

Model 530

High Temperature Pressure Transducers



Setra System's Model 530 pressure transducers are designed to withstand the extreme environments of high temperature, high pressure applications.

Utilizing thin film technology, the Model 530 is operable in temperature extremes as low as -65°F up to +248°F, and is designed for high pressure measurements up to 10,000 psi.

The thin film pressure sensor contains no fragile bonding wires that can erode under extreme conditions, making the Model 530 virtually insensitive to high shock and vibration. The stability of this technology assures the user of high reliability, with less than 0.05% drift per year.

All wetted parts are constructed of 17-4 PH and 15-5 stainless steel, which makes this unit virtually corrosion resistant.

The Model 530 offer 0.15% full scale accuracy and can be configured with voltage, current, or ratiometric output, choice of pressure and electrical connections, and a NEMA 4/IP65 or NEMA 6/IP67 weatherproof enclosure..

Principle of Operation

Thin Film Strain Gauge Pressure Sensors

Using the well proven Wheatstone Bridge principle, molecular layers are sputtered onto a 17-4 PH stainless steel diaphragm and the circuit is etched to provide excellent resistor definition and uniformity. Sputtered thin film technology allows the design of simple, highly accurate and compact strain gauges deposited onto the back of the sensing diaphragm which is in direct contact with the media. This method virtually eliminates drift, while offering enhanced sensitivity.

Pressure Ranges

PSIG Ranges

Gauge Pressure	Proof Pressure	Burst Pressure
0-500	1000	3500
0-1000	2000	7000
0-2000	4000	14000
0-3000	6000	21000
0-6000	12,000	42,000
0-7500	15,000	52,500
0-9000	15,000	63,000
0-10,000	15,000	40,000

BAR Ranges

Gauge Pressure	Proof Pressure	Burst Pressure
40	80	280
60	120	420
100	200	700
160	320	1120
250	500	1750
400	800	2100
600	1200	4200
700	1400	4900

Applications

- Off-Highway
- Natural Gas Equipment
- Power Plants
- Heating, Ventilating & Air-Conditioning
- Refrigeration
- Robotics

Benefits

- Superior Stability
Avoids Down Time
- $\pm 0.15\%$ FS Accuracy
- NEMA 4/IP65 and NEMA 6/IP67 Environmental Protection
- Wide Operating Temperature Range:
-65°F up to +248°F
- High Shock Resistance
- Meets $\llcorner$ Conformance Standards

*When it comes to a product to rely on - choose the Model 530 .
When it comes to a company to trust - choose Setra.*



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

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800-257-3872

Model 530 Specifications

Pressure media temperatures may be considerably higher or lower.

Performance Data

Accuracy RSS* (at constant temp)	±0.15% FS
Non-Repeatability	0.03% FS
Thermal Effects**	
Compensated Range °F (°C)	-4 to +176 (-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)
Response Time	0.5 ms
Long-Term Stability	0.05% FS/1 year

*RSS of Non-Linearity, Non-Repeatability and Hysteresis.

**Units calibrated at nominal 70°F. Maximum thermal error computed from this datum.

Environmental Data

Temperature	
Operating* °F (°C)	
For Elec Code U1	-4 to +148 (-20 to +100)
For Elec Codes E2	-67 to +248 (-55 to +120)
Storage °F (°C)	
For Elec Code U1	-4 to +148 (-20 to +100)
For Elec Codes E2	-67 to +248 (-55 to +120)
Vibration	
	70 Peak to Peak Sinusoidal, 5 to 5000 Hz
Shock	
	IEL 68-2-32 Procedure 1

Environmental Protection

Enclosure, Cable, & DIN Conn NEMA 4/IP65,

*Operating temperature limits of the electrical connectors only.

Physical Description

Case	Stainless Steel
Wetted Parts	17-4 PH Stainless Steel
Electrical Connection	DIN43650A
	Polurethane Shielded Cable 24 AWG
Pressure Fitting	1/4" -NPT Male 22 mm Hex
Weight	3.9oz (110g)

Electrical Data (Voltage)

Circuit	3-Wire (Exc, Out, Com)
Excitation	1.5VDC Above Span to 35 VDC @ 6mA**
Output*	0 to 5VDC, 0 to 10VDC, 0.1 to 5.1 VDC, 0.5 to 5.5 VDC, 1 to 5 VDC, 1 to 6 VDC, , 0.2 to 10.2 VDC*

*Zero output is factory set to 0.5% of Full Scale

*Span output is factory set 1.0% of Full Scale.

**Temperatures > 100°C/212°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°C/212°F supply is limited to 24 VDC	

Electrical Data (Ratiometric)

Circuit	3-wire
Output*	0.5VDC to 4.5VDC @ 5 VDC supply
Output Supply Voltage	5 VDC regulated (4.75 VDC - 7 VDC)

*Zero output factory set to 0.5% of Full Scale

*Span output factory set to 1.0% of Full Scale

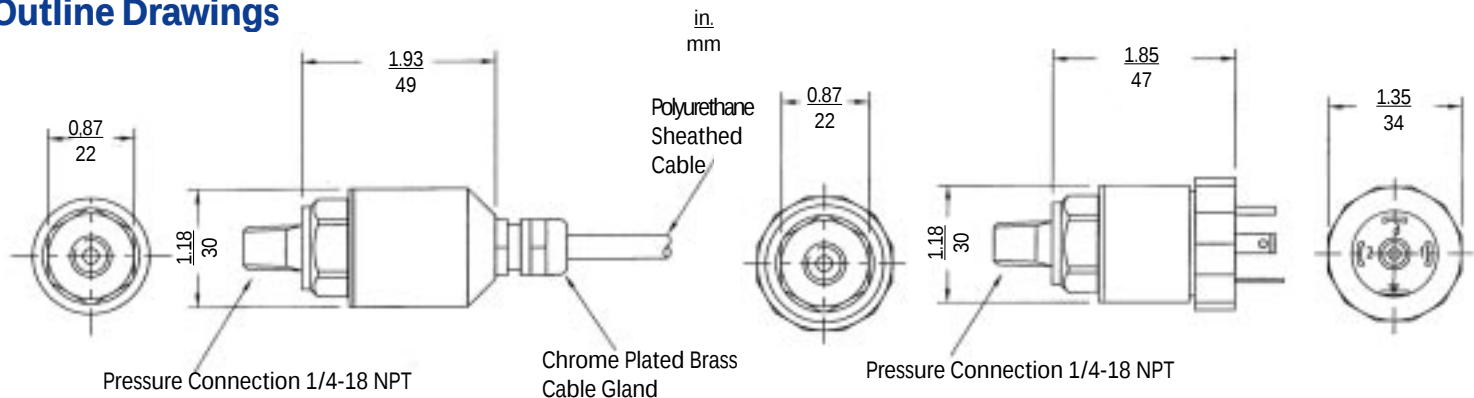
Pressure Media

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



ORDERING INFORMATION

Code all blocks in table.

Example: Part No 5301500PG2M11ZZL3 - For a Model 530 Pressure Transducer, 500 PSI, Gauge Pressure, 1/4-27 NPT Male Pressure Fitting, 4-20 mA Output, DIN43650Ain, 0.15% Accuracy

Model	Range	Pressure	Pressure Fitting	Output	Elec. Termination	Accuracy
5301 = 530	500P = 500 PSI 10CP = 1000 PSI 15CP = 1500 PSI 20CP = 2000 PSI 30CP = 3000 PSI 60CP = 6000 PSI 75CP = 7500 PSI 90CP = 9000 PSI 10KP = 10,000 PSI	040B = 40 BAR 060B = 60 BAR 100B = 100 BAR 160B = 160 BAR 250B = 250 BAR 400B = 400 BAR 600B = 600 BAR 700B = 700 BAR	G = Gauge 2M = 1/4" -NPT Male	11 = 4-20mA 2B = 0-5 VDC 2C = 0-10 VDC 59 = 0.2-10.2 VDC 22 = 0.1 - 5.1 VDC 24 = 0.5 - 5.5 VDC 27 = 1 - 5 VDC 28 = 1 - 6 VDC 2R = 1-11 VDC 29 = 0.2-10.2 VDC 85 = 0.5=4.5 VDC (3Wire	E2 = Large DIN43650A U1= IP 67 Cable (1 Meter)	S = 0.15% FS

Please contact factory for configurations not shown.

While we provide application assistance on all Setra products, both personally and through our literature, it is the customer's responsibility to determine the suitability of the product in the application.

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