

ST 3000 Smart Transmitter Series 100 Gauge Pressure Models Specifications

34-ST-03-62 August 2011



Introduction

In 1983, Honeywell introduced the first Smart Pressure Transmitter—the ST 3000®. In 1989, Honeywell launched the first all digital, bi-directional protocol for smart field devices. Today, its ST 3000 Series 100 In-line Pressure Transmitters continue to bring proven “smart” technology to a wide spectrum of measurement applications. These transmitters are screwed directly onto a ½” male NPT nipple. Typical applications include high-pressure measurement in boilers, fuel feeds, and high-pressure reaction vessels in the petrochemical and hydrocarbon recovery industries – any location where accuracy and reliability are crucial to safe, economical operation. Honeywell In-line Transmitters offer the ability to be installed in a wide variety of hazardous environments for accurate repeatable pressure measurement.

Models		
STG140/STG14L	0 to 500 psi	0 to 35 bar
STG170/STG17L	0 to 3,000 psi	0 to 210 bar
STG180/STG18L	0 to 6,000 psi	0 to 415 bar
STG19L	0 to 10,000 psi	0 to 690 bar

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

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



Figure 1 - On the right is Model STG140, STG170 and STG180 and on the left is STG14L, STG17L and STG18L. All Series 100 Gauge Pressure Transmitters feature proven piezoresistive sensor technology.

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

- Total Accuracy = ±0.0375%
 - Stability = ±0.01% per year
 - Reliability = 470 years MTBF
 - Rangeability = 400 to 1
 - Lifetime Warranty = 15 years.
- Includes Lifetime™ Transmitters:

Description

The ST 3000 transmitter can replace any 4 to 20 mA output transmitter in use today and operates over a standard two-wire system. The measuring means is a piezoresistive sensor, which actually contains three sensors in one. It contains a differential pressure sensor, a temperature sensor, and a static pressure sensor. Microprocessor-based electronics provide higher span-turndown ratio, improved temperature and pressure compensation, and improved accuracy.

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

Like other Honeywell transmitters, the ST 3000 features two-way communication and configuration capability between the operator and the transmitter through several Honeywell field-rated portable configuration devices, including the Smart Field Communicator (SFC) and the Multiple Communication Configurator (MC ToolKit).

While both are made for in-field use, the MC Toolkit also can be ordered for use in intrinsically safe environments.

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

Features

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

Advanced Diagnostics

ST 3000 is now available for both HART[®] 6 and Foundation[™] Fieldbus with advanced diagnostics that minimize unplanned plant outages, minimize maintenance costs and by providing the industry's most reliable transmitter.

- Provide advanced warning of possible failure events and avoid costly shutdowns.
- Three levels of failure reporting
- Comprehensive list of on-board diagnostics (Ref. ST 3000 User manual with HART[®] 6, 34-ST-25-17 Rev: June 09 and Foundation[™] Fieldbus option manual 34-ST-25-15 Rev: June 09)

Operating Conditions – All Models

Parameter	Reference Condition		Rated Condition		Operative Limits		Transportation and Storage	
	°C	°F	°C	°F	°C	°F	°C	°F
Ambient Temperature	25±1	77±2	-40 to 85	-40 to 185	-40 to 93	-40 to 200	-55 to 125	-67 to 257
Meter Body Temperature	25±1	77±2	-40 to 110*	-40 to 230*	-40 to 125	-40 to 257	-55 to 125	-67 to 257
Humidity %RH	10 to 55		0 to 100		0 to 100		0 to 100	
Vacuum Region - Minimum Pressure mmHg absolute inH ₂ O absolute	atmospheric atmospheric		25 13		2 (short term **) 1 (short term **)			
Supply Voltage, Current, and Load Resistance	Voltage Range: 10.8 to 42.4 Vdc at terminals Current Range: 3.0 to 21.8 mA Load Resistance: 0 to 1,440 ohms (as shown in Figure 2)							
Maximum Allowable Working Pressure (MAWP) (ST 3000 products are rated to Maximum Allowable Working Pressure)	STG140 and STG14L = 500 psi , 35 bar STG170 and STG17L = 3,000 psi, 210 bar STG180 and STG18L = 6,000 psi, 415 bar STG19L = 10,000 psi, 690 bar Units can withstand overpressure of 1.5X MAWP without damage.							

* For CTFE fill fluid the rating is -15 to 110°C (5 to 230°F)

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

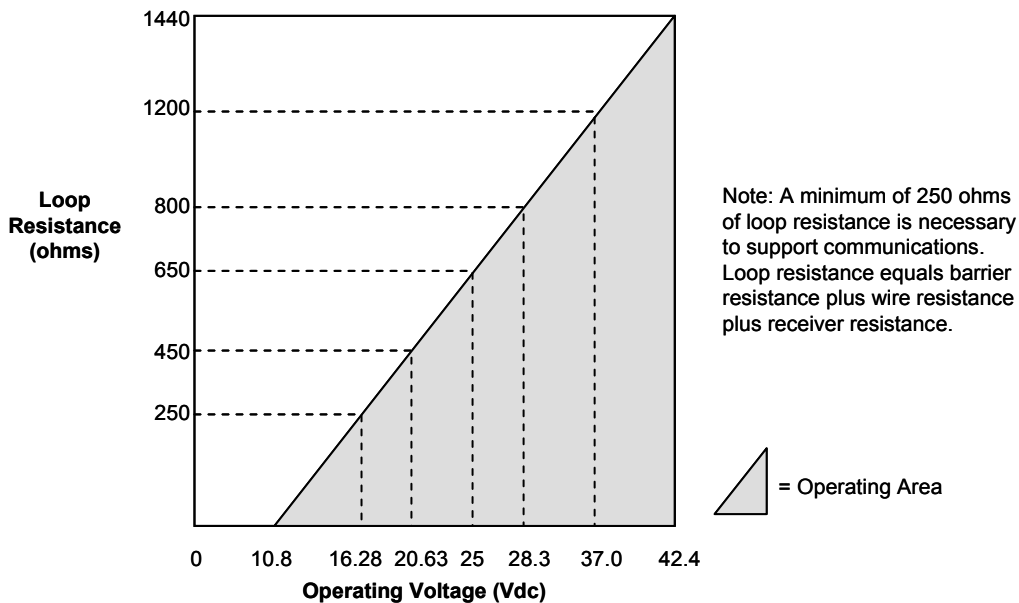


Figure 2 - Supply voltage and loop resistance chart

Performance under Rated Conditions* - Models STG140 & 14L (0 to 500 psi)

Parameter	Description
Upper Range Limit	psi: 500 bar: 35
Minimum Span	psi: 5 bar: 0.35
Turndown Ratio	100 to 1
Zero Elevation and Suppression	No limit except minimum span from absolute 0 (zero) to +100% URL. Specifications valid over this range.
Accuracy (Reference – Includes combined effects of linearity, hysteresis, and repeatability) <ul style="list-style-type: none"> Accuracy includes residual error after averaging successive readings. For Foundation™ Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications. 	<p>In Analog Mode: ±0.075% of calibrated span or upper range value (URV), whichever is greater, terminal based.</p> <p>For URV calibrated below reference point (20 psi), accuracy equals:</p> $\pm \left[0.025 + 0.05 \left(\frac{20 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.025 + 0.05 \left(\frac{1.4 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>For High Accuracy (HA) option: +/- 0.0375% of calibrated span or upper range value (URV), whichever is greater, terminal based.</p> <p>In Digital Mode: ±0.0625% of calibrated span or upper range value (URV), whichever is greater, terminal based.</p> <p>For URV calibrated below reference point (20 psi), accuracy equals:</p> $\pm \left[0.0125 + 0.05 \left(\frac{20 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.05 \left(\frac{1.4 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>* For High Accuracy (HA) option: +/- 0.035% of calibrated span or upper range value (URV), whichever is greater, terminal based</p>
Zero Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.0625% of span.</p> <p>For URV below reference point of 50 psi for model STG140 or 75 psi for model STG14L, effect equals:</p> $\pm \left[0.0125 + 0.05 \left(\frac{50 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.05 \left(\frac{3.5 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>OR</p> $\pm \left[0.0125 + 0.05 \left(\frac{75 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.05 \left(\frac{5.25 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.05% of span.</p> <p>For URV below reference point of 50 psi for model STG140 or 75 psi for model STG14L, effect equals:</p> $\pm 0.05 \left(\frac{50 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.05 \left(\frac{3.5 \text{ bar}}{\text{span bar}} \right) \text{ in \% of span}$ <p>OR</p> $\pm 0.05 \left(\frac{75 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.05 \left(\frac{5.25 \text{ bar}}{\text{span bar}} \right) \text{ in \% of span}$
Combined Zero and Span Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.10% of span.</p> <p>For URV below reference point of 50 psi for model STG140 or 75 psi for model STG14L, effect equals:</p> $\pm \left[0.05 + 0.05 \left(\frac{50 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.05 + 0.05 \left(\frac{3.5 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>OR</p> $\pm \left[0.05 + 0.05 \left(\frac{75 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.05 + 0.05 \left(\frac{5.25 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.075% of span.</p>

Parameter	Description
	<p>For URV below reference point of 50 psi for model STG140 or 75 psi for model STG14L, effect equals:</p> $\pm \left[0.025 + 0.05 \left(\frac{50 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.025 + 0.05 \left(\frac{3.5 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>OR</p> $\pm \left[0.025 + 0.05 \left(\frac{75 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.025 + 0.05 \left(\frac{5.25 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Stability	±0.015% of URL per year for lifetime

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

Performance under Rated Conditions* - Models STG170 & 17L (0 to 3,000 psi)

Parameter	Description
Upper Range Limit	psi: 3,000 bar: 210
Minimum Span	psi: 30 bar: 2.1
Turndown Ratio	100 to 1
Zero Elevation and Suppression	No limit except minimum span from absolute 0 (zero) to +100% URL. Specifications valid over this range.
<p>Accuracy (Reference – Includes combined effects of linearity, hysteresis, and repeatability)</p> <ul style="list-style-type: none"> Accuracy includes residual error after averaging successive readings. For Foundation™ Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications. 	<p>In Analog Mode: ±0.075% of calibrated span or upper range value (URV), whichever is greater, terminal based.</p> <p>For URV calibrated below reference point (750 psi), accuracy equals:</p> $\pm \left[0.025 + 0.05 \left(\frac{750 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.025 + 0.05 \left(\frac{52 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.0625% of calibrated span or upper range value (URV), whichever is greater, terminal based.</p> <p>For URV calibrated below reference point (750 psi), accuracy equals:</p> $\pm \left[0.0125 + 0.05 \left(\frac{750 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.05 \left(\frac{52 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Zero Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.1125% of span.</p> <p>For URV below reference point (500 psi), effect equals:</p> $\pm \left[0.0125 + 0.10 \left(\frac{500 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.10 \left(\frac{35 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.10% of span.</p> <p>For URV below reference point (500 psi), effect equals:</p> $\pm 0.10 \left(\frac{500 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.10 \left(\frac{35 \text{ bar}}{\text{span bar}} \right) \text{ in \% of span}$
Combined Zero and Span Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.175% of span.</p> <p>For URV below reference point (500 psi), effect equals:</p> $\pm \left[0.075 + 0.10 \left(\frac{500 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.075 + 0.10 \left(\frac{35 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.15% of span.</p> <p>For URV below reference point (500 psi), effect equals:</p> $\pm \left[0.05 + 0.10 \left(\frac{500 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.05 + 0.10 \left(\frac{35 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Stability	±0.03% of per year

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

Performance under Rated Conditions* - Models STG180 & 18L (0 to 6,000 psi)

Parameter	Description
Upper Range Limit	psi: 6,000 bar: 415
Minimum Span	psi: 60 bar: 4.1
Turndown Ratio	100 to 1
Zero Elevation and Suppression	No limit except minimum span from absolute 0 (zero) to +100% URL. Specifications valid over this range.
<p>Accuracy (Reference – Includes combined effects of linearity, hysteresis, and repeatability)</p> <ul style="list-style-type: none"> • Accuracy includes residual error after averaging successive readings. • For Foundation™ Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications. 	<p>In Analog Mode: ±0.075% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV calibrated below reference point (1,500 psi), accuracy equals:</p> $\pm \left[0.025 + 0.05 \left(\frac{1500 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.025 + 0.05 \left(\frac{104 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.0625% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV calibrated below reference point (1,000 psi), accuracy equals:</p> $\pm \left[0.0125 + 0.05 \left(\frac{1500 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.05 \left(\frac{104 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Zero Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.1125% of span. For URV below reference point (1,000 psi), effect equals:</p> $\pm \left[0.0125 + 0.10 \left(\frac{1000 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.10 \left(\frac{70 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.10% of span. . For URV below reference point (1,000 psi), effect equals:</p> $\pm 0.10 \left(\frac{1000 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.10 \left(\frac{70 \text{ bar}}{\text{span bar}} \right) \text{ in \% of span}$
Combined Zero and Span Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.175% of span. For URV below reference point (1,000 psi), effect equals:</p> $\pm \left[0.075 + 0.10 \left(\frac{1000 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.075 + 0.10 \left(\frac{70 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.15% of span. . For URV below reference point (1,000 psi), effect equals:</p> $\pm \left[0.05 + 0.10 \left(\frac{1000 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.05 + 0.10 \left(\frac{70 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Stability	±0.03% of per year

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

Performance under Rated Conditions* - Models STG19L (0 to 10,000 psi)

Parameter	Description
Upper Range Limit	psi: 10,000 bar: 690
Minimum Span	psi: 100 bar: 7
Turndown Ratio	100 to 1
Zero Elevation and Suppression	No limit except minimum span from absolute 0 (zero) to +100% URL. Specifications valid over this range.
Accuracy (Reference – Includes combined effects of linearity, hysteresis, and repeatability) <ul style="list-style-type: none"> • Accuracy includes residual error after averaging successive readings. • For Foundation™ Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications. 	<p>In Analog Mode: ±0.075% of calibrated span or upper range value (URV), whichever is greater, terminal based.</p> <p>For URV calibrated below reference point (2,500 psi), accuracy equals:</p> $\pm \left[0.025 + 0.10 \left(\frac{2500 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.025 + 0.10 \left(\frac{172 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.0625% of calibrated span or upper range value (URV), whichever is greater, terminal based.</p> <p>For URV calibrated below reference point (2,500 psi), accuracy equals:</p> $\pm \left[0.0125 + 0.10 \left(\frac{2500 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.10 \left(\frac{172 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Zero Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.1125% of span.</p> <p>For URV below reference point (2,500 psi), effect equals:</p> $\pm \left[0.0125 + 0.10 \left(\frac{2500 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.10 \left(\frac{172 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.10% of span. .</p> <p>For URV below reference point (2,500 psi), effect equals:</p> $\pm 0.10 \left(\frac{2500 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.10 \left(\frac{172 \text{ bar}}{\text{span bar}} \right) \text{ in \% of span}$
Combined Zero and Span Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.175% of span.</p> <p>For URV below reference point (2,500 psi), effect equals:</p> $\pm \left[0.075 + 0.10 \left(\frac{2500 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.075 + 0.10 \left(\frac{172 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.15% of span. .</p> <p>For URV below reference point (2,500 psi), effect equals:</p> $\pm \left[0.05 + 0.10 \left(\frac{2500 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.05 + 0.10 \left(\frac{172 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Stability	±0.03% of per year

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

Performance under Rated Conditions - General for all Models

Parameter	Description
Output (two-wire)	Analog 4 to 20 mA or digital communications DE mode. Options available for FOUNDATION™ Fieldbus and HART® protocol.
Supply Voltage Effect	0.005% of span per volt.
Damping Time Constant	Adjustable from 0 to 32 seconds digital damping.
CE Conformity (Europe)	89/336/EEC, Electromagnetic Compatibility (EMC) Directive.
NAMUR NE 43 Compliance Option	Transmitter failure information is generated when the measuring information is invalid or no longer present. Failure information is transmitted as a current signal but outside the normal 4-20 mA measurement signal level. Transmitter failure values are: ≤ 3.6 mA and ≥ 21.0 mA. The normal signal range is ≥ 3.8 mA and ≤ 20.5 mA.
SIL 2/3 Compliance	SIL certified to IEC 61508 for non-redundant use in SIL 2 related Safety Systems (single use) and for redundant (multiple) use in SIL 3 Safety Systems through TÜV Nord Sys Tec GmbH & Co. KG under the following standards: IEC61508-1: 1998; IEC 61508-2: 2000; IEC61508-3: 1998.
Lightning Protection Option (Code "LP")	Leakage Current: 10 microamps max. @ 42.4 VDC, 93°C Impulse Rating: 10/20 µ sec. 5,000 Amps (50 strikes) 10,000 Amps (20 strikes) (rise/decay) 10/1,000 µ sec. 250 Amps (1,000 strikes) 500 Amps (400 strikes)

Physical and Approval Bodies

Parameter	Description
Barrier Diaphragms Material	Single-Head Meter Body: 316L SS, Hastelloy® C-2762, Monel® 4003 In-Line Meter Body: 316L SS, Hastelloy® C-2762
Process Head Material	Single-Head Meter Body: 316 SS ⁴ , Carbon Steel (Zinc-plated) ⁵ , Hastelloy® C-276 ² , Monel® 400 ⁷ In-Line Meter Body: 316L SS ⁴
Head Gaskets	Teflon® is standard. Viton® and Graphite are optional – see MSG.
Meter Body Bolting	Carbon Steel (Zinc plated) standard. Options include 316 SS ⁴ bolts and nuts or NACE (A286 SS bolts and 304 SS nuts).
Mounting Bracket	Carbon Steel (Zinc-plated) or Stainless Steel angle bracket or Carbon Steel flat bracket available.
Fill Fluid	Silicone DC® 200 or CTFE (Chlorotrifluoroethylene)
Electronic Housing	Epoxy-Polyester hybrid paint. Low Copper-Aluminum. Meets NEMA 4X (watertight) and NEMA 7 (explosion proof). Stainless Steel Optional
Process Connections	Single-Head Meter Body: 1/2-inch NPT, 9/16-18 Aminco, DIN (standard option) In-Line Meter Body: 1/2-inch NPT FEM, ½ inch NPT male, 9/16 Aminco, DIN19213
Wiring	Accepts up to 16 AWG (1.5 mm diameter).
Mounting	Can be mounted in virtually any position using the standard mounting bracket. Bracket is designed to mount on 2-inch (50 mm) vertical or horizontal pipe. See Figure 3 for single-head models and Figure 4 for in-line models.
Dimensions	See Figures 5 and 6 .
Net Weight	With Single-Head Meter Body: 7.0 pounds (3.2 Kg) With In-Line Meter Body: 3.8 pounds (1.7 Kg)

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

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

Certifications

	Type of Protection	Comm. Option	Field Parameters	Temp. Codes
FM ApprovalsSM	Explosionproof: Class I, Division 1, Groups A, B, C, D locations Dust Ignition Proof: Class II, III, Division 1, Groups E, F, G locations, Enclosure Type 4X	All	All	T5 Ta = 93°C
	Intrinsically Safe: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G locations, Enclosure Type 4X	4-20 mA / DE	Vmax = 42.4V Imax = 225mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = 93°C
		4-20 mA /	Vmax = 30V Imax = 225mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = 93°C
	Intrinsically Safe: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G locations; Class 1, Zone 0, AEx ia Group IIC, Enclosure Type 4X / IP 66/67	Fieldbus – Entity (Not FISCO)	Vmax = 32V Imax = 120mA Ci = 4.2nF Li = 0 Pi = 0.84W	T4 Ta = 40°C T3 Ta = 93°C
		Fieldbus – Entity (Not FISCO)	Vmax = 24V Imax = 250mA Ci = 4.2nF Li = 0 Pi = 1.2W	T4 Ta = 40°C T3 Ta = 93°C
		FISCO	Vmax = 17.5V Imax = 380mA Ci = 4.2nF Li = 0 Pi = 5.32W	T4 Ta = 40°C T3 Ta = 93°C
	Nonincendive: Class I, Division 2, Groups A, B, C, D locations, Enclosure Type 4X	4-20 mA / DE	Vmax = 42.4V Imax = 225mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = 93°C
		4-20 mA / HART	Vmax = 30V Imax = 225mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = 93°C
	Nonincendive: Class I, Division 2, Groups A, B, C, D; Suitable for: Class II, Division 2, Groups F&G; Class III, Division 2; Class I, Zone 2, Group IIC, Enclosure Type 4X / IP 66/67	Fieldbus – Entity (Not FNICO)	Vmax = 32V Imax = 120mA Ci = 4.2nF Li = 0 Pi = 0.84W	T4 Ta = 40°C T3 Ta = 93°C
		Fieldbus – Entity (Not FNICO)	Vmax = 24V Imax = 250mA Ci = 4.2nF Li = 0 Pi = 1.2W	T4 Ta = 40°C T3 Ta = 93°C
		FNICO	Vmax = 32V Ci = 4.2nF Li = 0	T4 Ta = 40°C T3 Ta = 93°C

* Li = 0 except Li = 150µH when Option ME, Analog Meter, is selected.

FM ApprovalsSM is a service mark of FM Global

	Type of Protection	Comm. Option	Field Parameters	Temp. Codes	
Canadian Standards Association (CSA)	Explosion Proof: Class I, Division 1, Groups B, C, D locations Dust Ignition Proof: Class II, III, Division 1, Groups E, F, G locations, Enclosure Type 4X	All	All	T4 Ta = 93°C	
	Intrinsically Safe: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G locations, Enclosure Type 4X	4-20 mA / DE	Vmax = 42V Imax = 225mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = 93°C	
		4-20 mA / HART	Vmax = 42V Imax = 225mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = 93°C	
		Fieldbus – Entity (Not FISCO)	Vmax = 24V Imax = 250mA Ci = 4.2nF Li = 0 Pi = 1.2W	T4 Ta = 40°C T3 Ta = 93°C	
	Nonincendive: Class I, Division 2, Groups A, B, C, D locations, Enclosure Type 4X	4-20 mA / DE	Vmax = 42.4V Imax = 225mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = 93°C	
		4-20 mA / HART	Vmax = 30V Imax = 225mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = 93°C	
		Fieldbus – Entity (Not FNICO)	Vmax = 24V Imax = 250mA Ci = 4.2nF Li = 0 Pi = 1.2W	T4 Ta = 40°C T3 Ta = 93°C	
	Canadian Registration Number (CRN):	All ST 3000 models except STG19L, STG99L, STG170 and STG180 have been registered in all provinces and territories in Canada and are marked CRN: 0F8914.5C.			

	Type of Protection	Comm. Option	Field Parameters	Temp. Codes
IECEX International Electrotechnical Commission (LCIE)	Flameproof, Zone 1: Ex d IIC, Enclosure IP 66/67	All	All	T5 Ta = -50 to 93°C T6 Ta = -50 to 78°C
	Intrinsically Safe, Zone 0/1: Ex ia IIC, Enclosure IP 66/67	4-20 mA / DE	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 85°C T6 Ta = -50 to 70°C
		4-20 mA / HART	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 63°C T6 Ta = -50 to 48°C
		Fieldbus (Not FISCO)	Ui = 24V Ii = 250mA Ci = 4.2nF Li = 0 Pi = 1.2W	T3 Ta = -50 to 93°C T4 Ta = -50 to 40°C

- Li = 0 except Li = 150µH when Option ME, Analog Meter, is selected.

	Type of Protection	Comm. Option	Field Parameters	Temp. Codes
SAEx (South Africa)	Flameproof, Zone 1: Ex d IIC, Enclosure IP 66/67	All	All	T5 Ta = -50 to 93°C T6 Ta = -50 to 78°C
	Intrinsically Safe, Zone 0/1: Ex ia IIC, Enclosure IP 66/67	4-20 mA / DE	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 85°C T6 Ta = -50 to 70°C
		4-20 mA / HART	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 63°C T6 Ta = -50 to 48°C
		Fieldbus (Not FISCO)	Ui = 24V Ii = 250mA Ci = 4.2nF Li = 0 Pi = 1.2W	T3 Ta = -50 to 93°C T4 Ta = -50 to 40°C
	Multiple Marking: Flameproof, Zone 1: Ex d IIC, Enclosure IP 66/67 Intrinsically Safe, Zone 0/1: Ex ia IIC, Enclosure IP 66/67 NOTE: The user must determine the type of protection required for installation of the equipment. The user shall then check the box [√] adjacent to the type of protection used on the equipment certification nameplate. Once a type of protection has been checked on the nameplate, subsequently the equipment shall not be reinstalled using any of the other certification types.	4-20 mA / DE	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 85°C T6 Ta = -50 to 70°C
		4-20 mA / HART	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 63°C T6 Ta = -50 to 48°C
		Fieldbus (Not FISCO)	Ui = 24V Ii = 250mA Ci = 4.2nF Li = 0 Pi = 1.2W	T3 Ta = -50 to 93°C T4 Ta = -50 to 40°C

- * Li = 0 except Li = 150µH when Option ME, Analog Meter, is selected.

	Type of Protection	Comm. Option	Field Parameters	Temp. Codes
ATEX (LCIE)	Flameproof, Zone 0: Ⓔ II 1 D, Ex tD Enclosure IP 66/67	All	All	A20 IP6X T95°C Ta = 93°C or T80°C Ta = 78°C
	Flameproof, Zone 1: Ⓔ II 2 GD, Ex d IIC, Ex tD Enclosure IP 66/67	All	All	T5 Ta = -50 to +93°C T6 Ta = -50 to +78°C, A21 IP6X T95°C Ta = 93°C or T80°C Ta = 78°C
	Intrinsically Safe, Zone 0/1: Ⓔ II 1 G, Ex ia IIC, Enclosure IP 66/67	4-20 mA / DE	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 85°C T6 Ta = -50 to 70°C
		4-20 mA / HART	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 63°C T6 Ta = -50 to 48°C
		Fieldbus (Not FISCO)	Ui = 24V Ii = 250mA Ci = 4.2nF Li = 0 Pi = 1.2W	T3 Ta = -50 to 93°C T4 Ta = -50 to 40°C
	Non-Sparking, Zone 2: Ⓔ II 3 G, Ex nA IIC (Honeywell), Enclosure IP 66/67	4-20 mA / DE	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 85°C T6 Ta = -50 to 70°C
		4-20 mA / HART	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 63°C T6 Ta = -50 to 48°C
		Fieldbus (Not FNICO)	Ui = 24V Ii = 250mA Ci = 4.2nF Li = 0 Pi = 1.2W	T3 Ta = -50 to 93°C T4 Ta = -50 to 40°C
	Multiple Marking: Flameproof, Zone 1: Ⓔ II 2 G, Ex d IIC Intrinsically Safe, Zone 0/1: Ⓔ II 1 G, Ex ia IIC Non-Sparking, Zone 2: Ⓔ II 3 G, Ex nA IIC NOTE: The user must determine the type of protection required for installation of the equipment. The user shall then check the box [√] adjacent to the type of protection used on the equipment certification nameplate. Once a type of protection has been checked on the nameplate, subsequently the equipment shall not be reinstalled using any of the other certification types.	4-20 mA / DE	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 85°C T6 Ta = -50 to 70°C
		4-20 mA / HART	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 63°C T6 Ta = -50 to 48°C
		Fieldbus (Not FISCO/FNICO)	Ui = 24V Ii = 250mA Ci = 4.2nF Li = 0 Pi = 1.2W	T3 Ta = -50 to 93°C T4 Ta = -50 to 40°C

* Li = 0 except Li = 150µH when Option ME, Analog Meter, is selected.

	Type of Protection	Comm. Option	Field Parameters	Temp. Codes
INMETRO (CERTUSP) Brazil	Flameproof, Zone 1: BR-Ex d IIC Enclosure IP 66/67	All	All	T5 Ta = -50 to 93°C T6 Ta = -50 to 78°C
	Intrinsically Safe, Zone 0/1: BR-Ex ia IIC Enclosure IP 66/67	4-20 mA / DE	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 85°C T6 Ta = -50 to 70°C
		4-20 mA / HART	Ui = 30V Ii = 100mA Ci = 4.2nF Li = * Pi = 1.2W	T4 Ta = -50 to 93°C T5 Ta = -50 to 63°C T6 Ta = -50 to 48°C
		Fieldbus (Not FISCO)	Ui = 24V Ii = 250mA Ci = 4.2nF Li = 0 Pi = 1.2W	T3 Ta = -50 to 93°C T4 Ta = -50 to 40°C

* Li = 0 except Li = 150μH when Option ME, Analog Meter, is selected.

ST 3000 Pressure Transmitter Marine Certificate (MT Option)	This certificate defines the certifications covered for the ST 3000 Pressure Transmitter family of products, including the SMV 3000 Smart Multivariable Transmitter. It represents the compilation of the five certificates Honeywell currently has covering the certification of these products into marine applications. For ST 3000 Smart Pressure Transmitter and SMV 3000 Smart Multivariable Transmitter
	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
	Bureau Veritas (BV) - Product Code: 389:1H. Certificate number: 12660/B0 BV
	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
	Korean Register of Shipping (KR) - Certificate number: LOX17743-AE001
	Lloyd's Register (LR) - Certificate number: 02/60001(E1) & (E2)

<p>European Pressure Equipment Directive (PED) (97/23/EC)</p>	<p>The ST 3000 Smart Pressure Transmitters are in conformity with the essential requirements of the Pressure Equipment Directive.</p> <p>Honeywell ST 3000 Smart Pressure Transmitters are designed and manufactured in accordance with the applicable portions of Annex I, Essential Safety Requirements, and sound engineering practices. These transmitters have no pressurized internal volume, or have a pressurized internal volume rated less than 200 bar (2,900 psig), and/or have a maximum volume of less than 0.1 liter (Article 3, 1.1.(a) first indent, Group 1 fluids). Therefore, these transmitters are not subject to the essential requirements of the directive 97/23/EC (PED, Annex I) and shall not have the CE mark applied.</p> <p>For transmitters rated > 200 bar (2,900 psig) < 1,000 bar (14,500 psig) Honeywell maintains a technical file in accordance with Annex III, Module A, (internal production control) when the CE mark is required. Transmitter Attachments: Diaphragm Seals, Process Flanges and Manifolds comply with Sound Engineering Practice.</p> <p>NOTE: Pressure transmitters that are part of safety equipment for the protection of piping (systems) or vessel(s) from exceeding allowable pressure limits, (equipment with safety functions in accordance with Pressure Equipment Directive 97/23/EC article 1, 2.1.3), require separate examination.</p> <p>A formal statement from TÜV Industry Service Group of TÜV America, Inc., a division of TÜV Süddeutschland, a Notified Body regarding the Pressure Equipment Directive, can be found at www.honeywell.com. A hard copy may be obtained by contacting a Honeywell representative.</p>
<p>CE Mark</p>	<p><i>Electro Magnetic Compatibility (EMC) (2004/108/EC)</i> All Models: EN 50081-1: 1992; EN 50082-2:1995; EN 61326-1:1997 + A1, A2, and A3 – Industrial Locations</p>
<p>Dual Seal Certification</p>	<p>Dual Seal Certification based on ANSI/NFPA 70-202 and ANSI/ISA 12.27.01 requirements without the use of additional seal protection elements.</p>
<p>Recommended Frequency of Calibration</p>	<p>Honeywell recommends verifying the calibration of these devices once every four years.</p>
<p>Approved Manufacturing Locations</p>	<p>Honeywell Process Solutions - York, PA USA Honeywell (Tianjin) Limited – Tianjin, P.R. China Honeywell Automation India Ltd. – Pune 411013 India</p>

Foundation™ Fieldbus is a trademark of the Fieldbus Foundation.

Viton® is a registered trademark of DuPont

HART® is a registered trademark of HART Communications Foundation.

Teflon® is a registered trademark of DuPont.

Hastelloy® C-276 is a registered trademark of Haynes International.

DC® 200 is a registered trademark of Dow Corning.

Monel® 400 is a registered trademark of Special Metals Corporation.

FM ApprovalsSM is a service mark of FM Global

ST 3000® and Experion® are registered trademarks of Honeywell International Inc.

Mounting

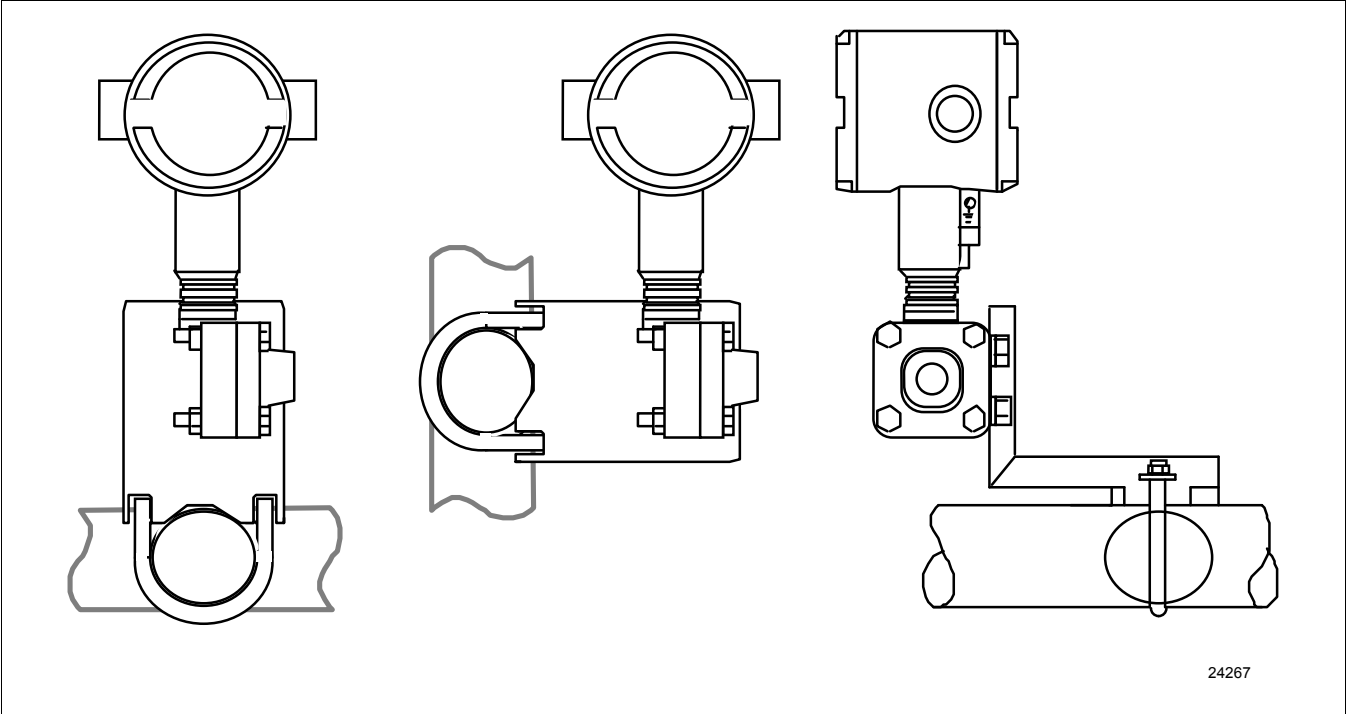
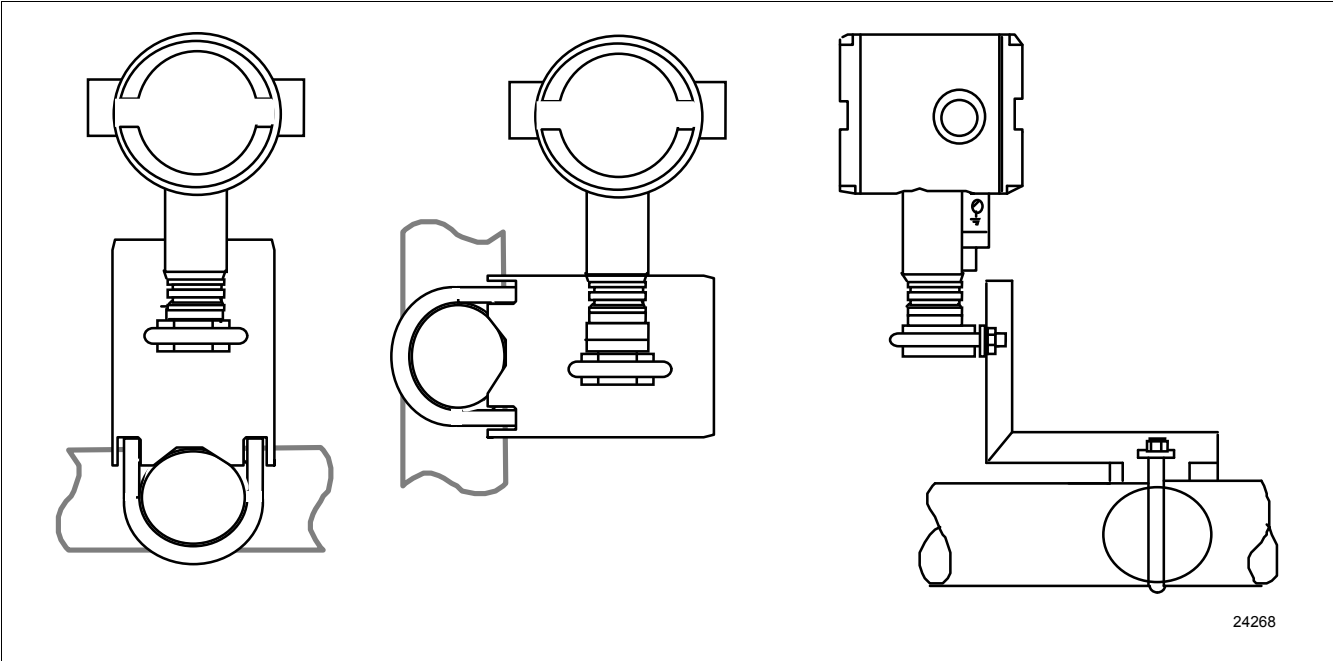


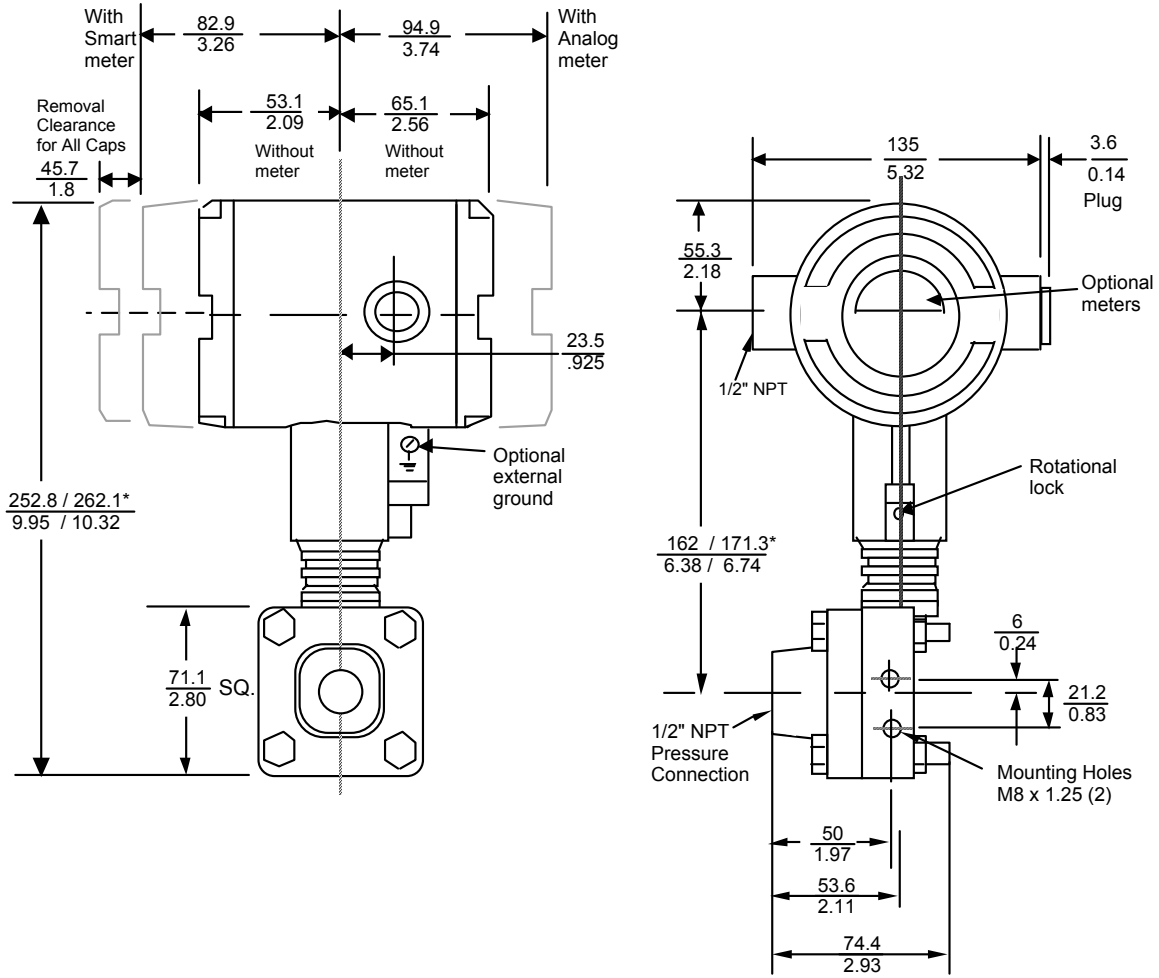
Figure 3 - Examples of typical mounting positions for single-head models STG140, STG170, and STG180.



**Figure 4 - Examples of typical mounting positions for in-line models STG14L, STG17L, STG18L, and STG19L.
Note that a mounting bracket is not required for in-line models.**

Reference Dimensions

millimeters
inches



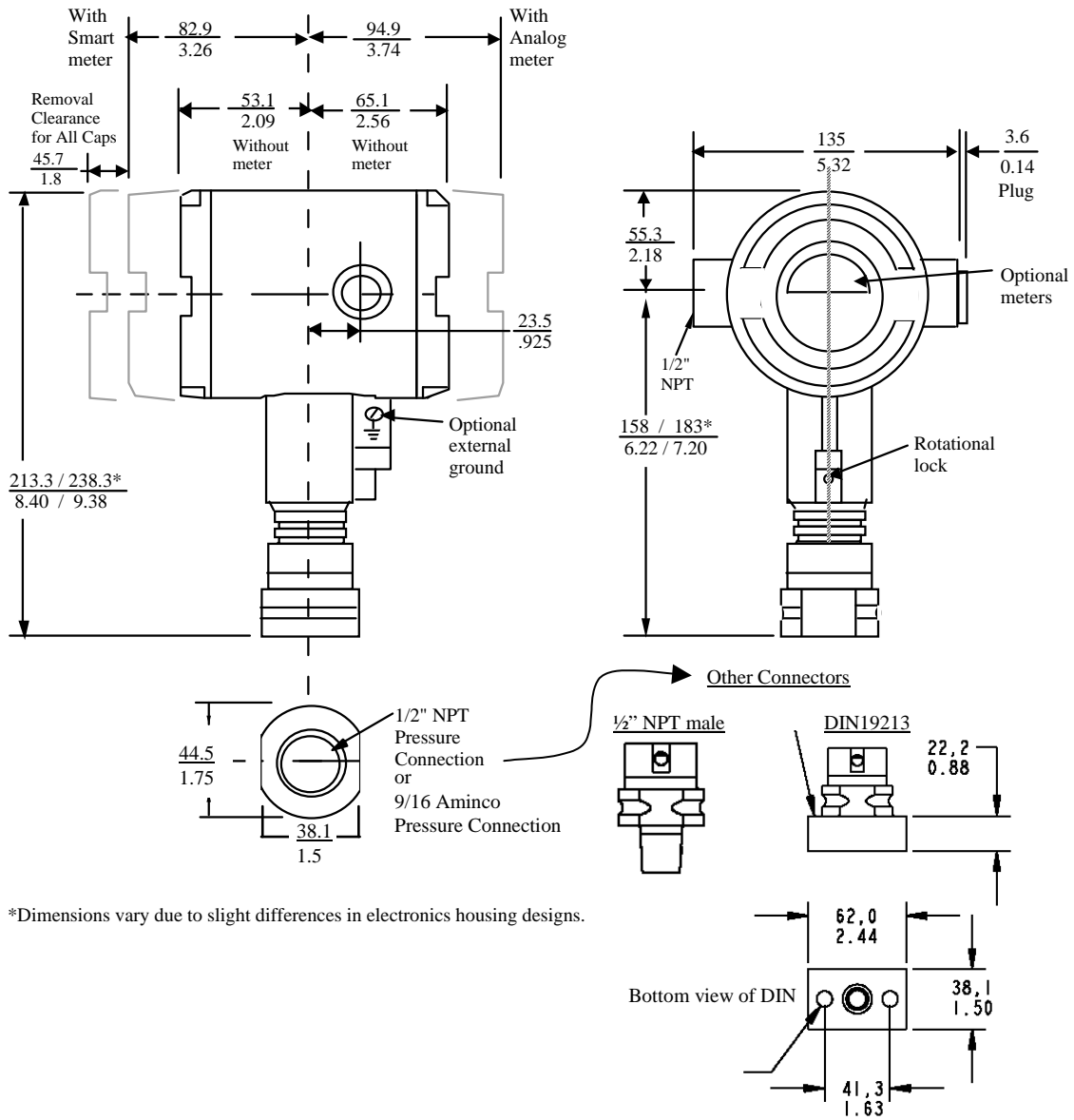
*Dimensions vary due to slight differences in electronics housing designs.

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Figure 5 - Typical mounting dimensions for single-head models STG140, STG170, and STG180 for reference.

Reference Dimensions

millimeters
inches



*Dimensions vary due to slight differences in electronics housing designs.

Figure 6 - Typical mounting dimensions for in-line models STG14L, STG17L, STG18L, and STG19L for reference.

Options

- **High Accuracy (Option HA)**

Extends applicable ST 3000 S100 models to $\pm 0.0375\%$ reference accuracy (analog).
The mounting bracket is available in either zinc-plated carbon steel or stainless steel.
- **Mounting Bracket (Options MB, MX, SB, SX, FB)**

The angle mounting bracket is available in either zinc-plated carbon steel or stainless steel and is suitable for horizontal or vertical mounting on a two inch (50 millimeter) pipe, as well as wall mounting. An optional flat mounting bracket is also available in carbon steel for two inch (50 millimeter) pipe mounting.
- **Indicating Meter (Options ME and SM)**

Two integral meter options are available. An analog meter (option ME) is available with a 0 to 100% linear scale. The Smart Meter (option SM) provides an LCD display for both analog and digital output and can be configured to display pressure in pre-selected engineering units.
- **HART® Protocol Compatibility (Options HC and H6)**

Optional electronics modules for the ST 3000 provides HART Protocol compatibility in either HART 5.x or 6.x formats. Transmitters with a HART Option are compatible with any HART enabled system that provides 5.x or 6.x format support.
- **FOUNDATION Fieldbus (Option FF)**

Equips transmitter with FF protocol for use in 31.25 kbit/s FF networks. See document 34-ST-03-72 for additional information on ST 3000 Fieldbus transmitters.
- **SIL2/SIL3 Certification (Option SL)**

This ST 3000 product is available for use with safety systems. With the SL option, we are fully certified to SIL 2 capability for single transmitters and SIL 3 capability for multiple transmitter use through TÜV Nord Sys Tec GmbH & Co. KG. We are in compliance with the following SIL standards:

 - IEC 61508-1: 1998
 - IEC 61508-2: 2000
 - IEC 61508-3: 1998
- **Indicator Configuration (Option CI)**

Provides custom configuration of Smart Meters.
- **NAMUR NE43 Compliance (Option NE)**

This option provides software that meets the NAMUR NE43 requirements for failsafe software. Transmitter failure information is generated when the measuring information is no longer valid.
Transmitter failure values are:
 ≤ 3.6 mA and ≥ 21.0 mA. The normal ST 3000 ranges are ≤ 3.8 mA and ≥ 20.5 mA.
- **Lightning Protection (Option LP)**

A terminal block is available with circuitry that protects the transmitter from transient surges induced by nearby lightning strikes
- **Tagging (Option TG)**

Up to 30 characters can be added on the stainless steel nameplate mounted on the transmitter's electronics housing at no extra cost. Note that a separate nameplate on the meter body contains the serial number and body-related data. A stainless steel wired on tag with additional data of up to 4 lines of 28 characters is also available. The number of characters for tagging includes spaces.
- **Transmitter Configuration (Option TC)**

The factory can configure the transmitter linear/square root extraction, damping time, LRV, URV and mode (analog/digital) and enter an ID tag of up to eight characters and scratchpad information as specified.
- **Custom Calibration and ID in Memory (Option CC)**

The factory can calibrate any range within the scope of the transmitter's range and enter an ID tag of up to eight characters in the transmitter's memory.
- **Lifetime Warranty (Option WL)**

Extends limited 1-year warranty policy to 15 years for ST 3000 S100 pressure transmitters. See Honeywell Terms and Conditions.

Sales and Service

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

**Asia Pacific Global
Technical Support
Field Instruments**

Phone: +65 6580 3156
Fax: +65 6445-3033

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

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China – PRC - Shanghai

Honeywell China Inc.
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Fax: (86-21) 6237-2826

China – PRC - Chengdu

Honeywell China Inc.
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China – PRC - Xi'an

Honeywell China Ltd - Xi'an.
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Fax: +(86-29) 8833-7489

China – PRC - Shenzhen-

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FAX: +(62) 21-5367 1008

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Fax: +(81) 3 6730 7228

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Honeywell Limited
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Fax: +(64-9) 623-5060
Toll Free (0800) 202-088

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Phone: +(65) 6580 3278
Fax: +(65) 6445-3033

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

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Honeywell Systems
(Thailand) Ltd.
Phone: +(662) 693-3099
FAX: +(662) 693-3089

Taiwan R.O.C.

Honeywell Taiwan Ltd.
Phone: +(886-2) 2245-1000
FAX: +(886-2) 2245-3243

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(Singapore)
for: Philippines, Pakistan,
Cambodia, Guam, Laos,
Myanmar, Vietnam,
East Timor

SE Asia Countries

see Honeywell
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Nepal
Sri Lanka

EUROPE
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FAX: +32 (0)2728 22 45

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FAX: +420 242 442 131

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FAX: +(45) 39 55 55 58

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FAX: +40 (0) 21 2316439

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Moscow 121059, Russia
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Fax +7 (495) 797 99 64

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FAX: +34 (0)91313 61 30

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FAX: +(46) 8 775 56 00

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FAX: +(41) 1 855 24 45

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FAX: +90 216 575 66 35

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Honeywell Middle East Ltd.
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FAX: +971 2 4432536

Sultanate of Oman

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Ext.33
FAX +968 24 787351

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Honeywell Turki Arabia Ltd
Jubail Office
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Fax: +966-3-341-0216
Honeywell - ATCO
Dammam Office
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Fax: 0096638338059

Kuwait

Honeywell Kuwait KSC
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Fax: +965 242 8315
And
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2934/1821 Fax: +965 326
1714

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FAX: +39 (02) 250 10 659

South Africa (Republic of)

and sub saharan
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Honeywell Southern Africa
Honeywell S.A. Pty. Ltd.
Phone: +27 11 6958000
FAX +27 118051504

NORTH AMERICA
Canada

Honeywell LTD
Phone: 1-800-737-3360
FAX: 1-800-565-4130

USA

**Honeywell Process
Solutions,**
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Or **1-800-343-0228**
Email: ask-ssc@honeywell.com

SOUTH AMERICA
Argentina

Honeywell S.A.I.C.
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FAX: +(54-11) 4325-6470

Brazil

Honeywell do Brasil & Cia
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FAX: +(55-11) 7266-1905

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Honeywell Chile, S.A.
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FAX: +(56-2) 231-6679

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FAX: +(52) 55 5570-2985

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Trinidad

Honeywell Inc.
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Venezuela

Honeywell CA
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FAX: +(58-2) 238-3391

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: <http://hpsweb.honeywell.com/Cultures/en-US/Products/Instrumentation/ProductModelSelectionGuides/default.htm>

Model Selection Guide



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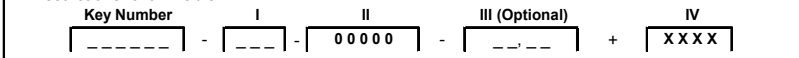
**ST 3000 Smart Transmitter
Gage Pressure (GP) &
Absolute Pressure (AP)
Series 100**

Model Selection Guide



Instructions

- Select the desired Key Number. The arrow to the right marks the selection available.
- Make one selection from each Table (I, II and IV) using the column below the proper arrow.
- Select as many Table III options as desired plus a required communications option selection.
- A (●) denotes unrestricted availability. A letter denotes restricted availability.
- Restrictions follow Table IV.



KEY NUMBER

	Design	Span	Selection	Availability					
Gage Pressure	Single Head	0-5 to 0-500 psi / 0-0.34 to 0-35 bar	STG140		↓				
		0-30 to 0-3,000 psi / 0-2.1 to 0-210 bar	STG170		↓				
		0-60 to 0-6,000 psi / 0-4.1 to 0-420 bar	STG180			↓			
Gage Pressure	In-Line	0-5 to 0-500 psi / 0-0.34 to 0-35 bar	STG14L				↓		
		0-30 to 0-3,000 psi / 0-2.1 to 0-210 bar	STG17L				↓		
		0-60 to 0-6,000 psi / 0-4.1 to 0-420 bar	STG18L				↓		
		0-100 to 0-10,000 psi / 0-7 to 0-690 bar	STG19L				↓		
Absolute Pressure	Single Head	0-50 to 0-780 mm HgA / 0-67 to 0-1,040 mbarA	STA122	↓					
		0-5 to 0-500 psi/0-0.34 to 0-35 bar absolute	STA140		↓				
Absolute Pressure	In-Line	0-50 to 0-780 mm HgA / 0-67 to 0-1,040 mbarA	STA12L						↓
		0-5 to 0-500 psia / 0-0.34 to 0-35 barA	STA14L					↓	
		0-30 to 0-3,000 psia / 0-2.1 to 0-210 barA	STA17L					↓	

Important Note: Base STG and STA models no longer include a default communications option. All units now require the selection of a communication option from Table III (AN, DE, HC, H6 or FF).

TABLE I - METER BODY

	Wetted Process Heads / Bonnet	Vent/Drain Valves	Barrier Diaphragms	Selection										
Materials of Construction	Carbon Steel ¹	-	316L SS	A__	●	●	●	●	●					
	Carbon Steel ¹	-	Hastelloy® C-276 ³	B__	●	●	●	●	●					
	Carbon Steel ¹	-	Monel 400® ⁴	C__	19	19	19	19						
	316 SS ⁵	-	316L SS	E__	●	●	●	●	●					
	* 316 SS ⁵	-	316L SS	E__						●	●	●	●	
	* 316 SS ⁵	-	Hastelloy® C-276 ³	F__	●	●	●	●	●					
	* 316 SS ⁵	-	Hastelloy® C-276 ³	F__						●	●	●	●	
	316 SS ⁵ Hastelloy® C-276 ^{3,6} Monel 400® ⁷	-	Monel 400® ⁴ Hastelloy® C-276 ³ Monel 400® ⁴	G__ J__ L__	19 19 19	19 19 19	19 19 19	19 19 19						
Fill Fluid	Silicone DC®200 ⁸			_1_	●	●	●	●	●	●	●	●	●	●
	CTFE (Halocarbon 6.3)			_2_	●	●	●	●	●	●	●	●	●	●
	CTFE (MO-10)			_4_	●									●
Process Connection Configuration	9/16" - 18 Aminco			_A_	●	●	●	●	●	●	●	●	●	●
	1/2 NPT (female)			_G_	●	●	●	●	●	●	●	●	●	●
	1/2 NPT (male)			_H_										●
	DIN 19213			_D_										●

¹ 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.
³ Hastelloy® C-276 or UNS N10276
⁴ Monel 400® or UNS N04400
⁵ Supplied as 316 SS or as Grade CF8M, the casting equivalent of 316 SS.
⁶ Supplied as indicated or as Grade CW12MW, the casting equivalent of Hastelloy® C-276
⁷ Supplied as indicated or as Grade M30C, the casting equivalent of Monel 400®
⁸ Use DC®704 option when the STA122 or STA12L will be operating below 50mm HgA, see Fig. 2 in Specification 34-ST-03-65.
 * STG1_L has 316L SS process interface.

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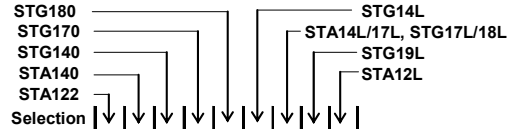


TABLE II

No Selection	0 0 0 0 0
--------------	-----------	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE III - OPTIONS

Option	Code	1	2	3	4	5	6	7	8	9	10	11	12	13
Communication Options (Must choose a communications option)														
Analog only (can be configured using appropriate Honeywell DE tool)	AN	.	.	.	.	.	.	.	.	.	.	.	.	.
DE Protocol communications	DE	.	.	.	.	.	.	.	.	.	.	.	.	.
HART [®] 5.x Protocol Compatible Electronics	HC	.	.	.	.	.	.	.	.	.	.	.	.	.
HART [®] 6.x Protocol Compatible Electronics	H6	.	.	.	.	.	.	.	.	.	.	.	.	.
FOUNDATION [™] Fieldbus Communications	FF	r	r	r	r	r	r	r	r	r	r	r	r	r
Indicating Meter Options														
Analog Meter (0-100 Even 0-10 Square Root)	ME	.	.	.	.	.	.	.	.	.	.	.	.	.
Smart Meter	SM	.	.	.	.	.	.	.	.	.	.	.	.	.
Custom Configuration of Smart Meter	CI	e	e	e	e	e	e	e	e	e	e	e	e	e
Local Zero & Span	ZS	.	.	m	m	m	m	m	m	m	m	m	m	m
Local Zero	LZ	.	.	x	x	x	x	x	x	x	x	x	x	x
Transmitter Housing & Electronics Options														
No housing conduit plugs come standard with the ST 3000.														
For certain approval codes, you must select select a certified conduit plug from below and it will come packaged in the box with your transmitter.														
316 SS ⁵ Electronics Housing - (with M20 Conduit Connections)	SH	n	n	n	n	n	n	n	n	n	n	n	n	n
316 SS ⁵ Electronics Housing - (with M20 to 1/2 NPT 316 SS Conduit Adapter for use with FM and CSA Approval codes)	A3	i	i	i	i	i	i	i	i	i	i	i	i	i
1/2 NPT to M20 316 SS Conduit Adaptor (Certified ATEX, CSA & IECEx)	A1	n	n	n	n	n	n	n	n	n	n	n	n	n
1/2 NPT to 3/4 NPT 316 SS Conduit Adaptor (Certified ATEX, CSA & IECEx)	A2	.	.	.	.	.	.	.	.	.	.	.	.	.
M20 Male to 1/2 NPT Female 316 SS Conduit Adaptor (Certified ATEX, CSA & IECEx)	A4	.	.	.	.	.	.	.	.	.	.	.	.	.
1/2 NPT Zinc-plated Certified Conduit Plug (ATEX, CSA & IECEx)	A5	.	.	.	.	.	.	.	.	.	.	.	.	.
1/2 NPT 316 SS Certified Conduit Plug (ATEX, CSA & IECEx)	A6	.	.	.	.	.	.	.	.	.	.	.	.	.
M20 316 SS Certified Conduit Plug (ATEX, CSA & IECEx)	A7	.	.	.	.	.	.	.	.	.	.	.	.	.
1/2 NPT Non-certified Conduit plug (Zinc-plated carbon steel, general use)	A8	.	.	.	.	.	.	.	.	.	.	.	.	.
NAMUR Failsafe Software	NE	15	15	15	15	15	15	15	15	15	15	15	15	15
SIL 2 - TÜV Certified transmitter (requires HC/H6 and WP options)	SL	p	p	p	p	p	p	p	p	p	p	p	p	p
Lightning Protection	LP	.	.	.	.	.	.	.	.	.	.	.	.	.
Custom Calibration and I.D. in Memory	CC	.	.	.	.	.	.	.	.	.	.	.	.	.
Transmitter Configuration - (non-Fieldbus)	TC	15	15	15	15	15	15	15	15	15	15	15	15	15
Transmitter Configuration - (Fieldbus)	FC	21	21	21	21	21	21	21	21	21	21	21	21	21
Write Protection (Delivered in "ON" position)	WP	.	.	.	.	.	.	.	.	.	.	.	.	.
Write Protection (Delivered in "OFF" position)	WX	g	g	g	g	g	g	g	g	g	g	g	g	g
Stainless Steel Customer Wired-On Tag (4 lines, 26 characters per line, customer supplied information)	TG	.	.	.	.	.	.	.	.	.	.	.	.	.
Stainless Steel Customer Wired-On Tag (blank)	TB	.	.	.	.	.	.	.	.	.	.	.	.	.
High Accuracy	HA	.	.	d	.	.	d	.	.	.	.	.	.	.
Meter Body Options														
A286 SS (NACE) Bolts and 304 SS (NACE) Nuts for Head	CR	.	.	.	.	.	.	.	.	.	.	.	.	.
316 SS Bolts and 316 SS Nuts for Process Heads	SS	.	.	f	f	f	.	.	.	.	.	.	.	.
Modified DIN Process Heads - 316 SS	DN	w	w	w	w	w	.	.	.	.	.	.	.	.
Viton [®] Process Head Gasket (Teflon [®] is standard)	VT	.	.	z	z	z	.	.	.	.	.	.	.	.
Graphite Process Head Gasket	GF	.	.	.	.	.	.	.	.	.	.	.	.	.
Teflon [®] Process Head Gasket (Viton [®] is standard)	TF	.	.	.	.	.	.	.	.	.	.	.	.	.
Transmitter Mounting Bracket Options														
Angle Mounting Bracket - Carbon Steel	MB	.	.	.	.	.	.	.	.	.	.	.	.	.
Marine Approved Angle Mounting Bracket - Carbon Steel	MX	.	.	.	.	.	.	.	.	.	.	.	.	.
Angle Mounting Bracket - 304 SS	SB	.	.	.	.	.	.	.	.	.	.	.	.	.
Marine Approved Angle Mounting Bracket - 304 SS	SX	.	.	.	.	.	.	.	.	.	.	.	.	.
Flat Mounting Bracket - Carbon Steel	FB	.	.	.	.	.	.	.	.	.	.	.	.	.
Services/Certificates/Marine Type Approval Options														
User's Manual Paper Copy (Standard, HC, H6 or FF ships accordingly)	UM	.	.	.	.	.	.	.	.	.	.	.	.	.
Clean Transmitter for Oxygen or Chlorine Service with Certificate (50039190)	OX	h	h	h	h	h	h	h	h	h	h	h	h	h
Over-Pressure Leak Test with Certificate (F3392)	TP	.	.	.	.	.	.	.	.	.	.	.	.	.
Calibration Test Report and Certificate of Conformance (F3399)	F1	.	.	.	.	.	.	.	.	.	.	.	.	.
Certificate of Conformance (F3391)	F3	.	.	.	.	.	.	.	.	.	.	.	.	.
Certificate of Origin (F0195)	F5	.	.	.	.	.	.	.	.	.	.	.	.	.
SIL Certificate (SIL 2/3) (FC33337)	FE	22	22	22	22	22	22	22	22	22	22	22	22	22
NACE Certificate (Process-Wetted & Non-Process Wetted) (FC33339)	F7	o	o	o	o	o	.	.	.	.	.	.	.	.
NACE Certificate (Process-Wetted) (FC33338)	FG	.	.	.	.	.	.	.	.	.	.	.	.	.
Material Traceability Certification per EN 10204 3.1 (FC33341)	FX	.	.	.	.	.	.	.	.	.	.	.	.	.
Marine Type Approvals (DNV, ABS, BV, KR & LR) (FC33340)	MT	2	2	2	2	2	2	2	2	2	2	2	2	2

Table III continued next page

⁵ Supplied as 316 SS or as Grade CF8M, the casting equivalent of 316 SS.

⁸ Viton[®] or Fluorocarbon Elastomer

⁹ Teflon[®] or PTFE

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TABLE III - OPTIONS (continued)

Warranty Options	Selection														
Additional Warranty - 1 year	W1	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Additional Warranty - 2 years	W2	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Additional Warranty - 3 years	W3	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Additional Warranty - 4 years	W4	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Lifetime Warranty - 15 years	WL	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Approval Body	Approval Type	Location or Classification	Selection														
No hazardous location approvals			9X	•	•	•	•	•	•	•	•	•	•	•	•		
FM Approvals SM	Explosion Proof	Class I, Div. 1, Groups A,B,C,D	1C	•	•	•	•	•	•	•	•	•	•	•	•		
	Dust-Ignitionproof	Class II, III Div. 1, Groups E,F,G		•	•	•	•	•	•	•	•	•	•	•	•	•	
	Non-Incendive	Class I, Div. 2, Groups A,B,C,D		•	•	•	•	•	•	•	•	•	•	•	•	•	
	Intrinsically Safe	Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G		•	•	•	•	•	•	•	•	•	•	•	•	•	
ATEX ¹⁰ (LCIE)	Intrinsically Safe, Zone 0	Ex ia IIC T4 (Ta = -50°C to +93°C); T5 (Ta = -50°C to +85°C); T6 (Ta = -50°C to +70°C) Enclosure IP 66/67	3S	•	•	•	•	•	•	•	•	•	•	•	•		
	Intrinsically Safe, Zone 1	Ex ia IIC T4 (Ta = -50°C to +93°C); T5 (Ta = -50°C to +85°C); T6 (Ta = -50°C to +70°C) Enclosure IP 66/67		•	•	•	•	•	•	•	•	•	•	•	•	•	
	Dust-tight Enclosure, Zone 0	Ex td A20 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C) Enclosure IP 66/67	33	24	24	24	24	24	24	24	24	24	24	24	24	24	
	Flameproof and Dust-tight Enclosure, Zone 1	Ex d IIC T5 (Ta = -40°C to +93°C), T6 (Ta = -40°C to +78°C) Supply 11- 42Vdc Ex td A21 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C) Enclosure IP 66/67		•	•	•	•	•	•	•	•	•	•	•	•	•	
	Multiple Marking ¹¹ Int. Safe, Zone 0/1 and Dust-tight Enclosure, or Flameproof, Zone 1 and Dust-tight Enclosure, or Non-Sparking, Zone 2	Ex ia IIC T4 (Ta = -50°C to +93°C); T5 (Ta = -50°C to +85°C); T6 (Ta = -50°C to +70°C); Ui = 30V; Ii = 100mA Ex td A20 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C)	Ex nA, IIC T5 (Ta = -40°C to +93°C), T6 (Ta = -40°C to +78°C); Zone 2 Supply < 42Vdc, 23mA Ex td A22 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C) (Honeywell). Enclosure IP 66/67	3N	•	•	•	•	•	•	•	•	•	•	•	•	
		Ex d IIC T5 (Ta = -40°C to +93°C), T6 (Ta = -40°C to +78°C) Supply 11- 42Vdc Ex td A21 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C)			3C	24	24	24	24	24	24	24	24	24	24	24	24
Ex nA, IIC T5 (Ta = -40°C to +93°C), T6 (Ta = -40°C to +78°C); Zone 2 Supply < 42Vdc, 23mA Ex td A22 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C) (Honeywell). Enclosure IP 66/67		•				•	•	•	•	•	•	•	•	•	•	•	•

Table III Approvals continued next page

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TABLE III - OPTIONS (continued)

Approval Body	Approval Type	Location or Classification	Selection													
Canadian Standards Association (CSA)	Explosion Proof	Class I, Div. 1, Groups B,C,D	2J	24	24	24	24	24	24	24	24	4	24			
	Dust-Ignitionproof	Class II, III, Div. 1, Groups E,F,G														
	Intrinsically Safe	Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G														
IECEX	Flameproof, Zone 1	Ex d IIC; T5 (Ta = -40 to +93°C), T6 (Ta = -40 to +78°C)	CA	24	24	24	24	24	24	24	24	24	24			
	Intrinsically Safe, Zone 0/1	Ex ia IIC; T3, T4, T5, T6 See Spec for detailed temperature codes by Communications option														
SAEx (South Africa)	Intrinsically Safe, Zone 0/1	Ex ia IIC T4, T5, T6	Z2	•	•	•	•	•	•	•	•	•	•			
	Flameproof, Zone 1	EX d IIC T5, T6 Enclosure IP 66/67	ZD	•	•	•	•	•	•	•	•	•	•			
	Multiple Marking ¹¹ Int. Safe, Zone 0/1, or Flameproof, Zone 1	Ex ia IIC T4, T5, T6 Ex d IIC T5, T6 Enclosure IP 66/67	ZA	•	•	•	•	•	•	•	•	•	•			
CERTUSP INMETRO (Brazil)	Flameproof, Zone 1	BR- Ex d IIC T5, T6	6D	•	•	•	•	•	•	•	•	•	•			
	Intrinsically Safe, Zone 0/1	BR- Ex ia IIC; T4, T5, T6 (See CERTUSP certificate for detailed temperature codes by Communications option)	6S	•	•	•	•	•	•	•	•	•	•			

¹⁰ See ATEX installation requirements in the ST 3000 User's Manual

¹¹ The user must determine the type of protection required for installation of the equipment. The user shall then check the box [x] adjacent to the type of protection used on the equipment certification nameplate. Once a type of protection has been checked on the nameplate, subsequently the equipment shall not be reinstalled using any of the other certification types.

TABLE IV

	Selection									
Factory Identification	X X X X	•	•	•	•	•	•	•	•	•

RESTRICTIONS

Restriction Letter	Available Only With		Not Available With		
	Table	Selection	Table	Selection	
b		Select only one option from this group			
d	I	A _ , E _ _			
e	III	SM			
f			III	2J	
g			III	SL	
h	I	_ 2 _			
i	III	1C or 2J			
m			III	STA12L, STA14L, ME, FF	
n			III	1C, 2J	
o	III	CR			
p	III	HC or H6 and WP	III	FF, WX	
r	III	FISCO/FNICO compliance available only with 1C	III	TC, ME, or FISCO/FNICO compliance not available 2J, 3C, 3N, 33, 3S, CA, Z2, ZD, ZA, 6D & 6S	
w	I	E _ G, F _ G, G _ G			
x	III	FF, SM	Key #	STA12L, STA14L	
z			I	B _ , F _ _ J _ _	
2	III	MX, SX	III	FB, MB, SB	
4	III	This approval code requires the selection of a certified conduit plug: A5, A6 or A7	III	No CRN Number available	
15			III	FF	
19			III	F7, FG	
21	III	FF			
22	III	SL			
24	III	This approval code requires the selection of a certified conduit plug: A5, A6 or A7			

Ordering Example: STG140-A1A-00000-HC,NE,3H+XXXX

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 HART® is a registered trademark of HART Communication Foundation.
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For More Information

Learn more about how Honeywell's ST 3000 Smart Pressure Transmitters can increase performance, reduce downtime and decrease configuration costs, visit our website www.honeywell.com/ps/hfs or contact your Honeywell account manager.

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34-ST-03-62
August 2011
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