

Paine 311-38-540 Series Pressure Transducer

mV/V, HP/HT, +218 °C, Ranges to 30,000 PSIA (2068 BAR)



Well suited for applications requiring high shock, vibration and external case pressures, our 311-38-540 Series is the perfect solution for critical pressure and direct media stream temperature measurements. The 311-38-540 Series is designed for corrosive environments and is provided in pressure ranges of 0-5,000 to 0-30,000 psia (0-344 to 0-2068 bar) and temperature measurement from -40 °F to +425 °F (-40 °C to +218 °C).

Solutions

- High Pressure and High Temperature Measurement.
- Direct Media Stream Temperature Measurement.
- Rapid Temperature Change Detection.
- All-Welded, Sealed Construction.
- Harsh/Extreme Environment Ready.

Potential Applications

- Oilfield Drilling/Production.
- Industrial Plant Automation Monitoring.
- Harsh/Extreme/Corrosive Environments.
- Heavy/Agricultural/Off-Road Equipment.

Features

- **Full Scale (F.S.) Sensitivity:** 2.6 mV/V nominal.
- **Total Error Band (Non-Linearity, Hysteresis and Thermal Effects):** Shall not be greater than 0.02% of the 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 °F to +425 °F (-40 °C to +218 °C).
- **Pressure Range:** 0-5,000 to 0-30,000 psia (344 to 2068 bar).
- **Operating Media:** Compatible with alloy UNS NO7718 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 on-line.

Performance

Full Scale (F.S.) Sensitivity: 2.6 mV/V nominal.

Total Error Band (Non-Linearity, Hysteresis and Thermal Effects): Shall not be greater than 0.02% of the 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 at Zero Pressure: 0.12 ± 0.1 mV/V over calibrated temperature range.

Platinum Resistance Temperature Detector (RTD): 0 °C, $1000\Omega \pm 0.06\% \Omega$ to IEC 751, Class A, Alpha = 0.00385 nominal.

Environmental

Operating Temperature Range: -40 °F to +425 °F (-40 °C to +218 °C).

Calibrated Temperature Range: +75 °F to +350 °F (+23 °C to +176 °C).

Contents

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Mechanical

Pressure Range: Contact factory for additional pressure ranges.

Pressure table				
Standard part number	Pressure range PSIA (BAR)	Proof pressure PSIA (BAR)	Burst pressure PSIA (BAR)	Total error band (%FS)
311-38-540-04	0-20,000 (0-1,378)	24,000 (1,654)	30,000 (1,378)	0.02%
311-38-540-06	0-25,000 (0-1,723)	30,000 (2,068)	33,000 (2,275)	0.02%
311-38-540-07	0-30,000 (0-2,068)	36,000 (2,482)	40,000 (2,757)	0.02%

Operating Media: Any compatible with alloy UNS N07718 solution annealed and aged to a maximum hardness of 40 HRC, and alloy 600 (Probe).

Pressure Fitting: 0.750-16 UNF-2A thread. Threads and o-ring mating surfaces to be plated with Armoloy thin dense chrome, 0.0001- 0.0002 inch thick per drawings 40100-480 and 40100-481 (available upon request).

Electrical

Excitation: 1 to 20 VDC (10 VDC nominal).

Input Resistance: 1500 \pm 300 Ω .

Output Resistance: 1500 \pm 150 Ω .

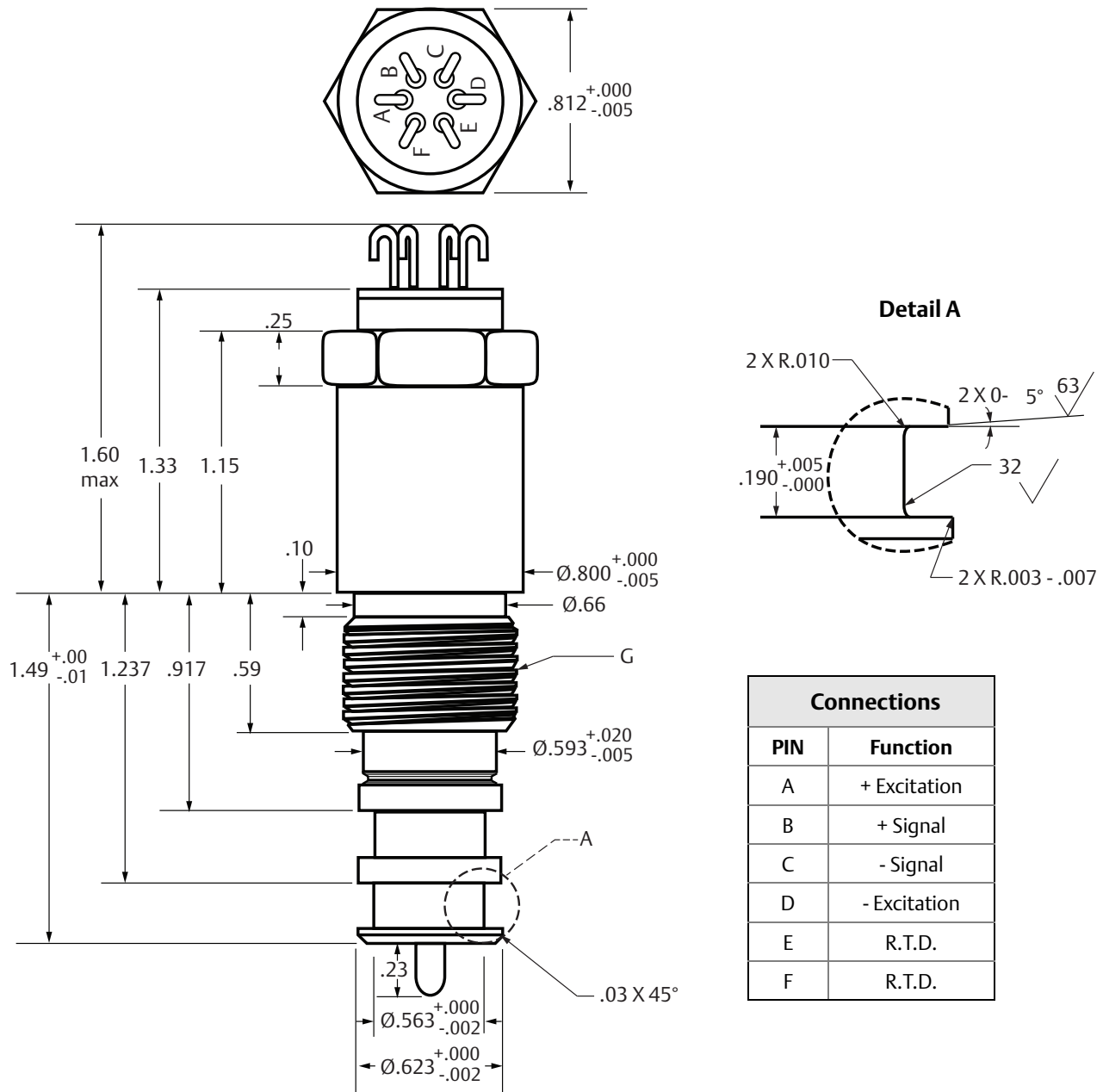
Insulation Resistance: All conductors together to case, 10 G Ω minimum at 50 VDC and +77 °F (25 °C).

Platinum Resistance Temperature Detector (RTD): Class A, 1000 Ω @ 32 °F (0 °C) to IEC 751, Class A, Alpha = 0.00385 nominal.

Electrical Connections: 6ea, high temperature solderable pins.

Dimensional Drawings

Figure 1. 311-38-540 Series



A - F. See Connections table
 G. .750-16 UNF-2A thread

Dimensions are inches.

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