

Model 522

Industrial OEM Pressure Transducers

Gauge, Absolute, and Compound Pressure



Setra System'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 exposure 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 with 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 calibration. 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.

Applications

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

Benefits

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

*When it comes to a product to rely on - choose the Model 522.
When it comes to a company to trust - choose Setra.*



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<http://www.setra.com>

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800-257-3872

Model 522 Specifications

Performance Data

Accuracy RSS [*] (at constant temp)	±0.25% Full Scale ±0.15% Full Scale, Optional
Thermal Effects^{**}	
Compensated Range °F (°C)	-5 to +180 (-20 to + 80)
Accuracy 0.25% Full Scale	
Zero Shift %FS/100°F (100°C)	0.8 (1.5)
Span Shift %FS/100°F (100°C)	0.8 (1.5)
Accuracy ±0.15% Full Scale	
Zero Shift %FS/100°F (100°C)	0.5 (1.0)
Span Shift %FS/100°F (100°C)	0.5 (1.0)
Long-Term Stability	0.2% FS/year
Proof Pressure	2 x FS (1.5 x FS for 400 Bar, >=5000 PSI)
Burst Pressure	>35 x FS <= 100 Psi (6 Bar) >20 X FS <= 1000 Psi (60 Bar) >5 X FS <= 6000 Psi (400 Bar)
Response Time	0.5 ms

*RSS of Non-Linearity, Non-Repeatability and Hysteresis.
**Units calibrated at nominal 70°F. Maximum thermal error computed from this datum.

Pressure Media

Liquids or gases compatible with 17-4 PH Stainless Steel
*Note: Hydrogen not recommended for use with 17-4 PH Stainless Steel

Specification subject to change without notice.

Environmental Data

Temperature	
Operating °F (°C)	-40 to +260 (-40 to +125)
for Elec. Code E1	-5 to +180 (-20 to +80)
for Elec Code N1	-5 to +125 (-20 to +50)
Storage °F (°C)	-40 to +260 (-40 to +125)
for Elec. Code E1	-5 to +180 (-20 to +80)
for Elec Code N1	-5 to +125 (-20 to +50)
Vibration	70g Peak to Peak Sinusoidal, 5 to 2000 Hz (Random)
Acceleration	100g Steady Acceleration in any Direction 0.32% F
Shock	20g, 11 ms, per MIL-STD-810E Method 516.4 Procedure

*Operating/Storage temperature limits of the connector only.

Electrical Data (Millivolt)

Circuit	4 -Wire (+Exc. -Out, +Out, -Exc)
Excitation	10VDC (15VDC Max.) Regulated
Output [*]	100 mV (10mV/V)
Bridge Resistance	2600-6000 Ohms

*Zero output is factory set to 1.0% of Full Scale
*Span output is factory set 1.0% of Full Scale

Electrical Data (Voltage)

Circuit	3 -Wire (Exc, Out, Com)
Excitation	1.5VDC Above Span to 35VDC **
Output [*]	0 to 5VDC, 0 to 10VDC, 0.5 to 5.5VDC, 1 to 5VDC, 1 to 6VDC, 1 to 11VDC, 0.1 to 5.1VDC, 0.2 to 10.2VDC
Current Consumption***	Approx. 6 mA @ 7.5VDC output

*Zero output is factory set to <1.0% of Full Scale
*Span output is factory set <1.0% of Full Scale
**Temperatures >100°C/212°F supply is limited to 24VDC
*** Minimum Load Resistance: (FS output/2) Kohms

Electrical Data (Current)

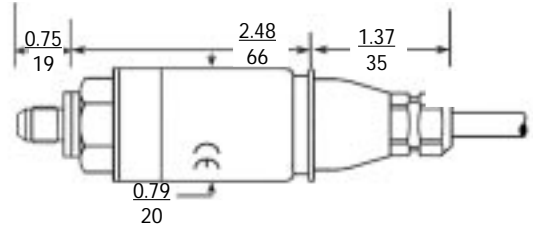
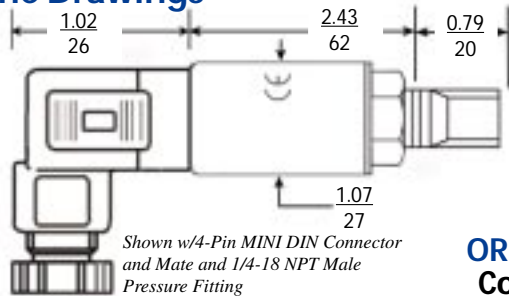
Circuit	2-Wire
Output [*]	4 to 20 mA
Loop Supply Voltage	24VDC, (7-35 VDC)**
Maximum Loop Resistance	(Vs-7) x 50 Ohms

*Zero output factory set to within ±0.16 mA.
*Span output factory set to within ±0.16 mA.
**Temperatures >100°C/212°F supply is limited to 24VDC.

Physical Description

Case	316 SS, 17-4 PH SS
Ratings	IP65 for Elec Codes E1, N1 IP67 for Elec Code NA (3ft Depth Max.)
Wetted Parts	17-4 PH Stainless Steel
Electrical Connection	See Below
Pressure Fitting	See Ordering Information Below
Weight	3.5oz (100g)

Outline Drawings



ORDERING INFORMATION

Code all blocks in table.

Example: Part No 5221030PG1M11E1F - For a Model 522 Pressure Transducer, 30 PSI, Gauge Pressure, 1/8-27 NPT Male Pressure Fitting, 4-20 mA, 4-Pin Din Connector, 0.25% Accuracy

5	2	2	1								
Model	Range		Pressure	Pressure Fitting	Output	Elec. Termination	Accuracy	Option			
5221 = 522	015P = 15 PSI	001B = 1 BAR	G = Gauge	1M = 1/8-27 NPT Male	BP = 100 mV	E1 = 4-Pin MINI DIN Connector w/Mate	F = 0.25% FS	A = Intrinsic Safe (ETL approved for Class 1, Div. 1, hazardous areas.)			
	030P = 30 PSI	0R6B = 1.6 BAR	A = Absolute*	2M = 1/4-18 NPT Male	11 = 4-20 mA	N1 = NEMA 4 Cable*	S = 0.15% FS, Optional				
	060P = 60 PSI	2R5B = 2.5 BAR	C = Compound*	SM = 1/4-NPT Male w/ Snubber	28 = 1-6 VDC	NA = IP67 Weatherproof Cable Gland					
	100P = 100 PSI	004B = 4 BAR	<i>*Compound and absolute ranges available through 300psi only.</i>			2R = 1-11 VDC					
	150P = 150 PSI	006B = 6 BAR		2F = 1/4-18 NPT Female	27 = 1-5 VDC						
	200P = 200 PSI	010B = 10 BAR		4M = 1/2-14 NPT Male	24 = 0.5-5.5 VDC						
	300P = 300 PSI	016B = 16 BAR		J7 = 7/16 -20 UNF Male SAE #4 (J1926-2)	2B = 0-5 VDC						
	500P = 500 PSI	025B = 25 BAR		J9 = 9/16-18 UNF Male SAE #6 (J1926-2)	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										
	045P = -14.7 to 45 PSI										
	085P = -14.7 to 85 PSI										
	135P = -14.7 to 135 PSI										
	185P = -14.7 to 185 PSI										
	285P = -14.7 to 285 PSI										

Please contact factory for configurations not shown.