

K-Shear[®] Accelerometers

Type 8732A500/34A500

Micro Shear, Voltage Mode Accelerometers

Low profile, less than 1.3 gram weight accelerometers for measuring shock and vibration on very small objects. Available with or without a mounting flange, this ultra light weight sealed accelerometer features a wide frequency response and an integral cable.

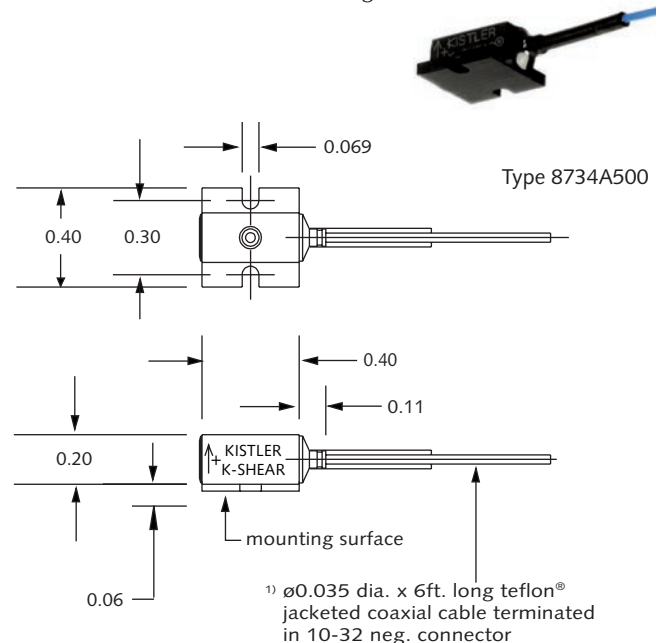
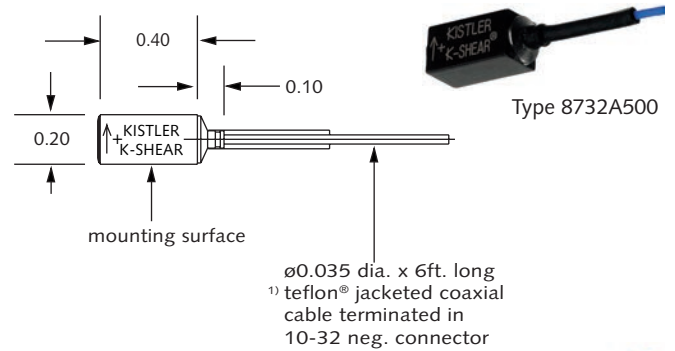
- Low impedance voltage mode
- Quartz shear element
- Low profile and lightweight
- Ultra-low base strain and thermal transient response
- Ground isolated
- Standard automotive footprint & mounting
- Conforming to CE

Description

The Type 8732A500 and 8734A500 micro K-Shear accelerometers use Kistler's uniquely designed quartz sensing element. Operating in the shear mode with precisely cut quartz plates, assures that the accelerometer will exhibit an insensitivity to base strain, thermal transients and transverse (cross-axis) acceleration. Quartz sensing elements afford excellent long-term stability to ensure repeatable, accurate measurements for many years.

The rectangular body shape of the Type 8732A500 allows for easy adhesive mounting on any side particularly in tight locations. The mounting flanges of the accelerometer Type 8734A500 allow for rigid mounting with fastener during shock testing and its automotive industry standard "footprint" makes it ideal for vehicle testing. The hard anodized case is constructed of titanium and aluminum that provides ground isolation and a lightweight package. An integral Teflon jacketed cable, 1.8 meters in length, is terminated in a 10-32 negative connector.

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 output. The low impedance output provides high immunity to noise and insensitivity to cable motion.



Application

The small lightweight, low profile of both Micro K-Shear[®] units make them ideal for precision vibration measurements or modal analysis on small, thin-walled structures or where space is limited. The footprint of the Type 8734A500 is compatible with the automotive standard, ensuring mechanical compatibility. The Type 8732A500 can be used in place of Piezoresistive Accelerometers (when measuring dynamic acceleration) to obtain a higher output signal and improved thermal performance. Changes in dynamic response of the test article due to accelerometer mass loading are minimized by these lightweight sensors.

¹⁾ Teflon[®] is a registered trademark of DuPont.

Technical Data

Specification	Unit	Type 8732A500/ 8734A500
Acceleration range	g	±500
Acceleration limit	gpk	±1000
Threshold nom. (noise 130 µvrms)	grms	0.01
Sensitivity, ±10 %	mV/g	10
Resonant frequency mounted nom	kHz	76
Frequency response, -5 ... 12 %	Hz	2 ... 10000
Amplitude non-linearity	%FSO	±1
Time constant nom.	sec	0.5
Transverse sensitivity nom. (max. 5)	%	1.5
Long term stability	%	±1

Environmental

Base strain sensitivity @ 250 µε	g/µε	0.04
Shock limit (1 ms pulse)	gpk	5000
Temperature coeff. 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 ... 18
Impedance min.	kΩ	100

Construction

Sensing element	Type	quartz-shear
Case/base	material	Al./Titanium
Degree of protection case/connector	Type	epoxy
Connector	Type	10-32 neg. Int.
Ground isolated		yes
Mass	grams	1.3
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

Mounting

The Type 8732A500 can be attached to the test structure with wax or adhesive. The Type 8734A500 is designed with mounting flanges and can be attached to the test structure by screw, wax or adhesive. Reliable and accurate measurements require that the mounting surface be clean and flat. The operating instruction manual for the accelerometers Type 8732A... and 8734A... provides detailed information regarding mounting surface preparation.

Included Accessories

- Mounting wax

Type
8432

Optional Accessories

- Sensor cable, 10-32 pos. to BNC pos., specify length in meters
- Coupler series or dual mode amplifier
- Cable BNC pos. to BNC pos., specify length in meters

Type
1761B

51...
1511

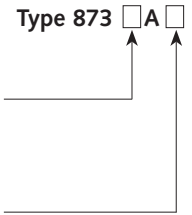
Ordering Key

Range

Standard	2
Unit with mounting flanges	4

Range

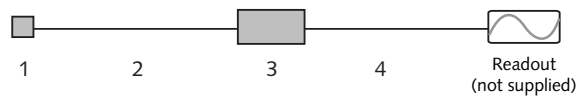
±500 g	500
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Measuring Chain

- 1 Low impedance sensor
- 2 Sensor cable, 10-32 pos. to BNC pos.
- 3 Power supply/signal conditioner
- 4 Output cable, BNC pos. to BNC pos.

Type
8732/34A...
1761B...
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