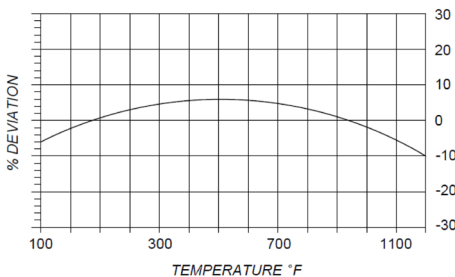
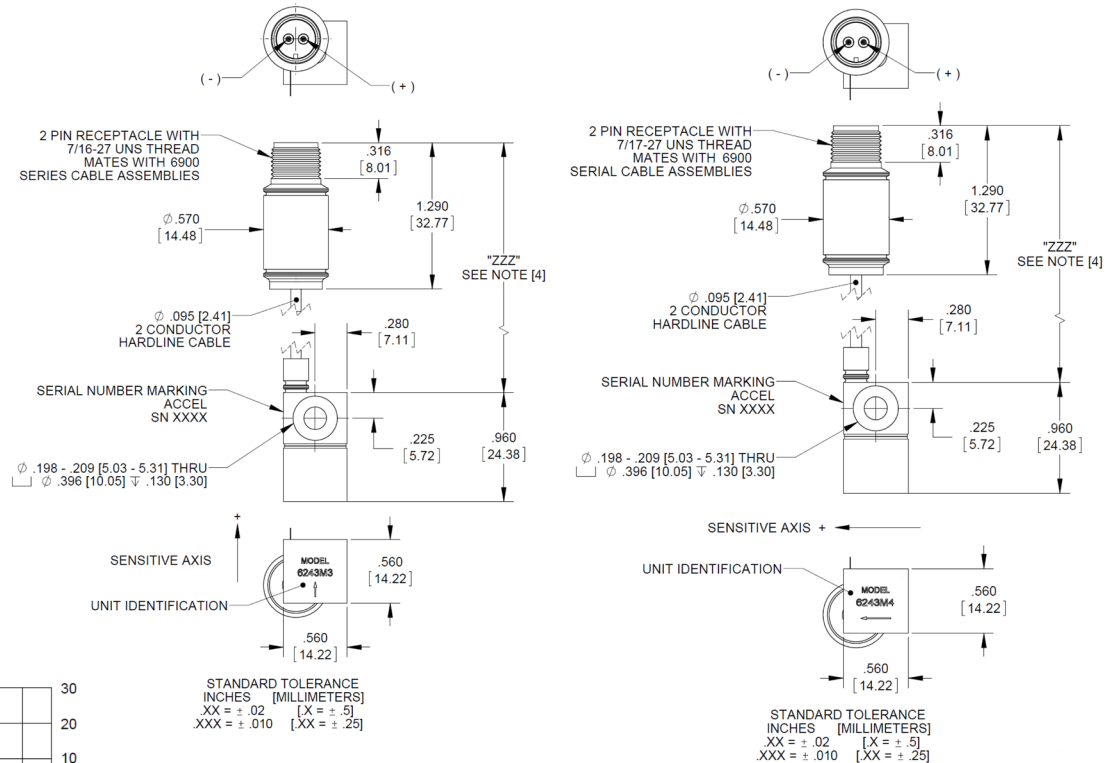


Piezoelectric accelerometer

Model 6243M3/M4



Key features

- +1200°F (+650°C) operation
- Integral hardline cable
- Hermetically sealed
- No pyroelectric or thermal velocity spiking
- Single bolt mount
- Balanced differential output

Description

Meggitt model 6243M3 and 6243M4 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 +1200°F (+650°C) and intermittent operation (see note 5) up to +1400°F (+760°C). The small size and light weight of these accelerometers facilitate installation in cramped locations with minimal structural support.

6243M3 and 6243M4 incorporate Meggitt's MC2 shear mode crystal. The 6243M3 has its sensitive axis located in line with the mounting screw. The 6243M4 has its sensitive axis located perpendicular to the mounting screw. The models 6243M3 and 6243M4 provide a balanced differential output which is isolated from case ground. The accelerometer features an integral hardline cable of customer specified length, in which the standard length is 120 inches. The 2-conductor Inconel jacketed, mineral insulated cable terminates with a 7/16-27 two-pin receptacle which is designed for use with Meggitt 6917 and Meggitt 6918 series cables or equivalent. The connector is designed to operate in an environment up to +900°F (+482°C).

Piezoelectric accelerometer

Model 6243M3/M4

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	6243MX
Charge sensitivity		
Typical	pC/g	5.5
Tolerance	pC/g	±0.5
Frequency response		
Resonance frequency		
Typical	kHz	11
Minimum	kHz	9
Typical amplitude response [1][2]		
±5%	Hz	1 to 2000
±10%	Hz	1 to 3000
±3dB	Hz	1 to 6000
Temperature response		See typical curve
+1200°F (650°C) max/min	%	±15
Transverse sensitivity	%	≤5
Amplitude linearity per 500g, 0 to 2000 g	%	1
Electrical characteristics		
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)	50 (164)
Unbalance	max %	5
Dielectric strength	V	500
Grounding		Signal return isolated from case
Environmental characteristics		
Temperature range		
Transducer/hardline cable, continuous	°F (°C)	-65 to +1200 (-55 to +650)
Transducer/hardline cable, intermittent [5]	°F (°C)	-65 to +1400 (-55 to +760)
Connector	°F (°C)	-65 to +900 (-55 to +482)
Humidity		Hermetically sealed
Sinusoidal vibration limit	g	500
Shock limit	g	2000
Physical characteristics		
Dimensions		See outline drawing
Weight excluding cable	grams (oz)	30 (1.1)
Case material		Inconel
Hardline cable		2 conductor, 0.095 inch diameter, Inconel jacketed, mineral oxide insulated
Cable minimum bend radius	Inches	0.25
Connector		7/16-27 two-pin connector
Mounting torque	lbf-in (Nm)	18 (2)
Calibration data supplied		
Charge sensitivity	pC/g	
Frequency response	%	50 Hz to 2000 Hz
Transverse sensitivity	%	
Capacitance	pF	

Piezoelectric accelerometer

Model 6243M3/M4

Accessories

Product	Description	6243MX
Meggitt EH471	Mounting screw (10-32 x 0.75 in, 12 pt)	Included
Meggitt 6918M30-ZZZ	Cable assembly, +900°F (+482°C)	Optional
6917B-ZZZ	Cable assembly, +500°F (+260°C)	Optional
6917D-ZZZ	Cable assembly, +500°F (+260°C)	Optional

Notes

1. Frequency response is controlled by the resonance characteristics of the transducer. Estimated calibration errors are ±1.5% to 900 Hz and ±2.5% from 900 Hz to 5000 Hz.
2. Low-end response of the transducer is a function of its associated electronics.
3. The electrical resistance of piezoelectric materials decreases with an increase in temperature and can approach 10,000Ω at +1200°F (+650°C).
4. Dash number "ZZZ" indicates the cable length in inches. See table below for tolerance on the cable lengths for the 6243M3 and 6243M4.

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

±2.00 inches (50.8 mm)

±4.00 inches (101.6 mm)

±4.00 inches (101.6 mm) per 144.00 inches (3.66 m) or part thereof

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

6243M X - ZZZ

