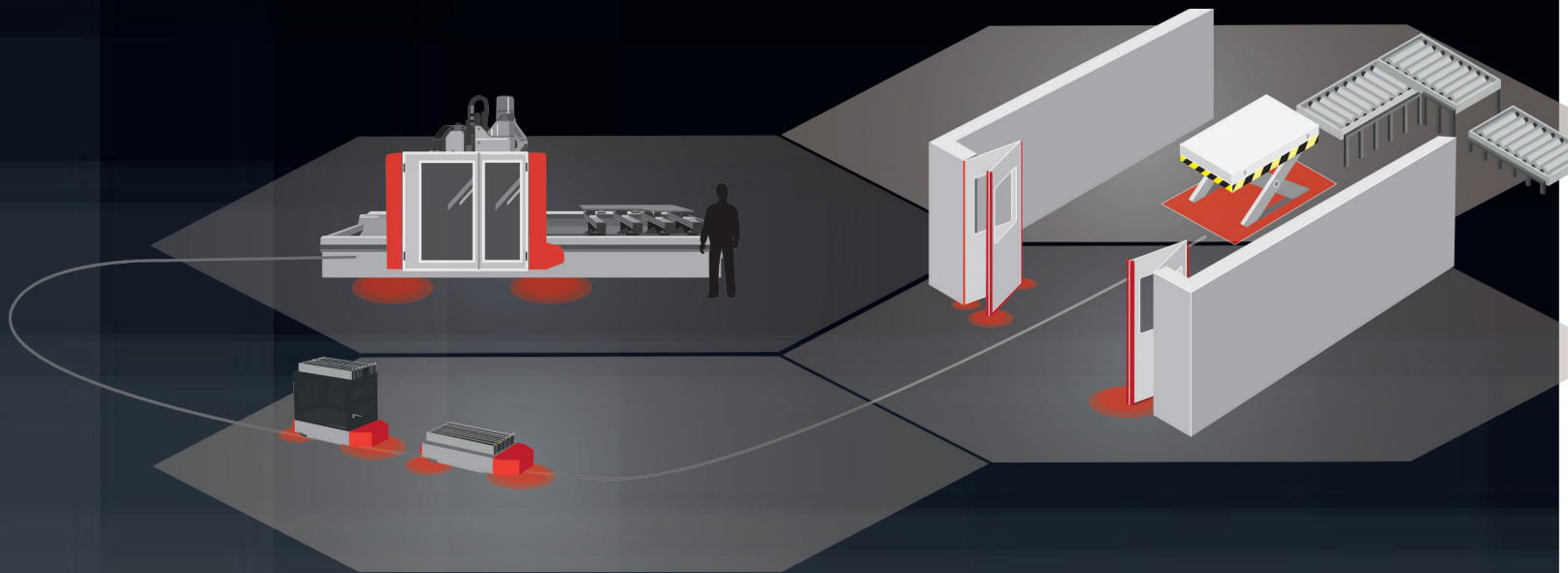


# Safety for the Lift and Transport Technology



Information for Manufacturers and End-  
users of Lifting, Access and Transport Equipment

**ASO** **Safety**  
Solutions

## Transport Technology

Moving and tool changing vehicles, heavy-duty trucks and other moveable equipment can be safely stopped with the use of **SENTIR bumper** safety contact bumpers or **SENTIR edge** safety contact edges. Workers or users of systems are protected against impacts and entrapment which offers a high degree of peace of mind.

Contact bumpers provide protection to property and people. The individually designed foam cores gently buffer during over-travel and the integrated sensor in the **SENTIR bumper** ensures fastest reaction paths. Developed and manufactured in-house, the outstanding appearance and feel are complemented by artificial leather covers. Maximum shape stability and a secure barrier against external influences make this an ideal choice.

**SENTIR edge** contact edges have a patented double chamber system that offers unsurpassed protection from external influences. This is due to the internal switching chamber with integrated sensor element that ensures optimum cycle times and continuous process stability. Ideal for conveyor technology. The simple handling of the innovative KS4 Plug'N'Sense system means a significant minimisation in production downtime, procurement and storage is achieved.

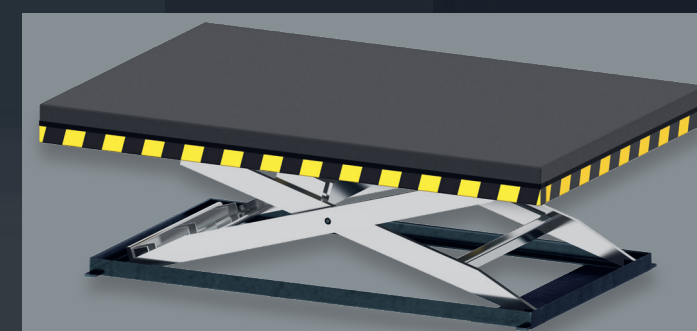
The **ELMON** series electronic evaluation system ensures safe stopping in the event of activation. Safety category requirements, interfaces and sensor numbers can be monitored to fulfil your specifications.



## Lift and Access Technology

Work platforms, lifting vehicles and vertically and horizontally moving parts can all be potentially dangerous for operators. **SENTIR bumper** contact bumpers provide switching pulses at the correct time, when used with the **ELMON** safety relay they offer safety assurance.

Contact edges and contact bumpers reliably switch off machines in the event of a crushing incident to avoid personal or material damage (bumpers with the largest overtravel). Contact mats detect the presence of something or someone in a hazardous area to stop potential injury or damage. **SENTIR mat** safety mats also offer a wide range of design options including shape, surface finish, color and illumination.

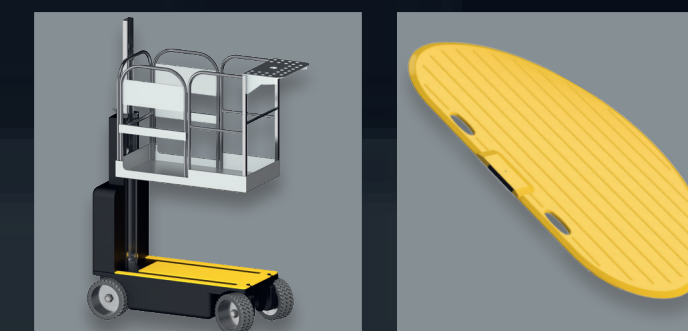


## Industrial Scissor Lift Technology

The **SENTIR mat** contact mat is an ideal addition to the safe and proper use of scissor lift vehicles. When the operator steps onto the mat, he is detected and the vehicle can fully fulfil its functions.

The contact mat integrates safety functionally into the vehicle making it a comfortable and safe addition. Low height construction, ergonomically adaptable surface structure with hard/soft balance makes the mat very comfortable for the operator to stand on. The mat is unaffected by vibrations, dust, damp or cold conditions. Additional features such as integrated and color coded foot switches and LED status displays can be added to the contact mat.

Lift vehicles can also be secured with **SENTIR contact mats**. If unauthorised access of the base platform occurs the mat stops the lift beam from being lowered and stops a potentially dangerous situation from occurring below the operator's cage. **SENTIR bumper** contact bumpers can surround the operating cage to stop the cage from causing damage to facades such as the outer skin of aircraft. A secure stop signal is generated when touched.



**SENTIR bumper**

- Robust design due to flexible and durable synthetic leather
- Large variety of standard bumpers
- Fast realization due to 100% inhouse production
- Individual mounting and connection possibilities




**SENTIR edge**

Contact edges



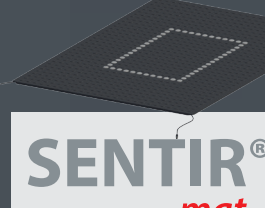
**SENTIR edge**

- Huge selection of standard products: 96 existing contact edges
- Patented double chamber system for high durability
- Accelerated response
- Rating up to IP 68
- Low wiring requirements



**SENTIR mat**

Contact mats



**SENTIR mat**

- Maintenance-free system, easy to clean of dust and dirt
- High moisture resistance (IP65)
- Withstands more than 6 million activations
- Individual dimensions and shapes possible




**ELMON relay**

Safety relays



**ELMON relay**

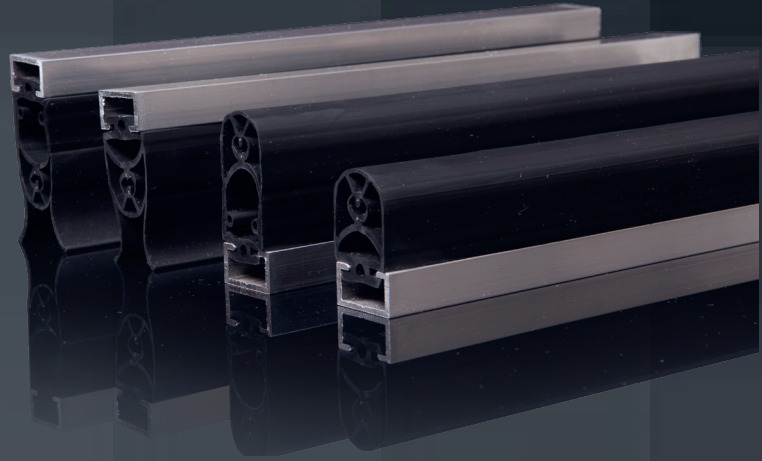
- Reliable link between the signal transmitter and the control unit
- Various housings
- Universal use due to various adjustment possibilities on the device and suitability for several voltages
- Different safety categories available, up to Cat.3 / PL e



# ASO - Safety, Sensors & Controls

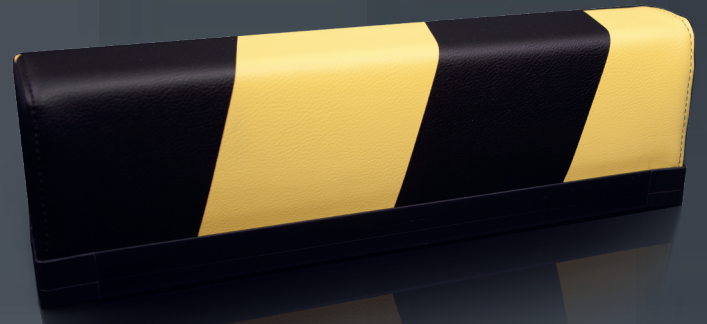
## SENTIR *edge* - Safety Contact Edges

Crushing and shearing points on automated equipment and vehicles have a high risk potential for people and material. The **SENTIR *edge*** safety contact edges provide reliable protection. The pressure-sensitive sensors act as closing edge safety devices and guarantee optimum overtravel and fast switching characteristics.



## SENTIR *bumper* - Safety Contact Bumpers

The **SENTIR *bumper*** safety contact bumpers offer adaptability, reliability and versatility. They are valued as safety guarantees on AGV's and forklift trucks, high-bay storage systems, machine lines, free-floating systems and wherever flexibility is required from a safety device.



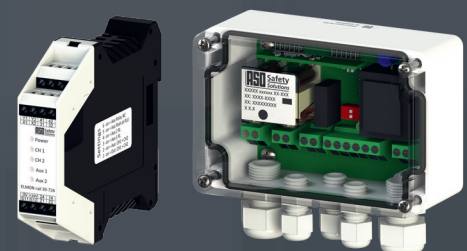
## SENTIR *mat* - Safety Contact Mats

Equipped with a structural surface and laminated section sensors, the **SENTIR *mat*** safety contact mat protects and detects. Easily integrated into any environment to protect from danger or injury.



## ELMON *relay* - Safety relays

**ELMON** relays from ASO provide permanent monitoring of contact edges, mats and bumpers. It acts as a link between tactile sensors and the system vehicle control.



## ASO Safety Solutions – At the Cutting Edge

ASO Safety Solutions has been established for almost 40 years and is today the world market leader for tactile sensor technology.

Regular exchanges and feedback from customers has enabled the company to align production and sales with real customer requirements. Investment in research and development has allowed ASO to meet growing requirements in industry and society. ASO Safety Solutions pride themselves on innovative thinking and dynamic development processes that make them an industry success.

ASO addresses the major challenges of globalisation by concentrating on core competences, by carefully adapting its operating structures and systematically expanding its international presence. Today, there are 200 employees worldwide, who manufacture safety contactors, controls and customer-specific sensor solutions. In addition to the company headquarters in Germany, the USA and China, sales offices all over Europe and a worldwide dealer network are responsible for worldwide sales.



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