

Model 522

Industrial OEM Pressure Transducers



DESCRIPTION

Setra's Model 522 General Purpose pressure transducer is designed for OEM industrial applications that require exceptional stability and high accuracy.

The Model 522's CVD strain gauge design is resistant to aging and virtually insensitive to thermal transients and pressure cycling. The stability of this technology assures the user of high reliability with less than 0.2% drift per year.

All wetted parts are constructed of corrosion-resistant 17-4 PH stainless steel, which makes this unit ideal for use when corrosive media.

The Model 522 offers 0.25% FS accuracy (optional 0.15% FS), compensated temperature range of -5°F to 180°F (-20°C to 80°C), gauge, absolute, and compound pressure ranges from -14>7 psi up to 6000 psi.

The Model 522's modular design is offered in a wide choice of millivolt, voltage or current outputs over almost any pressure range, and a variety of pressure and electrical connections, enabling this unit to be custom configured for your OEM application.

Depending upon the electrical connection selected, when coupled with the Model 522 enclosure, which is fabricated in 316 SS/17-4 PH SS, this unit is rated for IP65 or IP67 operation.

Principle of Operation:

Using the well proven Wheatstone Bridge Principle, a chemical vapor is deposited in thin layers of silicon and silicon dioxide onto a stainless steel sensor to form a very sensitive and accurate polysilicon strain gauge. The elements of the strain gauge are fused together at the atomic level, assuring the strength and integrity of the bond, which exceeds the adhesives used in common bonded strain gauge pressure sensors. A custom designed ASIC performs signal amplification and temperature compensation. This technology offers the user the option of configurable output and pressure ranges, sets the zero and span tolerance, and ensures interchangeability from unit to unit.

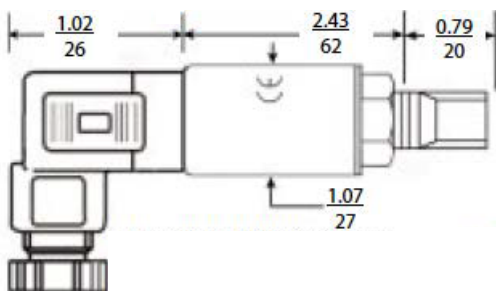
FEATURES

- General Purpose
- Off-Highway Vehicles
- Industrial OEM Equipment
- Hydraulic Systems
- Pumps and Compressors
- Industrial Engines
- Process Applications

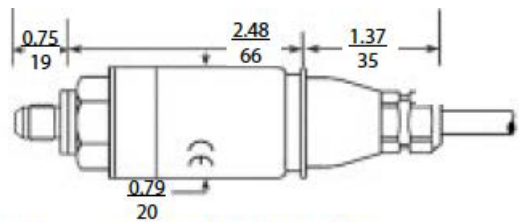
APPLICATIONS

- Superior Stability Avoids Down Time
- ±0.25% FS Accuracy (Optional ±0.15%)
- Millivolt, Voltage, or Current Outputs
- IP65 and IP67 Rated
- Meets CE Conformance Standards

OUTLINE DRAWING



Shown w/4-Pin MINI DIN Connector and Mate and 1/4-18 NPT Male Pressure Fitting



Shown with IP67 Weatherproof Cable and 7/16-20 UNF Male SAE #4 Pressure Fitting

in
mm

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SPECIFICATIONS

Performance Data		Environmental Data		Electrical Data (Voltage)	
Accuracy RSS ¹ (at constant temp)	±0.25% FS ±0.15% FS, Optional	Temperature		Circuit	3-Wire (Exc, Out, Com)
Thermal Effects ²		Operating ³ °F (°C) for Elec. Code E1 for Elec. Code N1 for Elec. Code NA	-40 to +260 (-40 to +125) -5 to +180 (-20 to +80) -5 to +125 (-20 to +50)	Excitation	1.5 VDC Above Span to 35 VDC ³
Compensated Range °F(°C)	-5 to +180 (-20 to +80)	Storage ⁴ °F (°C) for Elec. Code E1 for Elec. Code N1 for Elec. Code NA	-40 to +260 (-40 to +125) -5 to +180 (-20 to +80) -5 to +125 (-20 to +50)	Output ⁶	0 to 5VDC, 0 to 10VDC, 0.5 to 5.5 VDC, 1 to 5 VDC, 1 to 6 VDC, 1 to 11 VDC 0.1 to 5.1 VDC, 0.2 to 10.2 VDC
Accuracy 0.25% FS Zero/Span Shift %FS/100°F (100°C)	0.8 (1.5)	Vibration	70g Peak to Peak Sinusoidal, 5 to 2000 Hz (Random)	Current Composition ⁷	Approx. 6mA @ 7.5 VDC output
Accuracy ±0.15% FS Zero/Span Shift %FS/100°F (100°C)	0.5 (1.0)	Acceleration	100g Steady Acceleration in any Direction 0.32% F	Electrical Data (Current)	
Long-Term Stability	0.2% FS/year	Shock	20g, 11 ms, per MIL-STD-810E Method 516.4 Procedure	Circuit	2-wire
Proof Pressure	2 x FS (1.5 x FS for 400 bar, >= 5000 Psi)	Pressure Media		Output ⁸	4 to 20 mA
Burst Pressure	> 35 x FS <= 100 Psi (6 Bar) > 20 x FS <= 1000 Psi (60 Bar) > 5 x FS <= 6000 Psi (400 Bar)	Liquids or gases compatible with 17-4 PH Stainless Steel ⁴		Loop Voltage Supply	24 VDC, (7-35 VDC) ⁹
Response Time	0.5 ms	¹ RSS of Non-Linearity, Non-Repeatability and Hysteresis. ² Units of calibrated at normal 70°F. Maximum thermal error computed from this datum. ³ Operating/Storage temperature limits of the corrector only. ⁴ Note: Hydrogen not recommended for use with 17-4 PH Stainless Steel. ⁵ Temperatures >100°C/212°F supply is limited to 24 VDC. ⁶ Span and zero output is factory set to <1.0% of FS. ⁷ Minimum Load Resistance: (FS output/2) Kohms. ⁸ Span and zero output factory set to within ±0.16 mA. ⁹ Temperatures >100°C/212°F supply is limited to 24 VDC. ¹⁰ Span and zero output is factory set 1.0% of FS.		Maximum Loop Resistance	(Vs-7) x 50 Ohms
Physical Description				Electrical Data (Millivolt)	
Case Ratings	R316SS, 17-4 PHSS IP65 for Elec Codes E1, N1 IP67 for Elec Code NA (3ft Depth Max.)			Circuit	
Wetted Parts	17-4 PH Stainless Steel	Excitation		10VDC (15 VDC Max.) Regulated	
Electrical Connection	See Below	Output ¹⁰		100mV (10mV/V)	
Pressure Fittings	See Ordering Information Below	Bridge Resistance		2600-6000 Ohms	

ORDERING INFORMATION

Model	Range		Pressure		Pressure Fitting		Output		Elec. Term.		Accuracy		Options			
5221 = 522	015P	15 PSI	001B	1 BAR	G	Gauge	1M	1/8-27 NPT Male	BP	100 mV	E1	4-Pin MINI Din Conn. w/o Mate	F	0.5% FS	A	ATEX Intrinsic Safe ³
	030P	30 PSI	1R6B	1.6 BAR	A	Absolute ¹	2M	1/4-18 NPT Male	11	4-20 mA	N1	NEMA 4 Cable ²	S	0.15% FS, Opt		
	060P	60 PSI	2RSB	2.5 BAR	C	Compound ¹	SM	1/4-NPT Male w/ Snubber	28	1-6 VDC	NA	IP67 Weatherproof Cable Gland				
	100P	100 PSI	004B	4 BAR			2F	1/4-18 NPT Female	2R	1-11 VDC						
	150P	150 PSI	006B	6 BAR			4M	1/2-14 NPT Male	27	1-5 VDC						
	200P	200 PSI	010B	10 BAR			J7	7/16-20 UNF Male SAE#4 (J1926-2)	24	0.5-5.5 VDC						
	300P	300 PSI	016B	16 BAR			J9	9/16-18 UNF Male SAE #6 (J1926-2)	2B	0-5 VDC						
	500P	500 PSI	025B	25 BAR					2C	0-10 VDC						
	600P	600 PSI	040B	40 BAR					29	0.2-10.2 VDC						
	10CP	1000 PSI	060B	60 BAR					22	0.1-5.1 VDC						
	15CP	1500 PSI	100B	100 BAR												
	20CP	2000 PSI	160B	160 BAR												
	30CP	3000 PSI	250B	250 BAR												
	40CP	4000 PSI	400B	400 BAR												
	50CP	5000 PSI	600B	600 BAR												
	60CP	6000 PSI														
	000P	14.7 TO 0 PSI														
	015P	14.7 TO 15 PSI	135P	14.7 TO 135 PSI												
	045P	14.7 TO 45 PSI	185P	14.7 TO 185 PSI												
	85P	14.7 TO 85 PSI	285P	14.7 TO 285 PSI												

¹Compound and absolute ranges available through 300 psi only.
²Available w/ intrinsic safe option.
³ETL approved for Class 1, Div. 1, Groups C & D, hazardous areas.

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