

ACCELEROMETER BASICS

VIBRATION SENSORS

TE Connectivity offers these general suggestions for accelerometer use across most applications:

- » The maximum frequency range of an accelerometer is 1/3 of its natural frequency.
- » A two inch fall of a metal object onto a workbench can generate 2,000 g's.
- » Choose accelerometers to allow sufficient room for spikes.
- » The higher the frequency, the smaller the accelerometer required while the lower the frequency the larger the accelerometer that can be used.
- » In explosive applications, the closer the accelerometer is to the source the greater the g level.
- » Accelerometers can measure position and displacement. At higher frequencies, they may provide more reliable data than sensing technologies based on position and displacement.
- » A correctly installed accelerometer will have one natural frequency and a flat frequency response where accurate measurements can be made.
- » A thermal isolator, such as a piece of polymer inserted between the base of an accelerometer and a hot surface may reduce the conducted heat sufficiently to allow the accelerometer to operate within its specified temperature range.
- » Compared to strain-gage accelerometers, piezoresistive MEMS designs offer advantages of smaller size, lighter weight, higher output and greater frequency range.



- » High frequency measurements usually end up being made with accelerometers with low sensitivity.
- » For permanent installations of stud mounted accelerometers also apply an adhesive to the mounting surface.
- » Tape or glue cable securely leaving only enough room for any cable movement that may occur.
- » Use a thread locking adhesive when installing stud mounted accelerometers.
- » Case grounded, insulated mounted accelerometers provide the best protection against ground loops.

TE.com/sensorsolutions

Measurement Specialties, Inc., a TE Connectivity company.

TE Connectivity, TE Connectivity (logo) are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2017 TE Connectivity Ltd. family of companies All Rights Reserved.

NORTH AMERICA

Measurement Specialties, Inc.,
a TE Connectivity Company
Tel 800-522-06752 (option 2)
customercare.hmpt@te.com