

Ceramic Shear Accelerometer

Type 8714B...

Center Hole , Ceramic Shear Accelerometer, Optional TEDS

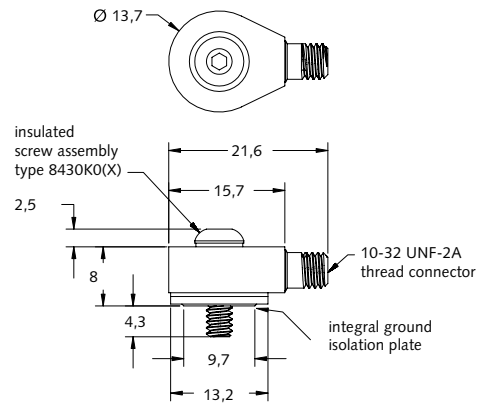
The 8714B... is a low profile, high temperature IEPE ceramic annular shear accelerometer.

- 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 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 Model 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.

8714B_000-602-e-11.06

Technical Data

Type	Unit	8714B100	8714B500
Acceleration Range	g	±100	±500
Acceleration Limit	gpk	±200	±1000
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 ... 10000	1 ... 10000
Amplitude Non-linearity	%FSO	±1	±1
Time Constant nom.	s	0,7	0,7
Transverse Sensitivity nom.	%	3	3
Environmental:			
Base Strain Sensitivity @ 250µε	g/µε	0,001	0,001
Shock Limit (0,2ms pulse)	gpk		5000 5000
Temperature Coeff. of Sensitivity	%/°C	-0,14	-0,16
Temperature Range Operating			
8714B...M5	°C	-55 ... 165	-55 ... 165
8714B...T	°C	-55 ... 120	-55 ... 120
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
Housing/Base	material	Titanium / Aluminum	Titanium / Aluminum
Sealing-housing/connector	type	Hermetic	Hermetic
Connector	type	10-32 neg.	10-32 neg.
Ground Isolated min.	MΩ	≥10	≥10
Weight	grams	5	4,2
Mounting (thread/stud)	type	screw	screw
Mounting Torque	Nm	0.68	0.68

 1 g = 9,80665 m/s², 1 Inch = 25,4 mm, 1 gram = 0,03527 oz, 1 lbf-in = 0,1129 Nm

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.

Accessories Included

- | | Type |
|---|-------------|
| • 6-32 x 1/2" insulated screw assembly | 8430K01 |
| • M3 x 0,5 x 12mm, insulated screw assembly | 8430K02 |

Optional Accessories

- | | Type |
|--|-------------|
| • Mounting magnet, 10-32 threaded hole | 8452A |
| • Adhesive mounting pad, 10-32 threaded hole | 8436 |
| • 6-32 to 10-32 adapter stud | 8430K03 |

Ordering Key

Measuring Range	
±100g	100
±500g	500

8714B

Variant / TEDS Templates

High temperature	M5
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 Point 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

Measuring Chain

- | | Type |
|--|-------------|
| 1 Low impedance sensor | 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 |

