

# Model 204

## High Accuracy Gauge & Absolute Pressure Transducer

Setra's Model 204 is the "standard" for measuring gauge and absolute pressure in the Test and Measurement industry. Decades worth of installations have helped the 204 build a reputation of reliability and remains the trusted choice for critical installations. The 204 delivers a high performance  $\pm 0.073\%$  FS accuracy over a wide temperature range which outperforms competitive transducers in the mid to high pressure market. The 204 offers multiple options to meet both simple and demanding application requirements that are not provided on competitive transducers.

### Long-Term Reliability

The Model 204 pressure transducer uses a simple and reliable variable capacitance sensor design. The 204 provides repeatable and dependable readings in rugged applications through its efficient sensor design.

### Accuracy & Performance

The Model 204 is a Test and Measurement grade transducer for mid to high pressure ranges. The 204 covers a large selection of pressure ranges with  $\pm 0.073\%$  FS accuracy over a wide temperature range. The Model 204 provides response time of  $< 1$  ms, exceeding the performance of many competitors.

### Customization is Standard

Unlike many competitors, the 204 offers many mechanical and electrical options that can be integrated into existing system designs. These options reduce engineering design time, allowing for earlier project completion and quicker time to market.



- Ideal for High Accuracy Applications
- Excellent Thermal Effects
- Highly Configurable Design

#### Model 204 Features:

- $\pm 0.073\%$  FS Accuracy
- 0-5 VDC
- Fast Response, Less than 1 ms
- Low Output Noise
- Solid One-Piece Stainless Steel Sensor
- Meets CE Conformance Standards

#### Applications:

- High Accuracy General Purpose
- R&D Test and Measurement
- Vacuum Systems
- Dynamometers
- Engine Test Cells

# Model 204

## High Accuracy Gauge & Absolute Pressure Transducer



### ORDERING INFORMATION

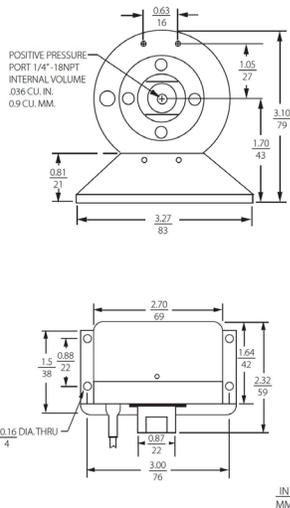
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Model	Pressure Ranges		Pressure Fitting	Output	Electrical Termination	Accuracy <sup>1</sup>	Options <sup>2</sup>
2041=Model 204	<b>Gauge Pressure</b>	<b>Absolute Pressure</b>	2F 1/4" NPT Female	2B <sup>2</sup> 0-5 VDC	02 2' Cable	W ±0.11% FS	3 <sup>3</sup> Compensated Temperature Range (-65 to 250°F)
	025PG 0-25 PSIG	025PA 0-25 PSIA		2Y 0-2.5 VDC	10 10' Cable	9 ±0.073% FS	7 Clean for Oxygen
	050PG 0-50 PSIG	050PA 0-50 PSIA		27 1-5 VDC	25 25' Cable		D Mate with Datum
	100PG 0-100 PSIG	100PA 0-100 PSIA		28 1-6 VDC	Y1 2' Red Cable 9-Conductor 30 AWG		E Special Excitation Voltage ± -24VDC
	250PG 0-250 PSIG	250PA 0-250 PSIA		2C 0-10 VDC			F NEMA4 Enclosure
	500PG 0-500 PSIG	500PA 0-500 PSIA		2U 1-10 VDC			G Special Excitation Voltage ± -15VDC
	10CPG 0-1000 PSIG	10CPA 0-1000 PSIA					L Etched SS Tags
	30CPG 0-3000 PSIG	30CPA 0-3000 PSIA					M <sup>4</sup> Remote Full Scale Sensitivity
	50CPG 0-5000 PSIG	50CPA 0-5000 PSIA					N None
	10KPG 0-10000 PSIG						R <sup>4</sup> Remote Calibration (Adjustable)
	Z01PV 0-14.7 PSI (VACUUM)						S <sup>4</sup> Remote Calibration Adjustable (Fixed)

<sup>1</sup>Units with pressure range > 5,000 PSI have accuracy of ±0.14% FS only.  
<sup>2</sup>Both boxes must be filled in alphanumeric order:  
 -If No options: N + N  
 -If 1 option: Option Code + N  
 -If 2 options: Option Code + Option Code  
<sup>3</sup>x Thermal Effects Specification  
<sup>4</sup>Options M, R and S will have Y1 Cable as STD.  
 Note: Setra adheres to strict quality standards including ISO 9001 and ANSI-Z540-1. The calibration of this product is NIST traceable.

Ordering Example: 2041025PG2F2B02WNN, Model 204, Ranges 0-25 PSIG, 1/4" NPT Female, 0-5 VDC, 2' Cable, ±0.11% FS Accuracy.

### DIMENSIONS



### GENERAL SPECIFICATIONS

Performance Data		Physical Description	
Accuracy RSS <sup>1</sup> (at constant temperature)	±0.11% FS ±0.14% for 10,000 PSIG	Pressure Fitting	1/4" - 18 NPT Internal
Non-Linearity (BFSL)	±0.07% FS	Excitation	22 to 30 VDC, 24 VDC (Normal) Reverse Excitation Protected
Hysteresis	0.08% FS 0.1% for 10,000 PSIG	Output <sup>4</sup>	0 to 5 VDC <sup>3</sup>
Non-Repeatability	0.02% FS	Power Consumption	10 mA (0.25 Watts)
Thermal Effects <sup>2</sup>		Output Impedance	<10 Ohms
Zero Shift <sup>3</sup> %FS/100°F (%FS/50°C)	<±0.4 (<±0.36)	Output Noise	<100 Microvolts RMS (0 Hz to 10 KHz)
Span Shift <sup>3</sup> %FS/100°F (%FS/50°C)	<±0.3 (<±0.27)	<sup>1</sup> RSS of Non-Linearity, Hysteresis and Non-Repeatability <sup>2</sup> Units calibrated at nominal 70°F <sup>3</sup> Approximately 50% higher for 0-14.7 psiv range <sup>4</sup> Calibrated into 50K ohm load. Operable into 5000 ohms or greater. <sup>5</sup> Zero output factory set to within ±10mV. Span (Full Span) output factory set to within ±10mV. Note: Both output leads are normally 1.6 VDC above the negative excitation lead at zero pressure. Either negative excitation or negative output should be connected to case (ground). But both leads cannot be connected to case (ground). Unit is calibrated at the factory with the negative excitation connected to case (ground). <sup>6</sup> Calibrated at factory with a 24 VDC loop supply voltage and a 250 ohm load.	
Static Acceleration Effect	<0.05 PSI/G (Typ.) (Pressure Port Axis)		
Volume Increase Due to FS Pressure	5 x 10 <sup>-5</sup> cu. in.		
Warm-Up Shift	±0.5% Total (±0.1% Residual Shift after 5 Minutes)		
Environmental Data		Specifications subject to change without notice.	
Operating Temperature °F(°C)	0 to +175 (-18 to +80)		
Storage Temperature °F(°C)	-65 to +250 (-55 to +120)		
Vibration	2g from 5 Hz to 500 Hz		
Shock	50g		
Acceleration	10g Maximum		

### PROOF PRESSURE

Pressure Ranges 0 PSIA or 0 PSIG to:	Proof Pressure (PSI)	Burst Pressure Rating (PSI)	Approx. Natural Frequency (KHz)
25	50	150	2.0
50	75	200	2.5
100	150	500	3.5
250	375	1000	5.0
500	750	1500	8.0
1000	1250	3000	11.0
3000	3750	4500	15.0
5000	6000	7500	25.0
10,000 PSIG only	11,000	12,500	30.0
0-14.7 PSIV	50	150	2.0