Technical Information

Honeywell

ST 3000 Smart Transmitter Series 900 Gauge Pressure Models Specifications 34-ST-03-67 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 900 In-line gauge Pressure Transmitters STG94L and the Series 900 Dualhead gauge (STG944), continue to bring proven "smart" technology to a wide spectrum of pressure measurement applications. 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. As with the rest of the line of Honeywell transmitters, the in-line transmitters offer the ability to be installed in a wide variety of hazardous environments for accurate repeatable pressure measurement.

Models		
STG944	0 to 500 psi	0 to 35 bar
STG94L	0 to 500 psi	0 to 35 bar
STG974	0 to 3,000 psi	0 to 210 bar
STG97L	0 to 3,000 psi	0 to 210 bar
STG98L	0 to 6,000 psi	0 to 415 bar
STG99L	0 to 10,000 psi	0 to 690 bar

Honeywell's cost-effective ST 3000 S900 transmitters lead the industry in reliability and stability

ST 3000 S900 Transmitter Benefits

Stability = ±0.01% per year

Reliability = 470 years MTBF



Figure 1 – On the left is an In-line GP type Model STG94L and on the right is a dual-head GP type Model STG944. Both these Series 900 Gauge Pressure Transmitters feature proven piezoresistive sensor technology.

All ST 3000 transmitters can be ordered to provide one of the following output communication options.

Communications options
4-20 mA
Honeywell Digitally Enhanced (DE)
HART [®] (versions 5.x or 6.x)
FOUNDATION™ Fieldbus

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.

The devices provide comprehensive self-diagnostics to help users maintain high uptime, meet regulatory requirements, and attain high quality standards. S900 transmitters allow smart performance at analog prices. Accurate, reliable and stable, Series 900 transmitters offer greater turndown ratio than conventional transmitters.

Description

The ST 3000 transmitter can replace any 4 to 20 mA output transmitter in use today and operates over a standard twowire 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 spanturndown 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)

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 70	-40 to 158	-40 to 85	-40 to 185	-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 t	o 55	0 to	100	0 to	100	0 to 100	
Vacuum Region – Minimum Pressure mmHg absolute inH ₂ O absolute		spheric spheric		25 3		term***) 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	STG944 and STG94L = 500 psi, 35 bar							
Working Pressure	STG974 and STG97L = 3,000 psi, 210 bar							
(MAWP)	STG98	L = 6,00	0 psi, 415 bar					
(ST 3000 products are rated to Maximum Allowable Working Pressure.)	STG99L = 10,000 psi, 690 bar							
	Units c	Units can withstand overpressure of 1.5X MAWP without damage.						

Operating Conditions – All Models

* For model 944 with CTFE fill fluid, the rating is -15 to 70°C (5 to 158°F); for model 98L with CTFE fill fluid, the rating is -15 to 110°C (5 to 230°F).

** For Models STG94L, STG97L, and STG98L, STG99L the upper limit is 110°C (230°F).

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

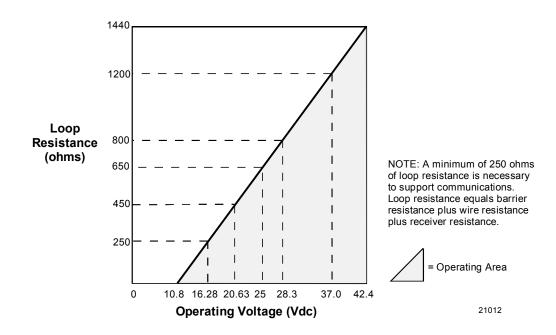


Figure 2 - Supply voltage and loop resistance chart

Performance Under Rated Conditions* - Model STG944 & STG94L (0 to 500 psi/35 bar)

Parameter		tions* - Model STG944 & STG94L (0 to 500 psi/35 bar) Description	
Upper Range Limit	psi	500	
	bar	35	
Minimum Span	psi	5	
Turndown Ratio	bar 0.35 ndown Ratio 100 to 1		
Zero Elevation and Supp	ression	No limit except minimum span from absolute 0 (zero) to +100% URL. Specifications valid over this range.	
Accuracy (Reference – In combined effects of lineari hysteresis, and repeatabili	ty,	In Analog Mode: ±0.075% of calibrated span or upper range value (URV), whichever is greater, terminal based.	
 Accuracy includes resid 		For URV below reference point (20 psi), accuracy equals:	
 Accuracy includes resid after averaging success readings. For FOUNDATIONTM Field. 	ive	$\pm \left[0.025 + 0.05 \left(\frac{20 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.025 + 0.05 \left(\frac{1.4 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$	
 For Foundation Thera Digital Mode specification For HART[®] use Analog 	ons.	In Digital Mode: ±0.0625% of calibrated span or upper range value (URV), whichever is greater, terminal based.	
specifications.		For URV below reference point (20 psi), accuracy equals:	
		$\pm \left[0.0125 + 0.05 \left(\frac{20 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.0125 + 0.05 \left(\frac{1.4 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$	
Zero Temperature Effect	per	In Analog Mode: ±0.1625% of span.	
28°C (50°F)		For URV below reference point (50 psi), effect equals:	
		$\pm \left[0.0125 + 0.15 \left(\frac{50 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.0125 + 0.15 \left(\frac{3.5 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$	
		In Digital Mode: ±0.15% of span. For URV below reference point (50 psi), effect equals:	
		$\pm 0.15 \left(\frac{50 \text{ psi}}{\text{span psi}} \right)_{\text{or}} \pm 0.15 \left(\frac{3.5 \text{ bar}}{\text{span bar}} \right)_{\text{in \% of span}}$	
Combined Zero and Spa	n	In Analog Mode: ±0.25% of span.	
Temperature Effect per 2	28°C	For URV below reference point (50 psi), effect equals:	
(50°F)		$\pm \left[0.10 + 0.15 \left(\frac{50 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.10 + 0.15 \left(\frac{3.5 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$	
		In Digital Mode: ±0.225% of span.	
		For URV below reference point (50 psi), effect equals:	
		$\pm \left[0.075 + 0.15 \left(\frac{50 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.075 + 0.15 \left(\frac{3.5 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$	
Stability		±0.015% of URL per year	
		\sim reference conditions of 25°C (77°C) 10 to 55°(DLL and 21°C Staipless Steel barrier disphram	

Performance Under Rated Conditions* - Model STG974 & STG97L (0 to 3,000 psi/210 bar)

Parameter	Description		
Upper Range Limit psi bar	3,000 210		
Minimum Span psi bar	30 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.		
Accuracy (Reference – Includes combined effects of linearity, hysteresis, and repeatability)	In Analog Mode: ±0.10% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (750 psi), accuracy equals:		
 Accuracy includes residual error after averaging successive readings. 	$\pm \left[0.05 + 0.05 \left(\frac{750 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.05 + 0.05 \left(\frac{52 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$		
 For FOUNDATIONTM Fieldbus use Digital Mode specifications. For HART[®] use Analog Mode 	In Digital Mode: ±0.075% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (300 psi), accuracy equals:		
specifications.	$\pm \left[0.025 + 0.05 \left(\frac{750 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.025 + 0.05 \left(\frac{52 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$		
Zero Temperature Effect per 28°C (50°F)	In Analog Mode: ±0.2125% of span. For URV below reference point (500 psi), effect equals:		
	$\pm \left[0.0125 + 0.20 \left(\frac{500 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.0125 + 0.20 \left(\frac{35 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$		
	In Digital Mode: ±0.20% of span. For URV below reference point (500 psi), effect equals:		
	$\pm 0.20 \left(\frac{500 \text{ psi}}{\text{span psi}} \right)_{\text{or}} \pm 0.20 \left(\frac{35 \text{ bar}}{\text{span bar}} \right)_{\text{in \% of span}}$		
Combined Zero and Span Temperature Effect per 28°C	In Analog Mode: ±0.325% of span. For URV below reference point (500 psi), effect equals:		
(50°F)	$\pm \left[0.125 + 0.20 \left(\frac{500 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.125 + 0.20 \left(\frac{35 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$		
	In Digital Mode: ±0.30% of span. For URV below reference point (500 psi), effect equals:		
	$\pm \left[0.10 + 0.20 \left(\frac{500 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.10 + 0.20 \left(\frac{35 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$		
Stability	±0.03% of URL per year		

Performance Under Rated Conditions* - Model STG98L (0 to 6,000 psi/415 bar)

	ed Condi	tions* - Model STG98L (0 to 6,000 psi/415 bar)
Parameter		Description
Upper Range Limit	psi bar	6,000 415
Minimum Span	psi bar	62 4.1
Turndown Ratio		100 to 1
Zero Elevation and Supp	pression	No limit except minimum span from absolute 0 (zero) to +100% URL. Specifications valid over this range.
Accuracy (Reference – In combined effects of lineari hysteresis, and repeatabili	ty,	In Analog Mode: ±0.10% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (1,500 psi), accuracy equals:
 Accuracy includes resid after averaging success readings. For FOUNDATIONTM Field. 	ive	$\pm \left[0.05 + 0.05 \left(\frac{1,500 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.05 + 0.05 \left(\frac{104 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$
 Digital Mode specification For HART[®] use Analog 	ons.	In Digital Mode: ±0.075% of calibrated span or upper range value (URV), whichever is greater, terminal based.
specifications.		For URV below reference point (1,500 psi), accuracy equals:
		$\pm \left[0.025 + 0.05 \left(\frac{1,500 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.025 + 0.05 \left(\frac{104 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$
Zero Temperature Effect	per	In Analog Mode: ±0.2125% of span.
28°C (50°F)		For URV below reference point (1,500 psi), effect equals:
		$\pm \left[0.0125 + 0.20 \left(\frac{1,500 \text{ psi}}{\text{spanpsi}} \right) \right]_{\text{or}} \pm \left[0.0125 + 0.20 \left(\frac{104 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$
		In Digital Mode: ±0.20% of span. For URV below reference point (1,500 psi), effect equals:
		$\pm 0.20 \left(\frac{1,500 \text{ psi}}{\text{span psi}} \right)_{\text{or}} \pm 0.20 \left(\frac{70 \text{ bar}}{\text{span bar}} \right)_{\text{in \% of span}}$
Combined Zero and Spa Temperature Effect per 2		In Analog Mode: ±0.325% of span. For URV below reference point (1,500 psi), effect equals:
(50°F)		$\pm \left[0.125 + 0.20 \left(\frac{1,500 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.125 + 0.20 \left(\frac{104 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$
		In Digital Mode: ±0.30% of span.
		For URV below reference point (1,,500 psi), effect equals:
		$\pm \left[0.10 + 0.20 \left(\frac{1,500 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.10 + 0.20 \left(\frac{104 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}}$
Stability		±0.03% of URL per year

Performance Under Rated Conditions* - STG99L (0 to 10,000 psi/690 bar)

Parameter		itions* - STG99L (0 to 10,000 psi/690 bar) Description		
Upper Range Limit	psi bar	10,000 690		
Minimum Span	psi bar	100 7		
Turndown Ratio		100 to 1		
Zero Elevation and Suppr	ression	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) Accuracy includes residual error after averaging successive readings. For FOUNDATIONTM Fieldbus use Digital Mode specifications. For HART[®] use Analog Mode specifications. 		In Analog Mode: ±0.10% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (2,500 psi), accuracy equals:		
Zero Temperature Effect p 28°C (50°F)	Jei	For URV below reference point (2,500 psi), effect equals: $ \pm \left[0.0125 + 0.20 \left(\frac{2,500 \text{ psi}}{\text{span psi}} \right) \right]_{\text{or}} \pm \left[0.0125 + 0.20 \left(\frac{172 \text{ bar}}{\text{span bar}} \right) \right]_{\text{in \% of span}} $ In Digital Mode: ±0.20% of span. For URV below reference point (2,500 psi), effect equals: $ \pm 0.20 \left(\frac{2,500 \text{ psi}}{\text{span psi}} \right)_{\text{or}} \pm 0.20 \left(\frac{172 \text{ bar}}{\text{span bar}} \right)_{\text{in \% of span}} $		
Combined Zero and Span Temperature Effect per 28 (50°F)		In Analog Mode: ±0.325% of span. For URV below reference point (2,500 psi), effect equals: $ \frac{\pm}{\left[0.125 + 0.20\left(\frac{2,500 \text{ psi}}{\text{span psi}}\right)\right]_{or}} \pm \left[0.125 + 0.20\left(\frac{172 \text{ bar}}{\text{span bar}}\right)\right]_{in \% \text{ of span}} \\ \text{In Digital Mode: ±0.30% of span.} \\ \text{For URV below reference point (2,500 psi), effect equals:} \\ \qquad \pm \left[0.10 + 0.20\left(\frac{2,500 \text{ psi}}{\text{span psi}}\right)\right]_{or} \pm \left[0.10 + 0.20\left(\frac{172 \text{ bar}}{\text{span bar}}\right)\right]_{in \% \text{ of span}} \\ \qquad \text{in \% of span} \\ $		
Stability		±0.03% of URL per year.		
Stability		10.0070 of offer por your.		

Parameter	Description			
Output (two-wire)	Analog 4 to 20 mA or DE digital communications 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	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: \leq 3.6 mA and \geq 21.0 mA. The normal signal range is \geq 3.8 mA and \leq 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	Leakage Current: 10 micro amps max. @ 42.4 VDC, 93°C			
(Code "LP")	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)			

Performance Under Rated Conditions – General for all Models

Physical and Approval Bodies

Parameter	Description	
Barrier Diaphragms Material	Dual-Head Meter Body: 316L SS, Hastelloy [®] C-276 ² , Monel [®] 400 ³ , Tantalum In-Line Meter Body: 316L SS, Hastelloy [®] C-276 ²	
Process Head Material	Dual-Head Meter Body: Carbon Steel (zinc-plated) ⁵ , 316 SS, Hastelloy [®] C-276 ⁶ , Monel [®] 400 ⁷ Monel [®] 400 ³ . [Standard reference head is Carbon Steel (zinc-plated) ⁵ . Optional reference head is 316 SS ⁴ .]	
	In-Line Meter Body: 316L SS process interface.	
Head Gaskets	Teflon [®] is standard. Viton [®] is available.	
Meter Body Bolting	Carbon Steel (Zinc plated) standard. Options include 316 SS, NACE A286 SS bolts with 304 SS nuts, and B7M.	
Mounting Bracket	Carbon Steel (Zinc-plated) or Stainless Steel angle bracket or Carbon Steel flat bracket available.	
Vent/Drain Valves & Plugs ¹	316 SS ⁴ , Hastelloy [®] C-276 ² , Monel [®] 400 ⁸ (Models STG944 and STG974 only)	
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). 316 SS optional.	
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 dual-head models and Figure 4 for in-line models.	
Dimensions	See Figures 5 and 6.	
Net Weight	With Dual-Head Meter Body: 9 pounds (4.1 Kg)	
	With In-Line Meter Body: 3.8 pounds (1.7 Kg)	

¹ Vent/Drains are sealed with Teflon[®] or PTFE

² Hastelloy[®] C-276 or UNS N10276

³ Monel[®] 400 or UNS N04400

 $^{\rm 4}\,$ Supplied as 316 SS or as Grade CF8M, the casting equivalent of 316 SS.

⁵ Carbon Steel heads are zinc-plated and not recommended for water service due to hydrogen migration. For that service, use 316 stainless steel wetted Process Heads.

⁶ Hastelloy[®] C-276 or UNS N10276. Supplied as indicated or as Grade CW12MW, the casting equivalent of Hastelloy[®] C-276

⁷ Monel[®] 400 or UNS N04400. Supplied as indicated or as Grade M30C, the casting equivalent of Monel[®] 400

⁸ Monel 400[®] or UNS N04400 or UNS N04405

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
	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 = 93⁰C
	Intrinsically Safe:	4-20 mA / DE	Vmax = 42.4V Imax = 225mA Ci = 4.2nF Li = * Pi =1.2W	T4 Ta = 93⁰C
	Class I, II, III, Division 1, Groups A, B, C, D, E, F, G locations, Encl	4-20 mA	Vmax = 30V Imax = 225mA Ci = 4.2nF Li = * Pi =1.2W	T4 Ta = 93⁰C
FM Approvals SM	Intrinsically Safe:	Fieldbus – Entity (Not FISCO)	Vmax = 32V Imax = 120mA Ci = 4.2nF Li = 0 Pi =0.84W	T4 Ta = 40°C T3 Ta = 93°C
	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 = 24V Imax = 250mA Ci = 4.2nF Li = 0 Pi =1.2W	T4 Ta = 40ºC T3 Ta = 93ºC
		FISCO	Vmax = 17.5V Imax = 380mA Ci = 4.2nF Li = 0 Pi =5.32W	T4 Ta = 40ºC T3 Ta = 93ºC
		4-20 mA / DE	Vmax = 42.4V Imax = 225mA Ci = 4.2nF Li = * Pi =1.2W	T4 Ta = 93⁰C
	Class I, Division 2, Groups A, B, C, D locations, Enclosure Type 4X	4-20 mA / HART	Vmax = 30V Imax = 225mA Ci = 4.2nF Li = * Pi =1.2W	T4 Ta = 93⁰C
	Nonincendive: Class I, Division 2, Groups A, B, C, D;	Fieldbus – Entity (Not FNICO)	Vmax = 32V Imax = 120mA Ci = 4.2nF Li = 0 Pi =0.84W	T4 Ta = 40°C T3 Ta = 93°C
	Suitable for: Class II, Division 2, Groups F&G Class III, Division 2; Class I, Zone 2, Group IIC,	Fieldbus – Entity (Not FNICO)	Vmax = 24V Imax = 250mA Ci = 4.2nF Li = 0 Pi =1.2W	T4 Ta = 40°C T3 Ta = 93°C
	Enclosure Type 4X / IP 66/67	FNICO	Vmax = 32V Ci = 4.2nF Li = 0	T4 Ta = 40°C T3 Ta = 93°C

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

FM Approvals $^{\rm SM}$ is a service mark of FM Global

	Type of Protection	Comm. Option	Field Parameters	Temp. Codes	
	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 = 93ºC	
	Intrinsically Safe:	4-20 mA / DE	Vmax = 42V Imax = 225mA Ci = 4.2nF Li = * Pi =1.2W	T4 Ta = 93⁰C	
Canadian	Class I, II, III, Division 1, Groups A, B, C, D, E, F, G locations, Enclosure Type 4X Nonincendive: Class I, Division 2, Groups A, B, C, D locations, Enclosure	4-20 mA / HART	Vmax = 42V Imax = 225mA Ci = 4.2nF Li = * Pi =1.2W	T4 Ta = 93⁰C	
Standards Association (CSA)		Fieldbus – Entity (Not FISCO)	Vmax = 24V Imax = 250mA Ci = 4.2nF Li = 0 Pi =1.2W	T4 Ta = 40°C T3 Ta = 93°C	
		4-20 mA / DE	Vmax = 42.4V Imax = 225mA Ci = 4.2nF Li = * Pi =1.2W	T4 Ta = 93⁰C	
		4-20 mA / HART	Vmax = 30V Imax = 225mA Ci = 4.2nF Li = * Pi =1.2W	T4 Ta = 93⁰C	
	Type 4X	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 li = 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
	Flameproof, Zone 1: Ex d IIC, Enclosure IP 66/67	All	All	T5 Ta = -50 to 93°C T6 Ta = -50 to 78°C
		4-20 mA / DE	Ui = 30V li = 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
	Intrinsically Safe, Zone 0/1: Ex ia IIC, Enclosure IP 66/67	4-20 mA / HART	Ui = 30V li = 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
SAEx (South Africa)	Multiple Marking: Flameproof, Zone 1: Ex d IIC, Enclosure IP 66/67	4-20 mA / DE	Ui = 30V li = 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
	Intrinsically Safe, Zone 0/1: Ex ia IIC, Enclosure IP 66/67 NOTE: The user must determine the type of protection required for	4-20 mA / HART	Ui = 30V li = 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
	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.	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

 $^{\star}\,$ Li = 0 except Li = 150µH when Option ME, Analog Meter, is selected.

	Type of Protection	Comm. Option	Field Parameters	Temp. Codes
	Flameproof, Zone 0:	All	All	A20 IP6X T95°C Ta = 93°C or T80°C Ta = 78°C
	Flameproof, Zone 1: ((in) 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:	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
	Enclosure IP 66/67	4-20 mA / HART	Ui = 30V li = 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 li = 250mA Ci = 4.2nF Li = 0 Pi =1.2W	T3 Ta = -50 to 93°C T4 Ta = -50 to 40°C
ATEX (LCIE)		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
	Non-Sparking, Zone 2: II 3 G,Ex nA IIC (Honeywell), Enclosure IP 66/67	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	4-20 mA / DE	Ui = 30V li = 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
	Intrinsically Safe, Zone 0/1: (Intrinsically Safe, Zone 0/1: (Intrinsically Safe, Zone 0/1: Non-Sparking, Zone 2:	4-20 mA / HART	Ui = 30V li = 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
	WII 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.		Ui = 24V li = 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 = 150μ H when Option ME, Analog Meter, is selected.

	Type of Protection	Comm. Option	Field Parameters	Temp. Codes
	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
INMETRO (CERTUSP)		4-20 mA / DE	Ui = 30V li = 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
Brazil	Intrinsically Safe, Zone 0/1: BR-Ex ia IIC Enclosure IP 66/67	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 = 150μ H when Option ME, Analog Meter, is selected.

	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 Multivarible Transmitter
	American Bureau of Shipping (ABS) - 2009 Steel Vessel Rules 1-1-4/3.7, 4-6-2/5.15, 4-8-3/13
ST 3000 Pressure	& 13.5, 4-8-4/27.5.1, 4-9-7/13. Certificate number: 04-HS417416-PDA
Transmitter Marine	
Certificate	Bureau Veritas (BV) - Product Code: 389:1H. Certificate number: 12660/B0 BV
(MT Option)	
	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)

Т

European	The ST 3000 Smart Pressure Transmitters are in conformity with the essential requirements of the Pressure Equipment Directive.
Pressure	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.
Equipment	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.
Directive (PED)	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.
(97/23/EC)	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.
CE Mark	<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
Recommended Frequency of Calibration	Honeywell recommends verifying the calibration of these devices once every four years.
Approved	Honeywell Process Solutions - York, PA USA
Manufacturing	Honeywell (Tianjin) Limited – Tianjin, P.R. China
Locations	Honeywell Automation India Ltd. – Pune 411013 India

 Foundation[™] Fieldbus is a trademark of the Fieldbus Foundation.
 N

 HART[®] is a registered trademark of HART Communications Foundation.
 N

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

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

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

 $\begin{array}{l} {\sf Viton}^{\circledast} \mbox{ is a registered trademark of DuPont} \\ {\sf Teflon}^{\circledast} \mbox{ is a registered trademark of DuPont.} \\ {\sf DC}^{\circledast} \mbox{ 200 is a registered trademark of Dow Corning.} \\ {\sf FM Approvals}^{\rm SM} \mbox{ is a service mark of FM Global} \end{array}$

Г

Т

Mounting

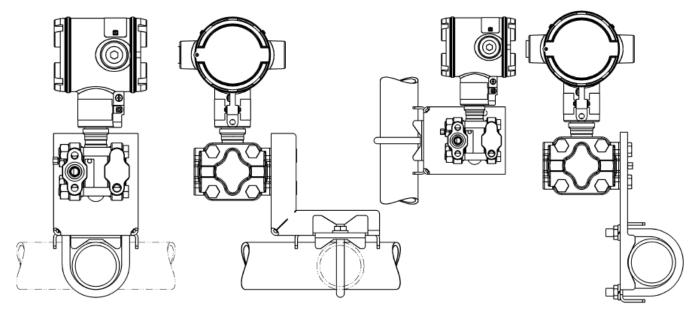


Figure 3—Examples of typical mounting positions for dual-head models STG944 and STG974

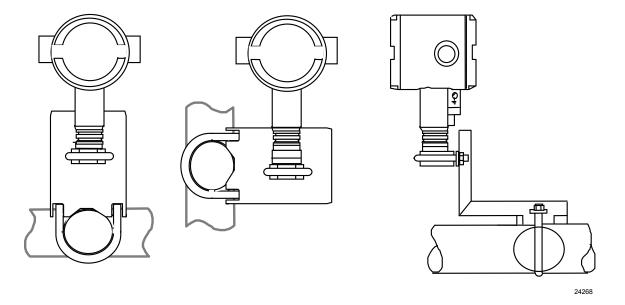


Figure 4—Examples of typical mounting positions for in-line models STG94L, STG97L, STG98L, and STG99L. Note that a mounting bracket is not required for in-line models.

Reference Dimensions

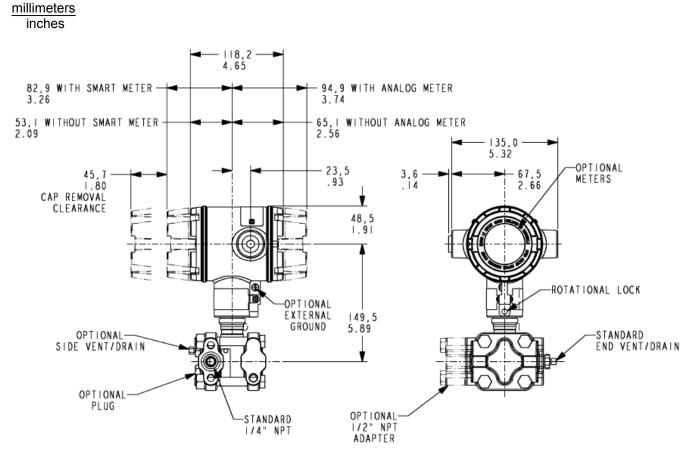


Figure 5—Typical mounting dimensions for dual-head models STG944 and STG974 for reference

Reference Dimensions

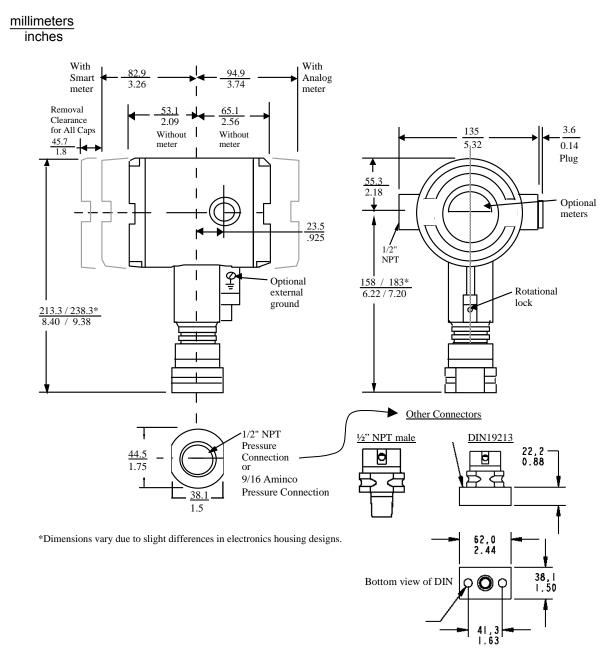


Figure 6—Typical mounting dimensions for in-line models STG94L, STG97L, STG98L, and STG99L for reference

Options

• Mounting Bracket (Options MB, MX, SB, SX, FB)

The angle mounting bracket is available in either zincplated 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.

• Lightning Protection (Option LP)

A terminal block is available with circuitry that protects the transmitter from transient surges induced by nearby lightning strikes.

• HART[®] Protocol Compatibility (Options HC and H6)

Optional electronics modules for the ST 3000 provide 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

NAMUR NE43 Compliance (Option NE)

This option provides software the 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:

 \leq 3.6 mA and \geq 21.0 mA. The normal ST 3000 ranges are \leq 3.8 mA and \geq 20.5 mA.

• Indicator Configuration (Option CI)

Provides custom configuration of Smart Meters.

• 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.

Ordering information

Contact your nearest Honeywell sales office, or visit Honeywell on the World Wide Web at: http://www.honeywell.com.

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Asia Pacific Global **Technical Support** Field Instruments Phone: +65 6580 3156 Fax: +65 6445-3033 Process Instruments Phone: (603) 76950 4777 Fax: (603) 7958 8922

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China - PRC - Chengdu Honeywell China Inc. Phone: +(86-28) 8678-6348 Fax: +(86-28) 8678-7061

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China - PRC - Shenzhen-Honeywell China Inc. Phone: +(86) 755-2518-1226 Fax: +(86) 755-2518-1221

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Cambodia Myanmar Vietnam Fast Timor

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NORTH AMERICA Canada Honeywell LTD Phone: 1-800-737-3360

FAX: 1-800-565-4130 USA Honeywell Process Solutions, Phone: 1-800-423-9883 Or 1-800-343-0228 Email: ask-

ssc@honeywell.com

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Venezuela Honeywell CA

Phone: +(58-2) 238-0211 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 (34-ST-16-26)

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ST 3000 Smart Transmitter Dual Head Gage Pressure (GP) and Single Head Absolute Pressure (AP) Series 900

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 communication option selection.
- A (•) denotes unrestricted availability. A letter denotes restricted availability.
- Restrictions follow Table IV.

Key Number	<u> </u>	Ш	III (Optional)	IV
		00000 -	,, +	XXXX

KEY NUMBER

	Span	Selection	/	Avail.	
Gage	0-5 to 0-500 psi / 035 to 0-35 bar	STG944	\mathbf{V}		
Pressure	0-30 to 0-3,000 psi / 0-2.1 to 0-210 bar	STG974	¥		
Absolute	0-50 to 0-780 mmHgA / 0-67 to 0-1,040 mbarA	STA922		¥	
Pressure	0-5 to 0-500 psia / 0-0.35 to 0-35 barA	STA940			¥

Important Note: Base STA and STG 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 Head ¹³	Vent/Drain Valves 2	Barrier Diaphragms	Selection			
	Carbon Steel ¹	316 SS	316L SS	Α	٠	٠	٠
	Carbon Steel ¹	316 SS	Hastelloy [®] C-276 ³	B	•	٠	٠
	Carbon Steel ¹	316 SS	Monel 400 ^{® 4}	C	19		
	Carbon Steel ¹	316 SS	Tantalum	D	٠		
	316 SS ⁵	316 SS	316L SS	E	•	٠	٠
Materials of	316 SS ⁵	316 SS	Hastelloy [®] C-276 ³	F	•	•	٠
Construction	316 SS ⁵	316 SS	Monel 400 ^{® 4}	G	19		
	316 SS ⁵	316 SS	Tantalum	Η	٠		
	Hastelloy® C-276 3, 6	Hastelloy® C-276 3	Hastelloy [®] C-276 ³	J	٠	٠	٠
	Hastelloy® C-276 3, 6	Hastelloy® C-276 3	Tantalum	K	٠		
	Monel 400 ^{® 4, 7}	Monel 400 ^{® 9}	Monel 400 ^{® 4}	L	•		
		Silicone DC [®] 200	14	_1_	٠	٠	٠
Fill Fluid		CTFE		$ \begin{array}{c ccccc} & & & & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & $	٠		٠
		CTFE (MO)		_3_		٠	
Process Head		1/4 NPT		A	•		
Configuration		1/2 NPT with Adap	iter	G	t		
sonngulation		1/2 NPT		G		•	٠
ABLE II					1		
lo Selection				00000	٠	٠	٠

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.

² Vent/Drains are sealed with Teflon[®] or PTFE

- 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[®]
- $^9\,$ Monel 400 $^{\otimes}$ or UNS N04400 or UNS N04405
- ¹³ The standard reference head for the STG9XX is carbon steel (zinc-plated). See Table III for a stainless steel reference (HR) head option.
 ¹⁴ Use DC[®]704 option when the STA922 will be operating below 50mm HgA, see Fig. 2 in Specification 34-ST-03-65.

Note: End vent drain valve standard for STG9XX. End vent drain valves are not available on STA9XX.

34-ST-16U-26
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Dogo 2 of F

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Page 2 of 5	STG944		Г	-	STA92
	STG974	-			STA94
TABLE III - OPTIONS	Selection	♦	↓	♦	
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	•	•		b
HART [®] 6.x Protocol Compatible Electronics	H6	•	•	•	Ĩ
FOUNDATION TM Fieldbus Communications	FF	r	r	r	
Indicating Meter Options					
Analog Meter (0-100 Even 0-10 Square Root)	ME	٠	٠	٠	b
Smart Meter	SM	•	٠	٠	
Custom Configuration of Smart Meter	CI	m	m	m	
Local Zero	LZ	x			b
Local Zero and Span	ZS	s			
Transmitter Housing & Electronics Options No housing conduit plugs or adaptors come standard with the ST 3000.	_		_		
For certain approval codes, you <u>must</u> 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	
316 SS ⁵ Electronics Housing - (with M20 to $1/2$ NPT 316 SS conduit adapter for use	A3				b
with FM and CSA Approval codes)	-	i	i	i	تّ
1/2 NPT Male to M20 Female 316 SS Certified Conduit Adapter (ATEX, CSA & IECEx)	A1	n	n	n	
1/2 NPT Male to 3/4 NPT Female 316 SS Certified Conduit Adapter (ATEX, CSA &	A2	•	•	•	
IECEX)				-	
M20 Male to 1/2 NPT Female 316 SS Certified Conduit Adaptor (ATEX, CSA & IECEx) 1/2 NPT Zinc-plated Certified Conduit Plug (ATEX, CSA & IECEx)	A4 A5	•	•	•	
1/2 NPT 316 SS Certified Conduit Plug (ATEX, CSA & IECEX)	A5 A6	•	•		
M20 316 SS Certified Conduit Plug (ATEX, CSA & IECEX)	A0 A7	•			
1/2 NPT Non-certified Conduit plug (Zinc-plated carbon steel, general use)	A8	•	•	•	
NAMUR Failsafe Software	NE	15	15	15	
SIL 2 - TÜV Certified transmitter (requires HC/H6 and WP options)	SL	р	р	р	
Lightning Protection	LP	•	٠	٠	
Custom Calibration and I.D. in Memory	CC	•	٠	•	
Transmitter Configuration - (<i>non-Fieldbus</i>)	TC	15	15	15	b
Transmitter Configuration - (<i>Fieldbus</i>) Write Protection (<i>Delivered in the "enabled" position</i>)	FC WP	21 ●	21 ●	21 •	
Write Protection (Delivered in the "disabled" position)	WX	•	•		b
Stainless Steel Customer Wired-On Tag (4 lines, 26 characters per line, customer		•	•	•	
supplied information)	TG	•	•	٠	
Stainless Steel Customer Wired-On Tag (blank)	ТВ	•	•	•	
Low Temperature (-50° C Ambient Limit)	LT	z			
Meter Body Options (Seal bolt material depends on Transmitter bolt material)					
A286 SS (NACE) Bolts and 304 SS (NACE) Nuts for Process Heads	CR	•	٠	٠	ļ
316 SS Bolts and 316 SS Nuts for Process Heads B7M Bolts and Nuts for Process Heads	SS	•			b
316 SS ⁵ Adapter Flange - 1/2 NPT with CS Bolts	B7 S2	•			
316 SS^{-5} Adapter Flange - 1/2 NPT with 316 SS Bolts	S3	с с			
STO SO Adapter hange - 1/2 Nr T with STO SO Doits	S4	c			
316 SS ⁵ Adapter Flange - 1/2 NPT with NACE A286 SS Bolts		c			
316 SS ⁵ Adapter Flange - 1/2 NPT with NACE A286 SS Bolts 316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts	S5				b
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts		С			
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts Hastelloy [®] C-276 ^{3, 6} Adapter Flange - 1/2 NPT with CS Bolts Hastelloy [®] C-276 ^{3, 6} Adapter Flange - 1/2 NPT with 316 SS Bolts	S5	с с			
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts Hastelloy [®] C-276 ^{3, 6} Adapter Flange - 1/2 NPT with CS Bolts Hastelloy [®] C-276 ^{3, 6} Adapter Flange - 1/2 NPT with 316 SS Bolts Monel 400 ^{® 4, 7} Adapter Flange - 1/2 NPT with CS Bolts	S5 T2 T3 V2				
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts Hastelloy [®] C-276 ^{3, 6} Adapter Flange - 1/2 NPT with CS Bolts Hastelloy [®] C-276 ^{3, 6} Adapter Flange - 1/2 NPT with 316 SS Bolts Monel 400 ^{® 4, 7} Adapter Flange - 1/2 NPT with CS Bolts Monel 400 ^{® 4, 7} Adapter Flange - 1/2 NPT with 316 SS Bolts	S5 T2 T3 V2 V3	с			
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts Hastelloy [®] C-276 ^{3, 6} Adapter Flange - 1/2 NPT with CS Bolts Hastelloy [®] C-276 ^{3, 6} Adapter Flange - 1/2 NPT with 316 SS Bolts Monel 400 ^{® 4, 7} Adapter Flange - 1/2 NPT with CS Bolts Monel 400 ^{® 4, 7} Adapter Flange - 1/2 NPT with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with CS Bolts	S5 T2 T3 V2 V3 B3	c c			
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts Hastelloy [®] C-276 ^{3,6} Adapter Flange - 1/2 NPT with CS Bolts Hastelloy [®] C-276 ^{3,6} Adapter Flange - 1/2 NPT with 316 SS Bolts Monel 400 ^{® 4,7} Adapter Flange - 1/2 NPT with CS Bolts Monel 400 ^{® 4,7} Adapter Flange - 1/2 NPT with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with CS Bolts 316 SS ⁵ Blind Adapter Flange with 316 SS Bolts	S5 T2 T3 V2 V3 B3 B4	c c			
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts Hastelloy [®] C-276 ^{3, 6} Adapter Flange - 1/2 NPT with CS Bolts Hastelloy [®] C-276 ^{3, 6} Adapter Flange - 1/2 NPT with 316 SS Bolts Monel 400 ^{® 4, 7} Adapter Flange - 1/2 NPT with CS Bolts Monel 400 ^{® 4, 7} Adapter Flange - 1/2 NPT with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with CS Bolts 316 SS ⁵ Blind Adapter Flange with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with NACE A286 SS Bolts	S5 T2 T3 V2 V3 B3 B4 B5	c c			
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts Hastelloy [®] C-276 ^{3,6} Adapter Flange - 1/2 NPT with CS Bolts Hastelloy [®] C-276 ^{3,6} Adapter Flange - 1/2 NPT with 316 SS Bolts Monel 400 ^{® 4,7} Adapter Flange - 1/2 NPT with CS Bolts Monel 400 ^{® 4,7} Adapter Flange - 1/2 NPT with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with CS Bolts 316 SS ⁵ Blind Adapter Flange with NACE A286 SS Bolts 316 SS ⁵ Blind Adapter Flange with B7M Bolts	S5 T2 T3 V2 V3 B3 B4 B5 B6	c c			b
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts Hastelloy [®] C-276 ^{3,6} Adapter Flange - 1/2 NPT with CS Bolts Hastelloy [®] C-276 ^{3,6} Adapter Flange - 1/2 NPT with 316 SS Bolts Monel 400 ^{® 4,7} Adapter Flange - 1/2 NPT with CS Bolts Monel 400 ^{® 4,7} Adapter Flange - 1/2 NPT with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with CS Bolts 316 SS ⁵ Blind Adapter Flange with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with NACE A286 SS Bolts 316 SS ⁵ Blind Adapter Flange with B7M Bolts 316 SS ⁵ Blind Adapter Flange with B7M Bolts 316 SS Center Vent Drain and Bushing	S5 T2 T3 V2 V3 B3 B4 B5 B6 CV	c c			b
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts Hastelloy [®] C-276 ^{3,6} Adapter Flange - 1/2 NPT with CS Bolts Hastelloy [®] C-276 ^{3,6} Adapter Flange - 1/2 NPT with 316 SS Bolts Monel 400 ^{® 4,7} Adapter Flange - 1/2 NPT with CS Bolts Monel 400 ^{® 4,7} Adapter Flange - 1/2 NPT with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with CS Bolts 316 SS ⁵ Blind Adapter Flange with NACE A286 SS Bolts 316 SS ⁵ Blind Adapter Flange with B7M Bolts	S5 T2 T3 V2 V3 B3 B4 B5 B6	с с с • • • •			۲ ط
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts Hastelloy [®] C-276 ^{3.6} Adapter Flange - 1/2 NPT with CS Bolts Hastelloy [®] C-276 ^{3.6} Adapter Flange - 1/2 NPT with 316 SS Bolts Monel 400 ^{® 4.7} Adapter Flange - 1/2 NPT with S16 SS Bolts 316 SS ⁵ Blind Adapter Flange with CS Bolts 316 SS ⁵ Blind Adapter Flange with S16 SS Bolts 316 SS ⁵ Blind Adapter Flange with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with NACE A286 SS Bolts 316 SS ⁵ Blind Adapter Flange with B7M Bolts 316 SS ⁵ Blind Adapter Flange with B7M Bolts 316 SS ⁵ Blind Adapter Flange with B7M Bolts 316 SS ⁶ Blind Adapter Flange With B7M Bolts 317 SS ⁶ Blind Adapter Flange With B7M Bolts 318 SS ⁶ Blind Adapter Flange With B7M Bolts 319 SS ⁶ Blind Adapter Flange With B7M Bolts 310 SS ⁶ Blind Adapter Hatter	S5 T2 T3 V2 V3 B3 B4 B5 B6 CV SV	с с с • • • • •	•	•	а В П В П В
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts Hastelloy [®] C-276 ^{3,6} Adapter Flange - 1/2 NPT with CS Bolts Hastelloy [®] C-276 ^{3,6} Adapter Flange - 1/2 NPT with 316 SS Bolts Monel 400 ^{® 4,7} Adapter Flange - 1/2 NPT with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with CS Bolts 316 SS ⁵ Blind Adapter Flange with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with NACE A286 SS Bolts 316 SS ⁵ Blind Adapter Flange with B7M Bolts 316 SS Center Vent Drain and Bushing Side Vent/Drain (<i>End Vent Drain is standard</i>) Viton ^{® 8} Process Head Gaskets Viton ^{® 8} Adapter Flange Gaskets	S5 T2 T3 V2 V3 B3 B4 B5 B6 CV SV VT GF VF	с с с • • • • • •	•	•	L _o L
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts Hastelloy [®] C-276 ^{3.6} Adapter Flange - 1/2 NPT with CS Bolts Hastelloy [®] C-276 ^{3.6} Adapter Flange - 1/2 NPT with 316 SS Bolts Monel 400 ^{® 4.7} Adapter Flange - 1/2 NPT with S16 SS Bolts 316 SS ⁵ Blind Adapter Flange with CS Bolts 316 SS ⁵ Blind Adapter Flange with S16 SS Bolts 316 SS ⁵ Blind Adapter Flange with 316 SS Bolts 316 SS ⁵ Blind Adapter Flange with NACE A286 SS Bolts 316 SS ⁵ Blind Adapter Flange with B7M Bolts 316 SS ⁵ Blind Adapter Flange with B7M Bolts 316 SS ⁵ Blind Adapter Flange with B7M Bolts 316 SS ⁶ Blind Adapter Flange With B7M Bolts 317 SS ⁶ Blind Adapter Flange With B7M Bolts 318 SS ⁶ Blind Adapter Flange With B7M Bolts 319 SS ⁶ SS ⁶ Blind Adapter Flange With B7M Bolts 310 SS ⁶ Blind Adapter Flange With B7M Bolts 310 SS ⁶ Blind Adapter Flange With B7M Bolts 310 SS ⁶	S5 T2 T3 V2 V3 B3 B4 B5 B6 CV SV VT GF	с с с • • • • • •	•	•	в в

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 Viton[®] or Fluorocarbon Elastomer

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TABLE III - OPTIONS (continued)	G944 — G974 — Selection			↓	STA922 STA940
Transmitter Mounting Bracket Options					
Angle Mounting Bracket - Carbon Steel	MB	٠	٠	٠	
Marine Approved Angle Mounting Bracket - Carbon Steel	MX	٠	٠	•	
Angle Mounting Bracket - 304 SS	SB	٠	٠	٠	b
Marine Approved Angle Mounting Bracket - 304 SS	SX	٠	٠	٠	
Flat Mounting Bracket (pipe mounting) - Carbon Steel	FB	٠	٠	•	
Diaphragm Options					
Gold plated diaphragm(s) on 316 SS	G1	٠			b
Gold plated diaphragm(s) on Monel 400 ^{® 4} or Hastelloy [®] C-276 ³ ONLY	G2	•			
Services/Certificates/Marine Type Approval Options					
User's Manual Paper Copy (Standard, HC, H6 or FF ships accordingly)	UM	٠	٠	٠	
Clean Transmitter for Oxygen or Chlorine Service (with Certificate) (50035190)	0X	h	h	h	
Over-Pressure Leak Test (with Certificate) (F3392)	TP	٠	٠	•	
Calibration Test Report and Certificate of Conformance (F3399)	F1	٠	٠	•	b
Certificate of Conformance (F3391)	F3	٠	٠	•	
Certificate of Origin (F0195)	F5	٠	•	٠	
SIL Certificate (SIL 2/3) (FC33337)	FE	22	22	22	
NACE Certificate (Process-Wetted & Non-Process Wetted) (FC33339)	F7	0	0	ο	
NACE Certificate (Process-Wetted) (FC33338)	FG	٠	•	•	J J
Material Traceability Certification per EN 10204 3.1 (FC33341)	FX	٠	•	•	
Marine Type Approvals (DNV, ABS, BV, KR & LR) (FC33340)	MT	2	2	2	
Warranty Options					
Additional Warranty - 1 year	W1	٠	•	٠	
Additional Warranty - 2 years	W2	٠	•	•	b
Additional Warranty - 3 years	W3	•	•	•	
Additional Warranty - 4 years	W4	•	•	•	

 3 Hastelloy $^{\$}$ C-276 or UNS N10276 4 Monel 400 $^{\$}$ or UNS N04400

Approval Body	Approval Type	Location or Classification	Selection				
No hazardou	s location approvals		9X	٠	٠	٠	
FM Approvals SM	Explosion Proof Dust-Ignitionproof Non-Incendive Intrinsically Safe	Class I, Div. 1, Groups A,B,C,D Class II, III Div. 1, Groups E,F,G Class I, Div. 2, Groups A,B,C,D Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G	1C	٠	•	•	
Canadian Standards Association (CSA)	Explosion Proof Dust-Ignitionproof Intrinsically Safe	Class I, Div. 1, Groups B,C,D Class II, III, Div. 1, Groups E,F,G Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G	2J	f	24	24	
IECEx	Flameproof, Zone 1 Intrinsically Safe, Zone 0/1	Ex d IIC; T5 (Ta = -40 to +93°C), T6 (Ta = -40 to +78°C) Ex ia IIC; T3, T4, T5 , T6 (See Spec for detailed temperature codes by Communications option)	СА	24	24	24	
	Intrinsically Safe, Zone 0/1	Ex ia IIC T4, T5, T6	Z2	•	•	•	
	Int. Safe, Zone 0/1, or	EX d IIC T5, T6 Enclosure IP 66/67 Ex ia IIC T4, T5, T6 Ex d IIC T5, T6 Enclosure IP 66/67	ZD ZA	•	•	•	
CERTUSP INMETRO (Brazil)	Flameproof, Zone 1 Intrinsically Safe, Zone 0/1	BR- Ex d IIC T5, T6 BR- Ex ia IIC; T4, T5, T6 (See CERTUSP certificate for detailed temperature codes by Communications option)	6D 6S	•	• •	•	

Approvals continued on next page

¹¹ The user must determine the type of protection required for installation of the equipment. The user shall then check the box [v] 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.

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•	ody Table (con't)			STG974 Selection				ST
Approval Body	Approval Type	Loca	ation or Classification	Selection	¥	¥	¥	
	Intrinsically Safe Zone 0	©∭1 G	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	35		•		
	Intrinsically Safe, Zone 1	€)II 2 G	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	30				
	Dust-tight Enclosure, Zone 0	€;;) 1 D	Ex tD A20 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C) Enclosure IP 66/67					
ATEX ¹⁰ (LCIE)	Flameproof and Dust-tight Enclosure, Zone 1	€) 2 GD	Ex d IIC T5 (Ta = -40° C to $+93^{\circ}$ C), T6 (Ta = -40° C to $+78^{\circ}$ 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	33	24	24	24	
	Non-Sparking, Zone 2	©:⊪3G	Ex nA, IIC T5 (Ta = -40° C to $+93^{\circ}$ C), T6 (Ta = -40° C to $+78^{\circ}$ 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	•	•	•	b
	Multiple Marking ¹¹	©⊗ II 1 GD	$\begin{array}{l} \textbf{Ex ia IIC} \\ T4 (Ta = -50^{\circ}\text{C to } +93^{\circ}\text{C}); \\ T5 (Ta = -50^{\circ}\text{C to } +85^{\circ}\text{C}); \\ T6 (Ta = -50^{\circ}\text{C to } +70^{\circ}\text{C}); \\ Ui = 30V; \text{ in } 100\text{mA} \\ \textbf{Ex tD A20 IP6X} \\ T95^{\circ}\text{C (at Ta = } 93^{\circ}\text{C) or} \\ T80^{\circ}\text{C (at Ta = } 78^{\circ}\text{C}) \end{array}$					
	Int. Safe, Zone 0/1 and Dust-tight Enclosure, or Flameproof, Zone 1 and Dust-tight Enclosure,	€e>ll 2 GD	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)	зс	24	24	24	
	or Non-Sparking, Zone 2		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					

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 [v] 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	1	1	11	1
Factory Identification	XXXX	•	٠	•	

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Restriction		Available Only With	Not Available With			
Letter	Table	Selection	Table	Selection		
b		Select only one opti	on from thi	is group		
С		G				
		This approval code requires the	Key #	STG974		
f	III	selection of a certified conduit plug: A5, A6 or A7	I	L		
h		_2_				
i		1C or 2J				
m		SM				
n				1C, 2J		
0		CR, S4, B5				
р		HC or H6 <u>and</u> WP		FF, 00		
r	I	FISCO/FNICO compliance available only with 1C	III	TC, ME, or FISCO/FNICO compliance not available 3C, 3N, 33, 3S, 2J, CA, Z2, ZD, ZA, 6D & 6S		
S				FF, ME		
t	Ш	Select from Table III S2, S3, S4, S5, T2, T3, V2, V3				
v		E_G, F_G				
х		FF, SM				
z			Key #	STG974		
2		MX, SX		FB, MB, SB		
15				FF		
17		VT				
19			III	F7, FG		
21	III	FF				
22	III	SL				
24	Ш	This approval code <u>requires</u> the selection of a certified conduit plug: A5, A6 or A7				

Ordering Example: STG944-A1A-00000-HC,LP,2J+XXXX

FOUNDATION[™] Fieldbus is a trademark of Fieldbus Foundation. Viton[®] is a registered trademark of DuPont Performance Elastomers. Teflon[®] is a registered trademark of DuPont.

FM ApprovalsSM is a service mark of FM Global

DC[®] 200 and DC[®] 704 are registered trademarks of Dow Corning

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 (34-ST-16-28) Honeywell

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ST 3000 Smart Transmitter In-Line Gage & Absolute Pressure Series 900

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 communications option selection.
- $\bullet~$ A (\bullet) denotes unrestricted availability. A letter denotes restricted availability.
- Restrictions follow Table IV.

Key Number	<u> </u>	П	III (Optional)	IV
	- [] - [00000 -	,, +	XXXX

KEY NUMBER

	Span	Selection	Av	ail.
	0-5 to 0-500 psig / 0-0.35 to 0-35 bar	STG94L	\	
Gage Pressure	0-30 to 0-3,000 psig / 0-2.1 to 0-210 bar	STG97L	\mathbf{V}	
Gage Flessule	0-60 to 0-6,000 psig / 0-4.1 to 0-415 bar	STG98L	₩	
	0-100 to 0-10,000 psig / 0-7 to 0-690 bar	STG99L		\mathbf{V}
	0-50 to 0-780 mmHg / 0-67 to 0-1,040 mbarA	STA92L	≁	
Absolute Pressure	0-5 to 0-500 psia / 0-0.35 to 0-35 barA	STA94L	\mathbf{V}	
	0-30 to 0-3,000 psia / 0-2.1 to 0-210 barA	STA97L	\mathbf{V}	

Important Note: Base STA and STG 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	Vent/Drain Valves ¹	Barrier Diaphragms	Selection			
Materials of	316 SS		316L SS	E	٠	٠	
Construction	316 SS		Hastelloy [®] C-276 ²	F	•	•	
Fill Fluid	DC [®] 200 Silicone			_1_	٠	٠	
	CTFE			_2_	•	•	
	9/16" - 18 Aminco			A	٠	•	
Process Connection	1/2 NPT (female)			G	•	٠	
Configuration	1/2 NPT (male)			H	•	•	
		DIN 19213		D	•		
TABLE II							
No Selection				00000	•	•	

¹ Vent/Drains are sealed with Teflon[®] or PTFE

² Hastelloy[®] C-276 or UNS N10276

Ordering Example: STG94L-E1A-00000-AN,9X+XXXX

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HART® 6, XProtocol Compatible Electronics H6 r r FOUNDATION™ Fieldous Communications FF r r Analog Meter (0-100 Even 0-10 Square Root) ME SM • Smart Meter Cli M m m Local Zero MS • • Ternsmitter Housing & Electronics Options Z S s No housing conduit plugs or adaptors come standard with the ST 3000. For cartian approval codes, you <u>must</u> select a cartified conduit plug from below and it will come packaged in the box with your transmitter. SH n	Issue 49 Page 2 of 5 STG9	_L	vailab	-	G99
Sommunication Options (Must choose a communications option) AN Image only (can be configured using appropriate Honeywell DE tool) AN Image only (can be configured using appropriate Honeywell DE tool) AN Image of the configured using appropriate Honeywell DE tool) DE Protocol Communications HC Image of the configured using appropriate Honeywell DE tool) DE HART [®] 5, Protocol Compatible Electronics HG Image of the configured using appropriate Honeywell DE tool) FOUNDATION [®] Fieldbus Communications FF r r Grading Meter (0-100 Even 0-10 Square Rool) ME Image of the configured using approximate to the configured to configured to not sing a tent the configured to conduct to conduct tapts for metal to the configured to the configured to the configured to the conduct tapts of the conduct tapts of the conduct tapts for the conduct tapts of the con		_			
Analog only (can be configured using appropriate Haneywell DE tool) AN AN DE Protocol communications DE • HART [®] 6.x Protocol Compatible Electronics HG • HART [®] 6.x Protocol Compatible Electronics HG • Foldiating Meter Options ME • Analog Meter (1:00 Even 0-10 Square Root) ME • Smart Meter Cl m m Local Zero Local Zero LZ X Local Zero and Span ZS s s For sertian approval codes, you <u>must</u> select a certified conduit plug from below and it will com packaged in the box with your transmitter. N n 316 SS ² Electronics Housing - (with M20 Conduit Connoctions) SH n n 112 NPT Male to 3/4 NPT Female 316 SS Certified Conduit Adapter (ATEX, CSA & IECEx) A4 • 12 NPT Male to 12 NPT Female 316 SS Certified Conduit Adapter (ATEX, CSA & IECEx) A4 • • 12 NPT Male to 13/4 NPT Female 316 SS Certified Conduit Adapter (ATEX, CSA & IECEx) A4 • • 12 NPT Male to 13/4 NPT Female 316 SS Certified Conduit Adapter (ATEX, CSA & IECEx) A5 • • • 12 NPT Non-certifie		Selection	- * ∣	♥	
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HART® 6x Protocol Compatible Electronics H6 • FoUNDATION ¹¹ Fieldbus Communications FF r radicating Meter Options ME • Analog Meter (0-100 Even 0-10 Square Root) ME • Smart Meter Cl SM • Custom Configuration of Smart Meter Cl M m Local Zero and Span ZS s s Tansmitter Mousing & Electronics Options ZS s s No housing conduit plugs or adeptors come standard with the ST 3000. For certain approval codes, you <u>must</u> select a certified conduit plug from below and it will come packaged in the box with your transmitter. 316 SS ² Electronics Housing - (with M20 to 12. NPT 316 SS conduit adapter for use with FM and CSA Approval codes) A1 • 112 NPT Male to 3/4 NPT Female 316 SS Certified Conduit Adapter (ATEX, CSA & IECEx) A4 • • M20 Male to 1/2 NPT Female 316 SS Certified Conduit Adapter (ATEX, CSA & IECEx) A6 • • 12 NPT Tinc-plated Certified Conduit Plug (ATEX, CSA & IECEx) A6 • • M20 Als to 1/2 NPT Female 316 SS Certified Conduit Adapter (ATEX, CSA & IECEx) A6 • • 12 NPT Tinc-plated Certified Conduit Plug (ATEX, CSA & IECEx)<				•	
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M20 Male to 1/2 NPT Female 316 SS Certified Conduit Adaptor (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 • NAUR Failafe Software NE 15 15 SIL 2 - TÜV Certified transmitter (requires HC or H6 and WP options) SL p p Lightning Protection LP • • • Custom Calibration and LD. in Memory TC 15 15 15 Transmitter Configuration - (non-Fieldbus) TC 15 15 15 Vrite Protection (Delivered in the "ababled" position) WX • • • Write Protection (Delivered in the "disabled" position) WX • • • • Stainless Steel Customer Wired-On Tag (4 lines, 26 characters per line, customer supplied information) TB •					
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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 SIL P SIL 2 - TÜV Certified transmitter (requires HC or H6 and WP options) LP • Lightning Protection LP • • Custom Calibration and I.D. in Memory TC 15 15 Transmitter Configuration - (non-Fieldbus) TC 15 15 Write Protection (Delivered in the "inabled" position) WX • • Stainless Steel Customer Wired-On Tag (Alines, 26 characters per line, customer supplied information) WX • • Stainless Steel Customer Wired-On Tag (blank) TB • • • Low Temperature (-50° C Ambient Limit) TT 18 18 • • Transmitter Mounting Bracket - Carbon Steel MA • • • • Angle Mounting Bracket - Carbon Steel MX • • • • • Angle Mounting Bracket - Carb				-	
M20 316 SS Certified Conduit Plug (ATEX, CSA & IECEx)A7A71/2 NPT Non-certified Conduit plug (Zinc-plated carbon steel, general use)A8NAMUR Failsafe SoftwareNESIL 2 - TÜV Certified transmitter (requires HC or H6 and WP options)LPLightning ProtectionLPCustom Calibration and I.D. in MemoryCCTransmitter Configuration - (non-Fieldbus)TCTransmitter Configuration - (fieldbus)TCWrite Protection (Delivered in the "anabled" position)WPWrite Protection (Delivered in the "anabled" position)WXStainless Steel Customer Wired-On Tag (blank)TBLow Temperature (-50° C Ambient Limit)TBTeansmitter Approved Angle Mounting Bracket - Carbon SteelMBMarine Approved Angle Mounting Bracket - Carbon SteelMBMarine Approved Angle Mounting Bracket - Carbon SteelMBMarine Approved Angle Mounting Bracket - Carbon SteelFBMarine Approved Angle Mounting Bracket - Carbon SteelMAMarine Approved Angle Mounting Bracket - Carbon SteelFBMarine Type Approval Conformance (F339)F1Certificate (FCacsasard)F3Certificate (FC					
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NAMUR Failsafe SoftwareNE1515SIL 2 - TÜV Certified transmitter (requires HC or H6 and WP options)LPPCustom Calibration and I.D. in MemoryCC•Transmitter Configuration - (non-Fieldbus)TC15Transmitter Configuration - (Fieldbus)FC21Write Protection (Delivered in the "enabled" position)WP•Write Protection (Delivered in the "disabled" position)WX•Stainless Steel Customer Wired-On Tag (4 lines, 26 characters per line, customerTGsupplied information)Stainless Steel Customer Wired-On Tag (blank)TBCow Temperature (-50° C Ambient Limit)LT18Transmitter Mounting Bracket - Carbon SteelMK•Marine Approved Angle Mounting Bracket - 304 SSSB•Fat Mounting Bracket - 304 SSSB•Fat Mounting Bracket - 304 SSSB•Certificates/Marine Type Approval OptionsUM•User's Manual Paper Copy (Standard, HC, H6, or FF ships accordingly)UM•Certificate of Conformance (F3392)F1•Certificate of Conformance (F3392)F5•SU Certificate (Process-Wetted & Non-Process Wetted) (FC33339)F6•NACE Certificate (Process-Wetted & Non-Process Wetted) (FC33339)F6•Marine Type Approval S(DNV, ABS, BV, KR & LR) (FC33340)MT2Varanty OptionsV2••Additional Warranty - 1 yearsW1••Additional Warranty - 3 yearsW3• <td< td=""><td></td><td></td><td>•</td><td>•</td><td></td></td<>			•	•	
SIL 2 - TÜV Certified transmitter (requires HC or H6 and WP options)SL pppLightning ProtectionLPLP•Custom Calibration and I.D. in MemoryTC1515Transmitter Configuration - (non-Fieldbus)TC1515Write Protection (Delivered in the "enabled" position)WP••Write Protection (Delivered in the "disabled" position)WX••Stainless Steel Customer Wired-On Tag (4 lines, 26 characters per line, customer supplied information)TB••Stainless Steel Customer Wired-On Tag (blank)TB•••Low Temperature (-50° C Ambient Limit)LT1818Angle Mounting Bracket - Carbon SteelMK••Marine Approved Angle Mounting Bracket - 304 SSSB••Services/Certificates/Marine Type Approval OptionsSX••Services/Certificates/Marine Type Approval OptionsVM••Calibration Test Report and Certificate of Conformance (F3399)F1••Calibration Test Report and Certificate of Conformance (F3399)F5••Calibration Test Report and Certificate of Conformance (F3339)F7••Calibration Test Report and Certificate of Conformance (F3339)F7••Calibration Test Report and Certificate of Conformance (F3399)F6••Calibration Test Report and Certificate of Conformance (F3339)F7••Certificate (Process-Wetted & Non-Process Wetted) (FC33		-	-	-	
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Additional Warranty - 3 years W3 • •	Additional Warranty - 2 years				
	Additional Warranty - 3 years	W3	•	•	
	Additional Warranty - 4 years	W4	•	•	

 $^{\rm 3}\,$ Supplied as 316 SS or as Grade CF8M, the casting equivalent of 316 SS.

Table III continued next page

	OPTIONS (continued)			STG9_L — STA9_L —	Availat	sto
Approval Body	Approval Type	Loc	ation or Classification	Selection	¥	♦
lo hazardo	ous location approvals			9X	٠	٠
FM	Explosion Proof		1, Groups A,B,C,D			
Approvals SM	Dust-Ignitionproof		iv. 1, Groups E,F,G	1C	•	•
Approvais	Non-Incendive Intrinsically Safe		2, Groups A,B,C,D Div. 1, Groups A,B,C,D,E,F,G			
		Ciass I, II, III,			_	
	Intrinsically Safe, Zone 0	€⊇II 1 G	Ex ia IIC T4 (Ta = -50° C to $+93^{\circ}$ C); T5 (Ta = -50° C to $+85^{\circ}$ C); T6 (Ta = -50° C to $+70^{\circ}$ C) Enclosure IP 66/67	3S		
	Intrinsically Safe, Zone 1	€x)II 2 G	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	€⊋ 1 D	Ex tD A20 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C) Enclosure IP 66/67			
ATEX ¹⁰ (LCIE)	Flameproof and Dust-tight Enclosure, Zone 1	< ⊡ 2 GD	Ex d IIC T5 (Ta = -40° C to $+93^{\circ}$ C), T6 (Ta = -40° C to $+78^{\circ}$ 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	33	24	24
	Non-Sparking, Zone 2	€ ⊖ 3 G	Ex nA, IIC T5 (Ta = -40° C to $+93^{\circ}$ C), T6 (Ta = -40° C to $+78^{\circ}$ 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	ЗN		•
	Multiple Marking ¹¹	© II 1 GD	Ex ia IIC T4 (Ta = -50° C to $+93^{\circ}$ C); T5 (Ta = -50° C to $+85^{\circ}$ C); T6 (Ta = -50° C to $+70^{\circ}$ C); Ui = 30V; Ii = 100mA Ex tD A20 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C)			
	Int. Safe, Zone 0/1 and Dust-tight Enclosure, or Flameproof, Zone 1 and Dust-tight Enclosure,	© ll 2 GD	Ex d IIC T5 (Ta = -40° C to $+93^{\circ}$ C), T6 (Ta = -40° C to $+78^{\circ}$ C) Supply 11- 42Vdc Ex tD A21 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C)	3C	24	24
	or Non-Sparking, Zone 2	© 3 GD	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 - (STG9_L STA9_L	\square	STG99		
Approval Body	Approval Lype Location or Classification		Selection]↓	↓
Canadian	Explosion Proof	Class I, Div. 1, Groups B,C,D			
Standards Association	Dust-Ignitionproof	Class II, III, Div. 1, Groups E,F,G	2J	3	4
(CSA)	Intrinsically Safe	Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G			
IECEx	Flameproof, Zone 1	CA 2		24	
	Intrinsically Safe, Zone 0/1	Ex ia IIC; T3, T4, T5, T6 See Spec for detailed temperature codes by Communications option			
	Intrinsically Safe, Zone 0/1	Ex ia IIC T4, T5, T6	Z2	•	•
SAEx	Flameproof, Zone 1	Ex d IIC T5, T6 Enclosure IP 66/67	ZD	•	•
(South Africa)		Ex ia IIC T4, T5, T6 Ex d IIC T5, T6 Enclosure IP 66/67	ZA	•	•
	Flameproof, Zone 1	BR- Ex d IIC T5, T6	6D	٠	•
CERTUSP INMETRO (Brazil)	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 [√] 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 attraction that has been checked on the nameplate. Subsequently the equipment shall not be reinstalled using any of the other certification types.

TABLE IV	Selection		1	
Factory Identification	X X X X	٠	٠	1

RESTRICTIONS

Restriction		Available Only With	Not Available With		
Letter	Table	Selection	Table	Selection	
b		Select only one option	from this gro	bup	
h		_2_			
i		1C or 2J			
m		SM			
n			=	1C, 2J	
р		HC or H6 and WP	=	FF	
r	111	FISCO/FNICO compliance available only with 1C	Ш	TC, ME or FISCO/FNICO compliance not available with 3C, 3N, 33, 3S, 2J, CA, Z2, ZD, ZA, 6D & 6S	
S				STA92L, STA94L, FF, ME	
X		FF, SM			
2		MX, SX	III	FB, MB, SB	
3		This approval code requires the selection of a certified conduit plug: A5, A6 or A7	Key #	STA92L or STA94L	
4		This approval code requires the selection of a certified conduit plug: A5, A6 or A7	Ш	No CRN Number Available	
15				FF	
18		_1_			
21		FF			
22		SL			
24		This approval code <u>requires</u> the selection of a certified conduit plug: A5, A6 or A7			

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For More Information

Learn more about how Honeywell's ST 3000 Series 900 In-line, Gauge Pressure Transmitters can increase performance, reduce downtime and decrease configuration costs, visit our website www.honeywell.com/ps or contact your local channel partner

Fluidic Limited (Channel Partner)

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