

## ST 3000 Smart Transmitter Series 100 Remote Diaphragm Seals Models

STR12D	0-10 to 0-400 inH <sub>2</sub> O	0-25 to 0-1000 mbar
STR13D	0-5 to 0-100 psid	0-0.35 to 0-7 bar
STR14G	0-5 to 0-500 psig	0-0.35 to 0-35 bar
STR17G	0-100 to 0-3000 psig	0-7 to 0-210 bar
STR14A	0-5 to 0-500 psia	0-0.35 to 0-35 bar

## Specification and Model Selection Guide

### Introduction

In 1983, Honeywell introduced the first Smart Pressure Transmitter—the ST 3000®. In 1989, Honeywell launched the first all digital, bi-directional protocol for smart field devices. Today, its ST 3000 Series 100 Remote Seal Transmitters continue to bring proven “smart” technology to a wide spectrum of measurement applications. Typical applications include high accuracy level measurement in pressurized vessels in the chemical and hydrocarbon processing industries. A second application consists of accurate flow measurement for slurries and high viscosity fluids in the chemical industry. Honeywell remote seal transmitters demonstrate proven reliability in hundreds on installations in a wide variety of industries and applications with a wide variety of secondary fill fluids for corrosive or high temperature process fluids.

All ST 3000 transmitters can provide a 4-20 mA output, Honeywell Digitally Enhanced (DE) output, HART® output, or FOUNDATION™ Fieldbus output. When digitally integrated with Honeywell's Process Knowledge System™, EXPERION PKS™, ST 3000 instruments provide a more accurate process variable as well as advanced diagnostics.

Honeywell's high-performance ST 3000 S100 transmitters lead the industry in:

- Accuracy
- Stability
- Reliability
- Rangeability
- Warranty

Includes Lifetime™ Transmitters:

- Accuracy =  $\pm 0.0375\%$
- Stability =  $\pm 0.01\%$  per year
- Reliability = 470 years MTBF
- Rangeability = 400 to 1
- Lifetime Warranty = 15 years



**Figure 1**—Series 100 Remote Seal Pressure Transmitters feature proven piezoresistive sensor technology.

The devices provide comprehensive self-diagnostics to help users maintain high uptime, meet regulatory requirements, and attain high quality standards. S100 transmitters are ideal for critical applications, such as custody transfer of natural gas and energy and material balances, where accuracy and stability are of the utmost importance.

"Our commitment to Honeywell field instruments is based on seamless integration with our Honeywell system and the enhanced fault detection that the Honeywell DE protocol offers. Honeywell instruments also offer us a better way of ensuring database integrity over simple analog instruments. In addition, Honeywell's high-quality support has enabled us to better implement solutions to some of our more difficult problems. We have used Honeywell differential pressure smart transmitters for the past eight years. Based on their accuracy and low failure rates, we are now targeting critical flow applications that require the robustness that these transmitters bring."

DCS Systems Engineer  
International Integrated Oil Company

## Description

The ST 3000 transmitter can replace any 4 to 20 mA output transmitter in use today and operates over a standard two-wire system.

The measuring means is a piezoresistive sensor, which actually contains three sensors in one. It contains a differential pressure sensor, a temperature sensor, and a static pressure sensor.

Microprocessor-based electronics provide higher span-turndown ratio, improved temperature and pressure compensation, and improved accuracy.

The transmitter's meter body and electronics housing resist shock, vibration, corrosion, and moisture. The electronics housing contains a compartment for the single-board electronics, which is isolated from an integral junction box. The single-board electronics is replaceable and interchangeable with any other ST 3000 Series 100 or Series 900 model transmitter.

Like other Honeywell transmitters, the ST 3000 features two-way communication between the operator and the transmitter through our Smart Field Configurator (SFC). You can connect the SFC anywhere that you can access the transmitter signal lines.

The SCT 3000 Smartline® Configuration Toolkit provides an easy way to configure instruments using a personal computer. The toolkit enables configuration of devices before shipping or installation. The SCT 3000 can operate in the offline mode to configure an unlimited number of devices. The database can then be loaded downline during commissioning.

## Features

- Choice of linear or square root output conformity is a simple configuration selection.
- Direct digital integration with Experion PKS and other control systems provides local measurement accuracy to the system level without adding typical A/D and D/A converter inaccuracies.
- Unique piezoresistive sensor automatically compensates input for temperature and static pressure. Added "smart" features include configuring lower and upper range values, simulating accurate analog output, and selecting preprogrammed engineering units for display.
- Smart transmitter capabilities with local or remote interfacing means significant manpower efficiency improvements in commissioning, start-up, and ongoing maintenance functions.

## Specifications

### Operating Conditions – All Models

Parameter	Reference Condition		Rated Condition		Operative Limits		Transportation and Storage	
	°C	°F	°C	°F	°C	°F	°C	°F
Ambient Temperature *	25 ±1	77 ±2	—	—	—	—	–55 to 90	–67 to 194
Humidity % RH	10 to 55		0 to 100		0 to 100		0 to 100	
Overpressure – Flange Rating ANSI Class 150 ANSI Class 300	See Model Selection Guide.							
Vacuum Region - Minimum Pressure mmHg absolute	Atmospheric (See Figure 4 for vacuum limitations.)							
Supply Voltage, Current, and Load Resistance	Voltage Range: 10.8 to 42.4 Vdc at terminals Current Range: 3.0 to 21.8 mA Load Resistance: 0 to 1440 ohms (as shown in Figure 5)							

\* Ambient Temperature Limit is a function of Process Interface Temperature. (See Figure 2.)

**Performance Under Rated Conditions \* - Model STR12D (0-10 to 0-400 inH<sub>2</sub>O)**

Parameter	Description
<b>Upper Range Limit **</b> <b>inH<sub>2</sub>O mbar</b>	400 (39.2°F/4°C is standard reference temperature for inH <sub>2</sub> O range.) 1000
<b>Minimum Span</b> <b>inH<sub>2</sub>O mbar</b>	10    Note: Recommended minimum span in square root mode is 20 inH <sub>2</sub> O (50 mbar). 25
<b>Turndown Ratio</b>	40 to 1
<b>Zero Elevation and Suppression</b>	No limit except minimum span within ±100% URL.
<b>Accuracy</b> (Reference – Includes combined effects of linearity, hysteresis, and repeatability)  • <i>Accuracy includes residual error after averaging successive readings.</i>  • <i>For FOUNDATION Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications.</i>	<b>In Analog Mode:</b> ±0.2% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (50 inH <sub>2</sub> O), accuracy equals: $\pm 0.1 + 0.1 \left( \frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \text{ or } \pm 0.1 + 0.1 \left( \frac{125 \text{ mbar}}{\text{span mbar}} \right) \text{ in } \% \text{ span}$  <b>In Digital Mode:</b> ±0.175% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (50 inH <sub>2</sub> O), accuracy equals: $\pm 0.075 + 0.10 \left( \frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \text{ or } \pm 0.075 + 0.10 \left( \frac{125 \text{ mbar}}{\text{span mbar}} \right) \text{ in } \% \text{ span}$
<b>Combined Zero and Span Temperature Effect per 28°C (50°F) ***</b>	<b>In Analog Mode:</b> ±1.2% of span. For URV below reference point (100 inH <sub>2</sub> O), effect equals: $\pm 0.2 + 1.0 \left( \frac{100 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \text{ or } \pm 0.2 + 1.0 \left( \frac{250 \text{ mbar}}{\text{span mbar}} \right) \text{ in } \% \text{ span}$  <b>In Digital Mode:</b> ±1.175% of span. For URV below reference point (100 inH <sub>2</sub> O), effect equals: $\pm 0.175 + 1.0 \left( \frac{100 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \text{ or } \pm 0.175 + 1.0 \left( \frac{250 \text{ mbar}}{\text{span mbar}} \right) \text{ in } \% \text{ span}$

\* Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, 10 to 55% RH, and 316L Stainless Steel barrier diaphragm.

\*\* Transmitter URL limit or maximum seal pressure rating, whichever is lower.

\*\*\* Apply 1.5 times factor to capillary lengths greater than 10 feet.

# Performance Under Rated Conditions \* - Model STR13D (0-5 to 0-100 psid)

Parameter	Description
Upper Range Limit **      psid bar	100 7
Minimum Span                psid bar	5 0.35
Turndown Ratio	20 to 1
Zero Elevation and Suppression	No limit except minimum span within –18% and +100% of URL. Specifications valid from –5% to 100% of URL.
<b>Accuracy</b> (Reference – Includes combined effects of linearity, hysteresis, and repeatability) <ul style="list-style-type: none"> <li>• <i>Stated accuracy <b>does not</b> apply for models with 2.9 inch diameter remote seal diaphragms.</i></li> <li>• <i>Accuracy includes residual error after averaging successive readings.</i></li> <li>• <i>For FOUNDATION Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications.</i></li> </ul>	<b>In Analog Mode:</b> ±0.1% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (30 psi), accuracy equals: $\pm 0.05 + 0.05 \left( \frac{30 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.05 + 0.05 \left( \frac{2 \text{ bar}}{\text{span bar}} \right) \text{ in } \% \text{ span}$ <b>In Digital Mode:</b> ±0.075% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (30 psi), accuracy equals: $\pm 0.025 + 0.05 \left( \frac{30 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.025 + 0.05 \left( \frac{2 \text{ bar}}{\text{span bar}} \right) \text{ in } \% \text{ span}$
<b>Combined Zero and Span Temperature Effect per 28°C (50°F) ***</b>	<b>In Analog Mode:</b> ±0.33% of span. For URV below reference point (30 psi), effect equals: $\pm 0.05 + 0.28 \left( \frac{30 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.05 + 0.28 \left( \frac{2 \text{ bar}}{\text{span bar}} \right) \text{ in } \% \text{ span}$ <b>In Digital Mode:</b> ±0.305% of span. For URV below reference point (30 psi), effect equals: $\pm 0.025 + 0.28 \left( \frac{30 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.025 + 0.28 \left( \frac{2 \text{ bar}}{\text{span bar}} \right) \text{ in } \% \text{ span}$

\* Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, 10 to 55% RH, and 316L Stainless Steel barrier diaphragm.

\*\* Transmitter URL limit or maximum seal pressure rating, whichever is lower.

\*\*\* Apply 1.5 times factor to capillary lengths greater than 10 feet.

**Performance Under Rated Conditions \* - Model STR14G (0-5 to 0-500 psig)**

Parameter	Description
<b>Upper Range Limit **</b> <b>psig</b> <b>bar</b>	500 35
<b>Minimum Span</b> <b>psig</b> <b>bar</b>	5 0.35
<b>Turndown Ratio</b>	100 to 1
<b>Zero Elevation and Suppression</b>	No limit except minimum span from absolute zero to 100% of URL. Specifications valid over this range.
<b>Accuracy</b> (Reference – Includes combined effects of linearity, hysteresis, and repeatability) <ul style="list-style-type: none"> <li>• <i>Accuracy includes residual error after averaging successive readings.</i></li> <li>• <i>For FOUNDATION Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications.</i></li> </ul>	<p><b>In Analog Mode:</b> <math>\pm 0.1\%</math> of calibrated span or upper range value (URV), whichever is greater.</p> <p>For URV below reference point (20 psi), accuracy equals:</p> $\pm 0.05 + 0.05 \left( \frac{20 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.05 + 0.05 \left( \frac{1.4 \text{ bar}}{\text{span bar}} \right) \text{ in } \% \text{ span}$ <p><b>In Digital Mode:</b> <math>\pm 0.075\%</math> of calibrated span or upper range value (URV), whichever is greater.</p> <p>For URV below reference point (20 psi), accuracy equals:</p> $\pm 0.025 + 0.05 \left( \frac{20 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.025 + 0.05 \left( \frac{1.4 \text{ bar}}{\text{span bar}} \right) \text{ in } \% \text{ span}$
<b>Combined Zero and Span Temperature Effect per 28°C (50°F) ***</b>	<p><b>In Analog Mode:</b> <math>\pm 1.88\%</math> of span.</p> <p>For URV below reference point (75 psi), effect equals:</p> $\pm 0.2 + 1.68 \left( \frac{75 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.2 + 1.68 \left( \frac{5.25 \text{ bar}}{\text{span bar}} \right) \text{ in } \% \text{ span}$ <p><b>In Digital Mode:</b> <math>\pm 1.855\%</math> of span</p> <p>For URV below reference point (75 psi), effect equals:</p> $\pm 0.175 + 1.68 \left( \frac{75 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.175 + 1.68 \left( \frac{5.25 \text{ bar}}{\text{span bar}} \right) \text{ in } \% \text{ span}$

\* Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, 10 to 55% RH, and 316L Stainless Steel barrier diaphragm.

\*\* Transmitter URL limit or maximum seal pressure rating, whichever is lower.

\*\*\* Apply 1.5 times factor to capillary lengths greater than 10 feet.

# Performance Under Rated Conditions \* - Model STR17G (0-100 to 0-3000 psig)

Parameter	Description
<b>Upper Range Limit **</b> <b>psig</b> <b>bar</b>	3000 210
<b>Minimum Span</b> <b>psig</b> <b>bar</b>	100 7
<b>Turndown Ratio</b>	30 to 1
<b>Zero Elevation and Suppression</b>	No limit except minimum span from absolute zero to 100% of URL. Specifications valid over this range.
<b>Accuracy</b> (Reference – Includes combined effects of linearity, hysteresis, and repeatability) <ul style="list-style-type: none"> <li>• <i>Accuracy includes residual error after averaging successive readings.</i></li> <li>• <i>For FOUNDATION Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications.</i></li> </ul>	<p><b>In Analog Mode:</b> ±0.15% of calibrated span or upper range value (URV), whichever is greater. For URV below reference point (300 psi), accuracy equals:</p> $\pm 0.10 + 0.05 \left( \frac{300 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.10 + 0.05 \left( \frac{21 \text{ bar}}{\text{span bar}} \right) \text{ in \% span}$ <p><b>In Digital Mode:</b> ±0.125% of calibrated span or upper range value (URV), whichever is greater. For URV below reference point (300 psi), accuracy equals:</p> $\pm 0.075 + 0.05 \left( \frac{300 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.075 + 0.05 \left( \frac{21 \text{ bar}}{\text{span bar}} \right) \text{ in \% span}$
<b>Combined Zero and Span Temperature Effect per 28°C (50°F) ***</b>	<p><b>In Analog Mode:</b> ±0.70% of span. For URV below reference point (500 psi), effect equals:</p> $\pm 0.20 + 0.50 \left( \frac{500 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.2 + 0.50 \left( \frac{34.5 \text{ bar}}{\text{span bar}} \right) \text{ in \% span}$ <p><b>In Digital Mode:</b> ±0.675% of span. For URV below reference point (500 psi), effect equals:</p> $\pm 0.175 + 0.50 \left( \frac{500 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.175 + 0.50 \left( \frac{34.5 \text{ bar}}{\text{span bar}} \right) \text{ in \% span}$

\* Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, 10 to 55% RH, and 316L Stainless Steel barrier diaphragm.

\*\* Transmitter URL limit or maximum seal pressure rating, whichever is lower.

\*\*\* Apply 1.5 times factor to capillary lengths greater than 10 feet.

**Performance Under Rated Conditions \* - Model STR14A (0-5 to 0-500 psia)**

Parameter	Description
<b>Upper Range Limit **</b> psia bar absolute	500 35
<b>Minimum Span</b> psia bar absolute	5 0.35
<b>Turndown Ratio</b>	100 to 1
<b>Zero Elevation and Suppression</b>	No limit except minimum span from 0 to 100% URL.
<b>Accuracy</b> (Reference – Includes combined effects of linearity, hysteresis, and repeatability) <ul style="list-style-type: none"> <li>• <i>Accuracy includes residual error after averaging successive readings.</i></li> <li>• <i>For FOUNDATION Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications.</i></li> </ul>	<p><b>In Analog Mode:</b> <math>\pm 0.1\%</math> of calibrated span or upper range value (URV), whichever is greater. For URV below reference point (20 psi), accuracy equals:  <math>\pm 0.05 + 0.05 \left( \frac{20 \text{ psi}}{\text{span psi}} \right)</math> or <math>\pm 0.05 + 0.05 \left( \frac{1.4 \text{ bar}}{\text{span bar}} \right)</math> in % span</p> <p><b>In Digital Mode:</b> <math>\pm 0.075\%</math> of calibrated span or upper range value (URV), whichever is greater. For URV below reference point (20 psi), accuracy equals:  <math>\pm 0.025 + 0.05 \left( \frac{20 \text{ psi}}{\text{span psi}} \right)</math> or <math>\pm 0.025 + 0.05 \left( \frac{1.4 \text{ bar}}{\text{span bar}} \right)</math> in % span</p>
<b>Combined Zero and Span Temperature Effect per 28°C (50°F) ***</b>	<p><b>In Analog Mode:</b> <math>\pm 1.88\%</math> of span. For URV below reference point (50 psi), effect equals:  <math>\pm 0.2 + 1.68 \left( \frac{50 \text{ psi}}{\text{span psi}} \right)</math> or <math>\pm 0.2 + 1.68 \left( \frac{3.5 \text{ bar}}{\text{span bar}} \right)</math> in % span</p> <p><b>In Digital Mode:</b> <math>\pm 1.855\%</math> of span For URV below reference point (50 psi), effect equals:  <math>\pm 0.175 + 1.68 \left( \frac{50 \text{ psi}}{\text{span psi}} \right)</math> or <math>\pm 0.175 + 1.68 \left( \frac{3.5 \text{ bar}}{\text{span bar}} \right)</math> in % span</p>

\* Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, 10 to 55% RH, and 316L Stainless Steel barrier diaphragm.

\*\* Transmitter URL limit or maximum seal pressure rating, whichever is lower.

\*\*\* Apply 1.5 times factor to capillary lengths greater than 10 feet.



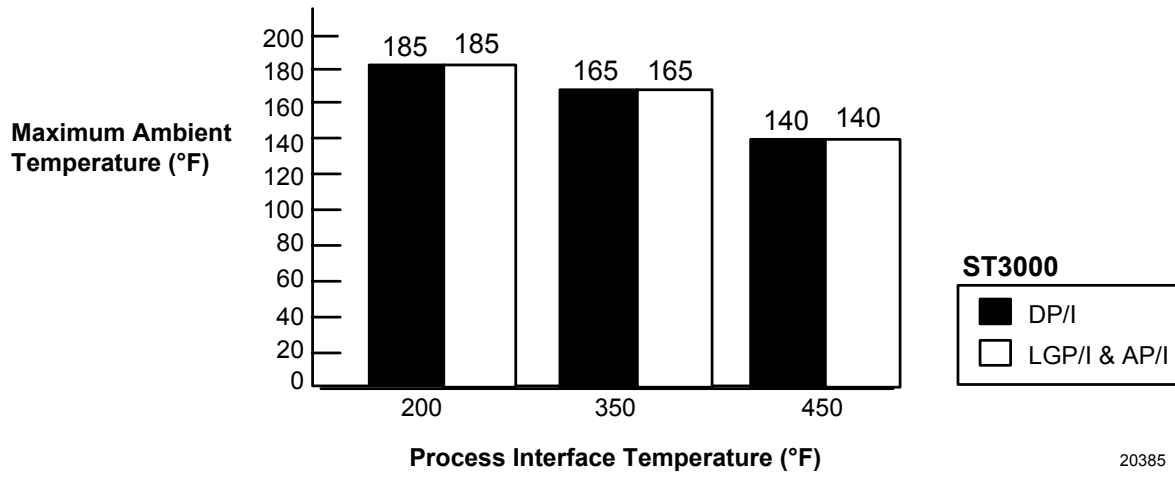
**Performance Under Rated Conditions – General for all Models**

Parameter	Description
Output (two-wire)	Analog 4 to 20 mA or digital communications DE mode. Options available for FOUNDATION Fieldbus and HART protocol.
Supply Voltage Effect	±0.005% span per volt.
Damping Time Constant	Adjustable from 0 to 32 seconds digital damping.
RFI Protection (Standard)	Negligible (20 to 1000 MHz at 30 volts per meter).
CE Conformity (Europe)	89/336/EEC, Electromagnetic Compatibility (EMC) Directive.

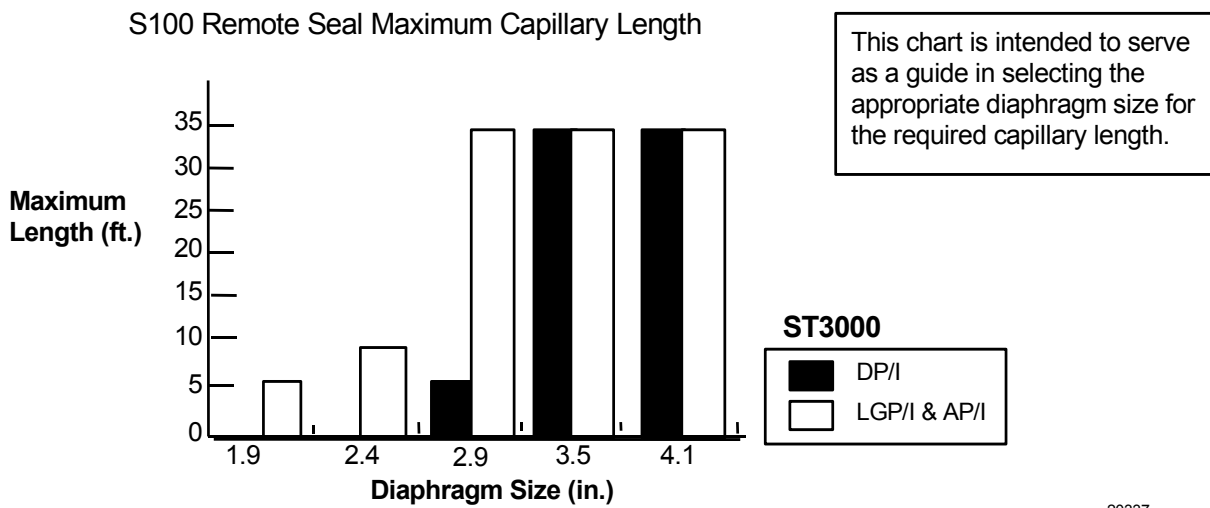
**Physical and Approval Bodies**

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
Mounting Bracket	Carbon Steel (Zinc-Chromate plated) or Stainless Steel.
Fill Fluid (Meter Body)	Silicone (DC 200) S.G. @ 25°C = 0.94 CTFE (Chlorotrifluoroethylene) S.G. @ 25°C = 1.89
Fill Fluid (Secondary)	Silicone (DC 200) S.G. @ 25°C = 0.94 CTFE (Chlorotrifluoroethylene) S.G. @ 25°C = 1.89 Silicone (DC 704) S.G. @ 25°C = 1.07 NEOBEE M-20 S.G. @ 25°C = 0.90 Syltherm 800 S.G. @ 25°C = 0.93
Electronic Housing	Epoxy-Polyester hybrid paint. Low copper-aluminum alloy. Meets NEMA 4X (watertight) and NEMA 7 (explosion proof). Stainless steel optional.
Capillary Tubing	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 Figure 3 for guide to maximum capillary length vs. diaphragm diameter.
Wiring	Accepts up to 16 AWG (1.5 mm diameter).
Mounting	See Figure 6.
Dimensions	<b>Transmitter:</b> See Figures 9 and 10. <b>Seal:</b> See Model Selection Guide.
Net Weight	<b>Transmitter:</b> 15.4 pounds (7 Kg). Total weight is dependent on seal type and capillary length.
Approval Bodies - Hazardous Areas	Approved as explosion proof and intrinsically safe for use in Class I, Division 1, Groups A, B, C, D locations, and nonincendive for Class I, Division 2, Groups A, B, C, D locations. Approved EEx ia IIC T4, T5, T6 and EEx d IIC T5, T6 per ATEX standards. See attached Model Selection Guide for options.
Pressure Equipment Directive (97/23/EC)	The ST 3000 pressure transmitters listed in this Specification have no pressurized internal volume or have a pressurized internal volume rated less than 1,000 bar (14,500 psig) and/or have a maximum volume of less than 0.1 liter. Therefore, these transmitters are either; not subject to the essential requirements of the directive 97/23/EC (PED, Annex 1) and shall not have the CE mark, or the manufacturer has the free choice of a module when the CE mark is required for pressures > 200 bar (2,900 psig).

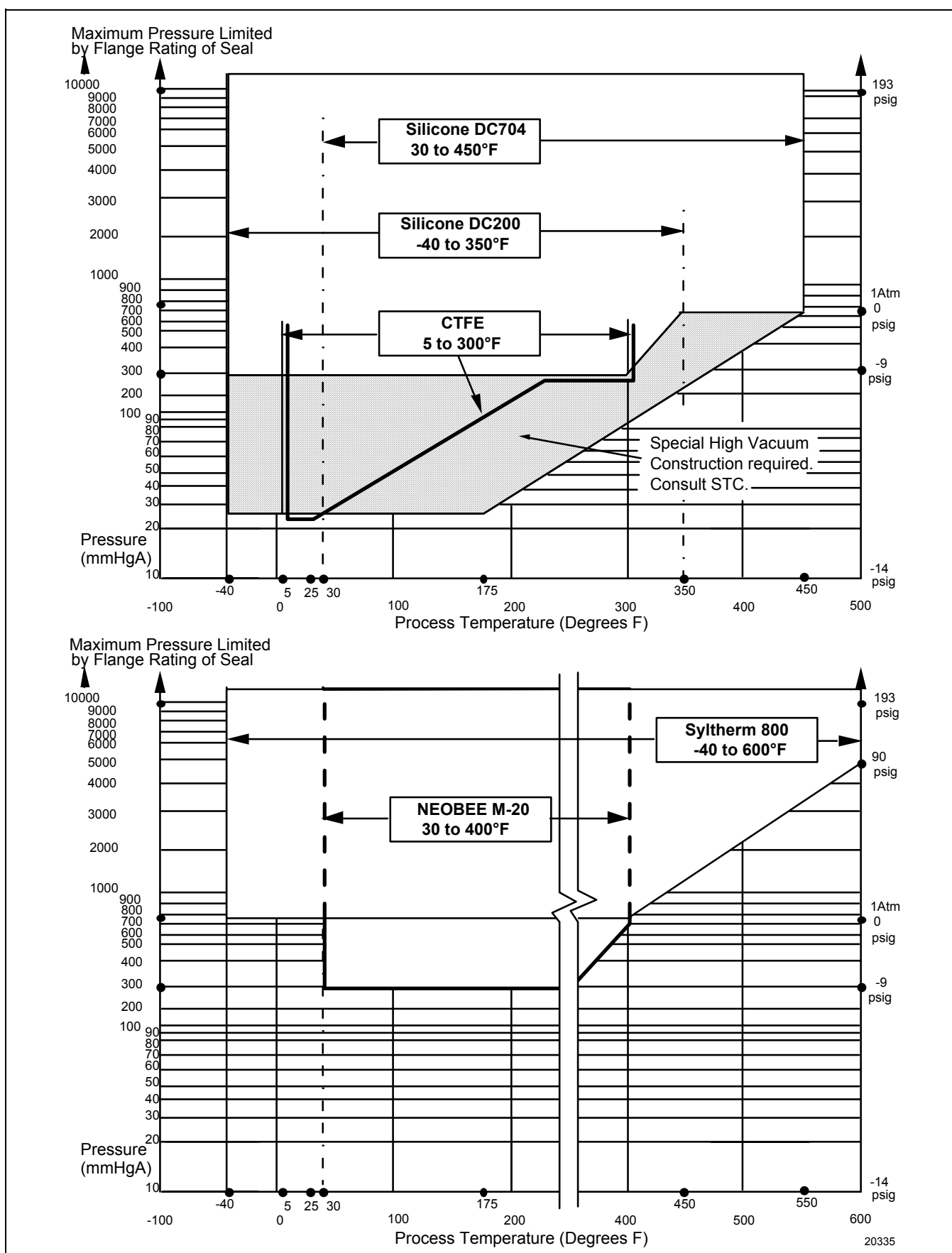
**NOTE:** Pressure transmitters that are part of safety equipment for the protection of piping (systems) or vessel(s) from exceeding allowable pressure limits, (equipment with safety functions in accordance with Pressure Equipment Directive 97/23/EC article 1, 2.1.3), require separate examination.



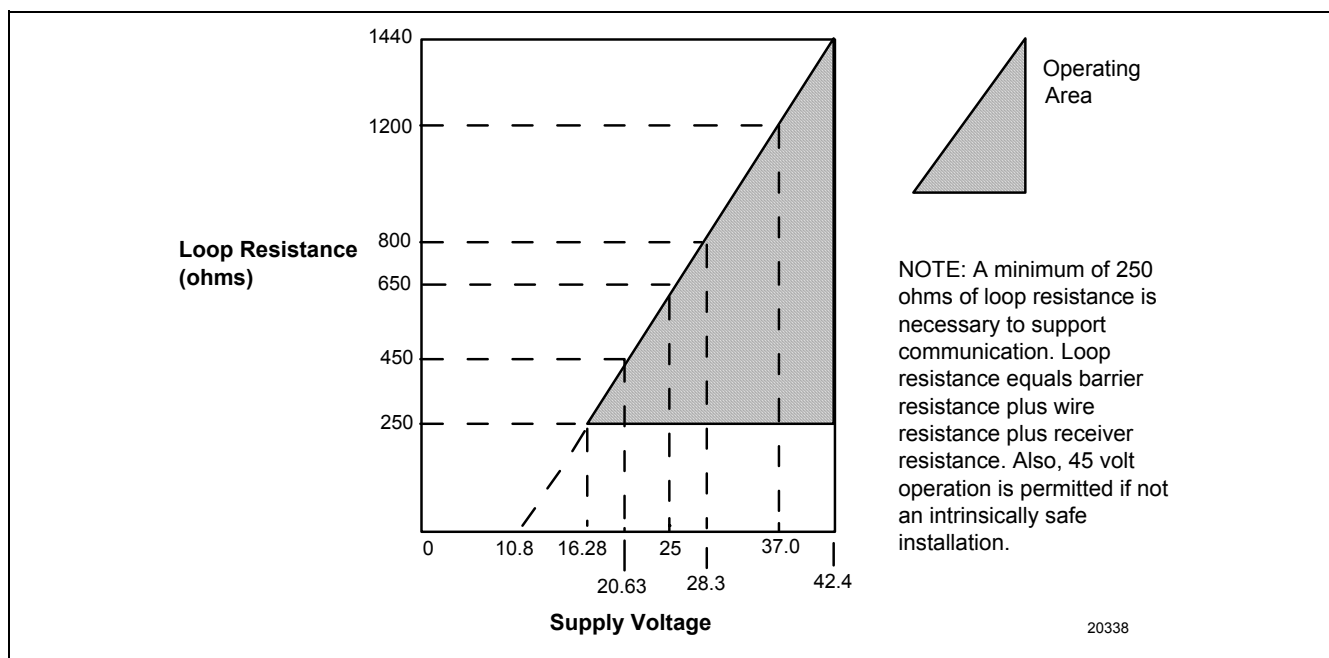
**Figure 2**—Ambient temperature and process interface chart.



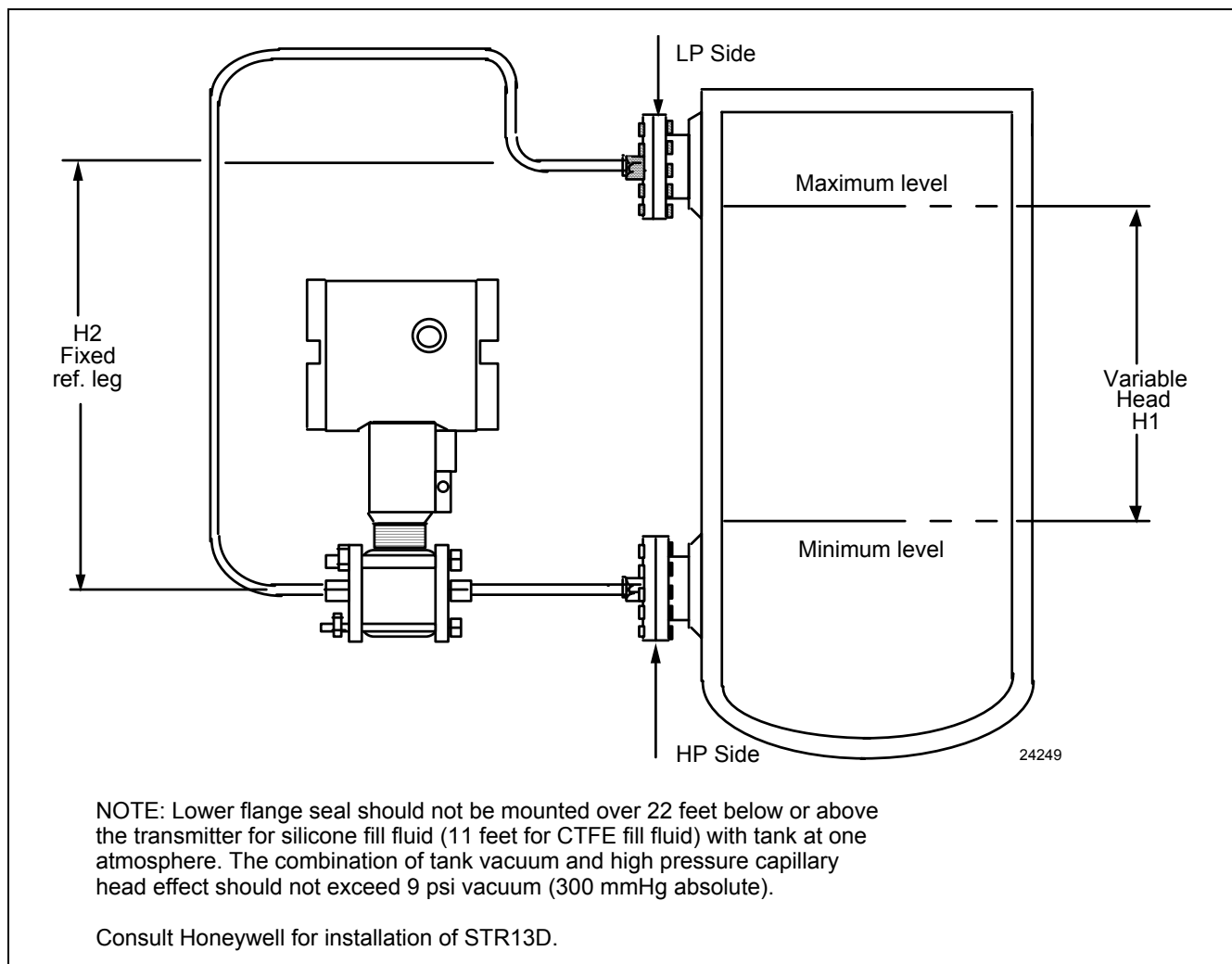
**Figure 3**—Maximum capillary length and diaphragm size chart.



**Figure 4—ST 3000 Remote Seals operable limits for pressure vs. temperature.**



**Figure 5**—Supply voltage/loop resistance chart.



**Figure 6**—The ST 3000 transmitter with remote diaphragm seals shown mounted on a tank.

### Application Data\*

#### Liquid Level: Closed Tank

Determine the minimum and maximum pressure differentials to be measured (Figure 7).

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

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

Where:

Minimum level at 4 mA  
Maximum level at 20 mA

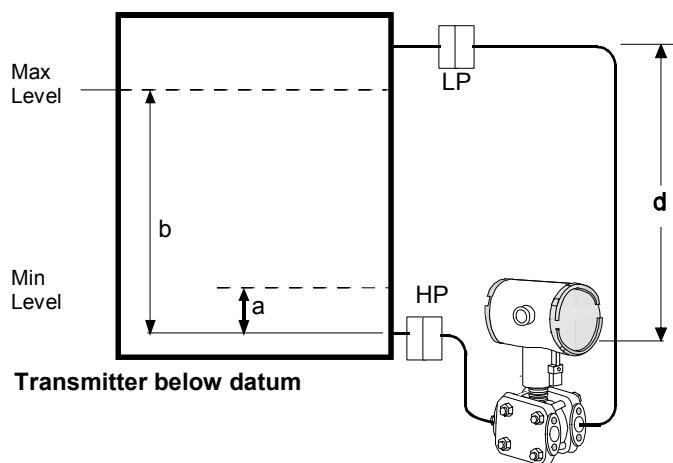
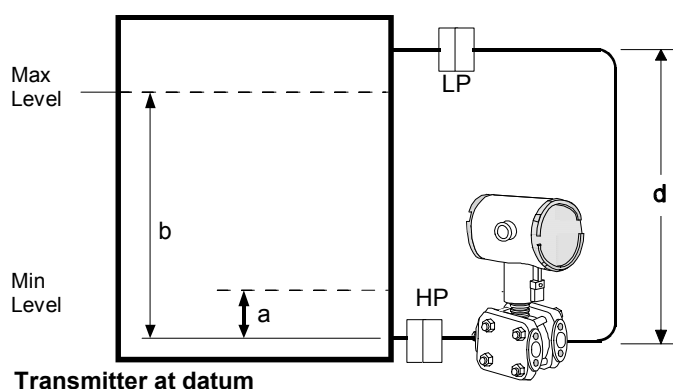
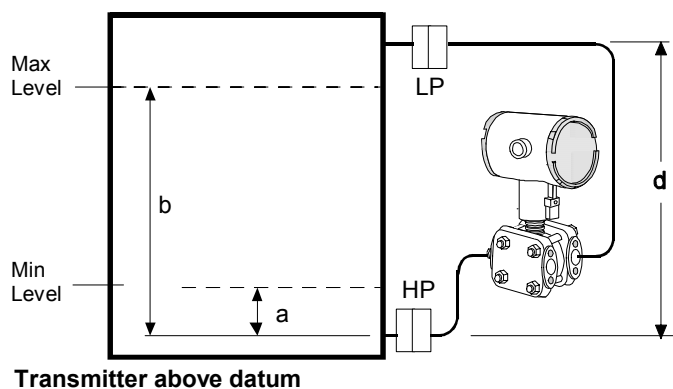
a = distance between bottom tap and minimum level

b = distance between bottom tap and maximum level

d = distance between taps

SG<sub>f</sub> = Specific Gravity of capillary fill fluid (see page 8 for values)

SG<sub>p</sub> = Specific Gravity of process fluid



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**Figure 7**—Closed tank liquid level measurement distances.

\* Contact STC-Phoenix concerning applications for model STR13D.

**Density or Interface\***

Calculate the minimum and maximum pressure differentials to be measured.

$$P_{\min} = (SG_{\min} - SG_f) \times (d);$$

minimum density, 4mA output

$$P_{\max} = (SG_{\max} - SG_f) \times (d);$$

maximum density, 20mA output

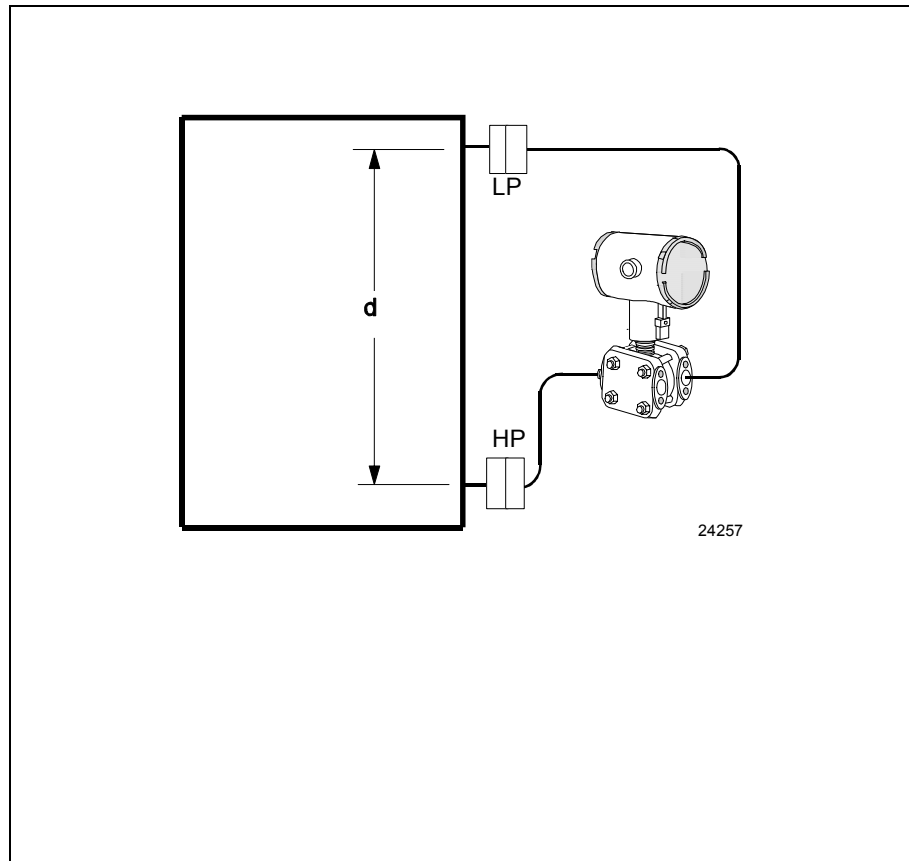
Where:

d = distance between the taps

SG<sub>max</sub> = maximum Specific Gravity

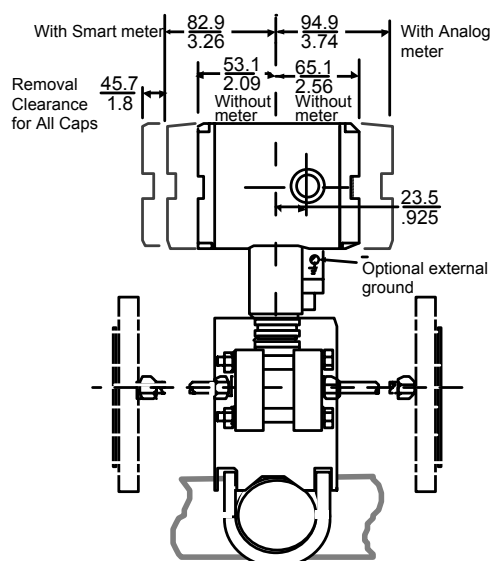
SG<sub>min</sub> = minimum Specific Gravity

SG<sub>f</sub> = Specific Gravity of capillary fill fluid (see page 8 for values)



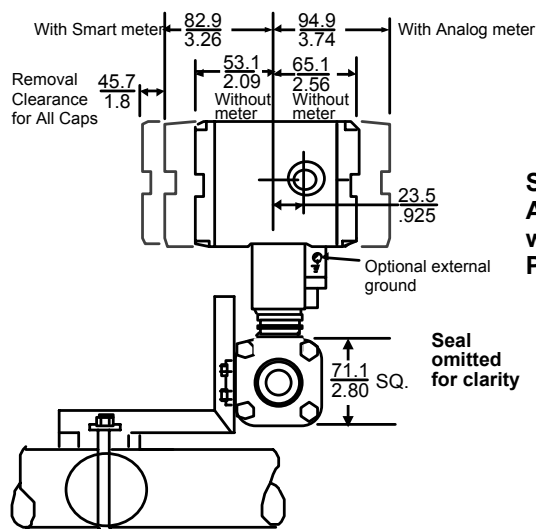
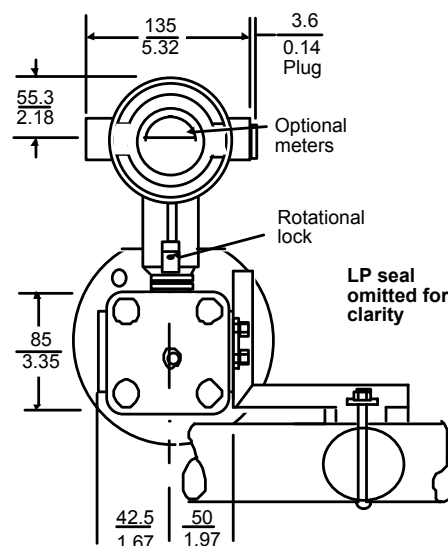
**Figure 8**—Density, direct acting instrument configuration.

\* Contact STC-Phoenix concerning applications for model STR13D.

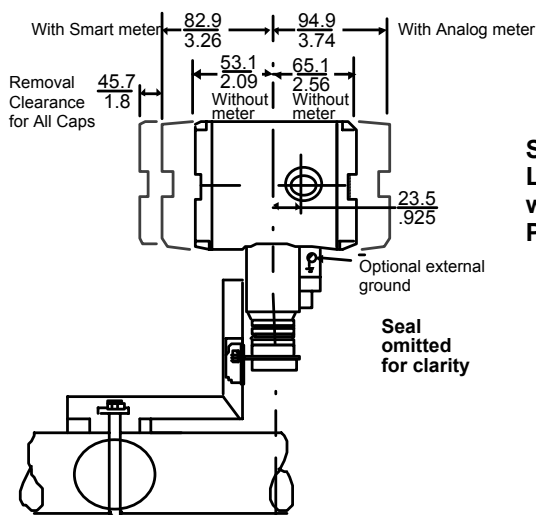
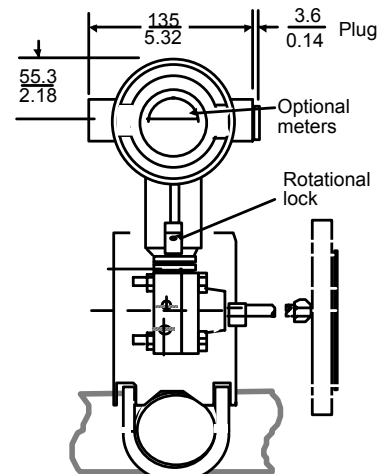


**Reference  
Dimensions:**  
millimeters  
inches

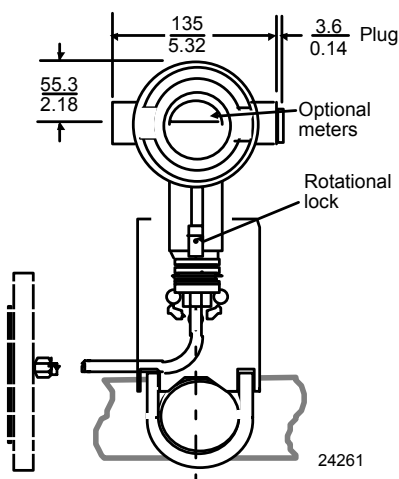
**STR12D, STR13D  
DP/I Remote Seal  
with Horizontal  
Pipe Mount**



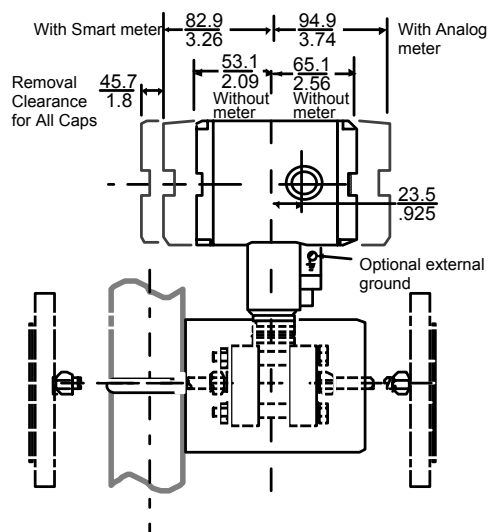
**STR14A  
AP/I Remote Seal  
with Horizontal  
Pipe Mount**



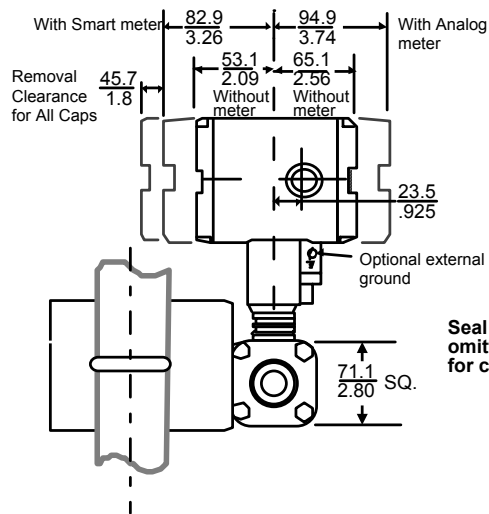
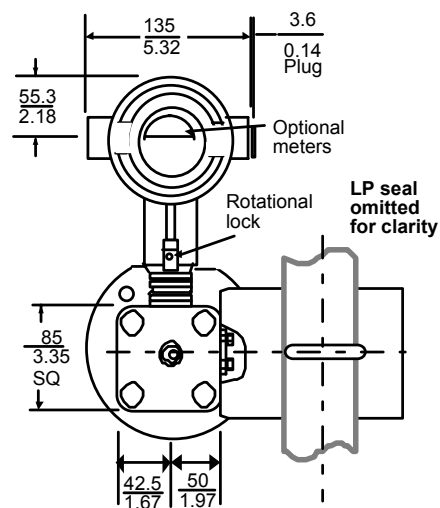
**STR14G, STR17G  
LGP/I Remote Seal  
with Horizontal  
Pipe Mount**



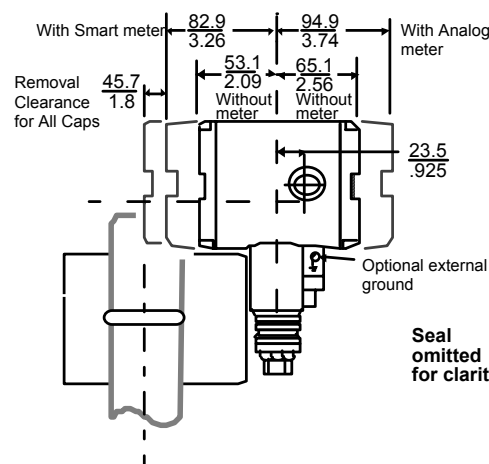
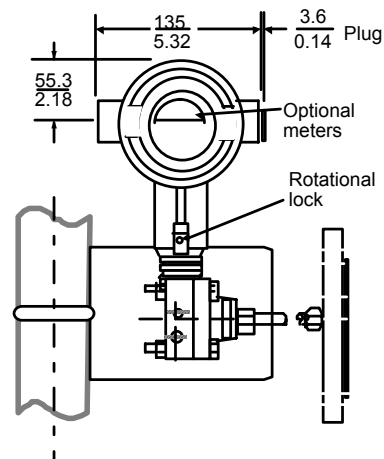
**Figure 9a** —Approximate horizontal mounting dimensions for Remote Seal Transmitter.



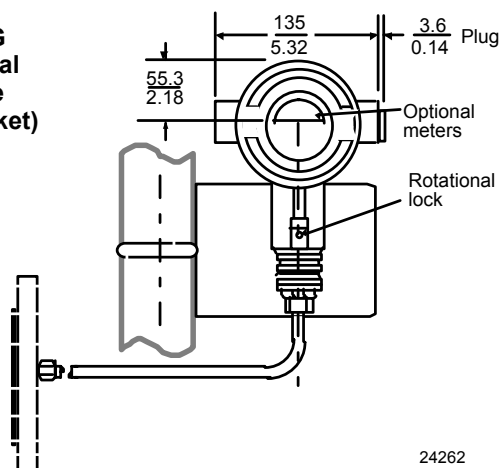
**STR12D, STR13D  
DP/I Remote Seal  
with Vertical  
Pipe Mount**



**STR14A  
AP/I Remote Seal  
with Vertical  
Pipe Mount**



**STR14G, STR17G  
LGP/I Remote Seal  
with Vertical Pipe  
Mount (Flat Bracket)**



24262

**Figure 9b** —Approximate vertical mounting dimensions for Remote Seal Transmitter.



Options	Ordering Information
<b>Mounting Bracket</b> The angle mounting bracket is available in either zinc-plated carbon steel or stainless steel and is suitable for horizontal or vertical mounting on a two inch (50 millimeter) pipe, as well as wall mounting. An optional flat mounting bracket is also available in carbon steel for two inch (50 millimeter) pipe mounting.	Contact your nearest Honeywell sales office, or
<b>Indicating Meter (ME and SM Options)</b> Two integral meter options are available. An analog meter (option ME) is available with a 0 to 100% linear scale. The Smart Meter (option SM) provides an LCD display for both analog and digital output and can be configured to display pressure in pre-selected engineering units.	In the U.S.: Honeywell Industrial Automation & Control 16404 North Black Canyon Hwy. Phoenix, AZ 85053 1-800-288-7491
<b>HART Protocol Compatibility (Option HC)</b> An optional electronics module is available for the ST 3000 that provides HART Protocol compatibility. Transmitters with the HART Option are compatible with the AMS System. (Contact your AMS Supplier if an upgrade is required.)	In Canada: The Honeywell Centre 155 Gordon Baker Rd. North York, Ontario M2H 3N7 1-800-461-0013
<b>Lightning Protection (Option LP)</b> A terminal block with circuitry that protects the transmitter from transient surges induced by nearby lightning strikes is available.	In Latin America: Honeywell Inc. 480 Sawgrass Corporate Parkway, Suite 200 Sunrise, FL 33325 (954) 845-2600
<b>Indicator Configuration (Option CI)</b> Provides custom configuration of Smart Meters	In Europe and Africa: Honeywell S. A. Avenue du Bourget 1 1140 Brussels, Belgium
<b>Tagging (Option TG)</b> Up to 30 characters can be added on the stainless steel nameplate mounted on the transmitter's electronics housing at no extra cost. Note that a separate nameplate on the meter body contains the serial number and body-related data. A stainless steel wired on tag with additional data of up to 4 lines of 28 characters is also available. The number of characters for tagging includes spaces.	In Eastern Europe: Honeywell Praha, s.r.o. Budejovicka 1 140 21 Prague 4, Czech Republic
<b>Transmitter Configuration (Option TC)</b> The factory can configure the transmitter linear/square root extraction, damping time, LRV, URV and mode (analog/digital) and enter an ID tag of up to eight characters and scratchpad information as specified.	In the Middle East: Honeywell Middle East Ltd. Khalifa Street, Sheikh Faisal Building Abu Dhabi, U. A. E.
<b>Custom Calibration and ID in Memory (Option CC)</b> The factory can calibrate any range within the scope of the transmitter's range and enter an ID tag of up to eight characters in the transmitter's memory.	In Asia: Honeywell Asia Pacific Inc. Honeywell Building, 17 Changi Business Park Central 1 Singapore 486073 Republic of Singapore
<b>FOUNDATION Fieldbus (Option FF)</b> Equips transmitter with FF protocol for use in 31.25 kbit/s FF networks. See document 34-ST-03-72 for additional information on ST 3000 Fieldbus transmitters.	In the Pacific: Honeywell Pty Ltd. 5 Thomas Holt Drive North Ryde NSW Australia 2113 (61 2) 9353 7000
	In Japan: Honeywell K.K. 14-6 Shibaura 1-chrome Minato-ku, Tokyo, Japan 105-0023
Or, visit Honeywell on the World Wide Web at: <a href="http://www.honeywell.com">http://www.honeywell.com</a>	

Specifications are subject to change without notice.

## Model Selection Guide (34-ST-16-32)

### Instructions

- Select the desired Key Number. The arrow to the right marks the selection available.
- Make one selection from each Table I and II using the column below the proper arrow.
- Select as many Table III options as desired (if no options or approvals are desired, specify 9X).  
A (♦) denotes unrestricted availability. A letter denotes restricted availability.  
Restrictions follow Table IV.

List Price equals  
the sum of all  
selections made

Key Number      I      II      III (Optional)      IV  
 [ ] - [ ] - [ ] - [ ] + [ ]

KEY NUMBER	Description	Selection	Availability
0-10" to 0-400" H <sub>2</sub> O/0-25 to 0-1000 mbar		STR12D (Note)	↓
Body Rating*: 3000 psi (172 bar) Compound Characterized			
0-5 to 0-100 psi/0-0.34 to 0-7 bar		STR13D	↓
Body Rating*: 3000 psi (172 bar)			

**Note:** With Model STR12D, Table III, Option CM must be specified.

\* Remote seal system pressure rating is body rating or seal rating, whichever is less.

**TABLE I - METER BODY**

Number of Seals	1 Remote Seal (High Side)	1 _ _	♦ ♦
	2 Remote Seals	2 _ _	♦ ♦
	1 Remote Seal (Low Side)	3 _ _	♦ ♦
Fill Fluid (Meter Body)	Silicone (DC 200)	_ 1 _	♦ ♦
	CTFE	_ 2 _	q q
<b>Construction</b>	<b>Non-Wetted Adapter Head Material</b>		
Standard Dual Head	316 St. St.	_ _ A	♦ ♦
	Carbon St. (zinc-plated)	_ _ B	♦ ♦
	316 St. St. for Close-Couple	_ _ D	y y

See Specification Sheet 34-ST-03-64 for figures on construction.

## Model Selection Guide, cont.

TABLE II - SEALS						STR1_D			
Format for Seal Selection: Specify 12 characters						Selection		2	3
<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>Common      Required Seal</div> <p><b>Note:</b> The first 3 characters are common to all seals. When selecting required seal, you must specify only the 9 selections within the required seal.</p>									
Secondary Fill	Silicone (DC 200)				1		♦	♦	
	CTFE				2		♦	♦	
	Silicone (DC 704)				3		p	p	
	Neobee(M20) **				4		♦	♦	
	Syltherm 800 ***				5		p	p	
Connection of Remote Seal to Meter Body	Capillary Length	5 feet	1.5 m	SS Armor	_ A _ _ _ _ _	♦	♦		
		10 feet	3.0 m		_ B _ _ _ _ _	♦	♦		
		15 feet	4.5 m		_ C _ _ _ _ _	♦	♦		
		20 feet	6.1 m		_ D _ _ _ _ _	♦	♦		
		25 feet	7.5 m		_ E _ _ _ _ _	♦	♦		
		35 feet	10.7 m	_ F _ _ _ _ _	♦	♦			
		PVC Coated SS Armor	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 _ _ _ _ _	z	z		
	No Selection				_ _ 0 _ _ _ _	♦	♦		
Flush Flanged Seal	Diaphragm Diameter	Flange Size	Flange Pressure Rating *		_ _ _ AFA _ _ _ _ _ _ _ AFC _ _ _ _ _ _ _ AFM _ _ _ _	♦ ♦ ♦ ♦ ♦ ♦			
	3.5"	3"	ANSI Class 150 ANSI Class 300 DIN DN80-PN40						
	Wetted Material		Diaphragm	Upper Insert			_ _ _ _ _ AA _ _ _ _ _ _ _ _ AB _ _ _ _ _ _ _ _ AC _ _ _ _ _ _ _ _ AE _ _ _	♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦	
			316L SS	316 St. St.					
			Hastelloy C	316 St. St.					
			Hastelloy C	Hastelloy C					
	Non-Wetted Material (upper)		Monel		Monel				
			CS with Polyester Powder Coating						
	Bolts		No Selection		_ _ _ _ _ 0 _ _	♦ ♦			
	Sytles		No Selection		_ _ _ _ _ 0 _ _	♦ ♦			
	Gasket		No Selection		_ _ _ _ _ 0 _ _	♦ ♦			

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

\*\* Limited vacuum availability.

\*\*\* Minimum static pressure requirement. No vacuum allowed. See Specifications' Figure 4.

Table II continued next page

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

## Model Selection Guide, cont.

STR1\_D ↓

TABLE II - SEALS (continued)						Selection		2	3
Flush Flanged Seal with Lower	Diaphragm Diameter	Flange Size	Flange Pressure Rating *	Const. - See Spec. Figure 34-ST-03-64	Construction - See Spec. 34-ST-03-64 figure				
	2.9"	1/2"	ANSI 150	12	--- CAA ---	t	t		
		1"	ANSI 150	12	--- CCA ---	t	t		
			ANSI 300	12	--- CCC ---	t	t		
		1-1/2"	ANSI 150	11	--- CGA ---	t	t		
			ANSI 300	11	--- CGC ---	t	t		
		2"	ANSI 150	11	--- CDA ---	t	t		
			ANSI 300	11	--- CDC ---	t	t		
	4.1"	1/2"	ANSI 150	12	--- DAA ---	♦	♦		
		1"	ANSI 150	12	--- DCA ---	♦	♦		
			ANSI 300	12	--- DCC ---	♦	♦		
		1-1/2"	ANSI 150	12	--- DGA ---	♦	♦		
			ANSI 300	12	--- DGC ---	♦	♦		
		2"	ANSI 150	12	--- DDA ---	♦	♦		
			ANSI 300	11	--- DDC ---	♦	♦		
		3"	ANSI 150	11	--- DFA ---	♦	♦		
			ANSI 300	11	--- DFC ---	♦	♦		
	Wetted Material		Diaphragm	Lower					
			316L SS	316 St. St.	--- BA ---	♦	♦		
			Hastelloy C	316 St. St.	--- BB ---	♦	♦		
			Hastelloy C	Hastelloy C	--- BC ---	♦	♦		
			Monel	Monel	--- BE ---	♦	♦		
			Tantalum	316 St. St.	--- BF ---	♦	♦		
			Tantalum	Hastelloy C	--- BG ---	♦	♦		
	Non-Wetted Material (upper, upper insert)		Upper	Upper Insert					
			316 St. St.	316 St. St.	--- 4 ---	♦	♦		
			CS	316 St. St.	--- 5 ---	♦	♦		
	Bolts		No Selection		--- 0 ---	♦	♦		
	Styles		Without 1/4" NPT Flushing Connection		--- 0 ---	♦	♦		
			With 1/4" NPT Flushing Connection		--- 7 ---	♦	♦		
	Gasket		Klinger C-4401 (non-asbestos)		--- K ---	c	c		
			Grafoil		--- G ---	d	d		

Table II continued next page

\* Standard facing 125-250 AARH RF (raised face) serrated finish.

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

# Model Selection Guide, cont.

				STR1_D		
				Selection		
TABLE II - SEALS (continued)				2	3	
Flange Seal with Extended Diaphragm	Diaphragm Diameter	Flange Size	Flange Pressure Rating *			
	2.9" (2.85")	3" (2.85" OD extension)	ANSI Class 150	ANSI Class 300	ANSI Class 150	ANSI Class 300
			DIN DN80-PN40	DIN DN100-PN40	DIN DN80-PN40	DIN DN100-PN40
	3.5"	4" (3.70" OD extension)	ANSI Class 150	ANSI Class 300	ANSI Class 150	ANSI Class 300
			DIN DN80-PN40	DIN DN100-PN40	DIN DN80-PN40	DIN DN100-PN40
	Wetted Material		Diaphragm	Lower		
			316L SS	316 St. St.	316L SS	316 St. St.
			Hastelloy C	316 St. St.	Hastelloy C	316 St. St.
			Hastelloy C	Hastelloy C	Hastelloy C	Hastelloy C
	Non-Wetted Material (flange)		CS with Polyester Powder Coating			
Pancake Seal	Bolts		No Selection			
	Extension Length		2"			
			4"			
			6"			
			No Selection			
	Diaphragm Diameter	Flange Size	Flange Pressure Rating Dependent on customer flange			
	3.5"	3"	ANSI Class 150/300/600			
	Wetted Material		Diaphragm	Body		
			316L SS	316 St. St.	316L SS	316 St. St.
			Hastelloy C	316 St. St.	Hastelloy C	316 St. St.
			Hastelloy C	Hastelloy C	Hastelloy C	Hastelloy C
			Monel	Monel	Monel	Monel
	Non-Wetted Material		No Selection			
	Bolts		No Selection			
	Styles		No Selection			
			No Selection			

Table II continued next page

\* Standard facing 125-250 AARH RF (raised face) serrated finish.

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

## Model Selection Guide, cont.

STR1\_D  
↓ ↓

TABLE II - SEALS (continued)

					Selection	2	3
Chemical Tee "Taylor" Wedge	Diaphragm Diameter	Flange Size	Flange Pressure Rating				
	3.5"	Taylor Wedge 5" O.D.	750 psi		___ HMO ___	v	v
	Wetted Material		Diaphragm	Lower			
			316L SS	316 St. St.	___ HA ___	♦	♦
			Hastelloy C	316 St. St.	___ HB ___	♦	♦
	Non-Wetted Material		No Selection		___ 0 ___	♦	♦
	Bolts		No Selection		___ 0 ___	♦	♦
	Styles		No Selection		___ 0 ___	♦	♦
			No Selection		___ 0 ___	♦	♦
Seal with Threaded Process Connection	Diaphragm Diameter	Threaded Process Connection Size (NPT Female)	Pressure Rating				
			CS Bolts	304 SS Bolts			
	2.9"	1/2" NPT	2500 psi	1250 psi	___ KJG ___	t	t
		3/4" NPT			___ KKG ___	t	t
		1" NPT			___ KLG ___	t	t
	4.1"	1/2" NPT	1500 psi	750 psi	___ LJG ___	♦	♦
		3/4" NPT			___ LKG ___	♦	♦
		1" NPT			___ LLG ___	♦	♦
	Wetted Material		Diaphragm	Lower			
			316L SS	CS	___ JA ___	♦	♦
			316L SS	316 St. St.	___ JB ___	♦	♦
			Hastelloy C	316 St. St.	___ JC ___	♦	♦
			Hastelloy C	Hastelloy C	___ JD ___	♦	♦
			Monel	Monel	___ JE ___	♦	♦
			Tantalum	316 St. St.	___ JF ___	♦	♦
			Tantalum	Hastelloy C.	___ JG ___	♦	♦
	Non-Wetted Material (upper)		CS with Polyester Powder Coating		___ A ___	♦	♦
			Stainless Steel		___ C ___	w	w
					___ D ___	♦	♦
	Bolts		C.S.		___ C ___	♦	♦
			304 St. St.		___ D ___	♦	♦
	Styles		W/O Flushing Connection		___ A ___	♦	♦
			With Flushing Connection		___ F ___	♦	♦
	Gasket		Klinger C-4401 (non-asbestos)		___ K ___	c	c
			Grafoil		___ G ___	d	d

Table II continued next page

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

## Model Selection Guide, cont.

STR1\_D

TABLE II - SEALS (continued)

				Selection	2	3
Sanitary Seal	Diaphragm Diameter	Flange Size	Pressure Rating			
	2.9"	3"	Customer clamp rating or 600 psi, whichever is less	___ PF0 ___	t	t
	4.1"	4"		___ QG0 ___	•	•
			Diaphragm	Body		
	Wetted Material		316L SS	316 St. St.	___ N A ___	• •
	Non-Wetted Material		No Selection		___ 0 ___	• •
	Bolts		No Selection		___ 0 ___	• •
	Styles		Tri-Clover Tri-Clamp		___ 8 ___	• •
	Gasket		No Selection		___ 0 ___	• •

Note: All sanitary seals have dairy grade 3A approval.

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

TABLE III - OPTIONS

None	00	•	•	
FOUNDATION Fieldbus Communications	FF	r	r	b
HART Protocol compatible electronics	HC	e	e	
Analog Meter (0-100 Even 0-10 Square Root)	ME	•	•	b
Smart Meter	SM	•	•	
Customer Configuration of Smart Meter	CI	f	f	b
Local Zero & Span	ZS	m	m	
Local Zero	LZ	x	x	b
Lightning Protection	LP	•	•	
Custom Calibration and I.D. in Memory	CC	•	•	
Transmitter Configuration - non-Fieldbus	TC	•	•	
Write Protection	WP	•	•	
A286SS (NACE) Bolts and 302/304SS (NACE) Nuts for Heads	CR	•	•	
Stainless Steel Customer Wired-On Tag	TG	•	•	
(4 lines, 28 characters per line, customer supplied information)				
Stainless Steel Customer Wired-On Tag (blank)	TB	•	•	
Mounting Bracket - Carbon Steel	MB	•	•	
Mounting Bracket - ST. ST.	SB	•	•	b
Flat Mounting Bracket	FB	•	•	
316 ST.ST. Electronics Housing - with M20 Conduit Connections	SH	n	n	
1/2" NPT to M20 316SS Conduit Adapter (BASEEFA EEx d IIC)	A1	n	n	
1/2" NPT to 3/4" NPT 316 SS Conduit Adapter	A2	u	u	b
Stainless Steel Housing with M20 to 1/2" NPT 316 SS Conduit Adapter (use for FM and CSA Approvals)	A3	i	i	
Clean Transmitter for Oxygen or Chlorine Service with Certificate	0X	h	h	
Over-Pressure Leak Test with F3392 Certificate	TP	•	•	
Calibration Test Report and Certificate of Conformance (F3399)	F1	•	•	b
Certificate of Conformance (F3391)	F3	•	•	
Certificate of Origin (F0195)	F5	•	•	
FMEDA (SIL) Certificate	F6	•	•	
NACE Certificate (F0198)	F7	o	o	
Additional Warranty - 1 year	W1	•	•	
Additional Warranty - 2 years	W2	•	•	b
Additional Warranty - 3 years	W3	•	•	
Additional Warranty - 4 years	W4	•	•	

Table III continued next page

### Model Selection Guide, cont.

STR1\_D



TABLE III - OPTIONS (continued)

Selection

Approval Body	Approval Type	Location or Classification		2	3
No hazardous location approvals			9X	♦	♦
Factory Mutual	Explosion Proof	Class I, Div. 1, Groups A,B,C,D	1C	♦	♦
	Dust Ignition Proof	Class II, III Div. 1, Groups E,F,G			
	Non-Incendive	Class I, Div. 2, Groups A,B,C,D			
	Intrinsically Safe	Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G			
CSA	Explosion Proof	Class I, Div. 1, Groups B,C,D	2J	♦	♦
	Dust Ignition Proof	Class II, III, Div. 1, Groups E,F,G			
	Intrinsically Safe	Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G			
SA (Australia)	Intrinsically Safe	Ex ia IIC T4	4G	♦	♦
	Non-Sparking	Ex n IIC T6 (T4 with SM option)			
ATEX*	Intrinsically Safe, Zone 0/1	<del>Ex</del> II 1 G EEx ia IIC T4, T5, T6	3S	♦	♦
	Flameproof, Zone 1	<del>Ex</del> II 2 G EEx d IIC T5, T6, Enclosure IP 66/67	3D	♦	♦
	Non-Sparking, Zone 2	<del>Ex</del> II 3 G EEx nA, IIC T6 (Honeywell). Enclosure IP 66/67	3N	♦	♦

b

\*See ATEX installation requirements in the ST 3000 User's Manual 97/23/EC Pressure Equipment Directive (PED)

The ST 3000 pressure transmitters listed in this Model Selection Guide are in conformity with the essential requirements of the PED. A formal statement from TÜV Industry Service Group of TÜV America, Inc., a division of TÜV Süddeutschland, a Notified Body regarding the Pressure Equipment Directive, is available upon request

TABLE IV

Factory Identification	XXXX	♦	♦
------------------------	------	---	---



# Model Selection Guide, cont.

## RESTRICTIONS

Restriction		Available Only With		Not Available With
Letter	Table	Selection	Table	Selection
a		Pending		
b		Select only one option from this group		
c			II	----- BF -----, ----- BG -----, ----- JF -----, ----- JG -----,
d	II	----- BF -----, ----- BG -----, ----- JF -----, ----- JG -----,		
e			III	4G
f	III	SM		
h	I, II	_ 2 _ - 2 _ _ _ _ _ _ _ _		
i	III	1C or 2J		
m			III	ME, FF
n			III	1C, 2J
o	III	CR		
p			II	DC704 and Syltherm 800 fills and close-couple require SS seal upper. ----- CAA _ 5 _ _ _ _ _ , ----- CCA _ 5 _ _ _ _ _ , ----- CCC _ 5 _ _ _ _ _ , ----- DAA _ 5 _ _ _ _ _ , ----- DCA _ 5 _ _ _ _ _ , ----- DCC _ 5 _ _ _ _ _ , ----- DGA _ 5 _ _ _ _ _ , ----- DGC _ 5 _ _ _ _ _ , ----- DDA _ 5 _ _ _ _ _ , ----- GE _ _ _ _ _ , ----- A _ _ _ _ _
q	II	2 _ _ _ _ _ _ _ _ _ _ , 4 _ _ _ _ _ _ _ _ _ _		
r			III	TC, ME, 4G, 3S
s		Must be specified with Model STR12D		
t			I II	2 _ _ _ B _ _ _ _ _ _ _ _ _ _ , _ C _ _ _ _ _ _ _ _ _ _ , _ D _ _ _ _ _ _ _ _ _ _ , _ E _ _ _ _ _ _ _ _ _ _ , _ F _ _ _ _ _ _ _ _ _ _ , _ H _ _ _ _ _ _ _ _ _ _ , _ J _ _ _ _ _ _ _ _ _ _ , _ K _ _ _ _ _ _ _ _ _ _ , _ L _ _ _ _ _ _ _ _ _ _ , _ M _ _ _ _ _ _ _ _ _ _

### Model Selection Guide, cont.

**RESTRICTIONS Continued**

<b>u</b>	III	1C, 2J		
<b>w</b>			II	_____JA_____
<b>x</b>	III	FF, SM		
<b>y</b>	I	1 __, 3 __	III	MB, SB, FB
	II	_ 2 _____	II	DC704 and Syltherm 800 fills and close-couple require SS seal upper. ____CAA____5____, ____CCA____5____, ____CCC____5____, ____DAA____5____, ____DCA____5____, ____DCC____5____, ____DGA____5____, ____DGC____5____, ____DDA____5____, _______GE_____, _______A_____
<b>z</b>	I	__D		

**Note:** See ST-83 for Published Specials with pricing.  
 See ST-89 and User's Manual for part numbers.  
 See ST-OE-9 for OMS Order Entry Information including TC, manuals, certificates, drawings and SPINS.  
 See ST-OD-1 for tagging, ID, Transmitter Configuration (TC) and calibration including factory default values.  
 To request a quote for a non-published "special", fax RFQ w/ Application Data Sht (34-ST-18-01) to Mktg. Applications  
 See Specification 34-ST-03-64 for Seal dimensions.

## Model Selection Guide (34-ST-16-33)

### Instructions

- Select the desired Key Number. The arrow to the right marks the selection available.
- Make one selection from each Table I and II using the column below the proper arrow.
- Select as many Table III options as desired (if no options or approvals are desired, specify 9X).  
A (\*) denotes unrestricted availability. A letter denotes restricted availability.  
Restrictions follow Table IV.

List Price equals  
the sum of all  
selections made

Key Number      I      II      III (Optional)      IV  
|-----| - |-----| - |-----| - |-----| + |XXXX|

KEY NUMBER	Description	Selection	Availability
0-5 to 0-500 psi/0-0.34 bar to 0-35 bar Body Rating *: 500 psi (35 bar)		STR14G	↓
0-100 to 0-3000 psi/0-7 bar to 210 bar Body Rating *: 3000 psi (172 bar)		STR17G	↓
0-5 to 0-500 psia/0-0.34 to 0-35 bar Body Rating *: 500 psi (35 bar)		STR14A	↓

\* Remote seal system pressure rating is body rating or seal rating, whichever is less.

TABLE I - METER BODY

Number of Seals	1 Remote Seal (High Side)	1 _ _	♦	♦	♦
Fill Fluid	Silicone (DC 200)	_ 1 _	♦	♦	♦
(Meter Body)	CTFE	_ 2 _	q	q	q
<b>Construction</b>	<b>Non-Wetted Material</b>				
Standard In-line	316 St. St. Bonnet	_ _ A	♦	♦	
Design	316 St. St. Bonnet for Close-Couple	_ _ D	y	y	
Standard Single	316 St. St. Adapter Head	_ _ A			♦
Head Design	316 St. St. Head for Close-Couple	_ _ D			y

See Specification Sheet 34-ST-03-64 for figures on construction.

## Model Selection Guide, cont.

TABLE II - SEALS										STR14A STR1_G		Selection	4	7
Format for Seal Selection: Specify 12 characters														
<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>CommonRequired Seal</div>														
<b>Note:</b> The first 3 characters are common to all seals. When selecting required seal, you must specify only the 9 selections within the required seal.														
Secondary Fill		Silicone (DC 200) CTFE Silicone (DC 704) Neobee (M20) ** Syltherm 800 ***								1 _____ 2 _____ 3 _____ 4 _____ 5 _____	♦ ♦ p ♦ p	♦ ♦ p ♦ p		
Connection of Remote Seal to Meter Body		Capillary Length	5 feet	1.5 m	SS Armor	_ A _____	♦	♦	♦					
			10 feet	3.0 m		_ B _____	♦	♦	♦					
			15 feet	4.5 m		_ C _____	♦	♦	♦					
			20 feet	6.1 m		_ D _____	♦	♦	♦					
			25 feet	7.5 m		_ E _____	♦	♦	♦					
			35 feet	10.7 m		_ F _____	♦	♦	♦					
			5 feet	1.5 m	PVC Coated SS Armor	_ G _____	♦	♦	♦					
			10 feet	3.0 m		_ H _____	♦	♦	♦					
			15 feet	4.5 m		_ J _____	♦	♦	♦					
			20 feet	6.1 m		_ K _____	♦	♦	♦					
			25 feet	7.5 m		_ L _____	♦	♦	♦					
			35 feet	10.7 m		_ M _____	♦	♦	♦					
		2 inch long SS nipple close-coupled				_ 2 _____	z	z	z					
		No Selection										_ 0 _____	♦	♦
Flush Flanged Seal		Diaphragm Diameter	Flange Size	Flange Pressure Rating *										
		3.5"	3"	ANSI Class 150		___ AFA _____	♦	♦	♦					
				ANSI Class 300		___ AFC _____	♦	♦	♦					
				DIN DN80-PN40		___ AFM _____	♦	♦	♦					
		Wetted Material		Diaphragm	Upper Insert									
				316L SS	316 St. St.	___ AA _____	♦	♦	♦					
				Hastelloy C	316 St. St.	___ AB _____	♦	♦	♦					
				Hastelloy C	Hastelloy C	___ AC _____	♦	♦	♦					
		Non-Wetted Material (upper)		Monel		Monel	___ AE _____	♦	♦	♦				
				CS with Polyester Powder Coating		___ 1 _____	♦	♦	♦					
		316 St. St.		___ 2 _____	♦	♦	♦							
Bolts		No Selection		___ 0 _____	♦	♦	♦							
Sytyles		No Selection		___ 0 _____	♦	♦	♦							
Gasket		No Selection		___ 0 _____	♦	♦	♦							

Table II continued next page

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

\*\* Limited vacuum availability.

\*\*\* Minimum static pressure requirement. No vacuum allowed. See Specification Figure 4.

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

# Model Selection Guide, cont.

TABLE II - SEALS (continued)					Selection		
Flush Flanged Seal with Lower	Diaphragm Diameter	Flange Size	Flange Pressure Rating*	Construct. Specification 34-ST-03-64		4	7
	2.4"	1"	ANSI 150	11	--- BCA ---	•	•
			ANSI 300	11	--- BCC ---	•	•
		1-1/2"	ANSI 150	11	--- BGA ---	•	•
			ANSI 300	11	--- BGC ---	•	•
		2"	ANSI 150	11	--- BDA ---	•	•
			ANSI 300	11	--- BDC ---	•	•
		3"	ANSI 150	11	--- BFA ---	•	•
			ANSI 300	11	--- BFC ---	•	•
	2.9"	1/2"	ANSI 150	12	--- CAA ---	•	•
		1"	ANSI 150	12	--- CCA ---	•	•
			ANSI 300	12	--- CCC ---	•	•
		1-1/2"	ANSI 150	11	--- CGA ---	•	•
			ANSI 300	11	--- CGC ---	•	•
		2"	ANSI 150	11	--- CDA ---	•	•
			ANSI 300	11	--- CDC ---	•	•
	4.1"	1/2"	ANSI 150	12	--- DAA ---	•	•
		1"	ANSI 150	12	--- DCA ---	•	•
			ANSI 300	12	--- DCC ---	•	•
		1-1/2"	ANSI 150	12	--- DGA ---	•	•
			ANSI 300	12	--- DGC ---	•	•
		2"	ANSI 150	12	--- DDA ---	•	•
			ANSI 300	11	--- DDC ---	•	•
		3"	ANSI 150	11	--- DFA ---	•	•
			ANSI 300	11	--- DFC ---	•	•
	Wetted Material		Diaphragm	Lower	--- BA ---	•	•
			316L SS	316 St. St.	--- BB ---	•	•
			Hastelloy C	316 St. St.	--- BC ---	•	•
			Hastelloy C	Hastelloy C	--- BE ---	•	•
			Monel	Monel	--- BF ---	•	•
			Tantalum	316 St. St.	--- BG ---	•	•
	Non-Wetted Material (upper, upper insert)		Upper	Upper Insert	--- 4 ---	•	•
			316 St. St.	316 St. St.	--- 5 ---	•	•
			CS	316 St/ St.	--- 0 ---	•	•
	Bolts		No Selection		--- 0 ---	•	•
	Styles		Without 1/4" NPT Flushing Connection		--- 0 ---	•	•
			With 1/4" NPT Flushing Connection		--- 7 ---	•	•
	Gasket		Klinger C-4401 (non-asbestos)		--- K ---	c	c
			Grafoil		--- G ---	d	d

Table II continued next page

\* Standard facing 125-250 AARH RF (raised face) serrated finish.

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

## Model Selection Guide, cont.

TABLE II - SEALS (continued)					Selection		
Flange Seal with Extended Diaphragm	Diaphragm Diameter	Flange Size	Flange Pressure Rating *			4	7
	2.9" (2.85")	3" (2.85" OD extension)	ANSI Class 150	ANSI Class 300	--- EFA ---	*	*
				DIN DN80-PN40	--- EFC ---	*	*
					--- EFM ---	*	*
	3.5"	4" (3.70" OD extension)	ANSI Class 150	ANSI Class 300	--- FGA ---	*	*
				DIN DN100-PN40	--- FGC ---	*	*
					--- FGP ---	*	*
	Wetted Material		Diaphragm	Lower	--- EA ---	*	*
			316L SS	316 St. St.	--- EB ---	*	*
			Hastelloy C	316 St. St.	--- EC ---	*	*
Pancake Seal	Non-Wetted Material (flange)		CS with Polyester Powder Coating		--- 7 ---	*	*
	Bolts		No Selection		--- 0 ---	*	*
	Extension Length		2"		--- 2 ---	*	*
			4"		--- 4 ---	*	*
			6"		--- 6 ---	*	*
			No Selection		--- 0 ---	*	*
	Diaphragm Diameter	Flange Size	Flange Pressure Rating** Dependent on customer flange				
	3.5"	3"	ANSI Class 150/300/600		--- GFA ---	*	*
Pancake Seal	Wetted Material		Diaphragm	Body	--- GA ---	*	*
			316L SS	316 St. St.	--- GB ---	*	*
			Hastelloy C	316 St. St.	--- GC ---	*	*
			Hastelloy C	Hastelloy C	--- GE ---	*	*
	Non-Wetted Material		No Selection		--- 0 ---	*	*
	Bolts		No Selection		--- 0 ---	*	*
	Styles		No Selection		--- 0 ---	*	*
			No Selection		--- 0 ---	*	*

Table II continued next page

\* Standard facing 125-250 AARH RF (raised face) serrated finish.

\*\* **Caution:** Maximum working pressure of STR14G and STR14A transmitter is 500 psig and STR17G is 3000 psig. Damage to sensors may result if pressure limit is exceeded.**Note:** Remote seal system pressure rating is body rating or seal rating, whichever is less.

## Model Selection Guide, cont.

STR14A

STR1\_G

TABLE II - SEALS (continued)

Selection

4

7

	Diaphragm Diameter	Threaded Process Connection Size (NPT Female)	Pressure Rating						
			CS Bolts	304 SS					
				Bolts					
Seal with Threaded Process Connection	2.4"	1/2" NPT	2500 psi	1250 psi	___ JJG ___	*	*	t	
		3/4" NPT			___ JKG ___	*	*	t	
		1" NPT			___ JLG ___	*	*	t	
	2.9"	1/2" NPT			___ KJG ___	*	*	*	
		3/4" NPT			___ KKG ___	*	*	*	
		1" NPT			___ KLG ___	*	*	*	
	4.1"	1/2" NPT	1500 psi	750 psi	___ LJG ___	*	*	*	
		3/4" NPT			___ LKG ___	*	*	*	
		1" NPT			___ LLG ___	*	*	*	
	Wetted Material				Diaphragm	Lower		___ JA ___	*
			316L SS	CS		___ JB ___	*	*	*
			316L SS	316 St. St.		___ JC ___	*	*	*
			Hastelloy C	316 St. St.		___ JD ___	*	*	*
			Hastelloy C	Hastelloy C		___ JE ___	*	*	*
			Monel	Monel		___ JF ___	*	*	*
			Tantalum	316 St. St.		___ JG ___	*	*	*
			Tantalum	Hastelloy C.					
	Non-Wetted Material (upper)	CS with Polyester Powder Coating			___ A ___	*	*	*	
		Stainless Steel			___ C ___	w	w	w	
	Bolts	C.S.			___ C ___	*	*	*	
		304 St. St.			___ D ___	*	*	*	
	Styles	W/O Flushing Connection			___ A ___	*	*	*	
		With Flushing Connection			___ F ___	*	*	*	
	Gasket	Klinger C-4401 (non-asbestos)			___ K ___	c	c	c	
		Grafoil			___ G ___	d	d	d	

Table II continued next page

**\*\* Caution:** Maximum working pressure of STR14G and STR14A transmitter is 500 psig and STR17G is 3000 psig. Damage to sensor may result if pressure limit is exceeded.

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

## Model Selection Guide, cont.

STR14A

STR1\_G

TABLE II - SEALS (continued)

Selection

4

7

Sanitary Seal	Diaphragm Diameter	Flange Size	Pressure Rating					
	1.9"	2"	Customer clamp rating or 600 psi, whichever is less.		___ MD0 ___	♦	♦	
	2.4"	2-1/2"			___ NE0 ___	♦	♦	
	2.9"	3"			___ PF0 ___	♦	♦ ♦	
	4.1"	4"			___ QG0 ___	♦	♦ ♦	
	Wetted Material		Diaphragm	Body	___ N A ___	♦	♦ ♦	
	Non-Wetted Material		No Selection		___ 0 ___	♦	♦ ♦	
	Bolts		No Selection		___ 0 ___	♦	♦ ♦	
	Styles		Tri-Clover Tri-Clamp		___ 8 ___	♦	♦ ♦	
Gasket		No Selection		___ 0 ___	♦	♦ ♦		
Saddle Seal	Diaphragm Diameter	Size and Bolt Pattern	Seal Pressure Rating **					
	2.4"	for 3" pipe-Conoflow or 4" or larger pipe-Conoflow	C.S. Bolts	304 St. St. Bolts	___ RPK ___	♦	♦ t	
			1250 psi	1250 psi	___ RQK ___	♦	♦ t	
	Wetted Material		Diaphragm	Lower Housing	___ RA ___	♦	♦ ♦	
			316L SS	C. S.	___ RB ___	♦	♦ ♦	
			316L SS	316 St. St.	___ RC ___	♦	♦ ♦	
			Hastelloy C	316 St. St.	___ SB ___	♦	♦ ♦	
			316 LSS	N/A-Body Only	___ SC ___	♦	♦ ♦	
			Hastelloy C	N/A-Body Only	___ SC ___	♦	♦ ♦	
	Non-Wetted Material		Body	Bolts *	___ B ___	♦	♦ ♦	
			C. S.	C. S.	___ C ___	♦	♦ ♦	
	No Selection				___ 0 ___	♦	♦ ♦	
	Styles		No Selection		___ 0 ___	♦	♦ ♦	
	Gasket		No Selection		___ 0 ___	♦	♦ ♦	

Note: All sanitary seals have dairy grade 3A approval.

\* Bolts are not included with "Body Only" selection.

\*\* **Caution:** Maximum working pressure of STR14G and STR14A transmitter is 500 psig and STR17G is 3000 psig. Damage to sensor may result if pressure limit is exceeded.

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



## Model Selection Guide, cont.

TABLE III - OPTIONS		Selection	4	7	
None	00	•	•	•	
FOUNDATION Fieldbus Communications	FF	r	r	r	b
HART Protocol compatible electronics	HC	e	e	e	
Analog Meter (0-100 Even 0-10 Square Root)	ME	•	•	•	b
Smart Meter	SM	•	•	•	
Customer Configuration of Smart Meter	CI	f	f	f	b
Local Zero & Span	ZS	m	m	m	
Local Zero	LZ	x	x	x	b
Lightning Protection	LP	•	•	•	
Custom Calibration and I.D. in Memory	CC	•	•	•	
Transmitter Configuration - non-Fieldbus	TC	•	•	•	
Write Protection	WP	•	•	•	
A286SS (NACE) Bolts and 302/304SS (NACE) Nuts for Heads	CR	•	•	•	
Stainless Steel Customer Wired-On Tag	TG	•	•	•	
(4 lines, 28 characters per line, customer supplied information)					
Stainless Steel Customer Wired-On Tag (blank)	TB	•	•	•	
Mounting Bracket - Carbon Steel	MB	•	•	•	b
Mounting Bracket - ST. ST.	SB	•	•	•	
Flat Mounting Bracket	FB	•	•	•	b
316 ST.ST. Electronics Housing - with M20 Conduit Connections	SH	n	n	n	
1/2" NPT to M20 316SS Conduit Adapter (BASEEFA EEx d IIC)	A1	n	n	n	b
1/2" NPT to 3/4" NPT 316 SS Conduit Adapter	A2	u	u	u	
Stainless Steel Housing with M20 to 1/2" NPT 316 SS Conduit	A3	i	i	i	
Adapter (use for FM and CSA Approvals)					
Clean Transmitter for Oxygen or Chlorine Service with Certificate	0X	h	h	h	
Over-Pressure Leak Test with F3392 Certificate	TP	•	•	•	
Calibration Test Report and Certificate of Conformance (F3399)	F1	•	•	•	b
Certificate of Conformance (F3391)	F3	•	•	•	
Certificate of Origin (F0195)	F5	•	•	•	
FMEDA (SIL) Certificate	F6	•	•	•	
NACE Certificate (F0198)	F7	•	•	o	
Additional Warranty - 1 year	W1	•	•	•	b
Additional Warranty - 2 years	W2	•	•	•	
Additional Warranty - 3 years	W3	•	•	•	
Additional Warranty - 4 years	W4	•	•	•	
Approval Body	Approval Type	Location or Classification			
No hazardous location approvals			9X	•	•
Factory Mutual	Explosion Proof	Class I, Div. 1, Groups A,B,C,D	1C	•	•
	Dust Ignition Proof	Class II, III Div. 1, Groups E,F,G		•	•
	Non-Incendive	Class I, Div. 2, Groups A,B,C,D		•	•
	Intrinsically Safe	Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G		•	•
CSA	Explosion Proof	Class I, Div. 1, Groups B,C,D	2J	•	•
	Dust Ignition Proof	Class II, III, Div. 1, Groups E,F,G		•	•
	Intrinsically Safe	Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G		•	•
SA (Australia)	Intrinsically Safe	Ex ia IIC T4	4G	•	•
	Non-Sparking	Ex n IIC T6 (T4 with SM option)		•	•
ATEX*	Intrinsically Safe, Zone 0/1	Ex II 1 G EEx ia IIC T4, T5, T6	3S	•	•
	Flameproof, Zone 1	Ex II 2 G EEx d IIC T5, T6, Enclosure IP 66/67	3D	•	•
	Non-Sparking, Zone 2	Ex II 3 G EEx nA, IIC T6 (Honeywell). Enclosure IP 66/67	3N	•	•

\*See ATEX installation requirements in the ST 3000 User's Manual

97/23/EC Pressure Equipment Directive (PED)

The ST 3000 pressure transmitters listed in this Model Selection Guide are in conformity with the essential requirements of the PED. A formal statement from TÜV Industry Service Group of TÜV America, Inc., a division of TÜV Süddeutschland, a Notified Body regarding the Pressure Equipment Directive, is available upon request

TABLE IV

Factory Identification	XXXX	•	•	•
------------------------	------	---	---	---

## Model Selection Guide, cont.

### RESTRICTIONS

Restriction Letter	Table	Available Only With Selection	Table	Not Available With Selection
a		Pending		
b		Select only one option from this group		
c			II	----- BF -----, ----- BG -----, ----- JF -----, ----- JG -----,
d	II	----- BF -----, ----- BG -----, ----- JF -----, ----- JG -----,		
e			III	4G
f	III	SM		
h	I, II	_ 2 _ - 2 _		
i	III	1C or 2J		
m			III	ME, FF
n			III	1C, 2J
o	III	CR		
p			II	DC704 and Syltherm 800 fills and close-couple require SS seal upper. ----- CAA _ 5 -----, ----- CCA _ 5 -----, ----- CCC _ 5 -----, ----- DAA _ 5 -----, ----- DCA _ 5 -----, ----- DCC _ 5 -----, ----- DGA _ 5 -----, ----- DGC _ 5 -----, ----- DDA _ 5 -----, ----- GE -----, ----- A -----, ----- B -----, ----- BCA _ 5 -----
q	II	2 -----, 4 -----		
r			III	TC, ME, 4G, 3S
t	II	<b>See Figure 12 in Specification</b> _ A -----, _ G -----, _ B -----, _ H -----, _ 2 -----		
u	III	1C, 2J		
w			II	----- JA -----
x	III	FF, SM		

Restrictions continued next page

## Model Selection Guide, cont.

### RESTRICTIONS - (continued)

Restriction Letter	Table	Available Only With Selection	Table	Not Available With Selection
y	II	_ 2 _ _ _ _ _ _ _ _ ,	III II	MB, SB, FB DC704 and Syltherm 800 fills and close-couple require SS seal upper. _ _ _ CAA _ _ 5 _ _ _ , _ _ _ CCA _ _ 5 _ _ _ , _ _ _ CCC _ _ 5 _ _ _ , _ _ _ DAA _ _ 5 _ _ _ , _ _ _ DCA _ _ 5 _ _ _ , _ _ _ DCC _ _ 5 _ _ _ , _ _ _ DGA _ _ 5 _ _ _ , _ _ _ DGC _ _ 5 _ _ _ , _ _ _ DDA _ _ 5 _ _ _ , _ _ _ _ _ GE _ _ _ _ _ , _ _ _ _ _ A _ _ _ _ _ , _ _ _ _ _ B _ _ _ _ _ , _ _ _ BCA _ _ 5 _ _ _
z	I	_ _ D		

**Note:** See ST-83 for Published Specials with pricing.  
See ST-89 and User's Manual for part numbers.  
See ST-OE-9 for OMS Order Entry Information including TC, manuals, certificates, drawings and SPINS.  
See ST-OD-1 for tagging, ID, Transmitter Configuration (TC) and calibration including factory default values.  
To request a quotation for a non-published "special", fax RFQ with Application Data Sheet (34-ST-18-01) to Marketing Applications.  
See Specification 34-ST-03-64 for seal dimensions.

### Model Selection Guide, cont.

Type	Size	Non-wetted Material	Wetted Materials		Construction  See Figure	Dimension 3.5" Diaphragm Dia. (in.)	
			Diaphragm	Upper Insert		A	B
Flush Flanged Seal	3" 150	CS	316 LSS Hast C Hast C Monel Monel	SS SS Hast C SS Monel	10a	7.50	1.10
		SS	316 LSS Hast C Monel	N/A	10b 10a 10b		0.94 1.10 0.94
	3" 300	CS	316 LSS Hast C Hast C Monel Monel	SS SS Hast C SS Monel	10a	8.25	1.31
		SS	316 LSS Hast C Monel	N/A	10b 10a 10b		1.12 1.31 1.12
	DIN DN80- PN40	CS	316 LSS Hast C Hast C Monel Monel	SS SS Hast C SS Monel	10a	7.87	1.07
		SS	316 LSS Hast C Monel	N/A	10b 10a 10b		0.94 1.07 0.94

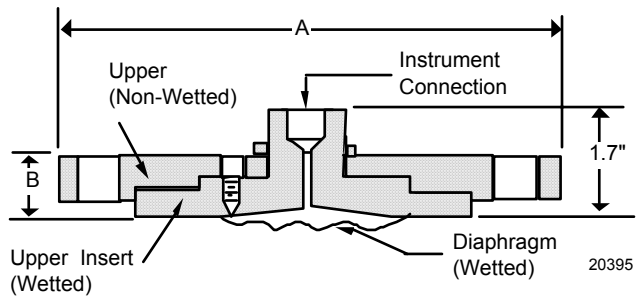


Figure 10a. Flush Flanged Seal

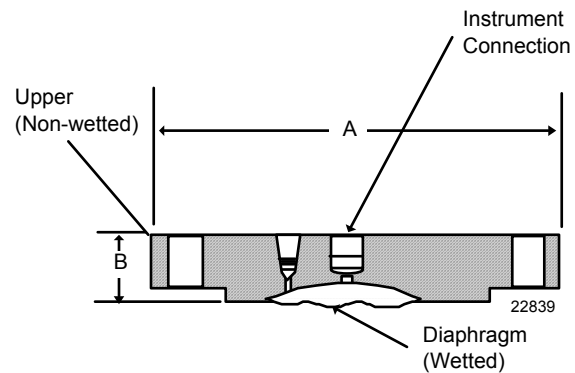


Figure 10b. Flush Flanged Seal

# Model Selection Guide, cont.

Type	Size	Dim.	2.4" Diaph. Dia. (in.)	2.9" Diaph. Dia. (in.)	4.1" Diaph. Dia. (in.)
Flush Flanged Seal with Lower	150	1/2"	A □ 3.50	□ 4.00	□ 5.30
			B □ 2.00	□ 1.90	□ 2.10
			C —	—	—
		1"	A ■ 4.00	□ 4.00	□ 5.30
			B ■ 1.70	□ 2.00	□ 2.10
			C ■ 1.10	—	—
		1-1/2"	A ■ 5.00	■ 5.00	□ 5.30
			B ■ 1.80	■ 1.80	□ 2.10
			C ■ 1.20	■ 1.20	—
		2"	A ■ 6.00	■ 6.00	□ 5.80
			B ■ 1.90	■ 1.80	□ 2.00
			C ■ 1.40	■ 1.30	—
		3"	A ■ 7.50	■ 7.50	■ 7.50
			B ■ 2.30	■ 2.30	■ 2.00
			C ■ 1.90	■ 1.90	■ 1.60
	300	1"	A ■ 4.90	□ 4.50	□ 5.30
			B ■ 1.90	□ 2.10	□ 2.10
			C ■ 1.30	—	—
		1-1/2"	A ■ 6.10	■ 6.10	□ 5.80
			B ■ 1.80	■ 1.80	□ 2.30
			C ■ 1.20	■ 1.30	—
		2"	A ■ 6.50	■ 6.50	■ 6.50
			B ■ 1.90	■ 1.80	■ 2.30
			C ■ 1.50	■ 1.40	■ 1.90
		3"	A ■ 8.30	■ 8.30	■ 8.30
			B ■ 2.70	■ 2.40	■ 2.30
			C ■ 2.10	■ 1.80	■ 2.10

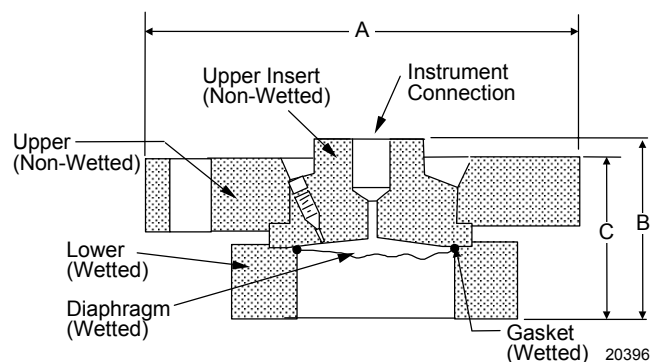
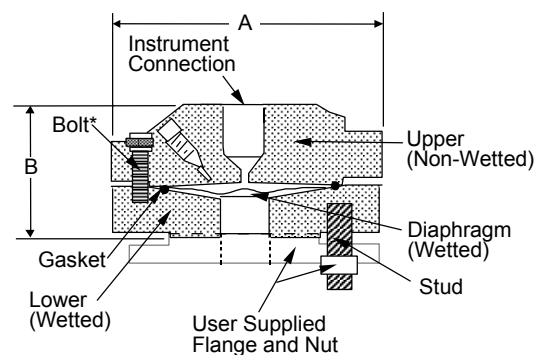


Figure 11. Flush Flanged Seal with Lower (■)



\*Bolts and Upper are same material.

20397

Figure 12. Flush Flanged Seal with Lower (□)

## Model Selection Guide, cont.

Type	Size	Dim.	2.4" Diaph. Dia. (in.)	2.9" Diaph. Dia. (in.)
Flanged Seal with Extended Diaphragm	3" 150	A	7.50	—
		B	0.94	—
		C*	2.85	—
	3" 300	A	8.25	—
		B	1.12	—
		C*	2.85	—
	DIN DN80- PN40	A	7.87	—
		B	0.94	—
		C*	2.85	—
	4" 150	A	—	9.00
		B	—	0.94
		C*	—	3.70
	4" 300	A	—	10.00
		B	—	1.25
		C*	—	3.70
	DIN DN100- PN40	A	—	9.25
		B	—	0.94
		C*	—	3.70

\*Designed to mate with Sch 40 pipe.

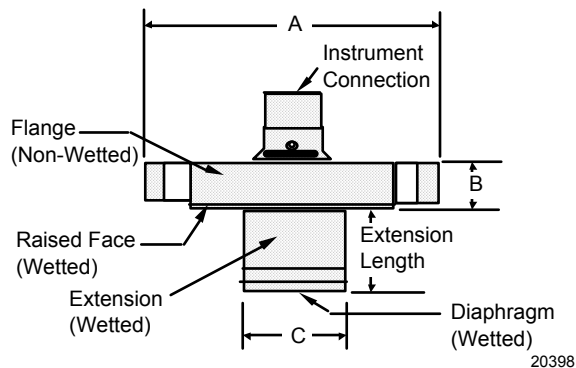


Figure 13. Flanged Seal with Extended Diaphragm

Type	Size	Dimension	3.5" Diaph. Dia. (in.)
Pancake Seal	3" 150/300/600	A B	5.00 0.90

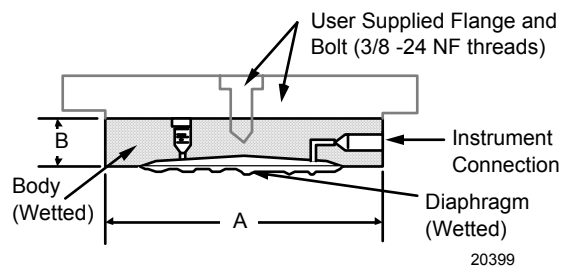


Figure 14. Pancake Seal

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

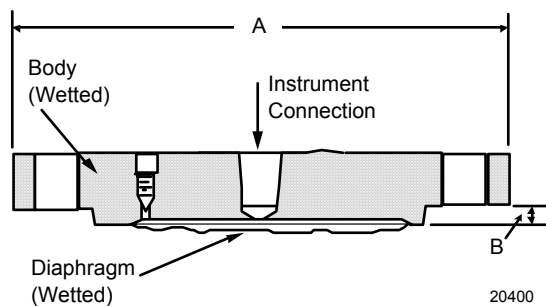


Figure 15. Chemical Tee "Taylor Wedge"

# Model Selection Guide, cont.

Type	Size	Dim.	2.4" Diaph. Dia. (in.)	2.9" Diaph. Dia. (in.)	4.1" Diaph. Dia. (in.)
Seal with Threaded Process Connection	1/4" or 1/2"	A B	3.50 1.80	4.00 1.80	5.30 1.80
	3/4" or 1"	A B	3.50 2.10	4.00 2.10	5.30 2.10

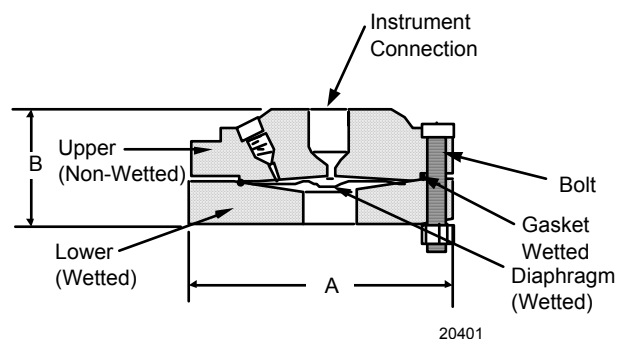


Figure 16. Seal with Threaded Process Connection

Type	Size	Dim.	1.9" Diaph. Dia. (in.)	2.4" Diaph. Dia. (in.)	2.9" Diaph. Dia. (in.)	4.1" Diaph. Dia. (in.)
Sanitary Seal	2"	A B	2.50 1.20	— —	— —	— —
	2-1/2"	A B	— —	3.00 1.20	— —	— —
	3"	A B	— —	— —	3.60 1.20	— —
	4"	A B	— —	— —	— —	4.7 1.0

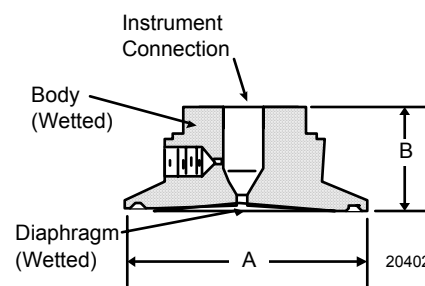


Figure 17. Sanitary Seal

Model Selection Guide, cont.

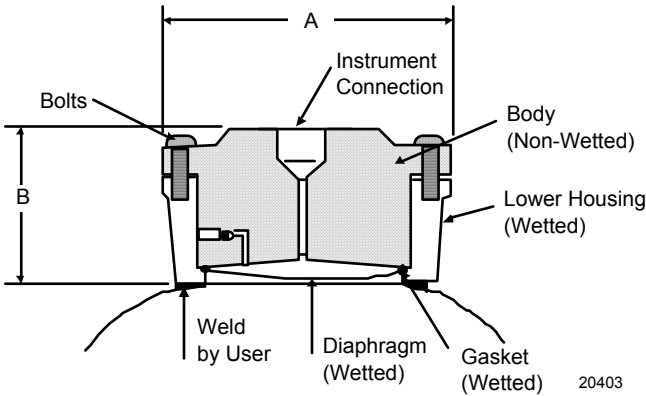


Figure 18. 3" Saddle Seal

Type	Size	Dimension	2.4" Diaph. Dia. (in.)
Saddle Seal	3"	A	3.50
		B	2.30
	4" or larger	A	3.50
		B	2.40

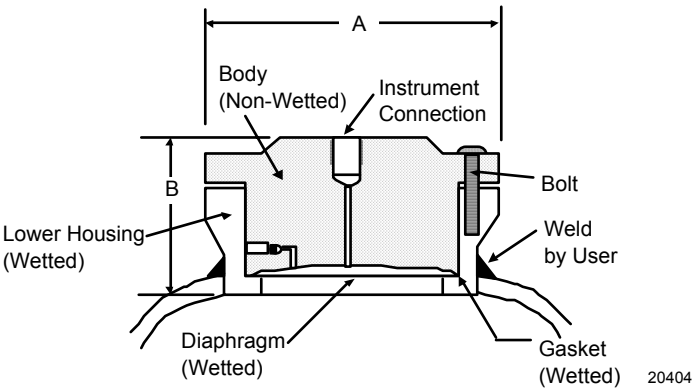


Figure 19. 4" or larger Saddle Seal

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