ST 3000 Smart Transmitter
Series 100 Differential Pressure Models

|		
STD110	0 to 10 inH$_2$O	0 to 25 mbar
STD120	0 to 400 inH$_2$O	0 to 1,000 mbar
STD125	0 to 600 inH$_2$O	0 to 1,500 mbar
STD130	0 to 100 psi	0 to 7,000 mbar
STD170	0 to 3000 psi	0 to 210,000 mbar

Specification and Model Selection Guide

Function

Honeywell's ST 3000® Series100 Differential Pressure Transmitters bring proven "smart" technology to a wide spectrum of pressure measurement applications from furnace combustion air flow to Hydrostatic Tank Gauging. They transmit an output signal proportional to the measured variable in either an analog 4 to 20 milliampere format or in a digital DE protocol format for direct digital integration with our TDC 3000®X control system. Additional protocol options available for the ST 3000 Series 100 transmitters include FOUNDATION™ Fieldbus[1] and HART® [2]. See the Model Selection Guide for help in selecting the correct ordering code for the desired protocol.

You easily select the analog or digital transmission format through the Smart Field Communicator (SFC®) which is the common hand-held operator interface for our Smartline® Transmitters. All configuration, operation, and communications functions are under the control of the ST 3000 Smart Transmitter's micro-processor and are accessible through the SFC.
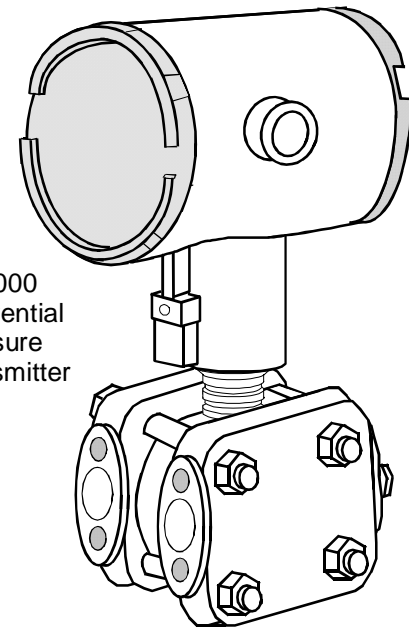
ST 3000 Differential Pressure Transmitter
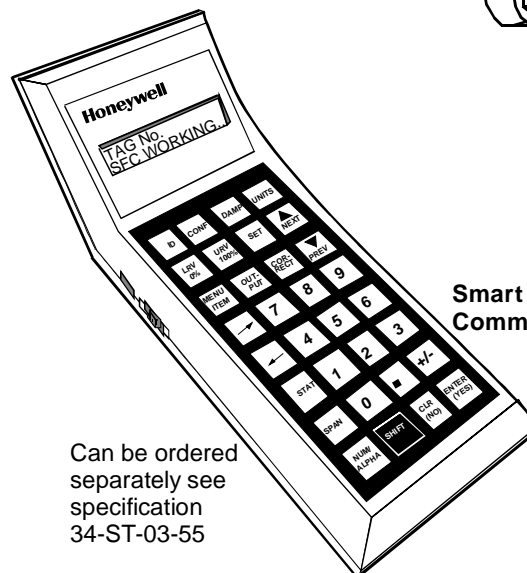
Smart Field Communicator

Can be ordered separately see specification 34-ST-03-55

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[1] FOUNDATION™ Fieldbus is a trademark of the Fieldbus Foundation.
[2] HART is a registered trademark of the Hart Communication Foundation.

Figure 1—Series 100 Differential Pressure Transmitters feature proven "smart" technology and come in several models to meet varying application needs.

Features	Description

- Choice of linear or square root output conformity is a simple configuration selection.
- Direct digital integration with TDC 3000^X system 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.

The ST 3000 transmitter can replace any 4 to 20 milliampere 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.

Like other Smartline Transmitters, the ST 3000 features two-way communication between the operator and the transmitter through our SFC.

You can connect the SFC anywhere that you can access the transmitter signal lines, and it provides the capabilities of transmitter adjustments and diagnostics from remote locations, such as the control room.

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 transmitter.

Specifications

Operating Conditions – All Models

Parameter	Reference Condition		Rated Condition		Operative Limits		Transportation and Storage	
	°C	°F	°C	°F	°C	°F	°C	°F
Ambient Temperature								
STD110	25±1	77±2	-15 to 65	5 to 150	-40 to 70	-40 to 158	-40 to 70	-40 to 158
STD125	25±1	77±2	-40 to 85	-40 to 185	-40 to 85	-40 to 185	-55 to 125	-67 to 257
STD120, STD130, STD170	25±1	77±2	-40 to 85	-40 to 185	-40 to 93	-40 to 200	-55 to 125	-67 to 257
Meter Body Temperature								
STD110	25±1	77±2	-15 to 65	5 to 150	-40 to 70	-40 to 158	-40 to 70	-40 to 158
STD125	25±1	77±2	-40 to 85	-40 to 185	-40 to 85	-40 to 185	-55 to 125	-67 to 257
STD120, STD130, STD170	25±1	77±2	-40 to 110*	-40 to 230*	-40 to 125	-40 to 257	-55 to 125	-67 to 257
Humidity %RH	10 to 55		0 to 100		0 to 100		0 to 100	
Overpressure STD110 **psi**	0		50		50			
bar	0		3.45		3.45			
All Other Models **psi**	0		3000		3000			
bar	0		210		210			
Static Pressure STD110 **psi**	0		10		50			
bar	0		0.7		3.45			
Vacuum Region - Minimum Pressure All Models Except STD110								
mmHg absolute	Atmospheric		25		2 (short term**)			
inH$_2$O absolute	Atmospheric		13		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 1440 ohms (as shown in Figure 2)							

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

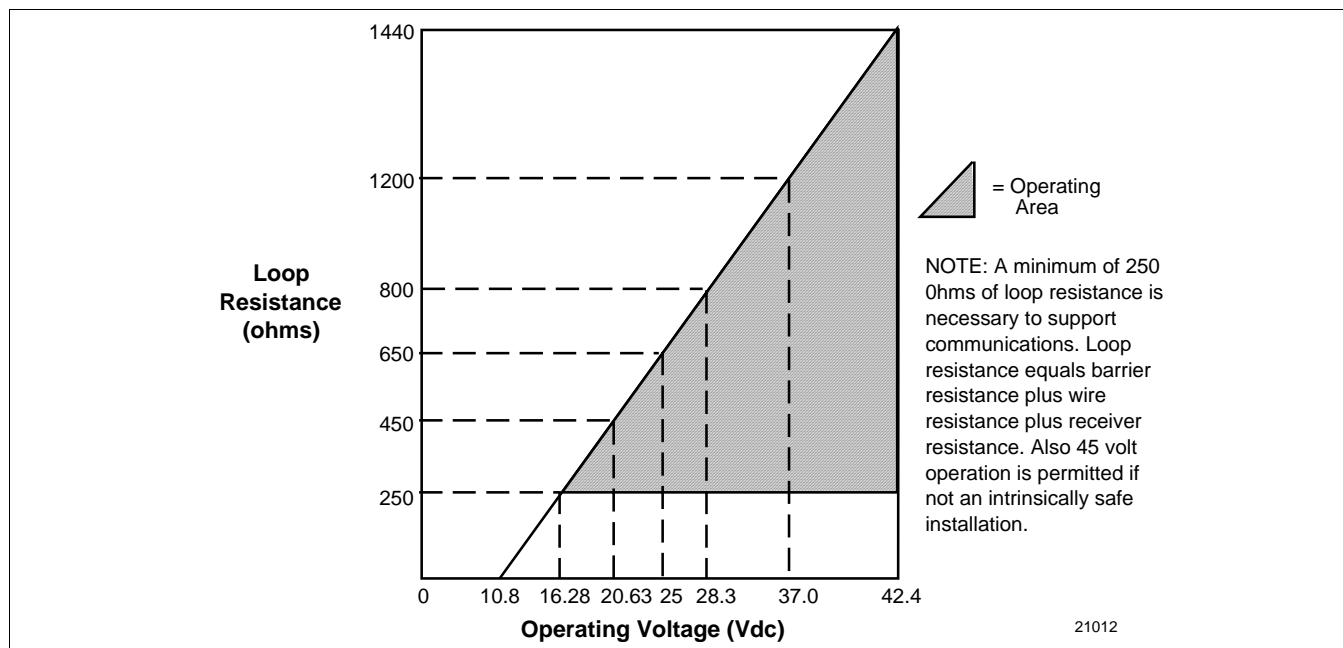** Short term equals 2 hours at 70°C (158 °F)

Figure 2 - Supply voltage and loop resistance chart.

Performance Under Rated Conditions* - Model STD110 (0 to 10 inH$_2$O)

Parameter	Description
Upper Range Limit **inH2O** **mbar**	10 (39.2°F/4°C is standard reference temperature for inH2O range.) 25
Minimum Span **inH2O** **mbar**	0.4 1
Turndown Ratio	25 to 1
Zero Elevation and Suppression	No limit except minimum span within ±100% URL.
Accuracy (Reference – Includes combined effects of linearity, hysteresis, and repeatability) • *Accuracy includes residual error after averaging successive readings.* • *For FOUNDATION Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications.*	**In Analog Mode:** ±0.1% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (1.5 inH$_2$O), accuracy equals: $\pm 0.025 + 0.075 \left(\dfrac{1.5 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right)$ or $\pm 0.025 + 0.075 \left(\dfrac{3.75 \text{ mbar}}{\text{span mbar}} \right)$ in % span **In Digital Mode:** ±0.0875% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (1.5 inH$_2$O), accuracy equals: $.\pm 0.125 + 0.075 \left(\dfrac{1.5 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right)$ or $\pm 0.0125 + 0.075 \left(\dfrac{3.75 \text{ mbar}}{\text{span mbar}} \right)$ in % span
Zero Temperature Effect per 28°C (50°F)	**In Analog Mode:** ±0.2625% of span. For URV below reference point (10 inH$_2$O), effect equals: $\pm 0.0125 + 0.25 \left(\dfrac{10 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right)$ or $\pm 0.0125 + 0.25 \left(\dfrac{25 \text{ mbar}}{\text{span mbar}} \right)$ in % span **In Digital Mode:** ±0.25% of span. For URV below reference point (10 inH$_2$O), effect equals: $\pm 0.25 \left(\dfrac{10 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right)$ or $\pm 0.25 \left(\dfrac{25 \text{ mbar}}{\text{span mbar}} \right)$ in % span
Combined Zero and Span Temperature Effect per 28°C (50°F)	**In Analog Mode:** ±0.4875% of span. For URV below reference point (10 inH$_2$O), effect equals: $\pm 0.2375 + 0.25 \left(\dfrac{10 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right)$ or $\pm 0.2375 + 0.25 \left(\dfrac{25 \text{ mbar}}{\text{span mbar}} \right)$ in % span **In Digital Mode:** ±0.4625% of span. For URV below reference point (10 inH$_2$O), effect equals: $\pm 0.2125 + 0.25 \left(\dfrac{10 \text{ inH}_2\text{O}}{\text{span inH}_2\text{O}} \right)$ or $\pm 0.2125 + 0.25 \left(\dfrac{25 \text{ mbar}}{\text{span mbar}} \right)$ in % span

* 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 STD120 (0 to 400 inH$_2$O)

Parameter	Description
Upper Range Limit **inH$_2$O** **mbar**	400 (39.2°F/4°C is standard reference temperature for inH$_2$O range.) 1000
Minimum Span **inH$_2$O** **mbar**	1 Note: Recommended minimum span in square root mode is 20 inH$_2$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) • *Accuracy includes residual error after averaging successive readings.* • *For FOUNDATION Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications.*	**In Analog Mode:** ±0.075% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (25 inH$_2$O), accuracy equals: $\pm 0.025 + 0.05\left(\dfrac{25\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.025 + 0.05\left(\dfrac{62\ \text{mbar}}{\text{span mbar}}\right)$ in % span **In Digital Mode:** ±0.0625% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (25 inH$_2$O), accuracy equals: $\pm 0.0125 + 0.05\left(\dfrac{25\text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.0125 + 0.05\left(\dfrac{62\ \text{mbar}}{\text{span mbar}}\right)$ in % span
Zero Temperature Effect per 28°C 50°F)	**In Analog Mode:** ±0.0625% of span. For URV below reference point (50 inH$_2$O), effect equals: $\pm 0.0125 + 0.05\left(\dfrac{50\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.0125 + 0.05\left(\dfrac{125\ \text{mbar}}{\text{span mbar}}\right)$ in % span **In Digital Mode:** ±0.05% of span. For URV below reference point (50 inH$_2$O), effect equals: $\pm 0.05\left(\dfrac{50\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.05\left(\dfrac{125\ \text{mbar}}{\text{span mbar}}\right)$ in % span
Combined Zero and Span Temperature Effect per 28°C (50°F)	**In Analog Mode:** ±0.10% of span. For URV below reference point (50 inH$_2$O), effect equals: $\pm 0.05 + 0.05\left(\dfrac{50\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.05 + 0.05\left(\dfrac{125\ \text{mbar}}{\text{span mbar}}\right)$ in % span **In Digital Mode:** ±0.075% of span. For URV below reference point (50 inH$_2$O), effect equals: $\pm 0.025 + 0.05\left(\dfrac{50\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.025 + 0.05\left(\dfrac{125\ \text{mbar}}{\text{span mbar}}\right)$ in % span
Zero Static Pressure Effect per 1000 psi (70 bar)	±0.075% of span. For URV below reference point (50 inH$_2$O), effect equals: $\pm 0.0125 + 0.0625\left(\dfrac{50\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.0125 + 0.0625\left(\dfrac{125\ \text{mbar}}{\text{span mbar}}\right)$ in % span
Combined Zero and Span Static Pressure Effect per 1000 psi (70 bar)	±0.15% of span. For URV below reference point (50 inH$_2$O), effect equals: $\pm 0.0875 + 0.0625\left(\dfrac{50\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.0875 + 0.0625\left(\dfrac{125\ \text{mbar}}{\text{span mbar}}\right)$ in % 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 STD125 (0 to 600 inH$_2$O)

Parameter	Description
Upper Range Limit inH$_2$O mbar	600 (39.2°F/4°C is standard reference temperature for inH$_2$O range.) 1500
Minimum Span inH$_2$O mbar	25 62.2
Turndown Ratio	24 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) • *Accuracy includes residual error after averaging successive readings.* • *For FOUNDATION Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications.*	**In Analog Mode:** ±0.075% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (25 inH$_2$O), accuracy equals: $\pm 0.0375 + 0.0375\left(\dfrac{25\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.0375 + 0.0375\left(\dfrac{62\ \text{mbar}}{\text{span mbar}}\right)$ in % span **In Digital Mode:** ±0.05% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (25 inH$_2$O), accuracy equals: $\pm 0.0125 + 0.0375\left(\dfrac{25\text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.0125 + 0.0375\left(\dfrac{62\ \text{mbar}}{\text{span mbar}}\right)$ in % span
Zero Temperature Effect per 28°C (50°F)	**In Analog Mode:** ±0.0625% of span. For URV below reference point (50 inH$_2$O), effect equals: $\pm 0.0125 + 0.05\left(\dfrac{50\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.0125 + 0.05\left(\dfrac{125\ \text{mbar}}{\text{span mbar}}\right)$ in % span **In Digital Mode:** ±0.05% of span. For URV below reference point (50 inH$_2$O), effect equals: $\pm 0.05\left(\dfrac{50\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.05\left(\dfrac{125\ \text{mbar}}{\text{span mbar}}\right)$ in % span
Combined Zero and Span Temperature Effect per 28°C (50°F)	**In Analog Mode:** ±0.10% of span. For URV below reference point (50 inH$_2$O), effect equals: $\pm 0.05 + 0.05\left(\dfrac{50\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.05 + 0.05\left(\dfrac{125\ \text{mbar}}{\text{span mbar}}\right)$ in % span **In Digital Mode:** ±0.075% of span. For URV below reference point (50 inH$_2$O), effect equals: $\pm 0.025 + 0.05\left(\dfrac{50\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.025 + 0.05\left(\dfrac{125\ \text{mbar}}{\text{span mbar}}\right)$ in % span
Zero Static Pressure Effect per 1000 psi (70 bar)	±0.075% of span. For URV below reference point (50 inH$_2$O), effect equals: $\pm 0.0125 + 0.0625\left(\dfrac{50\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.0125 + 0.0625\left(\dfrac{125\ \text{mbar}}{\text{span mbar}}\right)$ in % span
Combined Zero and Span Static Pressure Effect per 1000 psi (70 bar)	±0.20% of span. For URV below reference point (50 inH$_2$O), effect equals: $\pm 0.1375 + 0.0625\left(\dfrac{50\ \text{inH}_2\text{O}}{\text{span inH}_2\text{O}}\right)$ or $\pm 0.1375 + 0.0625\left(\dfrac{125\ \text{mbar}}{\text{span mbar}}\right)$ in % span
Stability	**In Analog Mode:** ±0.03% URL per year **In Digital Mode:** ±0.015% URL per year [±0.09 inH$_2$O (0.22 mbar) 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 STD130 (0 to 100 psi)

Parameter	Description
Upper Range Limit **psi** **bar**	100 7
Minimum Span **psi** **bar**	5 0.35
Turndown Ratio	20 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) • *Accuracy includes residual error after averaging successive readings.* • *For FOUNDATION Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications.*	**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: $\pm 0.025 + 0.05\left(\dfrac{15\ \text{psi}}{\text{span psi}}\right)$ or $\pm 0.025 + 0.05\left(\dfrac{1\ \text{bar}}{\text{span bar}}\right)$ in % span **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: $\pm 0.0125 + 0.05\left(\dfrac{15\ \text{psi}}{\text{span psi}}\right)$ or $\pm 0.0125 + 0.05\left(\dfrac{1\ \text{bar}}{\text{span bar}}\right)$ in % span
Zero Temperature Effect per 28°C (50°F)	**In Analog Mode:** ±0.0625% of span. For URV below reference point (30 psi), effect equals: $\pm 0.0125 + 0.05\left(\dfrac{30\ \text{psi}}{\text{span psi}}\right)$ or $\pm 0.0125 + 0.05\left(\dfrac{2\ \text{bar}}{\text{span bar}}\right)$ in % span **In Digital Mode:** ±0.05% of span. For URV below reference point (30 psi), effect equals: $\pm 0.05\left(\dfrac{30\ \text{psi}}{\text{span psi}}\right)$ or $\pm 0.05\left(\dfrac{2\ \text{bar}}{\text{span bar}}\right)$ in % span
Combined Zero and Span Temperature Effect per 28°C (50°F)	**In Analog Mode:** ±0.10% of span. For URV below reference point (30 psi), effect equals: $\pm 0.05 + 0.05\left(\dfrac{30\ \text{psi}}{\text{span psi}}\right)$ or $\pm 0.05 + 0.05\left(\dfrac{2\ \text{bar}}{\text{span bar}}\right)$ in % span **In Digital Mode:** ±0.075% of span. For URV below reference point (30 psi), effect equals: $\pm 0.025 + 0.05\left(\dfrac{30\ \text{psi}}{\text{span psi}}\right)$ or $\pm 0.025 + 0.05\left(\dfrac{2\ \text{bar}}{\text{span bar}}\right)$ in % span
Zero Static Pressure Effect per 1000 psi (70 bar)	±0.075% of span. For URV below reference point (30 psi), effect equals: $\pm 0.0125 + 0.0625\left(\dfrac{30\ \text{psi}}{\text{span psi}}\right)$ or $\pm 0.0125 + 0.0625\left(\dfrac{2\ \text{bar}}{\text{span bar}}\right)$ in % span
Combined Zero and Span Static Pressure Effect per 1000 psi (70 bar)	±0.15% of span. For URV below reference point (30 psi), effect equals: $\pm 0.0875 + 0.0625\left(\dfrac{30\ \text{psi}}{\text{span psi}}\right)$ or $\pm 0.0875 + 0.0625\left(\dfrac{2\ \text{bar}}{\text{span bar}}\right)$ in % 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 STD170 (0 to 3000 psi)

Parameter	Description
Upper Range Limit **psi** **bar**	3000 210
Minimum Span **psi** **bar**	100 7
Turndown Ratio	30 to 1
Zero Elevation and Suppression	No limit except minimum span within –0.6 and +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 FOUNDATION Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications.*	**In Analog Mode:** ±0.15% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (300 psi), accuracy equals: $\pm 0.05 + 0.10 \left(\dfrac{300 \text{ psi}}{\text{span psi}} \right)$ or $\pm 0.05 + 0.10 \left(\dfrac{21 \text{ bar}}{\text{span bar}} \right)$ in % span **In Digital Mode:** ±0.125% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (300 psi), accuracy equals: $\pm 0.025 + 0.10 \left(\dfrac{300 \text{ psi}}{\text{span psi}} \right)$ or $\pm 0.025 + 0.10 \left(\dfrac{21 \text{ bar}}{\text{span bar}} \right)$ in % span
Zero Temperature Effect per 28°C (50°F)	**In Analog Mode:** ±0.1125% of span. For URV below reference point (500 psi), effect equals: $\pm 0.0125 + 0.10 \left(\dfrac{500 \text{ psi}}{\text{span psi}} \right)$ or $\pm 0.0125 + 0.10 \left(\dfrac{35 \text{ bar}}{\text{span bar}} \right)$ in % span **In Digital Mode:** ±0.10% of span. For URV below reference point (500 psi), effect equals: $\pm 0.10 \left(\dfrac{500 \text{ psi}}{\text{span psi}} \right)$ or $\pm 0.10 \left(\dfrac{35 \text{ bar}}{\text{span bar}} \right)$ in % span
Combined Zero and Span Temperature Effect per 28°C (50°F)	**In Analog Mode:** ±0.175% of span. For URV below reference point (500 psi), effect equals: $\pm 0.075 + 0.10 \left(\dfrac{500 \text{ psi}}{\text{span psi}} \right)$ or $\pm 0.075 + 0.10 \left(\dfrac{35 \text{ bar}}{\text{span bar}} \right)$ in % span **In Digital Mode:** ±0.15% of span. For URV below reference point (500 psi), effect equals: $\pm 0.05 + 0.10 \left(\dfrac{500 \text{ psi}}{\text{span psi}} \right)$ or $\pm 0.05 + 0.10 \left(\dfrac{35 \text{ bar}}{\text{span bar}} \right)$ in % span
Zero Static Pressure Effect per 1000 psi (70 bar)	±0.075% of span. For URV below reference point (500 psi), effect equals: $\pm 0.0125 + 0.0625 \left(\dfrac{500 \text{ psi}}{\text{span psi}} \right)$ or $\pm 0.0125 + 0.0625 \left(\dfrac{35 \text{ bar}}{\text{span bar}} \right)$ in % span
Combined Zero and Span Static Pressure Effect per 1000 psi (70 bar)	±0.15% of span. For URV below reference point (500 psi), effect equals: $\pm 0.0875 + 0.0625 \left(\dfrac{500 \text{ psi}}{\text{span psi}} \right)$ or $\pm 0.0875 + 0.0625 \left(\dfrac{35 \text{ bar}}{\text{span bar}} \right)$ in % 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 - 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% span per volt.
Damping Time Constant	Adjustable from 0 to 32 seconds digital damping.
CE Conformity (Europe)	89/336/EEC, Electromagnetic Compatibility (EMC) Directive.
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) 10/1000 µ sec. 250 Amps (1000 strikes) 500 Amps (400 strikes)

Physical and Approval Bodies

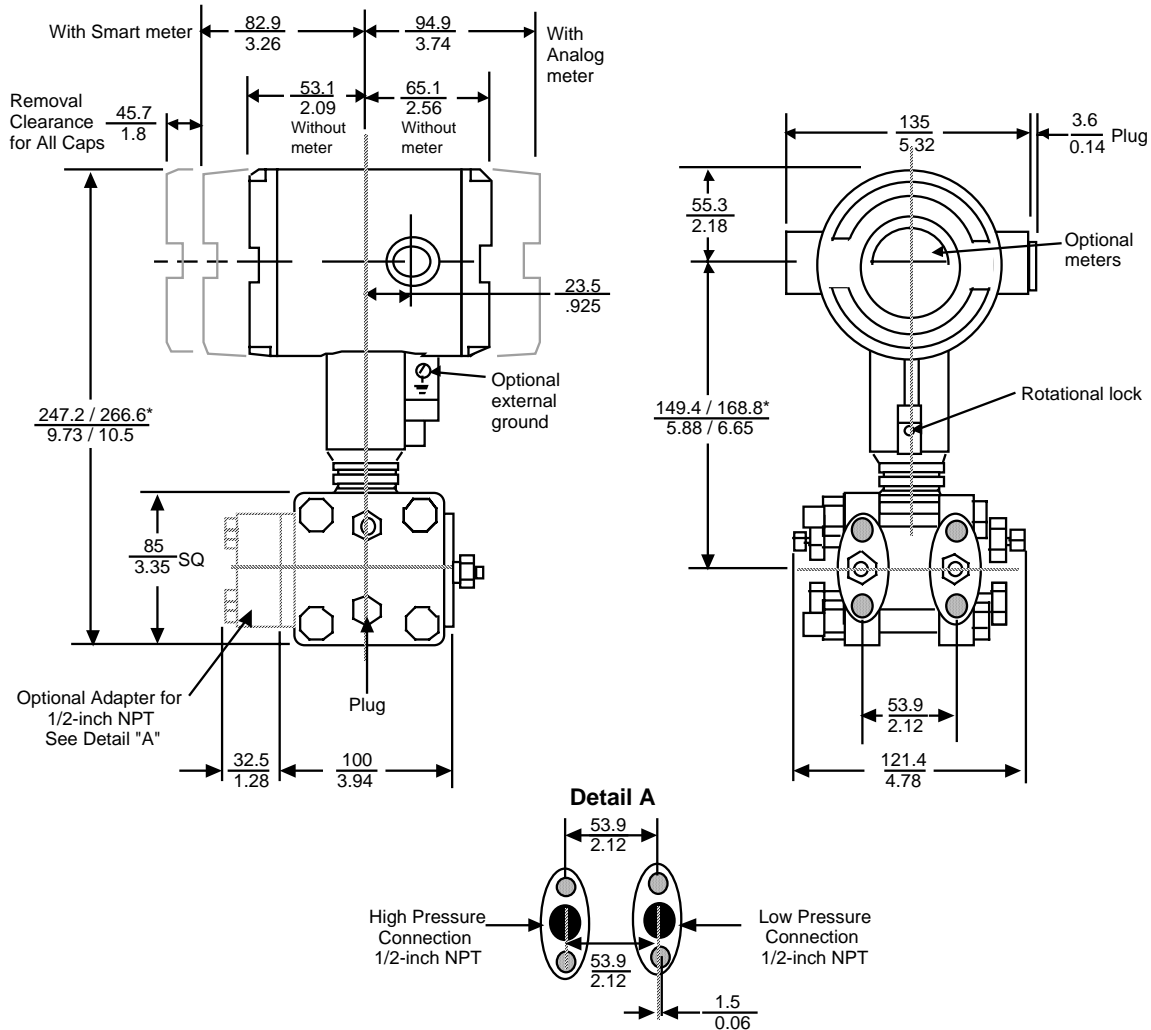| Parameter	Description
Barrier Diaphragms Material STD125, STD110 STD120, STD130 STD170	 316L SS 316L SS, Hastelloy C-276, Monel, Tantalum 316L SS, Hastelloy C-276
Process Head Material STD125, STD110 STD120, STD130 STD170	 316 SS, Carbon Steel (Zinc-plated) 316 SS, Carbon Steel (Zinc-plated), Monel, Hastelloy C-276 316 SS, Carbon Steel (Zinc-plated), Hastelloy C-276
Head Gaskets	Teflon, Viton
Meter Body Bolting	Carbon Steel (Zinc plated, standard) or A286 SS (NACE) bolts and 302/304 SS (NACE) nuts for heads and 316 SS (NACE) bolts for adapters (standard option).
Mounting Bracket	Carbon Steel (Zinc-plated) or Stainless Steel angle bracket or Carbon Steel flat bracket available (standard options).
Fill Fluid	Silicone DC 200 oil or CTFE (Chlorotrifluoroethylene). Note that Model STD110 is only available with silicone fill fluid.
Electronic Housing	Epoxy-Polyester hybrid paint. Low Copper-Aluminum. Meets NEMA 4X (watertight) and NEMA 7 (explosion proof). Stainless steel optional.
Process Connections	1/4-inch NPT; 1/2-inch NPT with adapter (standard option); DIN (standard option).
Wiring	Accepts up to 16 AWG (1.5 mm diameter).
Mounting	Can be mounted in virtually any position using the standard mounting bracket. Bracket is designed to mount on 2-inch (50 mm) vertical or horizontal pipe. See Figure 3.
Dimensions	See Figure 4.
Net Weight	12.5 pounds (5.6 Kg)
Approval Bodies	Approved as explosion proof and intrinsically safe for use in Class I, Division 1, Groups A, B, C, D locations, and nonincendive for Class I, Division 2, Groups A, B, C, D locations. Approved EEx ia IIC T5 and EEx d IIC T6 per CENELEC standards; and Ex N II T5 per BS 6941.

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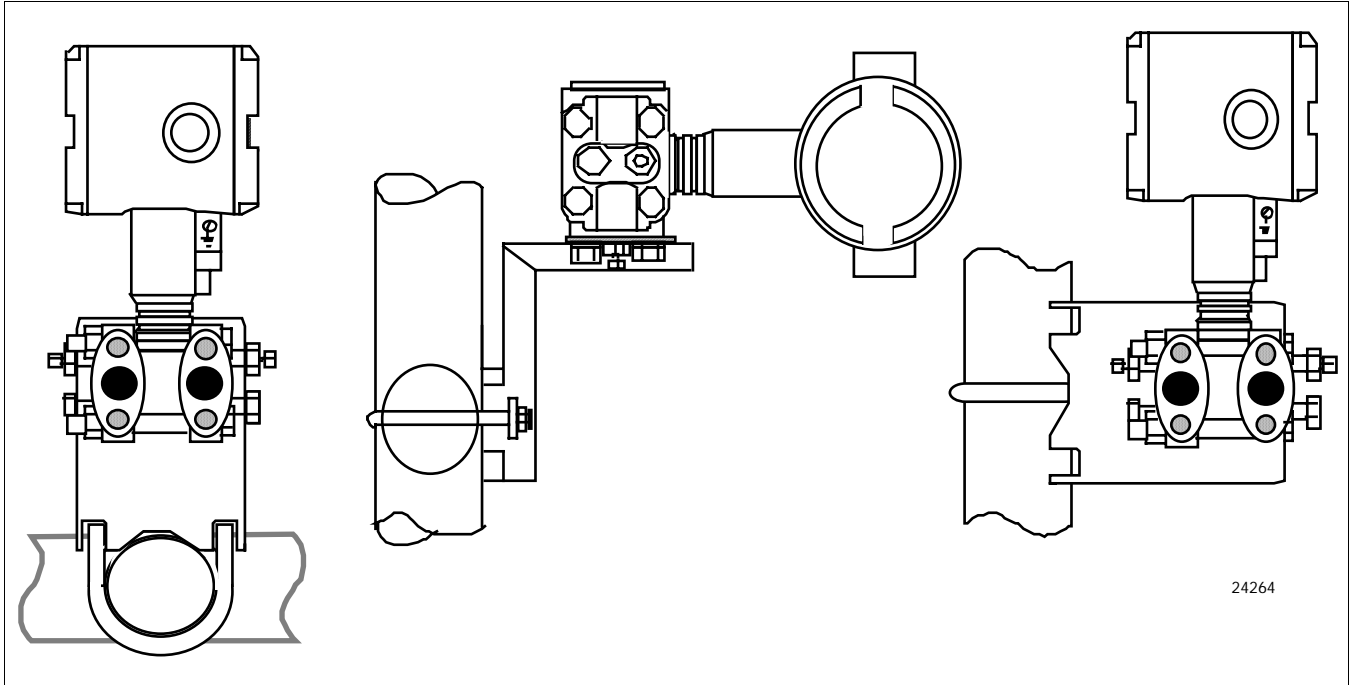
Figure 3 - Examples of typical mounting positions

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

Figure 4 - Typical mounting dimensions for reference

Options	**Ordering Information**

Mounting Bracket

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

Indicating Meter

Two integral meter options are available. An analog meter (option ME) is available with a dual 0 to 10 square root and 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 selected engineering units.

HART Protocol Compatibility (Option HC)

An optional electronics module is available for the Series 100 that provides HART Protocol compatibility. Transmitters with the HART Option are compatible with the AMS System. (Contact your AMS Supplier if an upgrade is required.)

Lightning Protection

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

Tagging (Option TG)

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

Transmitter Configuration (Option TC)

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

Custom Calibration and ID in Memory (Option CC)

The factory can calibrate any range within the scope of the transmitter's range and enter an ID tag of up to eight characters in the transmitter's memory.

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.

Contact your nearest Honeywell sales office, or

In the U.S.:
Honeywell
Industrial Automation & Control
16404 N. Black Canyon Highway
Phoenix, AZ 85023
1-800-288-7491

In Canada:
The Honeywell Centre
155 Gordon Baker Rd.
North York, Ontario
M2H 3N7
1-800-461-0013

In Latin America:
Honeywell Inc.
480 Sawgrass Corporate Parkway,
Suite 200
Sunrise, FL 33325
(954) 845-2600

In Europe:
Honeywell PACE
1, Avenue du Bourget
B-1140 Brussels, Belgium
[32-2] 728-2111

In Asia:
Honeywell Asia Pacific Inc.
Room 3213-25
Sun Hung Kai Centre
No. 30 Harbour Road
Wanchai, Hong Kong
2829-8298

In the Pacific:
Honeywell Limited
5 Thomas Holt Drive
North Ryde NSW 2113
Australia
(61 2) 9353 7000

Or, visit Honeywell on the World Wide Web at:
http://www.honeywell.com

Specifications are subject to change without notice.

Model Selection Guide

34-ST-16-01

Instructions

- Select the desired Key Number. The arrow to the right marks the selection available.
- Make one selection from each Table I and II using the column below the proper arrow.
- Select as many Table III options as desired (if no options are desired, specify 00).
  A dot (•) denotes unrestricted availability. A letter denotes restricted availability.
  Restrictions follow Table IV.

Key Number	I	II	III (Optional)	IV
_ _ _ _ _ _ -	_ _ _ -	_ _ _ _ _ -	_ _ , _ _ +	XXXX

KEY NUMBER

Span	Selection	Availability				
0-1" to 0-400" H$_2$O/0-2.5 to 0-1000 mbar Body Rating: 3000 psi (210 bar)	STD120	↓				
0-5 to 0-100 psi/0-0.35 to 0-7 bar Body Rating: 3000 psi (210 bar)	STD130		↓			
0-100 to 0-3000 psi/0-7 to 0-210 bar Body Rating: 3000 psi (210 bar)	STD170			↓		
0-25" to 0-600" H$_2$O/0-62.2 to 0-1500 mbar Body Rating: 3000 psi (210 bar)	STD125				↓	
0-0.4" to 0-10" H$_2$O/0-1 to 0-25 mbar Body Rating: 50 psi (3.5 bar) Compound Characterized	STD110					↓

TABLE I - METER BODY

	Wetted Process Heads	Vent/Drain Valves ** and Plugs	Barrier Diaphragms						
Material of Construction	Carbon Steel *	316 St. St.	316 LSS	A _ _	•	•	•	•	•
	Carbon Steel *	316 St. St.	Hastelloy C	B _ _	•	•	•		
	Carbon Steel *	316 St. St.	Monel	C _ _	•	•			
	Carbon Steel *	316 St. St.	Tantalum	D _ _	•	•			
	316 St. St.	316 St. St.	316 LSS	E _ _	•	•	•	•	•
	316 St. St.	316 St. St.	Hastelloy C	F _ _	•	•	•		
	316 St. St.	316 St. St.	Monel	G _ _	•	•			
	316 St. St.	316 St. St.	Tantalum	H _ _	•	•			
	Hastelloy C	Hastelloy C	Hastelloy C	J _ _	v	v	v		
	Hastelloy C	Hastelloy C	Tantalum	K _ _	v	v			
	Monel	Monel	Monel	L _ _	v	v			
Fill Fluid	Silicone			_ 1 _	•	•	•	•	•
	CTFE			_ 2 _	•	•	•		
Process Head Configuration	1/4" NPT			_ _ A	•	•	•	•	•
	1/2" NPT with Adapter (on 1/4" NPT Head)			_ _ H	t	t	t	t	t

* Carbon Steel heads are zinc-plated.   Not recommended for water service due to hydrogen migration.
            Use Stainless Steel heads.

** Vent/Drains are Teflon coated for lubricity.

Model Selection Guide, continued

		Availability				
TABLE II	**STD1 Selection**	**20**	**30**	**70**	**25**	**10**
No Selection	00000	•	•	•	•	•

TABLE III - OPTIONS

Option	Selection	20	30	70	25	10	
None	00	•	•	•	•	•	
Adapter Flange - 1/2" NPT St. Steel	S2	c	c	c	c	c	
Adapter Flange - 1/2" NPT Hastelloy-C	T2	c	c	c			b
Adapter Flange - 1/2" NPT Monel	V2	c	c	c			
Modified DIN Process Heads - 316SS	DN	w	w	w	w	w	
316 ST.ST. Electronics Housing with M20 Conduit Connections	SH	n	n	n	n	n	
1/2" NPT to M20 316SS Conduit Adapter (BASEEFA EEx d IIC)	A1	n	n	n	n	n	b
1/2" NPT to 3/4" NPT 316 SS Conduit Adapter	A2	u	u	u	u	u	
Viton Head Gaskets (1/2" adapter gaskets are special)	VT	•	z	z	•	•	
Mounting Bracket - Carbon Steel	MB	•	•	•	•	•	
Mounting Bracket - ST. ST.	SB	•	•	•	•	•	b
Flat Mounting Bracket - Carbon Steel	FB	•	•	•	•	•	
Lightning Protection	LP	•	•	•	•	•	
Analog Meter (0-100 Even 0-10 Square Root)	ME	•	•	•	•	•	b
Smart Meter	SM	•	•	•	•	•	
Custom Calibration and I.D. in Memory	CC	•	•	•	•	•	
Transmitter Configuration - non-Fieldbus	TC	•	•	•	•	•	b
Transmitter Configuration - Fieldbus	FC	a	a	a	a	a	
Write Protection	WP	•	•	•	•	•	
A286SS (NACE) Bolts and 302/304SS (NACE) Nuts for Heads and 316SS (NACE) Bolts for Adapters	CR	•	•	•	•	•	
Stainless Steel Customer Wired-On Tag (4 lines, 28 characters per line, customer supplied information)	TG	•	•	•	•	•	
Stainless Steel Customer Wired-On Tag (blank)	TB	•	•	•	•	•	
Additional Warranty - 1 year	W1	•	•	•	•	•	
Additional Warranty - 2 years	W2	•	•	•	•	•	
Additional Warranty - 3 years	W3	•	•	•	•	•	b
Additional Warranty - 4 years	W4	•	•	•	•	•	
Clean Transmitter for Oxygen or Chlorine Service with Certificate	0X	j	j	j			
Over-Pressure Leak Test with F3392 Certificate	TP	•	•	•	•	•	
Side Vent/Drain (End Vent Drain is standard)	SV	g	g	g	g		
SS Center Vent Drain and Bushing	CV	g	g	g	g	g	b
Blind DIN SS Flanges Mounted with NACE Bolts	B2	d	d	d	d	d	
Calibration Test Report and Certificate of Conformance (F3399)	F1	•	•	•	•	•	b
Certificate of Conformance (F3391)	F3	•	•	•	•	•	
Certificate of Origin (F0195)	F5	•	•	•	•	•	
NACE Certificate (F0198)	F7	o	o	o	o	o	
FOUNDATION Fieldbus Communications	FF	r	r	r	r	r	b
HART Protocol compatible electronics	HC	e	e	e	e	e	
Local Zero & Span	ZS	m	m	m	m		b
Local Zero	LZ	x	x	x	x		

Model Selection Guide, continued

TABLE III - OPTIONS (continued)

Approval Body	Approval Type	Location or Classification	STD1 Selection	20	30	70	25	10	
No hazardous location approvals			9X	•	•	•	•	•	
Factory Mutual	Explosion Proof	Class I, Div. 1, Groups A,B,C,D	1C	•	•	•	•	•	
	Dust Ignition Proof	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							
CSA	Explosion Proof	Class I, Div. 1, Groups B,C,D	2J	•	•	•	•	•	
	Dust Ignition Proof	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							
Zone 2 (Europe)	Self-Declared per 94/9/EC (ATEX4)	Ex II 3 GD T [1] X (1) T4 at Tamb. 93°C, T5 at Tamb. 80$^{\lor}$C, T6 at Tamb. 65$^{\lor}$C	3N	•	•	•	•	•	b
SA (Australia)	Intrinsically Safe	Ex ia IIC T4	4H	a	a	a	a	a	
	Non-Incendive	Ex n IIC T6 (T4 with SM option)							
	Flame Proof	Ex d IIC T6							
LCIE CENELEC	Flame Proof	EEx d IIC T6	3A	•	h	•	•	•	
	Intrinsically Safe	EEx ia IIC T5							
	Flame Proof	EEx d IIC T6	3D	•	h	•	•	•	
	Intrinsically Safe	EEx ia IIC T5	3S		p				

TABLE IV

	Selection	20	30	70	25	10
Factory Identification	XXXX	•	•	•	•	•

Model Selection Guide, continued

RESTRICTIONS

Restriction Letter	Table	Available Only With Selection	Table	Not Available With Selection
a	Pending			
b	Select only one option from this group			
c	I	_ _ H		
d	III	DN		
e	III	1C, 2J, 3N, 3D, 9X		
g			I	J _ _, K _ _, L _ _ includes side vent - no price add
h			I	C _ _, G _ _, L _ _
j	I	_ 2 _		
m			III	ME, FF
n			III	1C, 2J
o	III	CR or B2		
p	I	C _ _, G _ _, L _ _		
r			III	TC, ME
t	III	S2, T2, V2		
u	III	1C, 2J		
v	Includes side vent drain - no price add		III	SV
w	I	E _ A, F _ A, G _ A, H _ A	III	SV
x	III	FF, SM		
z			I	B _ _, D _ _, F _ _, H _ _, J _ _, K _ _

Note: See 13:ST-27 for Published Specials with pricing.

See 13:ST-29 and User's Manual for part numbers.

See 13:ST-OE-9 for OMS Order Entry Information including TC, manuals, certificates, drawings and SPINS.

See 13:ST-OD-1 for tagging, ID, Transmitter Configuration (TC) and calibration including factory default values.

To request a quotation for a non-published "special", fax RFQ to Marketing Applications.

Honeywell