

PiezoSmart™

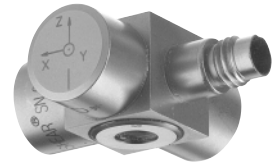
Type 8792A....M10

Through Hole Mounting, Voltage Mode Triaxial Accelerometer

A shear designed quartz triaxial accelerometer with TEDS Smart Sensor operating capability.

The 8792A PiezoSmart Accelerometers simultaneously measure vibration in three mutually perpendicular axis.

They are available in four measuring ranges from ±25g to ±500g and feature a housing through hole allowing a single bolt to attachment to the test structured.



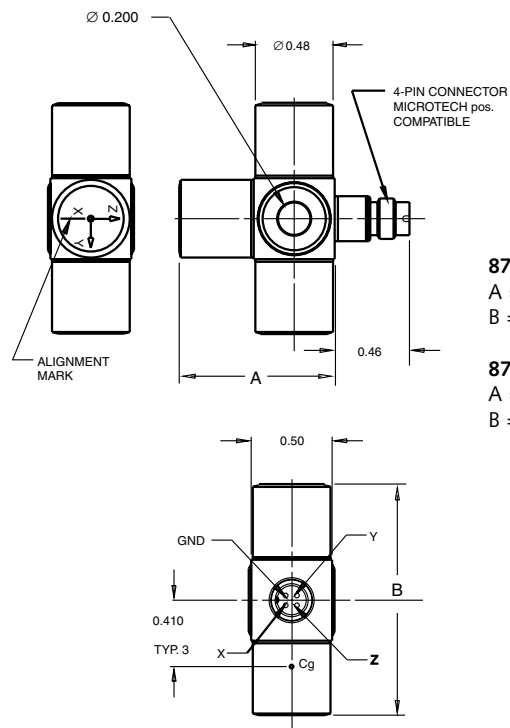
- Low impedance, voltage mode output
- Incorporates "TEDS" smart sensor technology
- Quartz shear sensing elements
- High immunity to thermal transients
- Ground isolated
- Conforming to CE

Description

The 8792A series of quartz shear triaxial accelerometers are rugged, low impedance voltage mode sensors. They are available in four ranges from 25g to 500g with sensitivities from 10mV/g to 200mV/g. The K-Shear™ quartz sensing elements contained within the accelerometer provide long term operational stability, a wide operating frequency range along with extremely low sensitivity to thermal transients and transverse acceleration. The accelerometer can operate both as a standard low impedance, voltage mode accelerometer with a conventional analog output or in a digital "PiezoSmart Sensor Mode" capable of providing pertinent information stored within its memory module. The smart sensor operating mode allows information regarding accelerometer specification, location, position direction to be entered and accessed by a host signal/data acquisition processor. Since the design of the accelerometer conforms to a universal standard (IEEE P1451.4), any commercially manufactured TEDS Signal Conditioner, or Kistler's 5150/2853A...Y45 Signal Conditioning Platform along with a host computer, will

Application

The low profile, center mounting hole design of the 8792A(X)M10 is ideally suited for multi-channel measurements in aerospace applications, automotive vehicle structure testing and general product development where large number of units are installed on a test structure.



8792A...
A = 0.96
B = 1.42

8792A500
A = 0.82
B = 1.15

Accessing TEDS Data

The 8792A(X)M10 triaxial accelerometer models are PiezoSmart variants of the standard versions incorporating "Smart Sensor" technology. Viewing an accelerometer's data sheet requires an Interface/Coupler such as Kistler's Model 5150A PiezoSmart Signal Conditioning Module, 2853A...Y45 Signal Conditioning Platform and the SCP Visual Interface (Windows™ based) software. The Interface/Coupler provides negative current excitation (reverse polarity) altering the operating mode of the PiezoSmart sensor allowing the program editor software to read or add information contained in the memory chip.

000-470a-06.03

Technical Data

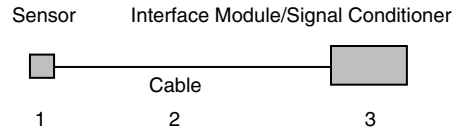
Type	Units	8792A25M10	8792A50M10	8792A100M10	8792A500M10
Acceleration Range	g	±25	±50	±100	±500
Acceleration Limit	g _{pk}	±50	±100	±200	±1000
Threshold	g _{rms}	0.002	0.004	0.006	0.01
Sensitivity ±5% @ 100Hz, 10g _{rms}	mV/g	200	100	50	10
Resonant Frequency nom. mtd.	kHz	54	54	54	54
Frequency Response ±5%	Hz	1 ... 5000	0.5 ... 5000	0.5 ... 5000	–
Frequency Response –5%, +10%	Hz	–	–	–	1 ... 5000
Amplitude Non-linearity	% FSO	±1	±1	±1	±1
Time Constant nom.	s	1	2	1.5	1
Transverse Sensitivity typ. (max.)	%	1.5 (3)	1.5 (3)	1.5 (3)	1.5 (3)
Base Strain Sensitivity @250 µε, max.	g/µε	0.005	0.005	0.005	0.005
Shock (1 ms pulse width) max.	g	2000	2000	2000	5000
Long Term Stability	%	±1	±1	±1	±1
Temperature @ 4mA supply current					
Coefficient of Sensitivity	% /°F	–0.03	–0.03	–0.03	–0.03
Temperature Range Operating	°F	–65...212	–65...212	–65...212	–65...250
Temperature Range Storage	°F	–100...250	–100...250	–100...250	–100...300
Output:					
Bias nom.	VDC	11	11	11	11
Impedance max.	Ω	100	100	100	100
Current	mA	2	2	2	2
Voltage F.S., nom.	V	±5	±5	±5	±5
Source:					
Current	mA	2 ... 18	2 ... 18	2 ... 18	2 ... 18
Voltage	VDC	20 ... 30	20 ... 30	20 ... 30	20 ... 30
Impedance	kΩ	>100	>100	>100	>100
Construction:					
Sealing-housing/connector	type	hermetic	hermetic	hermetic	hermetic
Housing/Base	material	St. Stl.	St. Stl.	St. Stl.	St. Stl.
Sensing Element	type	shear/quartz	shear/quartz	shear/quartz	shear/quartz
Connector	type	4-pin pos. Microtech Equivalent	4-pin pos. Microtech Equivalent	4-pin pos. Microtech Equivalent	4-pin pos. Microtech Equivalent
Weight	grams	29	29	29	27
Ground Isolation	MΩ	10	10	10	10
Mounting Torque	lbf-in	18	18	18	18

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

Mounting

Reliable and accurate measurements require that the mounting surface be clean and flat. The sensor can be attached to the structure with a single 10-32 socket head cap screw. The Operating Instruction Manual for the 8792 provides detailed information regarding mounting surface preparation.

Ordering Information



sp = specify cable length in meters; 0.5, 3, 10, 20

X = specify range 25g, 50g, 100g, 500g

- 1 - 8792A(X)M10 triaxial accelerometer
- 2 - 1578Asp optional extension cable, 4-pin pos. Microtech equivalent to 4-pin neg. Microtech equivalent or 1756Bsp cable, 4-pin Microtech neg., to 3x BNC pos.
- 3 - 5150/2853A...Y45 SCP interface module/signal conditioner visual interface software

Supplied Accessories

- 431-0475-003 socket cap head screw, 10-32 x 0.75" long
- 431-0494-001 socket cap head screw, M5 x 20mm long

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