

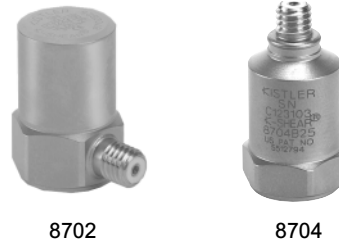
Type 8702B500, M1, M5, M8
8704B500, M1

8702B500 & 8704B500 K-SHEAR® ACCELEROMETER SERIES

The 8702B500 side connector and 8704B500 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 and stainless steel. 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. Models identified with an M1 are ground isolated versions. The 8702B500M5 extends the operating temperature range to 165°C (330°F) while the 8702B500M8 operates at a low cryogenic temperature of -195°C (... 320°F). All types 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



Technical Data	Units	8702B500 8704B500	8702B500M1 8704B500M1	8702B500M5 8702B500M8
Acceleration Range	<i>g</i>	±500	±500	±500
Acceleration Limit	<i>g</i> pk	±1000	±1000	±1000
Transverse Acceleration Limit	<i>g</i> pk	±1000	±1000	±1000
Threshold nom.	<i>g</i> rms	0.01	0.01	0.01
Sensitivity (±5%)	mV/ <i>g</i>	10	10	—
(±10%)	mV/ <i>g</i>	—	—	10
Resonant Frequency mounted, nom.	kHz	54	54	73
Frequency Response ± 5%	Hz	1 ... 10000	—	2 ... 7000
± 10%	Hz	—	—	1 ... 10000
-5%, +10%	Hz	—	1 ... 10000	—
Amplitude Non-linearity	%FSO	±1	±1	±1
Time Constant nom.	s	1	1	1
Transverse Sensitivity typ. (max.)	%	1.5 (3)	1.5 (3)	1.5 (3)
Base Strain Sensitivity @250 µε	<i>g</i> /µε	0.01	0.01	0.01
Shock (1 ms pulse width), max.	<i>g</i> pk	5000	5000	5000
Temperature Coefficient of Sensitivity	%/°C	-0.03	-0.03	-0.016
	%/°C	-0.06	-0.06	-0.03
Temperature Range Operating (4 mA supply current)	°F	-65 ... 250	-65 ... 250	—
	°C	-55 ... 120	-55 ... 120	—
Storage	°F	-100 ... 300	-100 ... 300	—
	°C	-75 ... 150	-75 ... 150	—
Operating (4 mA supply current)	°F	—	—	-65 ... 330 (-320 ... 250)
8702B500M5 (8702B500M8)	°C	—	—	-54 ... 165 (-195 ... 120)
Storage	°F	—	—	-75 ... 330 (-320 ... 260)
8702B500M5 (8702B500M8)	°C	—	—	-65 ... 165 (-95 ... 130)
Output Bias nom.	VDC	11	11	11
Impedance max.	Ω	100	<100	100
Current	mA	2	2	2
Voltage F.S. nom.	V	±5	±5	±5
Source				
Voltage	VDC	20...30	20 ... 30	20 ... 30
Constant Current	mA	2 ... 20	2 ... 20	2 ... 20
Impedance min.	kΩ	100	100	100

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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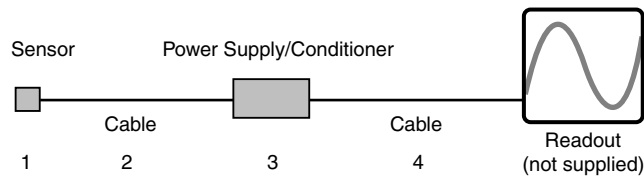
000-238e-10.02 (DBK8.8702/04B500e)

Technical Data **Units** **8702B500, M1, M5, M8**
8704B500, M1

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 8702	grams	8.9
8704	grams	7.3

Ordering Information



- Specify:
- 1 - 8702B... accelerometer, side connector, specify range or 8702B... M1 accelerometer, side connector, ground isolated, specify range
 - 8702B...M5 high temperature accelerometer, 165°C operation
 - 8702B...M8 low temperature accelerometer, -195°C operation
 - 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 or 1631C... premium cable, 10-32 to BNC pos., recommended for use with 8702B500M8 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.

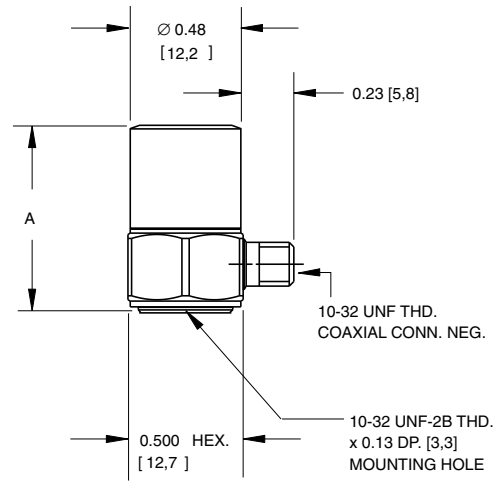
Supplied Accessories

- 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

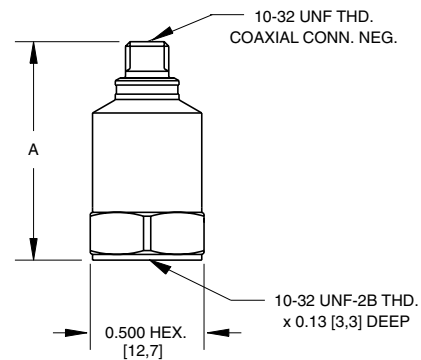
Dimensions in inches [mm]



"A" dim 8702B500	0.63 [16]
"A" dim 8702B500M1	0.67 [17]
"A" dim 8702B500M5,M8	0.80 [20,3]

8702B Series

Dimensions in inches [mm]



"A" dim 8704B500	0.83 [21,1]
"A" dim 8704B500M1	0.85 [21,6]

8704B Series