

## Model 528

### High Temperature Pressure Transducers

Absolute and Gauge Pressure



**S**etra System's Model 528 high performance pressure transducer is designed for robust industrial and submersible applications that require high performance in extreme environments.

The Model 528'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 528 offers enclosures fabricated in 316 SS/ 17-4 PH SS, and rated for NEMA 4/IP40, IP65, IP66, IP68 operation. This unit is protected against contact by small tools and wires, and is suitable for continuous submersion in water, water projected by a nozzle or jets.

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 528 offers 0.1% FS accuracy, compensated temperature range of -20°F to +212°F (-30°C to 100°C), operating temperatures as low as -40°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 528's modular design is offered in a wide range of voltage or current outputs, 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

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

## Benefits

- Superior Stability  
Avoids Down Time
- $\pm 0.1\%$  FS Accuracy
- NEMA 4/IP65 and NEMA 6/IP67 Environmental Protection
- High Shock Resistance
- Meets  $\llcorner$  Conformance Standards

*When it comes to a product to rely on - choose the Model 528 .  
When it comes to a company to trust - choose Setra.*



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# Model 528 Specifications

## Performance Data

Accuracy RSS* (at constant temp)	± 0.1% FS
Thermal Effects**	
Compensated Range °F (°C)	-20 to +212 (-30 to +100)
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 x FS <= 100 Psi (6 Bar) >20 X FS <= 1000 Psi (60 Bar) >5 X FS <= 6000 Psi (400 Bar)

\*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 Stainless Steel, 17-4 Stainless Steel
Ratings	IP40 for Elec Code B3, Gauge Unit IP66 for Elec Code N4, Absolute Unit IP68 for Elec. Code U1
Wetted Parts	17-4 PH Stainless Steel

## Physical Description (Cont'd)

Electrical Connection	10-6 Bayonet
	IP66 Weatherproof Cable
	Molded Cable Immersible (1 Meter Length)
Pressure Fitting	See Ordering Information Below
Weight	3.5oz (100g)

## Environmental Data

Temperature	
Operating* °F (°C)	
for Elec Codes B1, B3, N4	-40 to +260 (-40 to +125)
for Elec. Codes U1	-5 to +125 (-20 to +50)
Storage °F (°C)	
for Elec Codes B1, B3, B4	-40 to +260 (-40 to +125)
for Elec. Codes U1	-5 to +125 (-20 to +50)
Vibration	35g peak sinusoidal, 5 to 2000 Hz
Shock	Withstands Free Fall to IEC 68-2-32 Procedure 1

\*Operating temperature limits of the electrical connectors only.  
Pressure media temperatures may be considerably higher or lower.

Specifications subject to change without notice.

## Electrical Data (Voltage)

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

\*Zero output is factory set to 1.0% 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)

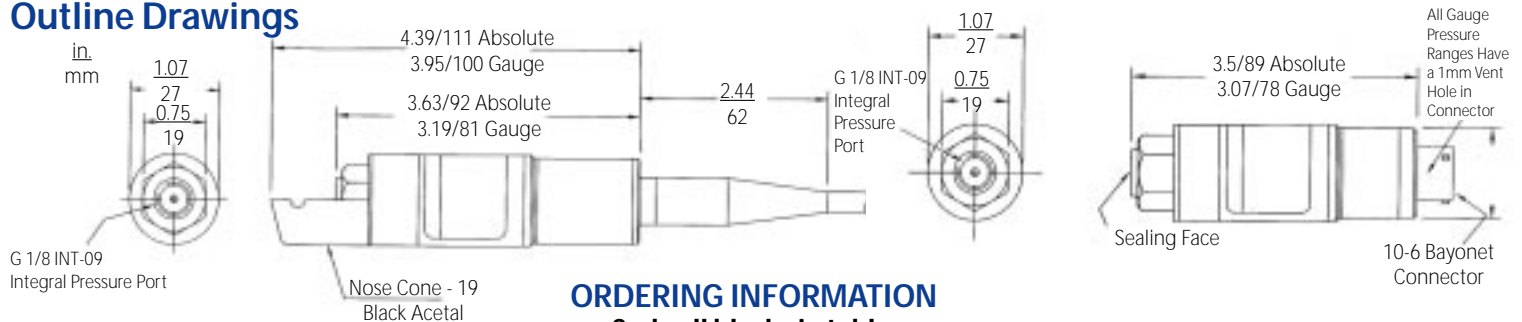
Circuit	2-Wire
Output*	4 to 20 mA
Loop Supply Voltage	24VDC, (7-35VDC)**
Maximum Loop Resistance	(Vs-7) x 50 Ohms
*Zero output factory set to within ±0.16 mA	
*Span output factory set to within ±0.16 mA	
**Temperatures > 100°C/212°F supply is limited to 24VDC	

## Pressure Media

Liquids or gases compatible with 17-4 PH Stainless Steel.\*

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

## Outline Drawings



## ORDERING INFORMATION

Code all blocks in table.

Example: Part No 5281030PGH111V1L4 - For a Model 528 Pressure Transducer, 30 PSI, Gauge Pressure, 1/8-27 NPT Male Pressure Fitting, 4-20 mA Output, 10-6 Bayonet, 0.1% Accuracy

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Model		Range		Pressure		Pressure Fitting		Output		Elec. Termination	Accuracy
5281 = 528		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 000P = -14.7 to 0 PSIG 015P = -14.7 to 15 PSIG 045P = -14.7 to 45 PSIG 085P = -14.7 to 85 PSIG 135P = -14.7 to 135 PSIG 185P = -14.7 to 185 PSIG 285P = -14.7 to 285 PSIG		G = Gauge A = Absolute* C = Compound*		1M = 1/8-27 NPT Male G2 = G1/4 Male 2M = 1/4-18 NPT Male J7 = 7/16 UNF to SAE J514 W1 = Nose Cone		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		B1= 8-4 Bayonet Connector B3 = 10-6 Bayonet Connector N4 = IP66 Weatherproof Cable U1 = Molded Cable, Immersible (1 Meter Length)	T = 0.1% FS
		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 205B = 250 BAR 400B = 400 BAR 600B = 600 BAR 690B = 690 BAR									

Please contact factory for configurations not shown.

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