

Type 8730A500, 8730A500M1, 8730A500M8,  
8730AE500, 8730AE500M8

## 8730A MINIATURE K-SHEAR® ACCELEROMETERS

The 8730A500 Series are miniature, lightweight accelerometers weighing only 1.9 grams. Only the M1 version which is slightly larger and "off-ground" ; weighs 2.5 grams. These sensors are constructed in a welded, hermetically sealed titanium case. The units are designed with a 10-32 top connector for convenience and reliability. The basic 8730A500 and its M1, and M8 versions contain integral 5-40 threaded mounting stud . For low temperature or cryogenic applications down to -320 °F (-195 °C), the 8730A500M8 and

8730AE500M8 are available. Kistler's K-SHEAR technology assures high immunity to base strain, thermal transients and transverse (cross-axis) acceleration. Quartz sensing elements afford excellent long-term stability that ensures repeatable, accurate measurements for many years. The Piezotron® low impedance output provides high immunity to noise and insensitivity to cable motion. Kistler's design allows the use of rugged, low cost coaxial cable between the accelerometer and power/readout equipment. In cases where min-

Continued

- Low impedance voltage mode
- Quartz shear sensing element
- Ultra-low base strain sensitivity
- Minimal thermal transient response
- Low temperature -195°C version available
- Ground isolated version available
- Conforming to CE



Technical Data	Units	8730A500	8730A500M1	8730A500M8
Acceleration Range	<i>g</i>	± 500	± 500	± 500
Acceleration Limit	<i>g</i> <sub>pk</sub>	± 1000	± 1000	± 1000
Transverse Acceleration Limit	<i>g</i> <sub>pk</sub>	± 1000	± 1000	± 1000
Threshold	<i>g</i> <sub>rms</sub>	0.02	0.02	0.02
Sensitivity ±10%	mV/ <i>g</i>	10	10	10
Resonant Frequency mounted nom.	kHz	76	76	76
Frequency Response ± 5%	Hz	2 ... 10000	2 ... 7000	2 ... 10000
± 10%	Hz	1 ... 15000	1 ... 10000	1 ... 15000
Amplitude Non-Linearity	%FSO	± 1	± 1	± 1
Time Constant nom.	s	0.5	0.5	0.5
Transverse Sensitivity typ. (max.)	%	1.5 (3)	1.5 (3)	1.5 (3)
Base Strain Sensitivity @250 µε,	<i>g</i> /µε	0.05	0.05	0.05
Shock (1 ms pulse width) max.	<i>g</i> <sub>pk</sub>	5000	5000	5000
Temperature Coefficient of Sensitivity	%/°F	-0.03	-0.03	-0.03
	%/°C	-0.06	-0.06	-0.06
Temperature Range Operating (4mA supply current)	°F	-65 ... 250	-65 ... 250	-320 ... 250
	°C	-54 ... 120	-54 ... 120	-195 ... 120
Storage	°F	-100 ... 302	-100 ... 302	-320 ... 250
	°C	-74 ... 150	-74 ... 150	-195 ... 120
Output				
Bias nom.	VDC		11	
Impedance max.	Ω		100	
Current	mA		2	
Voltage F.S. nom.	V		± 5	

1 *g* = 9.80665 m/s<sup>2</sup>, 1 inch = 25.4 mm, 1 gram = 0.03527 oz, 1 lbf-in = 0.1129 Nm

Technical Data	Units	8730A500...
<b>Source Voltage</b>	VDC	20 ... 30
<b>Constant Current</b>	mA	2 ... 20
<b>Impedance</b> min.	kΩ	100
<b>Construction</b>		
<b>Sensing Element</b>	type	quartz/shear
<b>Housing/Base</b>	material	titanium
<b>Sealing-Housing/Connector</b>	type	hermetic
<b>Connector</b>	type	10-32 neg.
<b>Ground Isolation</b> min (8730A500M1 only)	MΩ	100
<b>Weight</b>		
(8730A500,M8)	grams	1.9
(8730A500M1)	grams	2.5
<b>Mounting Torque</b>	lbf-in (Nm)	10 (1)

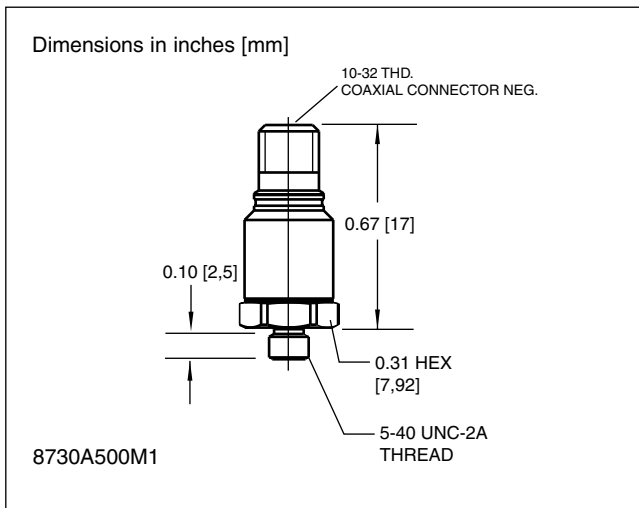
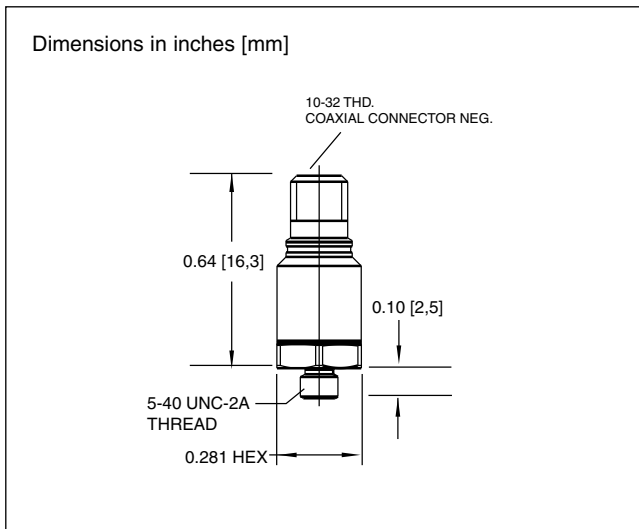
imum cable and connector weight are desirable, the 1631C or 1635C low noise cables are recommended. These premium cables reduce connector weight by as much as 50% and offer a double O-ring seal for added environmental protection.

### Applications

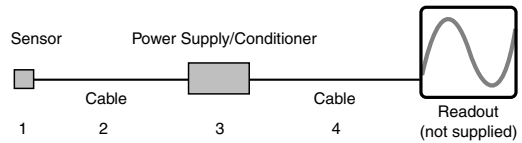
The light weight and small size of the 8730A500 Series make them ideal for precision measurements on small, thin-walled structures. Changes in dynamic response of the test article due to accelerometer mass loading are minimize when using this family of accelerometers.

### Related Products

- 8728A500 1.6 gram mass, integral cable
- 8732A500 1.1 gram mass, low profile, integral cable
- 8734A500 1.1 gram mass, with mounting flange, integral cable



### Ordering Information



Specify:

- 1 - 8730A500 miniature accelerometer or  
8730A500M1 off ground accelerometer or  
8730A500M8 low temperature accelerometer or
- 2 - 1761B... sensor cable, 10-32 pos. to BNC pos.  
1631C... premium cable, 10-32 pos. to BNC pos.,  
recommended for use with M8 version  
used in low temperature applications,  
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

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