

Model 522

Industrial OEM Pressure Transducers

Gauge, Vacuum, Absolute, Compound PSI and BAR Ranges



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.

The 522 offers enclosures fabricated in 316 SS/ 17-4 PH SS, rated for NEMA 4/IP65 operation, and when coupled with the 6/IP67 rated weatherproof cable gland, the unit is fully protected against the ingress of dust, or water resulting from jet spray or immersion, that could affect performance.

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), operating temperatures as low as -22°F to 260°F (-40°C to 125°C), and gauge, absolute, vacuum or 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

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. Using a custom designed ASIC to perform amplification and temperature calibration, each parameter can be fine tuned for optimal performance. This design 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
- NEMA 4/IP65 and NEMA 6/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>

setra
800-257-3872

Model 522 Specifications

Performance Data

Accuracy RSS* (at constant temp) $\pm 0.25\%$ FS
 $\pm 0.15\%$ FS, Optional

Thermal Effects**

Compensated Range °F (°C) -5 to +180 (-20 to +80)

Zero Shift %FS/100°F (100°C) 0.8 (1.5)

Span Shift %FS/100°F (100°C) 0.8 (1.5)

Optional:

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 $> 35 \times \text{FS} \leq 100$ Psi (6 Bar)
 $> 20 \times \text{FS} \leq 1000$ Psi (60 Bar)
 $> 5 \times \text{FS} \leq 6000$ 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.

Physical Description

Case 316 SS, 17-4 PH SS
 Ratings IP65 for Elec Codes E1, N1
 IP67 for Elec Code N2

Wetted Parts 17-4 PH Stainless Steel

Electrical Connection See Below

Pressure Fitting See Ordering Information Below

Weight 3.5oz (100g)

Environmental Data

Temperature

Operating* °F (°C)

for Elec. Code E1 -22 to +260 (-40 to +125)

for Elec Code N1 -5 to +180 (-20 to +80)

for Elec Code N2 -5 to +125 (-20 to +50)

Storage °F (°C)

for Elec. Code E1 -22 to +60 (-40 to +125)

for Elec Code N1 -5 to +180 (-20 to +80)

for Elec Code N2 -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 temperature limits of the connector only.

Pressure media temperatures may be considerably higher or lower.

Electrical Data (Millivolt)

Circuit 4-Wire (+Exc, -Out, +Out, -Exc)

Excitation 10 VDC (15 VDC Max.) Regulated

Output* 100 mV (10mV/V)

Current Consumption (FS output/2) Kohms Approx. 6 mA @
 7.5 VDC output

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 1.5 VDC Above Span to 35 VDC **

Output* 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
 (FS output/2) Kohms Approx. 6
 mA @ 7.5 VDC output

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

*Span output is factory set 1.0% of Full Scale

**Temperatures $> 100^\circ\text{C}/212^\circ\text{F}$ supply is limited to 24 VDC

Electrical Data (Current)

Circuit 2-Wire

Output* 4 to 20 mA

Loop Supply Voltage 24 VDC, (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 $> 100^\circ\text{C}/212^\circ\text{F}$ supply is limited to 24 VDC

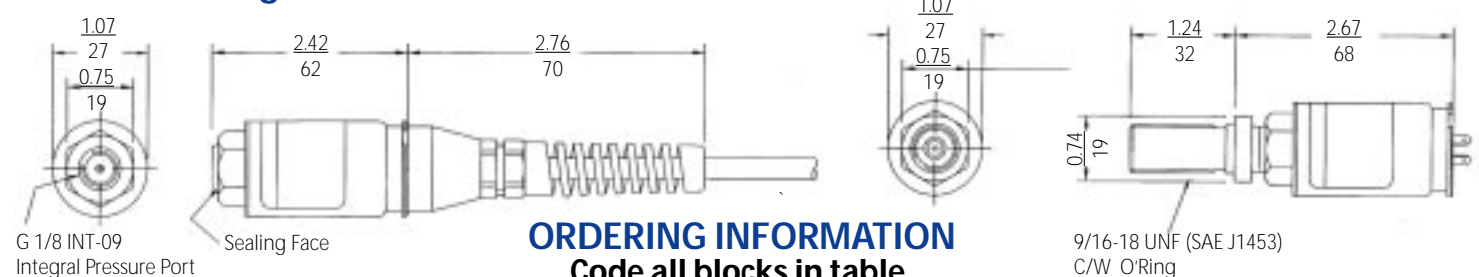
Pressure Media

Liquids or gases compatible with 17-4 PH Stainless Steel

*Note: Hydrogen not recommended for use with 17-4 PH Stainless Steel

Specifications are subject to change without notice.

Outline Drawings



ORDERING INFORMATION

Code all blocks in table.

Example: Part No 5221030PGG1M11E1F- 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

Model	Range	Pressure	Pressure Fitting	Output	Elec. Termination	Accuracy	Option
5221 = 522	015P = 15 PSI 030P = 30 PSI 060P = 60 PSI 100P = 100 PSI 150P = 150 PSI 200P = 200 PSI 300P = 300 PSI 500P = 500 PSI 600P = 600 PSI 10CP = 1000 PSI 15CP = 1500 PSI 20CP = 2000 PSI 30CP = 3000 PSI 40CP = 4000 PSI 50CP = 5000 PSI 60CP = 6000 PSI	001B = 1 BAR 0R6B = 1.6 BAR 2R5B = 2.5 BAR 004B = 4 BAR 006B = 6 BAR 010B = 10 BAR 016B = 16 BAR 025B = 25 BAR 040B = 40 BAR 060B = 60 BAR 100B = 100 BAR 160B = 160 BAR 250B = 250 BAR 400B = 400 BAR 600B = 600 BAR	G = Gauge A = Absolute* C = Compound* 1M = 1/8-27 NPT Male 2M = 1/4-18 NPT Male SM = 1/4-NPT Male w/ Snubber 2F = 1/4-NPT Female 4M = 1/2-14 NPT Male J7 = 7/16-20 Male (SAE #4, J1926-2) J9 = 9/16-18 Male (SAE #6, J1926-2)	BP = 100 mV 11 = 4-20 mA 28 = 1-6 VDC 2R = 1-11 VDC 27 = 1-5 VDC 24 = 0.5-5.5 VDC 2B = 0-5 VDC 2C = 0-10 VDC 29 = 0.2-10.2 VDC 22 = 0.1-5.1 VDC	E1 = 4-Pin DIN Connector N1 = Cable NEMA 4 N2 = Cable Gland Metal IP67-3ft Depth Max.	F = 0.25% FS S = 0.15% FS, Optional	A = Intrinsic Safe (ETL approved for Class 1, Div. 1, Groups C & D, hazardous areas.)

*Compound and absolute ranges available through 300psi only.

Please contact factory for
 configurations not shown.