

Technical article, published in:  
md-automation, 9/2018

## 'We'll need to start looking at safety and security as one' Safety sensors in robot systems

**Christian Heller, Head of Sales for Central Germany at Schmersal, speaks to us about the significance of safety and security solutions for collaborating robots and the need for more intensive collaboration amongst safety and security experts in the age of Industry 4.0.**

**In this age of human/robot cooperation, safety sensors are more important than ever before. How has this development impacted you as a manufacturer of safety solutions for the industry?**

**Christian Heller:** The Schmersal Group has been working on safeguards for industrial robots for a number of years now. We were quick to develop a safety control system for collaborating robots and we continue to monitor technical developments in robot systems with great interest. Our assumption is that this growing market will become even more differentiated and that robots will be used more and more and in an increasingly wide variety of applications — from the human/robot collaboration-capable lightweight robot to welding robots and mobile robots. It's essential that our safety solutions can adapt to these changing applications, so we carefully monitor robot applications as we develop our safety sensors, components and systems, including in collaboration with external partners. We're currently supporting a research project being carried out by Hochschule-Bonn-Rhein-Sieg, which will continue into 2019, looking at reliable monitoring of collaborating industrial robots.

**One of the focus points of this year's Automatica was industrial and service robot systems. What solutions for human/robot collaboration does Schmersal already offer?**

**Christian Heller:** One thing that was particularly noticeable at Automatica was how the number of collaborating robots is growing. The majority of those robots are safeguarded by some form of guard. So for us at Automatica, it was especially important to draw attention to our Safety Controller for collaborating robots as well as to our comprehensive range of products and services



'IT and automation will grow together more, which will mean that safety systems will need to be as communicative, flexible and dynamic as production systems.'  
Christian Heller

for safeguarding industrial robots. We work with other providers such as our sales partner Satech Safety Technology, which used its Automatica stand to showcase its safety fences fitted with safety interlocks and sensors for Schmersal. The product ranges that we are able to offer complement one another perfectly so that we can offer customers complete systems from a single source with all of the benefits this brings, such as greater convenience with a shortened ordering process and simplified communication processes.

**What other specific products did you have on display at Automatica?**

**Christian Heller:** We presented our optoelectronic safety equipment for securing hazard areas and access points for robot workplaces. Safety light barriers and safety light curtains are a real space-saving and economically efficient solution, affording a clear view of the process and offering

additional productivity boosting functions. Our SLC/SLG 445 product series, with its multi-scan function, is able to filter out interference, which makes it ideal for welding robots. The filter function means that sparks and the influence of high amounts of light energy do not automatically cause the safety equipment to shut down, helping to maintain the performance of the robot. We also presented a number of individual components and systems for safeguarding robots, such as special interlocks and safety switching mats, plus various evaluation systems and control systems.

**What general (safety) trends do you currently see on the automation market?**

**Christian Heller:** The use of Industry 4.0-compatible components and systems is largely still in the testing stage. In the future, machine builders will begin integrating the capabilities of digitisation into devices and machines from the very outset, so that they

can transmit data to the next level up or to an IT environment. This will help bring about greater efficiency through cross-location process control or predictive maintenance. IT and automation will grow together more, which will mean that safety systems will need to be as communicative, flexible and dynamic as production systems. We'll also need to start looking at safety and security as one, as new data-driven systems are vulnerable to manipulation by hackers. This will require safety and security experts to work together more intensively. Today, for example, conflicts of interest that spring from competing requirements on safety and security are not dealt with systematically enough in the early development and planning phases.

**What challenges are your customers and plant operators currently having to grapple with?**

**Christian Heller:** The efficient analysis and use of data is a key aspect of Industry 4.0 and requires an efficient exchange of data within the value-added chain, clear digital identification of products and use of real-time data to control production. As such, we're advancing the communication capability of our safety components within product development. As an example, our Smart Safety Solution is a solution that enables continuous communication from the

component through to the cloud. A challenge within this is to establish standardised communication standards in M2M communication — this requires solutions that are wholly independent of the manufacturers.

**To what extent are you supporting this with the services that you provide under the tec.nicum brand?**

**Christian Heller:** The increase in service-oriented business models is a clear trend, and one that Schmersal has embraced with the foundation of tec.nicum. Customers are able to procure individual components from Schmersal, or fully integrated systems, or even a complete service package that includes everything from analysis and risk assessment to manufacturer-independent consultation, planning and conception of safety solutions and turnkey implementation, including documentation. One of the challenges that anyone dealing with Industry 4.0 has to face is the increased need for expertise and upskilling. To this end, our tec.nicum academy offers a complete programme of training and workshops for customers, and to ensure that we ourselves stay abreast of technical developments and play an active part in the exchange of knowledge, we participate in various networks such as the Zukunftsallianz Maschinenbau, the VDMA and the Labs Network Industrie 4.0.

**Finally, can you give us a quick preview of what we can expect from Schmersal over the coming year?**

**Christian Heller:** We'll be attending the most important trade fair for our industry, the SPS IPC Drives, which takes place in Nuremberg in November, where we'll be demonstrating a number of new developments that I'm afraid I can't go into at this point in time. What I can say, though, is that our R&D efforts are very focussed on the needs of our customers and the innovations that we'll be showcasing at the SPS will exhibit the practicality that you'd expect.

Author: Christian Heller, Head of Sales for Central Germany, Schmersal Group  
[www.schmersal.com](http://www.schmersal.com)

**Images:**  
K.A. Schmersal GmbH & Co. KG, Wuppertal

**K. A. Schmersal GmbH & Co. KG**  
Möddinghofe 30  
42279 Wuppertal  
Phone: +49 202 6474-0  
[info@schmersal.com](mailto:info@schmersal.com)  
[www.schmersal.com](http://www.schmersal.com)