	Monel	D			
	SS	Tantalum	SS	C			
		SS	N/A	B			
		Hastelloy C	SS	A			



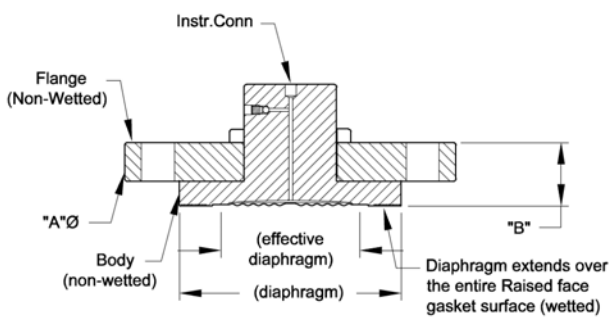
**Configuration "HS"**

**Figure A**



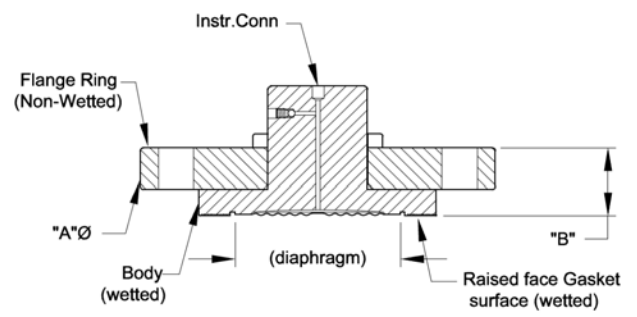
**Configuration "HT"**

**Figure B**



**Configuration "IS"**

**Figure C**



**Configuration "IT"**

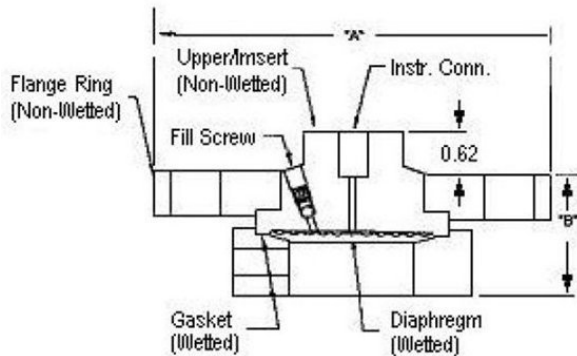
**Figure D**

**Figure 8 - Seal Dimensions (Flush Flanged)**

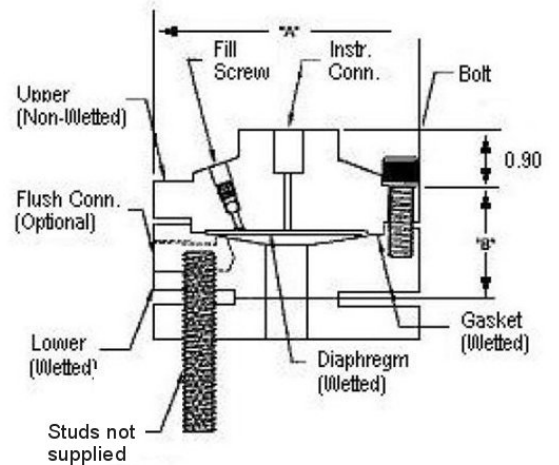
**Reference Dimensions (cont'd) Flush Flanged Seal with Lower**

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"	A	4.25	4.00	5.25
			B0	1.12	1.72	1.84
			B1	1.62	1.72	1.84
		B2	1.98	1.72	2.34	
		1-1/2"	A	5.00	5.00	5.25
			B0	2.50	2.50	1.78
			B1	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	3.60		
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



**Flush Flanged Seal with Lower**



**Flush Flanged Seal with Lower**

Note: 0.90 dimension is 0.70 for 4.1" Dia Diaphragm

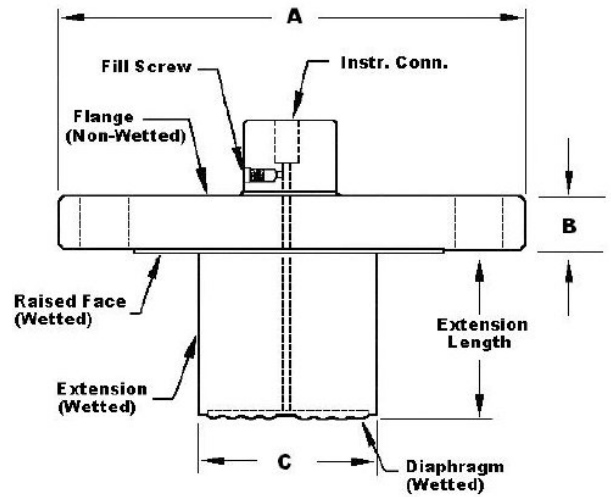
**Figure 9 - Seal Dimension (Flush Flanged)**

**Reference Dimensions (cont'd)**

**Flanged Seal with Extended Diaphragm**

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 DN100-PN40	A	-	9.25	
	B	-	0.94	
	C	-	3.70	

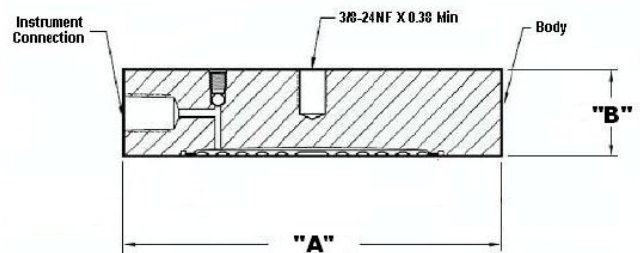
Designed to meet with schedule 40 pipe



**Figure 10 — Seal Dimensions (Extended Diaphragms)**

**Pancake Seal**

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



**Figure 11 — Seal Dimensions (Pancake)**

**Seal with Threaded Process Connection**

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	1.86	1.86	1.79
		B1	1.86	1.86	1.79
		B2	2.18	2.16	2.14
	3/4" or 1"	A	3.50	4.00	5.25
		B0	1.86	1.86	1.79
		B1	1.86	1.86	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

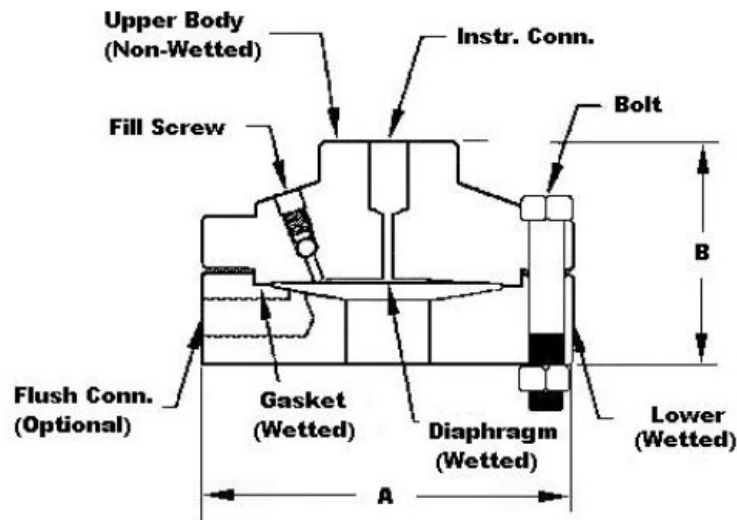


Figure 12— Seal Dimensions (Threaded Process Connection Seals)

**Calibration Ring**

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

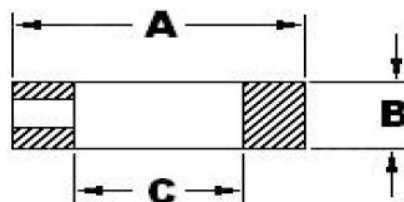


Figure 13— Calibration Ring

## Communications Protocols & Diagnostics

### HART Protocol

#### Version:

HART 7

#### Power Supply

Voltage: 10.8 to 42.4Vdc at terminals

Load: Maximum 1440 ohms. See [Figure 2](#).

Minimum Load: 0 ohms. (For handheld communications a minimum load of 250 ohms is required)

### Standard Diagnostics

ST 700 top level diagnostics are reported as either critical or non-critical and readable via the DD/DTM tools or integral display as shown below.

#### Critical Diagnostics

HART DD/DTM Tools	Standard Display
Electronic Module DAC Failure	Fault Comm EI
Meter Body NVM Corrupt	Fault Mtrbody
Config. Data Corrupt	Fault Comm EI
Electronic Module Diag Failure	Fault Comm EI
Meter Body Critical Failure	Fault Mtrbody
Sensor Comms Timeout	Fault Mbd Com

#### 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
LRV Set Error – Zero Config. Button
URV Set Error – Zero Config. Button
AO Out of Range
Loop Current Noise
Meter Body Unreliable Comm
No DAC Calibration
Sensor Supply Voltage Low

Refer to ST 700 manuals for additional level diagnostic information.

**Approval Certifications:**

AGENCY	TYPE OF PROTECTION	FIELD PARAMETERS	AMBIENT TEMP (Ta)
<b>FM Approvals™</b>	<b>Explosionproof:</b> Class I, Division 1, Groups A, B, C, D;  <b>Dust Ignition Proof:</b> Class II, III, Division 1, Groups E, F, G; Class I, Zone 0/1, AEx d IIC Ga/Gb Class II, Zone 21, AEx tb IIIC Db T 95°C	Note 1	T5: -50 °C to 85°C T6: -50 °C to 65°C
	<b>Intrinsically Safe:</b> Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; Class I, Zone 0, AEx ia IIC Ga		T4: -50 °C to 70°C
	<b>Nonincendive:</b> Class I, Division 2, Groups A, B, C, D Class I, Zone 2, AEx nA IIC Gc	Note 1	T4: -50 °C to 85°C
	<b>Enclosure:</b> Type 4X/ IP66/ IP67	All	-
<b>Canadian Standards Association (CSA)</b>	<b>Explosion Proof:</b> Class I, Division 1, Groups A, B, C, D;  <b>Dust Ignition Proof:</b> Class II, III, Division 1, Groups E, F, G; Ex d IIC Ga Ex tb IIIC Db T 95°C	Note 1	T5: -50 °C to 85°C T6: -50 °C to 65°C
	<b>Intrinsically Safe:</b> Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; Ex ia IIC Ga		T4: -50 °C to 70°C
	<b>Nonincendive:</b> Class I, Division 2, Groups A, B, C, D; T4 Ex nA IIC Gc	Note 1	T4: -50 °C to 85°C
	<b>Enclosure:</b> Type 4X/ IP66/ IP67	All	-
<b>ATEX</b>	<b>Flameproof:</b> II 1/2 G Ex d IIC Ga/Gb II 2 D Ex tb IIIC Db T 95°C	Note 1	T5: -50 °C to 85°C T6: -50 °C to 65°C
	<b>Intrinsically Safe:</b> II 1 G Ex ia IIC Ga		T4: 50 °C to 70°C
	<b>Nonincendive:</b> II 3 G Ex nA IIC Gc	Note 1	T4: -50 °C to 85°C
	<b>Enclosure:</b> IP66/ IP67	All	-



**Approval Certifications: (Continued)**

<b>IECEx (World)</b>	<b>Flameproof :</b> Ex d IIC Ga/Gb Ex tb IIIC Db T 95°C	Note 1	T5: -50 °C to 85°C T6: -50 °C to 65°C
	<b>Intrinsically Safe:</b> Ex ia IIC Ga		T4: -50 °C to 70°C
	<b>Nonincendive:</b> Ex nA IIC Gc	Note 1	T4: -50 °C to 85°C
	<b>Enclosure:</b> IP66/ IP67	All	-
<b>NEPSI (China)</b>	<b>Flameproof:</b> Ex d IIC Ga/Gb Ex tb IIIC Db T 85°C	Note 1	T5: -50 °C to 85°C T6: -50 °C to 65°C
	<b>Intrinsically Safe:</b> Ex ia IIC Ga		T4: -50 °C to 70°C
	<b>Nonincendive:</b> Ex nA IIC Gc	Note 1	T4: -50 °C to 85°C
	<b>Enclosure :</b> IP 66/67	All	-

**Notes:**

## 1. Operating Parameters:

Voltage= 11 to 42 V DC

Current= 4-20 mA Normal

= 10 to 30 V (FF)

= 30 mA (FF)

**Other Certification Options****SIL**

<b>SIL 2/3 Certification</b>	IEC 61508 SIL 2 for non-redundant use and SIL 3 for redundant use according to EXIDA and TÜV Nord Sys Tec GmbH & Co. KG under the following standards: IEC61508-1: 2010; IEC 61508-2: 2010; IEC61508-3: 2010.
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**Materials**

- NACE MR0175, MR0103, ISO15156

## Application Data

### Liquid Level: Closed Tank

Determine the minimum and maximum pressure differentials to be measured (Figure 14)

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

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

Where:

minimum level at 4mA  
maximum level at 20 mA

a = distance between bottom tap and minimum level

b = distance between bottom tap and maximum level

d = distance between taps

$SG_f$  = Specific Gravity of capillary fill fluid (See page 6 "Material Spec" for values.)

$SG_p$  = Specific Gravity of process fluid

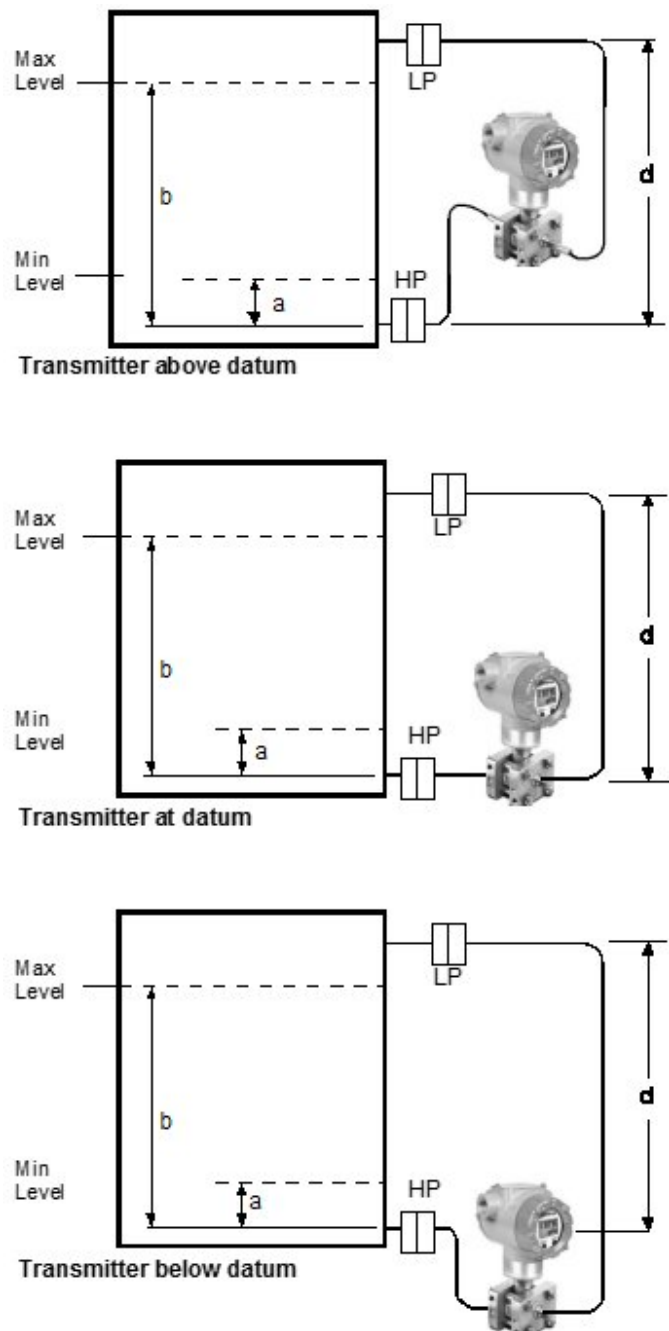


Figure 14—Closed tank liquid level measurement distance

### Application Data (Cont'd)

#### Density or Interface\*

Calculate the minimum and maximum pressure differentials to be measured. (Figure 15)

$P_{\min} = (SG_{\min} - SG_f) \times (d)$ ;  
minimum density, 4mA output

$P_{\max} = (SG_{\max} - SG_f) \times (d)$ ;  
maximum density, 20mA output

Where:

d = distance between the taps

$SG_{\max}$  = maximum Specific Gravity

$SG_{\min}$  = minimum Specific Gravity

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

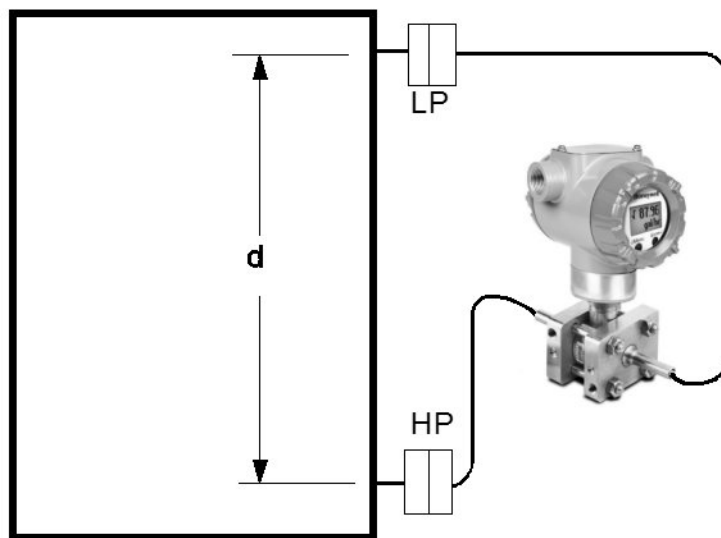


Figure 15- Density, direct acting transmitter configuration

### Seal Configurations



Figure 16—Flush Flange Seals and with Left Lower

Flush Flange Seals can be used with differential, gauge and absolute pressure transmitters and are available with 3" ANSI Class 150, ANSI Class 300 and DIN DN80-PN40 process connections. Flush flange seals can also be provided with Lowers. Lowers are essentially calibration rings, which allow flushing connections if needed.



Figure 17—Pancake Seals

Pancake Seals can be used with differential, gauge and absolute pressure transmitters and are available with 3" ANSI Class 150, 300 and 600 process connections

## Seal Configurations (cont'd)



**Figure 18 — Flange Seal with Extended Diaphragm**

Flange Seal with Extended Diaphragm can be used with differential, gauge and absolute pressure transmitters and are available with 3" and 4" ANSI Class 150, ANSI Class 300, DIN DN80-PN40 and DIN DN100-PN40 process connections. 2", 4" and 6" extension lengths are available



**Figure 21 — Stainless Steel Armor and PVC Coated Stainless Steel Armor Capillaries**

Stainless Steel Armor and PVC Coated Stainless Steel Armor Capillaries are available with Honeywell Remote Seal Solutions.



**Figure 19— Seals with Threaded Process Connections**

Seals with Threaded Process Connections can be used with differential, gauge and absolute pressure transmitters and are available with 1/2", 3/4" and 1" NPT Female process connections.



**Figure 22 — 2" Stainless Steel Nipples**

2" Stainless Steel Nipples are available for Close-Coupled remote seal solutions



**Figure 20 — Calibration Rings**

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



**Figure 23 — Welded Meter Body for All-Welded Remote Seal Solution**

Welded Meter Body for All-Welded Remote Seal Solution. The welded ST 700 meter body is an important part of an All-Welded Remote Seal Solution, which is commonly used in Vacuum applications.

**Model Selection Guide**

Model Selection Guides are subject to change and are inserted into the specifications as guidance only. Prior to specifying or ordering a model check for the latest revision Model Selection Guides which are published at:

[www.honeywellprocess.com/en-US/pages/default.aspx](http://www.honeywellprocess.com/en-US/pages/default.aspx)

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

Model Selection Guide  
34-ST-16-124 Issue 1

**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    IX

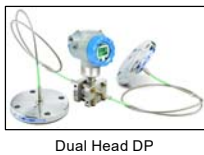
STR7 \_\_\_\_ - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ - \_\_\_\_ + \_\_\_\_

KEY NUMBER	URL	LRL	Max Span	Min Span	Units	Selection	Availability
Measurement Range Std Accuracy	100 (7)	-100 (-7)	100 (7)	0.9 (0.062)	psi (bar)	STR735D	↓
	500 (35)	-14.7 (-1.0)	500 (35)	5 (0.35)	psi (bar)	STR745G	↓

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

TABLE I	Description	Selection	Availability			
Meter Body & Capillaries	a. Number of Seals 1 Remote Seal (High Side) 2 Remote Seals 1 Remote Seal (Low Side)	1 _____ 2 _____ 3 _____	• • • • • •			
	b. Primary Fill Fluid (Meter body)	Silicone Oil 200 Fluorinated Oil CTFE	1 _____ 2 _____	• • 2 2		
	c. Construction	<b>Non-Wetted Adapter Head Materials</b>				
	In-Line Gauge	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		
	d. 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	__0____ __C____ __S____ __N____	• • • •		
	e. Secondary Fill Fluid (capillary & seal)	No Fill Fluid Silicone Oil 200 Fluorinated Oil CTFE Silicone Oil 704 Neobee® M20 <sup>11</sup> Syltherm® 800 <sup>12</sup>	__0____ __1____ __2____ __3____ __4____ __5____	5 5 • • • • • •		
	f. Connection of Remote Seal to Meter Body	No Capillary, No Nipple (Specify for VAM Unit Only)		__0____	5 5	
		Capillary Length	SS Armor	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____	•
		Capillary Length	PVC Coated SS Armor	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____	•			
g. Seal Option	2 inch long SS nipple close-coupled None Teflon Coated Seal Diaphragm - only for anti-sticking	__2____ __0____ __4____	6 6 • • 7 7			

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



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**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 <sup>1</sup>		Selection		
					3.5"	3"	ANSI Class 150 ANSI Class 300	AFA _____ AFC _____	• • • •
						80mm	DIN DN80-PN40	AFM _____	• •
		Wetted Material	316L SS	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___	8 8	
		Tantalum <sup>5</sup>		316L SS		___AF___	8 8		
		Non-Wetted Material (upper)		CS (Nickel Plated) 316L SS		___1___ ___2___	• • • •		
		Seal-Capillary Connection		Center Seal Side Seal		___1___ ___2___	• • 9 9		
		Calibration Rings		None 316L SS Hastelloy® C-276 Monel 400®		___A___ ___B___ ___C___ ___D___	• • 10 10 10 10 10 10		
		Flushing Connections and Plugs <sup>4</sup> (Metal plug material will be the same as Cal. ring material if metal plug is chosen )		None One 1/4" with plastic plug One 1/4" with metal plug Two 1/4" with plastic plugs Two 1/4" with metal plugs One 1/2" with plastic plug One 1/2" with metal plug Two 1/2" with plastic plugs Two 1/2" with metal plugs		___0___ ___H___ ___J___ ___M___ ___N___ ___P___ ___Q___ ___R___ ___S___	• • 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11		

Table II continued next page

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

<sup>4</sup> Plastic Plugs are TEMPORARY ONLY to protect threads and MUST be REMOVED before installation

<sup>5</sup> 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.

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TABLE II		Description				Selection				
Seal Type	Diaphragm Diameter	Flange Size	Flange Pressure Rating <sup>1</sup>	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 ANSI 300	22 22	BCA _____	•	•			
		1-1/2"	ANSI 150 ANSI 300	22 22	BGA _____	•	•			
		2"	ANSI 150 ANSI 300	22 22	BDA _____	•	•			
		3"	ANSI 150 ANSI 300	22 22	BFA _____	•	•			
						BGC _____	•	•		
						BDC _____	•	•		
		2.9"	1/2"	ANSI 150	23	CAA _____	•	•		
			1"	ANSI 150 ANSI 300	23 23	CCA _____	•	•		
			1-1/2"	ANSI 150 ANSI 300	22 22	CGA _____	•	•		
			2"	ANSI 150 ANSI 300	22 22	CDA _____	•	•		
		4.1"	1/2"	ANSI 150	22	CAA _____	•	•		
			1"	ANSI 150 ANSI 300	23 23	DCA _____	•	•		
	1-1/2"		ANSI 150 ANSI 300	23 23	DCC _____	•	•			
	2"		ANSI 150 ANSI 300	23 22	DGA _____	•	•			
					DGC _____	•	•			
					DDA _____	•	•			
	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 _____	8	8		
			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 Carbon Steel	316L SS 316L SS		--- 4 _____	•	•	
	Bolts <sup>6</sup>		No Selection			--- 5 _____	•	•		
	Flushing		None			--- 0 _____	•	•		
	Connections and Plugs <sup>4</sup> (Metal plug material will be the same as Lower material, if metal plug is chosen - (SS Plug for CS Lower and Tantalum Clad)	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 Two 1/2" with metal plugs			--- R _____				•	•		
Gasket	Klinger® C-4401 (non-asbestos)			--- K _____				•	•	
	Grafoil®			--- G _____				•	•	
	Teflon®			--- T _____				•	•	
	Gylon® 3510			--- L _____				15	15	

Table II continued next page

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

<sup>6</sup> Bolt material will be same as Upper Material. However, if Table I bolts/nuts material is NACE, seal bolt material will be 304 SS NACE.

<sup>4</sup> 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.

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TABLE II	Description								
Seal Type	Diaphragm Diameter	Flange Size	Flange Pressure Rating <sup>1</sup>		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"	(3.70" OD extension)	ANSI Class 150		FGA_____	•	•		
			ANSI Class 300		FGC_____	•	•		
			DIN DN100-PN40		FGP_____	•	•		
	Wetted Material	Non-Wetted Material (flange)		Diaphragm	Ext. Tube	Selection			
				316L SS	316L SS	___EA___	•	•	
				Hastelloy® C-276	316L SS	___EB___	•	•	
		Hastelloy® C-276	Hastelloy® C-276	___EC___	•	•			
CS (Nickel Plated)		316L SS		___7___	•	•			
316L SS				___8___	•	•			
Bolts		No Selection		___0___	•	•			
Extension Length		2"		___2___	•	•			
		4"		___4___	•	•			
		6"		___6___	•	•			
No Selection	No Selection	No Selection		___0___	•	•			

Table II continued below

STR745G  
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TABLE II	Description						
Seal Type	Diaphragm Diameter	Flange Size	Flange Pressure Rating Dependent on Customer Flange <sup>1</sup>		Selection		
 Pancake Seal	3.5"	3"	ANSI Class 150/300/600		GFA_____	•	•
			Diaphragm	Body			
	Wetted Material		316L SS		___GA___	•	•
			Hastelloy® C-276		___GB___	•	•
			Hastelloy® C-276		___GC___	•	•
			Monel 400®		___GE___	8	8
	Tantalum		Tantalum <sup>7</sup>		___GG___	8	8
	Non-Wetted Material		No Selection		___0___	•	•
	Bolts		No Selection		___0___	•	•
	Calibration Rings		None		___A___	•	•
		316L SS		___B___	10	10	
		Hastelloy® C-276		___C___	10	10	
		Monel 400®		___D___	10	10	
Flushing Connections and Plugs <sup>4</sup> (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

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

<sup>4</sup> Plastic Plugs are TEMPORARY ONLY to protect threads and MUST be REMOVED before installation

<sup>7</sup> 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.



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STR735D



TABLE II		Description						
Seal Type	Diaphragm Diameter	Threaded Process Connection Size (NPT Female)	Pressure Rating		Selection			
			CS Bolts	304 SS Bolts				
<b>Seals (continued)</b>   Seal with Threaded Process Connection	2.4"	1/2 NPT	2,500 psi	1,250 psi	JJG _____	•	•	
		3/4 NPT			JKG _____	•	•	
		1 NPT			JLG _____	•	•	
	2.9"	1/2 NPT	2,500 psi	1,250 psi	KJG _____	•	•	
		3/4 NPT			KKG _____	•	•	
		1 NPT			KLK _____	•	•	
	4.1"	1/2 NPT	1,500 psi	750 psi	LJG _____	•	•	
		3/4 NPT			LKG _____	•	•	
		1 NPT			LLG _____	•	•	
	Wetted Material   Seal with Threaded Process Connection	Diaphragm	316L SS	Lower		Selection		
			316L SS	Carbon Steel	_____ JA _____		•	•
		Hastelloy® C-276	316L SS	316L SS	_____ JB _____		•	•
			Hastelloy® C-276	Hastelloy® C-276	_____ JC _____		•	•
			Monel 400®	Monel 400®	_____ JD _____		•	•
			Tantalum	316L SS	_____ JE _____		8	8
Tantalum			Hastelloy® C-276	_____ JF _____		8	8	
Non-Wetted Material (upper)	CS (Nickel Plated)		_____ A _____		•	•		
	316 Stainless Steel		_____ C _____		17	17		
Bolts <sup>8</sup>	Carbon Steel		_____ D _____		•	•		
	304 SS		_____ E _____		•	•		
Flushing Connections and Plugs <sup>4</sup> (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 _____		18	18		
	One 1/2" with metal plug		_____ Q _____		18	18		
Gasket	Klinger® C-4401 (non-asbestos)		_____ K _____		•	•		
	Grafoil®		_____ G _____		•	•		
	Teflon®		_____ T _____		•	•		
Gylon® 3510		_____ L _____		15	15			

Table II continued next page

<sup>4</sup> Plastic Plugs are TEMPORARY ONLY to protect threads and MUST be REMOVED before installation

<sup>8</sup> 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.

STR745G  
STR735D

0	•	•
A	•	•
B	•	•
C	•	•
D	•	•
G	•	•

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 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
b. Output/ Protocol	Analog Output		Digital Protocol
	4-20mA dc		HART Protocol
c. Customer Interface Selections	Indicator	Ext Zero, Span & Config Buttons	Languages
	None	None	None
	None	Yes (Zero/Span Only)	None
	Standard (w/internal Zero, Span & Conf Buttons)	None	English
Standard (w/internal Zero, Span & Conf Buttons)	Yes	English	

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

_ H _	•	•
-------	---	---

_ _ 0	•	•
_ _ A	•	•
_ _ S	•	•
_ _ T	•	•

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 <sup>3</sup>
	Disabled	High > 21.0mAdc	Honeywell Std (3.8 - 20.8 mAdc)
	Disabled	Low < 3.6mAdc	Honeywell Std (3.8 - 20.8 mAdc)
	Enabled	High > 21.0mAdc	Honeywell Std (3.8 - 20.8 mAdc)
Enabled	Low < 3.6mAdc	Honeywell Std (3.8 - 20.8 mAdc)	
c. General Configuration	Factory Standard		
	Custom Configuration (Unit Data Required from customer)		

1 _ _	•	•
-------	---	---

_ 1 _	•	•
_ 2 _	•	•
_ 3 _	•	•
_ 4 _	•	•
_ _ 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	23	23
B	23	23

<sup>3</sup> NAMUR Output Limits 3.8 - 20.5mAdc 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	
	Angle Bracket	316 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)		
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		
Plugs & Adapters	1/2 NPT 316 SS Certified Conduit Plug		
	M20 316 SS Certified Conduit Plug		

0	---	•	•
1	---	•	•
2	---	•	•
3	---	•	•
5	---	•	•
6	---	•	•
7	---	•	•

0	---	•	•
1	---	•	•
2	---	•	•

__	A0	•	•
__	A2	n	n
__	A6	n	n
__	A7	m	m

TABLE VIII		OTHER Certifications & Options : (String in sequence comma delimited (XX, XX, XX,...))	
Certifications & Warranty	None - No other options		
	NACE MR0175; MR0103; ISO15156 Process wetted parts only		
	NACE MR0175; MR0103; ISO15156 wetted and non-wetted parts		
	EN10204 Type 3.1 Material Traceability		
	Certificate of Conformance		
	Calibration Test Report & Certificate of Conformance		
	Certificate of Origin		
	FMEDA (SIL 2/3) Certification		
	Over-Pressure Leak Test Certificate (1.5X MAWP)		
	Cert Clean for O <sub>2</sub> or CL <sub>2</sub> service per ASTM G93		

00	*	*
FG	•	•
F7	c	c
FX	•	•
F3	•	•
F1	•	•
F5	•	•
FE	j	j
TP	•	•
OX	e	e

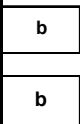


TABLE IX		Manufacturing Specials	
Factory	Factory Identification		

0000	•	•
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**MODEL RESTRICTIONS**

Restriction Letter	Available Only With		Not Available With		
	Table	Selection(s)	Table	Selection(s)	
<b>b</b>	Select only one option from this group				
<b>c</b>	Id	___ 0, N, ___			
<b>e</b>	I	_ 2 _ 2 _			
<b>j</b>	IVb		Vb	_ 1,2 _	
<b>m</b>	IVa	B, D, F, H ___			
<b>n</b>	IVa	A, C, E, G ___			
<b>2</b>	Ie	___ 0 ___			
		___ 2 ___			
		___ 4 ___			
<b>3</b>	If	___ 2 _	Ia	2 _ _ _ _ _	
<b>4</b>	I	2 _ 0 ___			
<b>5</b>	II	000000000	VIII	FG, F7, FX, OX, TP, F1	
<b>6</b>	I	___ B,D ___	Ia	2 _ _ _ _ _	
<b>7</b>			II	___ AF ___	
				___ BF ___	
				___ BG ___	
				___ BH ___	
				___ GG ___	
				___ JF ___	
<b>8</b>			VIII	___ JG ___	
				FG, F7	
<b>9</b>	II	___ AA2 ___			
		___ AB2 ___			
<b>10</b>			II	___ 0	
<b>11</b>			II	___ A	
<b>13</b>	II	___ 0 _	II	___ T	
			VIII	FG, F7	
<b>15</b>	II	___ BF ___			
					___ BG ___
					___ BH ___
					___ JF ___
					___ JG ___
<b>17</b>			II	___ JA ___	
<b>18</b>			II	___ JJG ___	
				___ JKG ___	
				___ JLG ___	
<b>21</b>	I	___ 000			
<b>22</b>	Ic	___ E ___			
<b>23</b>			II	000000000	

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For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

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