EAO HMI Systems
for machinery.

www.eao.com
Expressing the immediate moment of interaction and making it innovative, intuitive and reliable is our task, our credo, and at the same time our fascination. The Human Touch. Our passion, since 1947.
EAO develops impressive, customised HMI Systems that feature innovative technology, intuitive operation and reliable functions.

EAO HMI Systems are of an outstanding quality in order to meet any requirement. Our engineering services also include the combining of customer-specific components outside of EAO’s product range. As an expert in mixed-technology solutions, we create optimal solutions for our customers saving them both time and money. Here, we have global supply chain experience at our disposal, and can draw on our expertise in process optimisation and EAO’s risk management system.

We meet not only every possible functional and ergonomic end user requirement, but also all market- and country-specific standards. We also possess all the necessary certifications and approvals.

Our HMI solutions offer the lowest total cost of ownership. EAO customers benefit from extensive savings in terms of money and time, as well as extremely long-term availability of our products and systems.

As a successful company with production sites around the world, EAO is actively committed to the effective implementation of a sustainable environmental policy. Our ISO 14001 certification for environmentally friendly management is something we are committed to and passionate about.

Since 1947, our product innovation has been based on a thorough understanding of the end users and on our fascination with making interactions between humans and machines possible.

Your benefits as an EAO customer:

• EAO is your HMI expert – including mixed-technology solutions
• Efficient system solutions – tailored to your needs
• You save time and money – thanks to reduced interfaces
• Global service – around the world
• Sustainability – an integral part of our consultation service
5 x 360 degrees.
Thorough and complete project management.

We provide you with what you need: innovative, intuitive and reliable HMI System solutions, with qualified services through to the end of a product’s life cycle – and beyond.

As an expert partner, we offer you effective and efficient planning and design. Our global network of qualified suppliers in combination with our vast materials expertise results in optimised purchasing, production and logistics. Based on our comprehensive technical knowledge, we reduce unnecessary interfaces and guarantee precise project implementation. This ultimately enables the end-user to work intuitively. Cost-effective project management is supported via long-term service and the documenting of all technically and commercially relevant and necessary information.

EAO project management – holistic systems thinking

PROJECT MANAGEMENT

Phase 1
Initialisation
- Customer request
- Analyse customer requirements
- Risk and potential assessment
- Start phase 2

Phase 2
Pre-study and concept
- Official project kick-off
- Pilot study
- Quotation for product and project
- Start phase 3

Phase 3
Realisation
- FMEA
- Development of prototype
- Release for prototype
- Start phase 4

Phase 4
Prototype
- Supply of tools and material
- Produce prototypes
- Release testing and design freeze
- Start phase 5

Phase 5
Zero Series and Series manufacturing
- Supply of material
- Produce and release zero Series
- Lessons learned
- End of project

Series production
- Delivery of Series products
- Product ramp-up
- Product ramp-down
- Obsolescence management
Target-focused.  
With commitment and efficiency.

HMI design and ergonomics  
- The starting point for optimal HMI solutions is a thorough understanding of best design practices, ergonomics and manufacturing standards.
- Modern HMI solutions have embedded interfaces that link them with the larger system through software-controlled communication connections.
- To develop innovative, application-oriented solutions that add significant value to end products, we offer our customers the appropriate expertise:
  - Expert engineers, designers and toolmakers
  - High-quality and reliable HMI Components
  - Lean production knowledge and technology review and obsolescence management
  - Conformance with CE, UL, CUL, VDE, RoHS, WEEE and other standards
  - Environmental Management System ISO 14001

We ensure that your HMI solution meets all the criteria for your sector.

Software and interface design  
- Modern HMI solutions have embedded interfaces that link them with the larger system through software-controlled communication connections.
- EAO has extensive experience with on-board microcontrollers, real-time operating systems and encryption technology for PIN-protected, secure access, as well as a variety of communication protocols, including:
  - CAN-Bus, CANopen, CAN-J1939, ProfiBus, InterBus, DeviceNet, ASI-Bus
  - USB, Ethernet, RS-232, RS-485
  - GUI touchscreen integration

The interaction is our task and our objective.

Manufacturing and HMI expertise  
- As a worldwide manufacturer of HMI Components, our expertise in prototyping, tooling, plastics moulding, plating, electrical design, automation and precision-parts assembly is unsurpassed.
- To develop innovative, application-oriented solutions that add significant value to end products, we offer our customers the appropriate expertise:
  - Expert engineers, designers and toolmakers
  - High-quality and reliable HMI Components
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We offer you the full spectrum of HMI services.

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  - Environmental Management System ISO 14001

We offer you the full spectrum of HMI services.

Production and supply chain  
- EAO supports you in taking advantage of local production while strengthening your global supply chain.
- Our four global production companies and planning centers in Europe, Asia and North America ensure the planning and production of HMI products to ISO 9001 and other international standards.
- Consistent processes at all locations, with integrated supply chain quality measures
- PCB design and manufacturing
- SMT placement, assembly and inspection
- Cable crimping, cutting, harnessing and final assembly

From the initial processing through to the final integration of complete HMI solutions.

Mechanical and electrical system design  
- EAO supports you in taking advantage of local production while strengthening your global supply chain.
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- PCB design and manufacturing
- SMT placement, assembly and inspection
- Cable crimping, cutting, harnessing and final assembly

EAO has a dynamic total quality management system linked to all areas of our business.

Quality assurance and testing  
- EAO supports you in taking advantage of local production while strengthening your global supply chain.
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- Cable crimping, cutting, harnessing and final assembly

Once specifications have been approved, including components, panel layout and integration, they form the basis for mechanical and electrical system design.

EAO works closely with you to prepare detailed drawings, parts lists, circuit schematics and assembly instructions. Production schedules are agreed upon before manufacturing commences. EAO helps you cut development times using rapid prototyping techniques for plastic components and PCBs.
- 3D CAD / CAM / CAE (Solid Edge, AutoCAD, Pro/ENGINEER and SolidWorks)
- PCB design and simulation software (P-CAD, Altium)
- Gerber file generation for PCB manufacturing
- Rapid prototyping (3D Printing)

Thanks to our optimised production-sequence planning, you will get your product to market faster.

Beyond advising the efficient implementation of your projects – our commitment, expertise, experience and global network afford you impressive competitive advantages.

With commitment and efficiency.
Control.
For every application.

Regardless of the industrial demands placed on our HMI Systems, reliability, longevity, intuitive operation and safety are always at the heart of our products and solutions. Our aim is to provide control over these processes and to afford machine operators the greatest possible level of protection at all times.
Reliable and safe.
HMI Systems for main operator panels.

The main operator panels in modern machines are control centres that must work intuitively and safely at all times. To provide optimum benefit for its customers, EAO undertakes the planning, development and production of complete HMI Systems solutions.

For our partners in the mechanical engineering this presents unique opportunities for intuitive main operator panels – completely scalable solutions ranging from single components up to fully customised plug-and-play systems.

HMI Systems solutions contain a front plate or a complete housing along with the HMI control devices arranged in an ergonomically effective layout to ensure optimum machine operation.

Our extensive EAO service also comprises electrical wiring and plug connectors as well as interface and communication modules for efficient network integration.
Intuitive and user-friendly.

HMI Systems for operator devices.

Operator devices in sophisticated industrial environments have to be intuitive above all else and of course must perform key safety functions while maintaining full functionality. In addition, this is exactly what we can offer with our HMI Systems.

For instance, EAO offers with their Smart Box a simple and customisable “snap-on, plug & play” solution for operator devices in an industrial environment. This can include on/off, up/down or emergency stop functions in CNC machines or semiconductor production. Alongside a broad standard range, customised solutions are also available to meet the needs of the user.

EAO customers benefit from our experience and solutions expertise that spans more than 60 years. As well, our comprehensive EAO product portfolio enables every conceivable HMI requirement to be met with the highest standard of equipment.
Mobile and flexible.  
**HMI Systems for handheld control units.**

EAO offers handheld HMI Systems solutions based on existing or entirely new housings which can be optimally integrated into machine communication systems. Using a “mixed technologies approach”, a combination of touch panels and electromechanical switches provide a comprehensive solution that allows for intuitive multitouch control.

HMI Systems for handheld control units must be flexible, intuitive and reliable, able to withstand a wide variety of environments and influences. They must also provide dimensions and back panel depths consistent with their function.

Ergonomic yet attractive design, tactile feedback, logical component layout and operating comfort are just some of the advantages offered by EAO’s HMI products and solutions.
EAO worldwide.
Your nearest centre of excellence.

Our close proximity to our customers and ability to provide a comprehensive range of services is fundamental to our success and at the core of our corporate policy.

EAO’s production sites in Switzerland, Germany, North America and China combine volume production, development, research, and logistics. In addition to these centres of competence, EAO has 10 sales companies around the world at its disposal.

Thanks to this comprehensive network and more than 50 distribution companies in the major industrialised countries, EAO is represented wherever interactions between humans and machines play key roles.

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.

Manufacturing companies/sales companies: Switzerland, EAO Headquarters, China, France, Germany, Hong Kong, Italy, Japan, Netherlands, North America, Switzerland, United Kingdom. Distributors: Argentina, Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Chile, Croatia, Czech Republic, Denmark, Egypt, Finland, Great Britain, Greece, Iceland, India, Iran, Ireland, Israel, Italy, Korea, Latvia, Malaysia, Mexico, Netherlands, New Zealand, Nigeria, North America, Norway, Poland, Portugal, Romania, Russia, Saudi Arabia, Singapore, Slovenia, Spain, Sri Lanka, South Africa, Sweden, Taiwan, Thailand, Turkey, Ukraine, United Arab Emirates, United Kingdom.
EAO manufacturing companies.

With four value-adding partners in Europe, Asia and North America, 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 – as well as comprehensive production expertise.

Our products possess the key international approvals, and meet all standards and guidelines such as: IRIS, TSI PRM, UIC, CE, RoHS, ENEC, CB, UL/UR, ISO, CSA, VDE, SEV, CCC, GHOST, Germanischer Lloyd and many more.

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**Switzerland**
EAO AG
4600 Olten, Switzerland

- Overall surface area in m²: 15000
- Production and storage space in m²: 3200
- Employees: 320
- Corporate certifications: ISO 9001, ISO 14001, IRIS Rev. 2

**North America**
EAO Corporation
Shelton, Connecticut, USA

- Overall surface area in m²: 12000
- Production and storage space in m²: 25
- Employees: 25
- Corporate certifications: ISO 9001

**China**
EAO (Guangzhou) Ltd.
Guangzhou, PRC, China

- Overall surface area in m²: 1300
- Production and storage space in m²: 45
- Employees: 45
- Corporate certifications: ISO 9001

**Germany**
EAO Automotive GmbH & Co. KG
08209 Auerbach, Germany

- Overall surface area in m²: 12000
- Production and storage space in m²: 120
- Employees: 120
- Corporate certifications: ISO / TS 16949, ISO 14001

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**Core capabilities**
- Manufacturing of complete HMI control units and HMI Systems
- Customer-specific HMI solutions
- Complex front plate mounting
- Internal product validation and approval
- Various marking technologies
- Complete mounting sets
- Cable and plug mounting
- Specialised packaging
- 3D prototyping

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**Awards**
- 2013 Frost and Sullivan ML100 recipient

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**EAO HMI Systems**
- Integrated HMI design
- Complex front plate mounting
- Various marking technologies
- Complete mounting sets
- Cable and plug mounting
- Specialised packaging
- 3D prototyping

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**EAO HMI Systems**
- Manufacturing of complete HMI control units
- Panel production
- Various marking technologies
- Complete mounting sets
- Cable and plug mounting
- Specialised packaging
- 3D prototyping
- Cable and plug mounting
Highest standards guaranteed.  
Your HMI expert partner.

At EAO, quality is a case not only of our individual products but also the entire value-creation process. Our certified quality management system ensures that our customers can rely on our products and services.

Automating components and production processes
With decades of experience as a global provider, we have the knowledge and products to satisfy our customers’ requirements and quality expectations.

CAD and rapid prototyping
EAO works with you to prepare detailed drawings, circuit schematics, production processes, inspection plans and assembly instructions. We help you significantly reduce development times with the aid of rapid prototyping techniques for your components and PCBs.

Software and bus system design
EAO has extensive experience with on-board microcontrollers. Bus systems are integrated in close collaboration with our customers and industry requirements.

Haptic and tactile design
We use special software for tests and material analysis in order to ensure the optimum tactile feedback characteristics for our HMI Components.
Packing and assembly
EAO offers a comprehensive range of cables and connectors as well as connector mating halves. Customers can select the cable type, cable length, connector type and pin assignment to suit their needs.

Application-specific testing
EAO analyses technical requirements and operating environments, as well as ergonomic and commercial demands, to ensure that users and technologies work in complete harmony.

Product testing and simulation
Using in-house laboratories, environmental chambers, and various methods of analysis, EAO’s products are exposed to very harsh conditions and tailored for maximum service life even in challenging environments.

Surface treatments
Our well-founded knowledge of surface treatment for sub-assemblies enables us to provide our customers with expert advice with respect to the characteristics of a huge variety of procedures.

Electrical and mechanical life-cycle testing
In order to meet customers’ demands in terms of reliability, continuity and durability, our products and systems are subject to constant quality monitoring using service life testing, optical and x-ray analysis, the finite element method, and more.

Engraving and marking
EAO lenses, text plates and film inserts can be individually marked with text, symbols or pictograms as required. Customers can choose between engraved, printed or laser markings.
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.