Hot Box and Hot Wheel Detector "FUES-EPOS"

In the railroad sector, the bearings, brakes and the wheels of the rolling-stock units are vital elements for the safety of the Railroad operation. The non detection of heating of these elements can result in the break of the axle boxes, in a derailment, cause fire and other damages to the rolling stock or tracks, but all cause the interruption of the service of trains.

Beside the cost for such delays, also costs for delayed recognition of required maintenance will increase the costs for repair. Overall is a not detected Hot box or Hot Wheel critical for safe Railway Operation. For these motives it is fundamental to install systems of detection for warm boxes and brakes in the railroad infrastructure, which allow to act directly on an detected event.

The system of Detection of heated Boxes **FUES-EPOS (Easy Pull out System)** of Progress Rail, allows to monitor and detect the heating of the outer and inner bearings, the wheels and the brakes. The system **FUES-EPOS** offers a big reliability and a long lifetime, high availability, reduction of false alarms, simple installation and maintenance and operative efficacy (l ow LCC costs) .

The detectors (EPOS modules) are installed in hollow metallic sleeper. They are using the infrared technology to detect the warming's at a defined target area. The System provides the absolute, relative and distinguishing temperatures of the elements in real-time.

With more than 1000 systems installed in the demanding operations of passengers' railway transport in Europe, the FUES operates in a wide speed status, from 3 km/h up to 500 km/h (1,86 mph up to 310 mph) and it is completely compatible with the different types of trains, cars, bearings and existing brakes used in these railways. The FUES can adapt itself to comply with the specific configuration of the rolling-stock of any operator and railroad infrastructure.
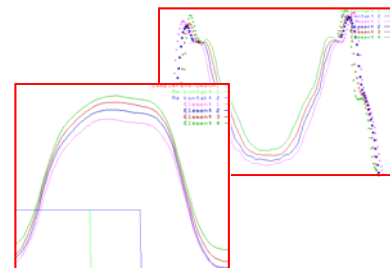
Specification

Detected defects

- Heated Bearing
- Heated Wheel and Tight Brakes

Scanner

- Infrared detector multifocus HgCdTe
- 4 elements and internal focus for self-control
- Up to 120 samples for every Bearing, 240 for every wheel.
- 5 types of alarm thresholds: warm, hot, differential (warm and hot), relative (min and max), dedicated for car type.

Detection of temperatures

- Up to 180ºC for Hot Box
- Up to 600ºC for Hot Wheel
- Accuracy: +/- 2 degrees K, with 12 bit resolution

Calibration and Maintenance

- Auto-calibration
- Self diagnostic and reporting on status, including remote diagnostics
- Automatic correction of contamination
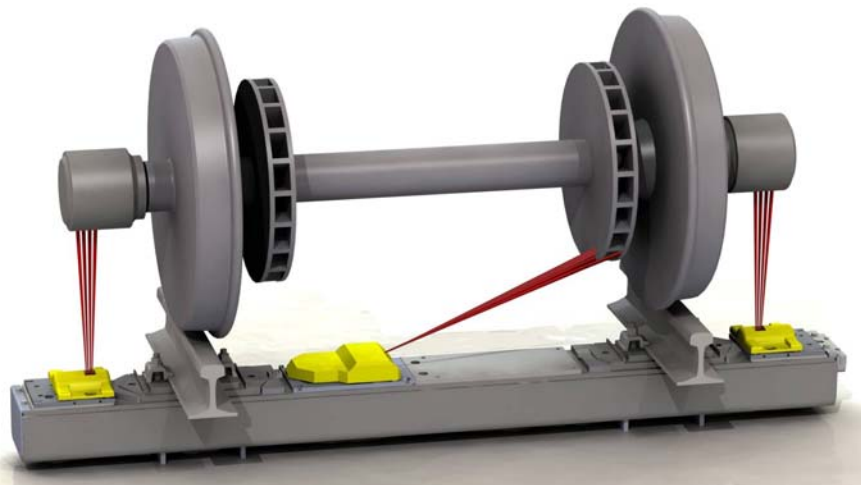
Installation

- Sleeper: +/- 24VDC per Sleeper
- TCP/IP or modem communication
- Power supply AC: 220-240, VAC 50-60 Hz
- Cable length of 100 meters between sleeper and Location Electronic is supported.
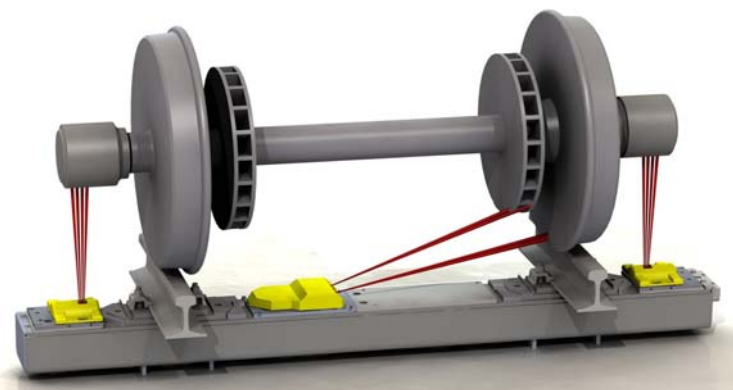
Train speed supported

- from 3 km/h up to 500 km/h（1,86 mph up to 310 mph）

Options

- Automatic voice Broadcasting（radio）
- Vehicle Identification
- Snow Covers, electrical Winter Heaters
- TAS（Target Are Split）module
- 2 FBOA detectors
- Software based Sun Filter and Classificators
- Dispatcher System（RAD）

Option; FUES-EPOS TAS

EPOS Module: FUES-EPOS HOA

Option: Snow Cover: FUES-EPOS

EPOS Module: FUES-EPOS FBOA

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