

## 209 Series – Industrial OEM Pressure Transducer

- ▶ -1 to 690 bar Sensing Ranges (Vacuum to 10,000 psi)
- ▶ Rugged Stainless Steel & Valox® Housings
- ▶ Ideal for High Shock & Vibration Applications

The 209 Series pressure transducers are designed specifically for industrial applications with demanding price and performance requirements. They offer exceptional reliability in typical industrial grade environments. 209 Series transducers operate on low-cost, unregulated DC power, and over a wide temperature band with both liquids and gases. Designed for harsh environments, they are suitable for use in high shock and vibration applications. Stainless steel and Valox® housings are small and lightweight for easy integration into compact systems. The standard feature set of the 209 Series delivers exceptional performance in extreme environmental conditions at a price that OEMs will appreciate.

### Common Specifications

Input	
<b>Pressure Range</b>	-1 to 690 bar (-14.7 to 10,000 psi)
<b>Proof Pressure</b>	See ordering chart
<b>Burst Pressure</b>	See ordering chart
<b>Fatigue Life</b>	>1 million cycles
Performance	
<b>Supply Voltage (Vs)</b>	9-30 VDC (5 VDC on 0.5-4.5 VDC units)
<b>Long Term Drift</b>	0.5% FS/year
<b>Accuracy</b>	±0.25% FS
<b>Thermal Error Zero</b>	±0.036% FS/°C (±0.02% FS/°F)
<b>Thermal Error Span</b>	±0.030% FS/°C (±0.015% FS/°F)
<b>Compensated Temperatures</b>	-20°C to +80°C (-4°F to +176°F)
<b>Operating Temperatures</b>	-40°C to +85°C (-40°F to +185°F)
<b>Storage Temperatures</b>	-40°C to +85°C (-40°F to +185°F)
<b>Zero Tolerance</b>	1% of span
<b>Span Tolerance</b>	1% of span
<b>Response Time</b>	5 ms
Mechanical Configuration	
<b>Pressure Port</b>	See ordering chart
<b>Wetted Parts</b>	17-4 PH Stainless Steel
<b>Electrical Connection</b>	See Dimensions chart, next page
<b>Enclosure</b>	Weather-Resistant (Stainless Steel and Valox®)
<b>Vibration</b>	20g (MIL STD 202, Method 204, Condition C)
<b>Shock</b>	200g (MIL STD 202, Method 213B, Condition C)
<b>Weight</b>	65 gms (2.3 oz)

### Individual Specifications

Voltage Output Units	
<b>Output</b>	3 Wire, see ordering chart
<b>Current Consumption</b>	8 mA
<b>Min. Load Resistance</b>	5000 ohms
Current Output Units	
<b>Output</b>	4-20 mA (2 wire)
<b>Max. Loop Resistance</b>	(Vs-9) x 50 ohms



1/2" Conduit/Terminal Block



Cable



3-Pin Packard Connector



Hirschmann Connector

### Applications

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

### How They Operate

209 Series transducers utilize a proven center mount electrode configuration combined with a durable 17-4 PH stainless steel pressure sensing element to form a variable capacitor. As pressure (or vacuum) increases or decreases, the capacitance changes. Self-contained high-level output IC-circuitry converts the change in capacitance to a fully conditioned linear voltage or current output signal.

**Dimensions**

Electrical Termination Style	Cable Anchor	1/2" Conduit/Terminal Block	Hirschmann Connector	3-Pin Packard Connector
<b>Terminal Specifications</b>	Standard: 61 cm multiconductor cable. Longer lengths options. See ordering chart.	1/2" conduit connection with 3-screw terminal block. (T1 version is same without conduit connection.)	Mating connector is Hirschmann G4WIF. May be ordered separately from Gems— Option 590.	Mating connector is comprised of Packard P/Ns 12065287 & 12103881. May be ordered separately from Gems— Option 581/582.
<b>Ordering Code</b>	<b>XX</b> (cable length in centimetres)	<b>A1</b> - Conduit / <b>T1</b> - Terminal Block	<b>H2</b>	<b>P1</b> (3-Pin)
<b>Volt</b>	<b>Wire Colour</b>	<b>Terminal Labels</b>	<b>Pin #</b>	<b>Pin ID</b>
<b>+Ve in</b>	Red	Exc	1	B
<b>Common</b>	Black	Common	2	A
<b>+Ve out</b>	Green	Out	3	C
<b>+V out</b>	White	—	—	—
<b>Earth</b>	Shield	Gnd	—	—
<b>Current</b>	<b>Wire Colour</b>	<b>Terminal Labels</b>	<b>Pin #</b>	<b>Pin ID</b>
<b>+Ve</b>	Red	+Ve	1	B
<b>-Ve</b>	Black	-Ve	2	A
<b>Earth</b>	Shield	—	—	—

**How to Order**

Use the **bold** characters from the chart below to construct a product code.

**SELECT**

Series **2091** - 209 Series

Pressure Range Code

**2091 - 001P - G - 2M - 11 - 02 - XXX**

**Pressures – bar**

Code	Range	Proof	Burst	Code	Range	Proof	Burst
<b>Z01</b>	0 to -1.01	0.69	1.03	<b>150P</b>	0 to 10.34	20.68	69.95
<b>001P</b>	0 to 0.07	0.14	17.24	<b>200P*</b>	0 to 13.79	27.58	137.89
<b>002P</b>	0 to 0.14	0.27	17.24	<b>250P*</b>	0 to 17.24	34.47	137.89
<b>005P*</b>	0 to 0.34	0.69	17.24	<b>500P*</b>	0 to 34.47	69.95	206.84
<b>010P*</b>	0 to 0.69	1.38	34.47	<b>600P</b>	0 to 41.37	82.74	206.84
<b>015P</b>	0 to 1.03	2.07	34.47	<b>10CP*</b>	0 to 69.95	137.89	344.74
<b>025P*</b>	0 to 1.72	3.45	34.47	<b>20CP</b>	0 to 137.89	206.84	448.16
<b>030P</b>	0 to 2.07	3.45	34.47	<b>30CP</b>	0 to 206.84	310.26	517.11
<b>050P*</b>	0 to 3.45	6.89	51.71	<b>50CP</b>	0 to 344.74	517.11	689.47
<b>100P*</b>	0 to 6.89	13.79	69.95	<b>10KP</b>	0 to 689.47	861.84	1,378.95

**Options**

- 590** - Hirschmann Mating Connector (for H2 Termination)
- 581** - Packard Mating Connector, 3 ft. (for P1 Termination)
- 582** - Packard Mating Connector, 6 ft. (for P1 Termination)

**Electrical Termination**

- XX** - Cable length in feet (e.g., 02 = 2 ft.)\*
- P1** - Packard (3-Pin)
- H2** - Hirschmann ("Mini")
- T1** - Terminal Block
- A1** - 7/8" Hole for 1/2" Conduit\*

**Output**

- 11** - 4-20 mA\*
- 24** - 0.5-5.5 Vdc\*
- 28** - 1-6 Vdc
- 45** - 0.5-4.5 VDC (5 VDC supply voltage)

**Pressure Port**

- 2M** - 1/4" NPT Male\*
- J7** - 7/16" SAE Male (J1926-2)
- 1M** - 1/8" NPT Male

**Datum**

- G** - Gauge
- C** - Compound (030PC = -14.7 to 30 psi)
- S** - Sealed (available in 200 psi ranges and above)
- V** - Vacuum (**Z01** range code only)

\* Standard configuration. Minimum 25 pieces apply for all other configurations.