



Doors, Gates & Windows

Sensor technology for safety and convenience.

Safety and comfort: Perfect self-assembly with our sensor profile series

Modern building technology without automatically controlled doors, gates and windows is no longer conceivable. This is true of industrial, commercial and residential buildings. Automation is therefore a definite growth market in this sector.

Depending on the installation situation and the particular use, there is a potential danger to people and objects during the closing movement. Mayser offers pressure-sensitive protection devices that respond quickly to provide reliable protection in danger zones regardless of interfering factors such as incidence of light, dirty surfaces or weather factors. The goal is to provide maximum protection in a user-friendly design. Different contact elements are used depending on the particular areas of application:

- Sensor profiles
- Safety edges
- Miniature safety edges

The new series of sensor profiles developed by Mayser makes DIY solutions even easier for our customers. The company's long-term and broad experience in the area of pressure sensitive sensors, in-house development departments, broad vertical range of manufacture, and competent advice from acknowledged specialists make it possible for us to produce premium quality safety edges.

Electrically operated doors and windows are also considered machines in accordance with the Machinery Directive and are subject to special safety requirements. Safety components from Mayser are tested in accordance with EN 12978 and/or EN ISO 13849 and/or EN ISO 13856 and thus comply with the safety-related requirements of the Machinery Directive.

Table of contents

1	Area of application	4
	Sliding gates	4
	Revolving doors	4
	Folding gates	4
	Roller gates	5
	Barriers / crossing gates	5
	Louvred windows	5
2	Our solutions	6
	Sensor profiles	6
	Safety edges	7
	Miniature safety edges	7
3	Sensor profiles	8
	The most important characteristics	8
	Technical data	9
4	DIY sensor profiles	10
5	Safety edges	12
	Technical data	12
	The most important characteristics	13
6	Miniature safety edges	14
	Technical data	14
	The most important characteristics	15
7	Supplementary products	16
	Control units	16
	Safety bumpers	17
8	Overview of profiles	18

1 Areas of application

Mayser pressure-sensitive protection devices provide reliable protection at main and secondary closing edges of doors, gates or windows that close automatically. If a person or an object is in the danger zone during the closing movement of the door or gate, a pressure-sensitive sensor is actuated. The control system stops or reverses the automatic closing motion.

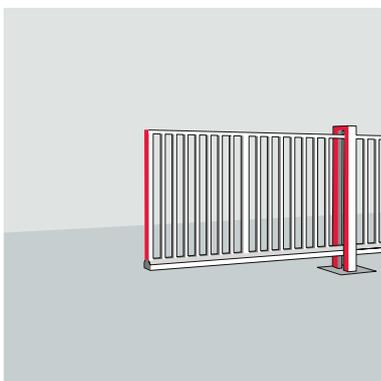
Our pressure-sensitive protection devices for main and secondary closing edges are used in the following areas:

- Sliding gates
- Revolving doors
- Folding gates and high-speed folding gates
- Overhead sectional doors
- High-speed doors
- Roller gates
- Crossing gates / barriers
- Doors
- Louvred windows

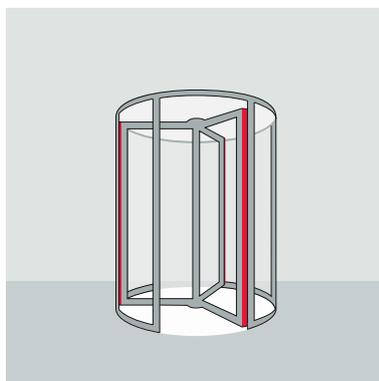
The new series of sensor profiles was specially developed for your sector of industry and is therefore custom tailored to the requirements of the door and gate market. In-house development of tools and profile geometries means that Mayser can guarantee optimal product properties.



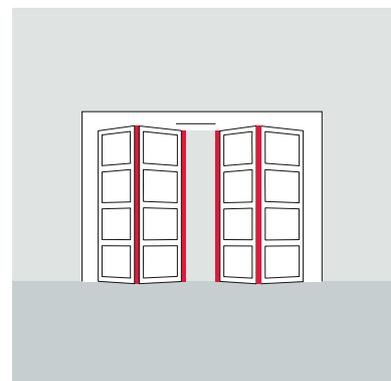
◆ Pressure sensitive sensors



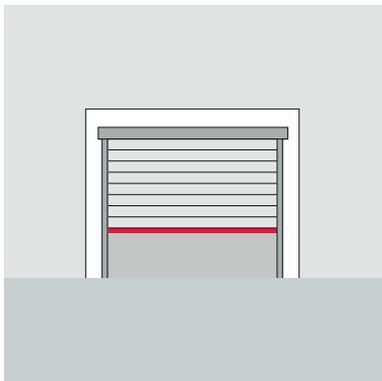
Sliding gates



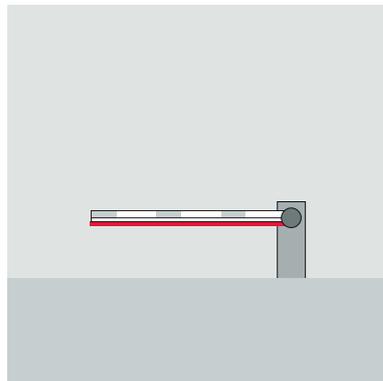
Revolving doors



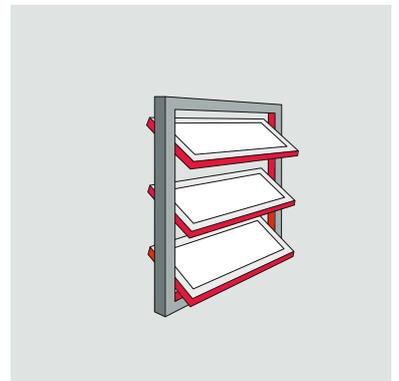
Folding gates



Roller gates



Barriers /
crossing gates



Louvred windows

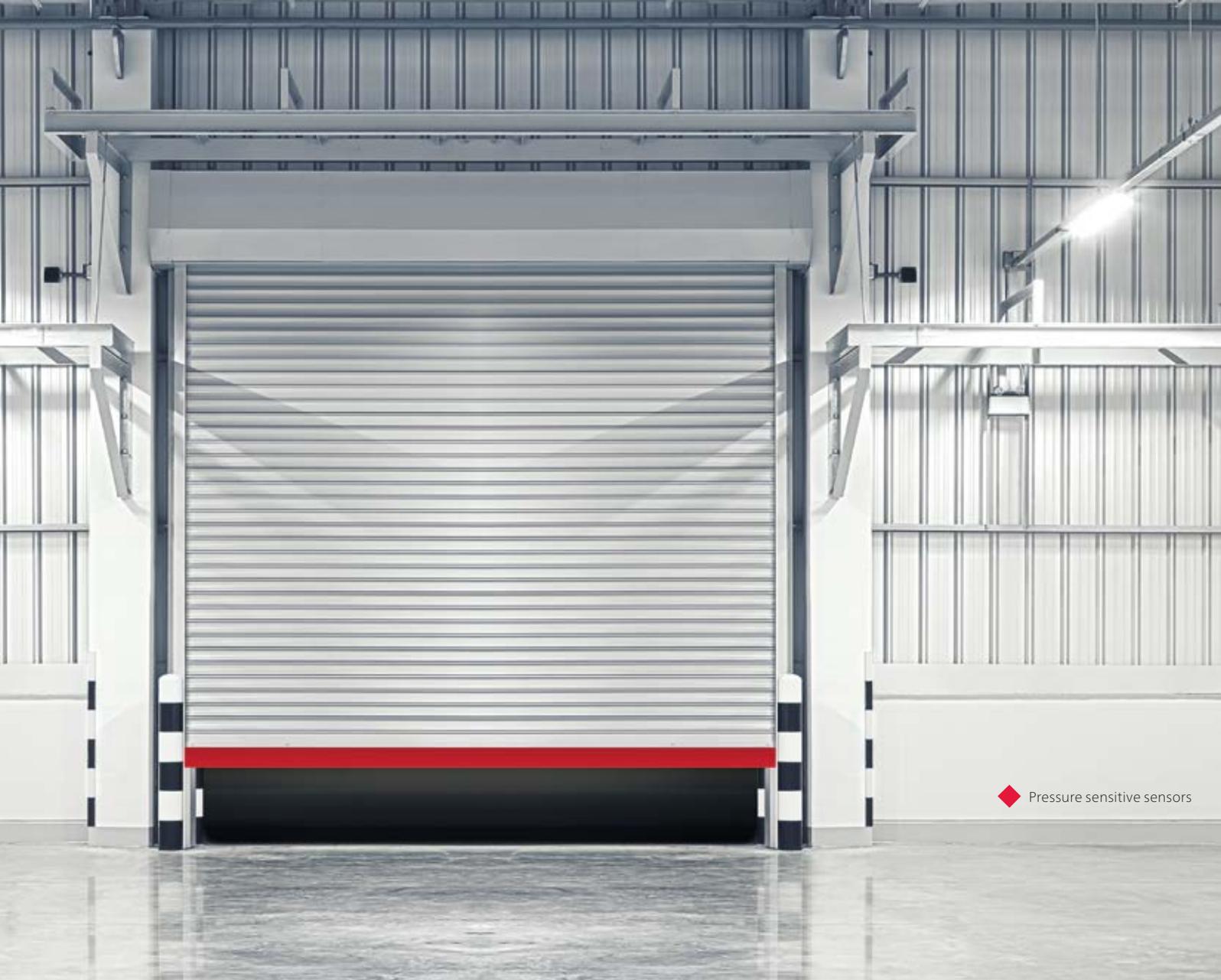
2 Our solutions



Sensor profiles

The sensor profile series SP for protecting closing edges is available individually adapted to your products or, on request, as a DIY solution. Whether for use in production or uncomplicated on-site servicing, DIY installation of the new sensor profile series is very fast and requires no additional tools.

A smart plug-in system consisting of the sensor, plug and a cap allows fast and easy installation of functioning safety edges directly at the gate with IP67 protection without the use of adhesives.



◆ Pressure sensitive sensors



Safety edges

Safety edges consists of an inner safety element with a rubber envelope profile. You can choose from diverse profile geometries, as well as custom versions with special bending radii, angled geometries and active ends.



Miniature safety edges

Miniature safety edges are custom tailored to the requirements of power-operated windows. They adapt discreetly to the design of the window geometry.

3 Sensor profiles

Our sensor profiles are coextrusion profiles consisting of elastomer components with different properties. This design enables versatile and user-friendly handling that is advantageous for the protection of doors and gates. Mayser offers its customers an above-average selection of base geometries, profile sections and colours. This broad product spectrum makes the profiles ideal for large-scale commercial and industrial use. We can also implement individual customer requirements, including printing of the profiles.

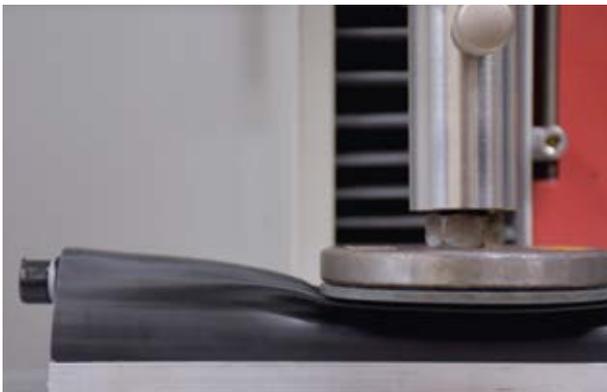
The sensor profiles withstand extreme loads, are manufactured for a custom fit, feature a non-slip and sturdy design, and must pass stringent quality controls. All profiles are subjected to extensive environmental and endurance testing and have a B10_D of at least 2 million test cycles.

The most important characteristics

- ✓ Absolutely dust-proof to provide complete contact protection
- ✓ Extremely resistant to hot and cold temperatures
- ✓ High degree of protection (IP67) Protection against temporary immersion (1m water column >30 minutes)
- ✓ Low switching force
- ✓ Short actuation distances
- ✓ Long overtravel distance
- ✓ DIY plug has a very high pull-out force
- ✓ Testing basis: EN 12978, ISO 13849-1, ISO 13856-2
- ✓ Compatible with conventional gate control systems and transmission systems – 8K2 evaluation



Even DIY sensor profiles offer protection against dust and water according to protection class IP67.

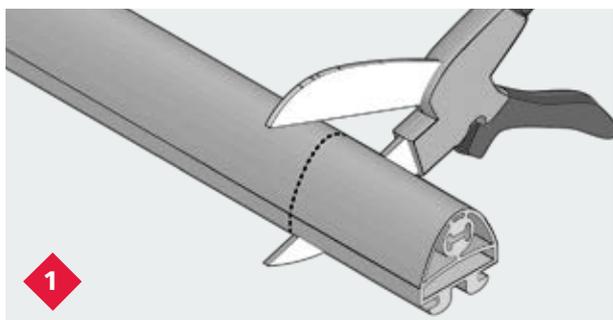


Technical data

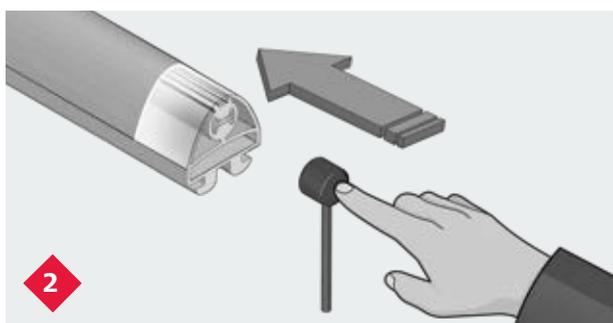
	Sensor profiles
Operation	Pressure-sensitive NO contact principle
Overall height	20 – 120 mm
Actuation angle	±45° to ±50°
DIY	•
Applied standards	EN 12978 ISO 13856-2 ISO 13849-1
Degree of protection	IP67 / Higher protection classes on request
Operating temperature	Min. -25 °C max. +55 °C
Actuation distance	5 – 10 mm at 100 mm/s depending on profile
Overtravel distance	1.4 – 52 mm depending on profile
Rubber envelope profile	TPE



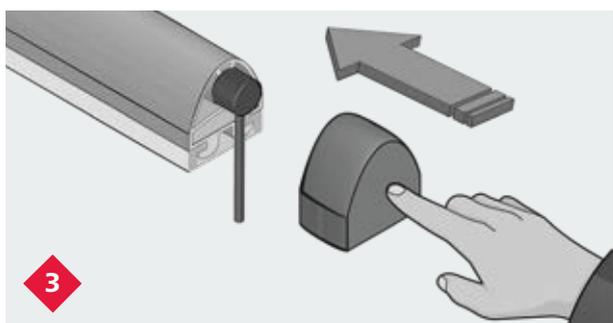
4 DIY sensor profiles



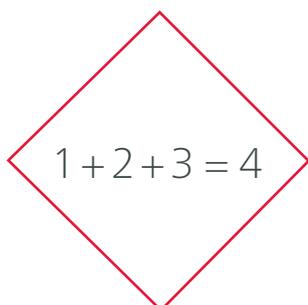
Cut off profile / rail



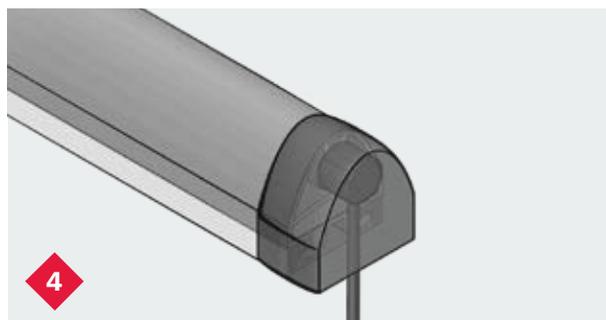
Plug in sensor / resistor



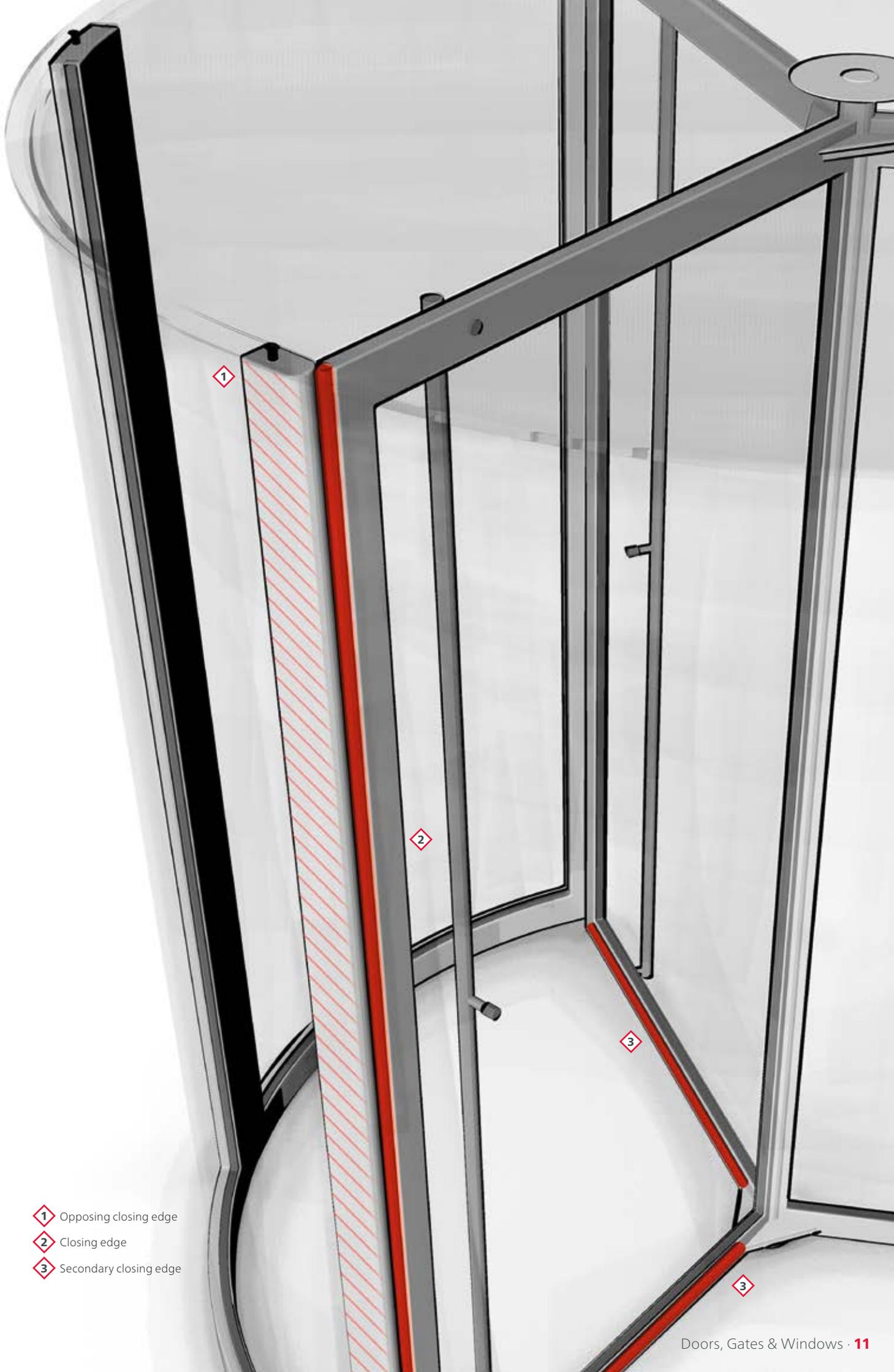
Insert rubber profile / put on end cap



Even easier than before: DIY installation of the new sensor profile series. The smart plug-in system – sensor/ plug/cap – enables fast assembly in production or during on-site servicing in just three steps. Practically without tools.



Finished sensor profile



- 1 Opposing closing edge
- 2 Closing edge
- 3 Secondary closing edge

5 Safety edges

Safety edges, consisting of an inner safety element in a rubber envelope profile, are sensors that provide protection against the dangers of shearing and pinching edges. If the safety edge comes into contact with an obstacle, a signal is sent to the control system, which immediately stops the automatic movement. This provides reliable protection against injury and damage. The closing safety edge is available with a monitoring resistor or as a through edge with four-wire technology. This provides for increased safety since the sensor and connection cables are constantly monitored to ensure they are functioning properly.

The different heights of the rubber profiles compensate for the overtravel distance of the system. Contact elements are used in the safety area as a self-monitoring system. Mayser implements resistance monitoring on the basis of 8K2.

Our safety edges are designed for DIY use by the customer, for fast and economical production.



Technical data

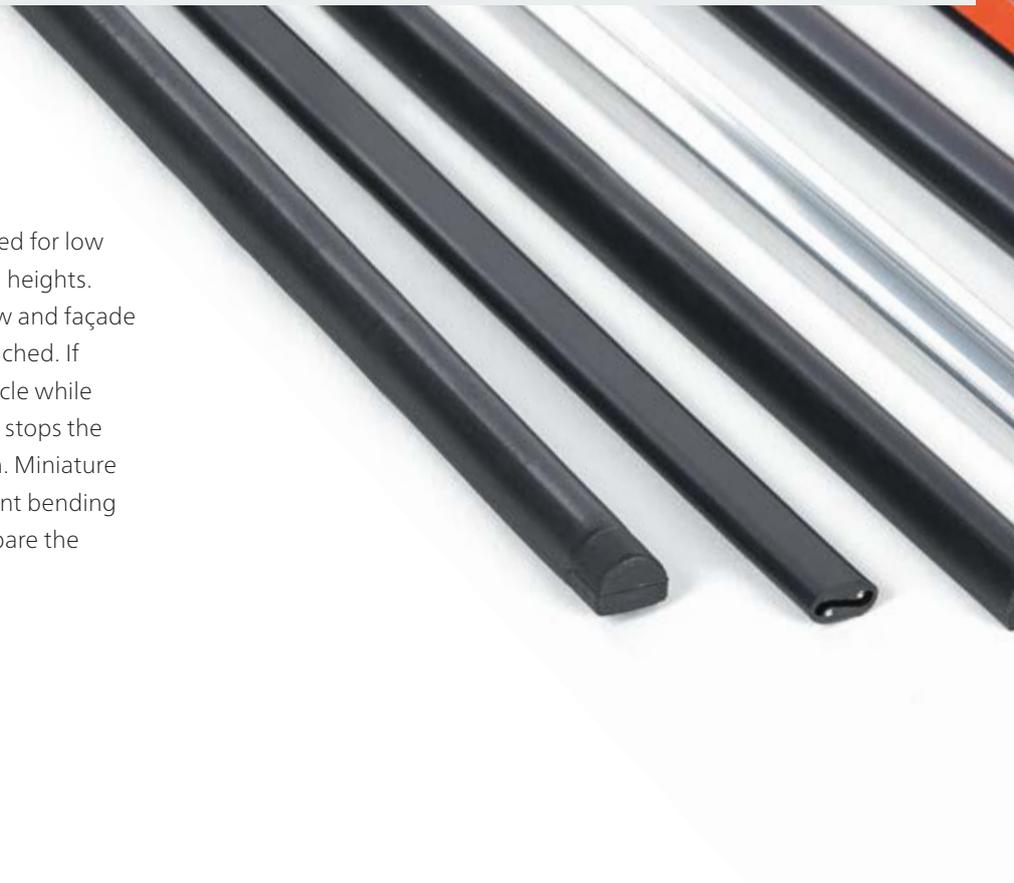
	Safety edge
Operation	Pressure-sensitive NO contact principle
Overall height	20 – 137 mm
Actuation angle	±30° to ±45°
DIY	•
Applied standards	EN 12978 ISO 13856-2 ISO 13849-1
Degree of protection	IP65 (IP67)
Operating temperature	Min. -20 °C max. +55 °C
Actuation distance	8 – 17 mm
Rubber envelope profile	EPDM NBR CR
Custom adaptation	Bend radii Angled geometries Active ends

The most important characteristics

- ✓ Tested in accordance with EN 12978, EN ISO 13856-2 and EN ISO 13849-1
- ✓ Numerous profile geometries to choose from
- ✓ Available with or without edge seal
- ✓ Custom solutions available
- ✓ Ideal solution for different installation heights
- ✓ High degree of protection possible (IP67)

6 Miniature safety edges

Miniature safety edges are specially developed for low overtravel distances and minimal installation heights. They are especially suitable for use in window and façade technology to protect fingers from being pinched. If the sensor comes into contact with an obstacle while a window is closing, the system immediately stops the closing motion and the window opens again. Miniature safety edges can easily be adapted to different bending radii and angles. For indoor use you can prepare the anti-pinch sensor yourself.



Technical data

	Miniature safety edge / anti-pinch sensor
Operation	Pressure-sensitive NO contact principle
Overall height	4 – 16 mm
Actuation angle	Up to $\pm 45^\circ$
DIY	•
Applied standards	ISO 13849-1 ISO 13856-2
Degree of protection	IP65
Operating temperature	Min. -25°C max. $+80^\circ\text{C}$
Actuation distance	$\leq 1.0\text{ mm}$
Rubber envelope profile	TPE
Custom adaptation	Bend radii Angled geometries



The most important characteristics

- ✓ Tested according to EN ISO 13849-1 and ISO 13856-2
- ✓ High sensitivity – short reaction time
- ✓ Ideal for low installation heights
- ✓ Diverse profile geometries
- ✓ Versatile profile mounting options
- ✓ Temperature-insensitive (–40 °C to +85 °C)
- ✓ Profiles available for tight bending radii



All of our safety edges and miniature safety edges are maintenance-free.

7 Supplementary products

Control units

Control units are a component of the pressure-sensitive protection device. They analyse the output signals of the sensors and immediately initiate the necessary safety measures. Functional monitoring of our sensors is based on different principles. A monitoring resistor integrated in the sensors measures a constant closed-circuit current in safe state. If the sensor is actuated, the voltage drops.

The safety contacts of the control unit open and provide for safe shut-down of the actuating unit, designed for 1K2 or 8K2 terminal resistors. In four-wire technology, functional monitoring is achieved by returning the signals to the control unit. The control units are available in different versions and safety categories for different areas of application.





Safety bumpers

The safety bumper is used to detect people at entrances and gates. It is available in lengths up to 4 m, both in a standard and also a special version. The depth ranges from 150 mm in the standard version to 1200 mm for a custom bumper. That makes the safety bumper ideal for providing protection at large hangar gates. Short actuating distances and long overtravel distances ensure a high level of protection. Safety bumpers therefore expand the available spectrum of collision protection systems.

The most important characteristics

- ✓ High-quality materials and craftsmanship
- ✓ Custom solutions
- ✓ All RAL colours possible
- ✓ Virtually all geometries possible
- ✓ Maintenance-free
- ✓ Safety bumpers adjust to various applications with their design, form and surface, regardless of external influences like weather or chemicals
- ✓ Optional fire resistance

8 Overview of profiles



Designation	SP 17-3	SP 37-1	SP 37-2	SP 37-3
Art. no.	7503461	7502853	7503318	7503343
Mounting	Snap-in foot	Snap-in foot	Snap-in web	T-foot
Roller size	80 mm	30 mm	30 mm	30 mm

Profile geometries

Height	20.3 mm	37.5 mm	38 mm	38 mm
Width	15.5 mm	25 mm	25 mm	25 mm

Speed 10 mm/s

Actuation force	38 N	42 N	42 N	42 N
Response time	140 ms	580 ms	580 ms	580 ms
Actuation distance	1.4 mm	5.8 mm	5.8 mm	5.8 mm
Overtravel distance up to:				
250 N	1.4 mm	9.2 mm	9.2 mm	9.2 mm
400 N	2.3 mm	11.1 mm	11.1 mm	11.1 mm
600 N	4.1 mm	13.0 mm	13.0 mm	13.0 mm
Total deformation	5.5 mm	18.8 mm	18.8 mm	18.8 mm

Speed 100 mm/s

Actuation force	-	50 N	50 N	50 N
Response time	-	58 ms	58 ms	58 ms
Actuation distance	-	5.8 mm	5.8 mm	5.8 mm
Overtravel distance up to:				
250 N	-	8.7 mm	8.7 mm	8.7 mm
400 N	-	10.5 mm	10.5 mm	10.5 mm
600 N	-	12.5 mm	12.5 mm	12.5 mm
Total deformation	-	18.3 mm	18.3 mm	18.3 mm

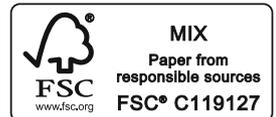
Speed 200 mm/s

Actuation force	-	54 N	54 N	54 N
Response time	-	35 ms	35 ms	35 ms
Actuation distance	-	7.0 mm	7.0 mm	7.0 mm
Overtravel distance up to:				
250 N	-	3.8 mm	3.8 mm	3.8 mm
400 N	-	7.6 mm	7.6 mm	7.6 mm
600 N	-	12.9 mm	12.9 mm	12.9 mm
Total deformation	-	19.9 mm	19.9 mm	19.9 mm



SP 57-2 7503055	SP 57L-2 7503412	SP 57-3 7503521	SP 57L-4 7503711	SP 67-2 7503285	SP 87-2 7503722
Snap-in web	Snap-in web	T-foot	T-foot	Snap-in web	Snap-in web
30 m	30 m	25 m	25 m	25 m	25 m
56 mm	64 mm	64 mm	79 mm	67.3 mm	87 mm
34 mm	34 mm	35 mm	35 mm	34 mm	36.3 mm
48 N	48 N	48 N	48 N	41 N	34 N
910 ms	910 ms	910 ms	910 ms	880 ms	850 ms
9.1 mm	9.1 mm	9.1 mm	9.1 mm	8.8 mm	8.5 mm
24.5 mm	24.5 mm	24.5 mm	24.5 mm	35.7 mm	52.3 mm
29.3 mm	29.3 mm	29.3 mm	29.3 mm	37.9 mm	54.7 mm
31.0 mm	31.0 mm	31.0 mm	31.0 mm	41.0 mm	56.2 mm
40.1 mm	40.1 mm	40.1 mm	40.1 mm	49.8 mm	64.7 mm
41 N	41 N	41 N	41 N	42 N	38 N
80 ms	80 ms	80 ms	80 ms	101 ms	81 ms
8.0 mm	8.0 mm	8.0 mm	8.0 mm	10.1 mm	8.1 mm
26.0 mm	26.0 mm	26.0 mm	26.0 mm	35.4 mm	51.9 mm
29.4 mm	29.4 mm	29.4 mm	29.4 mm	37.8 mm	54.4 mm
31.5 mm	31.5 mm	31.5 mm	31.5 mm	39.8 mm	56.0 mm
39.5 mm	39.5 mm	39.5 mm	39.5 mm	49.9 mm	64.1 mm
58 N	58 N	58 N	58 N	45 N	37 N
71 ms	71 ms	71 ms	71 ms	51.5 ms	47 ms
14.2 mm	14.2 mm	14.2 mm	14.2 mm	10.3 mm	9.4 mm
20.8 mm	20.8 mm	20.8 mm	20.8 mm	36.5 mm	51.5 mm
23.7 mm	23.7 mm	23.7 mm	23.7 mm	39.4 mm	54.0 mm
25.9 mm	25.9 mm	25.9 mm	25.9 mm	41.3 mm	55.5 mm
40.1 mm	40.1 mm	40.1 mm	40.1 mm	51.6 mm	64.9 mm

The technical data is applicable as of the date of printing. Technical specifications, design and features are subject to change without notice, due to continued development at Mayser – errors excepted. Illustrations are not binding and may contain options.



www.mayser.com

Mayser GmbH & Co. KG

Bismarckstraße 2
88161 Lindenberg
GERMANY

Phone: +49 8381 507-0
info.lindenberg@mayser.com

Mayser GmbH & Co. KG

Örlinger Straße 1–3
89073 Ulm
GERMANY

Phone: +49 731 2061-0
info.ulm@mayser.com

Mayser USA, Inc.

6200 Schooner Drive
48111 Belleville /
Michigan
USA

Phone: +1 734 858-1290
usa@mayser.com

Mayser France

Les Aunettes
12M Bd. Louise Michel
91030 Evry Cedex
FRANCE

Phone: +33 1 6077-3637
france@mayser.com

Mayser Slovakia s.r.o.

Gemerska 564
04951 Brzotin
SLOVAKIA

Phone: +421 58-7884870
roznava@mayser.com