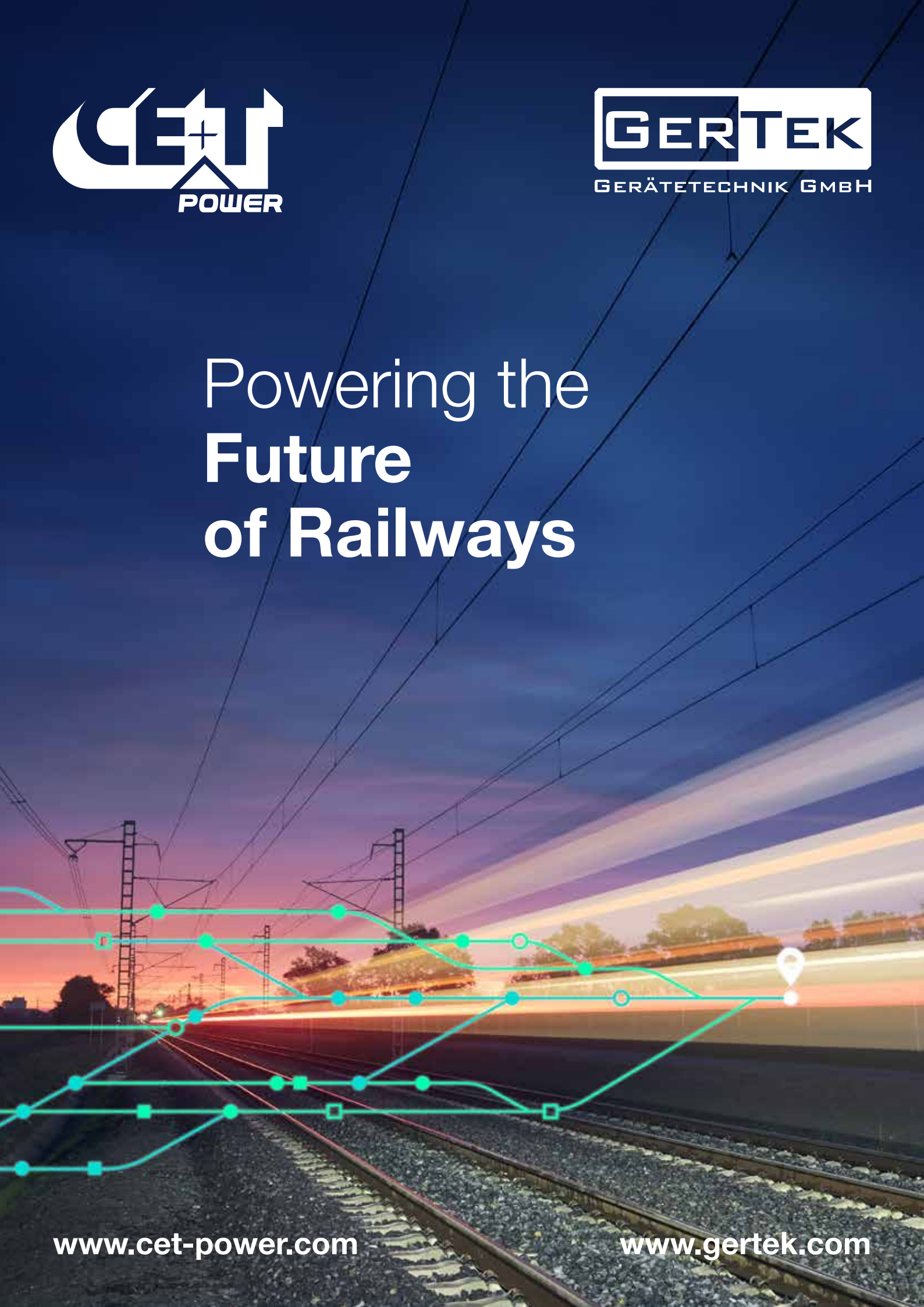
CE+T POWER

GERTEK
GERÄTETECHNIK GMBH

Powering the **Future of Railways**



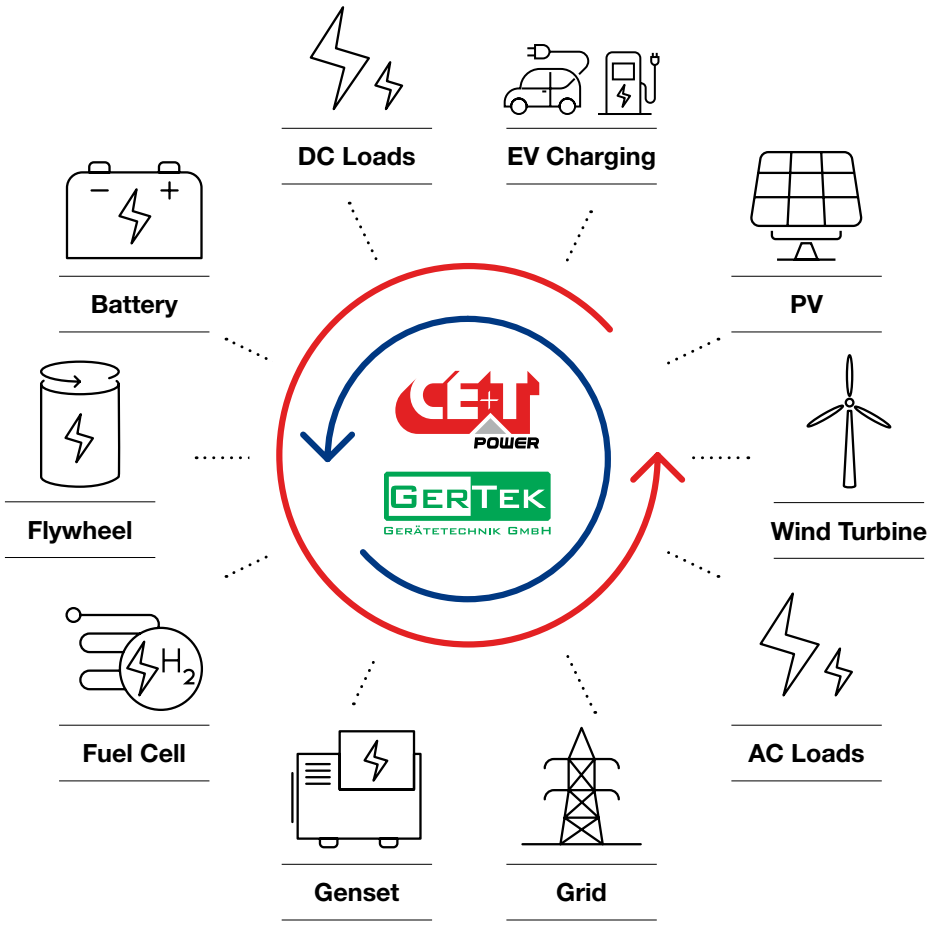
www.cet-power.com

www.gertek.com

Company profile

CE+T Power is a Belgian company with international footprints. Leader in power conversion solutions, we develop, manufacture and distribute products and systems worldwide. With our solutions, our customers can secure their critical applications and manage their energy flows efficiently with little efforts.

Gertek, member of the CE+T Power family, delivers compact and innovative power supply solutions, with over 20 years of expertise in the railway sector. Gertek offers a comprehensive 360° service and support: from understanding applications to technical feasibility checks, technical specifications, coordination and approval, production, delivery, and assembly, to maintenance and training.



1934
Established in 1934

10%
Of annual revenue reinvested in research and development

350+
Employees worldwide

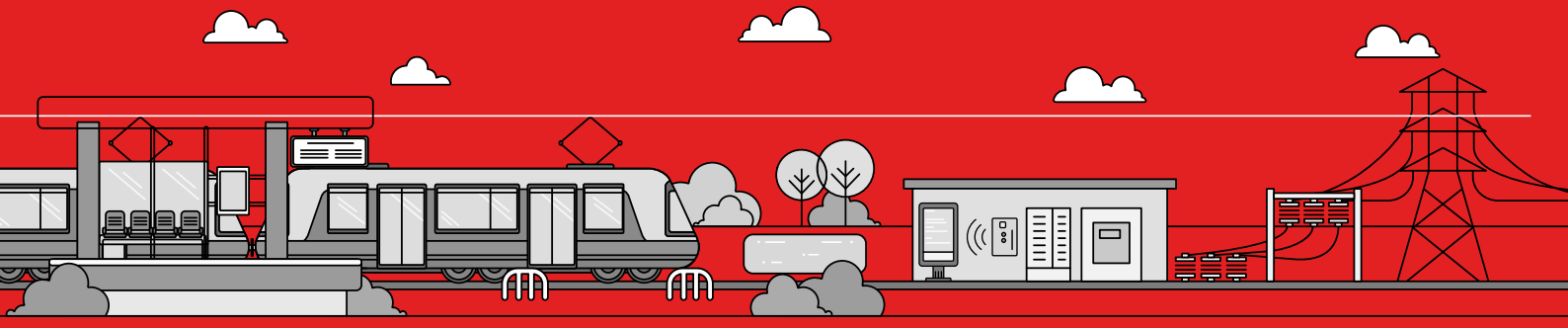
8
Factories

Europe
Headquartered in Europe, Active worldwide

Q1 supplier
Certified Q1 supplier by the Deutsche Bahn

Driving Efficiency, Reliability, and Future-Proofing in Rail Transport

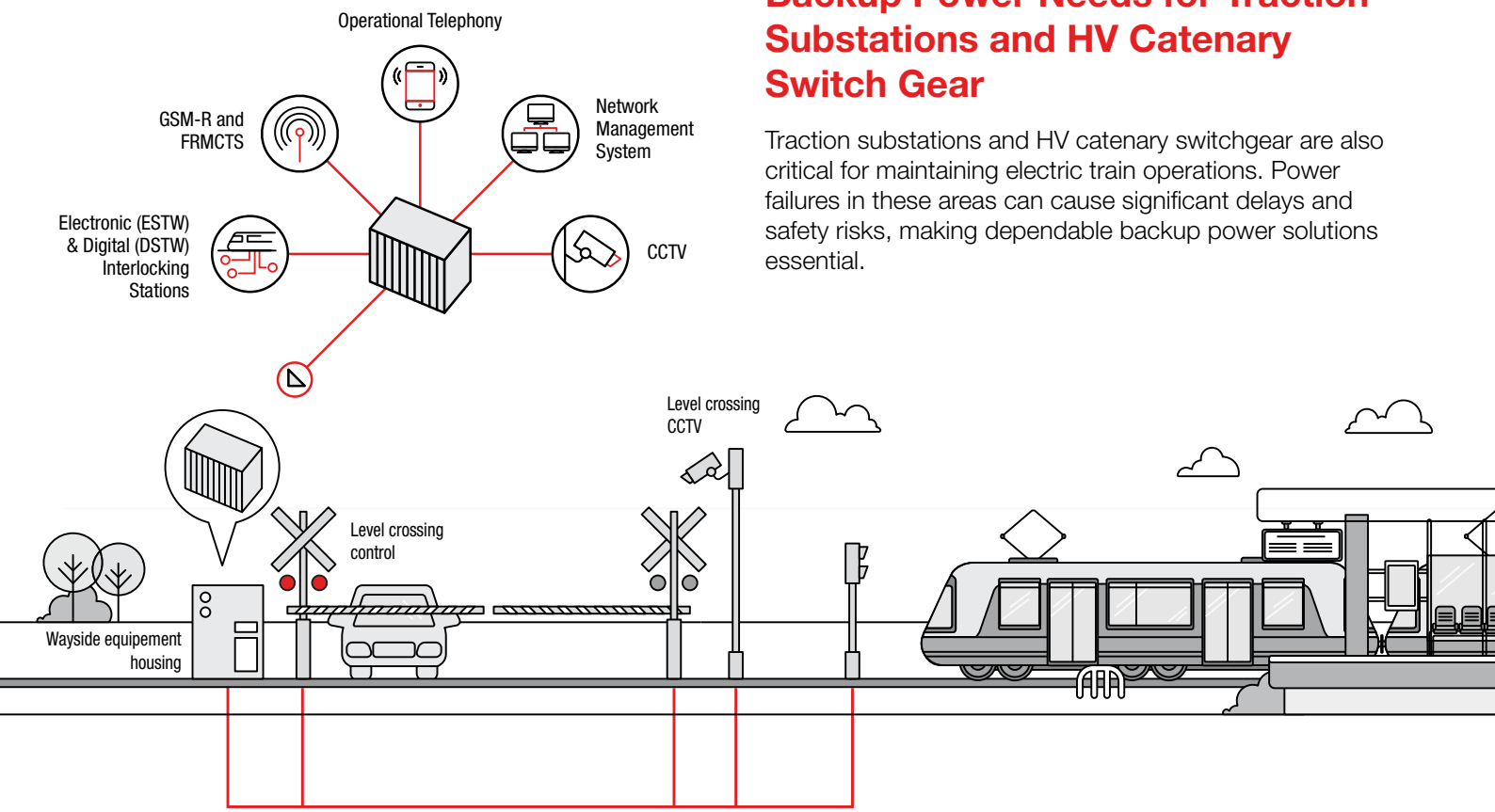
In an era where railways are becoming smarter, greener, and faster, CE+T Power stands at the forefront, offering cutting-edge power conversion solutions tailored to the railway sector. Our expertise ensures reliability, efficiency, and safety, helping railway operators navigate the complexities of modern transportation networks. From legacy systems to the latest digital innovations, we provide comprehensive solutions that enhance operational performance and sustainability. Our versatile, future-proof solutions, such as the Sierra multidirectional three ports converters, go beyond simple UPS systems, supporting both DC and AC loads in one single, adjustable product. This ensures your railway infrastructure is prepared for the demands of tomorrow.



Solutions for all levels of railways infrastructure

Backup Power Needs for Railway Communication Systems

Railway communication systems rely on various critical components that require reliable backup power to ensure uninterrupted operation. Key areas where CE+T equipment is commonly used include:



Backup Power Needs for Traction Substations and HV Catenary Switch Gear

Traction substations and HV catenary switchgear are also critical for maintaining electric train operations. Power failures in these areas can cause significant delays and safety risks, making dependable backup power solutions essential.

CE+T Power: Comprehensive Backup Solutions for Railway Infrastructure

CE+T Power offers robust and reliable backup power solutions designed to minimize downtime and ensure the seamless operation of both communication systems and traction infrastructure. Our solutions are compact, modular, and scalable, providing tailored support for the specific needs of railway operations. With fast recovery times, easy maintenance, and high efficiency, CE+T Power's systems ensure that your railway network remains resilient, efficient, and ready to meet the demands of modern transportation.

Key Benefits for Railways Sector

- → Safety & Reliability
- → Maximizing Uptime
- → Asset ROI Optimization
- → Sustainability
- → Certified Q1 supplier by the Deutsche Bahn

Our Solutions at a Glance

Power Conversion System

We offer a complete range of power solutions including inverters (DC to AC), UPS (securing AC loads with batteries) and multidirectional converters (inverter, rectifier and UPS all-in-one). Coupled with our state-of-the-art monitoring and control solution, you have a real energy blender to connect multiple sources of energy!

Monitoring & Control

Inview: local monitoring

With Inview, you can monitor and control your entire infrastructure. This solution collects data from multiple devices, power converters, batteries (via their BMS) and IoT sensors to create a single power management system (PMS) for customers.

Inview Mesh: multi-sites monitoring

Interconnect your sites to monitor, manage and control all devices of your infrastructure on a single platform. Inview Mesh collects, centralizes, process and structure data, alarms and events.

What's in it for you?

- → Expertise & Innovation
- → Customized Solutions
- → Comprehensive Support

Supporting Both Legacy and Modern Technologies

Railways often operate with a mix of legacy systems and new technologies. CE+T Power understands the importance of supporting both. Our solutions are backward compatible, ensuring interoperability with existing assets while providing a future-proof platform that can evolve with technological advancements. This dual support minimizes disruption during upgrades and maximizes the value of past investments.

Digital Transformation in Railways

The digitalization of the railway sector is revolutionizing how operators manage their networks. From automated maintenance operations to real-time data analytics, digital solutions are essential for modern railways. CE+T Power offers advanced digital integration capabilities, including:

- → Real-time Monitoring and Data Analytics
- → Centralized control and management of power systems
- → Seamless integration with both legacy and modern systems

Projects

1. Infrabel, Belgium

Scope: Swap of modules in 20 cabinets across 10 sites
Products: Sierra 10 48/230 + Inview S
Application: Power backup and module replacement for railway infrastructure.

2. Deutsche Bahn (DB), Germany

Scope: Supply critical AC loads after replacing diesel gensets with fuel cells and batteries
Products: Bravo 72kVA Inverter System
Application: Critical AC load support and renewable energy integration.

3. Australia

Scope: Trackside signaling power with dual voltage output
Products: Flexa in a cabinetized solution
Application: Powering trackside signaling systems with 120Vac and 230Vac, including separate battery compartments and AC distribution.

4. CFL, Luxembourg

Scope: Battery charging and backup systems for railway infrastructure
Products: Bravo 25 and third-party rectifiers
Application: Supporting various railway equipment with reliable power backup solutions.

5. Deutsche Bahn (DB), Germany

Scope: A/B power supply for critical loads within the BroaDBand project
Products: Sierra 25 Systems (3 units)
Application: Ensuring continuous power for critical loads in the BroaDBand project.

6. Deutsche Bahn (DB), Munich Station, Germany

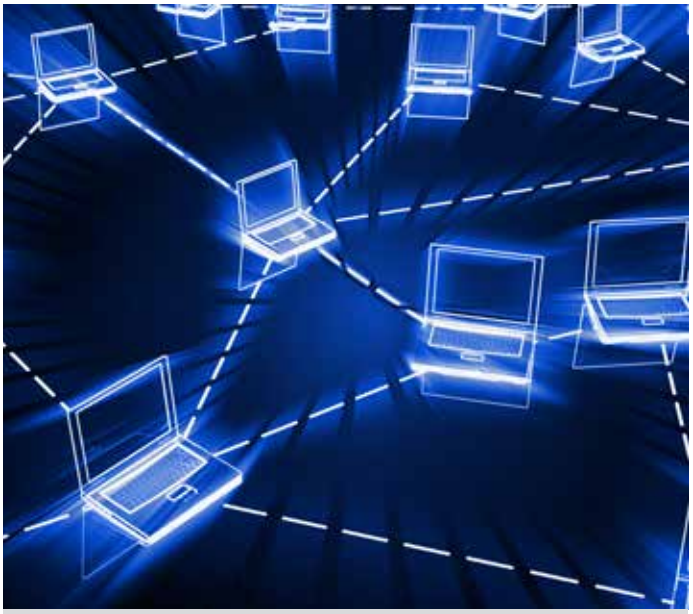
Scope: AC UPS implementation for station operations
Products: Flexa 200
Application: Providing reliable backup power at Munich station.

7. Belgian Railways (ESTW Network)

Scope: Providing backup power to the ESTW network
Products: Sierra 10 (5-11kW Systems)
Application: Ensuring resilient power backup across the digital interlocking (ESTW) network in Belgium.

8. Infrabel, Belgium

Scope: Backup power for the railway fiber optic network
Products: Sierra 10 UPS Systems + Polarium LiFePo Battery
Application: Ensuring continuous operation of the railway fiber optic network with advanced UPS and battery solutions.



9. Infrabel, Belgium

Scope: Network security enhancement
Products: Inview Controllers with DOT.1X Protocol
Application: Improved network security on CISCO systems within Infrabel's railway infrastructure.

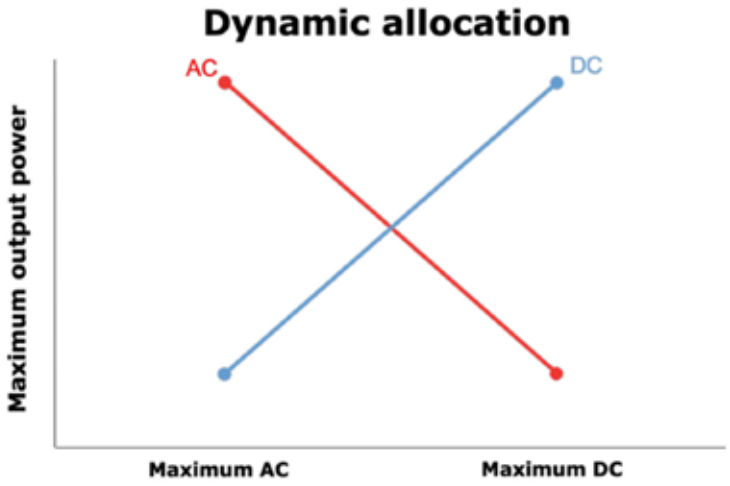
10. Digital Interlocking Systems (DSTW), Germany

Scope: High-voltage DC power conversion for digital interlocking
Products: Sierra 25 380VDC, Iris DC/DC Converter (48V/380VDC)
Application: Providing stable DC power conversion for digital interlocking systems in Germany.

Product ranges

Multidirectional Converters – Sierra

The Sierra range offers a future-proof solution that goes beyond traditional UPS systems. Designed to handle both DC and AC loads, Sierra converters offer unmatched flexibility with a single, adjustable product that meets a wide array of power needs.



Each Sierra converter is equipped with three bidirectional ports (two AC and one DC) making it ideal for integrating batteries, renewable energy sources, AC and DC loads, and more into your energy system. Additionally, Sierra converters are fully compatible with Iris DC/DC converters, enabling the creation of a complete, scalable power conversion system.

Benefits for Customers:

- → **Versatile:** Handles both DC and AC loads, replacing the need for multiple devices.
- → **Future-Proof:** Designed to adapt to changing energy requirements, ensuring long-term value.
- → **Efficiency:** Continuous operation during outages, ensuring reliability and resilience.
- → **Scalable:** A single product meets a broad range of power needs, reducing complexity and costs.

General product information

Scan the QR code for complete technical datasheets

Sierra 25 - 48/230-277

AC In :	230, 240 & 277 Vac
DC In :	48 Vdc
AC Out :	230, 240 & 277 Vac
DC Out :	48 Vdc
Power :	2.7 kW
Up to :	2 MW

Sierra 25 – 380/230-277

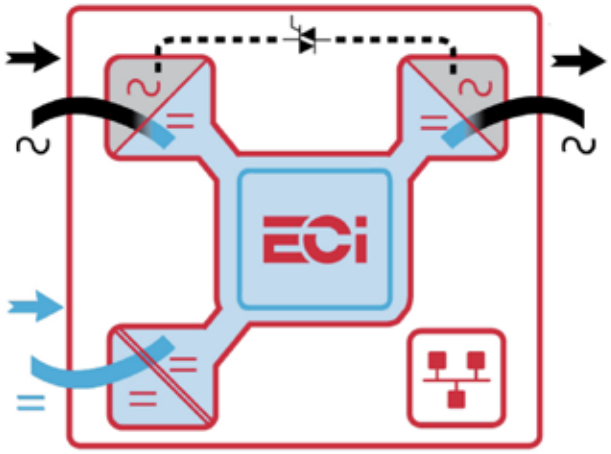
AC In :	230, 240 & 277 Vac
DC In :	380 Vdc
AC Out :	230, 240 & 277 Vac
DC Out :	380 Vdc
Power :	2.7 kW
Up to :	2 MW

Sierra 10 - 48/230-277

AC In :	230 Vac
DC In :	48 Vdc
AC Out :	230 Vac
DC Out :	48 Vdc
Power :	1.2 kW
Up to :	38 kW

Modular Inverters – Bravo

The Bravo series of modular inverters is engineered to ensure secure and reliable supply of AC loads within DC infrastructures. With CE+T's patented EPC (Enhanced Power Conversion) technology, Bravo inverters provide an additional AC input that directly supplies loads from the grid, offering up to 96% conversion efficiency. This advanced technology reduces energy losses by more than 60% compared to traditional solutions, making Bravo inverters a cost-effective and energy-efficient solution for railway operations.



Benefits for Customers:

- **Uninterrupted Power:** 0 ms transfer time between AC and DC inputs ensures no disruption to critical railway systems.
- **High Reliability:** Built-in Static Transfer Switch (STS) function eliminates single points of failure, enhancing system resilience. Works on the principle of double conversion.
- **Scalable Solutions:** Modular design allows for incremental power additions.
- **Easy Maintenance:** Hot-swappable modules enable quick replacements without interrupting operations, ensuring minimal downtime.

General product information

Scan the QR code for complete technical datasheets

Bravo 10 - 48/230

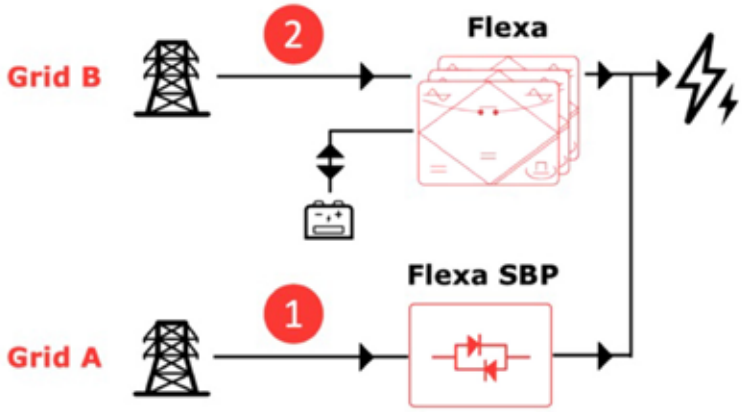
AC In :	230 Vac
DC In :	48 Vdc
AC Out :	230 Vac
Power :	1.25 kVA
Up to :	40 kVA

Bravo 25 - 48/230

AC In :	230, 240 & 277 Vac
DC In :	48 Vdc
AC Out :	230, 240 & 277 Vac
Power :	3 kVA
Up to :	1.35 MVA

Modular UPS – Flexa

Flexa series modular UPS systems are engineered for reliability and flexibility, offering efficient power backup solutions tailored to specific customer needs. The Smart By-Pass (SBP) technology ensures up to 98% conversion efficiency, making Flexa ideal for critical applications. Flexa UPS systems provide robust performance with flexible configuration options.



Benefits for Customers:

- **High conversion efficiency** with Smart By-Pass technology
- **Modular design** for easy scalability and maintenance
- **No master/slave configuration**, ensuring maximum reliability
- Suitable for both **small and large systems**

General product information

Scan the QR code for complete technical datasheets

Flexa 200 - 400/400

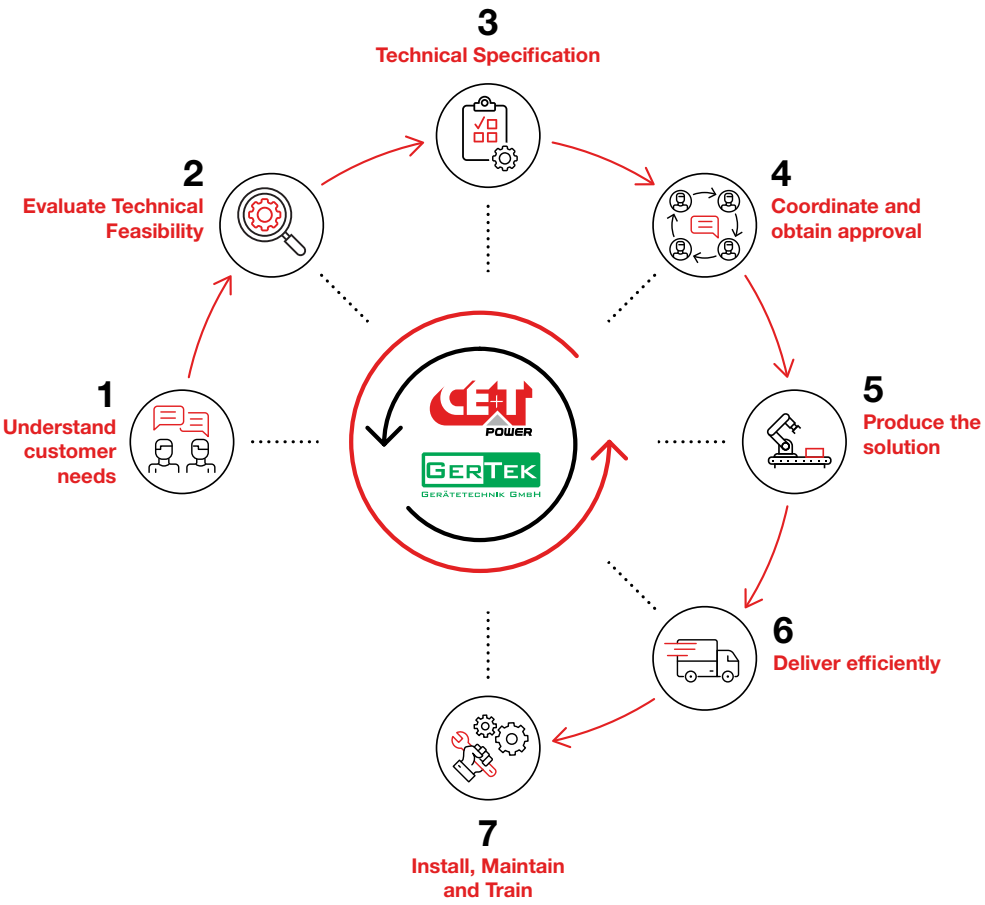
AC In :	400 Vac
DC :	408 Vdc
AC Out :	400 Vac
Power :	20 kW
Up to :	640 kW

Flexa 200 - 400/230

AC In :	400 Vac
DC :	408 Vdc
AC Out :	230 Vac
Power :	20 kW
Up to :	100 kW

Rectifier Cabinets Gertek

Gertek's rectifier cabinets are designed for high reliability and efficiency, making them ideal for critical applications in the railway sector. These cabinets are built to ensure consistent power delivery, even in the most demanding environments, and can be tailored to meet specific power requirements.



Key Benefits for Customers:

- **Scalable Power Solutions:** power needs can be adapted to the application and customization is always possible
- **Enhanced Reliability:** ensuring consistent and stable power delivery, crucial for critical operations that demand uninterrupted energy.
- **High Efficiency and Low Maintenance:** built with durability in mind, requiring minimal maintenance and providing long-term reliability.

General product information

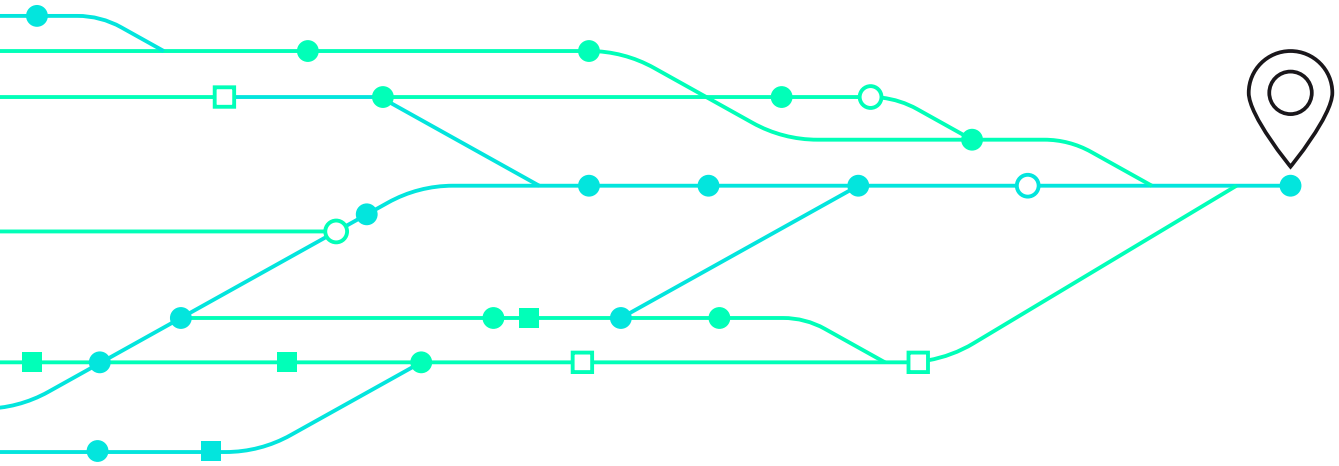
Scan the QR code for complete technical datasheets

PSR 12K-48V-250A-450Ah

AC :	230 Vac
DC :	48 Vdc
Power :	2 kW
Up to :	12 kW

PSR 6k-48V – 125 A – 450 Ah

AC :	230 Vac
DC :	48 Vdc
Power :	2 kW
Up to :	6 kW



Contact us

Let’s keep in touch !

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