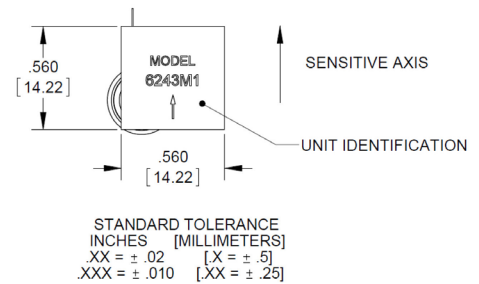
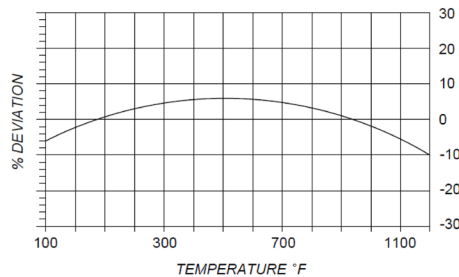
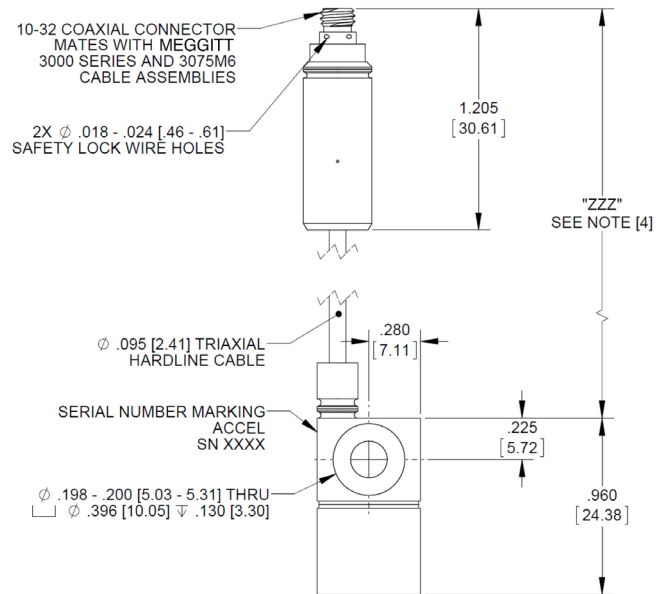
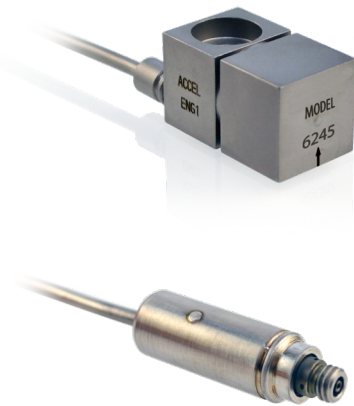


# Piezoelectric accelerometer

## Model 6245



### Key features

- +1500°F (+815°C) operation
- Integral hardline cable
- Hermetically sealed
- No pyroelectric or thermal velocity spiking
- Single bolt mount
- Ground isolated

### Description

Meggitt model 6245 piezoelectric accelerometers are designed specifically for use in extremely high temperature environments such as aircraft and ground-based gas turbines. These accelerometers are designed for continuous operation at +1500°F (+815°C) and intermittent. The small size and light weight of these accelerometers facilitate installation in cramped locations with minimal structural support.

The 6245 incorporate Meggitt's MC2 shear mode crystal. The 6245 has its sensitive axis located in line with the mounting screw. The sensing elements and integral shield are isolated from the case. The accelerometer features an integral hardline cable of customer specified length, in which the standard length is 120 inches. The cable is triaxial with the termination of the signal positive and negative leads through a 10-32 coaxial receptacle. The connector is designed to operate in an environment up to +900°F (+482°C).

# Piezoelectric accelerometer

## Model 6245

### Specifications

The following performance specifications conform to ISA-RP-37.2 and are typical values, referenced at +75°F (+24°C) and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

| Dynamic characteristics                          | Units        | 6245   |
|--|--------------|--|
| Charge sensitivity                               |              |  |
| Typical  | pC/g         | 3  |
| Tolerance  | pC/g         | ±0.5   |
| Frequency response                               |              |  |
| Resonance frequency                              |              |  |
| Typical  | kHz          | 11   |
| Minimum  | kHz          | 9  |
| Typical amplitude response [1][2]                |              |  |
| ±5%  | Hz           | 1 to 3000  |
| ±10%   | Hz           | 1 to 4000  |
| ±3dB   | Hz           | 1 to 6000  |
| Temperature response                             |              | See typical curve  |
| +1500°F (815°C) max/min                          | %            | ±15  |
| Transverse sensitivity                           | %            | ≤5   |
| Amplitude linearity per 500g, 0 to 2000 g        | %            | 1  |
| <b>Electrical characteristics</b>                |              |  |
| Output polarity                                  |              | Acceleration in direction of arrow marked on unit produces positive output |
| Resistance                                       |              |  |
| Pin to pin at 1200°F [3]                         | kΩ           | ≥10  |
| Isolation, pin to case, at 1200°F                | kΩ           | ≥500   |
| Hardline cable, two places at 1200°F (650°C)     | kΩ-ft        | 100  |
| Capacitance                                      |              |  |
| Transducer, excluding hardline cable             | pF           | 50   |
| Hardline cable, center conductor to inner shield | pF/ft (pF/m) | 100 (328)  |
| Dielectric strength                              | V            | 500  |
| Grounding  |              | Signal return isolated from case   |
| <b>Environmental characteristics</b>             |              |  |
| Temperature range                                |              |  |
| Transducer/hardline cable                        | °F (°C)      | +1500°F (+815°C)   |
| Connector  | °F (°C)      | -65 to +900 (-55 to +482)  |
| Humidity   |              | Hermetically sealed  |
| Sinusoidal vibration limit                       | g            | 500  |
| Shock limit                                      | g            | 2000   |
| <b>Physical characteristics</b>                  |              |  |
| Dimensions                                       |              | See outline drawing  |
| Weight excluding cable                           | grams (oz)   | 30 (1.1)   |
| Case material                                    |              | Inconel  |
| Hardline cable                                   |              | Triaxial, 0.095 inch diameter, Inconel jacketed, mineral oxide insulated   |
| Cable minimum bend radius                        | Inches       | 0.25   |
| Connector  |              | 10-32 coaxial  |
| Mounting torque                                  | lbf-in (Nm)  | 18 (2)   |
| <b>Calibration data supplied</b>                 |              |  |
| Charge sensitivity                               | pC/g         |  |
| Frequency response                               | %            | 50 to 3000 Hz  |
| Transverse sensitivity                           | %            |  |
| Capacitance                                      | pF           |  |

# Piezoelectric accelerometer

## Model 6245

### Accessories

| Product            | Description  | 6243MX   |
|--------------------|--|----------|
| Meggitt 874        | Mounting screw (10-32 x 0.75 in, 12 pt)              | Included |
| 3090C-ZZZ          | Cable assembly, +500°F (+260°C)                      | Optional |
| Meggitt 3075M6-ZZZ | Cable assembly, +900°F (+482°C)                      | Optional |
| 2721B              | Signal conditioner                                   | Optional |
| 2771CM2-1          | Remote charge converter                              | Optional |
| Meggitt 3076-ZZZ   | Cable assembly, high temp softline, +1000°F (+538°C) | Optional |

### Notes

- Frequency response is controlled by the resonance characteristics of the transducer. Estimated calibration errors are  $\pm 1.5\%$  to 900 Hz and  $\pm 2.5\%$  from 900 Hz to 5000 Hz.
- Low-end response of the transducer is a function of its associated electronics.
- The electrical resistance of piezoelectric materials decreases with an increase in temperature and can approach  $10,000\Omega$  at  $+1200^\circ\text{F}$  ( $+650^\circ\text{C}$ ).
- Dash number "ZZZ" indicates the cable length in inches. See table below for tolerance on the cable lengths for the 6245.

**Length "ZZZ"**

Up to 72.00 inches (1.83 m)

Over 72.00 inches (1.83 m) to 144.00 in (3.66m)

Over 144.00 inches (3.66 m)

**Tolerance**

$\pm 2.00$  inches (50.8 mm)

$\pm 4.00$  inches (101.6 mm)

$\pm 4.00$  inches (101.6 mm) per 144.00 inches (3.66 m) or part thereof

- Intermittent temperature exposure is defined as 5 minutes over a 60 minute period.
- Model number definition:

