

# Safety in system: Protection for man and machine

Innovations 2015/2016

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**SCHMERSAL**

Safe solutions for your industry

AZM400

# Safety solenoid interlock with bolt locking for highest demands on safety

- Bistable, motor-driven system
- Holding force 10,000 N
- Release possible against lateral forces up to 300 N
- Individually coded version with coding level "High" according to ISO 14119
- PL e / cat. 4 / SIL 3 for interlocking and guard locking function
- Two-channel input signal of the guard locking function
- Operation on P/P- and P/N-switching outputs
- High tolerance to door misalignment
- Up to two diagnostic outputs
- Emergency exit or manual release
- Optional: electric manual release with auxiliary voltage
- Assembly set for simple installation on 40 mm aluminium profiles
- Protection class IP66 / IP67



More detailed information can be found in the brochure  
"Safety solenoid interlock with bolt locking AZM400"

## PROTECT SRB-E

# The new configurable SRB-E modules

### User-friendly

- Up to 11 different applications can be selected
- Monitoring of all conventional safety switchgear
- Safety level up to PL e / SIL 3 can be achieved
- Simple adjustment using rotary switch
- Selected application can be locked using seal
- Quick response time (< 10 ms) to request
- Excellent switching performance and short cycle times
- Slot-in termination with coding

### Flexible

- 1 or 2 channel signal evaluation
- Contact configuration can be selected for the sensors
- Start / Reset functions with monitoring
- Input expanders for 4 sensors up to PL e
- Cascading via safe inputs
- Combined evaluation for 2 safety guards
- Two-hand control monitoring according to type IIIC
- STOP Category 0 and 1
- Up to 5 safety outputs
- Safety category 4, PL e semi-conductor outputs up to 5.5 A

### Compact

- Installation width for all device variants 22.5 mm
- Up to 24 connecting terminals
- Up to 10 safe inputs and 5 safe outputs
- Up to 4 signalling outputs
- Holder for equipment label



More detailed information can be found in the brochure  
"Multi-functional safety relay modules PROTECT SRB-E"

PROTECT PSC1

# Programmable modular safety controller

## Technical features

- Can be used up to PL e to ISO 13849-1 and SIL CL 3 to IEC 62061
- Safe drive monitoring according to EN 61800-5-2 (SDM – Safe Drive Monitoring for up to 12 axes)
- Safe cross and safe remote I/O communication
- Hardware-independent fieldbus protocols (adjustable via software)
- Secure compact safety controllers, modularly extendable in a variety of ways
- Object-orientated programming with SafePLC2 software
- Program transfer and storage with SD card
- Schmersal SD bus (serial I/O diagnosis) gateway function



## System performance

### PSC1-C-10

- Up to 64 inputs/outputs possible
- Extendable by up to 2 I/O modules
- Monitoring for up to 2 axes
- Working memory for 800 instructions
- 8 ms reaction time, 2 ms fast channel shutoff time

### PSC1-C-100

- Up to 272 inputs/outputs possible
- Can be extended by up to 8 modules
- Monitoring for up to 12 axes
- Working memory for 3,000 instructions
- 16 ms reaction time, 2 ms fast channel shutoff time

## Networking with fieldbus protocols

Available



Under Preparation



More detailed information can be found in the brochure  
"Programmable modular safety controller – PROTECT PSC1"



# Products

## RSS260 AS – Safety sensor with AS interface, coding level "High" through RFID, switch distance 10 mm



Code number: C-23RSS2

- Enhanced protection against tampering through RFID technology
- Repeated universal or individual coding
- Individually coded versions with coding level "High" according to ISO 14119
- Suitable for applications
  - up to PL e / category 4 to ISO 13849-1
  - and SIL 3 to IEC 61508
- Protection class IP67



## AZM300-AS – Solenoid interlock with AS interface, coding level "High" through RFID, holding force 1000 N, protection class IP69



Code number: AZM300-AS

- Enhanced protection against tampering through RFID technology
- Repeated universal or individual coding
- Individually coded versions with coding level "High" according to ISO 14119
- Suitable for applications
  - up to PL e / category 4 to ISO 13849-1
  - and SIL 3 to IEC 61508
- Solenoid interlock in 2 variants:
  - AZM300 Z-AS** – Enabling signal when guard is locked
  - AZM300 B-AS** – Enabling signal when guard is closed
- Protection class IP69



## SLC/SLG440 AS safety light curtain / light grid with AS interface



Code number: C-91SLC4 / C-21SLG4

### Safety light curtain SLC

- Protection field heights 170 mm – 1770 mm
- Resolution 14 mm and 30 mm

### Safety light grids SLG

- Protection field heights 500 mm / 800 mm / 900 mm
- 2-, 3-, 4-beam
- Safety type 4
- Suitable for applications
  - up to PL e / category 4 to ISO 13849-1
  - and SIL 3 to IEC 61508
- Programmable blanking functions
- Integrated status indication
- Protection class IP67



Detailed information about the products can be found at: [www.schmersal.net](http://www.schmersal.net) below the indicated code numbers either directly through the QR-code.

# Products

## RSS16 – RFID safety sensor with innovative technology in a proven design



- Enhanced protection against tampering through RFID technology
- Repeated universal or individual coding
- Individually coded versions with coding level "High" according to ISO 14119
- Three actuating directions
- Door stop with magnetic latching function
- Clamping space or plug connection
- Suitable for applications
  - up to PL e / category 4 to ISO 13849-1
  - and SIL 3 to IEC 61508
- Protection class IP65 / IP67

Code number: C-52RSS1

## AZ 16/17 and AZM 161/170 with individual coding



- Worldwide unique electromechanical safety switches and solenoid interlocks with high coding in accordance with ISO 14119
- Fewer additional measures necessary to prevent overriding of locking devices, such as mounting out of reach or in a concealed position
- Same design as versions already widely distributed in the market
- Low cost, electromechanical version combined with high standard of safety

## PS116 – Position detection with system – compact and versatile



- Minimal space required due to compact-design
- Reduced assembly time and cost thanks to pre-assembled position switches
- Symmetric casing for different installation situations
- Housing versions can be combined in numerous ways with various actuating and switch elements
- Quick and easy alteration of the actuators in 45° steps
- Switching elements with 3 contacts ensures a redundant switch-off with additional signaling contact
- Protection class IP66 / IP67 – safe operation under rough ambient conditions

Code number: PS116

# Products

## N-program with blue sealing membrane, IP69K



Code number: C-53NDTP

- Hygienic design
- High resistance to chemicals, even if aggressive cleaners are used
- Blue sealing material makes it possible to detect a foreign body on the lighting in the event of a defect in the device thanks to optical monitoring systems
- Long service life of devices thanks to a tough, trusted design
- Protection class IP69K

## ADDT – Double push button of the "A" program



- Up to three devices integrated (indicator lamp in centre optional)
- Time and cost saving design:  
Contact carrier integrated on command device
- Time-saving assembly thanks to central attachment
- Reduced effort required for assembly:  
Only one device needs to be mounted
- Reduction in control units possible:  
Less installation space is needed

## ELDE.N-... – 3-colour LED-module for 22.3 mm command and signalling devices



Code number: C-44KONT

- Unique: 3-colour signals in default command and signalling devices
- Fewer devices needed:
  - Less effort required for assembly
  - Greater overview of control units with same functionality
  - Reduction in costs

Detailed information about the products can be found at: [www.schmersal.net](http://www.schmersal.net) below the indicated code numbers either directly through the QR-code.



# Products

## RM40S – Magnetic stopper for ease of cleaning



- Door hinge with magnetic latching
- Housing completely enclosed in stainless steel
- Different directions of actuation
- Easy to clean and is rugged
- Rear sided thread or through holes
- Ideal accessory for BNS40S



Code number: RM40S

## MBGHAC – EMERGENCY STOP enclosure for surface mounting



- EMERGENCY STOP enclosure with an integrated protective collar and yellow cover according to ANSI standard
- Robust light-alloy metal housing
- Design with rounded edges
- Easy installation of control devices with 22.3 mm through generous connection space
- Protection class IP65 / IP67



Code number: C-73MBGA



# tec.nicum

excellence in safety

## tec.nicum – Developed services relating to the machine safety and the industrial safety

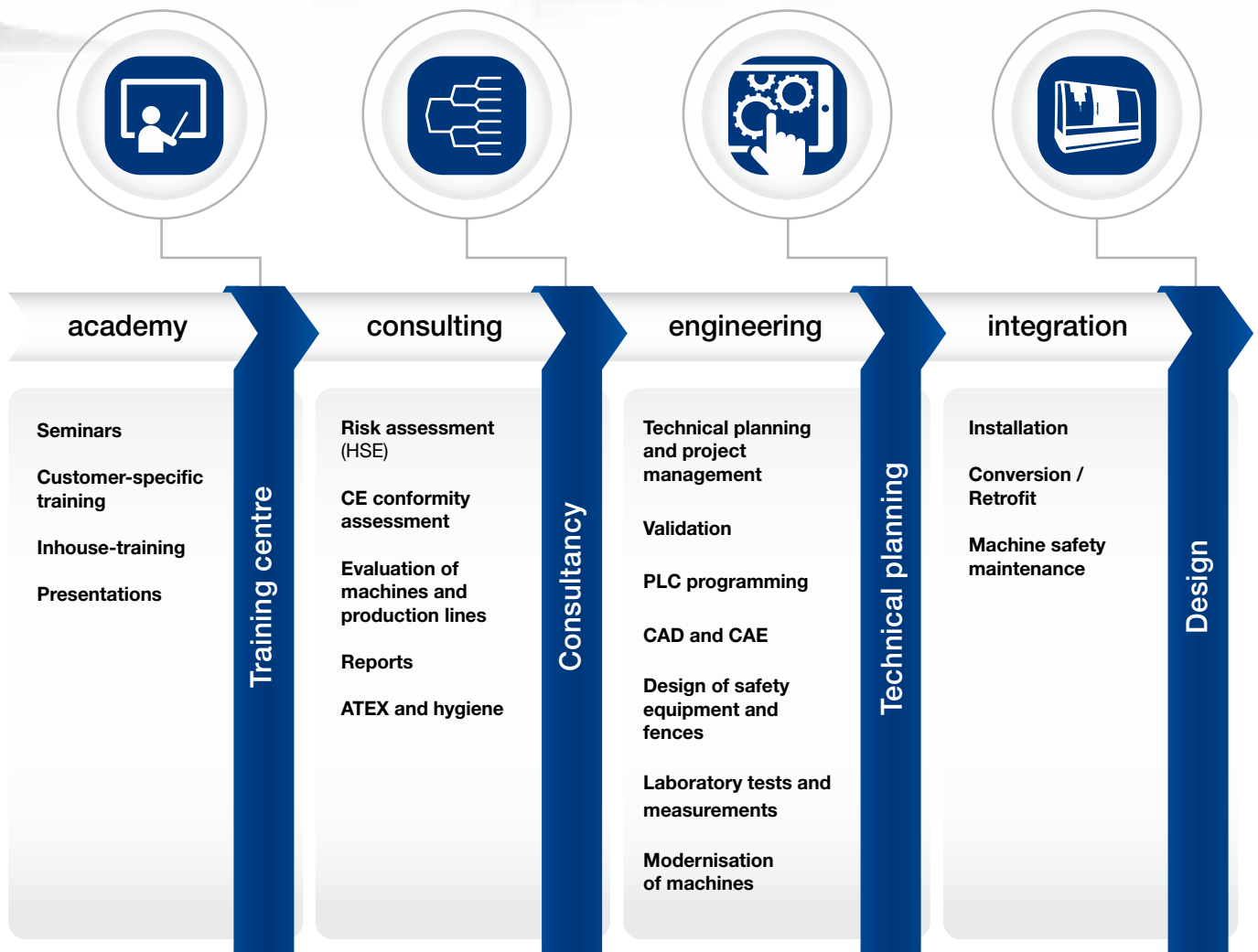
In the Schmersal Group, tec.nicum is the department for services relating to machine and industrial safety. The experts at tec.nicum implement all sorts of safety-related projects for their customers - from analysis of the status quo through planning and documentation to the final handover of the finished, norm-compliant machine.

tec.nicum offers companies a global network of TÜV Rheinland -certified Functional Safety Engineers, so the services of the international tec.nicum organisation can be accessed quickly and easily wherever the customer is. tec.nicum experts not only have sound knowledge of the applicable regional and national guidelines, laws and ordinances, they also have technical know-how and extensive experience in project implementation.



The experts at tec.nicum aim to offer customers a capable, product and manufacturer-neutral consultancy on all the latest statutory guidelines and support them in designing their machines and workplaces to be norm-compliant.

For all of its consultancy and solution strategies, tec.nicum sets great store by objectivity.



The range at tec.nicum covers four columns: learning in the **academy** section, consultancy services in the **consultancy** section, designing safety solutions in the **engineering** section and practical implementation in the **integration** section.

The head office of the tec.nicum organisation, which operates all over the world, is in Wuppertal, Germany.

**Contact:**

tec.nicum  
 Martin Hahmann  
 Solution Consultant  
 Möddinghofe 30  
 42279 Wuppertal  
 Phone: +49 202 6474-875  
 E-mail: mhahmann@tecnicum.com  
 www.tecnicum.com





# The Schmersal Group

The privately-owned Schmersal Group has been developing and manufacturing products to enhance the safety at work for decades. The company was founded in 1945 and is represented by seven manufacturing sites on three continents and with its own companies and sales partners in more than 60 nations. In the demanding field of machine safety, the Schmersal Group is one of the international market and competence leaders. Based on a comprehensive product range, the company's approximately 2000 employees develop and design complete solutions for the safety of man and machine.

Customers of the Schmersal Group include „global players“ from mechanical engineering and plant manufacturing and machine users. They benefit from the comprehensive know-how of the company when it comes to the standard-compliant integration of safety technology in the production processes. Furthermore, Schmersal has special sector expertise in the application fields that demand high quality and special characteristics from safety switching systems. These include food production, the packaging industry, machine tool construction, lift engineering, heavy industry and the automotive industry.

Against the backdrop of increasing numbers of standards and directives, tec.nicum offers a comprehensive range of safety services as part of the Schmersal Group services division: Certified functional safety engineers advise customers on selecting suitable safety equipment, CE compliance assessments and risk assessment, on a word-wide basis.

## Product ranges



### Safe switching and monitoring

- Guard door monitoring (Safety switches)
- Command devices with safety function
- Tactile safety devices
- Optoelectronic safety devices

### Safe signal processing

- Safety relay components
- Safety controllers
- Safety bus systems

### Automation

- Position detection
- Command and signalling devices

## Industries



- Elevators and Escalators
- Packaging
- Food
- Automotive
- Machine tools
- Heavy industry

## Services



- Application support
- CE conformity assessment
- Risk assessment
- Upgrading / Retrofit
- Technical planning and implementation
- Training courses

## Competences



- Machine safety
- Automation
- Explosion protection
- Hygienic design

Precautions have been taken to assure accuracy of the information in this catalogue. Typographic or pictorial errors that are brought to our attention will be corrected in subsequent issues.

[www.schmersal.com](http://www.schmersal.com)



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