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
- Local display capabilities
- External zero, span, & configuration capability
- Polarity insensitive electrical connections
- 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.
- Modular design characteristics

Remote Seal/Transmitter Span & Range Limits:

<table>
<thead>
<tr>
<th>Model</th>
<th>URL (psig)</th>
<th>LRL (psig)</th>
<th>Max Span (psig)</th>
<th>Min Span (psig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STR73D</td>
<td>100 (7.0)</td>
<td>-100 (-7.0)</td>
<td>100 (7.0)</td>
<td>0.9 (0.062)</td>
</tr>
<tr>
<td>STR74G</td>
<td>500 (35.0)</td>
<td>-14.7 (-1.0)</td>
<td>500 (35.0)</td>
<td>5 (0.35)</td>
</tr>
</tbody>
</table>

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

All transmitters are available with the above listed communications protocols.
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. This level of performance allows the ST 700 to replace most competitive transmitters available today.

Indication/Display Option
The ST 700 modular design accommodates a basic alphanumeric LCD display.

Basic Alphanumeric LCD Display Features
- Modular (may be added or removed in the field)
- 0, 90,180, & 270 degree position adjustments
- Configurable (HART only) and standard (Pa, KPa, MPa, KGcm2, Torr, ATM, inH2O, mH2O, bar, mbar, inH2O, inHG, FTH2O, mmH2O, mm HG, & psi) measurement units
- 2 Lines 16 Characters (4.13H x 1.83W mm)
- Square root output indication (√)

Simple 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, KGcm2, Torr, ATM, inH2O, mH2O, bar, mbar, inH2O, inHG, FTH2O, mmH2O, 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 (√) 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/DE/Fieldbus.
- Integration with Honeywell’s Experion PKS offers the following unique advantages.
  - Tamper reporting
  - FDM Plant Area Views with Health summaries
  - All ST 700 units are Experion tested to provide the highest level of compatibility assurance

Configuration Tools
External Three Button Configuration Option
Suitable for all electrical and environmental requirements, SmartLine offers the ability to configure the transmitter and display via three externally accessible buttons when a display option is selected. Zero/span capabilities are also optionally available via these buttons with or without selection of the display option.

Internal Two Button Configuration Option
The Simple display has two buttons that can be used for Basic configuration such as re ranging, PV Engineering unit setting, Zero/Span settings and 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 DE and 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
Honeywell’s SCT 3000 Configuration Toolkit provides an easy way to configure Digitally Enhanced (DE) instruments using a personal computer as the configuration interface. Field Device Manager (FDM) Software and FDM Express are also available for managing HART & Fieldbus device 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, add indicators or change electronic modules without affecting overall performance or approval body certifications. Each meter body is uniquely characterized to provide in-tolerance performance over a wide range of application variations in temperature and pressure and due to the Honeywell advanced interface, electronic modules may be swapped with any electronics module without losing in-tolerance performance characteristics.

Modular Features
- Meter body replacement
- Exchange/replace electronics/comms modules*
- Add or remove integral indicator*
- Add or remove lightning protection (terminal connection)*

* Field replaceable in all electrical environments (including IS) except flameproof without violating agency approvals.

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)

<table>
<thead>
<tr>
<th>Model</th>
<th>URL</th>
<th>LRL</th>
<th>Min Span</th>
<th>Maximum Turndown Ratio</th>
<th>Reference Accuracy¹,² (% Span)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STR73D</td>
<td>100 psid/7.0 bar</td>
<td>-100 psi/-7.0 bar</td>
<td>0.9 psi/.062 bar</td>
<td>100:1</td>
<td>0.075</td>
</tr>
<tr>
<td>STR74G</td>
<td>500 psid/35 bar</td>
<td>-14.7 psi/-1.0 bar</td>
<td>5 psi/.035 bar</td>
<td>100:1</td>
<td>0.075</td>
</tr>
</tbody>
</table>

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

![Accuracy and Temperature Effect Table]

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)
STR73D @ 20 psid: 1.03% 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 0.005% 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 316Stainless 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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Reference Condition (at zero static)</th>
<th>Rated Condition</th>
<th>Operative Limits</th>
<th>Transportation and Storage</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>°C</td>
<td>°F</td>
<td>°C</td>
<td>°F</td>
</tr>
<tr>
<td>Ambient Temperature¹</td>
<td>25±1</td>
<td>77±2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Humidity %RH</td>
<td>10 to 55</td>
<td>0 to 100</td>
<td>0 to 100</td>
<td>0 to 100</td>
</tr>
<tr>
<td>Vacuum Region, Minimum Pressure mmHg absolute</td>
<td>Atmospheric (See Figure 4 for vacuum limitation)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply Voltage, Current, and Load Resistance</td>
<td>10.8 to 42.4 Vdc at terminals (IS versions limited to 30 Vdc)</td>
<td>0 to 1,440 ohms (as shown in Figure 2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Allowable Working Pressure (MAWP)⁴</td>
<td>MAWP is minimum of Body Rating or Seal Rating (See Model Selection Guide for Seal MAWP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body</td>
<td>MAWP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STR73D</td>
<td>750 psig (51.7 bar) Bolted Process Heads</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STR74G</td>
<td>500 psig (35 bar)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 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

4 Consult factory for MAWP of ST 700 transmitters with CRN approval.

Note: A minimum of 250 ohms of loop resistance is required to support communications.

Loop resistance = barrier resistance + wire resistance + receiver resistance

![Supplementary Image](image)

RLmax = 45.6 x (Power Supply Voltage - 10.8)

Figure 2- Supply voltage and loop resistance
Figure 3- Ambient temperature Limits
Figure 4 - STR700 Remote Seals operable limits for pressure vs. temperature
### Performance Under Rated Conditions – All Models

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Analog Output</strong>&lt;br&gt;Digital Communications:</td>
<td>Two-wire, 4 to 20 mA (HART &amp; DE Transmitters only)&lt;br&gt;Honeywell DE, HART 7 protocol or FOUNDATION Fieldbus ITK 6.0.1 compliant&lt;br&gt;All transmitters, irrespective of protocol have polarity insensitive connection.</td>
</tr>
<tr>
<td><strong>HART &amp; DE Output Failure Modes</strong>&lt;br&gt;(NAMUR for DE Units requires selecting display and configuration buttons or factory configuration)</td>
<td><strong>Honeywell Standard:</strong>&lt;br&gt;Normal Limits: 3.8 – 20.8 mA&lt;br&gt;Failure Mode: ≤ 3.6 mA and ≥ 21.0 mA&lt;br&gt;<strong>NAMUR NE 43 Compliance:</strong>&lt;br&gt;Normal Limits: 3.8 – 20.5 mA&lt;br&gt;Failure Mode: ≤ 3.6 mA and ≥ 21.0 mA</td>
</tr>
<tr>
<td><strong>Supply Voltage Effect</strong></td>
<td>0.005% span per volt.</td>
</tr>
<tr>
<td><strong>Transmitter Turn on Time</strong>&lt;br&gt;(includes power up &amp; test algorithms)</td>
<td>HART or DE: 2.5 sec. Foundation Fieldbus: Host dependant</td>
</tr>
<tr>
<td><strong>Damping Time Constant</strong></td>
<td>HART: Adjustable from 0 to 32 seconds in 0.1 increments. Default: 0.50 seconds&lt;br&gt;DE: Discrete values 0, .16, .32, .48, 1, 2, 4, 8, 16, 32 seconds. Default: 0.48 seconds</td>
</tr>
<tr>
<td><strong>Electromagnetic Compatibility</strong></td>
<td>IEC 61326-3-1</td>
</tr>
<tr>
<td><strong>Lightning Protection Option</strong></td>
<td><strong>Leakage Current:</strong> 10uA max @ 42.4VDC 93C&lt;br&gt;Impulse rating: 8/20uS 5000A (&gt;10 strikes) 10000A (1 strike min.)&lt;br&gt;10/1000uS 200A (&gt; 300 strikes)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process Interface</strong></td>
<td>See Model Selection Guide for Material Options for desired seal type.</td>
</tr>
<tr>
<td><strong>Seal Barrier Diaphragm</strong></td>
<td>316L Stainless Steel, Monel®, Hastelloy® C, Tantalum</td>
</tr>
<tr>
<td><strong>Seal Gasket Materials</strong></td>
<td>Klinger C-4401 (non-asbestos) Grafoil®, Teflon®, Gylon 3510®</td>
</tr>
<tr>
<td><strong>Mounting Bracket</strong></td>
<td>Carbon Steel (Zinc-Chromate plated) or 304 Stainless Steel or 316 Stainless Steel.</td>
</tr>
<tr>
<td><strong>Fill Fluid (Meter Body)</strong></td>
<td>Silicone 200 S.G. @ 25°C = 0.94&lt;br&gt;CTFE (Chlorotrifluoroethylene) S.G. @ 25°C = 1.89&lt;br&gt;Silicone 704 S.G. @ 25°C = 1.07&lt;br&gt;NEOBEE M-20® S.G. @ 25°C = 0.93</td>
</tr>
<tr>
<td><strong>Fill Fluid (Secondary)</strong></td>
<td>Silicone 200 S.G. @ 25°C = 0.94&lt;br&gt;CTFE (Chlorotrifluoroethylene) S.G. @ 25°C = 1.89&lt;br&gt;Silicone 704 S.G. @ 25°C = 1.07&lt;br&gt;Syltherm 800® S.G. @ 25°C = 0.90&lt;br&gt;NEOBEE M-20® S.G. @ 25°C = 0.93</td>
</tr>
<tr>
<td><strong>Electronic Housing</strong></td>
<td>Pure Polyester Powder Coated Low Copper (&lt;0.4%)-Aluminum. Meets NEMA 4X, IP66, &amp; P67. All stainless steel housing is optional.</td>
</tr>
<tr>
<td><strong>Capillary Tubing</strong></td>
<td><strong>Material:</strong> Armored Stainless Steel or PVC Coated Armored Stainless Steel.&lt;br&gt;<strong>Length:</strong> 5, 10, 15, 20, 25, and 35 feet (1.5, 3, 4.5, 6.1, 7.5, and 10.7 meters).&lt;br&gt;A 2 inch (51 millimeter) S.S. close-coupled nipple is also available. See Model Selection Guide. Refer to Figure 5 for guide to maximum capillary length vs. diaphragm diameter. <strong>Note:</strong> 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.</td>
</tr>
<tr>
<td><strong>Figure 5</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Wiring</strong></td>
<td>Accepts up to 16 AWG (1.5 mm diameter)</td>
</tr>
<tr>
<td><strong>Mounting</strong></td>
<td>See Figure 6</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td><strong>Transmitter:</strong> See Figures 7a and 7b.&lt;br&gt;<strong>Seal:</strong> See Figure 8 through Figure 15</td>
</tr>
<tr>
<td><strong>Net Weight</strong></td>
<td><strong>Transmitter:</strong> 8.3 pounds (3.8 Kg). With Aluminum Housing. Total weight is dependent on seal</td>
</tr>
</tbody>
</table>

**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 STR73D Transmitter with two Seals

<table>
<thead>
<tr>
<th>Diaphragm Size (Inch)</th>
<th>Capillary Length (Feet)</th>
<th>Maximum Capillary Length (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>1.9</td>
<td>15 psi</td>
<td>20 psi</td>
</tr>
<tr>
<td>2.4</td>
<td>5.4 psi</td>
<td>7.2 psi</td>
</tr>
<tr>
<td>2.9</td>
<td>1.8 psi</td>
<td>2.7 psi</td>
</tr>
<tr>
<td>3.5</td>
<td>0.9 psi</td>
<td>0.9 psi</td>
</tr>
<tr>
<td>4.1</td>
<td>0.9 psi</td>
<td>0.9 psi</td>
</tr>
</tbody>
</table>

Minimum recommended span for STR74G and STR73D Transmitter with one Remote Seal

<table>
<thead>
<tr>
<th>Diaphragm Size (Inch)</th>
<th>Direct Mount</th>
<th>Capillary Length (Feet)</th>
<th>Maximum Capillary Length (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>1.9</td>
<td>25 psi</td>
<td>25 psi</td>
<td>30 psi</td>
</tr>
<tr>
<td>2.4</td>
<td>10 psi</td>
<td>15 psi</td>
<td>20 psi</td>
</tr>
<tr>
<td>2.9</td>
<td>8 psi</td>
<td>9 psi</td>
<td>10 psi</td>
</tr>
<tr>
<td>3.5</td>
<td>2 psi</td>
<td>2 psi</td>
<td>3 psi</td>
</tr>
<tr>
<td>4.1</td>
<td>0.9 psi</td>
<td>0.9 psi</td>
<td>1 psi</td>
</tr>
</tbody>
</table>

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.

**Figure 5– 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 0 psi vacuum (300 mmHg absolute).

Consult Honeywell for installation of STR73D.

**Figure 6 - STR700 transmitter with remote diaphragm seals shown mounted on a tank**
Reference Dimensions Horizontal Mounting

DP REMOTE SEAL
WITH HORIZONTAL PIPE MOUNT

AP REMOTE SEAL
WITH HORIZONTAL PIPE MOUNT
Reference Dimensions Horizontal Mounting (cont’d)

Figure 7 — Approximate horizontal mounting dimensions for Remote Seal Transmitter

Reference Dimensions Vertical Mounting
Reference Dimensions Vertical Mounting (cont’d)

Figure 8 — Approximate vertical mounting dimensions for Remote Seal Transmitter
## Reference Dimensions (cont’d)

### Flush Flanged Seal Dimensions

<table>
<thead>
<tr>
<th>Type</th>
<th>ANSI/DIN Rating</th>
<th>Flange Material</th>
<th>Wetted Materials</th>
<th>Construction See figure</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS</td>
<td>3” Class 150#</td>
<td>SS</td>
<td>Hastelloy C</td>
<td>D</td>
<td>7.5</td>
<td>1.37</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SS</td>
<td>Hastelloy C</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hastelloy C</td>
<td>D</td>
<td></td>
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<td></td>
<td>Hastelloy C</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SS</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td></td>
<td>N/A</td>
<td>Hastelloy C</td>
<td>B</td>
<td>2.94</td>
<td>1.37</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hastelloy C</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hastelloy C</td>
<td>D</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>SS</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>3” Class 300#</td>
<td>SS</td>
<td>Hastelloy C</td>
<td>D</td>
<td>6.25</td>
<td>1.50</td>
</tr>
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<td></td>
<td>SS</td>
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<td>D</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Hastelloy C</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SS</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A</td>
<td>Hastelloy C</td>
<td>B</td>
<td>1.12</td>
<td>1.50</td>
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<tr>
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<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hastelloy C</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SS</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td></td>
<td>SS</td>
<td>Hastelloy C</td>
<td>D</td>
<td>6.25</td>
<td>1.75</td>
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<td></td>
<td>SS</td>
<td>Hastelloy C</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hastelloy C</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SS</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2” Class 600#</td>
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<td>Hastelloy C</td>
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<td>1.70</td>
</tr>
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<td></td>
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<td></td>
<td>Hastelloy C</td>
<td>D</td>
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<td>C</td>
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</tr>
<tr>
<td>CS</td>
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<td>N/A</td>
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<td>0.04</td>
<td>1.32</td>
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<tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>SS</td>
<td>C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure A**

Configuration "HS"

**Figure B**

Configuration "HT"

**Figure C**

Configuration "IS"

**Figure D**

Configuration "IT"

---

Figure 9 - Seal Dimensions (Flush Flanged)
### Reference Dimensions (cont’d)

**Flush Flanged Seal with Lower**

<table>
<thead>
<tr>
<th>Type</th>
<th>ANSI/DIN Rating</th>
<th>Size</th>
<th>Dimension</th>
<th>2.4” Diaph. Dia. (in.)</th>
<th>2.9” Diaph. Dia. (in.)</th>
<th>4.1” Diaph. Dia. (in.)</th>
</tr>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2”</td>
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<td>A</td>
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<td>4.00</td>
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<tr>
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<td>1.72</td>
<td>1.72</td>
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<tr>
<td></td>
<td></td>
<td>B0</td>
<td>1.72</td>
<td>1.72</td>
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<td></td>
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<td></td>
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</tr>
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<td>3.50</td>
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</tr>
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<td>6.72</td>
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<td>3.00</td>
<td></td>
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<td>3.50</td>
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<td>3”</td>
<td></td>
<td>A</td>
<td>8.25</td>
<td>8.25</td>
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<td></td>
<td>B1</td>
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<td>3.48</td>
<td>3.30</td>
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<td>Class 600#</td>
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<td>4.68</td>
<td>4.68</td>
<td>4.68</td>
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<td></td>
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<td>3.00</td>
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<td>3.50</td>
<td>3.50</td>
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<td>A</td>
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<td>8.25</td>
<td>6.25</td>
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</tbody>
</table>
| Note: 0.90 dimension is 0.70 for 4.1” Dia Diaphragm

**Flush Flanged Seal with Lower**

**Figure 10- Seal Dimension (Flush Flanged)**
Reference Dimensions (cont’d)

Flanged Seal with Extended Diaphragm

<table>
<thead>
<tr>
<th>Type</th>
<th>ANSI/DIN Rating</th>
<th>Dimension</th>
<th>2.8” Diaphragm Dia. (in.)</th>
<th>3.5” Diaphragm Dia. (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3” Class 150#</td>
<td>A</td>
<td>7.50</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>0.94</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>2.80</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3” Class 300#</td>
<td>A</td>
<td>8.25</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>1.12</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>2.80</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DIN DN80-PN40</td>
<td>A</td>
<td>7.87</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>0.94</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>2.80</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4” Class 150#</td>
<td>A</td>
<td>-</td>
<td>9.00</td>
<td>-</td>
</tr>
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<td>-</td>
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<tr>
<td></td>
<td>C</td>
<td>-</td>
<td>3.70</td>
<td>-</td>
</tr>
<tr>
<td>4” Class 300#</td>
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<td>-</td>
<td>10.00</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>-</td>
<td>1.25</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>-</td>
<td>3.70</td>
<td>-</td>
</tr>
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<td>DIN DN100-PN40</td>
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<td></td>
<td>B</td>
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<td>0.94</td>
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</tr>
<tr>
<td></td>
<td>C</td>
<td>-</td>
<td>3.70</td>
<td>-</td>
</tr>
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</table>

Designed to meet with schedule 40 pipe

Figure 11 — Seal Dimensions (Extended Diaphragms)

Pancake Seal

<table>
<thead>
<tr>
<th>Type</th>
<th>ANSI/DIN</th>
<th>Dimension</th>
<th>3.5” Diaph. (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancake Seal</td>
<td>Class 150#, 300#, 600#, DN80-PN40</td>
<td>A</td>
<td>5.00</td>
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<td></td>
<td></td>
<td>B</td>
<td>1.08</td>
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Figure 12 — Seal Dimensions (Pancake)

Chemical Tee “Taylor Wedge” Seal

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Dimension</th>
<th>3.5” Diaph. (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Tee “Taylor Wedge” Seal</td>
<td>750 psi</td>
<td>A</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Figure 13 — Seal Dimensions (Chemical TEE “Taylor Wedge” Seals)
Seal with Threaded Process Connection

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Dimension</th>
<th>2.4&quot; Diaphragm Dia. (in.)</th>
<th>2.9&quot; Diaphragm Dia. (in.)</th>
<th>4.1&quot; Diaphragm Dia. (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threaded Process Conn. Seal</td>
<td>1/4&quot; or 1/2&quot;</td>
<td>A</td>
<td>3.50</td>
<td>4.00</td>
<td>5.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B0</td>
<td>1.88</td>
<td>1.66</td>
<td>1.79</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B1</td>
<td>1.66</td>
<td>1.66</td>
<td>1.79</td>
</tr>
<tr>
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<td></td>
<td>B2</td>
<td>2.18</td>
<td>2.16</td>
<td>2.14</td>
</tr>
<tr>
<td></td>
<td>3/4&quot; or 1&quot;</td>
<td>A</td>
<td>3.50</td>
<td>4.00</td>
<td>5.25</td>
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<tr>
<td></td>
<td></td>
<td>B0</td>
<td>1.66</td>
<td>1.66</td>
<td>1.79</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B1</td>
<td>1.66</td>
<td>1.66</td>
<td>1.79</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B2</td>
<td>2.25</td>
<td>2.16</td>
<td>2.14</td>
</tr>
</tbody>
</table>

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

Figure 14— Seal Dimensions (Threaded Process Connection Seals)

Sanitary Seal

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Dimension</th>
<th>1.9&quot; Diaphragm Dia. (in.)</th>
<th>2.4&quot; Diaphragm Dia. (in.)</th>
<th>2.9&quot; Diaphragm Dia. (in.)</th>
<th>4.1&quot; Diaphragm Dia. (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Seal</td>
<td>2&quot;</td>
<td>A</td>
<td>2.50</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>1.42</td>
<td>-</td>
<td>-</td>
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<tr>
<td></td>
<td>2-1/2&quot;</td>
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<td>-</td>
<td>3.00</td>
<td>-</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>-</td>
<td>1.28</td>
<td>-</td>
<td>-</td>
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<td>B</td>
<td>-</td>
<td>-</td>
<td>1.38</td>
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<tr>
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<td>4&quot;</td>
<td>A</td>
<td>-</td>
<td>-</td>
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<td>4.68</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>-</td>
<td>-</td>
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<td>1.60</td>
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</table>

Figure 15— Seal Dimensions (Sanitary Seals)
Saddle Seal

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<tr>
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<th>Dimension</th>
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</tr>
</thead>
<tbody>
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<td></td>
<td>B</td>
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<tr>
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<td>4&quot; or larger</td>
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<td></td>
<td></td>
<td>B</td>
<td>3.04</td>
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Note: Specify 6 or 8 bolt pattern

Figure 16— Seal Dimensions (3" Saddle Seal)

<table>
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<th>Dimension</th>
<th>2.4&quot; Diaph. (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saddle Seal</td>
<td>3&quot;</td>
<td>A</td>
<td>3.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>2.90</td>
</tr>
<tr>
<td></td>
<td>4&quot; or larger</td>
<td>A</td>
<td>3.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>3.04</td>
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</table>

Note: Specify 6 or 8 bolt pattern

Figure 17— Seal Dimensions (4" Saddle Seal)

Calibration Ring

<table>
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<tr>
<th>Type</th>
<th>Size</th>
<th>Rating</th>
<th>Dimension</th>
<th>1/4 NPT</th>
<th>1/2 NPT</th>
</tr>
</thead>
<tbody>
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<td>3&quot;</td>
<td>150# / 800#</td>
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</tr>
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<td></td>
<td></td>
<td></td>
<td>B</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C</td>
<td>3.00</td>
<td>3.00</td>
</tr>
</tbody>
</table>

Figure 18— 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)

Foundation Fieldbus (FF)
Power Supply Requirements
Voltage: 9.0 to 32.0Vdc at terminals
Steady State Current: 17.6mAdc
Software Download Current: 27.4mAdc

Available Function Blocks

<table>
<thead>
<tr>
<th>Block Type</th>
<th>Qty</th>
<th>Execution Time</th>
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<td>Resource</td>
<td>1</td>
<td>n/a</td>
</tr>
<tr>
<td>Transducer</td>
<td>1</td>
<td>n/a</td>
</tr>
<tr>
<td>Diagnostic</td>
<td>1</td>
<td>n/a</td>
</tr>
<tr>
<td>Analog Input</td>
<td>1*</td>
<td>30 ms</td>
</tr>
<tr>
<td>PID w/Autotune</td>
<td>1</td>
<td>45 ms</td>
</tr>
<tr>
<td>Integrator</td>
<td>1</td>
<td>30 ms</td>
</tr>
<tr>
<td>Signal Char (SC)</td>
<td>1</td>
<td>30 ms</td>
</tr>
<tr>
<td>LCD Display</td>
<td>1</td>
<td>n/a</td>
</tr>
<tr>
<td>Flow Block</td>
<td>1</td>
<td>30 ms</td>
</tr>
<tr>
<td>Input Selector</td>
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<td>30 ms</td>
</tr>
<tr>
<td>Arithmetic</td>
<td>1</td>
<td>30 ms</td>
</tr>
</tbody>
</table>

* AI block may have two (2) additional instantiations.

All available function blocks adhere to FOUNDATION Fieldbus standards. PID blocks support ideal & robust PID algorithms with full implementation of Auto-tuning.

Link Active Scheduler
Transmitters can perform as a backup Link Active Scheduler and take over when the host is disconnected. Acting as a LAS, the device ensures scheduled data transfers typically used for the regular, cyclic transfer of control loop data between devices on the Fieldbus.

Number of Devices/Segment
Entity IS model: 6 devices/segment

Schedule Entries
18 maximum schedule entries

Number of VCR’s: 24 max

Compliance Testing: Tested according to ITK 6.0.1
Software Download

Utilize proc any i host.

Honeywell Digitally Enhanced (DE)
DE is a Honeywell proprietary protocol which provides digital communications between Honeywell DE enabled field devices and Hosts.

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

<table>
<thead>
<tr>
<th>HART DD/DTM Tools</th>
<th>Basic Display</th>
<th>Simple Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic Module DAC Failure</td>
<td>Electronics module fault</td>
<td>Fault Comm El</td>
</tr>
<tr>
<td>Meter Body NVM Corrupt</td>
<td>Meter Body fault</td>
<td>Fault Mtrbody</td>
</tr>
<tr>
<td>Config. Data Corrupt</td>
<td>Electronics module fault</td>
<td>Fault Comm El</td>
</tr>
<tr>
<td>Electronic Module Diag Failure</td>
<td>Electronics module fault</td>
<td>Fault Comm El</td>
</tr>
<tr>
<td>Meter Body Critical Failure</td>
<td>Meter Body fault</td>
<td>Fault Mtrbody</td>
</tr>
<tr>
<td>Sensor Comms Timeout</td>
<td>Meter Body Comm fault</td>
<td>Fault Mbd Com</td>
</tr>
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</table>

Non-Critical Diagnostics

<table>
<thead>
<tr>
<th>HART DD/DTM Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display Failure</td>
</tr>
<tr>
<td>Electronic Module Comm Failure</td>
</tr>
<tr>
<td>Meter Body Excess Correct</td>
</tr>
<tr>
<td>Sensor Over Temperature</td>
</tr>
<tr>
<td>Fixed Current Mode</td>
</tr>
<tr>
<td>PV Out of Range</td>
</tr>
<tr>
<td>No Factory Calibration</td>
</tr>
<tr>
<td>No DAC Compensation</td>
</tr>
<tr>
<td>LRV Set Error – Zero Config. Button</td>
</tr>
<tr>
<td>URV Set Error – Zero Config. Button</td>
</tr>
<tr>
<td>AO Out of Range</td>
</tr>
<tr>
<td>Loop Current Noise</td>
</tr>
<tr>
<td>Meter Body Unreliable Comm</td>
</tr>
<tr>
<td>Tamper Alarm,</td>
</tr>
<tr>
<td>No DAC Calibration</td>
</tr>
<tr>
<td>Sensor Supply Voltage Low</td>
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</table>
Refer to ST 700 manuals for additional level diagnostic information.
## Approval Certifications:

<table>
<thead>
<tr>
<th>AGENCY</th>
<th>TYPE OF PROTECTION</th>
<th>COMM. OPTION</th>
<th>FIELD PARAMETERS</th>
<th>AMBIENT TEMP (Ta)</th>
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</thead>
<tbody>
<tr>
<td><strong>FM Approvals™</strong></td>
<td><strong>Explosionproof:</strong> Class I, Division 1, Groups A, B, C, D; Dust Ignition Proof: Class II, III, Division 1, Groups E, F, G; T4</td>
<td>All</td>
<td>Note 1</td>
<td>T5: -50 °C to 85°C T6: -50 °C to 65°C</td>
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<tr>
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</tr>
<tr>
<td></td>
<td><strong>Intrinsically Safe:</strong> Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; T4</td>
<td>4-20 mA / DE/ HART</td>
<td>Note 2a</td>
<td>-50 °C to 70°C</td>
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</tr>
<tr>
<td></td>
<td>Class I, Zone 0, AEx ia IIC Ga T4</td>
<td>Foundation Fieldbus</td>
<td>Note 2b</td>
<td>-50 °C to 70°C</td>
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<td>FISCO Field Device (Only for FF Option) Ex ia IIC T4</td>
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<tr>
<td></td>
<td><strong>Nonincendive:</strong> Class I, Division 2, Groups A, B, C, D locations,</td>
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<td>Note 1</td>
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<tr>
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<td><strong>Enclosure:</strong> Type 4X/ IP66/ IP67</td>
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<td>Note 1</td>
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<tr>
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<td>Note 2a</td>
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## Approval Certifications: (Continued)

### ATEX

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<tr>
<td>II 1/2 G Ex d IIC Ga/Gb II 2 D Ex tb IIC Db T 95°C</td>
<td>II 1 G Ex ia IIC Ga T4</td>
<td>II 3 G Ex nA IIC Gc T4</td>
<td>IP66/ IP67</td>
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<td>Note 2a</td>
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<tr>
<td>T5: -50 °C to 85°C T6: -50 °C to 65°C</td>
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<td>FISCO Field Device (Only for FF Option) Ex ia IIC T4</td>
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<td>Foundation Fieldbus</td>
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<td>Ex nA IIC Gc T4</td>
<td>IP66/ IP67</td>
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<td>4-20 mA / DE/ HART</td>
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<td>Note 1</td>
<td>Note 2a</td>
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<tr>
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<th>Enclosure:</th>
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<tbody>
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<td>Ex nA IIC Gc T4</td>
<td>IP66/ IP67</td>
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<td>4-20 mA / DE/ HART</td>
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<tr>
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<td>Note 2a</td>
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<td>All</td>
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<td>-50 °C to 85°C</td>
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<td>4-20 mA / DE/ HART</td>
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<tr>
<td>Note 1</td>
<td>Note 2a</td>
<td>Note 1</td>
<td>All</td>
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<td>-50 °C to 85°C</td>
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### Approval Certifications: (Continued)

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<td>Ex nA IIC Gc T4</td>
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<tr>
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<td>FISCO Field Device (Only for FF Option) Ex ia IIC T4</td>
<td>4-20 mA / DE/ HART</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>Note 2a</td>
<td>Note 1</td>
</tr>
<tr>
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<td>Note 1</td>
<td>-50 °C to 70°C</td>
<td>-50 °C to 85°C</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>EAC Russia, Belarus and Kazakhstan</th>
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<th>Intrinsically Safe:</th>
<th>Nonincendive:</th>
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<tbody>
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<td>0 Ex ia IIC Ga T4</td>
<td>4-20 mA / DE/ HART</td>
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<tr>
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<td>Ex tb IIIC Db T 85°C</td>
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<td>Foundation Fieldbus</td>
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<tr>
<td></td>
<td>All</td>
<td>Note 2a</td>
<td>Note 1</td>
</tr>
<tr>
<td></td>
<td>Note 1</td>
<td>-50 °C to 70°C</td>
<td>-50 °C to 85°C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KOSHA Korea</th>
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<th>Enclosure:</th>
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<tbody>
<tr>
<td></td>
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<td>Ex ia IIC T4</td>
<td>IP 66/67</td>
</tr>
<tr>
<td></td>
<td>Ex tD T 95°C</td>
<td>FISCO Field Device (Only for FF Option) Ex ia IIC T4</td>
<td>All</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>Note 2a</td>
<td>All</td>
</tr>
<tr>
<td></td>
<td>Note 1</td>
<td>Ta= -50 °C to 65°C</td>
<td>Ta= -50 °C to 70°C</td>
</tr>
<tr>
<td></td>
<td>T6: Ta= -50 °C to 65°C</td>
<td>T5: Ta= -50 °C to 85°C</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Operating Parameters:</td>
</tr>
<tr>
<td>Voltage= 11 to 42 V DC Current= 4-20 mA Normal</td>
</tr>
<tr>
<td>= 10 to 30 V (FF) = 30 mA (FF)</td>
</tr>
<tr>
<td>2. Intrinsically Safe Entity Parameters</td>
</tr>
<tr>
<td>a. Analog/ DE/ HART Entity Values:</td>
</tr>
<tr>
<td>Vmax= Ui = 30V Imax= li= 105mA Ci = 4.2nF Li =984 uH Pi =0.9W</td>
</tr>
<tr>
<td>Transmitter with Terminal Block Revision E or Later</td>
</tr>
<tr>
<td>Vmax= Ui = 30V Imax= li= 225mA Ci = 4.2nF Li = 0 Pi =0.9W</td>
</tr>
<tr>
<td>Note : Transmitter with Terminal Block Revision E or later</td>
</tr>
<tr>
<td>The revision is on the label that is on the module. There will be two lines of text on the label:</td>
</tr>
<tr>
<td>• First is the Module Part #: 50049839-001 or 50049839-002</td>
</tr>
<tr>
<td>• Second line has the supplier information, along with the REVISION:</td>
</tr>
<tr>
<td>XXXXXXXX-EXXX, THE “X” is production related, THE POSITION of the “E” IS THE REVISION.</td>
</tr>
<tr>
<td>b. Foundation Fieldbus- Entity Values</td>
</tr>
<tr>
<td>Vmax= Ui = 30V Imax= li= 180mA Ci =0nF Li = 984 uH Pi =1W</td>
</tr>
<tr>
<td>Transmitter with Terminal Block Revision F or Later</td>
</tr>
<tr>
<td>Vmax= Ui = 30V Imax= li= 225mA Ci =0nF Li = 0 Pi =1 W</td>
</tr>
<tr>
<td>FISCO Field Device</td>
</tr>
</tbody>
</table>
Vmax= Ui = 17.5V  Imax= Ii= 380 mA  Ci = 0nF  Li = 0  Pi =5.32 W

Note: Transmitter with Terminal Block Revision F or later
The revision is on the label that is on the module. There will be two lines of text on the label:
- First is the Module Part #: 50049839-003 or 50049839-004
- Second line has the supplier information, along with the REVISION:
  XXXXXXX-EXXX, THE “X” is production related, THE POSITION of the “E” IS THE REVISION.

### Approval Certifications: (Continued)

<table>
<thead>
<tr>
<th>Marine Certificates</th>
<th>This certificate defines the certifications covered for the SmartLine Pressure Transmitter family of products, including the SMV SmartLine Multivariable Transmitter. It represents the compilation of the five certificates Honeywell currently has covering the certification of these products into marine applications.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>American Bureau of Shipping (ABS)</strong></td>
<td>2009 Steel Vessel Rules 1-1-4/3.7, 4-6-2/5.15, 4-8-3/13 &amp; 13.5, 4-8-4/27.5.1, 4-9-7/13. Certificate number: 04-HS147416-PDA</td>
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<tr>
<td><strong>Bureau Veritas (BV)</strong></td>
<td>Product Code: 389:1H. Certificate number: 12660/B0 BV</td>
</tr>
<tr>
<td><strong>Det Norske Veritas (DNV)</strong></td>
<td>Location Classes: Temperature D, Humidity B, Vibration A, EMC B, Enclosure C. For salt spray exposure; enclosure of 316 SST or 2-part epoxy protection with 316 SST bolts to be applied. Certificate number: A-11476</td>
</tr>
<tr>
<td><strong>Korean Register of Shipping (KR)</strong></td>
<td>Certificate number: LOX17743-AE001</td>
</tr>
<tr>
<td><strong>Lloyd’s Register (LR)</strong></td>
<td>Certificate number: 02/60001(E1) &amp; (E2)</td>
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</tbody>
</table>

### SIL 2/3 Certification

### Other Certification Options
**Materials**
- NACE MRO175, MRO103, ISO15156
Application Data

Liquid Level: Closed Tank

Determine the minimum and maximum pressure differentials to be measured (Figure 16).

\[ P_{\text{Min}} = (SG_p \times a) - (SG_f \times d) \]

- LRV when HP at bottom of tank
- \(-URV\) when LP at bottom of tank

\[ P_{\text{Max}} = (SG_p \times b) - (SG_f \times d) \]

- URV when HP at bottom of tank
- \(-LRV\) when LP at bottom of tank

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 Specifications” for values.)

\( SG_p = \) Specific Gravity of process fluid

Figure 16—Closed tank liquid level measurement distance
Application Data (Cont’d)

Density or Interface*

Calculate the minimum and maximum pressure differentials to be measured (Figure 19).

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

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

Where:

\[d = \text{distance between the taps}\]
\[SG_{\text{max}} = \text{maximum Specific Gravity}\]
\[SG_{\text{min}} = \text{minimum Specific Gravity}\]
\[SG_f = \text{Specific Gravity of capillary fill fluid (See Page 6 “Material Specifications” for values.)}\]

Figure 19- Density, direct acting transmitter configuration

Seal Configurations

Figure 20—Flush Flange Seals

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 21 — 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 22—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.

Figure 23— Chemical Tee “Taylor” Wedge

Chemical Tee “Taylor” Wedge can be used with differential pressure transmitters and are available with Taylor Wedge 5” O.D. process connection.
Seal Configurations (cont’d)

Figure 24 — Seals with Threaded Process Connections
Seals with Threaded Process Connections can be used with differential, gauge and absolute pressure transmitters and are available with ½”, ¾” and 1” NPT Female process connections.

Figure 25 — Sanitary Seals
Sanitary Seals can be used with differential, gauge and absolute pressure transmitters and are available with 3” and 4” Tri-Clover-Tri-Clamp process connections.

Figure 26 — Saddle Seals
Saddle Seals can be used with differential, gauge and absolute pressure transmitters and are available with 3” and 4” (6 bolt or 8 bolt designs) process connections.

Figure 27 — Calibration Rings
Calibration Rings are available with Flush Flange Seals and Pancake Seals. Flushing ports (¼” or ½”) are available with calibration rings.

Figure 28 — 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 29 — 2” Stainless Steel Nipples
2” Stainless Steel Nipples are available for Close-Coupled remote seal solutions

Figure 30 — 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.

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

**34-ST-16-104 Issue 23**

#### 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

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<tr>
<th>STR7</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
<th>VIII</th>
<th>IX</th>
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<th>Measurement Range Std Accuracy</th>
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</thead>
<tbody>
<tr>
<td>100 (7)</td>
</tr>
<tr>
<td>500 (35)</td>
</tr>
</tbody>
</table>

#### Max Span

<table>
<thead>
<tr>
<th>Min Span</th>
<th>Units</th>
<th>Selection</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 (7)</td>
<td>psi (bar)</td>
<td>STR73D</td>
<td></td>
</tr>
<tr>
<td>500 (35)</td>
<td>psi (bar)</td>
<td>STR74G</td>
<td></td>
</tr>
</tbody>
</table>

---

#### TABLE I

<table>
<thead>
<tr>
<th>Description</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Number of Seals</td>
<td>1 Remote Seal (High Side) 1.--- ● ● 2 Remote Seals 2.--- ● ● 1 Remote Seal (Low Side) 3.--- ● ●</td>
</tr>
<tr>
<td>b. Primary Fill Fluid (Meter body)</td>
<td>Silicone Oil 200 1.--- ● ● Flourinrated Oil CTFE 2.--- 2 2 Silicon Oil 704 3.--- ● ● NEOBEE® M-20 4.--- ● ●</td>
</tr>
<tr>
<td>c. Construction Non-Wetted Adapter Head Materials In-Line Gauge</td>
<td>316 SS Bonnet 1.--- A ● 316 SS Bonnet for Close-Couple 1.--- B 3</td>
</tr>
<tr>
<td>Dual Head DP</td>
<td>316 SS (bolt-on heads) 1.--- C ● 316 SS for Close-Couple 1.--- D 3 316 SS with all-welded meter body 1.--- E 4</td>
</tr>
<tr>
<td>d. Bolts and Nuts for Transmitter Heads</td>
<td>No Fill Fluid 1.--- 0 22 5 5 Carbon Steel Bolts and Nuts 1.--- C ● 316 SS Bolts and Nuts 1.--- S ● A286 SS (NACE) Bolts and 304 SS (NACE) Nuts 1.--- N ● B7M (NACE) Bolts and 7M (NACE) Nuts 1.--- B ●</td>
</tr>
<tr>
<td>e. Secondary Fill Fluid (capillary &amp; seal)</td>
<td>No Fill Fluid 1.--- 0 22 5 5 Silicone Oil 200 1.--- 1 ● Flourinrated Oil CTFE 2.--- 2 2 Silicon Oil 704 3.--- 3 3 Neobee® M-20 4.--- 4 4 Syltherm® 800 5.--- 5 5</td>
</tr>
<tr>
<td>f. Connection of Remote Seal to Meter Body</td>
<td>No Capillary: No Nipple (Specify for VAM Unit Only) 1.--- 0 5 5</td>
</tr>
<tr>
<td>Capillary Length</td>
<td>SS Armor 1.--- A ● 2.--- B ● 3.--- C ● 4.--- D ● 5.--- E ● 6.--- F ●</td>
</tr>
<tr>
<td>PVC Coated SS Armor 1.--- G ● 2.--- H ● 3.--- I ● 4.--- J ● 5.--- K ● 6.--- L ● 7.--- M ● 8.--- N ● 9.--- O ●</td>
<td></td>
</tr>
<tr>
<td>g. Seal Option</td>
<td>None 1.--- 0 5 5</td>
</tr>
<tr>
<td>In-Line Gauge</td>
<td>Std Gold Plated Seal Diaph. = 50 µin 1.--- 1 7 7 Teflon Coated Seal Diaphragm - only for anti-sticking 1.--- 4 7 7</td>
</tr>
</tbody>
</table>

---

1 Limited vacuum availability.

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

<table>
<thead>
<tr>
<th>Seal Type</th>
<th>Description</th>
<th>Flange Size</th>
<th>Flange Pressure Rating</th>
<th>Const. - See Spec. Figure 34-ST-03-104</th>
<th>Construction - See Spec. Figure 34-ST-03-104</th>
<th>Selection</th>
</tr>
</thead>
</table>
| Flange Flanged Seal | Wetted Material | 316L SS | ANSI Class 150 | 22 | AFC | **
| | Non-Wetted Material | 316L SS | Center Seal | 22 | AFC | **
| | | 316L SS | Side Seal | 22 | AFC | **
| | | 316L SS | Upper Insert | 22 | AFC | **
| | | 316L SS | | | | **
| | | 316L SS | | | | **

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

---

### Table II continued next page
### TABLE II

<table>
<thead>
<tr>
<th>Seal Type</th>
<th>Diaphragm Diameter</th>
<th>Flange Size</th>
<th>Flange Pressure Rating</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diaphragm Body</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetted Material</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5&quot;</td>
<td>3&quot;</td>
<td>ANSI Class 150</td>
<td>GA</td>
<td>• •</td>
</tr>
<tr>
<td></td>
<td></td>
<td>316L SS</td>
<td>GB</td>
<td>• •</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Monel 400®</td>
<td>GC</td>
<td>• •</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hastelloy® C-276</td>
<td>GC</td>
<td>• •</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tantalum</td>
<td>GG</td>
<td>8 8</td>
</tr>
<tr>
<td>Non-Wetted Material</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>316L SS</td>
<td></td>
<td></td>
<td>0</td>
<td>• •</td>
</tr>
<tr>
<td>316L SS</td>
<td></td>
<td></td>
<td>0</td>
<td>• •</td>
</tr>
<tr>
<td>Hastelloy® C-276</td>
<td></td>
<td></td>
<td>0</td>
<td>• •</td>
</tr>
<tr>
<td>Hastelloy® C-276</td>
<td></td>
<td></td>
<td>0</td>
<td>• •</td>
</tr>
<tr>
<td>Monel 400®</td>
<td></td>
<td></td>
<td>0</td>
<td>• •</td>
</tr>
<tr>
<td>Monel 400®</td>
<td></td>
<td></td>
<td>0</td>
<td>• •</td>
</tr>
<tr>
<td>Hastelloy® C-276</td>
<td></td>
<td></td>
<td>0</td>
<td>• •</td>
</tr>
<tr>
<td>Tantalum</td>
<td></td>
<td></td>
<td>0</td>
<td>• •</td>
</tr>
<tr>
<td>Tantalum</td>
<td></td>
<td></td>
<td>0</td>
<td>• •</td>
</tr>
<tr>
<td>Tantalum</td>
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<td></td>
<td>0</td>
<td>• •</td>
</tr>
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<td>Tantalum</td>
<td></td>
<td></td>
<td>0</td>
<td>• •</td>
</tr>
<tr>
<td>Tantalum</td>
<td></td>
<td></td>
<td>0</td>
<td>• •</td>
</tr>
</tbody>
</table>

### Seals (continued)

1. Standard facing 125-250 AARH RF (raised face) serrated surface finish.
2. Plastic plugs are TEMORARY ONLY to protect threads and MUST be REMOVED before installation.
3. Tantalum body has tantalum wetted parts and 316 SS non-wetted parts.

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

**Seals (continued)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Diaphragm Diameter</th>
<th>Range Size</th>
<th>Range Pressure Rating</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>STR700 Smart Pressure Transmitter 29</td>
<td>3.5”</td>
<td>Taylor Wedge 5” O.D.</td>
<td>750 psi</td>
<td>HMD</td>
</tr>
</tbody>
</table>

**Wetted Material**

<table>
<thead>
<tr>
<th>Description</th>
<th>Diaphragm Body</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>316L SS</td>
<td>750 psi</td>
<td></td>
</tr>
</tbody>
</table>

**Chemical Tee “Taylor” Wedge**

<table>
<thead>
<tr>
<th>Description</th>
<th>Diaphragm Body</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>316L SS</td>
<td>750 psi</td>
<td></td>
</tr>
</tbody>
</table>

**Non-Wetted Material**

<table>
<thead>
<tr>
<th>Description</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Selection</td>
<td>0</td>
</tr>
</tbody>
</table>

### TABLE II

**Seals (continued)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Diaphragm Diameter</th>
<th>Threaded Process Connection Size (NPT Female)</th>
<th>Pressure Rating</th>
<th>CS Bolts</th>
<th>SS Bolts</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4”</td>
<td>1/2 NPT</td>
<td>2,500 psi</td>
<td>JKG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2 NPT</td>
<td>2,500 psi</td>
<td>JKG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4 NPT</td>
<td>1,250 psi</td>
<td>JKG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 NPT</td>
<td>1,250 psi</td>
<td>JKG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.9”</td>
<td>1/2 NPT</td>
<td>2,500 psi</td>
<td>KKG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2 NPT</td>
<td>2,500 psi</td>
<td>KKG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4 NPT</td>
<td>1,250 psi</td>
<td>KKG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 NPT</td>
<td>1,250 psi</td>
<td>KKG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1”</td>
<td>1/2 NPT</td>
<td>1,500 psi</td>
<td>LKG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4 NPT</td>
<td>750 psi</td>
<td>LKG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 NPT</td>
<td>750 psi</td>
<td>LKG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Diaphragm Body</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>316L SS</td>
<td>750 psi</td>
<td></td>
</tr>
</tbody>
</table>

**Chemical Tee “Taylor” Wedge**

<table>
<thead>
<tr>
<th>Description</th>
<th>Diaphragm Body</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>316L SS</td>
<td>750 psi</td>
<td></td>
</tr>
</tbody>
</table>

**Non-Wetted Material**

<table>
<thead>
<tr>
<th>Description</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Selection</td>
<td>0</td>
</tr>
</tbody>
</table>

**Bolts**

<table>
<thead>
<tr>
<th>Description</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Selection</td>
<td>0</td>
</tr>
</tbody>
</table>

**Plumbing Connections and Plugs**

<table>
<thead>
<tr>
<th>Description</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>One 1/4” with plastic plug</td>
<td>15 18</td>
</tr>
<tr>
<td>One 1/4” with metal plug</td>
<td>15 18</td>
</tr>
<tr>
<td>Two 1/4” with plastic plugs</td>
<td>15 18</td>
</tr>
<tr>
<td>Two 1/4” with metal plugs</td>
<td>15 18</td>
</tr>
<tr>
<td>One 1/2” with plastic plug</td>
<td>1</td>
</tr>
<tr>
<td>One 1/2” with metal plug</td>
<td>1</td>
</tr>
<tr>
<td>Two 1/2” with plastic plugs</td>
<td>1</td>
</tr>
<tr>
<td>Two 1/2” with metal plugs</td>
<td>1</td>
</tr>
</tbody>
</table>

**Gasket**

<table>
<thead>
<tr>
<th>Description</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Klinger® C-4401 (non-asbestos)</td>
<td>K</td>
</tr>
<tr>
<td>Grafoil®</td>
<td>G</td>
</tr>
<tr>
<td>Teflon®</td>
<td>T</td>
</tr>
<tr>
<td>Dyneon® 3510</td>
<td>L</td>
</tr>
</tbody>
</table>

1. Standard facing 125-250 AARH RF (raised face) serrated surface finish.
2. Plastic Plugs are TEMPORARY ONLY to protect threads and MUST be REMOVED before installation.
3. If Table I Bolts and Nuts material option is NACE, Bolts and Nuts will ship with Alloy Steel NACE and MAWP may change.
4. Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.

### TABLE II

**Seals (continued)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Diaphragm Diameter</th>
<th>Range Size</th>
<th>Pressure Rating</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.9”</td>
<td>2”</td>
<td>MDO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4”</td>
<td>2-1/2”</td>
<td>Customer clamp rating or 600 psi, whichever is less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.9”</td>
<td>3”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1”</td>
<td>4”</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Wetted Material**

<table>
<thead>
<tr>
<th>Description</th>
<th>Diaphragm Body</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>316L SS</td>
<td>750 psi</td>
<td></td>
</tr>
</tbody>
</table>

**Chemical Tee “Taylor” Wedge**

<table>
<thead>
<tr>
<th>Description</th>
<th>Diaphragm Body</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>316L SS</td>
<td>750 psi</td>
<td></td>
</tr>
</tbody>
</table>

**Non-Wetted Material**

<table>
<thead>
<tr>
<th>Description</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Selection</td>
<td>0</td>
</tr>
</tbody>
</table>

**Bolts**

<table>
<thead>
<tr>
<th>Description</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Selection</td>
<td>0</td>
</tr>
</tbody>
</table>

**Styles**

<table>
<thead>
<tr>
<th>Description</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tri-Clover Tri-Clamp®</td>
<td>8</td>
</tr>
</tbody>
</table>

**Gasket**

<table>
<thead>
<tr>
<th>Description</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Selection</td>
<td>0</td>
</tr>
</tbody>
</table>

1. Standard facing 125-250 AARH RF (raised face) serrated surface finish.
2. Plastic Plugs are TEMPORARY ONLY to protect threads and MUST be REMOVED before installation.
3. If Table I Bolts and Nuts material option is NACE, Bolts and Nuts will ship with Alloy Steel NACE and MAWP may change.
4. Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.
### TABLE II

<table>
<thead>
<tr>
<th>Description</th>
<th>Seal Pressure Rating</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.S. Bolts</td>
<td>304 SS Bolts</td>
<td></td>
</tr>
<tr>
<td>2.4&quot; 8-Bolt Design 316L SS for 3&quot; pipe 2,500 psi C.S. Bolts 1,250 psi RFK RFK RFK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4&quot; 6-Bolt Design 316L SS for 3&quot; pipe 2,000 psi 1,000 psi RPK RPK RPK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetted Material</td>
<td>Lower Housing</td>
<td></td>
</tr>
<tr>
<td>316L SS Carbon Steel</td>
<td>RA RA RA</td>
<td></td>
</tr>
<tr>
<td>316L SS Carbon Steel</td>
<td>RB RB RB</td>
<td></td>
</tr>
<tr>
<td>Hastelloy® C-276 316L SS</td>
<td>RC RC RC</td>
<td></td>
</tr>
<tr>
<td>Hastelloy® C-276 Hastelloy® C-276</td>
<td>RD RD RD</td>
<td></td>
</tr>
<tr>
<td>316L SS NA-Body Only 316L SS</td>
<td>SB SB SB</td>
<td></td>
</tr>
<tr>
<td>Hastelloy® C-276 NA-Body Only Hastelloy® C-276</td>
<td>SC SC SC</td>
<td></td>
</tr>
</tbody>
</table>

### TABLE III

#### Agency Approvals (see data sheet for Approval Code Details)

<table>
<thead>
<tr>
<th>Approvals</th>
<th>Approval Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Approvals Required</td>
<td>0</td>
</tr>
<tr>
<td>FM Explosion proof, Intrinsically Safe, Non-incendive, &amp; Dustproof</td>
<td>A</td>
</tr>
<tr>
<td>CSA Explosion proof, Intrinsically Safe, Non-incendive, &amp; Dustproof</td>
<td>A</td>
</tr>
<tr>
<td>ATEX Explosion proof, Intrinsically Safe &amp; Non-incendive</td>
<td>C</td>
</tr>
<tr>
<td>IECEx Explosion proof, Intrinsically Safe &amp; Non-incendive</td>
<td>D</td>
</tr>
<tr>
<td>SAE/CCeE Explosion proof, Intrinsically Safe &amp; Non-incendive</td>
<td>E</td>
</tr>
<tr>
<td>INMETRO Explosion proof, Intrinsically Safe &amp; Non-incendive</td>
<td>F</td>
</tr>
<tr>
<td>NEPSI Explosion proof, Intrinsically Safe &amp; Non-incendive</td>
<td>G</td>
</tr>
<tr>
<td>KOSHA Explosion proof, Intrinsically Safe &amp; Non-incendive</td>
<td>H</td>
</tr>
<tr>
<td>EAC Customs Union(Russia,Belarus,Kazakhstan)Ex Approval, Flame proof, Intrinsically Safe</td>
<td>I</td>
</tr>
</tbody>
</table>

### TABLE IV

#### TRANSMITTER ELECTRONIC SELECTIONS

<table>
<thead>
<tr>
<th>Material Type</th>
<th>Connection</th>
<th>Lightning Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Electronic Housing Material &amp; Connection Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyester Powder Coated Aluminum</td>
<td>1/2 NPT</td>
<td>None</td>
</tr>
<tr>
<td>Polyester Powder Coated Aluminum</td>
<td>M20</td>
<td>None</td>
</tr>
<tr>
<td>Polyester Powder Coated Aluminum</td>
<td>1/2 NPT</td>
<td>Yes</td>
</tr>
<tr>
<td>Polyester Powder Coated Aluminum</td>
<td>M20</td>
<td>Yes</td>
</tr>
<tr>
<td>Polyester Powder Coated Aluminum</td>
<td>1/2 NPT</td>
<td>None</td>
</tr>
<tr>
<td>Polyester Powder Coated Aluminum</td>
<td>M20</td>
<td>None</td>
</tr>
<tr>
<td>Polyester Powder Coated Aluminum</td>
<td>1/2 NPT</td>
<td>Yes</td>
</tr>
<tr>
<td>Polyester Powder Coated Aluminum</td>
<td>M20</td>
<td>Yes</td>
</tr>
<tr>
<td>316 Stainless Steel (Grade CF8M)</td>
<td>1/2 NPT</td>
<td>None</td>
</tr>
<tr>
<td>316 Stainless Steel (Grade CF8M)</td>
<td>M20</td>
<td>None</td>
</tr>
<tr>
<td>316 Stainless Steel (Grade CF8M)</td>
<td>1/2 NPT</td>
<td>Yes</td>
</tr>
<tr>
<td>316 Stainless Steel (Grade CF8M)</td>
<td>M20</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analog Output</th>
<th>Digital Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-20mA dc</td>
<td>HART Protocol</td>
</tr>
<tr>
<td>4-20mA dc</td>
<td>DE Protocol</td>
</tr>
<tr>
<td>none</td>
<td>Foundation Fieldbus</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Ext Zero, Span &amp; Config Buttons</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>c. Customer Interface Selections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>None</td>
<td>Yes (Zero/Span Only)</td>
<td>None</td>
</tr>
<tr>
<td>Basic</td>
<td>None</td>
<td>English</td>
</tr>
<tr>
<td>Basic</td>
<td>Yes</td>
<td>English</td>
</tr>
<tr>
<td>Standard (w/external Zero, Span &amp; Config Buttons)</td>
<td>None</td>
<td>English</td>
</tr>
</tbody>
</table>

---

*All sanitary seals have dary grade 3A approval.

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

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

Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.
### TABLE V  
**CONFIGURATION SELECTIONS**

<table>
<thead>
<tr>
<th>a. Application Software</th>
<th>Configuration</th>
<th>Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Diagnostics</td>
<td>Write Protect</td>
<td>Fail Mode</td>
</tr>
<tr>
<td>Disabled</td>
<td>High&gt; 21.0mAdc</td>
<td>Honeywell Std (3.8 - 20.8 mAdc)</td>
</tr>
<tr>
<td>Disabled</td>
<td>Low&lt; 3.6mAdc</td>
<td>Honeywell Std (3.8 - 20.8 mAdc)</td>
</tr>
<tr>
<td>Enabled</td>
<td>High&gt; 21.0mAdc</td>
<td>Honeywell Std (3.8 - 20.8 mAdc)</td>
</tr>
<tr>
<td>Enabled</td>
<td>Low&lt; 3.6mAdc</td>
<td>Honeywell Std (3.8 - 20.8 mAdc)</td>
</tr>
<tr>
<td>Enabled</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Disabled</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b. Output Limit, Failsafe &amp; Write Protect Settings</th>
<th>Configuration</th>
<th>Diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factory Standard</td>
<td>Custom Configuration (Unit Data Required from customer)</td>
<td></td>
</tr>
</tbody>
</table>

<sup>3</sup> NAMUR Output Limits 3.8 - 20.5mAdc can be configured by the customer or select custom configuration Table Vc

### TABLE VI  
**CALIBRATION & ACCURACY SELECTIONS**

<table>
<thead>
<tr>
<th>Accuracy and Calibration</th>
<th>Calibrated Range</th>
<th>Calibration Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Standard</td>
<td>Factory Std</td>
<td>Single Calibration</td>
</tr>
<tr>
<td>Standard</td>
<td>Custom (Unit Data Required)</td>
<td>Single Calibration</td>
</tr>
</tbody>
</table>

### TABLE VII  
**ACCESSORY SELECTIONS**

<table>
<thead>
<tr>
<th>Bracket Type</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Angle Bracket</td>
<td>Carbon Steel</td>
</tr>
<tr>
<td>Angle Bracket</td>
<td>304 SS</td>
</tr>
<tr>
<td>Angle Bracket</td>
<td>316 SS</td>
</tr>
<tr>
<td>Marine Approved Bracket</td>
<td>Carbon Steel</td>
</tr>
<tr>
<td>Marine Approved Bracket (In - Line)</td>
<td>Carbon Steel</td>
</tr>
<tr>
<td>Marine Approved Bracket</td>
<td>304 SS</td>
</tr>
<tr>
<td>Marine Approved Bracket (In - Line)</td>
<td>304 SS</td>
</tr>
<tr>
<td>Flat Bracket</td>
<td>Carbon Steel</td>
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<tr>
<td>Flat Bracket</td>
<td>304 SS</td>
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<tr>
<td>Flat Bracket</td>
<td>316 SS</td>
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### TABLE VIII  
**OTHER Certifications & Options : (String in sequence comma delimited (XX, XX, XX, ....))**

<table>
<thead>
<tr>
<th>Certifications &amp; Warranty</th>
<th>Factory Tag</th>
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<tbody>
<tr>
<td>NACE MR0175; MR0103; ISO15156 (FC33338) Process wetted parts only</td>
<td>FG</td>
</tr>
<tr>
<td>NACE MR0175; MR0103; ISO15156 (FC33339) wetted and non-wetted parts</td>
<td>MT</td>
</tr>
<tr>
<td>EN10204 Type 3.1 Material Traceability (FC33341)</td>
<td>FX</td>
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<tr>
<td>Certificate of Conformance (F3391)</td>
<td>F3</td>
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<tr>
<td>Calibration Test Report &amp; Certificate of Conformance (F3399)</td>
<td>F1</td>
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<tr>
<td>Certificate of Origin (F0195)</td>
<td>F5</td>
</tr>
<tr>
<td>FMEDA (SIL 2/3) Certification (FC33337)</td>
<td>FE</td>
</tr>
<tr>
<td>Over-Pressure Leak Test Certificate (1.5X MWP) (F3392)</td>
<td>TP</td>
</tr>
<tr>
<td>Cert Clean for O2 or CL2 service per ASTM G93</td>
<td>OX</td>
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<tr>
<td>Extended Warranty Additional 1 year</td>
<td>O1</td>
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<tr>
<td>Extended Warranty Additional 2 years</td>
<td>O2</td>
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<tr>
<td>Extended Warranty Additional 3 years</td>
<td>O3</td>
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<tr>
<td>Extended Warranty Additional 4 years</td>
<td>O4</td>
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### TABLE IX  
**Manufacturing Specials**

<table>
<thead>
<tr>
<th>Factory Identification</th>
<th>Factory</th>
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<tbody>
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**Notes:**
- **TABLE VII**
- **TABLE VIII**
- **TABLE IX**
### MODEL RESTRICTIONS

<table>
<thead>
<tr>
<th>Restriction Letter</th>
<th>Selection(s)</th>
<th>Available Only With</th>
<th>Not Available With</th>
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<td>Table Selection(s)</td>
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<tr>
<td>b</td>
<td></td>
<td>VIIa</td>
<td>1,2,3,5,6,7</td>
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<tr>
<td>c</td>
<td></td>
<td>Id</td>
<td>_ _ _ 0, N, B _ _ _</td>
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<tr>
<td>e</td>
<td></td>
<td>lb</td>
<td>_ 2 _ 2 _</td>
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<tr>
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<tr>
<td>23</td>
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</table>

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Tri-Clover Tri-Clamp® is a registered trademark of Alfa-Laval
FIELD INSTALLABLE REPLACEMENT PARTS

<table>
<thead>
<tr>
<th>Description</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrally Mounted Basic Indicator Kit (Compatible with all Electronic Modules)</td>
<td>50049911-501</td>
</tr>
<tr>
<td>Terminal Strip w/Lightning Protection Kit for HART or DE Modules</td>
<td>50075472-532</td>
</tr>
<tr>
<td>Terminal Strip w/Lightning Protection Kit for FFB/ProfiBus Module</td>
<td>50075472-534</td>
</tr>
<tr>
<td>Terminal Strip w/o Lightning Protection for HART or DE Modules</td>
<td>50075472-531</td>
</tr>
<tr>
<td>Terminal Strip w/o Lightning Protection FFB Module</td>
<td>50075472-533</td>
</tr>
<tr>
<td>HART Electronics Module</td>
<td>50049849-501</td>
</tr>
<tr>
<td>HART Electronics Module w/connection for external configuration buttons</td>
<td>50049849-502</td>
</tr>
<tr>
<td>DE Electronics Module</td>
<td>50049849-503</td>
</tr>
<tr>
<td>DE Electronics Module w/connection for external configuration buttons</td>
<td>50049849-504</td>
</tr>
<tr>
<td>FFB Electronics Module Kit</td>
<td>50049849-509</td>
</tr>
<tr>
<td>FFB Electronics Module w/connection for external configuration buttons</td>
<td>50049849-510</td>
</tr>
<tr>
<td>Standard Display Module</td>
<td>50126003-501</td>
</tr>
</tbody>
</table>

PRODUCT MANUALS

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 700 SmartLine Transmitter User Manual - English</td>
<td>34-ST-25-44</td>
</tr>
<tr>
<td>ST 700 SmartLine Transmitter HART/DE Communications Manual - English</td>
<td>34-ST-25-47</td>
</tr>
<tr>
<td>ST 700 SmartLine Transmitter Safety Manual - English</td>
<td>34-ST-25-37</td>
</tr>
<tr>
<td>ST 700 SmartLine Transmitter Foundation Fieldbus Manual - English</td>
<td>34-ST-25-48</td>
</tr>
<tr>
<td>ST 700 SmartLine Transmitter Function Block Manual - English</td>
<td>34-ST-25-49</td>
</tr>
</tbody>
</table>

All product documentation is available at www.honeywellprocess.com.
Sales and Service
For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

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Fax: +(65) 6445-3033

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(TAC)  
[hfs-tac-support@honeywell.com](mailto:hfs-tac-support@honeywell.com)

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(Sales) 1-800-343-0228

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or  
(TAC)  
[hfs-tac-support@honeywell.com](mailto:hfs-tac-support@honeywell.com)

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Or contact your Honeywell Account Manager

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