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**VEROTEC**  
Electronic Enclosures

A MEMBER OF **POLYRACK**  
TECH GROUP



# AUTOMOTIVE & TRANSPORTATION

TRAFFIC-CONTROL, TRANSIT, ELECTRIC MOBILITY, ON-TRACK, TRACK-SIDE,  
PLATFORM, OFF-SIDE

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Products and solutions for the automotive industry, the road and rail transport as well as solutions in the area of transportation and mobility.

**Economic solutions for complex tasks in the automotive and railway industry.**

PRECISION QUALITY  
DESIGN ENGINEERING  
CONCEPTION DESIGN  
DESIGN ASSEMBLY  
ENGINEERING TECH  
TECHNOLOGIES KI  
KNOW-HOW ELECT  
ELECTRONICS ASS  
ASSEMBLY PRECIS  
PRECISION QUALITY  
QUALITY LOGISTIC  
IN LOGISTICS CONCE  
ELECTRONICS **R**  
SION QUALITY LOGIS

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## AUTOMOTIVE

Economic solutions for plastic and sheet metal parts in the automotive sector

The automotive industry is currently one of the most innovative industries. The global market expects a large variety of models that meet the most modern and up-to-date requirements in terms of technology and design. It is therefore all the more important for vehicle manufacturers to have partners at their side who support these processes with clever solutions.

POLYRACK offers economical solutions for complex tasks in the automotive sector - from high-precision connector housings up to monitor covers and much more.

Customer-specific POLYRACK product applications are typically used in the fields of navigation, communication, reception and distribution technology,

infotainment and measurement technology. In series production, the quantities of the products can vary from several hundred to millions. From our mechanical engineering department, we also offer services that are perfectly adapted to economical series production, such as devices and systems for separating sprues or complete injection molding automation.



**THERMOPLASTIC COMMUNICATIONS UNIT**  
including threaded inserts and connector labeling

## PLASTIC AND SHEET METAL PARTS



### CONNECTOR HOUSING

for high-speed data transmission

© Rosenberger Hochfrequenztechnik GmbH & Co. KG



### HIGH-SPEED DATA ACQUISITION PLATFORM

Customized solution



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## AUTOMOTIVE

Priority for quality and innovative technologies - we supply the automotive industry with individual parts and assemblies made of various materials

### SERVICES

- Electronic and mechanical components and assemblies
- Sheet metal processing
- Individual plastic parts
- Injection-molded plastic parts, insert-molding
- Plastic parts as assemblies and/or product refinement
- Component refinement by screen printing, pad printing and/or laser marking and powder coating
- Ultrasonic welding

### PORTFOLIO

- Infotainment
- Electromobility: connector housings, case applications for charging columns and charging stations
- Motor covers
- Fan housing
- Data logger / measurement technology

## INDIVIDUAL PARTS AND ASSEMBLIES



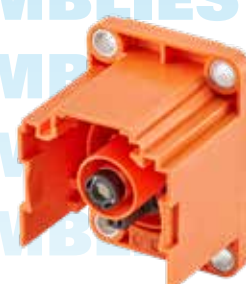
**HOUSING ENCLOSURE**

Multi-component part with threaded inserts



**SYSTEM FOR TEST BENCHES,**

moving measurement technology,  
Data logger

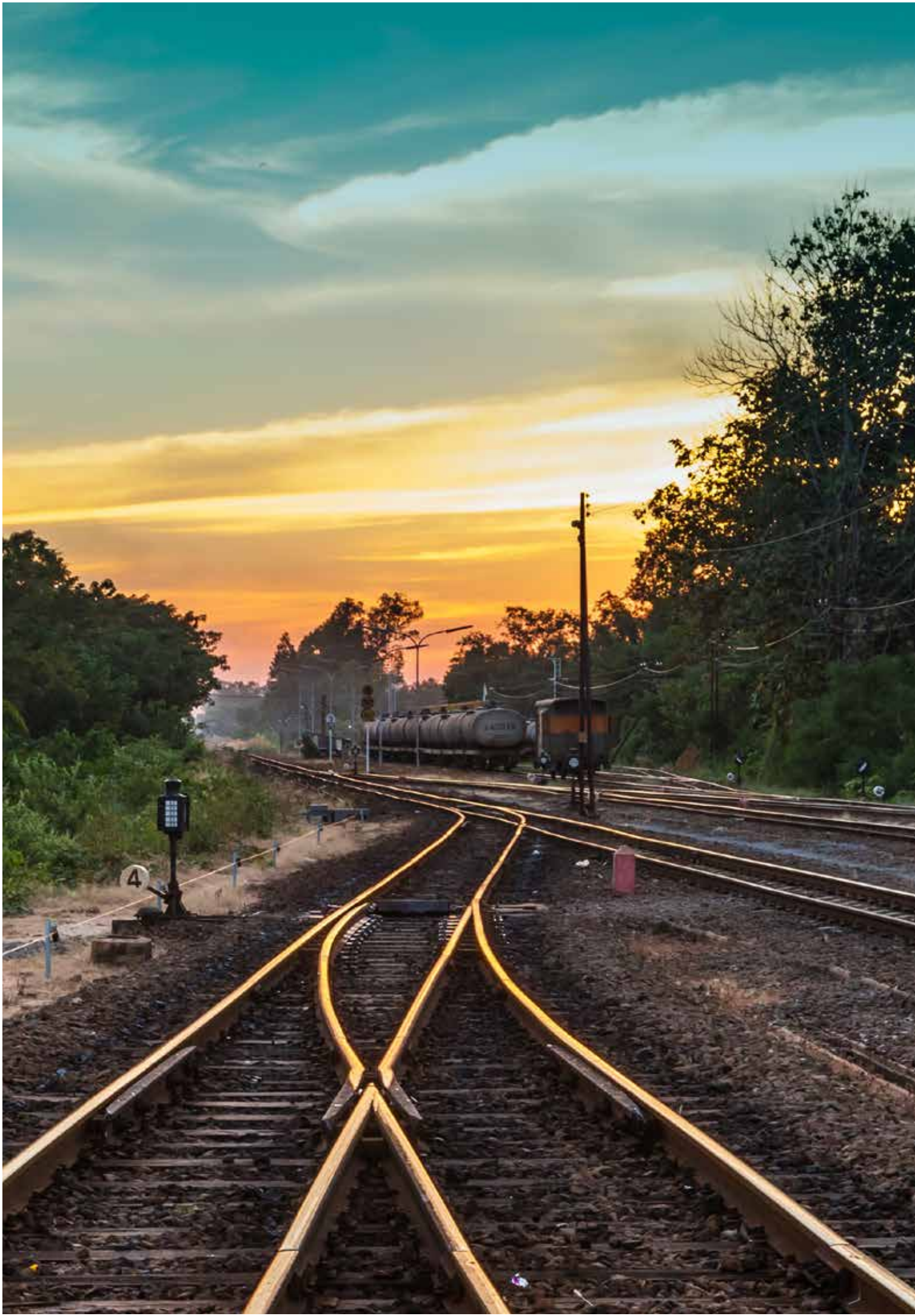


**HIGH-VOLTAGE CONNECTOR HOUSING**

for typical applications such as the charging of batteries in electric traction vehicles  
© Rosenberger Hochfrequenztechnik GmbH & Co. KG







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## ON-TRACK

POLYRACK is active on the rails. Products and solutions can be found in trains and passenger coaches worldwide and are constant companions.

High demands are placed on rail vehicles. In addition to the features safety, comfort, control and function, the main focus is on a long service life. Important aspects in the interaction of all integrated Products on the rail for a reliable journey. The networking is progressing steadily in all areas, for the greatest possible access to comfort and benefit for all parties involved. Innovative strength and the experience in the rough environment of Railway technology with shock and vibration are our drive. Reliable solutions for the interior and exterior of Railway vehicles are our ambition.

### PASSENGER INFORMATION SYSTEM

Visualization of information and instant recognition increase the comfort factor.

### REMOTE I/O

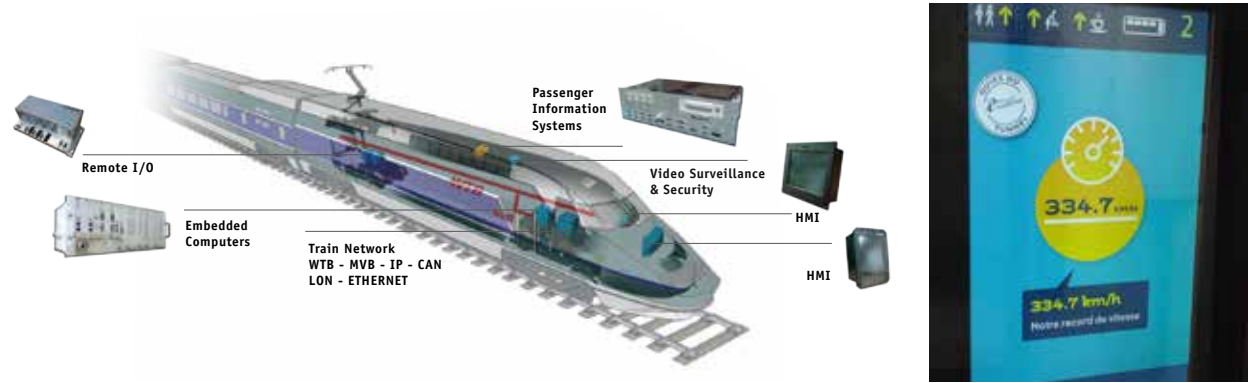
Transmission and processing of data are indispensable requirements in the movement of every train. A safe journey is guaranteed by the recording of a wide range of parameters.

### ONBOARD REPEATER EQUIPMENT (CSR, TE-TRA, GSM-R, GSM 900 / GSM 1800 / UMTS)

Communication with the outside world determines our present. Accessibility and use of various electronic media is of great importance.

### TRAIN NETWORK WTB - MVB - IP - CAN - LON - ETHERNET

The connection in the train meets different fieldbus connections and protocols and is responsible for processing within the data network.



PASSENGER INFORMATION SYSTEM



## TRACK-SIDE

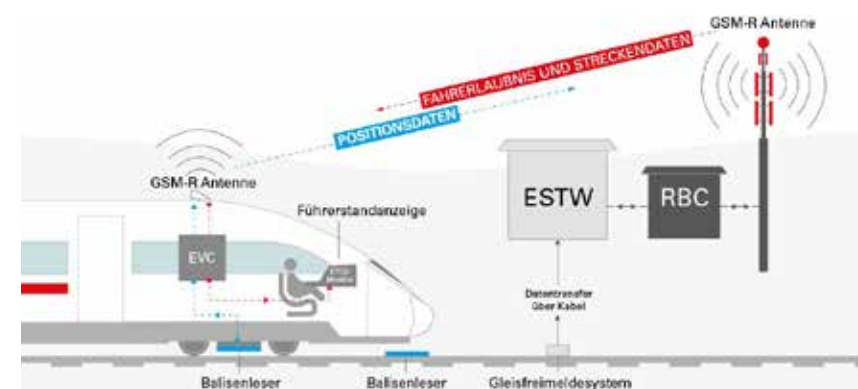
POLYRACK is active on track-side. Special attention is paid to the constantly growing control and safety in rail transport.

For rail transport, mobility has a high meaning. Efficient forms of mobility must meet high technical requirements.

The technological connection around the railway technology in the interaction of all systems beyond the European borders gets visionary characteristics. A standardized platform for consistent communication is essential for unrestricted travel. Safety in ever-closer intervals is taking on a new significance. We accompany the constant change in direct contact with the users with innovative developments as an answer for an intelligent rail network.

### ERTMS / ETCS

System for the management and control of railway traffic with the aim of creating a unified and standardised train control system in Europe. The ERTMS (European Railway Traffic Management System) consists of the train control system ETCS (European Train Control System) and the GSM-R mobile radio system. The ETCS train control system is a fundamental component of the European rail traffic management system ERTMS and prevents a train from entering too fast or entering a busy / occupied track section.



ETCS

### MINI LEU

The Trainguard MiniLEU (Line Equipment Unit) is designed for existing systems with ETCS for retrofitting in a fast, cost-effective and environmentally friendly way. The MiniLEU is used for communication with track-bound vehicles and the connected centres in addition to the track line.

### TUNNEL REPEATER

The repeater provides coverage of passenger areas in carriages by amplifying signals received from outside the train. This ensures continuous and seamless communication within the train.



MINI LEU







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## PLATFORM

POLYRACK can be found in and around train stations in many different ways. Our solutions are present in very different applications.

Stations, platforms and stops are at the heart of the lifelines of rail transport. User-friendly facilities show the way and facilitate orientation in an ever more closely timed sequence. Simple operation and visual exchange are decisive requirements and common practice for the user. Flexibility in the surface design and background of the displays a must for the supplier. Design and assembly are accompanying factors in close coordination with the manufacturer.

### TICKET VENDING MACHINE / HANDHELD

Vending machines, operating and control terminals can be found everywhere. High robustness against vandalism combined with user-friendliness are just some of the features. Due to the ever-increasing benefits in exchange with mobile phones, terminals are increasingly contributing to our comfort. This also includes electronic reading and checking devices for ticket control in local public transport.

### PANEL PC / HMI / LED DISPLAY

Advertisements not only serve the purpose of advertising, but often facilitate orientation or point the way. The actuality of the advertisement is guaranteed by the networked control. The constant exchange of information and communication with people requires appropriate equipment and Interfaces. Displays in various forms and technologies provide relevant information and are important indicators in our environment.

### PASSENGER ANNOUNCEMENT / INFORMATION SYSTEM

Besides visual orientation, voice announcements are an important component and omnipresent travel companion.

## PLATFORM / APPLICATION

PLATFORM / APPLICATION  
PLATFORM / APPLICATION  
PLATFORM / APPLICATION



READER AND TEST DEVICE



HMI



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## OFF-SIDE

POLYRACK serves further requirements in the field of transportation. Solutions in the field of mobility, safety and comfort complete our range of products.

The transport sector is not exclusively defined by the railways. Upstream and downstream, as well as in the direct environment of railway applications, solutions must be found. The innovations and developments do not stop at the railways, but are being sensibly expanded in many ways. The results are products that have a direct or indirect influence on safe and comfortable transportation.

### VIDEO SURVEILLANCE & SECURITY / TRAFICAM

Monitoring for safety is the main focus. Today, the technology goes far beyond the platform. Crowds of people have to be controlled in the same way as the actual railway operation. The monitoring and control of road junctions promotes the flow of traffic and has a steering effect on efficient movement. Product solutions made of plastic, aluminium cast or a mix of materials offer high flexibility for the respective application.

### RUGGED AIR-COOLED VME SYSTEM

The lightweight housing is designed for high performance applications in industrial environments with harsh environmental conditions. The case is very versatile and individually adaptable to the requirements, both mechanically and by integrating electronic components with a wide range of input and output interfaces.

### BUS NETWORK

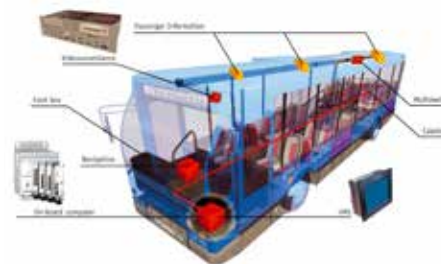
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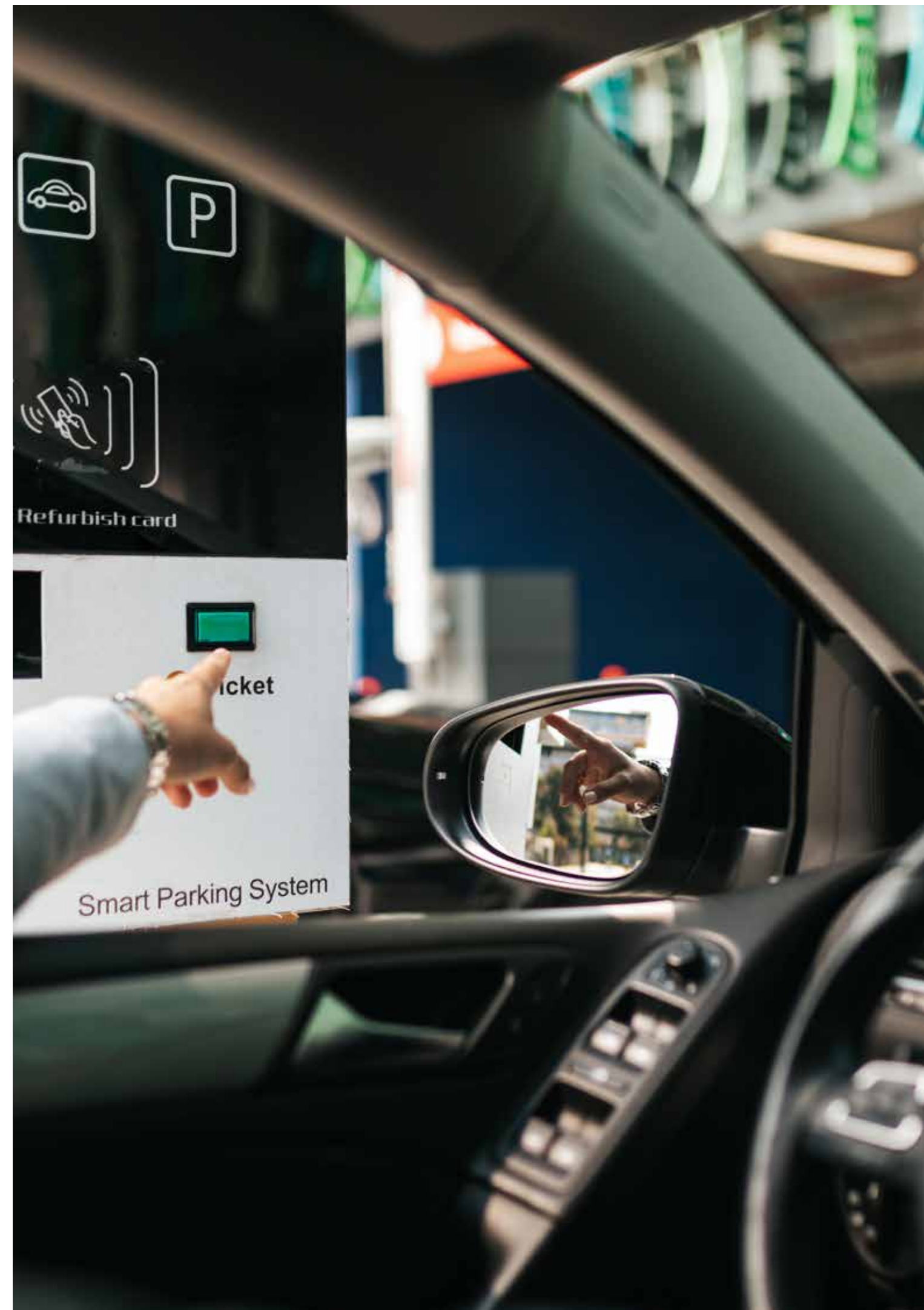
VIDEO SURVEILLANCE



RUGGED AIR COOLED  
VME SYSTEM



BUS NETWORK





#### 19" SUBRACK FERRORAIL

Standard, 3 U and 6 U with card guides/backplane

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## PRODUCT HIGHLIGHTS

Continuous development is our goal, the realization dictates the way, the demand proofs of our vision.

### RAILWAY-SUITABLE SUBRACKS

The subracks are based on the Future series and reach their final configuration level in the FerroRAIL series.

- For French Railway applications SNCF: NF EN 61373, NF F 67-012, NF F 60-002, NF F 61-005, NF F 16-101/102 class F1, I2
- For applications of Deutsche Bahn: LES-DB compliant
- Tested EN 50155 (3-30 kg)
- Tested EN 60068-2-6:2008, EN 60086-2-27:2009

### FRONT PANELS

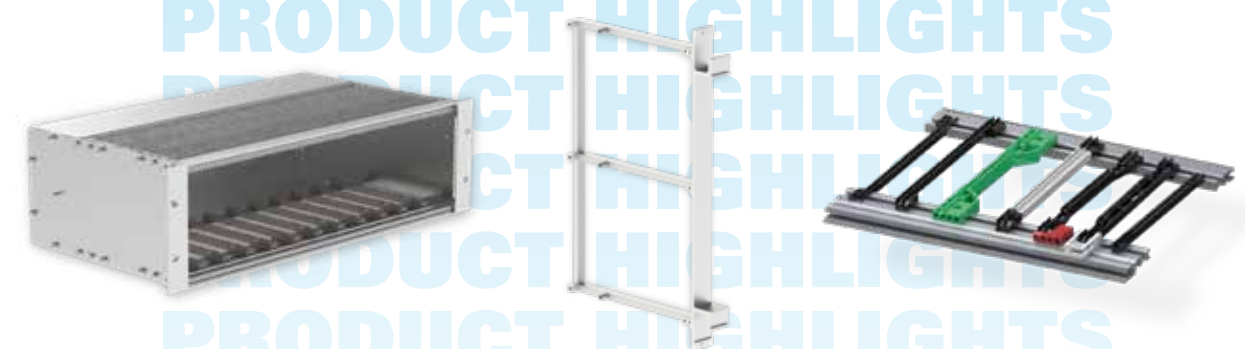
POLYRACK offers an extruded front panel for the use in railway applications with high mechanical stress developed in cooperation with our customers. The extruded front panel carries an integrated handle and direct connections for the card assembly. In addition, there is a reinforcement frame available

in combination with the extruded front panel. Reinforcement frames in the heights of 3 U and 6 U are offered, as well as different depths configurations depending on the type of plug connection.

### CARD GUIDES

POLYRACK achieved a classification result of the card guide according to requirement set R24 for hazard level HL3, which is the highest classification according to the hazard level table. With the classification DIN EN 45545-2, POLYRACK guarantees its customers safe and high-quality card guides for rail vehicles.

## PRODUCT HIGHLIGHTS



SUBRACK SERIES FUTURE

FRONT PANEL  
PROFILE

CARD GUIDES



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## TECHNOLOGY HIGHLIGHTS

Design and development, material combination, optimized process definition, application-oriented finish.

### RESEARCH & DEVELOPMENT

The fundamental experience in dealing with the most diverse requirements for a product is the basis for developments on Design to Spec Fabrication or Design to Cost (DTC). The integral business philosophy and our own aspiration justify the disposable know-how in harmony of the scope on different levels: development, mechanics, electronics, materials, integration, elegance. In all phases accompanied by simulation programs, measurement and test facilities, infrastructure and the experts.

### MATERIALS

During the development of your product, the different material properties are taken into account in the decision-making process. Often a combination of different materials is the challenge in the product development process - our team of experienced developers is always available to help you find the perfect material combination for your product or application.

### TECHNOLOGIES

Our service portfolio is based on a broad vertical range of manufacturing capabilities. Modern facilities and machines support the balancing act from idea to reality. Challenges are accepted just like exploring boundaries.

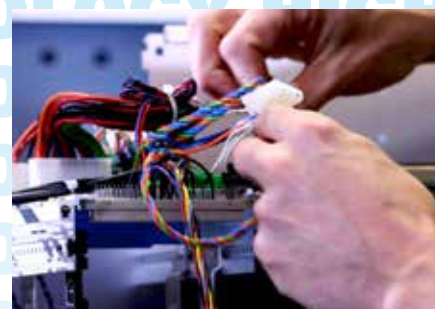
### PROCESSES

Every product development is subject to its own guidelines. The merging of requirements and desires determine the function and appearance of the final solution. Processes that are constantly adapted to the situation are constant companions from the first step. The aesthetics and perception of the product in the anticipated application is of accompanying importance right from start.

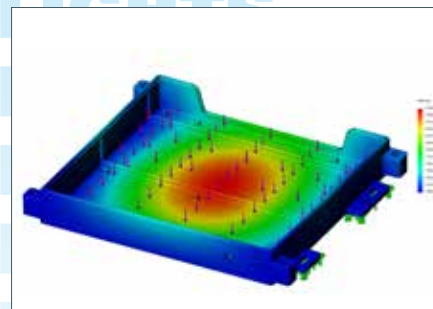
## TECHNOLOGY HIGHLIGHTS



**MACHINERY, E.G. PUNCHING /  
LASER TECHNOLOGY**



**ESD-COMPLIANT  
END PRODUCTS**



**SOLIDWORKS STRENGTH TEST**



### CUSTOMER-SPECIFIC SOLUTIONS

Product application from the comprehensive service and product range of POLYRACK








Corporate Identity Design - the POLYRACK TECH-GROUP is the right contact for the design and implementation of your product image.

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## CROSS TECHNOLOGICAL SYSTEMS PARTNER

Due to the technology crossing company concept POLYRACK distinguishes itself from the market and combines all different fields that are shown below.

 <b>PROCESS DEVELOPMENT</b>  <b>Plastic solutions</b> Tool construction, injection molding	 <b>PRODUCT- &amp; SYSTEMS DEVELOPMENT</b>  <b>Mechanical production</b> Welding, laser robot, CNC punching, milling, etc.	 <b>TECHNOLOGY &amp; MATERIAL CONSULTING</b>  <b>Extrusion solutions, cast</b> Aluminum-, zinc-, magnesium casting
<b>Electronics</b>	<ul style="list-style-type: none"><li>• Development and layout of circuit boards</li><li>• Interface connection test for backplanes</li></ul>	<ul style="list-style-type: none"><li>• Partially and fully assembled systems</li><li>• Cable assembly</li></ul>
<b>Surface Treatment</b>	<ul style="list-style-type: none"><li>• Wet painting</li><li>• Powder coating</li></ul>	<ul style="list-style-type: none"><li>• Silk screen, pad printing, HD printing</li><li>• Electroplating</li></ul>
<b>Mounting and Assembly</b>	<ul style="list-style-type: none"><li>• ESD-compliant assembly</li><li>• Function and final testing</li></ul>	<ul style="list-style-type: none"><li>• Quality control</li><li>• Software installation and testing</li></ul>
<b>Logistics</b>	<ul style="list-style-type: none"><li>• Packaging concepts</li><li>• Global inventory support</li><li>• Individual logistic concepts</li></ul>	



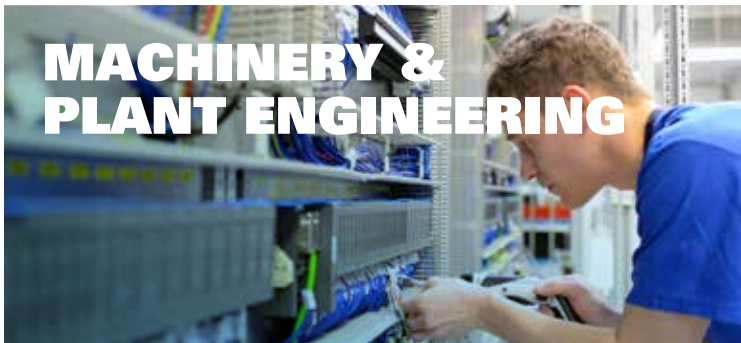
**With our wide range of products we can always offer our customers the optimal solution across technologies.**

**Andreas Rapp**





**AUTOMOTIVE**



**MACHINERY &  
PLANT ENGINEERING**



**TELECOMMUNICATION**



**AEROSPACE &  
DEFENSE**



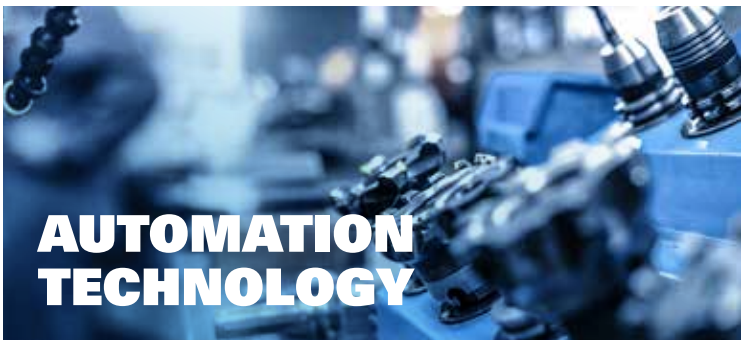
**MEDICAL TECHNOLOGY**



**TRANSPORTATION**



**ENERGY TECHNOLOGY**



**AUTOMATION  
TECHNOLOGY**



**MULTIMEDIA  
& BROADCAST**



**MEASUREMENT  
& CONTROL**

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## MARKETS & INDUSTRIES

Industries at a glance: The more diverse the challenges become, the more individual our solutions are.

Take advantage from our know-how of more than 45 years.

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## POLYRACK TECH-GROUP

Our group of companies – POLYRACK Electronic Aufbausysteme GmbH, RAPP Kunststofftechnik GmbH, POLYRACK Aerospace GmbH, Metalle in Form Geräteteile GmbH, as well as their subsidiaries abroad - offers an innovative and comprehensive range of products that are manufactured in high quality and with the economical benefits of series production.

Our focus is particularly dedicated to the development and manufacturing of customer-specific products and solutions. Extensive consultancy in the conception stage, right at the start targeted and reliable development, production and assembly combined with on-time delivery are characteristic of our service offering.



PLANT 2, STRAUBENHARDT,  
GERMANY



PLANT 1,  
STRAUBENHARDT,  
GERMANY



POLYRACK  
NORTH AMERICA CORP.,  
USA



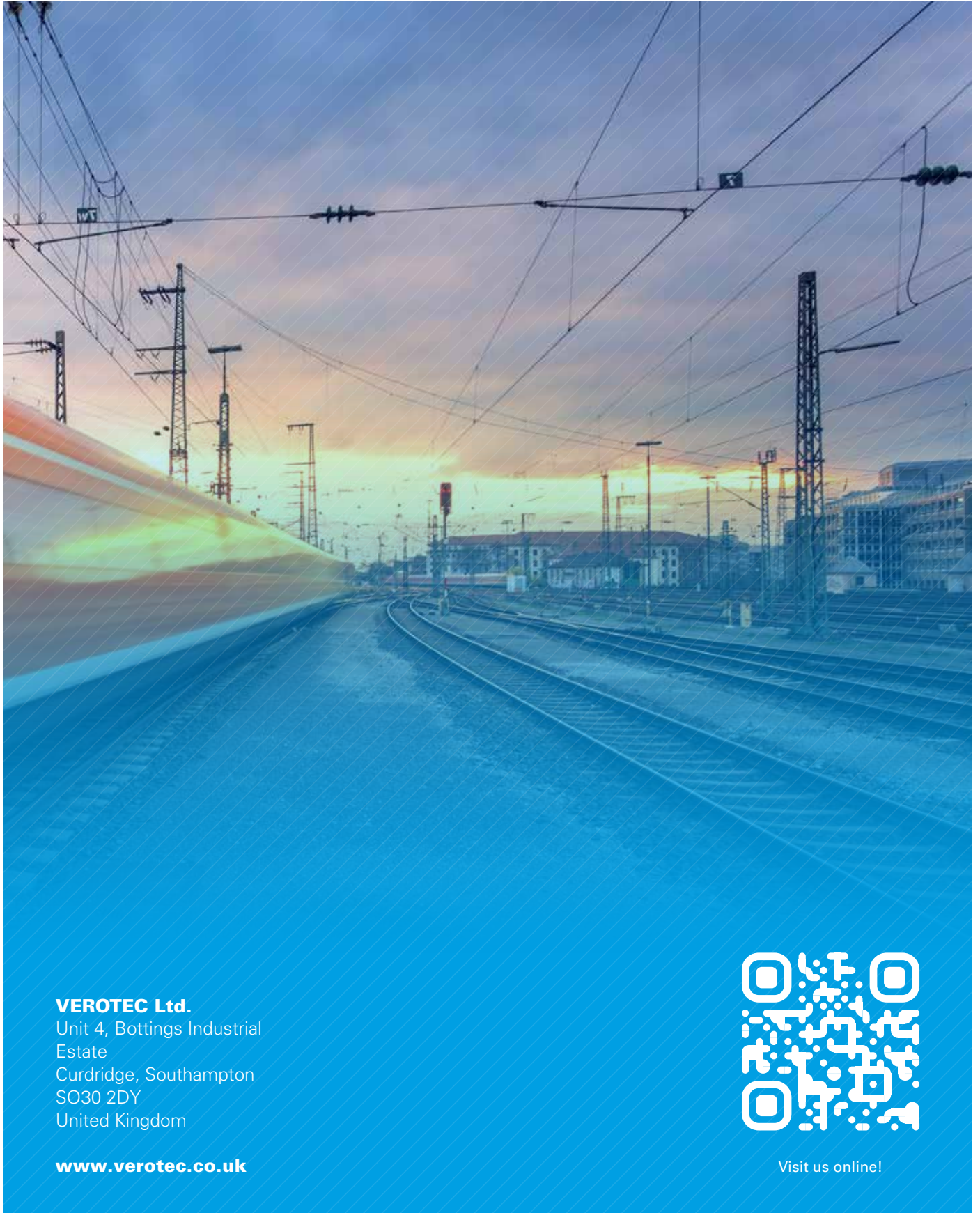
Effective: 01.01.2025



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Electronic Enclosures

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