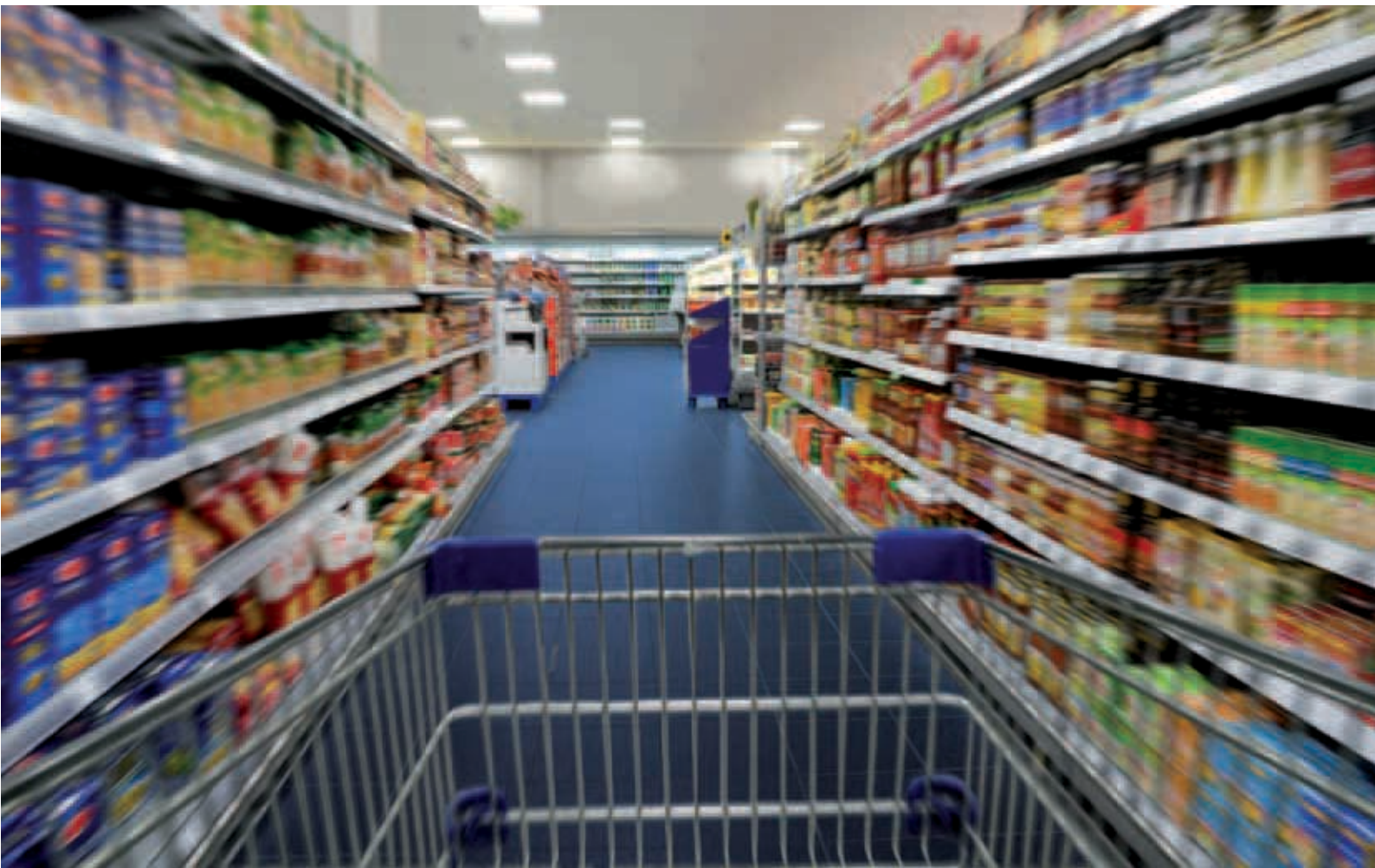


A basket full of solutions

Food



SCHMERSAL

Safe solutions for your industry

Safe solutions for your industry

Safety systems for the food-processing industry

The basis: customer orientation from the start

Safety in system: Protection for man and machine - under this motto, the Schmersal Group develops and produces safety switching appliances and systems for the entire machinery and plant construction for decennia already. In some industries, special and additional requirements are applicable. As customer-focussed company, who intensively deals with the wishes of the manufacturer and users of machines, Schmersal has taken up these challenges from the start. As a result, specific products and solutions were developed for many industries and for some of them, an own portfolio has been developed as well.

Versatile requirements

The food-processing industry includes many, usually mechanically performed process steps, such as harvesting, drying, filleting, heating, shredding and crushing, mixing, filling, packing. During these process steps, the standards and directives with regard to machinery safety must be observed. Moreover, the food-processing industry in particular has other fields of activity as well, where the selection of switchgear or command devices at the man-machine interface is highly important.

Hygiene

Hygiene is a key issue in the food-processing industry. Four hygienic zones can be distinguished, for which strictly defined constructive details of the "hygienic design" are applicable:

- Dry zone (non-contact area; protection against soiling required)
- Splashing zone (foodstuff can splash; the operators touch the foodstuff and the machines; risk of contamination or cross-contamination)
- Wet zone (high risk of bacterial contaminations; low-pressure cleaning with chemicals or hot cleaning)
- Aggressive zone (even higher risk of contamination; frequent hot steam cleaning or high-pressure cleaning with aggressive detergents)

The Hygienic Design also influences the choice of safety switchgear. An example: the food-processing industry was the first branch, which used safety sensors instead of the conventional electromechanical safety switches. These non-contact operating safety switchgear can be smoothly cleaned due to the smooth surfaces of the sensor and the actuator and moreover provide for concealed mounting.

Humidity, moisture and detergents

Stringent hygienic standards are applicable to those components or periphery of food-processing machinery, which are in contact with the product; as a result, the safety switchgear and actuating elements must meet the highest requirements as their protection class is regarded. Many series therefore are IP69K. These switchgear must be able withstanding a water jet of at least 80 bar with a temperature of 80°C.

Temperature resistance

In frozen storage or in case of shock freezing - to name two examples - automated processes take place at temperatures below the freezing point. Even more frequent are the processes, for which high temperatures are inevitable, e.g. evaporation, homogenisation, drying, condensation, distillation. Switchgear, which are used for these processes, must be accordingly high- and low-temperature resistant.



Branch-specific certifications

The specific characteristics to be featured by machinery and plants destined to the food-processing industry are laid down in different regulations, which also concern the individual machinery and plant components and which are in part very demanding. This includes, amongst others, the following standards and approvals according to the following standards:

- EN 1672-1 and EN 1672-2
- 3A Sanitary
- Ecolab
- EHEDG
- FDA
- HACCP

Switchgear from Schmersal is approved and certified in accordance with these regulations depending on the requirements.

Long lifetime and availability

In food production, machinery and plants often operate with short cycles and in a three-shift operation in interlinked plants. The expected availability is accordingly high. Schmersal switchgear meet these requirements. They stand the test in various applications, even under unfavorable ambient conditions.

Explosion protection

When mixed to air in a particular proportion, all organic dusts are inflammable. Therefore, the regulations of the dust explosion directive must be observed e.g. when filling/bottling and storing powdered food products and their primary products (flour, baking mixtures, pudding powder, coffee and cacao powder). The Schmersal Group offers a comprehensive range of switchgear for automation and machine safety, which is approved and certified to the ATEX and IECEx Directives.

Services

Machine safety is a complex theme. The Schmersal Group offers its customers comprehensive support for the implementation of standards and guidelines in high-productive machinery and plants. The service portfolio include, amongst other things, seminars in the Wuppertal tec.nicum training centre as well as the individual consultancy of machine builders and safety engineers by certified Safety Consultants in more than 20 countries.

Branch-related knowledge on call

The Schmersal Group furthermore aims at establishing good contacts and exchanging experiences with food-processing machinery builders, so that new switchgear is developed and the individual consultancy is provided with the highest level of practice-orientation. To that effect, Schmersal is, amongst others, member of the "Packaging Excellence Center" (PEC). This Centre of Competence for packaging and automation technology reunites many companies manufacturing machinery and plants for the food packaging industry.



Security

Safety sensor with MZM 120 magnetic solenoid interlock



- Metal parts with hygiene-compliant surface coating
- Suitable for use with food
- Solid design and excellent resistance to abrasion
- Excellent resistance to corrosion
- Excellent anti-adherence features
- Fine-adjustment through slotted holes
- Power to lock
- The safety sensor must be used as mechanical backstop
- Holding force 300 N
- Variably adjustable latching
- Sensor technology permits an offset between actuator and interlock of ± 5 mm vertically and horizontal ± 3 mm horizontally
- Intelligent diagnostic indication of failures and errors
- 3 LED's to indicate operating modes
- Up to 31 components can be wired in series
- Protection class IP69K

Code number: C-68MZM1



1) under preparation

CSS 30S safety sensor



- Stainless steel enclosure M30
- 2 short-circuit proof PNP safety outputs (24 VDC, 250 mA each)
- up to 31 safety sensors can be wired in series, self-monitoring
- Max. length of the sensor chain 200 m
- integrated cross-wire short and external voltage monitoring of the safety outputs
- Integrated connector
- Protection class IP69K
- Concealed mounting behind stainless steel possible

Code number: C-09CSS3



1) under preparation

BNS 40 AS safety sensor



- Stainless steel enclosure
- with coding
- Rectangular design
- long life, no mechanical wear
- Protection class IP69K
- Actuation only possible with BPS 40S
- Insensitive to transverse misalignment
- Concealed mounting possible
- Insensitive to soiling
- Connecting cable suitable for the food-processing industry

Code number: C-15BNS4



1) under preparation

Safety/Automation

SLC/SLG 220/420 IP69K safety light curtains and safety light grids



- Safety light curtain
- Type 2 and type 4 to IEC/EN 61496-1, -2
- Resolution 14, 30 and 80 mm
- Protection field heights from 170 ... 1450 mm
- Protection class IP69K
- Integrated start/restart interlock
- Integrated contactor control
- Integrated blanking function
- Diagnostic and parametrization interface by PC
- Range from 0.3 ... 14 m
- Fail-safe transistor outputs
- Optical synchronisation
- Status display
- Signalling output
- Safety light grid
- 2-, 3- or 4-beam light grid
- Range from 0.3 ... 30 m

Code number: SLC or SLG



CleanSIGN LED signal column

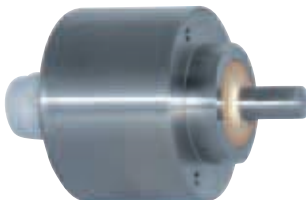


- Ease of cleaning and disinfection by easy-to-clean and hygiene-compliant design
- Use of food-safe, detergent-resistant material (approval to FDA)
- EHEDG and Fraunhofer IPA approval
- Protection class IP67 and IP69K
- Complies with air cleanliness class 2 to DIN EN ISO 14644
- Maintenance-free through LED technology with long lifetime of up to 50,000 hours
- Pine Tree Clip® (fastener) enables quick and smooth assembly
- Easy assembly and wiring
- Electronic modularity of the individual stages
- Integrated buzzer

Code number: C-49CLEA



WDG 58V encoder



- Incremental shaft encoder
- Extremely robust execution: high bearing loads up to 100N
- Stainless steel execution 1.4401 (V4A)
- EHEDG: Approved hygiene-compliant construction/design (Hygienic Design)
- Ecolab: Certificate regarding the resistance to detergents and disinfectants
- High-grade electronics: up to 25000 impulses
- Protection class IP67 and IP69K
- Radial shaft seal without dead zones (PTFE)
- Full connection protection at 10 ... 30 VDC
- optional: -40 °C ... +80 °C

Code number: C-54WDG5



Safety/Automation

HYGIENEFENCE safety fence



Code number: C-22HYGI

The HYGIENEFENCE fence system is an economical safety fence system, which meets the especially high requirements and the legal safety and quality prescriptions, which are applicable in the food-processing industry.

High-grade stainless steel guarantees cleanliness and long lifetime. A HACCP/GMP-compliant design with water- and dirt-resistant construction enables cleaning without traces and residues. The long lifetime, the smooth maintenance and the robustness of the protective device guarantee an economical price/performance ratio.

- Useful length of the element 500, 1000 and 1500 mm
- Door widths 1-leaf hinged door: 1000 mm
- 2-leaved hinged door: 1900 mm
- System height 2,000 mm
- Surface finish stainless steel 1.4301 stained, optionally additionally electropolished



Hygiene-compliant construction



Pre-assembled safety switch



Attractive design



Spring-return joystick switch WKT... / MKT... / Maintained joystick switch WKS... / MKS...



- Mounting holes 22.3 mm and 30.5 mm
- 2-4 actuating directions, latching or switching
- With different contact functions - also with analogue output
- Very robust operation
- Easy fitting
- Suitable for food-processing industry
- Solvent- and chemical-resistant materials
- Protection class IP67 and IP69K
- Temperature range -40 °C ... +80 °C

Code number: C-18WKT / C-47WKS



Command and signalling devices

Hygiene-compliant control devices and indicator lights range N



- Special sealing measures prevent the penetration of dirt and bacteria in the gaps between the stationary and rotary elements of the components. The special component geometries facilitate cleaning without traces and residues of the command and signalling elements.
- Mounting holes 22.3 mm
- Protection class IP67 and IP69K
- Pushbutton
- Illuminated pushbutton with LED's
- Selector switch with 2 and 3 positions and short and long knob
- Emergency-stop pushbuttons
- Domed and flat indicator lights with LED's
- Emergency-stop command devices
- Main switches
- Blanking plug
- Lockable mounting frame for maintained selector switch
- D-30/D-22 mm adapter
- Screw terminals, spade connector, cage clamp terminals or PCB connection



Emergency stop command device



- to IEC EN 60947-5-5 and EN ISO 13850
- with optional protective cover

Code number: C-43NDRR

Indicator lights



- high luminosity by integrated multi-LED's
- different colours available

Code number: C-44NME4 / C-74NML7

Maintained- / spring-return selector switches



- optional short or long knob
- Colours: white, grey or black

Code number: C-75NWSW / C-95NWTT

Illuminated pushbutton



- high luminosity by integrated multi-LED's
- different colours available

Code number: C-13NDLL

Emergency-stop pushbuttons



- with black or white sealing bellows
- different colours available

Code number: C-75NDPP

Enclosure for surface mounting



- Stainless steel enclosure
- Protection class IP69K

Code number: C-51NBG1

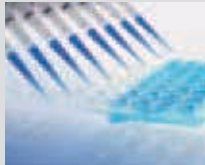


For many years the privately owned Schmersal Group has been developing and manufacturing products to enhance occupational safety. What started out with the development and manufacture of a

very wide variety of mechanical and non contact switchgear has now become the world's largest range of safety systems and solutions for the protection of man and machine. Over 1,200 employees in more than 20 countries around the world are developing safety technology solutions in close cooperation with our customers, thus contributing to a safer world.

Motivated by the vision of a safe working environment, the Schmersal Group's engineers are constantly working on the development of new devices and systems for every imaginable application and requirement of the different industries. New safety concepts require new solutions and it is necessary to integrate new detection principles and to discover new paths for the transmission and evaluation of the information provided by these principles. Furthermore, the set of ever more complex standards, regulations and directives relating to machinery safety also requires a change in thinking from the manufacturers and users of machines.

These are the challenges which the Schmersal Group, in partnership with machinery manufacturers, is tackling and will continue to tackle in the future.

Product ranges	Industries	Services	Competences
 Safe switching and monitoring ■ Guard door monitoring safety switches ■ Command devices with safety function ■ Tactile safety devices ■ Optoelectronic safety devices Safe signal processing ■ Safety monitoring modules ■ Safety controllers ■ Safety bus systems Automation ■ Position detection ■ Command and signalling devices	 ■ Elevators and escalators ■ Packaging ■ Food ■ Medicine/ pharmaceuticals ■ Machine tools ■ Wood working ■ Construction machines and cranes ■ Renewable energy sources ■ Automotive ■ Chemical industry	 ■ Application advice ■ CE conformity assessment ■ Risk assessment in accordance with the Machinery Directive ■ Stop time measurements ■ Training courses	 ■ Automation ■ Explosion protection ■ Hygienic design ■ Machine safety

All data mentioned in this flyer have been carefully checked. Technical modifications and errors excepted.

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 **SCHMERSAL**
Safe solutions for your industry

