

K-Shear® Accelerometer

Type 8728A500

Miniature, Wide Frequency Response, Voltage Mode Accelerometer

Small, 1.6 gram weight general purpose accelerometer for vibration measurements in wide range of applications. Available with an attached cable, this light weight accelerometer features a welded housing and an epoxy sealed cable.

- Low impedance, voltage mode
- Small, lightweight, with integral cable
- Wide frequency response
- Ultra-low base strain sensitivity & thermal transient response
- Quartz shear stability and precision
- Conforming to CE

Description

The light weight, low profile Type 8728A... 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. Quartz sensing elements afford excellent long-term stability that ensures repeatable and accurate measurements

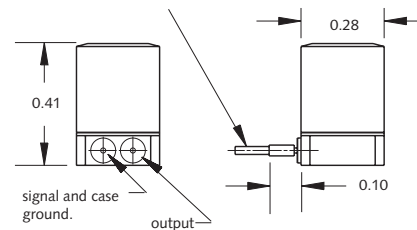
An internal microelectronic Piezotron® signal conditioning circuit converts the charge developed in the quartz element as a result of the accelerometer being subjected to a vibration, into a useable high level voltage signal at a low impedance output. The accelerometer case is constructed of titanium and is welded to insure years of reliable operation. A Teflon® integral cable is attached to solder terminals which are potted.

Application

The Type 8728A... is recommended for precision measurements on small, thin-walled structures or where space is limited. Changes in the characteristics of the test article are minimized when using this sensor. It is ideal for high frequency vibration measurements.

Teflon® is a registered trademark of DuPont Performance Elastomers.

coaxial cable, ø0.035 X 6ft long Teflon® jacketed terminated in 10-32 neg. connector



Mounting

The Type 8728A... can be attached to the test structure by adhesive or wax. The accelerometer's side cable egress facilitates orientation in confined areas. Reliable and accurate measurements require that the mounting surface be clean and flat. The operating instruction manual for the accelerometer Type 8728A... provides detailed information regarding mounting surface preparation.

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Technical Data

Specification	Unit	Type 8728A500
Acceleration Range	g	±500
Acceleration Limit	gpk	±1000
Transverse acceleration limit	gpk	±1000
Threshold, nom. (noise 200 µVrms)	grms	0.02
Sensitivity, ±10 %	mV/g	10
Resonant frequency mounted, nom.	kHz	76
Frequency response, ±5 %	Hz	2 ... 10000
Amplitude non-linearity	%FSO	±1
Time constant, nom.	s	0.5
Transverse sensitivity, nom. (max. 3)	%	1.5
Long term stability	%	±1

Environmental

Base strain sensitivity @ 250 µε	g/µε	0.03
Shock Limit (1 ms pulse)	gpk	5000
Temperature coefficient of sensitivity	%/°F	-0.03
Operating temperature range	°F	-65 ... 250
Storage temperature range	°F	-100 ... 300

Output

Bias, nom.	VDC	11
Impedance	Ω	<100
Voltage full scale	V	±5
Current	mA	2

Source

Voltage	VDC	20 ... 30
Constant current	mA	2 ... 20
Impedance, min.	kΩ	100

Construction

Sensing element	Type	quartz-shear
Case/base	material	Titanium
Degree of protection case/connector		epoxy
Connector	Type	10-32 neg. int.
Ground Isolated		no
Mass	grams	1.6
Mounting	Type	adhesive/wax

1 g = 9.80665 m/s², 1 inch = 25.4 mm, 1 gram = 0.03527 oz, 1 lbf-in = 0.113 N-m

Included Accessories

- Mounting wax

Type
8432

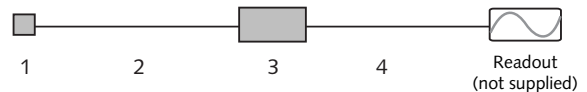
Ordering Key

Range

±500 g 500 Type 8728A

Measuring Chain

- | | |
|--|---------------|
| 1 Low impedance sensor | Type 8728A500 |
| 2 Sensor cable, 10-32 pos. to BNC pos. | 1761B... |
| 3 Power supply/signal conditioner | 51... |
| 4 Output cable, BNC pos. to BNC pos. | 1511 |



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