

Paine™ 212-60-080 Series Pressure Transducer

VDC, Differential, +121 °C, Ranges to 5,000 PSID (344 BAR)



The Paine 212-60-080 Differential Series is temperature compensated and a 0–5 VDC output, full line differential pressure sensor.

With two separate sensing elements to measure the pressure at the input ports, each sensor has two strain gage legs. These two sensors are connected to provide a fully balanced bridge. This sensing method provides an accurate output directly proportional to the pressure difference at the two ports.

Featuring built-in electronics to eliminate the need for separate sensors and amplifiers, the Paine 212-60-080 Series is designed for dependable and long-term pressure measurement in a small/light weight (3 oz) manifold style mounting package.

Solutions

- Fast response time
- Compact design
- High shock and vibration design
- Port adapters available



Port adapters and accessories available

Potential applications

- Actuator and propulsion controls
- Industrial hydraulic and pneumatic controls
- Automotive test systems
- Vehicle steering control systems
- Fuel pressure monitoring
- Positioning systems
- Robotic hydraulic controls
- Valve pressure control

Features

- **Thermal zero shift:** $\pm 0.02\%$ of Full Scale (F.S.) per $^{\circ}\text{F}$ maximum
- **Thermal sensitivity shift:** $\pm 0.02\%$ of F.S. per $^{\circ}\text{F}$ maximum
- **Output:** VDC
- **Operating temperature:** -40 to $+250$ $^{\circ}\text{F}$ (0 to $+121$ $^{\circ}\text{C}$)
- **Pressure range:** ± 500 to $\pm 5,000$ psid (34 to 344 bar)
- **Operating media:** Any compatible with 300 series CRES, Buna-N-Rubber, 2024-T351 AL, and 15-5 PH CRES
- **Pressure fitting:** Manifold mounting per MIL-G-5514, Type II, Class 2. O-rings (2) MS28775-008 are supplied with each transducer.

Specifications

Calibration: Calibration certificates are supplied with each unit and available online.

Performance

Thermal zero shift: $\pm 0.02\%$ of F.S. output per $^{\circ}\text{F}$ maximum

Thermal sensitivity shift: 0.02% of F.S. per $^{\circ}\text{F}$ maximum

Output at zero differential pressure: 0.0 ± 0.1 VDC = E_0 over calibrated temperature range

Output at positive rated pressure ($P1 > P2$):
 $+5.0 \pm 0.1$ VDC = E_p

Output at negative rated pressure ($P2 > P1$):
 $-(E_p - 2 E_0) \pm 0.1$ VDC

Static error band (non-linearity and hysteresis combined):
 See “Pressure Table” on page 3.

Operating temperature: -40 to $+250$ $^{\circ}\text{F}$ (0 to $+121$ $^{\circ}\text{C}$)

Environmental

Positive excitation: 11 to 40 VDC, 20 mA maximum

Negative excitation: -6 to -15 VDC, 5 mA maximum

Output current: 50 k Ω maximum load, short circuit protection

Output ripple: 70 mV peak to peak (typical) $0-1$ kHz bandwidth

Electrical connections: Six pin bayonet locking electrical connector. Mates with M83723-75R10066 type connector, not supplied with unit.

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Mechanical

Pressure range: Contact factory for additional pressure ranges.

Table 1. Pressure Table

Standard part number	Pressure range PSID (BAR)	Proof pressure PSID (BAR)	Burst pressure PSID (BAR)	Static error band (BSLM)
212-60-080-01	±500 (34)	±850 (58)	±1,250 (86)	±1.0% F.S.
212-60-080-02	±1,000 (68)	±1,700 (117)	±2,500 (172)	±0.75% F.S.
212-60-080-03	±3,000 (103)	±5,100 (351)	±7,500 (517)	±0.5% F.S.
212-60-080-04	±5,000 (137)	±8,500 (586)	±12,500 (861)	±0.5% F.S.

Operating media: Any compatible with 300 series CRES, Buna-N-Rubber, 2024-T351 AL and 15-5 PH CRES.

Pressure fitting: Manifold mounting per MIL-G-5514, Type II, Class 2. O-rings (2) MS28775-008 are supplied with each transducer.

Electrical

Excitation: 10 VDC

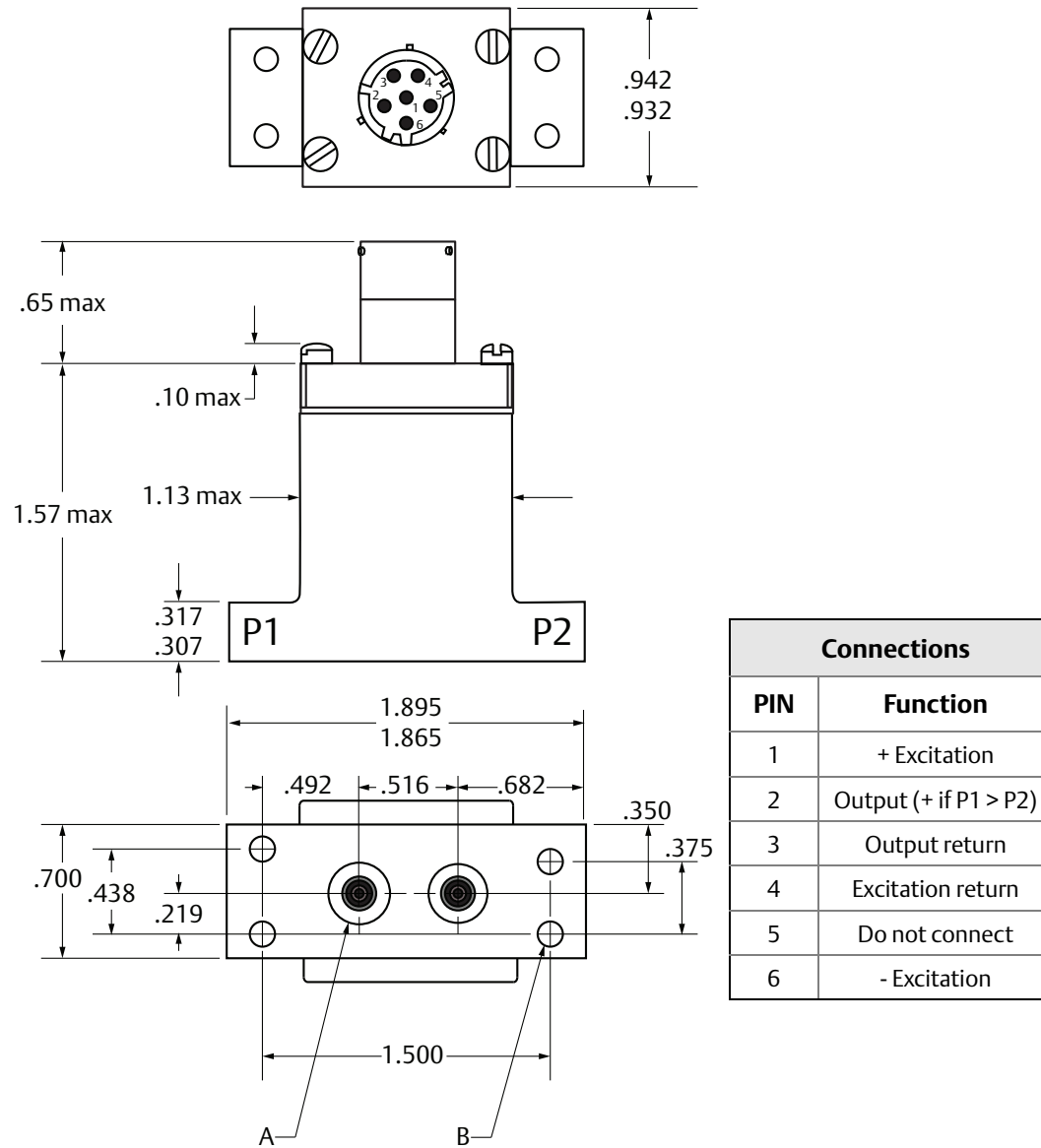
Input resistance: $350 \pm 70 \Omega$

Output resistance: $350 \pm 35 \Omega$

Electrical connections: Four pin bayonet locking electrical connector. Mates with MS3116-8-4S. (P/N: 247-99-100-01 sold separately).

Dimensional Drawings

Figure 1. Paine 212-60-080 Series




A. Pressure port manifold mounting per MIL-G-5514

B. Ø.125/.130 through four places

Dimensions are shown in inches.


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