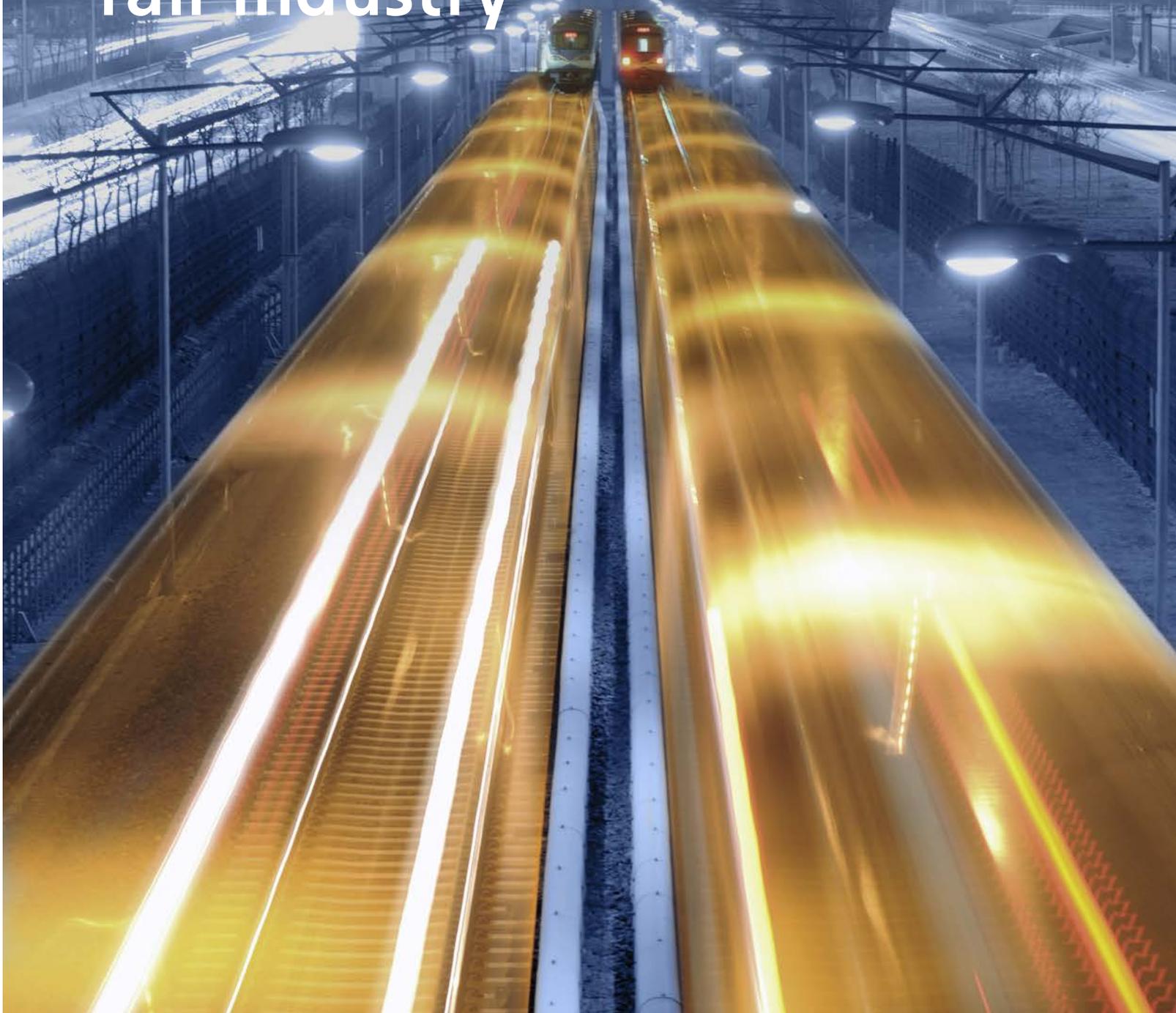


Rail solutions

Energizing a sustainable rail industry



EATON

Powering Business Worldwide

At Eaton, we are helping many of the world's rail leaders build a more sustainable future.

Eaton is a leading power management company, providing energy efficient solutions that help customers use electrical, fluid and mechanical power more reliably, efficiently, safely and sustainably.

We provide innovative solutions globally that help you build a more sustainable business.

Eaton brings a new dimension of expertise.

With many methods of transportation available today, you're challenged to make traveling the railways the reliable, efficient, safe, comfortable and cost-effective choice. To meet customer expectations, regulatory requirements and the demands of increased globalization, you must find ways to reduce downtime, increase productivity and enhance safety and security to drive profitability. All with an eye on making the industry more sustainable for the future.

At Eaton, powering the rail industry means both helping our customers build better and safer trains and enabling railway operators to operate competitively through a broad portfolio of electrical, hydraulic and filtration solutions designed for maximum reliability in any environment. With a focus on energy efficiency and safety, and through our technical expertise and project management capabilities, we can help you meet stringent regulations, minimize risk, secure your rail projects and drive sustainability.

Legacy of innovation.

Over the years, our innovative portfolio has grown, including solutions from:

- | | |
|-----------|--------------|
| Aeroquip | Internormen |
| B-Line | Martek Power |
| Bussmann | Powerware |
| Cooper | Vickers |
| Heinemann | Walterscheid |





Our solutions help improve safety, drive profitability and maximize reliability.

Build better and safer trains

In today's competitive transportation landscape, both new and refurbished trains must offer high levels of energy efficiency, safety, reliability, passenger comfort and capacity. As your trusted supplier, Eaton can help you build better and safer trains through a depth of customized electrical, hydraulic and filtration solutions. Remote monitoring capabilities ensure safety through preventive maintenance. High-reliability products and engineering competencies reduce downtime and project risk. And energy efficient solutions help reduce train energy consumption so you can focus your investment on passenger experience.

Lower total cost of ownership to maintain competitiveness

Railway operators can only operate competitively if they deliver maximum reliability at the lowest total cost of ownership possible. Our large standard products portfolio is designed for dependability and reduced maintenance even in harsh environments. Plus, Eaton innovation and engineering support can provide you with customized solutions to improve your train design and enhance your productivity. Rely on our engineering services to help optimize your investment.

De-risk and secure the project

By focusing on safety and security, you can not only meet stringent regulations but also help drive the industry towards a sustainable future. With expertise in and technology designed for mission-critical applications, global capacity with local support and a complete services portfolio (including project management and safety training), we can help you achieve these goals. Our holistic approach to your power system reduces your energy consumption and arc prevention and containment products increase personnel and equipment safety. In addition, our high-reliability UPS with redundancy management and backup power protection are suitable even in harsh and underground environments.

Powering railways with reliable and sustainable electrical, hydraulic and filtration solutions.



Hoses and hose assemblies

Power conversion

Remote control systems for hydraulic-magnetic circuit breakers

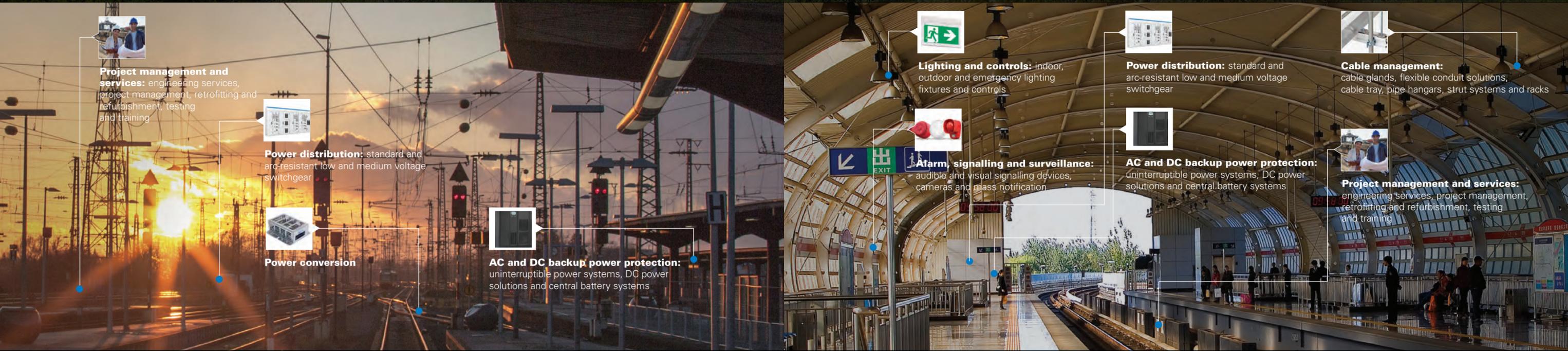
Electro-hydraulic tilting system

Motor control and circuit protection: circuit breakers, fuses, contactors, pushbuttons and SmartWire-DT connectivity

Couplings

Rolling stock

For operators and train manufacturers, safety is a top concern. You must also effectively manage costs while achieving economies of scale.



Project management and services: engineering services, project management, retrofitting and refurbishment, testing and training

Power distribution: standard and arc-resistant low and medium voltage switchgear

Power conversion

AC and DC backup power protection: uninterruptible power systems, DC power solutions and central battery systems

Lighting and controls: indoor, outdoor and emergency lighting fixtures and controls

Alarm, signalling and surveillance: audible and visual signalling devices, cameras and mass notification

Power distribution: standard and arc-resistant low and medium voltage switchgear

AC and DC backup power protection: uninterruptible power systems, DC power solutions and central battery systems

Cable management: cable glands, flexible conduit solutions, cable tray, pipe hangars, strut systems and racks

Project management and services: engineering services, project management, retrofitting and refurbishment, testing and training

Control and signaling

By constantly improving the rail management system, you can increase line capacity and reduce traffic, leading to increased safety and passenger satisfaction.

Infrastructure

As an infrastructure owner or operator, you must continuously reduce capital costs and increase system reliability by investing in more reliable and resource-efficient technologies.



With deep expertise in the rail industry,
we understand the challenges you face every day.

Infrastructure

As an infrastructure owner, you must continuously invest in new, more reliable and resource-efficient technologies to reduce capital costs and increase system reliability. Eaton can help you invest wisely. Our solutions help build an intelligent infrastructure that is autonomously monitored in real-time and can be operated remotely, removing the need to send personnel to remote and oftentimes dangerous sites. Eaton solutions also enable greater energy efficiency and a reduction in your carbon footprint.

Rolling stock

Safety is a top concern for operators and train manufacturers. You must also find ways to effectively manage costs, while achieving economies of scale through platforming and standardization. With modular sub-systems and components, Eaton helps reduce maintenance, proactively identify service issues before they occur and enable upgrades during a vehicle's service life. Eaton also helps ensure that electrical components in new and refurbished stock are designed, built and maintained for high levels of energy efficiency, safety, reliability, passenger comfort and capacity.

Control and signaling

Better control and signaling management increases capacity of the lines and reduces line traffic, leading to profitability, increased safety and passenger satisfaction. Eaton solutions help you maintain the flexibility of the rail management system as well as enable increased reliability and resiliency, so that in the case of an incident, systems restart quickly and your passengers reach their destination safely.

Service

Operators are concerned about the effect of planning for maintenance and the costs related to ensure rail network availability. Reliability is essential so that fewer resources are required now and in the future. Eaton helps optimize rolling stock and infrastructure design, as well as enable proactive maintenance for easy upgrades and refurbishments in response to your changing needs. Additionally, we offer a range of support services, including project management and safety training as part of a holistic portfolio.



Enabling train builders,
infrastructure owners
and railway operators
to build a more
sustainable future.



Discover how Eaton can help solve your power management challenges.

Bringing your business a new dimension of expertise, customized innovative solutions and uninterrupted operations on the railways.

Eaton.com/Rail