Model 512

Industrial OEM Pressure Transducer

Gauge and Compound Pressure

Setra System's Model 512 OEM pressure transducer is designed to withstand pressure spikes, shock, and vibration caused by the harsh physical and environmental conditions of industrial applications.

The Model 512'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.

This units exceptional proof pressure specification is 4 x full scale with less than a 1.0% zero shift.

The Model 512 offers 0.5% FS accuracy, compensated temperature range of -5°F to +180°F (-20°C to 80°C), and gauge or compound pressure ranges from -14.7 psi up to 6000 psi.

The Model 512's modular design is offered in a wide choice of 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 512 enclosure, which is fabricated in 316 SS/17-4 PH SS, this unit is rated for IP65 or IP67 operation.

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

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.

Applications

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

Benefits

- Superior Stability Avoids Down Time
- Insensitive to Pressure Spikes
- ±0.5% FS Accuracy
- IP65 and IP67 Rated
- High Shock Resistance
- Meets CE Conformance Standards

When it comes to a product to rely on - choose the Model 512. When it comes to a company to trust - choose Setra.

ISO 9001: 2000 Certified

Visit Setra On-line:
http://www.setra.com

setra

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Model 512 Specifications

Performance Data

Accuracy RSS* (at constant temp)	±0.5% Full Scale
Thermal Effects**	
Compensated Range ℉ (℃)	-5 to +180 (-20 to +80)
Zero Shift %FS/100℉ (100℃)	1.0 (2.0)
Span Shift %FS/100℉ (100℃)	1.0 (2.0)
Response Time	0.5 ms
Long-Term Stability	0.2% FS/year
Proof Pressure	4 x FS (<1% Zero Shift)
Burst Pressure	>35 x FS <= 60 Psi (4 Bar)
	>20 X FS <=600 Psi (40 Bar)
	>5 X FS <= 6000 Psi (400 Bar)

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

Physical Description

Case	316 Stainless Steel, 17-4 Stainless Steel
Ratings	IP65 for Elec Codes E1 and N1 IP67 for Elec Code NA
Wetted Parts	17-4 PH Stainless Steel

Physical Description (Cont'd)

Electrical Connection	4-Pin MINI DIN Connector IP67 Weatherproof Cable Gland **(3ft Depth, Max.)** IP65 Cable
Pressure Fitting	See Ordering Information Below
Weight	3.5oz (100g)

Environmental Data

Temperature	
Operating* ℉ (℃)	
for/ Elec Code E1	-40 to +260 (-40 to +125)
for/ Elec. Code N1	-5 to +180 (-20 to +80)
for/ Elec. Code NA	-5 to +125 (-20 to +50)
Storage ℉ (℃)	
for/ Elec Code E1	-40 to +260 (-40 to +125)
for/ Elec. Code N1	-5 to +180 (-20 to +80)
for/ Elec. Code NA	-5 to +125 (-20 to +50)
Vibration	70g Peak to Peak Sinusoidal, 5 to 5000 Hz (Random Vibration: 20 to 200 Hz~ 20g Peak per MIL STD-810E Method 514.4)
Shock	20g, 11ms, per MIL-STD-810E Method 516.4 Procedure 1

*Operating/Storage temperature limits of the connector only.

Electrical Data (Voltage)

Circuit	3 -Wire (Exc, Out, Com)
Excitation	1.5 VDC Above Span to 35 VDC @ 6mA**
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

*Zero output is factory set to <1.0% of Full Scale.
*Span output is factory set to <1.0% of Full Scale.
**Temperatures >100℃/212℉ 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

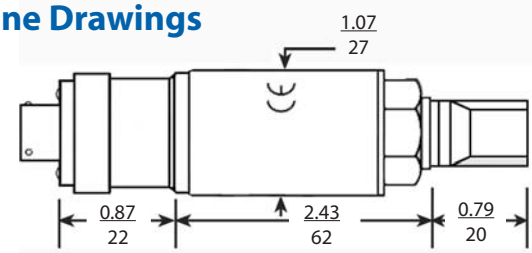
*Zero output factory set to within ±0.16 mA.
*Span output factory set to within ±0.16 mA.
**Temperatures >100℃/212℉ supply is limited to 24 VDC.

Pressure Media

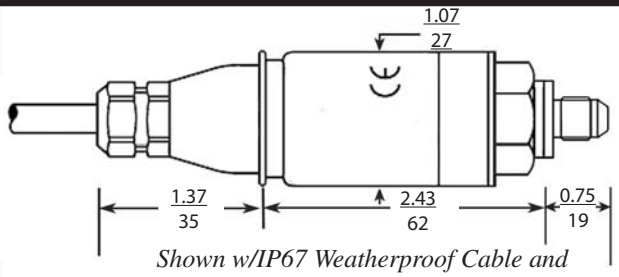
Liquids or gases compatible with 17-4 PH Stainless Steel.*
*Note: Hydrogen not recommended for use with 17-4 PH Stainless Steel.

Specifications subject to change without notice.

Outline Drawings



Shown w/10-4 Bayonet Connector and 1/4-18 NPT Pressure



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

in
mm

ORDERING INFORMATION

Code all blocks in table.

Example: Part No 5121030PG1M11E1H - For a Model 512 Pressure Transducer, 30 PSI, Gauge Pressure, 1/8-27 NPT Male Pressure Fitting, 4-20 mA Output, 4-Pin Mini Din Connector, 0.5% Accuracy

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Model		**Range**		**Pressure**		**Pressure Fitting**		**Output**		**Elec. Termination**		**Accuracy**		**Option**

Model
512 = 5121

Range

015P = 15 PSI	**001B** = 1 BAR
030P = 30 PSI	**0R6B** = 1.6 BAR
060P = 60 PSI	**2R5B** = 2.5 BAR
100P = 100 PSI	**004B** = 4 BAR
150P = 150 PSI	**006B** = 6 BAR
200P = 200 PSI	**010B** = 10 BAR
300P = 300 PSI	**016B** = 16 BAR
500P = 500 PSI	**025B** = 25 BAR
600P = 600 PSI	**040B** = 40 BAR
10CP = 1000 PSI	**060B** = 60 BAR
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	
60CP = 6000 PSI	
000P = -14.7 to 0 PSI	
015P = -14.7 to 15 PSI	
045P = -14.7 to 45 PSIG	
135P = -14.7 to 135 PSI	
185P = -14.7 to 185 PSI	
285P = -14.7 to 285 PSI	

Pressure
G = Gauge
C = Compound

Pressure Fitting
1M = 1/8-27 NPT Male
2M = 1/4-18 NPT Male
SM = 1/4-NPT Male w/ Snubber
2F = 1/4-18 NPT Female
4M = 1/2-14 NPT Male
J7 = 7/16 -20 UNF Male SAE #4 (J1926-2)
J9 = 9/16-18 UNF Male SAE #6 (J1926-2)

Output
11 = 4-20mA
2B = 0-5 VDC
2C = 0 -10 VDC
24 = 0.5 - 5.5 VDC
27 = 1 - 5 VDC
28 = 1 - 6 VDC
2R = 1-11 VDC

Elec. Termination
E1 = 4-Pin MINI DIN Connector w/o Mate
NA = IP67 Weatherproof Cable Gland
N1 = IP65 Cable

Accuracy
H = 0.5% FS

Option
A = Intrinsic Safe*

*Note: Intrinsically safe transducers are available with amplified outputs only. (ETL., entity approved for Class 1 Division 1, Groups C & D, hazardous areas; Class 1 Divisions 1 and 2, Groups C & D for electrical termination code E1 and ?.

Please contact factory for configurations not shown.

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