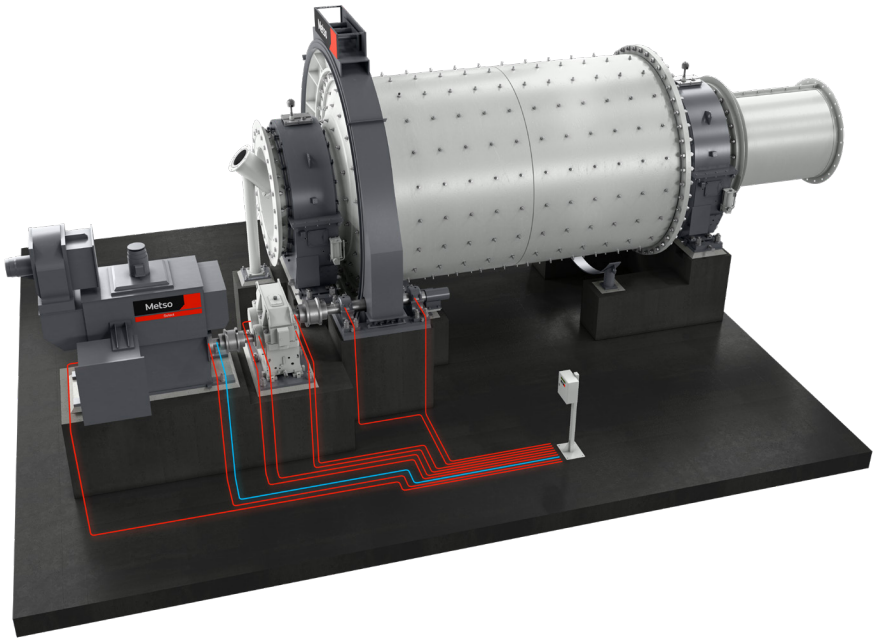
Metso

Grinding services

Vibration monitoring system



Knowing the condition of your grinding mill equipment allows you to plan your maintenance and operations more effectively. Detecting and diagnosing potential failures and planning maintenance activities can maximize availability and eliminate critical machine component damage.

Vibration analysis is one of the most valuable techniques to monitor the health and maximize the reliability of your mining process equipment. When applied correctly, it can detect and identify existing and developing issues based on equipment condition.

Vibration analysis can diagnose gear and bearing faults as well as unbalance, misalignment, looseness and soft foot conditions. When issues are detected, preventive maintenance activities can be planned during scheduled shutdowns to avoid failures and reduce equipment downtime.

The Metso solution

Metso offers a cost-effective solution for process-optimized mill drive train condition analysis. Our system consists of capacitive sensors that monitor all roller element bearing as well as roller bearings or sleeves, if applicable. The sensors are connected via shielded cables to diagnostic units installed in a locally mounted enclosure. The units connect to the plant control system via an Ethernet interface, which can be configured for ProfiNet, Ethernet/IP or Modbus TCP.

The diagnostic units continuously process raw vibration data received from the sensors based on the system configuration. An inductive proximity sensor detects the motor shaft rotating speed and provides the required speed reference to the diagnostic unit. The units provide the processed vibration data for trending and monitoring via the network interface including:

- Unbalance (mm/s)
- Velocity RMS (mm/s)
- Acceleration RMS (mg)
- Rolling element bearing (mg)
- Gear mesh frequency

Additional offerings

Metso also offers an edge connectivity panel with remote access hardware that allows a vibration specialist to connect to the data collection units for raw data recording and spectrum analysis.

The edge connectivity panel also provides connection to Metso services for remote diagnostics and support to resolve equipment-related issues.

Plant owners can also take advantage of Metso's cloud-based analytics to gain valuable insights over asset condition and performance. These insights can be used to develop a robust predictive maintenance plan.

For detailed investigation and vibration analysis, the dynamic data can also be accessed directly or remotely from the diagnostic units.