

**Safety in System:  
Protection for man and machine**

# **FOR GOOD COLLABORATION SAFETY SOLUTIONS FOR INDUSTRIAL ROBOTS**



# SAFETY SOLUTIONS FOR ROBOT APPLICATIONS

## ACCESS CONTROL FOR ROBOT WORKSTATIONS

The Schmersal Group has a wide range of products and services available for the protection of industrial robots, from simple safety components to programmable safety controllers. We offer a variety of solutions for access control and area safeguarding that are suitable for a range of different robot systems. The product range satisfies the requirements of C standard ISO 10218-1 (robots and robotic devices) and ISO 10218-2 (robotic systems and integration). In addition, our manufacturer-independent service team tec.nicum has a wealth of safety-related expertise in all areas of robot safety, from consultancy services to risk assessments of robot workstations.

### AZM201 SOLENOID INTERLOCK/ BDF200-SD CONTROL PANEL

Many robot workstations are protected by safety fences. The AZM201 solenoid interlock, combined with the BDF200-SD control panel, enables the creation of individual safety solutions for safety doors. For preventive maintenance purposes, comprehensive diagnostic and status information can be transferred to a superior control system via a gateway.



### SMS 4 SAFETY MATS

Safety mats are used within a robot cell for area safeguarding or as entry protection at light grids, thereby preventing robots from starting when persons are still inside hazardous zones.



### SLC/SLG 440 (445) OPTOELECTRONIC SAFETY DEVICES

Safety light curtains and light grids are used at robot workstations as area safeguarding. An optional muting function may be used to convey material into or out of the working area without the safety light grid being deactivated.



## SIGNAL EVALUATION AND SAFETY CONTROLLERS

Depending on the complexity and number of safety circuits, Schmersal provides solutions for reliable signal evaluation based on safety relay modules and safety controllers with an array of visualisation and diagnostic options.



### PROTECT-SRB-E SAFETY RELAY MODULES

For small robot systems, PROTECT-SRB-E series multi-functional safety relay modules offer ease of configuration and cover a wide range of applications. Versions with reliable standstill or time monitoring are also available, including with optional additional safety door monitoring.



### PROTECT-PSC1 SAFETY CONTROLLER

For more complex individual safety solutions and larger robot systems, we recommend the use of the modular, programmable PROTECT-PSC1 safety controller. The PROTECT-PSC1 not only evaluates the secure signals from the connected sensors, but can also forward non-secure diagnostic signals to an automation controller or to the IT environment via a field bus.



### SCHMERSAL SAFETY CONTROLLER

The Schmersal safety controller is a safety controller that allows collaboration between man and robot without the need for a protective fence. This unique controller is not an 'off-the-shelf' safety solution, but an individually adapted solution to meet the specific requirements of the respective robot manufacturer.

More information is available at:  
[www.schmersal.com](http://www.schmersal.com)

# THE SCHMERSAL GROUP

## PROTECTION FOR MAN AND MACHINE

In the demanding field of machine safety, the owner-managed Schmersal Group is one of the international market leaders. The company, which was founded in 1945, has a workforce of about 2000 people and seven manufacturing sites on three continents along with its own companies and sales partners in more than 60 countries.

Customers of the Schmersal Group include global players from the area of mechanical engineering and plant manufacturing as well as operators of machinery. They profit from the company's extensive expertise as a provider of systems and solutions for machine safety. Furthermore, Schmersal specialises in various areas including food & beverage, packaging, machine tools, lift switchgear, heavy industry and automotive.

A major contribution to the systems and solutions offered by the Schmersal Group is made by tec.nicum with its comprehensive range of services: certified Functional Safety Engineers advise machinery manufacturers and machinery operators in all aspects relating to machinery and occupational safety – and do so with product and manufacturer neutrality. Furthermore, they design and realise complex solutions for safety around the world in close collaboration with the clients.



### SAFETY PRODUCTS

- Safety switches and sensors, solenoid interlocks
- Safety controllers and safety relay modules, safety bus systems
- Optoelectronic and tactile safety devices
- Automation technology: position switches, proximity switches

### SAFETY SYSTEMS

- Complete solutions for safeguarding hazard areas
- Individual parametrisation and programming of safety controllers
- Tailor-made safety technology – be it for individual machines or a complex production line
- Industry-specific safety solutions

### SAFETY SERVICES

- tec.nicum academy – Seminars and training
- tec.nicum consulting – Consultancy services
- tec.nicum engineering – Design and technical planning
- tec.nicum integration – Execution and installation



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