Optoelectronic safety systems for the protection of man and machine

Product information

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Schmersal offers its customers a comprehensive range of products for optoelectronic safeguarding of hazardous areas. The company has a large program of active optoelectronic protective devices (“AOPD”), ranging from light barriers, light grids and light curtains with different functions (e.g. blanking, muting, cascading) up to laser scanners. A large range of accessories, e.g. deflecting mirrors, mounting brackets etc. helps the user fitting and using the AOPD on his specific application.

This brochure contains a brief introduction of the individual optoelectronic product families as well as the main accessories for the AOPD systems of the Schmersal Group.

The technical data of the individual devices are completed with wiring examples, e.g. in combination with Safety monitoring modules or for integration in the AS-i Safety at Work System. Appropriate components can be wired into a complete safety system.

Descriptions of technical correlations, details on external control units, installation or operating instructions or similar have been provided to the best of our knowledge. However, this does not mean that any warranted characteristics or other properties under liability law may be assumed which extend beyond the “General Terms of Delivery of Products and Services of the Electrical Industry”. We trust that you will understand that the user must check our information and recommendations before using our equipment.

Subject to technical modifications and errors.

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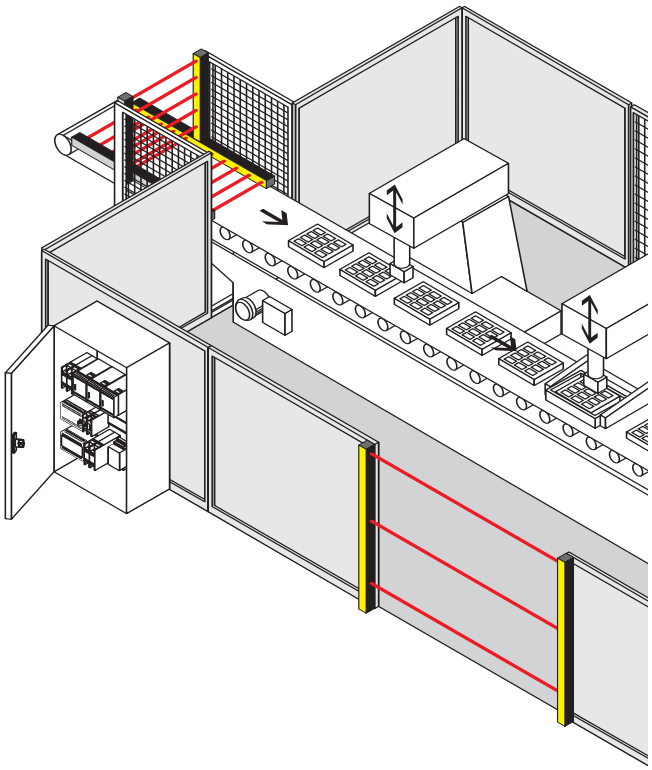
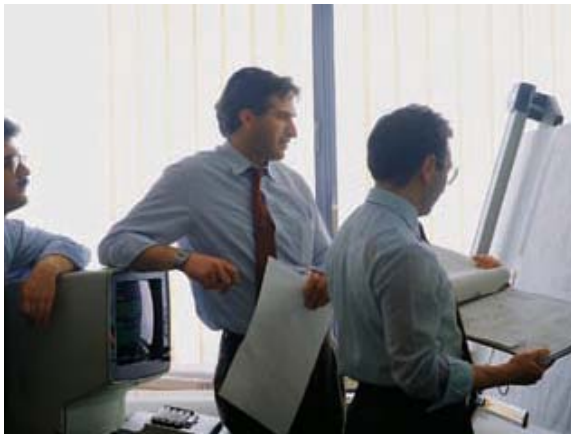
The field of automation is subject to a permanent and innovative change of products and applications. The focus is on increasing the productivity and realising a smooth-running production process with a minimum of human interventions on machinery and systems. The ideal, a fully automatic and totally safe machine however will always remain a dream, though the robots used in production plants already are a big step towards this aim.
Human intervention and knowledge will always be required for the commissioning, monitoring and maintenance of modern industrial systems. Man however is not infallible and ignorance or lack of information, thoughtlessness or negligence often leads to damages.

For these reasons, harmonised standards, i.e. the Machinery Directive EC 98/37/EC and other regulations, were implemented at European level.
These standards aim at detecting and constructively avoiding all possible risks and hazards during the planning and project phase of machines and systems. Safety components must be used to minimise or eliminate the residual risks.
In this way, manufacturers and users are making equivalent efforts to set up an optimal process flow, which offers the highest possible protection to the operating staff. The challenge for all manufacturers of safety components is to design efficient and safe product solutions for mechanical engineers. Flaps and doors are the simplest means of access to the machine.
These separating hardguarding safety solutions offer an efficient and effective protection against hazardous movements and products being ejected from the machine.
When these safety guards are opened, the machine is brought to standstill (through the corresponding safety sensor transmitting the “stop” signal to the control), which interrupts and therefore slows down the production. In case of continuous processes, which must not be interrupted, solenoid interlocks protect man and the work piece against damages.
Safety fences are not suitable for production processes requiring the material to be transported into the working area by means of conveyor belts, as it does not allow for an ergonomic and optimal work sequence.
A “virtual safety guard“ in the form of an active optoelectronic device (AOPD), e.g. a safety light curtain, is a perfect solution, offering both an optimal protection of human life and uninterrupted production process.





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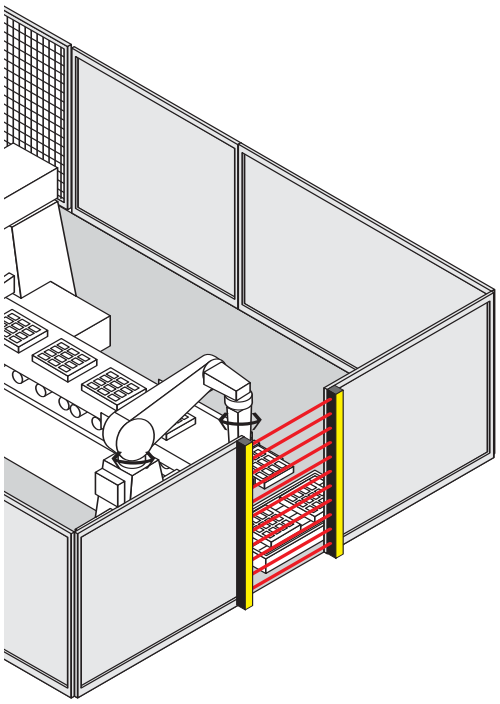
Typical applications:

- Power-driven machines
- Power-driven presses in metalworking, plastics, leather, stone working and rubber processing industry
- Folding presses and attachments
- Filter presses
- Punching machines in leather, textile and plastics processing
- Robots stations and welding booths
- Printing and injection moulding machines
- Transport engineering
- Pallet loaders and palletizers
- Materials handling and storage technology
- and so on



Depending on the application, the AOPD are used for danger point, danger zone and perimeter guarding. The user can choose from a large range of different optoelectronic safety solutions e.g. light barriers, light grids, light curtains and laser scanners.