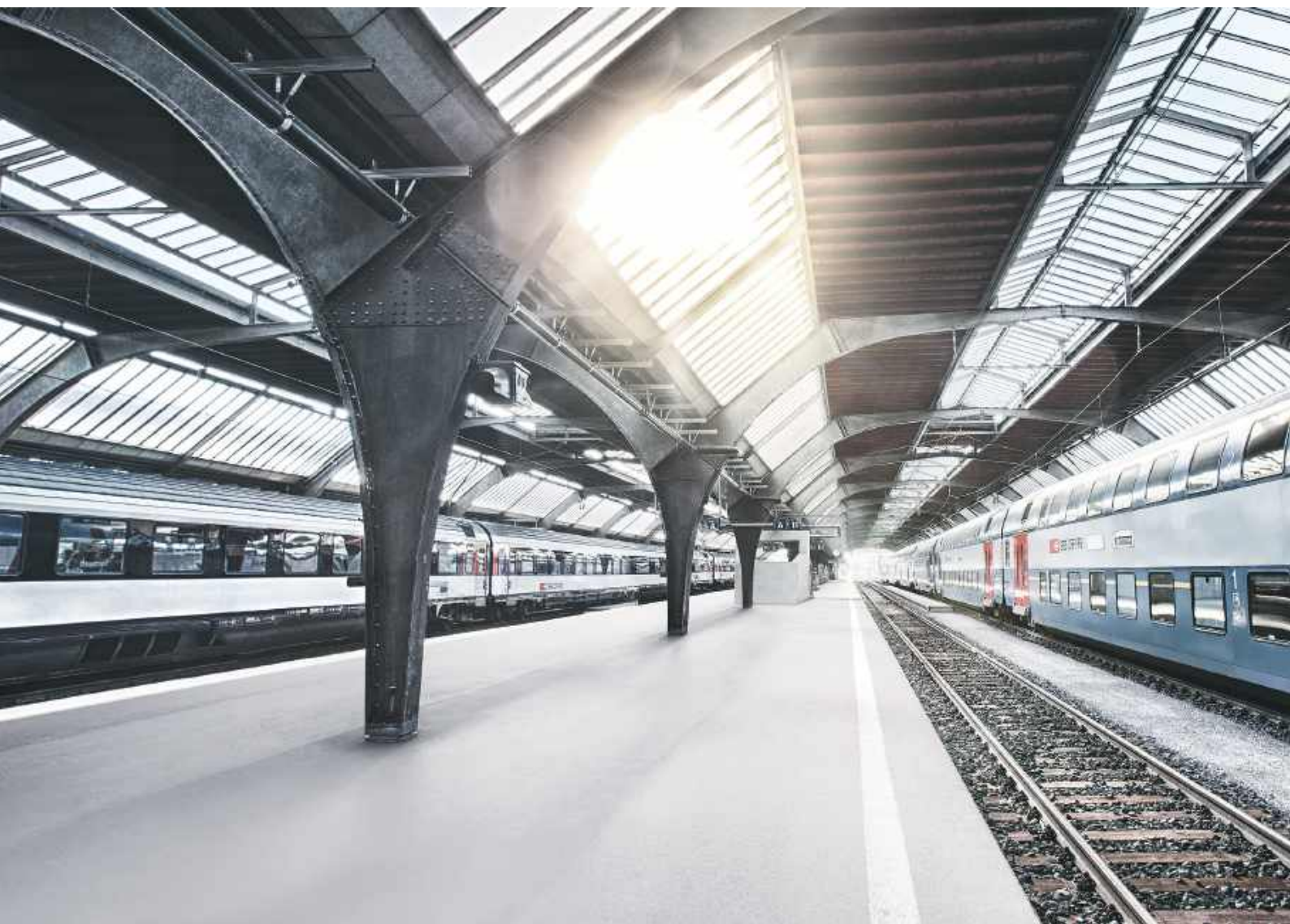


# EAO Railway

*Punctual. Intuitive and reliable.*

[www.eao.com](http://www.eao.com)





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We are always on the move and bridging distances. Both in day-to-day life and to discover new things. Since 1947, EAO Railway has been providing the safety and trust this requires.

“My day-to-day life. My world.”  
*EAO creates possibilities.*



Our products and solutions are as intuitive and reliable as expected within the transportation industry.

EAO develops and produces high-quality HMI Components and Systems for the public and private transport sectors.

Whether it's a driver's cab, passenger door or any other application, we bring innovation, the highest quality standards, and engineering expertise to every project, and deliver ergonomic, safe and environmentally-friendly solutions.

Vehicle manufacturers and public transport companies around the world benefit from the superior design, reliability, quality and durability of our HMI Components and Systems used in trains, trams, metros and buses. EAO customers appreciate the comprehensive choice of standard products and the consistent global availability.

When it comes to intuitive and reliable HMI Components and Systems for the transport industry, EAO has been a market leader for decades. EAO offers customers vital added value in the planning, developing and manufacturing of both simple and complex HMI Components and Systems. With their intuitive markings, superb tactile feedback and functional LED illumination, the EAO Series 56 and 57 illuminated door opening pushbuttons are the industry standard and used by the world's leading transport companies.

EAO can adapt the products' features for the intended application, so that technology and user are in perfect harmony. This results in high quality, intuitive, user-friendly interfaces.

**The Human Touch®**

It is moments that matter. Behind each interaction lies a need, a story, an objective, a wish, and a goal. These are just as diverse as the requirements for the operation of machines. It is only our complete understanding of the requirements, the environmental demands, and the technical functionality of machines that allows us to develop innovative, intuitive, reliable, and safe products and systems.

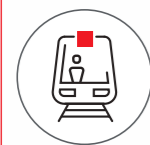
**EAO – Your Expert Partner for Human Machine Interfaces**

# Intuitive and reliable. *Under all conditions.*

Regardless of the conditions to which our HMI Components and Systems are exposed in public transportation, the focus of our products and solutions is always on intuitive operation, a long service life and reliability in use. Our innovation, quality and unique products represent our contribution to safe, environmentally friendly mobility.

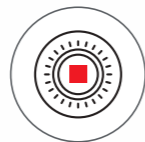
### Driver's cab

HMI Components and Solutions for driver's cabs.



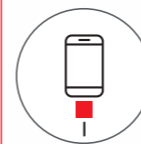
### Passenger access system

Intuitive switch actuators and indicators for passenger access systems.



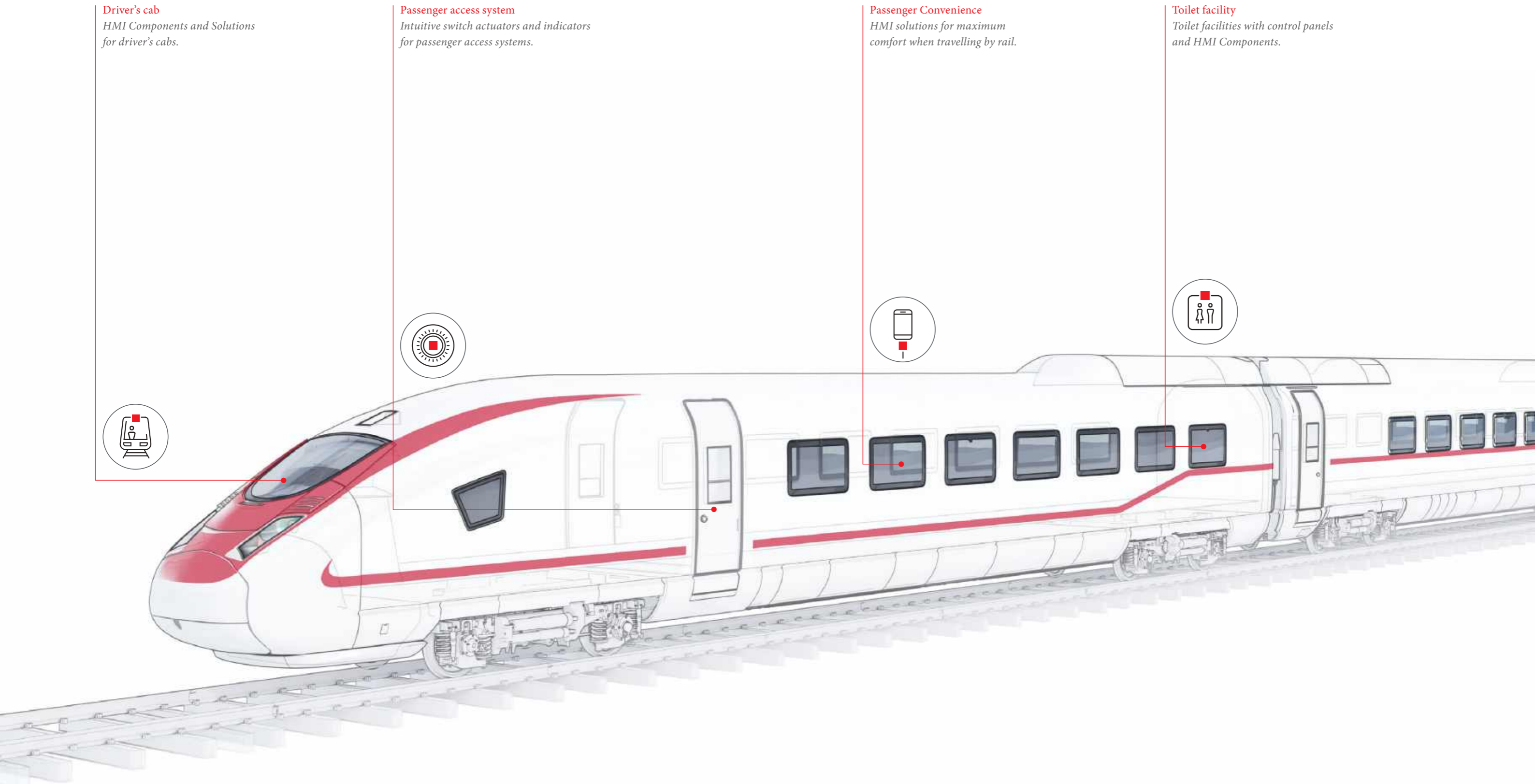
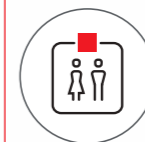
### Passenger Convenience

HMI solutions for maximum comfort when travelling by rail.



### Toilet facility

Toilet facilities with control panels and HMI Components.



## Ergonomics. *For control elements in driver's cabs.*



EAO works closely with experienced manufacturers and operators of rail vehicles to develop driver's cab control elements that meet both customer expectations and international standards and specifications.

The effectiveness of a driver's cab HMI System depends to a critical extent on the precision of the requirements analysis and the quality of the design. With decades of expertise, we master increasing levels of complexity and tackle the broad range of integration issues inherent in these control systems.

Our attractive designs, global service network and comprehensive research and development activities make EAO the world's leading partner for innovative, intuitive, ergonomic and reliable driver and passenger controls.

### Ancillary driver and guard controls

EAO products are the outstanding solution for ancillary driver and guard controls. Train drivers and crew can use them for locking and unlocking doors, turning on lights, or operating communication systems. Our products can be fitted to any location within the train, wherever controls are needed.

### Retrofitting

EAO's modular plug-and-play components and systems allow for simple and cost-effective retrofitting, making our products and solutions flexible and long-lasting.



## Safety. *For passenger access systems.*

EAO passenger door controls offer quick and easy vehicle access, whilst maintaining high levels of comfort, safety and security.

The large multicolour illuminated pushbuttons are easy to find, whilst EAO's sounders, speaker modules and message indicators convey important passenger information, or warnings.

EAO door openers are used in trains, trams, undergrounds, buses, ships, elevators and escalators. These components are established and used in their millions around the world, proving their reliability on a daily basis even in extreme climates.

### Understanding requirements

Our passenger access systems are often the only point of interaction between passenger and vehicle. This makes it all the more important that the human factors are met with intuitive markings, tactile, acoustic and optical feedback, and reliable operation. We maintain close relationships and a lively exchange of ideas with associations for people with disabilities in order to meet their needs. We wish to help people enjoy a safe and comfortable journey, from the time they get on to the time they get off.

It is only our complete understanding of the human requirements, the environmental demands, and the technical functionality of vehicles and machinery that allows us to develop and manufacture innovative, intuitive, reliable, ergonomic, and safe HMI Components and Systems.



## For a pleasant journey. *HMI for passenger convenience.*

When it comes to passenger comfort and convenience, EAO offers a comprehensive range of perfect HMI solutions which have established themselves as indispensable components in many modern rail vehicles.

Here, our HMI solutions meet the various different installation situations. EAO's HMI solutions primarily focus on the needs of customers and the requirements of passengers, and we always aim to optimally meet both.

### Applications for passenger convenience

EAO HMI seat operating systems for individually operating reading lights allow passengers to enjoy a comfortable journey. Using reliable EAO products, passengers can easily operate toilet flushes or the showers in sleeper carriages.



The EAO Charging Solutions improve the passenger experience, by providing phone charging, eliminating 'low battery anxiety' and enabling passengers to stay connected on their journeys.

With the bright seat reservation system, travellers can easily and quickly find their pre-reserved seats or recognise free seats from a distance – for an optimal passenger flow

Major international manufacturers in the transport industry put their faith in the tried-and-tested EAO HMI solutions, and draw on our global consulting and planning expertise.



## User-friendly controls. For toilet facilities.



Modern EAO operation panels for toilet facilities are fitted to trains all over the world. These EAO solutions are intuitive and user-friendly, and offer passengers safe, secure and reliable operation.

The new generations of train must meet the TSI PRM technical specification. TSI PRM defines the specific requirements for people with restricted mobility in railway travel, which includes universal toilets.

The comprehensive EAO range includes the following:

- Complete toilet operation and door locking panels
- Switches with ring illumination, symbols and “Braille”
- Rugged secure door locking switches
- Warning signal – Multi-Tone Sound Modules (MTSM)
- Toilet engaged and toilet locked status indicators



## Foresight. In passenger transport infrastructure.



HMI Components and Systems from EAO are also being used successfully around the world in passenger transport infrastructure at train stations, airports, bus stops, control centres and many other areas of application.

With our extensive range of individual products and solutions, we also meet the requirements for buildings and infrastructure used in the public and private transport sectors.

These include:

- Vandal-proof access systems and emergency-call terminals
- HMI Systems for monitoring emergency-call terminals
- LED information control systems at underground stations, bus stations, railway stations and at airports
- HMI Components and Systems for intuitive operation by employees and passengers

We focus on developing, easy to use, ergonomically designed products. Thorough testing of prototypes and production products ensures we always provide solutions of the highest quality, reliability and safety.

Our standard products can be individually customised in terms of materials, engraving or Braille embossing. We can easily produce customised options for individual customers.





## Efficiency. *In retrofitting and modernising.*



*Driver's cab before modernisation.*



*Driver's cab after modernisation in accordance with international standards.*

EAO's core areas of expertise include the refurbishment, retrofitting and modernisation of HMI Components and Systems. Here, our specialists and our systems engineers work closely with major manufacturers, operators and subcontractors in the field of transport technology for trains, buses, trams and ships.

In the course of these collaborations, we analyse the specific installation requirements, examine the existing conditions, and implement the best-possible solution.

Effective refurbishment of a driver's cab depends upon an exacting design process that incorporates all technical, ergonomic and communication requirements and meets all international standards.

In accordance with international standards EAO train drivers' desk panels are designed according to UIC Leaflet 612-0 standards, which harmonises the layout and functional requirements of each control device.

Passenger access systems can be refurbished and upgraded using the latest Series 57 products. Our technical know-how ensures compliance with international regulations, including the new EN 14752, TSI PRM and ADA standards.

Additional modular control panels can be designed as drop-in upgrades for security and lighting controls, critical system displays, toilet controls, crew controls and guards panels.

## Innovative, intuitive and reliable. *The Series 57.*

With the market launch of Series 57 in 2012, EAO once again set the standard in public transportation.

The innovative Series 57 combines the latest technology with the ergonomics of appealing design, exceeding the requirements of this stringently regulated market thanks to its particularly large 74 mm operation area.

Combined with international certifications, compliance with relevant standards and directives, and with the optional finding tone, these modern actuators and indicators satisfy all application needs. These outstanding properties have enabled the versatile Series 57 to become an established feature of many passenger access systems and toilet facilities in public transportation.

#### Functions

- Door opening pushbuttons
- Indicators
- Call for aid pushbuttons
- Warning indicators

The high-quality plastic front bezels are available to match the Series 57's appealing design in green, red, blue, yellow, grey and black.

Alternatively, the front bezels are also available in anodised aluminium. The Series 57 also has a rear-side plug-in terminal and its connector cable complies with the EN 50306 standard.

#### Advantages

- First choice to fully comply with EN 14752
- User-friendly, extra-large, Ø 74 mm operating area
- Two unique, independently illuminated feedback rings
- Raised, illuminated symbols that conform to TSI PRM & ADA
- Robust, raised front ring prevents unintended activation
- Coherent look and feel of the entire Series 57
- Integrated finding tone for visually impaired persons
- High IP69K front protection
- Optional illumination functions
- High UV resistance
- Smart final mounting saves time and costs

Further information on the Series is available at [www.eao.com/57](http://www.eao.com/57)



## Millions in use worldwide since 1996. *The Series 56.*



Over 20 years ago, EAO launched its intuitive and reliable Series 56 door opener, a pushbutton that revolutionised the public transport sector with its characteristic “click”, denoting the mechanical contact point.

The resounding success of Series 56 is due first and foremost to how highly its functions are valued by railway passengers and employees alike. This is thanks to the intuitive and reliable operation of the robust door opening pushbutton, indicators, individually programmable Multi-Tone Sound Modules, flashing warning lamps and unique lever switches. After its initial success in passenger access systems and toilet facilities on trains, the EAO door opener has also proven its value anywhere reliable access is needed as seen in trams, metros, buses, ships, elevators, escalators and emergency help points over the years.

#### Functions

- Door opening pushbuttons
- Indicators
- Multi-Tone Sound Modules
- Flashing warning beacons
- Lever switches

In addition to their very long mechanical and electrical service life, Series 56 door openers are hallmarked by their reliability, vast potential for customer-specific individualisation and a variety of mounting options – these products can be front, rear, or even glass mounted.

The high-quality plastic front bezel is available in black, red, orange, yellow, green, blue, dark grey and light grey – to match customers’ designs. Alternatively, these front bezels are also available in aluminium.

#### Advantages

- Unique tactile feedback
- Exceptional long-term reliability
- Wide product range
- Simple integration through mounting options
- Individually customisable

Further information on the Series is available at [www.eao.com/56](http://www.eao.com/56)



## Versatile. Robust and reliable. *The Series 04.*

EAO's versatile Series 04 has proven its value in modern rail vehicles by fulfilling a variety of application and international requirements.

Thanks to their modern design, safe and ergonomically friendly operation, and pronounced tactile feedback, the Series 04 has become an established feature of driver's cabs in particular. The extensive range of Series 04 products offer square or round options that enable virtually flush front mounting styles.

### Functions

- Illuminated pushbuttons
- Indicators
- Selector switches
- Key insert switches
- Lever switches
- Emergency stop switches

Each of these HMI functions can be designed precisely to specification for the given application. For instance, standardised or customised markings can enable intuitive operation – in the form of text or symbol engravings as found on the lens or text plate.

Front bezels made of black or silver plastic, as well as natural or black anodised aluminium, lend these actuators and indicators a design that is as modern as it is robust.

The switching elements also offer a choice of screw or plug-in terminals as well as tool-less mounting using the intuitive option of push-in terminals (PIT). Combined with international approvals and compliance with relevant standards and directives, these actuators and indicators cater to all the needs of users.

### Advantages

- Versatile and reliable range of products
- Ideal for driver's cabs
- Modern and robust design
- Safe and ergonomically friendly in use
- Pronounced tactile feedback
- Customised and standardised markings
- International certifications and compliance with relevant standards and directives

Configure now your Series 04 HMI at [www.eao.com/04](http://www.eao.com/04)



## Charge. Connect. Communicate. EAO Charging Solutions.



EAO's railway certified Charging Solutions help train operators to enhance the passenger experience by allowing passengers to charge their phones, tablets and laptops, on the move.

Passengers are busy multi-tasking whilst travelling – using their devices for messaging, entertainment, calls, shopping and working. This varied use means that it may be necessary to recharge phones, laptops, tablets and headphones during the journey. Travellers are grateful for charging solutions on the train. It can help them stay connected to the internet, their family, friends and colleagues. They see this as an important factor in the quality of their passenger experience.

EAO's Passenger Charging Solutions can give every passenger access to convenient, reliable device charging. The range includes both wireless chargers and standard USB-A or USB-C sockets. The multi-coil wireless chargers overcome issues with phone placement on the wireless charging transmitter especially when mounted in seatbacks and grab poles.

EAO charging solutions can be installed in different areas across the train carriage.

- Tabletops and counters
- Seatbacks
- USB-C Power Delivery socket
- Seat dividers
- Side walls, partitions, and bulkheads
- Grab poles

### Benefits to the passenger

- Charge phone without inconvenience of carrying plugs and cables
- Opportunistic charging to avoid 'low battery anxiety'
- Access to additional on-board services during journey
- Profit from tailored promotional offers during and after the journey

The Charging Solution will broaden the role of public transport operators towards digital service technology providers to deliver additional value for their customers.

### Benefits to the train operator

- Clear enhancement to the passenger experience and the operator's image
- Can be retrofitted during refurbishment or as a separate upgrade
- The SliderFLEX and holster accept most modern smart phones
- Can be branded with the service operator's or sponsor's logo
- Additional revenues through tailored passenger services

Further information is available at [www.eao.com/passenger-interface](http://www.eao.com/passenger-interface)



## For an optimised passenger flow. *EAO Seat Reservation System.*

Megatrends of the future, such as mobility and urbanisation, pose new challenges for railway transport. It is becoming increasingly important to optimise the flow of passengers so that they are routed efficiently in the increasingly connected and dynamic world of rail transport.

EAO supports this need with the latest generation of seat reservation system with a standardised platform, that offers maximum flexibility in terms of customer-specific design and system adaptations. Not only can the system be easily and seamlessly integrated into the passenger information system but thanks to the innovative display technology and bright, clear, seat status indicators; passengers can easily locate a free seat, or find their prebooked seat reservation.

### Advantages

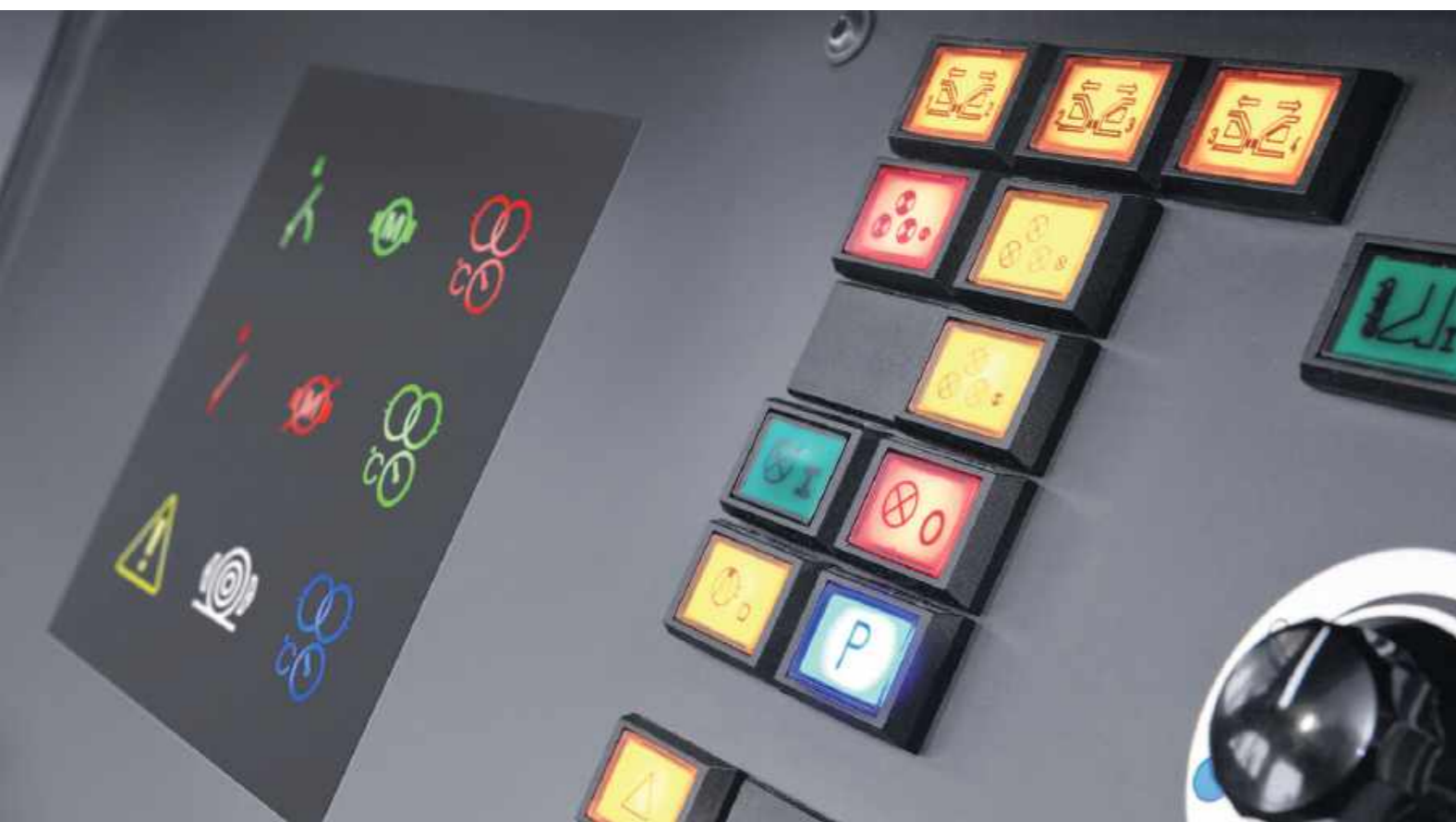
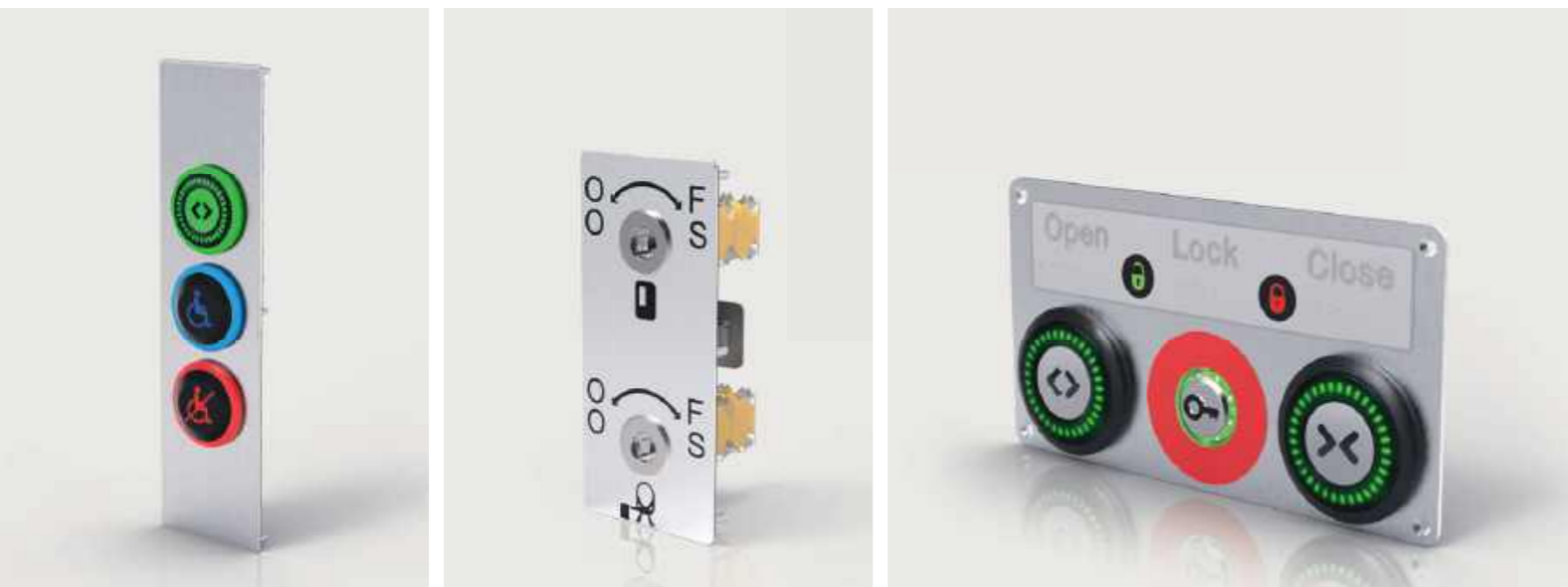
- Early recognition of seat reservations thanks to bright LED indicators
- Increased passenger flow efficiency
- Energy-efficient, cost-effective and high-contrast display technology
- One display solution for flexible installation situations
- Seamless integration thanks to versatile customisation options

EAO's seat reservation system was developed for the rail market and fulfils the specific norms and standards. Overall, the EAO seat reservation system represents a comprehensive solution for the requirements of rail transport. From straightforward installation to flexible adaptation to different seating arrangements and design requirements and with a focus on efficiency, we are setting new standards for the future railway travel experience.

Contact us for your customised seat reservation system or find more information at [www.eao.com/srs](http://www.eao.com/srs)



## Experts. *In mixed technology solutions.*



EAO develops impressive, customised HMI Systems that feature innovative technology, intuitive operation and reliability.

As experts in various mixed technology solutions, we provide our customers with expertise – from the initial idea right through to the manufacturing stage – and generate real added value on their behalf.

### System solutions

When manufacturing HMI Systems (HMIS) that meet the entire spectrum of market requirements, quality is key. Thanks to EAO's high-quality product range, and to the variety and flexibility of our components and systems, we have in place the ideal requirements for an effective HMIS. When it comes to cockpits, control panels and modules, control devices for robot systems, and complex control systems, we have the right components and the necessary expertise to combine these and create perfect solutions.

### Experts in mixed technology solutions

Our engineering services also include bringing together customer-specific components and touchscreens that are not part of the EAO product range. As experts in mixed technology HMI solutions, we can provide our customers with our comprehensive expertise – from the initial idea right through to the manufacturing stage – and generate real added value on their behalf.

### Savings in cost and time

Global experience in supply chains, our expertise in process optimisation and the EAO risk management system guarantee accurate planning and a reduction

in the number of interfaces. EAO's customers thereby benefit from considerable savings in cost and time. Our customers around the world also appreciate our global expertise when it comes to functional and ergonomic user requirements as well as market-specific and country-specific standards, certifications and approvals.

### Global service

We use our globally active planning and production centres to provide advice and support during all project phases. This is all a fundamental part of our system of total quality management. The EAO network of sales companies and production sites in Europe, North America and Asia provides our customers with access to top-quality consultation, design and logistics services. From planning and prototyping through to assembly, we offer all the services necessary for the production of process-specific systems solutions.

Contact us for your customised seat reservation system or find more information at [www.eao.com/srs](http://www.eao.com/srs)

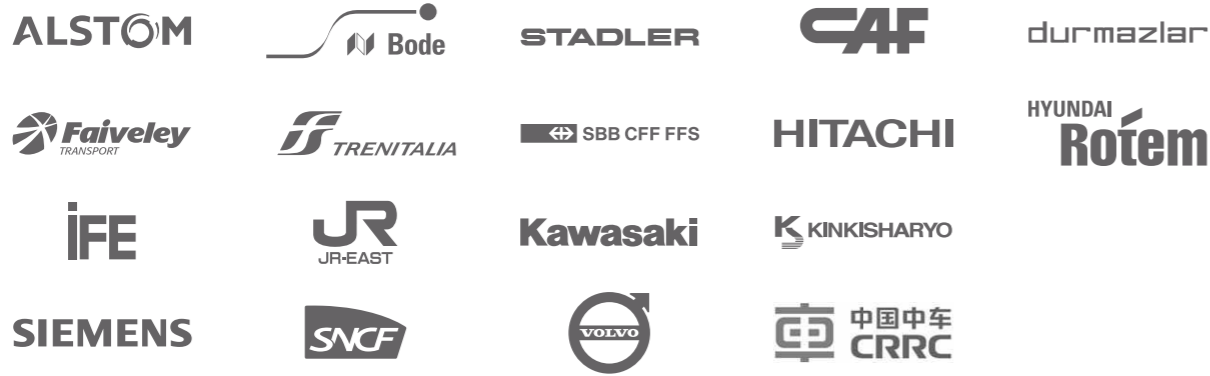


# Trust. We impress globally.



With fascination and in close cooperation with our customers and business partners, we develop innovative, intuitive and reliable HMI solutions to ensure highest customer satisfaction – from the initial idea through to the implementation and beyond.

Customers around the world place their trust in our comprehensive and long-standing experience. The results of our work are reflected in our impressive list of references. This is ultimately the best proof of our market expertise, from which you too can benefit.



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Technical changes, errors and omissions without prior notice.

**Safety instructions**

All our products are to be used for the designated applications only. Maintenance, repair and replacement of our components and systems must be carried out by authorised and trained personnel.

**General conditions of sale and delivery**

We refer to the currently valid General conditions of sale and delivery which can be obtained from us. For further information about EAO's product range either contact your local sales office, distributor, or alternatively visit our website: [www.eao.com](http://www.eao.com)

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