

A stack full of solutions

Wood-processing



 **SCHMERSAL**
Safe solutions for your industry

Safe solutions for your industry

Wood-processing - Safety, also in heavy-duty environments

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 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, an own portfolio has been developed as well.

Higher level of automation

Wood is a popular natural material, both in carpentry and in architecture. The processing methods "from forest to furniture" are manifold. They include debarking and sawing as well as miscellaneous surface treatments, furniture assembly and strand board production methods. Most of these methods and processes have a common feature, i.e. they entail hazards and risks for the operators.

In ancient times, sawmills were a downright synonym to high injury-risk workplaces. This situation meanwhile has changed - not in the least as a result of the ever stringent regulations with regard to machine safety and the higher level of automation.

High availability

Wood-processing and wood-working machinery usually runs non-stop and often in a 24/7 cycle. Interruptions thereby are very unwanted. Safety switchgear from Schmersal is geared to these conditions. They are characterised by longevity, even under rough operating conditions similar to those prevailing in sawmills and chipping plants and they were designed and developed with the objective to minimise or even avoid interruptions of the production process.

An example: safety sensors, safety switches and solenoid interlocks equipped with the Schmersal-patented CSS technology detect the slightest misalignment of the guard door and transmit a corresponding message to the control or the master display. The user then can realign the guard door before it becomes misaligned to such an extent that for instance the safety sensor no longer responds to the actuator, thus preventing the start-up of the machine

Long service life, even in heavy-duty conditions

A number of switchgear series from Schmersal are true specialists for the heavy-duty conditions prevailing in wood-processing and the wood-working industry. These series include for instance safety mats, robust position switches and pull-wire emergency stop switches, which enable a very fast activation of the emergency stop function on conveyor plants and large wood-processing machinery.

The safety mats of the SMS series are often used to protect areas and the safety switching covers of the SL 300 series from Schmersal are tactile safety guards, which were originally developed for a customer who was active in the forestry industry and then included in the entire product programme.

Pollution by wood chips and dust excluded.

Wherever it should be avoided that the function of safety switchgear is affected by wood chips or dust, non-contact safety sensors, whose switch and actuator have smooth surfaces, or optoelectronic safety guards are used.



Source 1)



Source 1)

High reliability at the man-machine interface

The Schmersal Group also offers switchgear for the man-machine interface of wood-processing machinery, which are characterised by a long service life under rough and heavy-duty ambient conditions. An example: many wood-processing and -working companies use the robust command devices and indicator lights of the R series to accessorize high-grade operating panels. The programme features, amongst other things, a high protection class, a metal enclosure and a "vandal-proof" design.

Information provides for transparency

In complex plants, the communication between individual components is highly important. The Schmersal Group therefore offers a Diagnostic Gateway, for instance for the CSS series, for the transmission of non-safety-related, diagnostic-information through default bus protocols. This provides for enhanced availability and quick troubleshooting in the case of a failure.

The use of the "AS Interface Safety at Work" standard is also useful for the transmission of safety-related signals. Here, the user benefits from considerably reduced installation efforts and overheads as well as enhanced diagnostic possibilities - features, which are applauded within wood-processing machinery construction. The Schmersal Group therefore offers a comprehensive programme of safety switchgear with integrated AS-i Safety interface.

Dust-explosion protection

When mixed with a certain volume of air, wood dust is explosive. The Schmersal Group offers a comprehensive programme of explosion-proof switchgear for automation and machine safety, which is tested and certified to the ATEX and IECEx Directives. These switchgear provide for a double safety: they ensure the safety of the machine on the one hand and cannot become a source of ignition themselves on the other hand.

International presence

Most wood-processing machinery builders are international players. This is inevitable, as their customers usually are also operating on a worldwide scale - for instance in Asia and South-America, where there are many wood-processing and -working companies. These enterprises can rely on Schmersal for competent service and consultancy in approximately 50 nations – according to the motto: safe solutions for your industry.

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 includes, 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.



Source 1)



Safety switch with separate actuator

Safety switch with separate actuator



Application

Safety switches with a separate actuator are used in the entire production process and almost all fields of the wood-processing industry. They are suitable for monitoring the position of hinged, sliding and especially for removable safety guards, which need to be closed to ensure the necessary operational safety.

In addition to the universally-popular AZ 16 (left), different series are available, which can be fitted, amongst other things, on profiles as well as in confined mounting spaces and moreover can be used for modernisation and retrofitting purposes. The programme also includes coded versions, which guarantee a high level of protection against tampering.

- Up to 4 safety contacts
- Metal and thermoplastic enclosure
- Long life
- Optionally with individual coding
- A wide range of accessories is available
- Versions with connector and cable



Solenoid interlocks



Application

The AZM series solenoid interlocks have been designed to prevent, in conjunction with the control part of a machine, sliding, hinged and removable safety guards (fences, covers or doors) from being opened before hazardous conditions (e.g. run-on movements) have been eliminated. The necessary signal is transmitted to the solenoid interlock through fail-safe standstill monitors or fail-safe delay timers through the safety controllers.

As an alternative to the AZM series, the MZM 100 is available, a non-contact solenoid interlock, whose latching force of 500 N is electromagnetically generated.

- Holding force of 500 - 3500 N
- Up to 5 safety contacts
- Metal and thermoplastic enclosure
- Long life
- Optionally with individual coding
- Non-contact solenoid interlocks
- A wide range of accessories is available
- Versions with connector and cable



Detailed information about the products can be found at: www.schmersal.net below the indicated code numbers

Courtesy of Steven Engineering, Inc. - (800) 258-9200 - sales@steveneng.com - www.stevenengineering.com

Position switch with safety function

Position switches to DIN EN 50047 / 50041



Z/T 235 - Code number: C-11235



Z/T 255 - Code number: C-07255



Z/T 335/336 - Code number: C-12335 / C-03336

Application

Position switches with safety function can be used for various positioning tasks of packages and conveyed material as well as linear axes and conveyor belts. The position monitoring of safety guards is another popular field of application for these switches.

Due to their standardised mounting dimensions, this switchgear is universally applicable. Different actuating elements are available for an optimal adjustment of the individual series to the specific application.

- Plastic and metal enclosure
- Different designs
- Mounting dimensions to DIN EN 50047 or DIN EN 50041
- Actuating elements for various applications
- Versions with connector and cable



Hinge safety switch



T.C 235/236 - Code number: C-53TC23



TV.S 335 - Code number: C-34TV8S



TV.S 410 - Code number: C-56TVS4

Application

Wherever the mounting space is confined or special requirements with regard to tamper protection must be met, the use of hinge safety switches is recommended as an alternative to the conventional safety switches with separate actuator.

Here, the safety-related monitoring function is integrated in the switch. In this way, small guards and service doors, e.g. of automatic conveying systems, as well as heavy hinged door on large wood-processing machines can be (depending on the series used) protected as to provide for easy fitting and maintenance as well as compliance with the standards.

- Plastic and metal enclosure
- Suitable for standard profile systems
- Positive linkage without cam
- Additional hinges and universal joints to simplify fitting



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Non-contact safety sensors

Electronic and magnetic safety sensors



BNS 260 - Code number: C-71BNS2



RSS 36 - Code number: C-57RSS3



CSS 180 - Code number: C-22CSS1

Application

The use of safety sensors is of particular advantage, in cases where extremely dirty conditions can occur. The wear-free operating principle, which avoids the use of mechanical actuating elements, enables a hard-wearing and easy-to-clean design of these safety components.

With CSS technology, the Schmersal Group has developed an operating principle, which offers considerable advantages for the safety of machinery in actual practice. CSS technology provides for instance comprehensive diagnostic information, which enables fast localisation of faults. This is particularly advantageous on interlinked wood-processing wood-working plants or on machinery with many stations and safety guards.

- Plastic and stainless steel enclosure
- Many coding options
- Comprehensive additional functions through RFID technology
- With integrated logic circuit for monitoring and evaluation
- Protection class up to IP69K
- Insensitive to transverse misalignment
- Insensitive to soiling



Optoelectronic safety devices



SLB 200 - Code number: C-43SLB2



SLB 400 - Code number: C-86SLB4



SLC 420 IP 69K - Code number: C-69SLC4

Application

Optoelectronic safety devices such as safety light barriers, safety light grids and safety light curtains are used to protect access to hazardous points or hazardous areas. Compared to the separating safety guards, they provide for an enhanced flexibility.

Through muting and blanking functions, they can be set so that conveyed products can get into the hazardous area, whilst persons are detected immediately.

- Type 2 and type 4 safety light grids and curtains to IEC/EN 61496-1, -2
 - Range 0.3 ... 40 m
 - Protection class up to IP69K
 - Optionally with muting and blanking functions
- Safety light barriers range 4 ... 15 m



Detailed information about the products can be found at: www.schmersal.net below the indicated code numbers

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Controlling, signalling and evaluating

Control devices and indicator lights



TFH 232 - Code number: C-64TFH2



Pull-wire emergency stop switch - Code number: C-22ZQ70



Command and signalling devices

Application

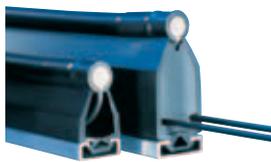
At the man-machine interface of packaging machinery, command devices and indicator lights keep the operator informed about the operating condition and take care of the communication with the machine. The Schmersal Group has a comprehensive portfolio of command devices, which have been developed especially for industrial applications.

This offer includes the command devices of the R series as well as the spring-return and maintained joystick switches of the K series for heavy-duty operating conditions. New in the programme are the compact, modular control panels of the BDF series, which can be fitted onto common profile systems.

- Emergency stop button
- Pull-wire emergency stop switches
- Two-hand control panels
- Enabling switches
- Tactile sensors
- Foot switches
- Spring-return/maintained joystick switches, pushbuttons, selectors and indicator lights



Tactile safety switching systems



SE 40 / SE 70 - Code number: C-34SE-P / C-06SE-P



SL 300 - Code number: C-84SL30



SMS 4 - Code number: C-77SMS4

Application

Tactile monitoring systems stop the hazardous movement in case of contact or when touched. The variety of application fields requires constructively different safety systems. Large feed and insertion openings on machinery for instance place different requirements on the protection of the operating staff and the machine - here, the SL 300 safety flap is used - compared to surfaces, where the SMS safety mats are used.

- Safety edges
- Safety mats
- Safety bumpers
- Safety switching covers



Detailed information about the products can be found at: www.schmersal.net below the indicated code numbers

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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 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>Safe switching and monitoring</p> <ul style="list-style-type: none"> ■ Guard door monitoring safety switches ■ Command devices with safety function ■ Tactile safety devices ■ Optoelectronic safety devices <p>Safe signal processing</p> <ul style="list-style-type: none"> ■ Safety monitoring modules ■ Safety controllers ■ Safety bus systems <p>Automation</p> <ul style="list-style-type: none"> ■ Position detection ■ Command and signalling devices |  <ul style="list-style-type: none"> ■ Elevators and escalators ■ Packaging ■ Food ■ Medicine/ pharmaceuticals ■ Machine tools ■ Wood working ■ Construction machines and cranes ■ Renewable energy sources ■ Automotive ■ Chemical industry |  <ul style="list-style-type: none"> ■ Application advice ■ CE conformity assessment ■ Risk assessment in accordance with the Machinery Directive ■ Stop time measurements ■ Training courses |  <ul style="list-style-type: none"> ■ 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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K. A. Schmersal GmbH
 Möddinghofe 30
 42279 Wuppertal
 Telefon: +49 202 6474-100
 info@schmersal.com
 www.schmersal.com

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