Bearing Fault Transmitter Default Alert Levels Guide



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Predictive maintenance (PdM) programs can be an intensive undertaking to create, run and manage for many organizations. The AssetScan Condition Monitoring product line helps reduce the complexities of installation and commissioning a traditional PdM program. Monitoring the variables that discern the health of a machine is accomplished with the flexible AssetScan Family of products.

Ultrasonic, high frequency or bearing fault monitoring provides an early warning weeks and months prior to failure and successfully detecting:

- Bearing faults in early stages
- Lubrication and/or friction defects
- Gear defects
- Slow RPM bearings faults
- thermal growth • Cavitation, flow turbulence, or

Installation defects related to

impeller defects

The bearing fault alert allows equipment maintenance and repair to be planned and completed in advance of an unplanned failure. Roller element bearing failures are random and unpredictable in nature (vs. time based in nature). Due to the randomness of failure, changing bearings on a time basis results in changing a good bearing and wasted maintenance effort. Alternately, waiting to change a bearing after complete failure creates a production risk and/or loss.

Condition monitoring for bearing faults to determine when to change a bearing is a common solution and often done using a monthly route and a vibration analyst. When monthly routes are not enough, (due to cycling, high stakes, or impaired equipment) then the AssetScan Condition Monitoring Family of transmitters is a good option.

The bearing fault measurement is calculated in addition to an overall vibration measurement from the same sensor. The trend chart below shows an example of the difference between the Ultrasonic Bearing Fault Vibration vs. Overall vibration.





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Bearing fault monitoring varies from supplier to supplier and does not have an ISO standard for alert levels. The AssetScan ASB bearing fault transmitter uses technology defining the measurement bandwidth of 1kHz to 25kHz. The alert levels shown in the chart below for general purpose machines running between 600 and 10,000 RPM. As the guidelines show, the alert levels for slower RPM machines decrease with rotational speed, with faster machines recommending higher alert level settings.



1800 RPM Examples



16 Gs Outer Race Defect 1200HP Motor



Defect on Inner Race of Generator Outboard Bearing



600-10,000 RPM ALERT LEVELS MINOR6 Gs WARNING12 Gs CRITICAL18 Gs



42 Gs Ball Defect 300 HP Motor

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76 RPM ALERT LEVELS MINOR1 Gs WARNING2 Gs

76 RPM Example



2.9 Gs Gear Defect Right Angle Gearbox 70% of Tooth Metal is Gone



33 RPM Example

33 RPM ALERT LEVELS MINOR0.6 Gs WARNING1.2 Gs CRITICAL1.8 Gs



1.1 Gs Lubrication Defect Trunnion Bearing Added Grease and Defect Resolved

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