

# Annular Ceramic Shear Sensor

Type 8762A...

## Light Weight, Voltage Mode, Triaxial Accelerometer

High sensitivity triaxial accelerometers that simultaneously measure vibration in three, mutually perpendicular axis (x, y and z). Designed primarily for modal analysis applications, the triaxial accelerometer features three tapped mounting surfaces that allow each axis to be hard mounted for calibration.

- Low impedance voltage mode
- Cube shaped, ceramic shear sensor
- Ultra low thermal transient response
- Durable hard anodized, ground isolated aluminium housing
- Conforming to CE

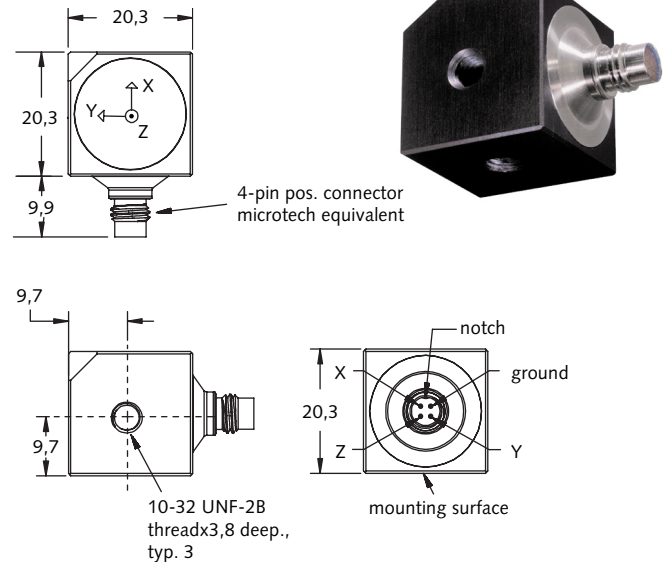
### Description

Internal of the 8762A... accelerometer is a unique annular, shear sensor element that features extremely low thermal transient response, a high immunity to base strain and transverse acceleration. An advanced hybrid charge amplifier design 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.

Each of the three sensing elements is internally connected to a microelectronic circuit that converts the charge from the ceramic piezoelectric elements into a useable high level voltage signal at a low impedance output. The 8762A... accelerometer series will operate directly from the internal power source found in most FFT analyzers; from several Kistler Piezotron® power supply couplers or any industry standard IEPE (Integrated Electronic Piezo-Electric) compatible power source.

### Application

The lightweight 8762A... triaxial accelerometer series, is highly desirable for 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; general vibration measurements.



### Accessing TEDS Data

Accelerometers with a "T" suffix are variants of the standard version incorporating the "Smart Sensor" design. Viewing an accelerometer's data sheet requires an Interface/Coupler such as Kistler's Type 5134B... or 5000M04 with TEDS Editor software. The Interface 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.

### Mounting

The 8762A... accelerometer series can be attached to the test surface by using a 10-32 stud inserted in any one of the three threaded mounting holes. Reliable and accurate measurements require that the mounting surface be clean and flat. The instruction manual for the 8762A... (8762A\_002-233) provides detailed information regarding mounting surface preparation.

### Technical Data

Specification	Unit	Type 8762A5	Type 8762A10	Type 8762A50
Acceleration range	g	±5	±10	±50
Acceleration limit	gpk	±8	±16	±80
Threshold, nom.	grms	0,0003	0,00035	0,0012
Sensitivity, ±5 %	mV/g	1 000	500	100
Resonant frequency, mounted, nom.	kHz	30	30	30
Frequency response, ±5 %	Hz	0,5 ... 6 000	0,5 ... 6 000	0,5 ... 6 000
Amplitude non-linearity	%FSO	±1	±1	±1
Time constant, nom.	s	1	1	1
Transverse sensitivity, nom.	%	<5	<5	<5

### Environmental

Base strain sensitivity @ 250 µε	g/µε	0,004	0,004	0,004
Shock limit (0,2 ms pulse)	gpk	5 000	7 000	7 000
Temperature coefficient of sensitivity	%/°C	-0,06	-0,02	-0,02
Operating temperature range	°C	-55 ... 80	-55 ... 80	-55 ... 80
Type 8762A...T	°C	-40 ... 80	-40 ... 80	-40 ... 80

### Output

Bias, nom.	VDC	11	11	11
Impedance	Ω	≤500	≤500	≤100
Voltage full scale	V	±5	±5	±5

### Source

Voltage	VDC	20 ... 30	20 ... 30	20 ... 30
Constant current	mA	2 ... 18	2 ... 18	2 ... 18

### Construction

Sensing element	Type	ceramic-shear	ceramic-shear	ceramic-shear
Case/base	material	aluminum hard anodized	aluminium hard anodized	aluminium hard anodized
Degree of protection case/connector (EN 60529)		IP66	IP66	IP66
Connector	Type	4-pin pos.	4-pin pos.	4-pin pos.
Ground isolated		yes	yes	yes
Mass	grams	23	23	23
Mounting (10-32 thd.x4 dp)	Type	stud	stud	stud

1 g = 9.80665 m/s<sup>2</sup>, 1 inch = 25.4 mm, 1 gram = 0.03527 oz, 1 lbf-in = 0.1129 N·m

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**Included Accessories**

- Mounting stud, 10-32 UNF-2A
- Mounting stud, 10-32 to M6, shipped only outside N.A.

**Type**

- 8402
- 8411

**Measuring Chain**

- 1 Low impedance sensor
- 2 Sensor cable, 4-pin neg. to 3x BNC pos.
- 3 Power supply/signal conditioner
- 4 Output cable, BNC pos. to BNC pos.

**Type**

- 8762A...
- 1756B...
- 51...
- 1511

**Ordering Key**

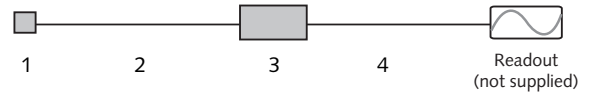
**Range**

±5 g	5
±10 g	10
±50 g	50

**TEDS Templates**

Standard	-
Default, IEEE 1451.4 V0.9 template 0 (UTID 1)	T
IEEE 1451.4 V0.9 template 24 (UTID 116225)	T01
LMS template 117, free format ID	T02
LMS template 118, automotive format (field 14 geometry = 0)	T03
LMS template 118, aerospace format (field 14 geometry = 1)	T04
P1451.4 V1.0 template 25 – transfer function disabled	T05
P1451.4 V1.0 template 25 – transfer function enabled	T06

Type 8762A



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