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.

Frequency bandwidth extended from 6 kHz to 11.5 kHz at level ±5% and from 12.5 kHz to 20 KHz at level of ±3dB when the 2273A is combined with patented remote charge converter (RCC) 1772-6 (Gain of 1) or 1772-6-10 (Gain of 10).

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 supplied
2273A-US = Made in USA

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
- RoHS compliant
- Increase bandwidth with patented remote charge converter

03 Applications

- Test cell vibration measurements
- Nuclear and high temperature applications

04 Contact

1-833-HITEMP1
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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]			With 1772-6 or 1772-6-10
±5 %	Hz	20 to 6000	13 to 11500
±1 dB	Hz	1 to 10000	8 to 14000
+3 dB	Hz	1 to 12500	3.5 to 20000
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	gm (oz)	See outline detail	
Weight		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 3075M6-120/3075M6-120-US Cable assembly +900°F (482°C), Hardline/EHM464 Hex key wrench

OPTIONAL: Model 1001-ZZZ Cable assembly, +550˚F (288°C)

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

OPTIONAL: REMOTE CHARGE CONVERTER 1772-6 or 1772-6-10

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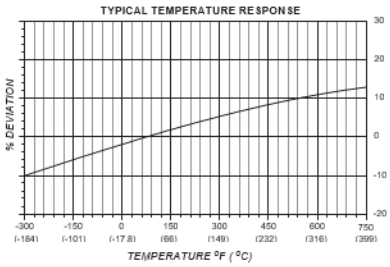
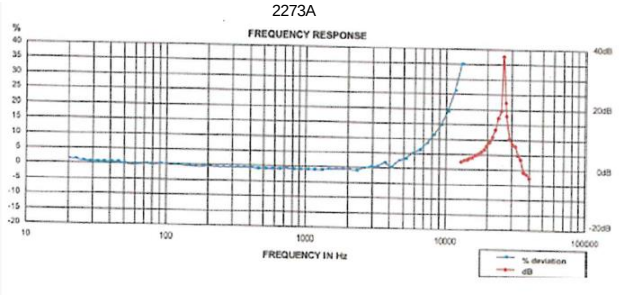
HIGH TEMPERATURE PE ACCELEROMETER, Model 2273A

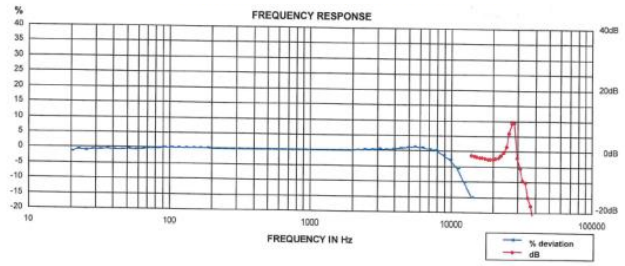
06 Outline details

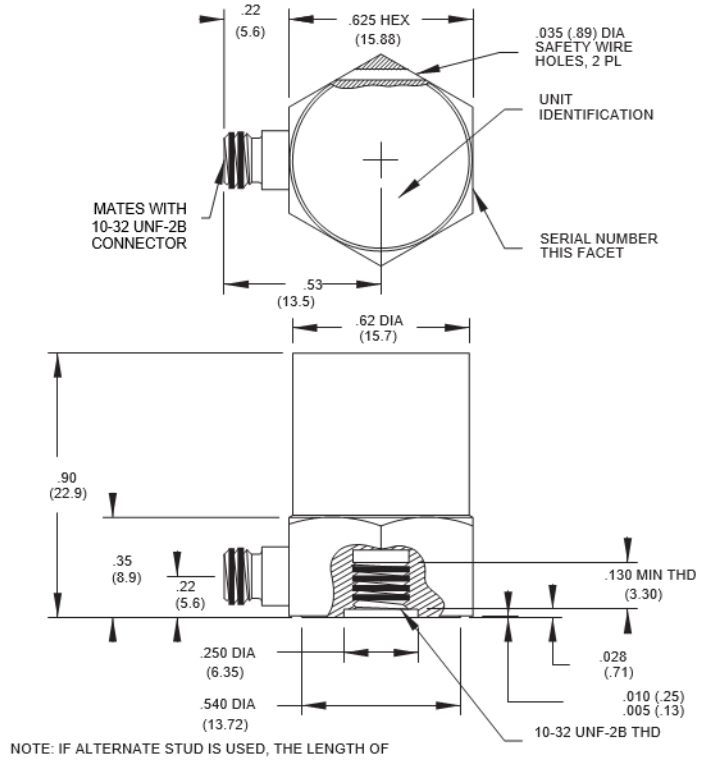


2273A



2273A with RCC 1772-6 or 1772-6-10





NOTE: IF ALTERNATE STUD IS USED, THE LENGTH OF STUD FROM MOUNTING SURFACE MUST BE .155/.135 (3.94/3.43)

STANDARD TOLERANCE
INCHES (MILLIMETERS)
.XX = +/- .02 (.X = +/- .5)
.XXX =+/-.010 (.XX = +/- .25)

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 errors.
3. Parts made in the USA are marked with -US after the model number

APPLIES TO CALIFORNIA FACILITY

Note: Due to continous process improvement, specifications are subject to change without notice. TCO Review #338