**Press release**

**Digital twin for machine safety**

**Schmersal to showcase 4D model for safety components for the first time at SPS in Nuremberg**

**Wuppertal, 4 September 2024.** Schmersal is set to showcase a 4D model of its safety components for the first time at SPS 2024 – Smart Production Solutions – in Nuremberg, **stand 460, hall 9**: a digital twin of the AZM40 solenoid interlock and the DHS door handle system. In addition to the three-dimensional representation (3D), the virtual image simulates all properties and functions of the physical devices as a fourth dimension (4D). If, for instance, a guard door is unlocked using the real button on the door handle, the LEDs on the digital twin light up in the same way as on the physical counterpart. This makes Schmersal one of the very first companies to develop a digital twin for safety components.

The Schmersal Safety 4D model simulates not only individual components, but also complete process and control sequences using virtual mapping of signal flows. The benefit: In addition to early fault detection and optimisation, the 4D model will also aid with virtual machine commissioning in the future, even before the real machine has been mechanically assembled. This will help to save costs and reduce unnecessary development loops. In future, it should also be possible to monitor the components as a prerequisite for predictive maintenance

‘Our plan is to offer the Schmersal Safety 4D model to customers as a future service, e.g. via our website or via the online store for 4D models ‘TwinStore’ – a platform on which component and system suppliers can make their digital twins available,’ explains Volker Heinzer, Strategic Product Manager for Programmable Electronic Systems and Industry 4.0/IIoT at the Schmersal Group. To this end, there will be a range of successive digital ‘model catalogues’ containing the 4D models of Schmersal products.

Schmersal is using the ‘ISG-virtuos’ simulation software from ISG Industrielle Steuerungstechnik GmbH for the Safety 4D model. The CPU-intensive simulation model is computed on the ISG real-time target. This powerful yet ultra-compact industrial PC enables loss-free real-time physics simulation. It represents the complete machine or system from the point of view of the control system, is mobile thanks to its compact dimensions and can also be installed inside the switch cabinet.

Visit Schmersal at SPS – Smart Production Solutions – in Nuremberg, **hall 9, stand 460**, between **12 and 14 November 2024**.

**Photo in print quality for download:**

https://products.schmersal.com/media/images/PHO\_PRO\_PRE\_kdhs-f51\_SALL\_AINMAX\_V1.jpg

**Image caption:**

The Schmersal Safety 4D model simulates all properties and functions of the physical safety switchgear.

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**About the Schmersal Group**

The Schmersal Group is an international market and expertise leader in the demanding field of machine safety. With the world’s most comprehensive range of safety switchgear products, the Schmersal Group develops safety systems and safety solutions for special requirements in a variety of user industries. Schmersal’s tec.nicum business division complements the range of solutions offered by Schmersal with a comprehensive range of services.

Founded in 1945, the company is represented by seven manufacturing sites on three continents with its own companies and sales partners in more than 60 countries. The Schmersal Group employ round 2,000 people worldwide.

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