MPT50 Dual Pressure and Temperature Transducer

100mV Output @ 5.0 Vdc, Threaded Mount

Introduction

Piezo-Metrics Model MPT50 is a flush mountable, miniature, low cost, general use dual measurement pressure and temperature transducer. These transducers are made of corrosive resistant titanium (6AL4V) and utilize high reliability semiconductor strain gages bonded directly to the inside surface of the machined diaphragm.

Pressure on the diaphragm is applied through the hole in the 10-32 threaded nose which is then converted to an electric signal proportional to the pressure.

The Model MPT50 is available in either Gage (PSIG), Absolute (PSIA), or Sealed Reference (PSIR) pressure configurations. The Absolute and Sealed Referencce configurations utilize a welded Titanium hermetic header. The hermetic header is located just behind the strain gage diaphragm section of the sensor and seals the sensitive gages in a vacuum which dramatically increases stability and reliability. Long term stability versions are available.

Applications

- Test & measurement equipment
- Production equipment & controls
- Energy Controls
- Laboratory instruments & equipment
- Liquid level
- Calibration Equipment

Performance Options *

	Pressure Output Spec's		Temperature Output Spec's	Units
	A	C		
Balance (Zero) **	0.00 ± 3.00	0.00 ± 2.00	30.00 ± 2.00 (@ 30°F)	mV
Full Scale Sensitivity	20.0 ± 2.00	20.0 ± 2.00	130.00 ± 2.00 (@ 130°F)	mV/V
Static Error Band (Best Fit Straight Line)	± 0.50	± 0.25	± 0.50	%FS (BFSL)
Thermal Balance (Zero) Shift	± 0.02	± 0.01	N/A	%FS/°F
Thermal Sensitivity Shift	± 0.02	± 0.01	N/A	%FS/°F

Standard Long Term Stability	± 2.00 %FS/Year Max. *(Pressure Transducer Output)*				
Long Term Stability Options	L10 = <1.0	L5= <0.5	L2= <0.2	L1= <0.1	%FS/year

Mechanical

Pressure Ranges	50, 100, 200, 300, 500, 1k, 2k, 3k, 5k, 7K * PSI
Other ranges possible	Consult Factory
Over Pressure (No change out of spec.)	2.0x Range
Burst Pressure	6.0x Range

Electrical

Input	5.0 Volts DC or AC
Maximum Voltage	30 V for short periods
Input Resistance (Nominal)	1500 Ohms
Output Resistance (Nominal)	450 Ohms *(Pressure)* & 4500 Ohms *(Temperature)*
Insulation Resistance Minimum	50 Megohms @ 50 VDC

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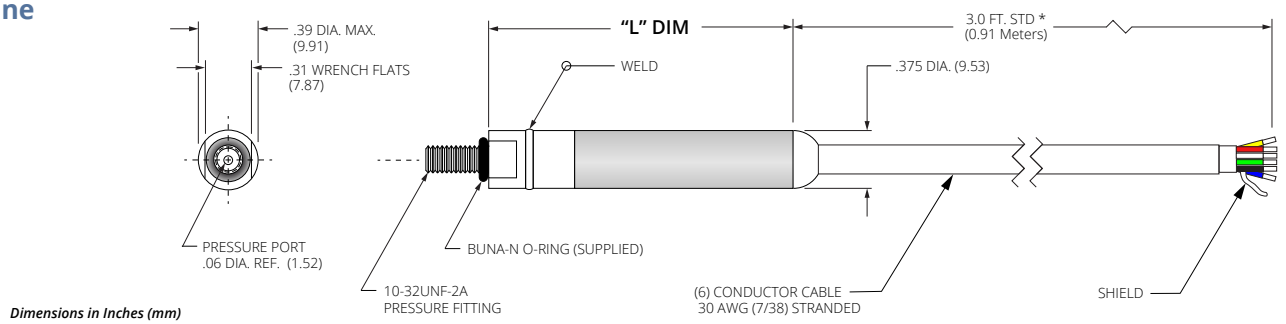
Environmental

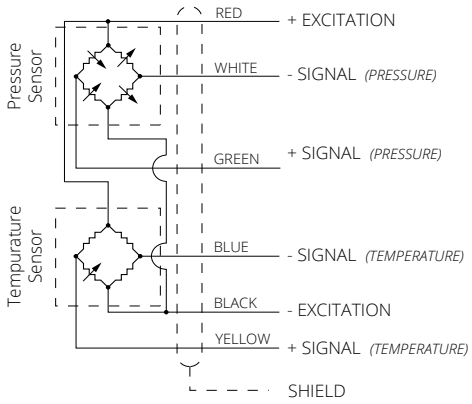
Storage and Operating Temperature	0° to 180°F
Compensated Temperature Range *(Pressure & Temperature)*	30° to 130°F *
Other Temperature Compensated Ranges	Consult Factory
Acceleration	100g's any axis
Media Compatibility (wetted surface)	Liquids & Gases compatible with Titanium 6AL4V

Outline



Dimensions in Inches (mm)

Schematic



Unit Type	"L" DIM
Gage	2.00 MAX. (50.8)
Absolute or Sealed Reference	2.30 MAX. (58.5)

Ordering Format

MPT50X - XXXX - X

- Model
- Performance Specification
- Pressure Range PSI
- Header Option
  - G = Gage (No Header)
  - A = Absolute (With Header)
  - R = Sealed Reference (With Header)
- Long-term Stability Option

Example

MPT50C - 500A - L5

- LTS < 0.50 %FS/yr *(Leave blank if no LTS)*
- Absolute Pressure
- 0 - 500 PSI
- C Performance Options
- Model MPT50

** Custom Performance Options and special cable length available - Consult Factory.*

*** Balance (Zero) set point: Gage (PSIG) & Sealed Reference (PSIR) - (Zero) set at "0"PSIG atmospheric pressure. Absolute (PSIA) - (Zero) set at "0"PSIA pressure relative to an absolute vacuum.*

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