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MEGGiTT

DATA SHEET

# High Temperature Piezoelectric Accelerometer (HTPE)

## Model 2248/2248M1

Model 2248

Model 2248M1

## 01 Description

The Meggitt model 2248 is a small piezoelectric accelerometer for shock and vibration measurement of structures subjected to very high temperatures. It features a side 10-32 receptacle, with either flange (2248) or integral stud-mount (2248M1). The accelerometer is a self- generating device that requires no external power source for operation.

The 2248 features Meggitt's crystal material in compression construction. The design provides mechanical isolation of base strain from the mounting surface. Signal ground is connected to case.

Signal conditioner model 1772-1 or equivalent are recommended for use with this accelerometer.

Model number definition:
2248 = mounting with 2 bolts
2248-R = replacement sensor, no accessories
2248M1= integral mounting stud
2248M1-R = replacement sensor, no accessories

## 02 Key features and benefits

- Small size
- Light weight
- High temperature operation 900°F (+482°C)

## 03 Applications

- Gas Turbine engine monitoring
- Nuclear applications

## 04 Contact

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DATA SHEET

# HIGH TEMPERATURE PE ACCELEROMETER, Model 2248/2248M1

## 05 Specifications

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

**Dynamic characteristics**

| | | |
|---|---|---|
| Charge Sensitivity | | |
| (typical) | pC/g | 3.0 |
| Minimum | pC/g | 2.4 |
| Frequency response | | See typical amplitude response |
| ±1 dB | Hz | 1 to 8K |
| ±5% | Hz | 1 to 5K |
| Resonance (typical) | kHz | 25 |
| Minimum | kHz | 22 |
| Temperature response | % | ±18 max over temperature range |
| Transverse sensitivity | % | ≤ 5 |
| Amplitude linearity | % | 1 |

**Electrical characteristics**

| | |
|---|---|
| Resistance at room temperature | |
| (typical) | ≥1GΩ |
| At +900°F (+482°C) | ≥100KΩ [1] |
| Capacitance | 250 pF |
| Grounding | Signal return connected to case |

**Environmental characteristics**

| | |
|---|---|
| Temperature range | -65°F to +900°F (-54°C to +482°C) |
| Humidity | Hermetically sealed |
| Sinusoidal vibration limit | 500 g pk |
| Shock limit | 3000 g pk |
| Base strain sensitivity | 0.005pk/µstrain |
| Transient temperature | 0.10 equiv g pk/°F [2] |

**Physical characteristics**

| | |
|---|---|
| Dimensions | See Outline details |
| Weight | 0.46 oz. (13 gm) |
| Case Material | Inconel |
| Connector | 10-32 coaxial |
| Mounting torque | 18 to 20 lbf-in (2 to 2.3 Nm) |
| Mounting (2248) | 6-32 botls (qty 2) |
| Mounting (2248M1) | 10-32 stud |

**Calibration Supplied**

| | |
|---|---|
| Charge Sensitivity | pC/g |
| Frequency response through resonance | 20 Hz to 8000 Hz, 8000 Hz through resonance |
| Maximum transverse sensitivity | % |
| Capacitance | pF |

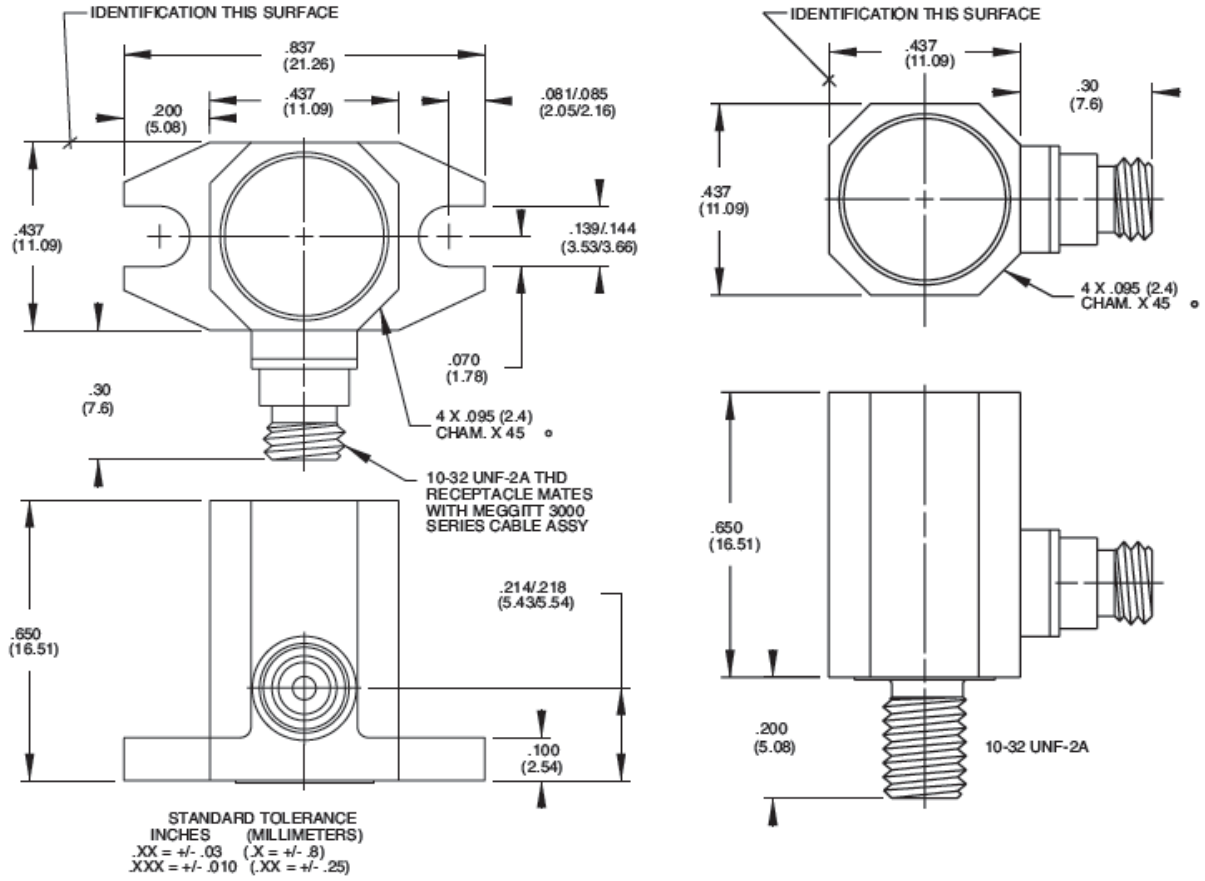
**Accessories**

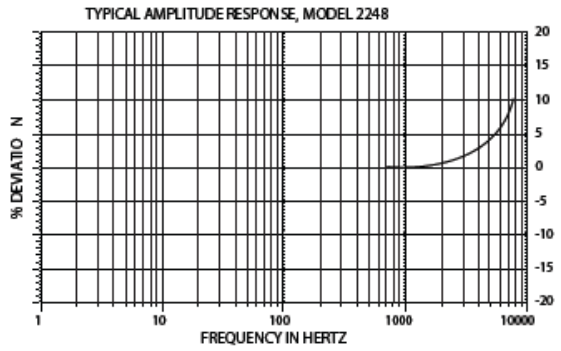
SUPPLIED
EH535 Mounting screws 6-32 (Model 2248)
3075M6-120 Cable assembly, 900°F (+482°C)
OPTIONAL
Model 1001-120 Cable assembly, 550°F (+288°C)

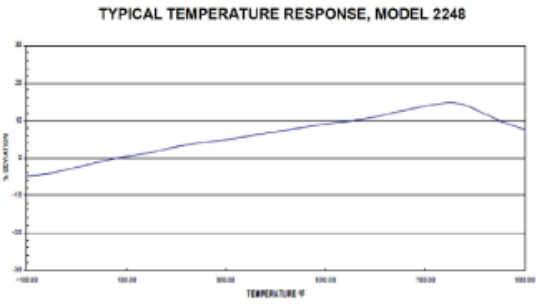
DATA SHEET

# HIGH TEMPERATURE PE ACCELEROMETER, Model 2248/2248M1

## 06 Outline details




Notes:
[1] Signal conditioner must be able to accept 100 k ohm source resistance
[2] Measured with a 1 Hz high pass filter.