

PiezoStar® Accelerometer

Type 8765A250M5

Miniature, Voltage Triaxial Accelerometer

Type 8765A250M5 triaxial accelerometer measures shock and vibration in three orthogonal axis. Type 8765A250M5 is a miniature 6.4 gram center hole triaxial accelerometer with a ± 250 g measurement range and 20 mV/g sensitivity.

- Low mass
- PiezoStar sensing element
- High temperature 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

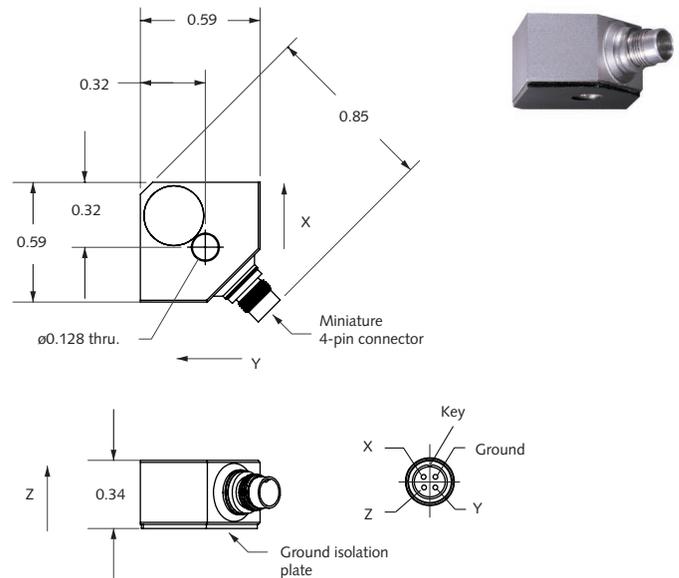
Type 8765A250M5 is a miniature IEPE triaxial accelerometer designed for high temperature applications. The triaxial design permits simultaneous shock and vibration measurements in three perpendicular axes: X, Y and Z.

Kistler's PiezoStar element design provides a wide operating frequency range along with extremely low sensitivity to thermal transients. The accelerometer operates from $-65 \dots 330$ °F using a welded hermetic and ground isolated housing with a miniature 4-pin ceramic insulated connector for reliable measurements and long time stability especially at higher operating temperatures. Type 8765A250M5 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 Type 8765A250M5 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. Type 8765A250M5 also offers high sensitivity over a wide frequency range resolving a wide range of vibration measurements.



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 Type 8765A250M5 provides detailed information regarding mounting surface preparation.

Technical Data

Specification	Unit	Type 8765A250M5
Acceleration range	g	±250
Acceleration limit	gpk	±500
Threshold (noise 40 µVrms), nom.	grms	0.002
Sensitivity, ±10 %	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 @ 250 µε	g/µε	0.015
Shock limit (1 ms pulse)	gpk	5000
Temperature coefficient of sensitivity	%/°F	-0.002
Operating temperature range	°F	-65 ... 330

Output

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

Power Supply

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

Construction

Sensing element	Type	PiezoStar
Case/base	material	titanium
Degree of protection case/connector	Type	hermetic
Connector	Type	mini 4-pin pos.
Ground isolated		yes
Mass	grams	6.4
Mounting (ø0,13 hole)	Type	cap screw

1 g = 9.80665 m/s², 1 Inch = 25.4 mm, 1 gram = 0.03527 oz, 1 lbf-in = 0.113 N·m

Included Accessories

- Mounting wax
- #4-40x1/2" isolated mounting screw
- 2.5x12 mm isolated mounting screw

Type

- 8432
- 8446AE2
- 8446AM3

Optional Accessories

- Mini 4-pin neg to 4-pin pos., 0.5 meter
- Mini 4-pin neg to 3x BNC (max. length 10 m)
- Cable, break out, 4-pin neg. to 3x BNC pos.
- Adhesive mounting base, 4-40 thd.
- Adhesive mounting base, M2.5 thd.

Type

- 1784A...K02
- 1784A...K03
- 1756B
- 8462K01
- 8462K02

Ordering Code



Measure	Connect	Amplify	Output	Analyze
Type 8765A250M5 Low impedance	Typ 1784A... Mini, 4-pin neg. 3x BNC pos.	Type 51... Power supply/ signal conditioner	Type 1511 BNC pos. BNC pos.	not supplied

Fig. 1: Measuring chain

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