

Technical Information

STG800 SmartLine Gauge Pressure Specification 34-ST-03-83, February 2017



Introduction

Part of the SmartLine® family of products, the STG800 and STG80L are high performance gauge pressure transmitter 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:

- Accuracy up to 0.055 % of calibrated span & 0.025% Opt.
- Stability up to 0.015% of URL per year for ten years
- Automatic temperature compensation
- Rangeability up to 100:1
- Response times as fast as 80ms
- Multiple local display capabilities
- External zero, span, & configuration capability
- Polarity insensitive electrical connections
- 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 as a standard.
- Modular design characteristics
- Available with 15 year warranty
- Plugged Impulse Line Detection Option
- Dual/Triple Calibration Option (HART & Fieldbus Only)



Figure 1 – STG800 Gauge Pressure Transmitters feature field-proven piezoresistive sensor technology

Communications/Output Options:

- 4-20mA dc
- Honeywell Digitally Enhanced (DE)
- HART® (version 7.0)
- FOUNDATION™ Fieldbus

All transmitters are available with the above listed communications protocols.

Span & Range Limits:

| Model | URL/Max Span psi (bar) | LRL psi (bar) | Min Span | Turn down |
|---------------|---------------------------|------------------|-----------|-----------|
| STG830/STG83L | 50 (3.5) | -14.7 (-1.0) | 0.5 (.35) | 100:1 |
| STG840/STG84L | 500 (35) | -14.7 (-1.0) | 5 (.35) | 100:1 |
| STG870/STG87L | 3000 (210) | -14.7 (-1.0) | 30 (2.1) | 100:1 |
| STG88L | 6000 (420) | -14.7 (-1.0) | 60 (4.2) | 100:1 |
| STG89L | 10000 (690) | -14.7 (-1.0) | 100 (6.9) | 100:1 |

Description

The SmartLine family of gauge pressure, differential pressure, and absolute pressure transmitters is 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 resulting in the best total performance available. This level of performance allows the ST 800 to replace virtually any competitive transmitter available today.

Unique Indication/Display Options

The ST 800 modular design accommodates a basic alphanumeric LCD display or a unique advanced graphics LCD display with many unparalleled features.

Basic Alphanumeric LCD Display Features

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

Advanced Graphics LCD Display Features

- Modular (may be added or removed in the field)
- 0, 90, 180, & 270 degree position adjustments
- Standard and custom measurement units available.
- Up to eight display screens with 3 formats are possible (Large PV with Bar Graph or PV with Trend Graph)
- Configurable screen rotation timing (1 to 30 sec)
- Display Square Root capabilities may be set separately from the 4-20mA dc output signal
- Unique "Health Watch" indication provides instant visibility of diagnostics
- Multiple language capability. (EN, DE, FR, IT, ES, RU, TR, CN, JP)

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**

Configuration Tools

Integral Three Button Configuration Option

Suitable for all electrical and environmental requirements, SmartLine offer 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.

Hand Held Configuration

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

Personal Computer Configuration

Honeywell's SCT 3000 Configuration Toolkit provides an easy way to configure Digitally Enhanced (DE) instruments using a personal computer as the configuration interface. Field Device Manager (FDM) Software and FDM Express are also available for managing HART & Fieldbus device configurations.

System Integration

- SmartLine communications protocols all meet the most current published standards for HART/DE/Fieldbus.
- Integration with Honeywell's Experion PKS offers the following unique advantages.
 - Transmitter messaging
 - Maintenance mode indication
 - Tamper reporting
 - FDM Plant Area Views with Health summaries
 - All ST 800 units are Experion tested to provide the highest level of compatibility assurance

Modular Design

To help contain maintenance & inventory costs, all ST 800 transmitters are modular in design supporting the user's ability to replace meter bodies, add indicators or change electronic modules without affecting overall performance or approval body certifications. Each meter body is uniquely characterized to provide in-tolerance performance over a wide range of application variations in temperature and pressure and due to the Honeywell advanced interface, electronic modules may be swapped with any electronics module without losing in-tolerance performance characteristics.

Modular Features

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

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

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

Plugged Impulse Line Detection:

STG800 models are offered with a PILD option which provides indication of a plugged impulse line or process connection. When used in conjunction with a basic or advanced display, a non-critical diagnostic indication appears on the integral display. For units without an integral display, an indication can be seen via the host or hand held device when HART Protocol is utilized.

Dual/Triple Calibration:

STG800 models are optionally offered with multiple calibrations. In lieu of a standard factory calibration, units can be supplied with 1, 2, or 3 customer specified calibrations. These calibrations are stored in the meter body and provide users with factory calibrated performance at up to three different calibrated ranges. This increases application flexibility without requiring any costly recalibration or additional inventory.

Performance Specifications

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

| Model | URL | LRL | Min Span | Maximum Turndown Ratio | Stability (% URL/Year) | Reference Accuracy ^{1,2} (% Span) Std / Opt. |
|--------|---------------------|----------------------|--------------------|------------------------|------------------------|---|
| STG830 | 50 psi (3.5 bar) | -14.7 psi (-1.0 bar) | 0.5 psi (.035 bar) | 100:1 | 0.010 | 0.055 / 0.025% |
| STG83L | 50 psi (3.5 bar) | -14.7 psi (-1.0 bar) | 0.5 psi (.035 bar) | | | |
| STG840 | 500 psi (35 bar) | -14.7 psi (-1.0 bar) | 5 psi (.35 bar) | | | |
| STG84L | 500 psi (35 bar) | -14.7 psi (-1.0 bar) | 5 psi (.35 bar) | | | |
| STG870 | 3000 psi (210 bar) | -14.7 psi (-1.0 bar) | 30 psi (2.1 bar) | | | |
| STG87L | 3000 psi (210 bar) | -14.7 psi (-1.0 bar) | 30 psi (2.1 bar) | | | |
| STG88L | 6000 psi (420 bar) | -14.7 psi (-1.0 bar) | 60 psi (4.2 bar) | | | |
| | | | | | | 0.055 / 0.04% |
| STG89L | 10000 psi (690 bar) | -14.7 psi (-1.0 bar) | 100 psi (6.9 bar) | | | |

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

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

| | Model | URL | For Turndowns Greater Than | Accuracy ^{1,2} (% of Span) | | | Combined Zero & Span Temperature Effect (% Span/50°F) | |
|---|--------|----------------------|----------------------------|-------------------------------------|-------|--|---|-------|
| | | | | A | B | C psi (bar) | D | E |
| Standard Accuracy | STG830 | 50 psi (3.5 bar) | 50:1 | 0.015 | 0.04 | 1 (0.7) | 0.030 | 0.003 |
| | STG83L | 50 psi (3.5 bar) | 16:1 | | | 3 (0.47) | | 0.006 |
| | STG840 | 500 psi (35 bar) | 25:1 | | | 20 (1.4) | | 0.004 |
| | STG84L | 500 psi (35 bar) | 25:1 | | | 20 (1.4) | 0.025 | 0.007 |
| | STG870 | 3000 psi (210 bar) | 10:1 | | | 300 (20.7) | | 0.005 |
| | STG87L | 3000 psi (210 bar) | 10:1 | | | 300 (20.7) | | 0.010 |
| | STG88L | 6000 psi (420 bar) | 12:1 | | | 500 (34.4) | | |
| | STG89L | 10000 psi (690 bar) | 10:1 | | | 1000 (69) | | |
| High Accuracy Option | STG830 | 50 psi (3.5 bar) | 50:1 | 0.015 | 0.01 | 1 (0.7) | 0.030 | 0.003 |
| | STG83L | 50 psi (3.5 bar) | 16:1 | 0.010 | 0.015 | 3 (0.47) | 0.030 | 0.006 |
| | STG840 | 500 psi (35 bar) | 25:1 | 0.015 | 0.01 | 20 (1.4) | 0.025 | 0.004 |
| | STG84L | 500 psi (35 bar) | 25:1 | | | 20 (1.4) | | 0.007 |
| | STG870 | 3000 psi (206.8 bar) | 10:1 | | | 300 (20.7) | | 0.005 |
| | STG87L | 3000 psi (206.8 bar) | 10:1 | | | 300 (20.7) | | 0.001 |
| | STG88L | 6000 psi (413 bar) | 12:1 | 500 (34.4) | | | | |
| | STG89L | 10000 psi (690 bar) | 10:1 | 1000 (69) | 0.025 | | | |
| Turn Down Effect | | | | | | Temp Effect | | |
| ± $\left[A + B \left(\frac{C}{\text{Span}} \right) \right]$ | | | | | | ± $\left[D + E \left(\frac{\text{URL}}{\text{Span}} \right) \right]$ | | |
| % Span | | | | | | % Span per 28°C (50°F) | | |

Total Performance (% of Span):

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

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

| | | | | | |
|-------------------|----------------|-------------------|----------------|------------------|-----------------|
| STG830 @ 10 psi | 0.071% of span | STG840 @ 100 psi | 0.071% of span | STG870 @ 600 psi | 0.074 % of span |
| STG83L @ 10 psi | 0.081% of span | STG84L @ 100 psi | 0.081% of span | STG87L @ 600 psi | 0.093% of span |
| STG88L @ 1200 psi | 0.093% of span | STG89L @ 2000 psi | 0.093% of span | | |

Typical Calibration Frequency:

Calibration verification is recommended every four (4) years

Notes:

1. Terminal Based Accuracy - Includes combined effects of linearity, hysteresis, and repeatability. Analog output adds 0.005% of span.
2. For zero based spans and reference conditions of: 25 °C (77°F) for LRV>= 0 psia, 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 |
| Ambient Temperature ¹ | 25±1 | 77±2 | -40 to 85 | -40 to 185 | -40 to 85 | -40 to 185 | -55 to 120 | -67 to 248 |
| Meter Body Temperature ² | 25±1 | 77±2 | -40 to 110 ¹ | -40 to 230 ¹ | -40 to 125 | -40 to 257 | -55 to 120 | -67 to 248 |
| Humidity %RH | 10 to 55 | | 0 to 100 | | 0 to 100 | | 0 to 100 | |
| Vac. Region – Min. Pressure mmHg absolute inH ₂ O absolute | Atmospheric Atmospheric | | 25 13 | | 2 (short term) ³ 1 (short term) ³ | | | |
| Supply Voltage Load Resistance | 10.8 to 42.4 Vdc at terminals 0 to 1,440 ohms (as shown in Figure 2) | | | | | | | |
| Maximum Allowable Working Pressure (MAWP) ^{4, 5} (Maximum allowable working pressure is the maximum pressure allowed for the normal transmitter operation. MAWP depends on Approval agencies and transmitter material of construction. MAWP are same as URL for gauge and absolute pressure transmitters) | STG830: 50 psi (3.5 bar) STG840: 500 psi (35 bar) STG870: 3000 psi (210 bar) | | STG83L: 50 psi (3.5 bar) STG84L: 500 psi (35 bar) STG87L: 3000 psi (210 bar) STG88L: 6000 psi (420 bar) STG89L: 10000 psi (690 bar) | | | | | |
| Over pressure These are the pressure limits the transmitters can withstand without damage | STG830: 75 psi (5.25 bar) STG83L: 75 psi (5.25 bar) STG840: 1500 psi (103 bar) STG84L: 1500 psi (103 bar) STG870: 4500 psi (310 bar) STG87L: 4500 psi (310 bar) STG88L: 9000 psi (620 bar) STG89L: 15000 psi (1035 bar) | | | | | | | |

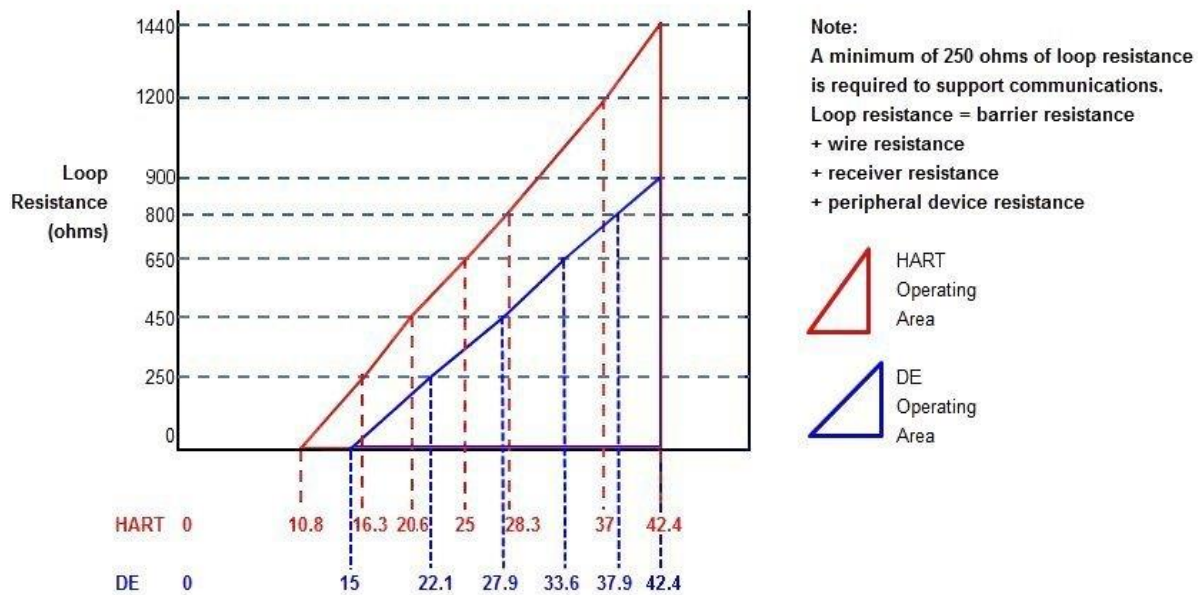
¹ LCD Display operating temperature -20°C to +70°C . Storage temperature -30°C to 80°C.

² Silicone 704 minimum temperature rating is 0°C (32°F). NEOBEE M-20 minimum temperature rating is -15°C (5°F)
NEOBEE® is a registered trademark of Stepan Company

³ Short term equals 2 hours at 70°C (158°F)

⁴ Units can withstand overpressure of 1.5 x MAWP without damage

⁵ Consult factory for MAWP of ST 800 transmitters with CRN approval



For DE, $R_{lmax} = 35 * (\text{Power Supply Voltage} - 15)$
 For HART, $R_{lmax} = 45.6 * (\text{Power Supply Voltage} - 10.8)$

Figure 2 - Supply voltage and loop resistance chart & calculations

Performance Under Rated Conditions – All Models

| Parameter | Description | | | | | | | | | |
|---|---|----------------------------------|----------------------------|-------------------------|------------------------|----------------------|---------------|----------------------|----------------------------------|----------------------------------|
| Analog Output Digital Communications: | Two-wire, 4 to 20 mA (HART & DE Transmitters only) Honeywell DE, HART 7 protocol or FOUNDATION Fieldbus ITK 6.0.1 compliant All transmitters, irrespective of protocol have polarity insensitive connection. | | | | | | | | | |
| HART & DE Output Failure Modes (NAMUR for DE Units requires selecting display and configuration buttons or factory configuration) | <table border="0"> <thead> <tr> <th></th> <th>Honeywell Standard:</th> <th>NAMUR NE 43 Compliance:</th> </tr> </thead> <tbody> <tr> <td>Normal Limits:</td> <td>3.8 – 20.8 mA</td> <td>3.8 – 20.5 mA</td> </tr> <tr> <td>Failure Mode:</td> <td>≤ 3.6 mA and ≥ 21.0 mA</td> <td>≤ 3.6 mA and ≥ 21.0 mA</td> </tr> </tbody> </table> | | Honeywell Standard: | NAMUR NE 43 Compliance: | Normal Limits: | 3.8 – 20.8 mA | 3.8 – 20.5 mA | Failure Mode: | ≤ 3.6 mA and ≥ 21.0 mA | ≤ 3.6 mA and ≥ 21.0 mA |
| | Honeywell Standard: | NAMUR NE 43 Compliance: | | | | | | | | |
| Normal Limits: | 3.8 – 20.8 mA | 3.8 – 20.5 mA | | | | | | | | |
| Failure Mode: | ≤ 3.6 mA and ≥ 21.0 mA | ≤ 3.6 mA and ≥ 21.0 mA | | | | | | | | |
| Supply Voltage Effect | 0.005% span per volt. | | | | | | | | | |
| Transmitter Turn on Time (includes power up & test algorithms) | HART or DE: 2.5 sec Foundation Fieldbus: Host dependent | | | | | | | | | |
| Response Time (delay + time constant) | <table border="0"> <thead> <tr> <th><u>DE/HART Protocol</u></th> <th><u>FOUNDATION Fieldbus</u></th> </tr> </thead> <tbody> <tr> <td>80ms</td> <td>150ms (Host Dependent)</td> </tr> </tbody> </table> | <u>DE/HART Protocol</u> | <u>FOUNDATION Fieldbus</u> | 80ms | 150ms (Host Dependent) | | | | | |
| <u>DE/HART Protocol</u> | <u>FOUNDATION Fieldbus</u> | | | | | | | | | |
| 80ms | 150ms (Host Dependent) | | | | | | | | | |
| Damping Time Constant | HART: Adjustable from 0 to 32 seconds in 0.1 increments. Default Value: 0.5 seconds DE: Discrete values 0, 0.16, 0.32, 0.48, 1, 2, 4, 8, 16, 32 seconds. Default Value: 0.48 seconds | | | | | | | | | |
| Vibration Effect: | Less than +/- 0.1% of URL w/o damping Per IEC60770-1 field or pipeline, high vibration level (10-2000Hz: 0.21 displacement/3g max acceleration) | | | | | | | | | |
| Electromagnetic Compatibility | Complies with EMC directive 2004/108/EC per IEC 61326-3-1 (HART/ DE Units) IEC 61326-1 (FF Units) | | | | | | | | | |
| Lightning Protection Option | Leakage Current: 10uA max @ 42.4VDC 93C Impulse rating: <table border="0"> <tr> <td>8/20uS</td> <td>5000A (>10 strikes)</td> <td>10000A (1 strike min.)</td> </tr> <tr> <td>10/1000uS</td> <td>200A (> 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 |
|---|--|
| Barrier Diaphragms Material | STG800: 316L SS, Hastelloy® C-276 ² , Monel® 400 ³ , Tantalum, Gold-plated 316L SS, Gold-plated Hastelloy® C-276, Gold-plated Monel® 400 STG80L: 316L SS, Hastelloy C-276 |
| Process Head Material | STG800: Carbon Steel (Zinc Plated), 316 SS ⁴ , Hastelloy® C-276 ⁶ , Monel® 400 ⁷ STG80L: 316L SS, Hastelloy C-276 ⁶ |
| Vent/Drain Valves & Plugs ¹ | STG800: 316 SS ⁴ , Hastelloy C-276 ² , Monel 400 ⁷ STG80L: N/A |
| Head Gaskets | STG800: Glass-filled PTFE standard. Viton® and graphite are optional. STG80L: N/A |
| Meter Body Bolting | STG800: Carbon Steel (Zinc plated) standard. Options include 316 SS, NACE A286 SS bolts and nuts or NACE A286 SS bolts and 304 SS nuts STG80L: N/A |
| Mounting Bracket | Carbon Steel (Zinc-plated) or 304 Stainless Steel or 316SS angle bracket or Carbon Steel or 304SS or 316SS flat bracket available .with 2" pipe bracket. See Figure 3 |
| Fill Fluid | Silicone 200, CTFE, NEOBEE M-20 or Silicone 704 |
| Electronic Housing | Pure Polyester Powder Coated Low Copper (<0.4%)-Aluminum. Meets NEMA 4X, IP66, IP67 and NEMA 7 (explosion proof). All stainless steel housing is optional. |
| Process Connections | STG800: ½ -inch NPT(female), DIN 19213 (standard) STG80L: ½ -inch NPT(female), ½ -inch NPT male, 9/16 Aminco, DIN19213 (except STG89L), G ½ -B Male threaded |
| Wiring | Accepts up to 16 AWG (1.5 mm diameter). |
| Dimensions | See Figure 4. |
| Net Weight | STG800: 8.3 pounds (3.8 Kg). STG80L: 3.6 pounds (1.6 Kg) with Aluminum Housing |

¹ Vent/Drains are sealed with Teflon®² Hastelloy® C-276 or UNS N10276³ Monel® 400 or UNS N04400⁴ Supplied as 316 SS or as Grade CF8M, the casting equivalent of 316 SS.⁵ Carbon Steel heads are zinc-plated and not recommended for water service due to hydrogen migration. For that service, use 316 stainless steel wetted Process Heads.⁶ Hastelloy® C-276 or UNS N10276. Supplied as indicated or as Grade CW12MW, the casting equivalent of Hastelloy® C-276⁷ Monel® 400 or UNS N04400. Supplied as indicated or as Grade M30C, the casting equivalent of Monel® 400

Communications Protocol & Diagnostics

HART Protocol

Version:

HART 7

Power Supply

Voltage: 10.8 to 42.4Vdc at terminals

Load: Maximum 1440 ohms See figure 2

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

Foundation Fieldbus (FF)

Power Supply Requirements

Voltage: 9.0 to 32.0Vdc at terminals

Steady State Current: 17.6mAdc

Software Download Current: 27.4mAdc

Available Function Blocks

| Block Type | Quantity | Execution Time |
|------------------|----------|----------------|
| Resource | 1 | n/a |
| Transducer | 1 | n/a |
| Diagnostic | 1 | n/a |
| Analog Input | 1* | 30 ms |
| PID w/Autotune | 1 | 45 ms |
| Integrator | 1 | 30 ms |
| Signal Char (SC) | 1 | 30 ms |
| LCD Display | 1 | n/a |
| Flow Block | 1 | 30 ms |
| Input Selector | 1 | 30 ms |
| Arithmetic | 1 | 30 ms |

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

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

Link Active Scheduler

Transmitters can perform as a backup Link Active Scheduler and take over when the host is disconnected.

Acting as a LAS, the device ensures scheduled data transfers typically used for the regular, cyclic transfer of control loop data between devices on the Fieldbus.

Number of Devices/Segment

Entity IS model: 6 devices/segment

Schedule Entries

18 maximum schedule entries

Number of VCR's: 24 max

Compliance Testing:

- Tested according to ITK 6.0.1

Software Download

Utilizes Class-3 of the Common Software Download procedure as per FF-883 which allows the field devices of any manufacturer to receive software upgrades from any host.

Honeywell Digitally Enhanced (DE)

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

Power Supply

Voltage: 10.8 to 42.4Vdc at terminals

Load: Maximum 1440 ohms See figure 2

Standard Diagnostics

ST 800 top level diagnostics are reported as either critical or non-critical and readable via the DD/DTM tools or integral display as shown

| Critical Diagnostics | | |
|--------------------------------|--------------------------|--------------------------|
| HART DD/DTM tools | Advanced Display | Basic Display |
| Electronic Module DAC Failure | Electronics Module fault | Electronics Module fault |
| Meter Body NVM Corrupt | Meterbody fault | Meterbody fault |
| Config Data Corrupt | Electronics Module fault | Electronics Module fault |
| Electronic Module Diag Failure | Electronics Module fault | Electronics Module fault |
| Meter Body Critical Failure | Meterbody fault | Meterbody fault |
| Sensor Comm Timeout | Meterbody Comm fault | Meterbody Comm fault |

| Non-Critical Diagnostics | | |
|------------------------------------|--|---------------|
| HART DD/DTM tools | Advanced Display | Basic Display |
| Display Failure | n/a | n/a |
| Electronic Module Comm Failure | n/a | n/a |
| Meter Body Excess Correct | Zero Correct (OK or EXCESSIVE) Span Correct (OK or EXCESSIVE) | n/a |
| Sensor Over Temperature | Meterbody Temp (OK, OVER TEMP) | n/a |
| Fixed Current Mode | Analog Out mode (Fixed or Normal) | n/a |
| PV Out of Range | Primary PV (OK or OVERLOAD) | n/a |
| No Factory Calibration | Factory Cal (OK, NO FACTORY CAL) | n/a |
| No DAC Compensation | DAC Temp Comp (OK, NO COMPENSATION) | n/a |
| LRV Set Error – Zero Config Button | n/a | n/a |
| URV Set Error – Span Config Button | n/a | n/a |
| AO Out of Range | n/a | n/a |
| Loop Current Noise | n/a | n/a |
| Meter Body Unreliable Comm | Meterbody Comm (OK, SUSPECT) | n/a |
| Tamper Alarm | n/a | n/a |
| No DAC Calibration | n/a | n/a |
| Sensor Supply Voltage Low | Supply Voltage (OK, LOW, or HIGH) | n/a |

Other Certification Options

Materials

- NACE MRO175, MRO103, ISO15156

Approval Certifications:

| AGENCY | TYPE OF PROTECTION | COMM. OPTION | FIELD PARAMETERS | AMBIENT TEMP (Ta) |
|---|--|---|------------------|--|
| FM Approvals™ | Explosionproof: Class I, Division 1, Groups A, B, C, D; Dust Ignition Proof: Class II, III, Division 1, Groups E, F, G; Class I, Zone 0/1, AEx d IIC Ga/Gb Class II, Zone 21, AEx tb IIIC Db T 95°C | All | Note 1 | T5: -50 °C to 85°C T6: -50 °C to 65°C |
| | Intrinsically Safe: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; T4 Class I, Zone 0, AEx ia IIC Ga T4 FISCO Field Device (Only for FF Option) Ex ia IIC T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | Nonincendive: Class I, Division 2, Groups A, B, C, D locations, Class I, Zone 2, AEx nA IIC Gc T4 | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| | Enclosure: Type 4X/ IP66/ IP67 | All | All | - |
| | Explosion Proof: Class I, Division 1, Groups A, B, C, D; Dust Ignition Proof: Class II, III, Division 1, Groups E, F, G; Ex d IIC Ga Ex tb IIIC Db T 95°C | All | Note 1 | T5: -50 °C to 85°C T6: -50 °C to 65°C |
| Canadian Standards Association (CSA) | Intrinsically Safe: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; T4 Ex ia IIC Ga T4 FISCO Field Device (Only for FF Option) Ex ia IIC T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | Nonincendive: Class I, Division 2, Groups A, B, C, D; T4 Ex nA IIC Gc T4 | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| | Enclosure: Type 4X/ IP66/ IP67 | All | All | - |
| | Explosion Proof: Class I, Division 1, Groups A, B, C, D; Dust Ignition Proof: Class II, III, Division 1, Groups E, F, G; Ex d IIC Ga Ex tb IIIC Db T 95°C | All | Note 1 | T5: -50 °C to 85°C T6: -50 °C to 65°C |

Approval Certifications: (Continued)

| | | | | |
|------------------------|--|--|---------|--|
| ATEX | Flameproof: II 1/2 G Ex d IIC Ga/Gb II 2 D Ex tb IIIC Db T 95°C | All | Note 1 | T5: -50 °C to 85°C T6: -50 °C to 65°C |
| | Intrinsically Safe: II 1 G Ex ia IIC Ga T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | FISCO Field Device (Only for FF Option) Ex ia IIC T4 | Foundation Fieldbus | Note 2b | -50 °C to 70°C |
| | Nonincendive: II 3 G Ex nA IIC Gc T4 | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| | Enclosure: IP66/ IP67 | All | All | - |
| IECEX (World) | Flameproof : Ex d IIC Ga/Gb Ex tb IIIC Db T 95°C | All | Note 1 | T5: -50 °C to 85°C T6: -50 °C to 65°C |
| | Intrinsically Safe: Ex ia IIC Ga T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | FISCO Field Device (Only for FF Option) Ex ia IIC T4 | Foundation Fieldbus | Note 2b | -50 °C to 70°C |
| | Nonincendive: Ex nA IIC Gc T4 | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| | Enclosure: IP66/ IP67 | All | All | - |
| SAEx (South Africa) | Flameproof : Ex d IIC Ga/Gb T4 Ex tb IIIC Db T 95°C | All | Note 1 | -50 °C to 85°C |
| | Intrinsically Safe: Ex ia IIC Ga T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | FISCO Field Device (Only for FF Option) Ex ia IIC T4 | Foundation Fieldbus | Note 2b | -50 °C to 70°C |
| | Nonincendive: Ex nA IIC Gc T4 | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| | Enclosure: IP66/ IP67 | All | All | - |
| INMETRO (Brazil) | Flameproof: Ex d IIC Ga/ Gb T4 Ex tb IIIC Db T 95°C | All | Note 1 | -50 °C to 85°C |
| | Intrinsically Safe: Ex ia IIC Ga T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | FISCO Field Device (Only for FF Option) Ex ia IIC T4 | Foundation Fieldbus | Note 2b | -50 °C to 70°C |
| | Nonincendive: Ex nA IIC Gc T4 | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| | Enclosure : IP 66/67 | All | All | - |

Approval Certifications: (Continued)

| | | | | |
|--------------------------|---|--|---------|----------------|
| NEPSI (China) | Flameproof: Ex d IIC Ga/Gb T4 Ex tb IIIC Db T 85°C | All | Note 1 | -50 °C to 85°C |
| | Intrinsically Safe: Ex ia IIC Ga T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | | Foundation Fieldbus | Note 2b | -50 °C to 70°C |
| | Nonincendive: Ex nA IIC Gc T4 | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| | Enclosure : IP 66/67 | All | All | - |
| GOST | Flameproof: 1 Ex d IIC Ga/Gb T4 Ex tb IIIC Db T 85°C | All | Note 1 | -50 °C to 85°C |
| | Intrinsically Safe: 0 Ex ia IIC Ga T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | | Foundation Fieldbus | Note 2b | -50 °C to 70°C |
| | Enclosure : IP 66/67 | All | All | |

Notes:

1. Operating Parameters:

Voltage= 11 to 42 V DC Current= 4-20 mA Normal
= 10 to 30 V (FF) = 30 mA (FF)

2. Intrinsically Safe Entity Parameters

a. Analog/ DE/ HART Entity Values:

Vmax= Ui = 30V I_{max}= I_i= 105mA Ci = 4.2nF Li =984 uH Pi =0.9W

Transmitter with Terminal Block Revision E or Later

Vmax= Ui = 30V I_{max}= I_i= 225mA Ci = 4.2nF Li = 0 Pi =0.9W

Note : Transmitter with Terminal Block Revision E or later

The revision is on the label that is on the module. There will be two lines of text on the label:

- 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.

b. Foundation Fieldbus- Entity Values

Vmax= Ui = 30V I_{max}= I_i= 180mA Ci = 0nF Li = 984 uH Pi =1W

Transmitter with Terminal Block Revision F or Later)

Vmax= Ui = 30V I_{max}= I_i= 225mA Ci =0nF Li = 0 Pi =1 W

FISCO Field Device I_{max}= I_i= 380 mA Ci = 0nF Li = 0 Pi =5.32 W

Vmax= Ui = 17.5V

Note : Transmitter with Terminal Block Revision F or later

The revision is on the label that is on the module. There will be two lines of text on the label:

- First is the Module Part #: 50049839-003 or 50049839-004
- Second line has the supplier information, along with the REVISION:
XXXXXX-EXXXX, THE "X" is production related, THE POSITION of the "E" IS THE REVISION.

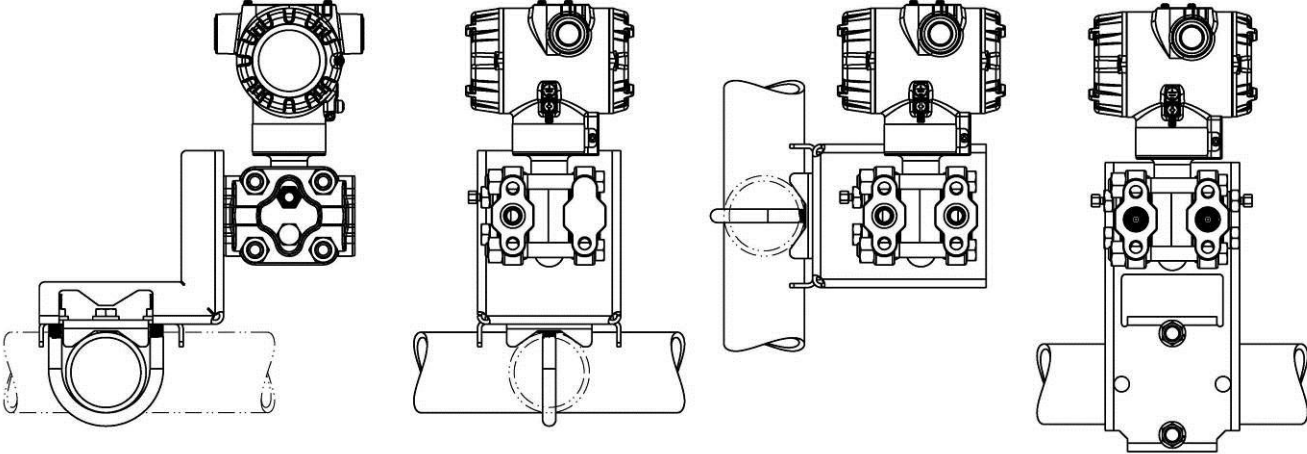
Approval Certifications: (Continued)

| Marine Certificates | <p>This certificate defines the certifications covered for the ST 800 Pressure Transmitter family of products, including the SMV 800 Smart Multivariable Transmitter. It represents the compilation of the five certificates Honeywell currently has covering the certification of these products into marine applications.</p> <p>For ST 800 Smart Pressure Transmitter and SMV800 Smart Multivariable Transmitter</p> | | | | | | | | | | | | | | | | |
|---|--|------|--------------------|--------|----------------|--------|------------|--------|---------------|--------|-------------|--------|--------------|--------|----------------|--------|--------------|
| | <p>American Bureau of Shipping (ABS) - 2009 Steel Vessel Rules 1-1-4/3.7, 4-6-2/5.15, 4-8-3/13 & 13.5, 4-8-4/27.5.1, 4-9-7/13. Certificate number: 04-HS417416-PDA</p> | | | | | | | | | | | | | | | | |
| | <p>Bureau Veritas (BV) - Product Code: 389:1H. Certificate number: 12660/B0 BV</p> | | | | | | | | | | | | | | | | |
| | <p>Det Norske Veritas (DNV) - Location Classes: Temperature D, Humidity B, Vibration A, EMC B, Enclosure C. For salt spray exposure; enclosure of 316 SST or 2-part epoxy protection with 316 SST bolts to be applied. Certificate number: A-11476</p> | | | | | | | | | | | | | | | | |
| | <p>Korean Register of Shipping (KR) - Certificate number: LOX17743-AE001</p> | | | | | | | | | | | | | | | | |
| | <p>Lloyd's Register (LR) - Certificate number: 02/60001(E1) & (E2)</p> | | | | | | | | | | | | | | | | |
| SIL 2/3 Certification | <p>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.</p> | | | | | | | | | | | | | | | | |
| MEASUREMENT INSTRUMENTS DIRECTIVE (MID) 2004/ 22/ EC | <p>Certificate Issued by NMI Certin B.V. Mechanical Class: M3 Electromagnetic Environment: E3 Ambient Temperature Range: -25 °C to + 55 °C</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Unit</th> <th style="text-align: center;">Custom Calibration</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">STD820</td> <td style="text-align: center;">0 to 1000 mBar</td> </tr> <tr> <td style="text-align: center;">STD830</td> <td style="text-align: center;">0 to 7 Bar</td> </tr> <tr> <td style="text-align: center;">STA84L</td> <td style="text-align: center;">0 to 35 Bar A</td> </tr> <tr> <td style="text-align: center;">STG84L</td> <td style="text-align: center;">0 to 35 Bar</td> </tr> <tr> <td style="text-align: center;">STD870</td> <td style="text-align: center;">0 to 100 Bar</td> </tr> <tr> <td style="text-align: center;">STA87L</td> <td style="text-align: center;">0 to 100 Bar A</td> </tr> <tr> <td style="text-align: center;">STG87L</td> <td style="text-align: center;">0 to 100 Bar</td> </tr> </tbody> </table> | Unit | Custom Calibration | STD820 | 0 to 1000 mBar | STD830 | 0 to 7 Bar | STA84L | 0 to 35 Bar A | STG84L | 0 to 35 Bar | STD870 | 0 to 100 Bar | STA87L | 0 to 100 Bar A | STG87L | 0 to 100 Bar |
| Unit | Custom Calibration | | | | | | | | | | | | | | | | |
| STD820 | 0 to 1000 mBar | | | | | | | | | | | | | | | | |
| STD830 | 0 to 7 Bar | | | | | | | | | | | | | | | | |
| STA84L | 0 to 35 Bar A | | | | | | | | | | | | | | | | |
| STG84L | 0 to 35 Bar | | | | | | | | | | | | | | | | |
| STD870 | 0 to 100 Bar | | | | | | | | | | | | | | | | |
| STA87L | 0 to 100 Bar A | | | | | | | | | | | | | | | | |
| STG87L | 0 to 100 Bar | | | | | | | | | | | | | | | | |

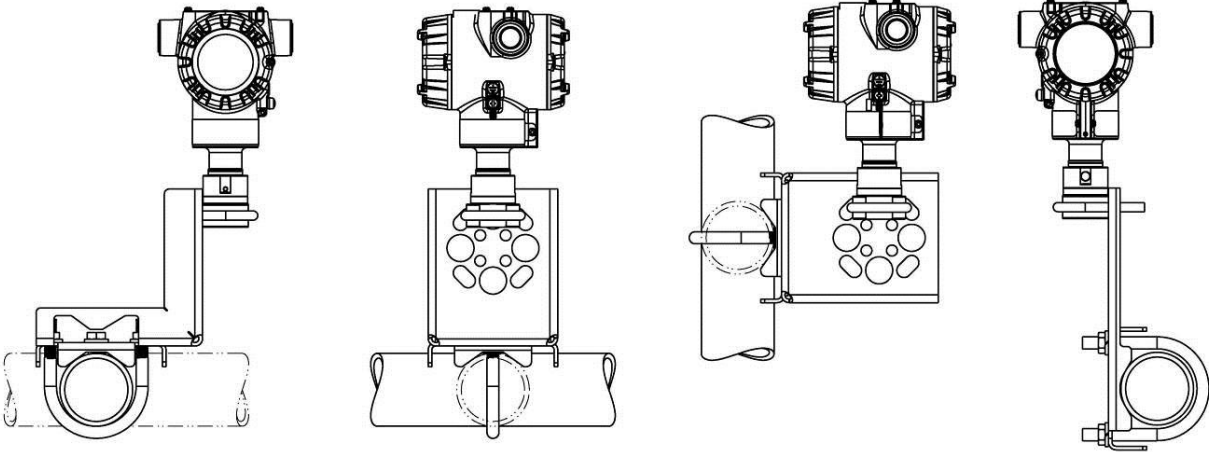
Mounting & Dimensional Drawings)

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

Mounting Configurations: (Dual head design)



Mounting Configurations (Inline Designs)



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

Dimensions: (Dual head design)

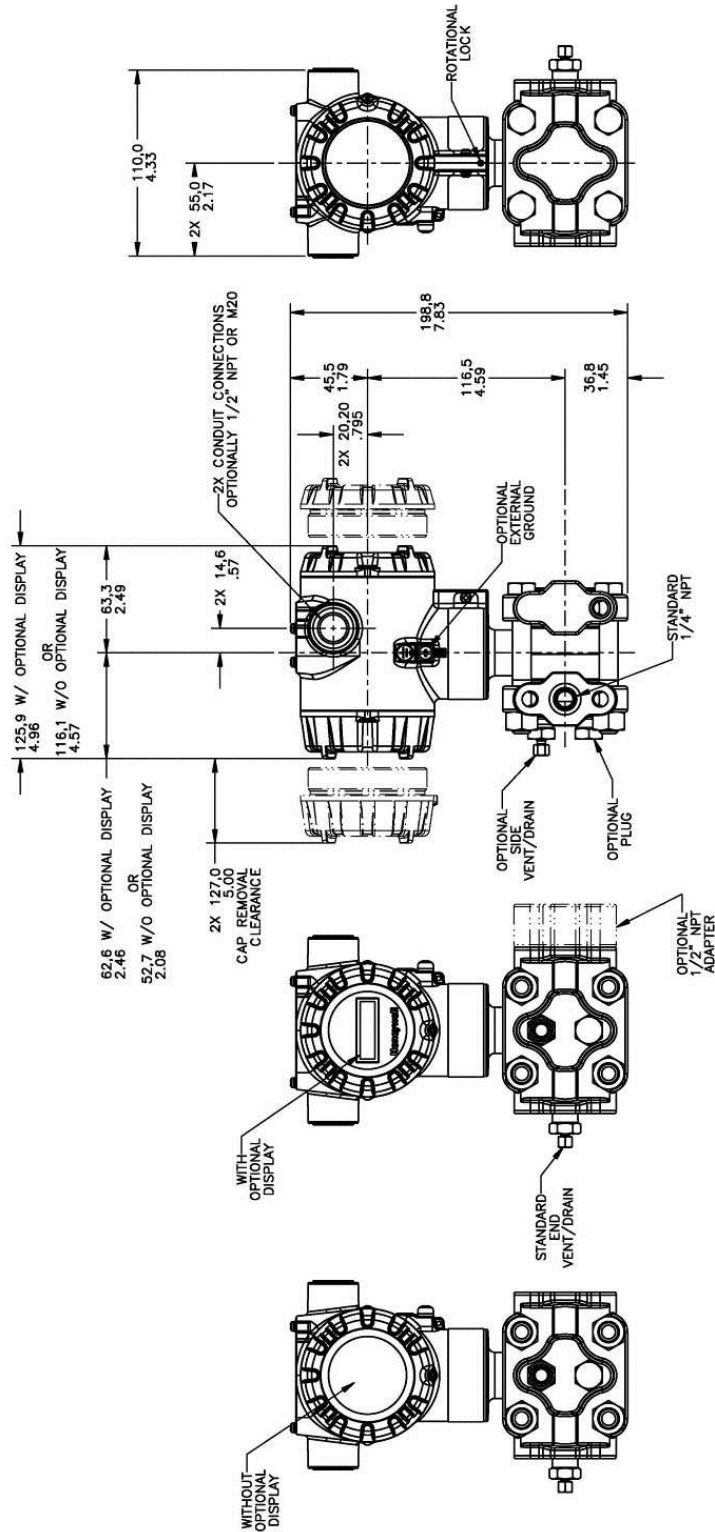


Figure 4 – Typical mounting dimensions of STG840 & STG870 for reference

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

Dimension (Inline Design)

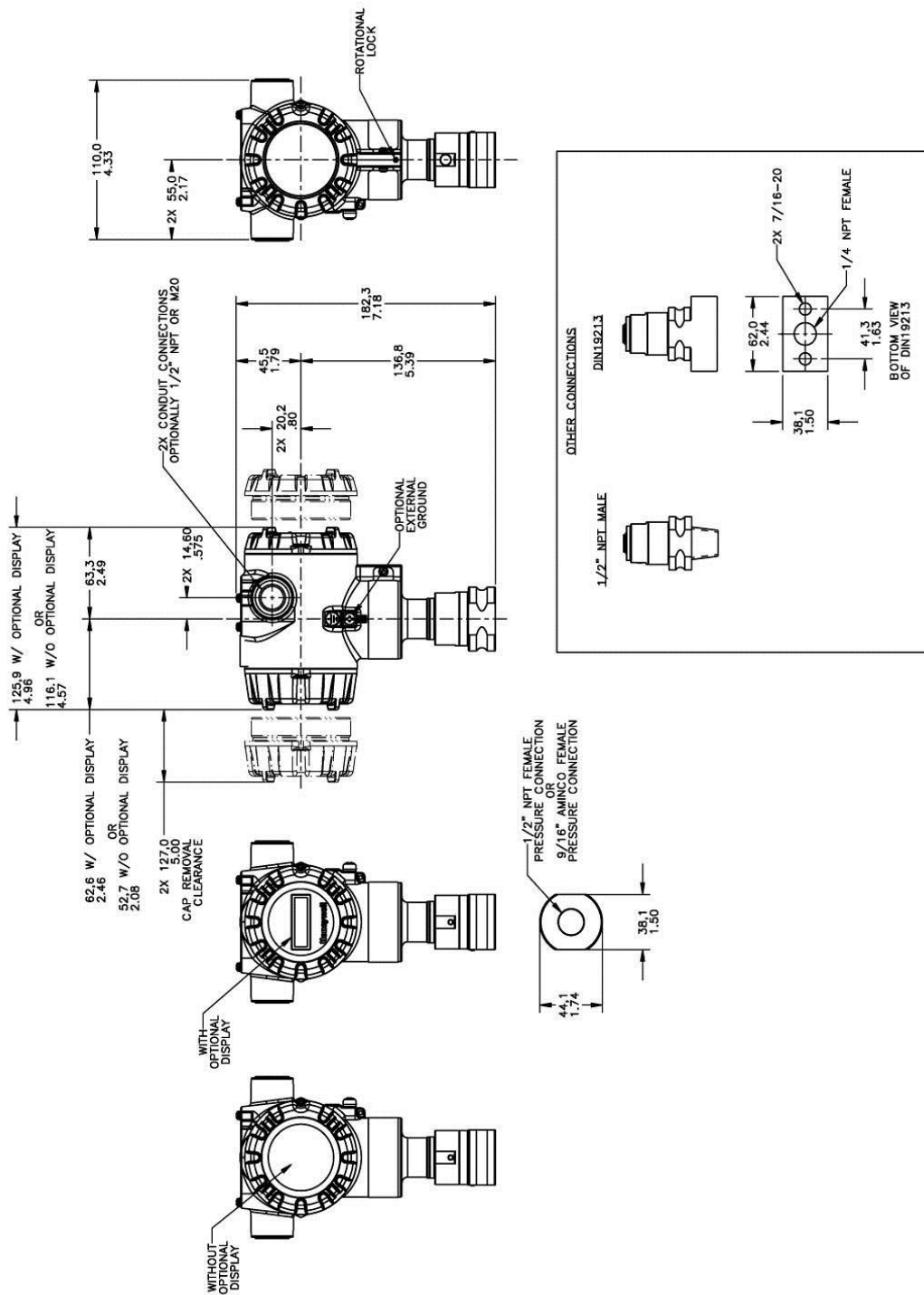


Figure 5 – Typical mounting dimensions of STG84L, STG87L, STG88L, & STG89L for reference

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

www.honeywellprocess.com/en-US/pages/default.aspx

Model Selection Guide

**Model STG800
Gauge Pressure Transmitters**

Model Selection Guide
34-ST-16-83 Issue 16

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.

| | | | | | | | | | |
|-----|---|----|-----|----|---|----|-----|------|------|
| Key | I | II | III | IV | V | VI | VII | VIII | IX |
| STG | - | - | - | - | - | - | - | - | 0000 |

| KEY NUMBER | URL/Max Span | LRL | Min Span | Units |
|-----------------|--------------|--------------|------------|-----------|
| Gauge Dual Head | 50 (3.5) | -14.7 (-1.0) | 0.5 (.035) | psi (bar) |
| | 500 (35) | -14.7 (-1.0) | 5 (.35) | psi (bar) |
| | 3000 (210) | -14.7 (-1.0) | 30 (2.1) | psi (bar) |
| Gauge In-Line | 50 (3.5) | -14.7 (-1.0) | 0.5 (.035) | psi (bar) |
| | 500 (35) | -14.7 (-1.0) | 5 (.35) | psi (bar) |
| | 3000 (210) | -14.7 (-1.0) | 30 (2.1) | psi (bar) |
| | 6000 (420) | -14.7 (-1.0) | 60 (4.2) | psi (bar) |
| | 10000 (690) | -14.7 (-1.0) | 100 (6.9) | psi (bar) |

| Selection | Availability | | | | |
|-----------|--------------|---|---|---|---|
| STG830 | ↓ | | | | |
| STG840 | ↓ | | | | |
| STG870 | | ↓ | | | |
| STG83L | | | ↓ | | |
| STG84L | | | | ↓ | |
| STG87L | | | | | ↓ |
| STG88L | | | | | ↓ |
| STG89L | | | | | ↓ |

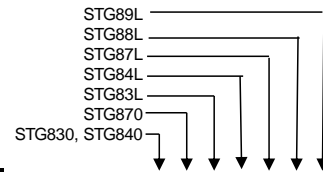
| TABLE I | METER BODY SELECTIONS | | | |
|---------------------------------------|--|--|------------------------------------|------------------------------------|
| | Process Head/Reference Head Material ^{1a} | Barrier Diaphragm Material | | |
| a. Process Head & Diaphragm Materials | Plated Carbon Steel / Plated Carbon Steel | 316L SS Hastelloy® C - 276 Monel 400® Tantalum Gold Plated 316L SS Gold Plated Hastelloy C-276 Gold Plated Monel 400 | | |
| | 316 Stainless Steel / 316 Stainless Steel | 316L SS Hastelloy C - 276 Monel 400 Tantalum Gold Plated 316L SS Gold Plated Hastelloy C-276 Gold Plated Monel 400 | | |
| | Hastelloy C - 276 / 316 Stainless Steel | Hastelloy C - 276 Tantalum Gold Plated Hastelloy C-276 | | |
| | Monel 400 / 316 Stainless Steel | Monel 400 Gold Plated Monel 400 | | |
| b. Fill Fluid | Silicone Oil 200 Fluorinated Oil CTFE Silicone Oil 704 NEOBEE® M-20 | | | |
| c. Process Connection | Size/Type | | Material | |
| | 9/16" Aminco | | Same as Process Head | |
| | 1/2" NPT (female) | | Same as Process Head ^{1a} | |
| | 1/2" NPT (male) | | Same as Process Head | |
| | DIN 19213 (1/4" female NPT) | | Same as Process Head | |
| G 1/2 B Threaded Fitting | | Same as Process Head | | |
| d. Bolt/Nuts Materials | None | | | |
| | Carbon Steel | | | |
| | 316 SS | | | |
| | Grade 660 (NACE A286) with NACE 304 SS Nuts | | | |
| | Grade 660 (NACE A286) Bolts & Nuts | | | |
| | Monel K500 Super Duplex B7M | | | |
| e. Vent/Drain Type/Location | Head Type | Vent Type | Location | Vent Material |
| | None | None | None | None |
| | Single Ended | None | None | None |
| | Single Ended | Standard Vent | Side | Matches Head Material ¹ |
| | Single Ended | Center Vent | Side | Stainless Steel Only |
| | Dual Ended | Standard Vent | End | Matches Head Material ¹ |
| | Dual Ended | Center Vent | End | Stainless Steel only |
| Dual Ended | Std Vent/Plug | Side/End | Matches Head Material ¹ | |
| f. Gasket Materials | None | | | |
| | Teflon® or PTFE (Glass Filled) | | | |
| | Viton® | | | |
| | Graphite | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A | * | * | * | * | * | * | * |
| B | * | * | * | * | * | * | * |
| C | * | * | * | * | * | * | * |
| D | a | a | * | * | * | * | * |
| 1 | * | * | * | * | * | * | * |
| 2 | * | * | * | * | * | * | * |
| 3 | * | * | * | * | * | * | * |
| E | * | * | * | * | * | * | * |
| F | * | * | * | * | * | * | * |
| G | * | * | * | * | * | * | * |
| H | a | a | * | * | * | * | * |
| 4 | * | * | * | * | * | * | * |
| 5 | * | * | * | * | * | * | * |
| 6 | * | * | * | * | * | * | * |
| J | * | * | * | * | * | * | * |
| K | a | a | * | * | * | * | * |
| 7 | * | * | * | * | * | * | * |
| L | a | a | * | * | * | * | * |
| 8 | a | a | * | * | * | * | * |
| 1 | * | * | * | * | * | * | * |
| 2 | * | * | * | * | * | * | * |
| 3 | * | * | * | * | * | * | * |
| 4 | * | * | * | * | * | * | * |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A | * | * | * | * | * | * | * |
| G | * | * | * | * | * | * | * |
| H | * | * | * | * | * | * | * |
| D | * | * | * | * | * | * | * |
| B | * | * | * | * | * | * | * |
| 0 | * | * | * | * | * | * | * |
| C | * | * | * | * | * | * | * |
| S | * | * | * | * | * | * | * |
| N | * | * | * | * | * | * | * |
| K | p | p | * | * | * | * | * |
| M | p | p | * | * | * | * | * |
| D | p | p | * | * | * | * | * |
| B | * | * | * | * | * | * | * |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0 | * | * | * | * | * | * | * |
| 1 | * | * | * | * | * | * | * |
| 2 | * | * | * | * | * | * | * |
| 3 | t | t | * | * | * | * | * |
| 4 | * | * | * | * | * | * | * |
| 5 | t | t | * | * | * | * | * |
| 6 | * | * | * | * | * | * | * |
| 0 | * | * | * | * | * | * | * |
| A | * | * | * | * | * | * | * |
| B | * | * | * | * | * | * | * |
| C | * | * | * | * | * | * | * |

¹ Except Carbon Steel Heads shall use 316SS Vent/Drain & Plugs and or 1/2" adapters
^{1a} STG830,840,870 supplied via 1/2" flange adapter same material as process head except carbon steel shall use 316 SS
^{1b} Reference head available with Dual Head Gage models only. In-Line Gage models are supplied with Process Head only.



| TABLE II | | METER BODY & CONNECTION ORIENTATION |
|--------------------------|-------------|--|
| Head/Connect Orientation | Standard | High Side Left, Low Side Right ² / Std Head Orientation |
| | Reversed | Low Side Left, High Side Right ² / Std Head Orientation |
| | 90/Standard | High Side Left, Low Side Right ² / 90° Head Rotation |

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

| TABLE III | | AGENCY APPROVALS |
|---|--|------------------|
| Approvals | No Approvals Required | |
| | <FM> Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof | |
| | CSA Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof | |
| | ATEX Explosion proof, Intrinsically Safe & Non-incendive | |
| | IECEX Explosion proof, Intrinsically Safe & Non-incendive | |
| | SAEx/CCoE Explosion proof, Intrinsically Safe & Non-incendive | |
| | INMETRO Explosion proof, Intrinsically Safe & Non-incendive | |
| NEPSI Explosion proof, Intrinsically Safe & Non-incendive | | |

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|---|---|---|---|---|---|---|
| 0 | * | * | * | * | * | * |
| A | * | * | * | * | * | * |
| B | * | * | * | * | * | p |
| C | * | * | * | * | * | * |
| D | * | * | * | * | * | * |
| E | * | * | * | * | * | * |
| F | * | * | * | * | * | * |
| G | * | * | * | * | * | * |

| 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 | |
| | 4-20mA dc | | DE Protocol | |
| none | | Foundation Fieldbus | | |
| c. Customer Interface Selections | Indicator | Ext Zero, Span & Config Buttons | Languages | |
| | None | None | None | |
| | None | Yes (Zero/Span Only) | None | |
| | Basic | None | EN | |
| | Basic | Yes | EN | |
| | Advanced | None | EN, GR, FR, IT, SP, RU, TU | |
| | Advanced | Yes | EN, GR, FR, IT, SP, RU, TU | |
| Advanced | None | EN, CH, JP | | |
| Advanced | Yes | EN, CH, JP | | |

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

| | | | | | | |
|-----|---|---|---|---|---|---|
| _H_ | * | * | * | * | * | * |
| _D_ | u | u | u | u | u | u |
| _F_ | * | * | * | * | * | * |

| | | | | | | |
|-----|---|---|---|---|---|---|
| __0 | * | * | * | * | * | * |
| __A | f | f | f | f | f | f |
| __B | * | * | * | * | * | * |
| __C | * | * | * | * | * | * |
| __D | * | * | * | * | * | * |
| __E | * | * | * | * | * | * |
| __H | * | * | * | * | * | * |
| __J | * | * | * | * | * | * |

| TABLE V | | CONFIGURATION SELECTIONS | | |
|--|---|--------------------------|---------------------------------------|----------------------|
| a. Application Software | Diagnostics | | | |
| | Standard Diagnostics | | | |
| b. Output Limit, Failsafe & Write Protect Settings | Write Protect | Fail Mode | High & Low Output Limits ³ | |
| | Disabled | High> 21.0mA dc | Honeywell Std (3.8 - 20.8 mA dc) | |
| | Disabled | Low< 3.6mA dc | Honeywell Std (3.8 - 20.8 mA dc) | |
| | Enabled | High> 21.0mA dc | Honeywell Std (3.8 - 20.8 mA dc) | |
| | Enabled | Low< 3.6mA dc | Honeywell Std (3.8 - 20.8 mA dc) | |
| | Enabled | N/A | N/A | Fieldbus or Profibus |
| Disabled | N/A | N/A | Fieldbus or Profibus | |
| c. General Configuration | General Configuration | | | |
| | Factory Standard Custom Configuration (Unit Data Required from customer) | | | |

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

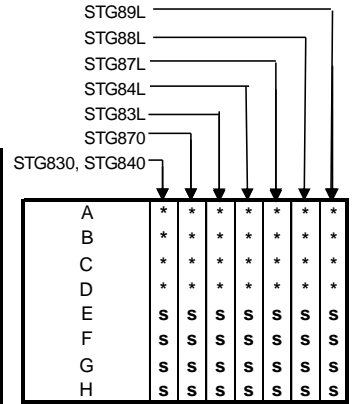
| | | | | | | |
|-----|---|---|---|---|---|---|
| _1_ | f | f | f | f | f | f |
| _2_ | f | f | f | f | f | f |
| _3_ | f | f | f | f | f | f |
| _4_ | f | f | f | f | f | f |
| _5_ | g | g | g | g | g | g |
| _6_ | g | g | g | g | g | g |

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

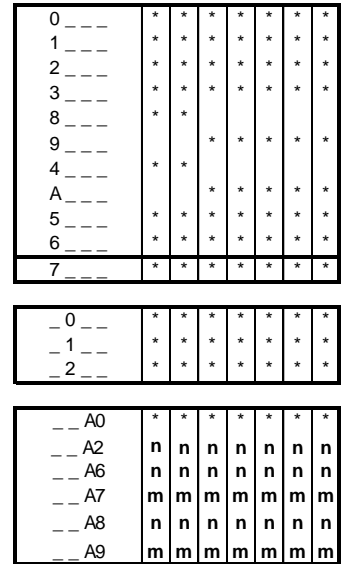
² Left side/Right side as view ed from the customer connection perspective

³ NAMUR Output Limits are configurable by customer

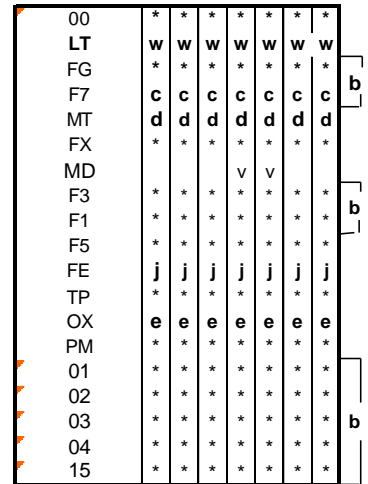
| TABLE VI CALIBRATION & ACCURACY SELECTIONS | | | |
|--|---------------|-----------------------------|--------------------|
| | Accuracy | Calibrated Range | Calibration Qty |
| a. Accuracy and Calibration | Standard | Factory Standard | Single Calibration |
| | Standard | Custom (Unit Data Required) | Single Calibration |
| | Standard | Custom (Unit Data Required) | Dual Calibration |
| | Standard | Custom (Unit Data Required) | Triple Calibration |
| | High Accuracy | Factory Standard | Single Calibration |
| | High Accuracy | Custom (Unit Data Required) | Single Calibration |
| | High Accuracy | Custom (Unit Data Required) | Dual Calibration |
| | High Accuracy | Custom (Unit Data Required) | Triple Calibration |



| TABLE VII ACCESSORY SELECTIONS | | |
|---|--|--------------|
| | Bracket Type | Material |
| a. Mounting Bracket | None | None |
| | Angle Bracket | Carbon Steel |
| | Angle Bracket | 304 SS |
| | Angle Bracket | 316 SS |
| | Marine Approved Bracket | Carbon Steel |
| | Marine Approved Bracket (In-Line) | Carbon Steel |
| | Marine Approved Bracket | 304 SS |
| | Marine Approved Bracket (In-Line) | 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 26 char/line) Two Wired Stainless Steel Tag (Up to 4 lines 26 char/line) | |
| c. Unassembled Conduit Plugs & Adapters | Unassembled Conduit Plugs & Adapters | |
| | No Conduit Plugs or Adapters Required | |
| | 1/2 NPT Male to 3/4 NPT Female 316 SS Certified Conduit Adapter | |
| | 1/2 NPT 316 SS Certified Conduit Plug | |
| | M20 316 SS Certified Conduit Plug | |
| | Minifast® 4 pin (1/2 NPT) (not suitable for X-Proof applications) Minifast® 4 pin (M20) (not suitable for X-Proof applications) | |



| TABLE VIII OTHER Certifications & Options: (String in sequence comma delimited (XX, XX, XX,...)) | |
|--|--|
| Certifications & Warranty | No additional options |
| | Low Temperature Rating (-50 deg C min. ambient temperature) |
| | NACE MR0175; MR0103; ISO15156 (FC33338) Process wetted parts only |
| | NACE MR0175; MR0103; ISO15156 (FC33339) Process wetted and non-wetted parts |
| | Marine (DNV, ABS, BV, KR, LR) |
| | EN10204 Type 3.1 Material Traceability (FC33341) |
| | MID Approved Transmitter - Contact Tech Support for specific MID approved ranges |
| | Certificate of Conformance (F3391) |
| | Calibration Test Report & Certificate of Conformance (F3399) |
| | Certificate of Origin (F0195) |
| | FMEDA (SIL 2/3) Certification (FC33337) |
| | Over-Pressure Leak Test Certificate (1.5X MAWP) (F3392) |
| | Cert Clean for O ₂ or CL ₂ service per ASTM G93 |
| | PMI Certification |
| | Extended Warranty Additional 1 year |
| Extended Warranty Additional 2 years | |
| Extended Warranty Additional 3 years | |
| Extended Warranty Additional 4 years | |
| Extended Warranty Additional 15 years | |



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



RESTRICTIONS

| Restriction Letter | Available Only with | | Not Available with | |
|--|---------------------|---------------------|--------------------|----------------------------|
| | Table | Selection(s) | Table | Selection(s) |
| a | | | VIII | FG, F7 |
| c | Id | __ _ 0,N,K,D,B _ __ | I a | D,H,K,L,8 _ _ _ _ _ |
| d | IV a | C,D,G,H _ _ | VIa | 1,2,3,5,6,7 _ _ _ |
| e | Ib | _ 2 _ _ _ _ _ | | |
| f | | | IV b | _ F _ |
| g | | | IVb | _ H, D _ |
| h | | | Ie | _ _ _ 4, 5, 6 |
| j | IV b | H | VIa | 1,2,3,4,5,6,7 _ _ _ |
| m | IV a | B,D, F, H _ _ | Vb | _ 1,2,6 _ |
| n | IV a | A,C, E, G _ _ | | |
| p | | | III | B- No CRN number available |
| t | | | Ia | J, K, 7, L, 8 |
| s | Ia | A,E _ _ _ _ _ | | |
| u | | | Va | 2 _ _ _ |
| v | IV a | C,D,G,H _ _ | VIa | C,D,G,H |
| w | Ib | _ 1 _ _ _ _ _ | IVb | _ D,F _ |
| b | | | VIII | FE |
| Select Only one option from this group | | | | |

Sales and Service

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

ASIA PACIFIC

Honeywell Process Solutions,
(TAC) 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: + 80012026455 or
+44 (0)1344 656000

Email: (Sales)

FP-Sales-Apps@Honeywell.com

or

(TAC)

hfs-tac-support@honeywell.com

AMERICA'S

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

Email: (Sales)

FP-Sales-Apps@Honeywell.com

or

(TAC)

hfs-tac-support@honeywell.com

Specifications are subject to change without notice.



For more information

To learn more about SmartLine Transmitters,
visit 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

Honeywell

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