

PeakVue™

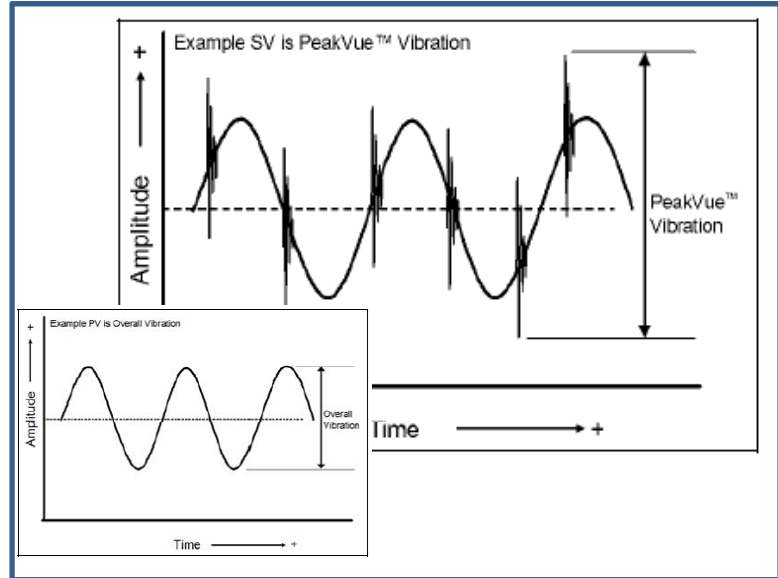
■ PeakVue™ is a patented measurement technique that is extremely useful for isolating high-frequency phenomena associated with developing faults, especially in rolling-element bearings.

■ The PeakVue™ algorithm isolates the peak energy of a waveform to provide early indications of developing bearing faults such as inner and outer race defects, ball defects, gear mesh, lubrication problems and any type of “impacting” fault, where metal is contacting metal .

■ With PeakVue high frequency faults will be visible, long before there is any significant increase in Overall Vibration.

■ PeakVue™ provides an indication of the maximum excursion in the waveform, which is how indications of many developing bearing faults are first manifested. **Overall Vibration, on the other hand, provides an indication of the total low-frequency energy in the waveform.**

■ Based on years of experience with this technology, Emerson Process Management has developed for PeakVue™ alarm levels, which are illustrated in the graph on the next page..



PeakVue is available in all Emerson “Prediction” Monitors and Transmitters.

Overview

The premise for PeakVue™ is that the high-frequency components are not readily detected with more conventional measurements such as overall velocity, low-frequency energy (LFE), or digital overall. This is because the low-frequency measurements either average the energy or provide an energy summation over a relatively large frequency band and the relative amount of energy that is typically contributed by the high-frequency components is quite small.

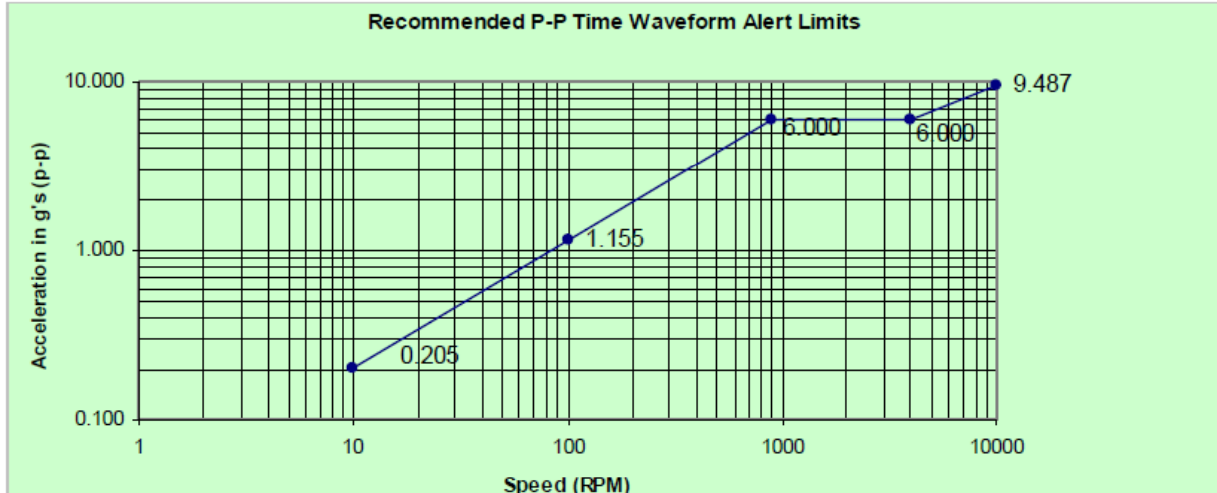
As a result, even large “spikes” are difficult to detect with classic techniques.

The difference in the vibration waveform and the associated measurement for Overall Vibration versus PeakVue™ is depicted conceptually in the illustrations above.

Suggested Plant Software:
AMS Suite: Intelligent Device
Manager Ver. 10 or DeltaV
Ver. 10

For more information contact
your Novaspect Account
Manager.

PeakVue Alert Limit Information



The equations that govern this curve are:

$$g's = \left(\frac{\text{RPM}}{900} \right)^{0.75} \times 6 \quad \text{for RPM} < 900$$

$$g's = 6, \quad \text{for } 900 < \text{RPM} \leq 4000,$$

$$g's = \left(\frac{\text{RPM}}{4000} \right)^{0.5} \times 6 \quad \text{for } 4000 < \text{RPM} \leq 10000,$$

$$g's = 10, \quad \text{for RPM} > 10000,$$

These are provided as a starting point and these values (for a 3600 RPM machine) are used as the default alert thresholds by the vibration transmitter. The alarm levels may be different for your application.

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