

Type 8742A5...8742A50, 8743A100

## 8742A & 8743A SHOCK ACCELEROMETERS

This unique shock accelerometer series incorporate a stable quartz, shear design and are tailored to measure high accelerations from pyroshock to impact testing. The 100kHz resonance frequency ensures accurate measurement of high speed events, virtually eliminating zero shift and internal amplifier saturation.

These shock sensors feature extremely low transverse and base strain sensitivity. The 8742A series units have an integral 10-32 negative connector, while the 8743A100 model is ranged for 100000g operation and includes twin leads, terminating in a 10-32 negative connector.

- Low impedance, voltage mode
- Unique quartz shear sensing element
- Ranges from 5000g to 100000g
- Low transverse sensitivity
- Rugged connector for repeated connections
- Wide bandwidth, high resonant frequency
- Conforming to CE



8742A...



8743A100

Technical Data	Units	8742A5	8742A10	8742A20	8742A50	8743A100
<b>Acceleration Range</b>	<i>g</i>	±5000	±10000	±20000	±50000	±100000
<b>Acceleration Limit</b>	<i>g<sub>pk</sub></i>	±6000	±12000	±24000	±60000	±110000
<b>Threshold nom.</b>	<i>g<sub>rms</sub></i>	0.13	0.25	0.5	1.3	2.6
<b>Sensitivity nom.</b>	mV/g	1	0.5	0.25	0.10	0.05
<b>Resonant Frequency mounted, nom.</b>	kHz	100	100	100	100	100
<b>Frequency Response ±7%</b>	Hz	1...10000	1...10000	1...10000	1...10000	0.5...10000
<b>Amplitude Non-linearity</b>	%FSO	±1	±1	±1	±1	±1
<b>Time Constant at room temp,</b>	s	≥0.5	≥0.5	≥0.5	≥0.5	≥1
<b>Transverse Sensitivity typ., (max.)</b>	%	1.5 (5)	1.5 (5)	1.5 (5)	1.5	1.5 (5)
<b>Environmental:</b>						
<b>Base Strain Sensitivity @ 250 µε</b>	<i>g/µε</i>	0.005	0.005	0.005	0.005	0.005
<b>Shock Limit (1ms pulse width, max.)</b>	<i>g<sub>pk</sub></i>	50000	50000	50000	100000	120000
<b>Temperature Coefficient of Sensitivity</b>	%/°F			- 0.03		
	%/°C			- 0.06		
<b>Temperature Range Operating</b>	°F			- 65...250		
	°C			- 55...120		
<b>Output:</b>						
<b>Bias nom.</b>	VDC			11		
<b>Impedance</b>	Ω			100		
<b>Voltage full scale</b>	V			±5		
<b>Source:</b>						
<b>Voltage</b>	VDC			18 ... 30		
<b>Constant Current</b>	mA			2 ... 20 <sup>(1)</sup>		
<b>Impedance min.</b>	kΩ			100		

(1) Recommended minimum 4mA

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	8742/43...
<b>Construction</b>		
Sensing Element	type	quartz/shear
Housing/Base	material	st. stl.
Sealing - housing/connector	type	hermetic
Connector	type	10-32 neg.
Weight	g	4.5
Mounting Torque	lbf-in (Nm)	18 (2)

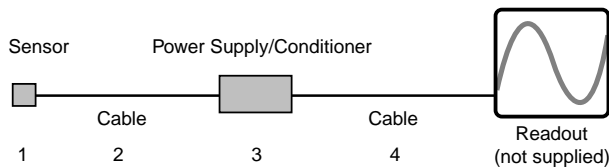
**Applications**

The 8742 series and 8743 accelerometers have multipurpose applications. The wide bandwidth and rugged construction is ideal for impact and vibration-related applications including condition monitoring and vehicle testing. These sensors offer excellent performance and cost advantages.

**Related Products**

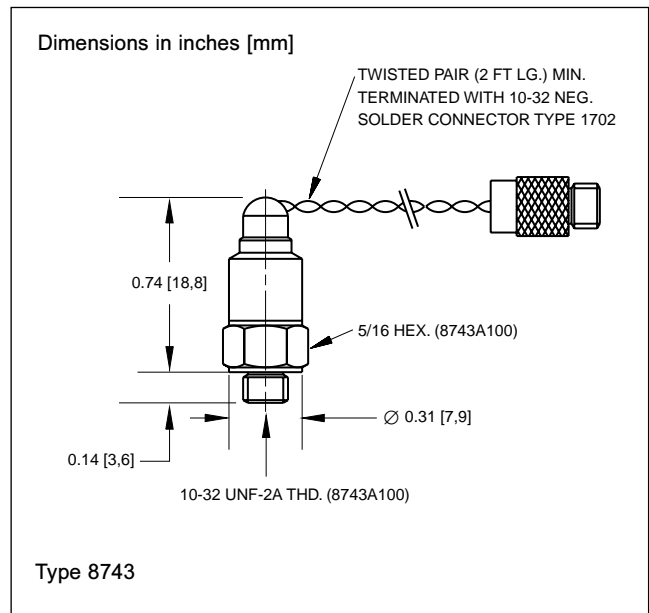
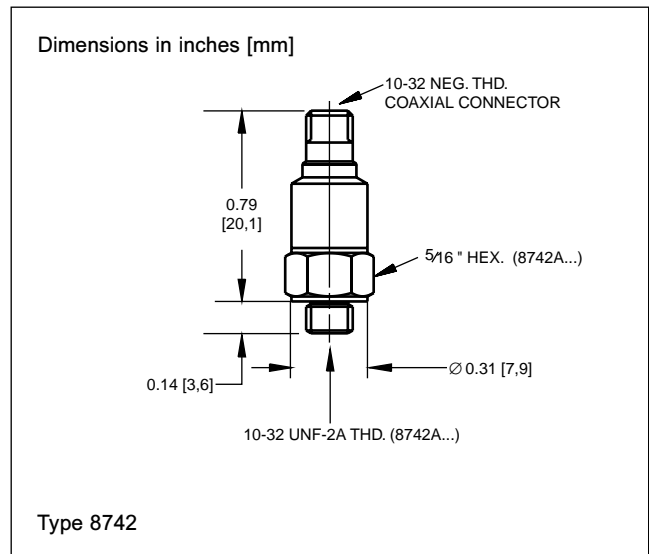
- 8042 high impedance, charge mode, 100 000  $g_{pk}$  (-0.05 pC/g)
- 8044 high impedance, charge mode, 30 000  $g_{pk}$  (-0.3 pC/g)

**Ordering Information**



Specify:

- 1 - 8742A... accelerometer, specify range or 8743A100 100 000 g range accelerometer
- 2 - 1761B... cable, 10-32 pos. to BNC pos., specify length
- 3 - 5100 coupler series or dual mode amplifier
- 4 - 1511... output cable, BNC pos. to BNC pos., specify length in meters



000-250e-10.02 (DBK8.8742/43e)