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-  **KNORR-BREMSE**

-  **NEW YORK AIR BRAKE**

-  **IFE**

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-  **MICROELETTRICA**

-  **SELECTRON**

-  **KIEPE ELECTRIC**

-  **EVAC**

-  **ZELSKO**

-  **RAILSERVICES**

AUTOMATIC COUPLING SOLUTIONS

**MAKING MOBILITY SAFE –
KNORR-BREMSE'S DAILY MISSION.**



Product focus: Coupling systems – future-ready couplers for passenger and freight trains



Overview

- Coupling systems combines KB's long-standing tradition in coupler manufacturing^[1] with the company's current positioning as a market leader for innovative rail systems
- The coupling systems business unit was re-established in 2019
- Coupling systems combines the passenger train and freight car coupler businesses
- Knorr-Bremse couplers combine outstanding quality with a focus on maximum safety and high availability
- Knorr-Bremse's "future-ready" approach is rounded off by a customer-oriented service offering that combines global presence with local service centers and field service for short response times

Key locations

Munich (DE)

- HQ
- Lead Engineering
- Sales & Business Development

Budapest (HU)

- Engineering
- Production

Couplers for passenger trains: Modular target portfolio enables delivery of all relevant coupler types

Passenger train target product portfolio: Automatic center buffer coupler "AutoLink", Semi-permanent coupler "ShortLink" and Adapter coupler "RescueLink"

Mechanical heads

- Mainline (HS/ MU): T10 (TSI)
- Metro: T25 & T35 & T330 & T130
- LRV: T430 & T530
- Others on request

Pneumatic valves

- MRP
- BP for 1- and 2-position heads

Additional functions

- Pneumatic system for 1- and 2-position heads
- Heating systems

Additional products

- Condition monitoring & CBM
- Standards-compliant Type 10 adapter
- Lightweight Type 10 adapter
- Other adapter solutions on request
- Wear gauges
- Semi-permanent eyebolt connection

Electrical couplers

- Scalable standard sizes (top-, bottom- and side-mounted solutions)
- Customized to requirements

Electrical coupler operating mechanisms

- For side-, top- and bottom-mounted electrical couplers
- All solutions include self-locking function

Draftgear (reversible)

- EFG3
- EFG3 with shear-off
- Gas hydraulic
- Polymer Pad Articulation

Draftgear (irreversible)

- Deformation tube
- Deformation tube behind bearing bracket

Vertical support & centering

- Solution with combination of deformation tube and shear-off
- Pneumatic solution

Current and future product areas



High-speed trains
Ready for delivery

Regional and commuter trains
Ready for delivery

Metros
Ready for delivery

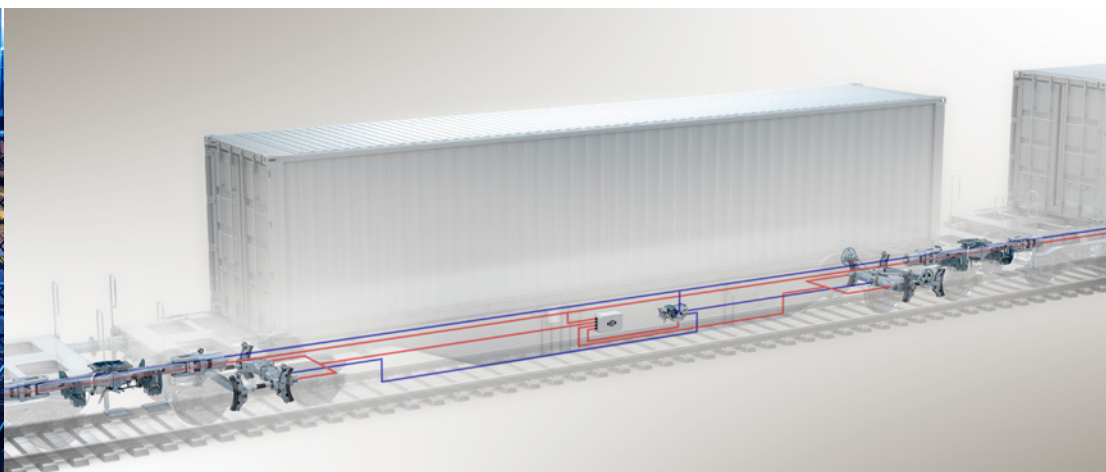


Light rail vehicles
At planning stage

Digital Automatic Coupler for freight cars
At planning stage

^[1] 1960 – Unicoupler AK69e and 1990 – Z-AK

Couplers for freight trains: Knorr-Bremse drives introduction of the Digital Automatic Coupler (DAC)



FreightLink Digital Automatic Coupler

- Digital Automatic Couplers (DACs) facilitate rail freight automation and enable connected, train-wide functionalities
- The DAC plays a key role in Knorr-Bremse's strategy to make modern rail freight transportation fit for the 21st century
- DACs will form an integral part of Knorr-Bremse's overarching "automated digital freight train" offering, which includes innovative solutions that combine DACs with core Knorr-Bremse competencies such as braking systems, digitalization and automation
- Knorr-Bremse is a member of all relevant national and European bodies
- Like all Knorr-Bremse couplers, our Digital Automatic Couplers and compatible locomotive couplers are developed in Munich and Budapest

