

Type 8694M1

**8694M1 PIEZOTRON® MINIATURE TRIAXIAL ACCELEROMETER**

The 8694M1 Piezotron triaxial accelerometer essentially consists of three individual sensor elements mounted in an orthogonal configuration with each containing a quartz-crystal measuring assembly, a seismic mass, and an integrated impedance converter. The quartz assembly located between the sensor body and the seismic

mass is preloaded by a flexible member. The electrical charge yielded by each quartz crystal measuring element is directly proportional to that portion of the acceleration signal incident on the sensor's mounting surface.

*Continued*

- Low impedance voltage mode
- Small size and lightweight, less than 2.5 grams
- Quartz sensing element
- Conforming to CE



Technical Data	Units	8694M1
<b>Acceleration Range</b>	<i>g</i>	±500
<b>Acceleration Limit</b>	<i>g</i> <sub>pk</sub>	±1000
<b>Transverse Acceleration Limit</b>	<i>g</i> <sub>pk</sub>	±2000
<b>Threshold</b> nom.	<i>g</i> <sub>rms</sub>	0.025
<b>Sensitivity</b> nom.	mV/ <i>g</i>	4
<b>Resonant Frequency</b> mounted nom.	KHz	80
<b>Frequency Response</b> ±5%	Hz	10 ... 20 000
<b>Amplitude Non-linearity</b>	%FSO	±1
<b>Time Constant</b>	s	0.5
<b>Transverse Sensitivity</b>	%	=5
<b>Shock Limit</b> (1ms pulse width) max.	<i>g</i> <sub>pk</sub>	±2000
<b>Temperature Coefficient of Sensitivity</b>	%/°F	-0.03
	%/°C	-0.054
<b>Temperature Range Operating</b>	°F	-65 ... 275
	°C	-55 ... 135
x <b>Storage</b>	°F	-65 ... 300
	°C	-55 ... 150
<b>Output</b>		
<b>Bias</b> nom.	VDC	4
<b>Impedance</b>	Ω	<100
<b>Voltage</b> F.S.	V	±2
<b>Current</b>	mA	2
<b>Source</b>		
<b>Voltage</b>	VDC	12 ... 30
<b>Constant Current</b>	mA	2 ... 20
<b>Impedance</b> min	kΩ	100
<b>Construction</b>		
<b>Sensing Element</b>	type	quartz/compression
<b>Housing/Base</b>	material	titanium
<b>Sealing</b> - Housing/Connector	type	Epoxy
<b>Connector</b>	type	4-Pin neg. Microtech Equivalent
<b>Weight</b>	g	2.5

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

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A Piezotron accelerometer has integrated miniature electronics which provide a low impedance signal at the output. Since the 8694 is a triaxial accelerometer, each sensor axis requires individual excitation power and signal processing. Kistler's 5100 Piezotron coupler series includes a wide selection of single and multichannel units that include both gain and frequency tailoring.

**Applications**

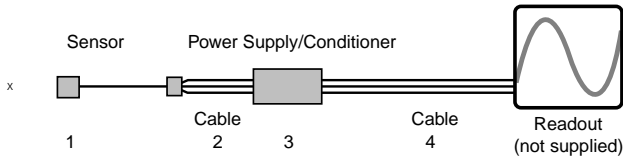
The 8694M1 accelerometer is well suited for measuring dynamic acceleration, vibration and shocks in applications where minimum mass, small mounting size, and high resonant frequency are essential. The dynamic characteristics of very light test objects are practically not influenced by the accelerometer's small mass.

- Measuring of acceleration vectors in space
- Measuring of vibrations on thin-walled structures
- Modal testing

**Mounting Options**

The accelerometer can either be adhesively attached to the mounting surface of the test object or to one of the mounting adaptors supplied with the unit. Adhesive mounting is recommended for the widest transfer of frequency information, but double-sided adhesive tape or wax may also be used. When using the anodized adaptor, Types 8439 or 8440, the accelerometer will be ground isolated from the test object.

**Ordering Information**



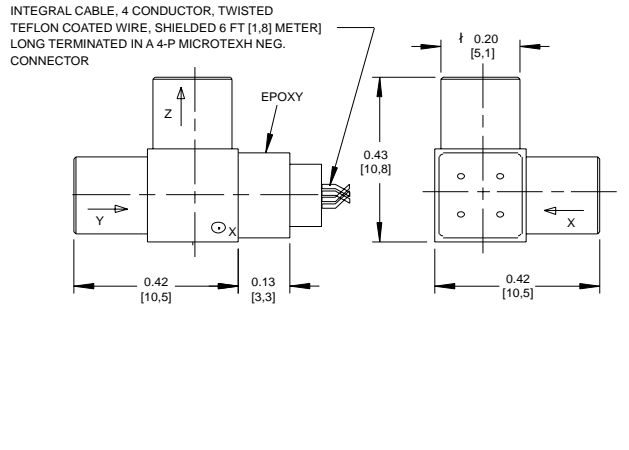
Specify:

- 1 - 8694M1 miniature triaxial accelerometer or
- 2 - 1576 interconnect cable, 4-pin Microtech pos. to 3x BNC pos. (length = 0,2m) or 1578A... extension cable, 4-pin Microtech pos. to 4-pin Microtech neg., specify length in meters
- 3 - 5100 coupler series or dual mode charge amplifier
- 4 - 1511... output cable, BNC pos. to BNC pos., specify length in meters

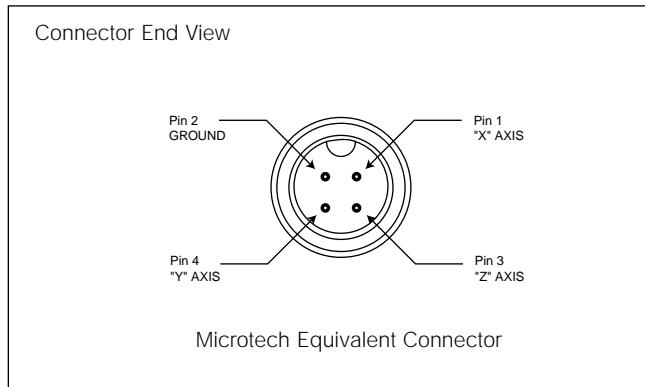
**Optional Accessories**

- 8439 mounting adaptor with M3 thread
- 8440 mounting adaptor with 4-40 UNC thread

**Dimensions in inches [mm]**



**Connector End View**



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