

EXTREME HIGH TEMPERATURE PIEZOELECTRIC ACCELEROMETER (EHTPE) Model 6243M1/6243M2



Product description

Parker Meggitt model 6243M1 and 6243M2 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. Frequency bandwidth extended from 2 kHz to 5 kHz at level +5% and from 6 kHz to 8 kHz at level +3dB when the 6243M1/6243M2 are combined with patented remote charge converter (RCC) 1772-1.

6243M1 and 6243M2 incorporate Parker Meggitt's MC2 shear mode crystal. The 6243M1 has its sensitive axis located in line with the mounting screw. The 6243M2 has its sensitive axis located perpendicular to 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).

Model number definition:

6243MX-ZZZ

6243MX = basic model number

ZZZ = cable length in inches

6243MX-ZZZ-US = Made in the USA



Key features and benefits

- +1200°F (+650°C) operation
- Integral hardline cable
- Hermetically sealed
- No pyroelectric or thermal velocity spiking
- Single bolt mount
- Ground isolated
- RoHS compliant
- Increased bandwidth with patented remote charge converter

Applications

- Aircraft and gas turbine engine monitoring
- Test cell vibration measurements
- Nuclear applications

Parker Meggitt Defense Systems
9801 Muirlands Blvd.
Irvine, CA 92618
+1 (949) 465 7700
www.meggittdefense.com

EXTREME HIGH TEMPERATURE PIEZOELECTRIC ACCELEROMETER (EHTPE) Model 6243M1/6243M2

Specifications

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

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)	100 (328)
Dielectric strength	V	500
Grounding		Signal return isolated from case
Environmental characteristics		
Temperature range		
Transducer/hardline cable, continuous [4]	°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

EXTREME HIGH TEMPERATURE PIEZOELECTRIC ACCELEROMETER (EHTPE)

Model 6243M1/6243M2

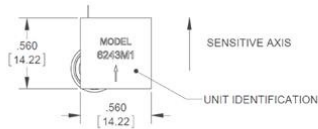
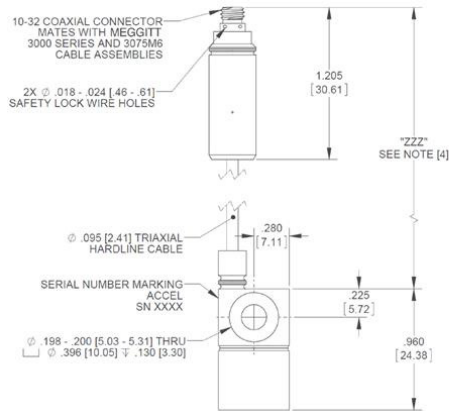
Physical characteristics		
Dimensions		See outline detail
Weight excluding cable	grams (oz)	30 (1.1)
Case material		Inconel
Hardline cable		Triaxial, 0.095 inch (2.41 mm) diameter, mineral insulated hardline
Cable minimum bend radius	Inches	0.25
Connector	10-32	coaxial
Mounting torque	lbf-in (Nm)	18 (2)
Calibration data supplied		
Charge sensitivity	pC/g	
Frequency response	%	50 to 2000 Hz
Transverse sensitivity	%	
Capacitance	pF	
Accessories		
SUPPLIED: EH471 MOUNTING SCREW, 10-32 X .75 in, 12 PT		
OPTIONAL: Model 1001-ZZZ Cable assembly, +550°F (288°C) /Model 3075M6-ZZZ/3075M6-ZZZ-US [+900°F (+482°C) Hardline] /Model 3076A-ZZZ [+1000°F (+538°C) Flexible]		
OPTIONAL: Model 1772-1 Remote charge converter (RCC)		
OPTIONAL: Thermal Isolator Pad 47091, EH875 Mounting Screw [reduces temp 200°F (93°C) for approximately 30 minutes]		
Notes		
1. Frequency response of the 6243M1/M2 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. For cable lengths of less than 12 inches (0.30 m), the maximum operating temperature is +900°F (+482°C).		
5. Intermittent temperature is defined as 5 minutes over a 30 minute period.		
6. Parts made in the USA are marked with -US after the model number.		



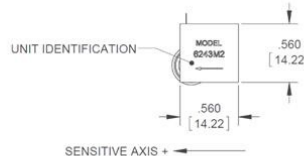
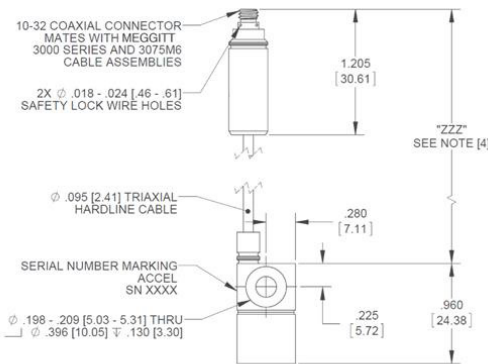
Defense
Systems

EXTREME HIGH TEMPERATURE PIEZOELECTRIC ACCELEROMETER (EHTPE)

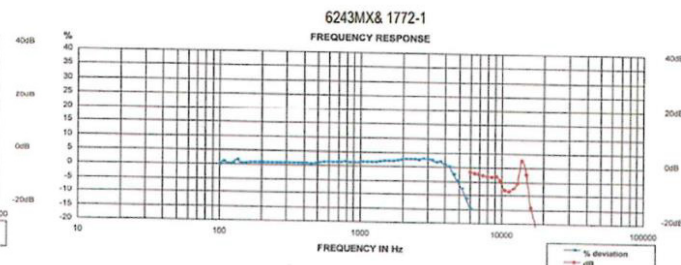
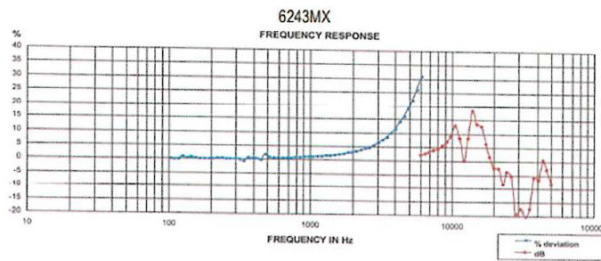
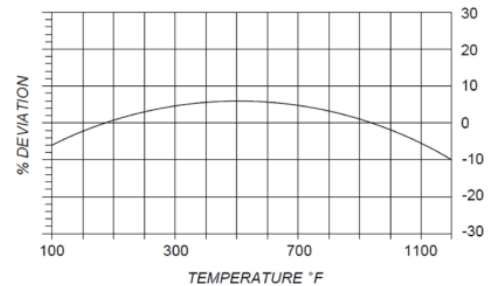
Model 6243M1/6243M2



STANDARD TOLERANCE
INCHES [MILLIMETERS]
XX = \pm .02 [X = \pm .5]
XXX = \pm .010 [XX = \pm .25]



STANDARD TOLERANCE
INCHES [MILLIMETERS]
XX = \pm .02 [X = \pm .5]
XXX = \pm .010 [XX = \pm .25]



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



Note: Due to continuous process improvement, specifications are subject to change without notice. TCO Review # 326