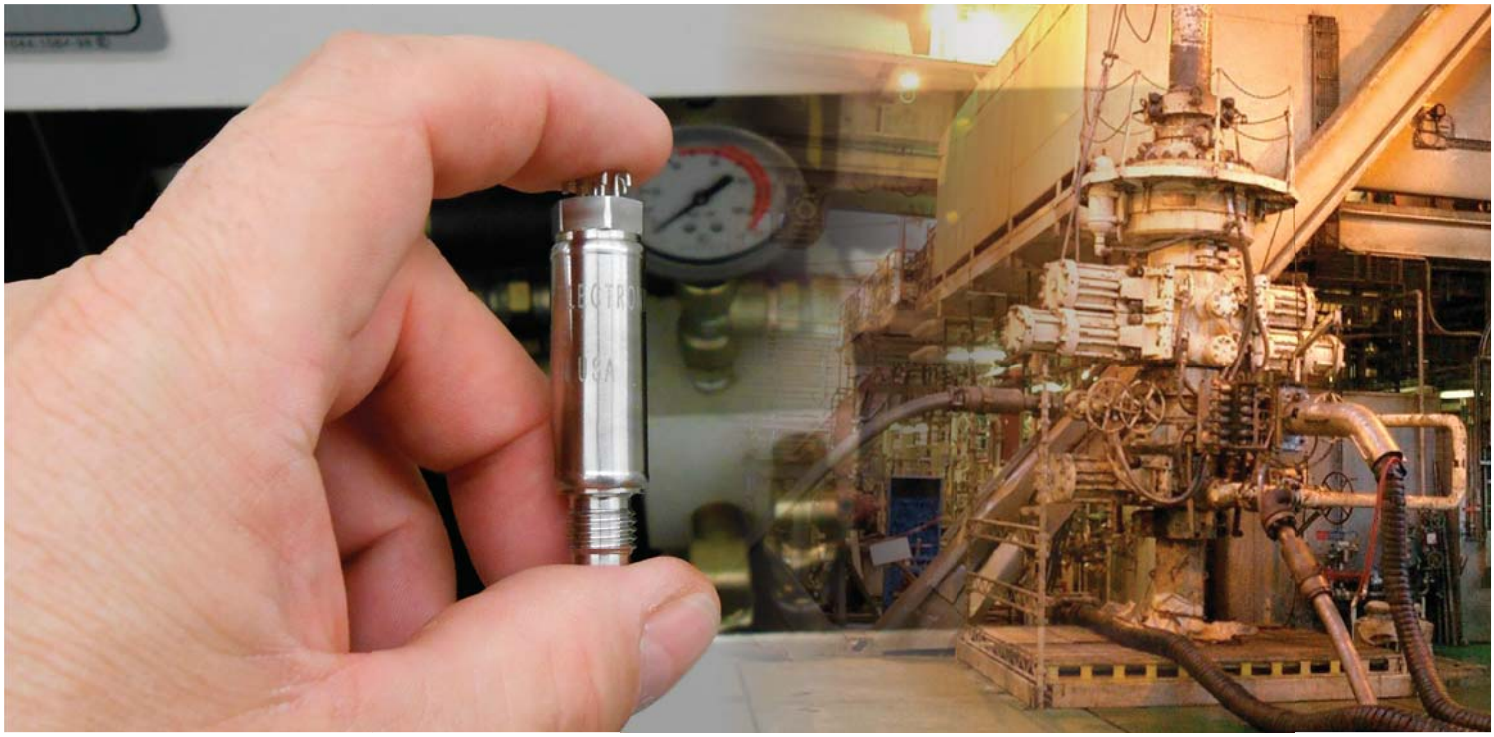
Paine 310-38-520 Series Pressure Transducer

High Precision, HP/HT, **+218°C**, 0-35,000 PSIA (0-2413 BAR)



The **310-38-520 Series** is our High Pressure / High Temperature, High Precision Pressure and Temperature transducer featuring 2.6mV/V nominal output with a total error band of ±0.02%.

With the added benefit of it's small size, sealed all-welded construction and the ability to perform in highly corrosive environments, the **310-38-520 Series**' real time pressure and temperature measurements are well suited in downhole oil and gas pressure monitoring, process controls, test stands, OEM's and many other industries.

Solutions

- Pressure & Temperature Measurement.
- 1/2 " Diameter Package.
- All-Welded, Sealed Construction.
- Harsh/Extreme Environment Ready.
- Wide Operating Pressure Range.

Potential Applications

- Oil & Gas Exploration & Production.
- MWD, PWD & LWD tools.
- Wellhead & Pump Station Monitoring.
- Geothermal & Power Generation.
- OEM & End-User Applications.

Features

- **Total Error Band:** ±0.02% of Full Scale Sensitivity.
- **Output:** mV/V.
- **Operating Temperature:** -40°F to +425°F (-40°C to +218°C).
- **Pressure Range:** 0-5,000 to 0-35,000 PSIA (344 to 2413 BAR).
- **External Case Pressure:** Up to 20,000 PSI (1378 BAR).
- **Media Compatibility:** Compatible with alloy UNS NO7718 solution annealed and aged to a minimum hardness of 40HRC. Inconel® 718.
- **Pressure Fitting:** Per MS33656-E3.

PAINE™

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Process Management

Specifications

Calibration: Calibration Certificates are supplied with each unit and available on-line.

Performance

Full Scale (F.S.) Sensitivity: 2.6 mV/V nominal.
Total Error Band (Non-Linearity, Hysteresis & Thermal Effects): Shall not be greater than ±0.02% of the Full Scale Sensitivity (F.S.S.) as compared to the serial number specific polynominal model P(T,mV) for all input pressures and temperatures over the calibrated range.
Output at Zero Pressure Over The Calibrated Temperature Range: 0 ± 2.0% full scale.
Platinum Resistance Temperature Detector (RTD): 0°C, 1000 Ω ± .06% Ω to IEC 751, Class A, Alpha = .00385 nominal.
Un-Compensated: This sensor is not hardware compensated for temperature effects on signal. Each sensor is provided with coefficients to load into your electronics for temperature and non-linearity compensation.

Environmental

Environmental: Error due to combined effect of shock, vibration and acceleration shall be less than 0.01 % of F.S. per G, 20G maximum.
Operating Temperature Range: -40°F to +425°F (-40°C to +218°C).
Calibrated Temperature Range: +75°F to +350°F (+23°C to +176°C).
Pressure Media: Any compatible with alloy UNS NO7718 solution annealed and aged to a minimum hardness of 40HRC.

Mechanical

Pressure Range: Contact factory for additional pressure ranges. * 310-35-520-08 is calibrated to 30,000 PSIA (2068 BAR).

Pressure Table

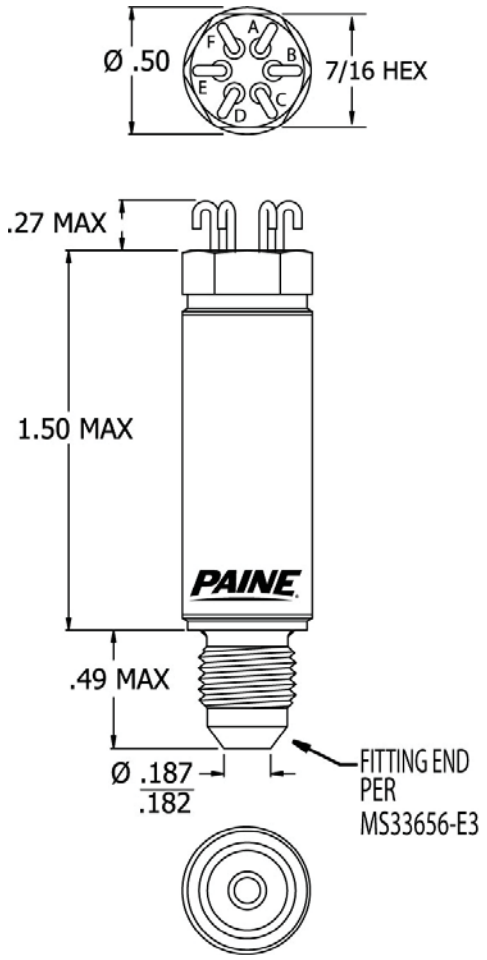
Standard Part Number	Pressure Range PSIS (BAR)	Proof Pressure PSIS (BAR)	Burst Pressure PSIS (BAR)	Replaceable Seal Part Number
310-38-520-01	0-5,000 (0-344)	7,500 (517)	10,000 (684)	247-99-250-01
310-38-520-02	0-10,000 (0-689)	15,000 (1034)	20,000 (1378)	247-99-250-01
310-38-520-03	0-15,000 (0-1034)	18,750 (1292)	22,500 (1551)	247-99-250-01
310-38-520-04	0-20,000 (0-1378)	25,000 (1723)	30,000 (2068)	247-99-250-01
310-38-520-05	0-22,500 (0-1551)	28,125 (1939)	30,000 (2068)	247-99-250-01
310-38-520-06	0-25,000 (0-1723)	31,325 (2159)	33,000 (2275)	247-99-250-01
310-38-520-07	0-30,000 (0-2068)	37,500 (2585)	40,000 (2757)	247-99-250-02
310-38-520-08*	0-35,000 (0-2413)	40,000 (2757)	48,000 (3309)	247-99-250-02

External Case Pressure: Up to 20,000 PSI (1378 BAR).
Pressure Fitting: Per MS33656-E3.
Installation Information: Mount on port using annealed Inconel® 600 Replaceable Seal (provided). Thermal coefficient of the mounting expansion should not exceed 8.3 x 10^ - 6 in/in °F for operation above 100°C.
Recommended Installation Torque: 125 to 150 in-lb (14-17 Nm).
Weight: 2.0 oz maximum.

Electrical

Excitation: 1 to 20 VDC (10 VDC nominal).
Input Resistance: 1500 ± 300 Ω. **Output Resistance:** 1500 ± 150 Ω.
Insulation Resistance: All conductors together to case, 10GΩ minimum at 50 VDC and +77°F.
Electrical Connections: High temperature solderable connections.

Dimensions (inches)



Connections

PIN	FUNCTION
A	+ EXCITATION
B	+ SIGNAL
C	- SIGNAL
D	-EXCITATION
E	R.T.D.
F	R.T.D.

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