

Type 8702B25, M1 ... 8702B100, M1
8704B25, M1 ... 8704B100, M1

8702B & 8704B K-SHEAR® ACCELEROMETER SERIES

The 8702B side connector and 8704B top connector accelerometer series use a unique shear mode sensing element made of stable quartz crystals. All units are hermetically sealed and are constructed of titanium. An internal circuit Piezotron® impedance converter provides a low impedance output. The quartz crystal sensing elements afford excellent long-term stability that ensure repeatable,

accurate measurements for many years. Other outstanding features include low base strain, thermal transient and transverse sensitivity. Both types are available with ground isolation (M1 versions). The 8702B and 8704B series are designed for general purpose vibration measurement, vehicle or environmental testing (with or without temperature cycling), ESS and modal analysis.

- Low impedance, voltage mode
- Quartz-shear sensing elements
- Ultra-low base strain
- Minimal thermal transient response
- Lightweight, hermetically sealed titanium case
- Conforming to CE



8702



8704

Technical Data	Units	8702B25, M1 8704B25, M1	8702B50, M1 8704B50, M1	8702B100, M1 8704B100, M1
Acceleration Range	<i>g</i>	±25	±50	±100
Acceleration Limit	<i>g</i> pk	±50	±100	±200
Transverse Acceleration Limit	<i>g</i> pk	±50	±100	±200
Threshold nom.	<i>g</i> rms	0.003	0.006	0.01
Sensitivity (±5%)	mV/ <i>g</i>	200	100	50
Resonant Frequency mounted, nom.	KHz	54	54	54
x Frequency Response ± 5%	Hz	10 ... 7000	3 ... 7000	0.6 ... 9000
± 10%	Hz	3 ... 10 000	1 ... 10 000	0.4 ... 10 000
Amplitude Non-linearity	%	±1	±1	±1
Time Constant nom.	s	0.5	1.0	1.5
Transverse Sensitivity typ. (max.)	%		1.5 (3)	
Base Strain Sensitivity @250 µε	<i>g</i> µε		0.01	
Shock (1 ms pulse), max.	<i>g</i> pk		2000	
Temperature Coefficient of Sensitivity	%/°F		-0.03	
	%/°C		-0.06	
x Temperature Range Operating (4 mA supply current)	°F		-65 ... 212	
	°C		-55 ... 100	
Storage	°F		-100 ... 250	
	°C		-75 ... 120	
Output Bias nom.	VDC		11	
Impedance max.	Ω		<100	
Voltage F.S.	V		±5	
Current	mA		2	
Source Voltage	VDC		18 ... 30	
Constant Current	mA		2 ... 20	
Impedance min.	Ω		100	

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

Technical Data	Units	8702B..., M1 8704B..., M1
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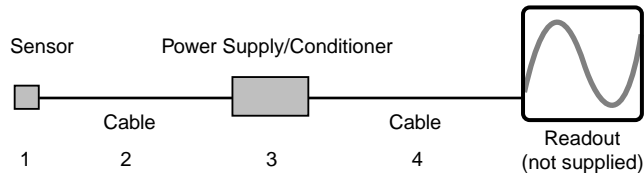
Construction

Sensing Element	type	quart/shear
Housing/Base	material	titanium
Sealing - housing/connector	type	hermetic
Connector	type	10-32 neg.
Ground Isolation (for M1 only)	MΩ	10
Weight (for M1)	g	8.6 (9.6)
Mounting	type	10-32 stud
Mounting Torque	lbf-in (Nm)	18 (2)

Related Products

8702B500	K-Shear accelerometer, side connector, 500g range
8702B500M1	K-Shear accelerometer, side connector, off ground, 500g range
8702B500M5	K-Shear accelerometer, side connector, 500g range, high temperature 165 °C operation
8702B500M8	K-Shear accelerometer, side connector, 500g range, low temperature -195 °C operation
8704B500	K-Shear accelerometer, top connector, 500g range
8704B500M1	K-Shear accelerometer, top connector, off ground, 500g range

Ordering Information



Specify:

- 1 - 8702B... accelerometer, side connector, specify range or 8702B... M1 accelerometer, side connector, ground isolated, specify range
- 8704B... accelerometer, top connector specify range or 8704B...M1 accelerometer, side connector, ground isolated, specify range
- 2 - 1761B... general purpose cable, 10-32 pos. to BNC pos., 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.

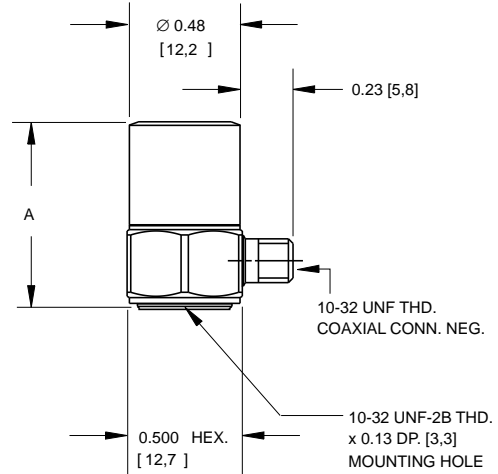
Supplied Accessories

8402	10-32 mounting stud
8411	mounting stud, 10-32 to M6; shipped only outside N. A.

Optional Accessories

8452A	mounting magnet
8502	triaxial mounting cube

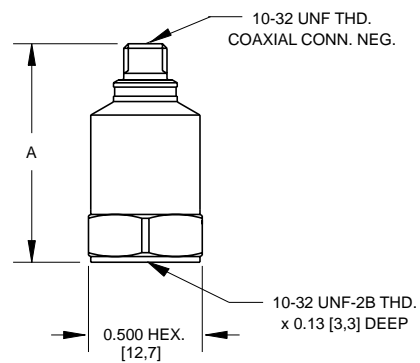
Dimensions in inches [mm]



"A" dim 8702B... 0.76 [19,3]
 "A" dim 8702B...M1 0.80 [20,3]

8702B Series

Dimensions in inches [mm]



"A" dim 8704B... 0.96 [24,4]
 "A" dim 8704B...M1 0.98 [24,9]

8704B Series

000-239e-08.02 (DBK8.8702/04e)