

Paine™ 211-55-010 Series Pressure Transducer

mV/V, HP/HT, +316 °C, Ranges to 30,000 PSIA (2,068 BAR)



The Paine 211-55-010 Series is our Highest Pressure and Highest Temperature (HP/HT) combination transducer. Rated to an operating temperature of +600 °F (+316 °C), the 211-55-010 Series is your best solution for new high temperature offshore oil, gas, and power industries tool and process equipment design. With its small form factor, rugged design, and compatibility with corrosive environments, it is the proven choice for many exploration and production companies world-wide.

Solutions

- High pressure and high temperature measurement
- 3/4-in. diameter package
- All-welded, sealed construction
- Harsh/extreme environment ready

Potential applications

- Downhole tools (MWD, LWD, Wireline, and more)
- Wellhead and pump station monitoring
- Geothermal and power generation
- Steam Assisted Gravity Drainage (SAGD) applications
- Artificial lifts

Features

- **Full Scale (F.S.) sensitivity:** 2.60 mV/V nominal
- **Total error band (non-linearity, hysteresis, and thermal effects):** ± 0.200% F.S. as compared to the serial number specific polynomial model P (T mv) for all input pressures and temperatures over the calibrated range.
- **Output:** mV/V
- **Operating temperature:** -40 to +600 °F (-40 to +316 °C)
- **Pressure range:** 0-5,000 to 0-30,000 psia (344 to 2,068 bar)
- **Operating media:** Compatible with alloy UNS N07718 solution annealed and aged to a minimum hardness of 40HRC.
- **Pressure fitting:** Per MS33656-E4 except I.D.

Specifications

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

Performance

Full Scale (F.S.) sensitivity over the calibrated temperature range: 2.60 mV/V nominal

Total error band (non-linearity, hysteresis, and thermal effects) bounds shall be: ± 0.200% F.S. as compared to the serial number specific polynomial model P(T mv) for all input pressures and temperatures over the calibrated range

Non-linearity and hysteresis combined: ±0.150% of F.S. maximum best straight line method (BSLM)

Output at zero pressure over the calibrated temperature range: ±2.5 mV/V

Platinum resistance temperature detector (RTD): 0 °C, 1000 Ω ± 0.06% Ω to IEC 751, Class A, Alpha = 0.00385 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 nonlinearity compensation.

Environmental

Environmental: Error due to combined effect of shock, vibration and acceleration shall be less than 0.01% of F.S. per G.

Operating temperature range: -40 to +600 °F (-40 to +316 °C)

Calibrated temperature range: +75 to +500 °F (+23 to +260 °C)

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Mechanical

Pressure range: Contact factory for additional pressure ranges.

Table 1. Pressure Table

Standard part number	Pressure range PSIA (BAR)	Proof pressure PSIA (BAR)	Burst pressure PSIA (BAR)	Replaceable seal part number
211-55-010-01	0-5,000 (0-344)	7,500 (517)	10,000 (689)	247-99-250-01
211-55-010-02	0-10,000 (0-689)	15,000 (1,034)	20,000 (1,378)	247-99-250-01
211-55-010-03	0-15,000 (0-1,034)	18,750 (1,292)	22,500 (1,551)	247-99-250-01
211-55-010-04	0-20,000 (0-1,378)	25,500 (1,723)	30,000 (2,068)	247-99-250-01
211-55-010-05	0-20,500 (0-1,551)	25,500 (1,939)	30,000 (2,068)	247-99-250-01
211-55-010-06	0-25,000 (0-1,723)	28,000 (2,154)	33,000 (2,275)	247-99-250-01
211-55-010-07	0-30,000 (0-2,068)	33,000 (2,585)	40,000 (2,757)	247-99-250-02

Operating media: Any compatible with UNS N07725, solution annealed and aged to a maximum hardness of 43 HRC

Pressure fitting: Per MS33656-E4 except I.D.

Installation information: 0.25 O.D. tubing with 37-in. flare. For optional boss mounting configuration, contact Paine Electronics.

Electrical

Excitation: 1 to 20 VDC (10 VDC nominal)

Input resistance: 1500 ± 300 Ω

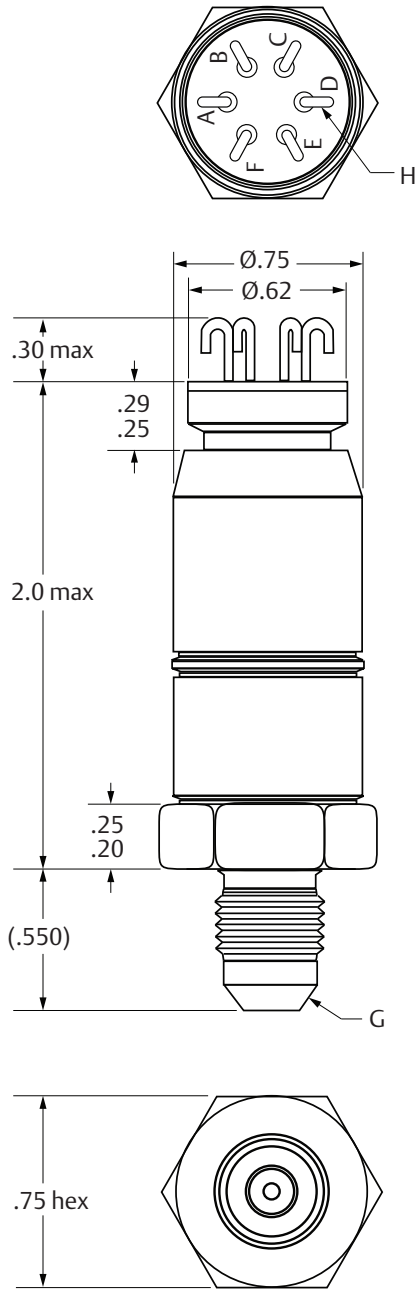
Output resistance: 1500 ± 150 Ω

Insulation resistance: All conductors together to case, 10 GΩ minimum at 50 VDC and +77 °F (25 °C)

Electrical connections: Six 18 AWG high temperature solderable pins

Dimensional Drawings

Figure 1. Paine 211-55-010 Series



Connections	
PIN	Function
A	+ Excitation
B	+ Signal
C	- Signal
D	- Excitation
E	R.T.D.
F	R.T.D.

A - F. See connections table

G. Fitting end per MS33656-E4

H. (6) 18 AWG solderable pins, equally spaced, set in individual glass beads




Dimensions are shown in inches.

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