

HAYER & BOECKER



NIAGARA

PULSE CONDITION MONITORING



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THE SOLUTION

As a leader in vibrating screen technology, Haver & Boecker Niagara's Pulse Condition Monitoring has been developed especially for vibrating screens using modern algorithms to provide accurate measurements and forecasts, useful insights and easy to understand information.

**Pulse will help
you predict the failure
of body and drive
components**



Powerful machine learning algorithms, built from years of vibrating screen knowledge and experience, make the technology predictive, not just reactive, and its wireless sensors and components are especially designed for the harsh conditions of the mining industry.

OUR GOALS

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.

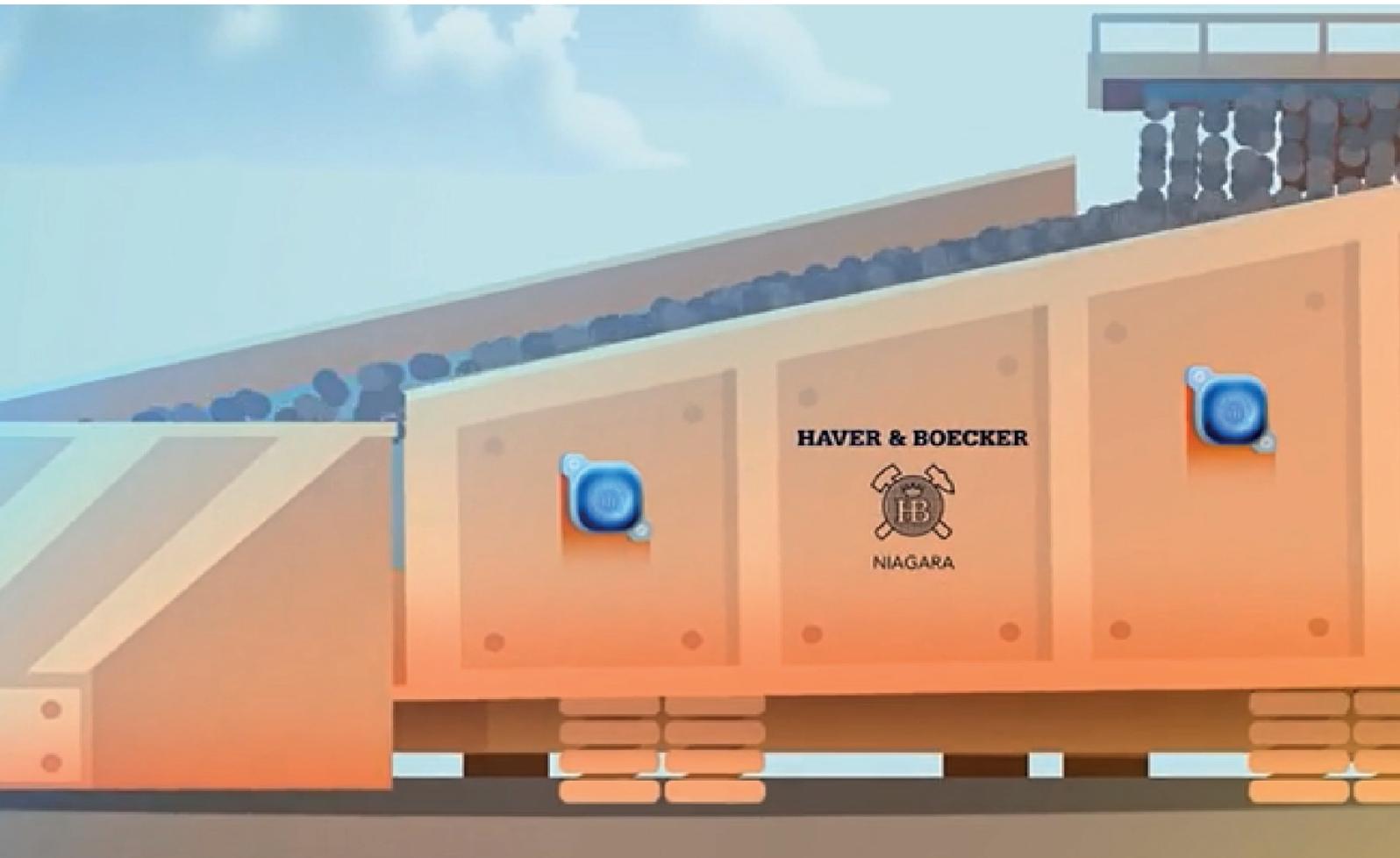
**Add greatly to production and maintenance
management, to planning and scheduling processes, not
to mention the positive impact on health and safety**

HARDWARE INFO

The body sensors acquire information each 5 minutes, while the bearing sensors acquire them every minute. After each 12 hours, vibration spectrum information is also available for the bearings.

The sensors are especially suitable to both the environment and the equipment, with wireless connections and IP69K degree of protection. The sensors battery is long lasting, approximately 3 years considering the acquisition intervals mentioned previously.

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

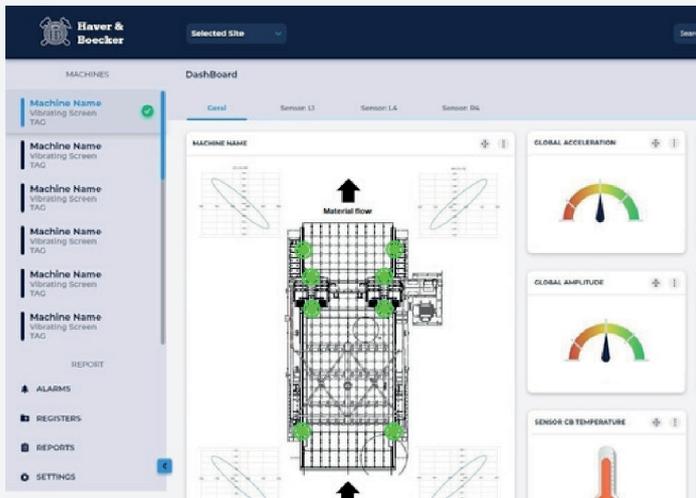
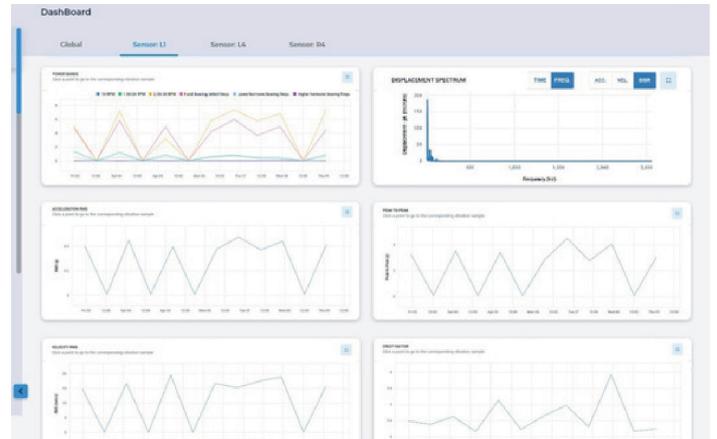
Wireless bearing sensors applied for monitoring:

- 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

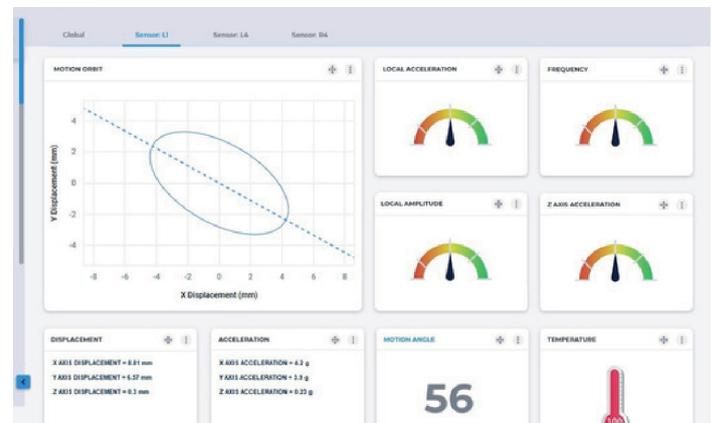
Haver & Boecker Niagara developed a web-based application to display all available information, group-ing the monitored equipment by plant and identifying each of them by the customer's TAG.



The main tab of a monitored equipment contains it's most valuable information, allowing the users to have a full overview of the equipment at that moment. The next tabs will be specific for each of the structure and bearing sensors. The graphic displays of the main parameters allows 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 analysts.

All parameters will have their history saved, 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 the most out of the equipment and assist maintenance and production planning, thus preventing unwanted or even catastrophic stops.



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