

# PiezoStar® Accelerometer

Type 8765A...

## Miniature, Voltage Triaxial Accelerometer

The 8765A... triaxial accelerometer measures shock and vibration in three orthogonal axis. The 8765A... is a miniature 6,4 gram center hole triaxial accelerometer with a  $\pm 250g$  measurement range and 20mV/g sensitivity.

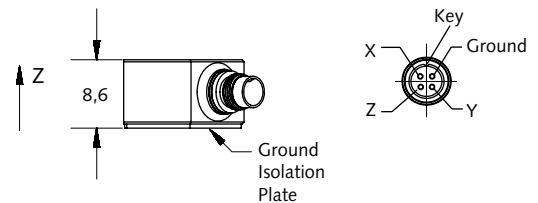
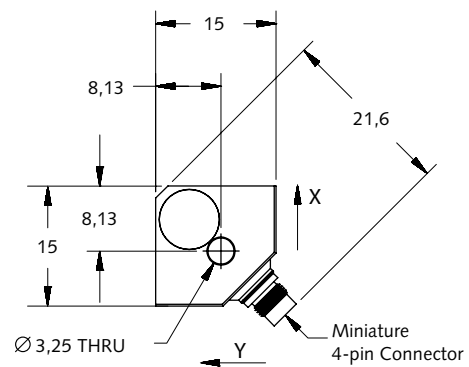


- Light weight
- PiezoStar sensing element
- +165°C Operation
- Hermetically sealed, miniature design
- New miniature 4-pin Connector
- Very low sensitivity variations over temperature
- Low base strain sensitivity
- Low impedance voltage output
- Conforming to CE

### Description

The 8765A... is a miniature IEPE triaxial accelerometer designed for high temperature applications. The triaxial design permits simultaneous shock and vibration measurements in three perpendicular axes: X, Y and Z.

Kistler's PiezoStar element design provides a wide operating frequency range along with extremely low sensitivity to thermal transients. The accelerometer operates from -55°C to +165°C using a welded hermetic and ground isolated housing with a miniature 4-pin ceramic insulated connector for reliable measurements and long-term stability especially at higher operating temperatures. The 8765A... accelerometer also uses Kistler PiezoStar Crystals and high gain integral hybrid microelectronics providing very low sensitivity variation over the operating temperature range, compared to quartz and ceramic element designs.



### Application

The extremely low weight of the 8765A accelerometer is highly attractive where mass loading of test structure is a major concern. Applications include automotive under the hood and under the vehicle testing and subsystem vibration testing for aerospace applications. The accelerometer is ground isolated and optional Kistler shielded cables are known for offering high measured signal integrity for the intended applications. In addition, the center-hole mounting permits flexibility for 360° orientation of the cable which allows a wide selection of locations for mounting. The 8765A... also offers high sensitivity over a wide frequency range resolving a wide range of vibration measurements

8765A\_000-472 e-01.07

**Technical Data**

Type	Unit	8765A250M5
Acceleration Range	g	±250
Acceleration Limit	gpk	±500
Threshold nom. (noise 40µVrms)	grms	0,002
Sensitivity (±5%)	mV/g	20
Resonant Frequency mounted, nom.	kHz	>50
Frequency Response, ±5%	Hz	1 ... 9000
Amplitude Non-linearity	%FSO	±1
Time Constant nom.	s	1
Transverse Sensitivity nom., (max. 5)	%	2,5
Environmental:		
Base Strain Sensitivity @ 250µε	g/µε	0,015
Shock Limit (1ms pulse)	gpk	5000
Temperature Coeff. of Sensitivity	%/°C	-0,004
Temperature Range Operating	°C	-55 ... 165
Output:		
Bias nom.	VDC	11
Impedance	Ω	≥100
Voltage full scale	V	±5
Source:		
Voltage	VDC	18 ... 30
Constant Current	mA	2 ... 20
Construction:		
Sensing Element	type	PiezoStar Crystal
Housing/Base	material	Titanium
Sealing-housing/connector	type	Hermetic
Connector	type	Mini 4-pin pos.
Ground Isolated min.	MΩ	≥10
Weight	grams	6,4
Mounting (through hole)	type	3,25

1 g = 9,80665 m/s<sup>2</sup>, 1 Inch = 25.4 mm, 1 gram = 0,03527 oz, 1 lbf-in = 0,113 Nm

**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 Operating Instruction Manual for the 8765A... provides detailed information regarding mounting surface preparation.

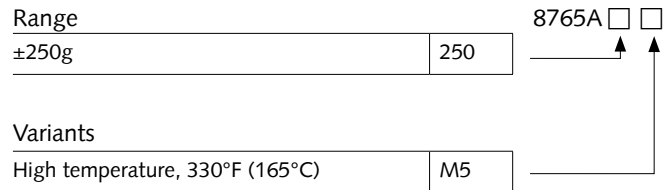
**Accessories Included**

- Mounting wax **Type** 8432
- #4-40 x 1/2" Mounting Screw Assembly **Type** 8446AE2

**Optional Accessories**

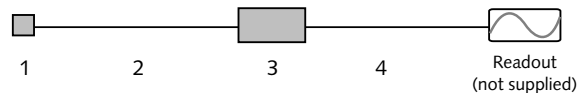
- Mounting adaptor 1/4-28 to 4-40 **Type** 8414M03
- Mini 4-pin neg to 4-pin pos., 0,5 meter **Type** 1784A...K02
- Mini 4-pin neg to (3) BNC pos., (lengths 1, 3, 5 or 10 meter) **Type** 1784A...K03
- Cable, break out, 4-pin neg. to 3x BNC pos. **Type** 1756sp
- #4-40 x 1/2" mounting screw assembly **Type** 8446AE2

**Ordering Key**



**Measuring Chain**

- 1 Low Impedance Sensor **Type** 8765A...
- 2 Sensor cable, 10-32 pos. to BNC pos. **Type** 1761B...
- 3 Power Supply/Signal Conditioner **Type** 51...
- 4 Outout cable, BNC pos. to BNC pos. **Type** 1511



8765A\_000-472 e-01.07