

Model 209

Pressure Transducer

Applications

- Industrial OEM Equipment
- Hydraulic Systems
- Compressor Control
- HVAC/R Equipment
- Industrial Engines
- Process and Containerized Refrigeration Systems

Benefits

- Unparalleled Price/Performance
- Rugged Design Survives Harsh Environments
- Operates Over a Wide Temperature Band
- Compatible with Wide Range of Gases and Liquids
- Operates on Low Cost Unregulated DC Power
- Suitable for High Shock and Vibration Applications
- No Seals or "O" Rings to Cause Leakage
- No Brazed Joints Susceptible to Corrosion Problems
- 3 to 5 Day Shipment for Small Quantities, Standard Configurations



Visit Setra Online:
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setra
800-257-3872

Model 209 Specifications

Performance Data

| | |
|---|-------------------------|
| Accuracy RSS* (at constant temperature) | ±0.25% FS |
| Non-Linearity (BFSL) | ±0.22% FS |
| Hysteresis | 0.10% FS |
| Non-Repeatability | 0.05% FS |
| Thermal Effects | |
| Compensated Range °F(°C) | -4 to +176 (-20 to +80) |
| Zero Shift %FS/100°F(%FS/50°C) | 2.0 (±1.8) |
| Span Shift %FS/100°F(%FS/50°C) | 1.5 (±1.3) |
| Warm-up Shift | ±0.1% FS total |
| Response Time | 5 milliseconds |
| Stability | 0.5% FS/Year |

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

Electrical Data (Voltage)

| | |
|------------------|------------------------|
| Circuit | 3-Wire (Com, Out, Exc) |
| Excitation | 9 to 30 VDC |
| Output* | 0.5 to 5.5 VDC** |
| Output Impedance | 10 ohms |

*Calibrated into a 50K ohm load, operable into a 5000 ohm load or greater.

**Zero output factory set to within ±50mV.

**Span (Full Scale) output factory set to within ±50mV.

Note: Other outputs are available with 9 to 30 VDC excitation.

An output of 0.5 to 4.5 VDC output is available with 5 VDC excitation.

Electrical Data (Current)

| | |
|---------------|---------------|
| Circuit | 2-Wire |
| Output* | 4 to 20 mA** |
| External Load | 0 to 800 ohms |

Minimum supply voltage (VDC) = $9 + 0.02 \times$
(Resistance of receiver plus line).

Maximum supply voltage (VDC) = $30 + 0.004 \times$
(Resistance of receiver plus line).

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

**Zero output factory set to within ±0.16mA.

**Span (Full Scale) output factory set to within ±0.16mA.

Environmental Data

| | |
|-------------------------------------|---------------------------|
| Temperature | |
| Operating °F (°C) | -40 to +260 (-40 to +127) |
| Storage °F (°C) | -40 to +260 (-40 to +127) |
| Vibration* | 20g |
| Shock** | 200g |
| Environmental Protection | Weather Resistant |
| *MIL-STD 202, Method 204, Cond. C | |
| **MIL-STD 202, Method 213B, Cond. C | |

Physical Description

| | |
|-----------------------|---|
| Case | Stainless Steel & Valox |
| Sensor | 17-4 PH Stainless Steel |
| Electrical Connection | 2 ft. multi-conductor cable |
| Pressure Fitting* | 1/4" -18 NPT external, 17-4 PH Stainless Steel |
| Vent | Through cable |
| Weight (approx.) | 2.3 ounces (65 grams) |

*See ordering information for other fittings available (minimum quantities apply).

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 are subject to change without notice.

NOTE: Setra quality standards are based on ANSI-Z540-1.

The calibration of this product is NIST traceable.

U.S. Patent Nos. 409315, and other Patents Pending.

Gauge and Compound Pressure Ranges

(Sealed ranges available on 200 PSI and above)

| Full Scale Range PSI | Proof Pressure PSI | Burst Pressure PSI |
|-------------------------|-----------------------|-----------------------|
| 1 | 2 | 250 |
| 2 | 4 | 250 |
| 5 | 10 | 250 |
| 10 | 20 | 500 |
| 25 | 50 | 500 |
| 50 | 100 | 750 |
| 100 | 200 | 1000 |
| 200 | 400 | 2000 |
| 250 | 500 | 2000 |
| 500 | 1000 | 3000 |
| 1000 | 2000 | 5000 |
| 2000 | 3000 | 6500 |
| 3000 | 4500 | 7500 |
| 5000 | 7500 | 10,000 |
| 10,000 | 12,500 | 20,000 |

Gauge Pressure: Pressure measured relative to ambient atmospheric pressure. Referred to as pounds per square inch (gauge) or psig.
Proof Pressure: The maximum pressure that may be applied without changing performance beyond specifications (±0.5% FS zero shift).
Burst Pressure: The maximum pressure that may be applied to the positive pressure port without rupturing the sensing element.

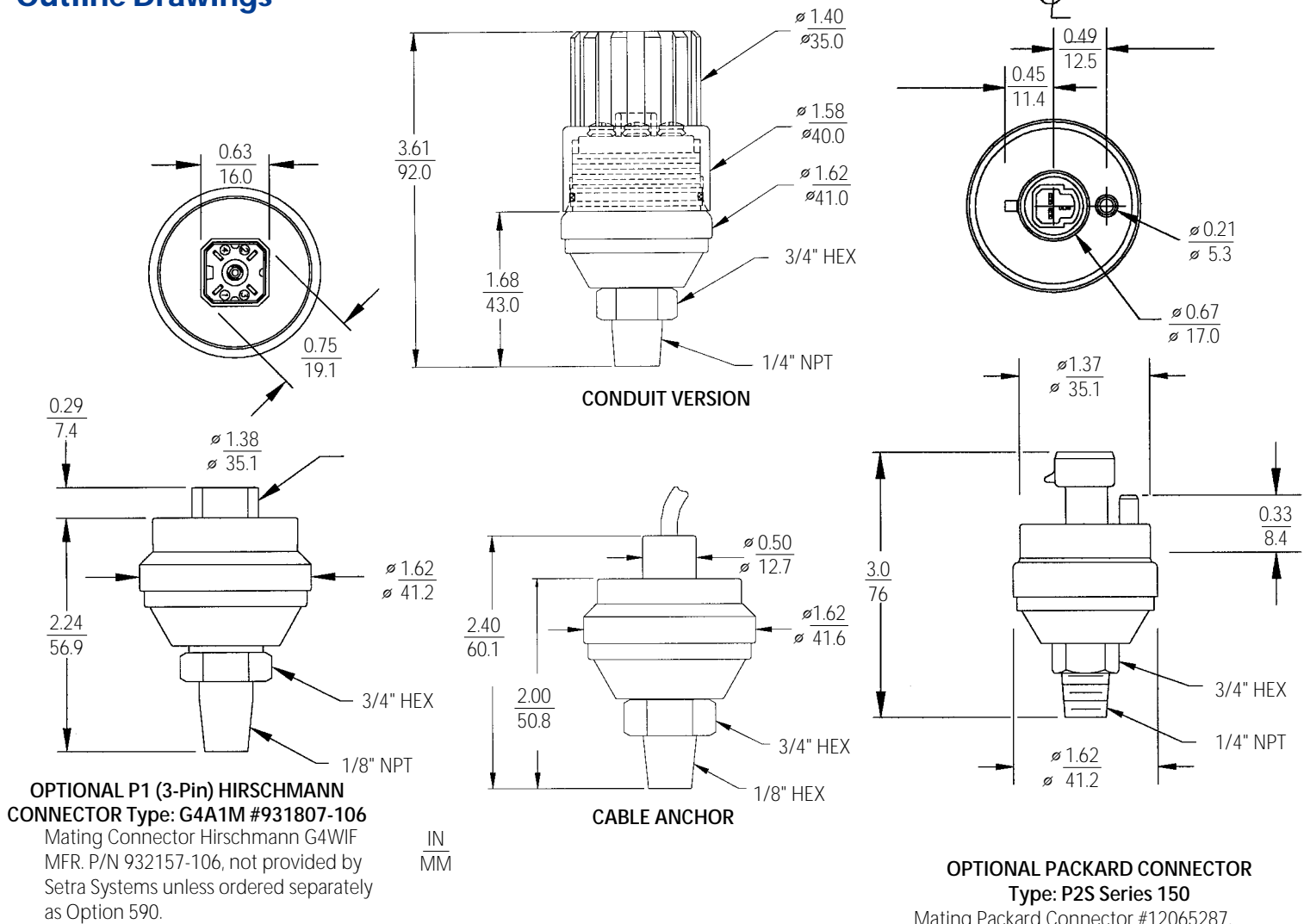
Setra Systems 209 pressure transducers have been designed specifically for industrial applications with demanding price and performance requirements. The 209 offers exceptional reliability in typical industrial grade environments. Standard features tailor the Model 209 for applications with more extreme environmental conditions or more stringent performance needs. The Model 209 offers unparalleled performance in a configurable transducer designed specifically for the budget conscious OEM.

Setra's proven center mount electrode configuration is the heart of this simple, yet industrialized, design. A 17-4 PH stainless steel sensor and a rigid stainless steel electrode form the variable capacitor.

Setra 209 transducers are packaged in rugged stainless steel/Valox housings, which are small and lightweight for optimum compatibility with system designs. As a totally self-contained electronic package, the 209 stainless steel capacitance sensing element, coupled with a high level output IC-based circuit, assures excellent accuracy and long term stability.

When it comes to a product to rely on - choose the Model 209. When it comes to a company to trust - choose Setra - an ESOP (Employee Owned) company.

Outline Drawings



ORDERING INFORMATION

Model 209 Pressure Transducer

Code all blocks in table.

Example: Part No. 2091050PG2M1102 for a 209 Transducer 0 to 50 PSIG Range, 1/4" NPT Male Pressure Fitting, 4 to 20 mA Output, and 2 Feet of Cable.

| Model | Pressure Ranges in. W.C. | Type | Pressure Fitting | Output | Electrical Termination |
|------------|--|--|---|--|---|
| 2091 = 209 | 001P = 0 to 1 PSI 002P = 0 to 2 PSI 005P = 0 to 5 PSI 010P = 0 to 10 PSI 025P = 0 to 25 PSI 050P = 0 to 50 PSI 100P = 0 to 100 PSI 200P = 0 to 200 PSI 250P = 0 to 250 PSI 500P = 0 to 500 PSI 10CP = 0 to 1000 PSI 20CP = 0 to 2000 PSI 30CP = 0 to 3000 PSI 50CP = 0 to 5000 PSI 10KP = 0 to 10000 PSI | G = Gauge C = Compound S = Sealed (Sealed version available in 200 PSI Ranges & Above) | 2M = 1/4" NPT Male J7 = 7/16" SAE Male 1M = 1/8" NPT Male | 11 = 4 to 20 mA 24 = 0.5 to 5.5 VDC 28 = 1 to 6 VDC 45 = 0.5 to 4.5 VDC (5 VDC Excitation) | XX = Cable length in feet (i.e., 2 feet = 02) P1 = Packard (3-Pin) P3 = Packard (4-Pin) H2 = Hirschmann, ("Mini") T1 = Terminal Block A1 = 1/2" Conduit |

Standard configuration consists of: PSI Range, 1/4" NPT Fitting and 2 feet of cable. Minimum quantities apply for all other configurations. Consult a Setra Applications Engineer for assistance.

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

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SSP209 Rev.C 11/01/99