

S-Line



## S-Line – Miniature Safety Edge System



**BIRCHER** REGLOMAT

# S-Line – Miniature Safety Edge System

## Application

Safety edges are used to protect dangerous closing edges at automatic doors and gates, shutters, vehicle doors or in the machinery industry. Depending on the force and speed of the moving part a suitable rubber

profile has to be selected. Bircher Reglomat safety components are developed and certified to meet today's European Safety Standards.

## Description

S-Line consists of various components that together build a safety edge system.

- ① Contact strip
- ② Rubber profiles
- ③ Aluminium rail
- ④ End pieces
- ⑤ Switching units
- ⑥ Tools and accessories

The contact strip is made with two conducting elements made of conductive silicon. They are placed with a defined distance. The strip can be terminated with different end pieces, depending on the application. Inserted into the rubber profile and connected to a switching unit, all components make the complete system.

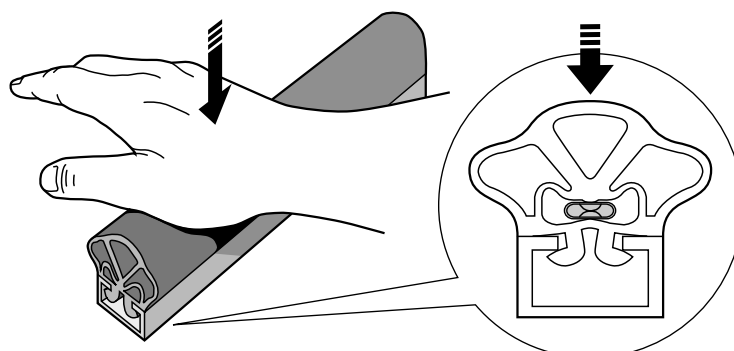
The safety edges can easily and quickly be assembled by the user. This provides enormous flexibility with regard to the production of different types in various lengths.



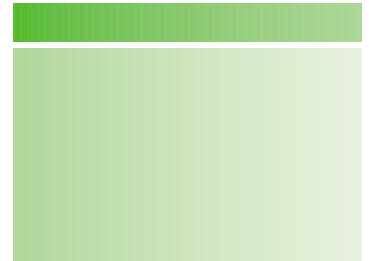
## Function

Vertical force onto the safety edge causes a contact of the conductive elements inside the contact strip. This results in a change of the resistance and the current, which can be analysed by the control unit. If assem-

bled correctly, the safety edges are water tight. It works properly even at damage, as long as the contact strip is not destroyed.



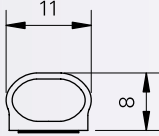
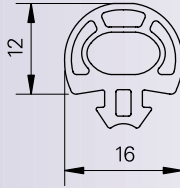
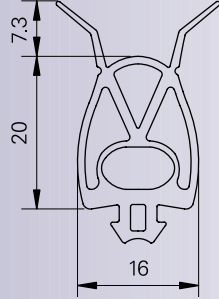
## Order Information Components



# S-Line – Miniature Safety Edge System

## Technical Data

### Rubber Profiles / Safety Edges

<b>Rubber Profiles</b>	<b>Type</b>	<b>EPT 011/008A0W1</b>	<b>EPE 016/012A0V1</b>	<b>EPE 016/020J2V1</b>
	Foot	adhesive <sup>1)</sup>	click	click
	Lips	none	none	double <sup>2)</sup>
	Material	TPE	EPDM	EPDM
	Alu-Rail	none	AP-S	AP-S
	Dimensions (in mm)			
Packaging	Reel with 50 m	Box with 50 m	Box with 50 m	
<b>Safety Edges</b> <small>(complete assembled)</small>	<b>Type</b>	<b>ELT 011/008A0W1</b>	<b>ELE 016/012A0V1</b>	<b>ELE 016/020J2V1</b>
	Temperature Range	-20° C to +55° C	-20° C to +55° C	-20° C to +55° C <sup>4)</sup>
	Activating Distance <sup>3)</sup>	2 mm	5 mm	5 mm
	Activating Force <sup>3)</sup>	< 150 N	< 150 N	80 N
	Over run distance <sup>3)</sup>			
	250 N	0 mm	1 mm	5 mm
	400 N	0 mm	2 mm	6 mm
	Switching angle	2 x 10°	2 x 20°	2 x 45°
	min. Bending Radius			
	Longitudinal axis	750 mm	750 mm	750 mm
	Lateral axis	150 mm	150 mm	150 mm
	max. Length	10 m	10 m	10 m
	max. Force	500 N	500 N	500 N
	Protection Class	IP65	IP65	IP65
Dead Zone	35 mm	35 mm	20 mm <sup>3)</sup>	
Inactive Range	35 mm	35 mm	35 mm	
Conformity with standard	–	–	EN 12978, EN 1760-2	

<sup>1)</sup> Sticks best on plane metal and plastic surfaces. Surface must be free from dust and grease. Suitability must be tested prior to use for any material.

<sup>2)</sup> If required, lips can be torn-off

<sup>3)</sup> Values at 23° C, with test piece Ø 80 mm, measuring point C3 per EN 1760-2

<sup>4)</sup> EN 1760-2, -5° C to +55° C

### Characteristics of Rubber Profiles

	<b>EPDM</b>	<b>NBR</b>	<b>TPE</b>
Chemical names	Ethylen-Propylen-Caoutchouc	Nitril-Caoutchouc	Polyoletin-Caoutchouc (Santoprene)
Rebound elasticity at 20° C	good	satisfactory	good
Resistance against lasting deformation	good	good	good
General weatherproofness	excellent	good	excellent
Ozone resistance	excellent	satisfactory	excellent
Oil resistance	low	excellent	satisfactory
Fuel resistance	low	good	low to satisfactory
Solvent resistance	low to satisfactory	partially good	low
General resistance against acids	good	satisfactory	good
Temperature range	-30° C to +140° C	-30° C to +120° C	-30° C to +110° C

The above mentioned list should be used as guideline. Critical applications must be verified.

## Technical Data

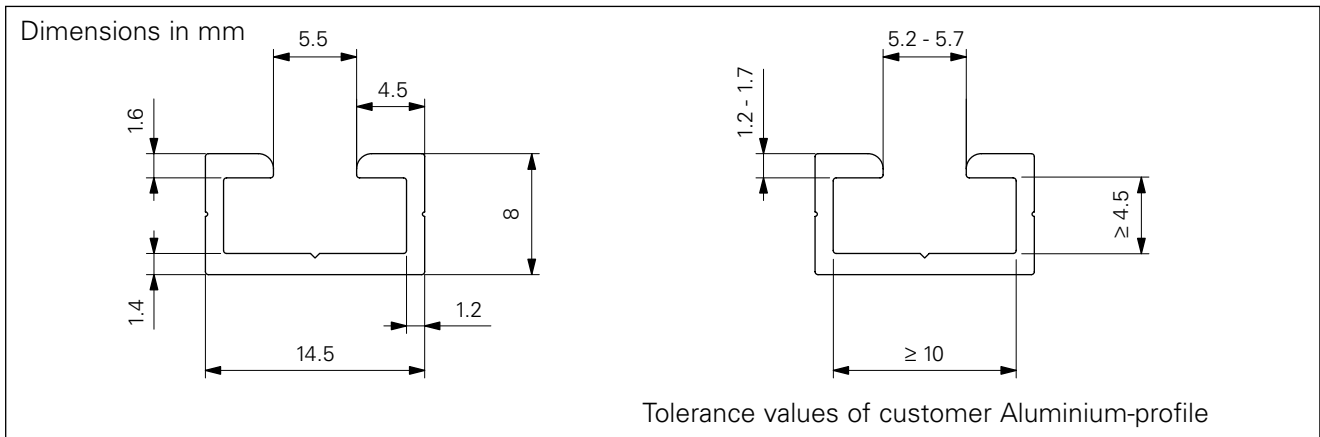
### Contact Strip ENT-S

<b>Material</b>	Silicon Rubber
<b>Dimensions</b>	approx. 4 x 7 mm
<b>Actuating Force max.</b>	5 N
<b>Actuating Distance</b>	1 mm
<b>Number of switching cycles</b>	> 10'000, according to EN 1760-2
<b>Switching voltage max.</b>	30 V ACDC
<b>Switching current max.</b>	10 mA
<b>Contact resistance max.</b>	typ. < 150 Ohm, max. 800 Ohm
<b>Transition Resistance max.</b>	800 Ohm (not switched)
<b>Temperature Range</b>	-40° C to +80° C
<b>min. Bending Radius</b>	
<b>Longitudinal axis</b>	750 mm
<b>Lateral axis</b>	75 mm
<b>Insulating Strength</b>	1500 DV, 1000 AC



### Aluminium-Rail AP-S

Type	Description	Packaging
AP-S	Aluminium-profile	Rail 6 m



### End pieces

Type	Description	Packaging
<b>End pieces with cable</b>		
ENES-K05	End piece with cable 0.5 m	Bag with 10 pcs.
ENES-K2	End piece with cable 2 m	Bag with 10 pcs.
ENES-K4	End piece with cable 4 m	Bag with 10 pcs.
ENES-K7	End piece with cable 7 m	Bag with 10 pcs.
ENES-K10	End piece with cable 10 m	Bag with 10 pcs.



**Connecting cable:** Ø 3.9 mm, bending radius 10 mm, 2 strands with 0.25 mm<sup>2</sup> each

<b>End pieces without cable</b>		
ENES-0	End piece without termination resistor	Bag with 10 pcs.
ENES-8	End piece with resistor 8.2 kOhm	Bag with 10 pcs.









## S-Line – Miniature Safety Edge System

### Accessories

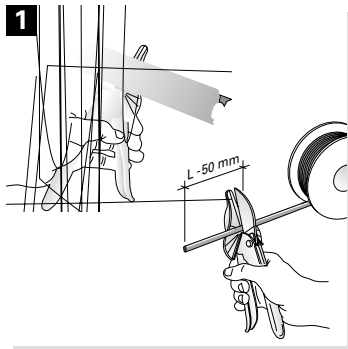
Type	Description	Packaging	
<b>Sealing Components</b>			
<b>ENA-10</b>	Sealing tape for rubber profiles	Roll with 10 m	
<b>ENS-DL</b>	Sealing plug with hole for cable outlet	Bag with 10 pcs.	
<b>ENS-DS</b>	Sealing plug without hole	Bag with 10 pcs.	
<b>ENSC</b>	Sealing piece for rubber profiles	Bag with 10 pcs.	
<b>ES-BD</b>	Sealing compound	Box with 84 strips (sufficient for at least 100 edges)	
<b>ES-KLEBER</b>	Adhesive glue for plugs and ENA	Tube with 20 g	
<b>Tools</b>			
<b>ESS-PRESS</b>	<b>Crimping tool for end pieces</b> To crimp end pieces onto the contact strip	Box with 1 pce.	
<b>ESS-INSERT</b>	<b>Insert for crimping tool</b> As exchange or replacement onto existing press tool	Box with 1 pair	
<b>GUMMISCHERE</b>	<b>Rubber cutter</b> To cut rubber profiles to length	Box with 1 pce.	
<b>Mounting accessories</b>			
<b>ENS-A12</b>	<b>Stopper piece for profile EPE016/012</b> Stops the gate at the end position and prevents from unintentional edge switching	Bag with 10 pcs.	
<b>ENS-A20</b>	<b>Stopper piece for profile EPE016/020</b> Stops the gate at the end position and prevents from unintentional edge switching	Bag with 10 pcs.	
<b>SPK-APD</b>	<b>Junction box</b> To connect the safety edge cable with a helix cable	Box with 1 pce.	
<b>SPK-3</b>	<b>Spiral cable</b> Cable diameter: 6 mm max. length: 3 m 4 strands with 0.5 mm <sup>2</sup>	1 pce.	



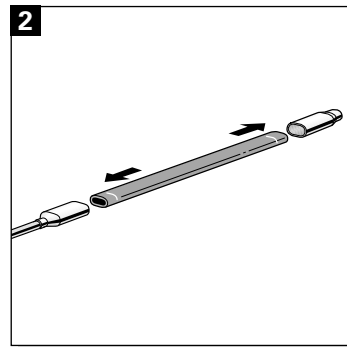
## Accessories

Type	Description	
<b>Switching units</b>		
<b>ESR11-230AC</b>	2 channels for 2 sensors 8.2 kOhm, 1 output, Safety category 1 according EN 954-1, Power supply 230 V AC, built in version with 11-pin plug, Dimensions 36 x 74 x 85 mm	
<b>ESR11-24ACDC</b>	2 channels for 2 sensors 8.2 kOhm, 1 output, Safety category 1 according EN 954-1, Power supply 24 V ACDC, built in version with 11-pin plug, Dimensions 36 x 74 x 85 mm	
<b>ESR12-230AC</b>	2 channels for 2 sensors 8.2 kOhm, 2 outputs, Safety category 1 according EN 954-1, Power supply 230 V AC, built in version with 11-pin plug, Dimensions 36 x 74 x 85 mm	
<b>ESR12-24ACDC</b>	2 channels for 2 sensors 8.2 kOhm, 2 outputs, Safety category 1 according EN 954-1, Power supply 24 V ACDC, built in version with 11-pin plug, Dimensions 36 x 74 x 85 mm	
<b>ESA25-230AC</b>	1 channel for 1 sensor 8.2 kOhm, 1 output, Safety category 2 according EN 954-1, Power supply 230 V AC, surface version, IP65, Dimensions 110 x 80 x 65 mm	
<b>ESA25-24ACDC</b>	1 channel for 1 sensor 8.2 kOhm, 1 output, Safety category 2 according EN 954-1, Power supply 24 V ACDC, surface version, IP65, Dimensions 110 x 80 x 65 mm	
<b>ESR25-24ACDC</b>	1 channel for 1 sensor 8.2 kOhm, 1 output, Safety category 2 according EN 954-1, Power supply 24 V ACDC, built in version with 11-pin plug, Dimensions 36 x 74 x 85 mm	
<b>ESR26-24ACDC</b>	2 channels for 2 sensors 8.2 kOhm, 2 outputs, Safety category 2 according EN 954-1, Power supply 24 V ACDC, built in version with 11-pin plug, Dimensions 36 x 74 x 85 mm	
<b>ESP 25-230AC</b>	1 channel for 1 sensor 8.2 kOhm, 1 output, Safety category 2 according EN 954-1, Power supply 230 V AC, printed circuit version, Dimensions 94 x 70 x 32 mm	
<b>ESP 25-24ADC</b>	1 channel for 1 sensor 8.2 kOhm, 1 output, Safety category 2 according EN 954-1, Power supply 24 V ACDC, printed circuit version, Dimensions 94 x 70 x 32 mm	

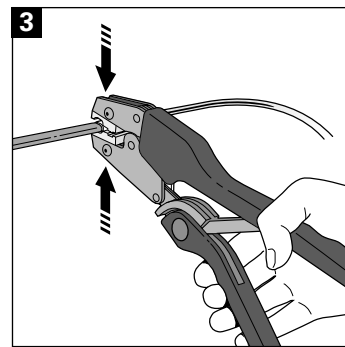
## Assembly Process



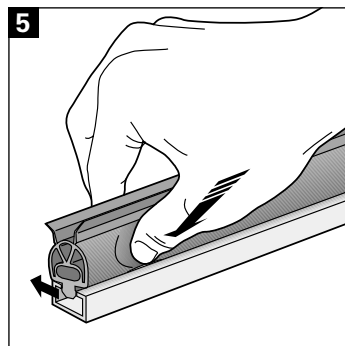
1  
Cut rubber profile and strip ENT-S to length



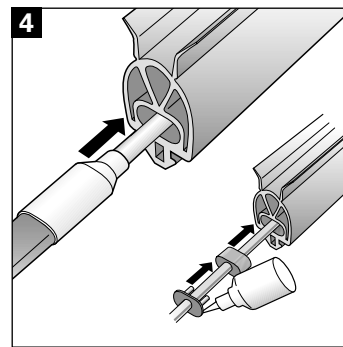
2  
Place end pieces



3  
Press



5  
Click profile into aluminium-rail



4  
Insert contact strip and seal profile

## Your contact

### Bircher Reglomat AG

Wiesengasse 20  
CH-8222 Beringen  
Switzerland  
Phone +41 (0)52 687 11 11  
Fax +41 (0)52 687 11 12  
info@bircher.com  
www.bircher-reglomat.com

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