8778A500 CERAMIC SHEAR ACCELEROMETER

The 8778A500 and the 8778A500M14 are high frequency, ultra miniature, light weight accelerometers with built-in electronics, providing a low impedance voltage output. Integrated Electronic Piezo Electric (IEPE) sensor electronics minimize cable noise and eliminates the need for highly insulated cables. The standard 8778A500 accelerometer includes an integral Teflon jacketed 3 ft (0,9 m) long cable terminated with a 10-32 neg. connector while the M14 version features a field replaceable twisted wire pair and connector.

Contained within the titanium housing is a piezo-ceramic sensing element oriented in a shear mode configuration that providing immunity to base bending and thermal influences. The unit is designed for wax or adhesive mounting and is supplied with a custom wrench to facilitate removal after testing. Power to the 8778A accelerometers can be provided by any Kistler 5100 series coupler or by any industry standard voltage mode piezo-electric power supply/coupler.

- Low impedance voltage mode
- Ultra low base strain and thermal transient response
- Wide frequency response ± 5% 2 to 9000 Hz
- Ground Isolated assembly
- High 10 mV/*g* sensitivity
- CE Compliant



Technical Data	Units	8778A500, M14
Acceleration Range	*g*	±500
Acceleration Limit	g_{pk}	±750
Threshold nom.	g_{rms}	0.01
Sensitivity	mV/*g*	10
Resonant Frequency mounted, nom.	kHz	60*
Frequency Response ± 5%	Hz	2 ... 9000*
Amplitude Non-linearity	%FSO	±1
Time Constant	s	≥0.3
Transverse Sensitivity typ., (max.)	%	3 (5)
Environmental:		
Base Strain Sensitivity @ 250 με	*g*/με	0.005*
Shock Limit (1ms pulse width) max.	g_{pk}	5000
Temperature Coefficient of Sensitivity	%/°F	–0.08
	%/ °C	–0.14
Temperature Range Operating (4 mA supply current)	°F	–65 ... 250
	°C	–54 ... 121
Output:		
Bias nom.	VDC	11
Impedance	Ω	≤100
Voltage full scale	V	±5
Source:		
Voltage	VDC	18 ... 30
Constant Current	mA	2 ... 20
Construction:		
Sensing Element	type	ceramic/shear
Housing/Base	material	Titanium, Al./hard anodized
Sealing - housing/connector	type	Epoxy
Connector-terminates	type	10-32 neg.
Ground Isolation min.	MΩ	10
Weight (excluding cable)	grams	0.40
Mounting	type	adhesive/wax

* wax mounted

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

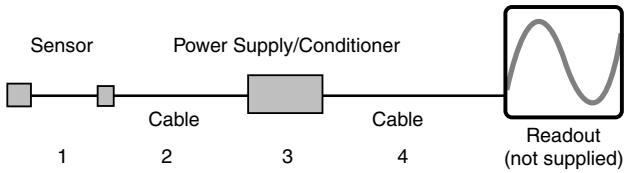
Kistler Instrument Corporation reserves the right to discontinue or change specifications, designs or materials without notice consistent with sound engineering principles and quality practices.

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Applications

The light weight, low profile and small size of the 8778A500 accelerometer makes it ideal for: precision vibration measurements; modal analysis on small, thin walled structures or where space is limited and mass loading is of primary concern. Typical applications included PC Board stress screening and critical component evaluation on disk drive assemblies.

Ordering Information



Specify:

1 - 8778A500	miniature accelerometer
8778A500M14	miniature accelerometer; replaceable twisted wire pair
2 - 1761B...	non-low noise extension cable, 10-32 pos. to BNC pos., specify length in meters
3 - 5100	coupler series
4 - 1511...	output cable, BNC pos. to BNC pos., specify length in meters

Mounting Options

The recommended adhesives to be placed between the accelerometer's insulator pad and the test object surface include:

Petro Wax

Loctite 430 general purpose for adhesion to metals

Loctite 495 general purpose for adhesion to other materials

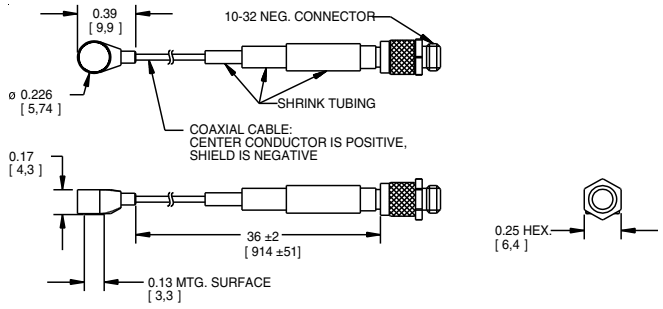
Note: Removal of an adhesively mounted unit is extremely difficult and care should be exercised during the removal process. The 1378 custom designed removal wrench should be used.

Supplied Accessories

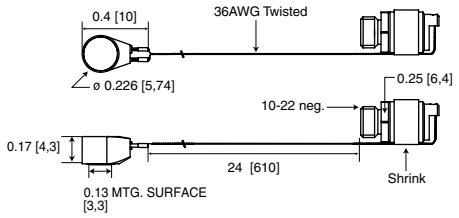
8432	Petro Wax
1378	Removal Wrench

Dimensions in inches [mm]

8778A500



8778A500M14



000-256e-11.02 (DBK8.8778e)

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