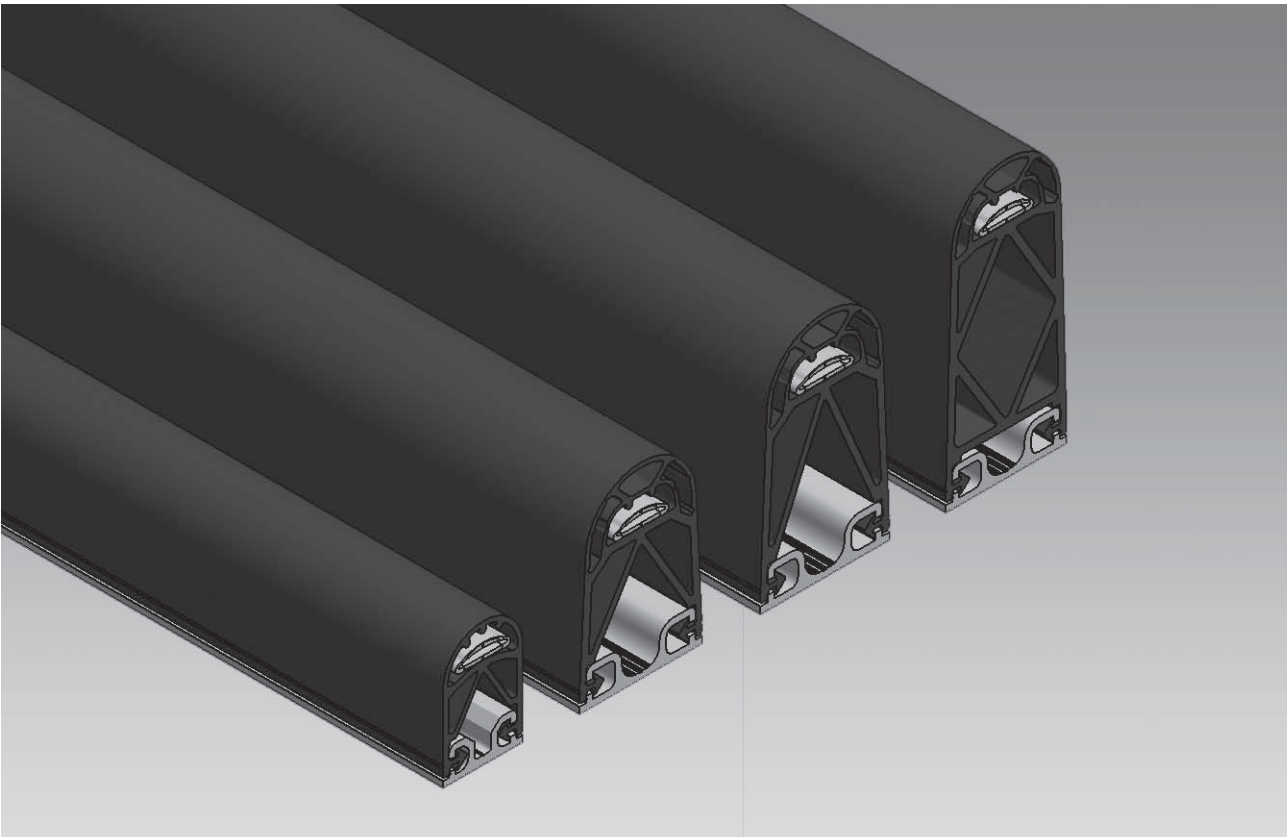


# MAYSER®

## Polymer Electric



### Installation Instructions



### Normally open Safety Edges SL/NO

Original instructions

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# 1 About these installation instructions

These installation instructions are part of the product.

Mayser Polymer Electric accepts no responsibility or warranty claims for damage and consequential damage due to failure to observe the installation instructions.

- ➔ Read the installation instructions carefully before use.
- ➔ Keep installation instructions for the complete service life of the product.
- ➔ Pass installation instructions on to every subsequent owner or user of the product.
- ➔ Add any supplement received from the manufacturer to the installation instructions.

**Validity**

These installation instructions are only valid for the products specified on the title page.

**Target group**

The target group of these installation instructions are operators and trained specialist personnel who are familiar with installation and commissioning.

**Other applicable documents**




- ➔ The following documents are to be observed in addition to the installation instructions:
  - Drawing of the Safety Edge system (optional)
  - Wiring diagram (optional)

**Symbols used**

Symbol	Meaning
➔ ...	Action with one step or with more than one step where the order is not relevant.
1. ... 2. ... 3. ...	Action with more than one step where the order is relevant.
• ... - ...	Bullets first level Bullets second level
(see chapter 1, P. 3)	Cross-reference

Tab. 1-1: Other symbols

**Danger symbols and notes**

Symbol	Meaning
<p><b>DANGER</b></p> 	Immediate danger leading to death or serious injury.
<p><b>CAUTION</b></p> 	Possible danger that may lead to slight injury or damage to property.
	Note for easier or safer working practices.

Tab. 1-2: Danger symbols and information

## 2 Safety

### 2.1 Intended use

This product is designed as a linear pressure-sensitive protective device (PSPD) for hazardous closing edges. The sensor is activated by pressure onto the actuation area.

In the idle state, no pressure must be applied to the sensor.

### 2.2 Residual dangers

**Non-sensitive areas**

The end areas of the Safety Edge are not sensitive. When pressure is applied to any non-sensitive area, the protective function of the Safety Edge is annulled.

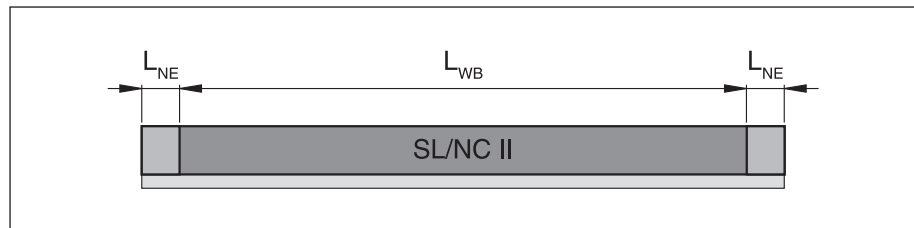


Fig. 2-1: Non-sensitive ends

SL/NO	GP 38	GP 58	GP 68	GP 88
$L_{NE}$	35 mm	35 mm	35 mm	35 mm
$L_{NE}$ = non-sensitive ends				
$L_{WB}$ = effective actuation length				

Tab. 2-1: Non-sensitive ends

- ➔ Use only one Safety Edge per closing edge
- ➔ Do not join Safety Edges at a corner.

**Replacement parts**

When using non-OEM replacement parts, the safety of the Safety Edges may be impaired.

➔ Only use OEM replacement parts from Mayser.

**2.4 Applicable standards**

The design type of the products conforms to the Machinery Directive 2006/42/EC and the EMC Directive 2004/108/EC.

Applicable standards:

- EN 1760-2 "Safety of machinery – Pressure-sensitive protective devices – Part 2: Safety Edges and pressure-sensitive bars"
- EN 12978 "Industrial, commercial and garage doors and gates – protective devices for power-operated doors and gates"
- ISO 13849 "Safety of machinery – Safety-related parts of control systems"

These installation instructions were prepared in compliance with EN 62079 "Preparation of instructions – Structuring, content and presentation."

**3 Technical data**

IEC 60529: Degree of protection	IP65
Actuation forces for signal triggering	According to EN 1760-2
Finger detection	Yes
Error behaviour (with SG-EFS 1X4 ZK2/1)	ISO 13849-1:2006 Category 3
Operating temperature	-20 to +55 °C
Storage temperature	-30 to +70 °C
Maximum load (signal)	600 N
Weight :	
GP 38(L) incl. C 26	0.8 kg/m (L: 0,9 kg/m)
GP 58(L) incl. C 36	1.2 kg/m (L: 1,3 kg/m)
GP 68 incl. C 36	1.4 kg/m
GP 88 incl. C 36	1.6 kg/m

Tab. 3-1: Technical data

**Type plate**

For identifying the Safety Edge type, a type plate is attached to the bottom of the aluminium profile next to the cable exit. In the event of enquiries, have the specified information to hand.

## 4 Transport and storage

### 4.1 Packaging and transport

The Safety Edges are packed skid-proof and can be transported by crane or lifting vehicle to the place of installation. The installation accessories have either been added to the Safety Edges or packed separately, depending on volume.

**DANGER**

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**Danger of injury by falling components!**

- ➔ Only use tested, suitable load bearing equipment.
  - ➔ Use appropriate load securing devices (e.g. transport belts, anti-slip devices).
  - ➔ Do not step or stand under suspended loads.
- 

### 4.2 Storage

- ➔ Store the Safety Edges in the original packing in a dry place.
- ➔ Store packagings pressure-free; do not stack.
- ➔ Store board tube packagings horizontally.
- ➔ Observe and maintain the storage temperature in accordance with the technical data.

## 5 Installation

Mount the Safety Edge in the following order:

Which aluminium profile is being installed?

	C 26M, C 36M, C 36L, C 36S		C 26, C 36
5.1	Prepare the installation site.	5.1	Prepare the installation site.
5.2	Unpack Safety Edge and accessories.	5.2	Unpack Safety Edge and accessories.
	–	5.3	Separate aluminium profile from the rubber profile.
5.4	Mount the aluminium profile.	5.4	Mount the aluminium profile.
	–	5.5	Snap in the rubber profile.
5.6	Lay cables.	5.6	Lay cables.
5.7	Test function.	5.7	Test function.

Tab. 5-1: Montageschritte, je nach Alu-Profil

### 5.1 Preparing the installation site

DANGER



**Danger of injury due to equipment and parts in the vicinity of the installation site (possible electrocution, crushing danger)!**

- ➔ De-energise all devices and live parts in the immediate vicinity of the installation site and secure them against reclosing (refer to the respective operating instructions).
- ➔ Check that the devices or parts are disconnected from the power supply.

- ➔ Prepare the installation surface:
  - Remove any dirt particles.
  - Make sure that the installation surface is flat and solid.
  - Cable bushing must be deburred.
- ➔ Keep the necessary tools ready.

### 5.2 Unpacking

CAUTION



**Damage to property due to incorrect handling!**

Safety Edges can be damaged by bending or due to the effects of sharp objects.

- ➔ Do not use the connection cable of the Safety Edges as a carrying handle.
- ➔ Avoid sagging of the Safety Edges:
  - Transport them upright, if possible
  - Carry Safety Edges that are > 3 m always using 4 hands
- ➔ Put Safety Edges only on a flat surface free of dirt.

1. Check that the contents of the packaging are undamaged.
2. Lay out the Safety Edges side by side at the place of installation

### 5.3 Separation of aluminium profile from the rubber profile

When delivered, the rubber profiles are snap-fitted in the aluminium profiles. For installation of the C 26 or C 36 aluminium profile, this must first be separated from the rubber profile.

- ➔ Disengage both side clip mounts from the aluminium profile.
- ➔ If necessary, use a tool as an aid, e.g. a flat-tip screwdriver or a wooden spatula. Use only blunt and in no case sharp-edged aids in order to avoid damage to the side clip mount.

#### CAUTION



#### Impairment of function by unstable rubber profile!

If the side clip mount is damaged over a length of > 10 cm, the function of the Safety Edge may be impaired.

- ➔ Immediately replace any rubber profile having a damaged side clip mount.
- ➔ Discard any rubber profile having a damaged side clip mount.

### 5.4 Mounting of aluminium profile.

1. Align the aluminium profile with the closing edge:
  - Have the non-sensitive ends been taken into account?
  - Is the cable bushing freely accessible?
2. Mark the drill holes by means of the aluminium profile:
  - At the first and last oblong hole
  - In between every fourth or fifth oblong hole
  - For cable bushing, if not already marked

“Drilling template“

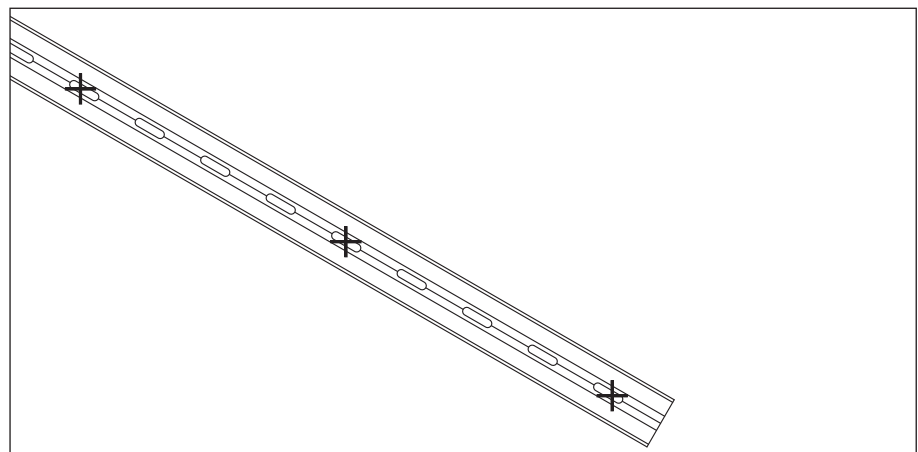


Fig. 5-1: Marking of drill holes



3. Remove the aluminium profile.
4. Drill holes for M5 on the marks.
5. Deburr the drill holes and remove the drill cutting.
6. Fasten the aluminium profile at the oblong holes by means of M5 countersunk screws or cheese-head screws.

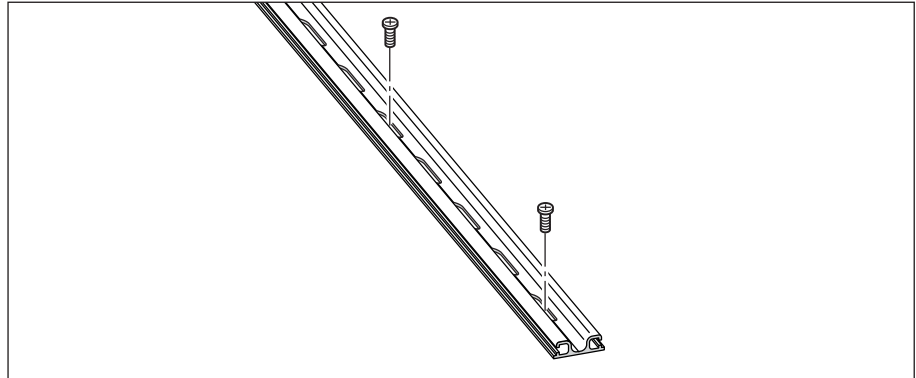


Fig. 5-2: Mounting of aluminium profile



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Alternatively, the aluminium profile may be fastened by means of rivets.

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Do you have Safety Edges with S1 or S2 cable exit?

- ➔ Route the cables through the prepared cable bushing prior to snapping in the rubber profile again.

## 5.5 Snapping in the rubber profile

After installation of the aluminium profile, the rubber profile is ultimately snapped in.

- ➔ Completely snap in both side clip mounts into the aluminium profile.



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Suitable aids for inserting and snapping in:

- Use a brush to apply a non-volatile sliding agent to the aluminium profile and the side clip mount.
- Seam roller for pushing in.



Fig. 5-3: Suitable aids

## 5.6 Laying cables

The type of cabling depends on the operation principle of your system.

1. Connect up Safety Edges in accordance with wiring diagram (optional) or in accordance with the wiring technologies described below. Observe the following:
  - Connect the wire ends of the Safety Edges in accordance with the colour coding
  - If no connecting plugs and sockets (optional) are available, insulate the soldered connections and seal them with heat-shrinkable sleeves
  - Wire each closing edge separately and route the cables to a separate Control Unit.

### CAUTION



#### Damage to cables due to incorrect laying!

- ➔ Do not pinch or bend cables.

2. Lay the cables and route them to the Control Unit

#### Key to the following wiring diagrams:

- BK Safety Edge with two-sided cables as feed-through sensors or for connection of an external monitoring resistor
- W Safety Edge with integrated monitoring resistor
- SG Control Unit
- D Sub-distribution with series terminals
- R Resistor for functional monitoring of the system (1k2 ±5% Ohm)

#### Colour coding:

- |    |       |    |       |
|----|-------|----|-------|
| bl | blue  | sw | black |
| br | brown | ws | white |
| rt | red   |    |       |

**Safety Edges BK:  
2-wire technology**

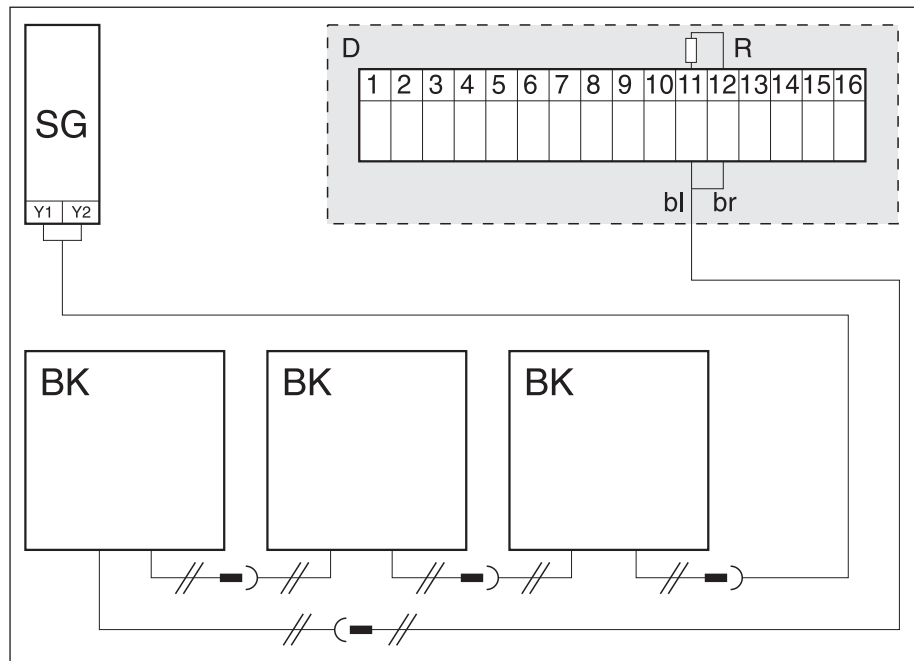


Fig. 5-4: Wiring of the Safety Edges BK for 2-wire technology

**Safety Edges BK:  
2-wire technology with  
terminal connector  
(optional)**

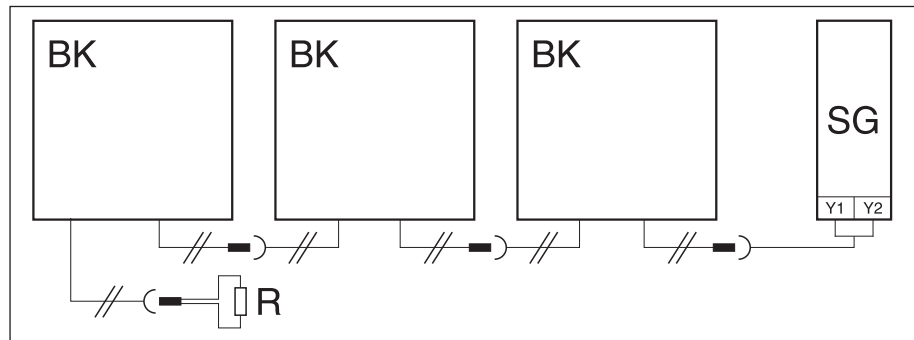


Fig. 5-5: Wiring of Safety Edges BK for 2-wire technology with optional terminal connector, in which the resistor R is integrated

**Safety Edges  
W and BK:  
2-wire technology wired  
straight to the Control  
unit**

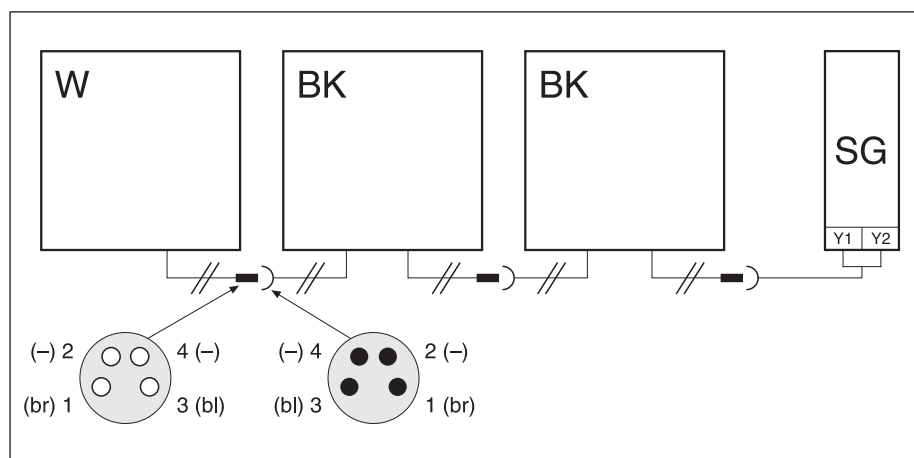


Fig. 5-6: Wiring of the Safety Edges W and BK for 2-wire technology

**Safety Edges W and BK:  
2-wire technology wired  
via sub-distribution  
system**

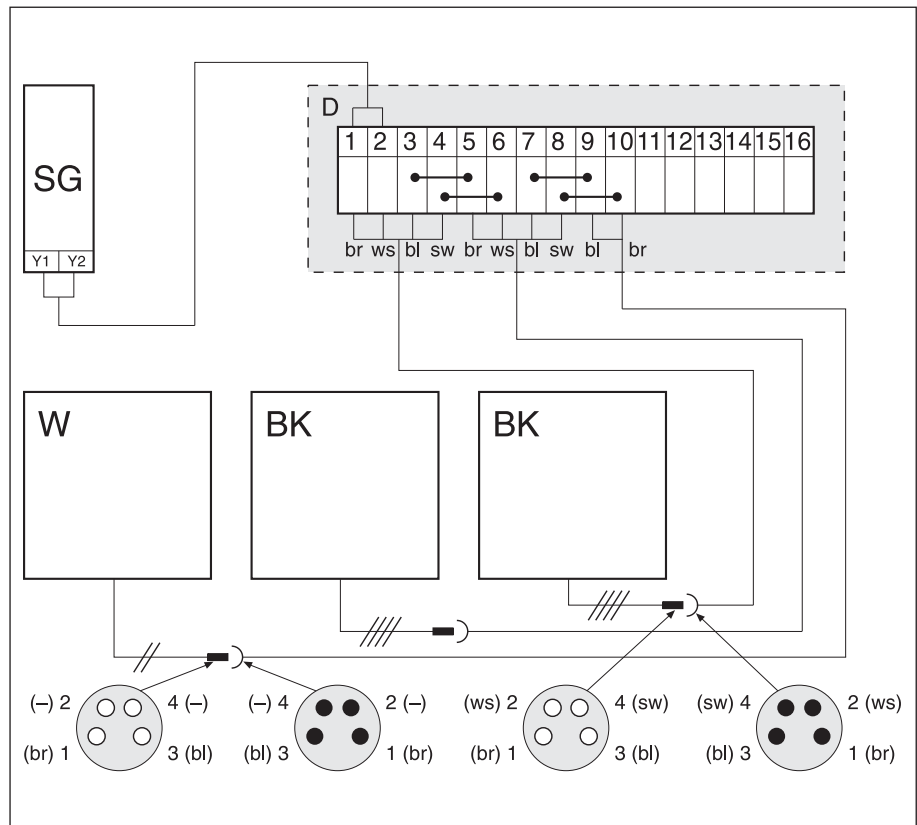


Fig. 5-7: Wiring of the Safety Edges for 2-wire technology via sub-distribution

**Safety Edges BK:  
4-wire technology**

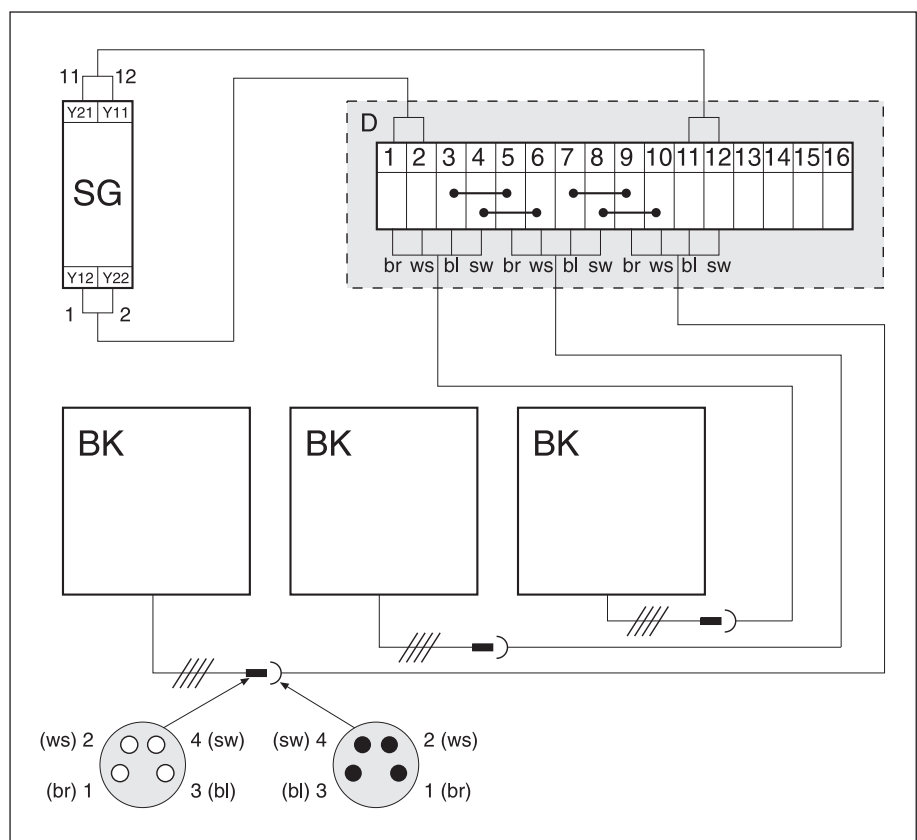


Fig. 5-8: Wiring of the Safety Edges BK for 4-wire technology

## 5.7 Testing

Perform the following steps for each cable of the Safety Edge system:

1. Set the ohmmeter for measuring in a high resistance range.
2. Connect the ohmmeter to the two wires of the cable.
3. Measure the electrical resistance between the wire ends while the Safety Edge is activated and non-activated.

The measured resistance must have the following values:

- Safety Edge activated: < 150 Ohm
- Safety Edge not activated:
  - Sensor BK: > 1 MOhm
  - Sensor W: 1k2 ±5% Ohm

### Test failed?

If the resistance measurement does not produce the specified values, this may have the following causes:

- The cables are bent or damaged
- The Safety Edge is not adequately fastened or is sagging
- The distance between the Safety Edge and the closing edge is too small in the end position causing the Safety Edge to actuate.

## 6 Maintenance and cleaning

The Safety Edges are virtually maintenance-free.

### Cleaning

- ➔ Clean the surface of the Safety Edges at regular intervals using mild detergents
- ➔ After cleaning, remove any remaining fluid.

### Regular inspections

- ➔ Test the rubber profile for damage at regular intervals.
- ➔ Test the safety function of the Safety Edges at regular intervals.

## 7 Disposal

The products included in the scope of supply contain the following materials:

### Safety Edges

- plastics
- copper (Safety Edge interior, cables)
- steel

### Installation

- steel (screws)
- aluminium (aluminium profile)

### Packaging

- wood, cardboard, plastics

Observe the following when disposing of these materials:

- ➔ Observe all relevant national disposal regulations and statutory conditions.
- ➔ Provide the material list given above when using a disposal company.
- ➔ Recycle or dispose of materials in an environmentally friendly manner.