

Heavy Duty & Special Vehicles

Rugged. Powerful and configurable.

www.eao.com





Content		
EAO Heavy Duty & Special Vehicles	Product overview	Production and supply chain
05 The Human Touch*	20 Heavy duty and special vehicles	34 Reliable assembly
Applications	21 Buses and coaches	Certificates and approvals
06 Overview	22 Series 09 CAN Modules	35 Certified
09 Off-road	26 Series 82	References
11 On-road	27 Series 04, Series 09 Joysticks	36 Trust
12 Off-road construction applications	28 Series 14, Series 45	EAO Group
13 Agricultural applications	29 Series 61, Series 71	38 Expert manufacturers
14 Applications in special vehicles	30 Series 84	EAO Contact
15 Applications in HGVs and buses	31 Series 09, Universal switches	40 Your centre of excellence
Overview	HMI Systems	
16 Your application – Our products	33 Experts	
HMI Components		
19 Diversity and individuality		

To work confidently in challenging terrain requires reliable equipment you can depend on. Since 1947, EAO has provided intuitive control elements and systems for equipment and special vehicles that fulfil all ergonomic and safety requirements.

“My productivity. My world.”
EAO creates possibilities.



As urbanisation continues, *the future development of both metropolitan and rural regions would be inconceivable without the assistance of heavy duty, special and commercial vehicles.*

Intuitive operation, performance, robust construction and reliability are key factors in the design of these vehicles and the equipment. EAO control elements and systems meet these requirements, making us an indispensable partner for manufacturers of heavy duty and special vehicles.

Thanks to our long-standing experience in the automotive and transportation industries, we are also able to develop high-quality, ergonomically designed HMI control elements and systems for vehicles and equipment used in construction, agriculture, passenger transport and public services.

EAO develops robust and tailored control units for both off-road and on-road applications – for example, in the vehicles and equipment used by fire departments and other emergency services, in construction, agriculture and more generally in heavy goods vehicles (HGVs), buses and electric vehicles.

Intuitive and reliable human interface technology is a key element of any vehicle. This is especially true for special vehicles equipped with ancillary equipment that requires intuitive operator or driver controls.

The flexibility created by our Human Machine Interface (HMI) Components and Systems provides our customers with considerable added value. EAO's products and solutions perform impressively when used in harsh conditions, with high levels of contaminants in the air, in extreme temperatures, or in environments featuring high levels of dirt or chemicals. We understand and meet strict requirements in the interest of safe and long-lasting functionality by performing numerous tests and requirement analyses beforehand.

EAO – Your Expert Partner for Human Machine Interfaces

Control. *Over each application.*

Whether HMI components and systems are used in off-road or on-road vehicles in outdoor environments or driver cabins, the focus of EAO products and solutions is always on reliability, robust construction and individuality. We strive to ensure that the operator has full control over the vehicle or equipment at all times.

Off-road construction applications
Robust and functional HMI solutions for construction vehicles and equipment.

Heavy goods vehicles
Attractive actuators and indicators with ergonomically friendly operation.

Special vehicles
Individual and reliable HMI solutions.

Transit buses and travel coaches
Control units for driver and passenger comfort.

Agricultural applications
Actuators and indicators for tailored user convenience.



Off-road. *Robust design for demanding environments.*

Off-road vehicles are robustly designed to easily and confidently travel over the most adverse and aggressive terrain. Our robust and environmentally sealed HMI controls are ideally suited for off-road applications.

Construction applications

- Road construction vehicles
- Excavators
- Loaders
- Roller compactors
- Telehandlers
- Cranes
- Crawler drills
- Boom scissors and boom lifts
- Forklifts
- Wireless remote controls
- Mining equipment
- And many other applications

Agricultural applications

- Tractors
- Combines
- Harvesters
- Forestry vehicles
- Agricultural equipment
- And many other agricultural vehicles and types of machines



On-road. *Innovative design. For unique interiors.*

EAO operator controls for interiors impress thanks to their design, individuality and excellent quality. Manufacturers of road vehicles around the world use EAO operator controls for a range of switching and monitoring tasks.

Trucks and buses

- City transit buses
- Travel coaches
- Airport buses
- HGVs
- Tow trucks
- And many other vehicles

Special vehicles

- Fire department
- Ambulances
- Police
- Military vehicles
- Street cleaning vehicles
- Waste collection
- Snow removers
- Airport vehicles
- And many other types of equipment



Robust and functional. *For off-road construction applications.*



Construction vehicles and equipment must be capable of withstanding harsh and adverse environmental conditions in day-to-day use. Excavators, loaders and roller compactors are in use around the clock and in many places.

Away from paved roads, these types of equipment are put through their paces by thick mud, stony dirt, gravel and rocks. Vehicles with their complex control units may be exposed to dust, water or corrosive chemicals, depending on the application at hand.

The ability to precisely control the excavator bucket, boom platform or scissor lift at all times is essential for ensuring safety at work. It must also be possible to make adjustments to the vehicle or equipment intuitively and precisely.

Road construction vehicles, crawler drills and mining equipment demand the same strict standards of HMI control units day by day. Lifting and transport applications such as those that employ equipment like forklift trucks, cranes, boom loaders and wireless remote controls demand particular precision in HMI control.

In the past, the driver's cabin was a highly constricted place to work that involved a certain degree of physical discomfort or even stress for the driver. Today, cabin design focuses not only on functionality but also the well-being of the operator. All components, including the HMIs, have been designed to enable maximum operating comfort and optimum ergonomics while also satisfying the latest safety standards. Such an engineered environment that is as attractive and pleasant as this also enhances working efficiency.

Tailored user convenience. *For agricultural applications.*



The operator is the focus of agricultural vehicles and equipment, which is why appealing and high-quality cabin design combined with maximum operating comfort and ergonomic optimisation are essential.

EAO bases its complex control system for agricultural use on a variety of applications. The requirements that are imposed on an HMI's feature are strict and diverse as a result.

The HMI must be specified precisely to meet the specific user's needs – whether it's driving a tractor or operating a special harvesting machine or sprayer.

The most fundamental HMI functions of agricultural equipment, such as start/stop and up/down, must be as intuitive and safe as the functions used to adjust the operating parameters.

Another challenge to be overcome by HMI products and solutions is that the control units must provide a reliable long life despite their intensive and regular use. Even when massively soiled by coarse dirt, fine dust, or under duress from pressure cleaners, our actuators and indicators work reliably at all times.

Forestry applications also benefit from the impressive value added that EAO products and solutions offer to our customers.

Individual and reliable. *For applications in special vehicles.*



Special vehicles need to be regularly modernised and customised. The demands placed upon vehicle manufacturers also continue to grow. For this reason, EAO has developed solutions that offer extreme flexibility – for airport vehicles, street sweepers, waste collection and snow plough equipment and vehicles.

Outdoor control systems, such as those used for rotating ladders on fire engines, must be able to withstand the operating conditions and weather conditions they are used in and must be developed accordingly. Emergency vehicles may encounter extremely polluted environments – in some cases perhaps even toxic environments.

Specifically for such safety-critical functions, EAO has developed products and solutions to meet the safety requirements of EN ISO 13849 PLD and ISO 26262 ASIL B standards. The CAN bus integration allows the devices to be intelligently and easily integrated into a CAN system.

HMIs for light or siren control in the driver's cabins of fire engines, ambulances, rescue and police vehicles must be especially intuitive to use and offer a long service life. Bright LED illumination and unambiguous symbols – in accordance with ISO requirements depending on the application – allow the required button to be found immediately.

The latest labelling technology we can provide allows us to offer complex markings and special lettering. This technology provides greater legibility, with crisp, sharp characters and symbols.

Please note

Functional safety with CANopen Safety protocol available from 2020.

Attractive and resilient. *For applications in HGVs and buses.*



Technological developments and modern vehicle design are becoming an increasingly critical aspect of commercial vehicles. HMIs need to keep pace with this trend.

When transporting goods in an HGV or travelling aboard travel coaches, HMI's aimed at enabling traveller comfort are used intensively over a longer period – both during day and at night.

Attractive HMI design and ergonomically friendly operation are essential to allow both the driver and passengers to travel in comfort. This necessitates intuitive symbols and bright illumination for controlling functions such as lighting, air conditioning, heating and entertainment services inside and outside the vehicle whether in ambient light levels or night-time conditions.

The ability to intuitively control functions aboard buses, for example when using the toilet facilities or a coffee machine, helps to enhance traveller comfort.

Equally, the ability for drivers of transit buses used in towns and airports to unlock and open doors and lower the chassis to facilitate passenger access is of great importance.

Your application. Our products.

Off-road – a selection of potential applications.

Applications	Series								
	09	04	14	45	61	61 E-Stop compact	71	82	84
Cranes									
Outdoor	■			■		■		■	■
Driver's cab	■	■	■	■	■	■		■	■
Crawler drills									
Outdoor	■			■		■		■	■
Driver's cab					■	■			
Telehandlers									
Outdoor	■			■		■			■
Driver's cab	■	■	■	■	■	■	■	■	■
Roller compactors									
Outdoor	■			■		■			■
Driver's cab	■	■	■	■	■	■	■	■	■
Excavators									
Outdoor	■			■		■		■	■
Driver's cab	■	■	■	■	■	■	■	■	■
Loaders									
Outdoor	■			■		■		■	■
Driver's cab	■	■	■	■	■	■	■	■	■
Road construction vehicles									
Outdoor	■			■		■			
Driver's cab	■	■	■	■	■	■	■	■	■
Boom scissors and boom lifts									
Outdoor	■			■		■		■	■
Forklifts									
Driver's cab	■			■		■		■	■
Wireless remote controls									
Outdoor	■			■		■		■	■
Mining machinery									
Outdoor	■			■		■		■	■
Driver's cab	■	■	■		■			■	■
Tractors									
Outdoor	■			■		■			
Driver's cab	■	■	■	■	■	■	■	■	■
Combines and other harvesting machinery									
Outdoor	■			■		■			
Driver's cab	■	■	■	■	■	■	■	■	■
Other agricultural vehicles									
Outdoor	■			■		■			
Driver's cab	■	■	■	■	■	■		■	■
Forestry vehicles									
Outdoor	■			■		■			
Driver's cab	■	■	■	■	■	■		■	■

On-road – a selection of potential applications.

Applications	Series								
	09	04	14	45	61	61 E-Stop compact	71	82	84
Fire department									
Outdoor	■		■	■				■	
Driver's cab	■	■	■				■	■	■
Ambulances									
Driver's cab	■	■	■				■		■
Police									
Driver's cab	■	■	■				■		■
Military vehicles									
Outdoor	■		■	■				■	
Driver's cab	■	■	■				■	■	
Street sweepers									
Outdoor	■		■						
Driver's cab	■	■	■				■	■	■
Cleaning vehicles									
Outdoor				■					
Driver's cab	■	■	■				■	■	■
Waste collection									
Outdoor	■		■	■				■	
Driver's cab	■	■	■				■	■	■
Snow ploughs									
Outdoor	■		■						
Driver's cab	■	■	■				■	■	■
Airport vehicles									
Outdoor	■		■	■					
Driver's cab	■	■	■				■		■
City transit buses									
Outdoor					■	■			
Driver's cab	■	■	■		■	■	■		
Airport buses									
Outdoor					■	■			
Driver's cab	■	■	■		■	■	■		
Travel coaches									
Driver's cab	■	■	■				■		
HGVs									
Outdoor				■					
Driver's cab	■	■	■				■		
Tow trucks									
Outdoor	■			■					
Driver's cab	■	■	■				■		

Diversity and individuality. *In HMI Components.*



EAO develops and manufactures one of the world's largest ranges of industrial HMI products.

A variety of mounting depths, design and combination options make our products hugely versatile. But what makes every EAO component really stand out are the cutting-edge materials, innovative technologies, and complete user-friendliness. We also modify our standard components individually in accordance with our customers' needs.

Designers can simplify their search for the perfect equipment by analysing their exact application requirements and, based on their needs, determine the characteristics of the components needed.

Because EAO offers one of the most comprehensive ranges of products, it is easy for everyone to select the right fit, according to:

- Electrical ratings – the right specifications for the task
- Actuation preferences – the most appropriate switch type
- Physical configuration and mounting needs – style and placement
- Special requirements – illumination and symbols
- International and market approvals

HMI functions

In public transportation, EAO specialises in these functions:

- Rugged CAN Keypad
- Rugged CAN Rotary Cursor Controller
- Indicator
- Buzzer
- Illuminated pushbutton
- Door opening pushbutton

- E-Stop and stop switch
- Mushroom-head pushbutton
- Keylock switch and key-insert switch
- Selector switch
- Potentiometer
- and many more

HMI features

EAO's engineers analyse the application requirements of our customers. This ensures that our HMI Components always perform to the correct standard for:

- Front protection
- Switch rating
- Mounting cut-out
- Connection system
- Certification
- Design
- Ergonomics
- Materials

Value added services

EAO makes it simple for designers to find the perfect equipment by analysing customers' exact application requirements and making the following adaptations to suit their needs:

- Marking
- Illumination
- Enhanced mechanical design
- Enhanced electronic design
- Software
- Cables and connections
- Assembled products/kits

Heavy duty and special vehicles.
Product overview.



Series 09



Series 09



Series 04



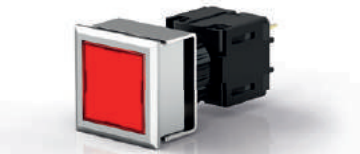
Series 14



Series 45



Series 61



Series 71



Series 82



Series 84

Buses and coaches.
Product overview.



Series 14



Series 56



Series 57



Series 82



Series 84



Series 84

Rugged and modular.
Reliable.



Rugged CAN Keypads
Series 09

Series 09 Rugged CAN Keypads offer high reliability: The modules are designed for E1 applications and functional safety in accordance with ISO 26262 ASIL B and EN ISO 13849 PLD as well as an intelligent control with CAN bus integration. The robust, modular design with sealing levels of up to IP67 and the ability to customise and interchange the keypad legends make these high-quality devices ideally suited for harsh use in heavy duty and special vehicles.

Robust, innovative design
Robust and innovative construction is a feature of the Rugged CAN Keypads design. The up to IP67 protected actuators and indicators work reliably at operating temperatures from –40 °C to +85 °C. The low back panel depth and robust clip-in or screw-in mounting allow easy, flexible installation, either vertically or horizontally. These high-quality devices also offer excellent tactile feedback, and are clearly visible in daylight and at night thanks to the powerful RGB LED halo and LED symbol illumination. Attractive and configurable 4-segment halo ring illumination is integrated as standard. The customisable illumination provides the operator with excellent visual feedback, and is combined with a unique, contemporary design.



Advantages

- Individual 4-segment and RGB halo ring illumination
- Designed for functional safety: ISO 26262 & ISO 13849
- Intelligent HMI's with CAN bus integration
- Robust, innovative, ergonomic design sealed up to IP67 protection
- Interchangeable ISO 7000 range of symbols or customised symbols

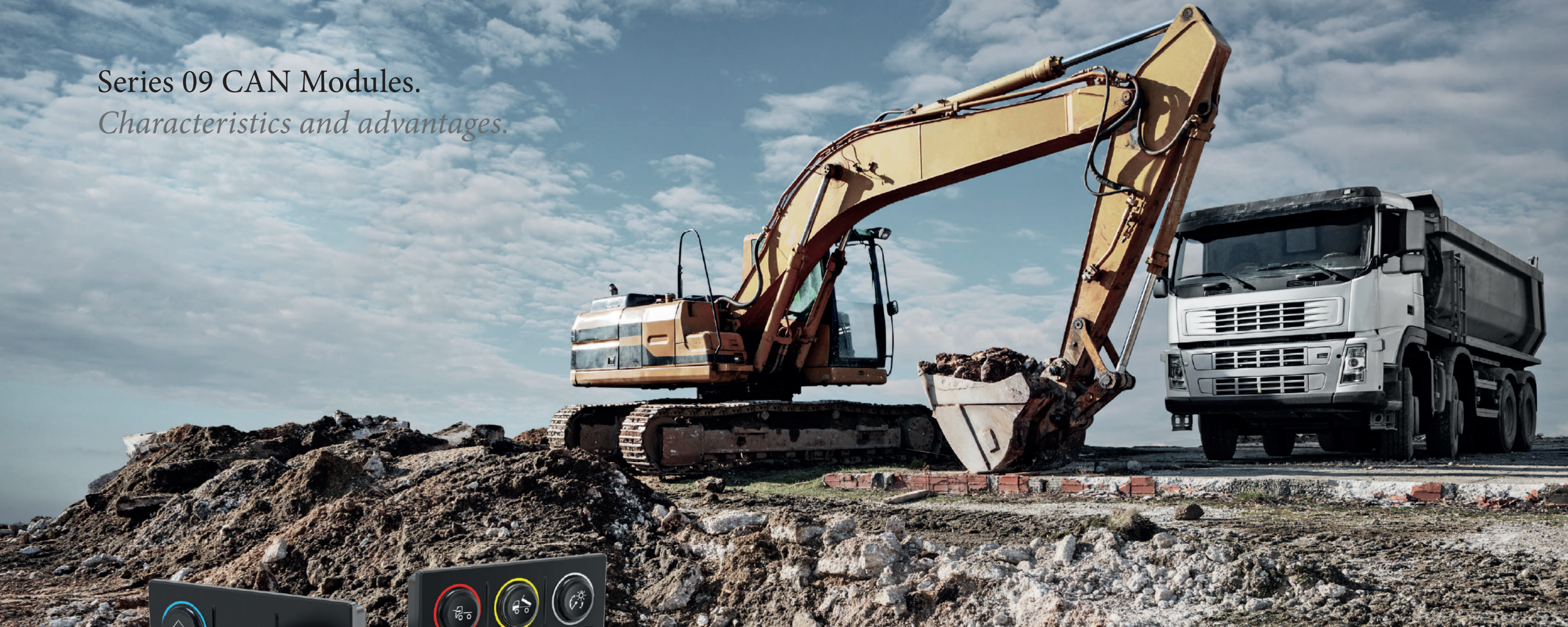
Durability
The Series 09 CAN Modules are produced in our automotive competence centre located in Germany. This allows us to apply years of comprehensive experience as an original equipment manufacturer (OEM) in the automotive industry to the heavy duty and special vehicle markets. At the same time, this offers EAO customers high quality, durable, and intuitive products and services. The development and production process is aligned and executed accord-

ing to automotive standards that include qualified suppliers and functional safety. This requirement ensures EAO customers high quality products and solutions.

Functional safety* and CAN bus integration
The Rugged CAN Keypads feature a high reliability and are designed for functional safety in accordance with the EN ISO 13849 PLD and ISO 26262 ASIL B standards. Put simply, functional safety means that the system monitors whether the safety-related function is working properly. If a function error occurs, the system promptly informs the operator. Thanks to the CAN bus integration, the devices are intelligently and easily integrated into a CAN system – the devices are fitted with a Deutsch DT Series connector.

* Functional safety with CANopen Safety protocol available from 2020.

Series 09 CAN Modules. *Characteristics and advantages.*



Illumination

Modern, trendy, innovative RGB 4-segment halo ring illumination in unlimited variety of colours and visual effects

Modularity

Control units can be combined into an array of modules

Safety level

Designed for functional safety*: ISO 26262 and ISO 13849

Sealing protection

Robust, resistant to weather and harsh environments, IP67 seals out dust, water, mud, salt, sand, oil

Symbols

Interchangeable inserts with laser etch LED backlit ISO 7000 range of symbols or customised symbols

Mounting option

Flexible vertical and horizontal installation as well as user-friendly clip-in and screw-in mounting

Communication protocols

Intelligent HMI with J1939, CANopen and CANopen Safety* integration

Design

Smart, optimally ergonomic design with low panel depth mounting

Feedback

Tactile and audible product feedback with haptic design

* Functional safety with CANopen Safety and ASIL B according to ISO 26262 and PLD according to DIN EN ISO 13849 are available from 2020 onwards.

Robust and attractive.
Intuitive.



Actuators and indicators.

Series 82

With Series 82, EAO offers robust and attractive HMIs resistant to harsh use even in the most challenging environments.

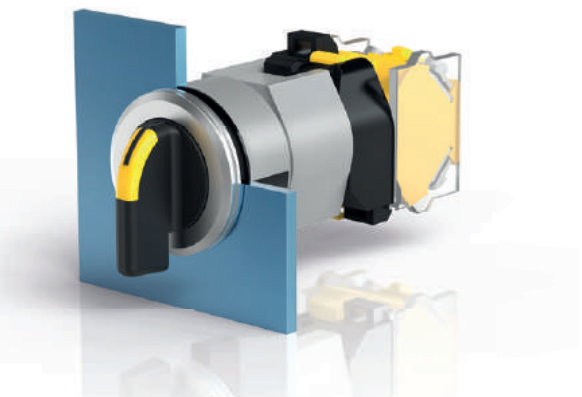
With their robust stainless steel, brass or anodised aluminium housings, these innovatively designed switches are protected to IK10 impact resistance and IP67 sealing requirements, which makes them ideal for use in exposed areas on machinery and equipment.

The switches are available with momentary or maintained action, and with or without LED illumination, choose from single or bi-colour LED's and central dot or ring illumination. The ring illumination is particularly striking and attractive.

The switching elements are offered either with silver alloyed or in addition gold-plated contacts for reliably switching low voltages and currents.

Advantages

- Vandal-resistant: Impact resistant to IK10, front protection up to IP67
- Gold-plated silver contacts available for low voltages and currents
- Optional single or bi-colour LED illumination and laser markings
- Excellent tactile feedback
- Long service life: > one million cycles of operation



Versatile. Robust and reliable.

Series 04

EAO's Series 04 has proven its value in a variety of applications.

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.

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



Robust. Powerful and configurable.

Series 09

EAO, your expert partner for innovative, intuitive and reliable Human Machine Interfaces (HMIs), offers a wide range of joysticks for rough usage in a variety of applications.

The joysticks are available as standard and individual configurable products for HMI systems in vehicles, machinery and remote control systems.

Advantages

- Mechanical and electrical customisation is possible
- Front protection to IP65 or IP67
- Standard joysticks available from stock
- Low back panel depth for Hall Effect and conductive plastic sensors
- Proportional Hall Effect joysticks

Versatile.
Universal in use.



Attractive, compact and reliable.
Series 14

EAO, the expert partner for Human Machine Interfaces (HMIs), offers with its attractive Series 14 a wide range of compact and reliable actuators and indicators for sophisticated applications.

The Series 14 offers excellent tactile feedback and an attractive front design. With indicators, illuminated pushbuttons, mushroom-head pushbuttons and buzzers for flush or raised mounting in 22.3 mm or 30.5 mm cut-outs.

Advantages

- Attractive 22.3 mm or 30.5 mm design (flush)
- Up to 4 NO and 4 NC contacts
- Low back panel depth
- High IP67 protection
- Low-level switching possible



Innovative and comprehensive.
Series 45

Series 45 from EAO unites an extremely broad range of machine operating functions with outstanding technical features. Penetration by dust and liquids is prevented even under the most adverse conditions. Resistant to aggressive cleaning agents, oils, lyes and other chemical substances, the actuators and indicators in the Series 45 work perfectly each and every time.

Advantages

- Comprehensive and modular Series
- Rugged in use (up to IP69K)
- Easy to assemble and use
- Modern design with many options
- Value Added Services



Comprehensive and versatile.
Series 61

EAO offers the modular and recognised Series 61, a versatile and modular switch range for complex applications.

Whether for applications with high temperature variations or mechanically demanding environments – the versatile Series 61 is always the first choice. Due to Series 61's modular construction and full selection of functions, you will find the right solution for nearly all applications.

Advantages

- Wide, modular series
- Modern design
- Range of switching elements and ease of mounting
- Custom marking possible
- Internationally recognised and approved series



Unique PCB mounting system.
Series 71

Thanks to a variety of actuators and switching elements, this series also has a modular structure. The flush-mounted construction gives each application a modern front design and protects the control devices from damage.

The high-quality pushbuttons, illuminated push-buttons, keylock switches, selector switches and indicators can be combined in any arrangement and mounted on the same PCB level. The combination of PCB soldered contact blocks and the reliable twist and lock fixing mechanism offers easy assembly without the need for mounting studs.

Advantages

- Unique PCB mounting
- A variety of switching functions
- Modular design and flush mounting
- IP65 front protection

Reliable in use.
Any time.



Attractive, versatile and functional.

Series 84

The Series 84 combines design and functionality in a versatile manner. Combined with innovative illumination options and IP67 protection, this product range is ideal for challenging environments with high visual expectations.

The illumination is a highlight that makes this series particularly attractive. Multiple illuminations in a single switching element can allow for a consolidation of status indicators thus eliminating panel space and additional costs of extra actuators and indicators.

This illumination system enables two status to be easily displayed using a single indicator in green/red and green/yellow.

Halo illumination is suitable where users require a simple and clearly visible status indicator. It makes simply every application an experience.

This illumination has been specially designed for SMD LEDs. In addition to the bi-colour LED in the centre, it is possible to display up to eight colours on a single indicator.

The new Halo Compact enables up to eight different status indications to be displayed easily, making this multi-functional illuminated switch element suitable for a wide variety of applications.

Advantages

- Attractive design and reliable operation
- IP67 front protection
- Powerful, consistent illumination with innovative technologies
- Animated illumination options for a wide variety of potential applications
- Available with soldered, plug, PCB and flat ribbon cable terminals



Attractive and versatile.

Series 09 Universal switch

The Series 09 universal switch has been developed for E1 applications and is ideally suited for use in vehicle interiors – in particular for various switching controls in heavy duty and special vehicles. The Series 09 keypad and switch family can be combined to create an almost unlimited range of switch functions in many varied vehicle applications. The modular ergonomic design and the adaptor frames allow the switches to be installed in a standard DIN ISO 7736 (radio type) cut-out. These high quality switches have an attractive and durable surface finish with superb haptics and the caps can be customised.

Advantages

- Ergonomic and modular design with protection degree of up to IP5K3
- ISO 7000 symbols or custom symbols
- Flexible combinations for the switches
- Wide range of applications and integrated status indications

Intelligent and reliable.

Series 09 LIN switch panel

EAO, the Expert Partner for Human Machine Interfaces (HMIs), designed the LIN switch panel for numerous applications in on-road and off-road vehicles. The reliable LIN switch panel has an intelligent control with LIN bus integration and can be combined via this bus with other actuators and indicators. With the ergonomic and innovative design, the superb haptics and high-quality surface finish, the LIN switch panel meets the requirements of numerous applications in the interiors of heavy duty and special vehicles.

Advantages

- Flexible application due to freely selectable switch assignment
- Intelligent HMI with LIN bus integration
- Ergonomic and innovative design with protection degree of up to IP5K3
- Lasered ISO 7000 symbols or customised symbols
- Quick and easy installation by snap-in or screw mounting

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 benefit 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.

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 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 system solutions.

Sustainability as standard

Sustainability is of course also a part of our consultation services – as are warehousing, project documentation, on-site training, and other services (such as refurbishment).



Reliable assembly.
Short delivery times.



Thanks to our international production sites and our global delivery and support centres, we offer you efficient, sustainable logistics and can optimise your supply chain.

With four value-creating partners in Europe, Asia and North America, as well as other strong partnerships around the world, we are able to offer the following:

- Qualified vendors worldwide
- Consistent multi-location processes
- Integrated quality measures throughout the supply chain

To us, speedy assembly, short delivery times and secure processing are all part of good customer service. And so too is comprehensive production expertise, as exemplified by the following:

- PCB design
- SMT placement, assembly and inspection
- Cable and connector assembly

EAO also has long-standing experience in building HMI Components, which allows us to offer our customers truly expert consultation in the areas of machining, surface treatments, sheet metal forming, injection moulding, marking, PCB placement, and the integration of complete HMI solutions.

Certified.
Your expert and partner.



Our adherence to international standards in combination with comprehensive product testing has made EAO into an established and reliable partner when it comes to planning, developing and implementing your optimal HMI solutions.

We use our in-house laboratories to subject our HMI products to various batteries of tests and assessments under the most realistic conditions. EAO utilises a comprehensive quality management system which covers all business areas.

We are certified in accordance with the following standards:

- Quality Management System DIN EN ISO 9001
- Quality Management System IATF 16949 (Automotive)
- Environmental Management System ISO 14001
- Industry-specific standards and regulations

Reliability. Continuity. Durability
In order to meet customers' demands in terms of reliability, continuity and durability, our products and systems are subjected to permanent quality monitoring. Among other things, this includes:

- Tests with special software (e.g. LAB View)
- Use of cutting-edge environmental test chambers
- Checking of adherence to different degrees of protection
- Testing the durability of individual components
- Optical and X-ray analyses
- Finite element method

Our products possess the key international approvals, and meet all standards and guidelines such as CE, UL or E1 for example.



Please note
Functional safety with CANopen Safety and ASIL B according to ISO 26262 and PLD according to DIN EN ISO 13849 from 2020 onwards.



References

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.

HITACHI

CAT

rosenbauer

LIEBHERR

MAN

CNH
INDUSTRIAL

COBO

KROMBERG
& SCHUBERT

STILL

EvoBus

DOLL

GRAMMER

WÖLFLE
CLEVER. EFFIZIENT. ERFINDEARISCH

ZOELLER
KIRCHHOFF GRUPPE

VOLVO

Expert manufacturers.
EAO creates possibilities. Since 1947.



Founding year: 1947
Number of employees: 600
Headquarters: Olten, Switzerland
Manufacturing Companies: Switzerland, Germany, North America, China
Sales Companies: 10
Distribution countries: 50
Core markets: Heavy Duty & Special Vehicles, Machinery, Transportation, Automotive

EAO AG, a Swiss, family-owned company founded in 1947, has developed into one of the world’s leading manufacturers of high-quality switches, keyboards, sophisticated control elements, and complete HMI control units and HMI Systems.

Efficient and modern development processes, effective global supply chains, and skilled project and consultation management represent additional services that we offer our customers and business partners around the world.

Your solution-focused expert and partner
We do much more than just manufacture individual control elements. As a solution-focused partner, we provide the option of technically and mechanically customising existing HMI Components in line with our customers’ individual requirements. From simple control elements through to sophisticated HMI Systems, from serial production through to installation – we offer the entire range of HMI services and inspire the confidence of our customers.

Issue: July 2019 © EAO AG
The contents of this document are protected by copyright. All rights are reserved. All necessary planning documentation available on our website: www.eao.com

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

This brochure is climate neutral and was printed on FSC-certified and CO₂-neutral paper.



MIX
Paper from
responsible sources
FSC® C002634

printed in
switzerland

printed carbon neutral • Swiss Climate

We thank the following companies for their support in creating and coordinating the mood images:
Elliott Equipment Company, Omaha, USA.

The Human Touch® is a registered trademark owned by EAO AG.
Regardless of the purpose, use of this trademark is prohibited without the written permission of EAO AG.

EAO Contact.

Your centre of excellence.

Headquarters

EAO Holding AG
Tannwaldstrasse 88
CH-4600 Olten
Telephone +41 62 286 92 00
info@eao.com

Manufacturing Companies

Switzerland
EAO AG
Tannwaldstrasse 88
CH-4600 Olten
Telephone +41 62 286 91 11
info@eao.com

EAO Systems AG
Tannwaldstrasse 88
CH-4600 Olten
Telephone +41 62 286 91 11
sales.esy@eao.com

China
EAO (Guangzhou) Ltd.
3/F, Block G4, South China
New Materials Innovation Park
31 Kefeng Road
Guangzhou Science City
CN-Guangzhou, PRC
Telephone +86 20 3229 0390
sales.ecn@eao.com

Germany
EAO Automotive GmbH & Co. KG
Richard-Wagner-Straße 3
DE-08209 Auerbach/Vogtland
Telephone +49 3744 8264 0
sales.esa@eao.com

North America
EAO Corporation
One Parrott Drive
Shelton
US-CT 06484
Telephone +1 203 951 4600
sales.eus@eao.com

Sales Companies

China
EAO (Guangzhou) Ltd.
3/F, Block G4, South China
New Materials Innovation Park
31 Kefeng Road
Guangzhou Science City
CN-Guangzhou, PRC
Telephone +86 20 3229 0390
sales.ecn@eao.com

EAO (Shanghai) Office
Rm.401, Lihpao Plaze,
NO.159 Shenwu Road,
Minhang District,
CN-Shanghai, 201106.
PRC
Telephone +86 21 6095 0717
sales.ecn@eao.com

France
EAO France SAS
Nextdoor – Bâtiment Silex
15 rue des Cuirassiers
CS 33821
FR-69487 Lyon Cedex 03
Telephone +33 9 74 18 93 41
sales.efr@eao.com

**Germany, Austria, Czech Republic,
Poland, Slovakia**
EAO GmbH
Langenberger Straße 570
DE-45277 Essen
Telephone +49 201 8587 0
sales.ede@eao.com

Hong Kong (Asia Pacific)
EAO (Far East) Ltd.
Unit A1, 1/F, Block A
Tin On Industrial Building
777 Cheung Sha Wan Road
Lai Chi Kok, Kln
HK-Hong Kong
Telephone +852 27 86 91 41
sales.ehk@eao.com

Italy
EAO Italia S.r.l.
Centro Direzionale Summit –
Palazzo D1
Via Brescia 28
IT-20063 Cernusco sul Naviglio (MI)
Telephone +39 029 247 0722
sales.eit@eao.com

Japan
EAO Japan Co. Ltd.
Net 1 Mita Bldg. 3F
3-1-4 Mita Minato-ku
JP-Tokyo 108-0073
Telephone +81 3 5444 5411
sales.ejp@eao.com

Netherlands, Belgium
EAO Benelux B.V.
Kamerlingh Onnesweg 46
NL-3316 GL Dordrecht
Telephone +31 78 653 17 00
sales.enl@eao.com

North America
EAO Corporation
One Parrott Drive
Shelton
US-CT 06484
Telephone +1 203 951 4600
sales.eus@eao.com

Switzerland
EAO Schweiz AG
Tannwaldstrasse 86
CH-4600 Olten
Telephone +41 62 286 95 00
sales.ech@eao.com

**United Kingdom, Denmark,
Finland, Ireland, Norway, Sweden**
EAO Ltd.
Highland House
Albert Drive
Burgess Hill
GB-West Sussex RH15 9TN
Telephone +44 1444 236 000
sales.euk@eao.com