

SENTIR[®]

bumper



1 General information

The ASO SENTIR bumper is certified according to "Safety of machinery — Pressure sensitive protective devices —Part 3: General principles for design and testing of pressure-sensitive bumpers, plates, wires and similar devices".

For the determination of the performance level of a safety bumper, the overall system of the machine has to be determined according to a previous risk assessment. The mounting position can be chosen variably. After mounting the function shall be tested.

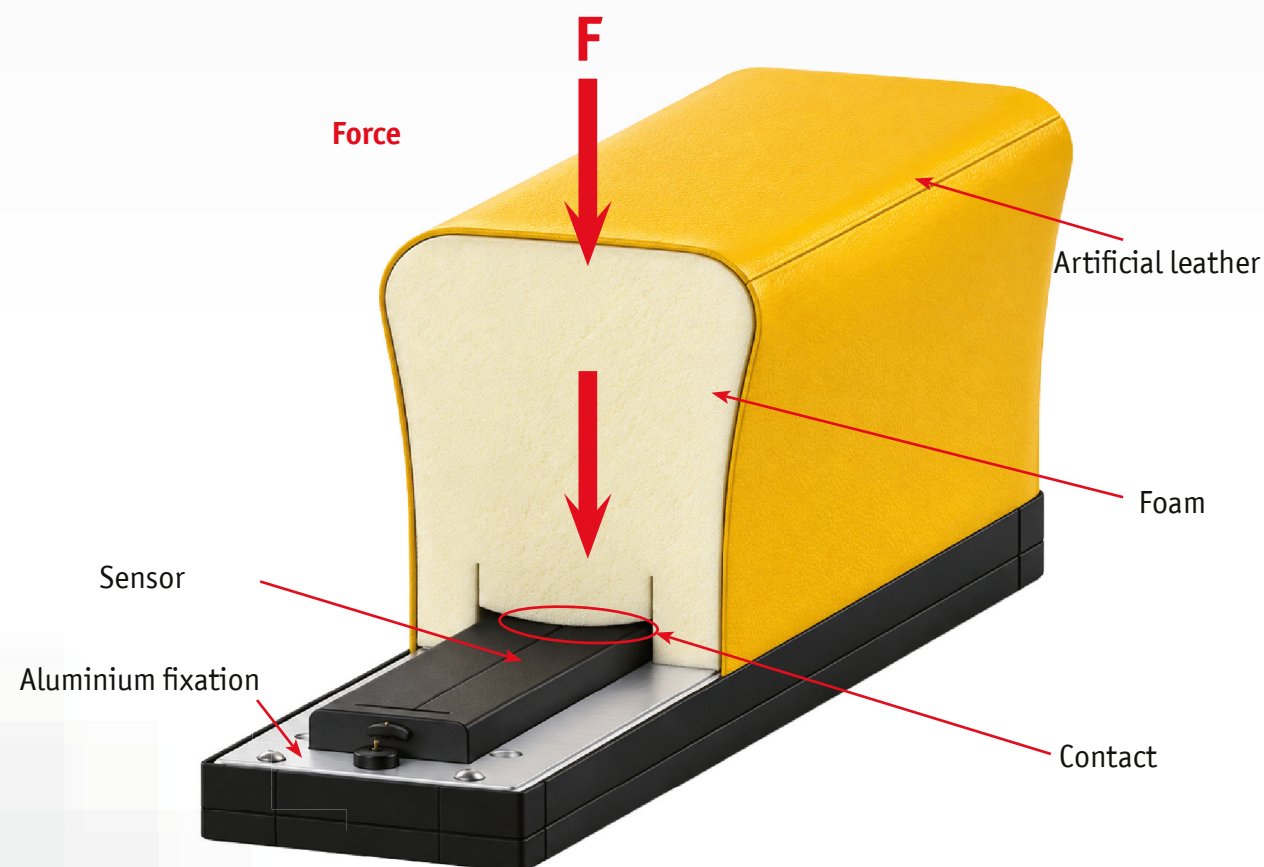
2 The construction

The basic construction of the safety contact bumper consists out of a foam core and a one piece extruded sensor, with two contact elements located opposite each other, which are assembled on an aluminium profile.

The coating of the SENTIR bumper consists of artificial leather.

When the SENTIR bumper is compressed and the sensor is actuated, the monitoring device sends an immediate command to the control unit.

Cable break and manipulation is also monitored permanently by the electronic device (ELMON safety relay, e.g.).



3 Variations

SENTIR bumper – safety contact bumpers- are tactile safety devices at industrial trucks, hangar doors, automated guided vehicles, high-bay warehouses and machines. They are used in any given situation, where safety installations require a long overtravel. The SENTIR bumper can be customized in various shapes, colors and sizes.

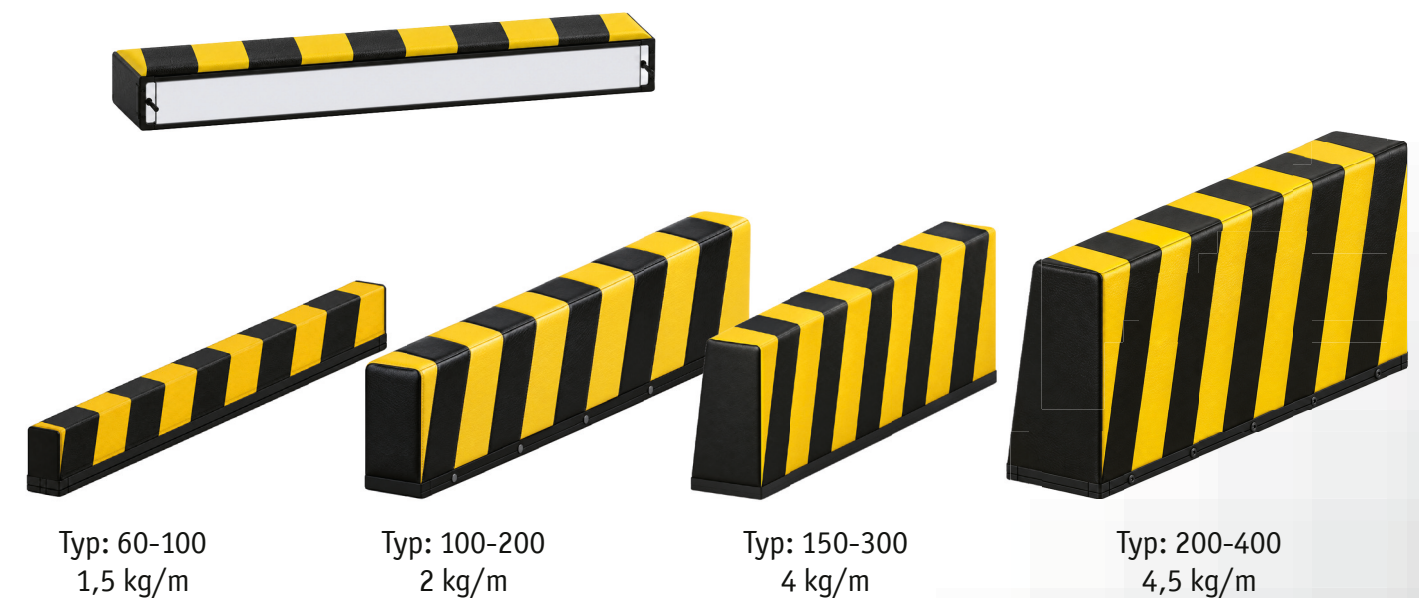
3.1 Custom

The SENTIR bumper can be adjusted to various specifications, e.g. angular, round, extensive size, different colors or resistant to solvents. Almost any application is realizable.

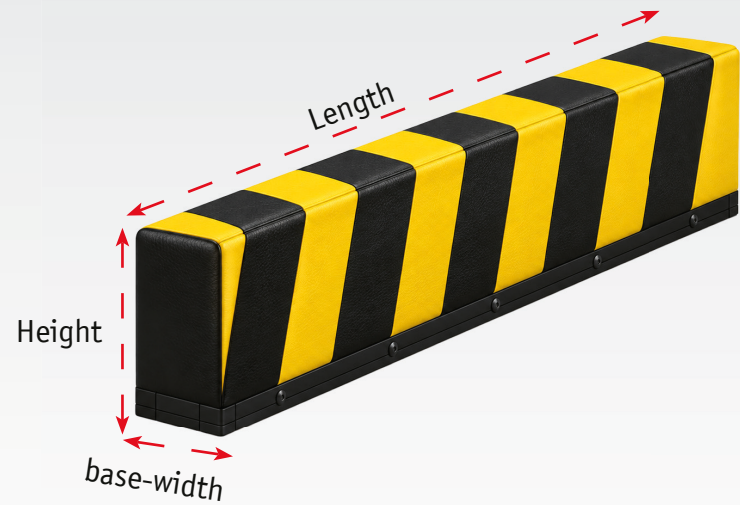


3.2 Standard delivery

- Length:** min. 200 mm
max. 2500 mm (Deviations on request)
- Connections:** The cable exits with each 0,12m Length (1x M8 connector male & 1xM8 connector female) at the ends of the bumpers. Extension cables available.
- Colors:** Black / Yellow / Black-Yellow striped (available for each material)
Furthermore on request.



4 Model code



1.	2.	3.	4.	5.	6.
SENTIR bumper	60	-	100	L	4.X L = x.x

1.	Description
	ASO-Safety contact bumper
2.	Base-width
	e.g. 60 mm
3.	Height
	e.g. 100 mm
4.	Materials
	L : Artificial leather
5.	Cable versions
	4.0: M8 connector male and M8 connector female
6.	Length
	e.g. L = 2,5 m

5 Technical Data

Actuating forces:	< 150 N by test specimen Ø80 mm (according to DIN EN ISO 13856-3) < 400 N by test specimen 45x400 mm (according to DIN EN ISO 13856-3)
Inactive edge region:	0 mm
Angle of activation:	± 45°
Switching cycles:	>10 000
Electric capacity:	24 V 10 mA
Protection class:	IP 54 (higher protection class on request)
Temperature range:	± 0°C to +55°C
Connection cable:	Pluggable, 2 x 0,34 mm² (PUR black) with M8 connector, 0,12 m
Maintenance:	The Bumper is maintenance-free. Annual service is recommended.
Certification:	EN ISO 13856-3 EN ISO 13849-1 EN 12978 UL 508 UKCA

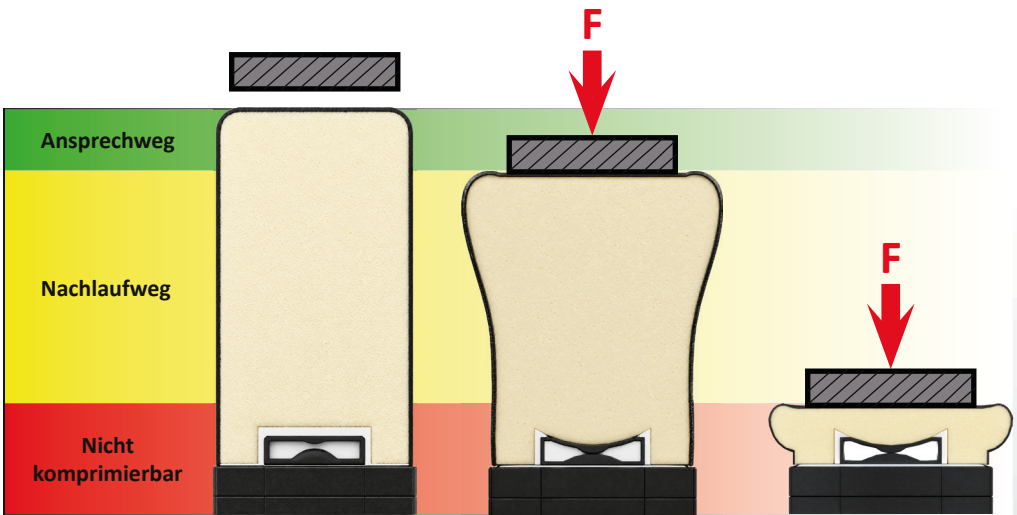
5.1 Dimensioning of bumper height

Use the following key in order to determine the appropriate height for the bumper:

Actuating distance:	sB = 20 % bumper height
Overtravel distance:	sV = 60 % bumper height
No longer compressible bumper:	20 % bumper height

The overtravel distance sV can then be used to determine the appropriate bumper height. Average values by a test speed of 10 mm/s. These data are reference values compiled by laboratory tests. Even if the component is used as intended, external factors and reaction times of all system components can have an influence on this type of value. Taking into account a risk analysis of the machine to be carried out, the application of this safety component thus allows a presumption of conformity, but does not release the machine manufacturer from the obligation to carry out an application-side test in order to demonstrate compliance with all applicable standards and directives.

5.2 Dimensional tolerances (according to DIN 7715-5 class P3)



Length and width	0-250 mm	+/- 3 mm	height	0-400 mm	+/- 10 mm
	250-1000 mm	+/- 5 mm		> 400 mm	+/- (10 mm + 1,5 % of nominal dimensions)
	> 1000 mm	+/- 10 mm			

5.3 Resistance

Effect solvent	Artificial leather coating			NBR-coating*		
	Wipe	1 h	24 h	Wipe	1h	24 h
Water	1	1	1	1	1	1
Detergent	1	1	1	1	1	1
Caustic-soda 10%	1	1	1	3	4	4
Ammonia 10%	1	1	1	-	-	-
Acetic acid 10%	1	1	1	3	4	4
Sulphuric acid 10%	1	1	1	3	4	4
Ethyl alcohol	1	2	3	-	-	-
Ethyl acetate	4	5	6	-	-	-
Acetone	4	5	6	-	-	-
Gasoline	1	2	3	1	2	3
Diesel	1	1	1	1	2	3
Engine oil	1	1	2	1	2	2
Transmission oil	1	1	2	1	2	2

*Please see technical information: Product information SENTIR bumper NBR

- 1 = no effects

2 = few effects

3 = medium effects

4 = noticeable effects

5 = strong effects

6 = extreme effects

- = without specification/test
- Permanent contact allowed

contact allowed

restricted contact allowed

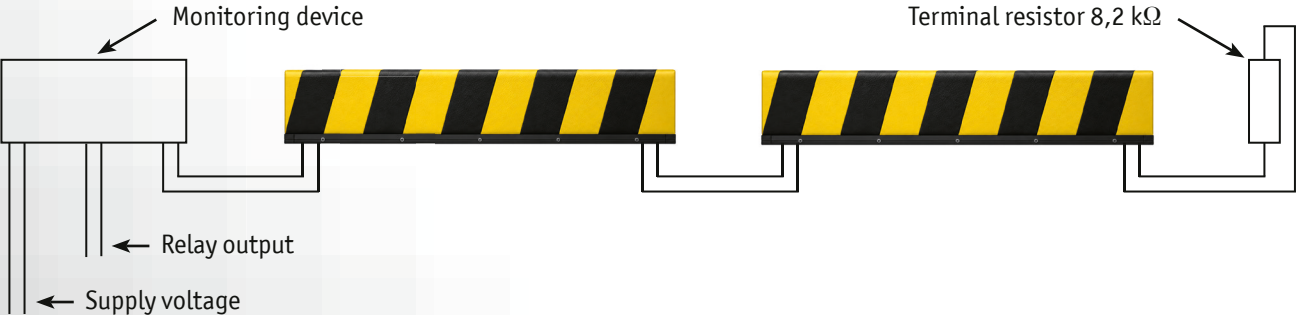
very brief contact allowed

avoid contact

The listed material properties are considered as guideline.
Critical applications have to be tested directly at the actual application.

5.4 The signal processing

The SENTIR bumper is equipped with two two-core cables which allow for series connection. The maximum number of connected bumpers is 5 and the total length of the system must not exceed 25 m. One line end connected to the monitoring device and the other end with a terminating resistor (factory-made). The electronic monitors the whole circuit, including sensor and terminating resistor. By extern force the contact areas bridge the resistor. The monitoring device detects the change of the resistance and the potential-free relay contact give a signal to the machine control. Additional the whole system is monitored for cable break or manipulation. Optionally the bumper can be monitored by cross connection.



6 EG - EC - Declaration of conformity

EG - Konformitätserklärung (gemäß Anhang II 2006/42/EG)

EC Declaration of conformity (according annex II 2006/42/EC)

Déclaration de conformité CE (selon annexe II 2006/42/CE)

Hiermit erklären wir, dass die nachfolgend bezeichneten Schaltpuffer

SENTIR bumper

zur Kombination mit den Sicherheitsschaltgeräten der Baureihe

ELMON relay 31*
ELMON relay 32*
ELMON relay 34*
ELMON relay 35*
ELMON relay 39*
ELMON relay 41*
ELMON relay 42

aufgrund ihrer Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung, den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen der nachfolgenden EG-Richtlinien und Normen entspricht:

EN ISO 13856-3
EN 12978
EN ISO 13849-1
2011/65/EU; 2015/863/EU RoHS (EG) Nr. 1907/2006 - REACH

*EG-Baumusterprüfung
Notified Body 0044
TÜV NORD CERT GmbH
Am TÜV 1
D-45307 Essen
Nr. 44 205 13031821

Diese Konformitätserklärung entbindet den Konstrukteur/ Hersteller der Maschine nicht von seiner Pflicht, die Konformität der gesamten Maschine, an der dieses Produkt angebracht wird, entsprechend der EG-Maschinenrichtlinie sicherzustellen.

Hersteller und Dokumentationsbevollmächtigter
ASO GmbH
Hansastr. 52
D-59557 Lippstadt
Lippstadt, 30.11.2022

We hereby declare that the following products of sensing contact bumpers

SENTIR bumper

for the combination with safety relays of the model range

ELMON relay 31*
ELMON relay 32*
ELMON relay 34*
ELMON relay 35*
ELMON relay 39*
ELMON relay 41*
ELMON relay 42

satisfies the relevant essential health and safety requirements of the EC directives and standards listed below on account of its design and construction, as does the version brought to market by us:

EN ISO 13856-3
EN 12978
EN ISO 13849-1
2011/65/EU; 2015/863/EU RoHS (EC) Nr. 1907/2006 - REACH

*EC type-examination
Notified Body 0044
TÜV NORD CERT GmbH
Am TÜV 1
D-45307 Essen
Nr. 44 205 13031821

This declaration of conformity does not relieve the designer / manufacturer of the machine from his obligation to ensure that the conformity of the entire machine to which this product is attached satisfies the corresponding EC directive.

Manufacturer and attorney of documents

D. Verhufen
- Geschäftsführer - CFO - Gérant -

Par la présente nous déclarons que les produits suivants de la série bumper

SENTIR bumper

en combinaison avec les relais de sécurité

ELMON relay 31*
ELMON relay 32*
ELMON relay 34*
ELMON relay 35*
ELMON relay 39*
ELMON relay 41*
ELMON relay 42

de par sa conception et sa construction, ainsi que dans les modèles mis en circulation par nos soins, répondent aux exigences de base pour la sécurité et la santé des directives et normes CE suivantes:

EN ISO 13856-3
EN 12978
EN ISO 13849-1
2011/65/EU; 2015/863/EU RoHS (EC) Nr. 1907/2006 - REACH

*Examen CE de type
Notified Body 0044
TÜV NORD CERT GmbH
Am TÜV 1
D-45307 Essen
Nr. 44 205 13031821

Cette déclaration de conformité ne délie pas le constructeur / fabricant de la machine de son obligation d'assurer la conformité de l'ensemble de la machine à laquelle ce produit est apposé selon la directive CE.

Fabricant et agent de documentation

DIN EN ISO 9001

Stand: 30.11.2022 Rev.: 05

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7

UKCA - Declaration of conformity

UKCA Declaration of conformity
In accordance with UK Government Guidance

ASO **Safety**
Solutions

We hereby declare that the following products of sensing contact bumper

SENTIR bumper

satisfies the relevant UK Statutory Instruments and their amendments listed below on account of its design and construction, as does the version brought to market by us:

2012 No 3032

The Restriction of the Use of Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

2008 No 1597

The supply of Machinery (Safety) Regulations 2008

Also, we declare that the product described above, to which this declaration of conformity refers to, is in conformity with the essential requirements of the following standards:

BS EN 12978	Industrial, commercial and garage doors and gates. Safety devices for power operated doors and gates. Requirements and test methods
BS EN ISO 13856-3	Safety of machinery. Pressure-sensitive protective devices General principles for design and testing of pressure-sensitive bumpers, plates, wires, and similar devices
BS EN ISO 13849-1	Safety of machinery. Safety related parts of control systems General principles for design

This declaration of conformity is issued under the sole responsibility of the product manufacturer.

Manufacturer and attorney of documents:

ASO GmbH
Hansastr. 52
D-59557 Lippstadt
Lippstadt, 25.10.2022



D. Verhufen
- Geschäftsführer - CFO - Gérant -

**UK
CA**

As of: 25.10.2022

Rev.:00

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7 Notes

Headquarters Europe

ASO GmbH
Hansastraße 52
59557 Lippstadt
GERMANY

Tel +49 2941 9793-0
Fax +49 2941 9793-299
www.asosafety.com
sales-eu@asosafety.com

Headquarters USA

ASO Safety Solutions Inc.
350 N Frontage Road
Landing, NJ 07850
USA

Phone +1 973 5869600
Fax +1 973 5861590
www.asosafety.com
sales-us@asosafety.com

Headquarters Asia Pacific

ASO Safety Solutions Nanjing Co. Ltd.
Jinma Lu 3 Maqun Scientific Park
210049 Nanjing
CHINA

Phone +86 25 856 73990
www.asosafety.cn
sales-cn@asosafety.com



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