

K-Shear[®] Accelerometer

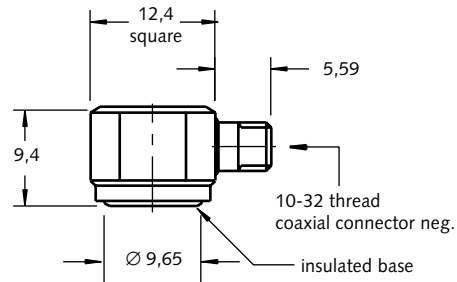
Type 8720A...

Low Profile, General Purpose, Voltage Accelerometer

Small, relatively light weight general purpose accelerometer for vibration measurements in a wide range of applications. Available in an off ground, adhesive mount configuration, this low profile accelerometer features a rugged, hermetically sealed construction.



- Low impedance, voltage mode
- Quartz shear sensing element
- Ultra low base strain
- Ultra low thermal transient response
- Lightweight, small size
- Ground isolated, hermetically sealed
- Conforming to CE



Description

The light weight, low profile 8720A... uses Kistler's uniquely designed K-Shear quartz sensing element. Operating in the shear mode with precisely cut quartz plates allows this accelerometer to exhibit ultra low sensitivity to thermal transients, base strain and transverse motion. Long-term stability and measurement accuracy is achieved by use of a quartz crystal sensing element.

An internal microelectronic Piezotron[®] signal conditioning circuit converts the charge developed in the quartz element as a result of the accelerometer being subjected to a vibration into a useable, high level voltage output signal at a low impedance level. The accelerometer case is constructed of titanium and is hermetically sealed to insure years of reliable operation. The ground isolated base is designed for adhesive mounting and exceptional flatness insures maximum high frequency sensitivity.

Application

The low gram weight of this accelerometer makes it ideal for modal analysis and measurements on light structures. The small size and low profile allows for installation on items with limited mounting space such as printed circuit boards.

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Technical Data

Type	Unit	8720A500
Acceleration Range	g	±500
Acceleration Limit	gpk	±1000
Transverse Acceleration Limit	gpk	±500
Threshold nom. (noise 130µVrms)	grms	0,01
Sensitivity (±5%)	mV/g	10
Resonant Frequency mounted, nom.	kHz	54
Frequency Response, -5%, 10%	Hz	1 ... 10000
Amplitude Non-linearity	%FSO	±1
Time Constant nom.	s	1
Transverse Sensitivity nom., (max. 3)	%	1,5
Long Term Stability	%	±1
Environmental:		
Base Strain Sensitivity @ 250µε	g/µε	0,04
Random Vibration max.	grms	2000
Shock Limit (1ms pulse)	gpk	5000
Temperature Coeff. of Sensitivity	%/°C	-0,054
Temperature Range Operating	°C	-55 ... 120
Temperature Range Storage	°C	-75 ... 150
Output:		
Bias nom.	VDC	11
Impedance	Ω	<100
Voltage full scale	V	±5
Current	mA	2
Source:		
Voltage	VDC	20 ... 30
Constant Current	mA	4
Impedance min.	kΩ	100
Construction:		
Sensing Element	type	Quartz Shear
Housing/Base	material	Titanium
Sealing-housing/connector	type	Hermetic
Connector	type	10-32 UNF neg.
Weight	grams	4,9
Mounting	type	Wax/Adhesive

1 g = 9,80665 m/s², 1 Inch = 25.4 mm, 1 gram = 0,03527 oz, 1 lbf-in = 0,113 Nm

Mounting

The 8720A... can be attached to the test structure by adhesive or wax. The accelerometer's side connector facilitates connector orientation in confined areas. Reliable and accurate measurements require that the mounting surface be clean and flat. The Operating Instruction Manual for the 8720A...accelerometer provides detailed information regarding mounting surface preparation.

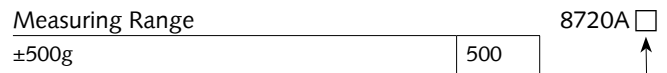
Accessories Included

- Mounting wax

Type

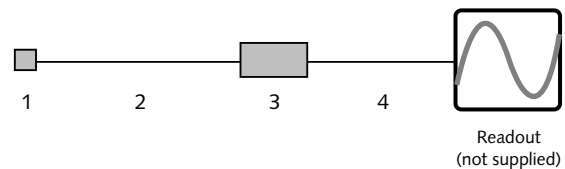
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Ordering Key



Measuring Chain

- | | Type |
|----------------------------------------|-------------|
| 1 Low Impedance Sensor | 8720A... |
| 2 Sensor cable, 10-32 pos. to BNC pos. | 1761B... |
| 3 Power Supply/Signal Conditioner | 51... |
| 4 Outout cable, BNC pos. to BNC pos. | 1511 |



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