

Products and Solutions for Railway Vehicles
HMI and Driver Assistance Systems

Mobility | Making mobility happen.



Mobility. Materials. Photonics. | united by passion.

CONTENTS

We are Gersys	
Our guiding principles	4
Highlights in the Gersys story	6
Products	
▪ Multifunctional Displays	8
▪ Driver Assistance Systems	10
▪ Rail PC, Video solutions, Rugged USB stick	12
Quality	
▪ Certificates	14
▪ In-house testing laboratory	16
Service	
Long-term supply and customer-specific solutions	18
The HÜBNER Group	
Think global, act local	20

We are GERSYS

Gersys develops and manufactures graphic display units (HMI/IDU/MMI), on-board computers and driver assistance systems for use in railway and special vehicles in accordance with the railway standards EN50155 and EN45545.

Working with Gersys, you can be sure you're making a secure investment. We guarantee the highest equipment reliability. And we also ensure a level of long-term availability for our products that is unique in the industry regardless of where they are being used – whether it's in the icy cold of Siberia, the dry heat of Australia's deserts, or the tropical humidity of South America. That's why we are the leading supplier for instrumentation in rail vehicle drivers cabs, and why we're Germany's number one market leader with our driver assistance systems.

Our guiding principles

Individual consulting and personal support are an essential part of our business approach. Our employees have decades of experience working with highly sophisticated IT applications where security and safety are paramount. In addition, they have detailed knowledge about the special requirements of the rail industry and related applications.

At Gersys, the durability of our products and the investment security of our customers are always top priorities. Nearly all of our products continue to be available even after the standard railway industry life cycle is over – or these products can be replaced by a compatible successor model without software changes.

Our network

Gersys has been part of the HÜBNER Group since 2019. HÜBNER is not only a strong and reliable brand name. The company also is represented around the world at some 30 different locations. At the same time, HÜBNER remains true to its origins as a responsibly managed family-owned company from Germany.

In cooperation with HÜBNER, we can offer you the advantages of being served by a company with global operations that is nonetheless a family-owned business.



Our history
**Highlights in the
Gersys story**

Gersys takes part in the InnoTrans exhibition in Berlin for the first time. This is a major success for our young company. Prominent companies such as ALSTOM, Bombardier, O & K (Orenstein & Koppel), Deutsche Bahn and Vossloh are already providing stability for Gersys through long-term contracts.

2001

Gersys GmbH is founded by Erwin Sterzer in Wolfratshausen, Germany.

2002

Release by the Deutsche Bahn of the on-board unit BC4100 for the second generation EBUa. The testing agency TÜV Süd certifies our quality management system in accordance with ISO 9001 in April 2004.

2003

Move into larger premises for development and production as well as construction of a laboratory for EMC testing.

2004

A complete relocation into our own much larger company building provides ideal conditions for further expansion. Gersys now has its own complete laboratory for testing EMC properties, climate and temperature characteristics, and shock and vibration behavior.

2008

For the first time, approximately 3,500 units per year were produced.

2012

The company's healthy financial status allows for further major investments in plant equipment. Gersys presents itself as one of the world's leading manufacturers of display systems for rail vehicles.

2014

Successful certification in accordance with ISO/TS 22163.

2018

2019

Gersys becomes part of the HUBNER Group.

Multifunctional Displays

Modular and always robust

To be safe and secure in every operational situation, you need co-pilots who never lose their cool.

Our Multifunctional Displays have been specially developed for use in rail vehicles. With their flexibility and rugged construction, they're also perfectly suited for other mobile applications as well. The modular device design with a large selection of available processor technologies and expandability through diverse interfaces supports a wide range of possible applications. And our Multifunctional Displays are also available in a range of sizes:

7" HMI Multifunctional Display

The Multifunctional Display BC2050 is equipped with an energy-saving but powerful ARM Cortex A9 processor. Its low-power loss, no-fan operation supports use across an expanded temperature range. The display is especially well-suited for limited space installations (e.g. retrofits). The open Linux operating system supports simple and economical implementation of a wide range of applications.

8.4" HMI Multifunctional Display

Especially when retrofitting and modernizing existing vehicles, there is often not enough space for the standard 10.4" display size. Our 8.4 displays combine compact installation dimensions with the look and feel of a 10.4" display.

10.4" HMI Multifunctional Display

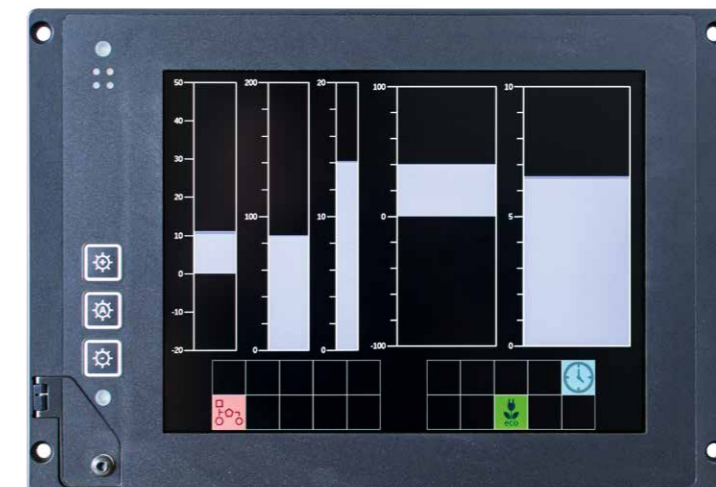
With a screen diagonal of 10.4", a multitude of processor variants and a range of available designs, our Multifunctional Displays in the BC3 and BC7 series cover nearly all application areas, and will meet the highest performance expectations. Available with ARM Cortex A9, and Intel ATOM x86 processors. The new Intel ATOM Apollo Lake processor in particular leaves nothing to be desired in terms of overall performance and graphic processing power.

12.1" HMI Multifunctional Display

Based on our proven bestseller BC3, the BC5 series is ideal not only as a technical display, but also for video applications thanks to the large 12.1" TFT display. With its modular concept, the BC5-series also offers a great selection of many different processor technologies and interfaces. The BC5 gives you a top-performing all-rounder in a large format.

15" HMI Multifunctional Display

With its large 15" TFT display, the BC6 series is ideally suited for video applications, but works equally well as a technical display unit. The BC6 series also offers a wide selection of different processor technologies and interfaces. Despite its large screen diagonal dimension, the BC6 features a slim design.





Driver Assistance Systems

Driver Assistance Display FASSI BC7433

On the basis of our new modular BC7 display family, we have developed the driver assistance system FASSI for DB Systel, the digital partner of Deutsche Bahn. It is a display device that can handle all of the DB Systel specifications and requirements. With a high-quality IPS TFT display that provides outstanding readability both in landscape and portrait modes, a processor with guaranteed long-term availability and an embedded operating system, the terminal serves as the hardware basis for DB Systel's FASSI system. Operation via a vandal-proof PCAP touch screen (in laminated glass technology) also enables the use of apps through its multi-touch capability. And thanks to the integrated GPS and LTE modules, it is possible to make use of current and future applications for driver assistance systems.



EBuLa - The on-board electronic timetable

The EBuLa on-board devices from Gersys have been developed and released in accordance with the Deutsche Bahn specification V1.5. The devices are available both in a fixed desk mounting and for portable use situations.

BC7 series / 10.4"

The on-board display units BC7900, BC7902 (with integrated GSM-R modem), BC7904 (with integrated GSM-R modem and integrated GPS module), BC7906 (with GPS module) and BC7908 (with LAN for MIPs) have been developed for use in rail vehicles – and in particular for the DB application EBuLa (electronic timetable and low-speed point system). The new high-performance Intel® processor and the short boot time at start-up make for user-friendly operation as well as short turnaround times. IT security is provided by the Windows 10 operating system in addition to other factors. As the unit is largely maintenance free, there is no longer any need for a fold-down front panel. The BC7 also has two covered USB charging sockets on the front panel of the device.

USB charging unit

For mobile devices such as smartphones or tablets, a single charge often is not sufficient to last through the whole working day. In older vehicles, there is usually no power socket available for a corresponding charger or it is being used for other purposes. To give train drivers the possibility to charge their mobile devices despite this limitation, we offer a retrofit kit for our EBuLa units of the BC43 and BC44 series. The integration of the charging socket into the existing on-board device can be done simply and economically by an electronics workshop or by Gersys as the manufacturer of the devices. A big advantage in this approach is that no new vehicle wiring or any other modifications are required in the driver's cab. The on-board display units BC43xx and BC44xx can each be retrofitted with two USB charging sockets, which are protected against dirt and soiling by a tightly closing flap.

The Rail PC from Gersys

Uninterruptable power supply

Our vehicle computers in the VC series were specially developed for use on rail vehicles. Highlights include the integrated uninterruptible power supply (UPS) and the cooling concept, which works in every mounting position. The modular device design with its large selection of different processor technologies, its expandability with diverse interfaces as well as the universal mounting potential via optional mounting frames support a very wide range of possible applications.

Video solutions

CCTV Solution

CCTV is our digital on-board video surveillance solution. It consists of network cameras, network attached storage (NAS) as well as network video recorders (NVR).

With the included software it is possible not only to monitor security-relevant incidents such as vandalism but also to analyze such occurrences. The CCTV Solution thus helps to prevent vandalism and at the same time heightens passengers' sense of security. In addition, our system provides the option of distinguishing between false alarms and genuine emergency situations. This makes it possible to respond to alarms quickly and efficiently.

CCTV enables:

- On-board video streaming
- On-board video recording
- Analysis of videos
- Live notifications

Video monitor of the VM1 series

The VM1 series video monitor is expressly suited for use in rail vehicles for displaying digital information transmitted via standard interfaces, in this case either via a DVI-D feed. As usual with Gersys, the monitor is equipped with a wide-range power supply and complies with railway standard EN50155.

Rugged USB stick

Superior quality and highly reliable

With the ZU102x, Gersys offers a high quality USB drive that meets the demanding requirements of railway-related use.

Applications range from data readout, to installation of programs, to recovery of an operating system together with its application program. The SLC-FLASH system provides high write and read rates together with high data security. The M12 connectors in the USB sticks are not commonly used in consumer applications, but they are well suited for railway applications with their high dependability and plug cycles. Long-term availability of the railway-suited USB sticks is assured.



With others, optional extras – Standard with us

The highly demanding requirements of the rail industry require reliable, high-quality electronics. To ensure that every product meets these standards, it is essential to have a perfectly functioning and well-conceived quality management system. In our process flow charts we define the required measures from the initial design phase to the end of the product life cycle. Each component can be traced through the serial number management system. In addition, each product undergoes multiple tests and quality control checks in the development process. Our highly qualified employees inspect each device in accordance with the relevant test instructions and the IRIS (ISO TS22163) quality specifications. We also have a comprehensive testing laboratory. The in-depth Gersys testing processes ensure that our components continue to function reliably even under the most extreme environmental conditions.

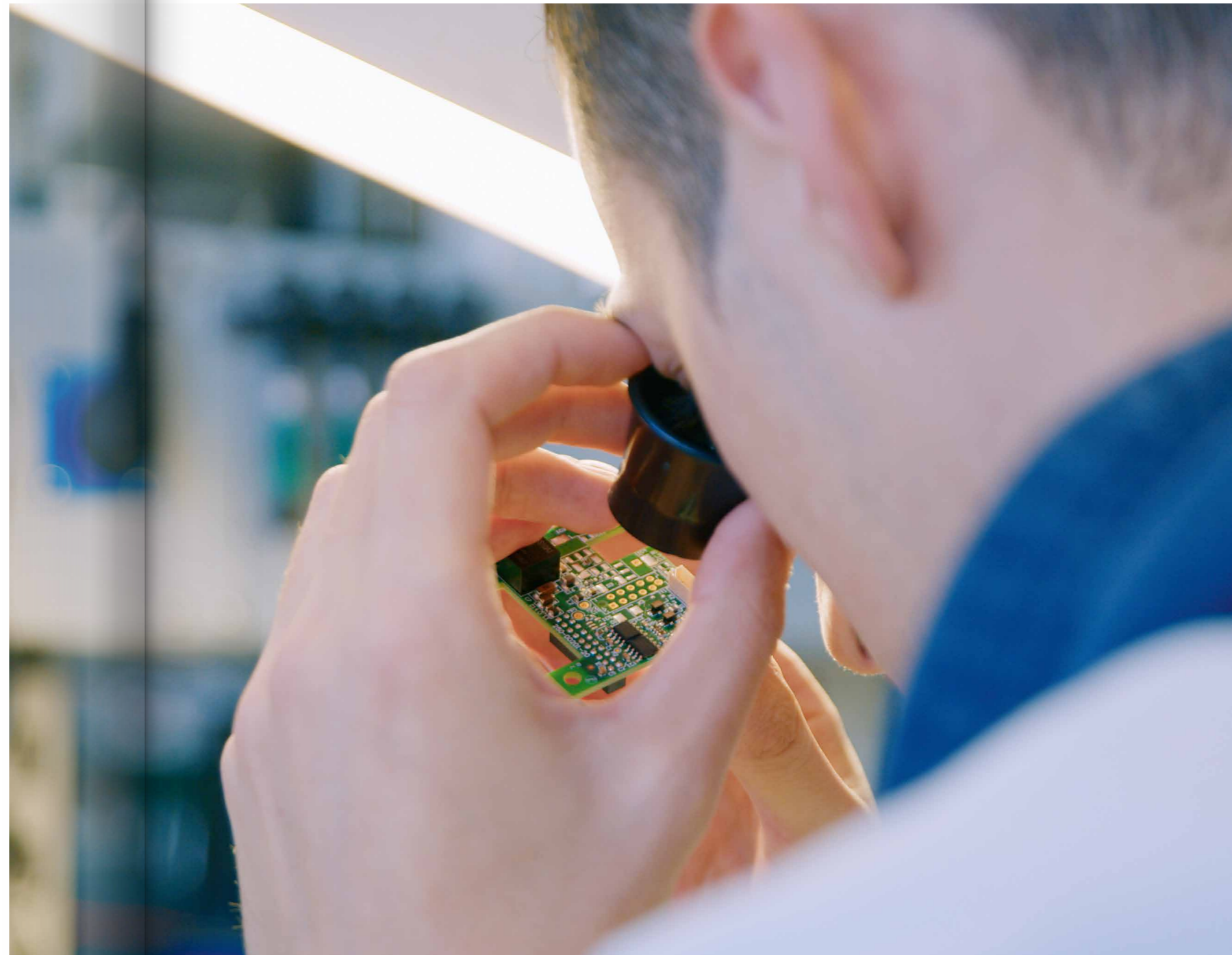
- Compliance with Railway Standards EN 50155, EN 50121-3-2 (EMC), EN 60068 (temperature/climate), EN 61373 (shock & vibration), EN 45545 (fire safety), additional customer-specific standards
- Wide-range power supply from 24 to 110 V DC (+/- 40%) as standard configuration
- On-board equipment with multiple interfaces, e.g. RS232, RS422, RS485, CAN, Ethernet, Audio, USB, PS/2
- Expansion possibilities via available mini PCIe or PC/104 slot
- Operation via keyboard (UIC612) and/or touchscreen

And perfectly prepared for special tasks

- Manufacture of individual solutions (e.g. connections, interfaces, display resolution, keyboard layouts, operating systems, housings, labeling)
- Complete from-scratch development of new devices based on customer specifications. Our cost-efficient approach: Wherever possible, we make use of established components and assemblies

Our Certificates

Certifications according to ISO 9001:2015 and IRIS Rev. 3 (ISO/TS 22163) as well as regular customer audits document and confirm our quality management system. In addition our complete product range for the Russian market has been qualified in accordance with GOST-R.



Our in-house testing laboratory

Tested from top to bottom

We operate our own in-house testing laboratory extensively equipped with modern instrumentation and accepted by leading rail vehicle manufacturers. The in-depth Gersys testing processes verify that our components function precisely even under the most extreme environmental conditions. That means they can be counted on to deliver reliable performance and exact data even in icy cold conditions of -40°C or extreme heat of $+85^{\circ}\text{C}$.

And full immunity against electromagnetic interference is also part of the package. Devices from Gersys not only comply with the European Railway Standards EN50155 / EN50121-3-2, they also can be produced to meet customer-specific or country-specific requirements.

Our measurements in detail

Our in-house testing laboratory supports the following measurements:

Interference emission

- Conducted emissions of 9 kHz to 30 MHz (in accordance with EN55016 and EN55022)
- Emissions (H and E fields) of 30 MHz to 6 GHz (in accordance with EN55016)

Interference immunity

- Radiation from 80 MHz to 6 GHz, field strengths up to 30 V/m (according to EN6100, 4-3)
- Electrostatic discharge (ESD), surge and burst
- Test set-up according to EN61000-4-2; 4-4

Climate simulations

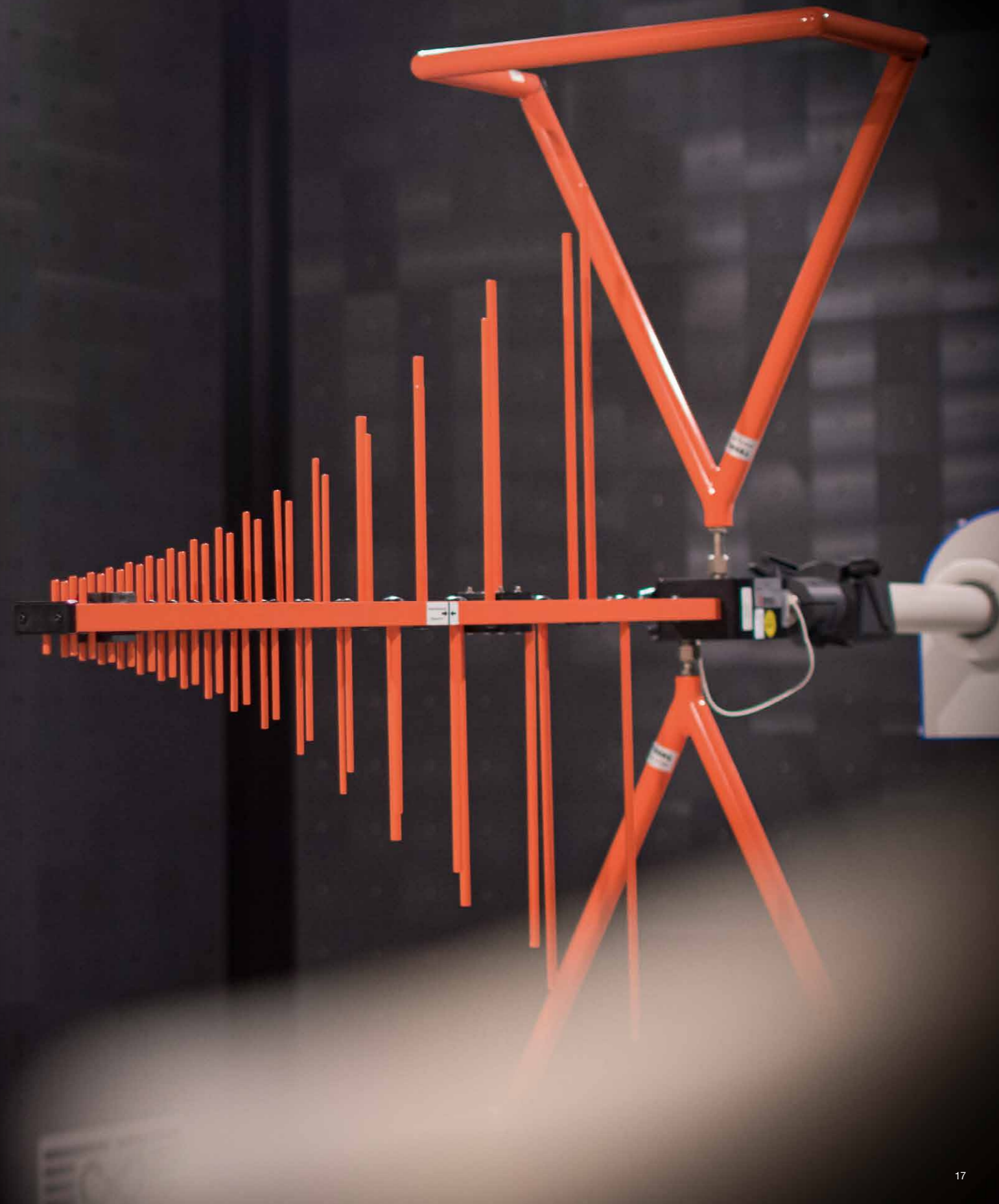
- Cold conditions to -40°C , dry heat up to $+85^{\circ}\text{C}$ (technically possible test interval -70°C to 180°C)
- Relative humidity 5 - 98%
- Tests according to IEC68-2-x

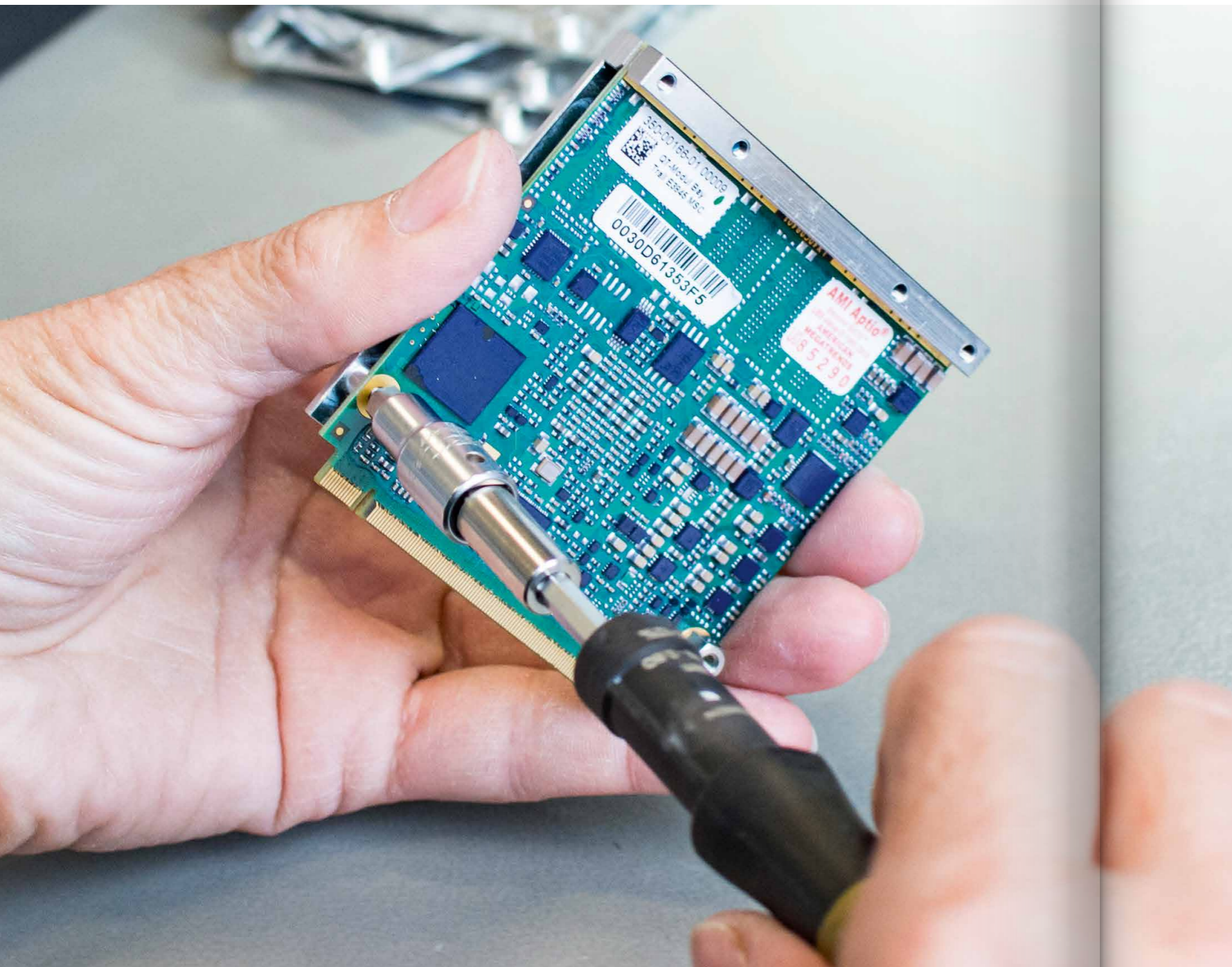
Shock and vibration test

- Durability testing with random vibration signals
- Shock testing according to IEC 61373
- Sine vibration testing
- Resonance point search

Burn-in testing

- Passive run-in testing. In passive run-in testing, the test units are run-in at an elevated ambient temperature for at least 48 hours.
- Active burn-in testing. In the temperature chamber, the test units are subjected to a "stress" temperature profile that approximates the customer's specification. This procedure also allows for testing the switch-on behavior at low temperatures.





Customer-specific solutions

Long-term supply

Today, long-term supply of spare parts and availability of replacement equipment that is form-fit-function compatible are an absolute necessity. Even after the end of a model cycle, we assure you of at least 15 years of equipment availability.

This is made possible through our selection of durable components and a implementation of a 2nd-source supply strategy. We also demonstrate our foresight and predictability as a responsible supplier through our regular obsolescence checks and last-time-buy information provided to contract customers. For later replacement requirements, devices compatible in form, fit and function are made available to avoid cost-intensive software changes and registration processes.

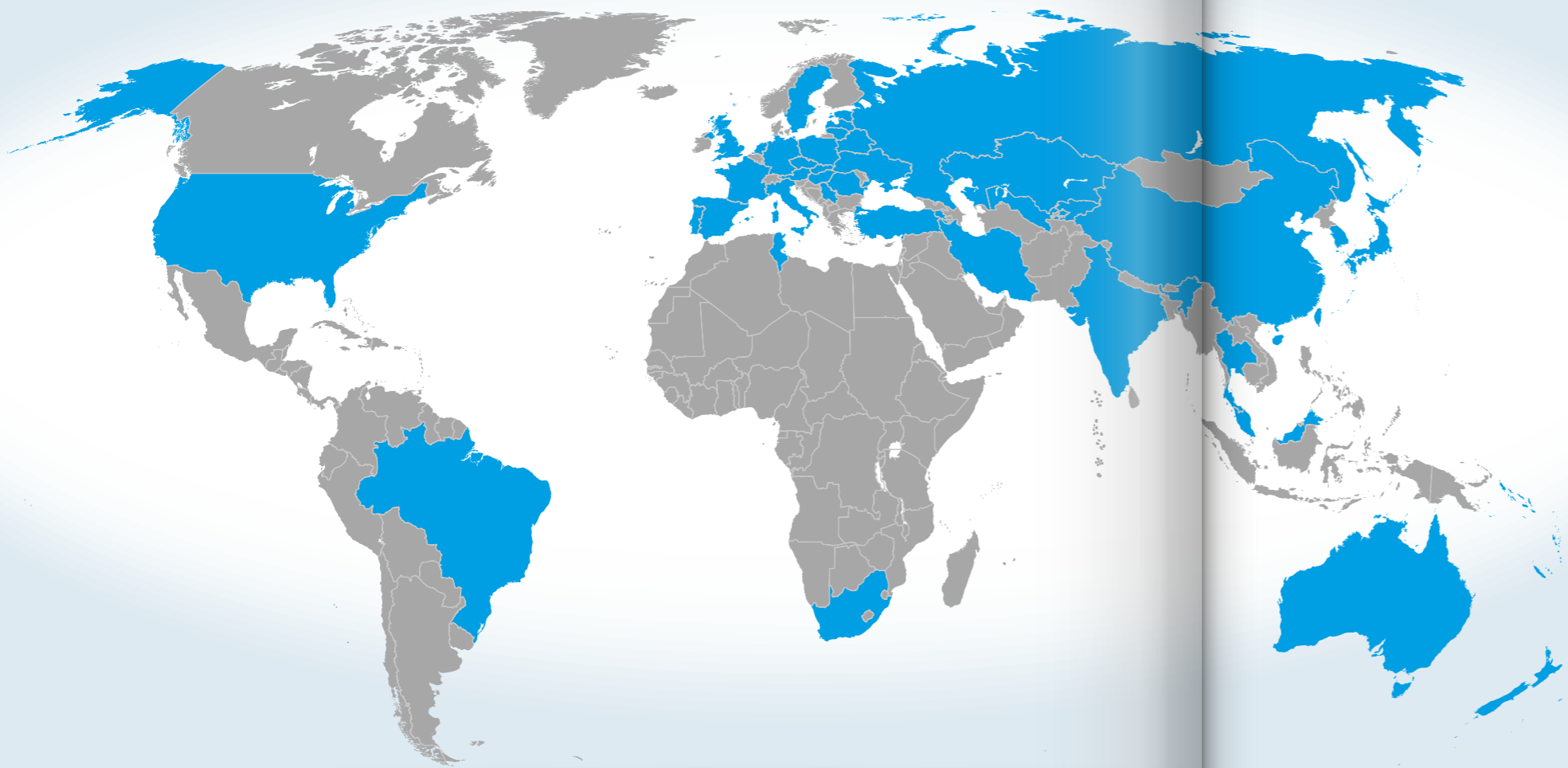
In addition, Gersys is a member of the Components Obsolescence Group Germany (COG).

Based on your individual requirements

Do you have a special requirement? In addition to our classic line of products, we also can offer customized solutions that are tailored exactly to your specific application.

We have already developed and manufactured train radio control units and on-board computers for special vehicles such as those used in the mining sector.

We would also be pleased to develop instruments for you based on our proven Gersys components to fit exactly to your individual requirements. Feel free to get in touch with us. We'll be happy to arrange a personal meeting with you.



Think globally, act locally

HÜBNER is there where its customers are – because close contact helps us to understand business partners better and to provide better support. Individual wishes and requirements can be determined quickly and then put into effect and implemented without delay. Customers thus have direct benefits from our strong local presence.

In addition to the company headquarters in Kassel, Germany in the heart of Europe, HÜBNER has built up more than 30 locations around the world in the preceding years and decades. The company now has major plants in Hungary, Poland, the USA, China and Brazil. This network of company-owned locations is supported by sales partners and trade representatives in more than 30 additional countries.

The company's offering to customers does not end with the delivery of the products. The HÜBNER Group is also continually expanding its service structures – in personnel and in the technical facilities that are provided. To be on hand ready to provide support as quickly as possible – in locations around the world.

www.hubner-group.com

1group with more than 30 locations	sales partners & representatives in more than 30 countries	approx.	3,500 employees
	founded in 1946	approx. 1,000 patents worldwide	



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