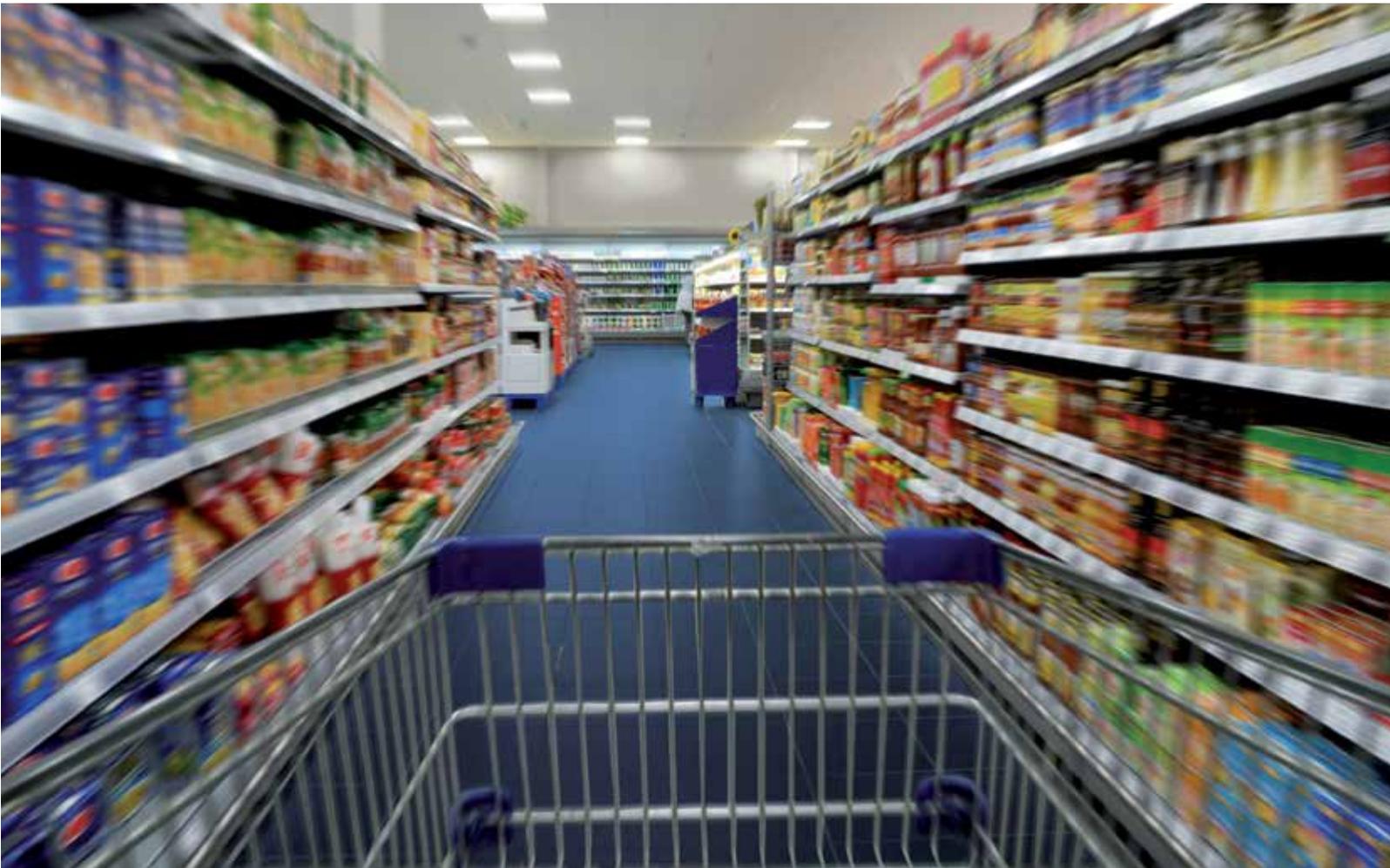


# A basket full of solutions

Food



 **SCHMERSAL**  
Safe solutions for your industry

Courtesy of Steven Engineering, Inc. - (800) 258-9200 - [sales@steveneng.com](mailto:sales@steveneng.com) - [www.stevenengineering.com](http://www.stevenengineering.com)

# 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 a customer-focussed company, who intensively deals with the wishes of the manufacturers 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, a complete portfolio has been developed also.**

### Various requirements

Harvesting, drying, filleting, heating, shredding, mixing, filling, packing: the foodstuff production process has many process steps, which are generally taken over by machine automation. During these processes, the Machinery Safety directives and standards have to be observed. In addition to that, the foodstuff industry also has other fields of activity, which must be taken into account when selecting safety switchgear or command devices for the man-machine interface.

### 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 cocoa powder). The Schmersal Group offers a comprehensive programme of solutions 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 individual consultancy for 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 safety solutions are 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 Centre" (PEC). This Centre of Competence for packaging and automation technology reuniting many companies manufacturing machinery and plants for the food packaging industry.



# Security

## Solenoid interlock AZM300



- Symmetrical mounting for right- and left-hinged doors
- Only one version for hinged and sliding doors
- Compact design
- Protection class IP69K
- 3 actuating directions
- High tolerance to door misalignment
- Switchable latching force (25 N / 50 N)
- PL e / SIL 3
- Series-wiring without reduction of the safety level
- More than 30,000 different codings
- Serial diagnostic
- Power to lock or power to unlock
- Actuator or solenoid interlock monitoring

Code number: C-96AZM3



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

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

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# Security/Automation

## SLC/SLG 220/420 IP69K safety light curtains and safety light grids and SLC/SLG 425I IP69K



- 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



## SLC/SLG 440 safety light curtains and safety light grids



- Safety light curtain
- Control category Type 4 to EN 61496-1, CLC/TS 61496-2
- Resolution 14 and 30 mm
- Protection field heights from 170 mm to 1770 mm
- Integrated restart interlock
- Integrated contactor control
- Integrated blanking function (fixed and floating blanking)
- Diagnostics and set-up tool
- Range from 0.3 ... 10 m
- Fail-safe transistor outputs
- Optical synchronisation
- LED status display, 7-segment display
- Protection class IP67
- Safety light grid
- 2-, 3- or 4-beam light grid
- Range 0.3 m ... 12 m

Code number: C-98SLC4 or C-07SLG4



## LED Signal Tower CleanSIGN



- 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



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# Security/Automation

## 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



## HYGIENEFENCE safety fence



**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

Code number: C-22HYGI



## 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 the 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



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# 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, blade terminal, 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

### Illuminated signal



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

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

### 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

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# The Schmersal Group

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 1,400 employees in more than 50 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



### 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

## Industries



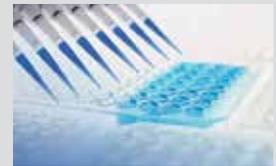
- Elevators and escalators
- Packaging
- Food
- Machine tools
- Heavy industry

## Services



- Application advice
- CE conformity assessment
- Risk assessment in accordance with the Machinery Directive
- Stop time measurements
- Training courses

## Competences



- Machine safety
- Automation
- Explosion protection
- Hygienic design

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

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