

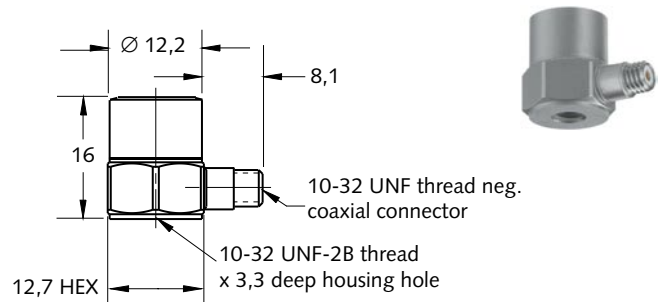
# Ceramic Shear Accelerometers

Type 8202A...,  
8203A...

## High Sensitivity, Charge Mode, Accelerometer

Designed for long-term, high temperature stability, the 8202A... and 8203A... accelerometers measure vibration in a wide range of applications.

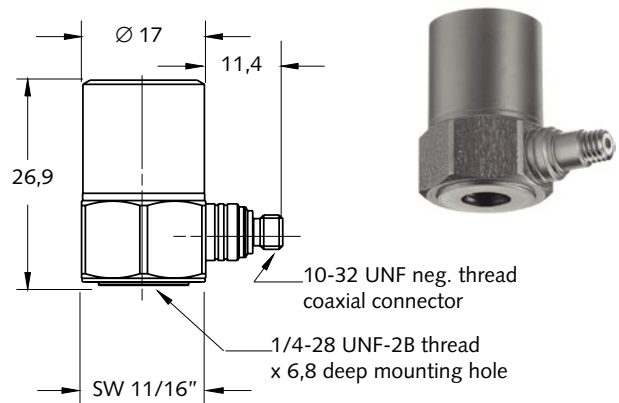
- High impedance, charge mode
- High temperature to 250°C
- Ceramic Shear sensing element
- Low transverse sensitivity
- Long-term stability at extended temperatures



8202A...

### Description

The 8202A... and 8203A... are high impedance, charge mode accelerometers designed for vibration measurements where temperature extremes may be experienced. A ceramic shear sensing element produces a significant charge output that can be easily converted into a useable analog voltage signal via a charge amplifier. Kistler's shear technology assures high immunity to base strain, thermal transients and transverse accelerations. A unique connector design features a ceramic insulator for long-term stability even at extended operating temperatures. Other outstanding features include high frequency response, light weight and hermetic sealing. It is recommended that low noise transducer cables be used between the accelerometer and the input of the charge amplifier or charge converter.



8203A...

Internal of these hermetically sealed accelerometers, is a shear mode, ceramic sensing element, providing a significant charge output. Type 5050A... In-Line Charge Amplifier is recommended for use with the 8202A... and 8203A.... The 5050A... is a lower cost alternative to the laboratory amplifier allowing the measurement system to take on the appearance of the traditional voltage mode accelerometer and power supply/coupler.

### CE Compliant Information

Because high impedance, charge mode accelerometers contain no electronics, CE certification to the EMC Directive is not appropriate. When a high impedance accelerometer is used with a CE certified signal conditioner (i.e., charge amplifier...), it is said that this system is CE compliant.

### Application

The 8202A... and 8203A... are ideal for automotive, aerospace and environmental testing where low impedance sensors are limited by temperature range. They can also be used in vehicle testing, ESS, and modal analysis applications.

### Mounting

Reliable and accurate measurements require that the mounting surface be clean and flat. The accelerometers can be attached to the structure utilizing the supplied 1/4-28 stud. The Operating Instruction Manual for the 8202A... and 8203A... provides detailed information regarding mounting surface preparation.

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**Technical Data**

Type	Unit	8202A10	8203A50
Acceleration Range	g	±2000	±1000
Threshold nom. (noise 100µVrms)	grms	0,001	0,001
Sensitivity	pC/g	-10	-50
Resonant Frequency mounted, nom.	kHz	45	24
Frequency Response ±5%	Hz	5 ... 10000	5 ... 4000
Amplitude Non-linearity	%FSO	±1	±1
Insulation Resistance (24°C)	Ω	≥1 x 10 <sup>8</sup>	≥1 x 10 <sup>8</sup>
Capacitance	pF	500	1400
Transverse Sensitivity nom., (max. 5%)	%	1,5	1,5
Long Term Stability	%	±1	±1
<b>Environmental:</b>			
Base Strain Sensitivity @ 250µε	g/µε	0,005	0,005
Shock Limit (1ms pulse) gpk		5000	
Temperature Coefficient of Sensitivity	%/°C	0,13	0,13
Temperature Range Operating	°C	-70 ... 245	-70 ... 245
<b>Construction:</b>			
Sensing Element	type	Ceramic Shear	Ceramic Shear
Housing/Base	material	St. Stl.	St. Stl.
Sealing-housing/connector	type	Hermetic/ceramic	Hermetic/ceramic
Connector	type	10-32 neg	10-32 neg
Weight	grams	14,5	44,5
Mounting	type	10-32 UNF-2B thread	1/4 - 28 thread

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

**Accessories Included - 8202A...**

- |  |                     |
|--|---------------------|
| • 10-32 thd. mounting stud                                   | <b>Type</b><br>8402 |
| • Mounting stud 10-32 to M6, shipped only outside N. America | 8411                |

**Ordering Key**

<b>Measuring Range</b>		820 <input type="checkbox"/>
±2000g accelerometer, with 10-32 thd.	2A10	↑
±1000g accelerometer, with 1/4-28 thd.	3A50	

**Optional Accessories - 8202A...**

- |                          |                      |
|--------------------------|----------------------|
| • Mounting magnet        | <b>Type</b><br>8452A |
| • Triaxial mounting cube | 8502                 |

**Measuring Chain**

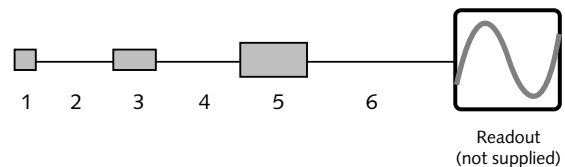
- |          |                                      |                         |
|----------|--------------------------------------|-------------------------|
| <b>1</b> | High impedance sensor                | <b>Type</b><br>8290A... |
| <b>2</b> | Sensor cable, 10-32 pos. to BNC pos. | 1631C...                |
| <b>3</b> | Series charge converter              | 5050A...                |
| <b>4</b> | Outout cable, BNC pos. to BNC pos.   | 1511                    |
| <b>5</b> | Power supply                         | 51...                   |
| <b>6</b> | Outout cable, BNC pos. to BNC pos.   | 1511                    |

**Accessories Included - 8203A...**

- |   |                     |
|---|---------------------|
| • 1/4-28 to 10-32 thd. mounting stud                          | <b>Type</b><br>8410 |
| • 1/4-28 to 1/4-28 thd. mounting stud                         | 8412                |
| • Mounting stud 1/4-28 to M8, shipped only outside N. America | 8421                |

**Optional Accessories - 8203A...**

- |                           |                     |
|---------------------------|---------------------|
| • Triaxial mounting cable | <b>Type</b><br>8506 |
| • Magnetic mounting base  | 8456                |



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