Model 512
Industrial OEM Pressure Transducer

DESCRIPTION

Setra'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.

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

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.

FEATURES

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

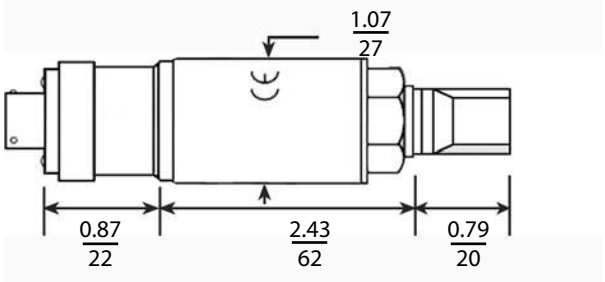
APPLICATIONS

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

Principle of Operation:

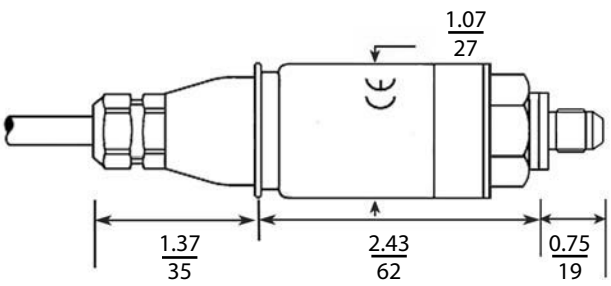
Using the well proven Wheatstone Bridge Principle, a chemical vapor is deposited in thin layers or silicon and silicon dioxide onto a stainless steel sensor to form a very sensitive and accurate polysilicon strain gauge. The elements of the strain gauge are fused together at the atomic level, assuring 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.

OUTLINE DRAWING



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

in
mm



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

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SPECIFICATIONS

Performance Data	
Accuracy RSS[1] (at constant temp)	±0.5% FS
Thermal Effect[2]	
Compensated Range F°(C°)	-5 to +180 (-20 to +80)
Zero/Span Shift %FS/100°F (%FS/50°C)	1.0 (2.0)
Response Time	0.5 milliseconds
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)

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

Environmental Data	
Operating and Storage Temperature[3] °F°C	
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 Peal per MIL STD-810E Method 514.4)
Shock	20g, 11ms per MIL-STD-81-E Method 516.4 Procedure 1

[1] RSS of Non-Linearity, Non-Repeatability and Hysteresis.
[2] Units calibrated at nominal 70°F. Maximum thermal error is computed from this datum.
[3] Operating/Storage temperature limits of the connector only.
[4] Temperatures >100°C/212°C is limited to 24 VDC.
[5] Zero/Span output factory set to <1.0% Full Scale
[6] Zero/Span output factory set to within ±0.16 mA.
[7] Temperatures >100°C/212°C is limited to 24 VDC.
[8] Note: Hydrogen not recommended for use with 17-4 PH Stainless Steel

Electrical Data (Voltage)	
Circuit	3-Wire (Exc, Out, Com)
Excitation	1.5 VDC Above Span to 35 VDC @ 6mA[4]
Output[5]	0 to 5VDC, 0 to 10VDC, 0.5 to 5.5 VDC, 1 to 5 VDC, 1 to 6 VDC, 1 to 11 VDC

Electrical Data (Current)	
Circuit	2-Wire
Output[6]	4 to 20 mA
Loop Voltage Supply	24 VDC, (7-35 VDC)[7]
Maximum Loop Resistance	(Vs-7) x 50 ohms

Pressure Media
Liquids or gases compatible with 17-4 PH Stainless Steel[8]

ORDERING INFORMATION

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Model	Range				Pressure		Pressure Fitting		Output		Elec. Term.		Accuracy		Options	
5121 = 512	015P	15 PSI	001B	1 BAR	G	Gauge	1M	1/8-27 NPT Male	11	4-20 mA	E1	4-Pin MINI Din Conn. w/o Mate	H	0.5% FS	B	ATEX Intrinsic Safe
	030P	30 PSI	0R6B	1.6 BAR	C	Compound	2M	1/4-18 NPT Male	2B	0-5 VDC	NA	IP67 Weather-proof Cable Gland				
	060P	60 PSI	2R5B	2.5 BAR			SM	1/4-NPT Male w/ Snubber	2C	0-10 VDC	N1	IP65 Cable				
	100P	100 PSI	004B	4 BAR			2F	1/4-18 NPT Female	24	0.5-5.5 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)	28	1-6 VDC						
	300P	300 PSI	016B	16 BAR			J9	9/16-18 UNF Male SAE #6 (J1926-2)	2R	1-11 VDC						
	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	135P	14.7 TO 135 PSI												
	015P	14.7 TO 15 PSI	185P	14.7 TO 185 PSI												
	045P	14.7 TO 45 PSI	285P	14.7 TO 285 PSI												

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