

Condition Monitoring
For Dynamic and Static Assets



For Pumps, Fans, Turbines, Piping, Vessels, Heat Exchangers Condition Monitoring System (CMS)

Gantner Instruments provides monitoring solutions for both dynamic and static equipment in terms of vibration monitoring of pumps, fans, and turbines (dynamic), piping, vessels, heat exchangers or large machines (static). Based on the robust and flexible Q-series and the cloud based web portal or dedicated software, a very reliable and cost effective trend and condition monitoring solution is available.



Accelerometer (IEPE) for industrial monitoring

Condition Monitoring System

With the monitoring solution of Gantner Instruments the asset becomes smart and delivers detailed status information. Machine based operational data like vibration patterns are acquired by robust accelerometers. These sensors are applicable also at locations with high surface or ambient temperature up to 700°C. Uni- or triaxle sensors with IEPE or charge output are used depending on the monitoring task. The vibration signal is acquired with up to 100kHz per channel and can be processed in real time for trend monitoring or further analysis depending on the monitored asset.

Benefits

- Large number of assets can be monitored
- Based on a cloud system the web portal gives an overview of the asset health
- System configuration and dashboards can be configured with the dedicated software Gl.bench

Monitoring Parameters for Warning/Alarm Level and Data Reduction:

In time domain (trend parameter)

- RMS: Overall, LF, ISO, HF (energy)
- Peak: Peak-to-peak, Max-Min (amplitude)
- Crest: Peak/RMS (impacting)
- Kurtosis (peakiness)
- Mean (static deviation)
- Smax (deviation in the plane)

In frequency domain

- Vibration velocity
- Vibration displacement
- Harmonics (1x, 2x, nx)
- Spectra amplitude/frequency

Vibration Monitoring System

For the power plant and process industry a reliable operation of piping and vessels within acceptable vibration limits are essential for long term operation and plant safety. Also, larger machines like stone crushing systems or conveyor belts are getting more and more important for a stable and reliable plant operation e.g. on a large construction site or in mining.

For these applications, also accelerometers, load cells or displacement sensors and strain gauges are used to detect the load or overload conditions. Often, these types of assets are located in areas where no local network connection is available for data transmission and alarm announcement.

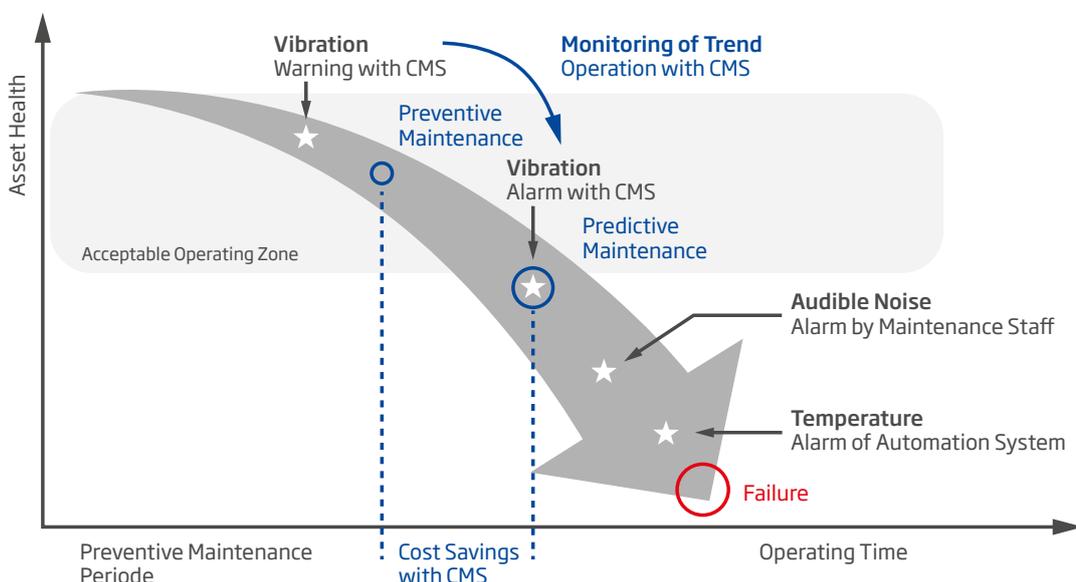
LTE routers or satellite networks with a secured connection to the GI web portal server are used to transmit trend and raw data for monitoring a large decentralized fleet of assets. Alarms and warnings can be indicated also locally direct at the machine by use of flashing lights or local display.

In the cement industry, the vibration pattern and load conditions of large grinders and mills is acquired to detect overloads and to protect the machine from being damaged.

For temporary application, a mobile version of the vibration monitoring system is available. This mobile system finds it use e.g. for data collection on piping before and after exchange of pipes, valves or supports. In that case the vibration pattern is measured and analyzed to detect eigen-frequencies or vibration velocity and displacement. With that cost optimized version all detailed data is available for stability or vibration fatigue analysis.



Listen to your Assets with Monitoring Solutions from Gantner Instruments



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