

Model 530

High Performance Pressure Transducers

Gauge Pressure



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 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, compensated temperature range of -4°F to +176°F (-20°C to +80°C), and can be configured with voltage or current output, choice of pressure and electrical connections, and a NEMA 4/IP65 and NEMA 6/IP67 rated 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.

Applications

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

Benefits

- Superior Stability
Avoids Down Time
- $\pm 0.15\%$ FS Accuracy
- NEMA 4/IP65 and NEMA 6/IP67 Environmental Protection
- Wide Compensated Temperature Range:
-4°F up to +176°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

Pressure Ranges

PSIG Ranges

Gauge Pressure	Proof Pressure	Burst Pressure
0-750	1500	5250
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
60	120	420
100	200	700
160	320	1120
250	500	1750
400	800	2100
600	1200	4200
700	1400	4900

Model 530 Specifications

Performance Data

Accuracy RSS* (at constant temp)	±0.15% Full Scale
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)
Zero Tolerance	0.5% of Full Scale
Span Tolerance	0.5% of Full Scale
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.

Physical Description

Case	Stainless Steel
Wetted Parts	17-4 PH and 15-5 Stainless Steel
Electrical Connection	DIN43650A
	Polyurethane Shielded Cable 24 AWG
Pressure Fittings	1/4" -NPT Male 22 mm Hex
	G 1/4 Male
Weight	3.9oz (110g)

Specifications subject to change without notice.

Environmental Data

Temperature	
Operating* °F (°C)	
For Elec Code V1	-4 to +148(-20 to +100)
For Elec Codes E2	-67 to +248 (-55 to +120)
Storage °F (°C)	
For Elec Code V1	-4 to +148(-20 to +100)
For Elec Codes E2	-67 to +248 (-55 to +120)
Vibration	70G Peak to Peak Sinusoidal, 5 to 5000 Hz per MIL-STD-810, method 514.2 Procedure 1
Shock	1000g/MIL-STD 810, method 516.2, Procedure IV
EMC	30V/m (100V/m Survivability)
*Operating/Storage temperature limits of the connector only.	

Electrical Data (Ratiometric)

Circuit	3-Wire
Output	0.5V to 4.5V @ 5VDC supply
Output Supply Voltage	5VDC Regulated (4.75V - 7VDC)

Electrical Data (Voltage)

Circuit	3-Wire (Exc, Out, Com)
Excitation	1.5VDC Above Span to 35VDC @ 6mA**
Output*	0 to 5VDC, 0 to 10VDC, 0.1 to 5.1VDC, 0.5 to 5.5VDC, 1 to 5VDC, 1 to 6VDC, 0.2 to 10.2VDC*
Minimum Load Resistance	(FS Output/2) Kohms
*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 24VDC.	

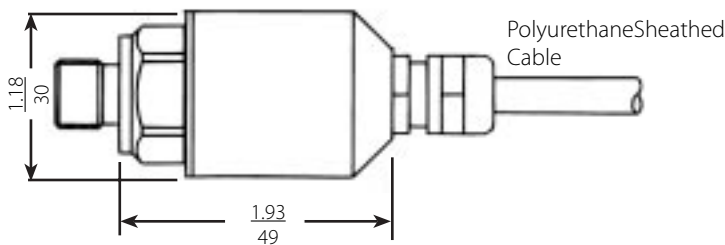
Electrical Data (Current)

Circuit	2-Wire
Output*	4 to 20 mA
Supply Voltage (Vs)	24VDC, (7-35VDC)**
Supply Voltage Sensitivity	0.1% FS/Volt
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.	

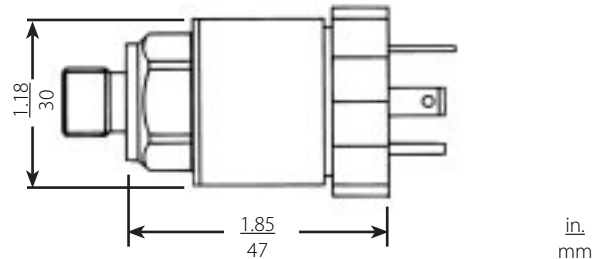
Pressure Media

Liquids or gases compatible with 17-4 PH and 15-5 Stainless Steel.*
*Note: Hydrogen not recommended for use with 17-4 PH Stainless Steel.

Outline Drawings



Shown w/ IP67 Cable Electrical Connector and 1/4-18 NPT Male Pressure Fitting



Shown w/ Large DIN 43650A Electrical Connector and 1/4-18 NPT Male Pressure Fitting

ORDERING INFORMATION

Code all blocks in table.

Example: Part No 5301500PG2M11E2S - For a Model 530 Pressure Transducer, 500 PSI, Gauge Pressure, 1/4-27 NPT Male Pressure Fitting, 4-20 mA Output, Large DIN 43650A, 0.15% Accuracy

Model	Range	Pressure	Pressure Fitting	Output	Elec. Termination	Accuracy
5301 = 530	750P = 750 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	060B = 60 BAR 100B = 100 BAR 160B = 160 BAR 250B = 250 BAR 400B = 400 BAR 600B = 600 BAR 700B = 700 BAR	G = Gauge 2M = 1/4-18 NPT Male G2 = G 1/4 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	E2 = Large DIN 43650 Plug w/Mating Plug V1 = IP 67 Cable (1 Meter [3.28ft.])	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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