HAVER & BOECKER

NIAGARA

PULSE CONDITION MONITORING

THE SOLUTION

As a leader in vibrating screen technology, Haver & Boecker Niagara developed Pulse Condition Monitoring (Pulse CM) specifically for monitoring the health of vibrating screens usingmodern algorithms to provide accurate measurements and forecasts complemented by information that is easy to understand.

Pulse CM is the predictive tool you need to predict body and drive component failure. Its wireless sensors and components are specifically designed for the harsh conditions of the mining industry.

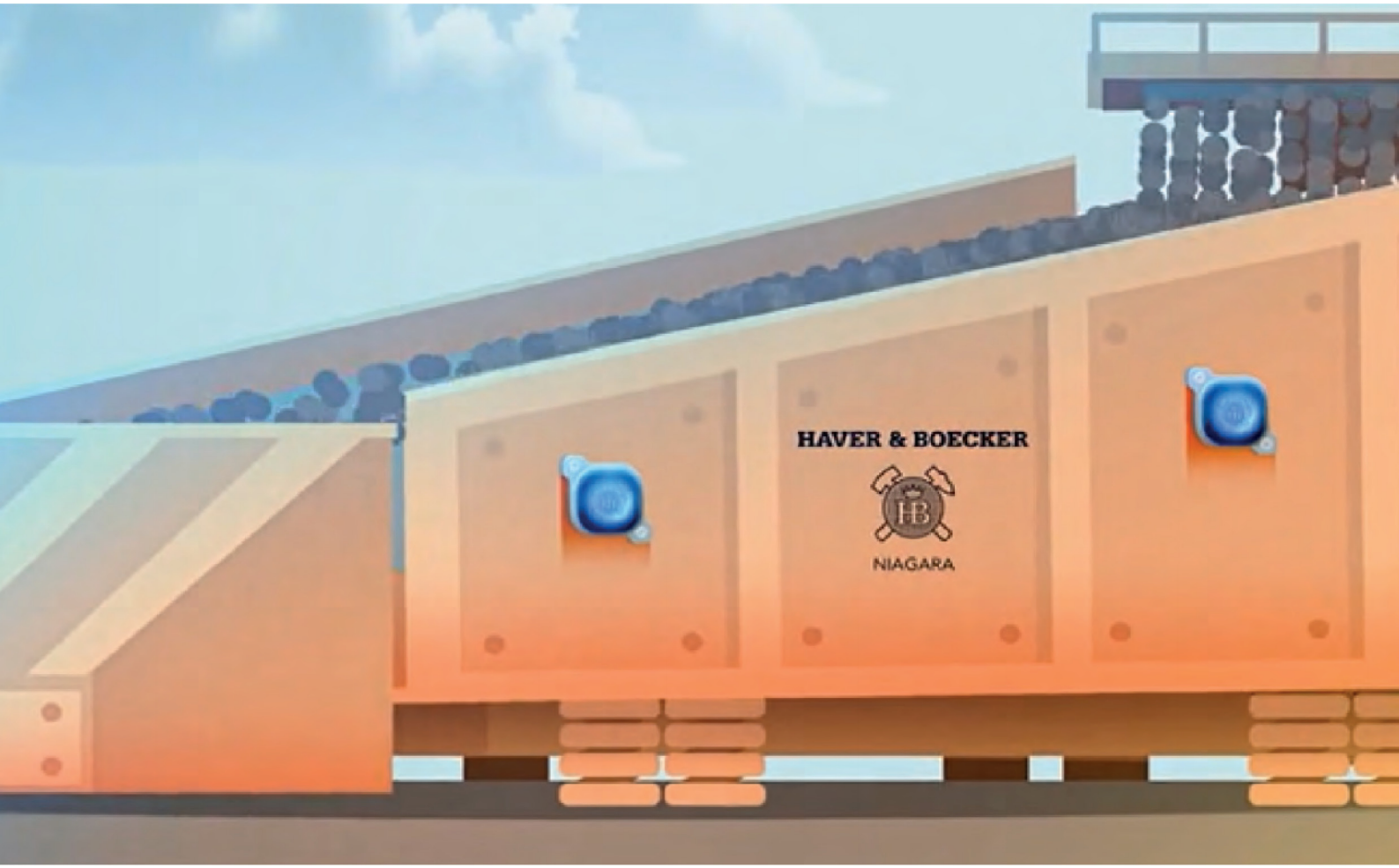
Pulse CM will help you avoid costly downtime and give you the ability to plan scheduled maintenance.

Based on machine learning algorithms, Pulse Condition Monitoring detects anomalies and predicts machine deterioration and potential failures, making it a powerful allied tool for efficiently planning predictive maintenance, not to mention that the contactless technology has a direct and positive impact on health and safety.

HOW IT WORKS

The bearing sensors acquire information every minute, while the body sensors acquire information every five minutes. Vibration spectrum information is also available for the bearings after each 12-hour interval.
The sensors are especially suitable to both the environment and the equipment, with wireless connections and IP69K degree of protection.
The sensor battery will last approximately three years.

To collect all data from the body and drive components, Pulse CM is equipped with a gateway that can connect with up to 20 sensors within a radius of up to 75 meters.Using a cellular signal or Wi-Fi from the plant, it will send all data to the Haver & Boecker Niagara Cloud. Some of the collected information will also be made available locally for communication with supervisory software via cable through Profib-us protocol.



Wireless body sensors applied for monitoring:

- Global acceleration
- Acceleration on axis X, Y and Z
- Global amplitude
- Displacement on axis X, Y and Z
- Frequency
- Motion orbit
- Phase angle

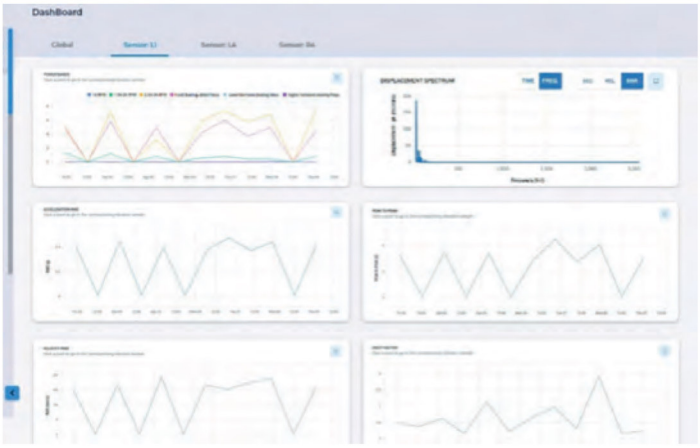
Wireless bearing sensors applied for monitoring:

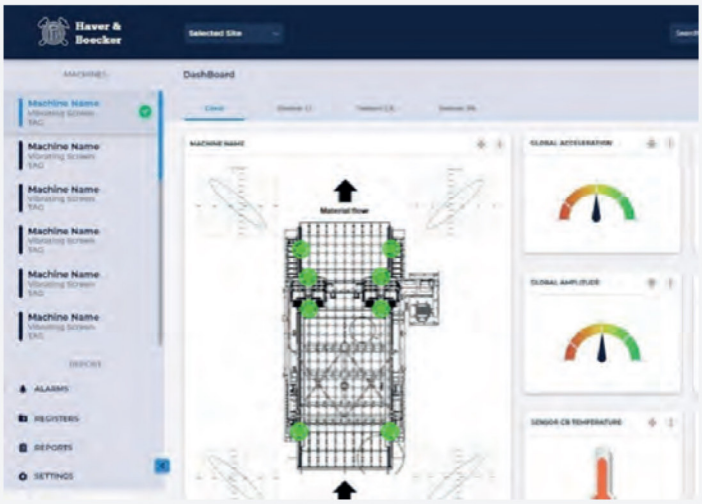
- Temperature
- Power bands
- Peak-to-peak acceleration
- RMS acceleration on axis X, Y and Z
- RMS velocity on axis X, Y and Z
- Crest factor
- Vibration spectrum

THE INTERFACE

A MEANINGFUL AND EASY TO USE WEB APP

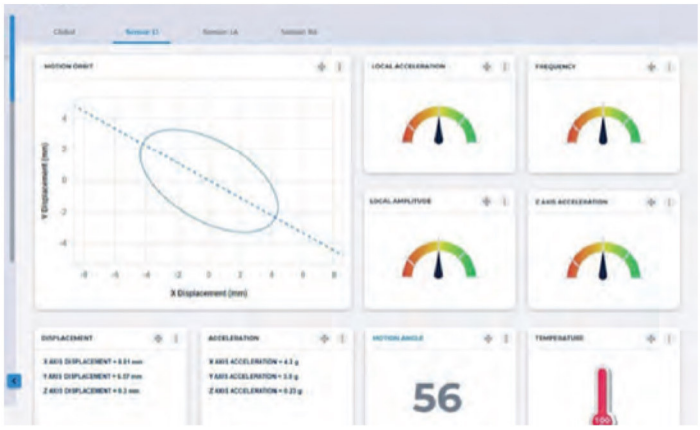
Haver & Boecker Niagara developed a web-based application to display all available information, group-ing the monitored equipment by plant and identifying each of them by the customer's TAG.





The main tab of the monitored vibrating screen contains its most valuable information, allowing the user to have a full overview of the equipment at that moment. Thenext few tabs will be specific for each of the body and bearing sensors. The graphic displays of the main parameters allow users to easily identify the equipment's operating condition and check if important parameters are within the established limits. Moreover,thresholds will be provided to guide the analyst.

All parameters will be saved in the machine's history, which can be easily retrieved at any time for further analyses.
The interface will also have specific tabs for the features that make Pulse CM unique: powerful machine learning algorithms and forecasting of key parameters to get themost out of the equipment and assist maintenance and production planning, thus preventing unwanted downtime or even catastrophic failures.



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