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.

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