

GUIDELINES FOR ADHESIVE MOUNTING ACCELEROMETERS VIBRATION SENSORS

Accelerometers measure shock and vibration by providing an output signal proportional to the object to which they are attached. The stiffer the mounting, the higher the natural frequency of the mounted accelerometer. Magnetic mounting of accelerometers provides the least stiffness, while screw or stud mounting provides the greatest. For those applications where holes cannot be drilled into the structure or the design of the accelerometer does not allow for screw/stud mounting, adhesive solutions are the most practical.

For best performance, we suggest using cyanoacrylate adhesives — a generic name for methyl-2-cyanoacrylate, which can be purchased under such trademarks as Super Glue, Loctite® or Krazy Glue®. Another form, 2-octyl cyanoacrylate (trade name Dermabond®), has many medical uses and causes less irritation to one's skin than methyl-2-cyanoacrylate. Cyanoacrylate sets in less than 60 seconds, with full strength reached in two hours. For temporary installation use hot glue or bees wax.

The table on the right provides some critical guidelines to consider when evaluating your accelerometer installations.



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MOUNTING GUIDELINES

1. Mounting surfaces must be clean and free of any residue from epoxies, waxes, paint or other foreign materials.
2. The mounting surface should be flat and even.
3. Prolonged inhalation of vapors can be harmful!
4. Avoid contact with your skin.
5. Use acetone to soften cured cyanoacrylate for accelerometer removal.
6. Cyanoacrylate is available for temperature ranges from -18° C through 125° C.
7. Use the thinnest layer of cyanoacrylate possible for best frequency response.
8. Exposure to moisture in the air causes cyanoacrylate to set. Store the material in an airtight container with a package of silica gel.
9. Use a razor blade to remove the accelerometer after the cyanoacrylate has been softened by acetone. Prying the sensor loose with a screwdriver may damage the unit.