

Type 8798A5M10 ... 8798A50M10

8798A...M10 PiezoSMART® TRIAXIAL ACCELEROMETERS

The 8798A series of PiezoSMART Accelerometers simultaneously measure vibration in three, mutually perpendicular axes (x, y and z). The unique annular, ceramic shear sensor design features extremely low thermal transient response, a high immunity to base strain and transverse acceleration. The 8798 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 with in its memory module. Since the design of the accelerometer conforms to a universal standard (IEEE P1451.4), any commercially manufactured TEDS Signal Conditioner, along with a host computer, will address and retrieve the stored information.

These light weight high sensitivity triaxial accelerometers reduce mass loading in multi-channel data acquisition in modal applications.

The smart sensor operating mode allows information regarding accelerometer location and position direction to be entered and accessed by a host signal/data acquisition processor. This series of triaxial accelerometers contain an advanced hybrid charge amplifier design that provides outstanding phase response as well as a wide operating frequency range. The light weight aluminum housing is epoxy sealed and hard anodized coated to provide ground isolation.

- Low impedance, voltage mode
- Incorporates "TEDS" smart sensor technology
- Lightweight, ceramic shear design
- Excellent thermal stability
- Choice of ranges and sensitivities
- Conforming to CE



Technical Data	Units	8798A5M10	8798A10M10	8798A50M10
Acceleration Range	<i>g</i>	±5	±10	±50
Acceleration Limit	<i>g_{pk}</i>	±8	±16	±80
Threshold nom.	<i>μg_{rms}</i>	400	500	2000
Sensitivity ± 5% (at 100 Hz, 3 <i>g_{rms}</i>)	<i>mV/g</i>	1000	500	100
Resonant Frequency mounted, nom.	<i>kHz</i>	20	20	20
Frequency Response ± 5%	<i>Hz</i>	1 ... 5000	1 ... 5000	1 ... 5000
Phase Shift , < 5°	<i>Hz</i>	2 ... 3000	2 ... 3000	2 ... 5000
Amplitude Non-linearity , nom.	%FSO	±1	±1	±1
Time Constant nom.	<i>s</i>	1	1	1
Transverse Sensitivity	%	<5	<5	<5
Environmental:				
Base Strain Sensitivity @ 250 <i>με</i>	<i>g/με</i>	< 0.005	< 0.005	< 0.05
Shock Limit (0.2 ms pulse width) max.	<i>g_{pk}</i>	5000	7000	7000
Sensitivity Shift typ. (for 2...8 mA)	%	±1	±1	±1
Temperature Coefficient of Sensitivity	%/°F	- 0.08	- 0.06	- 0.06
	%/ °C	- 0.15	- 0.10	- 0.10
Temperature Range Operating (4 mA supply current)	°F	32 ... 150	32 ... 150	32 ... 150
	°C	0 ... 65	0 ... 65	0 ... 65
Storage	°F	-10 ... 200	-10 ... 200	-10 ... 200
	°C	- 23 ... 94	- 23 ... 94	- 23 ... 94
Output:				
Bias nom.	VDC	11	11	11
Impedance	Ω	<500	<500	<100
Voltage full scale	V		±5	
Current	mA		2	

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

Technical Data	Unit	8798A...
Source		
Voltage	VDC	20 ... 30
Constant Current	mA	2 ... 18
Sensitivity Shift typ., 2 ... 18mA	%	±1
Impedance	kΩ	>100
Construction		
Sensing Element	type	ceramic/shear
Case	material	Al / hard anodized
Sealing housing/connector	type	epoxy
Connector	type	4-Pin pos, Microtech Equivalent
Ground Isolation min.	MΩ	10
Weight	gram	22
Mounting	type	stud/wax

Applications

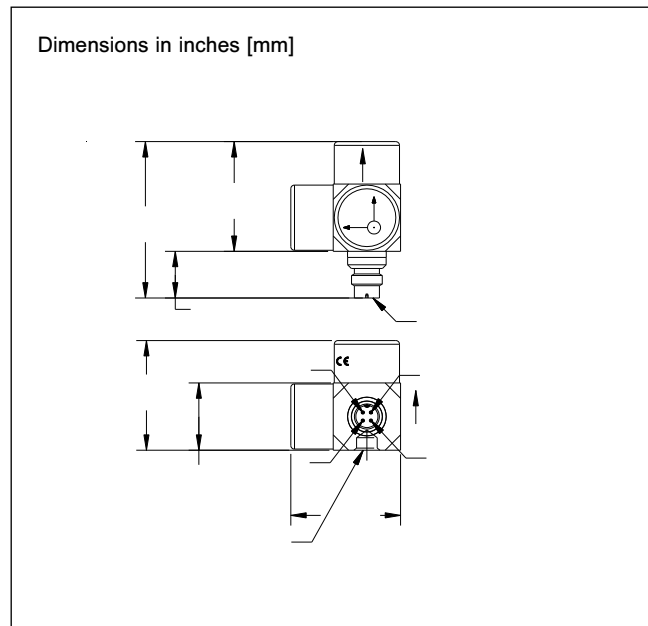
The low weight of the 8798 PiezoSMART triaxial accelerometer series, is highly desirable in measurement applications on light weight structures where mass loading must be kept to a minimum. The accelerometers are highly suited for multi-channel measurements; modal analysis measurements on automotive bodies and aircraft structures.

TEDS

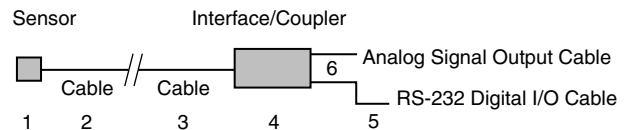
A 5142 smart sensor coupler/programming tool provides for convenient entry of the data fields that are defined during sensor installation or test preparation. A complete system requires a Windows-based PC software, to provide appropriate TEDS editing capability. This portable coupler is used to prepare the sensor for information handling by large TEDS capable analysis systems.

Supplied Accessory

8402	mounting stud 10-32 UNF-2A
8432	mounting wax
8411	mounting stud, 10-32 to M6, shipped only outside N.A.



Ordering Information



Specify:

- | | |
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| 1 - 8798A ...M10 | PiezoSMART triaxial accelerometer, specify range |
| 2 - 1578... | extension cable, 4-pin pos. Microtech Equivalent to 4-pin Microtech neg., specify length in meters |
| 3 - 1756B(x) | cable, 4-pin Microtech neg. to 3x BNC pos., length x =0.5,3,10 meters |
| 4 - 5142 | PiezoSMART, IEEE 1451.4 interface/coupler |
| 5 - 1500A20 | Cable RS-232, DB-9 male to DB-9 male, 6 ft (1.8m) |
| 6 - 1511... | Output cable, BNC pos. to BNC pos., specify length in meters. |
| 2860xxxx | Software, TEDS Programmer Editor |