

# Ceramic Shear Accelerometer

Type 8290A25M5

## High Sensitivity, Charge Mode, Triaxial Accelerometer

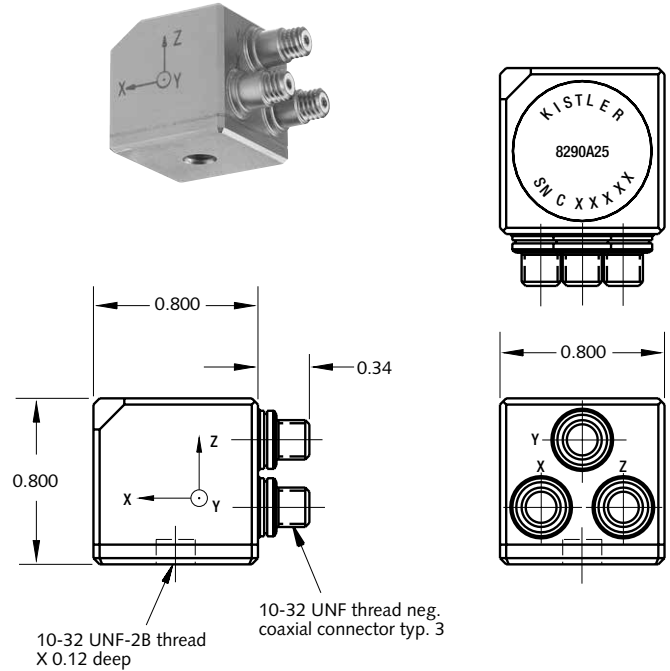
Designed for long-term, high operational temperature stability at 485°F, the 8290A25M5 accelerometer simultaneously measures shock and vibration in three orthogonal axis.

- High impedance, charge mode
- Ceramic Shear sensing element
- High Temperature (485°F)
- Low transverse sensitivity
- Long-term stability at extended temperatures

### Description

The 8290A25M5 high temperature, triaxial accelerometer is housed in a cube-shaped package with a notched corner to aid in orientation during installation in blind areas. Laser-etched markings on all sides clearly identify the three axes. A ceramic shear sensing element produces a 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. Other outstanding features include high frequency response, lightweight and hermetic sealing. It is recommended that low noise transducer cables be used between the sensor and charge amplifier, such as Kistler 1635 series.

Internal of this hermetically sealed accelerometer, is a shear mode, ceramic sensing element, providing a significant charge output. Type 5050B... In-Line Charge Amplifier is recommended for use with the 8290A25M5. The 5050B... 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.



### Application

The 8290A25M5 is recommended for general vibration measurements in high temperature and in confined areas. Applications for this accelerometer include vehicle vibration and NVH testing, general laboratory, environmental testing where low impedance sensors are limited by temperature range. It can also be used in ESS, and modal analysis applications.

### 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.

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**Technical Data**

Type	Unit	8290A25M5
Acceleration Range	g	±1000
Acceleration Limit	gpk	±2000
Threshold nom. (noise 100µVrms)	grms	0.001
Sensitivity	pC/g	-25
Resonant Frequency mounted, nom.	kHz	20
Frequency Response ±10%		
stud mounted	Hz	5 ... 4000
adhesive mounted	Hz	2 ... 2000
Insulation Resistance (75, 485°F)	Ω	≥ 1 x 10 <sup>8</sup>
Capacitance	pF	1300
Transverse Sensitivity nom., (max.)	%	1.5 (3)
Environmental:		
Base Strain Sensitivity @ 250µε	g/µε	0.01
Shock Limit (1ms pulse)	gpk	5000
Temperature Coeff. of Sensitivity	%/°F	0.07
Temperature Range Operating	°F	-95 ... 480
Temperature Range Storage	°F	-110 ... 500
Construction:		
Sensing Element	type	Ceramic/Shear
Housing/Base	material	St. Stl
Sealing-housing/connector	type	Hermetic/Ceramic
Connector	type	10-32 neg
Weight	grams	53
Mounting (thread)	type	10-32 UNF-2B

1 g = 9.80665 m/s<sup>2</sup>, 1 inch = 25.4 mm, 1 gram = 0.03527 oz, 1 lbf-in = 0.113 Nm

**Mounting**

Reliable and accurate measurements require that the mounting surface be clean and flat. The accelerometer can be attached to the structure utilizing the supplied 10-32 mounting stud or adhesive. The Operating Instruction Manual for the 8290A25M5 provides detailed information regarding mounting surface preparation.

**Accessories Included**

- 10-32 thd. mounting stud

**Type**

8402

**Optional Accessories**

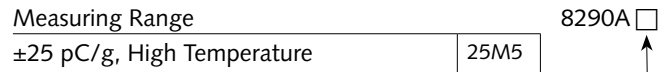
- Mounting magnet
- 10-32 thd to M6 mounting stud

**Type**

8452A

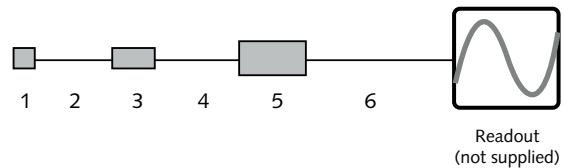
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**Ordering Key**



**Measuring Chain**

- |                           | <b>Type</b> |
|---------------------------|-------------|
| 1 High Impedance Sensor   | 8290A...    |
| 2 Low noise Cable         | 1635C...    |
| 3 Series charge converter | 5050B...    |
| 4 Outout cable to readout | 1511        |
| 5 Power Supply            | 51...       |
| 6 Outout cable to readout | 1511        |



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