

Online Vibration Monitor 2 Product Overview

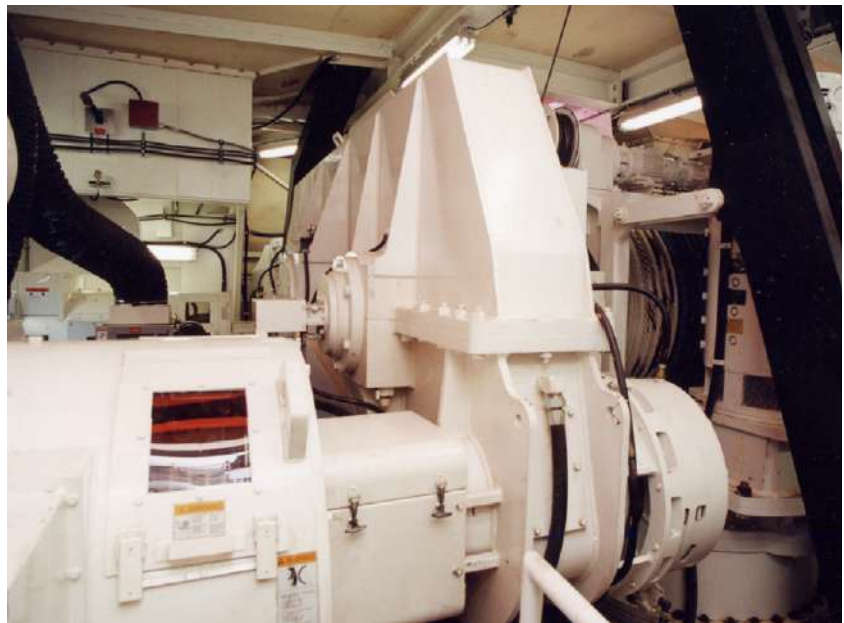
The power of predictive analytics

- Limit lost production from unplanned shutdowns
 - Help identify components nearing end-of-life or experiencing premature defects, allowing for maintenance before catastrophic failure
- Monitor while producing
 - Operational mode records, validates and uploads data during normal production with no operator input needed
- Know what your data means
 - Analysis is provided by a live expert with OEM knowledge
 - Exclusive Komatsu-developed algorithm records only valid data; invalid data introduced by the highly dynamic shovel system is automatically discarded
- View your data from anywhere
 - Validated data is sent to the cloud where it can be seen from your internet-connected device

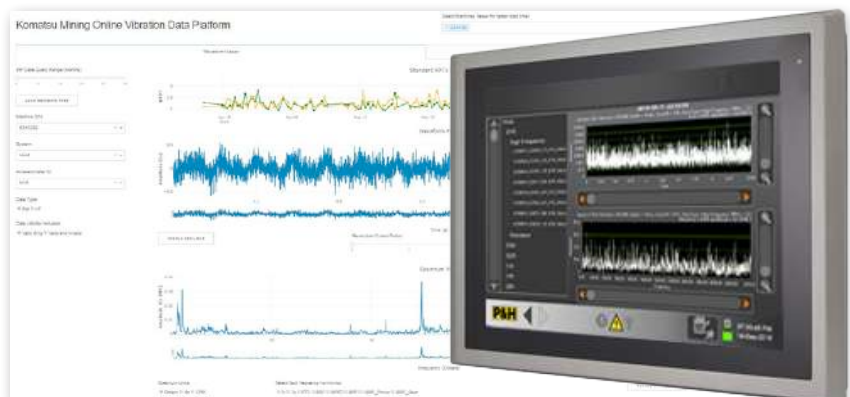
Description

Electric rope shovels are high value assets in any surface mining operation. Unexpected failures can be costly both in repairs and production loss; a successful predictive maintenance program driven by vibration analysis can mitigate or potentially eliminate these unexpected events altogether.

Online Vibration Monitor 2 provides predictive diagnostics on shovel motion mechanical components to help minimize downtime. This permanently installed predictive diagnostic tool and service helps detect early stage defects in motors, bearings and transmissions prior to catastrophic failure.



For more information, contact a local Komatsu Mining representative or visit mining.komatsu



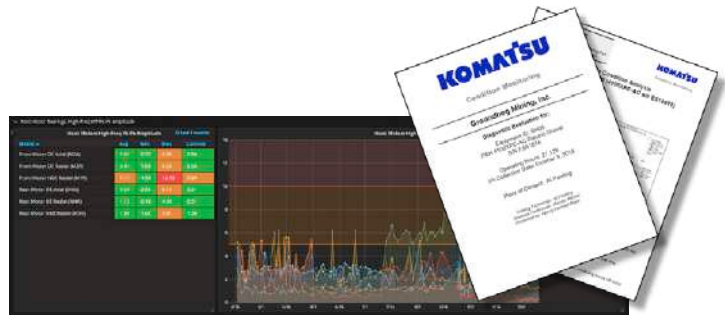
Choose the right mode of operation for your needs

- **Operational Mode:** monitoring and validation functions run continuously during the normal digging cycle; data is validated and uploaded to the cloud for viewing and analysis
- **Stage Test Mode:** operates like traditional vibration analysis systems; the operator works through a cycle of predefined motions, while the system collects data; validated data is uploaded to the cloud
- **Raw Mode:** data is collected with no analysis, feedback, or operator instruction; this is equivalent to viewing on a local chart recorder



Get detailed analysis reports and view data online from anywhere

- Komatsu-certified analysts review all vibration data
- Reports include data overview, analysis and recommendations
- View your data from your internet-connected device using the Remote Health Monitor interface
- Shovel and system level dashboards allow viewing of waveforms, spectra and alarms
- Data is maintained for up to 60 days in the event of shovel communication loss



Industry-leading data resolution

- Up to 48 separate points monitored
- Standard monitoring includes hoist, crowd and swing
- Over one million data points from across the fleet available to Komatsu analysts for comparison



Hardware-as-a-Service (HaaS) option

You no longer need to worry about owning the hardware or purchasing hardware upgrades. Talk to your Komatsu Mining representative about the **HaaS** option: packaging hardware with your analytics service fee and receiving future replacement hardware at no additional charge.



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