



# Model 209H

## 316L Stainless Steel OEM Pressure Transducer

### Features

- Rugged 316L SS construction
- Non-oil filled design
- High over-pressure option
- Operates over a wide temperature band
- Compatible with a variety of gases & liquids
- Operates on low cost unregulated DC power
- Suitable for high shock & vibration applications
- No seals or O-rings to cause leakage
- CSA certified as conforming to ANS/ISA 12-12-01-2015 for class 1, groups A,B,C D DIV2 locations
- CE & RoHS compliant
- Ideal for alternative energy market

### Applications

- Fuel cell OEMs
- CNG & LNG applications
- Hydrogen production system
- Water & washwater
- Natural gas distribution

The Model 209H pressure transducer is designed for customers who require high performance, reliability and versatility in harsh applications. The Model 209H features all 316L stainless steel wetted materials, ideal for the demanding requirements of the alternative energy and industrial market. The sensor offers many pressure and electrical connections to satisfy challenging installation requirements. The 209H is available with a patented overpressure stop to protect the transducer against unexpected spikes or in high pulsation applications.

### 316L SS design

The sensor and all wetted material of the 209H are manufactured using a 316L stainless steel, enabling the sensor to stand up in corrosive applications. The unit comes standard with an accuracy of  $\pm 0.25\%$  FS across a wide pressure range offering, providing high performance at a low cost.

### Trusted reliability

The Model 209H is designed and built to withstand demanding applications. The industrial non-oil filled construction, designed with a positive over-pressure stop, enables the sensor to recover from overpressure conditions up to 4X the rated range. The 209H's capacitive technology offers worry free operation vs. oil-filled designs, which have a high cost of failure if oil leaks into the application and contaminates costly equipment.

### Flexibility for many applications

The Model 209H transducer offers many pressure and electrical fittings, covering many installation configurations. This minimizes additional engineering time to accommodate the sensor, allowing for earlier project completion and quicker time to market.



## Specifications

### Performance data

Accuracy RSS <sup>1</sup> (at constant temperature)	±0.25% FS
Non-linearity, (BFSL)	±0.16% FS
Hysteresis	±0.19% FS
Non-repeatability	±0.05% FS

### Thermal effects

Compensated range °F (°C)	-4 to +176 (-20 to +80)
Zero shift %FS/°F (%FS/°C)	±0.03 (±0.05)
Span shift %FS/°F (%FS/°C)	±0.015 (±0.03)
Warm-up shift	0.2% FS total
Response time	5 milliseconds
Long term stability	0.5%FS/1yr

### Electrical data (voltage)

Circuit	3-wire (Com, Out, Exc)
Excitation	9 to 30 VDC
Output <sup>6</sup>	See ordering information <sup>4,5</sup>
Output impedance	10 ohms

### Pressure media

Liquids and gases compatible with 316L stainless steel

<sup>1</sup> RSS of non-linearity, hysteresis, and non-repeatability

<sup>2</sup> Mil-Std. 202, Method 213B, Cond. C

<sup>3</sup> Mil-Std. 202, Method 204, Cond. C

<sup>4</sup> Calibrated into a 50K ohm load, operable into a 5000 ohm load or greater.

<sup>5</sup> Zero output factory set to within ±50mV. Span (full scale) output factory set to within ±50mV.

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

<sup>7</sup> Zero output factory set to within ±0.16mA. Span (full scale) output factory set to within ±0.16mA.

Specifications subject to change without notice.

## Overpressure capability

Standard			Option	
Full scale range (PSI)	Proof pressure (PSI)	Burst pressure (PSI)	High proof pressure (PSI)	High burst pressure (PSI)
25	40	300	100	3000
50	75	500	150	4000
100	150	750	300	4000
250	350	1500	750	4000
500	700	2000	1000	4000
1000	1300	3000	2000	5000

\* Also available in Bar ranges. Consult Factory.

Gauge 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 (±1% FS zero shift).

Burst Pressure: The maximum pressure that may be applied to the positive pressure port without rupturing the sensing element.

### Physical description

Case	Stainless steel & Valox
Wetted material	316L stainless steel
Pressure fitting	See ordering information
Vent	Through elec. termination
Weight (approx.)	3.1 ounces (88 grams)

### Environmental data

Operating temperature °F (°C) <sup>3</sup>	-40 to +185 (-40 to +85)
Storage temperature °F (°C)	-40 to +185 (-40 to +85)
Shock <sup>2</sup>	200g operating
Acceleration	10g Maximum
Vibration <sup>3</sup>	20g
Environmental protection	Weather resistant

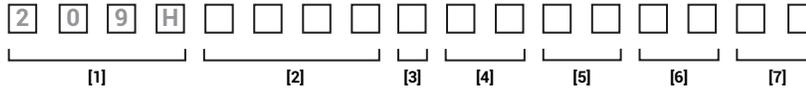
### Electrical data (current)

Circuit	2-wire
Output	4 to 20 mA <sup>6,7</sup>
External load	0 to 800 ohms
Min. supply voltage (VDC)	9 + 0.02 x (Resistance of receiver plus line)
Max. supply voltage (VDC)	30 + 0.004 x (Resistance of receiver plus line)

## Ordering information

Example part number: 209H100PG2M1102NN

Model 209, 0 to 100 PSI Range, Gauge pressure type, 1/4" NPT Ext. Fitting, 4 to 20mA output, 2 ft. cable length, No options.



[1]	[2]	[3]	[4]	[5]	[6]	[7]
<b>Model</b>	<b>Range code</b>	<b>Pressure type</b>	<b>Pressure fitting</b>	<b>Output</b>	<b>Elec. Termination<sup>2</sup></b>	<b>Options<sup>*</sup></b>
<b>209H</b>   Model 209	<b>015P<sup>1</sup></b> 0 to 15 PSI <b>025P</b> 0 to 25 PSI <b>050P</b> 0 to 50 PSI <b>100P</b> 0 to 100 PSI <b>250P</b> 0 to 250 PSI <b>500P</b> 0 to 500 PSI <b>10CP</b> 0 to 1,000 PSI	<b>G</b> Gauge <b>C</b> Compound <b>S</b> Sealed <sup>6</sup>	<b>2M</b> 1/4-18 NPT Ext. <b>J7<sup>7</sup></b> 7/16-20 SAE Ext. <b>1M</b> 1/8-27 NPT Ext.	<b>11</b> 4 to 20mA <b>24</b> 0.5-5.5 VDC <b>23</b> 0.2-5.2 VDC <b>N1<sup>8</sup></b> 4-20 mA <b>N4<sup>8</sup></b> 0.5-5.5 VDC <b>N3<sup>8</sup></b> 0.2-5.2 VDC	<b>02</b> 2 ft cable <b>10</b> 10 ft cable <b>25</b> 25 ft cable <b>P1</b> Packard (3-Pin) <sup>3</sup> <b>P3</b> Packard (4-Pin) <sup>4</sup> <b>H2</b> Hirschmann ("Mini") <sup>5</sup> <b>A1</b> Terminal block w/ conduit cover	<b>NN</b> No options <b>H</b> High overpressure capability <b>P</b> Calibration certificate <b>Y</b> Clean for oxygen service

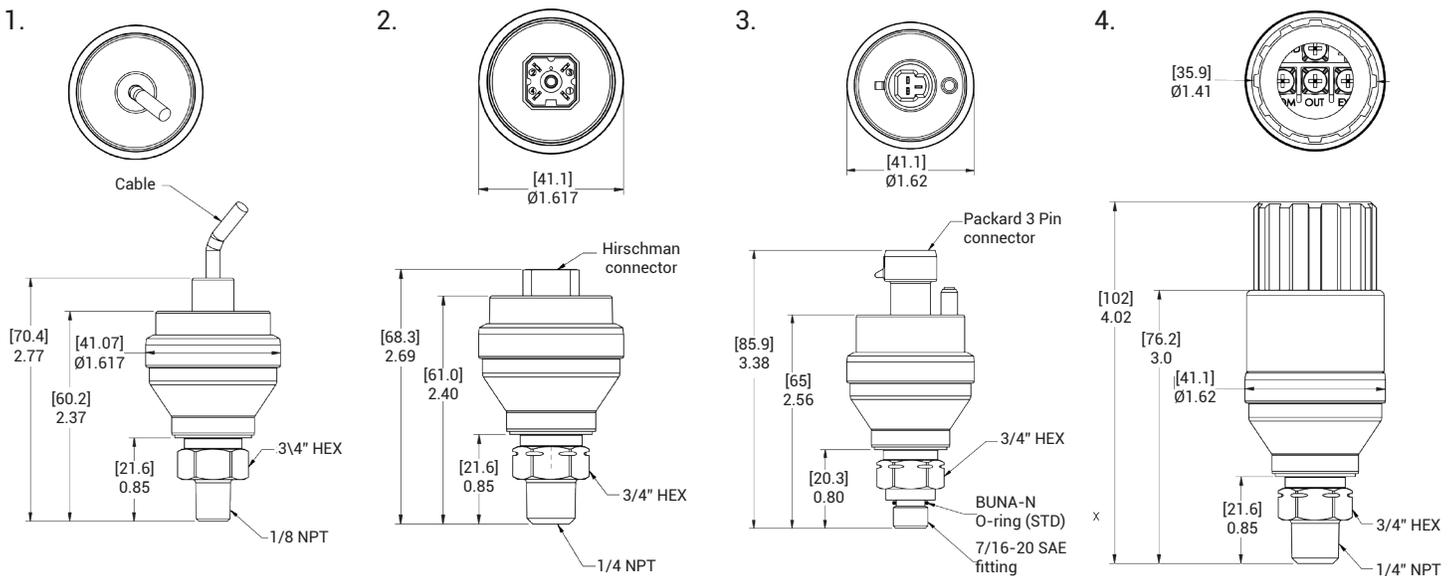
<sup>1</sup> Only available for compound pressure types  
<sup>2</sup> Other lengths available, consult factory  
<sup>3</sup> Order Setra Part #577 for Mating connector  
<sup>4</sup> Order Setra Part #857 for Mating connector  
<sup>5</sup> Order Setra Part #590 for Mating connector  
<sup>6</sup> Sealed type available on 250 PSI and above ranges  
<sup>7</sup> BUNA-N O-Ring STD  
<sup>8</sup> CSA certified as conforming to ANSI/ISA 12-12-01-2015 for Class 1, Groups A,B,C, D DIV2 locations

<sup>\*</sup> Both boxes must be filled in alphabetical order:  
 • If no options: N+N  
 • If 1 option: Option code+N  
 • If 2 options: Option code+option code

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. US Patent NO 6718827

## Dimensions



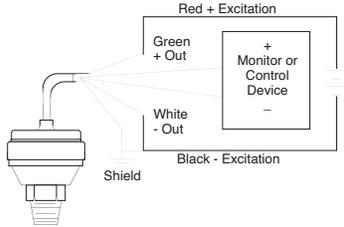
1. Cable Version
2. Hirschman Connector Type G4AIM #931807-106
3. 3-PIN Packard Connector Type P2S Series 150
4. Conduit Version

# Wiring

## CABLE ANCHOR

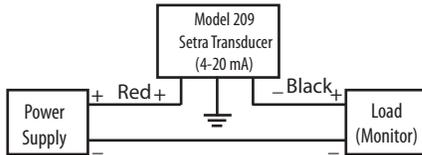
### Voltage Output

The Model 209H voltage output is a 3-wire circuit. If the 209 is supplied with 2 feet of cable, the electrical connection is as follows:



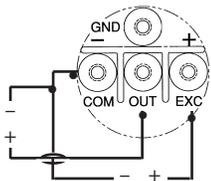
### Current Output

The Model 209H True 2-wire device. If the 209 is supplied with 2 feet of cable, the electrical connection is as follows:

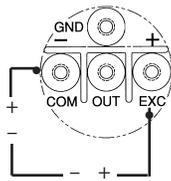


## CONDUIT VERSION

### Voltage

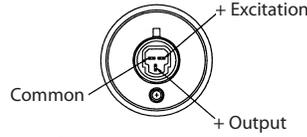


### Current



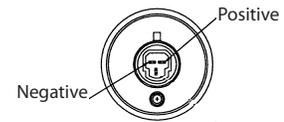
## 3-PIN PACKARD CONNECTOR

### Voltage



Top View: 3-Pin Packard Connector  
Type: P2S Series 150

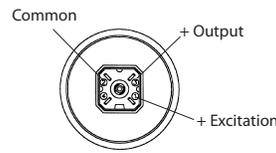
### Current



Top View: 3-Pin Packard Connector  
Type: P2S Series 150

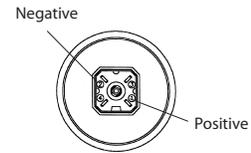
## HIRSCHMANN CONNECTOR

### Voltage



Top View: Hirschmann Connector  
Type: G4A1M#931807-106

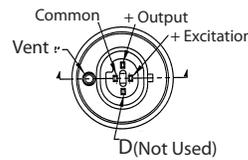
### Current



Top View: Hirschmann Connector  
Type: G4A1M#931807-106

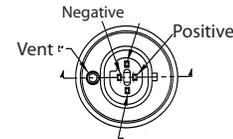
## 4-PIN PACKARD CONNECTOR

### Voltage



Top View: 4-Pin Packard Connector  
Type: Metri-Pack 150

### Current



Top View: 4-Pin Packard Connector  
Type: Metri-Pack 150