

K-Shear® Accelerometer

Type 8752A50...

Industrial Rated, Voltage Mode Accelerometer

Two industrial hardened accelerometer models with different operating temperature ranges measure vibration in machine health monitoring applications. Employing ultra-stable shear quartz elements, both models are housed in a hermetically sealed, stainless steel housing with a rugged military-rated (Mil-C-5015) electrical connector.

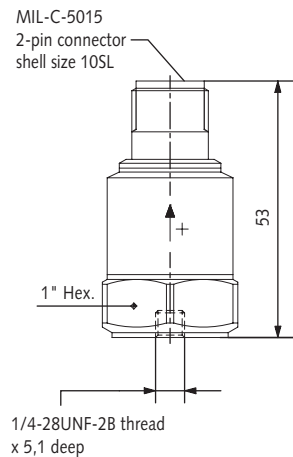
- Low impedance, voltage mode
- Quartz-shear stability and precision
- Accurate on flexible and stiff surfaces
- Insensitive to thermal transients
- High temperature version available
- Case ground isolated
- Conforming to CE

Description

The high temperature 165 °C version Type 8752A50 and the Type 8752A50M5 are industrial accelerometers that feature reliability and accuracy characteristics required for use in the most demanding of machine vibration measurements. With Kistler's unique K-Shear design, eliminates the inaccuracies long associated with industrial acceleration measurements.

Highly accurate machine housing vibration measurements are possible because the K-Shear is immune to base strain, thermal transients and transverse motion. The quartz shear sensing element provides long-term stability required for dependable trend measurements. An integral Piezotron® impedance converter provides a low impedance voltage output, ensuring reliability.

K-Shear virtually eliminates false alarms caused by accelerometer errors. The sensor's MIL-C-5015 top connector is compatible with industry standard connections. The entire accelerometer case is electrically isolated from the signal return, preventing unwanted ground loops.



Application

The accelerometer pair Type 8752A... are designed for use in industrial applications for machinery monitoring, predictive maintenance and analysis of gears and anti-friction bearings. The quartz, shear sensing design is ideally suited for measurements on machinery such as compressors, turbines, generators and other critical rotating machinery. Ideal for use on dryer sections in pulp and paper mills, gas turbines, roll processes in steel mills and other areas where the unit will be subjected to continuous or intermittent high temperatures. The high degree of reliability afforded by the Type 8752A50M5 makes it ideal for installation on the most critical plant machinery.

Mounting

Reliable and accurate measurements require that the mounting surface be clean and flat. The sensor can be attached to the structure by a single 1/4-28 mounting stud. The instruction manual for the Type 8752A... provides detailed information regarding mounting surface preparation.

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Technical Data

Specification	Unit	Type 8752A50...
Acceleration range	g	±50
Acceleration limit	gpk	±300
Threshold (noise 200 µVrms), nom.	grms	0,002
Sensitivity, ±5 % (M5: ±10 %)	mV/g	100
Resonant frequency mounted, nom.	kHz	31
Frequency response, ±5 %	Hz	0,5 ... 5 000
Type 8752A50M5, ±10 %	Hz	1 ... 5 000
Amplitude non-linearity	%FSO	±1
Time constant, nom.	s	1
Transverse sensitivity, nom. (max. 3)	%	1,5

Environmental

Base strain sensitivity @ 250 µε	g/µε	<0,004
Shock limit (1 ms pulse)	gpk	2 000
Temperature coefficient of sensitivity	%/°C	-0,03
Operating temperature range	°C	-55 ... 120
Type 8752A50M5	°C	-55 ... 165
Storage temperature range	°C	-75 ... 150

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 ... 20
Impedance, min.	kΩ	100

Construction

Sensing element	Type	quartz-shear
Case/base	material	stainless steel
Degree of protection case/connector (EN 60529)		IP68
Connector (MIL-C-5015)	Type	2-pin pos.
Ground isolated		yes
Mass	grams	115
Mounting (1/4-28 thd.x5,1 dp)	Type	stud
Mounting torque	N·m	2,7

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

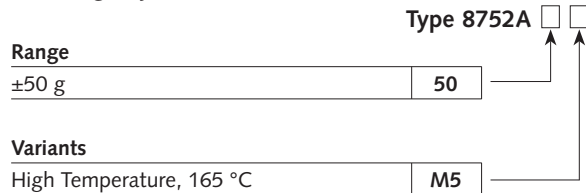
- Mounting stud, 1/4-28 thd. 8412
- Mounting stud, 1/4-28 to M8 thd., shipped only outside N.A. 8421

Optional Accessories

- Sensor cable, MS-3106 to BNC pos., use with Type 8752A50 1770A
- Sensor cable, MS-3106 to BNC pos., use with Type 8752A50M5 1772A
- Sensor cable, molded MS-3106 to BNC pos., use with Type 8752A50, length up to 30 meters 1774A
- Sensor cable, MS-3106 silicon boot, quick disconnect to BNC pos., use with Type 8752A50 1776A
- Sensor cable, MS-3106 silicon boot, quick disconnect to BNC pos., use with Type 8752A50M5, specify length in meters 1778A
- Sensor cable, MS-3106 (90° elbow with strain relief) to BNC pos., use with Type 8752A50 1780A

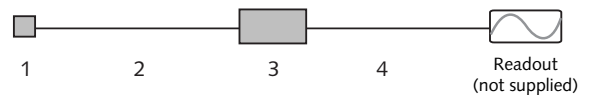
Note: MS-3106 mates with MIL-C-5015 accelerometer. All cables available in a 3 meter standard length; maximum length except where noted is 10 meters.

Ordering Key



Measuring Chain

- 1 Low impedance sensor 8752A50...
- 2 Sensor cable see optional accessories
- 3 Power supply/signal conditioner 51...
- 4 Output cable, BNC pos. to BNC pos. 1601...



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This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.