Safety in System
Protection for man and machine

INNOVATIONS
2023/2024

PROFINET®

EtherNet/IP™

EtherCAT®

PROFIsafe

CIP Safety™

Safety over EtherCAT®

SAFETY
INVENTED IN
GERMANY

SCHMERSAL
THE DNA OF SAFETY

TURNING WORKPLACES INTO SAFER PLACES.

Rarely have the challenges for industrial companies – and especially for mechanical and plant engineering – been so great: international conflicts, material shortages, rising energy prices, inflation and increasing competitive pressure.

Companies must therefore master the various challenges at the same time:
Innovation management and cost optimisation, flexibility and customer orientation, productivity increase and quality improvement. They also need to keep an eye on megatrends such as decarbonisation, automation and digitalisation.

Despite all these challenges, machine safety remains the indispensable basis of any corporate strategy. Machines must be safe not only because they are required by law, there are also good economic reasons for this.

We support you in reconciling machine safety and productivity. We continuously invest in research and development to ensure that our products and system solutions meet the increasing demands of our customers. In this brochure you will find a number of Schmersal products for which we have developed new variants or which we have equipped with additional functions. What all the innovations have in common is that they are more versatile, more powerful and more economical. They contribute to more flexibility, higher precision and cost efficiency as well as improved diagnostic and networking options, also in the sense of Industry 4.0. And they are even better tailored to the requirements of special areas of application, for example with explosion protection versions or hygienic design.

In addition, there is another offer that we are constantly optimising: We are expanding our international network of competent safety consultants in order to be able to offer you the best possible and customised services for all aspects of machine safety. We offer you the support you need – so that you can concentrate fully on your core business.

Get in touch with us directly – we will be happy to advise you!

Heinz Schmersal and **Philip Schmersal**

Managing Directors

www.schmersal.com

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products.schmersal.com

SCHMERSAL WEBSHOP

CONVENIENT   **OPTIMISED**   **INFORMATIVE**   **EFFICIENT**

The Schmersal webshop gives you access to more than 7,000 safety and automation products, from simple electromechanical safety switches to programmable safety control systems and software.
Each product is accompanied by up-to-date and comprehensive product information that can be retrieved at any time.

Operating instructions, EU declarations of conformity and certificates for components are available for download, together with additional documents. If a user has specific questions about a product or its use, he or she can make use of the live chat function to discuss with a skilled member of Schmersal's sales team during business hours.

S SCHMERSAL

SAFETY FIELDBOX SFB
COST-OPTIMISED, DECENTRALISED INSTALLATION SOLUTION

SAFETY FIELDBOX SFB

NEW **NOW AVAILABLE IN 3 FIELDBUS VARIANTS**

SFB-PN-IRT-8M12-IOP-V2	SFB-EIP-8M12-IOP	SFB-EC-8M12-IOP
PROFINET® PROFIsafe	EtherNet/IP™ CIP Safety™	EtherCAT® Safety over EtherCAT®

PRODUCT PROPERTIES

- 8 universal 8-pin M12 device ports

- Connection of electronic and electro-mechanical switchgear devices

- 4 control panels (with EMERGENCY STOP) connectable

- 1-channel and 2-channel control of the interlocking function

- Safety outputs deployable via 1 cable without additional measures to cat. 3/PL d/SIL 2

- Safety outputs can be used via 2 cables up to Cat. 4 / PL e / SIL 3

- Automatic resettable fuse integrated

- M12 power connector with a current carrying capacity of 10 A

- Robust industrial design

Thanks to the safety fieldbox, a wide variety of safety switchgear can be connected decentrally in the field and freely linked in the safety controller. Straightforward connection with M12 connectors allows for quick and fail-safe installation.

The power supply to the fieldbox is provided via M12 power connectors with a current capacity of 10 A. Due to the cable cross-section of 3 mm², the installation of the fieldboxes in series connection with only one central supply is possible.

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Device ports
8 connector M12,
8-pole

LED diagnostic
Extended status indication
of the safety switchgear

Communication
PROFINET / PROFIsafe (PN)
EtherNet/IP / CIP-Safety (EIP)
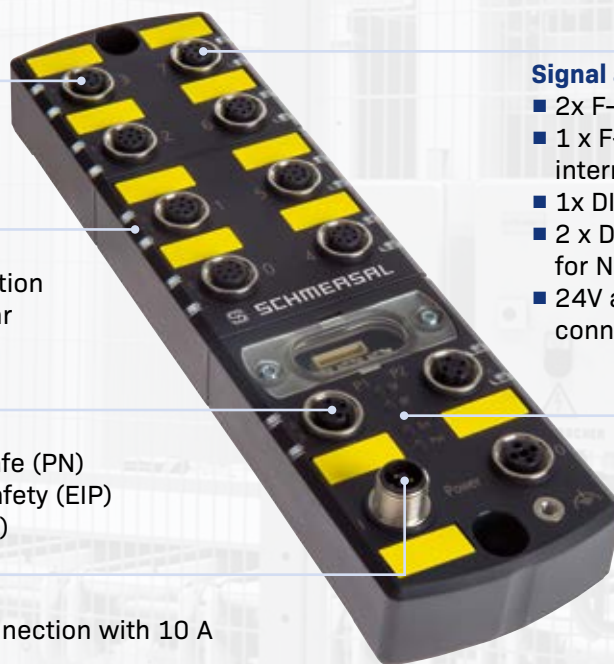EtherCAT / FSoE (EC)

Power supply
M12 power connection with 10 A

Signal assignment
- 2x F-DI: 2-channel safety input
- 1 x F-DQ: Safety output,
  internal, 2-channel
- 1x DI: Digital input for diagnostic signal
- 2 x DQ test pulse: 2 test pulse outputs
  for NC contacts
- 24V and GND: Power supply of the
  connected safety switchgear

LED diagnostic
Extended status indication
of the safety fieldbox

UNIQUE OPPORTUNITIES

In addition to electronic and electro-mechanical safety sensors and switches, light grids, light curtains and light barriers can also be connected to a single device connection via Y-adapters.

A particular highlight of the Schmersal SFB is the ability to connect up to 8 solenoid interlocks with 1-channel or 2-channel actuation of the guard locking function.
The option to connect up to 4 control panels with EMERGENCY-STOP button and up to 3 non-safe command and signalling devices is unique.

THE NEW "H" PROGRAMME
HYGIENIC DESIGN COMMAND AND SIGNALLING DEVICES

■ Central nut for easy installation

■ Simple disassembly of the contact carrier with a slotted screwdriver.
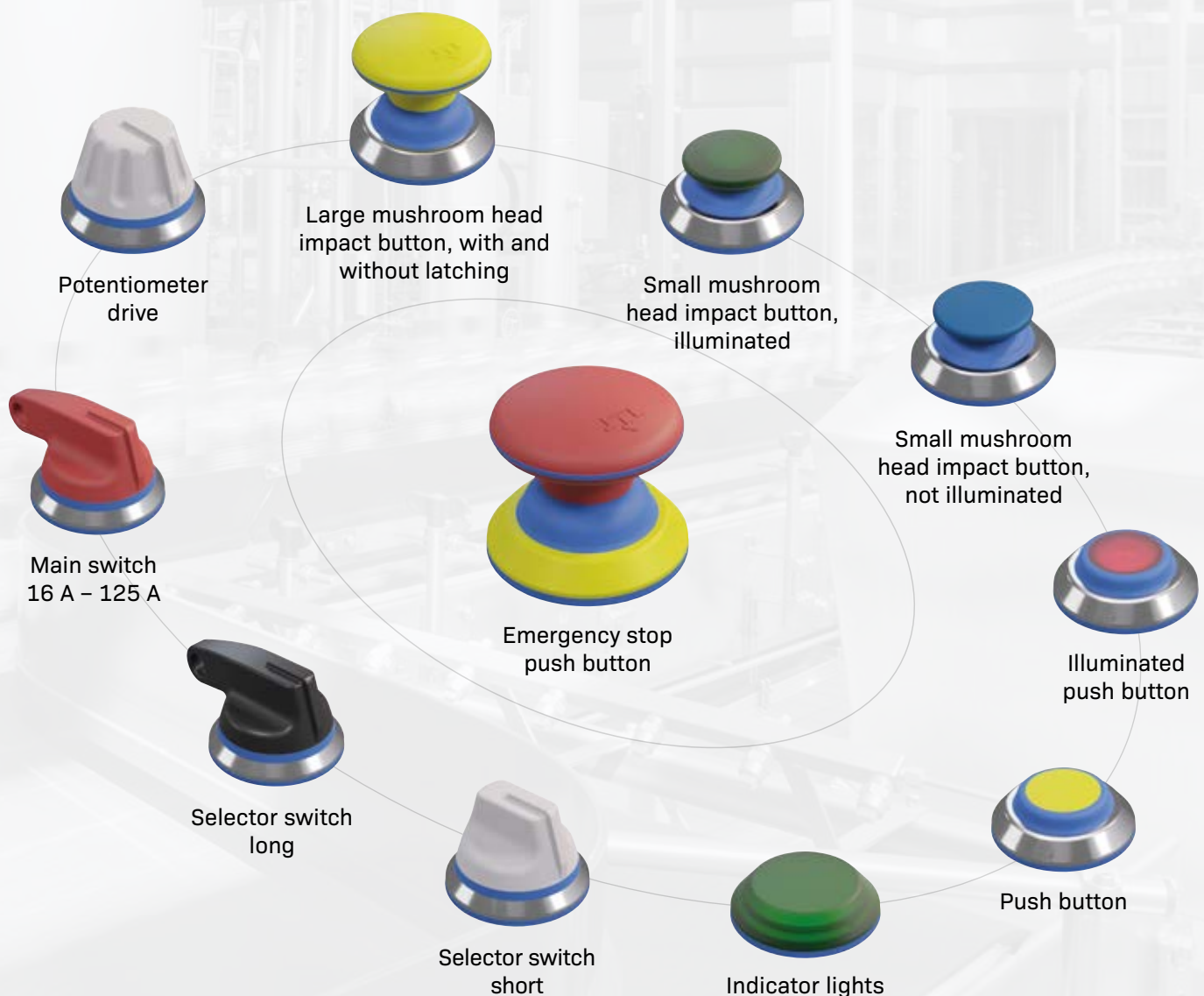
■ Contact element can be easily clipped on

The new hygiene command device product portfolio has been specially designed for use in hygiene-sensitive areas. At the heart of the development were requirements of hygienic design, which impose strict limits on the design of the shape geometry.

The front ring corresponds to the specified angulation. This allows liquids from foodstuffs, dirt particles and cleaning agents and disinfectants to run off more easily. The devices are equipped with high-quality plastic materials for the operating surfaces and stainless-steel front rings and enable a longer service life thanks to improved resistance to dirt and aggressive cleaning agents. The new hygiene command device product portfolio also offers a new design with a central nut attachment for device heads, as well as a simple snap-on contact carrier than can support up to 6 contact elements. This enables a fast and efficient installation. In addition, Schmersal also offers the option of having the units customised with individual symbols or company logos using the laser envelope process.

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THE ADVANTAGES AT A GLANCE

- Hygienic certified design

- Easy to clean thanks to
  low dirt adhesion and IP69

- Simple installation concept
  with central nut and contact carrier

- Hygienic, visible blue gaskets

- High-quality, hygienic and
  chemical-resistant materials

- Durable, customisable symbols and
  logos applicable through lasering

Potentiometer
drive

Large mushroom head
impact button, with and
without latching

Small mushroom
head impact button,
illuminated

Small mushroom
head impact button,
not illuminated

Main switch
16 A – 125 A

Emergency stop
push button

Illuminated
push button

Selector switch
long

Selector switch
short

Indicator lights

Push button

TIME OF FLIGHT CAMERA AM-T100
MILLIMETRE-PRECISE 3D DEPTH IMAGES IN INDUSTRIAL MANUFACTURING PROCESSES, LOGISTICS AND ROBOTICS

Original size

TIME OF FLIGHT CAMERA AM-T100

- Sony DepthSense™ technology for millimetre-precise 3D depth images

- High frame rate of up to 60 fps

- 67° x 51° field of view with a range of up to 6 m*

- Optimally adaptable to different ambient and mounting conditions

- Easy data exchange via standardised data interface GenICam

- Software for easy configuration of 3D monitoring areas

* Depending on the remission properties of the target objects, a range of up to 30 m can be achieved.

The AM-T100 is a time-of-flight (ToF) camera that uses a Sony DepthSense™ sensor to produce millimetre-precise 3D depth images. The high frame rate of up to 60 fps enables efficient use in industrial manufacturing processes, logistics and robotics.
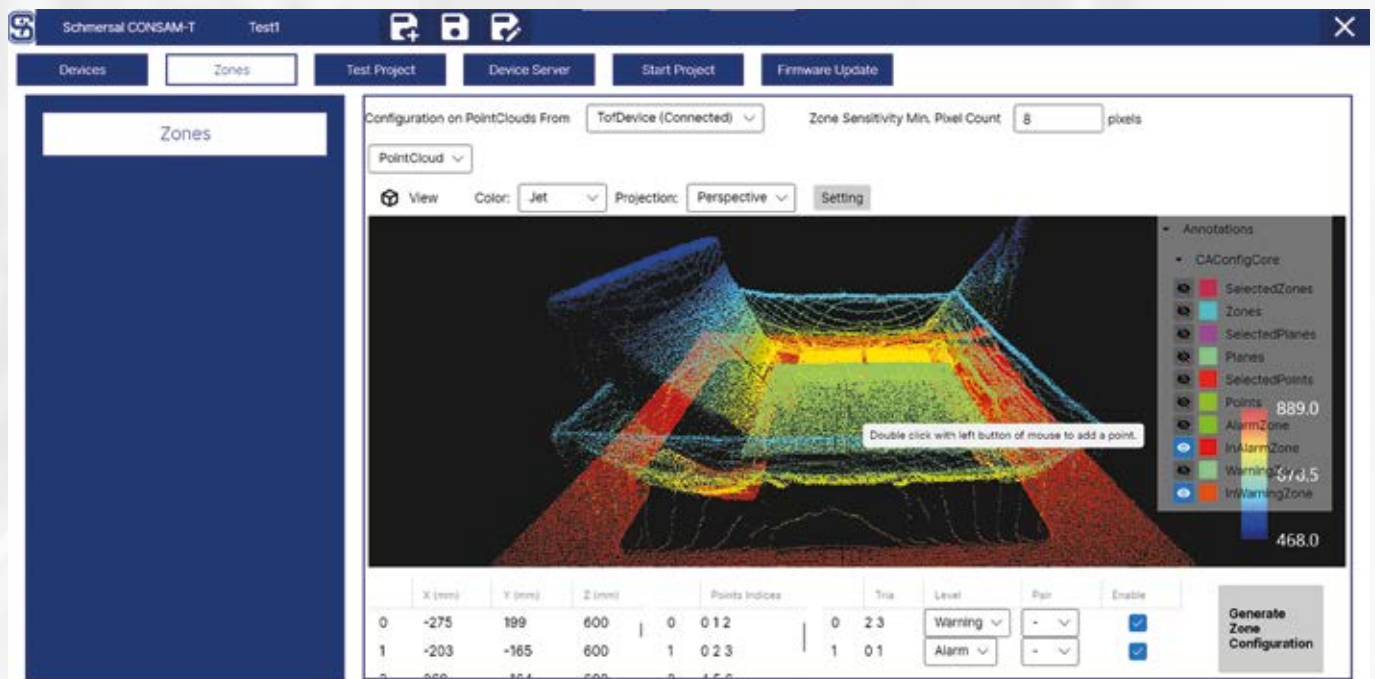
With powerful IR illumination and 640 x 480 pixel image resolution, the AM-T100 achieves a 67° x 51° field of view with a range of up to 6 m*.

High-performance algorithms enable pre-filtering of the data so that the camera can be optimally adapted to different ambient conditions. The AM-T100 is a GigE vision camera that makes its image data available to common image processing software via the standardised data interface GenICam. An integrated Software Development Kit (SDK) helps software developers and system integrators to configure the camera and create software applications.
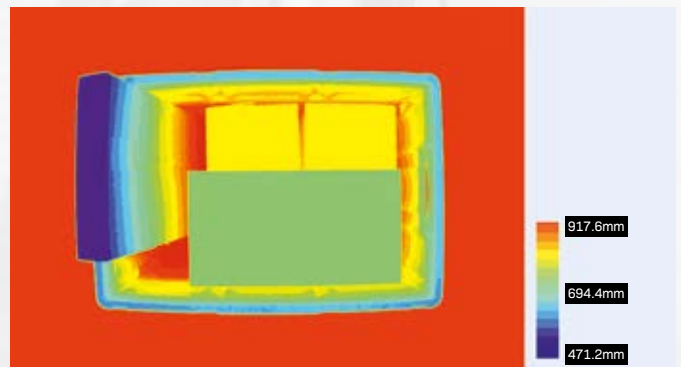
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CONFIGURATION SOFTWARE CONSAM-T

The configuration software CONSAM-T is pre-installed on the AM-T100. With the help of this software, the camera can be configured to monitor complex 3D zones.

If objects enter these zones, digital outputs are switched. In addition, digital inputs can be used to switch back and forth between different 3D zones so that complex sequences and processes can be monitored.

Fast detection of the filling level

Depth image with 3D camera AM-T100

SAFETY SWITCHES AZ215/AZ216 AND AZ315/AZ316
COMPACT AND FLEXIBLE

SAFETY SWITCHES
AZ215 / AZ216, AZ315 / AZ316

■ Actuating head can be repositioned by 4 x 90°

■ Latching force 12 N or 30 N

■ Flexible connection types and positions

■ Two or three switching contacts

■ Can be connected to the SFB safety fieldbox with 8-pole connector plug

AZ215
Metal enclosure,
Design to EN 50047

AZ216
Thermoplastic enclosure,
Design to EN 50047

AZ315
Metal enclosure,
Design to EN 50041

AZ316
Thermoplastic enclosure,
Design to EN 50041

The new safety switches of the AZ family are used for monitoring sliding or hinged guards. The die-cast zinc actuating head can be easily rotated in 90° steps before mounting. This makes it possible to approach the head laterally from four different directions as well as from above. Depending on the requirements, variants with a latching force of 12 N or 30 N are available.

In addition to the standard variant with M20 cable entry and connection terminals, variants with a 4- or 8-pin M12 connector are available depending on the number of contacts. Device variants with three contacts in a wide variety of combinations can also fulfil a signalling function in addition to the safety function. The 45° turned connection terminals of the switching elements enable quick and easy wiring.

Simple rotation of the actuating head

Quick installation as connection terminals rotated by 45°

Various actuators for hinged or sliding doors

SOLENOID INTERLOCK AZM40
SMALLEST ELECTRONIC SOLENOID INTERLOCK IN THE WORLD.

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SOLENOID INTERLOCK AZM40

NEW ■ New degree of protection up to IP69

NEW ■ Enhanced temperature range −20 °C to +55 °C

NEW ■ New variants with emergency exit or emergency release

■ Bistable working principle

■ High holding force F_{Zh} = 2,000 N

■ Suitable for applications up to Cat. 4 / PL e / SIL 3

The AZM40 has a bistable interlock principle, allowing the last lock state to be retained in the event of a power failure. Even with hazardous run-on movements, the safety door remains securely interlocked.

Thanks to the 180 degree angle flexibility, the actuator can approach the AZM40 continuously so that the interlock can also be used on flaps that do not close at a 90 degree angle or that open upwards at a 45 degree angle. The angle flexibility ensures that the interlock can be easily installed even in confined and difficult-to-access locations.

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EMERGENCY EXIT AND EMERGENCY RELEASE

Two different versions are available. The lever is available both as an emergency exit and as an emergency release and can be mounted directly on the AZM40. Additionally, there is a push button for emergency exit or emergency release. Since it is similar to an EMERGENCY STOP push button, it is intuitive to operate.

Lever or push button for emergency exit release or emergency release

LOCKOUT TAG

For larger, accessible machines and systems, service staff can attach a lock to the lockout tag when entering the danger zone. In this way, the guard door cannot be closed and an unintentional machine start-up is prevented.
- Attachment of up to six padlocks possible
- Suitable for mounting inside and outside of the hazardous area
- Practical retaining strap with securing chain

MOUNTING PLATES

The AZM40 can be easily mounted directly on 40 mm profile systems.
For deviating profile system widths (20 mm, 30 mm, 45 mm, 50 mm and 60 mm), the set consisting of two universal mounting plates for the AZM40 and the actuator can be used. This ensures fast and cost-effective assembly for a wide range of profile system widths.

DOOR HANDLE SYSTEM DHS
NEW STANDARDS IN ERGONOMICS, FUNCTIONALITY AND DESIGN

DOOR HANDLE SYSTEM DHS

- Machine status directly recognisable on the handle

- Optimised for the AZM40 solenoid interlock and the safety sensor RSS260

- Ergonomic door handle for left or right hinged safety guard

- Degree of protection   IP66, IP67
  (with operating element)
  IP66, IP67, IP69
  (without operating element)

Illuminated handle in seven colours:
white, yellow, green, light blue, blue, violet, red

Coloured push button cover caps in five colours:
white, yellow, green, blue, red

The innovative DHS door handle system combines the functions of a robust door handle with the signalling of various machine statuses via large-scale illumination of the handle. The RGB technology used makes it possible to illuminate the handle in 7 different colours. The colours can be individually controlled by the customer so that, for example, the respective machine status can be seen directly on the handle.

A push button is also available, which can be individually adapted to customer requirements using the coloured push button cover caps supplied. The push button can, for example, fulfil the tasks of a reset function or a request to open the safety guard.
In addition to the version with illumination and with push button, versions with illumination and without push button, without illumination and with push button and versions without electrical connection are also available.

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CONTROL PANEL BDF40
INTUITIVE CONTROL, ELEGANT DESIGN

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CONTROL PANEL BDF40

- Slimline design to match the AZM40 solenoid interlock and the DHS door handle system

- Flexibility thanks to mountable push button cover caps in 12 colours

- Generous open spaces for easy labelling

- Quick and error-free installation thanks to M12 connector

- Manipulation protection with cover caps for the door system

Ergonomic and perfect integration with AZM40 solenoid interlock and DHS door handle system
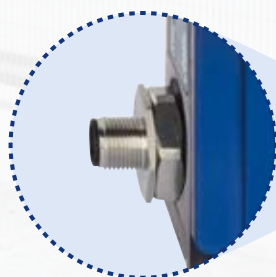
The new BDF40 control panel is characterised by its modern and slim design. It is available in two versions, with or without EMERGENCY STOP function, and offers a choice of exchangeable, coloured push button cover caps for push buttons or illuminated push buttons. The control panel can be perfectly integrated into a door system with the AZM40 solenoid interlock and the DHS door handle with a connecting cover. Alternatively, it can also be installed as a stand-alone control panel. The 12-pin M12 connector allows quick and error-free installation.

SOLENOID INTERLOCK AZM150
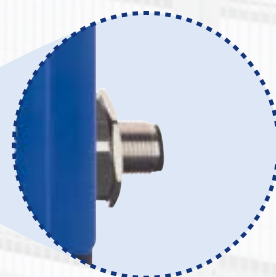## SLIMLINE DESIGN – HIGH CODING LEVEL

SOLENOID INTERLOCK AZM150

NEW ■ Connector versions M12, 8-pole

NEW ■ Remote release via a bowden cable

■ Actuating head can be repositioned by 4 x 90°

■ Holding force F_{Zh} = 1,500 N

■ Latching force 50 N

■ Degree of protection IP65, IP67

■ Power to unlock / Power to lock

■ Can be connected to the SFB safety fieldbox with 8-pole connector plug

■ Suitable for applications up to cat. 3/PL d

AZM150.-STL   AZM150.-ST   AZM150.-STR

The AZM150 electromechanical solenoid interlock is characterised by its slim design and the 4x 90° rotatable actuating head.

Designed with a holding force F_{Zh} of 1,500 N, the AZM150 can be combined with various actuators for different installation situations: A straight or angled actuator for sliding guards and an adjustable movable actuator for applications on hinged guards.

The DHS150 door handle can also be used for installation on safety fences or heavy doors. One advantage of the AZM150 is the rotating actuator head, which is locked in place by simply replacing the enclosure cover instead of screwing it on. The integrated 8-pin M12 metal connector of the AZM150-ST also enables a quick connection to the safety logic. This means that the AZM150 guard locking device is versatile.

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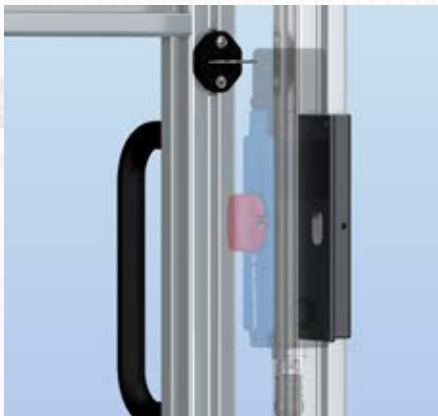■ Individually coded version with coding level "High" according to EN ISO 14119

NEW

■ New with M12 connector plug, 8-pole

■ Manual release, emergency exit or emergency release

Angled and straight mounting plates for mounting to 40 mm profiles for hinged and sliding doors

Optional remote release via a Bowden cable for emergency exit or emergency release

SAFETY SENSOR
RSS260...F0/F1

- With integrated evaluation logic in the sensor:
  - Feedback circuit monitoring (EDM)
  - Automatic restart or
    manual restart with/without monitored reset
  - Emergency stop monitoring

- No separate evaluation unit required

- Reduced installation and wiring effort

- With integrated M8 connector or M8/M12 cable connector
  or open cable ends

- High protection against tampering through RFID technology

- Individually coded version with
  coding level "High" according to EN ISO 14119

- Suitable for applications up to Cat. 4 / PL e / SIL 3

- Degree of protection IP66, IP67

These new functions make the proven RSS260 even more versatile. In combination with Schmersal installation components, they can contribute to more space in the control cabinet as well as cost reduction.

In the F0 and F1 variants, the RSS260 takes over the tasks of a safety relay module. This means that the monitoring of the movable safety guard as well as the contactors directly controlled by the sensor outputs is carried out by the integrated logic in the sensor, so that the use of a separate evaluation unit is not necessary.

With the F0 variant, the machine restarts automatically as soon as all safety doors are closed. However, an additional "enable button" – without detection of the trailing edge – can be switched into the feedback circuit (EDM - External Device Monitoring).
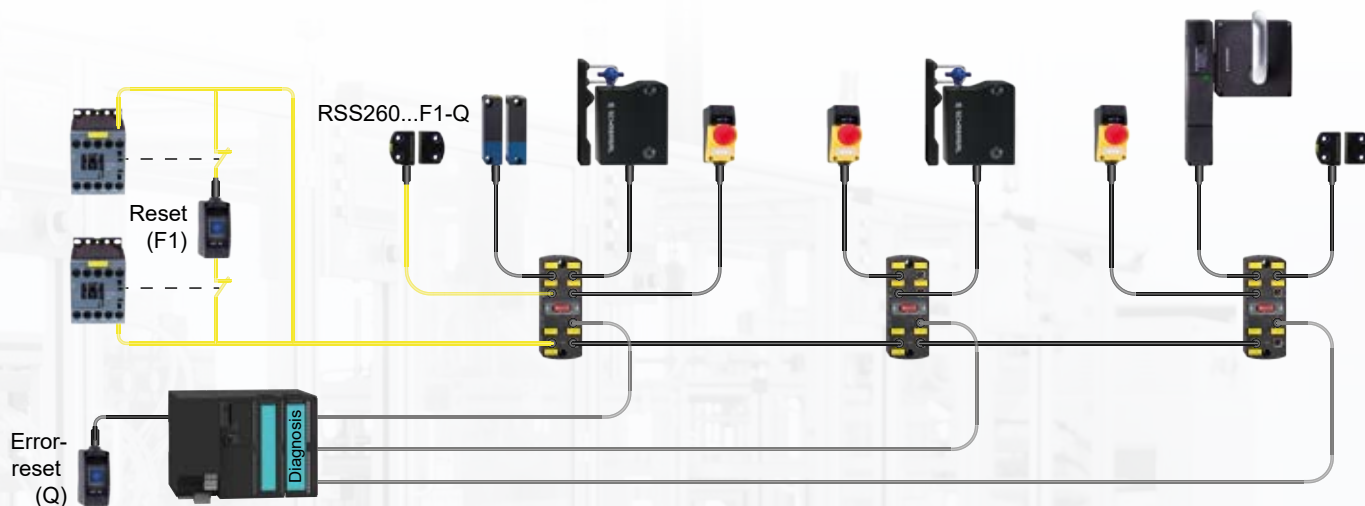
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Alternative actuating direction

Concealed actuator RST-U-2 with particularly small design

Variant with connecting cable and connector M8

Feedback circuit monitoring with reset and EMERGENCY STOP monitoring with a series connection of different safety sensors and solenoid interlocks

The F1 variant is recommended for installations where the hazardous area can be entered by the operator. This variant has a reset function with detection of the trailing edge. The reset button must be pressed before restarting the machine.

For machines where the use of an EMERGENCY STOP button is mandatory, the RSS260 with the additional Q function is suitable. EMERGENCY STOP switching elements integrated into a series circuit can be monitored by the Q function of the last sensor in the chain. This eliminates the need to set up a separate safety circuit for the EMERGENCY STOP buttons.

SSB-R MAGNET TRACK SENSOR BOX
FOUR-TRACK POSITION DETECTION

MAGNET TRACK SENSOR BOX
SSB-R

- Magnet track sensor box

- 4 shielded tracks in latching reed technology

- 2 optional fine positioning tracks with pre-warning indicator

- Optional second connector for signal distribution and track-related wire break monitoring

- Maintenance-free signal storage and changeover on voltage drop

- Wide-angle LED track indicator

Magnetic switching systems are characterised by wide-ranging wear resistance and tolerance in the event of misalignment. Magnetic switches are used for positioning and control in electric monorail systems and in lift construction.

The SBB-R sensor box captures the field of suitable actuator magnets on four independent tracks and, on pass-by, changes the signal status.

This level change, which is also generated during a fast pass-by, remains safe at zero-voltage until the next control.

A connected control unit uses the signals to determine the position and section of the sensorbox and controls, for example, the speed or holding positions of the drive motor. In addition, two angle sensors enable fine positioning.

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SAFETY SENSOR
BNS40S-...-T

SAFETY SENSOR
BNS40S-...-T

NEW
- Enhanced temperature range up to 100 °C
- Suitable for food processing industry
- Stainless steel enclosure
- Concealed mounting possible
- Insensitive to transverse misalignment

The new variant of the BNS40S-T magnetic safety sensor enables use at ambient temperatures up to 100 °C. In combination with the stainless steel housing and the contactless, electromagnetic mode of operation, the sensor is particularly suitable for use in hygiene-sensitive applications such as food processing.

The stainless steel housing not only ensures high corrosion and wear resistance, but also enables easy cleaning. Despite their compact design, the BNS sensors achieve high switching distances. Concealed mounting is also possible, as the sensor technology works through plastic and even stainless steel covers.

POSITION DETECTION AND MONITORING
PS RANGE POSITION SWITCHES

PS SERIES POSITION SWITCHES
WITH STATUS INDICATION

NEW

- New versions with LEDs for status indication

- Actuating elements can be rotated in 45 degree steps

- Metal or thermoplastic enclosure

- Wide application range thanks to modular versatility and design

- Variants for low temperatures up to −40 °C

| PS215-H200 | PS216-K200 | PS226-N200 | PS315-H326 | PS316-K360 |

The position switches of the PS series are now also available with additional LED status indication. While the green LED indicates operational readiness, the status indicator of the yellow LED can be connected by the customer to illuminate when either actuated or not actuated. This allows the user to choose which switching status is to be displayed.

The modular design, combined with the various actuating elements, enables a wide range of applications throughout all individual disciplines of machine and plant engineering.

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PULL-WIRE EMERGENCY-STOP SWITCH ZQ901
PULL-WIRE EMERGENCY STOP SWITCHES WITH STAINLESS STEEL ENCLOSURE

PULL-WIRE EMERGENCY-STOP SWITCH ZQ901

- Robust stainless steel housing

- Lengths of wire up to 75 m

- Wire pull detection with wire breakage detection

- Reset push button

- Twisting of towing eye not possible

The new ZQ901 pull-wire emergency stop switch is characterised by its robust stainless steel enclosure. The stainless steel enclosure offers optimal mechanical and chemical protection in harsh environments and provides the ideal solution for a wide range of applications in new areas. Thanks to the new housing material, the ZQ901 can be used on transport and material handling systems as well as on large system used in the food processing and chemicals industries.

The tried-and-tested technology, used in industrial settings, meets the highest availability standards.

The ZQ901 offers an emergency-stop function and manual reset, wire break detection and lengths of wire up to 75 metres. In conjunction with an appropriate safety analysis, the pull-wire emergency stop switch can be used up to PL e in accordance with EN ISO 13849-1.

PROGRAMMABLE MODULAR SAFETY CONTROLLER PROTECT PSC1

NEW ■ FB10 variants with Ethernet interface   **NEW** ■ FB20 variants with RS485 interface

PSC1-C-10-FB10   PSC1-C-100-FB10   PSC1-C-10-FB20   PSC1-C-100-FB20

PROFINET · EtherNet/IP · EtherCAT · PROFIsafe · Modbus · Safety over EtherCAT   PROFIBUS · CANopen · PROFIsafe

- ■ Safety functionality up to PL e / Cat. 4 according to EN ISO 13849-1 or SIL 3 according to EN 62061

- ■ Modularly expandable

- ■ Freely programmable

- ■ Safety functions according to EN ISO 61800-5-2 (SDM)

- ■ SafePLC2 graphical programming environment

Increasing demands on ease of use or new normative requirements are making today's machines more and more complex. This concerns both the safety-related consideration and the realisation of the safety functions.

The modular design of the PSC1 enables efficient adaptation to the respective application. The user-friendly SafePLC2 programming software facilitates the creation of your safety applications and enables uncomplicated scaling as requirements change. If no decentralised extensions and/or cross-communication between the PSC1 master units are required, the new FB10/FB20 variants offer a more cost-effective way of implementing a customised solution for your application.
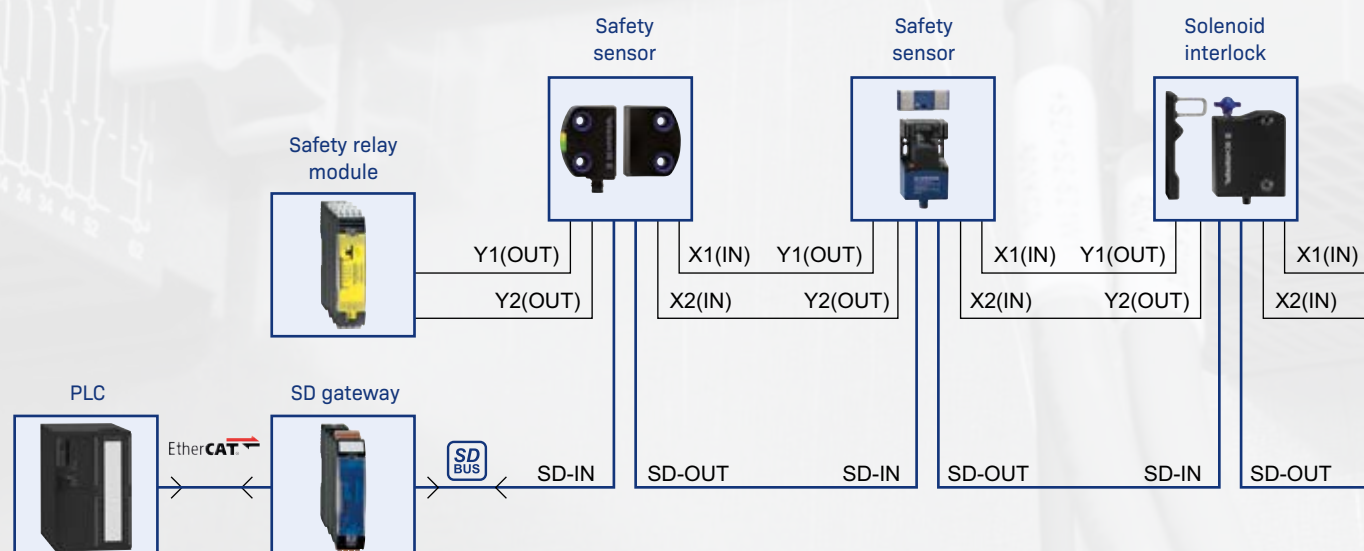
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FIELDBUS GATEWAY FOR DEVICES WITH SERIAL DIAGNOSIS
SDG

FIELDBUS GATEWAY SDG FOR SERIAL DIAGNOSIS

- Serial diagnosis of up to 31 safety relays via Schmersal SD bus

- Automatic addressing of the connected SD bus participants

- Diagnostic and configuration interface for easy commissioning and maintenance of the system

- Extensive additional functions via integrated web server

- Long-term storage of log messages via SD card

- Conversion of status and diagnostics data to Ethernet-based fieldbus protocols

EtherCAT.

PROFI NET®

Modbus TCP

EtherNet/IP™

under preparation

INSTALLATION VARIANT WITH SD GATEWAY AND SEPARATE SAFETY RELAY MODULE

| | Safety relay module | Safety sensor | Safety sensor | Solenoid interlock |

Safety sensor — Y1(OUT), Y2(OUT)
Safety sensor — X1(IN), X2(IN), Y1(OUT), Y2(OUT)
Solenoid interlock — X1(IN), X2(IN), Y1(OUT), Y2(OUT), X1(IN), X2(IN)

PLC — EtherCAT. — SD gateway — SD BUS — SD-IN — SD-OUT — SD-IN — SD-OUT — SD-IN — SD-OUT

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OUTPUT EXPANDER MODULE
SRB-E-602EM

- Contact expansion function

- 1x 6 safety contacts, STOP 0, or
  2x 3 safety contacts, STOP 0

- 2 signalling contacts

- Feedback contacts

- Temperature range −25 °C … +60 °C

- Slot-in termination
  with coding

The undelayed output expansion modules of the SRB-E product series are used for contact multiplication and contact amplification of safe relays or semiconductor outputs and can be used as expansion modules of a basic unit.

Basic components are all safety switchgear devices or safety controllers with feedback circuit monitoring.

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SAFETY LIGHT BARRIER IN PROTECTIVE HOUSING SLB440

- Hygienic design – end cap, fixation and membrane made of stainless steel V4A

- Degree of protection IP69

- Robust protective tube made of polycarbonate

- Range up to 75 m

- Connection: Cable with connector M12, length 0.2 m

- Performance Level PL e, type 4

- User-friendly parameter setting, no tools required

- Process reliability with daily cleaning

- Integrated set-up tool

ECOLAB®

The Schmersal Group has designed a new safety light barrier especially for hygiene-sensitive uses in the food processing industry, such as milk and meat processing.

This version has evolved with the demands of standard cleaning operations in the industry, as the sophisticated detailed design helps to ensure IP69 degree of protection (protection against the ingress of water from high-pressure of steam cleaning). The protective enclosure with external gaskets satisfies stringent standards and is designed to cope with frequent cleaning with water, foam, lyes, high-pressure or hot steam.

PULL-WIRE EMERGENCY STOP SWITCH EX-I-ZQ900-2GD
VERSIONS FOR EXPLOSION PROTECTION

ZONE 0 / 20   ZONE 1 / 21   ZONE 2 / 22

PULL-WIRE EMERGENCY STOP SWITCH EX-I-ZQ900-2GD

- Zone 1 and 21 (gas and dust atmospheres)
- Ex ib (gas/dust) – intrinsic safety
- Ex tb (dust) - protection by enclosure
- Reset push button
- Position indication
- Wire pull detection with wire breakage detection
- Wire up to 75 m long

Ex tb (dust)
Only zone 21
or 22

Ex ib
(gas/dust) –
intrinsic safety

Ex ib
Intrinsic safety

SRB-EXI

ZONE 0 / 20   ZONE 1 / 21   ZONE 2 / 22

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SOLENOID INTERLOCK
VERSIONS FOR EXPLOSION PROTECTION

SOLENOID INTERLOCK
EX-AZM150

- Zone 2 and 22 (gas and dust atmospheres)

- Ex nR (gas) – vapour-tight enclosure

- Ex tc (dust) - protection by enclosure

- Actuating head can be repositioned by 4 x 90°

- Holding force F_{Zh} = 1,500 N

- Latching force 50 N

- Suitable for applications up to cat. 3/PL d

Ex nR (gas)
Vapour-tight
enclosure

Ex tc (dust)
Protection
by enclosure

ZONE 2 / 22   ZONE 1 / 21   ZONE 0 / 20

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HEAVY DUTY SWITCHES HDS
VERSIONS FOR EXPLOSION PROTECTION

PULL-WIRE EMERGENCY STOP SWITCH EX-RS655

- Zone 1 and 21 (gas and dust atmospheres)

- Ex db eb (gas) – pressure-resistant enclosure

- Ex tb (dust) - protection by enclosure

- The emergency stop function can be triggered at any point on the wire

- The maximum length of wire of 2 x 100 m reduces the number of switches required, thereby saving costs

- Suitable for applications up to PL e

Ex tb (dust)
Protection
by enclosure

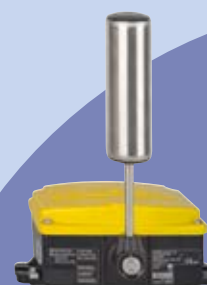Ex db eb (gas)
Pressure-resistant
enclosure

ZONE 0 / 20   ZONE 1 / 21   ZONE 2 / 22

SCHMERSAL

BASIC SWITCH
EX-BS655

- Zone 1 and 21 (gas and dust atmospheres)

- Ex db eb (gas) – pressure-resistant enclosure

- Ex tb (dust) - protection by enclosure

- Basic switch can be combined with different actuators for position, belt misalignment or level switches

- All variants can be used as a safety switch

- Suitable for applications up to PL d

Ex tb (dust)
Protection
by enclosure

Ex db eb (gas)
Pressure-resistant
enclosure

ZONE 2 / 22   ZONE 1 / 21   ZONE 0 / 20

COMMAND DEVICES, INDICATOR LIGHTS AND EMERGENCY STOP COMMAND DEVICE
VERSIONS FOR EXPLOSION PROTECTION

COMMAND DEVICES, INDICATION LIGHT EX-R-3127 AND EMERGENCY STOP COMMAND DEVICE EX-RDRZ45RT-3127

- Zone 1 and 21 (gas and dust atmospheres)

- Ex db eb (gas) – flameproof enclosure, increased safety

- Ex tb (dust) - protection by enclosure

- With EX-C contact elements

- Mounting hole (diameter): 22.3 mm

- Degree of protection IP65

- Can be used without an intrinsically safe barrier

**Ex tb (dust)
Protection
by enclosure**

**Ex db eb (gas)
Flameproof enclosure,
increased safety**

ZONE 0 / 20   ZONE 1 / 21   ZONE 2 / 22

SCHMERSAL

ASSEMBLY HOUSING
VERSIONS FOR EXPLOSION PROTECTION

S SCHMERSAL

ASSEMBLY HOUSING
EX-RCB

■ Zone 1 and 21 (gas and dust atmospheres)

■ Ex eb (gas) – increased safety

■ Ex tb (dust) - protection by enclosure

■ Enclosure sizes for 1, 3 and 5 control units

■ IP65, in combination with the EX-R programme

■ Stainless steel enclosure

■ Fastening from the back or with straps

Ex eb (gas)
Increased
safety

Ex tb (dust)
Protection
by enclosure

S SCHMERSAL

ZONE 2 / 22   ZONE 1 / 21   ZONE 0 / 20

excellence in safety

tec.nicum is the Schmersal Group's business unit for solutions and services related to machine, plant and occupational safety.

Schmersal restructured its service business in 2024. The range of safety services offered by tec.nicum has been significantly expanded – particularly with regard to digitalisation and complete solutions for machine safety – and the global activities and expertise have been more closely integrated.

In April 2024, Schmersal founded tec.nicum – Solutions & Services GmbH as a new subsidiary, which also incorporated omnicon engineering GmbH, which Schmersal had already acquired in 2019. The headquarters of the new subsidiary is located in Kirkel-Limbach, Germany.

The four pillars on which tec.nicum's offering has been built to date – academy, consulting, engineering and integration – have been supplemented by two more: digitalisation and outsourcing.

digitalisation: tec.nicum is increasingly offering newly developed software solutions, such as a new tool for carrying out risk assessments, as well as new digital technologies such as cloud solutions, IIoT applications, digitalised lockout-tagout procedures and energy management tools.

outsourcing: tec.nicum offers companies the opportunity to completely outsource all tasks related to machine safety, from the planning and installation of control cabinets to the design of holistic safety solutions. tec.nicum provides the user with ready-to-connect plug & play solutions.

Thanks to its worldwide consultancy network, tec.nicum services are available around the globe. tec.nicum provides customers with competent, product- and manufacturer-neutral advice and supports them in the safety-related design of their machines and production lines.

tec.nicum
Schmersal Group

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SCHMERSAL

academy

Education center

- Training courses
- Customer-specific trainings
- In-house seminars
- Certified courses (mce.expert and FSE)

consulting

Analysis and documentation

- Technical support
- Risk assessment
- CE conformity assessment
- Evaluation of machines and production lines
- Reports

engineering

Planning and design

- Technical project planning
- Conceptual project development
- Electrical and mechanical design
- Executive project management

integration

Practical application

- Turnkey approach
- Installation
- Retrofit

digitalisation

Software integration

- tec**.ps** (Product-Service System)
- tec**.ssm** (Schmersal Smart Machine)
- tec**.cvs** (AI and Computational Vision Solutions)
- tec**.dloto** (Digital Lockout Tagout)
- tec**.ems** (Energy Monitoring System)

outsourcing

Serial solutions

- Plug & Play products
- Engineer to Order projects
- Systems and cabinets

tec.nicum

The range of services offered by tec.nicum comprises six segments: academy (knowledge transfer), consulting (advisory services), engineering (technical planning), integration (execution and implementation), digitalisation (software solutions and new digital technologies) and outsourcing (complete solutions).

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 2,000 people and seven manufacturing sites on three continents along with its own companies and sales partners in more than 60 nations.

Customers of the Schmersal Group include "Global Players" in mechanical engineering and plant manufacturing and operators of machinery. They benefit from the company's extensive expertise as a provider of systems and solutions for machine safety. In addition, Schmersal specialises in various areas including intralogistics, foodstuff production, the packaging industry, machine tool industry, lift switchgear, heavy industry and the automotive industry.

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
- tec.nicum digitalisation – Software solutions and new digital technologiese
- tec.nicum oursourcing – Complete solutions

SCHMERSAL
THE DNA OF SAFETY

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