

### STA700 SmartLine Absolute Pressure Specification 34-ST-03-120, March 2024



#### Introduction

Part of the SmartLine® family of products, the STA700 and STA70L 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, & 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 characters
- Available with additional 4-year warranty

#### Communications/Output Options:

- HART® (version 7.0)



**Figure 1 – STA700 InLine and Dual Head Absolute Pressure Transmitters feature field-proven piezoresistive sensor technology**

#### Span & Range Limits:

| Model      | URL<br>mmHgA<br>(mbarA) | LRL mmHgA<br>(mbarA) | Min Span<br>mm HgA<br>(mbarA) |
|------------|-------------------------|----------------------|-------------------------------|
| STA725/72S | 780 (1040)              | 0 (0)                | 50 (66.7)                     |
| Model      | psia (barA)             | psi (barA)           | psi (barA)                    |
| STA745/74S | 500 (35)                | 0 (0)                | 5 (0.35)                      |
| STA77S     | 3000 (210)              | 0 (0)                | 30 (2.1)                      |

## 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.

## 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**

| Model  | URL                    | LRL                   | Min Span              | Maximum Turndown Ratio | Stability (% URL/Year for 10 years) | Reference Accuracy <sup>1,2</sup> % Span Standard |
|--------|------------------------|-----------------------|-----------------------|------------------------|-------------------------------------|---------------------------------------------------|
| STA725 | 780 mmHgA (1040 mbarA) | 0.0 mmHgA (0.0 mbarA) | 50 mmHgA (66.7 mbarA) | 15.6:1                 | 0.02                                | 0.065                                             |
| STA745 | 500 psia (35 barA)     | 0.0 mmHgA (0.0 mbarA) | 5 psia (0.35 barA)    | 100:1                  |                                     |                                                   |
| STA72S | 780 mmHgA (1040 mbarA) | 0.0 mmHgA (0.0 mbarA) | 50 mmHgA (66.7 mbarA) | 15.6:1                 |                                     |                                                   |
| STA74S | 500 psia (35 barA)     | 0.0 mmHgA (0.0 mbarA) | 5 psia (0.35 barA)    | 100:1                  |                                     |                                                   |
| STA77S | 3000 psi (210 barA)    | 0.0 mmHgA (0.0 mbarA) | 30 psia (2.1 barA)    | 100:1                  |                                     |                                                   |

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

**Accuracy at Specified Span and Temperature:** (Conformance to +/-3 Sigma)

**Table 2**

|                                                                                                                   | Model  | URL                    | Accuracy <sup>1,2</sup> (% of Span) |       |       | Combined Zero & Span temperature Effect (% Span / 28°C(50°F)) |       |       |
|-------------------------------------------------------------------------------------------------------------------|--------|------------------------|-------------------------------------|-------|-------|---------------------------------------------------------------|-------|-------|
|                                                                                                                   |        |                        | Reference Turndown                  | A     | B     | C (see URL units)                                             | D     | E     |
| Standard Accuracy                                                                                                 | STA725 | 780 mmHgA (1040 mbarA) | 6.5:1                               | 0.005 | 0.060 | 120 (160)                                                     | 0.075 | 0.060 |
|                                                                                                                   | STA745 | 500 psia (35 barA)     | 16.7:1                              |       |       | 30 (2.1)                                                      | 0.075 | 0.015 |
|                                                                                                                   | STA72S | 780 mmHgA (1040 mbarA) | 4.3:1                               |       |       | 180 (240)                                                     | 0.075 | 0.120 |
|                                                                                                                   | STA74S | 500 psia (35 barA)     | 16.7:1                              |       |       | 30 (2.1)                                                      | 0.075 | 0.020 |
|                                                                                                                   | STA77S | 3000 psi (210 barA)    | 5:1                                 |       |       | 600 (42)                                                      | 0.075 | 0.015 |
| <b>Turn Down Effect</b>                                                                                           |        |                        |                                     |       |       | <b>Temp Effect</b>                                            |       |       |
| $\pm [A + B] \text{ if Span} \geq C$ $\pm \left[ A + B \left( \frac{C}{Span} \right) \right] \text{ if Span} < C$ |        |                        |                                     |       |       | $\pm \left[ D + E \left( \frac{URL}{Span} \right) \right]$    |       |       |

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

**Total Performance Calculation:** = +/-  $\sqrt{(Accuracy)^2 + (Temperature Effect)^2}$

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

**STA725 @ 156 mmHgA:** 0.381% of span

**STA72S @ 156 mmHgA:** 0.679% of span

**STA745 @ 100 psia:** 0.163% of span

**STA74S @ 100 psia:** 0.187% of span

**STA77S @ 600 psia:** 0.163% 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), 10 to 55% RH, and 316 Stainless Steel barrier diaphragm.

**Operating Conditions – All Models**

| Parameter                                                             | Reference Condition                                                                                                                                  |      | Rated Condition |            | Operative Limits |            | Transportation and Storage |            |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------|------------|------------------|------------|----------------------------|------------|
|                                                                       | °C                                                                                                                                                   | °F   | °C              | °F         | °C               | °F         | °C                         | °F         |
| <b>Ambient Temperature<sup>1</sup></b>                                | 25±1                                                                                                                                                 | 77±2 | -40 to 85       | -40 to 185 | -40 to 85        | -40 to 185 | -55 to 120                 | -67 to 248 |
| <b>Meter Body Temperature</b>                                         |                                                                                                                                                      |      |                 |            |                  |            |                            |            |
| STA725 / STA72S                                                       | 25±1                                                                                                                                                 | 77±2 | See Figure 2    |            | See Figure 2     |            | -55 to 125                 | -67 to 257 |
| STA745, 74S, 77S                                                      | 25±1                                                                                                                                                 | 77±2 | -40 to 110      | -40 to 230 | -40 to 125       | -40 to 257 | -55 to 125                 | -67 to 257 |
| <b>Humidity %RH</b>                                                   | 10 to 55                                                                                                                                             |      | 0 to 100        |            | 0 to 100         |            | 0 to 100                   |            |
| <b>Vacuum Region - Minimum Pressure</b><br>STA725, 72S, 745, 74S, 77S | See Figure 2.<br>Operate within specifications above 25 mmHgA (33 mbarA). Short term <sup>2</sup> exposure to full vacuum will not result in damage. |      |                 |            |                  |            |                            |            |
| <b>Supply Voltage, Current, and Load Resistance</b>                   | 10.8 to 42.4 Vdc at terminals (IS versions limited to 30 VDC)<br>0 to 1,440 ohms (as shown in Figure 3)                                              |      |                 |            |                  |            |                            |            |
| <b>Maximum Allowable Working Pressure (MAWP)<sup>3, 4</sup></b>       | STA725, 72S = 780 mmHgA (1,040 mbarA)<br>STA745, 74S = 500 psia (35 barA)<br>STA77S = 3,000 psia (210 barA)                                          |      |                 |            |                  |            |                            |            |

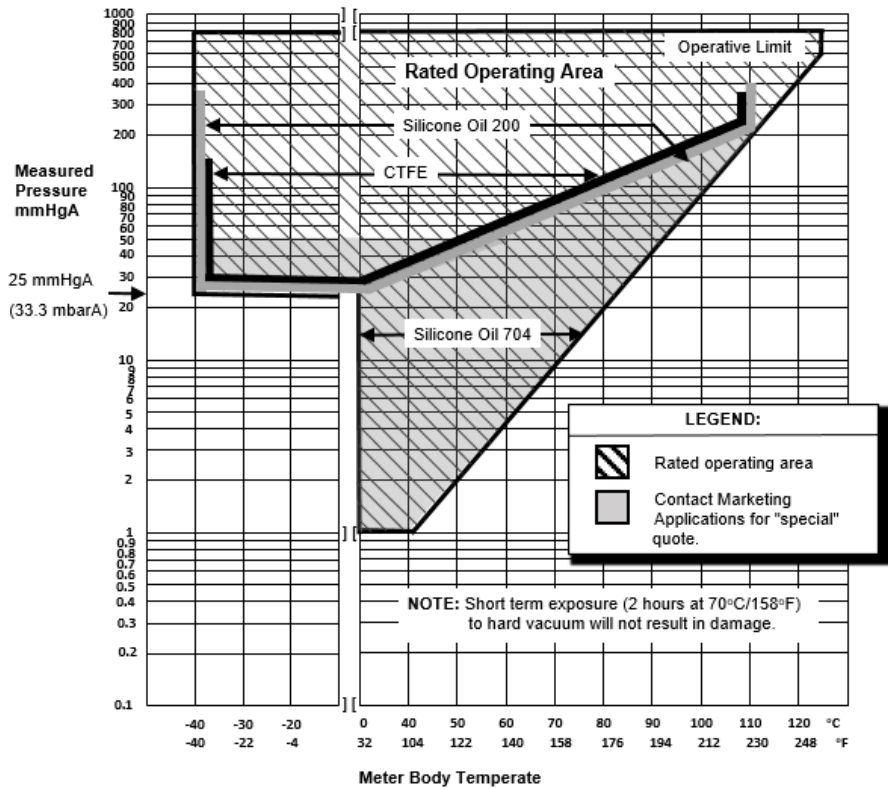
<sup>1</sup> LCD Display operating temperature -20°C to +70°C Storage temperature -30°C to 80°C.

<sup>2</sup> Short term equals 2 hours at 70°C (158°F).

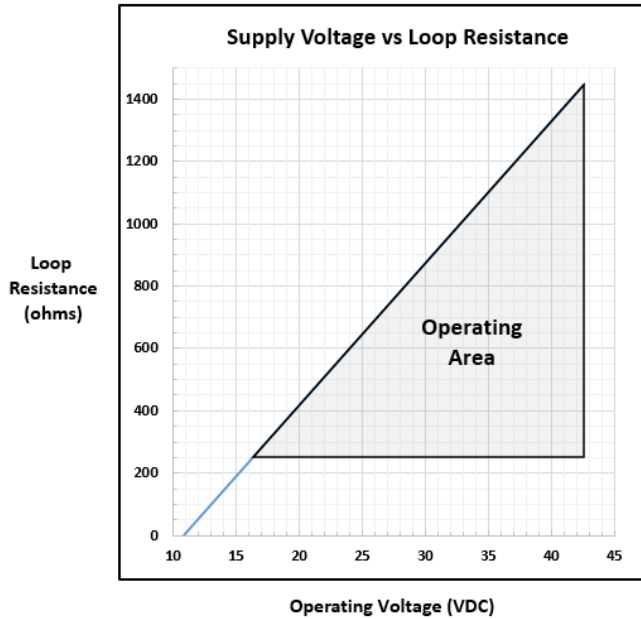
<sup>3</sup> Units can withstand overpressure of 1.5 x MAWP without damage.

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

<sup>5</sup> Silicone minimum temperature rating is -40°C (-40°F). CTFE minimum temperature rating is -40°C (-40°F).



**Figure 2 - Measured pressure versus meter body temperature chart for ST 700 Dual Head and Inline models**



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  
 $RL_{max} = 45.6 \times (\text{Power Supply Voltage} - 10.8)$

Figure 3 - Supply voltage and loop resistance chart & calculations

**Performance Under Rated Conditions – All Models**

| Parameter                                                      | Description                                                                                                                                                                                                                                                                                                                 |                               |                           |                               |                       |                      |               |                      |                        |                        |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------|-------------------------------|-----------------------|----------------------|---------------|----------------------|------------------------|------------------------|
| Analog Output                                                  | Two-wire, 4 to 20 mA                                                                                                                                                                                                                                                                                                        |                               |                           |                               |                       |                      |               |                      |                        |                        |
| Digital Communications:                                        | HART 7 protocol                                                                                                                                                                                                                                                                                                             |                               |                           |                               |                       |                      |               |                      |                        |                        |
| HART Output Failure Modes                                      | <table border="0"> <tr> <td></td> <td><b>Honeywell Standard</b></td> <td><b>NAMUR NE 43 Compliance</b></td> </tr> <tr> <td><b>Normal Limits:</b></td> <td>3.8 – 20.8 mA</td> <td>3.8 – 20.5 mA</td> </tr> <tr> <td><b>Failure Mode:</b></td> <td>≤ 3.6 mA and ≥ 21.0 mA</td> <td>≤ 3.6 mA and ≥ 21.0 mA</td> </tr> </table> |                               | <b>Honeywell Standard</b> | <b>NAMUR NE 43 Compliance</b> | <b>Normal Limits:</b> | 3.8 – 20.8 mA        | 3.8 – 20.5 mA | <b>Failure Mode:</b> | ≤ 3.6 mA and ≥ 21.0 mA | ≤ 3.6 mA and ≥ 21.0 mA |
|                                                                | <b>Honeywell Standard</b>                                                                                                                                                                                                                                                                                                   | <b>NAMUR NE 43 Compliance</b> |                           |                               |                       |                      |               |                      |                        |                        |
| <b>Normal Limits:</b>                                          | 3.8 – 20.8 mA                                                                                                                                                                                                                                                                                                               | 3.8 – 20.5 mA                 |                           |                               |                       |                      |               |                      |                        |                        |
| <b>Failure Mode:</b>                                           | ≤ 3.6 mA and ≥ 21.0 mA                                                                                                                                                                                                                                                                                                      | ≤ 3.6 mA and ≥ 21.0 mA        |                           |                               |                       |                      |               |                      |                        |                        |
| Supply Voltage Effect                                          | 0.005% of span per volt.                                                                                                                                                                                                                                                                                                    |                               |                           |                               |                       |                      |               |                      |                        |                        |
| Transmitter Turn on Time (includes power up & test algorithms) | 2.5 seconds                                                                                                                                                                                                                                                                                                                 |                               |                           |                               |                       |                      |               |                      |                        |                        |
| Response Time (delay + time constant)                          | 100ms                                                                                                                                                                                                                                                                                                                       |                               |                           |                               |                       |                      |               |                      |                        |                        |
| Damping Time Constant                                          | Adjustable from 0 to 32 seconds in 0.1 increments. <b>Default Value:</b> 0.5 seconds                                                                                                                                                                                                                                        |                               |                           |                               |                       |                      |               |                      |                        |                        |
| Vibration Effect                                               | Less than +/- 0.1% of URL w/o damping<br>Per IEC60770-1 field or pipeline, high vibration level (10-2000Hz: 0.21 displacement/3g max acceleration)                                                                                                                                                                          |                               |                           |                               |                       |                      |               |                      |                        |                        |
| Electromagnetic Compatibility                                  | Meets IEC61326-3-1                                                                                                                                                                                                                                                                                                          |                               |                           |                               |                       |                      |               |                      |                        |                        |
| Lightning Protection Option                                    | <b>Leakage Current:</b> 10uA max @ 42.4VDC 93C<br><b>Impulse rating:</b> <table border="0"> <tr> <td>8/20us</td> <td>5000A (&gt;10 strikes)</td> <td>10000A (1 strike min.)</td> </tr> <tr> <td>10/1000us</td> <td>200A (&gt; 300 strikes)</td> <td></td> </tr> </table>                                                    | 8/20us                        | 5000A (>10 strikes)       | 10000A (1 strike min.)        | 10/1000us             | 200A (> 300 strikes) |               |                      |                        |                        |
| 8/20us                                                         | 5000A (>10 strikes)                                                                                                                                                                                                                                                                                                         | 10000A (1 strike min.)        |                           |                               |                       |                      |               |                      |                        |                        |
| 10/1000us                                                      | 200A (> 300 strikes)                                                                                                                                                                                                                                                                                                        |                               |                           |                               |                       |                      |               |                      |                        |                        |

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

| Parameter                                         | Description                                                                                                                                                                                          |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Barrier Diaphragms Material</b>                | <b>STA7x5 Dual Head:</b> 316L SS, Hastelloy® C-276 <sup>2</sup><br><b>STA7xS Inline:</b> 316L SS, Hastelloy C-276 <sup>2</sup>                                                                       |
| <b>Process Head Material</b>                      | <b>STA700 Dual Head:</b> Carbon Steel (Zinc Plated) <sup>5</sup> , 316 SS <sup>4</sup> , Hastelloy® C-276 <sup>6</sup><br><b>STA700 Inline:</b> 316L SS <sup>4</sup> , Hastelloy® C-276 <sup>6</sup> |
| <b>Vent/Drain Valves &amp; Plugs</b> <sup>1</sup> | <b>STA700 Dual Head:</b> 316 SS <sup>4</sup> , Hastelloy® C-276 <sup>2</sup><br><b>STA700 Inline:</b> N/A                                                                                            |
| <b>Head Gaskets</b>                               | <b>STA700 Dual Head:</b> Glass-filled PTFE standard. Viton® and graphite are optional.<br><b>STA700 Inline:</b> N/A                                                                                  |
| <b>Meter Body Bolting</b>                         | <b>STA700 Dual Head:</b> Carbon Steel (Zinc plated) standard. Options include 316 SS, NACE A286 SS bolts and nuts or NACE A286 SS bolts nuts and Super Duplex<br><b>STA700 Inline:</b> N/A           |
| <b>Mounting Bracket</b>                           | Carbon Steel (Zinc-plated) or 304 or 316 Stainless Steel. See Figures 4 & 5                                                                                                                          |
| <b>Fill Fluid</b>                                 | Silicone 200, CTFE (Chlorotrifluoroethylene)                                                                                                                                                         |
| <b>Electronic Housing</b>                         | Pure Polyester Powder Coated Low Copper (<0.4%) – Aluminum.<br>Meets Type 4X / IP66 / IP67. All stainless-steel housing is optional.<br>Cover O ring material: Silicone.                             |
| <b>Process Connections</b>                        | <b>STA700 Dual Head:</b> ½ -inch NPT (female)<br><b>STA700 Inline:</b> ½ -inch NPT (female), ½ -inch NPT male, 9/16 Aminco. G½ -B Male Thread                                                        |
| <b>Wiring</b>                                     | Accepts up to 16 AWG (1.5 mm diameter).                                                                                                                                                              |
| <b>Dimensions</b>                                 | See Figure 4 and Figure 5                                                                                                                                                                            |
| <b>Net Weight</b>                                 | <b>STA700 Dual Head:</b> 8.3 pounds (3.8 Kg). <b>STA700 InLine:</b> 3.6 pounds (1.6 Kg) with Aluminum Housing                                                                                        |

<sup>1</sup> Vent/Drains are sealed with Teflon®

<sup>2</sup> Hastelloy® C-276 or UNS N10276

<sup>4</sup> Supplied as 316 SS or as Grade CF8M, the casting equivalent of 316 SS.

<sup>5</sup> 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.

<sup>6</sup> Hastelloy® C-276 or UNS N10276. Supplied as indicated or as Grade CW12MW, the casting equivalent of Hastelloy® C-276

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## 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

- Electronics Module Fault.
- 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.

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### Hazardous Area Certifications

| MSG CODE | AGENCY                                              | TYPE OF PROTECTION                                                                                                                                                                                                                                                                                                                        | COMM. OPTION   | ELECTRICAL PARAMETERS | AMBIENT TEMP (Ta)                        |  |
|----------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------|------------------------------------------|--|
| A        | FM Approvals™ USA                                   | Explosionproof:<br>Class I, Division 1, Groups A, B, C, D;<br>Dust Ignition Proof:<br>Class II, III, Division 1, Groups E, F, G;<br>T6..T5<br>Class I, Zone 0/1, AEx db IIC T6..T5 Ga/Gb<br>Class II, Zone 21, AEx tb IIIC T95° Db                                                                                                        | All            | Note 1                | T5: -50 °C to 85°C<br>T6: -50 °C to 65°C |  |
|          |                                                     | Intrinsically Safe:<br>Class I, II, III, Division 1, Groups A, B, C, D, E, F, G: T4<br>Class I, Zone 0, AEx ia IIC T4 Ga<br>Class I, Zone 0, AEx ic IIC T4 Ga<br>Ex ia IIC T4 Ga; Ex ic IIC T4 Gc                                                                                                                                         | 4-20 mA / HART | Note 2a               | -50 °C to 70°C                           |  |
|          |                                                     | Nonincendive:<br>Class I, Division 2, Groups A, B, C, D locations, T4<br>Class I, Zone 2, AEx nA IIC T4 Gc                                                                                                                                                                                                                                | 4-20 mA / HART | Note 1                | -50 °C to 85°C                           |  |
|          |                                                     | Enclosure: Type 4X/ IP66/ IP67                                                                                                                                                                                                                                                                                                            | All            | All                   | -                                        |  |
|          |                                                     | <b>STANDARDS:</b> FM Class 3600:2011; FM Class 3610: 2010; FM Class 3611: 2004; FM Class 3615: 2006; FM Class 3616: 2011; FM Class 3810: 2005; ANSI/ISA 60079-0: 2013; ANSI/UL 60079-1: 2015; ANSI/UL 60079-11: 2014; ANSI/ISA 60079-15: 2012; ANSI/UL 60079-26: 2017; ANSI/UL 60079-31: 2015; ANSI/NEMA 250: 2003; ANSI/ IEC 60529: 2004 |                |                       |                                          |  |
|          |                                                     |                                                                                                                                                                                                                                                                                                                                           |                |                       |                                          |  |
| B        | Canadian Standards Association (CSA) USA and Canada | <b>Explosion Proof:</b><br>Class I, Division 1, Groups A, B, C, D;<br>Class II, Division 1, Groups E, F, G;<br>Class III, Division 1, T6..T5<br>Class I Zone 1 AEx db IIC T6..T5 Ga/Gb<br>Ex db IIC T6..T5 Ga/Gb<br>Zone 22 AEx tb IIIC T95° Db<br>Ex tb IIIC T95° Db                                                                     | All            | Note 1                | T5: -50°C TO 85°C<br>T6: -50°C TO 65°C   |  |
|          |                                                     | <b>Intrinsically Safe:</b><br>Class I, II, III, Division 1, Groups A, B, C, D;<br>Class II, Division 1, Groups E, F, G;<br>Class III, Division 1, T4<br>Class I Zone 0, AEx ia IIC T4 Ga<br>Class I Zone 2, AEx ic IIC T4 Gc<br>Ex ia IIC T4 Ga<br>Ex ic IIC T4 Gc                                                                        | 4-20 mA / HART | Note 2                | -50°C TO 70°C                            |  |
|          |                                                     | <b>Nonincendive:</b><br>Class I, Division 2, Groups A, B, C, D;<br>Class II, Division 2, Groups F, G;<br>Class III, Division 2, T4<br>Class I Zone 2 AEx nA IIC T4 Gc<br>Ex ec IIC T4 Gc                                                                                                                                                  | 4-20 mA / HART | Note 1                | -50°C to 85°C                            |  |
|          |                                                     | Enclosure: Type 4X/ IP66/ IP67                                                                                                                                                                                                                                                                                                            | All            | All                   | -                                        |  |
|          |                                                     | <b>STANDARDS:</b> CSA C22.2 No. 0-10; CSA C22.2 No. 94-M91; CSA C22.2 No. 25-1966; CSA C22.2 No. 30-M1986; CSA C22.2 No. 142-M1987; CSA C22.2 No. 157-92; CSA C22.2 No. 213-M1987; CSA-C22.2 No. 60529:05; CSA-C22.2 No. 60079-0:11; CSA-C22.2 No. 60079-1:11; CSA-C22.2                                                                  |                |                       |                                          |  |
|          |                                                     |                                                                                                                                                                                                                                                                                                                                           |                |                       |                                          |  |



| MSG CODE | AGENCY                                                                                                                                                                                   | TYPE OF PROTECTION                                                                                                                                                                                                                                                    | COMM. OPTION                                                                                                                                                                                      | ELECTRICAL PARAMETERS | AMBIENT TEMP (Ta)                      |                                        |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------|----------------------------------------|
|          |                                                                                                                                                                                          | No. 60079-11:11; CSA-C22.2 No. 60079-15:12; CSA-C22.2 No. 60079-31:12; ISA 12.12.01-2010; ISA 60079-0: 2009; ISA 60079-11: 2011; ISA 60079-15: 2009; ISA 60079-26: 2008; ISA-60079-27:2007 (12.02.04)-2006 (R2011); UL 913 Ed. 6; UL 916:1998; ANSI/ISA-12.27.01-2011 |                                                                                                                                                                                                   |                       |                                        |                                        |
| C        | ATEX                                                                                                                                                                                     | <b>Flameproof: SIRA 12ATEX2233X</b><br> II 1/2 G Ex db IIC T6..T5 Ga/Gb<br>II 2 D Ex tb IIIC T95°C...T120°C Db                                                                       | All                                                                                                                                                                                               | Note 1                | T5: -50°C TO 85°C<br>T6: -50°C TO 65°C |                                        |
|          |                                                                                                                                                                                          | <b>Intrinsically Safe: SIRA 12ATEX2233X</b><br> II 1 G Ex ia IIC T4 Ga<br>II 2 D Ex ia IIIC T125°C Db                                                                                | 4-20 mA / HART                                                                                                                                                                                    | Note 2                | -50°C TO 70°C                          |                                        |
|          |                                                                                                                                                                                          | <b>Zone 2, Increase Safety: SIRA 12ATEX4234X</b><br> II 3 G Ex ec IIC T4 Gc                                                                                                          | 4-20 mA / HART                                                                                                                                                                                    | Note 1                | -50°C TO 85°C                          |                                        |
|          |                                                                                                                                                                                          | <b>Zone 2, Intrinsically Safe: SIRA 12ATEX4234X</b><br> II 3 G Ex ic IIC T4 Gc                                                                                                       | 4-20 mA / HART                                                                                                                                                                                    | Note 2                | -50°C TO 85°C                          |                                        |
|          |                                                                                                                                                                                          | Enclosure: IP66/ IP67                                                                                                                                                                                                                                                 | All                                                                                                                                                                                               | All                   | -                                      |                                        |
|          |                                                                                                                                                                                          | <b>STANDARDS:</b> EN 60079-0: 2018; EN 60079-1: 2014; EN 60079-7: 2015+A1: 2018; EN 60079-11: 2012; EN 60079-26: 2015; EN 60079-31: 2014                                                                                                                              |                                                                                                                                                                                                   |                       |                                        |                                        |
|          |                                                                                                                                                                                          | UKEX                                                                                                                                                                                                                                                                  | <b>Flameproof: CSAE 22UKEX1021X</b><br> II 1/2 G Ex db IIC T6..T5 Ga/Gb<br>II 2 D Ex tb IIIC T95°C...T120°C Db | All                   | Note 1                                 | T5: -50°C TO 85°C<br>T6: -50°C TO 65°C |
|          | <b>Intrinsically Safe: CSAE 22UKEX1021X</b><br> II 1 G Ex ia IIC T4 Ga<br>II 2 D Ex ia IIIC T125°C Db |                                                                                                                                                                                                                                                                       | 4-20 mA / HART                                                                                                                                                                                    | Note 2                | -50°C TO 70°C                          |                                        |
|          | <b>Zone 2, Increase Safety: CSAE 22UKEX1008X</b><br> II 3 G Ex ec IIC T4 Gc                           |                                                                                                                                                                                                                                                                       | 4-20 mA / HART/                                                                                                                                                                                   | Note 1                | -50°C TO 85°C                          |                                        |
|          | <b>Zone 2, Intrinsically Safe: CSAE 22UKEX1008X</b><br> II 3 G Ex ic IIC T4 Gc                        |                                                                                                                                                                                                                                                                       | 4-20 mA / HART                                                                                                                                                                                    | Note 2                | -50°C TO 85°C                          |                                        |
|          | Enclosure: IP66/ IP67                                                                                                                                                                    |                                                                                                                                                                                                                                                                       | All                                                                                                                                                                                               | All                   | -                                      |                                        |
|          | <b>STANDARDS:</b> EN 60079-0: 2018; EN 60079-1: 2014; EN 60079-7: 2015+A1: 2018; EN 60079-11: 2012; EN 60079-26: 2015; EN 60079-31: 2014                                                 |                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                   |                       |                                        |                                        |
|          | D                                                                                                                                                                                        | IECEx World                                                                                                                                                                                                                                                           | <b>Flameproof: IECEx SIR 12.0100X</b><br>Ex db IIC T6..T5 Ga/Gb<br>Ex tb IIIC T95°C...T120°C Db                                                                                                   | All                   | Note 1                                 | T5: -50°C TO 85°C<br>T6: -50°C TO 65°C |

| MSG CODE | AGENCY | TYPE OF PROTECTION                                                                                                                    | COMM. OPTION      | ELECTRICAL PARAMETERS | AMBIENT TEMP (Ta) |
|----------|--------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------|-------------------|
|          |        | <b>Intrinsically Safe: IECEx SIR 12.0100X</b><br>Ex ia IIC T4 Ga<br>Ex ia IIIC T125°C Db                                              | 4-20 mA /<br>HART | Note 2                | -50°C TO 70°C     |
|          |        | <b>Zone 2, Increase Safety: IECEx SIR 12.0100X</b><br>Ex ec IIC T4 Gc                                                                 | 4-20 mA /<br>HART | Note 1                | -50°C TO 85°C     |
|          |        | <b>Zone 2, Intrinsically Safe: IECEx SIR 12.0100X</b><br>Ex ic IIC T4 Gc                                                              | 4-20 mA /<br>HART | Note 2                | -50°C TO 85°C     |
|          |        | <b>Enclosure:</b> IP66/ IP67                                                                                                          | All               | All                   | -                 |
|          |        | <b>STANDARDS:</b> IEC 60079-0: 2017; IEC 60079-1: 2014; IEC 60079-7: 2017; IEC 60079-11: 2011; IEC 60079-26: 2014; IEC 60079-31: 2013 |                   |                       |                   |

|   |                                             |                                                                               |                   |        |                                        |
|---|---------------------------------------------|-------------------------------------------------------------------------------|-------------------|--------|----------------------------------------|
| E | SAEx<br>South Africa                        | <b>Flameproof :</b><br>Ex d IIC T6...T5 Ga/Gb<br>Ex tb IIIC T95°C...T120°C Db | All               | Note 1 | T5: -50°C TO 85°C<br>T6: -50°C TO 65°C |
|   |                                             | <b>Intrinsically Safe:</b><br>Ex ia IIC Ga T4                                 | 4-20 mA /<br>HART | Note 2 | -50°C TO 70°C                          |
|   |                                             | <b>Zone 2, Increase Safety:</b><br>II 3 G Ex ec IIC T4 Gc                     | 4-20 mA /<br>HART | Note 1 | -50°C TO 85°C                          |
|   |                                             | <b>Zone 2, Intrinsically Safe:</b><br>Ex ic IIC T4 Gc                         | 4-20 mA /<br>HART | Note 2 | -50°C TO 85°C                          |
|   |                                             | <b>Enclosure:</b> IP66/ IP67                                                  | All               | All    | -                                      |
| F | INMETRO<br>Brazil                           | <b>Flameproof:</b><br>Ex db IIC T6..T5 Ga/Gb<br>Ex tb IIIC T95°C...T120°C Db  | All               | Note 1 | T5: -50°C TO 85°C<br>T6: -50°C TO 65°C |
|   |                                             | <b>Intrinsically Safe:</b><br>Ex ia IIC T4 Ga                                 | 4-20 mA /<br>HART | Note 2 | -50°C TO 70°C                          |
|   |                                             | <b>Zone 2, Increase Safety:</b><br>II 3 G Ex ec IIC T4 Gc                     | 4-20 mA /<br>HART | Note 1 | -50°C TO 85°C                          |
|   |                                             | <b>Zone 2, Intrinsically Safe:</b><br>Ex ic IIC T4 Gc                         | 4-20 mA /<br>HART | Note 2 | -50°C TO 85°C                          |
|   |                                             | <b>Enclosure :</b> IP 66/67                                                   | All               | All    | -                                      |
| G | NEPSI<br>CHINA                              | <b>Flameproof:</b><br>Ex db IIC T6..T5 Ga/Gb<br>Ex tb IIIC T 95°C Db          | All               | Note 1 | T5: -50°C TO 85°C<br>T6: -50°C TO 65°C |
|   |                                             | <b>Intrinsically Safe:</b><br>Ex ia IIC T4 Ga                                 | 4-20 mA /<br>HART | Note 2 | -50°C TO 70°C                          |
|   |                                             | <b>Zone 2, Increase Safety:</b><br>II 3 G Ex ec IIC T4 Gc                     | 4-20 mA /<br>HART | Note 1 | -50°C TO 85°C                          |
|   |                                             | <b>Zone 2, Intrinsically Safe:</b><br>Ex ic IIC T4 Gc                         | 4-20 mA /<br>HART | Note 2 | -50°C TO 85°C                          |
|   |                                             | <b>Enclosure :</b> IP 66/67                                                   | All               | All    | -                                      |
| I | EAC<br>Russia, Belarus<br>and<br>Kazakhstan | <b>Flameproof:</b><br>Ga/Gb Ex d IIC T6..T5<br>Ex tb IIIC Db T 85°C           | All               | Note 1 | T5: -50°C TO 85°C<br>T6: -50°C TO 65°C |
|   |                                             | <b>Intrinsically Safe:</b><br>Ga Ex ia IIC T4 X                               | 4-20 mA /<br>HART | Note 2 | -50°C TO 70°C                          |
|   |                                             | <b>Zone 2, Non Sparking:</b><br>2 Ex nA IIC T4 Gc X                           | 4-20 mA /<br>HART | Note 1 | -50°C TO 85°C                          |
|   |                                             | <b>Zone 2, Intrinsically Safe:</b><br>Ga Ex ic IIC T4 X                       | 4-20 mA /<br>HART | Note 2 | -50°C TO 85°C                          |

|   |                 |                                                                                              |                       |        |                                        |
|---|-----------------|----------------------------------------------------------------------------------------------|-----------------------|--------|----------------------------------------|
|   |                 | <b>Enclosure :</b> IP 66/67                                                                  | All                   | All    |                                        |
| J | CCoE<br>INDIA   | <b>Flameproof:</b><br>Ex d IIC T6..T5 Ga/Gb                                                  | All                   | Note 1 | T5: -50°C TO 85°C<br>T6: -50°C TO 65°C |
|   |                 | <b>Intrinsically Safe:</b><br>Ex ia IIC T4 Ga                                                | 4-20 mA /<br>HART     | Note 2 | -50°C TO 70°C                          |
|   |                 | <b>Non Sparking</b><br>Ex nA IIC T4 Gc                                                       | 4-20 mA /<br>HART     | Note 1 | -50°C TO 85°C                          |
|   |                 | <b>Enclosure:</b> IP66/ IP67                                                                 | All                   | All    | -                                      |
| K | UATR<br>UKRAINE | <b>Flameproof:</b><br>II 1/2 G Ex db IIC T6..T5 Ga/Gb<br>II 2 D Ex tb IIIC T95°C...T120°C Db | All                   | Note 1 | T5: -50°C TO 85°C<br>T6: -50°C TO 65°C |
|   |                 | <b>Intrinsically Safe:</b><br>II 1 G Ex ia IIC T4 Ga                                         | 4-20 mA / DE/<br>HART | Note 2 | -50°C TO 70°C                          |
|   |                 | <b>Enclosure:</b> IP66/ IP67                                                                 | All                   | All    | -                                      |

**Notes:**

- Operating Parameters:  
Voltage = 11 to 42 VDC                      Current = 4-20 mA Normal
- Intrinsically Safe Entity Parameters
  - Analog/ HART Entity Values:  
 Vmax = Ui = 30V                      I<sub>max</sub> = I<sub>i</sub> = 105mA                      C<sub>i</sub> = 4.2nF                      L<sub>i</sub> = 984 uH                      P<sub>i</sub> = 0.9W  
 Transmitter with Terminal Block Revision E or Later  
 Vmax = Ui = 30V                      I<sub>max</sub> = I<sub>i</sub> = 225mA                      C<sub>i</sub> = 4.2nF                      L<sub>i</sub> = 0                      P<sub>i</sub> = 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:
    - First is the Module Part #: 50049839-001 or 50049839-002
    - Second line has the supplier information, along with the REVISION:  
 XXXXXX-EXXXX, THE "X" is production related, THE POSITION of the "E" IS THE REVISION.

**Other Certification Options****Materials**

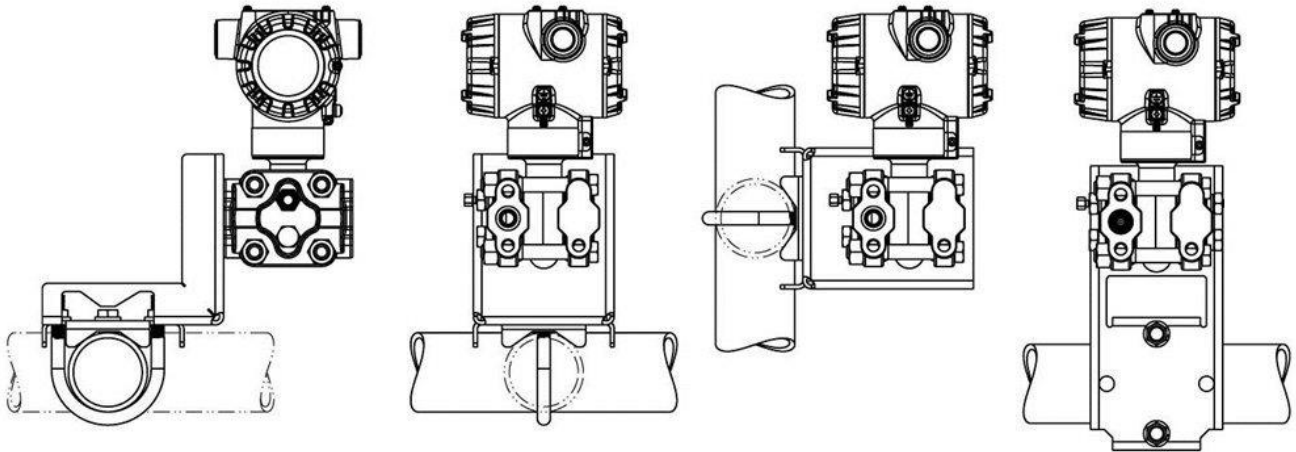
- NACE MRO175, MRO103, ISO15156

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

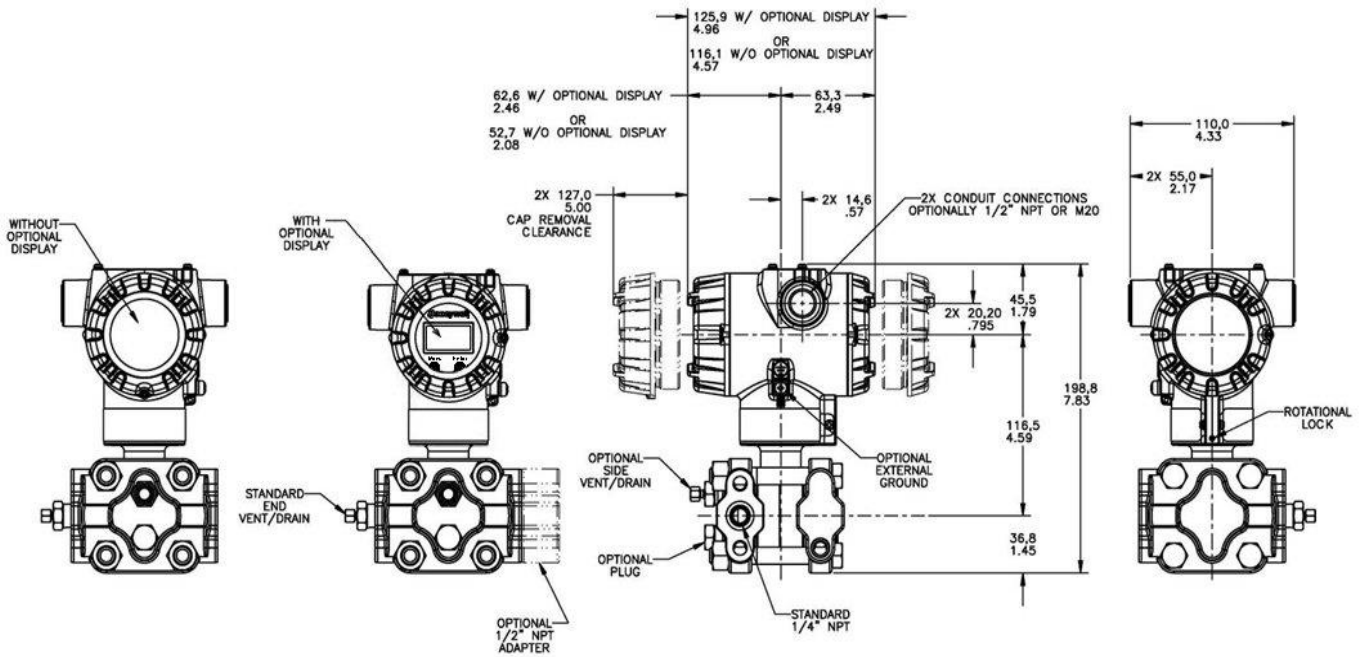
**Mounting & Dimensional Drawings**

Reference Dimensions:  $\frac{\text{millimeters}}{\text{inches}}$

**Mounting Configurations (Dual head design)**



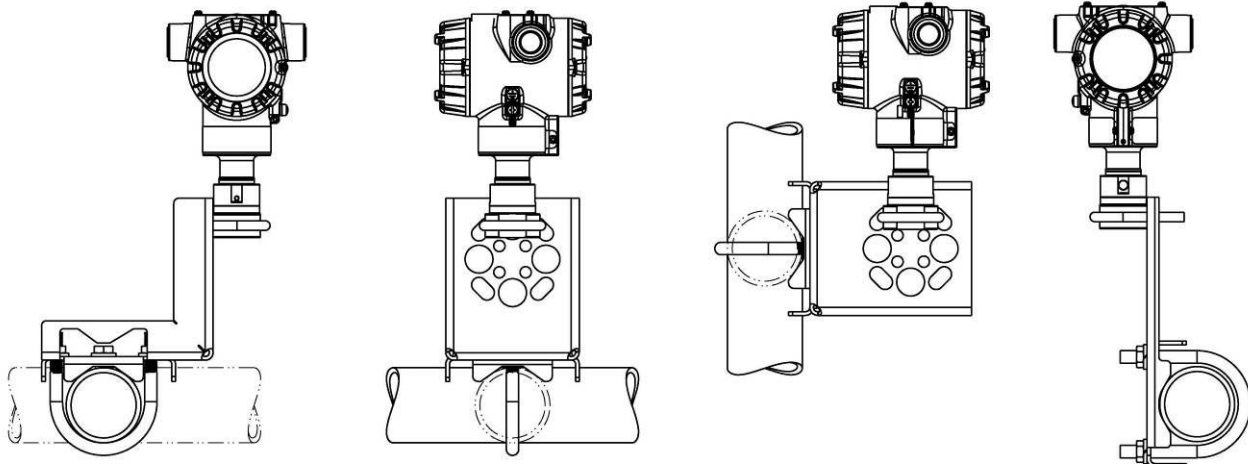
**Dimensions (Dual head design)**



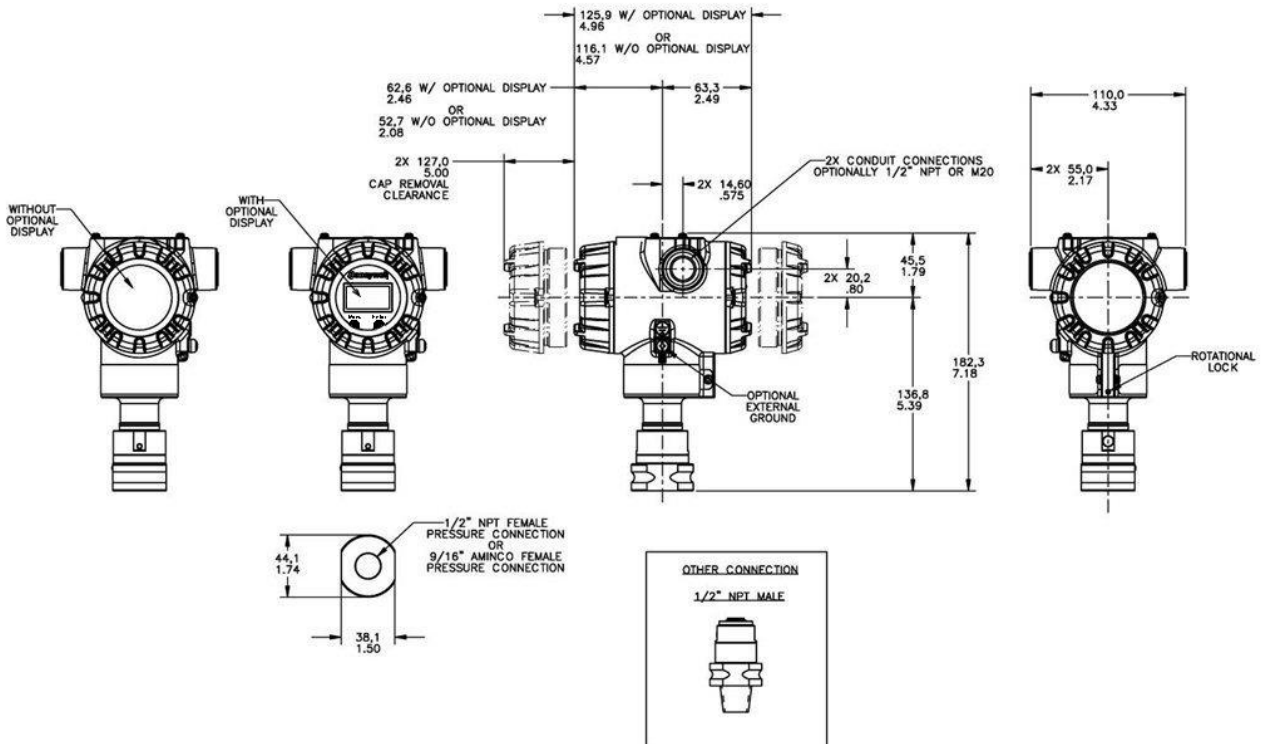
**Figure 4 - - Typical mounting dimensions of STA725 & STA745 for reference**

Reference Dimensions:  $\frac{\text{millimeters}}{\text{inches}}$

**Mounting Configurations (Inline Designs)**



**Dimension (Inline Design)**



**Figure 5 – Typical mounting dimensions of STA72S, STA74S, & STA77S for reference**

**Model Selection Guide**

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

**Model STA700  
Absolute Pressure Transmitters**

Model Selection Guide  
34-ST-16-120, Issue 18

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

Key                      I                      II                      III                      IV                      V                      VI                      VII                      VIII                      IX

STA7\_\_ - \_\_\_\_\_ - \_\_\_ - \_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - 0000

| KEY NUMBER                | URL/Max Span | LRL   | Min Span  | Units          |
|---------------------------|--------------|-------|-----------|----------------|
| <b>Absolute Dual Head</b> | 780 (1040)   | 0 (0) | 50 (65.0) | mm HgA (mbarA) |
|                           | 500 (35)     | 0 (0) | 5 (.35)   | psia (barA)    |
| <b>Absolute In-Line</b>   | 780 (1040)   | 0 (0) | 50 (65.0) | mm HgA (mbarA) |
|                           | 500 (35)     | 0 (0) | 5 (.35)   | psia (barA)    |
|                           | 3000 (210)   | 0 (0) | 30 (2.1)  | psia (barA)    |

| Selection | Availability |
|-----------|--------------|
| STA725    | ↓            |
| STA745    | ↓            |
| STA72S    | ↓            |
| STA74S    | ↓            |
| STA77S    | ↓            |

**TABLE I                      METER BODY SELECTIONS**

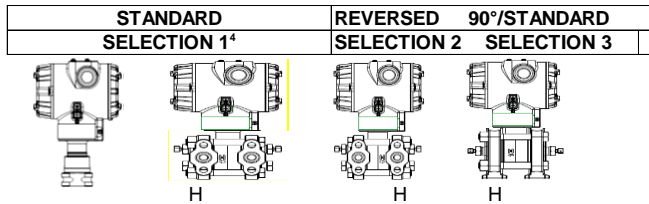
|                                                  |                                                                                                                                     |                  |                                           |                                    |                                    |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------|------------------------------------|------------------------------------|
| <b>a. Process Head &amp; Diaphragm Materials</b> | <b>Process Head/Reference Head Mat<sup>1b</sup></b>                                                                                 |                  | <b>Barrier Diaphragm Material</b>         |                                    |                                    |
|                                                  | Plated Carbon Steel /Plated Carbon Steel                                                                                            |                  | 316L SS<br>Hastelloy <sup>®</sup> C - 276 |                                    |                                    |
|                                                  | 316 Stainless Steel /316 Stainless Steel <sup>1c</sup>                                                                              |                  | 316L SS<br>Hastelloy C - 276              |                                    |                                    |
|                                                  | Hastelloy C - 276 /316 Stainless Steel                                                                                              |                  | Hastelloy C - 276                         |                                    |                                    |
| <b>b. Fill Fluid</b>                             | Silicone Oil 200<br>Fluorinated Oil CTFE                                                                                            |                  |                                           |                                    |                                    |
| <b>c. Process Connection</b>                     | <b>Size/Type</b>                                                                                                                    |                  | <b>Material</b>                           |                                    |                                    |
|                                                  | 9/16" Aminco                                                                                                                        |                  | Same as Process Head                      |                                    |                                    |
|                                                  | 1/2" NPT (female)                                                                                                                   |                  | Same as Process Head <sup>1a</sup>        |                                    |                                    |
|                                                  | 1/2" NPT (male)                                                                                                                     |                  | Same as Process Head                      |                                    |                                    |
|                                                  | G 1/2 B Threaded Fitting<br>M20 (male)                                                                                              |                  | Same as Process Head                      |                                    |                                    |
| <b>d. Bolt/Nuts Materials</b>                    | None<br>Carbon Steel<br>316 SS<br>Grade 660 (NACE A286) with NACE 304 SS Nuts<br>Grade 660 (NACE A286) Bolts & Nuts<br>Super Duplex |                  |                                           |                                    |                                    |
|                                                  | <b>e. Vent/Drain Type/Location</b>                                                                                                  | <b>Head Type</b> | <b>Vent Type</b>                          | <b>Vent Location</b>               | <b>Vent Material</b>               |
|                                                  |                                                                                                                                     | None             | None                                      | None                               | None                               |
|                                                  |                                                                                                                                     | Single Ended     | None                                      | None                               | None                               |
|                                                  |                                                                                                                                     | Single Ended     | Std Vent                                  | Side                               | Matches Head Material <sup>1</sup> |
| Single Ended                                     |                                                                                                                                     | Center Vent      | Side                                      | Stainless Steel Only               |                                    |
| Dual Ended                                       |                                                                                                                                     | Std Vent         | End                                       | Matches Head Material <sup>1</sup> |                                    |
| Dual Ended                                       |                                                                                                                                     | Center Vent      | End                                       | Stainless Steel Only               |                                    |
| Dual Ended                                       | Std Vent/ Plug                                                                                                                      | Side/End         | Matches Head Material <sup>1</sup>        |                                    |                                    |
| <b>f. Gasket Materials</b>                       | None<br>Teflon <sup>®</sup> or PTFE (Glass Filled)<br>Viton <sup>®</sup><br>Graphite                                                |                  |                                           |                                    |                                    |

|           |   |   |
|-----------|---|---|
| A _____   | * |   |
| B _____   | * |   |
| E _____   | * | * |
| F _____   | * | * |
| J _____   | * | * |
| _ 1 _____ | * | * |
| _ 2 _____ | * | * |

|           |          |   |
|-----------|----------|---|
| __ A ____ | *        | * |
| __ G ____ | *        | * |
| __ H ____ | *        |   |
| __ B ____ | *        |   |
| __ N ____ | *        | * |
| __ 0 ____ | *        | * |
| __ C ____ | *        |   |
| __ S ____ | *        |   |
| __ N ____ | *        |   |
| __ K ____ | <b>p</b> |   |
| __ D ____ | <b>p</b> |   |

|         |          |   |
|---------|----------|---|
| __ 0 __ | *        | * |
| __ 1 __ | *        |   |
| __ 2 __ | *        |   |
| __ 3 __ | <b>t</b> |   |
| __ 4 __ | *        |   |
| __ 5 __ | <b>t</b> |   |
| __ 6 __ | *        |   |
| __ 0    | *        | * |
| __ A    | *        |   |
| __ B    | *        |   |
| __ C    | *        |   |

<sup>1</sup> Except Carbon Steel Heads shall use 316SS Vent/Drain & Plugs  
<sup>1a</sup> STA725,745 supplied via 1/2" flange adapter same material as process head except carbon steel shall use 316 SS  
<sup>1b</sup> Reference head available only with Dual head models. In-line models supplied with process head only  
<sup>1c</sup> When selected for In-Line Gage models the Process Head / Bonnet is supplied in Dual Certified SS316/316L



| TABLE II                 |             | Meter Body & Connection Orientation                                |  |
|--------------------------|-------------|--------------------------------------------------------------------|--|
| Head/Connect Orientation | Standard    | High Side Left, Ref Side Right <sup>2</sup> / Std Head Orientation |  |
|                          | Reversed    | Ref Side Left, High Side Right <sup>2</sup>                        |  |
|                          | 90/Standard | High Side Left, Ref Side Right <sup>2</sup> / 90° Head Rotation    |  |

|   |   |   |
|---|---|---|
| 1 | * | * |
| 2 | * | * |
| 3 | h | * |

| TABLE III                                       |                                                                                           | AGENCY APPROVALS |   |   |   |
|-------------------------------------------------|-------------------------------------------------------------------------------------------|------------------|---|---|---|
| Approvals                                       | No Approvals Required                                                                     |                  | 0 | * | * |
|                                                 | <FM> Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof                      |                  | A | * | * |
|                                                 | CSA Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof                       |                  | B | * | * |
|                                                 | ATEX Explosion proof, Intrinsically Safe & Non-incendive                                  |                  | C | * | * |
|                                                 | IECEX Explosion proof, Intrinsically Safe & Non-incendive                                 |                  | D | * | * |
|                                                 | SAEx Explosion proof, Intrinsically Safe & Non-incendive                                  |                  | E | * | * |
|                                                 | INMETRO Explosion proof, Intrinsically Safe & Non-incendive                               |                  | F | * | * |
|                                                 | NEPSI Explosion proof, Intrinsically Safe & Non-incendive                                 |                  | G | * | * |
|                                                 | EAC-Customs Union(Russia,Belarus and Kazakhstan)EX Approval Flameproof,Intrinsically Safe |                  | I | * | * |
|                                                 | CCoE Explosion proof, Intrinsically Safe & Non-incendive                                  |                  | J | * | * |
| UATR Flameproof, Intrinsically Safe & Dustproof |                                                                                           | K                | * | * |   |

| TABLE IV                                         |                                               | TRANSMITTER ELECTRONICS SELECTIONS |                      |  |
|--------------------------------------------------|-----------------------------------------------|------------------------------------|----------------------|--|
| a. Electronic Housing Material & Connection Type | Material                                      | Connection                         | Lightning Protection |  |
|                                                  | Polyester Powder Coated Aluminum              | 1/2 NPT                            | None                 |  |
|                                                  | Polyester Powder Coated Aluminum              | M20                                | None                 |  |
|                                                  | Polyester Powder Coated Aluminum              | 1/2 NPT                            | Yes                  |  |
|                                                  | Polyester Powder Coated Aluminum              | M20                                | Yes                  |  |
|                                                  | 316 Stainless Steel (Grade CF8M)              | 1/2 NPT                            | None                 |  |
|                                                  | 316 Stainless Steel (Grade CF8M)              | M20                                | None                 |  |
|                                                  | 316 Stainless Steel (Grade CF8M)              | 1/2 NPT                            | Yes                  |  |
| 316 Stainless Steel (Grade CF8M)                 | M20                                           | Yes                                |                      |  |
| b. Output/ Protocol                              | Analog Output                                 |                                    | Digital Protocol     |  |
|                                                  | 4-20mA dc                                     |                                    | HART Protocol        |  |
| c. Customer Interface Selections                 | Indicator                                     | Ext Zero,Span & Config Buttons     | Languages            |  |
|                                                  | None                                          | None                               | None                 |  |
|                                                  | None                                          | Yes (Zero/Span Only)               | None                 |  |
|                                                  | Standard(w/Internal Zero,Span&Config Buttons) | None                               | EN, RU               |  |
| Standard(w/Internal Zero,Span&Config Buttons)    | Yes                                           | EN, RU                             |                      |  |

|     |   |   |
|-----|---|---|
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| B__ | * | * |
| C__ | * | * |
| D__ | * | * |
| E__ | * | * |
| F__ | * | * |
| G__ | * | * |
| H__ | * | * |

|     |   |   |
|-----|---|---|
| _H_ | * | * |
|-----|---|---|

|     |   |   |
|-----|---|---|
| __0 | * | * |
| __A | * | * |
| __S | * | * |
| __T | * | * |

| TABLE V                                            |                                                                 | CONFIGURATION SELECTIONS        |                                       |  |
|----------------------------------------------------|-----------------------------------------------------------------|---------------------------------|---------------------------------------|--|
| a. App S/W                                         | Diagnostics                                                     |                                 |                                       |  |
|                                                    | Standard Diagnostics                                            |                                 |                                       |  |
| b. Output Limit, Failsafe & Write Protect Settings | Write Protect                                                   | Fail Mode                       | High & Low Output Limits <sup>3</sup> |  |
|                                                    | Disabled                                                        | High> 21.0mAdc                  | Honeywell Std (3.8 - 20.8 mAdc)       |  |
|                                                    | Disabled                                                        | Low< 3.6mAdc                    | Honeywell Std (3.8 - 20.8 mAdc)       |  |
|                                                    | Enabled                                                         | High> 21.0mAdc                  | Honeywell Std (3.8 - 20.8 mAdc)       |  |
| Enabled                                            | Low< 3.6mAdc                                                    | Honeywell Std (3.8 - 20.8 mAdc) |                                       |  |
| c. General Configuration                           | General Configuration                                           |                                 |                                       |  |
|                                                    | Factory Standard<br>Customer Configuration (Unit Data Required) |                                 |                                       |  |

|     |   |   |
|-----|---|---|
| 1__ | * | * |
|-----|---|---|

|     |   |   |
|-----|---|---|
| _1_ | * | * |
| _2_ | * | * |
| _3_ | * | * |
| _4_ | * | * |

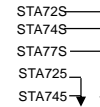
|     |   |   |
|-----|---|---|
| __S | * | * |
| __C | * | * |

<sup>2</sup> Left side/Right side as viewed from the customer connection perspective

<sup>3</sup> NAMUR Output Limits 3.8 - 20.5mAdc can be configured by the custom

<sup>4</sup> Process Connections will vary on In-Line models





| TABLE VI CALIBRATION & ACCURACY SELECTIONS |          |                             |                    |
|--------------------------------------------|----------|-----------------------------|--------------------|
| Accuracy and Calibration                   | Accuracy |                             | Calibration Qty    |
|                                            | Standard | Factory Std                 | Single Calibration |
|                                            | Standard | Custom (Unit Data Required) | Single Calibration |

|   |   |   |
|---|---|---|
| A | * | * |
| B | * | * |

| TABLE VII ACCESSORY SELECTIONS          |                                                                 |              |
|-----------------------------------------|-----------------------------------------------------------------|--------------|
| a. Mounting Bracket                     | Bracket Type                                                    | Material     |
|                                         |                                                                 | None         |
|                                         | Angle Bracket                                                   | Carbon Steel |
|                                         | Angle Bracket                                                   | 304 SS       |
|                                         | Angle Bracket                                                   | 316 SS       |
|                                         | Marine Approved Bracket                                         | 304 SS       |
|                                         | Flat Bracket                                                    | Carbon Steel |
|                                         | Flat Bracket                                                    | 304 SS       |
|                                         | Flat Bracket                                                    | 316 SS       |
| b. Customer Tag                         | Customer Tag Type                                               |              |
|                                         | No customer tag                                                 |              |
|                                         | One Wired Stainless Steel Tag (Up to 4 lines 26char/line)       |              |
| c. Unassembled Conduit Plugs & Adapters | Unassembled Conduit Plugs & Adapters                            |              |
|                                         | No Conduit Plugs or Adapters Required                           |              |
|                                         | 1/2 NPT Male to 3/4 NPT Female 316 SS Certified Conduit Adapter |              |
|                                         | 1/2 NPT 316 SS Certified Conduit Plug                           |              |
|                                         | M20 316 SS Certified Conduit Plug                               |              |

|   |     |   |   |
|---|-----|---|---|
| 0 | --- | * | * |
| 1 | --- | * | * |
| 2 | --- | * | * |
| 3 | --- | * | * |
| 4 | --- | * | * |
| 5 | --- | * | * |
| 6 | --- | * | * |
| 7 | --- | * | * |

|   |   |     |   |   |
|---|---|-----|---|---|
| _ | 0 | --- | * | * |
| _ | 1 | --- | * | * |

|   |    |   |   |
|---|----|---|---|
| _ | A0 | * | * |
| _ | A2 | n | n |
| _ | A6 | n | n |
| _ | A7 | m | m |

| TABLE VIII OTHER Certifications & Options: (String in sequence comma delimited (XX, XX, XX,....)) |                                                                       |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Certifications & Warranty                                                                         | None - No additional options                                          |
|                                                                                                   | NACE MR0175; MR0103; ISO15156 Process wetted parts only               |
|                                                                                                   | NACE MR0175; MR0103; ISO15156 Process wetted and non-wetted parts     |
|                                                                                                   | Marine (DNV,ABS,BV,KR,LR)                                             |
|                                                                                                   | EN10204 Type 3.1 Material Traceability                                |
|                                                                                                   | Certificate of Conformance                                            |
|                                                                                                   | Calibration Test Report & Certificate of Conformance                  |
|                                                                                                   | Certificate of Origin                                                 |
|                                                                                                   | FMEDA(SIL 2/3) Certification                                          |
|                                                                                                   | Over-Pressure Leak Test Certificate (1.5X MAWP)                       |
|                                                                                                   | Cert Clean for O <sub>2</sub> or CL <sub>2</sub> service per ASTM G93 |
|                                                                                                   | PM Certification <sup>5</sup>                                         |
|                                                                                                   | Extended Warranty Additional 1 year                                   |
|                                                                                                   | Extended Warranty Additional 2 years                                  |
| Extended Warranty Additional 3 years                                                              |                                                                       |
| Extended Warranty Additional 4 years                                                              |                                                                       |

|    |   |   |   |
|----|---|---|---|
| 00 | * | * |   |
| FG | * | * |   |
| F7 | c | c | b |
| MT | d | d |   |
| FX | * | * |   |
| F3 | * | * | b |
| F1 | * | * |   |
| F5 | * | * |   |
| FE | j | j |   |
| TP | * | * |   |
| OX | e | e |   |
| PM | * | * |   |
| 01 | * | * |   |
| 02 | * | * |   |
| 03 | * | * | b |
| 04 | * | * |   |

| TABLE IX Manufacturing Specials |                        |
|---------------------------------|------------------------|
| Factory                         | Factory Identification |

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | * | * |
|---|---|---|---|---|---|

**RESTRICTIONS**

| Restriction Letter | Available Only with |              | Not Available with                     |                             |
|--------------------|---------------------|--------------|----------------------------------------|-----------------------------|
|                    | Table               | Selection(s) | Table                                  | Selection(s)                |
| b                  |                     |              | Select Only one option from this group |                             |
| c                  | Id                  | 0,N,K,D      |                                        |                             |
| d                  | Iva                 | C, D, G, H   | VIIa                                   | 1, 2, 3, 5, 6, 7            |
| e                  | Ib                  | 2            |                                        |                             |
| h                  |                     |              | Ie                                     | 4,5,6                       |
| j                  |                     |              | VIIa                                   | 1, 2, 3, 4, 5, 6, 7         |
| m                  | IVa                 | B,D,F,H      | Vb                                     | 1,2                         |
| n                  | IVa                 | A,C,E,G      |                                        |                             |
| p                  |                     |              | III                                    | B - No CRN number available |
| s                  | Ia                  | A,E          |                                        |                             |
| t                  |                     |              | 1a                                     | J                           |

<sup>5</sup>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**

| Description                                                         | Kit Number   | Price  |
|---------------------------------------------------------------------|--------------|--------|
| Terminal Strip w/o Lightning Protection Kit for HART Module         | 50129832-501 | Note P |
| Terminal Strip w/Lightning Protection for HART Module               | 50129832-502 | Note P |
| HART Electronics Module                                             | 50129828-501 | Note P |
| HART Electronics Module w/connection for external Zero/Span buttons | 50129828-502 | Note P |
| Standard Display Module                                             | 50126003-501 | Note P |

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

**PRODUCT MANUALS**

| Description                                                   | Part Number |
|---------------------------------------------------------------|-------------|
| ST 700 Smart Transmitter User Manual - English                | 34-ST-25-44 |
| ST 700 Smart Transmitter HART Communications Manual - English | 34-ST-25-47 |
| ST 700 Smart Transmitter Safety Manual - English              | 34-ST-25-37 |

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

#### Australia

Honeywell Limited  
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

Honeywell Pte Ltd.  
Phone: +(65) 6580 3278  
Fax: +(65) 6445-3033

#### South Korea

Honeywell Korea Co Ltd  
Phone: +(822) 799 6114  
Fax: +(822) 792 9015

### EMEA

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

#### Email: (Sales)

[FP-Sales-Apps@Honeywell.com](mailto:FP-Sales-Apps@Honeywell.com)

or

(TAC)

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

#### Web

Knowledge Base search  
engine <http://bit.ly/2N5Vldi>

### AMERICAS

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

#### Email: (Sales)

[FP-Sales-Apps@Honeywell.com](mailto:FP-Sales-Apps@Honeywell.com)

or

(TAC)

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

#### Web

Knowledge Base search  
engine <http://bit.ly/2N5Vldi>

*Specifications are subject to change without notice.*

### For more information

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

### Process Solutions

Honeywell  
1250 W Sam Houston Pkwy S  
Houston, TX 77042

Honeywell Control Systems Ltd  
Honeywell House, Skimped Hill Lane  
Bracknell, England, RG12 1EB

Shanghai City Centre, 100 Jungi Road  
Shanghai, China 20061

[www.honeywellprocess.com](http://www.honeywellprocess.com)

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