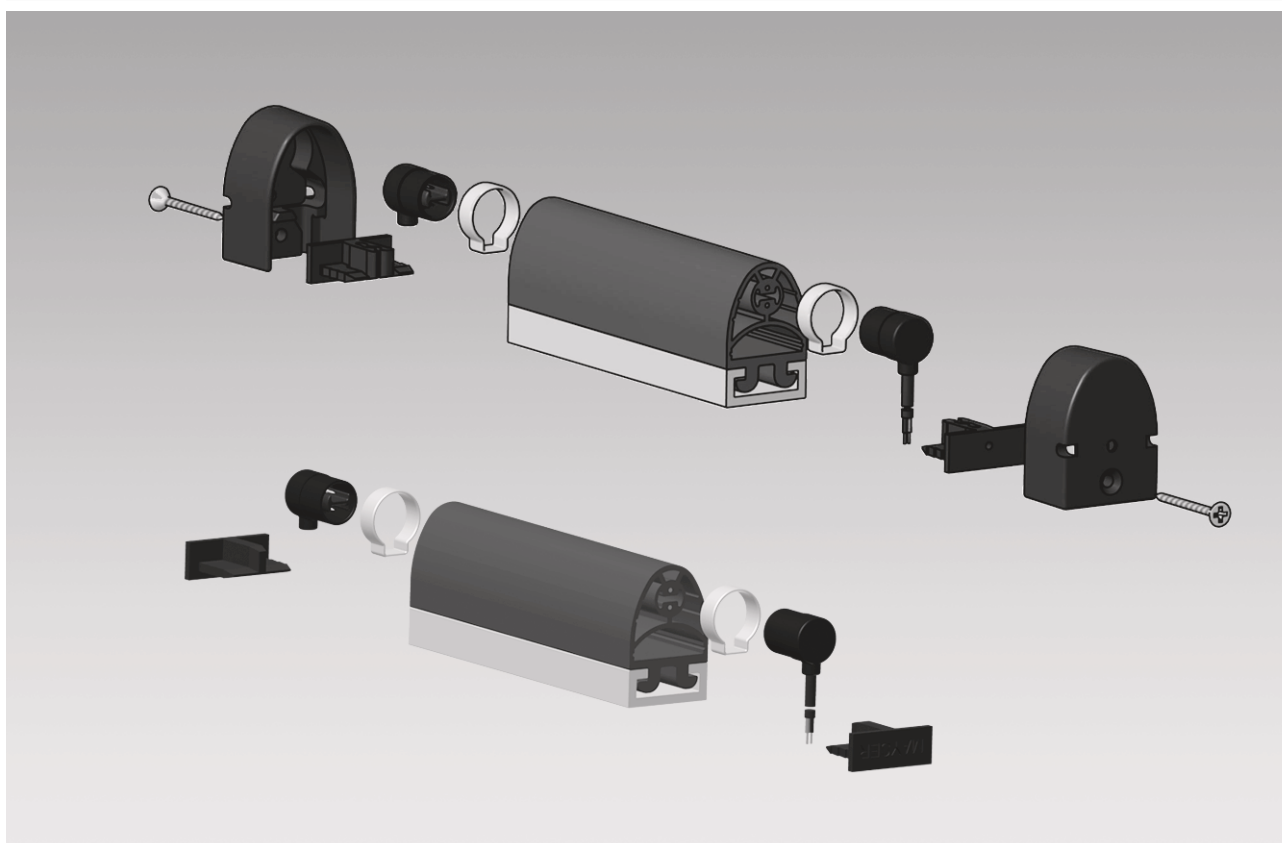


MAYSER®

Polymer Electric



Product information



DIY Sensor Profiles

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Technical data SK SP 3713

Important information

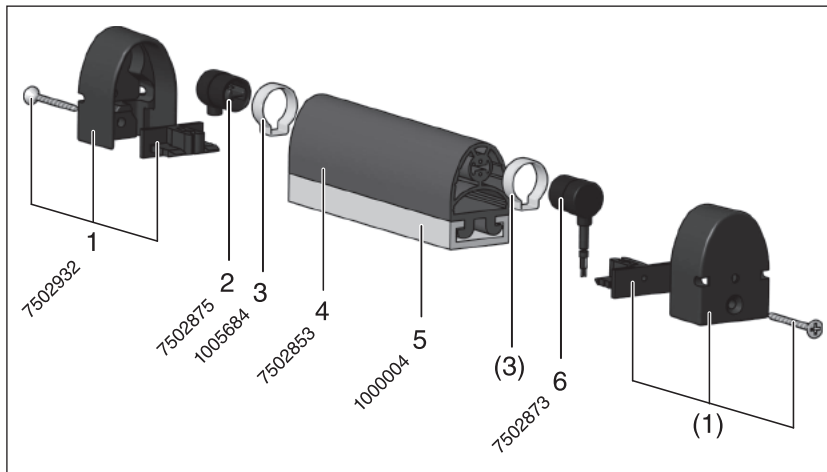
Read through the product information carefully. It contains important information on operation, safety and maintenance of the product. Retain the product information for later reference.

Always observe the safety instructions on the following pages under **ATTENTION**. Only use the product for the purpose described in the product information.

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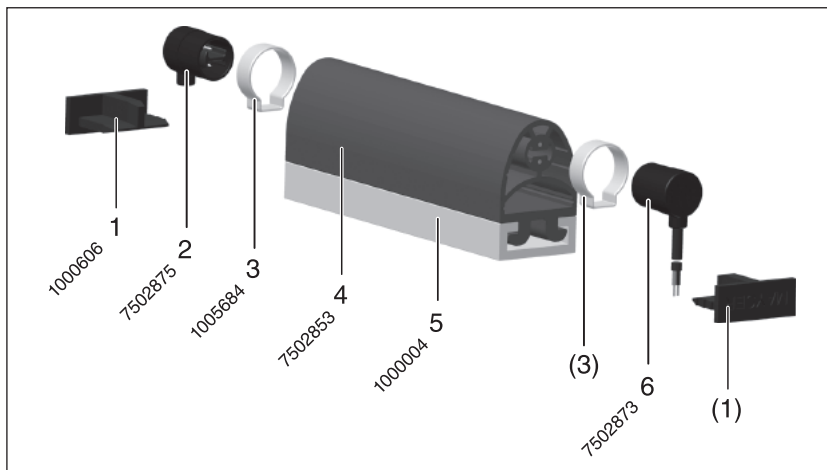
071113 v1.1

Overview



Sensor Profile with end caps

- | | |
|------------------------------|---------------------------|
| 1 Set of end caps | 4 Contact profile |
| 2 Closing plug with resistor | 5 Aluminium profile |
| 3 Ear clamp | 6 Closing plug with cable |



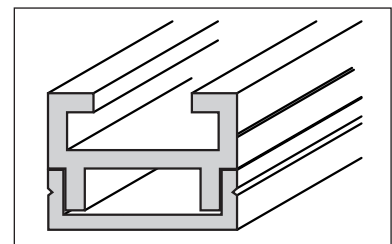
Sensor Profile without end caps

- | | |
|------------------------------|---------------------------|
| 1 End stoppers | 4 Contact profile |
| 2 Closing plug with resistor | 5 Aluminium profile |
| 3 Ear clamp | 6 Closing plug with cable |

Contact profile – Sensor Profile

The semi-finished contact profile (4) is cut to length and assembled with the other components. The functioning product is then called a Sensor Profile.

Tip: We recommend using the two-part aluminium profile C 25M for final assembly. The advantage is that the sensor profile can be entirely assembled on the separate upper section of the two-part aluminium profile. The upper section is then placed onto the lower section (mounted on the closing edge) and both are screwed together.



Aluminium profile C 25M

Subject to technical modifications.

Overview of combinations

Sensor profile	C 25M	C 25S	C 25
with end caps	●		●
without end caps, with end stoppers 1001223	●		
without end caps, with end stoppers 1000606		●	●

Materials list

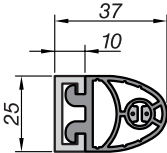
Part No.	Designation	Packing unit
7502853	Contact profile SP 37	30 m
7502875	Closing plug with resistor 8k2	10 pcs.
7502873	Closing plug with PUR cable 2.5 m, angled 90°	10 pcs.
1005684	Ear clamp for closing plug	20 pcs.
1000854	Aluminium profile C 25M for SP 37, upper section	6 m
1000855	Aluminium profile C 25M for SP 37, lower section	6 m
1000012	Aluminium profile C 25S for SP 37	6 m
1000004	Aluminium profile C 25 for SP 37	6 m
7502932	End cap set for SP 37: each containing 2 end caps, fixing stoppers and screw 3.5×25	10 pcs.
1001223	End stopper for C 25M, for SP without end caps	1 pce.
1000606	End stopper for C 25 or C 25S, for SP without end caps	1 pce.
1004988	Scissors with stop	1 pce.
7502868	Assembly aid SH3	1 pce.
1005741	Notching pliers Knipex 7742115	1 pce.
1005729	Vice-grip pliers Knipex System Oetiker 1099	1 pce.

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Subject to technical modifications.

Contact profiles

Dimensions

SP 37 TPE	
	
Actuation force: < 150 N Response time at 10 mm/s 500 ms at 100 mm/s 120 ms Actuation distance (A) at 10 mm/s 5 mm at 100 mm/s 12 mm Overtravel distance up to 250 N (B1) at 10 mm/s 9 mm at 100 mm/s 1.8 mm	

Note:
 Dimensional tolerances as per
 ISO 3302 E2/L2.

Note:
 Test sample 1 as per ISO
 13856-2 with Ø 80 mm.

Physical resistance

Sensor Profile SP	TPE
IEC 60529: protection class Hardness as per Shore A	IP67 50 ±5

Chemical resistance

The product is resistant against normal chemical influences such as diluted acids and alkalis as well as alcohol over an exposure period of 24 hrs.

The values in the table are results of tests carried out in our laboratory to the best of our knowledge and belief. The suitability of our products for your special area of application must always be verified with your own practical tests.

071113 v1.1

Subject to technical modifications.

Explanation of symbols:

+ = resistant

± = resistant to a certain extent

- = not resistant

Material	TPE
Acetone	-
Formic acid	-
Armor All	+
Car shampoo	+
Petrol	-
Brake fluid	+
Buraton	+
Butanol	-
Sodium hypochlorite	-
Disinfectant 1 %	+
Diesel	-
Acetic acid 10 %	-
Ethanol	+
Ethyl acetate	-
Ethylene glycol	+
Greases	±
Anti-frost agent	+
Skin cream	+
Icidine	+
Incidine	+
Incidine plus	+
Cooling lubricant	-
Plastic cleaner	+
Lyso FD 10	+
Metal working oil	-
Microbac	+
Microbac forte	+
Minutil	+
Saline solution 5 %	+
White spirit (ethyl alcohol)	+
Terralin	+
UV-resistance	+
Centring oil	-

Note:

Tests are carried out at room temperature (+23 °C).

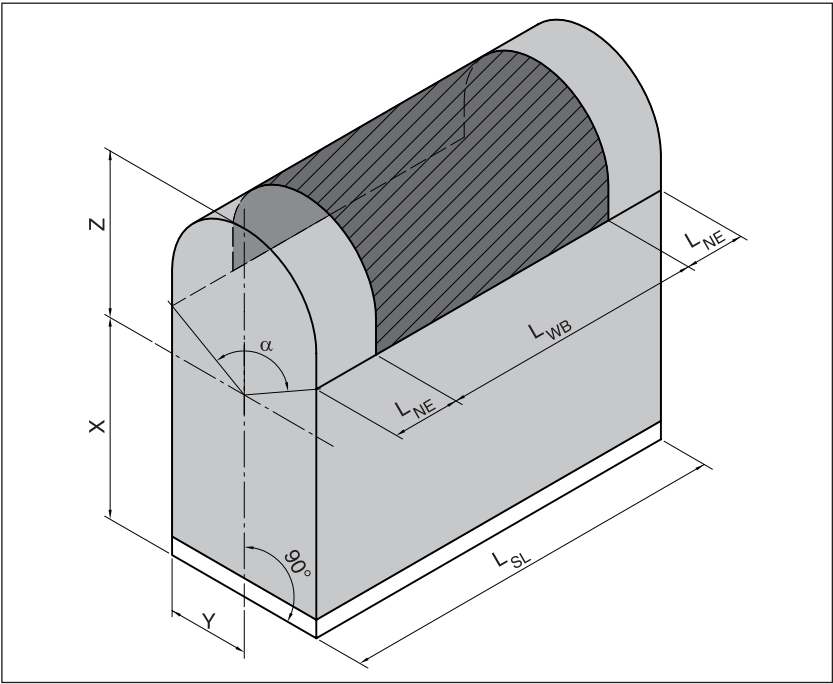
Subject to technical modifications.

Effective actuation area

The parameters X, Y, Z, L_{NE} and the angle α describe the effective actuation area.

For the effective actuation area, the following applies:

$$L_{WB} = L_{SP} - 2 \times L_{NE}$$

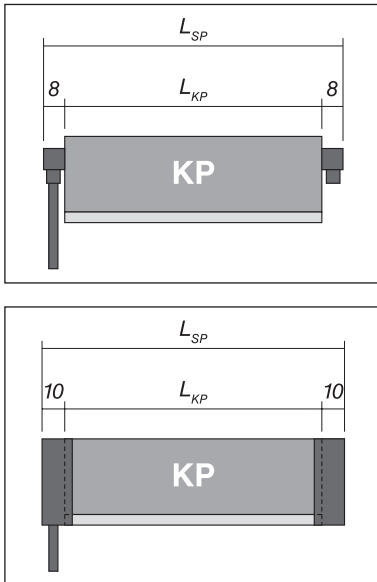


- Parameters:
- L_{WB} = effective actuation length
 - L_{SP} = total length of sensor profile
 - L_{NE} = non-sensitive length at end of sensor profile
 - α = effective actuation angle

	SP 37 with end caps	SP 37 without end caps		
α	120°	120°		
L _{NE}	60 mm	20 mm		
X	26 mm	26 mm		
Y	12.5 mm	12.5 mm		
Z	11 mm	11 mm		

DIY in 5 steps

These instructions describe how to cut the contact profile to length, insert and clamp the closing plug, fit the end caps and subsequently check and test the assembly. The final product is a sensor profile SP 37 with degree of protection IP67.



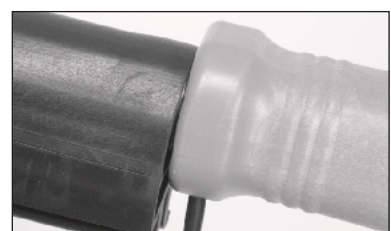
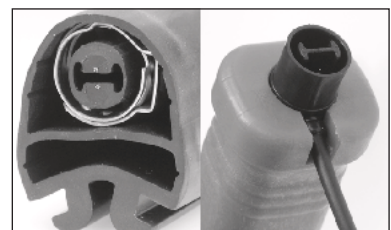
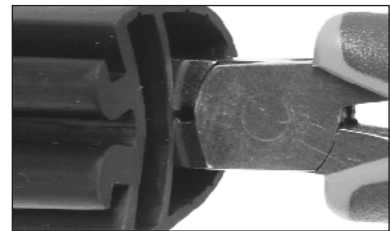
1. Cutting to length

- Measure and mark required length of contact profile (CP).
The following applies: $L_{CP} = L_{SP} - 16 \text{ mm}$ (without end caps)
Or: $L_{CP} = L_{SP} - 20 \text{ mm}$ (with 2 end caps)
where:
 L_{CP} = length of contact profile
 L_{SP} = length of sensor profile
- Cut off contact profile at marking with scissors (1004988)



2. Insertion

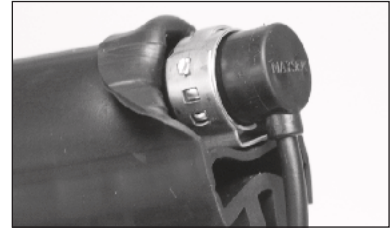
- Cut into the ends of all 3 fins with notching pliers: approx. 10 mm (1005741: full pliers length).
First cut into the fins at the joins to the outer casing.
Then bend the outer casing back and cut into the fins at the joins to the sensing chamber.
- Tear off the cut fins.
- Mount ear clamp in such a way as to leave an even space all round for the closing plug.
- Place closing plug into assembly aid SH3.
- Press closing plug as far as it will go into contact profile.



Subject to technical modifications.

3. Clamping

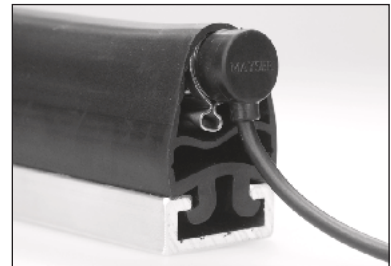
- Use a cavity in the contact profile to adjust the position of the ear, in such a way that the outer profile is not distorted by the ear.
- Place the cable through the cut-out in the vice-grip pliers.
- Place the vice-grip pliers over the ear.
- Check 1: Is the ear clamp flush with the edge of the closing plug?
- Check 2: Is the cable positioned such that it cannot be damaged?
- If yes: Firmly clamp the ear shut with pliers. Close the pliers to the limit.



Pinched cable impairs functioning!

➔ Replace the closing plug if the cable is pinched.

- Repeat steps 2 and 3 at the other end of the contact profile with second closing plug.
- Insert into aluminium profile: First press one side of the fixing foot into the aluminium profile over the entire length, then clip the other side in bit by bit.

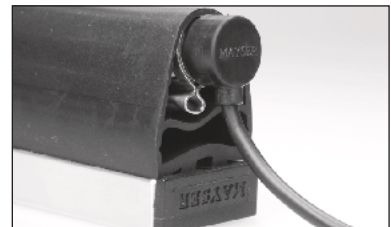


4. Closure

Now the Sensor Profile is principally functional. All that remains is to fix the Sensor Profile (at the ends of the aluminium profile) with the closing stoppers (1000606/1001223). Finished!

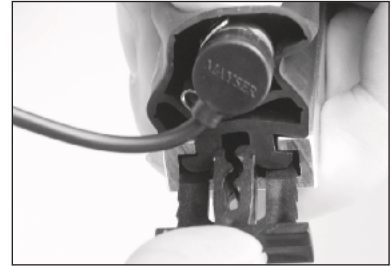
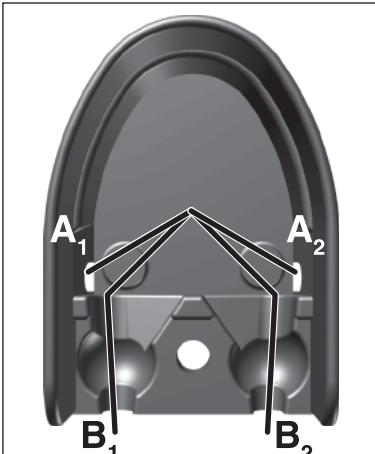
Closure with end caps gives a better appearance.

The positive side effect of this is that the end caps can withstand a load of up to 1,000 N.



- Press the fixing stoppers as far as they will go into the aluminium profile.

Tip: Squeeze the Sensor Profile together so that the foot makes room for the fixing stoppers.



Case **A:** lateral exit cable.

- Pull cable through the desired cut-out.

Case **B:** 90° cable exit.

- First loosely position end cap..
- Place cable into channel provided.



- Slide end cap on completely, press against aluminium profile and screw in place with self-tapping screw in fixing stopper.

- Close the other end of the sensor profile in the same way with the second end cap.

5. Check

- Check visually that the end caps or closing plugs fit flush all round.
- Check operation with multimeter: Are set values met?

Set values:

Sensor Profile not actuated

SP/W with 8k2:	8.2 kOhm ±3%
SP/BK:	> 20 MOhm
Continuity test per channel:	< (5 + (L _{CP} × 0.5/m)) Ohm

Sensor Profile actuated

all SP:	< 400 Ohm
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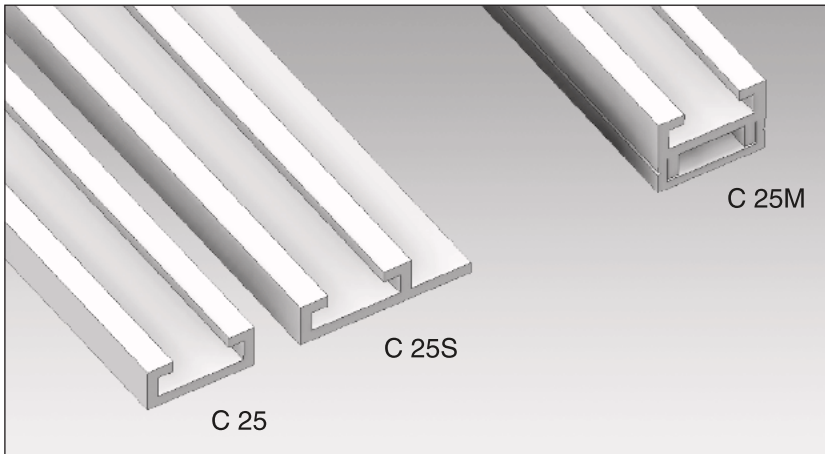


Sensor Profile can be irreparably damaged!

- ➔ No tensile load may be applied to the cable.
- ➔ Do not insert the sensor profile into an outer profile.
- ➔ In the idle state, no pressure must be applied to the contact profile.

Mounting

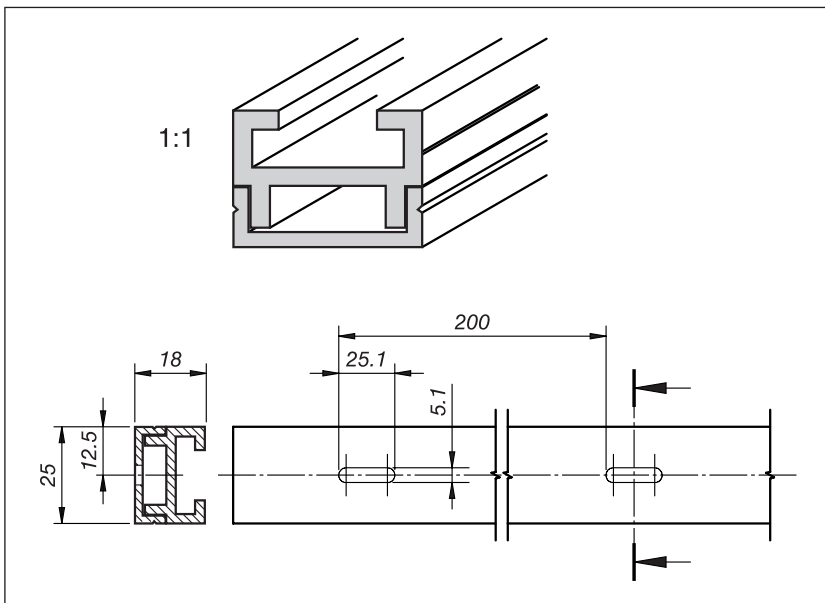
Sensor Profiles SP are mounted directly onto the main and secondary closing edges that present a danger. They are mounted using the aluminium profiles from the C 25 aluminium profile range. Mount the aluminium profiles with M5 screws or rivets.



Material properties

- AlMgSi0.5 F22
- Wall thickness at least 2 mm
- Tolerances as per EN 755-9
- Extruded
- Hot hardened

Aluminium profile C 25M

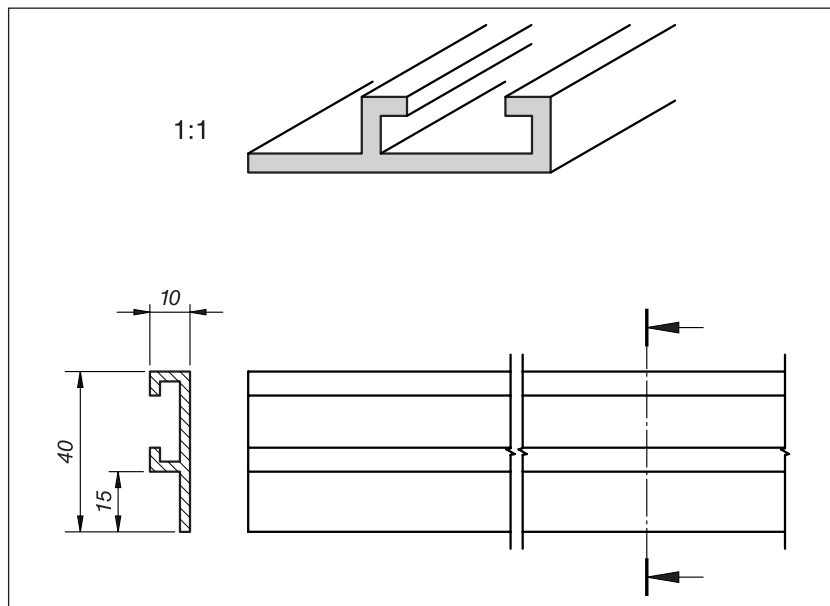


Two-part profile for SP 37:

For convenient assembly and disassembly. The sensor profile is clipped into the upper section and the upper section inserted into the installed lower section and fastened.

Subject to technical modifications.

Aluminium profile C 25S

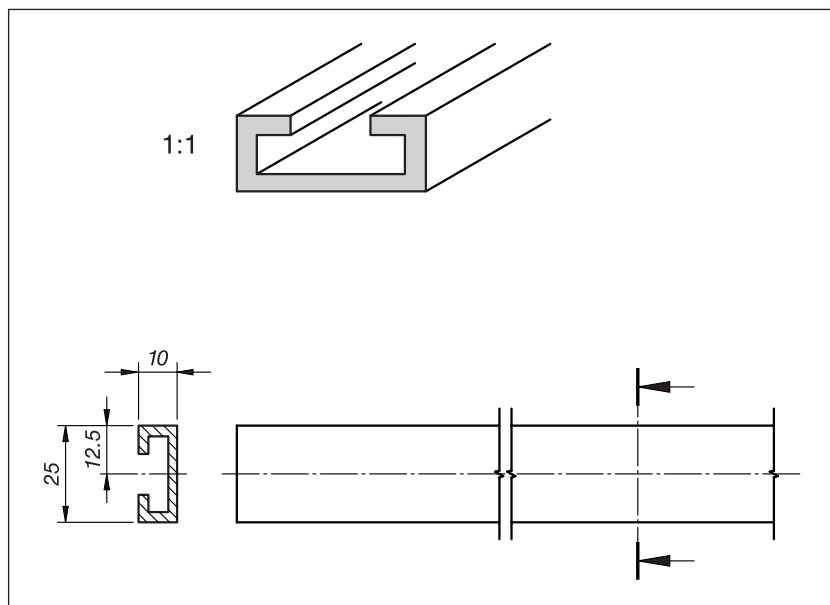


Flange profile for SP 37:

Final assembly is also possible when the sensor profile is already clipped into the aluminium profile.

Due to the flange, **no end caps** can be installed here.

Aluminium profile C 25



Standard profile for SP 37:

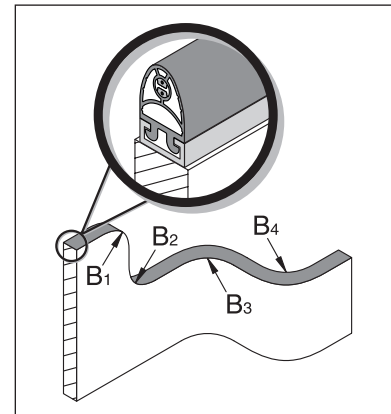
First the aluminium profile must be mounted onto the closing edge and then the sensor profile clipped into the aluminium profile.

Technical data SK SP 37

Sensor Profile SP 37 manufactured
with resistor for 2-wire technology (type SP/W8k2)
or without resistor for 4-wire technology (type SP/BK).

Testing basis		
EN 12978, ISO 13849-1, ISO 13856-2		
Switching characteristics at $v_{\text{test}} = 50 \text{ mm/s}$		
Switching operations		
Test piece (rod) Ø 20 mm, < 50 N	> 1×10^5	
Actuation force	+23 °C	-25 °C
Test piece (rod) Ø 20 mm	< 30 N	< 50 N
Test piece (cylinder) Ø 80 mm	< 45 N	< 110 N
Actuation distance		
Test piece (cylinder) Ø 80 mm	6 mm	
Actuation angle		
Test piece (cylinder) Ø 80 mm	< 120°	
Finger detection	yes	
Safety classifications		
ISO 13849-1: B _{10d}	2× 10 ⁶	
Mechanical operating conditions		
Bend radii, minimum		
B ₁ / B ₂ / B ₃ / B ₄	500 / 500 / 200 / 200 mm	
Tensile load, cable (max.)	20 N	
IEC 60529: degree of protection	IP67	
Operating temperature	-25 to +55 °C	
short term	-40 to +80 °C	
Electrical operating conditions		
Terminal resistance 8k2	±3%	
Switching capacity (max.)	250 mW	
Contact transition resistance	< 400 Ohm (per sensor)	
More than one sensor	max. 5 in series	
Electrical rating		
Voltage (max.)	DC 24 V	
Current (min./max.)	1 mA / 10 mA	
Connection cable	Ø 2.9 mm PUR 2× 0.25 mm ²	
Dimensional tolerances		
Length according to	ISO 3302 L2	
Profile section according to	ISO 3302 E2	

Bend radii:



Subject to technical modifications.