

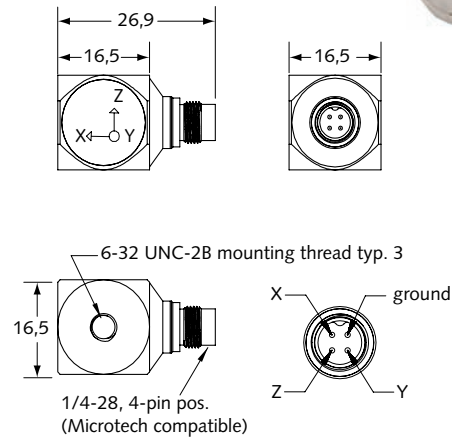
PiezoStar® Accelerometer

Type 8766A...

IEPE Triaxial Accelerometer Cube

The 8766A... triaxial accelerometer has a $\pm 50g$ measurement range and measures simultaneous shock and vibration in three orthogonal axes.

- PiezoStar® sensing element
- +165°C Operation Option
- TEDS option
- Hermetic, Titanium construction
- Very low temperature sensitivity
- Low base strain sensitivity
- Low impedance voltage output
- Low 16 gram mass
- Conforming to CE



Description

The 8766A... is a IEPE triaxial accelerometer designed for high temperature applications. The 8766A... accelerometer uses Kistler's PiezoStar shear element design which provides wide operating frequency range and extremely low sensitivity to temperature changes. The IEPE sensor combines PiezoStar crystals and high gain integral hybrid microelectronics to achieve very low sensitivity variation over the operating temperature range, compared to other sensing element designs. The Kistler shear element technology also ensures high immunity to base strain errors. The accelerometer uses a welded titanium construction for low mass and an industry standard 4-pin connector for reliable measurements and long-term stability especially at higher operating temperatures.

Application

Applications include automotive under the hood and under the vehicle testing as well as subsystem vibration testing for aerospace applications.

Mounting

Reliable and accurate measurements require that the mounting surface be clean and flat. The sensor can be attached to the structure with wax, adhesive or supplied mounting screw. The 8766A... has three 6-32UNC-2B threaded holes for flexible stud mounting on a test object, fully utilizing each mounting side of the cube design. In addition, the three threaded holes provide reliable mounting for calibration of each orthogonal axis. The Operating Instruction Manual for the 8766A... provides detailed information regarding mounting surface preparation.

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.

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Technical Data

Type	Unit	8766A50
Acceleration Range	g	±50
Acceleration Limit	gpk	±100
Threshold nom.	grms	<0,001
Sensitivity, ±10%	mV/g	100
Resonant Frequency mounted, nom.	kHz	>20
Frequency Response, ±5%		
8766A..., 8766A...T	Hz	0,5 ... 5000
8766A...M5	Hz	1 ... 5000
Amplitude Non-linearity	%FSO	±1
Time Constant nom. (8766A...M5)	sec	2 (1)
Transverse Sensitivity nom., (max. 3)	%	1,5
Long Term Stability	%	±1
Environmental:		
Base Strain Sensitivity @ 250µε	g/µε	0,001
Randm Vibration max.	grms	2000
Shock Limit (1 ms pulse)	gpk	5000
Temperature Coeff. of Sensitivity	%/°C	-0,004
Temperature Range Operating		
8766A..., 8766A...T	°C	-55 ... 121
8766A...M5	°C	-55 ... 165
Output:		
Bias nom.	VDC	11
Impedance	Ω	<100
Voltage full scale	V	±5
Current	mA	2
Source:		
Voltage	VDC	20 ... 30
Constant Current	mA	2 ... 18
Construction:		
Sensing Element	type	PiezoStar
Housing/Base	material	Titanium
Sealing-housing/connector	type	Hermetic
Connector	type	1/4-28 4-pin
Weight	grams	16
Mounting	type	wax/adhesive

1 g = 9,80665 m/s², 1 Inch = 25.4 mm, 1 gram = 0,03527 oz, 1 lbf-in = 0,113 Nm

Accessories Included

- Mounting wax Type 8432
- 6-32 to 10-32 Stud Adapter 8430K03

Optional Accessories

- Magnet with threaded 10-32 hole Type 8452A
- Cable, break out, 4-pin neg. to 3x BNC pos. 1756
- Adhesive Off Ground, Hex, Mounting Base with 10-32 Threaded hole 8436

Ordering Key

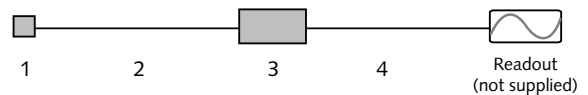
Measuring Range	8766A	<input type="checkbox"/>	<input type="checkbox"/>
±50g	50	↑	↑

Variants / TEDS Templates

Standard	-
High temperature, (330 °F/165°C)	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

- 1 Low impedance sensor Type 8766A...
- 2 Breakout cable, 4 pin neg. to 3x BNC pos. 1756B...
- 3 Power supply/Signal conditioner 51...
- 4 Outout cable, BNC pos. to BNC pos. 1511



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