MAYSER®

Innovative by tradition.

School Bus Safety

Components for passenger protection – even for the little ones

More safety for our children

Just wave goodbye to Mommy for a second... And that's it. The small child's arm or backpack can get caught in the bus door.

For school children, the way to and from school can be lined with dangers. In recent years there have been serious accidents with school buses that have resulted in serious injuries and even death. Mayser takes responsibility for the health of future generations and has developed a wide variety of safety components for school buses. We have the knowledge and experience to make American school buses safer. Mayser sensors on windows and doors, for example, prevent pinching and dragging accidents.

Mayser supplies the following special components for school buses from its portfolio of all safety components:

- APS: Anti-pinch sensor
- Safety edges with safety elements
- Control Units
- Safety steps

Mayser safety systems have been exceeding statutory regulation demands for over 20 years. The company is the leader in product quality in both Europe and North America along with being the world class leader in drag detection. Thanks to the reliability and availability of its solutions, the company is a yardstick for door area safety. Furthermore, Mayser safety systems integrate seamlessly into public transportation vehicles. This ensures higher cycle times.

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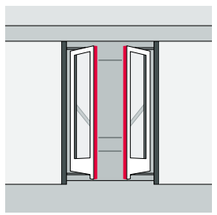
1 Areas of application

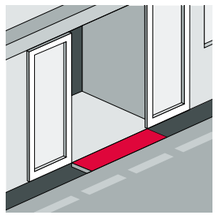
Mayser develops and produces pressure-sensitive sensors. These are installed both inside and outside on school buses. At all locations, Mayser sensors stop movement that can lead to pinching or dragging injuries as soon as an object is detected. Even if it's as small as a child's finger. The consistent installation of sensors at all points of danger can increase passenger safety.

Included in our range are solutions for:

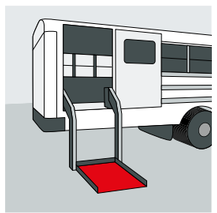
- Door Edges (Leading and Trailing)
- Windows & Hatches
- Outside Storage Compartments
- Wheelchair - Ramps
- Entry Steps/Floor



Internal swing doors



Saftey steps



Wheelchair - Ramps

2 Our solutions

APS: Anti-pinch sensor

With this safety element Mayser developed highly sensitive anti-pinching sensors with short reaction times for school buses. The detection of the smallest objects, such as fingers or feet, prevents major injury.
In particular, protection against dragging can prevent fatal accidents.

In the interest of sustainability, Mayser sensors can be retrofitted in existing safety edges.

Safety edges with safety elements

The pressure-sensitive finger protection profiles on the doors have integrated safety elements. They react to even very small objects by stopping the closing movements of doors.

These elements are designed to monitor themselves for safety and will alert the driver when the opening isn't safe.

3 APS: Anti-pinch sensor

These sensors are installed in sensor profiles and offer obstacle protection at pinch and shear edges. If the safety edge encounters an obstacle, the dangerous movement is stopped immediately. Due to their high flexibility, they can be retrofitted or easily modified to individual customer requirements. A low installation height is also possible. They are furthermore extremely resistant to heat and fire.

Your benefits

- ✓ Fire resistant
- ✓ Easily fit to various radii and angles
- ✓ Insensitive to temperature
- ✓ Accreditation: ISO/TS 16949 and ISO/TS 14001
- ✓ Compliant according to APTA-PR-CS-S-012-02
- ✓ Specialized in custom solutions

Technical data

Overall height	• 7 – 8 mm
ISO 13856-1 Actuation force B10D	 • < 150 N • > 4x 106
Covering	• Round nub structure • 2K coating structure surface
Slip protection	• R11, R12
Degree of protection: IEC 60529	• IP67
ISO 4649: Abrasion resistance	• < 100 mg
Operating temperature	• – 25 °C to + 70 °C
Customized mod. options	• Form • Color

4 Safety edges with safety elements

Safety edges with safety elements react to even very small objects by stopping the closing movements of doors. Doors are stopped before injuries can occur. Mayser is the only supplier of fire-retardant elements in this market segment.

Your benefits

- ✓ Safety element monitoring applying the closed-circuit principle
- ✓ Meets all statutory requirements
- ✓ Specialist competence / expertise in the industry
- ✓ Broad range of sensors
- ✓ High degree of customization possible
- ✓ High project expertise

Technical data

Operating principle	• Pressure-sensitive
Areas to be protected	• Main closing edge • Secondary closing edge
Degree of protection	• IP67
Applied standards	• UNECE-R 107 • EN 14752 • VDV 111 • VDV 157
Fire protection standard	• EN 45545-2 • UNECE-R 118
Electronic version	• Switch principle • Closed-circuit current principle
Customized modification options	• Customized profile design • Development of safety elements according to customer requirements

The Mayser brands RailFR® and RoadFR are fire-resistant sensors and cables which comply with the European standards EN 455 45-2 R26 Level HL3 and UNECE-R 118 even without rubber profile.

5 Supplementary products

Control units

Control units are a component of the pressure-sensitive protection device. They analyze the output signals from the sensors and immediately trigger the required safety measures. They are available in different versions and safety categories for different areas of application.

Safety steps

Mayser safety steps are plane protection devices for the entry and exit area of buses and rail vehicles. The surface sensors form pressure-sensitive surfaces to protect aids like ramps and power steps.

If a child is still standing on the stairs, the doors do not even start to close. This mat is also used for wheelchair ramps.

Your benefits

- Individually adjusted surface geometry
- Minimal quantities
- Complete solution provider
- Automatic monitoring of the function according to the closed-circuit current principle
- Maintenance-free
- Resistant to environmental influences and normal chemical influences

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