COMORAN – Condition Monitoring for Railway Applications

Applications
- High-Speed Trains
- Locomotives
- Metros
- Passenger Trains

KNORR-BREMSE
COMORAN: Condition Monitoring for Railway Applications

Bogie monitoring and diagnostics
Knorr-Bremse has developed a monitoring and diagnostic system for powered and unpowered bogies and their components. Integrated into the braking system, it identifies critical and safety-relevant conditions such as damage to wheelset bearings, hot axle boxes, unstable running or derailment, according to TSI requirements. The system also provides comprehensive data that enables condition-based maintenance work to be carried out economically.

CUSTOMER BENEFITS
- Enhanced safety, through detection of critical conditions
- Meets statutory requirements and regulations
- Early identification of defects and wear
- Extended operating life for components
- On-board information
- Introduction of condition-based maintenance
- Reduction of life-cycle costs

FUNCTIONING
Ongoing monitoring and diagnosis is carried out by on-board technology. Sensors at various points on the bogie measure wheel speed, temperature, and acceleration. The signals are then processed in an electronic unit and analyzed in real time. Results are displayed on- and off-board. On-board for immediate driver or system interaction if required, and offboards for trend analysis and maintenance operation.
**PERFORMANCE**

Safety-critical monitoring functions acc. to TSI for:
- Hot axle box detection
- Detection of non-rotating axles (DNRA)
- Derailment detection
- Bogie hunting

Diagnostics for:
- Wheelset bearings
- Wheel treads and flats
- Wheelset guidance
- Stabilization
- Transmission

**COMORAN MONITORING BOARD RB06A**

**TSI part**

- Monitoring board integration
- CAN Bus
- Power
- Watchdog
- μController for condition monitoring
- Multifunction sensors

**Conditioning monitoring part**

- Watchdog
- μController for safety-related applications
- Ethernet
- Condition monitoring data

**Database**

- Trend analysis
- Internet

**Monitoring board**

Integration into brake control and wheel slide protection

**Multifunction sensors**

- Speed
- Temperature
- Acceleration

**Warning**

Multifunction sensors

Internet database

Trend analysis