VEMS for Brake

Automated measurement solution for brake system integrity.

Brake pads and brake blocks are high cost drivers, as they are subject to constant wear that is difficult to monitor accurately during operation. Manual inspection has been the traditional method of monitoring, but is costly in terms of time and expense. The Vehicle Equipment Measurement System (VEMS) for brake was developed to provide accurate measurements of brake wear while the train is in service. This makes inspection fully automated, enabling a rapid delivery of data, which can be used to identify missing or damaged components and compare wear trends across axles, bogies, trains and fleets.

How Does It Work?

VEMS for brake comprises two measurement modules; for brake pads and brake blocks. An additional software module for brake disc monitoring is also available.

VEMS for brake inspects brake blocks during operation at speeds of up to 80 km/h (~50 mph), and brake pads at depot speed. The system uses a laser profile measurement technique to create a precise model of the components.

From this model, the current condition and thickness measurements are derived and reported. Alerts are raised when the component is detected to be outside safe operational limits.

A non-contact thermal measurement system can be integrated into the system to detect abnormal temperatures of brakes, discs or bearing housings.

Benefits at a Glance

- Time savings as inspection takes place during operation
- Trend analysis for predictive maintenance
- Lower costs due to extended component life

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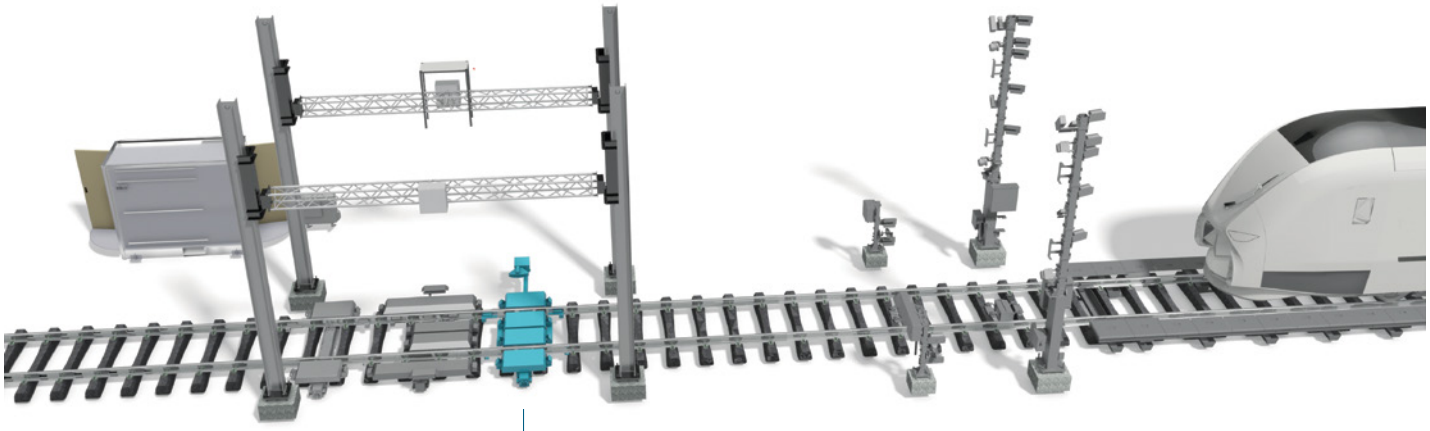

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One out of many vehicle equipment measurement systems

Comprehensive Report System

Drawing on brake pad and brake block measurements, VEMS for brake creates detailed reports: from pad status to component life in terms of time and mileage. Storing the data in the VEMS Data Management System enables data quality analyses. Long-term trend analyses – for individual components of a specific train, or for your entire fleet – are available within Siemens Railigent®.

Putting It into Practice

VEMS for brake turns a cost driver into a competitive advantage. Abrasion is monitored regularly in real time, so premature replacements are a thing of the past. This saves assembly time and cuts material costs.

Long-term statistical evaluations make it possible to inspect individual components in detail. It is possible to compare the behavior of components of various makes and determine the most cost-efficient choice. Monitoring brake pads also enables the customer to understand the health of the caliper and associated components – a valuable additional benefit compared to conventional brake maintenance methods.

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