Enabling the Extraordinary
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MEGGITT

DATA SHEET

Extreme+ High Temperature Piezoelectric Accelerometer (E+HTPE)

Model 6245

01 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 withminimal structural support.

The 6245 incorporates 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 whichthe 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:
6245-ZZZ
6245 = basic model number
ZZZ = cable length in inches

02 Key features and benefits

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

03 Applications

- Aircraft and gas turbine engine monitoring
- Gas turbine vibration measurements
- Nuclear applications

04 Contact

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EXTREME+ HIGH TEMPERATURE PE ACCELEROMETER, Model 6245

05 Specifications

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

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
Electrical characteristics		
Output polarity	Acceleration in direction of arrow marked on unit has positive output	
Resistance		
Pin to pin at 1500˚F [3]	kΩ	≥10
Isolation, pin to case, at 1500˚F	kΩ	≥500
Hardline cable, two places at 1500˚F (815˚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 [4]	˚F (˚C)	+1500°F (+815°C)
Connector	˚F (˚C)	-65°F to +900°F (-55°C to +482°C)
Humidity		Hermetically sealed
Sinusoidal vibration limit	g	500
Shock limit	g	2000
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)
Calibrations Supplied		
Charge sensitivity	pC/g	
Frequency response	%	50 to 3000 Hz
Transverse sensitivity	%	
Capacitance	pF	

Accessories:

SUPPLIED: EH874 MOUNTING SCREW, INCONEL,10-32 X .75 in, 12 PT
OPTIONAL: Model 1001-ZZZ Cable assembly, +550˚F (288°C) /Model 3075M6-ZZZ [+900˚F (+482˚C) Hardline] /Model 3076-ZZZ [+1000˚F (+538˚C) Flexible]
OPTIONAL: Model 1772-3 Remote charge converter
OPTIONAL: Isolator Pad EM3241, EH875 Mounting Screw [keeps unit 200 ˚F cooler for 30 minutes)

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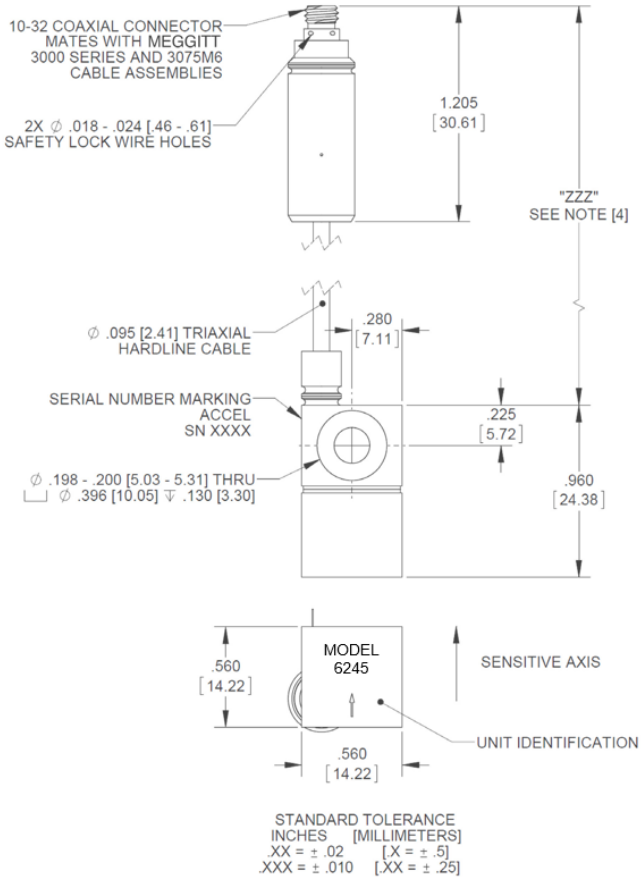
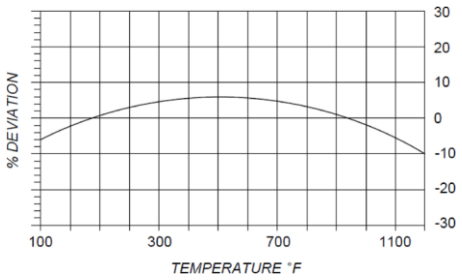
EXTREME+ HIGH TEMPERATURE PE ACCELEROMETER, Model 6245

06 Outline details





Typical Charge Deviation over temperature

Note:

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. For cable lengths of less than 12 inches (0.30 m), the maximum operating temperature is +900°F (+482°C).

APPLIES TO CALIFORNIA FACILITY