**PRESS RELEASE**

**Digital twin for the virtual commissioning of machines and systems**

**Schmersal presents 4D models of safety-related components**

**Wuppertal, 25. November 2025**. Schmersal is expanding its digital portfolio to include realistic 4D models of safety-related components, opening up new perspectives for virtual machine planning. These include the digital twin of the AZM40 solenoid interlock, the DHS door handle system and the BDF40 control panel. These 4D models not only depict the geometric properties of the physical components in three dimensions, but also add a fourth dimension: the behaviour in real operation. Components such as the AZM40 solenoid interlock are reproduced completely digitally and behave exactly like their real-life counterparts in virtual space. The virtual mapping of signal currents and control sequences allows complete machine processes to be simulated realistically.

**Virtual commissioning as the key to efficiency**

A key advantage of 4D models is the ability to commission machines and systems virtually - even before they are physically installed. This allows errors to be detected at an early stage, optimises development processes and saves costs. The possibility of connecting 4D models directly to real control systems, for example via Beckhoff or Siemens systems, is particularly noteworthy. In this way, system settings and control programs can be tested and optimised before actual commissioning takes place.

**Standardised simulation: Schmersal relies on FMU models**

One innovation is the availability of behavioural models as FMUs (Functional Mock-up Units). This enables standardised integration into different simulation environments such as Siemens Simit, the 3DEXPERIENCE platform from 3DS or ISG-virtuos. The FMU version of the AZM40 has already been successfully implemented. This significantly improves the interchangeability and reusability of the models – a decisive step for the scalability of digital twins in the industry.

**AZM40 opens digital model catalogue in TwinStore**

The 4D model of the AZM40 was also the first Schmersal component to be published and made available in the "TwinStore" – an online store for prefabricated and ready-to-use 4D simulation models. The release of the AZM40 as the first TwinStore package marks the start of a successive expansion of the Schmersal Group's digital model catalogue.

[**Download**](https://www.schmersal.com/en/press/press-releases/detail-pm/digital-twin-for-the-virtual-commissioning-of-machines-and-systems) **printable photos.**

**Captions**

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**20251125\_4D\_02.jpg**

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

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**20251125\_4D\_03.jpg**

Premiere in TwinStore: The 4D model of the AZM40 solenoid interlock is the first Schmersal component in ISG's digital model catalogue.

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**The Schmersal Group**

In the demanding field of machine safety the Schmersal Group is one of the international market and competence leaders. Based on the world's most comprehensive product portfolio of safety switching devices, the group develops safety systems and safety technology solutions for the special requirements of various user industries. Schmersal's solutions include the tec.nicum business division and its comprehensive range of services.

The company was founded in 1945, and is represented by eight manufacturing sites on three continents and with its own companies and sales partners in more than 60 countries. The Schmersal Group employs around 2,000 people.

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