

# ***Models 206/207***

## **Industrial Pressure Transducers**



Setra's Model 206/207 Series industrial pressure transducers are some of the most rugged and most reliable sensors available. Time after time, these transducers prove to be superior to competitive brands and technologies in the most critical test of all — the field application test!

Most pressure transducers seem alike in specification comparisons and even quick bench test analysis; however, the difference becomes obvious in the actual application. Setra's robust capacitive design exhibits its resistance to environmental effects such as shock, vibration, temperature and EMI/RFI. In addition, the 206 meets NEMA-4 and IP65 environmental protection ratings. With 0.5% FS/1 Year long term stability, the 206 is reliable as well as rugged.

To achieve this level of performance, Setra engineers combined a fundamentally simple but highly accurate and repeatable stainless steel capacitive sensor design and a custom ASIC based circuit. This high level output system is packaged in a welded stainless steel housing with versatility to accommodate a variety of pressure fittings and electrical connector options.

Every 206/207 transducer is assembled and calibrated in product-specific workcells. This means that technical experience and high quality standards are part of every transducer.

When it comes to a product to rely on - choose the Model 206/207. When it comes to a company to trust - choose Setra.



# Models 206/207 Specifications

## Performance Data

|   |           |
|---|-----------|
| Accuracy RSS* (at constant temperature) | ±0.13% FS |
| Non-Linearity, (BFSL)                   | ±0.1% FS  |
| 25 psig range**                         | ±0.2% FS  |
| Hysteresis                              | 0.08% FS  |
| Non-Repeatability                       | 0.02% FS  |

### Thermal Effects

|                                 |                         |
|---------------------------------|-------------------------|
| Compensated Range °F (°C)       | -4 to +176 (-20 to +80) |
| Zero Shift %FS/100°F (%FS/50°C) | 1.0 (0.9)               |
| Span Shift %FS/100°F (%FS/50°C) | 1.5 (1.4)               |
| Warm-up Shift                   | 0.1% FS Total           |
| Response Time                   | 5 milliseconds          |
| Long Term Stability             | 0.5% FS/1 YR            |

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

\*\*25 psig range accuracy is ±0.22% of Full Scale output.

## Environmental Data

### Temperature

|                                |                           |
|--------------------------------|---------------------------|
| Operating <sup>1</sup> °F (°C) | -40 to +185 (-40 to +85)  |
| Storage °F (°C)                | -40 to +185 (-40 to +85)  |
| Acceleration                   | 10 g maximum <sup>2</sup> |
| Shock <sup>†</sup>             | 200g operating            |
| Vibration**                    | 20g 50 - 2000 Hz          |

Note 1: The high temperature limit of the Model 206 cable is 200°F (95°C).

Note 2: Shift in output reading <0.05 psi/g typical; pressure port axis only.

\*Mil-Std. 202, Method 213B, Cond. C

\*\*Mil-Std. 202, Method 204, Cond. C

## Physical Description

|                       |   |
|-----------------------|---|
| Case                  | Stainless Steel   |
| Pressure Fitting      | 1/4" NPT external<br>(G1/4A or M14 x 1.5 also available on Model 206) |
| Vent                  | Through cable (206)<br>Via zero screw (207)                           |
| Electrical Connection | 2 ft. multiconductor cable (206)<br>3 screw terminal block (207)      |
| Zero/Span Adjustments | Top External Access   |
| Weight (approx.)      | 6 ounces  |

## Electrical Data (Voltage)

|                   |   |
|-------------------|---|
| Circuit           | 3-Wire (Exc, Out, Com)                        |
| Excitation        | 12 to 28 VDC, Reverse Excitation<br>Protected |
| Output*           | 0.1 to 5.1 VDC**                              |
| Output Impedance  | 100 ohms                                      |
| Power Consumption | <0.15 watts (approx. 5mA @ 24 VDC)            |

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

\*\*Zero output factory set to within ±25mV.

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

## Electrical Data (Current)

|   |               |
|---|---------------|
| Circuit   | 2-Wire        |
| Output*   | 4 to 20 mA**  |
| External Load   | 0 to 800 ohms |
| Minimum supply voltage (VDC) = 9 + 0.02 x<br>(Resistance of receiver plus line).  |               |
| Maximum supply voltage (VDC) = 30 + .004 x<br>(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 ±0.08mA.

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

## Pressure Media

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

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

*Specifications 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 No. 3859575; 4054833

## PSIG Ranges

| Gauge Pressure | Proof Pressure | Burst Pressure |
|----------------|----------------|----------------|
| 0-25           | 100            | 500            |
| 0-50           | 150            | 750            |
| 0-100          | 300            | 1000           |
| 0-250          | 500            | 2000           |
| 0-500          | 1000           | 3000           |
| 0-1000         | 2000           | 5000           |
| 0-3000         | 4500           | 7500           |
| 0-5000         | 7500           | 10,000         |
| 0-10,000       | 12,500         | 20,000         |

## Bar Ranges

| Gauge Pressure | Proof Pressure | Burst Pressure |
|----------------|----------------|----------------|
| 1.6            | 6              | 32             |
| 4.0            | 10             | 50             |
| 6.0            | 18             | 60             |
| 10             | 30             | 80             |
| 16             | 32             | 130            |
| 25             | 50             | 170            |
| 40             | 80             | 240            |
| 60             | 120            | 300            |
| 100            | 200            | 400            |
| 160            | 250            | 500            |
| 250            | 380            | 550            |
| 400            | 600            | 800            |
| 700            | 800            | 1350           |

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.

## Applications

- Industrial OEM Equipment
- Off-Road Equipment
- Hydraulic Systems
- Compressor Control
- HVAC/R Equipment
- Industrial Engines
- Industrial Refrigeration

## Benefits

- Solid Stability for Confident Installations
- Exceptional EMI/RFI Performance Prevents False System Shutdown
- NEMA-4/IP-65 Certified (206) for Use in Harsh Environments
- Rugged Design Withstands High Shock/Vibration Applications
- Versatile Package Design Provides JIT Delivery
- Miswiring Protection Makes for Confident Installation
- User Accessible Zero and Span Adjustment
- CE and RoHS Compliant



\*Standard configurations only.

ISO  
9001:  
2000  
Certified

Visit Setra Online:  
<http://www.setra.com>

setra

800-257-3872

## Available Options

(Minimum Quantities for Certain Options Apply. Consult a Setra Applications Engineer.)

### Electrical Options

|     |                        |
|-----|------------------------|
| 602 | 1 to 5 VDC Output      |
| 603 | 1 to 6 VDC Output      |
| 608 | 0.1 to 10.1 VDC Output |

### Feature Options

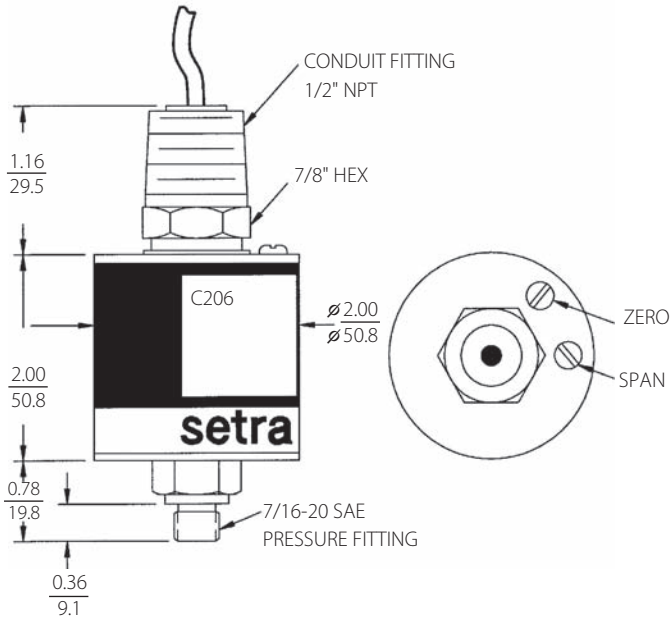
|     |                                   |
|-----|-----------------------------------|
| 901 | 10 Point Calibration Certificate  |
| 904 | Cleaning for Oxygen Service       |
| 911 | Etched Metal Stainless Steel Tags |

### Mechanical Options

|         |   |
|---------|---|
| 550     | Hirschmann Electrical Connector Type GSA 3000N (206 only)   |
| 560     | 7/16-20 SAE (External) Fitting (Only available on ranges $\leq$ 5000 PSI.)  |
| 562     | 1/8" NPT (External) Fitting   |
| 563     | #4 Male Face Seal   |
| 564     | #4 Female Face Seal   |
| 655     | Top Mounted Bayonet Connector (206 only)  |
| 803-825 | Up to 25 feet of cable can be supplied (206 only). Specify cable length when ordering (i.e. 805 for 5 ft. cable). Consult factory for cables longer than 25 feet. |
| 865     | NEMA 4 Weather Proof Enclosure (207 only)   |

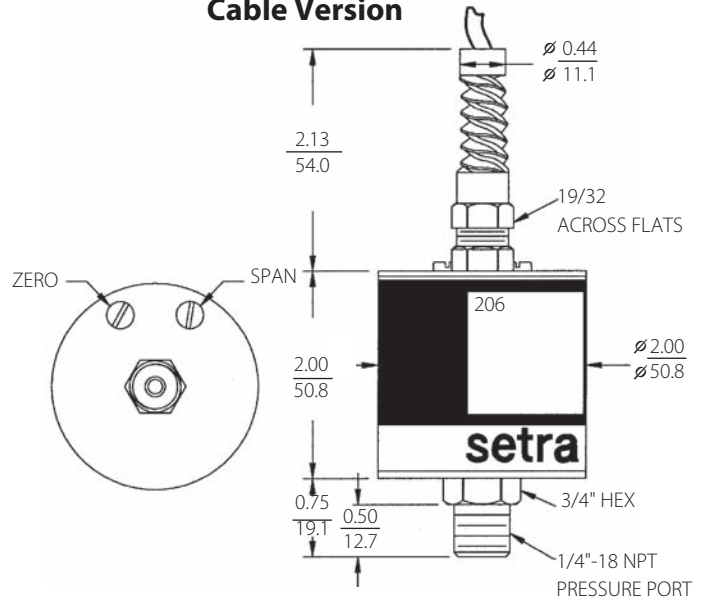
## Outline Drawings

### Cable with Conduit Version

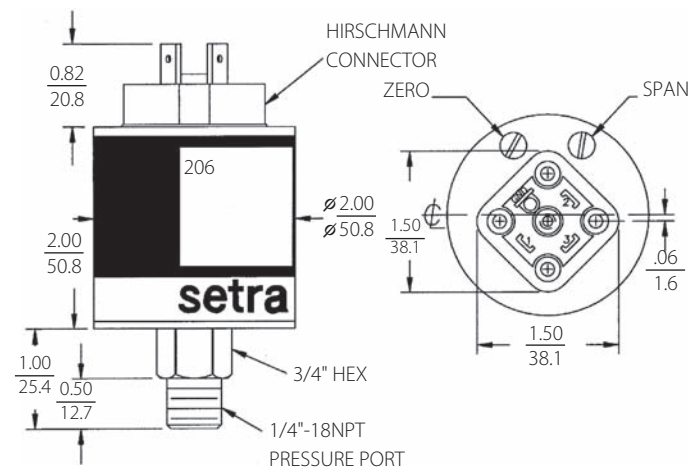


IN  
MM

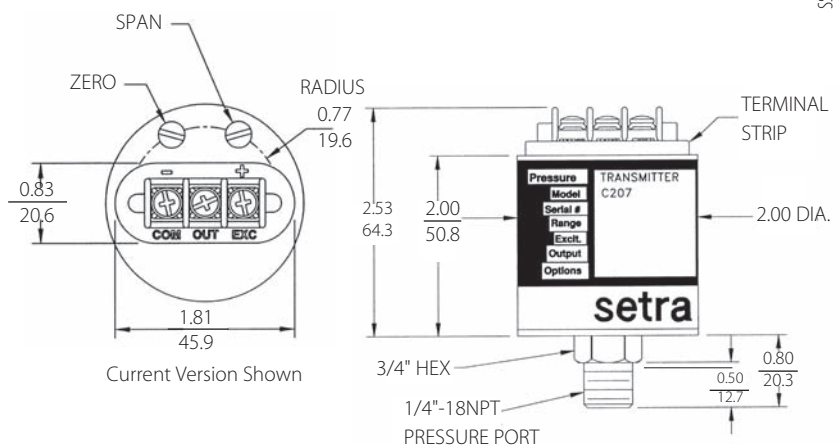
### Cable Version



### Hirschmann Connector



### 207 Terminal Version



## Ordering Information

Example: Order as Model 206, 100 PSIG, Option #550 for a Model 206 100 PSIG Gauge Pressure Range with a Hirschmann Electrical Connector.

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.

159 Swanson Road, Boxborough, Massachusetts 01719/Tel: 800-257-3872;  
Fax: 978-264-0292; Email: sales@setra.com; Web: www.setra.com

