



Pneumatic Solutions for Level Control and Brake Control

Pneumatic Solutions for the Railway Industry

Control and regulation – pneumatics is the top choice in rail vehicles





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We know what matters in the railway industry

Having to move a lot every day means you need partners and a technology you can rely on. That's where pneumatics comes in – a robust and intelligent technology. And Emerson – your innovative and experienced partner. Our product range is optimized for the special requirements of the railway industry.

Safety comes first, both for people and functions. Maximum reliability in all areas is essential. Our pneumatic components have been tried and tested, they meet the highest levels of the relevant standards and fulfill all expectations. They feature low-maintenance, economical continuous operation, and low life cycle costs thanks to their longevity.

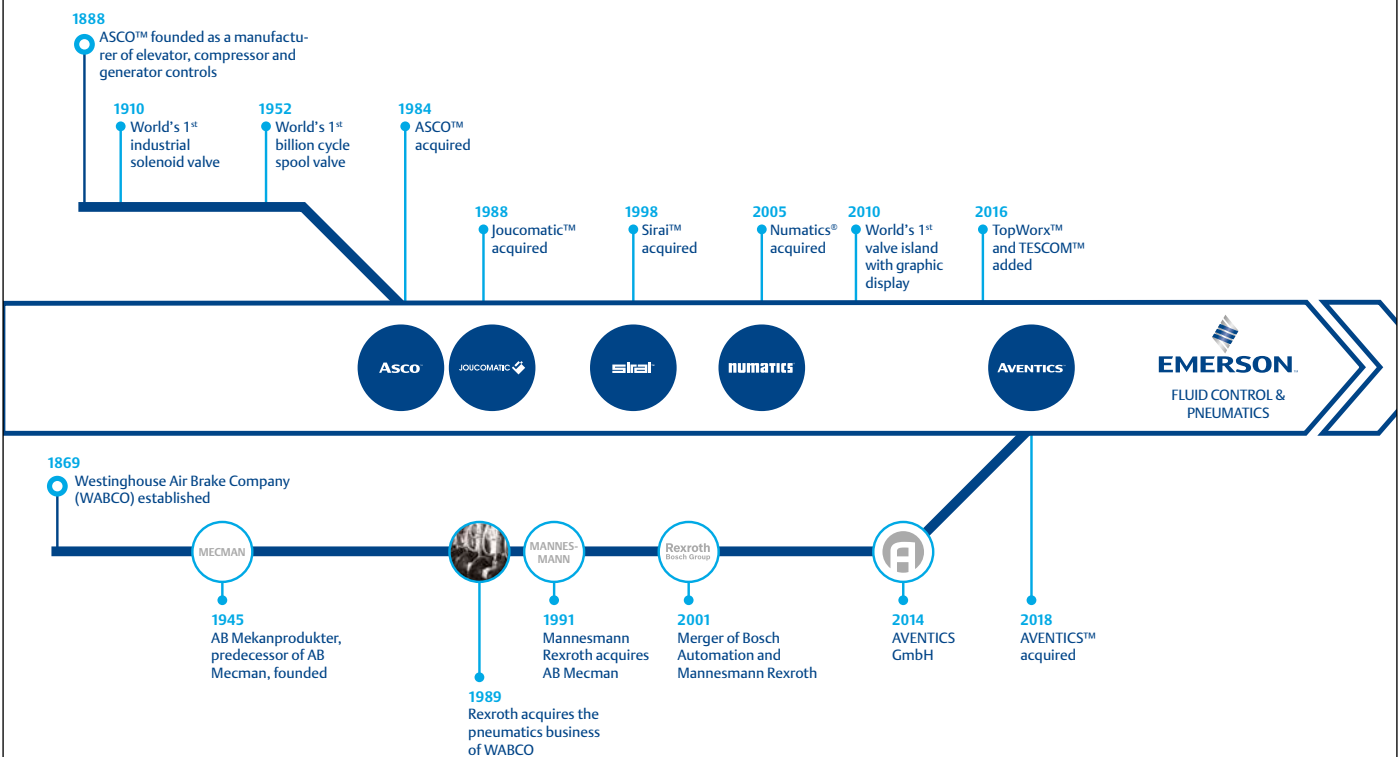
- Designed for extreme temperature ranges
- Reliable function even under extremely difficult ambient conditions
- Resistant to shock and vibration

Railway-specific standards



- ✓ Requirements for electronic and mechanical components acc. to **EN 50155**
- ✓ Electromagnetic compatibility acc. to **EN 50121-3-2**
- ✓ Cold-resistant to -40°C acc. to **EN 60068-2-1**
- ✓ Heat-resistant to +85°C acc. to **EN 60068-2-2**
- ✓ Fire protection standards and requirements for rail vehicles acc. to **EN 45545** and **NFPA 130**
- ✓ Special requirements for shock and vibration acc. to **EN 61373** and **MIL-STD-810G**
- ✓ Corrosion resistance for > 500 hours acc. to **ISO 9227**
- ✓ Voltage tolerances +25% / -30%
- ✓ Protection class IP65 or higher
- ✓ Resistant to high humidity

Emerson – A Respected Heritage of Fluid Control & Pneumatics Solutions



With our experience, you are on the safe side

Quality and reliability – our tradition

The history of our company goes back to the invention of the pneumatic brake for trains, one of the first industrial applications for pneumatics. Today, we offer an extensive range of products that not only set standards for quality and functionality in railway technology, but also offer cost-effectiveness.

- We know the special requirements and standards.
- We have industrial expertise and speak our customers' language.
- We offer established application support.

To us, close collaboration with our customers and partners is one of the key factors for global success.



“We tailor the assembly hardware and software precisely to the customer requirements.”

Roland Hatzenbichler – Sales Engineer – at Emerson Österreich

Chassis and Brake Control

Always at the right level, in sync, and precise – because the boarding process has to be quick

Pneumatics provide solid arguments for controls and drives in brakes and chassis suspension systems: they are reliable, secure, long-lasting, and cost-effective. The key is for the individual technical systems within the chassis construction to fit together perfectly. For example, the ready-to-install control panels for controlling the pneumatic service brake, as well as actuating the emergency brake circuit and the spring-loaded brake. Or the electronically controlled air suspension for the vehicle boarding height, which not only guarantees an optimal boarding process, but also offers energy savings of up to 50 percent of the air consumption.

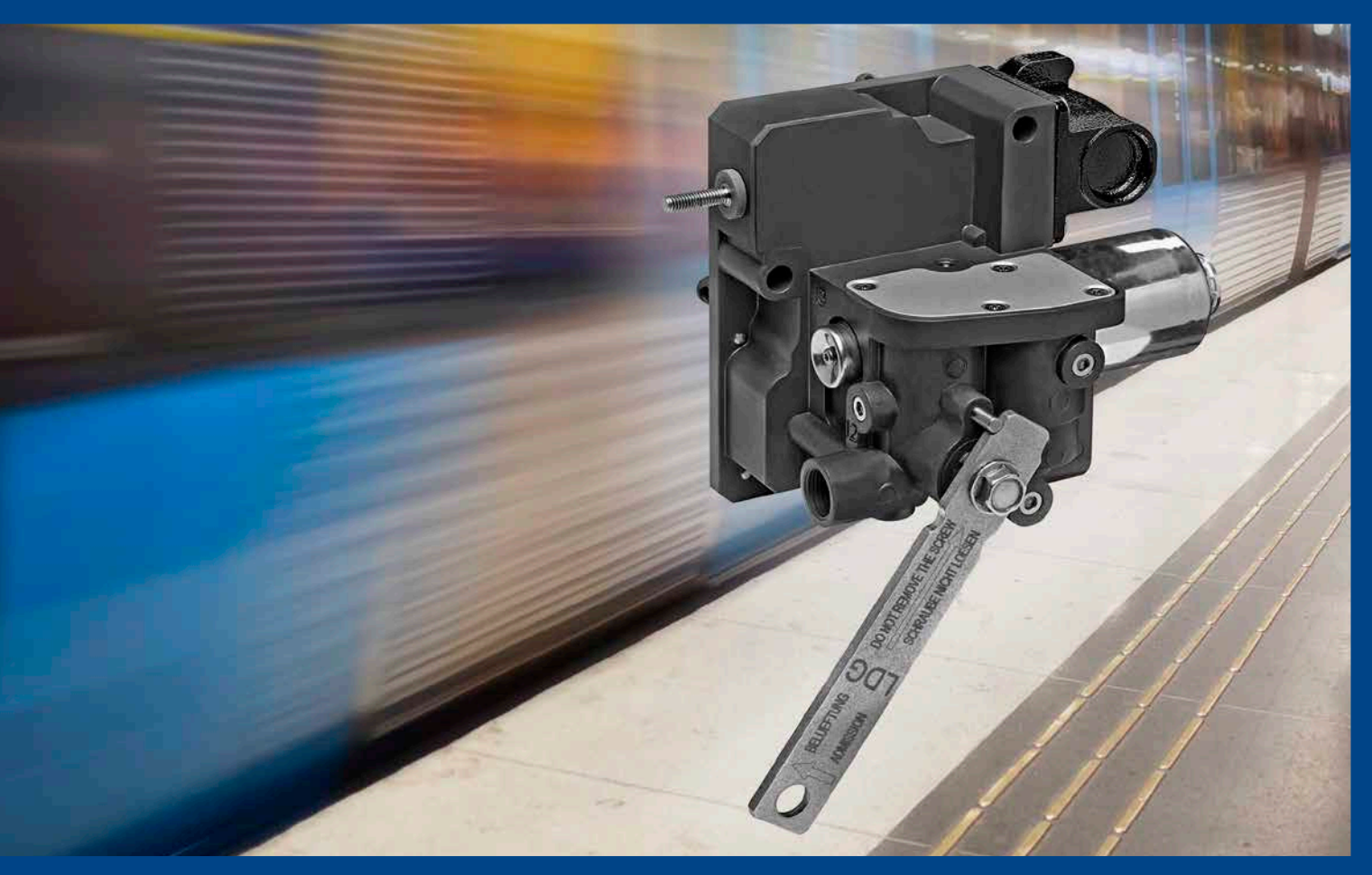
- Customer-specific product and system solutions
- Components and subsystems delivered ready for installation
- Components and systems validated according to customer and railway standards
- Maximum compliance with safety standards



Rely on proven quality!

Safe, precise brake controls require systems that are 100% reliable and ensure low-maintenance continuous operation. Pneumatics from Emerson, especially the AVENTICS ED05 Rail EP pressure regulator, make sure this is the case. All required components, including overcurrent valves, pressure switches, stop valves, and pressure sensors, are preassembled and tested, enabling direct installation of the complete control unit.





Electronic leveling valve for trains

The AVENTICS ELV leveling valve primarily consists of one proportional valve, two switching valves, and control electronics with sensors. The bus control makes handling easy and enables condition monitoring. Control electronics optimize the control and switching behavior of the integrated valves while minimizing air consumption.



Pneumatic control of air springs:

The entire ELV assembly corresponds to protection class IP66 and is designed for an operating temperature range of -40 to +70 degrees Celsius. Highlights include the software functions and the interaction of the train control as the master with the air suspension control as the slave.

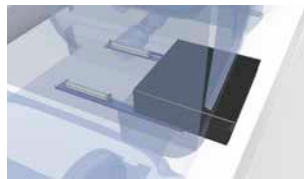
Our expertise is your benefit

Extreme temperatures, high voltage tolerances, demanding railway standards, bolted-on products, or the trend towards condition-based monitoring – as a specialist for pneumatics and railway technology, Emerson is familiar with all challenges. We cover everything that can be sensibly controlled, regulated, and safely moved in trains with the help of pneumatics. From consultation to delivery of ready-to-use solutions – talk to us about your applications!

- Standard products tailored to specific trains
- Solutions precisely tailored to the application
- Bolted-on components and products for pipe mounting

Sliding step control and drive:

Sensor-controlled cylinders for exact extension and retraction of the sliding steps in line with the platform.



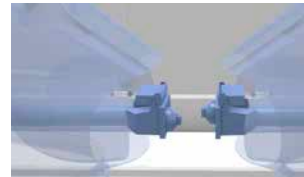
Door control and drive:

Special cylinders for safe opening, closing, and locking of doors.



Train coupling control and drive:

Cylinder controls to open and close the front ends, as well as actuate and lock the coupling mechanism.



Ventilation flap control and drive:

Sensor-controlled cylinders for automatic opening and closing of the ventilation flaps for air conditioning and ventilation systems.



Toilet control:

Valve systems to control various functions in train toilets.



Pantograph control and drive:





Complete system for precise, situation-specific contact force control with electropneumatic components and bellows actuators.



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With our experience, you are on the safe side.**



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