**Introduction**

Part of the SmartLine® family of products, the STG700 and STG70L are suitable for monitoring, control and data acquisition featuring 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 Features:**
- Accuracies up to 0.065% of span.
- Stability up to 0.020% of URL per year for 10 years.
- Automatic temperature compensation.
- Rangeability up to 100:1.
- Response times as fast as 100ms.
- Easy to use and intuitive display capabilities.
- Intuitive External Zero, Span and configuration capability.
- Comprehensive on-board diagnostic capabilities.
- Integral Dual Seal design for safety based on ANSI/NFPA 70-202 and ANSI/ISA 12.27.0.
- Full compliance to SIL 2/3 requirements.
- Modular design characteristics.
- Available with additional 4-year warranty.

**Communications/Output Options:**
- HART® (version 7.0)

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**Span & Range Limits:**

<table>
<thead>
<tr>
<th>Model</th>
<th>URL psi (bar)</th>
<th>LRL psi (bar)</th>
<th>Min Span psi (bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STG735/STG73S</td>
<td>50 (3.5)</td>
<td>-14.7 (-1.0)</td>
<td>0.5 (0.035)</td>
</tr>
<tr>
<td>STG745/STG74S</td>
<td>500 (35)</td>
<td>-14.7 (-1.0)</td>
<td>5 (0.35)</td>
</tr>
<tr>
<td>STG775/STG77S</td>
<td>3000 (210)</td>
<td>-14.7 (-1.0)</td>
<td>30 (2.1)</td>
</tr>
<tr>
<td>STG78S</td>
<td>6000 (420)</td>
<td>-14.7 (-1.0)</td>
<td>60 (4.2)</td>
</tr>
<tr>
<td>STG79S</td>
<td>10000 (690)</td>
<td>-14.7 (-1.0)</td>
<td>100 (6.9)</td>
</tr>
</tbody>
</table>
Description

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

Unique Indication/Display Option

Standard LCD Display Features

- Modular (may be added or removed in the field).
- Supports HART protocol variant.
- 0, 90, 180, & 270 degree position adjustments.
- Four configurable screens.
- Standard and custom measurement units available.
- Display calculated flow (square root) value in addition to analog output signal.
- 2 Lines 6 digits PV (9.95H x 4.20W mm) 8 Characters.
- Write protect Indication.
- Built-in Basic Device Configuration through Internal or External Buttons – Range/Engineering Unit/Loop Test /Loop Calibration/Zero /Span Setting.
- Multiple language capabilities (EN, RU).

Diagnostics

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

System Integration

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

Configuration Tools

Integral 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 either display option is selected. Zero/span capabilities are also optionally available via these buttons with or without selection of a display option.

Handheld Configuration

SmartLine transmitters feature two-way communication and configuration capability between the operator and the transmitter. All Honeywell transmitters are designed and tested for compliance with the offered communication protocols and are designed to operate with any standards compliant handheld configuration device, such as Honeywell Versatilis Configurator.

Personal Computer Configuration

On a personal computer or laptop, Honeywell Field Device Manager (FDM) Software and FDM Express can be used for managing HART 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, standard displays or electronic modules without affecting overall performance. Each meter body is uniquely characterized to provide intolerance performance over a wide range of application variations in temperature and pressure.

Modular Features

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

With no performance effects, Honeywell’s unique modularity results in lower inventory needs and lower overall operating costs.
Performance Specifications

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

Table 1

<table>
<thead>
<tr>
<th>Model</th>
<th>URL</th>
<th>URL/LRL</th>
<th>Min Span</th>
<th>Maximum Turndown Ratio</th>
<th>Stability (% URL/Year for 10 years)</th>
<th>Reference Accuracy^1,2 (% Span) Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>STG73S</td>
<td>50 psi (3.5 bar)</td>
<td>-14.7 psi (-1.0 bar)</td>
<td>0.5 psi (0.035 bar)</td>
<td>100:1</td>
<td>0.020</td>
<td>0.065</td>
</tr>
<tr>
<td>STG73S</td>
<td>50 psi (3.5 bar)</td>
<td>-14.7 psi (-1.0 bar)</td>
<td>0.5 psi (0.035 bar)</td>
<td>100:1</td>
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<td>STG74S</td>
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<td>5 psi (0.35 bar)</td>
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<td>0.020</td>
<td>0.065</td>
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<td>STG74S</td>
<td>500 psi (35 bar)</td>
<td>-14.7 psi (-1.0 bar)</td>
<td>5 psi (0.35 bar)</td>
<td>100:1</td>
<td>0.020</td>
<td>0.065</td>
</tr>
<tr>
<td>STG77S</td>
<td>3000 psi (210 bar)</td>
<td>-14.7 psi (-1.0 bar)</td>
<td>30 psi (2.1 bar)</td>
<td>100:1</td>
<td>0.020</td>
<td>0.065</td>
</tr>
<tr>
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<td>3000 psi (210 bar)</td>
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<td>100:1</td>
<td>0.020</td>
<td>0.065</td>
</tr>
<tr>
<td>STG78S</td>
<td>6000 psi (420 bar)</td>
<td>-14.7 psi (-1.0 bar)</td>
<td>60 psi (4.2 bar)</td>
<td>100:1</td>
<td>0.020</td>
<td>0.065</td>
</tr>
<tr>
<td>STG78S</td>
<td>6000 psi (420 bar)</td>
<td>-14.7 psi (-1.0 bar)</td>
<td>60 psi (4.2 bar)</td>
<td>100:1</td>
<td>0.020</td>
<td>0.065</td>
</tr>
<tr>
<td>STG79S</td>
<td>10000 psi (690 bar)</td>
<td>-14.7 psi (-1.0 bar)</td>
<td>100 (6.9 bar)</td>
<td>100:1</td>
<td>0.020</td>
<td>0.065</td>
</tr>
<tr>
<td>STG79S</td>
<td>10000 psi (690 bar)</td>
<td>-14.7 psi (-1.0 bar)</td>
<td>100 (6.9 bar)</td>
<td>100:1</td>
<td>0.020</td>
<td>0.065</td>
</tr>
</tbody>
</table>

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

Accuracy, Span and Temperature Effect: (Conformance to +/-3 Sigma)

Table 2

<table>
<thead>
<tr>
<th>Model</th>
<th>URL</th>
<th>Reference Turndown</th>
<th>C (see URL units)</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>STG73S</td>
<td>50 psi (3.5 bar)</td>
<td>16.7:1</td>
<td>3 (0.31)</td>
<td>0.070</td>
<td>0.008</td>
</tr>
<tr>
<td>STG73S</td>
<td>50 psi (3.5 bar)</td>
<td>8:1</td>
<td>6 (0.42)</td>
<td>0.100</td>
<td>0.015</td>
</tr>
<tr>
<td>STG74S</td>
<td>500 psi (35 bar)</td>
<td>8:1</td>
<td>25 (1.75)</td>
<td>0.075</td>
<td>0.013</td>
</tr>
<tr>
<td>STG74S</td>
<td>500 psi (35 bar)</td>
<td>20:1</td>
<td>35 (2.45)</td>
<td>0.100</td>
<td>0.020</td>
</tr>
<tr>
<td>STG77S</td>
<td>3000 psi (210 bar)</td>
<td>8.5:1</td>
<td>350 (24.5)</td>
<td>0.075</td>
<td>0.013</td>
</tr>
<tr>
<td>STG77S</td>
<td>3000 psi (210 bar)</td>
<td>8.5:1</td>
<td>400 (28)</td>
<td>0.100</td>
<td>0.025</td>
</tr>
<tr>
<td>STG78S</td>
<td>6000 psi (420 bar)</td>
<td>8:1</td>
<td>600 (42)</td>
<td>0.100</td>
<td>0.070</td>
</tr>
<tr>
<td>STG79S</td>
<td>10000 psi (690 bar)</td>
<td>8:1</td>
<td>1200 (82.8)</td>
<td>0.200</td>
<td>0.170</td>
</tr>
</tbody>
</table>

Turn Down Effect

\[ \pm \left( A + B \right) \text{ if Span} \geq C \]

\[ \pm \left( A + B \left( \frac{C}{\text{Span}} \right) \right) \text{ if Span} < C \]

Total Performance (% of Span):

Total Performance Calculation: \( \pm +/- \sqrt{(\text{Accuracy})^2 + (\text{Temperature Effect})^2} \)

Total Performance Examples (for comparison): (standard accuracy, 5:1 Turndown, +/- 50°F (28°C) shift)

STG73S @ 10 psi: 0.128% of span
STG74S @ 10 psi: 0.187% of span
STG73S @ 100 psi: 0.154% of span
STG74S @ 100 psi: 0.210% of span
STG77S @ 600 psi: 0.154% of span
STG77S @ 600 psi: 0.234% of span
STG78S @ 1200 psi: 0.455% of span
STG79S @ 2000 psi: 1.052% of span

Typical Calibration Frequency:

Calibration verification is recommended every two (2) years

Notes:

1. Terminal Based Accuracy - Includes combined effects of linearity, hysteresis, and repeatability. Analog output adds 0.006% of span.
2. For zero based spans and reference conditions of: 25°C (77°F) for LRV >= 0 psia, 10 to 55% RH, and 316 Stainless Steel barrier diaphragm.
## Operating Conditions – All Models

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Reference Condition</th>
<th>Rated Condition</th>
<th>Operative Limits</th>
<th>Transportation and Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>°C °F</td>
<td>°C °F</td>
<td>°C °F</td>
<td>°C °F</td>
</tr>
<tr>
<td><strong>Ambient Temperature</strong>¹</td>
<td>25±1 77±2</td>
<td>-40 to 85</td>
<td>-40 to 185</td>
<td>-40 to 85</td>
</tr>
<tr>
<td><strong>Meter Body Temperature</strong></td>
<td>25±1 77±2</td>
<td>-40 to 110</td>
<td>-40 to 230</td>
<td>-40 to 125</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>%RH 10 to 55</td>
<td>0 to 100</td>
<td>0 to 100</td>
<td>0 to 100</td>
</tr>
<tr>
<td><strong>Vac. Region – Min. Pressure</strong></td>
<td>Atmospheric 25</td>
<td>2 (short term)²</td>
<td>1 (short term)²</td>
<td></td>
</tr>
<tr>
<td>mmHg absolute</td>
<td>Atmospheric 13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>inH₂O absolute</td>
<td>Atmospheric</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Supply Voltage**                 | 10.8 to 42.4 Vdc at terminals (IS versions limited to 30 VDC) | 0 to 1,440 ohms (as shown in Figure 2) |
| **Load Resistance**                | STG73S: 50 psi (3.5 bar) | STG73S: 50 psi (3.5 bar) |
| **Maximum Allowable**              | STG74S: 500 psi (35 bar) | STG74S: 500 psi (35 bar) |
| Working Pressure (MAWP)³,⁴          | STG77S: 3000 psi (210 bar) | STG77S: 3000 psi (210 bar) |
| (ST700 products are rated to      | STG78S: 6000 psi (420 bar) | STG78S: 6000 psi (420 bar) |
| Maximum Allowable Working Pressure | STG79S: 10000 psi (690 bar) | STG79S: 10000 psi (690 bar) |
| (MAWP depends on Approval Agency   |                             |                             |
| and transmitter materials of       |                             |                             |
| construction.)                     |                             |                             |

¹ LCD Display operating temperature -20°C to +70°C Storage temperature -30°C to 80°C.
² Short term equals 2 hours at 70°C (158°F).
³ Units can withstand overpressure of 1.5 x MAWP without damage.
⁴ Consult the factory for MAWP of ST 700 transmitters with CRN approval.
⁵ Silicone minimum temperature rating is -40°C (-40°F). CTFE minimum temperature rating is -40°C (-40°F).

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**Figure 2 - Supply voltage and loop resistance chart & calculations**

A minimum of 250 ohms loop resistance is required to support field communicator, where loop resistance is the summation of barrier resistance, wire resistance and receiver resistance.

Maximum loop resistance

\[
R_{L\text{max}} = 45.6 \times (\text{Power Supply Voltage} - 10.8)
\]
### Performance Under Rated Conditions – All Models

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog Output Digital Communications:</td>
<td>Two-wire, 4 to 20 mA HART7</td>
</tr>
<tr>
<td>HART Output Failure Modes</td>
<td><strong>Honeywell Standard</strong> 3.8 – 20.8 mA</td>
</tr>
<tr>
<td></td>
<td><strong>NAMUR NE 43 Compliance</strong> 3.8 – 20.5 mA</td>
</tr>
<tr>
<td>Normal Limits:</td>
<td>3.8 – 20.8 mA</td>
</tr>
<tr>
<td>Failure Mode:</td>
<td>≤ 3.6 mA and ≥ 21.0 mA</td>
</tr>
<tr>
<td>Supply Voltage Effect</td>
<td>0.005% span per volt.</td>
</tr>
<tr>
<td>Transmitter Turn on Time</td>
<td>2.5 seconds</td>
</tr>
<tr>
<td>(includes power up &amp; test algorithms)</td>
<td></td>
</tr>
<tr>
<td>Response Time (delay + time constant)</td>
<td>100ms</td>
</tr>
<tr>
<td>Damping Time Constant</td>
<td>Adjusted from 0 to 32 seconds in 0.1 increments. <strong>Default Value:</strong> 0.5 seconds</td>
</tr>
<tr>
<td>Vibration Effect:</td>
<td>Less than +/- 0.1% of URL w/o damping</td>
</tr>
<tr>
<td></td>
<td>Per IEC60770-1 field or pipeline, high vibration level (10-2000Hz: 0.21 displacement/3g max acceleration)</td>
</tr>
<tr>
<td>Electromagnetic Compatibility</td>
<td>IEC 61326-3-1</td>
</tr>
<tr>
<td>Lightning Protection Option</td>
<td><strong>Leakage Current:</strong> 10uA max @ 42.4VDC 93C</td>
</tr>
<tr>
<td></td>
<td><strong>Impulse rating:</strong></td>
</tr>
<tr>
<td></td>
<td>8/20us 5000A (&gt;10 strikes)</td>
</tr>
<tr>
<td></td>
<td>10/1000us 200A (&gt; 300 strikes)</td>
</tr>
<tr>
<td></td>
<td>10000A (1 strike min.)</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>Barrier Diaphragms Material</td>
<td><strong>STG700 Dual Head:</strong> 316L SS, Hastelloy® C-276²</td>
</tr>
<tr>
<td></td>
<td><strong>STG700 Inline:</strong> 316L SS, Hastelloy® C-276²</td>
</tr>
<tr>
<td>Process Head Material</td>
<td><strong>STG700 Dual Head:</strong> Carbon Steel (Zinc Plated)⁵, 316 SS⁴, Hastelloy® C-276⁶</td>
</tr>
<tr>
<td></td>
<td><strong>STG700 Inline:</strong> 316L SS, Hastelloy® C-276⁶</td>
</tr>
<tr>
<td>Vent/Drain Valves &amp; Plugs</td>
<td><strong>STG700 Dual Head:</strong> 316 SS⁴, Hastelloy® C-276²</td>
</tr>
<tr>
<td></td>
<td><strong>STG700 Inline:</strong> N/A</td>
</tr>
<tr>
<td>Head Gaskets</td>
<td><strong>STG700 Dual Head:</strong> Glass-filled PTFE standard. Viton® and graphite are optional. STG700 Inline: N/A</td>
</tr>
<tr>
<td>Meter Body Bolting</td>
<td><strong>STG700 Dual Head:</strong> Carbon Steel (Zinc plated) standard. Options include 316 SS, NACE A286 SS bolts and nuts or NACE A286 SS bolts and 304 SS nuts, and Super Duplex. STG700 Inline: N/A</td>
</tr>
<tr>
<td>Mounting Bracket</td>
<td>Carbon Steel (Zinc-plated) or 304 or 316 Stainless Steel, See Figures 3 &amp; 4</td>
</tr>
<tr>
<td>Fill Fluid</td>
<td>Silicone, CTFE</td>
</tr>
<tr>
<td>Electronic Housing</td>
<td>Pure Polyester Powder Coated Low Copper (&lt;0.4%)-Aluminum. Meets NEMA 4X, IP66, IP67 and NEMA 7 (explosion proof). All stainless steel housing is optional.</td>
</tr>
<tr>
<td>Process Connections</td>
<td><strong>STG700 Dual Head:</strong> ½ -inch NPT(female)</td>
</tr>
<tr>
<td></td>
<td><strong>STG700 Inline:</strong> ½ -inch NPT(female), ½ -inch NPT male, 9/16 Aminco, G½ -B Male Thread</td>
</tr>
<tr>
<td>Wiring</td>
<td>Accepts up to 16 AWG (1.5 mm diameter).</td>
</tr>
<tr>
<td>Dimensions</td>
<td>See Figure 3 and Figure 4</td>
</tr>
<tr>
<td>Net Weight</td>
<td>STG700 Dual Head: 8.3 pounds (3.8 Kg). STG700 Inline: 3.6 pounds (1.6 Kg) with Aluminum Housing</td>
</tr>
</tbody>
</table>

1  Vent/Drains are sealed with Teflon®
2  Hastelloy® C-276 or UNS N10276
4  Supplied as 316 SS or as Grade CF8M, the casting equivalent of 316 SS.
5  Carbon Steel heads are zinc-plated and not recommended for water service due to hydrogen migration. For that service, use 316 stainless steel wetted Process Heads.
6  Hastelloy® C-276 or UNS N10276. Supplied as indicated or as Grade CW12MW, the casting equivalent of Hastelloy® C-276
Communications Protocols & Diagnostics

HART Protocol

Version: HART 7

Standard Diagnostics
ST 700 top level diagnostics are reported as either critical or non-critical and readable via the DD/DTM/FDI tools or Standard integral display. Some of the diagnostics are listed below:

Critical Diagnostics
- Electronics Module Fault.
- Meter body Memory Corruption.
- Config Data Corruption.
- Electronics Module Diagnostics Failure.
- Meter body Critical Failure.
- Sensor Communication Timeout.

Non-Critical Diagnostics
- Display Failure.
- Electronics Module Comm Failure.
- Meter body Excess Correct.
- Sensor Over Temperature.
- Fixed Current Mode.
- PV Out of Range.
- No DAC Compensation.

Refer to the product user manual for comprehensive list of diagnostics and details.
## Hazardous Area Certifications

<table>
<thead>
<tr>
<th>MSG CODE</th>
<th>AGENCY</th>
<th>TYPE OF PROTECTION</th>
<th>COMM. OPTION</th>
<th>ELECTRICAL PARAMETERS</th>
<th>AMBIENT TEMP (Ta)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>FM Approvals™ USA</td>
<td>Explosionproof: Class I, Division 1, Groups A, B, C, D; Dust Ignition Proof: Class II, III, Division 1, Groups E, F, G; T6..T5 Class I, Zone 0/1, AEx db IIC T6..T5 Ga/Gb Class II, Zone 21, AEx tb IIC T95°Db</td>
<td>All</td>
<td>Note 1</td>
<td>T5: -50°C to 85°C T6: -50°C to 65°C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intrinsically Safe: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G: T4 Class I, Zone 0, AEx ia IIC T4 Ga Ex ia IIC T4 Ga; Ex ic IIC T4 Gc</td>
<td>4-20 mA / HART</td>
<td>Note 2a</td>
<td>-50°C to 70°C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonincendive: Class I, Division 2, Groups A, B, C, D locations, T4 Class I, Zone 2, AEx nA IIC T4 Gc</td>
<td>4-20 mA / HART</td>
<td>Note 1</td>
<td>-50°C to 85°C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enclosure: Type 4X/ IP66/ IP67</td>
<td>All</td>
<td>All</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STANDARDS:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| B        | Canadian Standards Association (CSA) USA and Canada | Explosion Proof: Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1, T6..T5 Class I Zone 1 AEx db IIC T6..T5 Ga/Gb Ex db IIC T6..T5 Ga/Gb Zone 22 AEx tb IIC T95°Db Ex tb IIC T95°Db | All | Note 1 | T5: -50°C TO 85°C T6: -50°C TO 65°C |
|          |        | Intrinsically Safe: Class I, II, III, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1, T4 Class I Zone 0, AEx ia IIC T4 Ga Class I Zone 2, AEx ic IIC T4 Gc Ex ia IIC T4 Ga Ex ic IIC T4 Gc | 4-20 mA / HART | Note 2 | -50°C TO 70°C |
|          |        | Nonincendive: Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F, G; Class III, Division 2, T4 Class I Zone 2 AEx nA IIC T4 Gc Ex nA IIC T4 Gc | 4-20 mA / HART | Note 1 | -50°C TO 85°C |
|          |        | Enclosure: Type 4X/ IP66/ IP67 | All | All | - |</p>
<table>
<thead>
<tr>
<th>MSG CODE</th>
<th>AGENCY</th>
<th>TYPE OF PROTECTION</th>
<th>COMM. OPTION</th>
<th>ELECTRICAL PARAMETERS</th>
<th>AMBIENT TEMP (Ta)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Flameproof: SIRA 12ATEX2233X</td>
<td></td>
<td>4-20 mA / HART</td>
<td>-50°C TO 70°C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intrinsically Safe: SIRA 12ATEX2233X</td>
<td></td>
<td>4-20 mA / HART</td>
<td>-50°C TO 70°C</td>
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### Notes:

1. **Operating Parameters:**
   - **Voltage:** 11 to 42 VDC
   - **Current:** 4-20 mA Normal

2. **Intrinsically Safe Entity Parameters**
   a. **Analog/ HART Entity Values**
      - **Vmax = Ui = 30V**
      - **Imax = li = 105mA**
      - **Ci = 4.2nF**
      - **Li = 984 uH**
      - **Pi = 0.9W**

      **Transmitter with Terminal Block revision E or Later**
      - **Vmax = Ui = 30V**
      - **Imax = li = 225mA**
      - **Ci = 4.2nF**
      - **Li = 0**
      - **Pi = 0.9W**

      **Note:** Transmitter with Terminal Block revision E or later
      The revision is on the label that is on the module. There will be two lines of text on the label:
      1. First is the Module Part #: 50049839-001 or 50049839-002
      2. Second line has the supplier information, along with the REVISION:
         - XXXXXXX-EXXXX, THE “X” is production related, THE POSITION of the “E” IS THE REVISION.

### Other Certification Options

#### Materials
- NACE MRO175, MRO103, ISO15156

#### SIL 2/3 Certification
Mounting & Dimensional Drawings

Reference Dimensions: millimeters inches

Mounting Configurations: (Dual head design)

Dimensions: (Dual head design)

Figure 3 – Typical mounting dimensions of STG735, STG745 & STG775 for reference

Refer to the User’s manual (34-ST-25-44) for full details on mounting and installation.
Reference Dimensions: millimeters

Mounting Configurations (Inline Designs)

Figure 4 – Typical mounting dimensions of STG74S, STG77S, STG78S, & STG79S for reference

Refer to the User’s manual (34-ST-25-44) for full details on mounting and installation.
Model Selection Guide

Model Selection Guides are subject to change and are inserted into the specifications as guidance only.

Model STG700
Gauge Pressure Transmitters
Model Selection Guide
34-ST-16-122, Issue 17

Instructions: Make selections from all Tables using column below the proper arrow. Asterisk indicates availability. Letter (a) refers to restrictions highlighted in the restrictions table. Tables delimited with dashes.

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<th>Key</th>
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**TABLE I**

**METER BODY SELECTIONS**

- **a. Process Head & Diaphragm Materials**
  - Process Head/Reference Head Material
  - Barrier Diaphragm Material
  - 316L SS
  - Hastelloy C - 276
  - 316 Stainless Steel
  - Hastelloy C - 276
  - Hastelloy C - 276/316 Stainless Steel

- **b. Fill Fluid**
  - Silicone Oil 200
  - Fluorinated Oil CTFE

- **c. Process Connection**
  - 9/16" Arinco
  - 1/2" NPT (female)
  - 1/2" NPT (male)
  - G 1/2 B Threaded Fitting
  - M20 (male)

- **d. Bolt/Nuts Materials**
  - Carbon Steel
  - 316 SS
  - Grade 660 (NACE A286) with NACE 304 SS Nuts
  - Grade 660 (NACE A286) Bolts & Nuts
  - Super Duplex

- **e. Vent/Drain Type/Location**
  - None
  - Single Ended
  - Dual Ended

- **f. Gasket Materials**
  - None
  - Teflon® or PTFE (Glass Filled)
  - Viton®
  - Graphite

1. Exception: Carbon Steel Heads shall use 316SS Vent/Drain & Plugs and or 1/2" adapters
2. STG735,745,775 supplied via 1/2" flange adapter same material as process head except carbon steel shall use 316 SS
3. Reference head available with Dual Head Gage models only. In-Line Gage models are supplied with Process Head only.
4. When selected for In-Line Gage models the Process Head / Bonnet is supplied in Dual Certified SS316/316L.}

Instructions: List Price: Price equals the sum of prices for all selections made.

**Key**

- I
- II
- III
- IV
- V
- VI
- VII
- VIII
- IX

**Selection**

- STG735
- STG745
- STG775
- STG73S
- STG74S
- STG77S
- STG77S
- STG78S
- STG79S

**Availability**

- 
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**Process Head/Reference Head Material**

- Plated Carbon Steel
- 316L SS
- Hastelloy C - 276
- 316 Stainless Steel
- Hastelloy C - 276
- Hastelloy C - 276/316 Stainless Steel

**Barrier Diaphragm Material**

- A
- B
- E
- F
- B
- K
- D
- E

**Size/Type**

- Material

- A
- B
- G
- H
- N
- C
- S
- N
- K
- D

**Location**

- None
- Single Ended
- Dual Ended

**Head Type**

- None
- Single Ended
- Dual Ended

**Vent Type**

- End
- End
- Std Vent/Plug

**Vent Material**

- None
- None
- Matches Head Material
- Matches Head Material
- Matches Head Material

**Material**

- P
- P
- P
- P
### Table II: Meter Body & Connection Orientation

<table>
<thead>
<tr>
<th>Head/Connect Orientation</th>
<th>Standard</th>
<th>High Side Left, Ref Side Right&lt;sup&gt;2&lt;/sup&gt; / Std Head Orientation</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversed</td>
<td>Ref Side Left, High Side Right&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Reversed 90°/Standard Head Rotation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90/Standard</td>
<td>High Side Left, Ref Side Right&lt;sup&gt;3&lt;/sup&gt;</td>
<td>90° Head Rotation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table III: AGENCY APPROVALS

<table>
<thead>
<tr>
<th>Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Approvals Required</td>
</tr>
<tr>
<td>&lt;FM&gt; Explosion proof, Intrinsically Safe, Non-incendive, &amp; Dustproof</td>
</tr>
<tr>
<td>CSA Explosion proof, Intrinsically Safe, Non-incendive, &amp; Dustproof</td>
</tr>
<tr>
<td>ATEX Explosion proof, Intrinsically Safe &amp; Non-incendive</td>
</tr>
<tr>
<td>IECEx Explosion proof, Intrinsically Safe &amp; Non-incendive</td>
</tr>
<tr>
<td>SAEx Explosion proof, Intrinsically Safe &amp; Non-incendive</td>
</tr>
<tr>
<td>NEPSI Explosion proof, Intrinsically Safe &amp; Non-incendive</td>
</tr>
<tr>
<td>EAC-Customs Union (Russia, Belarus and Kazakhstan)</td>
</tr>
<tr>
<td>CCoE Explosion proof, Intrinsically Safe &amp; Non-incendive</td>
</tr>
<tr>
<td>UATR Flameproof, Intrinsically Safe &amp; Dustproof</td>
</tr>
</tbody>
</table>

### Table IV: TRANSMITTER ELECTRONICS SELECTIONS

#### a. Electronic Housing Material & Connection Type

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

#### b. Output/Protocol

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Ext Zero, Span &amp; Config Buttons</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Standard (w/ Internal Zero, Span &amp; Config buttons)</td>
<td>Yes (Zero/Span Only)</td>
<td>None</td>
</tr>
<tr>
<td>Standard (w/ Internal Zero, Span &amp; Config buttons)</td>
<td>None</td>
<td>EN, RU</td>
</tr>
<tr>
<td>Standard (w/ Internal Zero, Span &amp; Config buttons)</td>
<td>Yes</td>
<td>EN, RU</td>
</tr>
</tbody>
</table>

#### c. Customer Interface Selections

<table>
<thead>
<tr>
<th>Language</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EN, RU</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table V: CONFIGURATION SELECTIONS

#### a. Application Software

<table>
<thead>
<tr>
<th>Software</th>
<th>Standard Diagnostics</th>
</tr>
</thead>
</table>

#### b. Output Limit, Failsafe & Write Protect Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Write Protect</th>
<th>Fail Mode</th>
<th>High &amp; Low Output Limits&lt;sup&gt;4&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>High ≥ 21.0 mAcd</td>
<td>Honeywell Std</td>
<td>(3.8 - 20.8 mAcd)</td>
</tr>
<tr>
<td>Disabled</td>
<td>Low &lt; 3.6 mAcd</td>
<td>Honeywell Std</td>
<td>(3.8 - 20.8 mAcd)</td>
</tr>
<tr>
<td>Enabled</td>
<td>High ≥ 21.0 mAcd</td>
<td>Honeywell Std</td>
<td>(3.8 - 20.8 mAcd)</td>
</tr>
<tr>
<td>Enabled</td>
<td>Low &lt; 3.6 mAcd</td>
<td>Honeywell Std</td>
<td>(3.8 - 20.8 mAcd)</td>
</tr>
</tbody>
</table>

#### c. General Configuration

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Factory Standard</th>
<th>Custom Configuration (Unit Data Required from customer)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

<sup>1</sup> Left side/Right side as viewed from the customer connection perspective

<sup>2</sup> NAMUR Output Limits are configurable by customer

<sup>3</sup> Process connections will vary on In-Line Models

---
### TABLE VI  CALIBRATION & ACCURACY SELECTIONS

<table>
<thead>
<tr>
<th>Accuracy and Calibration</th>
<th>Accuracy</th>
<th>Calibrated Range</th>
<th>Calibration Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>Standard</td>
<td>Factory Standard</td>
<td>Single Calibration</td>
</tr>
<tr>
<td>Custom (Unit Data Required)</td>
<td>Custom (Unit Data Required)</td>
<td>Single Calibration</td>
<td></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>304 SS</td>
</tr>
<tr>
<td>Flat Bracket</td>
<td>Carbon Steel</td>
</tr>
<tr>
<td>Flat Bracket</td>
<td>304 SS</td>
</tr>
<tr>
<td>Flat Bracket</td>
<td>316 SS</td>
</tr>
</tbody>
</table>

### Table VIII  OTHER Certifications & Options: (String in sequence comma delimited [XX,XX,XX,...])

<table>
<thead>
<tr>
<th>Certifications &amp; Warranty</th>
<th>Description</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>NACE MR0175; MR0103; ISO15156 Process wetted parts only</td>
<td>FG</td>
<td>50129828-502</td>
</tr>
<tr>
<td>NACE MR0175; MR0103; ISO15156 Process wetted and non-wetted parts</td>
<td>FG</td>
<td>50129828-501</td>
</tr>
<tr>
<td>Marine (DNV,ABS,BV,KR,LR)</td>
<td>FG</td>
<td>50129832-502</td>
</tr>
<tr>
<td>EN10204 Type 3.1 Material Traceability</td>
<td>FG</td>
<td>50129832-501</td>
</tr>
<tr>
<td>Calibration Test Report &amp; Certificate of Conformance</td>
<td>FG</td>
<td>50129832-501</td>
</tr>
<tr>
<td>Certificate of Conformance</td>
<td>FG</td>
<td>50129832-501</td>
</tr>
<tr>
<td>FMEDA (SIL 2/3) Certification</td>
<td>FG</td>
<td>50129832-501</td>
</tr>
<tr>
<td>Over-Pressure Leak Test Certificate (1.5X MAWP)</td>
<td>FG</td>
<td>50129832-501</td>
</tr>
<tr>
<td>Cert Clean for O₂ or Cl₂ service per ASTM G93</td>
<td>FG</td>
<td>50129832-501</td>
</tr>
<tr>
<td>PM Certification⁵</td>
<td>FG</td>
<td>50129832-501</td>
</tr>
<tr>
<td>Extended Warranty Additional 1 year</td>
<td>FG</td>
<td>50129832-501</td>
</tr>
<tr>
<td>Extended Warranty Additional 2 years</td>
<td>FG</td>
<td>50129832-501</td>
</tr>
<tr>
<td>Extended Warranty Additional 3 years</td>
<td>FG</td>
<td>50129832-501</td>
</tr>
<tr>
<td>Extended Warranty Additional 4 years</td>
<td>FG</td>
<td>50129832-501</td>
</tr>
</tbody>
</table>

### TABLE IX  Manufacturing Specials

<table>
<thead>
<tr>
<th>Factory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Display Module</td>
<td>50129828-502</td>
</tr>
<tr>
<td>Terminal Strip w/Lightning Protection for HART Modules</td>
<td>50129828-501</td>
</tr>
<tr>
<td>HART Electronics Module</td>
<td>50129828-501</td>
</tr>
<tr>
<td>HART Electronics Module w/connection for external configuration buttons</td>
<td>50129828-501</td>
</tr>
</tbody>
</table>

### RESTRICTIONS

<table>
<thead>
<tr>
<th>Restriction Letter</th>
<th>Available Only with</th>
<th>Not Available with</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>Selection(s)</td>
<td>Table</td>
</tr>
<tr>
<td>c</td>
<td>Selection(s)</td>
<td>Table</td>
</tr>
<tr>
<td>d</td>
<td>Selection(s)</td>
<td>Table</td>
</tr>
<tr>
<td>e</td>
<td>Selection(s)</td>
<td>Table</td>
</tr>
<tr>
<td>h</td>
<td>Selection(s)</td>
<td>Table</td>
</tr>
<tr>
<td>i</td>
<td>Selection(s)</td>
<td>Table</td>
</tr>
<tr>
<td>m</td>
<td>Selection(s)</td>
<td>Table</td>
</tr>
<tr>
<td>p</td>
<td>Selection(s)</td>
<td>Table</td>
</tr>
<tr>
<td>t</td>
<td>Selection(s)</td>
<td>Table</td>
</tr>
</tbody>
</table>

The PM option is available on all Smartline Pressure Transmitter process wetted parts such as process heads, flanges, bushings and vent plugs except plated carbon steel process heads and flanges.  PM option information is also available on diaphragms except STG and STA in-line construction pressure transmitters.

**FIELD INSTALLABLE ACCESSORY KITS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Kit Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal Strip w/Lightning Protection Kit for HART</td>
<td>50129828-501</td>
<td>Note P</td>
</tr>
<tr>
<td>Terminal Strip w/Lightning Protection for HART Modules</td>
<td>50129828-502</td>
<td>Note P</td>
</tr>
<tr>
<td>HART Electronics Module</td>
<td>50129828-502</td>
<td>Note P</td>
</tr>
<tr>
<td>HART Electronics Module w/connection for external configuration buttons</td>
<td>50129828-502</td>
<td>Note P</td>
</tr>
</tbody>
</table>

Note P - For part number pricing please refer to WEB Channel

**PRODUCT MANUALS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 700 Smart Transmitter User Manual - English</td>
<td>34-ST-25-44</td>
</tr>
<tr>
<td>ST 700 Smart Transmitter HART Communications Manual - English</td>
<td>34-ST-25-47</td>
</tr>
<tr>
<td>ST 700 Smart Transmitter Safety Manual - English</td>
<td>34-ST-25-37</td>
</tr>
</tbody>
</table>

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

### ASIA PACIFIC
Honeywell Process Solutions, Phone: + 800 12026455 or +44 (0) 1202645583  
(TAC) hfs-tac-support@honeywell.com

### EMEA
Honeywell Process Solutions, Phone: + 800 12026455 or +44 (0) 1202645583

### AMERICAS
Honeywell Process Solutions, Phone: (TAC) (800) 423-9883 or (215) 641-3610  
(Sales) 1-800-343-0228

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Phone: +(61) 7-3846 1255  
FAX: +(61) 7-3840 6481  
Toll Free 1300-36-39-36  
Toll Free Fax: 1300-36-04-70

### China – PRC - Shanghai
Honeywell China Inc.  
Phone: (86-21) 5257-4568  
Fax: (86-21) 6237-2826

### Singapore
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Fax: +(65) 6445-3033

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### Web

Specifications are subject to change without notice.

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For more information  
To learn more about SmartLine Transmitters, visit [www.honeywellprocess.com](http://www.honeywellprocess.com)  
Or contact your Honeywell Account Manager

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Shanghai, China 20061

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