

DATA SHEET

# High Temperature Piezoelectric Dynamic Pressure Transducer

Model 522M37A



## 01 Description

Meggitt model 522M37A is a high quality piezoelectric pressure sensor designed to measure small dynamic pressure fluctuations, even in the presence of high static pressure. The sensor can also operate at very high temperatures; up to +938°F continuously and up to +1040°F intermittently.

Model 522M37A features an all welded, Inconel and stainless steel construction with a custom length metal-sheathed, mineral-insulated integral hardline cable. Output is via an integral three-pin (one pin not used) receptacle. The output signal is a balanced, differential signal. A differential input charge amplifier is appropriate for use with this sensor.

Common applications include: gas turbine combustion monitoring, high pressure steam and propulsion system testing. The unit with its mating cable is certified EExnA II T1-20°C <Tamb<399°C for use in explosive environments.

Model number definition:  
522M37A-ZZZ

522M37A= basic model number  
ZZZ = cable length in inches

## 02 Key features and benefits

- 986°F (+530°C) operation
- 1040°F (+560°C) intermittent operation
- Sensitive dynamic pressure measurements under high static pressure (not sensitive to static pressure)
- Balanced differential output
- Hermetically sealed, Inconel/SST construction
- Integral hardline cable, CUSTOM LENGTHS- cable does not have a metallic overbraid
- RoHS Compliant

## 03 Applications

- Combustion Monitoring
- High Pressure Steam
- Turbine exhaust pressure measurements

## 04 Contact

1-833-HITEMP1  
TMCSR.MSSOC@meggitt.com

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HIGH TEMPERATURE PE DYNAMIC PRESSURE TRANSDUCER, Model 522M37A

05 Specifications

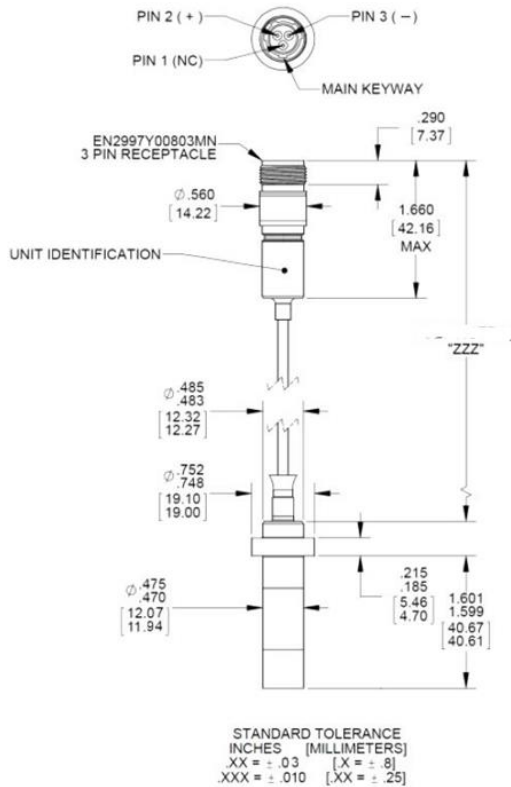
The following performance specifications are typical values, referenced at +75°F (+24°C) unless otherwise noted.

Dynamic characteristics	Units	522M37A
Measurement range	psi	± 500
Sensitivity	pC/psi	17 ± 20%
Resonance frequency, minimum	kHz	20
Sensitivity deviation over temperature -67°F to +986°F (-55°C to +530°C)	%	± 10 typical
Vibration sensitivity	pC/g	0.05 typical
<b>Electrical characteristics</b>		
Output signal type		Balanced differential
Resistance		
Room temperature, +75°F (+24°C)		
Internal (between pins 2 and 3)	Ω	1 G minimum
Insulation (between pins 2 or 3 and case)	Ω	100 M minimum
Maximum temperature, +986°F (+530°C)		
Internal	Ω	50 k minimum
Insulation	Ω	10 k minimum
Capacitance (between pins 2 and 3)	pF	165 + 65 pF/ft
<b>Environmental characteristics</b>		
Temperature range, operating		
Transducer and hardline cable		
Continuous	°F (°C)	-67 to +986 (-55 to +530)
Maximum intermittent exposure [1]	°F (°C)	+1040 (+560)
Receptacle [2]	°F (°C)	-67 to +500 (-55 to +260)
Humidity		Hermetically sealed
Maximum static pressure	psi	400
Minimum bend radius of hardline cable	inch	0.3
<b>Physical characteristics</b>		
Dimensions		See drawing detail
Weight	grams (oz)	18 (0.64) + 13 (0.46)/ft typ
Material		Inconel alloy
Transducer		
Hardline cable and receptacle		Stainless steel
<b>Calibration Supplied</b>		
Sensitivity	pC/psi	
Internal resistance	Ω	
Insulation resistance	Ω	
Capacitance	pF	

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06 Outline details



Notes:

1. Intermittent exposure is defined as 5 minutes over a 30 minute period.
2. For short cable lengths, provision must be made to ensure receptacle is not exposed to temperatures greater than +500°F (+260°C). Minimum cable length is 12 inches.
3. Compatible cables: twisted pair cable assemblies terminating to pigtail, BNC and PC06A-8-2P connector respectively.



Continued product improvement necessitates that MEGGITT reserve the right to modify these specifications without notice. MEGGITT maintains a program of constant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. 010121