

# Ceramic Shear Accelerometer

Type 8714B...

## Center hole, optional TEDS

The Type 8714B... is a low profile, high temperature IEPE ceramic annular shear accelerometer.

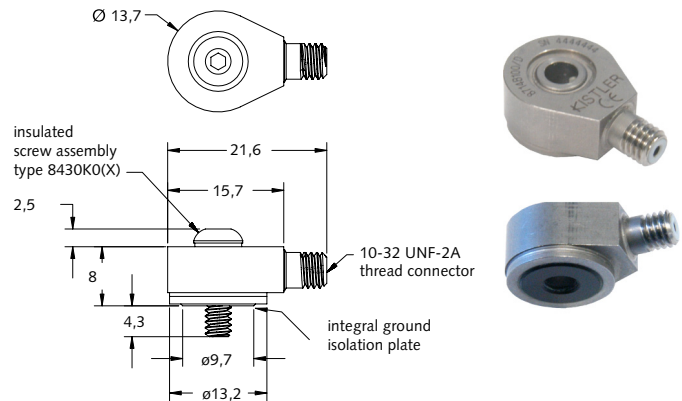
- IEPE, voltage output
- TEDS option available
- High frequency, low profile
- Ground isolated
- Center hole, 360° connector orientation
- -55 ... 165 °C
- Conforming to CE

### Description

The Type 8714B... utilizes a ceramic annular shear seismic element, Piezotron impedance converter and center hole hermetic housing with a hard anodized aluminum base and insulated mounting screw. The connector design is rugged and maintains excellent integrity with repeated connections. The ceramic sensing element components have been carefully designed to provide a high level of performance and low mass. Kistler's shear technology ensures high immunity to base strain, thermal transients and transverse accelerations. Other features include extended high frequency response, low profile, low mass, ground isolation and hermetic sealing.

### Application

This general purpose high temperature accelerometer provides measurement solutions in hard-to-mount locations when cable orientation is important or height restrictions apply. The center-hole mounting permits 360 ° orientation of the connector and cable for ease of installation. Typical applications include environmental testing, product qualification/acceptance testing, aviation structural testing as well as automotive structural testing. The hermetically sealed housing permits operation in harsh dirty or wet environments. In addition, the integral ground isolation is ideal for long cable length measurement or in electrically noisy environments.



### 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 5165A... 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 accelerometer is mounted with the supplied insulated screw, directly to the test specimen. The accelerometer can be magnetically or adhesively mounted directly to the test specimen or screwed into an adhesive mounting pad.

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## Technical data

Specification	Unit	8714B100M5	8714B500M5
Acceleration range	g	±100	±500
Acceleration limit	gpk	±200	±1 000
Threshold, nom.	grms	0,002	0,003
Sensitivity ±10 %	mV/g	50	10
Resonant frequency mounted, nom.	kHz	36	43
Frequency response, ±5 %	Hz	1 ... 10 000	1 ... 10 000
Amplitude non-linearity	%FSO	±1	±1
Time constant, nom.	s	0,7	0,7
Transverse sensitivity, nom. (max. 5)	%	3	3

## Environmental

Base strain sensitivity at 250 µε	g/µε	0,001	0,001
Shock (0,2 ms pulse)	gpk	5 000	5 000
Temperature coefficient of sensitivity	%/°C	-0,14	-0,16
Temperature range operating	°C	-55 ... 165	-55 ... 165
8714B...T	°C	-55 ... 80	-55 ... 80

## Output

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

## Source

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

## Construction

Sensing element	type	ceramic-shear	ceramic-shear
case/connector	material	Titanium/Al.	Titanium/Al.
Degree of protection		IP 68	IP 68
Case/connector (EN60529)			
Connector	type	10-32 neg.	10-32 neg.
Ground isolated		yes	yes
Mass	grams	5	4,2
Mounting	type	cap screw (hole)	cap screw (hole)
Mounting torque (lbf-in)	N·m	0,6	0,6

1 g = 9,80665 m/s<sup>2</sup>, 1 Inch = 25,4 mm, 1 gram = 0,03527 oz, 1 lbf-in = 0,113 N·m

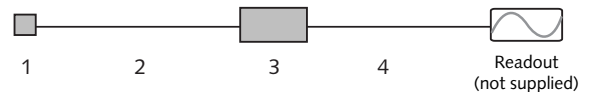
## Accessories included

- 6-32x1/2" insulated screw assembly
- M3x0,5x12 mm, insulated screw assembly

Type	8430K01
	8430K02

## Measuring chain

- |   |                                      |      |          |
|---|--------------------------------------|------|----------|
| 1 | Low impedance sensor                 | Type | 8714B... |
| 2 | Sensor cable, 10-32 pos. to BNC pos. |      | 1761B... |
| 3 | Power supply/signal conditioner      |      | 51...    |
| 4 | Output cable, BNC pos. to BNC pos.   |      | 1511     |



## Ordering key

### Range

±100 g	100
±500 g	500

### TEDS templates

High temperature TEDS, IEEE 1451.4 V0.9 Template 0 (UTID 1)	M5
IEEE 1451.4 V0.9 Template 24 (UTID 116225)	T
LMS Template 117 Free format Point ID	T01
LMS Template 118, Automotive Format (Field 14 Geometry = 0)	T02
LMS Template 118, Aerospace Format (Field 14 Geometry = 1)	T03
P1451.4 V1.0 Template 25 Transfer Function Disabled	T04
P1451.4 V1.0 Template 25 Transfer Function Enabled	T05
	T06

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