

Type 8614A500M1, 8614A1000M1

8614A PICOTRON® MINIATURE ACCELEROMETERS

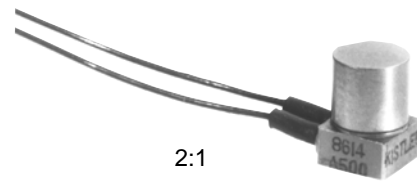
Kistler series 8614A accelerometers are extremely small and lightweight with very high resonant frequencies and built-in low impedance Piezotron circuit electronics. Piezotron electronics minimize cable noise and eliminate the need for highly insulated cables. The solder pin connectors enable easy repair of any cables that may become damaged in use.

Contained within the housing is a piezoelectric system consisting of a seismic mass preloaded to a quartz element and miniature hybrid

electronics. This combination yields a high level, low impedance output signal proportional to the accelerating stimulus.

Signal and DC excitation power to the unit are conducted through a twisted pair of six-foot wires. This simple power signal circuitry makes it possible to check with ease the circuit's integrity. Power and signal processing to the accelerometer can be provided by any one of the 5100 series couplers.

- Low impedance voltage mode
- Small and lightweight (0.7 grams)
- Very high resonant frequency
- Conforming to CE



2:1

Technical Data	Units	8614A500M1	8614A1000M1
Acceleration Range	g	± 500	± 1000
Acceleration Limit	g _{pk}	± 2000	± 2000
Transverse Acceleration Limit	g _{pk}	± 2000	± 2000
Threshold	g _{rms}	0.025	0.04
Sensitivity, nom.	mV/g	4	2.5
Resonant Frequency mounted, nom.	kHz	125	125
Frequency Response ± 5%	Hz	10 ... 25 000	10 ... 25 000
Amplitude Non-Linearity	%FSO	≤ ± 1	≤ ± 1
Time Constant nom.	s	0.5	0.5
Transverse Sensitivity	%	< 5	< 5
Environmental:			
Shock Limit (1ms pulse width)	g _{pk}	- 500 ... 1000	± 2000
Temperature Coefficient of Sensitivity	%/°F	- 0.03	- 0.03
	%/°C	- 0.06	- 0.06
Temperature Range Operating	°F	- 65 ... 275	- 65 ... 250
	°C	- 55 ... 135	- 55 ... 120
Storage	°F		- 65 ... 300
	°C		- 55 ... 150
Supply Current, nom.	mA		2 ... 18
Output:			
Bias nom.	VDC	4	11
Impedance	Ω		< 100
Voltage full scale, nom.	V	± 2	± 2.5
Current	mA		2
Source:			
Voltage	VDC	12 ... 30	18 ... 30
Impedance min.	kΩ		100
Construction:			
Sensing Element	type	quartz/compression	
Housing/Base	material	titanium	
Sealing - Housing/Connector	type	Epoxy	
Weight	grams	0.7	

1 g = 9.80665 m/s², 1 inch = 25.4 mm, 1 gram = 0.03527 oz, 1 lbf-in = 0.1129 Nm

Kistler Instrument Corporation reserves the right to discontinue or change specifications, designs or materials without notice consistent with sound engineering principles and quality practices.

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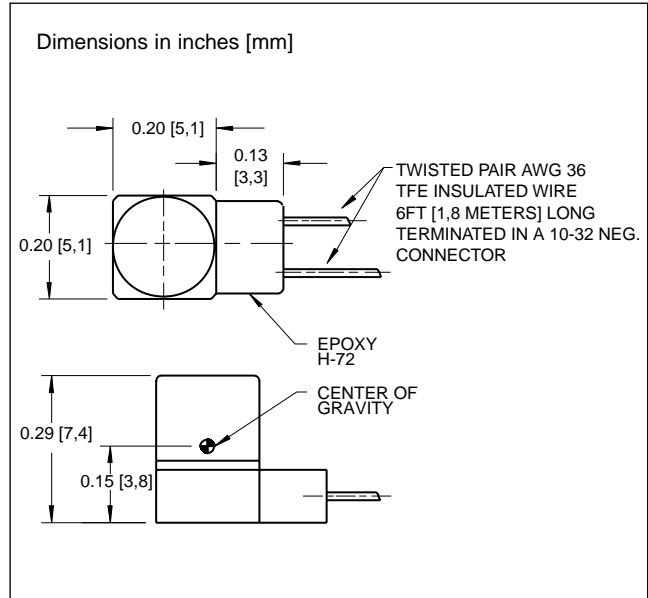
Applications

The 8614A series accelerometers are ideally suited for applications where space, mass, low *g* level resolution and high frequency response are of critical importance. Typical applications include; P.C Board component shock and vibration testing and monitoring; missile and aircraft vibration determination and monitoring; high speed rotating equipment performance and wear signature; and vibration responses of thin-walled structures.

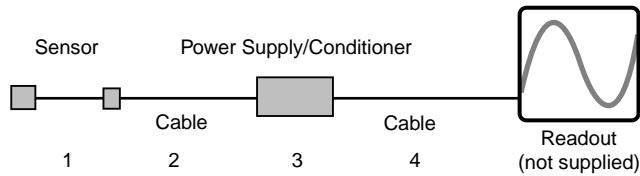
Mounting

The recommended adhesives, to be placed between the accelerometer and the object or a ground isolated mounting pad, include:

- Petro Wax
 - Loctite 430 general purpose for adhesion between metals
 - Loctite 495 general purpose for adhesion between other materials.
 - 3M Scotch Weld 1838: high temperature applications exceeding 75 °C
- Note: Removal of this substance is extremely difficult and care should be exercised when removing the accelerometer.



Ordering Information



- Specify:
- 1 - 8614A500M1 miniature accelerometer or 8614A1000M1 miniature accelerometer
 - 2 - 1761B... non-low noise extension cable, 10-32 pos. to BNC pos., specify length in meters
 - 3 - 5100 coupler series or dual mode amplifier
 - 4 - 1511... output cable, BNC pos. to BNC pos., specify length in meters

Supplied Accessories

- 8440 isolation mounting pad
- 8432 Petro Wax
- 8439 isolation mounting pad, M3 thd, shipped only outside N.A.

000-225e-10.02 (DBK8.86'14e)