



Model 204

High Accuracy Gauge & Absolute Pressure Transducer

Features

- Ideal for high accuracy applications
- Excellent thermal effects
- Highly configurable design
- $\pm 0.073\%$ 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

Setra's Model 204 is the "standard" for the 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.



Specifications

Performance data

Accuracy RSS ¹ (at constant temp)	±0.11% FS ±0.14% for 10,000 PSIG
Non-linearity (BFSL)	±0.07% FS
Hysteresis	0.08% FS 0.1% for 10,000 PSIG
Non-repeatability	0.02% FS

Physical description

Pressure fittings	1/4" -18 NPT internal
Excitation	22 to 30 VDC, 24 VDC (normal) Reverse excitation protected
Output	0 to 5 VDC ⁵
Power consumption	10 mA (0.25 Watts)
Output impedance	<10 Ohms
Output noise	<100 Microvolts RMS (0 Hz to KHz)

Environmental data

Operating temperature ³ °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

Thermal effects²

Zero/ span shift %FS/100°F (%FS/50°C)	<±0.4 (<±0.36)
Span shift %FS/100°F (%FS/50°C)	<±0.3 (<±0.27)
Static acceleration effect	<0.05 PSI/G (Typ.) (Pressure port axis)
Volume increase due to FS pressure	5 x 10 ⁻⁵ cu. in.
Warm-up shift	+0.5% total (±0.1% residual shift after 5 minutes)

RSS of Non-Linearity, Hysteresis and Non-Repeatability

¹Units calibrated at nominal 70°F

²Approximately 50% higher for 0-14.7 psiv range

⁴Calibrated into 50K ohm load. Operable into 5000 ohms or greater.

⁵Zero 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.)

⁶Calibrated at factory with a 24 VDC loop supply voltage and a 250 ohm load.

Specifications subject to change without notice.

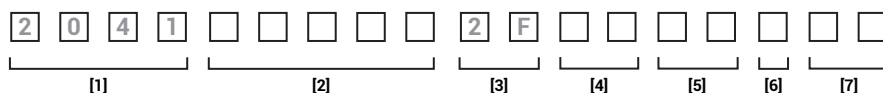
Proof pressure

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

Ordering information

Example part number: 2391005PB1F2S02WNN

Model 239, ± 5 PSID pressure range, 1/8" NPT Int. fitting, ± 2.5 VDC, 2' Cable Length, $\pm 0.14\%$ FS Accuracy, No Options.



[1]		[2]			[3]	[4]	[5]	[6]	[7]	
Model		Pressure range			Pressure fitting	Output	Termination	Accuracy	Options ²	
2041	Model 204	Gauge pressure	Absolute pressure	Differential pressure	2F 1/4" NPT Int.	2B ² 0-5 VDC	02 2' Cable	W $\pm 0.11\%$ FS	3 ³	Compensated temperature range (-65 to 250°F)
		025PG 0-25 PSIG	025PA 0-25 PSIA	025PD 0-25 PSID		2Y 0-2.5 VDC	10 10' Cable	9 $\pm 0.073\%$ FS	7	Clean for oxygen
		050PG 0-50 PSIG	050PA 0-50 PSIA	050PD 0-50 PSID		27 1-5 VDC	25 25' Cable		D	Mate with Datum
		100PG 0-100 PSIG	100PA 0-100 PSIA	100PD 0-100 PSID		28 1-6 VDC	Y1 2' Red cable 9-conductor 30 AWG		E	Special excitation voltage ± 24 VDC
		250PG 0-250 PSIG	250PA 0-250 PSIA	250PD 0-250 PSID		2C 0-10 VDC			G	Special excitation voltage
		500PG 0-500 PSIG	500PA 0-500 PSIA	500PD 0-500 PSID		2U 1-10 VDC			L	Special excitation voltage ± 15 VDC
		10CPG 0-1000 PSIG	10CPA 0-1000 PSIA	10CPD 0-1000 PSID					M ⁴	Etched SS tags
		30CPG 0-3000 PSIG	30CPA 0-3000 PSIA	30CPD 0-3000 PSID					N	None
		50CPG 0-5000 PSIG	50CPA 0-5000 PSIA	50CPD 0-5000 PSID					R ⁴	Remote calibration (adjustable)
		10kPG 0-10000 PSIG							S ⁴	Remote calibration adjustable (fixed)
		201PV 0-14.7 PSI (Vacuum)								

¹Units with pressure range > 5,000 PSI have accuracy of $\pm 0.14\%$ FS only.

² 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

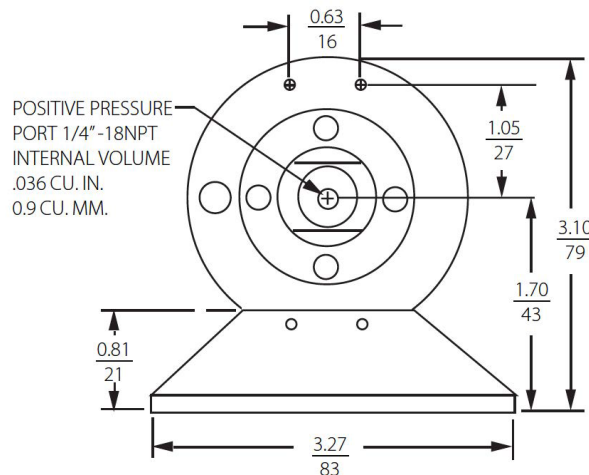
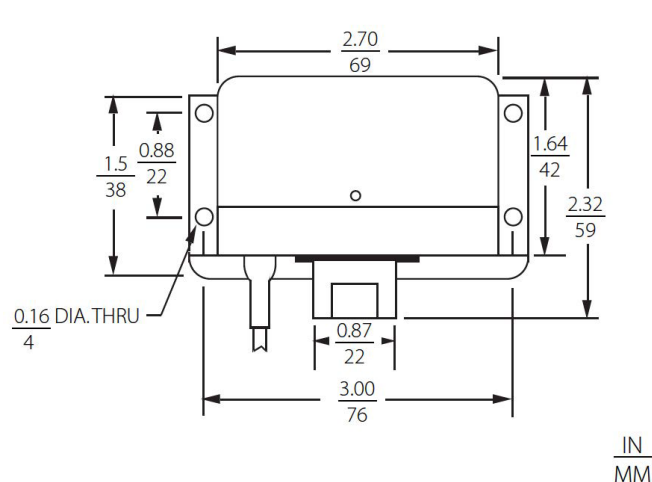
³2x Thermal Effects Specification

⁴Options 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.

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Dimensions





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