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PRODUCT DATASHEET

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Product Data Sheet
September 2017
210-65-010, Rev G

Paine™ 210-65-010 Series Pressure Transducer

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

The Paine 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 Paine 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.

EMERSON

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:** ± 0.03% of Full Scale (F.S.) per °F maximum
- **Thermal sensitivity shift:** ± 0.01% of F.S. 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 online.

Performance

Thermal zero shift: ±0.03% of F.S. per °F maximum

Thermal sensitivity shift: ±0.01% of F.S. per °F maximum

Full scale (F.S.) sensitivity: P1=2.0 mV/V ± 10%, P2=P1 ± 2.0% of P1

Output at zero differential pressure: 0 ± 10% F.S.

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

Repeatability: Within ± 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 V Part 1

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

Operating temperature range: –0 to +250 °F (–17 to +121 °C)

Compensated temperature range: +25 to +150 °F (–10 to +121 °C)

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 PISID (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)	±20,000 (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

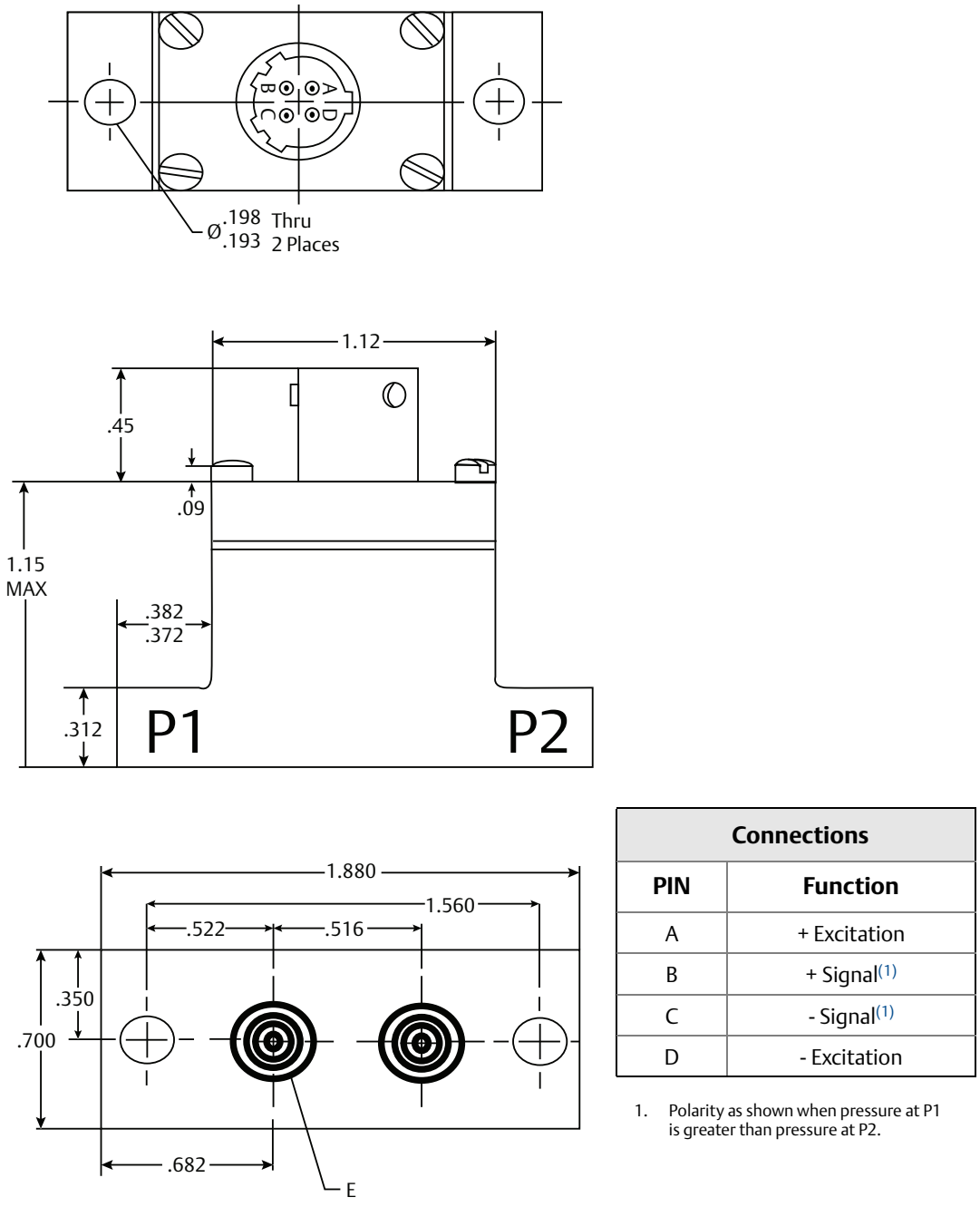
Input resistance: 350 ± 70 Ω

Output resistance: 350 ± 35 Ω

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

Dimensional Drawings

Figure 1. Paine 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, two 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 shown in inches.

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