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MEGGITT

DATA SHEET

High Temperature Piezoelectric Accelerometer (HTPE)

Model 2273A

01 Description

The Meggitt model 2273A is a precision piezoelectric accelerometer for use in industrial or laboratory applications involving high temperature or nuclear environments. It is capable of operation in the presence of Gamma and Neutron radiation. The 2273A incorporates a side mounted 10-32 receptacle and hex base construction with a 10-32 or M5 center stud mount. The accelerometer is a self- generating device that requires no external power source for operation.

The 2273A features Meggitt's crystal to provide flat temperature response over the range of
-300°F to +750°F (-184°C to 399°C). In addition, the construction provides mechanical isolation of bending motion from the mounting base. These features, together with an all-welded hermetically sealed enclosure, assure accurate and reliable data at high temperatures.

Model number definition:
2273A = basic model number
2273A-R = replacement sensor, no accessories

02 Key features and benefits

- Radiation hardened
- Shock limit 10 000 gpk
- Case grounded
- Operates over wide temperature range
- Vibration measurements in nuclear, and high temperature environments

03 Applications

- Test cell vibration measurements
- Nuclear and high temperature applications

04 Contact

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HIGH TEMPERATURE PE ACCELEROMETER, Model 2273A

05 Specifications

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

Dynamic characteristics	**Units**	
Charge sensitivity		
Typical	pC/g	3.0
Minimum	pC/g	2.5
Frequency response		See typical amplitude response
Resonance frequency	kHz	30
Amplitude response [1]		
±5 %	Hz	20 to 3000
±1 dB	Hz	1 to 6000
Temperature response		See typical curve
Transverse sensitivity	%	≤ 3 (1% available on special order)
Amplitude linearity [2]	%	1
Per 1000 g, 0 to 3000 g		
Electrical characteristics		
Output polarity	Acceleration directed into the base of unit produces positive	
Output Resistance		
Room temperature (typical)	GΩ	1
at +750˚F (+399˚C)	MΩ	≥ 10
Capacitance	pF	110
Grounding		Signal return connected to case
Environmental characteristics		
Temperature range		-300˚F to +750˚F (-184˚C to +399˚C)
Humidity		Hermetically sealed
Sinusoidal vibration limit	gpk	1000
Shock limit [3]	gpk	10 000
Base strain sensitivity	equiv g pk/ µstrain	0.004
Electromagnetic sensitivity	equiv g pk/ guass	0.0003
Radiation		
Integrated gamma flux	rad	up to 6.2×10^{10}
Integrated neutron flux	N/cm2	up to 3.7×10^{18}
Physical characteristics		
Dimensions		See outline detail
Weight	gm (oz)	25 (.88)
Case material		Stainless steel
Connector [4]		10-32 coaxial connector
Mounting torque	lbf-in (Nm)	18 (2)
Calibrations supplied		
Frequency response	%	20 Hz to 6000 Hz
	dB	6000 Hz through resonance
Sensitivity	pC/g	
Maximum transverse sensitivity	%	
Mounted resonance frequency	kHz	
Capacitance	pF	

Accessories:

SUPPLIED: Model 50001 Mounting stud (hex ID)10-32 to 10-32 / Model 3075M6-ZZZ Cable assembly +900°F (482°C), Hardline/EHM464 Hex key wrench
OPTIONAL: Model 1001-ZZZ Cable assembly, +550˚F (288°C) / Model 3076-ZZZ Cable Assembly +1000°F (538°C), Flexible
OPTIONAL: Model 50003 Mounting stud 10-32 to M5/Model 50002 Mounting stud, 10-32 to 10-32/Model 70019 Mounting Stud 10-32 to ¼-28

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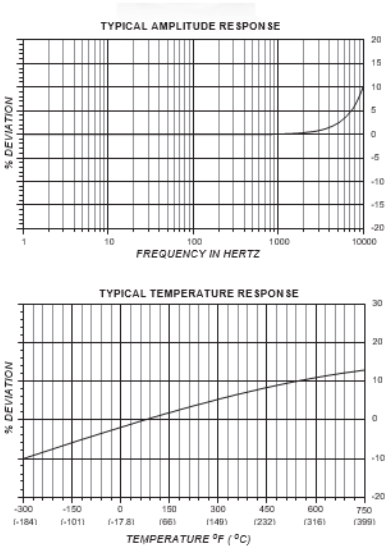
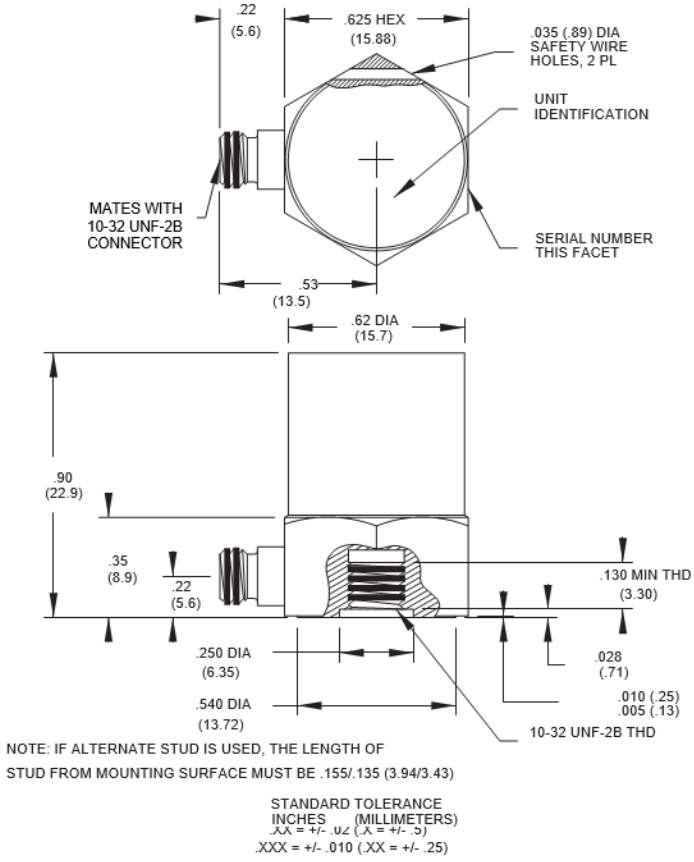
HIGH TEMPERATURE PE ACCELEROMETER, Model 2273A

06 Outline details





Note:

1. Low-end response of the transducer is a function of its associated electronics.
2. Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors.

APPLIES TO CALIFORNIA FACILITY