

ST 3000 Smart Transmitter Series 100 Flange Mounted Liquid Level Models Specifications

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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 Flange-mount Transmitters continue to bring proven “smart” technology to a wide spectrum of measurement applications. Honeywell flange-mount transmitters may be installed directly onto a tank flange and are offered with a variety of tank connections to include ANSI flange connections. Typical applications are high accuracy level measurement in pressurized and un-pressurized vessels in the chemical and hydrocarbon industries. Honeywell flange mount transmitters demonstrate proven reliability in hundreds on installations in a wide variety of industries and applications. 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 left is Model STF12F, STF13F and STF14F. In the middle is Model STF128 and STF132 (extended diaphragm). On the right is Model STF128 and STF132.

All these Series 100 Flange Mounted Liquid Level Pressure Transmitters feature proven piezoresistive sensor technology

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

- Accuracy
- Stability
- Reliability
- Rangeability
- Warranty

Includes Lifetime™ Transmitters:

Models		
STF128	0 to 400 inH ₂ O	0 to 1,000 mbar
STF132	0 to 100 psi	0 to 7bar
STF12F	0 to 400 inH ₂ O	0 to 1,000 mbar
STF13F	0 to 100 psi	0 to 7 bar
STF14F	0 to 600 inH ₂ O	0 to 1,500 mbar

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.

ST 3000 Lifetime™ Transmitter Benefits
Total Accuracy = ±0.0375%
Stability = ±0.01% per year
Reliability = 470 years MTBF
Rangeability = 400 to 1
Lifetime Warranty = 15 years

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 and Foundation™ Fieldbus option manual 34-ST-25-15)

Operating Conditions – All Models

Parameter	Reference Condition		Rated Condition		Operative Limits		Transportation and Storage	
	°C	°F	°C	°F	°C	°F	°C	°F
Ambient Temperature All models except STF14F STF14F	25±1 25±1	77±2 77±2	-40 to 85 -40 to 85	-40 to 185 -40 to 185	-40 to 93 -40 to 85	-40 to 200 -40 to 185	-55 to 125 -55 to 125	-67 to 257 -67 to 257
Meter Body Temperature All models except STF14F STF14F	25±1 25±1	77±2 77±2	-40 to 110* -40 to 85	-40 to 230* -40 to 185	-40 to 125 -40 to 85	-40 to 257 -40 to 185	-55 to 125 -55 to 125	-67 to 257 -67 to 257
Process Interface Temp. STF128, STF132 only	25±1	77±2	-40 to 110*	-40 to 230*	-40 to 175**	-40 to 350**	-55 to 125	-67 to 257
Humidity %RH	10 to 55		0 to 100		0 to 100		0 to 100	
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)							

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

** For CTFE fill fluid, the maximum temperature rating is 150°C (300°F)

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

Maximum Allowable Working Pressure (MAWP)^{3,4}

(ST 3000 products are rated to Maximum Allowable Working Pressure. MAWP depends on Approval Agency and transmitter materials of construction.)

STF 128, STF 132	Flange Material	Ambient Temperature -29 to 38°C [-20 to 100°F]	Maximum Meterbody Temperature 125°C [257°F]	Process Interface Temperature 175°C [350°F]
ANSI Class 150 psi [bar]	Carbon Steel	285 [19.6]	245 [16.9]	215 [14.8]
	304 S.S.	275 [19.0]	218 [15.0]	198 [13.7]
	316 S.S.	275 [19.0]	225 [15.5]	205 [14.1]
ANSI Class 300 psi [bar]	Carbon Steel	740 [51.0]	668 [46.0]	645 [44.5]
	304 S.S.	720 [49.6]	570 [39.3]	518 [35.7]
	316 S.S.	720 [49.6]	590 [40.7]	538 [37.1]
DN PN40 psi [bar]	Carbon Steel	580 [40.0] ¹	574 [39.6]	559 [38.5]
	304 S.S.	534 [36.8] ¹	419 [28.9]	385 [26.5]
	316 S.S.	534 [36.8] ¹	434 [29.9]	399 [27.5]
STF12F, STF13F, STF14F ANSI Class 150 psi [bar]	316L Stainless Steel	230 [15.9]	185 [12.8]	No rating at this temp

¹ Ambient Temperature for DN PN40 is –10 to 50°C [14 to 122 F]

³ MAWP applies for temperature range –40 to 125°C. However, Static Pressure Limit is de-rated to 3,000 psi from –26°C to –40°C. Use of graphite o-rings de-rates transmitter to 3,625 psi. Use of adaptor with graphite o-rings de-rates transmitter to 3,000 psi.

⁴ Consult factory for MAWP of ST 3000 transmitters with CSA approval.

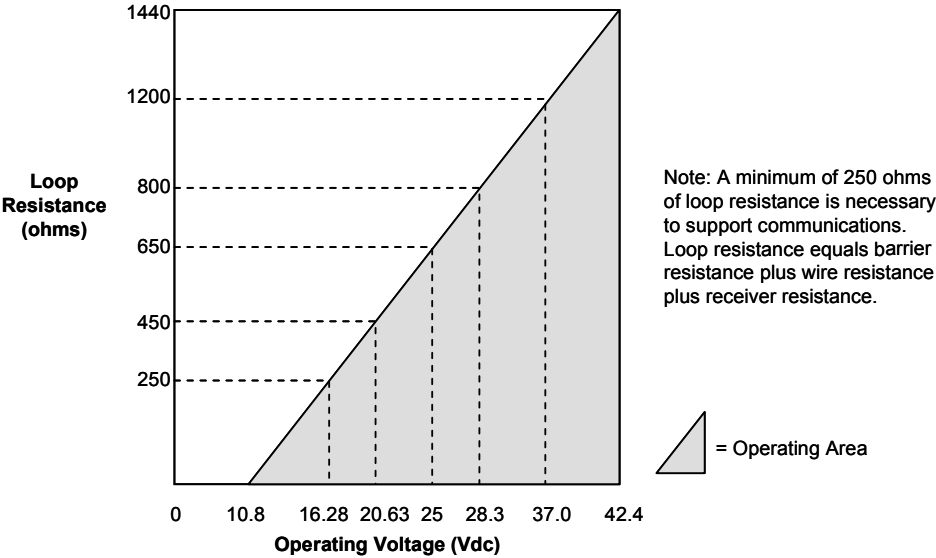


Figure 2 - Supply voltage and loop resistance chart

Performance under Rated Conditions* - Model STF128 (0 to 400 in H₂O)

Parameter	Description
Upper Range Limit in H₂O mbar	400 (39.2°F/4°C is standard reference temperature for in H ₂ O range.) 1,000
Minimum Span in H₂O mbar	4 Note: Recommended minimum span in square root mode is 20 in H ₂ O (50 mbar). 10
Turndown Ratio	100 to 1
Zero Elevation and Suppression	No limit except min. span within ±100% URL. Specifications valid from -5 to +100% URL.
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: ±0.0525% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (25 in H₂O), accuracy equals:</p> $\pm \left[0.025 + 0.0275 \left(\frac{25 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.025 + 0.0275 \left(\frac{62.5 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.0375% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (25 in H₂O), accuracy equals:</p> $\pm \left[0.0125 + 0.025 \left(\frac{25 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.0125 + 0.025 \left(\frac{62.5 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$ <p>* For High Accuracy (HA) option: ±0.025% 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: ±0.2125% of span. For URV below reference point (50 in H₂O), effect equals:</p> $\pm \left[0.0125 + 0.05 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.0125 + 0.05 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.20% of span. For URV below reference point (50 in H₂O), effect equals:</p> $\pm 0.20 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \text{ or } \pm 0.20 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \text{ in \% of span}$
Combined Zero and Span Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.40% of span. For URV below reference point (50 in H₂O), effect equals:</p> $\pm \left[0.20 + 0.20 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.20 + 0.20 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.375% of span. For URV below reference point (50 in H₂O), effect equals:</p> $\pm \left[0.175 + 0.20 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.175 + 0.20 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$
Zero Static Pressure Effect per 300 psi (20 bar)	<p>±0.1625% of span. For URV below reference point (50 in H₂O), effect equals:</p> $\pm \left[0.0125 + 0.15 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.0125 + 0.15 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$
Combined Zero and Span Static Pressure Effect per 300 psi (20 bar)	<p>±0.30% of span. For URV below reference point (50 in H₂O), effect equals:</p> $\pm \left[0.15 + 0.15 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.15 + 0.15 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$
Stability	±0.03% of URL per year

* Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, 10 to 55% RH, and 316 Stainless Steel barrier diaphragm.

Performance under Rated Conditions* - Model STF132 (0 to 100 psi)

Parameter	Description
Upper Range Limit psi bar	100 7
Minimum Span psi bar	1 0.07
Turndown Ratio	100 to 1
Zero Elevation and Suppression	No limit except minimum span within -18 and +100% URL. Specifications valid from -5 to +100% URL.
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: ±0.10% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV calibrated below reference point (20 psi), accuracy equals:</p> $\pm \left[0.05 + 0.05 \left(\frac{20 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.05 + 0.05 \left(\frac{1.4 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.075% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV calibrated below reference point (20 psi), accuracy equals:</p> $\pm \left[0.025 + 0.05 \left(\frac{20 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.025 + 0.05 \left(\frac{1.4 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Zero Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.2125% of span. For URV below reference point (30 psi), effect equals:</p> $\pm \left[0.0125 + 0.20 \left(\frac{30 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.20 \left(\frac{2 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.20% of span. For URV below reference point (30 psi), effect equals:</p> $\pm 0.20 \left(\frac{30 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.20 \left(\frac{2 \text{ bar}}{\text{span bar}} \right) \text{ in \% of span}$
Combined Zero and Span Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.40% of span. For URV below reference point (30 psi), effect equals:</p> $\pm \left[0.20 + 0.20 \left(\frac{30 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.20 + 0.20 \left(\frac{2 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.375% of span. For URV below reference point (30 psi), effect equals:</p> $\pm \left[0.175 + 0.20 \left(\frac{30 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.175 + 0.20 \left(\frac{2 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Zero Static Pressure Effect per 300 psi (20 bar)	<p>±0.1625% of span. For URV below reference point (30 psi), effect equals:</p> $\pm \left[0.0125 + 0.15 \left(\frac{30 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.15 \left(\frac{2 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Combined Zero and Span Static Pressure Effect per 300 psi (20 bar)	<p>±0.30% of span. For URV below reference point (30 psi), effect equals:</p> $\pm \left[0.15 + 0.15 \left(\frac{30 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.15 + 0.15 \left(\frac{2 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Stability	±0.04% of URL per year.

* Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, 10 to 55% RH, and 316 Stainless Steel barrier diaphragm.

Performance under Rated Conditions* - Model STF12F (0 to 400 in H₂O)

Parameter	Description
Upper Range Limit in H₂O mbar	400 (39.2°F/4°C is standard reference temperature for in H ₂ O range.) 1,000
Minimum Span in H₂O mbar	1 Note: Recommended minimum span in square root mode is 20 in H ₂ O (50 mbar). 2.5
Turndown Ratio	400 to 1
Zero Elevation and Suppression	No limit except minimum span within ±100% URL. Specifications valid from –5 to +100% URL.
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. For URV below reference point (25 in in H₂O), accuracy equals:</p> $\pm \left[0.025 + 0.05 \left(\frac{25 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.025 + 0.05 \left(\frac{62 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.0625% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (25 in in H₂O), accuracy equals:</p> $\pm \left[0.0125 + 0.05 \left(\frac{25 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.0125 + 0.05 \left(\frac{62 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$
Zero Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.0625% of span. For URV below reference point (50 in H₂O), effect equals:</p> $\pm \left[0.0125 + 0.05 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.0125 + 0.05 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.05% of span. For URV below reference point (50 in H₂O), effect equals:</p> $\pm 0.05 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \text{ or } \pm 0.05 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \text{ in \% of span}$
Combined Zero and Span Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.10% of span. For URV below reference point (50 in H₂O), effect equals:</p> $\pm \left[0.05 + 0.05 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.05 + 0.05 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.075% of span. For URV below reference point (50 in H₂O), effect equals:</p> $\pm \left[0.025 + 0.05 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.025 + 0.05 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$
Zero Static Pressure Effect per 1000 psi (70 bar)	±0.075% of span. For URV below reference point (50 in H ₂ O), effect equals: $\pm \left[0.0125 + 0.0625 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.0125 + 0.0625 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$
Combined Zero and Span Static Pressure Effect per 1000 psi (70 bar)*	±0.15% of span. For URV below reference point (50 in H ₂ O), effect equals: $\pm \left[0.0875 + 0.0625 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.0875 + 0.0625 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$
Stability	±0.015% of URL per year.

* Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, 10 to 55% RH, and 316 Stainless Steel barrier diaphragm.

Performance under Rated Conditions* - Model STF13F (0 to 100 psi)

Parameter	Description
Upper Range Limit psi bar	100 7
Minimum Span psi bar	1 0.07
Turndown Ratio	100 to 1
Zero Elevation and Suppression	No limit except minimum span within –18 and +100% URL. Specifications valid from –5 to +100% URL.
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. For URV below reference point (15 psi), accuracy equals:</p> $\pm \left[0.025 + 0.05 \left(\frac{15 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.025 + 0.05 \left(\frac{1 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.0625% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (15 psi), accuracy equals:</p> $\pm \left[0.0125 + 0.05 \left(\frac{15 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.05 \left(\frac{1 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Zero Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.0625% of span. For URV below reference point (30 psi), effect equals:</p> $\pm \left[0.0125 + 0.05 \left(\frac{30 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.05 \left(\frac{2 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of spa}$ <p>In Digital Mode: ±0.05% of span. For URV below reference point (30 psi), effect equals:</p> $\pm 0.05 \left(\frac{30 \text{ psi}}{\text{span psi}} \right) \text{ or } \pm 0.05 \left(\frac{2 \text{ bar}}{\text{span bar}} \right) \text{ in \% of span}$
Combined Zero and Span Temperature Effect per 28°C (50°F)	<p>In Analog Mode: ±0.10% of span. For URV below reference point (30 psi), effect equals:</p> $\pm \left[0.05 + 0.05 \left(\frac{30 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.05 + 0.05 \left(\frac{2 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.075% of span. For URV below reference point (30 psi), effect equals:</p> $\pm \left[0.025 + 0.05 \left(\frac{30 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.025 + 0.05 \left(\frac{2 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Zero Static Pressure Effect per 1000 psi (70 bar)	<p>±0.075% of span. For URV below reference point (30 psi), effect equals:</p> $\pm \left[0.0125 + 0.0625 \left(\frac{30 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0125 + 0.0625 \left(\frac{2 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Combined Zero and Span Static Pressure Effect per 1000 psi (70 bar)	<p>±0.15% of span. For URV below reference point (30 psi), effect equals:</p> $\pm \left[0.0875 + 0.0625 \left(\frac{30 \text{ psi}}{\text{span psi}} \right) \right] \text{ or } \pm \left[0.0875 + 0.0625 \left(\frac{2 \text{ bar}}{\text{span bar}} \right) \right] \text{ in \% of span}$
Stability	±0.04% of URL per year.

* Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, 10 to 55% RH, and 316 Stainless Steel barrier diaphragm.

Performance under Rated Conditions* - Model STF14F (0 to 600 inH₂O)

Parameter		Description
Upper Range Limit	inH₂O mbar	600 (39.2°F/4°C is standard reference temperature for inH ₂ O range.) 1,500
Minimum Span	inH₂O mbar	6 15
Turndown Ratio		100 to 1
Zero Elevation and Suppression		No limit except minimum span within 0 to 100% URL.
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. For URV below reference point (25 inH₂O), accuracy equals:</p> $\pm \left[0.0375 + 0.0375 \left(\frac{25 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.0375 + 0.0375 \left(\frac{62 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.05% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (25 inH₂O), accuracy equals:</p> $\pm \left[0.0125 + 0.0375 \left(\frac{25 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.0125 + 0.0375 \left(\frac{62 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$
Zero Temperature Effect per 28°C (50°F)		<p>In Analog Mode: ±0.0625% of span. For URV below reference point (50 inH₂O), effect equals:</p> $\pm \left[0.0125 + 0.05 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.0125 + 0.05 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.05% of span. For URV below reference point (50 inH₂O), effect equals:</p> $\pm 0.05 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \text{ or } \pm 0.05 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \text{ in \% of span}$
Combined Zero and Span Temperature Effect per 28°C (50°F)		<p>In Analog Mode: ±0.10% of span. For URV below reference point (50 inH₂O), effect equals:</p> $\pm \left[0.05 + 0.05 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.05 + 0.05 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$ <p>In Digital Mode: ±0.075% of span. For URV below reference point (50 inH₂O), effect equals:</p> $\pm \left[0.025 + 0.05 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.025 + 0.05 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$
Zero Static Pressure Effect per 1000 psi (70 bar)		<p>±0.075% of span. For URV below reference point (50 inH₂O), effect equals:</p> $\pm \left[0.0125 + 0.0625 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.0125 + 0.0625 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$
Combined Zero and Span Static Pressure Effect per 1000 psi (70 bar)		<p>±0.20% of span. For URV below reference point (50 inH₂O), effect equals:</p> $\pm \left[0.1375 + 0.0625 \left(\frac{50 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right) \right] \text{ or } \pm \left[0.1375 + 0.0625 \left(\frac{125 \text{ mbar}}{\text{span mbar}} \right) \right] \text{ in \% of span}$
Stability		±0.04% URL per year

* Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, 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.
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 (Wetted)	316L SS, Hastelloy® C-276* ² , Monel® 400** ³
Gasket Ring Material (Wetted)	316/316L SS, Hastelloy® C-276* ² , Monel® 400** ³
Extension Tube Material	316 SS ⁴
Process Head and Adapter Flange Material	316 SS ⁴ , Carbon Steel (Zinc-plated) ⁵ , Monel® 400** ⁷ , Hastelloy® C-276* ⁶
Process Head Gaskets	Teflon® is standard. Viton® is optional
Meter Body Bolting	Carbon Steel (Zinc-plated) ⁵ or 316 SS ⁴ (NACE) bolts.
Mounting Flange STF128, STF132 STF12F, STF13F, STF14F	Flush or Extended Diaphragm: Zinc Chromate plated Carbon Steel ⁵ , 304 SS, or 316 SS ⁴ . 316L SS (NOTE: Mounting Flange is process wetted.)
Fill Fluid	DC® 200 Silicone oil 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 All Models STF128, STF132 STF12F, STF13F, STF14F	Process Head: 1/4-inch NPT; 1/2-inch NPT with adapter and DIN, standard options. Flange: 2, 3 or 4-inch Class 150 or 300 ANSI; DN50-PN40, DN80-PN40 or DN100-PN40 DIN flange. Extended Diaphragm: 2, 4, or 6 inches (50, 101, 152 mm) long. 2 or 3-inch, Class 150 ANSI flange.
Wiring	Accepts up to 16 AWG (1.5 mm diameter).
Mounting	See Figure 3 for typical flange mounting arrangement.
Dimensions	See Figures 4, 5, and 6
Net Weight STF128, STF132 STF12F, STF13F, STF14F	Flush or Extended Model: 15.5 to 35.0 pounds (7 to 16 Kg) depending on flange size 14.2 to 18.4 pounds (6.5 to 9 Kg) depending on flange size

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

* Flush design only.

**Flush or pseudo flange design.

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, Encl	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>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

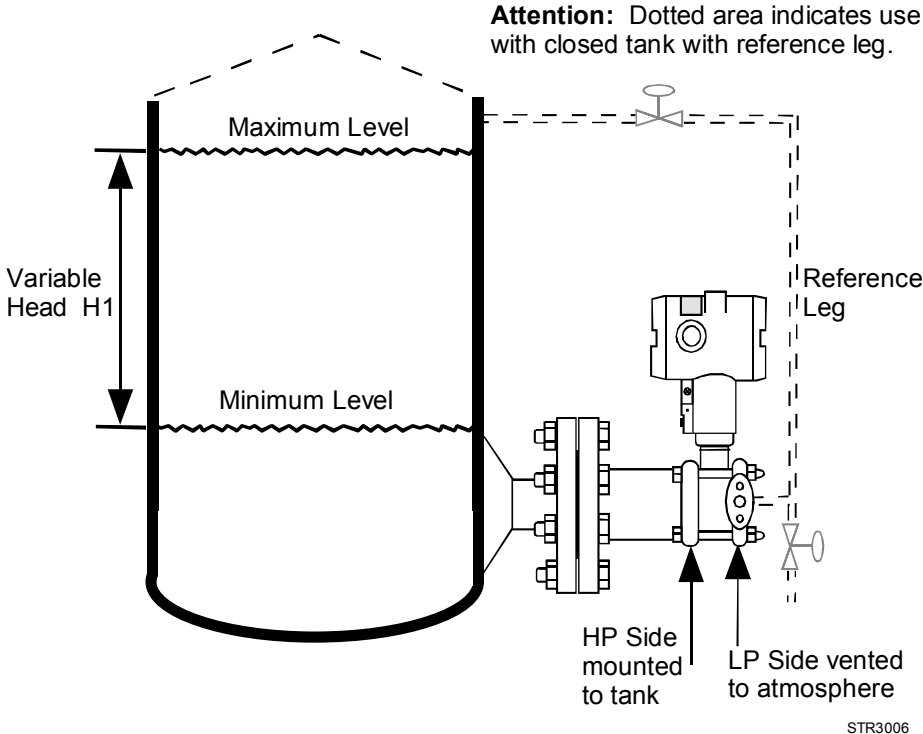


Figure 3 - Typical mounting arrangement for flange mounted liquid level transmitter.

Reference Dimensions

millimeters
inches

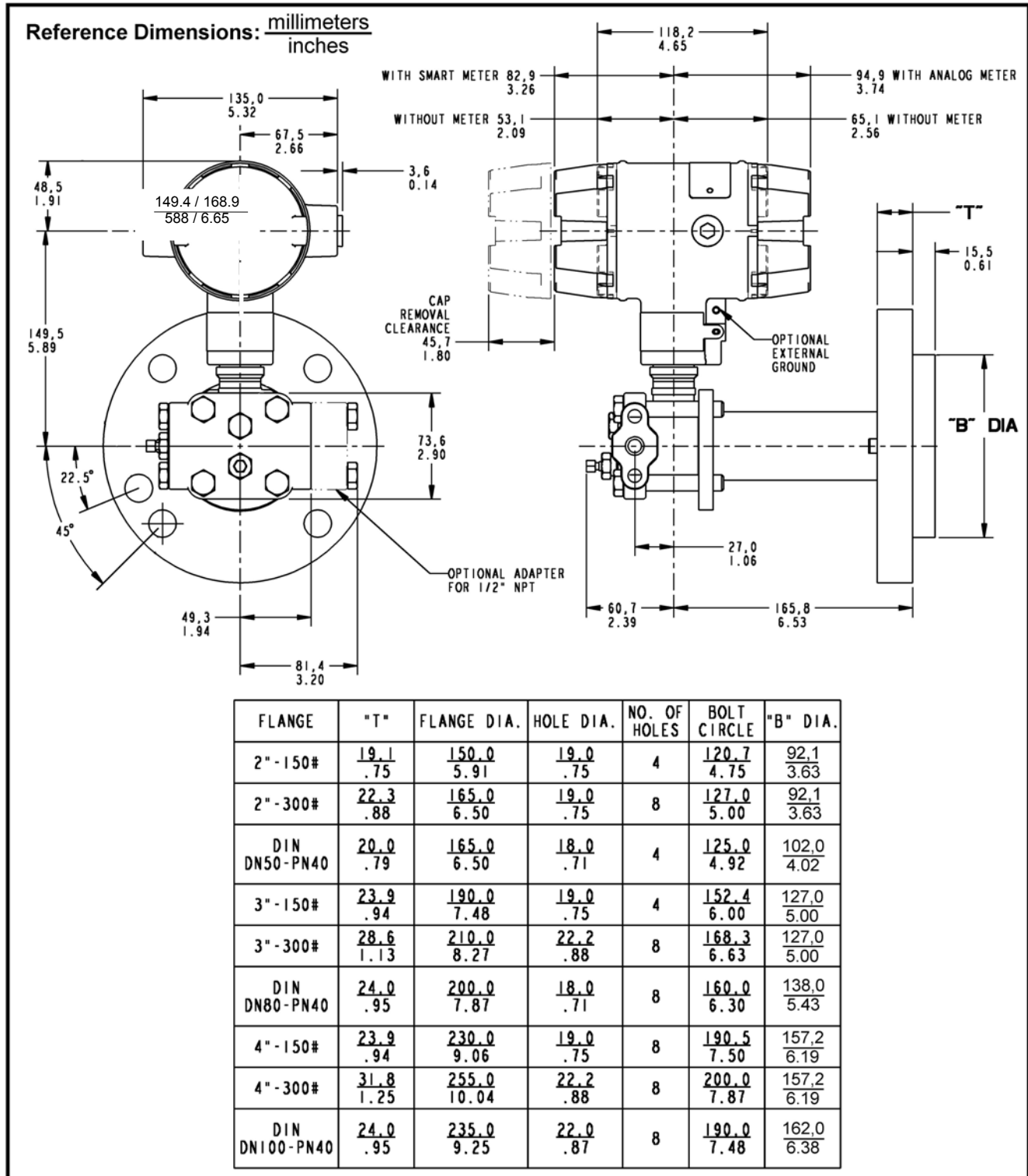


Figure 4 - Approximate mounting dimensions for flush diaphragm type models STF128 and STF132.

Reference Dimensions

millimeters
inches

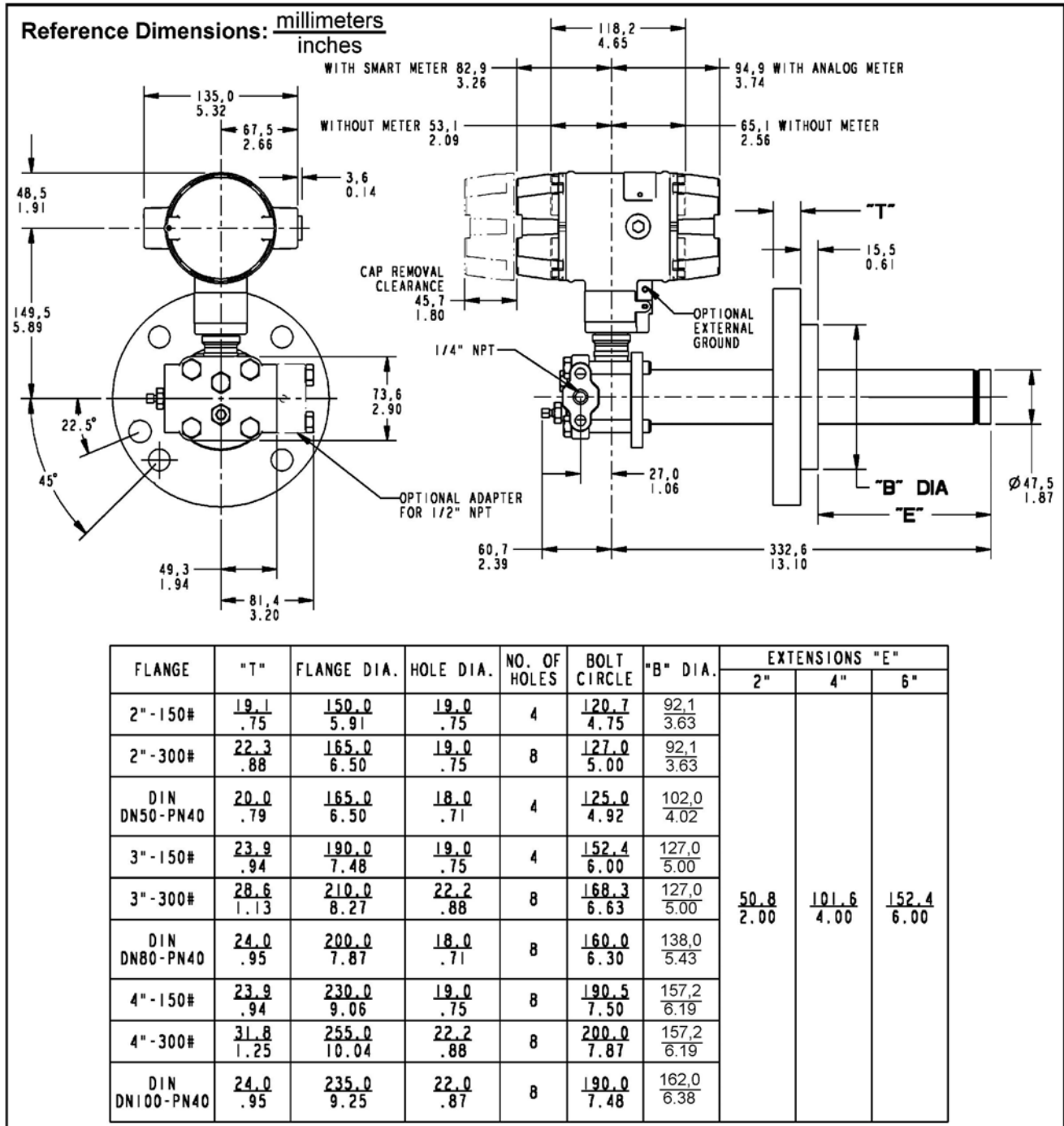


Figure 5 - Approximate mounting dimensions for extended diaphragm type models STF128 and STF132

Reference Dimensions

millimeters
inches

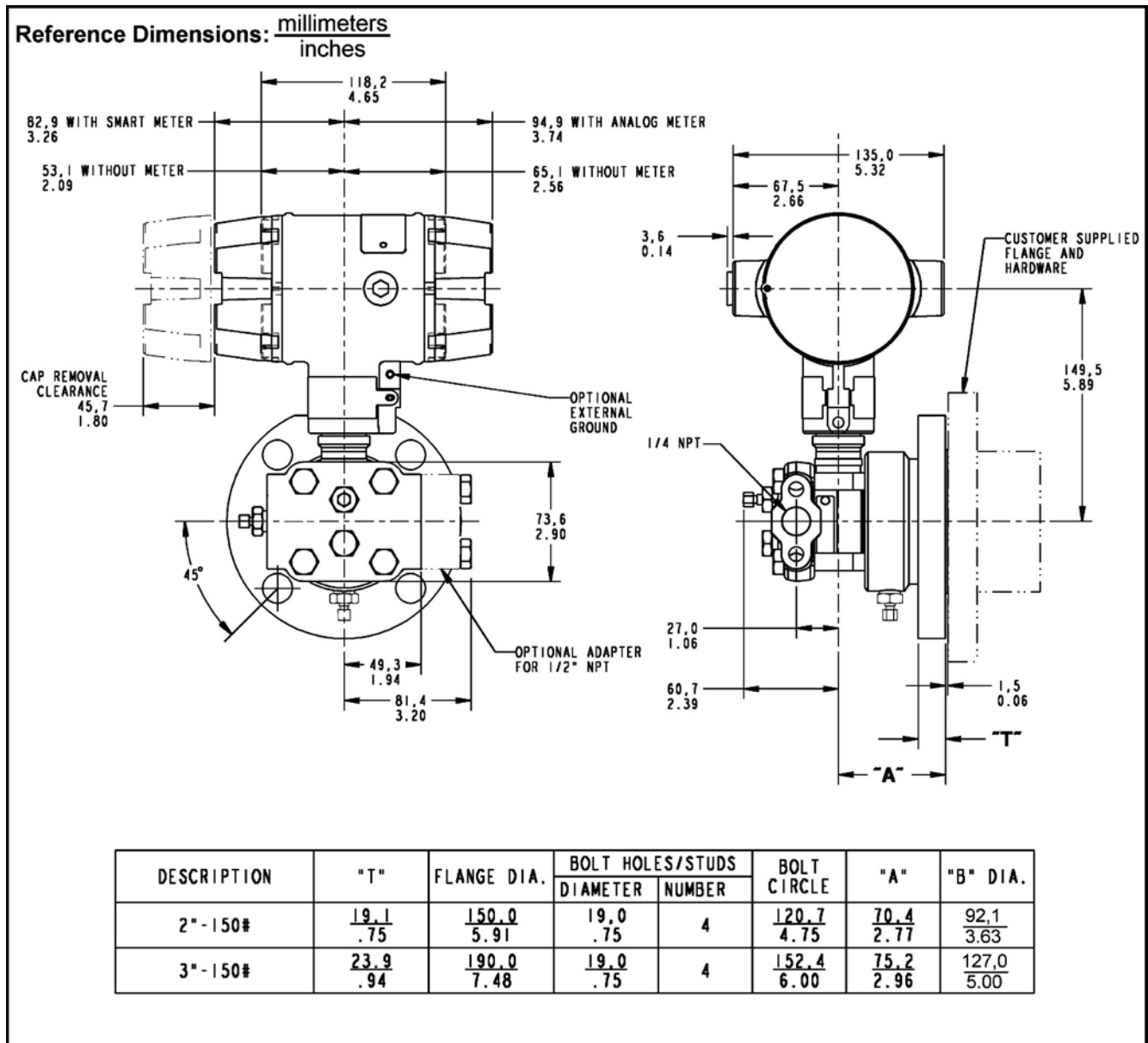


Figure 6 - Approximate mounting dimensions for pseudo flange type models STF12F, STF13F, and STF14F.

Options

- **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 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

- **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.

- **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.

- **Lifetime Warranty (Option WL)**

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

- **Indicator Configuration (Option CI)**

Provides custom configuration of Smart Meters

- **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 C)**

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.

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

China – PRC - Beijing

Honeywell China Inc.
Phone: +(86-10) 8458-3280
Fax: +(86-10) 8458-4650

China – PRC - Shanghai

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

China – PRC - Chengdu

Honeywell China Inc.
Phone: +(86-28) 6613-5078
Fax: +(86-28) 8678-7061

China – PRC - Xi'an

Honeywell China Ltd - Xi'an.
Phone: +(86-29) 8833-7490
Fax: +(86-29) 8833-7489

China – PRC - Shenzhen

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

Indonesia

PT Honeywell Indonesia
Phone: +(62) 21-535-8833
FAX: +(62) 21-5367 1008

Honeywell Automation

India Ltd.
Honeywell Ltd.
Phone: +(91) 6603-9400
Fax: +(91) 6603-9600

Japan

Honeywell Inc.
Phone: +(81) 3 6730 7197
Fax: +(81) 3 6730 7228

Malaysia

Honeywell Engineering Sdn Bhd
Phone: +(603) 7958-4788
Fax: +(603) 7958-8922

New Zealand

Honeywell Limited
Phone: +(64-9) 623-5050
Fax: +(64-9) 623-5060
Toll Free (0800) 202-088

Singapore

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

South Korea

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

Thailand

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

SE Asia Countries

see Honeywell Pte Ltd (Singapore)
for: Philippines, Pakistan, Cambodia, Guam, Laos, Myanmar, Vietnam, East Timor

SE Asia Countries

see Honeywell Automation India Ltd for: Bangladesh, Nepal, Sri Lanka

EUROPE

Austria

Honeywell Austria GmbH
Phone: +43 (316)400123
FAX: +43 (316)40017

Belgium

Honeywell SA/NV
Phone: +32 (0)2728 24 07
FAX: +32 (0)2728 22 45

Bulgaria

Honeywell EOOD
Phone: +(359) 2 40 20 900
FAX: +(359) 2 40 20 990

Czech Republic

Honeywell spol. s.r.o.
Phone: +420 242 442 232
FAX: +420 242 442 131

Denmark

Honeywell A/S
Phone: +(45) 39 55 55 55
FAX: +(45) 39 55 55 58

Finland

Honeywell OY
Phone: +358 (0)20752 2753
FAX: +358 (0) 20752 2751

France

Honeywell SA
Phone: +33 (0)1 60198075
FAX: +33 (0)1 60198201

Germany

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FAX: +49 (69)806497336

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FAX: +36-1-451 4343

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The Netherlands

Honeywell B.V.
Phone: +31 (0) 20 5656200
FAX: +31 (0) 20 5656210

Norway

Honeywell A/S
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Poland

Honeywell Sp. zo.o
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FAX: +48-22-6060901

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FAX: +351 21 424 50 99

Romania

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Russian Federation (RF),

Honeywell Field Solutions
Kievskaya str., 7,
Moscow 121059, Russia
Phone +7 (495) 796 98 60
Fax +7 (495) 797 99 64

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Phone: +421-2-58247 410
FAX: +421-2-58247 415

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FAX: +(46) 8 775 56 00

Switzerland

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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
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Fax: +380-44-351-15-51

United Kingdom

Honeywell Control Systems Ltd.
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Honeywell Middle East Ltd.
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Sultanate of Oman

Honeywell & Co Oman LLC
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Saudia Arabia

Honeywell Turki Arabia Ltd
Jubail Office
Phone: +966-3-341-0140
Fax: +966-3-341-0216
Honeywell - ATCO
Dammam Office
Phone: 0096638304584
Fax: 0096638338059

Kuwait

Honeywell Kuwait KSC
Phone: +965 242 1327 to 30
Fax: +965 242 8315
And
Phone: +965 326
2934/1821 Fax: +965 326
1714

AFRICA

Mediterranean & African Distributors

Honeywell SpA
Phone: +39 (02) 250 10 604
FAX: +39 (02) 250 10 659

South Africa (Republic of) and sub saharan

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,
Phone: 1-800-423-9883
Or 1-800-343-0228
Email: ask-ssc@honeywell.com

SOUTH AMERICA

Argentina

Honeywell S.A.I.C.
Phone: +(54-11) 4383-3637
FAX: +(54-11) 4325-6470

Brazil

Honeywell do Brasil & Cia
Phone: +(55-11) 7266-1900
FAX: +(55-11) 7266-1905

Chile

Honeywell Chile, S.A.
Phone: +(56-2) 233-0688
FAX: +(56-2) 231-6679

Mexico

Honeywell S.A. de C.V.
Phone: +(52) 55 5259-1966
FAX: +(52) 55 5570-2985

Puerto Rico

Honeywell Inc.
Phone: +(809) 792-7075
FAX: +(809) 792-0053

Trinidad

Honeywell Inc.
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FAX: +(868) 624-3969

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-16-21)



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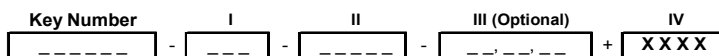
**ST 3000 Smart Transmitter
Flange Mounted Liquid Level
Series 100**

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



Important Note:

Base STF 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).

KEY NUMBER

Span	Selection	Availability
0-4" to 0-400" H ₂ O / 0-10 to 0-1,000 mbar - Compound Characterized	STF128	↓
0-1 to 0-100 psi / 0-0.07 to 7 bar - Compound Characterized	STF132	↓
0-1" to 0-400" H ₂ O / 0-2.5 to 0-1,000 mbar	STF12F	↓
0-1 to 0-100 psi / 0-0.07 to 0-7 bar	STF13F	↓
0-6" to 0-600" H ₂ O / 0-15 to 0-1,500 mbar	STF14F	↓

TABLE I - METER BODY

	Design	Ref. Head	Vent Drain Valve on Ref. Head ²	Barrier Diaphragm. (wetted)	Diaphragm. Plate (wetted)	Extension (wetted)	Sel.				
Materials of Construction	Flush	Carbon ¹ Steel	316 SS	316L SS	316L SS	N/A	A __	•			
				Hast C ³	316L SS		W __	•			
				Hast C ³	Hast C ³		B __	•			
				Monel 400 ⁴	Monel 400 ⁴		C __	•	19		
		316 SS ⁵		316L SS	316L SS	E __	•				
				Hast C ³	316L SS	X __	•				
				Hast C ³	Hast C ³	F __	•				
				Monel 400 ⁴	Monel 400 ⁴	G __	•	19			
			Hast C ^{3,6}	Hast C ³	Hast C ³	J __	•				
			Monel 400 ^{4,7}	Monel 400 ¹⁰	Monel 400 ⁴	L __	•	19			
		Extended	Carbon ¹ Steel	316 SS	316L SS	316L SS	316L SS	M __	•		
					Hast C ³			N __	•		
		316 SS ⁵		316L SS			R __	•			
				Hast C ³			S __	•			
	Pseudo Flange	Carbon ¹ Steel	316 SS	316L SS	N/A	N/A	A __	•	•		
				Hast C ³			B __	•			
				Monel 400 ⁴			C __	•	19		
		316 SS ⁵		316L SS			E __	•		•	
				Hast C ³			F __	•			
				Monel 400 ⁴			G __	•	19		
Fill Fluid (Meter Body & Flange)	DC [®] 200 Silicone						- 1 _	•	•	•	
	CTFE						- 2 _	•	•	•	
Process Connection	Reference Head			Flange		Sel.					
	1/4 NPT			High Pressure Side		-- A	•	•	•		
	1/4 NPT			Low Pressure Side		-- C	•	•	•		
	1/2 NPT (with Adapter)			High Pressure Side		-- H	t	t	t		
	1/2 NPT (with Adapter)			Low Pressure Side		-- K	t	t	t		

¹ Carbon Steel heads are zinc-plated and not recommended for water service due to hydrogen migration. For that service, use the 316 stainless steel Wetted Reference Head.
² Vent/Drains are Teflon or PTFE coated for lubricity.
³ Hastelloy[®] C-276 or UNS N10276
⁴ Monel 400[®] or UNS N04400
⁵ Supplied as indicated or as Grade CW12MW, the casting equivalent of Hastelloy[®] C-276
⁶ Supplied as indicated or as Grade M30C, the casting equivalent of Monel 400[®]
⁷ Monel 400[®] or UNS N04400 or UNS N04405

TABLE II - FLANGE ASSEMBLY

		STF1xx			Availability		
		Flange Material	Threaded Nut Ring Material	Selection	28 32	2F 3F	4F
No Selection		None	None	0 _ _ _ _	•	•	•
Flange (ANSI Flanges have 125-500 AARH Surface Finish)	3" ANSI Class 150 3" ANSI Class 300 DN80-PN40 DIN	Carbon Steel (non-wetted)	Carbon Steel (non-wetted)	_ 1 _ _ _	•		
	4" ANSI Class 150			_ 2 _ _ _	•		
	4" ANSI Class 300			_ 3 _ _ _	•		
	DN100-PN40 DIN			_ 4 _ _ _	•		
	2" ANSI Class 150			_ 5 _ _ _	•		
	2" ANSI Class 300			_ 6 _ _ _	•		
	DN50-PN40 DIN			_ 7 _ _ _	•		
				_ 8 _ _ _	•		
				_ 9 _ _ _	•		
	3" ANSI Class 150 3" ANSI Class 300 DN80-PN40 DIN	304 SS (non- wetted)	304 SS (non-wetted)	_ A _ _ _	•		
	4" ANSI Class 150			_ B _ _ _	•		
	4" ANSI Class 300			_ C _ _ _	•		
	DN100-PN40 DIN			_ D _ _ _	•		
	2" ANSI Class 150			_ E _ _ _	•		
	2" ANSI Class 300			_ F _ _ _	•		
DN50-PN40 DIN	_ Q _ _ _	•					
	_ U _ _ _	•					
	_ V _ _ _	•					
3" ANSI Class 150 3" ANSI Class 300 DN80-PN40 DIN	316 SS (non- wetted)	304 SS (non-wetted)	_ H _ _ _	•			
4" ANSI Class 150			_ J _ _ _	•			
4" ANSI Class 300			_ K _ _ _	•			
DN100-PN40 DIN			_ L _ _ _	•			
2" ANSI Class 150			_ M _ _ _	•			
2" ANSI Class 300			_ N _ _ _	•			
DN50-PN40 DIN			_ W _ _ _	•			
	_ X _ _ _	•					
	_ Y _ _ _	•					
Pseudo Flange on Standard DP							
Gasket Ring (wetted)	2" ANSI Class 150 without Vent/Drain	316L SS (wetted)	Not Applicable	_ S _ _ _		•	•
	2" ANSI Class 150 with Vent/Drain			_ T _ _ _		•	•
	3" ANSI Class 150 without Vent/Drain			_ P _ _ _		•	•
	3" ANSI Class 150 with Vent/Drain			_ R _ _ _		•	•
Extension (wetted)	No Selection			_ 0 _ _ _		•	•
	Flush Design	316L SS Hastelloy® C ³ Monel 400® ⁴		_ 1 _ _ _	g		
				_ 2 _ _ _	g		
				_ 3 _ _ _	q		
Extended Design	316L SS			_ 5 _ _ _	v		
No Selection	No Selection			_ 0 _ _ _		•	•
	Flush			_ F _ _ _	h		
		Diameter	Length				
	1.87 Inches (for 2", 3" or 4" spud) ¹³	2 inches	2 inches	_ C _ _ _	v		
		4 inches	4 inches	_ D _ _ _	v		
	6 inches	6 inches	_ E _ _ _	v			
No Selection	No Selection			_ 0 _ _ _	•	•	•

³ Hastelloy® C-276 or UNS N10276

⁴ Monel 400® or UNS N04400

¹³ For part numbers and pricing information on Tank Spuds refer to page ST-91 (Supplementary Accessories & Kits).

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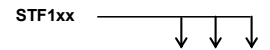


TABLE III - OPTIONS

	Selection	28 32	2F 3F	4F	
Communication Options					
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	•	•	•	
FOUNDATION [™] Fieldbus Communications	FF	r	r	r	
Indicating Meter Options					
Analog Meter (0-100 Even 0-10 Square Root)	ME	•	•	•	
Smart Meter	SM	•	•	•	b
Custom Configuration of Smart Meter	CI	e	e	e	
Local Zero & Span	ZS	m	m	m	b
Local Zero	LZ	x	x	x	b
Transmitter Housing & Electronics Options					
No housing conduit plugs or adaptors come standard with the ST 3000.					
For certain approval codes, you must 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 Adaptor, for use with FM and CSA Approval codes)	A3	i	i	i	b
1/2 NPT Male to M20 Female 316 SS Certified Conduit Adapter (ATEX, CSA & IECEx)	A1	•	•	•	
1/2 NPT Male to 3/4 NPT Female 316 SS Certified Conduit Adapter (ATEX, CSA & IECEx)	A2	•	•	•	
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	•	•	•	
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 or H6 and WP options)	SL	p	p	p	
Lightning Protection	LP	•	•	•	
Custom Calibration and I.D. in Memory	CC	•	•	•	
Transmitter Configuration - (non-Fieldbus)	TC	15	15	15	b
Transmitter Configuration - (Fieldbus)	FC	21	21	21	b
Write Protection (Delivered in the "enabled" position)	WP	•	•	•	
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	•	•	•	
Stainless Steel Customer Wired-On Tag (blank)	TB	•	•	•	
Meter Body Options (Carbon Steel standard)					
NACE A286 SS Bolts	CR	•	•	•	
316 SS Bolts	SS	•	•	•	b
B7M Bolts	B7	•	•	•	
316 SS ⁵ Adapter Flange - 1/2 NPT with CS Bolts	S2	c	c	c	
316 SS ⁵ Adapter Flange - 1/2 NPT with 316 SS Bolts	S3	c	c	c	
316 SS ⁵ Adapter Flange - 1/2 NPT with NACE A286 SS Bolts	S4	c	c	c	
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts	S5	c	c	c	
Hastelloy [®] C-276 ^{3,6} Adapter Flange - 1/2 NPT with CS Bolts	T2	c	c	c	b
Hastelloy [®] C-276 ^{3,6} Adapter Flange - 1/2 NPT with 316 SS Bolts	T3	c	c	c	
Monel 400 ^{4,7} Adapter Flange - 1/2 NPT with CS Bolts	V2	c	c	c	
Monel 400 ^{4,7} Adapter Flange - 1/2 NPT with 316 SS Bolts	V3	c	c	c	
316 SS ⁵ Blind Adapter Flange with CS Bolts	B3	•	•	•	
316 SS ⁵ Blind Adapter Flange with 316 SS Bolts	B4	•	•	•	b
316 SS ⁵ Blind Adapter Flange with NACE A286 SS Bolts	B5	•	•	•	b
316 SS ⁵ Blind Adapter Flange with B7M Bolts	B6	•	•	•	
316 SS Center Vent Drain and Bushing	CV	•	•	•	
Viton ^{®8} Process Head Gaskets (adapter gaskets ordered separately)	VT	•	•	•	
Viton ^{®8} Adapter Flange Gaskets	VF	17	17	17	
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)	0X	j	j	•	
Over-Pressure Leak Test with Certificate (F3392)	TP	•	•	•	
Calibration Test Report and Certificate of Conformance (F3399)	F1	•	•	•	
Certificate of Conformance (F3391)	F3	•	•	•	b
Certificate of Origin (F0195)	F5	•	•	•	
SIL Certificate (SIL 2/3) (FC33337)	FE	22	22	22	
NACE Certificate (Process-Wetted & Non-Process Wetted) (FC33339)	F7	o	o	o	b
NACE Certificate (Process-Wetted Only) (FC33338)	FG	•	•	•	
Material Traceability Certification per EN 10204 3.1 (FC33341)	FX	•	•	•	
Marine Type Approvals (DNV, ABS, BV, KR & LR) (FC33340)	MT	•	•	•	

Table III continued next page

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

STF1xx Availability
↓ ↓ ↓

TABLE III - OPTIONS (continued)

Warranty Options	Selection	28	2F	4F
		32	3F	
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	28	2F	4F
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	33	24	24	24
	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				
	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				
	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	3N	•	•	•
	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; li = 100mA Ex td A20 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C)	3C	24	24	24
		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)				
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	Availability		
				28 32	2F 3F	4F
Canadian Standards Association (CSA)	Explosion Proof	Class I, Div. 1, Groups B,C,D	2J	24	24	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
	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 [√] 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

Factory Identification	Selection			
	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		
c	I	H, K		
e	III	SM		
g	I	A __, B __, E __, F __, J __, W __, X __		
h			I II	M __, N __, R __, S __ 5
i	III	1C or 2J		
j	I	2		
m			III	ME, FF
n			III	1C, 2J
o	III	CR	III	S2, S3, S5, T2, T3, B3, B4, B6, V2, V3
p	III	HC or H6 and WP	III	FF
q	I	C __, G __, L __		
r	III	FISCO/FNICO compliance available only with 1C	III	TC, ME or FISCO/FNICO compliance not available with 3C, 3N, 33, 3S, 2J, CA, Z2, ZD, ZA, 6D & 6S
t	III	Select S2, S3, S4, S5, T2, T3, V2, V3		
v	I	M __, N __, R __, S __		
x	III	FF, SM		
15			III	FF
17	III	VT		
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: STF128-A1A-01000-HC,2J+XXXX

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Specifications are subject to change without notice.

For More Information

Learn more about how Honeywell's ST 3000 Smart Transmitter can provide accuracy, reliability and stability in transmitter measurement, visit our website www.honeywell.com/ps/hfs or contact your Honeywell account manager.

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