

## Product information

# SENTIR bumper artificial leather



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## Übergabedokumentation / Documentation / Documentation de datation / Documentazione di consegna / Documentatie

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Anlagenbeschreibung / Description / Description du système / Descrizione impianto / Beschrijving van de installatie

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Anlagenart / Type of plant / Sorte du système / Tipo d'impianto / Type installatie

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Hersteller / Manufacturer / Fabricant / Produttore / Fabrikant

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Seriennummer / Serial number / Numéro de série / Numero di serie / Seriennummer

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Datum der Inbetriebnahme / Commissioning date / Date de mise en marche / Data della messa in funzione /  
Datum van de ingebruikname

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Aufstellort / Site of installation / Lieu de montage / Luogo d'installazione / Opstellingsplaats

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Verwendete Steuerung / Control unit / Commande utilisée / Centralina di comando adottata / Gebruikte besturing

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Zusatzkomponenten / Additional components / Composants supplémentaires / Componenti ausiliari / Bijkomende componenten

### **Funktionsprüfung / Functional test / Contrôle de fonction / Controllo funzionale / Functiecontrole**

Sicherheitssensoren reagieren auf Betätigung / Safety sensor response to actuation /

Le senseur de sécurité réagit à l'actionnement / Il sensore di sicurezza reagisce all'azionamento /

Veiligheidssensor reageert op activering

ok

Sicherheitssensoren reagieren auf Zuleitungsunterbrechung / Safety sensor response to supply line inter-

ruption / Le senseur de sécurité réagit à l'interruption de l'alimentation / Il sensore di sicurezza reagisce

all'interruzione di collegamento / Veiligheidssensor reageert op onderbreking van de toevoerleiding

ok

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Name der ausführenden Firma / Owner / Nom de la société exécutrice / Nome della ditta esecutrice /

Naam van de uitvoerende firma

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Name des Installateurs / Installer / Nom de l'installateur / Nome dell'installatore / Naam van de installateur

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Datum / Date / Date / Data / Datum

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Unterschrift / Signature / Signature / Firma / Handtekening

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### 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 on 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. But make sure the safety bumper is not damaged. After mounting a functioning test should be made.

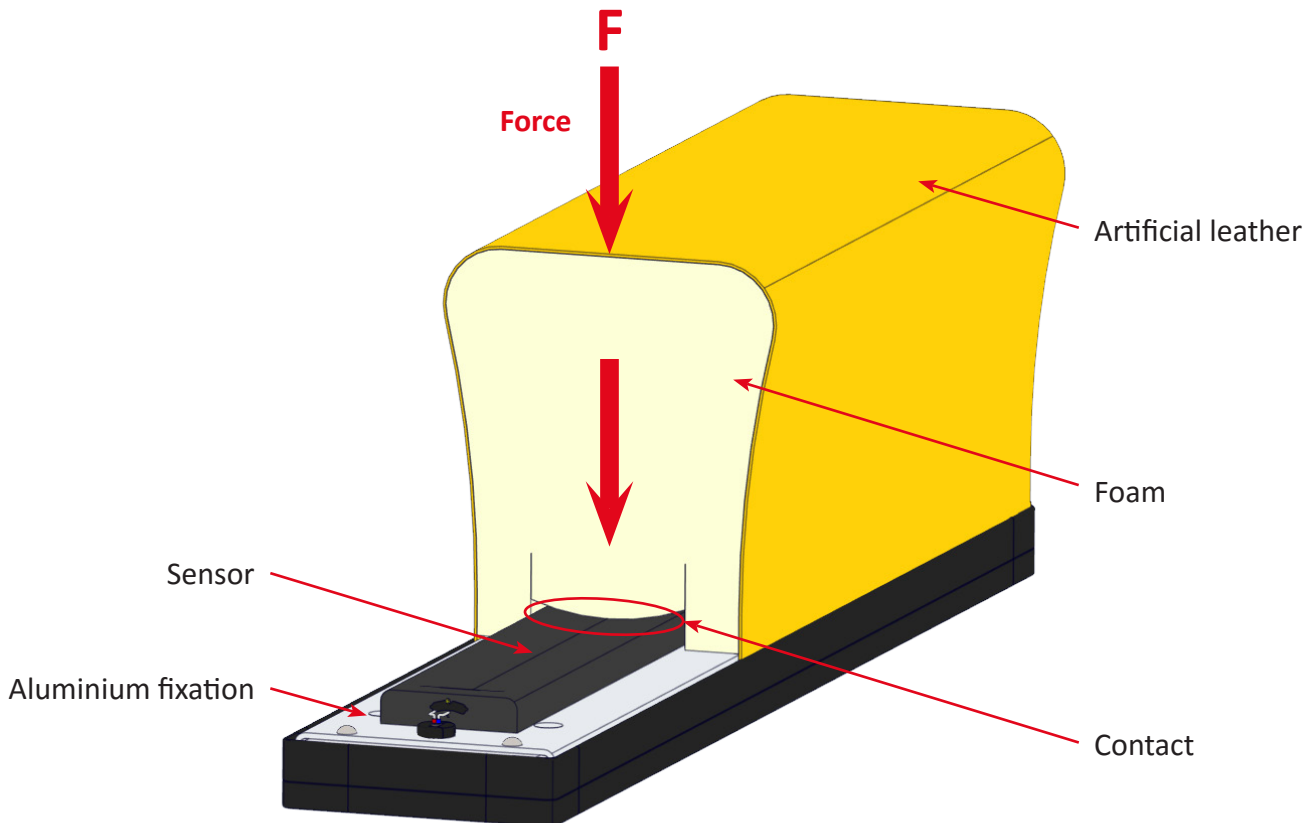
### 2 The construction

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

The coating of the SENTIR bumper consists of imitation leather.

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

Cable break is monitored permanently by an additional evaluation electronic (ELMON safety relay, e.g.).



# SENTIR

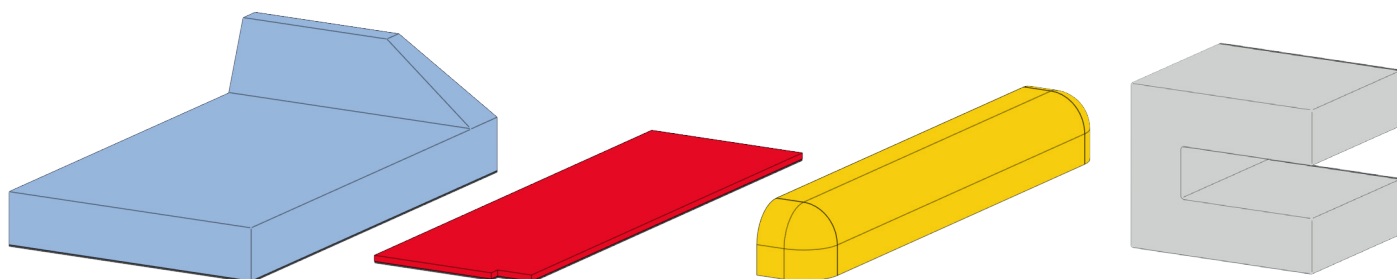
Safety contact bumper

## 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 made to customers' specifications 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.

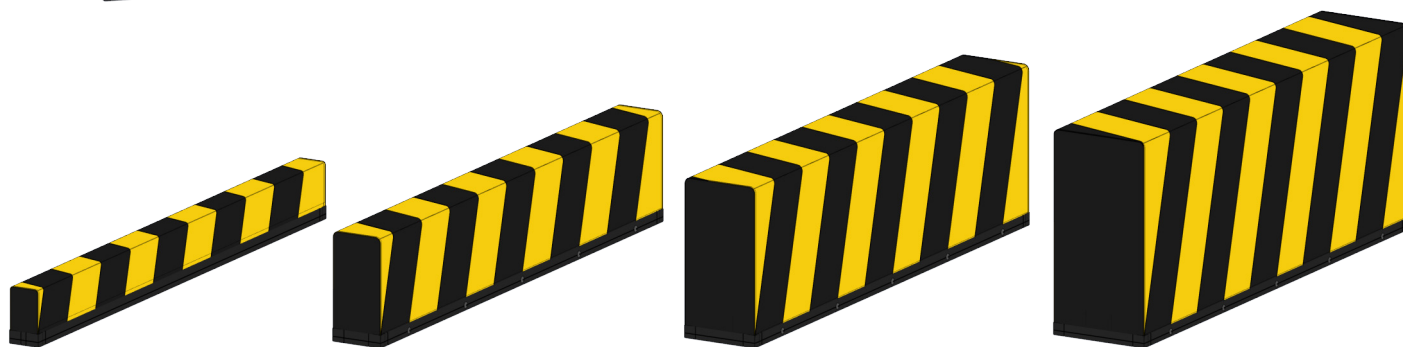


### 3.2 Standard delivery

**Length:** min. 150mm  
max. 3000mm

**Connections:** The cable exit with each 0,12m Length (1x M8 connector male & 1xM8 connector female) condition at the ends of the bumpers. The standard delivery package contains an extension cable (in accordance with model code)

**Colors:** Black / Yellow / Black-Yellow striped ( available for each material)  
Furthermore on request.



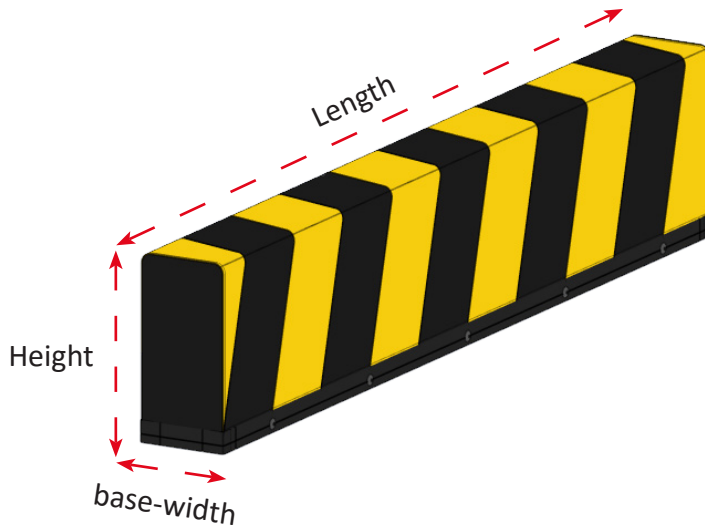
Type: 60-100  
1,5 kg/m

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 1 x M8 connector female
- 4.2 : (like 4.0) with M8 connection cable 2,5m
- 4.3 : (like 4.0) with 5m cable, M8 connector female and M8 resistor plug
- 4.4 : (like 4.0) with 5m cable, M8 connector male and 5m cable, M8 connector female

**6. Length**

e.g. L = 2,5 m

## 5 Technical data

<b>Actuating forces:</b>	< 150 N by test specimen $\varnothing 80$ mm (according to DIN EN ISO 13856-3) < 400 N by test specimen 45x400 mm (according to DIN EN ISO 13856-3)
<b>Inactive edge region:</b>	0 mm
<b>Angle of activation:</b>	$\pm 45^\circ$
<b>Dwitching cycles:</b>	> 10 000
<b>Electric capacity:</b>	24 v 10 mA
<b>Protection class:</b>	IP 54 (higher protection class on request)
<b>Temperature range:</b>	$\pm 0$ bis $+55^\circ\text{C}$
<b>Connection cable:</b>	Pluggable, 2 x 0,34 mm <sup>2</sup> ( PUR black) mit M8 connector, 0,12m
<b>Maintenance:</b>	The Bumper is maintenance-free. Annual service is recommended.
<b>Certification:</b>	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:

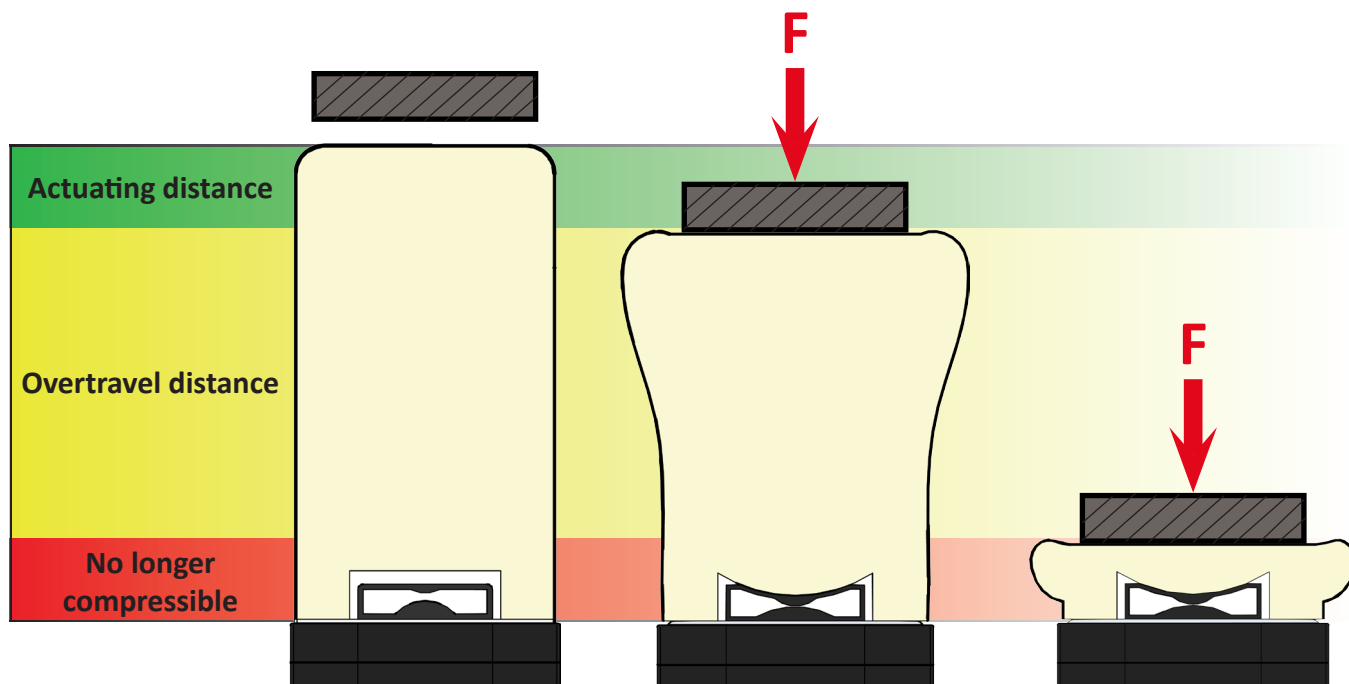
**Actuating distance:**  $s_B = 15\%$  bumper height

**Overtravel distance:**  $s_V = 60\%$  bumper height

**No longer compressible bumper:** 25 % bumper height

The overtravel distance,  $s_V$  (corresponding to the system's brake path) can then be used to determine the appropriate bumper height.

Average values by a test speed of 10 mm/s.



**5.2 Resistance**

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

\*Please see technical information: Product information SENTIR bumper Polyurethane / NBR

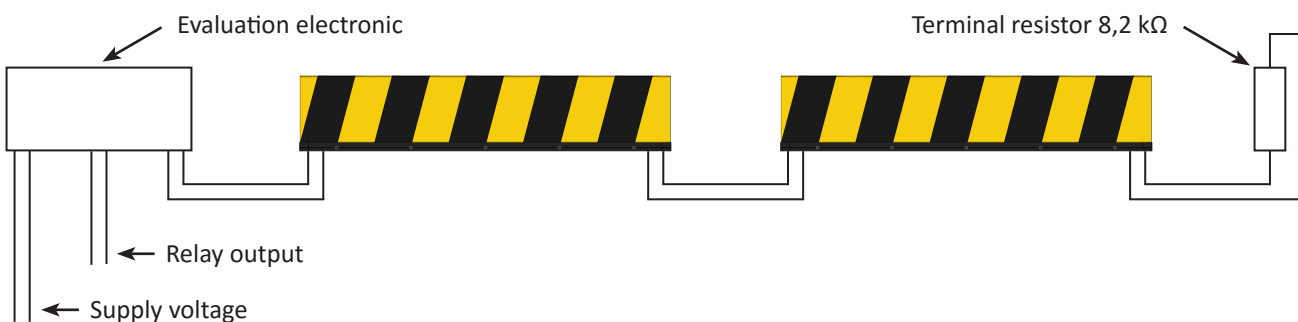
- |                                |                           |
|--------------------------------|---------------------------|
| 1 = no effects                 | Permanent contact allowed |
| 2 = few effects                | contact allowed           |
| 3 = medium effects             | contact allowed           |
| 4 = noticeable effects         | contact restricted        |
| 5 = strong effects             | very brief contact        |
| 6 = extreme effects            | avoid contact             |
| - = without specification/test |                           |



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

**5.3 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 evaluation electronic and the other end with a terminating resistor (factory-made). The electronic monitor the whole circuit, including sensor and terminating resistor. By extern force the contact areas bridge the resistor. The evaluation electronic detects the change of the resistance and via the potential-free relay contact give a signal to the machine control. Additional the hole system is monitoring on cable break or manipulation. Optionally the bumper can be use under cross-fault monitoring.



# SENTIR

Safety contact bumper

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English

17.DB.00.004 Operating Manual Rev 01

Subject to technical modifications.

No liability can be assumed for errors or misprints.