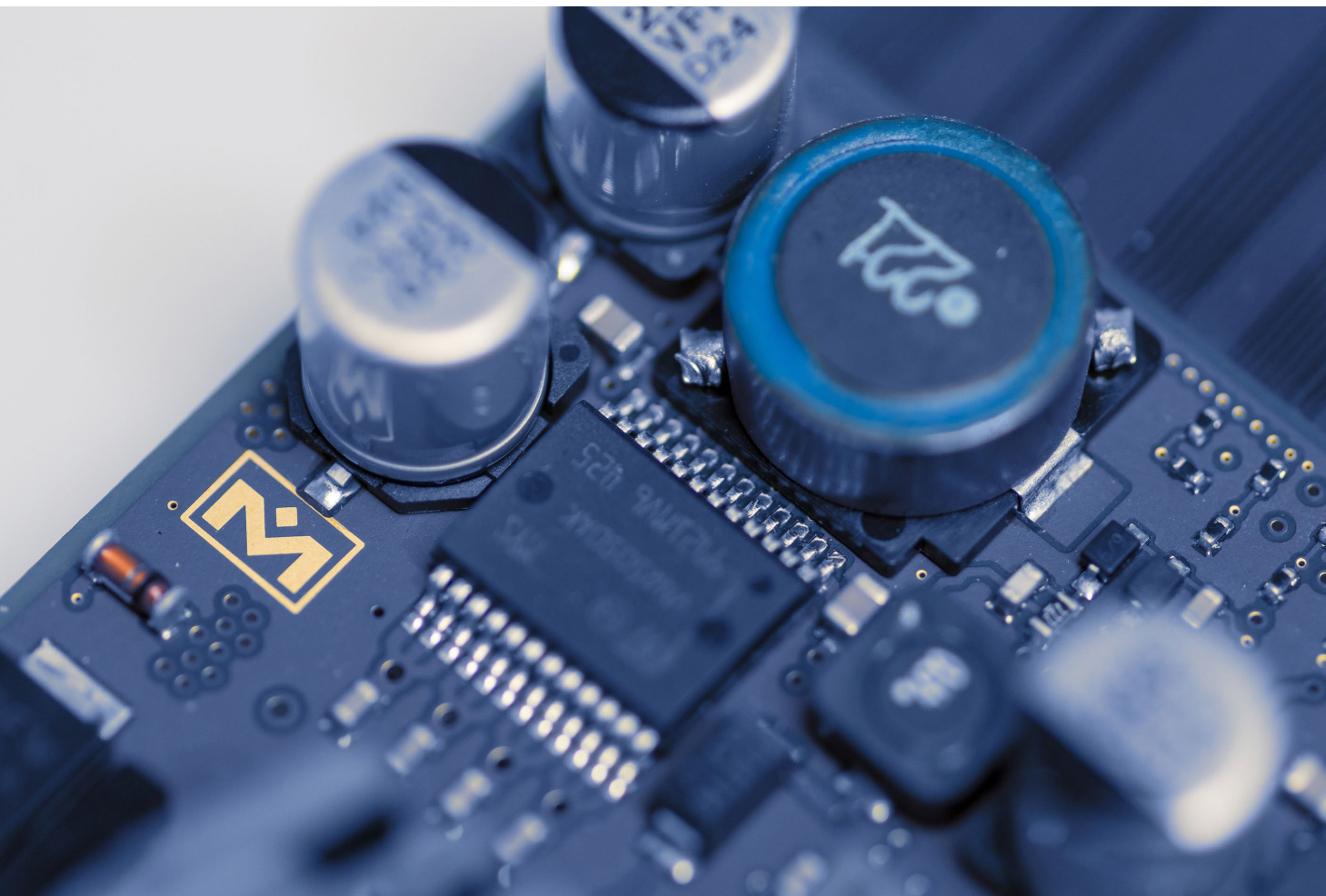


MRS ELECTRONIC GMBH & CO. KG



YOUR STRONG PARTNER FOR COMPACT CONTROLS

DEVELOPMENT

PRODUCTION

SUPPORT

>> ABOUT MRS ELECTRONIC

MRS Electronic - your strong partner for compact controls.

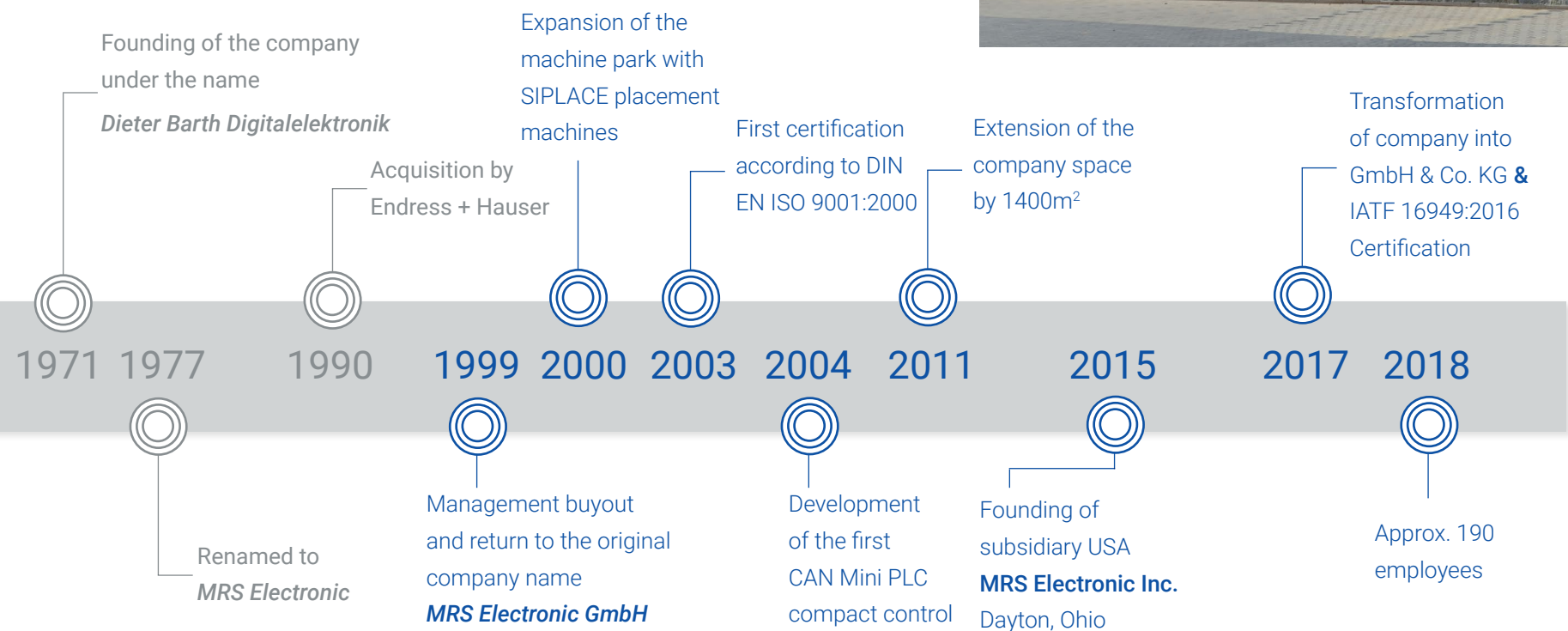
Located in Rottweil, the oldest city in Baden-Wuerttemberg and home of the world-famous dog breed. Ideally located midway between Stuttgart and Zurich.

Since the founding of the company in 1999, MRS Electronic has evolved from a simple manufacturer of relays and controls to a competent partner and expert in automotive and commercial vehicle electronics.

Advanced developments and in-house assembly and production offer the customer tangible added value for individual projects. Working as a highly productive team, our employees create day after day new ideas for advanced products made in Rottweil.



THE HISTORY MRS ELECTRONIC

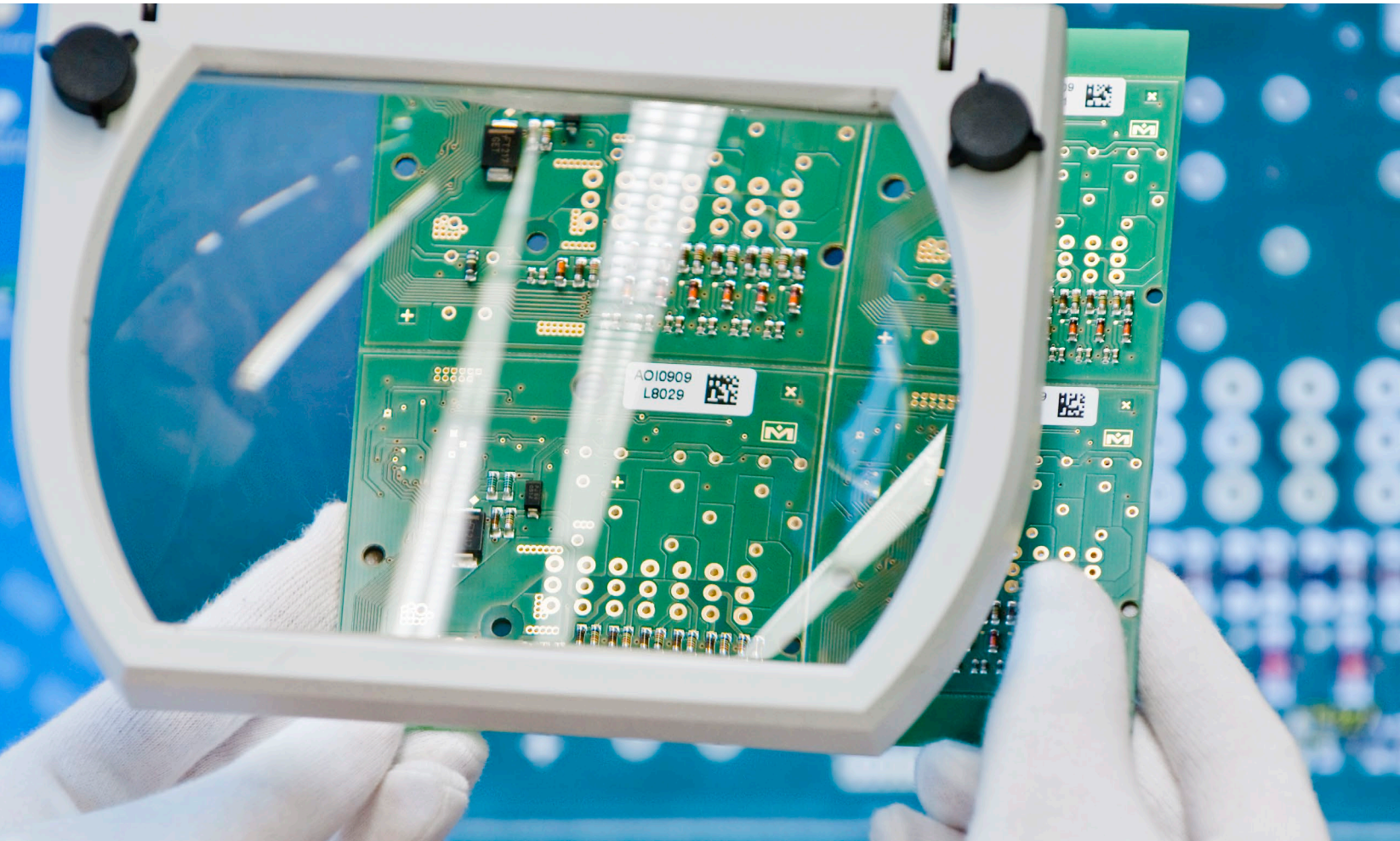


Our broad product portfolio consists of products in the areas of controls, gateways, HMI systems and relays.

Professional project management and high quality standards result in first-class products. We inspire customers with our partner-like collaboration and future-oriented solutions.

Teamwork, trust and a passion for electronics form the basis for our mutual success.

>> COMPETENCE / TECHNOLOGY



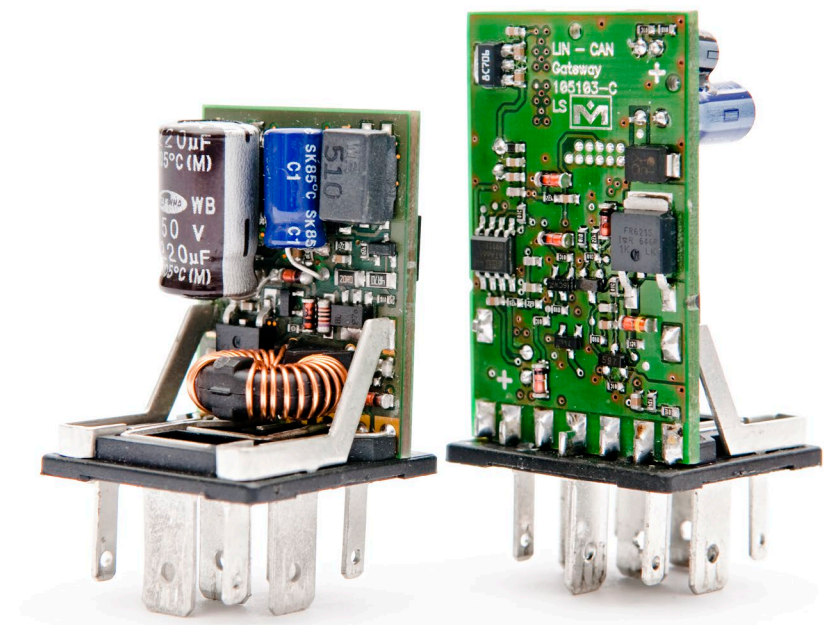
Our continuously growing competence makes us your preferred partner. As a customer, you achieve your goal faster and more economically – because with us you get everything from a single source. We accompany you every step of the way – from the conception and development of a product to series production to after-sale service.

Our quality standards are geared to the expectations and wishes of our customers.

We don't want to just meet the requirements, we want to exceed them. Quality runs like a golden thread through the whole company and every single employee takes responsibility for the quality of his or her daily work.

Modern manufacturing technologies, open communication and continuous optimization of all company processes reflect a quality management system that is put into practice every day.

Since 2003, MRS Electronic has been regularly certified according to the internationally recognized quality standard DIN EN ISO 9001. As a result of comprehensive and efficient quality activities, an environmental certification according to DIN EN ISO 14001 was achieved in 2012. In 2017, the company was certified according to the automotive standard IATF 16949:2016. The numerous E1 approvals issued by the German Federal Motor Transport Authority are another indicator of the quality standard of the Automotive Electronic Modules. Upon request, we can also carry out various environmental tests (climate, temperature, vibration, EMC).



>> APPLICATION AREAS

Your market position is our success.

Our products and services can be found in many different industries.

- Automotive
- Agricultural engineering
- Construction machinery
- Commercial vehicles
- Special vehicles
- Special-purpose machines
- Automation
- Customized solutions

Our products are in a lot of vehicles out there on the roads:

In the automotive industry, for example, our controls provide advanced functions in your car.

With our controls in lift systems, we make it easier for people with reduced mobility to travel. Customer-specific, robust modules with a high protection class and integrated CAN bus technology offer you maximum flexibility.

Moving heavy loads safely: Our products ensure that forklift trucks operate smoothly so that your goods arrive safely and on time every day. On road transport vehicles, our combined windscreen wiper control guarantees that drivers always have a clear view.



We ensure that the plaster on the walls of your house has the right mixing ratio and that road construction machines work quickly and produce optimum results. Special winches for forestry work are controlled by our robust operating modules (HMI).

Freely programmable controls from our company give harvesting vehicles the intelligence they need to bring fresh vegetables to your table.

Our ventilation controls ensure that the exhaust systems in laboratory equipment always create optimum environmental conditions.

We keep centrifuges for blood analysis in motion with our electronic components. With our know-how in environmental technology, we develop and manufacture high-quality water analysis instruments.

Very likely, you too could benefit from our products and services. Challenge us – we always look forward to new tasks.



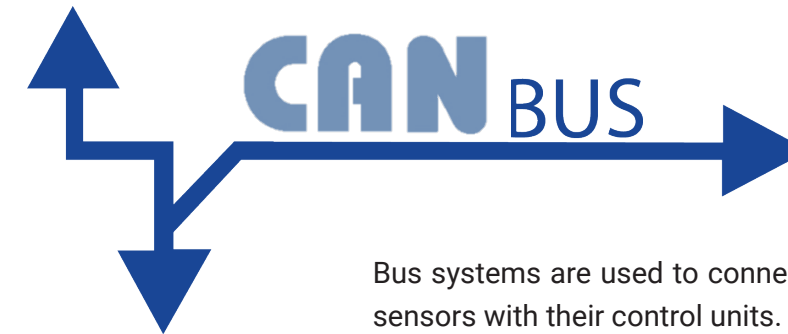
>> CONTROLS

PLC controls



PLC controls are digital electronic systems that, in the simplest case, operate with four components (inputs, outputs, operating systems and interfaces). As the name implies, these four components can be used to control machines or whole systems. A programmable memory allows user-specific control instructions to be stored and executed via the inputs and outputs.

Controls with CAN



Bus systems are used to connect devices such as actuators and sensors with their control units.

Bus systems can also partly control the processes themselves, provided they do not exceed a certain level of complexity.



Motor controls



Motor controls are microcontroller-controlled modules designed for automotive applications, among others. User configurable and programmable, they make it possible to realize a wide variety of applications. They are very compact and can therefore be used in many different ways.

Available versions:

- 5A CAN
- 10A CAN
- 10A CAN Pro
- 4-fold Motor control CAN + LIN
- Motor control 30A



>> RELAYS

Relays are electromechanical switches used to switch circuits on and off as well as toggle current flow. They provide the ability to control a large circuit with high voltages and currents with just a small circuit. This makes it possible to use a relay, for example, as a protective relay for machines and devices, so that they can be switched off immediately if their operating values are incorrect. They are also very well suited for controlling time-delayed switching of any kind.



Toggle relays

- Compact
- Time-limited
- Time-limited & compact

Time relays

- On & off delay
- Adjustable & on delayed
- Adjustable & off delayed
- On & off delay compact

Impulse relays

- Compact
- Adjustable

Voltage monitor

- Voltage monitor / range monitor
- Undervoltage monitor with acknowledgment

Frequency monitor

Frequency monitors switch consumers on/off when a defined frequency threshold is exceeded or underrun.

Flasher unit

- Flasher unit
- Universal Flasher unit
- Universal Flasher unit LED

Standard relays

- Micro-relay
- High-current relay
- High-current relay with screw terminals
- Relay with special contacts

Semiconductor relays

Semiconductor relays are suitable for switching lamp loads, ohmic and inductive loads. They switch noiselessly and are absolutely wear-free.

Special relays

Special relays are any relays that are not part of our standard program and that we can produce for you according to your specifications.

>> GATEWAYS



Gateways are the central contact point for all control units. They can transmit and evaluate all information and data, allowing all electronic control units to communicate and work together. They are used primarily in the automotive sector, where they control and coordinate all ECUs in vehicles. This enables error-free, secure communication between all controllers.

CAN Gateway module

The compact, vehicle-compatible CAN gateway module with PLC function is used to simply extend existing vehicle functions with minimal wiring. It is freely programmable and equipped with 3 CAN interfaces.



Universal Gateway 5x CAN

The Universal Gateway 5x CAN from MRS enables data exchange between CAN bus systems. Its open and flexible design tailored to automotive applications allows a quick adaptation to customer-specific requirements, even in small lot sizes.



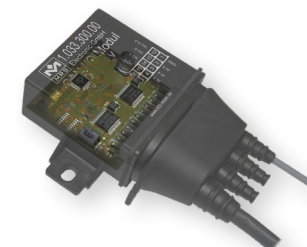
Micro Gateway

The Micro Gateway is the smallest gateway for automotive applications. Due to its small size and simple installation, it offers a wide range of application possibilities.



CAN/RS485 Gateway

This compact, vehicle-compatible CAN/RS485 gateway module is used to extend existing CAN controllers, but can also be used as a stand-alone PLC controller.



>> HMI SYSTEMS

An HMI (Human Machine Interface) serves as an interface between the operator and the process. Production processes can be coordinated and controlled with the help of an HMI. It displays production information in a simple way so that the operator can quickly react to this information. This allows companies to compensate for the ever stricter requirements and increasingly complex processes in machines and production facilities.



Touch Panel

The Touch Panel is a user-friendly keyboard specially designed for use in the commercial vehicle sector.

Thanks to the glass front screen, the module is resistant to liquids and oils, as well as dirt-repellent and impact-resistant.

The LED backlight allows the user to choose the color of the luminescent symbols.

>> MRS SOFTWARE TOOLS

When programming our controllers you can always count on us to be right at your side, providing advice and support. The following options are available:

We create the application software according to your specifications

You provide the application know-how and our development team creates the software in close cooperation with you. Years of experience in programming are at your disposal.

You provide the finished program

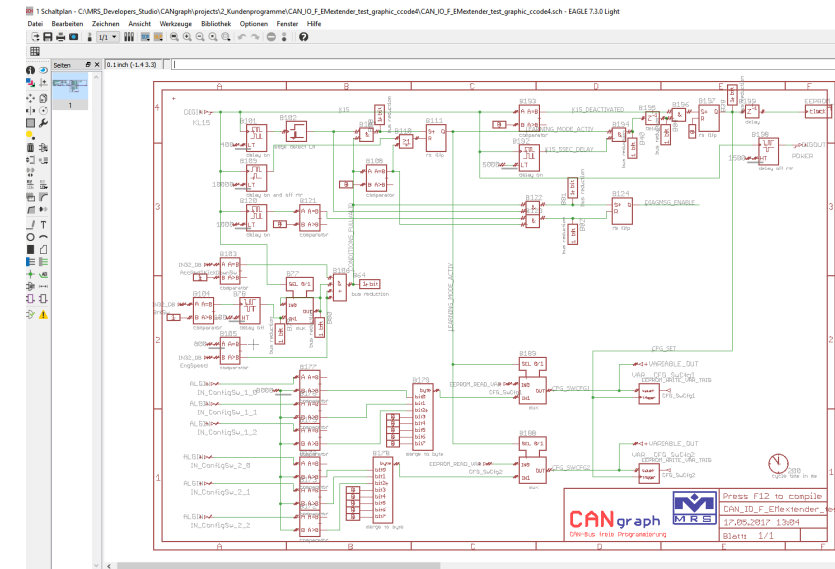
You are welcome to provide us with your program. We then deliver your modules already programmed, on request also to the end customer.



MRS Developers Studio

The MRS Developers Studio was developed for the programming of our CAN products.

Programming is carried out graphically, or in the case of complex applications, in „C code“ via the easy-to-use user interface. All CAN products have a CAN bootloader that is permanently active on the modules. A new program can be flashed at any time during operation via the bootloader.



The graphical programming is similar to the FUP (function diagram) according to IEC61131. For that reason, no extensive programming knowledge is required. A basic knowledge of digital technology is sufficient to create programs with the MRS Developers Studio.

MRS Realizer

The MRS Realizer can be used to quickly and easily program the M1, M3, Micro PLC controllers and the proportional amplifier. The parameters are set via the relay contacts, which means that the housing does not have to be opened. Z-Graph allows you to create your own programs for your application.

Graphical function blocks (similar to IEC61131) in Eagle are available for this purpose. For that reason, no extensive programming knowledge is required. A basic knowledge of digital technology is all that is needed to create programs with the MRS Realizer.



The knowledge and expertise of our development engineers is your big advantage, providing you with customized, optimal solutions in the OEM development business as well as in the automotive and industrial electronics sector.

Trust in our know-how and many years of experience in design and development. We support you with both hardware and software and come up with real solutions, no matter how complex the problem. Your extraordinary demands are our challenge.

OUR SERVICES WILL CONVINCING YOU

TESTER FOR POWER SEMICONDUCTORS - INSTALLATION DIRECTLY ON YOUR PREMISES

Many requirements are placed on power semiconductor testing. To meet the stringent requirements with respect to availability and reliability, each part must be thoroughly tested before being delivered to the customer.

The testers are designed to test all relevant parameters of power semiconductors. In particular, ZTH, RTH and other high-performance tests have forced us to combine wide source and measurement ranges. MRS also supplies devices for high-current FET commutation tests („real life stress tests“).

TRAINING COURSES FOR OUR PROPRIETARY SOFTWARE

In our seminars we impart exactly the technological, methodical and organizational knowledge you need. We offer a wide range of training formats, ranging from open training courses to individual training tailored to your requirements, either at our premises or at yours.

In these workshops we explain our CAN products within the context of practical applications.

Topics include components and programs, CAN data points, CAN communication as well as advanced programming.

Our expertise in software engineering, our mastery of development platforms and our deep technical understanding of the applications gives us an unparalleled ability to assist you with your project.

INDIVIDUAL PROJECT DEVELOPMENT

Our qualified project management accompanies you from the idea to the finished product. Prior to the start of the project, customer requirements are collected and analyzed and a concept is drawn up. Programming and manufacture of the final product then follows.

OUR WORLDWIDE SALES PARTNERS ACCOMPANY YOU
FROM THE IDEA TO THE FINISHED PRODUCT.



We support you worldwide with our headquarters in Rottweil, our sister company in the USA, a sales agency in France and six distribution partners!

OUR LOCATIONS

HEADQUARTERS

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www.mrs-electronic.com/us-en

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www.mobileintegrator.se

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Höger Tech GmbH

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CH-6300 Zug, Switzerland
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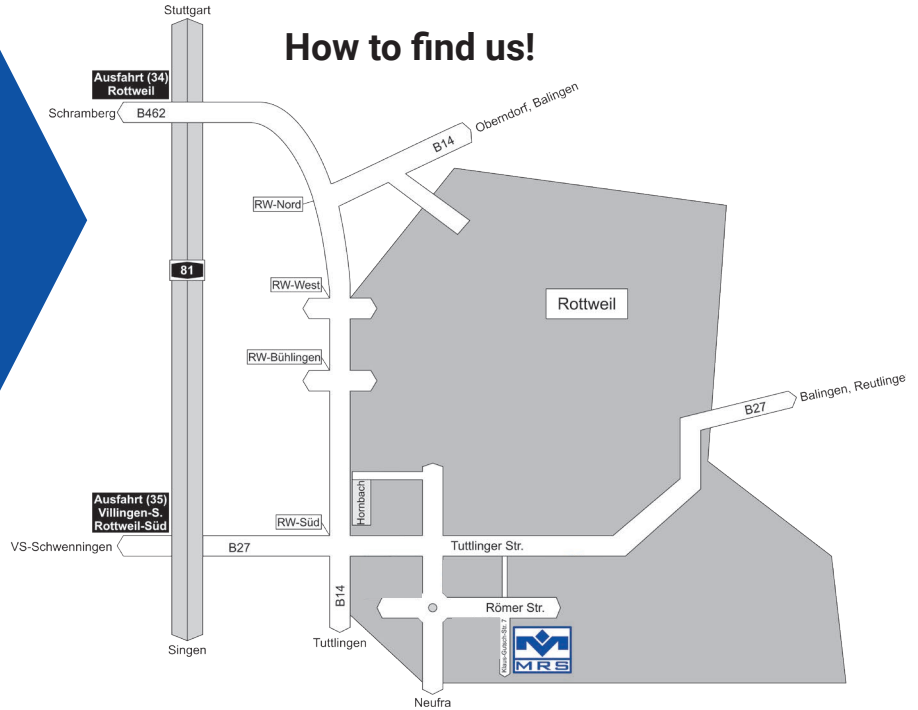
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How to find us!



Production in Germany

Automotive electronics

Advanced products

Production site in Rottweil

From idea to product Modern production facilities

Mobile controls

Open Communication

Concept

Optimal solutions

Worldwide distribution network

Intensive customer care

Development
CAN Products
IATF 16949 Certification