HIGH ACCURACY

measurement instruments

# PRODUCT DATASHEET

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**Product Data Sheet**
September 2017
212-60-080, Rev J

# 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.**

EMERSON

## 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:** ±0.02% of Full Scale (F.S.) per °F maximum
- **Thermal sensitivity shift:** ±0.02% of F.S. per °F maximum
- **Output:** VDC
- **Operating temperature:** –40 to +250 °F (0 to +121 °C)
- **Pressure range:** ±500 to ±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:** ±0.02% of F.S. output per °F maximum

**Thermal sensitivity shift:** 0.02% of F.S. per °F maximum

**Output at zero differential pressure:** 0.0 ± 0.1 VDC = $E_o$ over calibrated temperature range

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

**Output at negative rated pressure (P2 > P1):** - ($E_p$ – 2 $E_o$) ± 0.1 VDC

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

**Operating temperature:** –40 to +250 °F (0 to +121 °C)

## Environmental

**Positive excitation:** 11 to 40 VDC, 20 mA maximum

**Negative excitation:** –6 to –15 VDC, 5 mA maximum

**Output current:** 50 kΩ 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.

## Contents

## 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

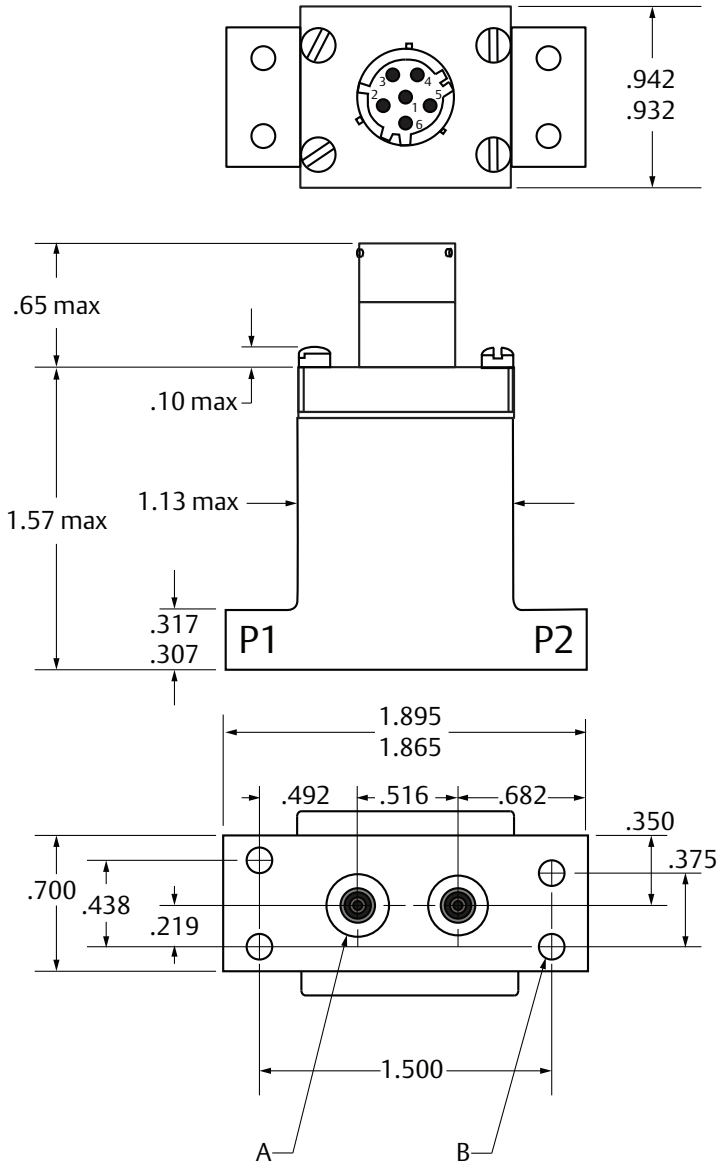
**Input resistance:** 350 ± 70 Ω

**Output resistance:** 350 ± 35 Ω

**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**




| Connections | |
|---|---|
| **PIN** | **Function** |
| 1 | + Excitation |
| 2 | Output (+ if P1 > P2) |
| 3 | Output return |
| 4 | Excitation return |
| 5 | Do not connect |
| 6 | - Excitation |

A. Pressure port manifold mounting per MIL-G-5514
B. ∅.125/.130 through four places
Dimensions are shown in inches.

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