

# Model 209H

## 316L Stainless Steel OEM Pressure Transducer

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 features 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.



- **Rugged 316L SS Sensor**
- **Non-Oil Filled Design**
- **Ideal For Alternative Energy Market**

### Model 209H Features:

- High Over-Pressure Option Available on Select Ranges
- Operates Over a Wide Temperature Band
- Compatible w/ 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
- No Brazed Joints Susceptible to Corrosion Problems
- CE & RoHS Compliant

### Applications:

- Fuel Cell OEMs
- CNG & LNG Applications
- Hydrogen Production System
- Water & Wastewater
- Natural Gas Distribution

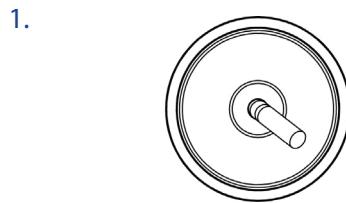
# Model 209H

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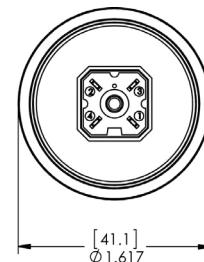
## DIMENSIONS

1. Cable Version



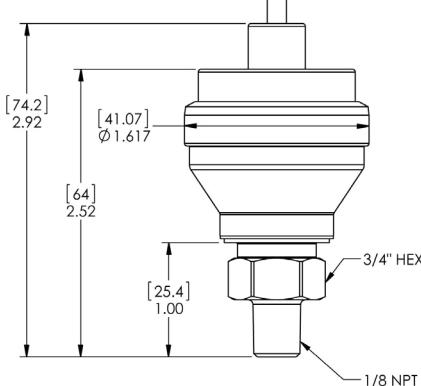
2. Hirschman Connector

Type G4AIM #931807-106

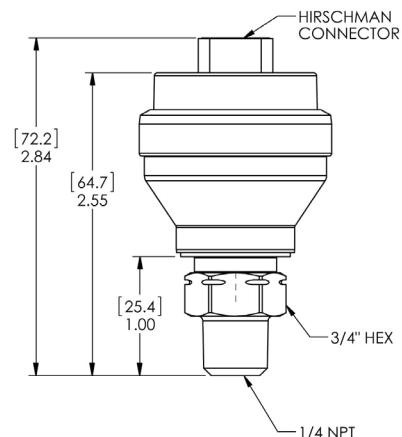


3. 3-PIN Packard Connector

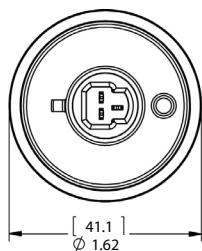
Type P2S Series 150



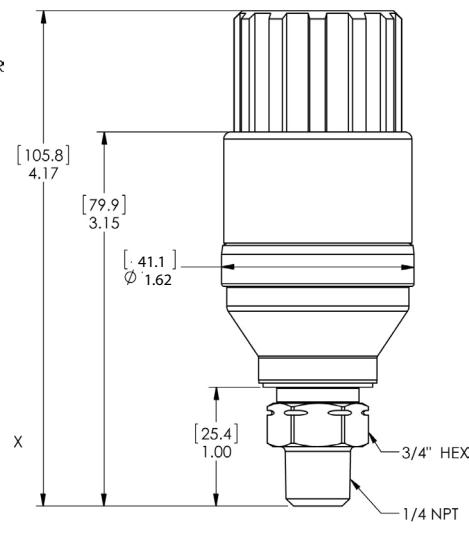
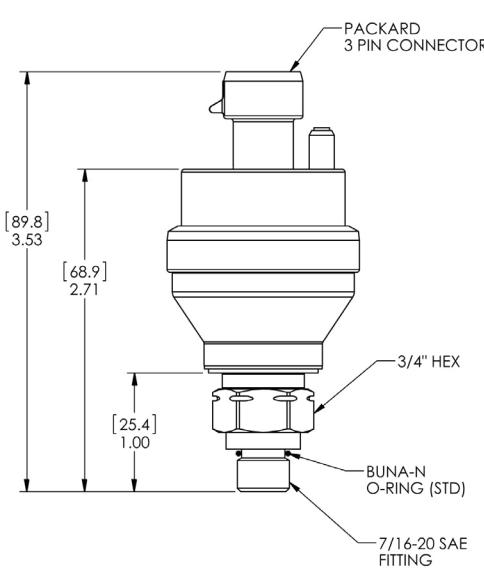
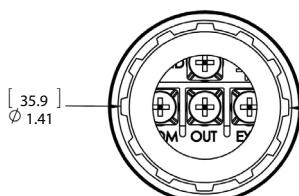
4. Conduit Version



5.



4.



# Model 209H

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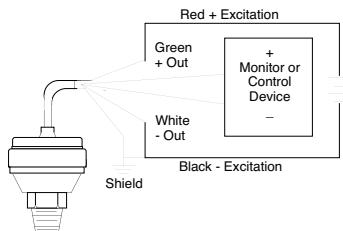


### WIRING

#### CABLE ANCHOR

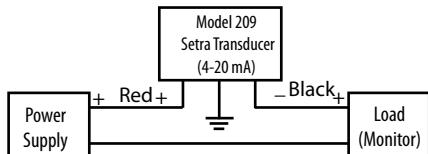
##### Voltage Output

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:



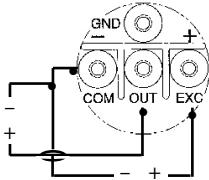
##### Current Output

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

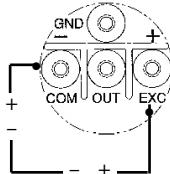


#### CONDUIT VERSION

##### Voltage

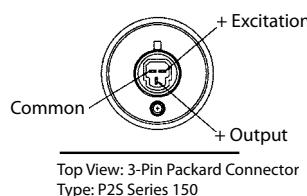


##### Current



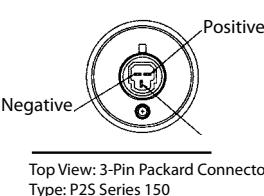
#### 3-PIN PACKARD CONNECTOR

##### Voltage



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

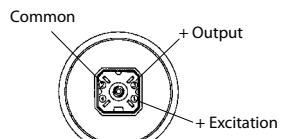
##### Current



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

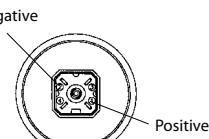
#### HIRSCHMANN CONNECTOR

##### Voltage



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

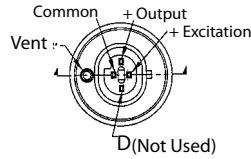
##### Current



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

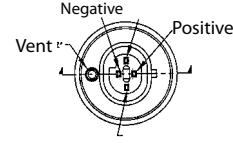
#### 4-PIN PACKARD CONNECTOR

##### Voltage



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

##### Current



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

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### ORDERING INFORMATION

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Model	Range Code		Pressure Type	Pressure Fitting		Output		Elec. Termination	Options*			
209H = Model 209	PSI		G	Gauge	2M	1/4-18 NPT External	11	4-20 mA	02	2 ft. Cable	NN	No Options
	025P	0 to 25	C	Compound	J7*	7/16-20 SAE External	24	0.5 to 5.5 VDC	05	5 ft Cable	H	High Overpressure Capability
	050P	0 to 50	S	Sealed*	1M	1/8-27 NPT External	23	0.2 to 5.2 VDC	10	10 ft Cable	P	Calibration Certificate
	100P	0 to 100							25	25 ft Cable	Y	Clean for Oxygen Service
	250P	0 to 250							P1	Packard (3-Pin) <sup>2</sup>		*Both boxes must be filled in alphabetical order:
	500P	0 to 500							P3	Packard (4-Pin) <sup>3</sup>		• If no options: N + N
	10CP	0 to 1000							H2	Hirschman ("Mini") <sup>4</sup>		• If 1 option: Option Code + N
									A1	Terminal Block w/ Conduit Cover		• If 2 Options: Option Code + Option Code

\*Sealed type available on 250 PSI and above ranges

Ordering Example: 209H100PG2M1102NN = Model 209, 0 to 100 PSI Range, Gauge Pressure, 14" NPT Male Fitting, 4 to 20 mA Output, 2 ft. Cable, No Options  
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

<sup>1</sup>Other lengths available, consult factory.

<sup>2</sup>Order Setra Part #577 for Mating Connector

<sup>3</sup>Order Setra Part #857 for Mating Connector

<sup>4</sup>Order Setra Part #590 for Mating Connector

### GENERAL SPECIFICATIONS

Performance Data		Environmental Data	
Accuracy RSS <sup>1</sup> (at constant temp)	±0.25% FS	Operating <sup>2</sup> Temperature °F (°C)	-40 to +185 (-40 to +85)
Non-Linearity, BFSL	±0.16% FS	Storage Temperature °F (°C)	-40 to +185 (-40 to +85)
Hysteresis	±0.19% FS	Shock <sup>2</sup>	200g operating
Non-Repeatability	±0.05% FS	Acceleration	10 g Maximum <sup>2</sup>
Thermal Effects		Vibration <sup>3</sup>	20g
Compensated Range °F (°C)	-4 to +176 (-20 to +80)	Environmental Protection	Weather Resistant
Electrical Data (Voltage)			
Zero Shift %FS/F (%FS/°C)	±0.03 (±0.05)	Circuit	3-Wire (COM, OUT, EXC)
Span Shift %FS/F (%FS/°C)	±0.015 (±0.03)	Excitation	9 to 30 VDC
Warm-up Shift	0.2% FS Total	Output <sup>4</sup>	See Ordering Information <sup>4,5</sup>
Response Time	5 milliseconds	Output Impedance	10 ohms
Pressure Media		Electrical Data (Current)	
Liquids and gases compatible with 316L Stainless Steel.		Circuit	2-Wire
Physical Description		Output	4 to 20mA <sup>6,7</sup>
Case	Stainless Steel & Valox	External Load	0 to 800 ohms
Wetted Material	316L Stainless Steel	Minimum supply voltage (VDC)	9+ 0.02 x (Resistance of receiver plus line)
Pressure Fitting	See Ordering Information	Maximum supply voltage (VDC)	30+ 0.004 x (Resistance of receiver plus line).
Vent	Through cable or Housing		
Weight (approx.)	3.1 ounces (88 grams)		

<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.

### GAUGE & COMPOUND PRESSURE

(SEALED RANGES AVAILABLE ON 250PSI & ABOVE)

	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.