

Paine 210-65-010 Series Pressure Transducer

mV/V, Differential, Skydrol[®], +121 °C, Ranges to 5,000 PSID (344 BAR)



The 210-65-010 Differential Series is especially designed to make differential measurements at full system pressure in Skydrol[®] fire resistant aviation hydraulic fluid applications. With two separate sensing elements to measure the pressure at the input ports, the 210-60-090 Differential Series provides an output directly proportional to the pressure difference at the two ports. It is temperature compensated, and is recommended for applications which require highly accurate measurement.

It is well suited for differential pressure measurement at full system pressure in applications such as actuator position feedback signals and aviation testing environments.

Solutions

- Skydrol® Fire Resistant Aviation Hydraulic Fluid Applications
- High Shock and Vibration Design
- **Port Adapters Available.**
- Compact Size.



Port Adapters and Accessories Available

Potential Applications

- Aviation and Automotive Test Stands.
- Aerospace and Aviation Transportation Motion Simulators.
- Transportation Steering Control Systems.
- Military Weapon Positioning Systems.
- Actuators.
- Positioning Systems.

Features

- **Thermal Zero Shift:** $\pm 0.03\%$ of Full Scale (F.S.) per °F maximum.
- **Thermal Sensitivity Shift:** $\pm 0.01\%$ of Full Scale per °F maximum.
- **Output:** mV/V.
- **Operating Temperature:** 0 °F to +250 °F (-17 °C to +121 °C).
- **Pressure Range:** 0-500 to 0-5,000 psid (34 to 344 bar).
- **Operating Media:** Any compatible with Skydrol®.
- **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 on-line.

Performance

Thermal Zero Shift: $\pm 0.03\%$ of Full Scale (F.S.) per °F maximum.

Thermal Sensitivity Shift: $\pm 0.01\%$ of Full Scale per °F maximum.

Full scale (F.S.) Sensitivity: P1=2.0 mV/V $\pm 10\%$, P2=P1 $\pm 2.0\%$ of P1.

Output at Zero Differential Pressure: 0 $\pm 10\%$ F.S.

Static Error Band (Non-Linearity and Hysteresis Combined): See [Pressure table](#).

Repeatability: Within $\pm 0.10\%$ of F.S.

Environmental

Environmental: Error due to combined effect of shock, vibration and acceleration shall be less than 0.01% of F.S. per G.
Acceleration: 20 G's per MIL-G-810, method 513.1, Procedure I.

Vibration: 20 G's per MIL-STD-810, method 514.1, Procedure.

Shock: 30 G's Per Mil-Std-810, Method 516.1, Procedure IV.

Operating Temperature Range: -0 °F to +250 °F (-17 °C to +121 °C).

Compensated Temperature Range: +25 °F to +150 °F (-10 °C to +121 °C).

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Mechanical

Pressure Range: Contact factory for additional pressure ranges.

| Pressure table | | | | |
|----------------------|---------------------------|---------------------------|---------------------------|--------------------------|
| Standard Part Number | Pressure range PSID (BAR) | Proof pressure PSID (BAR) | Burst pressure PSID (BAR) | Static error band (BSLM) |
| 210-65-010-01 | ± 500 (34) | ± 750 (51) | ± 1,250 (86) | ± 0.35% F.S. |
| 210-65-010-02 | ± 1,000 (68) | ± 1,500 (103) | ± 2,500 (172) | ± 0.35% F.S. |
| 210-65-010-03 | ± 1,500 (103) | ± 2,250 (115) | ± 3,750 (258) | ± 0.25% F.S. |
| 210-65-010-04 | ± 2,000 (137) | ± 3,000 (206) | ± 5,000 (344) | ± 0.25% F.S. |
| 210-65-010-05 | ± 2,500 (172) | ± 3,750 (258) | ± 6,250 (430) | ± 0.25% F.S. |
| 210-65-010-06 | ± 3,000 (206) | ± 4,500 (310) | ± 7,500 (517) | ± 0.25% F.S. |
| 210-65-010-07 | ± 3,500 (241) | ± 5,250 (361) | ± 8,750 (603) | ± 0.25% F.S. |
| 210-65-010-08 | ± 4,000 (275) | ± 6,000 (413) | ± 10,000 (689) | ± 0.25% F.S. |
| 210-65-010-09 | ± 5,000 (344) | ± 7,500 (517) | ± 12,500 (861) | ± 0.25% F.S. |

Operating Media: Any compatible with Skydrol®.

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.

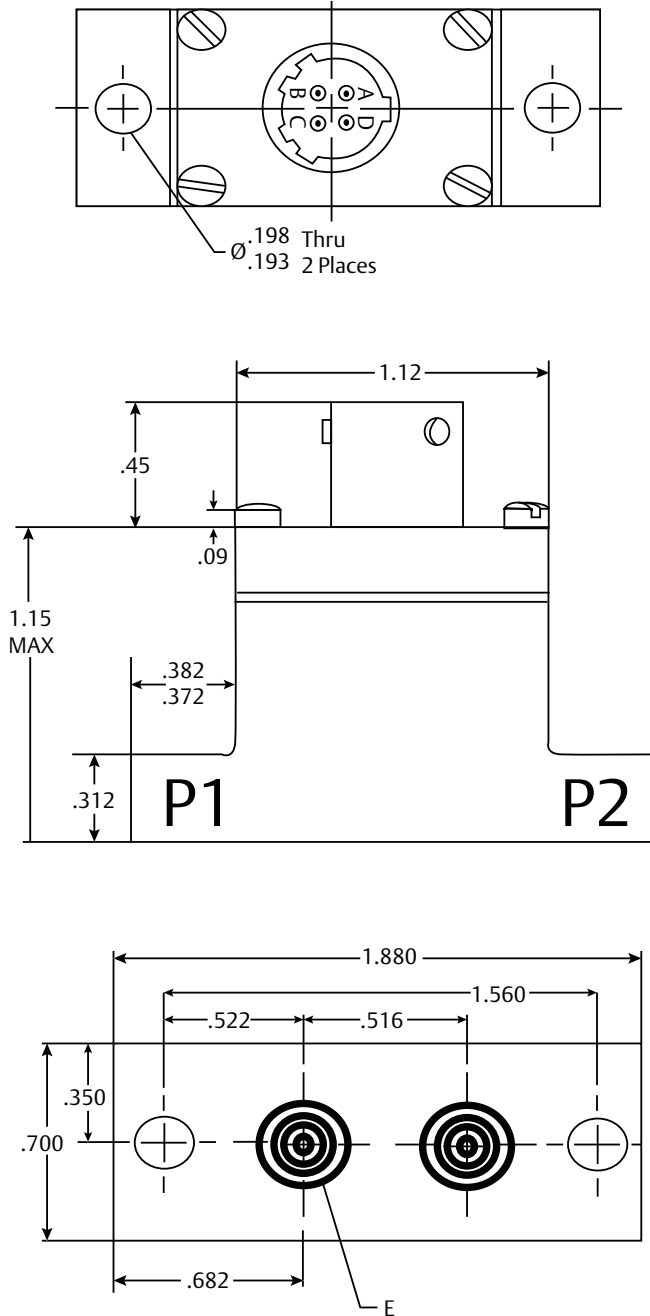
Input Resistance: $350 \pm 70 \Omega$

Output Resistance: $350 \pm 35 \Omega$

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

Dimensional Drawings

Figure 1. 210-65-010 Series



| Connections | |
|-------------|-------------------------|
| PIN | Function |
| A | + Excitation |
| B | + Signal ⁽¹⁾ |
| C | - Signal ⁽¹⁾ |
| D | - Excitation |

1. Polarity as shown when pressure at P1 is greater than pressure at P2.

A-D. See Connections table




E. Pressure port, 2 places per MIL-P-5514 Type II class 2 (Static Face Seal) for use with MS 28775-008 size for media compatible O-ring. Dimensions are in inches.


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