Controlling and regulating – pneumatics is the first choice for rail vehicles

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 AVENTICS – your innovative and experienced partner, with a product range that has been designed to meet the special requirements of the railway industry.

We know what’s important in the rail business
Safety comes first, both for people and functions. Maximum reliability in all areas is essential. Our pneumatic components have been extensively tested, they meet the highest levels of the relevant standards, fulfill all expectations, are sturdy and made to last. They feature low-maintenance, cost efficient continuous operation, and low life cycle costs thanks to their long life.

- Designed for extreme temperature ranges
- Safe and reliable under all conditions
- Resistant to shock and vibration

<table>
<thead>
<tr>
<th>Railway-specific standards</th>
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<tbody>
<tr>
<td>🔄 Requirements for electronic and mechanical components acc. to EN 50155</td>
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<tr>
<td>🔄 Fire protection standards and requirements for rail vehicles acc. to EN 45545 and NFPA 130</td>
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<tr>
<td>🔄 Electromagnetic compatibility to EN 50121-3-2</td>
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<tr>
<td>🔄 Cold-resistant to -40 °C acc. to EN 60068-2-1</td>
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<tr>
<td>🔄 Heat-resistant to +70 °C acc. to EN 60068-2-2</td>
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<td>🔄 Resistant to high humidity</td>
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<tr>
<td>🔄 Special requirements for shock and vibration acc. to EN 61373 and MIL-STD-810G</td>
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<tr>
<td>🔄 Corrosion resistant for up to 500 hours acc. to ISO 9227</td>
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<tr>
<td>🔄 Voltage tolerance +25 % / -30 %</td>
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<tr>
<td>🔄 Protection class IP65 or higher</td>
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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 high quality rail specific products that contribute to long life with low maintenance. Many of our pneumatic components for railway are standard products that have been modified to meet our customer requirements. They are produced at optimum cost under high-volume conditions – worldwide, for customers in the U.S., Europe, and Asia.

- We know the special requirements and standards.
- We have the rail expertise and speak our customers’ language.
- We offer global support.

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

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“*We tailor the hardware and software in assemblies to the customer’s exact requirements.*”

Roland Hatzenbichler
Sales Engineer
at AVENTICS Austria
Always at the right level, a precise floor lever to platform height enabled short dwell time

Pneumatics provide solid arguments for controls and drives in brakes and train suspension systems: they are reliable, safe, durable and cost-effective. The key is for the individual technical durable systems within the vehicle to fit together perfectly. Example – the ready-to-install control manifolds controlling the pneumatic service brake as well as actuating the emergency brake and the spring-applied parking brake. The electronic control air suspension for the vehicle platform height, which not only guarantees an optimal boarding process, but also offers energy savings of up to 50 percent of the air consumption.

- Customized products and system solutions
- Pre-tested components ready for bolt-on delivery
- Products and solutions tested to customer and rail standards
- Compliance with safety standards

Rely on proven quality!
Safe, precise brake controls require systems that are 100% reliable and ensure continuous low-maintenance operation. AVENTICS provides the right pneumatic solutions – especially the ED05...

- **Electronic leveling valve for trains**: The ELV electronic leveling valve consists of a 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 whilst minimizing air consumption.

- **Pneumatic control of air springs**: The entire assembly of the ELV corresponds to protection class IP 66 and is designed for an operating temperature range of –40 °C to +70 °C. Highlights are the software functions and the interaction of the train control as the master with the air suspension control as the slave.
Rail EP proportional valve. All required components, including overflow valves, pressure switches, ball valves and pressure sensors are pre-assembled and tested, allowing direct installation of the complete control manifold.

Our expertise is your benefit

Extreme temperatures, high voltage tolerances, demanding railway standards, sub-base mounted products, or the trend towards condition-based monitoring – as specialists for pneumatics and railway technology, we are familiar with all challenges. We cover everything that has to be controlled, regulated, and safely actuated in trains with the help of pneumatics. From consultation to delivery of ready-to-use systems – talk to us about your applications!

- Robust products tailored to the rail industry
- Customer specific solutions
- Sub-base or pipe mounted components

- **Sliding step control:**
  Sensor-controlled cylinder for precise extension and retraction of sliding steps.
- **Toilet control:**
  Valve system for controlling various functions in train toilets.
- **Door control:**
  Special cylinders for safe opening, closing, and locking of doors.
- **Train coupling control and actuation:**
  Cylinders and valve systems for nose cone and coupling.
- **Ventilation flap control and actuation:**
  Control solutions for automatic opening and closing of the ventilation flaps for air conditioning and ventilation systems.
- **Pantograph control and actuation:**
  Complete system for precise contact force control with electro pneumatic valve solutions and bellow actuators.
The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.