

During ongoing testing of impeller designs for wear and corrosion, a direct relationship has been found between Series 4000 housing vibration levels and impeller wear. Sensors mounted in a low vibration region (close to pipe supports) consistently give longer bearing life than those mounted in a high vibration region. The difference in bearing life persists through all tests so far conducted, independent of impeller and shaft materials, or methods of construction. The phenomenon is most obvious at high flow rates, when high levels of pipe vibration are most pronounced.

When mounting a Series 4000 Sensor, provision must be made to minimize housing vibration by either of the following methods:

1. Mount the sensor as close as possible to a stable, low vibration, anchored inlet or outlet pipe. Sufficient pipe length should be provided to satisfy our 10 diameter upstream, and 5 diameter downstream of straight pipe requirements.

2. Provide pipe supports, on both sides of the sensor, that are firmly anchored to a stable platform. This is particularly important if the sensor is mounted in the approximate center of a pipe section two (2) feet long between supports.

If these precautions, or other means of minimizing sensor vibration, are not taken; sensor accuracy will be affected, and impeller life reduced. These effects will be increasingly pronounced as vibration levels increase.

**DTB-044-01**

Badger® and Data Industrial® are registered trademarks of Badger Meter, Inc.

4-09



Please see our website at [www.badgermeter.com](http://www.badgermeter.com)  
for specific contacts.

Copyright © Badger Meter, Inc. 2009. All rights reserved.

Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists.



**BadgerMeter, Inc.**

P.O. Box 581390, Tulsa, Oklahoma 74158  
(918) 836-8411 / Fax: (918) 832-9962  
[www.badgermeter.com](http://www.badgermeter.com)