



Sensitec.

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Magnetoresistive Sensors >>made in Germany<<.



» We stand for  
curiosity and  
creativity ...«

... as an uncomplicated and  
willing partner we impress our  
customers with new product ideas  
and solutions .

» We keep our eye on  
the target ...«

... reliability and cooperative  
partnership come alive .

» We excite our  
customers ... «

... with a unique technology and  
an offbeat way to find the best  
solution.

PERFORMANCE  
SUSTAINED

Performance.  
Sustained.

# Together we are Strong.

We are a global leader for magnetoresistive sensor technology and the development and production of magnetic micro systems with two locations in Lahnau and Mainz. We offer sensor solutions for the measurement of length, angle, position, current and magnetic field – simply robust, precise and dynamic.

Since 2013 we are a member of the Körber Group. In the Business Unit Sensor Technology we are part of the Business Area Körber Automation. Sensitec GmbH was founded more than 15 years ago in Lahnau, near to Wetzlar, with the objective to produce sensors based on the magnetoresistive effect for industrial and automotive series applications. Backed by many years of experience and technological know-how, high quality products as well as the corporate stability of the Körber Group we are able to fulfil the requirements of our customers in a rapidly expanding market.

**Our service portfolio comprises amongst other things:**

- Measurement scales (magnetized linear scales and pole rings)
- Chip design and chip production
- Integrated signal processing circuits
- Components and system solutions in standard and customized design

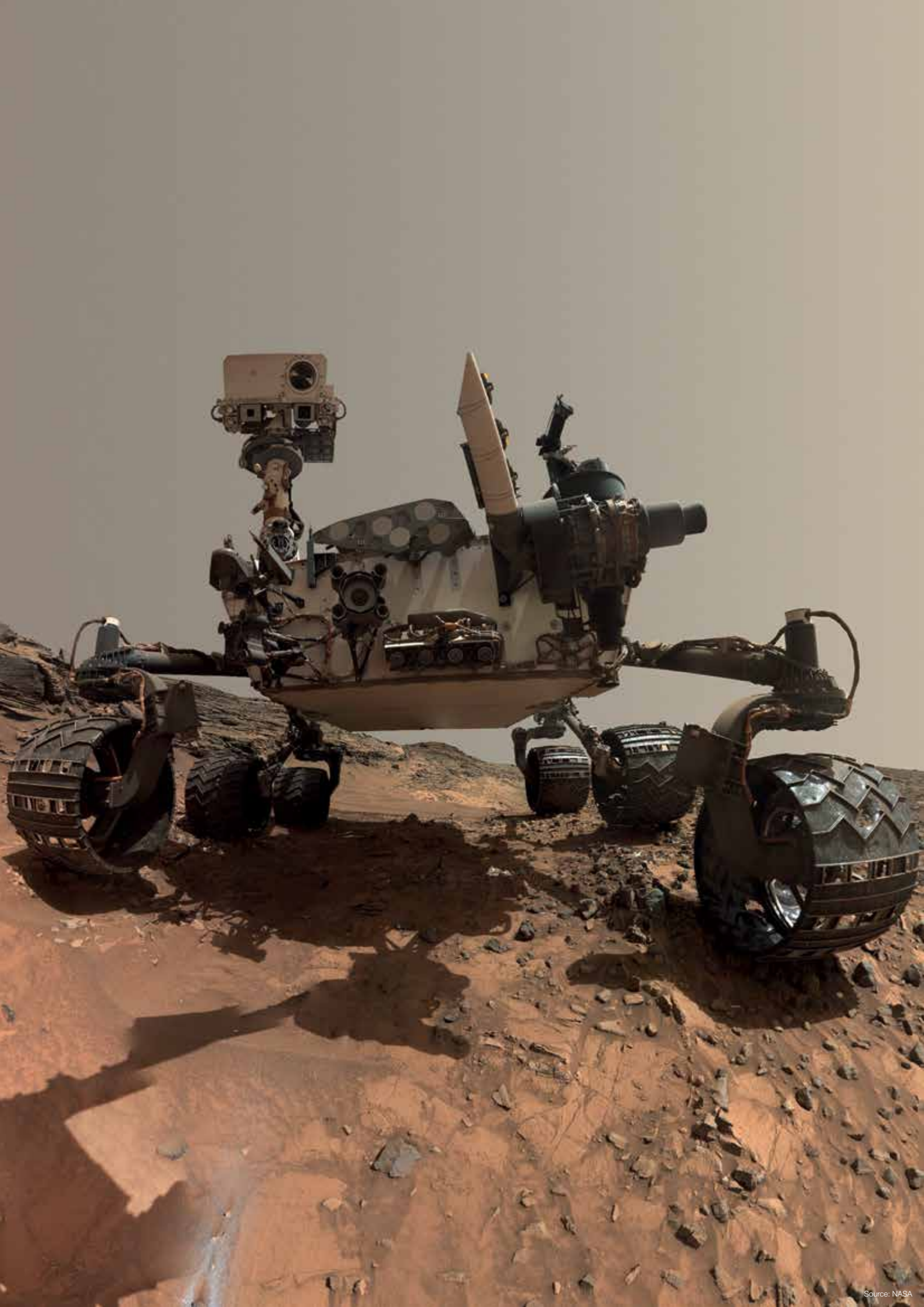
Körber AG is the holding company of an international technology corporation with more than 11,500 employees worldwide. The Körber Group combines technology leaders with more than 100 production, service and sales companies. At locations around the globe Körber combines the advantages of a worldwide organization with the power of highly specialized and flexible mid-sized companies, which provide their customers solutions, products and services in the business areas automation, logistic systems, machine tools, pharmaceutical systems, tissue, tobacco and corporate ventures. In the financial year 2015 the Körber Group achieved a turnover of 2.3 billion €.





The Körber AG is headquartered in the "Berliner Bogen" in Hamburg.





# 100 % Market Share on Mars.

Since more than 12 years our sensors are running trouble-free under the most extreme conditions.

When in 2004 the marsrovers „Spirit“ and „Opportunity“ landed on the red planet, the life expectancy of the robots was estimated to be about 90 days. In the case of „Opportunity“ the expected three months have been extended to more than 12 years to date. Meanwhile, the moving robot managed to drive more than 40 kilometers – this is the furthest distance ever driven on a foreign planet.

The fact that „Opportunity“ is able to do this outstanding job for such a long time also depends on our sensors. They are used to detect the angle and positions of all moving parts and to provide their control signals, such as for example for the angle position of the wheels or the position of the robotic arm. Due to their robustness the sensors can withstand extreme environmental conditions on Mars such as temperature fluctuations ranging from +27 to -133 °C as well as different surface structures and strong cosmic radiation due to an extremely thin atmosphere.

With the sensational landing in 2012 another rover touched the Martian ground with ultra-modern sensor technology on board. On behalf of NASA, „Curiosity“ supports the elder brother „Opportunity“ in searching for extraterrestrial life.

**„The successful Mars projects are a perfect example for the outstanding quality of our xMR sensors. These advantages are not only interesting for space applications but also for applications on earth”,** says Dr. Rolf Slatter, CEO Sensitec GmbH.

# Our Strengths. Your Benefit.

We develop and produce magnetoresistive sensors and systems for a variety of branches. With a comprehensive product range and the possibility to put customer-specific requirements into unique sensor solutions we are your competent partner for magnetic sensor technology.

All sensors and systems are developed by experts. Technological principles and new possibilities are developed systematically in EU- and state-funded R & D projects. In order to bring these new ideas into your application as fast as possible we always keep our focus on industrial requirements.

As one of the few manufacturers of xMR sensors we possess competent knowledge in all three industrially used technologies: Anisotropic Magnetoresistive (AMR), Giant Magnetoresistive (GMR) and Tunnel Magnetoresistive (TMR).

Besides research, development and production of sensors the support of our customers is an important matter for us. With a longstanding experience in many application fields we give advice and support to select the optimum sensor solution.





- Wide-ranging sensor portfolio.
- Permanent further development of xMR technology.
- Application experience in various fields.
- Customized sensor and system development.

**Fast start.  
Quick implementation.**

**Optimum system  
adaptation.**

**Individual solutions  
tailored to  
the application.**

Performance.  
Sustained.

# Research & Funded Projects.

The participation in national and international research projects has a long tradition and can be traced back to Sensitec's origin as a private research institute. Especially due to the co-operation with experts from research institutes, universities and industrial partners the potential of the relatively new xMR sensor technology could rapidly be developed for various application fields. From the application-specific demands new product ideas and findings are generated. But also the challenges and limits of the technology can be better understood. Finally the interdisciplinary project co-operation has a considerable contribution to the competence development of all experts involved.

During the last couple of years for example we took part in a project to develop a bio-sensor for the magnetic detection of germs by means of a specific sensor design. For the automotive sector we developed together with an international consortium a compact and intelligent drive concept for electro mobility, especially for the use in commercial vehicles. Currently we undertake intensive research and development in projects with industrial and mechanical engineering concentrating on Industry 4.0 in order to create the basis for new product solutions.





Since 2015 Sensitec Mainz uses 100 per cent green power.

# Sustainability.

## **Social Responsibility.**

Our commercial behavior is based on a commitment to social principles towards our employees, customers, suppliers or any other partners. One of our most important objectives is the investment of the provided capital to offer interesting and safe jobs to our employees. The education of young people is an important matter for us because we wish to enable them a good start into their professional life. Health protection, further training, safety at work and the promotion of diversity in our companies are major issues to support our sustainability.

## **Ecological Responsibility.**

The protection of the environment is an important part of our overall business policy. We want to reduce environmental impact in any form to a minimum and we want to fulfil the legal requirements as a minimum criterion. The risk potential of our production plant is checked at regular intervals, the safety installations and organizational measures are always kept up to date. At our location in Mainz Sensitec has implemented an environmental management system according to ISO14001. Furthermore the energy management system according to ISO50001 was introduced across locations.







# Application Fields.

Magnetic sensor technology can be applied in a vast range of different applications. In various industrial areas magnetic sensors help to fulfil the complex and demanding requirements.

Used as ABS or steering angle sensors in the automotive sector our sensors contribute to better road safety.

The automation industry optimizes and refines control processes of machinery, equipment and shop floors. Here the efficient and dynamic sensors help to achieve the best possible performance.

While in general aviation applications compact and intelligent sensor systems help to save fuel, magnetic sensors used in space applications penetrate into unimagined worlds and demonstrate unparalleled robustness and reliability.

Medical technology is another application area which benefits from the possibilities of compact, reliable and highly-precise magnetoresistive sensors. Be it in medical devices or in implants such as cardiac pacemakers, our sensors fulfil the highest medical standards.



Automotive.



Automation.





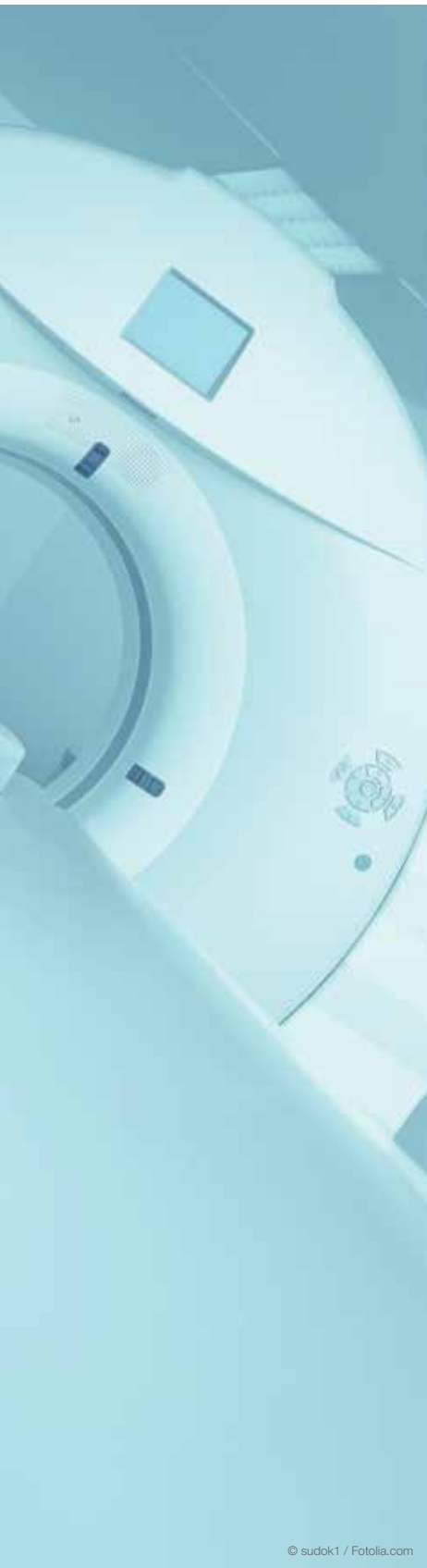
Machine Tools.



Aerospace.

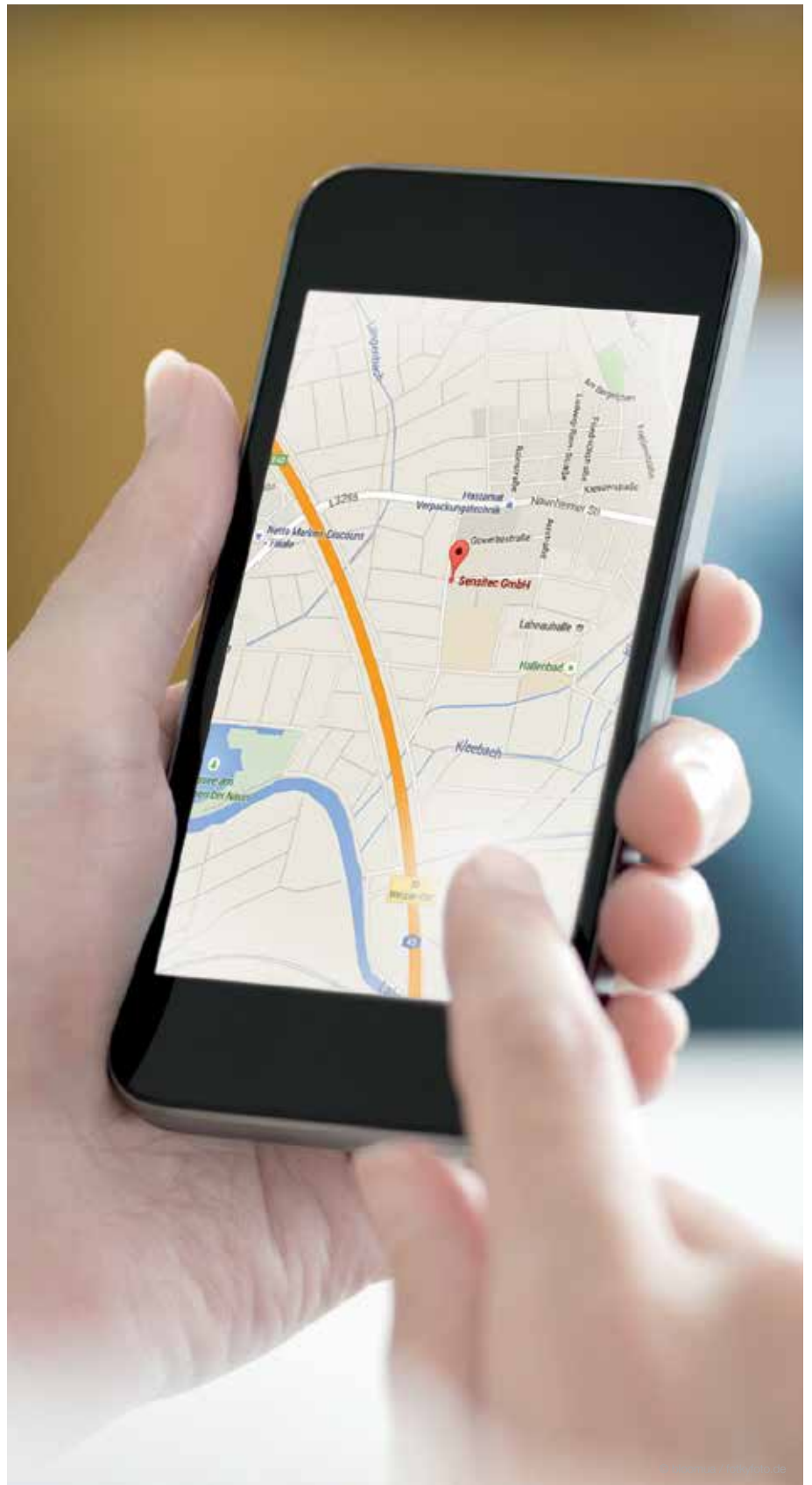


Bio- & Medical



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Technology.




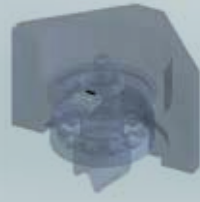

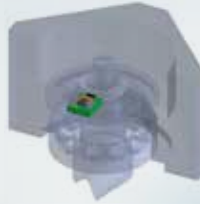

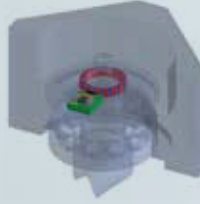




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Others.



Determine yourself the level of integration: From single components to complete systems.

|  |  |
|--|--|
|  |   <b>Angle - &amp; Length Measurement.</b>  |
|  <b>Component</b><br>Single components that are intended for integration into a module or system.                              | <b>AA700</b><br>AMR FreePitch sensor<br><b>AL700</b><br>AMR FixPitch sensor<br><b>TA900</b><br>TMR FreePitch sensor<br><b>TL900</b><br>TMR FixPitch sensor<br><b>MLx / MWx</b><br>Measurement scales / pole rings                                    |
|  <b>Module</b><br>A module comprises several components, e.g. a sensor or signal processing unit.                            | <b>GLM700</b><br>GMR toothed wheel sensor module<br><b>EBx7800</b><br>Sensor module with incremental output<br>- for toothed structures (passive)<br><b>EBx7900</b><br>Sensor module with incremental output<br>- for pole rings and scales (active) |
|  <b>Kit</b><br>Construction set of unassembled modules and components for integration into a system or evaluation kit.     | <b>GLAM700</b><br>Demoboard for GLM sensor family<br><b>EBK</b><br>Demoboard for EBx sensor family   |
|  <b>System</b><br>Fully functional combination of components and / or modules. The design and assembly effort is minimal.  |  |



## Current Measurement.

### **CFS1000**

Programmable AMR current sensor in SMD housing, flexible for different current ranges

### **CFK1000**

Demoboard for CFS1000 current sensor

### **CMK2000**

Demoboard for CMS2000 current sensor

### **CMK3000**

Demoboard for CMS3000 current sensor

### **CDK4000**

Demoboard for CDS4000 current sensor

### **CMS2000**

AMR current sensor with high signal-to-noise ratio

### **CMS3000**

AMR current sensor with 2 MHz bandwidth

### **CDS4000**

AMR current sensor with compact design and overcurrent detection



## Magnetic Field Measurement.

### **AFF700**

AMR magnetic field sensor, suitable for measurement of weak fields, e. g. terrestrial magnetic field

### **GF705**

GMR magnetic field sensor, adjusted characteristic curve for magnetic switches

### **GF708**

GMR magnetic field sensor, usable as reference sensor



## Magnetic Solutions.

### GLM711AVx

GMR tooth sensor, special design with 0.5 / 1.5 m connecting cable

### EPP7703

Signal processing unit incl. software for MS-Windows

### Speed Sensor

Precise speed sensor for variable tooth pitches

### VTMS

Valve train measurement system (e.g. valve stroke)

### Customized Development.

#### Individual Chip Development.

Development of a specific chip design according to your requirements.

#### Specific System Solution.

Ideally integrated system solution for your applications.

#### Process and System Production.

Your service partner for chip-on-board and system production.

### xMR-Sensor Technology.

#### Advantages of xMR Sensor Technology.

The robust contactless technology offers high dynamic performance and excellent reliability.

#### Special Design Features.

Functions and characteristic curves can be individually designed via special sensor layouts.

#### Optimized Measurement Scales.

Production of magnetic pole rings and linear measurement scales with different encodings.



# Service Portfolio.

Our products stand for precise measurement by means of robust sensor technology. Magnetoresistive sensor chips as well as the corresponding micro systems form the basis for measuring and controlling magnetic, electrical and mechanical parameters.



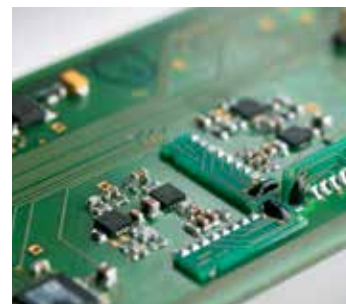
## Angle & Length Measurement.

Incremental or absolute angle and length measurement for position detection.



## Current Measurement.

Compact sensor types for different current ranges.



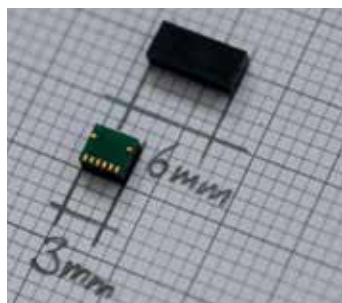
## Magnetic Field Measurement.

For the precise measurement of small fields or as reference sensors.



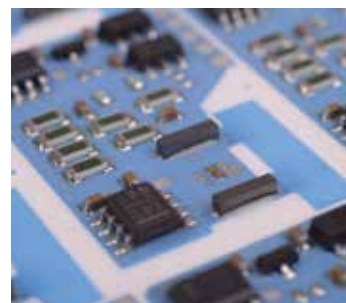
## Magnetic Solutions.

Efficient sensors and measurement data evaluation for test stands and condition monitoring.



## Customer-specific Development.

You and your requirements take the centre stage. We develop the ideal sensor solution for you.



## xMR Sensor Technology.

We have the know-how about all three magnetoresistive technologies currently used in industrial applications. AMR-, GMR- & TMR.

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