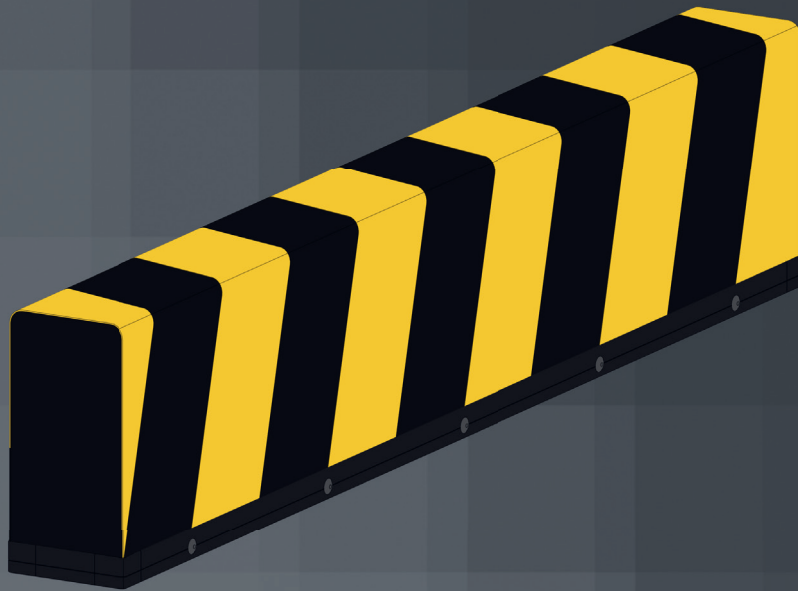


SENTIR[®]

bumper



Product Information

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.

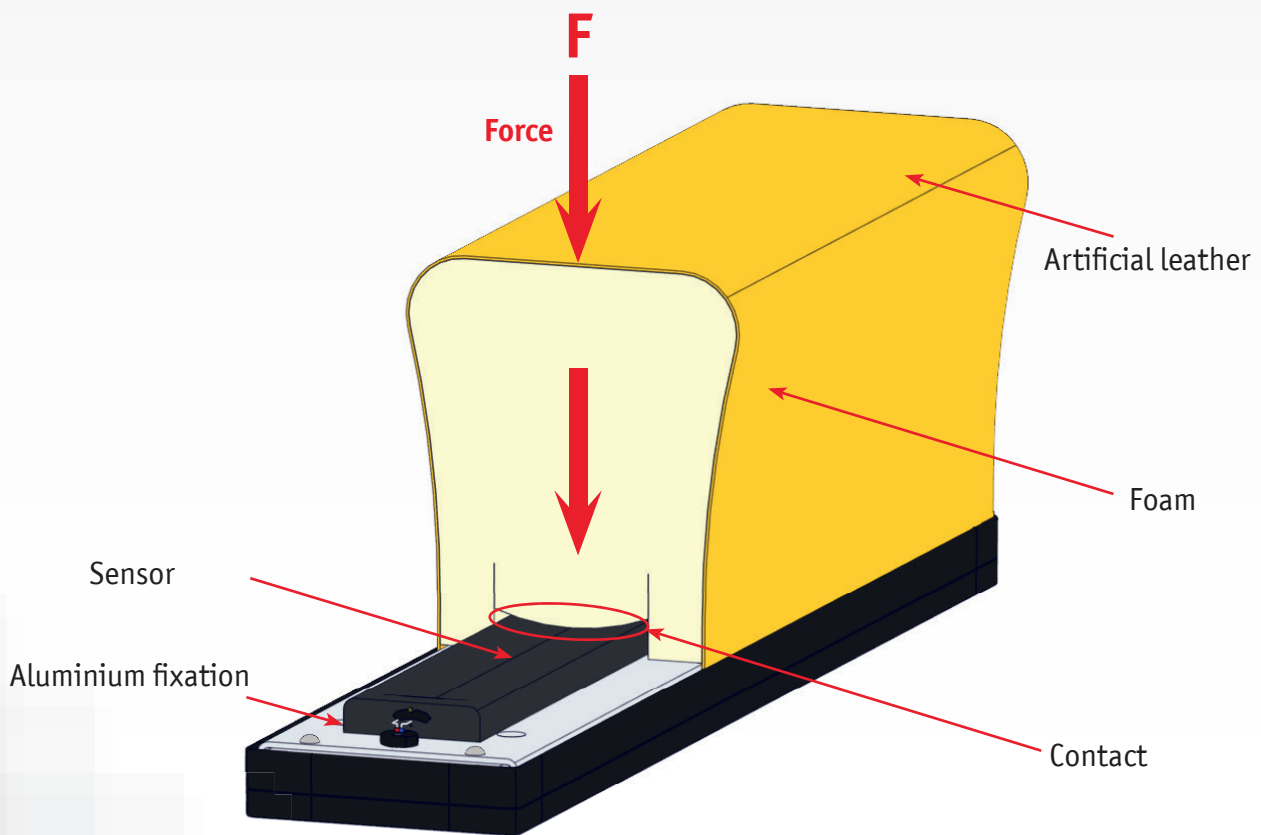
2 The construction

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.).

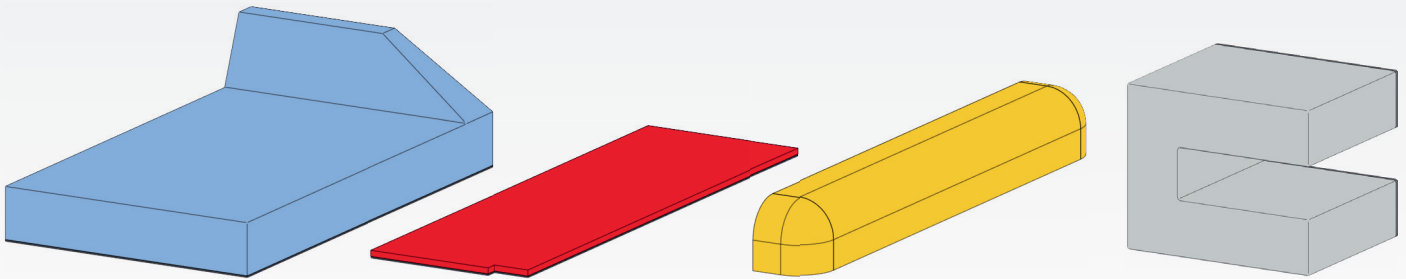


3 Variations

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.

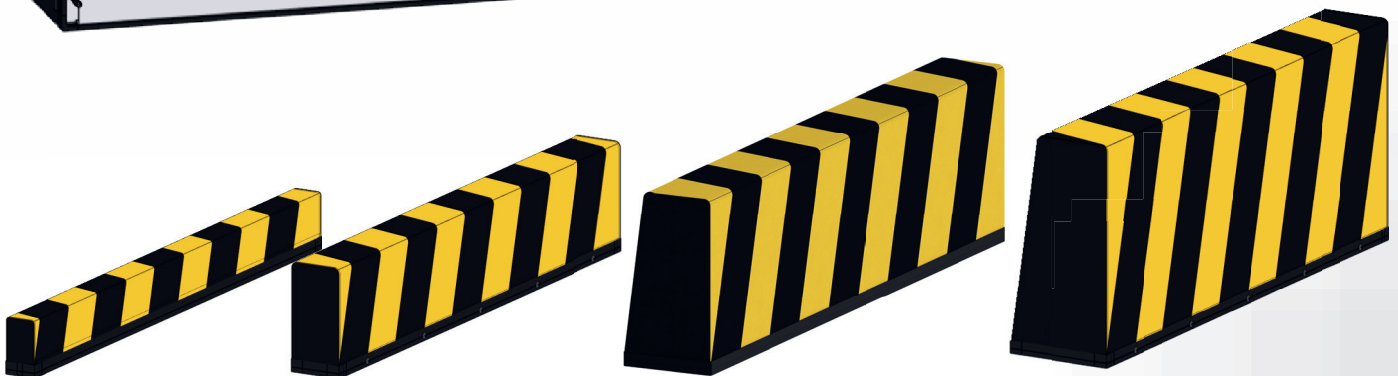
3.1 Custom

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.



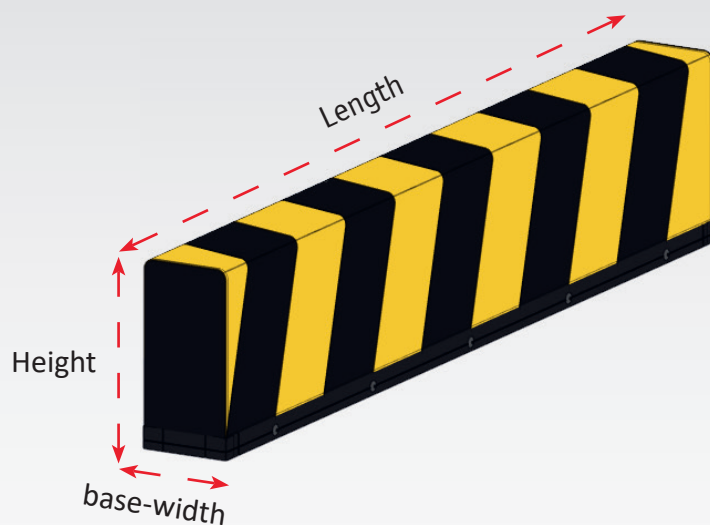
Type: 60-100
1,5 kg/m

Type: 100-200
2 kg/m

Type: 150-300
4 kg/m

Type: 200-400
4,5 kg/m

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 mm ² (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

5.1 Dimensioning of bumper height

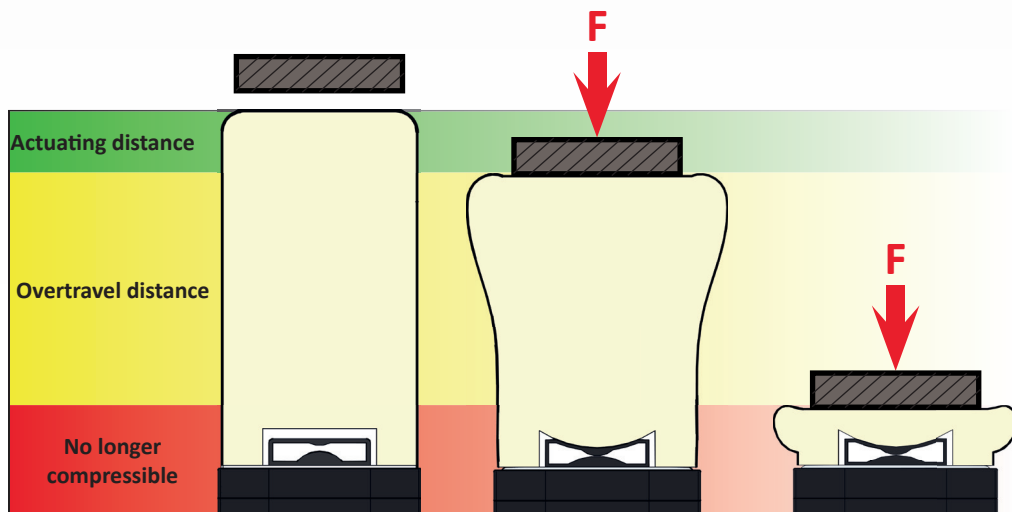
Use the following key in order to determine the appropriate height for the bumper:

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.



1. No safety functions have been evaluated by UL
2. These products were only investigated for risk of fire and electrical shock (in accordance with UL508)

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

contact allowed

restricted contact allowed

very brief contact allowed

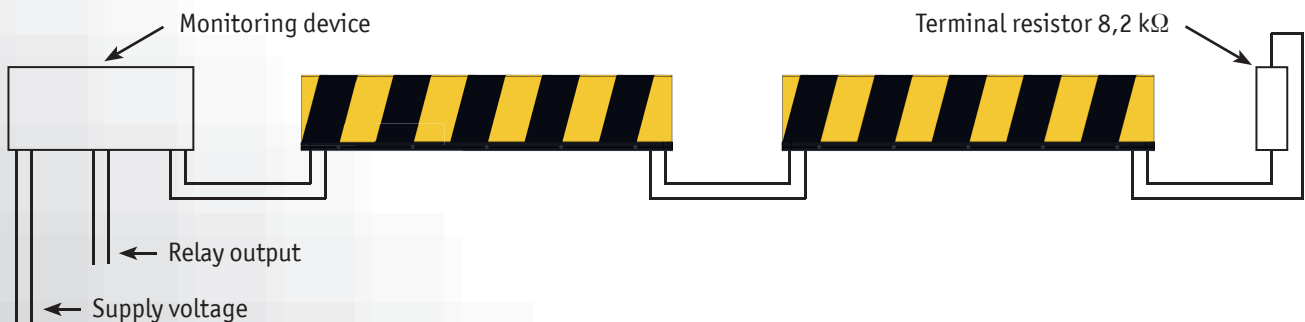
avoid contact



**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 external 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. Additionally the whole system is monitored for cable break or manipulation. Optionally the bumper can be monitored by cross connection.



6 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
nachfolgenden bezeichneten Schalterpuffer

We hereby declare that the following
products of sensing contact bumpers

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

SENTIR bumper

SENTIR bumper

SENTIR bumper

zur Kombination mit den
Sicherheitsschaltgeräten der Baureihe

for the combination with safety relays
of the model range

en combinaison avec les relais de
sécurité

ELMON classic 31
ELMON classic/rail 32
ELMON rail 34
ELMON rail 35
ELMON rail 39
ELMON classic/rail 41

ELMON classic 31
ELMON classic/rail 32
ELMON rail 34
ELMON rail 35
ELMON rail 39
ELMON classic/rail 41

ELMON classic 31
ELMON classic/rail 32
ELMON rail 34
ELMON rail 35
ELMON rail 39
ELMON classic/rail 41

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:

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:

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:

2006/42/EG
EN ISO 13856-3:2013
EN 12978:2003 + A1:2009
EN ISO 13849-1:2008/AC:2009

2006/42/EG
EN ISO 13856-3:2013
EN 12978:2003 + A1:2009
EN ISO 13849-1:2008/AC:2009

2006/42/EG
EN ISO 13856-3:2013
EN 12978:2003 + A1:2009
EN ISO 13849-1:2008/AC:2009

Alle technischen Daten für diese
Produkte werden sicher aufbewahrt
und werden erforderlichenfalls der
behördlichen Marktaufsicht auf Anfrage
zur Verfügung gestellt.

All technical data for these products are
securely stored and, if necessary, made
available to regulatory market
surveillance upon request.

Toutes les données techniques relatives
à ces produits seront conservées en
toute sécurité et, seront mises, sur
demande, à la disposition des autorités
de réglementation.

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-Maschinen-
richtlinie sicherzustellen.

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.

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.

Hersteller und
Dokumentationsbevollmächtigter

Manufacturer and attorney of
documents

Fabricant et agent de documentation

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Lippstadt, 31.07.2018

Helmut Friedrich
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