

Wheel Slide Protection Systems



Wheel Slide Protection Systems provide shorter stopping distances even in extreme weather conditions and enable dramatic reduction of maintenance costs by avoiding wheel flats. Decades of experience and ongoing technical improvement enable Knorr-Bremse to offer state-of-the-art wheel slide protection.

CUSTOMER BENEFITS

- Short braking distance
- Optimized control algorithms reduce air consumption
- Wear-free rotational speed measurement
- Additional option of detection of non-rotating axles and skid protection
- Meets all relevant standards such as EN50155 and safety requirements of EN5012x
- One system for all markets: easier homologation of trains, e.g. GOST/WSPER/UIC

APPLICATIONS

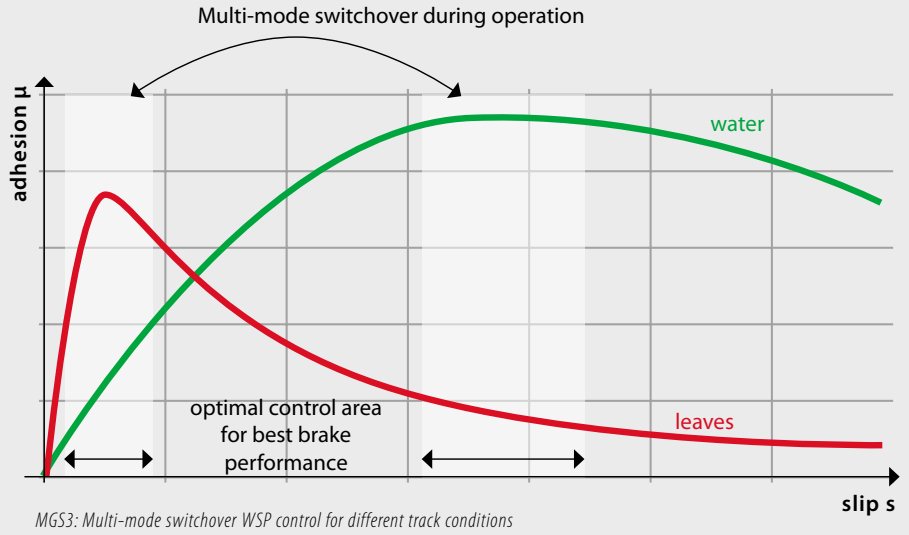
- High-speed trains
- Light rail vehicles
- Locomotives
- Metros
- Passenger coaches
- Regional & commuter trains

KNORR-BREMSE



ADDITIONAL FEATURES – HIGH-PERFORMANCE MGS3

- Multi-mode switchover WSP control between low and extremely low adhesion for shorter stopping distances
- Higher pneumatic performance for shorter ventilation times
- eNozzle functionality: electronic adaptation to different brake cylinder volumes for less commissioning effort
- Improved system control and diagnostics by pressure sensor integration

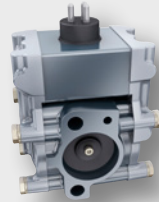


SYSTEM COMPONENTS



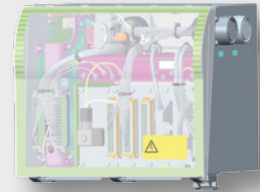
Sensor

- Range of single channel, dual channel and multisensors available
- Multisensor measures speed, acceleration and temperature
- Multifunctional sensor for WSP and Bogie Monitoring System
- Output signal: rectangular current signal, polarity reversal protected, permanently short-circuit protected
- Versions for temperature down to $-55\text{ }^{\circ}\text{C}$ and up to $100\text{ }^{\circ}\text{C}$ available



Anti-skid Valve

- One valve for all market requirements
- Optionally integrated pressure sensor for MGS 3
- Operating pressure: max. 6.5 bar
- Versions for temperatures down to $-55\text{ }^{\circ}\text{C}$ and up to $70\text{ }^{\circ}\text{C}$ available



Integration Example of WSP Electronics in Knorr-Bremse Brake Control

- Interface to typical train network systems such as MVB, CANopen, RS485
- HDLC, Ethernet protocol variants etc.
- Service and maintenance interface (Ethernet)
- Data log function with large storage volume
- Additional integrated functions such as:
 - Control for electromagnetic track brake and sanding
 - Speed signal output
 - Distance counter

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